

2021-2023
MONROE COUNTY
BIENNIAL PUBLIC FACILITIES
CAPACITY ASSESSMENT
REPORT



GROWTH MANAGEMENT
TRANSPORTATION
POTABLE WATER
SCHOOLS
SOLID WASTE
PARKS AND RECREATION
SANITARY SEWER

Monroe County
Planning and Environmental Resources Department

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EXECUTIVE SUMMARY

Goal 1401 of the Monroe County Comprehensive Plan requires that Monroe County shall provide and maintain, in a timely and efficient manner, adequate public facilities for both existing and future populations, consistent with available financial resources and the other elements of the Comprehensive Plan. [§163.3177(3)(a), F.S.] Monroe County coordinates land use decisions and fiscal resources with a schedule of capital improvements in order to maintain the adopted level of service (LOS) standards for both issued development orders and future development (Objective 1401.4). Further, Monroe County maintains a Concurrency Management System to ensure that facilities and services needed to support development are available concurrent with the impact of development. The Concurrency Management System ensures that the County shall issue no development order or permit which results in a reduction in the level of service (LOS) below the adopted LOS standards (Policy 1401.4.5).

The Monroe County Land Development (LDC) Section 114-2(b)(3) mandates a biennial assessment of the roadways, solid waste, potable water, sanitary sewer, schools and recreation and open space facilities serving the unincorporated portion of Monroe County. In the event that these public facilities have fallen below or are projected to fall below the level of service (LOS) required by the LDC, development activities must conform to special procedures to ensure that public facilities are not further burdened. The LDC clearly states that building permits shall not be issued unless the proposed use is, or will be, served by adequate public or private facilities.

As required by LDC Section 114-2, the Monroe County Board of County Commissioners (BOCC) shall consider and approve the biennial report, with or without modifications. Any modifications that result in an increase of development capacity must be accompanied by findings of fact, including the reasons for the increase and the funding source to pay for the additional capacity required to serve the additional development. Once approved, this document becomes the official report on public facilities upon which development approvals will be based for the next two years. This report distinguishes between areas of adequate, inadequate and marginally adequate facility capacity. Areas of *inadequate facility capacity* are those areas with capacity below the adopted LOS standards. Areas of *marginally adequate facility capacity* are those areas at the adopted level of service standard or which are projected to reach inadequate capacity within the next 12 to 24 months.

2021-2023 ASSESSMENT OF PUBLIC FACILITIES

Transportation/Roadways

Based on the findings of the 2021 U.S. 1 Arterial Travel Time and Delay Study for Monroe County, as prepared by AECOM, U.S. 1 has an overall level of service (LOS) C. The overall median travel speed on US 1 is 45.5 MPH.

Traffic volumes have increased in Big Pine (2.00%) and Upper Matecumbe (3.07%) Keys but have decreased in Marathon Key (-6.30%) as compared to 2017.

Compared to the study results in 2017, there were level of service changes in nine (9) of the 24 segments of US1; five (5) of which resulted in positive level of service changes and four (4) of

which resulted in negative level of service changes. Negative LOS changes are shown in bold text in the table below.

| Segment Number | Segment | Jurisdiction (county or municipality) | 2017 LOS | 2021 LOS | Reserve Trips Remaining | 5% Allocation below LOS C |
|----------------|------------------------|---------------------------------------|----------|----------|-------------------------|---------------------------|
| 1 | Stock Island | County | B | A | 3,279 | 3,474 |
| 8 | Ramrod | County | B | A | 2,285 | 3,063 |
| 10 | Big Pine | County | C | A | 4,561 | 5,511 |
| 11 | Bahia Honda | County | B | A | 7,998 | 10,730 |
| 18 | Tea Table | Islamorada | D | A | 2,222 | 2,965 |
| 19 | Upper Matecumbe | Islamorada | D | E | (3,531) | (2,187) |
| 20 | Windley | Islamorada | C | D | (378) | 271 |
| 21 | Plantation | Islamorada | B | C | 1,921 | 3,524 |
| 24 | Cross | County | B | C | 2,259 | 4,618 |

Compared to 2017 results, the median segment speeds increased in 13 of the 24 segments, ranging between 0.2 mph and 10.6 mph, and decreased in 11 segments, ranging from -0.1 mph to -5.8 mph.

The largest increase in speed (+10.6 mph) was recorded in Segment # 1 (Stock Island – MM 4.0 to MM 5.0); The largest reduction in speed (-5.8 mph) was recorded in Segment # 21 (Plantation – MM 86.0 to MM 91.5).

Potable Water

In March 2008, South Florida Water Management District approved the FCAA’s modification of WUP 13-00005-5-W for a 20-year allocation from the Biscayne and Florida Aquifers. This water use permit (WUP) provides an annual allocation of 23.98 MGD. The recently completed water supply wells and Reverse Osmosis (RO) water treatment facility provides an additional capacity of 6.0 MGD.

The County’s 2020 figures and projections for 2021 indicate a slight increase in annual average daily demand from 18.41 to 20.25 MGD. This provides a 3.73 MGD surplus water allocation based upon the projected 2021 demand. With the construction of the new water supply wells and reverse osmosis (RO) water treatment facility and a projected surplus allocation, there is an adequate supply of water to meet current and future demands, based on current conditions and projections.

Schools

The overall 2020-2021 utilization is 74.83% of the school system capacity and is projected for 2024-2025 at 77.58 % utilization of the school capacity. Enrollment figures for 2020-2021 indicate that there is adequate capacity in the Monroe County school system for the next two years.

Solid Waste

Monroe County has a contract with Waste Management Inc. (WMI). The contract authorizes the use of in-state facilities through September 30, 2024, thereby providing the County with approximately three (3) years of guaranteed capacity. There is adequate capacity for a solid waste generation for the next 12 to 24 months.

Parks and Recreation

There is a surplus of parks and recreational facilities (acreage).

Sanitary Sewer

The Monroe County Sanitary Sewer Master Plan was part of the Monroe County Year 2010 Comprehensive Plan. As population and tourism within the Keys have increased over the years have resulted in a significant degradation of water quality in canals and nearshore waters surrounding the keys. The creation of a new Sanitary Sewer System to replace the old system consisting mostly of collecting sewage waters by private septic tanks and small water treatment plants was imperative.

The new Sanitary Sewer System collects the wastewater mainly by a network of pipelines, force mains, pump stations and sewage treatment plants. The majority of the household units of unincorporated areas of the County have been connected to the system.

The sewage collection system operates below the capacity for which it was designed and the quality and disposal of treated waste water is in compliance with requirements established by F.A.C., F.S., and Monroe County Comprehensive Plan. There is sufficient wastewater treatment and disposal facilities and capacity available to satisfy the projected needs of the development for the next two years.

SUMMARY

Transportation/roadways (subject to concurrency review at time of development permit), potable water, solid waste, schools, parks and recreation, and sanitary sewer all have adequate capacity to serve the growth anticipated in 2021-2023 at the adopted level of service standard.

INTRODUCTION

The 2021-2023 Biennial Assessment of Public Facilities Capacity is mandated by the Monroe County Land Development Code (LDC) Section 114-2, titled Adequate Facilities and Review Procedures. The State of Florida requires all local jurisdictions to adopt regulations ensuring “concurrency” or providing public facilities in order to achieve and maintain the adopted level of service standard. In other words, local governments must establish regulations to ensure that public facilities and services that are needed to support development are available simultaneously with development impacts.

Section 114-2(a) contains two main sets of requirements: the minimum service standards for the six primary public facilities (roads, potable water, educational facilities, solid waste, parks and recreation, sanitary sewer), and biennial assessment process to determine the available capacity of these public facilities.

Section 114-2(b)(3) requires the Director of Planning to prepare a biennial report to the BOCC on the capacity of available public facilities. This report must determine the potential amount of residential and nonresidential growth expected in the upcoming year and make an assessment of how well the water supply facilities, solid waste, roads, sanitary sewer, and schools will accommodate that growth. The report considers potential growth and public facility capacity for only the next twelve months. In addition, the report must identify areas of unincorporated Monroe County with only marginal and/or inadequate capacity for public facilities.

Section 114-2(b)(4) requires the Monroe County Board of County Commissioners (BOCC) to consider this report and approve its findings either with or without modifications. The BOCC cannot act to increase development capacity beyond that demonstrated in this report without making specific findings of fact as to the reasons for the increase and identifying the source of funds to be used to pay for the additional capacity. Once approved by the BOCC, this document becomes the official assessment of public facilities upon which development approvals will be based for the next year.

In the event public facilities have fallen or are projected to fall below the level of service (LOS) standards required by the Comprehensive Plan or the LDC, development activities must conform to special procedures to ensure that public facilities are not further burdened. The Comprehensive Plan and the LDC clearly state that building permits shall not be issued unless the proposed use is or will be served by adequate public or private facilities.

Comprehensive Plan Objective 101.1 states:

“Monroe County shall ensure that all development and redevelopment taking place within its boundaries does not result in a reduction of the level-of-service requirements established and adopted by this comprehensive plan. Further, Monroe County shall ensure that comprehensive plan amendments include an analysis of the availability of facilities and services or demonstrate that the adopted levels of service can be reasonably met”.

The LDC, Section 114-2, “Adequate Facilities and Review Procedures” states:

Development application shall include a written evaluation (facilities impact report and traffic report) of the impact of the anticipated development on the level of services are available prior to or concurrent with the impacts of development.

PUBLIC FACILITIES STANDARDS

Pursuant to Section 163.3180, F.S., sanitary sewer, solid waste, drainage, and potable water are the public facilities and services subject to the concurrency requirement on a statewide basis and a local government may extend concurrency requirements so that it applies to additional public facilities within its jurisdiction. If concurrency is applied to other public facilities, including transportation facilities, the local government comprehensive plan must provide the principles, guidelines, standards, and strategies, including adopted levels of service, to guide its application. The premise of concurrency is that the public facilities will be provided in order to achieve and maintain the adopted level of service standard.

Accordingly, the Monroe County Comprehensive Plan Policy 101.1.1 provides that the County shall maintain level of service (LOS) standards for the following public facility types required by Chapter 163, F.S.: sanitary sewer, solid waste, drainage, and potable water. Policy 101.1.2 also requires the County maintain a Concurrency Management System.

Further, the following standards have been adopted in the Monroe County Comprehensive Plan:

Policy 101.1.3: Facilities for potable water, sanitary sewer, solid waste and drainage shall be in place and available to serve new development no later than the issuance of the certificate of occupancy or its functional equivalent. If facility improvements are needed to ensure that the adopted level-of-service standards are achieved and maintained, prior to commencement of construction, a developer is required to enter into a binding and legally enforceable commitment to the County to assure construction or improvement of the facility.

Policy 101.1.4: Parks and recreation facilities to serve new development shall be in place or under actual construction no later than one (1) year after issuance by the County of a building permit. The acreage (land) for such facilities shall be dedicated or be acquired by the County prior to issuance of a building permit, or funds in the amount of the developer's fair share shall be committed no later than the County's approval to commence construction. If park and recreation facility improvements are needed to ensure that the adopted level-of-service standards are achieved and maintained, prior to commencement of construction, the developer is required to enter into a binding and legally enforceable commitment to the County to assure construction of the facilities.

Policy 101.1.5: Transportation facilities needed to serve new development shall be in place when the impacts of the development occur. If transportation facilities are needed to ensure that the adopted level-of-service standards are achieved and maintained, prior to commencement of construction, a developer is required to enter into a binding and legally enforceable commitment to the County to assure construction or improvement of proportionate share of required improvements, or to assure the provision of the proportionate share contribution of the costs for the necessary transportation facilities. The development of a single family residential unit shall be considered de minimis and shall not be subject to this requirement.

Policy 101.1.6: Prior to the approval of a building permit, Monroe County shall consult with the Florida Keys Aqueduct Authority (FKAA) to determine whether adequate water

supplies to serve the new development will be available no later than the anticipated date of issuance by the County of a certificate of occupancy or its functional equivalent.

There are Six (6) primary public facilities that must be monitored for adequate capacity according to both the Monroe County Comprehensive Plan and the Land Development Code (LDC). These facilities are roads, solid waste, potable water, sanitary sewer and schools (Comp Plan also includes parks & recreation and drainage. The available capacity for each of these facilities may be either sufficient to accommodate projected growth over the next year, marginally adequate, or inadequate. In situations where public facilities serving an area are projected to be only marginally adequate or inadequate over the next year, the LDC sets out a review procedure to be followed when issuing development permits in that area.

