2. TRANSPORTATION & MOBILITY ELEMENT

TRANSPORTATION & MOBILITY ELEMENT

The purpose of the **Transportation & Mobility Element** is to plan for a multi-modal transportation system that is safe and meets the needs of the City's residents and visitors. This Element encourages a reduction in vehicle miles travelled and also encourages improved transportation and mobility planning. The **Transportation & Mobility Element** establishes Level of Service (LOS) Standards for the major roadways and also recognizes the need to provide transportation alternatives to increase accessibility and provide a comprehensive transportation system. This Element addresses roadway facilities, transit facilities, availability of public parking facilities, availability of bicycle and pedestrian facilities, airport and rail line systems, and other supplementary services and programs.

TRANSPORTATION & MOBILITY ELEMENT

1. Encourages complete streets and transit oriented development principles to improve accessibility and livability;

2. Assures the availability of convenient and safe parking;

3. Supports efforts towards bicycle and sidewalk connections and greenway and trail opportunities;

4. Makes safety and a safe mobility network a priority for the City;

5. Considers Level of Service standards and concurrency;

6. Establishes a guideline for prioritizing projects with a consideration of sustainability, environmental, social, accessibility and equity factors;

7. Establishes policies to guide the continued development of the Sebastian Municipal Airport and related facilities;

8. Supports the minimization of negative impacts from mobility infrastructure on the environment and encourages a reduction of greenhouse gas emissions through alternative mobility options

GOALS, OBJECTIVES AND POLICIES

Goal 2-1: Improve the Mobility Network.

Provide a safe, efficient, and convenient transportation system for multiple modes of travel within the Sebastian mobility network.

Objective 2-1.1: Mobility. The City shall promote roadways designed based on desired land use context which includes non-motorized modes of transportation to provide a safe and efficient multi-modal system and to provide for a possible reduction of individual motor vehicle travel.

Policy 2-1.1.1: Design. The City shall include landscaping and streetscaping as roadway design components in order to enhance the aesthetic and safety of the road for all users. The City shall encourage the use of Florida native and drought tolerant plants in landscaping and streetscaping. The City will also include pedestrian and bicycle improvements as part of streetscaping projects or look for improvements to parallel facilities. The City shall continue to pursue grant opportunities for median landscaping and road beautification.

Policy 2-1.1.2: Complete Streets. Implement complete streets principles in the planning, programming, and construction of all new City roadways, redesigns, and resurfacing design of existing roadways to address the needs of all users, including motorists, bicyclists, transit riders, and pedestrians of all ages and abilities. Support a pleasant environment for pedestrians and bicyclists through the incorporation of appropriate lighting, shade, and bus shelters. Roadways shall be designed based on the desired future land use context based on the FDOT Design Manual. The City will coordinate with the FDOT District Four Complete Streets Coordinator in the incorporation of FDOT's context classification system and Complete Streets Policy into future development.

Policy 2-1.1.3: Prioritizing. Prioritize mobility with consideration to sustainability, environmental, social, accessibility and equity factors using the following hierarchy as a guideline for prioritizing projects based on transportation mode. Where adequate facilities exist for all modes, enhancing the quality and integration of the facilities will be prioritized based on the hierarchy of modes. The sustainable mobility hierarchy is recommended as follows; however, may be revised from time to time by the City to reflect changes/improvements in technology, available resources, cost considerations:

- Walking
- Bicycling and Nonmotorized Vehicles
- Public Transit
- Service & Freight
- High Occupancy Vehicles
- Taxi, Car Sharing, Private Transit

- Registered Low Speed Vehicles (LSV)
- Single-occupancy Automobiles

Policy 2-1.1.4: Connection. Implement land use strategies that support "park once environments", increase vehicular trip capture, reduce vehicle dependence, promote non-vehicular travel, and decrease vehicle-miles-traveled (VMT), through development of mixed-use projects by requiring vehicular and pedestrian interconnection between adjacent properties, and by providing connections to transit facilities.

Policy 2-1.1.5: Greenway Plan. Consistent with the North Indian River County Greenways Master Plan (2008), the City shall seek funding for and prepare and maintain a Greenways Plan for bicycle and pedestrian access.

Policy 2-1.1.6: Bicycle Corridors. Consistent with the Indian River County Bicycle & Pedestrian Master Plan (2015), the City shall seek to provide adequate ROW for bicycle and pedestrian facilities, and construct where feasible bicycle ways along corridors to be specified in the Greenways Plan.

Policy 2-1.1.7: Bike Paths. Bike-paths or bike lanes shall be established linking arterial, collector, and local streets and shall be implemented as part of the overall mobility network (including pedestrian and transit connections). Where bike paths are not feasible, the City may consider installing a multi-use path.

Policy 2-1.1.8: Pedestrian Improvement Plan. A Pedestrian Improvement Plan that considers multi-use paths, sidewalks, and bike lanes shall be prepared and maintained by the City.

Policy 2-1.1.9: Sidewalks and Multi-use Paths. Sidewalks or multi-use paths shall be mandatory on all new roadway construction.

- Sidewalk width shall be provided based on land use context per the FDOT Design Manual.
- Sidewalks shall be constructed, concurrently with new non-residential development, by the developer.
- Except where constrained, new residential developments with densities of one or more dwelling units per acre shall provide sidewalks on both sides of every street.
- Sidewalks for all developments shall be designed to provide connectivity to existing pedestrian facilities.

Policy 2-1.1.10: Funding. Capital funding priority will be given to complete streets that benefit multi-modal users, greenways, recreational use areas, and along roadways between residential areas and schools.

Policy 2-1.1.11: Land Development Code. The City shall develop and maintain standards in the land development code (LDC) for access and improvements to bicycle and pedestrian systems. Such standards shall apply to new developments, substantial improvements of existing developments, and to road improvements. The City shall consider other options to developers to offset their up-front costs for sidewalks and bicycle pathways; such options shall be identified within the LDC.

Policy 2-1.1.12: Roadway Improvements. The City shall include and maintain in the LDC the provision of bicycle parking and circulation, pedestrian walkways, and handicap accessible facilities within new developments and existing developments undergoing substantial improvements.

Policy 2-1.1.13: Pedestrian Design. Intersections shall be made pedestrian-friendly by limiting the pedestrian crossing width; use of adequate lighting; adequate timing for traffic signals; and the provision of facilities for the handicapped.

Policy 2-1.1.14: Parking. The City shall regularly analyze, assess, and update parking requirements in the LDC to reflect actual parking trends and needs. Parking requirements may be customized for various parts of the City.

Policy 2-1.1.15: Parking. The City shall develop standards, for new non-residential development, to establish a maximum number of parking spaces allowed in excess of the parking space requirements of the City's LDC, in order to encourage walking, bicycling, ridesharing, and shared parking, and to minimize the creation of excess impervious surface area. These standards will also identify site related considerations including the use of alternative parking/surfacing materials (i.e., pervious).

Policy 2-1.1.16: Alternatives. Coordinate with and support efforts by FDOT, Indian River County and other strategic partners to implement Transportation System Management principles on roadways within the City, including optimization of traffic signal systems, transit prioritization, and technologies benefiting pedestrian and bicyclist movement at signalized intersections.

Policy 2-1.1.17: Public Transit. In coordination with the Indian River County MPO and other appropriate partners, the City shall evaluate the need for additional public transit routes consistent with the short- and long-range plans of Indian River Transit. The City shall also include standards within the LDC for public transit facilities and amenities, including, but not limited to, covered bus shelters, benches, and bus bays to be provided with new development in areas along transit corridors and in areas with major trip generators and attractors.

Policy 2-1.1.18: Transit-Oriented Development. The City shall promote transit-oriented development (TOD) through mechanisms within the LDC which provide opportunities for infill development and redevelopment that support transit ridership including within the mixed use areas. The City shall update the LDC to include site and building design standards for development in public transit corridors, including C.R. 512, to assure the accessibility of new development to public transit.

Policy 2-1.1.19: Environmental Impact. The City shall implement standards in the LDC that minimize the impacts of mobility infrastructure on the environment.

Objective 2-1.2: Safety. The City shall emphasize safety including the reduction of crashes involving those walking, riding a bicycle, riding or driving transit and other vehicles.

Policy 2-1.2.1: Speed. The City will review posted speeds on all major roadways and areas where the desired speed is lower than the posted speed. The City will strive to design roadways that meet the

desired speed. The City will promote traffic calming design standards on roadways that share a multi-modal component.

Policy 2-1.2.2: Driveways. The City will review proposed development and redevelopment and reduce the number of driveways where possible. As properties are developed or redeveloped the City will encourage the use of connecting commercial parking areas to reduce the number of driveways.

Policy 2-1.2.3: Crashes. The City shall maintain a record of traffic counts and traffic related crashes for major roadways in the City's network and update those records on an annual basis.

Policy 2-1.2.4: Pedestrian Safety. Adequate pedestrian circulation and safety shall be considered as a required component of roadway system management, with implementation and required construction.

Objective 2-1.3: Level of Service. The City shall adopt and adhere to level of service (LOS) standards for arterial and collector streets.

Policy 2-1.3.1: Standards. The City shall use the most recent Florida Department of Transportation Quality/Level of Service Handbook criteria as a general basis for the City's LOS standards.

Policy 2-1.3.2: Minimum LOS. The minimum LOS standard for arterials, collector, and local roads shall be "D." The LDC shall include standards that require the developer to design and construct street and intersection improvements where the proposed project will result in a decrease in the level of service below LOS "D."

Policy 2-1.3.3: County Roadways. City and County LOS standards shall apply to City and County maintained roadway facilities.

Policy 2-1.3.4: Developmental Impact. As part of the Concurrency Management System (CMS), the City shall, through the Development Review process, review proposed new developments for their impact on adopted LOS, interior circulation needs, and vehicle parking, with an emphasis on overall mobility.

Policy 2-1.3.5: Corridors. The City shall coordinate with the Indian River County Metropolitan Planning Organization (MPO) corridor studies to identify new corridors to increase north-south and east-west connectivity. The City shall encourage multi-modal components be integrated for new corridors.

Policy 2-1.3.6: Corridor Study. The City shall continue to coordinate with FDOT and the MPO to pursue recommended improvements and alternative corridors identified in the Indian River County SR5/US 1 Multimodal Corridor Study (2019).

Policy 2-1.3.7: Congestion. The City shall continue to partner with private developers, Indian River County and other government agencies to relieve congestion on arterial and collector roads and for improvements to the road network.

Objective 2-1.4: Roadway Network. Utilize transportation system management principles to effectively maximize the operations in the existing transportation system while simultaneously reducing emissions and reducing the need for increased laneage on roadways.

Policy 2-1.4.1: Signalization. The City shall coordinate with Indian River County and FDOT on a traffic flow management system (signal synchronization) for all future signalization along the transportation network.

Policy 2-1.4.2: Design. The City will coordinate with FDOT on roadway design meeting the FDOT Design manual standards.

Policy 2-1.4.3: Coordination. The City shall coordinate with Indian River County and FDOT on all connections and access points of driveways and roads to county and state roadways, respectively.

Policy 2-1.4.4: Deficiencies. The City shall continue to monitor future collector and arterial roadway deficiencies and shall devise methods and budget monies to alleviate those deficiencies.

Policy 2-1.4.5: Disaster Preparedness. Consistent with the **Conservation & Coastal Management Element**, the City shall update and maintain a plan for disaster preparedness by addressing evacuation procedures, the need for signage, and the availability and need for shelters. Evacuation plans shall be coordinated with Indian River County and FDOT.

Policy 2-1.4.6: Indicators. The City shall use County and State numerical indicators for measuring the achievement of City mobility goals. Numerical Indicators shall include:

- Modal Splits; and
- Annual Transit Trips Per Capita.

Objective 2-1.5: Future Land Use, Housing and Population. The City shall coordinate the transportation system with the adopted Future Land Use Map series and shall ensure that existing and proposed population densities, housing and employment patterns, and land uses are consistent with the mobility modes and services proposed to serve these areas.

Policy 2-1.5.1: Consistency. The City shall review roadway improvements, new construction and roadway extensions proposed by other agencies for consistency with the Future Land Use Map series of the Comprehensive Plan.

Policy 2-1.5.2: Traffic Study. Applications for future land use amendments to more intensive designations shall be accompanied by a traffic study analyzing the impacts of the development allowed by the new category on the citywide transportation system and the mobility of all users. Standards shall be provided in the City's LDC.

Policy 2-1.5.3: Development Review. The City's Development Department shall review all future land use and zoning map amendments to determine the impact of the amendment on the LOS for all roadways directly and indirectly affected by the amendment.