Section 114-2(b)(5)c of the LDC states: “The county shall not approve applications for development in areas of the county that are served by inadequate facilities identified in the biennial assessment of public facility capacity report, except the county may approve development that will have no reduction in the capacity of the facility or where the developer agrees to increase the level of service of the facility to the adopted level of service standard.”

The determination of an additional development’s impact on existing public facilities in areas with marginal or inadequate capacity is determined by a “facilities impact report” which must be submitted with a development application.

Transportation/Roadways:

The LOS for roads is regulated by the Traffic Circulation Element of the Comprehensive Plan.

Policy 301.1.1 establishes the LOS for County roads. The policy states:

“For all County roads, Monroe County hereby adopts a minimum peak hour level of service (LOS) standard of D, measured by the methodology identified in the most recent edition of the Highway Capacity Manual, as necessary to determine proposed development impacts. The County shall maintain the level of service on County roads within five percent (5%) of LOS D”

Policy 301.1.2 establishes the LOS for U.S. 1. The policy states:

“For U.S. 1, Monroe County hereby adopts a level of service (LOS) standard of C, as measured by the methodology established by the US-1 LOS Task Force and adopted by the Board of County Commissioners in August 1991. The level of service on US-1 shall be maintained within five percent (5%) of LOS C”

It should be noted in August 2021, the BOCC adopted an update to Policy 301.1.2 as follows:

“For U.S. 1, Monroe County hereby adopts a level of service (LOS) standard of C, as measured by the methodology established by the U.S. 1 LOS Task Force and adopted by the Board of County Commissioners in February 2021 (BOCC Resolution 064-2021). The level of service on U.S. 1 shall be maintained within five percent (5%) of LOS C.”

Section 114-2(a)(1) of the LDC pertains to the minimum LOS standards for Roads:

- (1) *Transportation/Roadways.*

- a. U.S. 1 shall have sufficient available capacity to operate at LOS C for the overall arterial length and the 24 roadway segments of U.S.1, as measured by the U.S. 1 Level of Service Task Force Methodology, at all intersections and roadway segments. In addition, all segments of U.S. 1, as identified in the U.S. 1 Level of Service Task Force Methodology, which would be impacted by a proposed development's access to U.S. 1, shall have sufficient available capacity to operate at LOS C.
- b. Development may be approved, provided that the development in combination with all other permitted development will not decrease travel speed by more than five percent (5%) below LOS C, as measured by the U.S. 1 Level of Service Task Force Methodology. While development may be approved within 5% of LOS C, the proposed development shall be considered to have an impact that needs mitigation. Development mitigation may be in the form of specific improvements or proportioned shared contribution towards improvements and strategies identified by the County, and/or FDOT to address any level of service degradation beyond LOS C and/or deficiencies.
- c. All paved County roads shall have sufficient available capacity to operate at or within 5% of a LOS D as measured by the methodology identified in the most recent edition of the Highway Capacity Manual. While development may be approved within 5% of LOS D, the development shall be considered to have an impact that needs mitigation. Development mitigation may be in the form of specific improvements or proportioned shared contribution towards improvements and strategies identified by the County, and/or FDOT to address any level of service degradation beyond LOS D and/or deficiencies.
- d. The development of one single family residence on a single parcel shall be considered de minimis and shall not be considered to impact road capacity established in this subsection.
- e. The County shall post on the Monroe County website informing the public of the available transportation capacity for each road segment of U.S. 1 as described in the county's biennial public facilities capacity report. The available capacity shall be expressed in terms of a number of trips remaining until the adequate transportation facilities standard is exceeded.
- f. The County, in coordination with the FDOT, shall continue the systematic traffic monitoring program to monitor peak season traffic volumes at permanent count stations and travel speeds on the overall length of U.S.1 and on each of the 24 study segments of U.S.1, and to determine the cumulative impact of development and through traffic. The County shall coordinate with municipalities in the review of the systematic traffic monitoring program to monitor traffic volumes and travel speeds of U.S.1 as well as on each of the 24 study segments on U.S.1. The County and municipalities shall coordinate with FDOT to evaluate segments with deficiencies of LOS to determine necessary improvements and strategies to address any degradation and/or deficiencies.

Potable Water:

The Monroe County Comprehensive Plan adopts the LOS standards and further, the LDC regulates the source of potable water for development or use.

Objective 701.1: Monroe County shall ensure that at the time a certificate of occupancy or its functional equivalent is issued, adequate potable water supply, treatment, and distribution facilities are available to support the development at the adopted level of service standards.

Policy 701.1.1: Monroe County hereby adopts the following level of service standards to achieve Objective 701.1 and shall use these standards as the basis for determining facility capacity and the demand generated by a development. [

Level of Service Standards

1. Quantity: 100 gal./capita/day*

**Note Based on historical data through December 2011; provided by FKAA, December 2012.*

2. Minimum Pressure: 20 PSI at customer service
3. Minimum Potable Water Quality: Shall be as defined by Chapter 62-550 F.A.C.

The LDC Section 114-2(a)(3) requires sufficient potable water from an approved and permitted source shall be available to satisfy the projected water needs of a proposed development, or use. Approved and permitted sources shall include cisterns, wells, FKAA distribution systems, individual water condensation systems, and any other system which complies with the Florida standards for potable water.

- a. Overall LOS: 100 gal./capita/day.
- b. Minimum pressure: 20 pounds per square inch at customer service point.
- c. Minimum quality: As defined by Chapter 62-550 F.A.C.

Policy 701.1.2: Monroe County shall maintain land development regulations which provide a Concurrency Management System (See Capital Improvements Policy 1401.4.5). The Concurrency Management System shall ensure that no certificate of occupancy or its functional equivalent will be issued for new development unless adequate potable water supply, treatment, and distribution facilities needed to support the development at the adopted level of service standards are available.

Solid Waste:

The Comprehensive Plan and the LDC require that "sufficient capacity shall be available at a solid waste disposal site at a level of services of 11.41 pounds per capita per day. The county solid waste and resource recovery authority may enter into agreements, including agreements under F.S. Section 163.01, to dispose of solid waste outside of the county. (LDC, Section 114-2(a)(2)).

Objective 801.1: Monroe County shall ensure that solid waste collection service and disposal capacity is available to serve development at the adopted level of service standards. [§163.3180(1)(b)., F.S.], [§163.3180(2)., F.S.]

Policy 801.1.1: Monroe County hereby adopts the following level of service standards to achieve Objective 801.1, and shall use these standards as the basis for determining facility capacity and the demand generated by a development. [§163.3180(2)., F.S.]

Level of Service Standards:

Disposal Quantity: 11.41 pounds per capita per day

Policy 801.1.2: Monroe County shall maintain land development regulations which provide a Concurrency Management System (See Capital Improvements Policy 1401.4.5). The Concurrency Management System shall ensure that no certificate of occupancy or its functional equivalent will be issued for new development unless adequate solid waste collection and disposal facilities needed to support the development at the adopted level of service standards are available concurrent with the impacts of development.

Sanitary Sewer:

The Comprehensive Plan and LDC establish the capacity LOS and the wastewater treatment level of service standards for sanitary sewers in Policy 901.1.1 of the Monroe County Year 2030 Comprehensive Plan.

Policy 901.1.1: Monroe County shall ensure that at the time a certificate of occupancy, or its functional equivalent is issued, adequate sanitary wastewater treatment and disposal facilities are available to support the development at the adopted level of service standards.

December 31, 2015, Level of Service Standards

(A)The permanent level of service standards for wastewater treatment in Monroe County are as follows:

| | Mg/L | | | |
|---|------|-----|----|----|
| | BOD | TSS | TN | TP |
| On-site Sewage Treatment and Disposal System | 10 | 10 | 10 | 1 |
| Design flows less than 100,000 gpd (BAT) | 10 | 10 | 10 | 1 |
| Design flows greater than or equal to 100,000 gpd (AWT) | 5 | 5 | 3 | 1 |

Source: Monroe County Sanitary Wastewater Master Plan, 2000.

- BOD: Biochemical Oxygen Demand
- TSS: Total Suspended Solids
- TN: Total Nitrogen
- TP: Total Phosphorus
- BAT: Best Available Technology
- AWT: Advanced Wastewater Technology

(B) The County shall support State and Federal educational programs to reduce demand for phosphate products.

(C) The capacity level of service standard: 167 gallons per day per EDU.

Policy 901.1.2: Monroe County shall maintain land development regulations which provide a Concurrency Management System (See Capital Improvements Policy 1401.4.5). The Concurrency Management System shall ensure that a certificate of occupancy or its functional equivalent will not be issued for new development unless adequate sanitary wastewater treatment and disposal facilities needed to support the development at the adopted level of service standards are available.

Parks and Recreation:

The Level of Service standards for parks and recreational facilities are included in Policy 1201.1.1 of the Monroe County Year 2030 Comprehensive Plan.

Policy 1201.1.1: Monroe County hereby adopts the following level of service standards to achieve Objective 1201.1, and shall use these standards as the basis for determining recreation land and facility capacity:

Level of Service Standards for Neighborhood and Community Parks:

1. 1.5 acres per 1,000 functional population of passive, resource-based neighborhood

- and community parks; and
2. 1.5 acres per 1,000 functional population of activity-based neighborhood and community parks within each of the Upper Keys, Middle Keys, and Lower Keys subareas.

Schools:

The Comprehensive Plan does not establish a LOS standard for schools but does include Policy 1301.5.3 which requires the County to coordinate with the District School Board of Monroe County on the siting and expansion of required facilities. LDC Section 114-2(a)(6) requires that sufficient school classroom capacity shall be available to accommodate all school-age children to be generated by the proposed development.

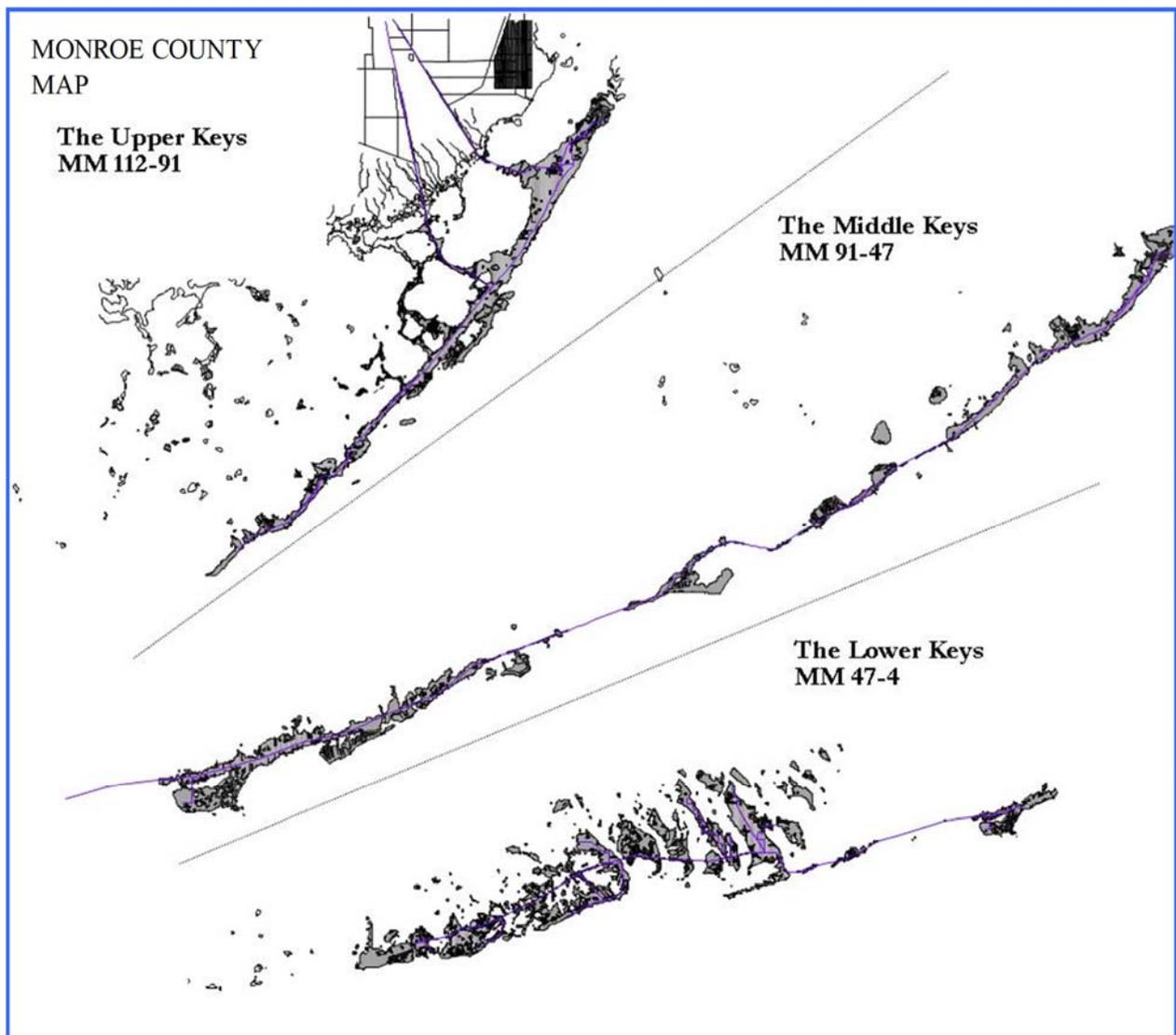
PERMITTING AND PUBLIC FACILITIES SERVICE AREAS

LDC Section 114-2(b)(2) Adequate Facilities and Review Procedures divides unincorporated Monroe County into three (3) service areas for the purpose of assessing potential growth and how public facilities can accommodate that growth. The boundaries mentioned in the Monroe County Land Development Code have been revised to account for incorporations of the Village of Islamorada and the City of Marathon.

Section 114-2(b)(2) defines the county's unincorporated public facilities service areas:

- Upper Keys Service Area: north of the Whale Harbor Bridge;
- Middle Keys Service Area: between the Seven Mile Bridge and Whale Harbor Bridge; and
- Lower Keys Service Area: south (west) of the Seven Mile Bridge.

The map shows the three (3) service areas of the Keys as they are currently recognized.



I. GROWTH MANAGEMENT

GROWTH ANALYSIS

This section of the report examines the projected growth of Monroe County’s permanent, seasonal and functional population, occupied and vacant housing data, Rate of Growth Ordinance (ROGO) and Nonresidential Rate of Growth Ordinance (NROGO) allocations and Building Department permit data.

CENSUS DATA

The U.S. Census Bureau released some 2020 demographic information in August 2021. The release of additional data has been delayed due to impacts related to the COVID-19 pandemic.

| | Census 2020 | Census 2010 | Change |
|-------------------------------------|----------------|-----------------|--------|
| Total Population | 82,874 | 73,090 | +9,784 |
| Total Housing Units | 53,892 | 52,764 | +1,128 |
| Occupied Housing Unit Rate | 59.5% | 61.8% | |
| Occupied Housing Units (calculated) | 32,066 | 32,629 | -563 |
| Vacant Housing Units (calculated) | 21,826 (40.5%) | 20,135 (38.16%) | +1,691 |

The permanent population for the Florida Keys (unincorporated and incorporated) increased by 13% (9,784 people) from the year 2010 to 2020. Total housing units increased by 1,128 units or 2%. The number of occupied units decreased by 563 units or 2%. Vacant units increased by 1,691 units or 8%. Further analysis will need to be conducted at a later date with the release of additional 2020 Census data.

The following tables provide 2010 summary information for Monroe County and the incorporated municipalities. Information from the 2000 Census has been included for comparison purposes.

| | Census 2000 | Census 2010 | Change | % Change |
|--|-------------|-------------|--------|----------|
| POPULATION | | | | |
| City of Key West | 25,478 | 24,649 | -829 | -3.25% |
| City of Marathon | 10,255 | 8,297 | -1,958 | -19.09% |
| City of Key Colony Beach | 788 | 797 | +9 | 1.14% |
| City of Layton | 186 | 184 | -2 | -1.08% |
| Village of Islamorada | 6,846 | 6,119 | -727 | -10.62% |
| Unincorporated Monroe County | 36,036 | 33,044 | -2,992 | -8.30% |
| Total Population (Unincorporated County & Cities) | 79,589 | 73,090 | -6,499 | -8.17% |
| HOUSING UNITS | | | | |
| City of Key West | 13,306 | 14,107 | +801 | 6.01% |
| City of Marathon | 6,791 | 6,187 | -604 | -8.89% |
| City of Key Colony Beach | 1,293 | 1,431 | +138 | 10.67% |
| City of Layton | 165 | 184 | +19 | 11.15% |
| Village of Islamorada | 5,461 | 5,692 | +231 | 4.23% |
| Unincorporated Monroe County | 24,601 | 25,163 | +562 | 2.28% |
| Total Housing Units (Uninc. County & Cities) | 51,617 | 52,764 | +1,147 | 2.22% |

| | | | | |
|--|--------|--------|--------|--------|
| Total housing units (Uninc. County & Cities) | 51,617 | 52,764 | +1,147 | 2.22% |
| Occupied housing units (Uninc. County & Cities) | 35,086 | 32,629 | -2,457 | -7.00% |
| Vacant housing units (Uninc. County & Cities) | 16,531 | 20,135 | +3,604 | 21.80% |
| % Vacant housing units (Uninc. County & Cities) | 32.02% | 38.16% | | |

POPULATION ESTIMATES

Functional population is the sum of seasonal and permanent population estimates. Permanent residents are people who spend all or most of the year living in Monroe County, and as such, exert a relatively constant demand on all public facilities. Seasonal population figures are the number of seasonal residents and visitors in the Keys on any given evening. They are composed of the tourist population and residents spending less than six months in the Keys. The seasonal population has a higher cyclical demand on public facilities like water, roads and solid waste.

The 2020 total population for Monroe County is 82,874 (2020 Census).

FUNCTIONAL POPULATION PROJECTIONS, 2020-2030

| Year | Permanent | Seasonal | Functional |
|------|-----------|----------|------------|
| 2020 | 76,900 | 82,151 | 159,051 |
| 2025 | 76,200 | 84,503 | 160,703 |
| 2030 | 75,500 | 86,855 | 162,355 |

Source: Monroe County 2012-2030 Population Projections, March 15, 2011, Keith and Schnars, P.A. and Fishkind and Associates

UNINCORPORATED FUNCTIONAL POPULATION PROJECTIONS, 2020-2030

| Year | Permanent | Seasonal | Functional |
|------|-----------|----------|------------|
| 2020 | 35,374 | 37,120 | 72,494 |
| 2025 | 35,052 | 38,173 | 73,225 |
| 2030 | 34,730 | 39,226 | 73,956 |

Source: Monroe County 2012-2030 Population Projections, March 15, 2011, Keith and Schnars, P.A. and Fishkind and Associates

UNINCORPORATED FUNCTIONAL POPULATION PROJECTIONS by service area, 2020-2030

| Year | Unincorporated Functional Population | | | Total Unincorporated Monroe County |
|------|--------------------------------------|-------------|------------|------------------------------------|
| | Lower Keys | Middle Keys | Upper Keys | |
| 2020 | 40,592 | 2,234 | 29,668 | 72,494 |
| 2025 | 41,003 | 2,256 | 29,966 | 73,225 |
| 2030 | 41,414 | 2,278 | 30,265 | 73,957 |

Source: Monroe County 2012-2030 Population Projections, March 15, 2011, Keith and Schnars, P.A. and Fishkind and Associates

The Fishkind & Associates population projections for the 2010-2030 planning period indicate a loss of permanent population. The data suggests the permanent population losses and associated increase in vacant housing units, shifting into an increase in seasonal population. Fishkind & Associates estimates that while permanent population decreases at an average rate of less than one percent every five years, seasonal population increases at an average rate of 2.57 percent every five years; resulting in a shift in population from permanent to seasonal. Overall, functional population or total population for the unincorporated County will increase at an average rate of less than one percent, every five years, in the twenty year planning period.

The Florida Bureau of Economic and Business Research (BEBR) provides the following estimates:

| Estimates April 1, 2020 | | Projections, April 1 | | | | |
|----------------------------|---------------|----------------------|--------|--------|--------|--------|
| | | 2025 | 2030 | 2035 | 2040 | 2045 |
| MONROE | 77,823 | | | | | |
| Low | | 73,600 | 72,200 | 70,500 | 68,700 | 66,700 |
| Medium | | 78,800 | 79,400 | 79,800 | 80,000 | 80,200 |
| High | | 84,300 | 87,500 | 90,100 | 92,200 | 94,200 |

The Florida Office of Economic and Demographic Research (EDR) provides the following estimates:

| Estimates April 1, 2020 | | Projections, April 1 | | | | |
|----------------------------|---------------|----------------------|--------|--------|--------|--------|
| | | 2025 | 2030 | 2035 | 2040 | 2045 |
| MONROE | 77,823 | 78,799 | 79,424 | 79,793 | 80,020 | 80,159 |

HOUSING

According to the U.S. Census, housing units are broken down into occupied and vacant units. The Census defines housing units as “a house, apartment, group of rooms, or single room occupied or intended for occupancy as separate living quarters.” Occupied housing units are occupied if there is “at least one person who lives in the unit as a usual resident at the time of the interview, or if the occupants are only temporarily absent, for example, on vacation. However, if the unit is occupied entirely by people with a usual residence elsewhere, the unit is classified as vacant, such as seasonal units.

The table below provides total housing units and occupancy based on the 2020 Census:

| | Census 2020 | Census 2010 | Change |
|-------------------------------------|--------------------|--------------------|---------------|
| Total Housing Units | 53,892 | 52,764 | +1,128 |
| Occupied Housing Unit Rate | 59.5% | 61.8% | |
| Occupied Housing Units (calculated) | 32,066 | 32,629 | -563 |
| Vacant Housing Units (calculated) | 21,826 (40.5%) | 20,135 (38.16%) | +1,691 |

The table below shows the housing units by status and tenure from the 2015-2019 American Community Survey.

| HOUSING UNITS BY STATUS AND TENURE BY UNITS IN STRUCTURE 2015-2019 (Monroe County-Unincorporated and Incorporated Areas) | | |
|---|------------------|----------------|
| HOUSING OCCUPANCY | Estimates | Percent |
| Total housing units | 53,518 | 100.00% |
| Occupied housing units | 32,068 | 59.9% |
| Vacant housing units | 21,450 | 40.1% |
| | | |
| UNITS IN STRUCTURE | Estimates | Percent |
| Total housing units | 53,518 | 100.00% |
| 1-unit, detached | 29,086 | 54.3% |
| 1-unit, attached | 3,290 | 6.1% |
| 2 units | 2,488 | 4.6% |
| 3 or 4 units | 2,929 | 5.5% |
| 5 to 9 units | 2,554 | 4.8% |
| 10 to 19 units | 2,260 | 4.2% |
| 20 or more units | 4,389 | 8.2% |
| Mobile home | 6,380 | 11.9% |
| Boat, RV, van, etc. | 142 | 0.3% |
| | | |
| HOUSING TENURE | Estimates | Percent |
| Occupied housing units | 30,068 | 100.00% |
| Owner-occupied | 19,078 | 59.5% |
| Renter-occupied | 12,990 | 40.5% |
| | | |
| Average household size of owner-occupied unit | 2.26 | |
| Average household size of renter-occupied unit | 2.36 | |

Source: US Census 2019 American Community Survey

RESIDENTIAL RATE OF GROWTH ORDINANCE (ROGO)

Based on the Carrying Capacity and Hurricane Evacuation Studies, the Monroe County Board of County Commissioners adopted Ordinance 016-1992 on June 23, 1992, creating the Residential Dwelling Unit Allocation System known as the Rate of Growth Ordinance or ROGO. ROGO was developed to limit the annual amount and rate of development commensurate with the County's ability to maintain its hurricane evacuation clearance time; and to deter the deterioration of public facility service levels, environmental degradation, and potential land use conflicts. It is used as a tool to equitably distribute the remaining number of permits available both geographically and over time. ROGO allows development subject to the ability to safely evacuate the Florida Keys (the Keys) within 24 hours.

The annual allocation period, or ROGO year, is the 12-month period beginning on July 13, 1992, (the effective date of the original dwelling unit allocation ordinance), and subsequent one-year periods. The number of dwelling units which can be permitted in Monroe County has consequently been controlled since July of 1992 (adoption of Ordinance 016-92).

Rule 28-20.140, F.A.C., and Comprehensive Plan Policy 101.3.2 regulate the number of permits issued annually for residential development under ROGO. Monroe County can award up to 197 allocations per year within the unincorporated area. These allocations are divided between three geographic subareas and are issued quarterly. Each year's ROGO allocation of 197 new units is split with a minimum of 71 units allocated for affordable housing in perpetuity and market rate allocations not to exceed 126 new residential units per year.