Policy 2-1.5.4: Compatibility. The City shall require that new development be compatible with Goals, Objectives and Policies of the **Transportation & Mobility Element**. Requirements for the compatibility of new development may include but are not limited to:

- Locating parking to the side or behind the development to provide pedestrian accessibility of building entrances and walkways to the street, rather than separating the building from the street by parking.
- Providing clearly delineated pedestrian routes through parking lots to safely accommodate pedestrian and bicycle circulation and to minimize potential bicycle/pedestrian and automobile interaction.

Policy 2-1.5.5: Traffic Analysis. Proposed development that is required to follow the site plan review process shall be required to submit a traffic analysis which identifies the development's impact on the City's transportation system.

Policy 2-1.5.6: Roadway Standards. Proposed developed will be reviewed to include appropriate roadway standards to include bicycle and pedestrian facilities based on the FDOT Design Manual. Shade trees should also be encouraged with new development.

Policy 2-1.5.7: Concurrency. Annexations and amendments to the **Land Use Element** shall be reviewed for their potential impacts upon the City's mobility network in order to identify any concurrency required improvements.

Policy 2-1.5.8: Public Transportation. The City shall encourage land uses that promote public transportation in designated public transportation corridors.

Objective 2-1.6: Connectivity. Provide for the protection of existing and future right-of-way (ROW) to ensure connectivity in the mobility network.

Policy 2-1.6.1: Land Acquisition. The City shall develop a priority listing of needed ROW for the purpose of orderly and economical land acquisition.

Policy 2-1.6.2: Right-of-Way. The City shall compile and maintain a listing of existing and projected needs for ROW within the urban area.

Policy 2-1.6.3: Setbacks. The City shall require additional building setbacks for new construction on roadway corridors identified as needing additional ROW.

Policy 2-1.6.4: ROW Standards. The City shall establish standards for donation/dedication of ROW by developers.

Policy 2-1.6.5: Ensuring Connectivity. Wherever possible, the City shall require that future development reserve ROW in a gridded street network that ensures connectivity.

Policy 2-1.6.6: Cul-de-sacs. Cul-de-sacs will not be encouraged. Where connectivity is not available, the City shall ensure that adequate turning areas are provided for emergency service vehicles.

Policy 2-1.6.7: Public Roadways. The City shall require that roadways be dedicated to the public to connect with and shorten existing public roadways.

Policy 2-1.6.8: Subdivisions. New subdivisions shall be required to "stub-out" to adjoining undeveloped lands to promote road connectivity, and to connect to existing roadways that are "stubbed-out" at their boundaries. The City shall require that future subdivisions with 25 units or more, at a minimum, have at least two (2) points of access open to motor vehicle traffic.

Policy 2-1.6.9: Access. The City shall establish access management standards in the LDC to ensure appropriate access to the City's transportation system. Standards may include the requirement of joint-use driveways and/or cross access easements to access sites.

Policy 2-1.6.10: Major Thoroughfare System. The City shall preserve the major thoroughfare system by requiring development of parallel roads or cross access easements to connect developments as they are permitted along major roads.

Policy 2-1.6.11. Traffic Calming. The City shall consider developing a technical traffic calming manual identifying measures for prioritization and implementation of traffic calming measures on public roadways.

Objective 2-1.7: Wayfinding. The City shall implement wayfinding mechanisms to give direction and prevent confusion for all mobility modes.

Policy 2-1.7.1: Comprehensive Wayfinding System. The City shall develop and maintain a comprehensive wayfinding system that appropriately scales directional signage for both vehicular and pedestrian travel routes, as well as the location of major civic uses.

Objective 2-1.8: Aviation Facilities. The City will ensure that the continued development of the Sebastian Municipal Airport, and related facilities, are consistent with the Goals, Objectives and Policies of the **Land Use**, **Conservation & Coastal Management**, and **Transportation & Mobility Elements** of the City's Comprehensive Plan and in accordance with Florida Statutes Ch. 330 and 333.

Policy 2-1.8.1: Compatibility. The City will continue to implement and enforce the Goals, Objectives, and Policies of its **Land Use Element** and its LDC to ensure that the Sebastian Municipal Airport and its related facilities are protected from the encroachment of incompatible land uses.

Policy 2-1.8.2: Regulations. The City will continue to implement and enforce its airport zoning regulations. These regulations address height, noise, clear zone and land use requirements.

Policy 2-1.8.3: Access. The City shall continue to ensure that access routes to the Sebastian Municipal Airport are integrated with other modes of surface and water transportation.

Policy 2-1.8.4: Improvements. The City shall ensure that any proposed or future transportation improvements are coordinated with the long-term development objectives of Sebastian Municipal Airport and the long-term development objectives of this Element.

Policy 2-1.8.5: Facilities. The City shall continue to coordinate with the Federal Aviation Administration (FAA) and the Continuing Florida Aviation System Planning Process (CFASPP) relating to facilities planning.

Policy 2-1.8.6: Future Needs. The City shall coordinate roadway and transit service improvements with the future needs of the Sebastian Municipal Airport.

Policy 2-1.8.7: Mitigation. The City will continue to minimize the adverse impacts and ensure the mitigation of adverse impacts from the Sebastian Municipal Airport or related facilities upon adjacent natural resources and land uses.

Policy 2-1.8.8: Economic Development. The City will foster use of Sebastian Municipal Airport lands in a manner which contributes to the development of the City's economic base through selective pursuit of industry.

Policy 2-1.8.9: Safety. The City will assure safe operation of aircraft through the following and consistent with FS 333 & FDOT Airport Compatible Land Use Guidebook:

- Efficient use of air space in relation to the Sebastian Municipal Airport and surrounding airports and airways.
- Maintenance and improvement of the aircraft operational ground environment.
- Implementation of the Sebastian Municipal Airport design plan, which accommodates operationally compatible aircraft.

Policy 2-1.8.10: Airport Master Plan. The City will support the Sebastian Municipal Airport and industrial development which is compatible with the adopted City of Sebastian Municipal Airport Master Plan (2018) and mutual environmental constraints through:

- Proper on- and off- Sebastian Municipal Airport land use which protects the operationally sensitive areas and reduces noise impact near the airport.
- Preserving the ecologically unique areas and the property.
- Encouraging aviation activity compatible with community needs and characteristics.

Policy 2-1.8.11: Financial Independence. Promote continued financial independence of the Sebastian Municipal Airport through:

- Preparing periodic updates to the Sebastian Municipal Airport development plan in order to maximize land resources within the constraints imposed by changing conditions; markets for land, goods and services; as well as constraints imposed by other goals, objectives and policies of the City.
- Development of a long-range capital improvements program consistent with financial capacity.
- Development of an operations and maintenance program compatible with financial resources.
- Keeping consistent with FDOT's Guidebook for Airport Master Planning and FDOT's Florida Statewide Aviation Economic Impact Study

Policy 2-1.8.12: Intergovernmental Coordination. Specific Objectives and Policies regarding intergovernmental coordination and this Element are provided and identified in the **Governance & Implementation Element**.

DATA INVENTORY AND ANALYSIS

INTRODUCTION

The purpose of the **Transportation & Mobility Element** is to plan for a transportation system that emphasizes residents' accessibility to goods and services and supports the **Land Use Element**. The Element also encourages a reduction in vehicle miles travelled and also encourages better transportation planning. The **Transportation & Mobility Element** establishes Level of Service (LOS) standards for the major roadways and supports land development policies that promote other transportation alternatives.

An essential base for planning a transportation system is the **Land Use Element**. The Future Land Use Map (FLUM) can guide where new or improved transportation facilities may be needed. The **Transportation & Mobility Element** assesses the condition and capacity of the existing transportation facilities, projects future needs, sets LOS standards for roads, and determines future system improvements.

Roadway LOS standards are established to ensure that adequate facility capacity for future development is concurrently sufficient with the issuance of development orders and development permits. These standards will be established for each roadway link consistent with the facility type, and current Florida Department of Transportation (FDOT) LOS guidelines.

The **Transportation & Mobility Element** also recognizes the need to provide transportation alternatives to increase accessibility and provide a comprehensive transportation system. Therefore, this Element addresses roadway facilities, transit facilities, availability of public parking facilities, availability of bicycle and pedestrian facilities, airport and rail line systems, and other ancillary services and programs.

INVENTORY

An efficient transportation system should provide access to various land uses through alternative transportation modes. The overview of the existing multi-modal transportation system within the City of Sebastian provides the basis for analyzing existing transportation deficiencies and needs within the City. This section will identify existing roadway and transit facilities, availability of public parking facilities, availability of bicycle and pedestrian facilities, airport facilities, train facilities and other ancillary services and programs.

Road System

This section describes the major roadway facilities within the City and their relative function in the City's circulation system. The traffic circulation system can generally be described as a small area of curvilinear gridded streets in the town center and a collection of disconnected rural roads surrounding the City. The following is a description of the major roadways in the City of Sebastian.

US 1 (Indian River Lagoon Scenic Highway) is under the jurisdiction of FDOT and serves as an urban principal arterial connecting the City of Sebastian with cities such as Melbourne, Vero Beach, and Fort Pierce. U.S. 1 runs along the state's east coast from Key West to Jacksonville. The portion of US 1 that passes through the City of Sebastian is part of the Indian River Lagoon Scenic Highway. The Indian River Lagoon Scenic Highway is a 130-mile long scenic byway located along the shores of the Indian River lagoon. US 1 in the City of Sebastian is a

divided four (4) lane facility located on the east side of the City parallel to the Indian River Lagoon. This road provides a linkage for both inter- and intra-state traffic between the north and south portions of the state and into Georgia. Since US 1 is the primary north-south route through the City of Sebastian, local traffic also uses this road on a frequent basis.

Sebastian Boulevard (County Road 512) is a divided four (4) lane facility under the jurisdiction of Indian River County and serves as an urban minor arterial for the City, providing access to US 1 and Interstate 95. County Road 512 runs diagonal through the center of the City south from County Road 510 and splits becoming unidirectional prior to terminating into US 1.

Wabasso Road (County Road 510) is a two (2) lane facility under the jurisdiction of Indian River County and serves as a county minor arterial for the City, providing access to US 1 and Sebastian Boulevard (County Road 512). County Road 510 runs in an east-west direction just south of the City and turns north and connects to County Road 512 on the western side of the City.

Roseland Road is an undivided two (2) lane facility under the jurisdiction of Indian River County and serves as an urban collector for the City of Sebastian. County Road 505 runs along the west side of the City from US 1 to County Road 512 at the southeast corner of the City's limits, connecting the City with the unincorporated community of Roseland.

Barber Street is an undivided two (2) lane facility that provides a semi-circular transverse across the southern and western portion of the City. Barber Street is under the jurisdiction of the City and serves as an urban collector. Barber Street's semicircular route along the southern and western portion of the City begins on the south eastern side of the City at US 1 and ends on the north western side of the City at Lake Drive. This road is characterized by its curvilinear design.

Easy Street is an undivided two (2) lane facility provides north south access from Main Street on the north western side of the City, near the airport, to Schumann Drive in the southern central portion of the City. Easy Street is under the jurisdiction of the City and serves as an urban local road.

Fleming Street is an undivided two (2) lane facility provides north south access from Main Street on the north western side of the City, near the airport, to South Easy Street in the southern central portion of the City. Fleming Street is under the jurisdiction of the City and serves as an urban collector. Fleming Street is characterized by its functionality as a north-south connector alternative to Easy Street, Barber Street, and Powerline Drive.

Main Street is an undivided two (2) lane facility provides diagonal north-south access on the north western side of the City, near the Sebastian Municipal Golf Course. Main Street is under the jurisdiction of the City and serves as an urban collector. The south-western terminus of Main Street begins at Wimbrow Drive. The north- eastern terminus of Main Street is at US 1.

Laconia Street is an undivided, north-south, two (2) lane facility from Sebastian Boulevard to Concha Drive. Laconia Street is under the jurisdiction of the City and serves as an urban collector for the City of Sebastian.

Schumann Drive is an undivided two (2) lane facility from Barber Street to Beach Lane and a divided two (2) lane facility from Beach Lane to US 1, under the jurisdiction of the City and serves as an urban collector for the

City of Sebastian. Within the City, Schumann Drive runs north-south along the eastside of the City from Barber Street to US 1 and can be characterized by its curvilinear design.

Englar Drive is an undivided two (2) lane facility under the jurisdiction of the City and serves as an urban collector for the City. Englar Drive provides an east-west connection from Barber Street to Schumann Street. Englar Drive allows the primary residential area access to US 1 and the commercial districts.

Jurisdiction and Maintenance Responsibility

The jurisdictional responsibility of each roadway in the City of Sebastian is displayed on **Map 2-1**. There is one State roadway, US 1 and three County roadways, CR 510, CR 512 and CR 505. Several minor roadway segments that function as local collectors, under City jurisdiction, have also been shown on the map.