Rule 28-20.140(b), F.A.C., and Comprehensive Plan Policy 101.2.1 state:

“The number of permits issued annually for residential development under the Rate of Growth Ordinance shall not exceed a total annual unit cap of 197, plus any available unused ROGO allocations from a previous ROGO year. Each year's ROGO allocation of 197 units shall be split with a minimum of 71 units allocated for affordable housing in perpetuity and market rate allocations not to exceed 126 residential units per year. Unused ROGO allocations may be retained and made available only for affordable housing and Administrative Relief from ROGO year to ROGO year. Unused allocations for market rate shall be available for Administrative Relief. Any unused affordable allocations will roll over to affordable housing. A ROGO year means the twelve-month period beginning on July 13”.

LDC, Section 138-24(a)(2) establishes that ROGO allocations are to be awarded quarterly.

“Each subarea shall have its number of market rate housing residential ROGO allocations available per ROGO quarter determined by the following formula:

- a. Market rate residential ROGO allocations available in each subarea per quarter is equal to the market rate residential ROGO allocations available in each subarea divided by four.
- b. Affordable housing residential ROGO for all four ROGO quarters, including the allocations available for Big Pine Key, shall be made available at the beginning of the first quarter for a ROGO year. Beginning July 13, 2016, the balance of all remaining affordable housing residential ROGO allocations shall be made available for award.

On January 22, 2020, the BOCC adopted Ordinances 005-2020 and 006-2020, amending Comprehensive Plan Policy 101.3.2 and Land Development Code Section 138-24 to extend the time period of the ROGO system through 2026 by distributing the final three (3) years of market rate ROGO allocations over a 6-year period. For ROGO Years 29, 30, and 31, (July 13, 2020 – July 12, 2023), the number of market rate allocations is reduced to 64 per year, rather than 126.

For ROGO Years 32, 33, and 34, (July 13, 2023 – July 12, 2026), the number of market rate allocations will be 62 per year, as follows:

| ROGO Year | Annual Allocation | | |
|-----------------------------|-------------------|--|------------|
| | Market Rate | Affordable Housing | |
| July 13, 2013—July 12, 2014 | 126 | 71 | |
| July 13, 2014—July 12, 2015 | 126 | 71 | |
| July 13, 2015—July 12, 2016 | 126 | 568 total AFH (total available immediately) | |
| July 13, 2016—July 12, 2017 | 126 | | |
| July 13, 2017—July 12, 2018 | 126 | | |
| July 13, 2018—July 12, 2019 | 126 | | |
| July 13, 2019—July 12, 2020 | 126 | | |
| July 13, 2020—July 12, 2021 | 64 | | |
| July 13, 2021—July 12, 2022 | 64 | | |
| July 13, 2022—July 12, 2023 | 64 | | |
| July 13, 2023—July 12, 2024 | 62 | | |
| July 13, 2024—July 12, 2025 | 62 | | |
| July 13, 2025—July 12, 2026 | 62 | | |
| TOTAL | 1,260 | | 710 |

This change reduces the annual rate of additional new market rate residential development, to address multiple purposes, such as hurricane modeling, land acquisition and so forth. Additionally, this change should reduce the demands on public facilities based on new market rate residential development.

TIER SYSTEM

On September 22, 2005, the BOCC adopted Ordinance 025-2005 which amended the Comprehensive Plan to revise ROGO to utilize the Tier overlay as the basis for the competitive point system. On March 15, 2006, the BOCC adopted Ordinance 009-2006 to incorporate the Tier System as a basis for implementing ROGO within the Land Development Regulations (LDRs).

The Tier System changed the service areas (subareas boundaries) mentioned in the Introduction. It is the basis for the scoring of NROGO and ROGO applications and administrative relief. The new ROGO and NROGO subareas are the Lower Keys (Middle Keys are not included in the Lower Keys), Upper Keys, and Big Pine / No Name Keys. Tier Ordinance 009-2006 provides vesting provisions and allows for allocation of an annual cap of 197 residential dwelling units.

The Tier System made changes such as subarea boundary districts for allocation distribution, the basis of scoring applications, and administrative relief.

- During ROGO Year 14, Ord. 009-2006 was enacted changing the allocation number to 197 (126 market rate 71 affordable) pursuant to Rule 28-20.110, F.A.C. The same rule also returned 165 allocations to the County to be used for affordable housing.

- By ROGO Year 15, the new Big Pine/No Name Key subarea was created. Of the 197 annual allocations, 8 market rate and 2 affordable allocations were assigned to this subarea.

BIG PINE KEY AND NO NAME KEYS

Efforts to address the development impacts on the habitat of the Key Deer, Lower Keys Marsh Rabbit and the Eastern Indigo Snake on Big Pine Key/No Name Key started in the mid-1980s. In 1998, Monroe County, the Florida Department of Transportation (FDOT) and the Department of Community Affairs (DCA) signed a Memorandum of Agreement in which they committed to develop a Habitat Conservation Plan (HCP) for these two Keys. The HCP was completed in April 2003.

The Livable CommuniKeys Program (LCP), Master Plan for Future Development of Big Pine Key and No Name Key was adopted on August 18, 2004, pursuant to Ordinance 029-2004. The LCP envisioned the issuance of 200 residential dwelling units over 20 year horizon at a rate of roughly 10 per year. A minimum of twenty percent (20%) of the 10 units per year is to be set aside for affordable housing development (e.g. 2 units per year set aside for affordable housing.)

On June 9, 2006, a Federal Incidental Take Permit (#TE083411-0, ITP) from the U.S. Federal Fish and Wildlife Commission was issued to three (3) permittees: Monroe County, Florida Department of Transportation, and the Florida Department of Community Affairs. The ITP ensures that development bears its fair share of required mitigation and that the take of the covered species is minimized and mitigated.

RATE OF GROWTH ORDINANCE (ROGO) ANALYSIS

| UNINCORPORATED COUNTY MARKET RATE AND AFFORDABLE ROGO HISTORICAL DATA YEARS 1-29 | | | | |
|---|---|---|--|---|
| ROGO Year | Market Rate ROGO Allocations Available | Market Rate ROGO Awarded | Affordable Housing ROGO Allocations Available | Affordable Housing ROGO Awarded* |
| Year 1 (July 14, 1992 –July 13, 1993) | 204 | 204 | 52 | 11 |
| Year 2 (July 14, 1993 –July 13, 1994) | 243 | 231 | 52 | 9 |
| Year 3 (July 14, 1994 –July 13, 1995) | 246 | 249 | 52 | 10 |
| Year 4 (July 14, 1995 –July 13, 1996) | 245 | 263 | 52 | 40 |
| Year 5 (July 14, 1996 –July 13, 1997) | 215 | 218 | 52 | 23 |
| Year 6 (July 14, 1997 –July 13, 1998) | 211 | 197 | 77 | 56 |
| Year 7 (July 14, 1998 –July 12, 1999) | 101 | 102 | 30 | 9 |

| | | | | |
|---|--------------|--------------|---------------------------------|---------------|
| Year 8 (July 13, 1999 –July 14, 2000) | 127 | 136 | 109 | 66 |
| Year 9 (July 13, 2000 –July 14, 2001) | 127 | 129 | 224 | 203 |
| Year 10 (July 14, 2001 –July 15, 2002) | 102 | 102 | 31 | 58 |
| Year 11 (July 16, 2002 –July 14, 2003) | 127 | 127 | 31 | 31 |
| Year 12 (July 13, 2003–July 14, 2004) | 127 | 127 | 31 | 21 |
| Year 13 (July 14, 2004 –July 13, 2005) | 96 | 96 | 29 | 16 |
| Year 14 (July 14, 2005 –July 13, 2006) | 126 | 126 | 236 | 271 |
| Year 15 (July 14, 2006 –July 13, 2007) | 126 | 129 | 49 | 17 |
| Year 16 (July 14, 2007 –July 14, 2008) | 126 | 126 | 68 | 100 |
| Year 17 (July 15, 2008 –July 13, 2009) | 206 | 242 | 67 | 36 |
| Year 18 (July 14, 2009 –July 12, 2010) | 126 | 128 | 71 | 0 |
| Year 19 (July 13, 2010 –July 12, 2011) | 126 | 119 | 71 | 0 |
| Year 20 (July 13, 2011 –July 13, 2012) | 126 | 92 | 71 | 4 |
| Year 21 (July 13, 2012 –July 13, 2013) | 126 | 43 | 71 | 0 |
| Year 22 (July 13, 2013 –July 13, 2014) | 126 | 90 | 71 | 9 |
| Year 23 (July 13, 2014 –July 13, 2015) | 126 | 106 | 71 | 1 |
| Year 24 (July 13, 2015 –July 13, 2016) | 126 | 126 | 71 | 45 |
| Year 25 (July 12, 2016 –July 12, 2017) | 126 | 126 | 742 | 6 |
| Year 26 (July 13, 2017 –July 12, 2018) | 126 | 126 | 587 | 12 |
| Year 27 (July 13, 2018 –July 12, 2019) | 126 | 124 | 565 | 1 |
| Year 28 (July 13, 2019 –July 12, 2020) | 126 | 111 | 332 | 343 |
| Year 29 (July 13, 2020 –July 12, 2021) | 64 | 64 | 63 | 11 |
| Totals | 4,015 | 3,886 | N/A (not cumulative) | 1,409* |

*Does not include Affordable Housing ROGO allocations reserved by the BOCC.

Source: *Monroe County 2010-2030 Technical Document & Data from Quarterly ROGO Result Reports for Years 18-29; and ROGO yearly tracking data.*

There is a time lapse which occurs between the ROGO allocation date and the permit issuance date. An allocation award expires when its corresponding building permit is not picked up after sixty (60) days of notification by certified mail of the award, or upon expiration of the issued permit. The historical data presented in the table above do not include allocations issued in Key West, Key Colony Beach, Layton, Islamorada, or Marathon.

NON-RESIDENTIAL RATE OF GROWTH ORDINANCE (NROGO)

Monroe County adopted the Non-Residential Rate of Growth (NROGO) in 2001 in order to ensure a reasonable balance between the amount of future non-residential development and the needs of a slower growing residential population.

Monroe County Comprehensive Plan Policy 101.4.1 limits the County’s availability of nonresidential square footage that may be permitted. This policy assures that the balance of residential to nonresidential development is maintained.

Policy 101.4.1 states:

“Monroe County shall maintain a Permit Allocation System for new nonresidential floor area, known as the Nonresidential Rate of Growth Ordinance (NROGO) System. Monroe County shall maintain a balance between residential and nonresidential growth by limiting the floor area of new nonresidential development available within the County to maintain a maximum of 47,083 square feet of floor area per NROGO year. The nonresidential allocation allowed by this policy shall be distributed on an annual basis, pursuant to Policy 101.4.3. The NROGO allocation system shall apply within the unincorporated area of the county, excluding areas within the county mainland and within the Ocean Reef planned development (Future development in the Ocean Reef planned development is based upon the December 2010 Ocean Reef Club Vested Development Rights Letter recognized and issued by the Department of Community Affairs).”

Section 138-51 of the LDC establishes the annual award distribution of NROGO allocations.

Sec. 138-51 NROGO allocations.

Maximum amount of available floor area for the annual nonresidential ROGO allocations. The annual amount of floor area available for allocation under NROGO shall be 47,083 square feet. Beginning NROGO Year 22 (July 13, 2013), this floor area shall be distributed to each of subareas as provided in the following table:

| ROGO subarea | Annual NROGO allocation |
|---------------------|--------------------------------|
| Upper | 22,944 SF |
| Lower | 21,749 SF |
| Big Pine/No Name | 2,390 SF |
| Total | 47,083 SF |

NON-RESIDENTIAL RATE OF GROWTH ORDINANCE (NROGO) ANALYSIS

A summary of square footage of non-residential floor area previously made available and allocated in the unincorporated Keys from Year 14 (2006) to Year 29 (2021) is shown below.

| NROGO ALLOCATIONS FOR UNINCORPORATED MONROE COUNTY YEAR 14 (2006) TO YEAR 29 (2021) | | |
|--|-------------------------|----------------------------------|
| (Excluding Big Pine & No Name Key) | | |
| Year | Amount Available | Total Allocations Awarded |
| Year 14 (2006) | 16,000 sq/ft | 12,594 sq/ft |
| Year 15 (2007) | 18,000 sq/ft | 12,500 sq/ft |
| Year 16 (2008) | 35,000 sq/ft | 17,938 sq/ft |
| Year 17 (2009) | 30,000 sq/ft | 13,056 sq/ft |
| Year 18 (2010) | 20,000 sq/ft | 6,355 sq/ft |
| Year 19 (2011) | 20,000 sq/ft | 6,116 sq/ft |
| Year 20 (2012) | 44,700 sq/ft | 8,234 sq./ft |
| Year 21 (2013) | 44,700 sq/ft | 2,500 sq/ft |
| Year 22 (2014) | 47, 083 sq/ft | 7,395 sq/ft |
| Year 23 (2015) | 47, 083 sq/ft | 2,484 sq/ft |
| Year 24 (2016) | 47, 083 sq/ft | 1,756 sq/ft |
| Year 25 (2017) | 47, 083 sq/ft | 3,558 sq/ft |
| Year 26 (2018) | 47, 083 sq/ft | 15,678 sq/ft |
| Year 27 (2019) | 47, 083 sq/ft | 11,092 sq/ft |
| Year 28 (2020) | 47, 083 sq/ft | 298 sq/ft |
| Year 29 (2021) | 47, 083 sq/ft | 10,995 sq/ft |

NROGO for the Big Pine/No Name Key subarea is treated differently given the Habitat Conservation Plan (HCP) for the Key Deer and other protected species and the USFWS issued Incidental Take Permit (ITP). Annually the amount of new nonresidential floor area allocated to the Big Pine/No Name Key subarea is 2,390 square feet. A summary of allocations in these environmentally sensitive keys is shown below.

| NROGO ALLOCATIONS FOR BIG PINE/NO NAME KEYS YEAR 15 (2007) – YEAR 29 (2021) | | | |
|--|------------------|-----------------------------|----------------------------------|
| Year | Available | Number of Applicants | Total Allocations Awarded |
| Year 15 (2007) | 9,082 sq/ft | 2 | 5,000 sq/ft |
| Year 16 (2008) | 0 sq/ft | 2 | 3,809 sq/ft |
| Year 17 (2009) | 5,000 sq/ft | 0 | 0 sq/ft |
| Year 18 (2010) | 2,390 sq/ft | 0 | 0 sq/ft |
| Year 19 (2011) | 2,390 sq/ft | 0 | 384 sq/ft |
| Year 20 (2012) | 2,390 sq/ft | 4 | 7,500 sq/ft |
| Year 21 (2013) | 6,729 sq/ft | 3 | 5,240 sq/ft |
| Year 22 (2014) | 2,390 sq/ft | 1 | 1,011sq/ft |
| Year 23 (2015) | 2,390 sq/ft | 2 | 728 sq/ft |
| Year 24 (2016) | 2,390 sq/ft | 0 | 0 sq/ft |

| | | | |
|----------------|-------------|---|---------|
| Year 25 (2017) | 2,390 sq/ft | 0 | 0 sq/ft |
| Year 26 (2018) | 2,390 sq/ft | 0 | 0 sq/ft |
| Year 27 (2019) | 2,390 sq/ft | 0 | 0 sq/ft |
| Year 28 (2020) | 2,390 sq/ft | 0 | 0 sq/ft |
| Year 29 (2021) | 2,390 sq/ft | 0 | 0 sq/ft |

BUILDING PERMIT DATA

There were 5,620 dwelling units that received a building permit from January 1, 2000, to December 31, 2020. Of these units, approximately 86.6 percent were single family homes and 7.8 percent were mobile homes and recreational vehicles (RV). An average of 268 new and replacement dwelling units per year were permitted from 2000 to 2020. Of the 5,620 dwelling unit permits issued, 2,324 were the result of obtaining a ROGO allocation. Of the 5,620 dwelling units permits issued, a total of 5,207 dwelling units received a certificate of occupancy.

| RESIDENTIAL/TRANSIENT BUILDING PERMIT ACTIVITY JANUARY 1, 2000 – DECEMBER 31, 2020 | | | | | | | | |
|---|----------------------|---------------|---------------------|-------------------------|----------------------|-----------------------------|----------------------------------|--------------------|
| Year | Single Family | Duplex | Multi Family | Mobile Home / RV | Hotel / Motel | Total Permits Issued | Permits Issued Under ROGO | Received CO |
| January 1, 2000-December 31, 2000 | 169 | 0 | 35 | 49 | 34 | 287 | 92 | 372 |
| January 1, 2001-December 31, 2001 | 153 | 0 | 13 | 55 | 1 | 222 | 118 | 261 |
| January 1, 2002-December 31, 2002 | 200 | 0 | 16 | 47 | 1 | 264 | 181 | 243 |
| January 1, 2003-December 31, 2003 | 228 | 0 | 12 | 38 | 28 | 306 | 161 | 290 |
| January 1, 2004-December 31, 2004 | 241 | 0 | 54 | 29 | 0 | 324 | 105 | 288 |
| January 1, 2005-December 31, 2005 | 361 | 8 | 2 | 28 | 0 | 399 | 160 | 288 |
| January 1, 2006-December 31, 2006 | 376 | 0 | 2 | 14 | 0 | 392 | 198 | 289 |
| January 1, 2007-December 31, 2007 | 380 | 0 | 0 | 13 | 0 | 393 | 103 | 317 |
| January 1, 2008-December 31, 2008 | 168 | 1 | 3 | 12 | 0 | 184 | 45 | 236 |
| January 1, 2009-December 31, 2009 | 197 | 0 | 0 | 4 | 0 | 201 | 4 | 140 |
| January 1, 2010-December 31, 2010 | 222 | 0 | 0 | 5 | 1 | 228 | 5 | 137 |
| January 1, 2011-December 31, 2011 | 162 | 0 | 0 | 2 | 0 | 164 | 165 | 202 |
| January 1, 2012-December 31, 2012 | 109 | 0 | 12 | 7 | 0 | 128 | 175 | 218 |
| January 1, 2013-December 31, 2013 | 174 | 0 | 0 | 25 | 0 | 199 | 103 | 144 |
| January 1, 2014-December 31, 2014 | 256 | 0 | 1 | 46 | 0 | 303 | 93 | 195 |
| January 1, 2015-December 31, 2015 | 209 | 0 | 44 | 27 | 1 | 281 | 197 | 267 |

| | | | | | | | | |
|---|--------------|----------|------------|------------|-----------|--------------|--------------|--------------|
| January 1, 2016- December 31, 2016 | 252 | 0 | 4 | 12 | 1 | 269 | 165 | 226 |
| January 1, 2017- December 31, 2017 | 199 | 0 | 28 | 4 | 1 | 232 | 67 | 232 |
| January 1, 2018- December 31, 2018 | 302 | 0 | 9 | 7 | 0 | 318 | 64 | 226 |
| January 1, 2019- December 31, 2019 | 293 | 0 | 1 | 5 | 0 | 299 | 70 | 319 |
| January 1, 2020- December 31, 2020 | 216 | 0 | 4 | 7 | 0 | 227 | 123 | 317 |
| TOTAL | 4,867 | 9 | 240 | 436 | 68 | 5,620 | 2,324 | 5,207 |
| <i>Source: Monroe County Growth Management, August 2021</i> | | | | | | | | |

A total of 4,057 dwelling units were demolished from 2000 to December 31, 2020. The highest demolition rate occurred in years 2018 and 2019 with 693 units demolished, presumably in response to damage incurred by Hurricane Irma in September, 2017. An average of 193 dwelling units were demolished per year between 2000 and 2020. At this time it is not possible to determine, whether a demolition was for a single family, a mobile home, etc.

| HOUSING DEMOLITION PERMITS | |
|---|--------------------------------|
| Year | Residential Demolitions |
| January 1, 2000-December 31, 2000 | 98 |
| January 1, 2001-December 31, 2001 | 157 |
| January 1, 2002-December 31, 2002 | 140 |
| January 1, 2003-December 31, 2003 | 143 |
| January 1, 2004-December 31, 2004 | 218 |
| January 1, 2005-December 31, 2005 | 341 |
| January 1, 2006-December 31, 2006 | 336 |
| January 1, 2007-December 31, 2007 | 241 |
| January 1, 2008-December 31, 2008 | 146 |
| January 1, 2009-December 31, 2009 | 129 |
| January 1, 2010-December 31, 2010 | 239 |
| January 1, 2011-December 31, 2011 | 96 |
| January 1, 2012-December 31, 2012 | 106 |
| January 1, 2013-December 31, 2013 | 120 |
| January 1, 2014-December 31, 2014 | 132 |
| January 1, 2015-December 31, 2015 | 140 |
| January 1, 2016- December 31, 2016 | 152 |
| January 1, 2017- December 31, 2017 | 262 |
| January 1, 2018- December 31, 2018 | 348 |
| January 1, 2019- December 31, 2019 | 345 |
| January 1, 2020- December 31, 2020 | 180 |
| TOTAL | 4,057 |
| <i>Source: Monroe County Growth Management, August 2021</i> | |

II. TRANSPORTATION FACILITIES

Roads are one of the critical public facilities identified for biennial assessment in the Monroe County Land Development (LDC). The Comprehensive Plan and LDC regulations require U.S. 1 to remain at a LOS C or higher and that all county roads to remain at a LOS D or higher. The Monroe County Division of Public Works is charged with maintaining and improving secondary roads within the boundaries of unincorporated Monroe County. The Florida Department of Transportation (FDOT) is responsible for maintaining U.S. 1.

Monroe County has conducted travel time and delay studies of U.S. 1 on an annual or biennial basis since 1991. The data collection for years 1991 through 1996 was conducted by the Monroe County Planning Department, with assistance from the Monroe County Engineering Department, and the Florida Department of Transportation. URS has collected the data for years 1997 through 2017, on behalf of the Monroe County Planning Department with assistance from the agencies identified above. Beginning in 2019, data for the biennial US1 Arterial Travel Time and Delay Study has been collected by AECOM, the County's current transportation consultant.

The following are the travel time/delay data and findings from the 2021 US1 Arterial Travel Time and Delay Study.

The U.S.1 Arterial Travel Time and Delay Study's primary objective is to monitor the level of service on U.S. 1 for concurrency management purposes pursuant to Chapter 163, Florida Statutes and Section 114 of the Monroe County Land Development Code. The study utilizes an empirical relationship between the volume-based capacities and the speed-based LOS methodology developed for U.S. 1 in Monroe County, by the U.S. 1 Level of Service Task Force.

A county-imposed building moratorium results when the measured speeds of a segment OR the overall travel speeds of the entire U.S. 1 fall below the adopted level of service thresholds; segment level failure results in building moratorium specific to the area served by that particular segment and the overall failure would result in a countywide moratorium. Although there has never been a countywide moratorium, Big Pine Key between 1994 and 2002 experienced a localized development moratorium. Due to the significant role of this study in the County's growth management process, the accuracy of data collection and the results of this study are significant.

U.S. 1 (the Overseas Highway) is the only principal arterial serving people and visitors in the Keys. The unique geography, land use patterns and trip making characteristics of the Florida Keys present a challenge in developing and applying a reasonable and acceptable method to assess LOS. Although U.S. 1 in the Florida Keys is predominantly an uninterrupted-flow, two-lane roadway, its uniqueness warrants an alternative LOS evaluation process than found in the *Highway Capacity Manual*.

A uniform method was developed in 1993 and amended December 1997 and February 2021 by the U.S. 1 Level of Service Task Force to assess the level of service on U.S. 1. The adopted method considers both the overall level of service from Key West to the mainland and the level of service on 24 selected segments (See Table 1). The methodology was developed from basic criteria and principles contained in Chapter 7 (Rural Multilane Highways), Chapter 8 (Rural Two-Lane Highways) and Chapter 11 (Urban and Suburban Arterials) of Highway Capacity Manual. The methodology establishes a procedure for using travel speeds as a means of assessing the level of service and reserve capacity of U.S. 1 in the unique setting of the Florida Keys.

The travel speeds for the entire 108-mile stretch of U.S. 1 and the 24 individual segments are established by conducting travel time runs during the peak season. The peak season, for the purpose of this study, has been established by the task force as the six-week window beginning the second week of February and ending the fourth week of March.

Overall speeds are those speeds recorded over the 108-mile length of the Keys between Key West and Miami-Dade County. Overall speeds reflect the conditions experienced by long distance trips or traffic traveling the entire length of the Keys. Given that U.S. 1 is the only principal arterial in unincorporated Monroe County, the movement of long distance traffic is an important consideration.

Monroe County has adopted a LOS C Standard for U.S. 1. Further, 45 mph has been adopted as the LOS C Standard for the entire length of U.S. 1 regardless of the posted speed limits. Under the adopted growth management process, if the overall LOS for U.S. 1 falls below the LOS C Standard, then no additional land development will be allowed in the Florida Keys.

Segment speeds are the speeds recorded within individual links of U.S. 1. The segments were defined by the Task Force to reflect roadway cross-sections, speed limits, and geographical boundaries. Segment speeds reflect the conditions experienced during local trips. Given that U.S. 1 serves as the "main street" of the Keys, the movement of local traffic is also an important consideration on this multi purpose highway.