Functional Classification

The functional classification of major roads in the City of Sebastian is illustrated in **Map 2-2**. The functional classification of public roads in this Element is based on FDOT criteria, which considers quantitative and qualitative factors such as jurisdiction, land access, route length, and trip lengths. A road hierarchy is used to identify relative importance of roads within the system; provide guidance for LOS and design standards; aid in establishing improvement priorities; identify maintenance responsibility; and, assist in determining funding and financing policies. The hierarchy used in this Element includes:

Limited Access Facilities/Freeways: Designed to provide regional mobility via uninterrupted flow at high travel speeds for regional trips. Access spacing is generally on the order of one mile or more, and average travel speeds are above 40 miles per hour. There is no direct land access, and urban freeways are multilane, divided facilities. Lane access is always via ramps to major arterials or frontage roads. There are currently no limited access facilities within the City of Sebastian.

Strategic Intermodal System (SIS): While the City does not have any Strategic Intermodal System (SIS) roadways in or near the municipal limits, there are two SIS facilities located within the City: the Florida East Coast Railroad and the Intercoastal Waterway.

Arterials: Provide regional mobility via both uninterrupted flow and interrupted flow segments. Arterials provide mobility around and through urban and community cores and accommodate relatively long trip lengths as opposed to providing access to adjacent properties. Arterials are further classified as “Urban” or “Rural” depending on the road location, “Principal”, “Major” or “Minor” depending on its function and relative importance and as Class I, II, or III based on the number of signals per mile, access controls, geometric cross sections, and speed limits for performance purposes.

Collectors: Provide for movement between local streets and the arterial network. Collectors serve residential, commercial and industrial areas and are further classified as urban or rural based on location and area served.

Local Roads: Provide direct access to abutting properties. Local roads accommodate traffic originating in or traveling to properties within a neighborhood, commercial or industrial development. Local roads are not considered part of the major thoroughfare system.

Existing Characteristics of Major Trip Generators and Attractors

Overall, the location of major trip generators and attractors influences roadway improvement needs as well as the demand for transit. Trip production areas are those portions of the City where major residential developments are located because this is where trips are generated. All of the Sebastian Highlands would be considered a trip production area. Trip attraction areas are locations with shopping, recreation, medical, employment, and other facilities, generally the location of the trip ends. People are attracted to these areas by the services or facilities available there. The major traffic attractors within the City include several Publix Shopping Centers, the Wal-Mart Superstore, Sebastian River Medical Center, the Post Office, the Municipal Golf Course, the Municipal Airport, as well as the City's boat ramps. Other facilities that are classified as minor traffic attractors include City Hall, the schools, City parks, businesses in the waterfront area, and the North County Library.

Existing Modal Split and Vehicle Occupancy Rates

Throughout the Sebastian area, single occupancy vehicle trips account for the vast majority of all trips in Indian River County. This is due in part to the lack of mass transit and bicycle/pedestrian ways in 2000. However, since 2000 the transit system has increasingly gained popularity and has steadily increased ridership each year. Automobile travel continues to be the easiest and most convenient mode of travel. Alternative modes of transportation are less attractive because accessibility is limited, and freedom of travel is restricted.

Population Characteristics

According to the University of Florida Bureau of Economic and Business Research (BEBR), Sebastian's official population estimate as of 2019 is 25,168 residents. According to the 2013-2017 American Community Survey, approximately 92% of the workers living in Sebastian drove to work alone, 8% drove to work in a carpool, and 0.1% took public transportation to work.

Constrained Facilities

Section 339.155, Florida Statutes, makes governmental police powers available to preserve and protect property necessary for transportation corridors and recommends that needed rights-of-way be acquired as far in advance of construction as possible. FDOT requests that local governments identify constrained roadways in their comprehensive plans to ensure maintenance of the operating conditions, so that significant degradation in the LOS does not occur. A constrained roadway is one in which adding two or more through lanes to meet current or future needs is not possible due to physical, environmental or policy barriers. There are currently no designated constrained roadway segments within the City limits.

Accident Locations

Accident analysis is critical because it provides a tool for City and State officials to recommend appropriate safety measures. Accident frequency along with roadway performance can be used to prioritize future roadway needs. Accident data, based on written crash reports, was compiled by the City of Sebastian Police Department from January 1, 2017 to December 31, 2019. The three (3) intersections with the highest number of accidents, in descending order, were: Roseland Road and Sebastian Boulevard, Jackson Street and US 1 (28 accidents), and Barber Street and Sebastian Boulevard (28 accidents. **Table 2-1** lists the other intersections in the City that were identified in the written crash reports.

Table 2-1: Written Crash Reports (Intersections) - Updated

Intersection	Number of Crashes
Jackson St & US 1	28
Roseland Rd & Sebastian Blvd	36
Main St & US 1	27
Barber St & Sebastian Blvd	28
Fleming St & Sebastian Blvd	18
Easy St & Sebastian Blvd	16
Barber St & Schumann Dr	6
Delaware Ave & Sebastian Blvd	8

Source: City of Sebastian Police Department, Written Crash Reports for the Period of 1/1/2017 to 12/31/2019

Signalized Intersections

County Road 512 and US 1 are the only two major corridors with signalized intersections within the City. There are currently traffic signals at the following intersections of County Road 512: County Road 510 (90th Avenue), County Road 505 (Roseland Road), Barber Street, Fleming Street, Easy Street, Delaware Avenue and US 1. There are seven traffic signals at the following intersections of US 1: Jackson Street, County Road 505 (Roseland Road), Main Street, County Road 512 (EB and WB), Schumann Drive, Barber Street and County Road 510 (Wabasso Road). US 1 in this area has less than two signals per mile, qualifying the roadway as a Class I State two-way Arterial. The intersection of Barber Street and Schumann Drive is also signalized.

Evacuation Routes

Sebastian is a coastal community and in the event of a hurricane or natural disaster evacuation routes must be delineated. Residents living in mobile homes are required to evacuate even in the event of a Category 1 hurricane, which is the least severe type of hurricane. **Map 2-3** depicts the principal evacuation routes for the City. The **Conservation & Coastal Management Element** of this plan addresses hurricane evacuation in detail. Though not part of the City of Sebastian, the residents living on the barrier island are required to evacuate during a Category 1 hurricane. As indicated in the **Conservation & Coastal Management Element**, the Regional Planning Council has done several hurricane evacuation studies for the Treasure Coast area, including Sebastian. The last hurricane evacuation study update was done in 2016 prepared by Indian River County.

The City of Sebastian participates with the Indian River County Emergency Operations Center (EOC) regarding hurricane evacuation and other emergency management activities. Indian River County's Comprehensive Emergency Management Plan identifies CR 512, CR 510, Roseland Road (CR 505), US 1 and Interstate 95 as the primary evacuation routes. US 1 runs north and south along the Indian River Lagoon through the County and would be used by a number of people evacuating from the surrounding counties. County Road 512 runs diagonally through the City predominately east and west, which would provide Sebastian residents an evacuation route connection from Interstate 95 and US 1.

Clearance time is defined as the time required to clear the roadways of all vehicles evacuating in response to a hurricane or other severe weather event. Clearance time is determined by three factors: mobilization time, travel time, and delay time. From a transportation system perspective, travel time and delay time are important because

those times, to a great extent, are dependent upon roadway characteristics. Indian River County's Comprehensive Emergency Management Plan showed that the clearance time for Indian River County range from 12.5 to 27 hours.

Airport

The City of Sebastian owns and operates a 625 acre general aviation airport consistent with the adopted City of Sebastian Municipal Airport Master Plan (2018). The Sebastian Municipal Airport is generally located north of CR 512 between CR 505 and US 1. Access to the airport facilities is on Main Street and Roseland Road. The airport has two asphalt runways which are 3,200 feet long and 75 feet wide and 4,000 feet long and 100 feet wide. This facility houses several aviation related businesses. The primary use for this facility is related to general aviation, related businesses, skydiving and flight-training. There are no passenger related flights currently operating out of this airport.

The airport is surrounded, on its south and east boundary, by a City owned and operated municipal golf course. On the northeast side of the airport, an approximately 112 acre conservation parcel was purchased by the St. Johns River Water Management District. Located on the westside, and adjacent to the airport, is an industrial district, which provides space for office, industrial, and supporting uses for the airport.

Rail

An active railroad system runs parallel to US 1 on its west side. Approximately 10 trains per day use these rail lines. This rail line is used predominately for freight transport of goods to and from south Florida. There are no passenger stations along this stretch of rail line within the City or within a close proximity. Brightline is currently in the process of adding tracks to this railroad system.

Public Transit System

Currently, GoLine Indian River Transit (IRT) provides service to the City of Sebastian with five (5) routes. See **Map 2-4** for the GoLine routes within the City. In addition to participating with the IRT GoLine transit system, the City of Sebastian utilizes the County's transportation disadvantage program known as the Community Coach. The Community Coach vehicle is a smaller size bus than the full-length traditional route buses. The Community Coach system is headquartered in Vero Beach. This program was created to help provide a transportation option to individuals because of an ailment, age, or disability, are incapable of using private transportation. This system is available for transport to medical appointments, employment centers, education facilities and essential life supporting daily regimes.

Parking System

Public parking in the City of Sebastian consists mainly of off-street parking. The City has several free parking lots and also provides on-street parking at various locations throughout town. The City of Sebastian Riverfront Parking Study (2011) evaluates existing supply and demand for parking in the Riverfront and projects future parking demand.

Bicycle System

The City of Sebastian recognizes the need to provide transportation alternatives to increase accessibility and provide a comprehensive transportation system. Currently, Sebastian does not have a citywide comprehensive system of bicycle facilities. However, the City does have an off-road bicycle/pedestrian path along the north side

of CR 512 and on-street facilities on portions of US1. This three-mile path was a railroad right-of-way which the County converted into a recreation path.

Pedestrian System

The City has a relatively comprehensive sidewalk system throughout the City. However, some portions of the City are disjointed, with sidewalks available on one side of the roadway facility but not located on the opposite side. Based on the current LDC, developments are required to construct sidewalks along collector and arterial roads.

Intermodal Facilities

Intermodal facilities are those traffic circulation components that accommodate and interconnect different modes of transportation and serve the movement of people and goods. The City of Sebastian has water, rail, and air intermodal facilities that interconnect different modes of transportation.

TRANSPORTATION ANALYSIS

Transportation can have a major role shaping the spatial and functional organization of a community. It can determine the size, scale, status and identity of a community. However, there are other contributing factors that need to be considered, such as the personal, social, physical, environmental, economic and cultural attributes of the community. This section analyzes existing and projected future conditions of the transportation system to provide a comprehensive assessment of the various transportation facilities and services, and their relationship with existing land uses.

This section also addresses growth trends. The analysis provides an examination of the current and future performance of the roadway system as well as the transit performance. Other modes of transportation are also addressed for additional opportunities in lieu of the automobile.

Future travel demand estimates are based on the population growth rate and the employment-to- population ratio. This analysis includes a comprehensive approach to the future transportation demand. Included within this analysis are future plans for bicycle, pedestrian, transit and roadway facilities. Also included are potential strategies to help alleviate future demand on constrained and overcapacity facilities.

Roadway Current Performance

The roadway LOS concept is defined in the FDOT 2009 Quality/ Level of Service Handbook as a qualitative assessment of the road user's perception of the quality of flow and is measured by a scale of driver satisfaction. The scale ranges from "A" to "F", with "A" representing the most favorable driving conditions and "F" representing the least favorable.

FDOT adopted statewide minimum LOS standards for the State highway system. The minimum LOS standards are used for planning applications, including the review of local government plans. The generalized maximum volume tables provided by FDOT are guidelines recommended for broad planning applications. They are to be used as a general guide to determine highway LOS and through-lane requirements. Minimum level-of-service standards recommended for the state system are shown on **Table 2-2**. The standardized descriptions of service levels used in transportation planning are as follows:

LOS A: A condition of road performance where traffic density is very low, with little or no restrictions in maneuverability. Drivers can maintain their desired speed with little or no delay.

LOS B: A condition of road performance where traffic density is low, and vehicles travel with operating speeds somewhat restricted by other vehicles. Drivers still have reasonable freedom to select their speeds.

LOS C: A performance condition where operating speeds are determined by other vehicles, permitting a stable traffic flow. Drivers might have limitations to maneuver and to increase speeds.

LOS D: A condition of road performance where traffic density is high but tolerable. Fluctuations in traffic volumes may cause reductions in operating speeds. Drivers have little freedom to maneuver. In some instances, traffic flows approach unstable conditions.

LOS E: Represents traffic operation near the roadway capacity or maximum service volume. Vehicles flow at unstable conditions. Stop-and-go situations may happen. In freeways or limited access roads, speeds are near thirty (30) miles per hour and traffic density is high.