A comparison of average posted speed limits and the average travel speeds for individual segments leads to the level of service on the respective segments along U.S. 1. The difference between the segment travel speeds and the LOS C Standard is called reserve speed. The reserve speed is converted into an estimated reserve capacity of additional traffic volumes and corresponding additional development. If the travel speed falls below the LOS C Standard, additional trips equivalent to 5% of LOS C capacity are allowed, to accommodate a limited amount of land development to continue until traffic speeds are measured again during the next biennial study or until remedial actions are implemented.

Table 1

| U.S. 1 Segments and Mile Markers | | | | | |
|----------------------------------|-------------|---------------|----------------|-------------|-----------------|
| Segment Number | Mile Marker | Segment Name | Segment Number | Mile Marker | Segment Name |
| 1 | 4-5 | Stock Island | 13 | 47-54 | Marathon |
| 2 | 5-9 | Boca Chica | 14 | 54-60.5 | Grassy |
| 3 | 9-10.5 | Big Coppitt | 15 | 60.5-63 | Duck |
| 4 | 10.5-16.5 | Saddlebunch | 16 | 63-73 | Long |
| 5 | 16.5-20.5 | Sugarloaf | 17 | 73-77.5 | Lower Matecumbe |
| 6 | 20.5-23 | Cudjoe | 18 | 77.5-79.5 | Tea Table |
| 7 | 23-25 | Summerland | 19 | 79.5-84 | Upper Matecumbe |
| 8 | 25-27.5 | Ramrod | 20 | 84-86 | Windley |
| 9 | 27.5-29.5 | Torch | 21 | 86-91.5 | Plantation |
| 10 | 29.5-33 | Big Pine | 22 | 91.5-99.5 | Tavernier |
| 11 | 33-40 | Bahia Honda | 23 | 99.5-106 | Key Largo |
| 12 | 40-47 | 7-Mile Bridge | 24 | 106-112.5 | Cross Key |

The travel time, delay, and distance data were collected by AECOM staff. The data were recorded by date, day of the week, time of the day, and direction. The field data collection took place between March 7, 2021, and March 20, 2021. Fourteen (14) round trips were made to successfully complete the twenty-eight (28) required northbound and southbound runs. These runs represent a sample of two runs of each day of the week. Every one of the twenty-eight travel time run data sheets was quality checked. The seven-day, 24-hour traffic data were collected in Islamorada, Marathon, and Big Pine Key from March 15, 2021, to March 21, 2021, concurrently with the travel time runs.

Traffic Volumes

U.S. 1 is predominately a four-lane facility in Marathon and a two-lane facility in Upper Matecumbe and Big Pine Key. Seven-day continuous traffic counts recorded at three locations along U.S. 1 yielded the following average daily traffic (ADT) and annual average daily traffic (AADT) volumes for 2021. These volumes for 5-day and 7-day are averages of the raw volumes counted. The volumes have been adjusted using 2019 seasonal and axle factors to estimate the 2021 AADT's. The traffic counts were recorded between March 15, 2021, to March 21, 2021.

| LOCATION | 5-DAY ADT | 7-DAY ADT | AADT |
|-------------------------|------------------|------------------|-------------|
| Big Pine Key (MM 29) | 22,799 | 22,009 | 19,427 |
| Marathon (MM 50) | 38,262 | 36,739 | 32,430 |
| Upper Matecumbe (MM 84) | 26,152 | 26,908 | 23,751 |

The 2021 AADT increased in Big Pine (1.99%) and Upper Matecumbe (3.07%) Keys but decreased in Marathon Key (-6.30%) compared to 2017.

Similarly, the 2021 AADT increased in Big Pine (3.59%) and Upper Matecumbe (6.48%) Keys but decreased in Marathon Key (-11.67%) as compared to 2019. A detailed historical comparison of the US 1 traffic counts for the period from 1996 to 2021 is presented in Appendix D. A comparison of the most recent data (2009 to 2021) is presented in a Table and graph on pages 29 and 30, respectively.

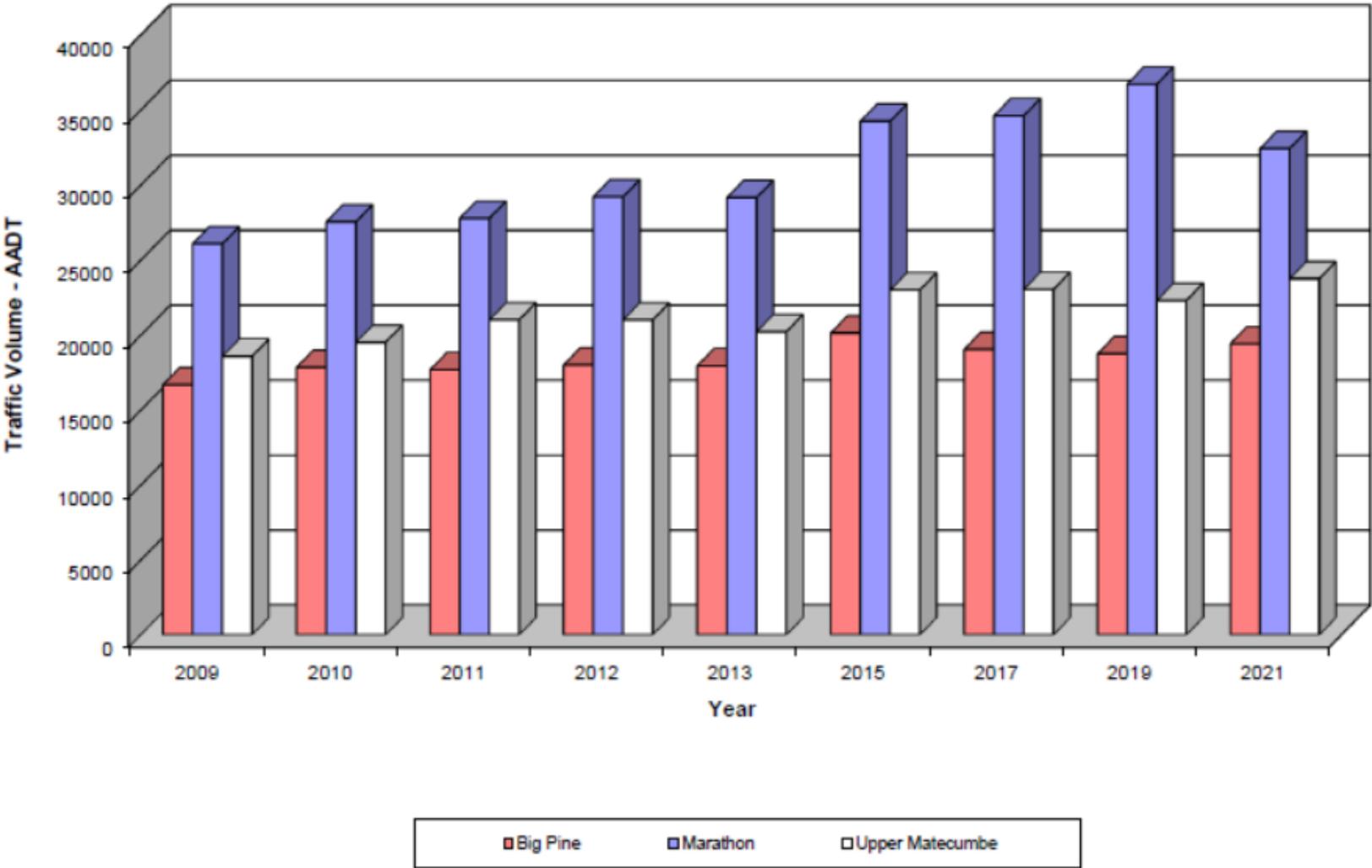
US 1 historical traffic growth is depicted in a regression analysis on page 31. A linear regression analysis of the AADT at each of the three locations over the last 25 years indicates that there is a slight increase in overall traffic growth at the Marathon and Upper Matecumbe count locations, and an overall decreasing trend in traffic volumes for the Big Pine count location (but the last 13-year data shows an increasing trend).

U.S. 1 TRAFFIC COUNTS – HISTORICAL COMPARISON

| | 2011 | | 2012 | | 2013 | | 2015 | | 2017 | | 2019 | | 2021 | |
|------------------------|--------|----------|--------|----------|--------|----------|--------|----------|--------|----------|--------|----------|--------|----------|
| | Count | % Change |
| Big Pine | | | | | | | | | | | | | | |
| 5 – Day Average | 20,468 | -0.88% | 21,056 | 2.87% | 20,986 | -0.33% | 22,833 | 8.80% | 21,915 | -4.02% | 22,408 | 2.25% | 22,799 | 1.74% |
| 7 – Day Average | 20,070 | -0.22% | 20,579 | 2.53% | 20,066 | -2.49% | 22,106 | 10.17% | 21,595 | -2.31% | 21,722 | 0.59% | 22,009 | 1.32% |
| AADT | 17,684 | -0.88% | 18,011 | 1.85% | 17,943 | -0.38% | 20,139 | 12.24% | 19,047 | -5.42% | 18,753 | -1.54% | 19,427 | 3.59% |
| Marathon | | | | | | | | | | | | | | |
| 5 – Day Average | 32,156 | 0.85% | 34,145 | 6.19% | 34,097 | -0.14% | 38,824 | 13.86% | 39,382 | 1.44% | 43,041 | 9.29% | 38,262 | -11.10% |
| 7 – Day Average | 31,097 | 1.79% | 32,985 | 6.07% | 32,783 | -0.61% | 38,144 | 16.35% | 39,239 | 2.87% | 42,530 | 8.39% | 36,739 | -13.62% |
| AADT | 27,782 | 0.85% | 29,208 | 5.13% | 29,153 | -0.19% | 34,243 | 17.46% | 34,609 | 1.07% | 36,716 | 6.09% | 32,430 | -11.67% |
| Upper Matecumbe | | | | | | | | | | | | | | |
| 5 – Day Average | 24,326 | 7.69% | 24,561 | 0.97% | 23,656 | -3.68% | 26,079 | 10.24% | 25,598 | -1.84% | 25,856 | 1.01% | 26,152 | 1.14% |
| 7 – Day Average | 24,508 | 8.27% | 24,936 | 1.75% | 23,164 | -7.11% | 25,817 | 11.45% | 26,126 | 1.20% | 25,837 | -1.11% | 26,908 | 4.15% |
| AADT | 21,017 | 7.69% | 21,009 | -0.04% | 20,226 | -3.73% | 23,002 | 13.72% | 23,043 | 0.18% | 22,305 | -3.20% | 23,751 | 6.48% |