LOS F: This condition usually results from long lines of vehicles backing up because the traffic volume exceeds the roadway capacity. The vehicles are forced to operate at very low speeds. Stop-and-go situations are frequent and in extreme cases, vehicles stop for long periods of time.

The existing performance of the roadway system represents the operating level of the facilities and will identify current deficiencies, if any exist. The analysis found no current deficiencies on any roadway serving the City.

Table 2-2: FDOT Minimum Levels of Service Standards

	Rural Areas	Transitioning Urbanized Areas, Urban Areas, or communities	Urbanized Areas Under 500,000	Urbanized Areas Over 500,000	Roadways Parallel to Exclusive Transit Facilities	Constrained and Backlogged Roadways
INTRASTATE						
Limited Access Highway (Freeway)	B	C	C(D)	D(E)	D(E)	Maintain
Controlled Access Highways	B	C	C	D	E	Maintain
OTHER STATE ROADS						
Two-Lane	B	C	D	D	E	Maintain
Multilanes	C	C	D	D	E	Maintain

Note: Level of service standards inside of parentheses apply to general use lanes only when exclusive through lanes exist.

Source: FDOT Level of Service Standards, 2009.

Availability of Transportation Facilities and Services to Serve Existing Land Uses

Current and future land use patterns have a substantial influence on the characteristics of the transportation system. **Table 2-3** illustrates the primary land uses served by each transportation facility.

Table 2-3: Transportation Facilities and Land Uses Served – Updated

Roadways	Lanes	Length	Category	Primary Land Uses
US 1	4	4.0	Principal Arterial	Commercial General, Commercial Limited, Industrial, Institutional, and Residential Low Density
County Rd 510	2	3.5	County Minor Arterial	Improved Pasture/Citrus
County Rd 512	4	4.1	County Minor Arterial	Commercial General, Residential Low Density, Residential Medium Density; Residential Mobile Home Development; Industrial, and Institutional
Roseland (County Rd 505)	2	2.0	County Collector	Residential Low Density, Industrial, and Institutional
Barber St	2	5.1	City Collector	Residential Low Density and Institutional
Easy St (Main to 512)	2	1.0	City Collector	Residential Low Density, Commercial Limited, and Institutional
Fleming St	2	2.0	City Collector	Residential Low Density
Laconia St (Periwinkle to Roseland)	2	1.1	City Collector	Residential Low Density
Main St (Fleming to US1)	2	1.2	City Collector	Residential Low Density; Institutional
Schumann Dr	2	2.9	City Collector	Residential Low Density, Residential Medium Density, and Institutional
Easy St (512 to Englar)	2	1.5	Significant Local Streets	Residential Low Density
Englar Dr	2	1.2	Significant Local Streets	Residential Low Density and Institutional
Indian River Dr	2	2.0	Significant Local Streets	Commercial General, Commercial Limited, Institutional, Residential Low Density, and Residential Mobile Home Development

Roadways	Lanes	Length	Category	Primary Land Uses
Louisiana Ave/High St (From Main to 512 East)	2	0.7	Significant Local Streets	Commercial General, Industrial, Institutional, Residential Low Density, Residential Mobile Home Development, Residential Medium Density
Vocelle Ave	2	0.8	Significant Local Streets	Commercial General and Residential Low Density
Wimbrow Dr	2	2.8	Significant Local Streets	Residential Low Density and Residential Medium Density

Source: City of Sebastian, 2018.

Intermodal Facilities

The City of Sebastian has water, rail, and air intermodal facilities that interconnect different modes of transportation. If the demand on roadway capacities become strained the need for additional intermodal facilities will develop. The projected demand on the roadway system indicates that additional intermodal facilities may not be necessary in the future.

Future Growth Projections

The year 2020 volumes were determined by the growth rate between the 2015 AADT volumes and the 2018 AADT volumes provided by the Florida Department of Transportation Historical AADT Report. From this data, the yearly growth rate was determined as 4.29%. To account for future 5-year and 20-year growth on the roadways, the projected 2040 volumes provided by the Indian River County Base Cost Feasible Plan Daily Volumes published by Indian River County MPO were adjusted based on the 2020 volumes to ensure none of the 2040 project volumes were less than the existing volumes. This long-range growth rate was determined as 0.21% and was compounded annually.

Future Roadway Performance

This subsection provides an analysis of the projected traffic circulation system needs. These needs are based on the anticipated travel demand and operating characteristics of major roadways. **Tables 2-4** through **6** and **Maps 2-5** through **2-7** show the 2020, 2025, and 2040 expected traffic conditions. All roadway segments modeled comply with the FDOT LOS standards as described above.

Table 2-4: Existing Level of Service, 2020

Road Name	From	To	Functional Class	^Class Type	No. of Lanes	(1) AADT 2020	(2) Peak K Factor	(3) Peak Direction	(4) Peak Hour	(5) Maximum Service Volume					2020 LOS
										A	B	C	D	E	
US 1 (Indian River Lagoon Scenic Hwy.)	Roseland Road	Jackson Street	Principal Arterial	Class I	4	31,742	9	15,836	1,425		1,560	1,890	1,960		B
US 1 (Indian River Lagoon Scenic Hwy.)	Jackson Street	Main Street	Principal Arterial	Class I	4	30,961	9	15,681	1,411		1,560	1,890	1,960		B
US 1 (Indian River Lagoon Scenic Hwy.)	Main Street	County Road 512 WB	Principal Arterial	Class I	4	30,961	9	15,681	1,411		1,560	1,890	1,960		B
US 1 (Indian River Lagoon Scenic Hwy.)	County Road 512 WB	County Road 512 EB	Principal Arterial	Class I	4	30,961	9	15,681	1,411		1,560	1,890	1,960		B
US 1 (Indian River Lagoon Scenic Hwy.)	County Road 512 EB	Schumann Dr	Principal Arterial	Class I	4	31,101	9	15,743	1,417		1,560	1,890	1,960		B
US 1 (Indian River Lagoon Scenic Hwy.)	Schumann Dr	Barber Street	Principal Arterial	Class I	4	31,125	9	16,494	1,484		1,560	1,890	1,960		B
US 1 (Indian River Lagoon Scenic Hwy.)	Barber Street	Wabasso Road	Principal Arterial	Class I	4	31,125	9	16,494	1,484		1,560	1,890	1,960		B
County Road 512	County Road 510	Roseland Road	Minor Arterial	Class I Non-State	4	23,818	9	11,987	1,079		1,404	1,701	1,764		B

Road Name	From	To	Functional Class	^Class Type	No. of Lanes	(1) AADT 2020	(2) Peak K Factor	(3) Peak Direction	(4) Peak Hour	(5) Maximum Service Volume					2020 LOS
										A	B	C	D	E	
County Road 512	Roseland Road	Barber Street	Minor Arterial	Class II Non-State	4	17,563	9	8,793	791			1,197	1,593	1,683	C
County Road 512	Barber Street	Fleming Street	Minor Arterial	Class II Non-State	4	16,602	9	8,582	772			1,197	1,593	1,683	C
County Road 512	Fleming Street	Winbrow Drive	Minor Arterial	Class II Non-State	4	15,973	9	8,401	756			1,197	1,593	1,683	C
County Road 512	Winbrow Drive	Easy Street	Minor Arterial	Class II Non-State	4	15,973	9	8,401	756			1,197	1,593	1,683	C
County Road 512	Easy Street	Delaware Avenue	Minor Arterial	Class II Non-State	4	15,531	9	7,775	700			1,197	1,593	1,683	C
County Road 512	Delaware Avenue	US 1	Minor Arterial	Class II Non-State	4	15,510	9	8,079	727			1,197	1,593	1,683	C
Roseland Road (County Road 505)	County Road 512	North City Limits	Collector	Class I Non-State	2	10,637	9	5,410	487		459	738	792		C
Schumann Dr (66th Ave)	South City Limits	Barber Street	Collector	Class II Non-State	2	8,918	9	*	420			1,197	1,593	1,683	C

Road Name	From	To	Functional Class	^Class Type	No. of Lanes	(1) AADT 2020	(2) Peak K Factor	(3) Peak Direction	(4) Peak Hour	(5) Maximum Service Volume					2020 LOS
										A	B	C	D	E	
Schumann Dr	Barber Street	Englar Drive	Collector	Class I Non-State	2	4,133	9	*	195		459	738	792		B
Schumann Dr	Englar Drive	US 1	Collector	Class I Non-State	2	3,263	9	*	154		459	738	792		B
Englar Drive	Barber Street	S Easy Street	Collector	Class I Non-State	2	2,284	9	*	108		459	738	792		B
Englar Drive	S Easy Street	Schumann Dr	Collector	Class I Non-State	2	4,133	9	*	195		459	738	792		B
Fleming Street	County Road 512	Main Street	Collector	Class I Non-State	2	2,828	9	*	133		459	738	792		B
Main Street	US 1	Fleming Street	Collector	Class I Non-State	2	1,196	9	*	56		459	738	792		B
Main Street	Fleming Street	Winbrow Drive	Collector	Class I Non-State	2	1,686	9	*	79		459	738	792		B
Easy Street	Main Street	Englar Drive	Local	Class I Other	2	2,828	9	*	133		332	533	572		B

Road Name	From	To	Functional Class	^Class Type	No. of Lanes	(1) AADT 2020	(2) Peak K Factor	(3) Peak Direction	(4) Peak Hour	(5) Maximum Service Volume					2020 LOS
										A	B	C	D	E	
Laconia Street	County Road 512	County Road 510	Collector	Class I Non-State	2	5,873	9	*	276		459	738	792		B
County Road 510	County Road 512	82nd Ave	Minor Arterial	Class II Non-State	4	15,692	9	8,153	734			1,197	1,593	1,683	C
County Road 510	82nd Ave	70th Ave	Minor Arterial	Class II Non-State	4	15,692	9	8,153	734			1,197	1,593	1,683	C
County Road 510	70th Ave	66th Ave	Minor Arterial	Class II Non-State	4	15,396	9	7,921	713			1,197	1,593	1,683	C
County Road 510	66th Ave	58th Ave	Minor Arterial	Class II Non-State	4	14,558	9	7,357	662			1,197	1,593	1,683	C
Barber Street	US 1	Schumann Dr	Local	Class I Other	2	9,244	9	*	435		332	533	572		C
Barber Street	Schumann Dr	Englar Drive	Collector	Class I Non-State	2	9,244	9	*	435		459	738	792		B
Barber Street	Englar Drive	County Road 512	Collector	Class I Non-State	2	9,244	9	*	435		459	738	792		B

Road Name	From	To	Functional Class	^Class Type	No. of Lanes	(1) AADT 2020	(2) Peak K Factor	(3) Peak Direction	(4) Peak Hour	(5) Maximum Service Volume					2020 LOS
										A	B	C	D	E	
Barber Street	County Road 512	Winbrow Drive	Collector	Class I Non-State	2	2,719	9	*	128		459	738	792		B

(1) The 2020 volumes were derived from Indian River County Traffic Engineering 2018 Traffic Volume Report and an area wide growth rate was applied to each link (FDOT Online 2015 - 2018) to determine 2020 volumes

(2) 'K' factor was provided by the FDOT Traffic Online

(3) The peak direction was provided by the Indian River County Traffic Engineering Annual Traffic Counting Report (2018)

(4) Peak hour is the peak direction multiplied by 'K' factor or AADT 2020 volume multiplied by FDOT 'K' factor and direction 'D' factor.