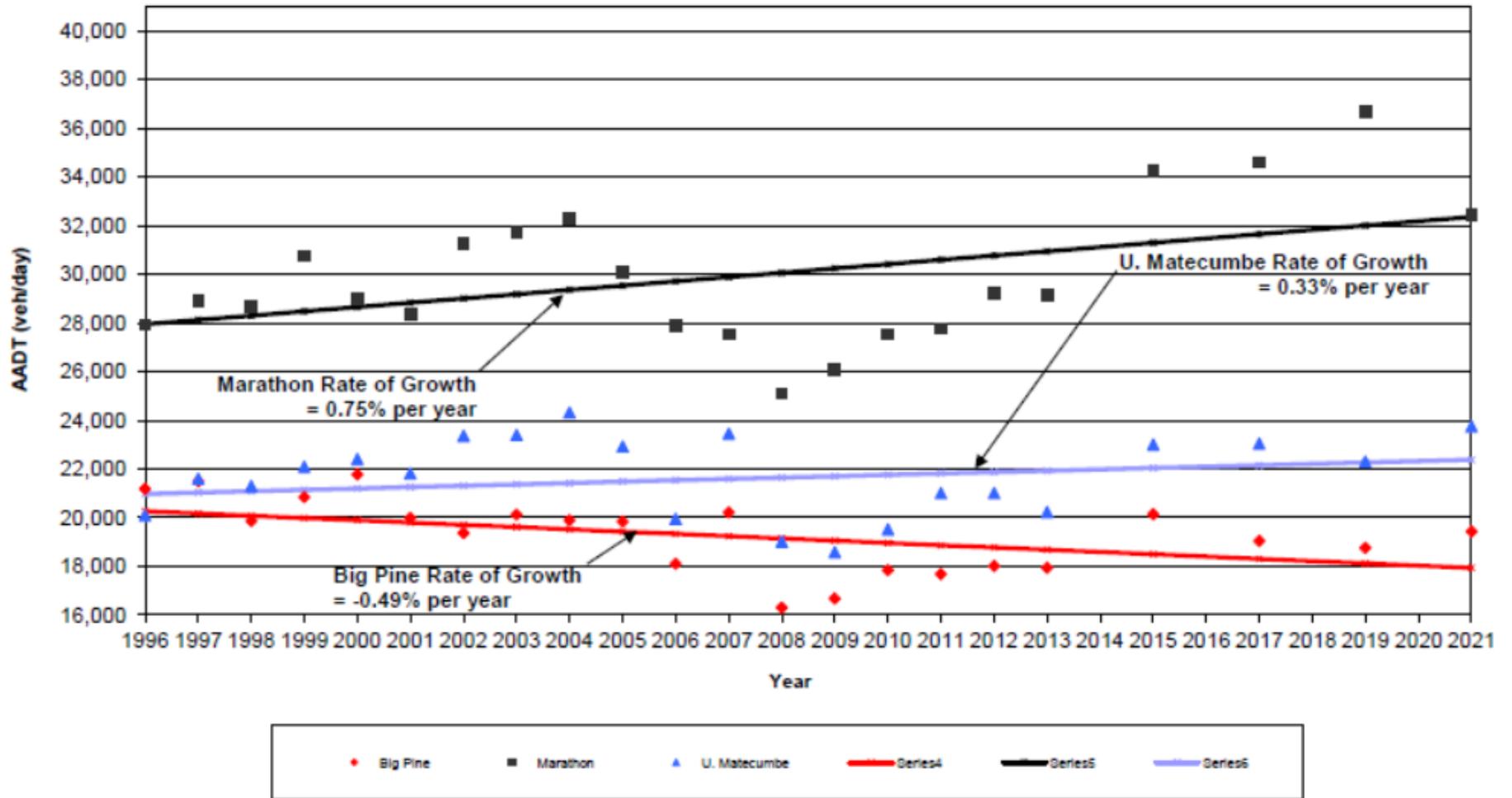
Source: 2021– U.S. 1 Arterial Travel Time and Delay Study-AECOM

U.S. 1 AADT- HISTORICAL COMPARISON



Source: 2021 – U.S. 1 Arterial Travel Time and Delay Study-AECOM

U.S. 1 AADT- HISTORICAL TRAFFIC GROWTH AADT



Source: 2021 – U.S. 1 Arterial Travel Time and Delay Study-AECOM

Overall Speeds

Overall speeds are those speeds recorded over the 108-mile length of US 1 in the Keys between Key West and Miami-Dade County line. Overall speeds reflect the conditions experienced during long distance or through trips. Given that U.S. 1 is the only principal arterial in Monroe County, the movement of through traffic is an important consideration.

The levels of service (LOS) criteria for overall speeds on U.S. 1 in Monroe County, as adopted by the Task Force, are as follows:

| | |
|--------------|---------------------------|
| LOS A | 51.0 mph or above |
| LOS B | 50.9 mph to 48 mph |
| LOS C | 47.9 mph to 45 mph |
| LOS D | 44.9 mph to 42 mph |
| LOS E | 41.9 mph to 36 mph |
| LOS F | below 36 mph |

The overall median speed during the 2021 ATTDS was 45.5 mph, which is 0.9 mph higher than the 2019 median speed of 44.6 mph, and 0.5 mph lower than the 2017 median speed of 46 mph. The median speed corresponds to LOS C. The highest overall speed recorded during the 14-day ATTDS was 49.6 mph (0.9 mph lower than the 2019 highest overall speed of 50.5 mph), which occurred on Monday, March 15, 2021 in the southbound direction. The lowest overall speed recorded was 35.5 mph (2.3 mph lower than the 2019 lowest overall speed of 37.8 mph), which occurred on Saturday, March 20, 2021 in the southbound direction.

Segment Speeds

Segment speeds are the speeds recorded within individual links of U.S. 1. The segments were defined by the Task Force to reflect roadway cross-sections, speed limits, and geographical boundaries. Segment speeds reflect the conditions experienced during local trips. Given that U.S. 1 serves as the "main street" of the Keys, the movement of local traffic is also an important consideration on this multipurpose highway.

The level of service criteria for segment speeds on U.S. 1 in Monroe County depends on the flow characteristics and the posted speed limits within the given segment. The criteria, listed by type of flow characteristic, are summarized below.

Interrupted Flow

| |
|--------------------------|
| LOS A ≥ 35 mph |
| LOS B ≥ 28 mph |
| LOS C ≥ 22 mph |
| LOS D ≥ 17 mph |
| LOS E ≥ 13 mph |
| LOS F < 13 mph |

Uninterrupted Flow

LOS A 1.5 mph above speed limit

LOS B 1.5 mph below speed limit

LOS C 4.5 mph below speed limit

LOS D 7.5 mph below speed limit

LOS E 13.5 mph below speed limit

LOS F more than 13.5 mph below speed limit

For all “uninterrupted” segments containing isolated traffic signals, the travel times were reduced by 35 seconds per signalized intersection and 3 seconds per pedestrian signal to account for delay due to signals. The Marathon and the Stock Island segments are considered “interrupted” flow facilities, which are evaluated using the interrupted flow LOS criteria shown above. Therefore, no adjustments (to account for delay at signals) were made to travel times in these segments.

The segment limits, median travel speeds, and Level of Service (for 2017 and 2021) for each segment are presented in Figure 3. The median segment speed ranged from 59.9 mph in the Boca Chica segment to 34.7 mph in the Plantation segment. The following is a summary of LOS changes, as compared to 2017:

| <u>LOS A</u> | <u>LOS B</u> | <u>LOS C</u> | <u>LOS D</u> | <u>LOS E</u> |
|----------------------|--------------|---------------------|------------------|-----------------------|
| (+) Stock Island (1) | | (-) Plantation (21) | (-) Windley (20) | (-) U. Matecumbe (19) |
| (+) Ramrod (8) | | (-) Cross (24) | | |
| (+) Big Pine (10) | | | | |
| (+) Bahia Honda (11) | | | | |
| (+) Tea Table (18) | | | | |

Compared to 2017 results, the median segment speeds increased in 13 of the 24 segments, ranging between 0.2 mph and 10.6 mph, and decreased in 11 segments, ranging from -0.1 mph to -5.8 mph.

The largest increase in speed (+10.6 mph) was recorded in Segment # 1 (Stock Island – MM 4.0 to MM 5.0); The largest reduction in speed (-5.8 mph) was recorded in Segment # 21 (Plantation – MM 86.0 to MM 91.5).

Compared to 2019 results, the LOS increased in seven of the 24 segments, and decreased in two segments. The LOS did not change in the remaining segments. The most significant LOS changes recorded in Segments # 18 (Tea Table – MM 77.5 to MM 79.5; LOS changed from ‘D’ to LOS ‘A’), # 20 (Windley – MM 84.0 to MM 86.0; LOS changed from ‘D’ to LOS ‘C’), # 21 (Plantation – MM 86.0 to MM 91.5; LOS changed from ‘D’ to LOS ‘C’), # 16 (Long – MM 63.0 to MM 73.0; LOS changed from ‘B’ to LOS ‘C’), and # 24 (Cross – MM 106.0 to MM 112.5; LOS changed from ‘B’ to LOS ‘C’).

Compared to 2019 results, the median segment speeds increased in 15 of the 24 segments, ranging between 0.3 mph and 7.0 mph, and decreased in nine segments, ranging from -0.1 mph to -2.1 mph. The largest increase in speed (+7.0 mph) was recorded in Segment # 1 (Stock Island – MM

4.0 to MM 5.0); The largest reduction in speed (-2.1 mph) was recorded in Segment # 16 (Long – MM 63.0 to MM 73.0).

Reserve Capacities

The difference between the median speed and the LOS C Standard speed gives the reserve speed, which in turn can be converted to an estimated reserve capacity. The overall median speed of 45.5 mph compared to the LOS C standard of 45 mph results in a positive overall reserve speed of 0.5 mph. This reserve speed is converted into an estimated number of reserve trips using the formula below:

$$\text{Reserve Volume} = \frac{\text{Reserve Speed} \times K \times \text{Overall Length}}{\text{Trip Length}}$$

$$\text{Reserve Volume} = \frac{\text{Reserve speed} \times 1656 \text{ daily trips/mph} \times 112 \text{ miles}}{10 \text{ miles}}$$

Applying the formula for reserve volume to each of the 24 segments of US 1 individually gives maximum reserve volumes for all segments totaling 105,865 trips. These individual reserve volumes may be unobtainable, due to the constraint imposed by the overall reserve volume.

County regulations and FDOT policy allow segments that fail to meet the LOS C standards to receive an allocation not to exceed five percent below the LOS C standard. The so-called five percent allocations were calculated for such segments as follows:

$$5\% \text{ Allocation} = \frac{(\text{median speed} - 95\% \text{ of LOS C}) \times 1656 \times \text{Length}}{\text{Trip Length}}$$

In 2021, there were two (2) segments identified to be functioning below the LOS C threshold - Upper Matecumbe (Segment #19) and Windley (Segment #20). Both segments are in the Village of Islamorada.

The two segments identified above have depleted their reserve capacities, leaving -2,187 trips in Upper Matecumbe (Segment #19) and 271 trips in Windley (Segment #20) based on the 5% below LOS C allocation.

The table on page 34 details the segment levels of service and reserve capacity values for each segment.

2021 LEVEL OF SERVICE AND RESERVE CAPACITY

| SEGMENT | LENGTH (miles) | FACILITY TYPE | POSTED SPEED | | ADJ. FOR SIGNAL (mph) | ADJUSTED LOS C CRITERIA (mph) | MEDIAN TRAVEL SPEED (mph) | LOS | RESERVE SPEED (mph) | 2021 | | 2017 |
|-------------------------------|-------------------|----------------------------|-----------------|------------------|--------------------------------|--|------------------------------------|-----|---------------------------|-------------------|------------------------|-------------------|
| | | | Limits (mph) | Average (mph) | | | | | | MAXIMUM RESERVE | 5% ALLOCATION | MAXIMUM RESERVE |
| | | | | | | | | | | VOLUME (trips) | BELOW LOS C (trips) | VOLUME (trips) |
| 1 Stock Island (4.0 - 5.0) | 1.10 | 4-L/D | 30/35/45 | 40.1 | N/A | 22.0 | 40.0 | A | 18.0 | 3,279 | 3,474 | 1,348 |
| 2 Boca Chica (5.0- 9.0) | 3.9 | 4-L/D | 45/55 | 54.7 | N/A | 50.2 | 59.9 | A | 9.7 | 6,265 | 7,876 | 6,071 |
| 3 Big Coppitt (9.0- 10.5) | 1.5 | 2-L/U | 45/55 | 46.3 | N/A | 41.8 | 47.5 | B | 5.6 | 1,391 | 1,921 | 1,341 |
| 4 Saddlebunch (10.5- 16.5) | 5.8 | 2-L/U | 45/55 | 53.6 | N/A | 49.1 | 53.5 | B | 4.3 | 4,130 | 6,513 | 4,034 |
| 5 Sugarloaf (16.5- 20.5) | 3.9 | 2-L/U | 45 | 45.0 | 6.8 | 33.7 | 48.8 | A | 15.1 | 9,752 | 10,856 | 7,944 |
| 6 Cudjoe (20.5- 23.0) | 2.5 | 2-L/U | 45 | 45.0 | N/A | 40.5 | 47.9 | A | 7.4 | 3,064 | 3,920 | 3,188 |
| 7 Summertand (23.0- 25.0) | 2.2 | 2-L/U | 45 | 45.0 | N/A | 40.5 | 46.1 | B | 5.6 | 2,040 | 2,791 | 1,639 |
| 8 Ramrod (25.0- 27.5) | 2.3 | 2-L/U | 45 | 45.0 | N/A | 40.5 | 46.5 | A | 6.0 | 2,285 | 3,063 | 2,133 |
| 9 Torch (27.5- 29.5) | 2.1 | 2-L/U | 45 | 45.0 | N/A | 40.5 | 48.8 | A | 8.3 | 2,886 | 3,589 | 2,504 |
| 10 Big Pine (29.5- 33.0) | 3.4 | 2-L/U | 45 | 45.0 | 5.9 | 34.6 | 42.7 | A | 8.1 | 4,561 | 5,511 | 1,295 |
| 11 Bahia Honda (33.0- 40.0) | 7.0 | 2-L/U (70%) 4-L/D (30%) | 45/50/55 | 52.4 | N/A | 47.9 | 54.8 | A | 6.9 | 7,998 | 10,730 | 6,723 |
| 12 7-Mile Bridge (40.0- 47.0) | 6.8 | 2-L/U | 45/55 | 54.4 | N/A | 49.9 | 53.2 | B | 3.3 | 3,716 | 6,508 | 3,603 |
| 13 Marathon (47.0- 54.0) | 7.3 | 2-L/U (13%) 4-L/D (87%) | 35/45 | 42.5 | N/A | 22.0 | 39.6 | A | 17.6 | 21,276 | 22,590 | 19,221 |
| 14 Grassy (54.0- 60.5) | 6.4 | 2-L/U | 45/55 | 54.6 | 2.1 | 48.0 | 51.4 | C | 3.4 | 3,603 | 6,183 | 3,286 |
| 15 Duck (60.5- 63.0) | 2.7 | 2-L/U | 55 | 55.0 | N/A | 50.5 | 53.2 | C | 2.7 | 1,207 | 2,344 | 1,252 |
| 16 Long (63.0- 73.0) | 9.9 | 2-L/U | 45/50/55 | 53.4 | N/A | 48.9 | 49.9 | C | 1.0 | 1,639 | 5,619 | 2,459 |
| 17 L Matecumbe (73.0- 77.5) | 4.5 | 2-L/U | 45/50/55 | 52.5 | N/A | 48.0 | 48.2 | C | 0.2 | 149 | 1,939 | 224 |
| 18 Tea Table (77.5- 79.5) | 2.2 | 2-L/U | 45 | 45.0 | N/A | 40.5 | 46.6 | A | 6.1 | 2,222 | 2,965 | (692) |
| 19 U Matecumbe (79.5- 84.0) | 4.1 | 2-L/U | 45 | 45.0 | N/A | 40.5 | 35.3 | E | -5.2 | (3,531) | (2,187) | (883) |
| 20 Windley (84.0- 86.0) | 1.9 | 2-L/U | 45 | 45.0 | N/A | 40.5 | 39.3 | D | -1.2 | (378) | 271 | 157 |
| 21 Plantation (86.0- 91.5) | 5.8 | 2-L/U | 35/45 | 43.0 | 5.9 | 32.6 | 34.7 | C | 2.0 | 1,921 | 3,524 | 3,266 |
| 22 Tavernier (91.5- 99.5) | 8.0 | 4-L/D | 45/50 | 47.2 | 3.1 | 39.6 | 49.4 | A | 9.8 | 12,983 | 15,580 | 8,876 |
| 23 Key Largo (99.5- 106.0) | 6.8 | 4-L/D | 45 | 45.0 | 5.4 | 35.1 | 45.0 | A | 9.9 | 11,148 | 13,095 | 8,333 |
| 24 Cross (106.0- 112.5) | 6.2 | 2-L/U | 45/55 | 51.4 | N/A | 46.9 | 49.1 | C | 2.2 | 2,259 | 4,618 | 5,852 |
| Overall | 108.3 | | | | | 45.0 | 45.5 | C | 0.5 | N/A | | |