Table 2-5: Year 2025 Projected Roadway Performance

Road Name	From	To	Functional Class	^Class Type	No. of Lanes	AADT 2020	(1) Growth Rate	AADT 2025	(2) Peak K Factor	(3) Peak 'D' Factor	(4) Peak Hour	(5) Maximum Service Volume					2025 LOS
												A	B	C	D	E	
US 1 (Indian River Lagoon Scenic Hwy.)	Roseland Road	Jackson Street	Principal Arterial	Class I	4	31,742		32,093	9	50	1,444		1,560	1,890	1,960		B
US 1 (Indian River Lagoon Scenic Hwy.)	Jackson Street	Main Street	Principal Arterial	Class I	4	30,961		31,303	9	51	1,437		1,560	1,890	1,960		B
US 1 (Indian River Lagoon Scenic Hwy.)	Main Street	County Road 512 WB	Principal Arterial	Class I	4	30,961		31,303	9	51	1,437		1,560	1,890	1,960		B
US 1 (Indian River Lagoon Scenic Hwy.)	County Road 512 WB	County Road 512 EB	Principal Arterial	Class I	4	30,961		31,303	9	51	1,437		1,560	1,890	1,960		B
US 1 (Indian River Lagoon Scenic Hwy.)	County Road 512 EB	Schumann Dr	Principal Arterial	Class I	4	31,101		31,445	9	51	1,443		1,560	1,890	1,960		B
US 1 (Indian River Lagoon Scenic Hwy.)	Schumann Dr	Barber Street	Principal Arterial	Class I	4	31,125		31,469	9	53	1,501		1,560	1,890	1,960		B
US 1 (Indian River Lagoon Scenic Hwy.)	Barber Street	Wabasso Road	Principal Arterial	Class I	4	31,125		31,469	9	53	1,501		1,560	1,890	1,960		B
County Road 512	County Road 510	Roseland Road	Minor Arterial	Class I Non-State	4	23,818		24,081	9	50	1,404		1,764	1,701	1,404		B

Road Name	From	To	Functional Class	^Class Type	No. of Lanes	AADT 2020	(1) Growth Rate	AADT 2025	(2) Peak K Factor	(3) Peak 'D' Factor	(4) Peak Hour	(5) Maximum Service Volume					2025 LOS
												A	B	C	D	E	
County Road 512	Roseland Road	Barber Street	Minor Arterial	Class II Non-State	4	17,563		17,757	9	50	799			1,197	1,593	1,683	C
County Road 512	Barber Street	Fleming Street	Minor Arterial	Class II Non-State	4	16,602		16,785	9	52	786			1,197	1,593	1,683	C
County Road 512	Fleming Street	Winbrow Drive	Minor Arterial	Class II Non-State	4	15,973		16,149	9	53	770			1,197	1,593	1,683	C
County Road 512	Winbrow Drive	Easy Street	Minor Arterial	Class II Non-State	4	15,973		16,149	9	53	770			1,197	1,593	1,683	C
County Road 512	Easy Street	Delaware Avenue	Minor Arterial	Class II Non-State	4	15,531		15,703	9	50	707			1,197	1,593	1,683	C
County Road 512	Delaware Avenue	US 1	Minor Arterial	Class II Non-State	4	15,510		15,681	9	52	734			1,197	1,593	1,683	C
Roseland Road (County Road 505)	County Road 512	North City Limits	Collector	Class I Non-State	2	10,637		10,755	9	51	494		459	738	792		C
Schumann Dr (66th Ave)	South City Limits	Barber Street	Collector	Class II Non-State	2	8,918		9,017	9	*	424			1,197	1,593	1,683	C

Road Name	From	To	Functional Class	^Class Type	No. of Lanes	AADT 2020	(1) Growth Rate	AADT 2025	(2) Peak K Factor	(3) Peak 'D' Factor	(4) Peak Hour	(5) Maximum Service Volume					2025 LOS
												A	B	C	D	E	
Schumann Dr	Barber Street	Englar Drive	Collector	Class I Non-State	2	4,133	0.22%	4,179	9	*	197		459	738	792		B
Schumann Dr	Englar Drive	US 1	Collector	Class I Non-State	2	3,263		3,299	9	*	155		459	738	792		B
Englar Drive	Barber Street	S Easy Street	Collector	Class I Non-State	2	2,284		2,309	9	*	109		459	738	792		B
Englar Drive	S Easy Street	Schumann Dr	Collector	Class I Non-State	2	4,133		4,179	9	*	197		459	738	792		B
Fleming Street	County Road 512	Main Street	Collector	Class I Non-State	2	2,828		2,859	9	*	135		459	738	792		B
Main Street	US 1	Fleming Street	Collector	Class I Non-State	2	1,196		1,209	9	*	57		459	738	792		B
Main Street	Fleming Street	Winbrow Drive	Collector	Class I Non-State	2	1,686		1,705	9	*	80		459	738	792		B
Easy Street	Main Street	Englar Drive	Local	Class I Other	2	2,828		2,859	9	*	135		332	533	572		B

Road Name	From	To	Functional Class	^Class Type	No. of Lanes	AADT 2020	(1) Growth Rate	AADT 2025	(2) Peak K Factor	(3) Peak 'D' Factor	(4) Peak Hour	(5) Maximum Service Volume					2025 LOS
												A	B	C	D	E	
Laconia Street	County Road 512	County Road 510	Collector	Class I Non-State	2	5,873		5,938	9	*	280		459	738	792		B
County Road 510	County Road 512	82nd Ave	Minor Arterial	Class II Non-State	4	15,692		15,865	9	52	742			1,197	1,593	1,683	C
County Road 510	82nd Ave	70th Ave	Minor Arterial	Class II Non-State	4	15,692		15,865	9	52	742			1,197	1,593	1,683	C
County Road 510	70th Ave	66th Ave	Minor Arterial	Class II Non-State	4	15,396		15,566	9	51	714			1,197	1,593	1,683	C
County Road 510	66th Ave	58th Ave	Minor Arterial	Class II Non-State	4	14,558		14,719	9	51	676			1,197	1,593	1,683	C
Barber Street	US 1	Schumann Dr	Local	Class I Other	2	9,244		9,346	9	*	440		332	533	572		C
Barber Street	Schumann Dr	Englar Drive	Collector	Class I Non-State	2	9,244		9,346	9	*	440		459	738	792		B
Barber Street	Englar Drive	County Road 512	Collector	Class I Non-State	2	9,244		9,346	9	*	440		459	738	792		B

Road Name	From	To	Functional Class	^Class Type	No. of Lanes	AADT 2020	(1) Growth Rate	AADT 2025	(2) Peak K Factor	(3) Peak 'D' Factor	(4) Peak Hour	(5) Maximum Service Volume					2025 LOS
												A	B	C	D	E	
Barber Street	County Road 512	Winbrow Drive	Collector	Class I Non-State	2	2,719		2,749	9	*	129		459	738	792		B

(1) Growth rate derived from 2020 volumes provided by Indian River County Traffic Engineering and 2040 volumes provided by the Indian River County MPO = 0.22% / year

(2) 'K' factor was provided by the FDOT Traffic Online

(3) The direction 'D' factor was derived from the year 2020 peak direction volume divided by the 2020 AADT volume from the Indian River County Traffic Engineering Annual Traffic Counting Report (2018)

(4) Peak hour volumes were determined by applying the 'K' factor and the direction 'D' factor to the year 2025 volumes

****Direction 'D' Factor = 52.3 provided by FDOT Traffic Online***

(5) Service volumes based on 2009 FDOT Quality/LOS Handbook

^ Class type uses generalized standard volumes and 'non-state' applied a -10% reduction and 'other' applied a -35% reduction to the generalized service volume

Table 2-6: Year 2040 Projected Roadway Performance

Road Name	From	To	Functional Class	^Class Type	No. of Lanes	(1) AADT 2040	(2) ADJ AADT 2040	(3) Peak K Factor	(4) Peak 'D' Factor	(5) Peak Hour	(6) Maximum Service Volume					2040 LOS
											A	B	C	D	E	
US 1 (Indian River Lagoon Scenic Hwy.)	Roseland Road	Jackson Street	Principal Arterial	Class I	4	28,040	33,121	9	50	1,490		1,560	1,890	1,960		B
US 1 (Indian River Lagoon Scenic Hwy.)	Jackson Street	Main Street	Principal Arterial	Class I	4	28,040	32,306	9	51	1,483		1,560	1,890	1,960		B
US 1 (Indian River Lagoon Scenic Hwy.)	Main Street	County Road 512 WB	Principal Arterial	Class I	4	27,748	32,306	9	51	1,483		1,560	1,890	1,960		B
US 1 (Indian River Lagoon Scenic Hwy.)	County Road 512 WB	County Road 512 EB	Principal Arterial	Class I	4	27,378	32,306	9	51	1,483		1,560	1,890	1,960		B
US 1 (Indian River Lagoon Scenic Hwy.)	County Road 512 EB	Schumann Dr	Principal Arterial	Class I	4	24,928	32,452	9	51	1,490		1,560	1,890	1,960		B
US 1 (Indian River Lagoon Scenic Hwy.)	Schumann Dr	Barber Street	Principal Arterial	Class I	4	26,696	32,477	9	53	1,549		1,560	1,890	1,960		B
US 1 (Indian River Lagoon Scenic Hwy.)	Barber Street	Wabasso Road	Principal Arterial	Class I	4	26,185	32,477	9	53	1,549		1,560	1,890	1,960		B

Road Name	From	To	Functional Class	^Class Type	No. of Lanes	(1) AADT 2040	(2) ADJ AADT 2040	(3) Peak K Factor	(4) Peak 'D' Factor	(5) Peak Hour	(6) Maximum Service Volume					2040 LOS
											A	B	C	D	E	
County Road 512	County Road 510	Roseland Road	Minor Arterial	Class I Non-State	4	29,120		9	50	1,310	1,404	1,764	1,701	1,404		B
County Road 512	Roseland Road	Barber Street	Minor Arterial	Class II Non-State	4	14,165	18,326	9	50	825			1,197	1,593	1,683	C
County Road 512	Barber Street	Fleming Street	Minor Arterial	Class II Non-State	4	14,165	17,323	9	52	811			1,197	1,593	1,683	C
County Road 512	Fleming Street	Winbrow Drive	Minor Arterial	Class II Non-State	4	15,076	16,667	9	53	795			1,197	1,593	1,683	C
County Road 512	Winbrow Drive	Easy Street	Minor Arterial	Class II Non-State	4	15,076	16,667	9	53	795			1,197	1,593	1,683	C
County Road 512	Easy Street	Delaware Avenue	Minor Arterial	Class II Non-State	4	15,076	16,205	9	50	729			1,197	1,593	1,683	C
County Road 512	Delaware Avenue	US 1	Minor Arterial	Class II Non-State	4	8,288	16,184	9	52	757			1,197	1,593	1,683	C

Road Name	From	To	Functional Class	^Class Type	No. of Lanes	(1) AADT 2040	(2) ADJ AADT 2040	(3) Peak K Factor	(4) Peak 'D' Factor	(5) Peak Hour	(6) Maximum Service Volume					2040 LOS
											A	B	C	D	E	
Roseland Road (County Road 505)	County Road 512	North City Limits	Collector	Class I Non-State	2	13,784		9	51	633		459	738	792		C
Schumann Dr (66th Ave)	South City Limits	Barber Street	Collector	Class II Non-State	2	14,679		9	*	691			1,197	1,593	1,683	C
Schumann Dr	Barber Street	Englar Drive	Collector	Class I Non-State	2	3,342	4,312	9	*	203		459	738	792		B
Schumann Dr	Englar Drive	US 1	Collector	Class I Non-State	2	5,145		9	*	242		459	738	792		B
Englar Drive	Barber Street	S Easy Street	Collector	Class I Non-State	2	4,544		9	*	214		459	738	792		B
Englar Drive	S Easy Street	Schumann Dr	Collector	Class I Non-State	2	5,152		9	*	243		459	738	792		B
Fleming Street	County Road 512	Main Street	Collector	Class I Non-State	2	2,408	2,951	9	*	139		459	738	792		B

Road Name	From	To	Functional Class	^Class Type	No. of Lanes	(1) AADT 2040	(2) ADJ AADT 2040	(3) Peak K Factor	(4) Peak 'D' Factor	(5) Peak Hour	(6) Maximum Service Volume					2040 LOS
											A	B	C	D	E	
Main Street	US 1	Fleming Street	Collector	Class I Non-State	2	3,556		9	*	167		459	738	792		B
Main Street	Fleming Street	Winbrow Drive	Collector	Class I Non-State	2	1,827		9	*	86		459	738	792		B
Easy Street	Main Street	Englar Drive	Local	Class I Other	2	2,058	2,951	9	*	139		332	533	572		B
Laconia Street	County Road 512	County Road 510	Collector	Class I Non-State	2		6,128	9	*	288		459	738	792		B
County Road 510	County Road 512	82nd Ave	Minor Arterial	Class II Non-State	4	19,514		9	52	913			1,197	1,593	1,683	C
County Road 510	82nd Ave	70th Ave	Minor Arterial	Class II Non-State	4	21,853		9	52	1,023			1,197	1,593	1,683	C
County Road 510	70th Ave	66th Ave	Minor Arterial	Class II Non-State	4	21,853		9	51	1,003			1,197	1,593	1,683	C
County Road 510	66th Ave	58th Ave	Minor Arterial	Class II Non-State	4	19,543		9	51	897			1,197	1,593	1,683	C

Road Name	From	To	Functional Class	^Class Type	No. of Lanes	(1) AADT 2040	(2) ADJ AADT 2040	(3) Peak K Factor	(4) Peak 'D' Factor	(5) Peak Hour	(6) Maximum Service Volume					2040 LOS
											A	B	C	D	E	
Barber Street	US 1	Schumann Dr	Local	Class I Other	2	5,958	9,645	9	*	454		332	533	572		C
Barber Street	Schumann Dr	Englar Drive	Collector	Class I Non-State	2	10,052		9	*	473		459	738	792		C
Barber Street	Englar Drive	County Road 512	Collector	Class I Non-State	2	8,772	9,645	9	*	454		459	738	792		B
Barber Street	County Road 512	Winbrow Drive	Collector	Class I Non-State	2	8,756		9	*	412		459	738	792		B

Direction 'D' Factor = 52.3 provided by FDOT Traffic Online

(1) AADT 2040 volumes were taken from Indian River County Base Cost Feasible Plan Daily Volumes provided by Indian River County MPO, adopted in December 2015

(2) Adjusted AADT 2040 volumes were used when project 2040 volumes were less than 2020 and 2025 volumes. A 0.22% exponential growth rate was applied to 2020 volumes

(3) 'K' factor was provided by the FDOT Traffic Online

(4) The direction 'D' factor was derived from the year 2020 peak direction volume divided by the 2020 AADT volume from the Indian River County Traffic Engineering Annual Traffic Counting Report (2018)

Public Transit Performance

Fixed-route transit has increased in Indian River County with 895,462 in fiscal year (FY) 2010/11 to 1,156,034 in FY 15/16. As indicated in Table 2-7, ridership increased on Route 5 by 69.6%% and Route 9 by 80.5%%. FY 2015/16, Route 10 and Route 5 have the highest trips per mile in the City of Sebastian at 1.16 and 1.13 passengers per revenue mile, respectively. None of the routes meet the County's ridership per mile standard of 0.25 trips per mile.

Table 2-7: 2014-2016 Indian River County Transit Performance in Sebastian

Routes	Ridership		
	FY 14/15	FY 15/16	% Change from FY06-07
Route 5	58,892	70,491	20%
Route 9	88,034	68,251	-23%
Route 10	97,630	93,592	-4%
Route 11	20,874	24,144	16%
Route 12	45,052	42,198	-6%

Source: Indian River County MPO, August 2017.

Future Transportation Plan

This section provides recommendations for creating a safe, convenient, and energy efficient transportation system, coordinated with future land uses, plans and programs of the County and FDOT.

Since World War II, roadways have been designed primarily for automobiles. Very little attention has been given to accommodating other modes of transportation such as bicycles, pedestrians, and transit. The goal of this **Transportation & Mobility Element** is to look at roads as multi-modal transportation corridors, and to start to plan for future growth accordingly.

Intergovernmental coordination is essential for the most cost-effective provision of transportation system improvements. Clearly, the City of Sebastian does not possess the resources nor is it fiscally responsible for the entire transportation system within the City. For example, both Indian River County and FDOT have financial responsibility for county roads and state highway system roads, respectively. Therefore, it is necessary for the City to review the transportation improvement plans and programs prepared by the County and FDOT. In this way, the effort and dollars expended by the City to improve its transportation system may be complemented and perhaps enhanced by the activities of the County and FDOT.

One area of coordination should include the preservation and protection of rights-of-way for identified future roadway improvements and construction. With the escalating value of land and costs entailed in right-of-way acquisition it is essential that the City protect roadway corridors in advance from building encroachment. Increased right-of-way costs reduce the funds available for actual construction. The City needs to utilize techniques such as setback requirements, zoning restrictions, right-of-way protection regulations and official transportation maps to preserve and protect existing and future rights-of-way.

Future Transportation Map

The City of Sebastian is located in an urbanized area. The adopted LOS standard of "D" for all of the major roadways serving Sebastian will be met in the year 2025 given the assumptions included in this plan. The projected roadway performance for the year 2040 includes the programmed improvements listed below. The adopted LOS standard of "D" for all of the major roadways serving Sebastian will be met in the year 2040. Future roadway design will need to incorporate bicycle, pedestrian and, eventually, transit features to achieve a true multi-modal system. In addition to incorporating roadway design standards, the City will start requiring that new developments be interconnected to enhance the transportation network. Development design must provide connectivity and access between adjacent residential developments and nearby land uses.

According to the Indian River County MPO 2040 Long Range Transportation Plan, Cost Affordable Plan (with enhanced revenues), anticipated roadway improvement and construction projects by 2025 include:

- Widening County Road 510 from County Road 512 to 66th Avenue from two (2) lanes undivided to four (4) lanes undivided with an estimated cost of $16,000,00.
- Projected Indian River County MPO roadway improvement and construction projects by 2040 include:
- Widening Roseland Road from Country Road 512 to US 1 from two (2) lanes undivided to four (4) lanes undivided with an estimated cost of $69,702,825.
- Providing a new two (2) lane undivided roadway on 82nd Avenue from Laconia Street to 69th Street with an estimated cost of $24,575,004.
- Widening 66th Avenue from Barber Street to 81st Street from two (2) lanes undivided to four (4) lanes undivided with an estimated cost of $17,357,922.

There are no planned FDOT roadway improvement or construction projects scheduled within the City of Sebastian.

Future Public Transit Plan

The City of Sebastian works closely with the Indian River County Transit department. The ridership, for the five (5) routes currently servicing the City, has steadily increased in the last several years. This trend is expected to continue in the near and long term future. As the ridership increases the demand for additional bus routes will potentially occur. New routes should take into account the land use pattern within the City. The 2040 Indian River County Long Range Transportation Plan has identified one additional bus route for the Sebastian area. This route would connect the City of Sebastian with the City of Fellsmere along CR 512.

Future Pedestrian Plan

All great cities are "walkable" cities. Pedestrian mobility is greatly influenced by the mix and proximity of land uses, as well as the availability of adequate sidewalks and other pedestrian facilities. In 2004 the Indian River MPO studied the bicycle and pedestrian facilities within the entire County. This study identified several roadways in need of sidewalk facilities including portions of CR 512, Fleming Street, 82nd Avenue, Schumann Drive, Barber Street, and Roseland Road. The City will further identify gaps in the pedestrian system and allow prioritization of pedestrian improvements along major roadways, within downtown and throughout the City. Implementation of these improvements will provide connectivity to the overall transportation system. Appropriate land use and careful urban design will encourage walking for short trips and for accessing transit facilities and services. The

City's LDC encourages increased pedestrian mobility by requiring sidewalks for all new development. **Map 2-8** shows proposed bike and pedestrian routes.

Future Parking Plan

Parking is an essential component of the overall transportation system. The decision of a commuter to drive alone or to use alternative transportation modes such as ride- sharing or public transit depends to a large extent on the cost, accessibility and availability of public parking. Currently, parking within the City has not been a major concern. The current parking requirements for new development have been adequate for patrons. Therefore, no additional parking studies were determined to be necessary at this time.

Future Bicycle Plan

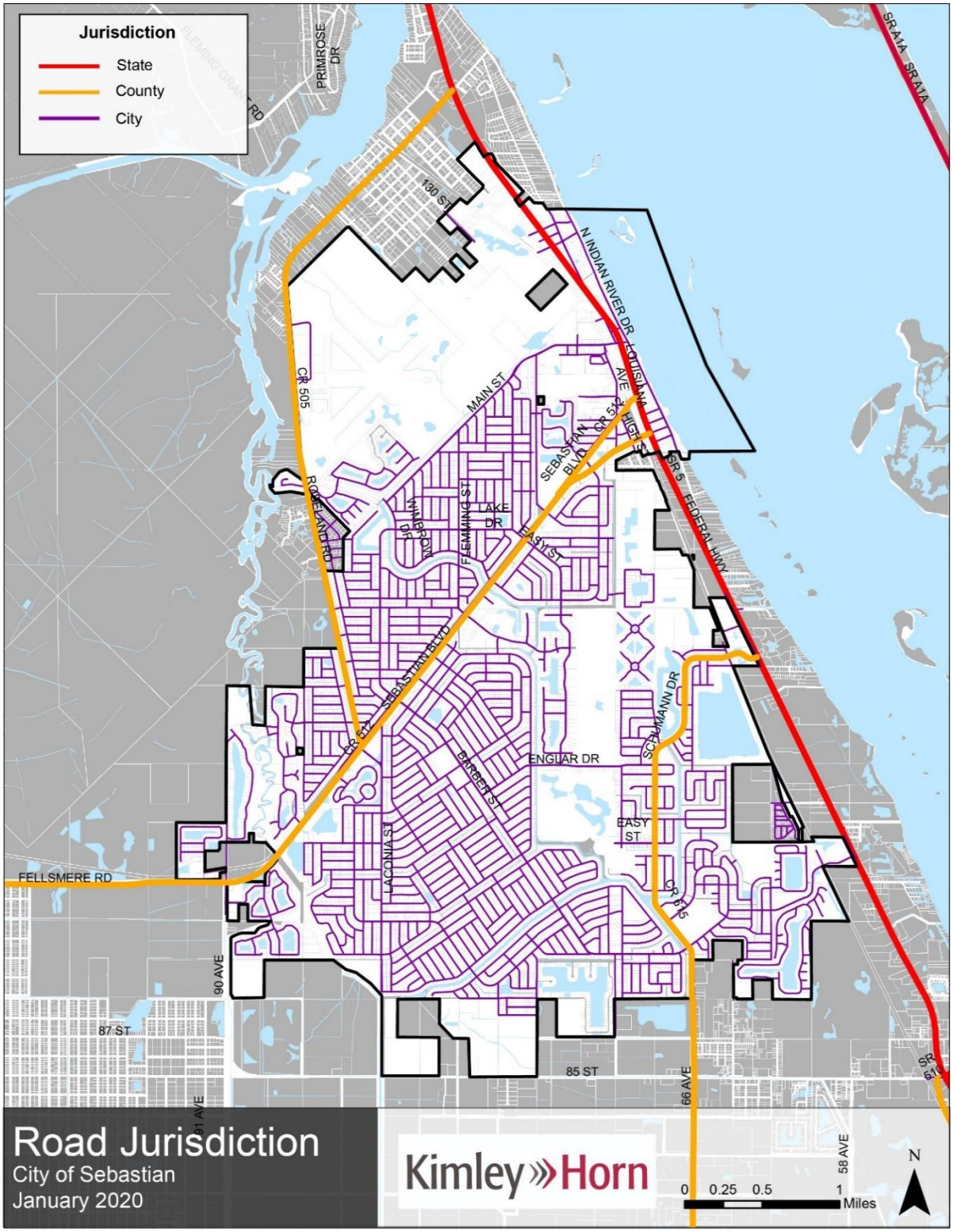
Bicycling is a viable mobility alternative. Bicycle networks provide a commuting alternative as well as a recreational asset. As described in the inventory section, there are currently on and off street bicycle facilities on portions of US 1 and County Road 512. The Indian River County 2040 Long Range Transportation Plan (LRTP) identified County Road 512, Barber Street, Schumann Drive, Englar Drive, Roseland Road, and 82nd Avenue as needing bicycle facilities for 2040.

The City of Sebastian recognizes the need to provide transportation alternatives to increase accessibility and provide a comprehensive transportation system and is coordinating with the Indian River County MPO to identify future bicycle route improvements and potential future bicycle routes and facilities. The City does have an opportunity to potentially provide future off-street bicycle facilities similar to the rails to trails facility parallel to CR 512. **Map 2-8** shows proposed bike and pedestrian routes.

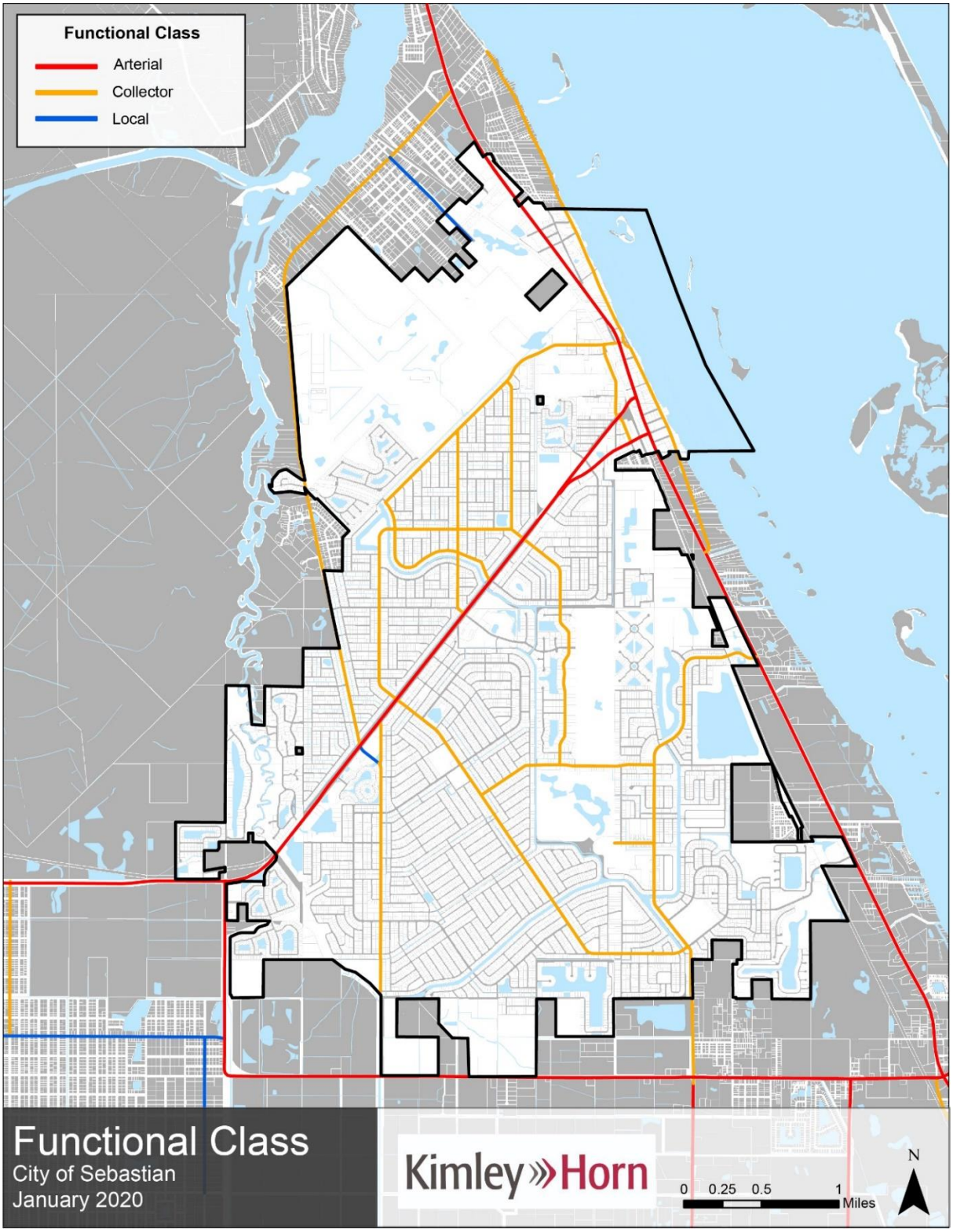
TSM/TDM Strategies

Transportation System Management (TSM) and Transportation Demand Management (TDM) are options for communities trying to add roadway capacity without having to construct costly new facilities. The ultimate goal of the TDM program is to influence people to shift to more efficient modes of transportation and to travel during off-peak hours. TSM strategies, on the other hand, aim to affect the actual supply of transportation services. The most effective programs integrate supply and demand strategies to create a transportation network that promotes efficient choices. The City of Sebastian does not have the need to offer any of these programs at this time. However, the options may be considered in the future.

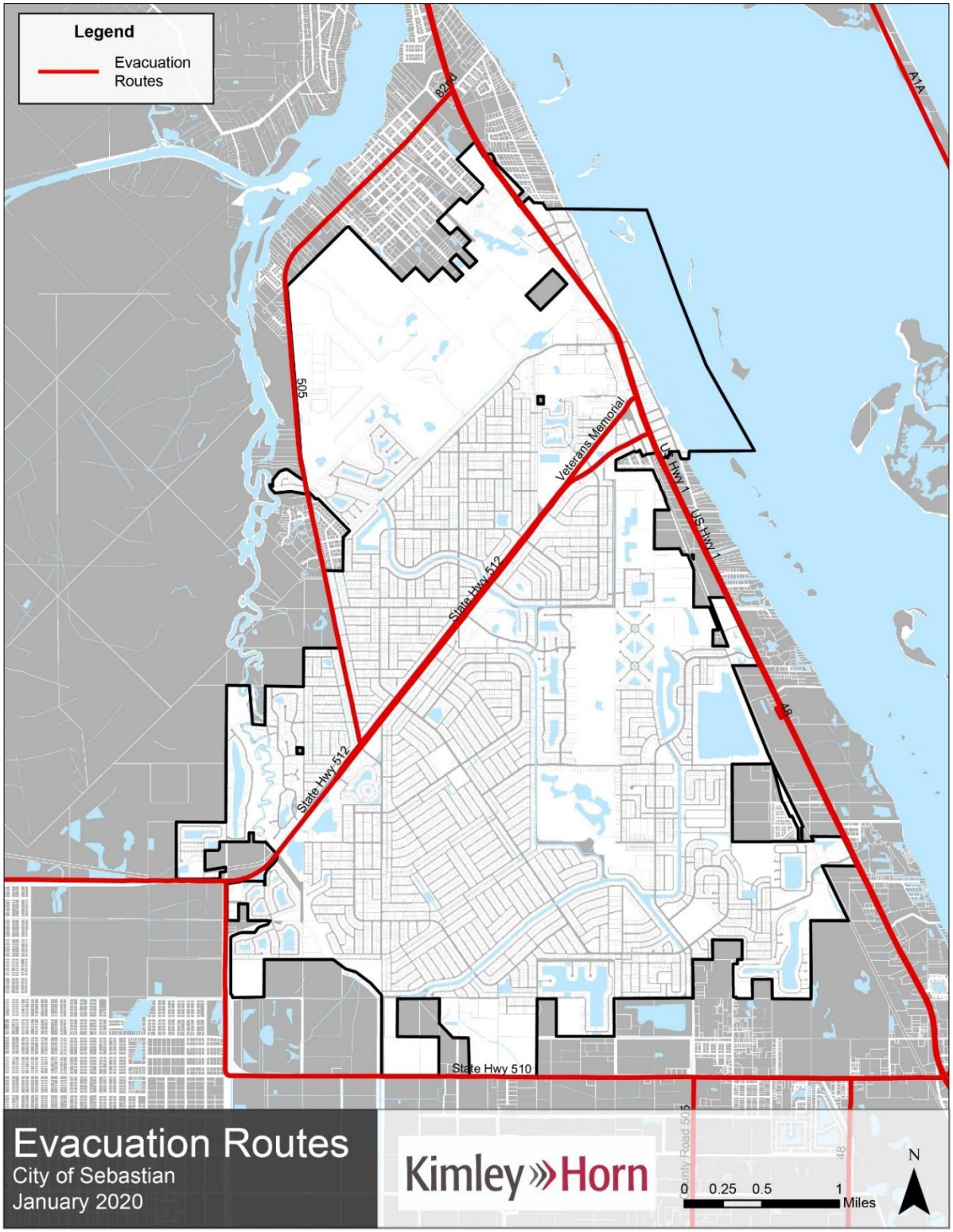
Map 2-1: Road Jurisdiction



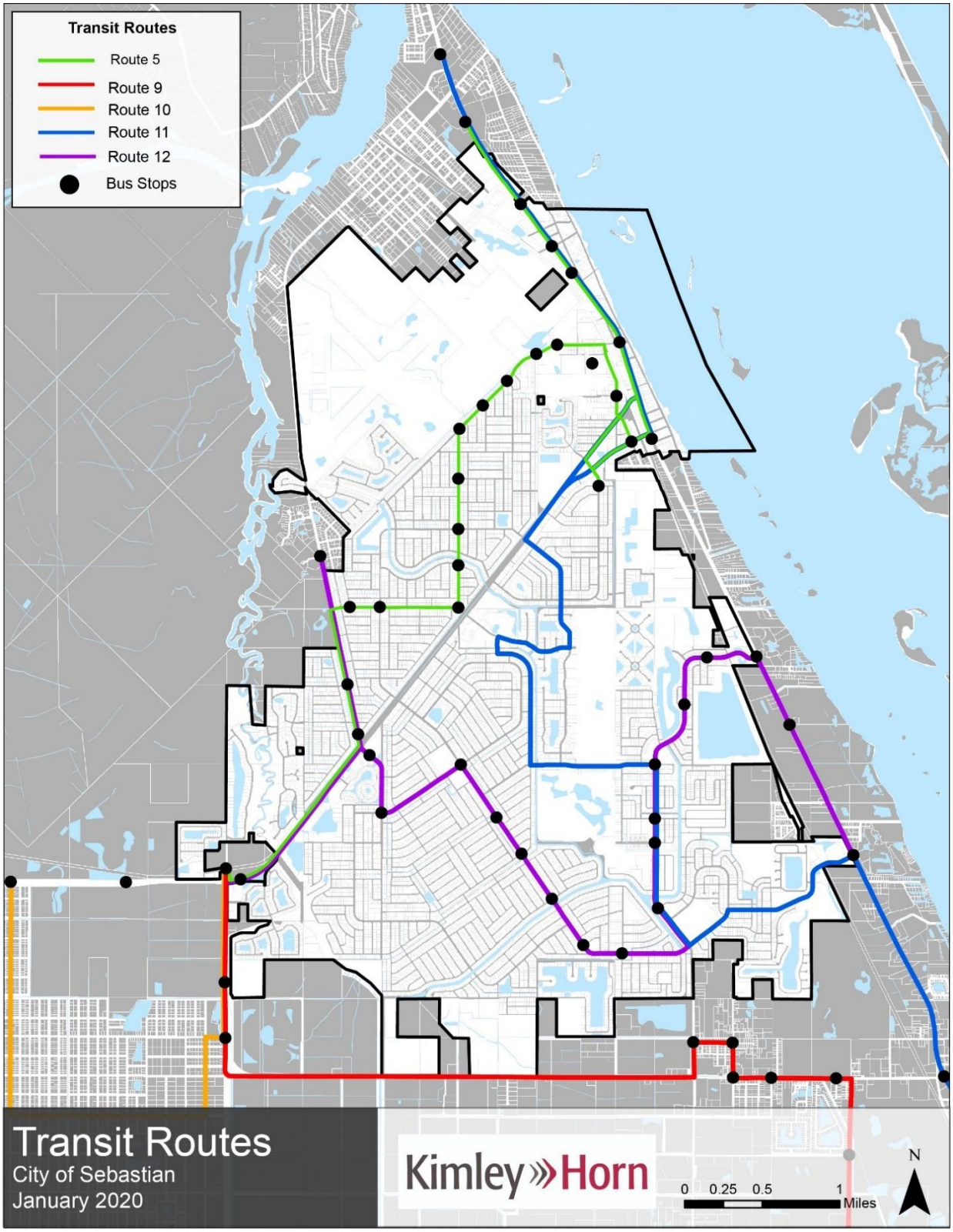
Map 2-2: Functional Class



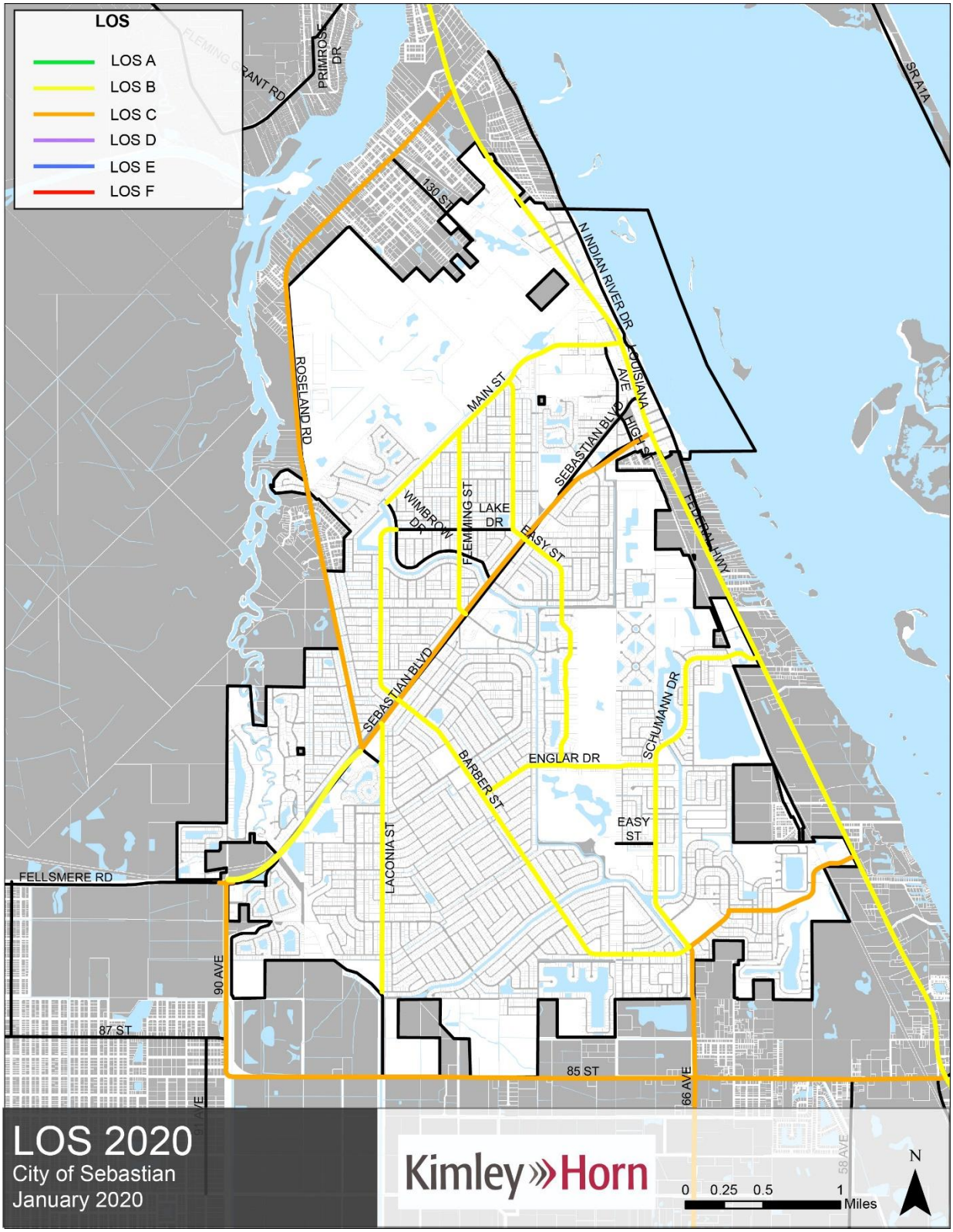
Map 2-3: Evacuation Routes



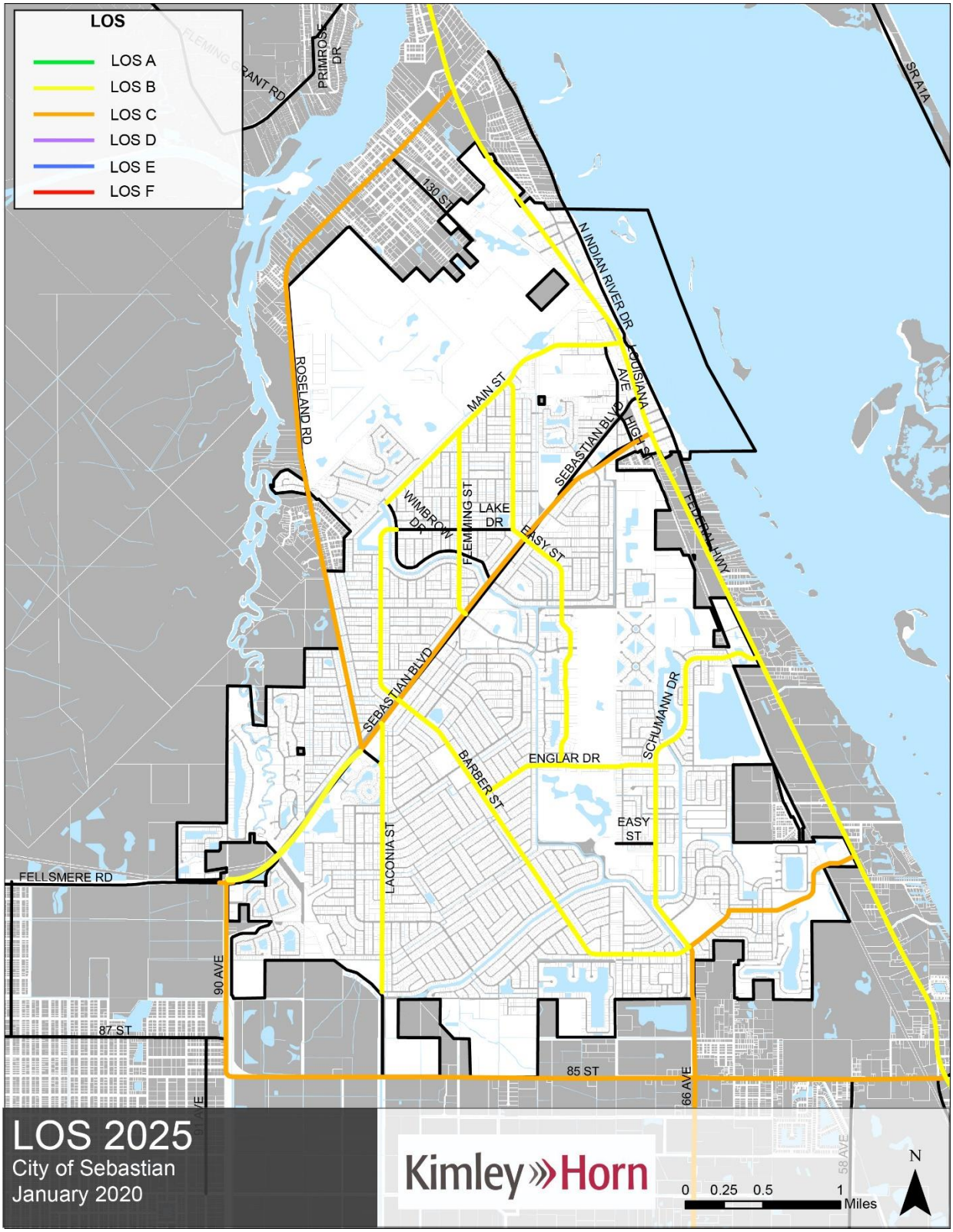
Map 2-4: Transit Routes



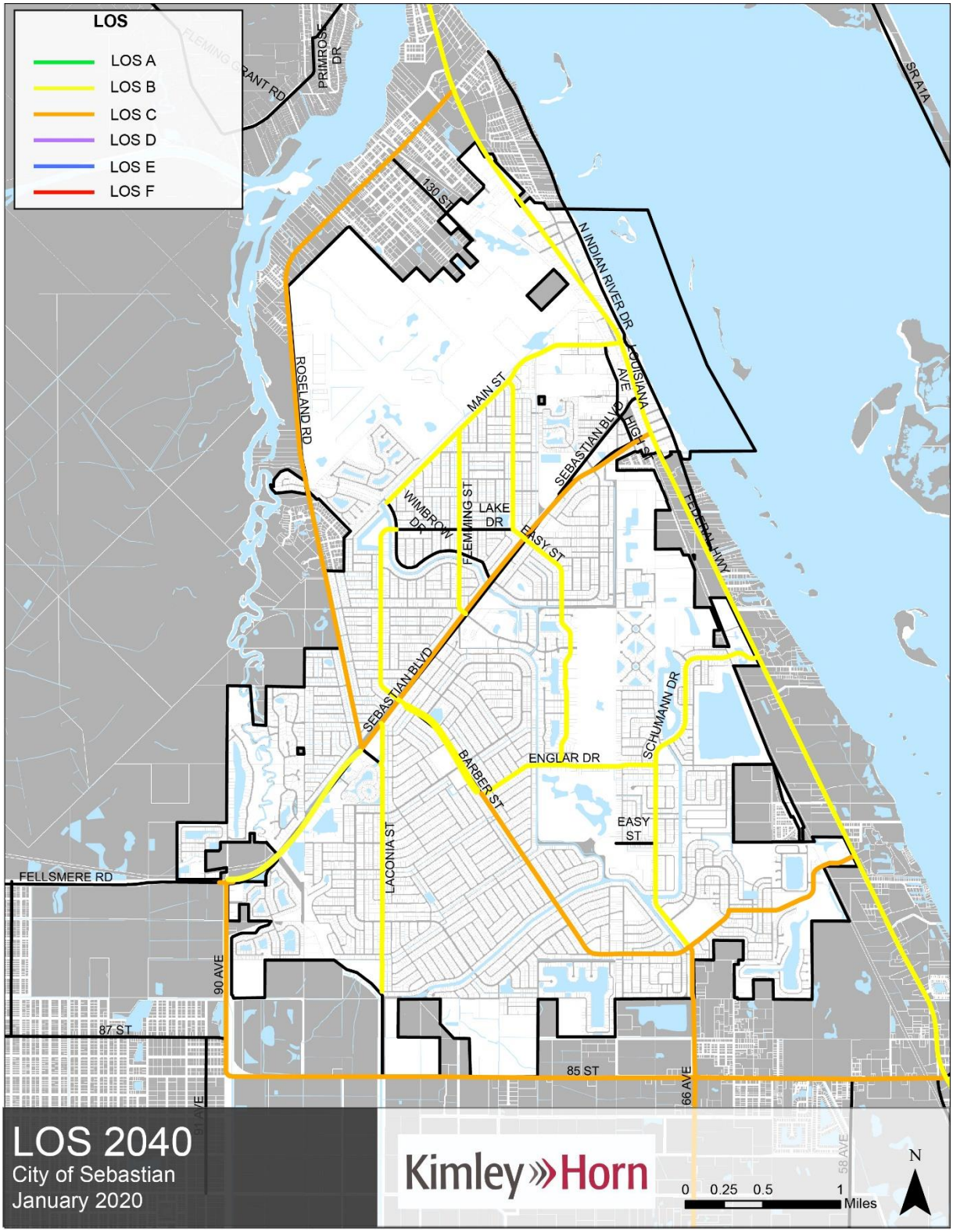
Map 2-5: Existing Level of Service, 2020



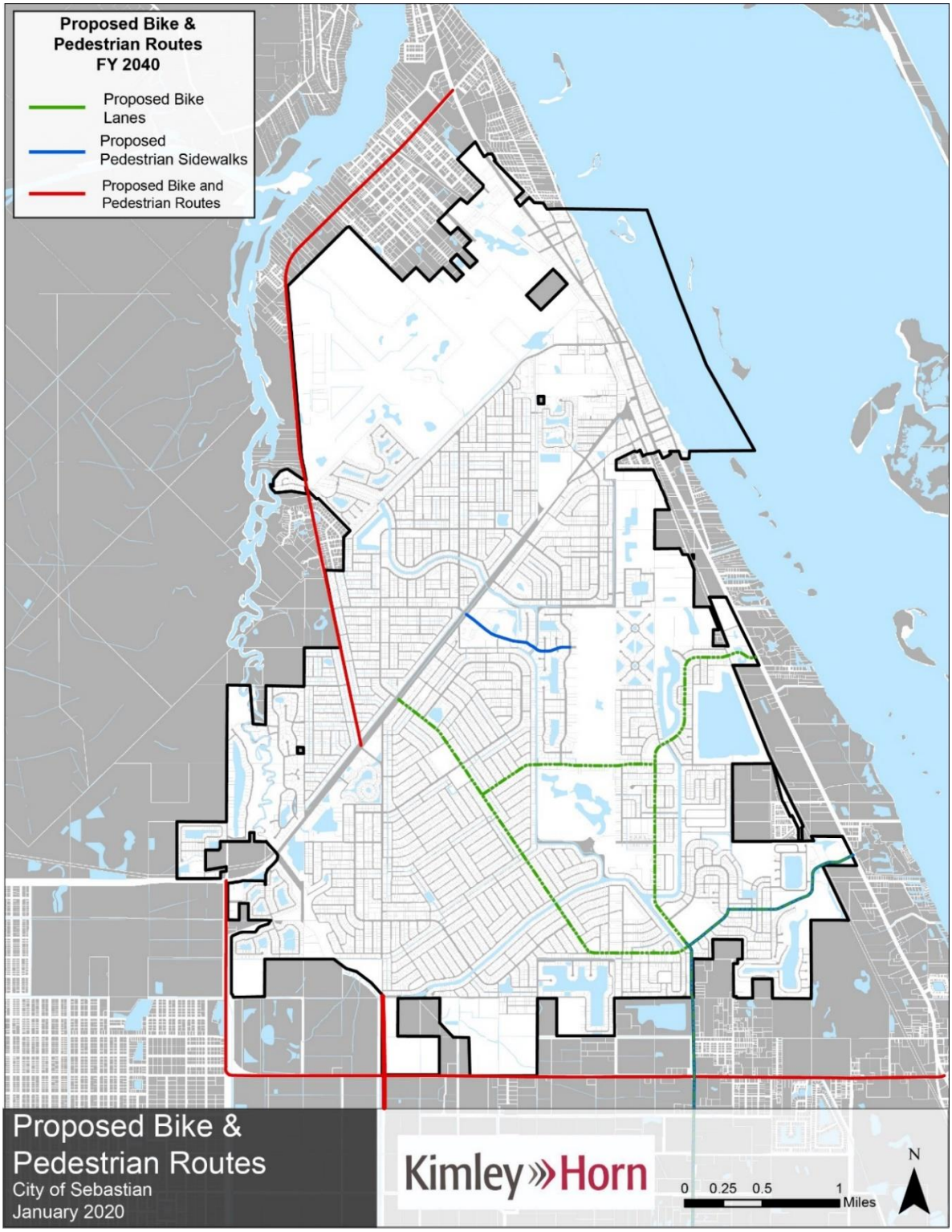
Map 2-6: Existing Level of Service, 2025



Map 2-7: Existing Level of Service, 2040



Map 2-8: Proposed Bike and Pedestrian Routes



Source: Indian River County 2040 Long Range Transportation Plan.