Source: 2021- U.S. I Arterial Travel Time and Delay Study-AECOM

SUMMARY

The following is a summary of the 2021 Travel Time and Delay Study results as compared to the 2017 Travel Time and Delay Study:

- a) The average traffic volumes have increased in Big Pine (2.00%) and Upper Matecumbe (3.07%) Keys but have decreased in Marathon Key (-6.30%) as compared to 2017.
- b) The overall travel speed on US 1 based on the 2021 study is 45.5 mph, which is 0.5 mph lower than the 2017 overall travel speed.
- c) As compared to the 2017 data, the median travel speeds in 13 of the 24 segments have increased. They are:

| | |
|----------------------------|--------------------------|
| - Stock Island (+10.6 mph) | - Torch (+1.1 mph) |
| - Boca Chica (+0.3 mph) | - Big Pine (+3.3 mph) |
| - Big Coppitt (+0.9 mph) | - Bahia Honda (+1.1 mph) |
| - Saddlebunch (+0.2 mph) | - Marathon (+1.7 mph) |
| - Sugarloaf (+0.5 mph) | - Tavernier (+2.0 mph) |
| - Summerland (+1.1 mph) | - Key Largo (+0.6 mph) |
| - Ramrod (+0.4 mph) | |

Median travel speeds in 11 segments have decreased. They are:

| | |
|----------------------------|--|
| - Cudjoe (-0.3 mph) | - L Matecumbe (-1.6 mph) - Village of Islamorada |
| - 7-Mile Bridge (-0.1 mph) | - Tea Table (-1.0 mph) - Village of Islamorada |
| - Grassy (-0.2 mph) | - U Matecumbe (-3.9 mph) - Village of Islamorada |
| - Duck (-0.1 mph) | - Windley (-1.7 mph) - Village of Islamorada |
| - Long (-0.6 mph) | - Plantation (-5.8 mph) - Village of Islamorada |
| - Cross (-3.6 mph) | |

- d) As compared to the 2017 study, there are LOS changes in nine of the 24 segments – the LOS for five segments have improved, and the LOS for four segments have degraded.
- e) Segment #19 (Upper Matecumbe – MM 79.5 – MM 84.0) changed from LOS ‘D’ to ‘E’. Segment # 20 (Windley – MM 84.0 – MM 86.0) LOS changed from LOS ‘C’ to ‘D’. These two segments have no reserve capacity and should be given special attention.
- f) There were two drawbridge delay events during the 2021 study (accounted for 12 minutes, with an average delay of 6 minutes), as compared to no drawbridge delay events during the 2017 study.
- g) There were 10 construction delay events in 2021 (accounted for 2 hours 14 minutes and 56 seconds), as compared to no construction delay events in 2017.

- h) There were 124 signal related delay events in 2021, resulting in 1 hour and 8 seconds of delay, as compared to 2 hours 10 minutes and 29 seconds in 2017. The signal delay events contributed to an average of 2 minutes and 9 seconds of delay per trip, which is lower than the 2017 average signal delay per trip of 4 minutes and 30 seconds.
- i) Segments with reserve speeds of less than or equal to 3 mph should be given particular attention when approving development applications. Based on the 2021 study, there are six segments in this category (same number of segments as in the 2017 study).

| | |
|------------------------------------|-------------------------------|
| - Duck (MM 60.5 – MM 63.0) | - Windley (84.0 – 86.0) |
| - Long (MM 63.0 – MM 73.0) | - Plantation (86.0 – 91.5) |
| - L. Matecumbe (MM 73.0 – MM 77.5) | - Cross (MM 106.0 – MM 112.5) |
| - U. Matecumbe (MM 79.5 – MM 84.0) | |

Following is a summary of the 2021 Travel Time and Delay Study results compared to the 2019 Travel Time and Delay Study:

- a) The average traffic volumes have increased in Big Pine (3.59%) and Upper Matecumbe (6.48%) Keys but have decreased in Marathon Key (-11.67%) as compared to 2019.
- b) The overall travel speed on US 1 based on the 2021 study is 45.5 mph, which is 0.9 mph higher than the 2019 overall travel speed.
- c) As compared to the 2019 data, the median travel speeds in 15 of the 24 segments have increased. They are:

| | |
|---------------------------|---|
| - Stock Island (+7.0 mph) | - Big Pine (+0.3 mph) |
| - Boca Chica (+4.1 mph) | - Bahia Honda (+0.6 mph) |
| - Big Coppitt (+1.4 mph) | - Marathon (+1.7 mph) |
| - Saddlebunch (+1.5 mph) | - Grassy (+0.7 mph) |
| - Sugarloaf (+0.7 mph) | - Windley (+2.3 mph)- Village of Islamorada |
| - Cudjoe (+0.7 mph) | - Tavernier (+2.5 mph) |
| - Summerland (+0.9 mph) | - Key Largo (+0.8 mph) |
| - Torch (+0.7 mph) | |

Median travel speeds in 9 segments have decreased. They are:

| | |
|----------------------------|--|
| - Ramrod (-0.2 mph) | - L Matecumbe (-1.4 mph) - Village of Islamorada |
| - 7-Mile Bridge (-0.2 mph) | - Tea Table (-0.3 mph) - Village of Islamorada |
| - Duck (-0.1 mph) | - U Matecumbe (-1.1 mph) - Village of Islamorada |
| - Long (-2.1 mph) | - Plantation (-0.6 mph)- Village of Islamorada |
| - Cross (-1.1 mph) | |

- d) As compared to the 2019 study, there are LOS changes in nine of the 24 segments – the LOS for seven segments have improved, and the LOS for two segments have degraded.

- e) Segment # 20 (Windley – MM 84.0 – MM 86.0) LOS changed from LOS ‘E’ to ‘D’. The LOS for Segment #19 (Upper Matecumbe – MM 79.5 – MM 84.0) remained at LOS ‘E’. These two segments have no reserve capacity and should be given special attention.
- f) There were two drawbridge delay events during the 2021 study, the same as the 2019 study. Drawbridge delays accounted for 12 minutes, with an average delay of 6 minutes.
- g) There were 10 construction delay events in 2021 (accounted for 2 hours 14 minutes and 56 seconds), as compared to one construction delay event (accounted for 9 minutes and 55 seconds) in 2019.
- h) There were 124 signal related delay events in 2021, resulting in 1 hour and 8 seconds of delay, as compared to 1 hour 51 minutes and 49 seconds in 2019. The signal delay events contributed to 2 minutes and 9 seconds of delay per trip on an average, which is lower when compared to the 2019 average signal delay per trip of 4 minutes.

The following is a list of considerations for review:

- 1) Under the adopted growth management process, if the overall LOS for US 1 falls below the LOS C Standard, then no additional land development will be allowed unless mitigation measures are implemented. Roadway widening is a typical mitigation measure (or capacity improvement) used by most agencies. However, in Monroe County, road widening (specifically along US 1) is restricted by the adopted comprehensive plan policies to preserve and protect the fragile ecological conditions. There are other remedies that could be explored and evaluated to improve the traffic flow and capacity along US 1. Some examples include:
 - Upgrade the traffic signal infrastructure and/or signal timing at signalized intersections along US 1 to enhance traffic flow.
 - Provide or improve transit service or other multi-modal transportation alternatives.
 - Implement active traffic management and Transportation System Management & Operation type improvements, which include real-time monitoring of traffic flow and implementing measures to address traffic congestion.
 - Add turn lanes at strategic locations to improve roadway capacity.
 - Implement access management improvements (consolidate driveways/access points, modify median openings, etc.) to reduce interruptions to US 1 traffic.
 - Provide and/or improve frontage roads to reduce the impacts to US 1 traffic flow. Improve local roads to minimize US 1 being used as a local street for short trips.
 - Do not allow new traffic signals along US 1, if a safe and/or less restrictive alternative (such as indirect left-turns, a roundabout, etc.) can be provided to accommodate traffic movements.

- Conduct speed studies on selected segments of US 1 to confirm if the current posted speed limits are correct and modify, if necessary.
- 2) This is the first Travel Time and Delay Study conducted after the COVID-19 pandemic. The traffic volumes were observed to increase in some areas and decrease in other areas, as compared to 2019 and 2017 studies. Therefore, the travel time impacts due to the pandemic appear to be very minimal.

U.S. 1 is a state maintained roadway. Therefore, any modifications/ improvements to U.S. 1 have to be developed in collaboration with the Florida Department of Transportation.

CONCURRENCY REVIEW - TRANSPORTATION/ROADWAY LEVEL OF SERVICE

The Monroe County Comprehensive Plan and Land Development Code (LDC) require that all development and redevelopment taking place within unincorporated Monroe County do not result in a reduction of the level of service requirements, including transportation facilities. The Monroe County Comprehensive Plan and LDC have adopted level of service (LOS) standards for roads, particularly US Highway 1, which is part of the Florida Department of Transportation (FDOT) State Highway System.

Policy 301.1.2

For U.S. 1, Monroe County hereby adopts a level of service (LOS) standard of C, as measured by the methodology established by the U.S. 1 LOS Task Force and adopted by the Board of County Commissioners in August 1991. The level of service on U.S. 1 shall be maintained within five percent (5%) of LOS C.

Sec. 114-2. - Adequate Facilities and Review Procedures.

(a) Level of Service Standards (LOS). All development shall be served by adequate public facilities in accordance with the following standards:

(1) Transportation/Roadways.

- a. U.S. 1 shall have sufficient available capacity to operate at LOS C for the overall arterial length and the 24 roadway segments of U.S. 1, as measured by the U.S. 1 Level of Service Task Force Methodology, at all intersections and roadway segments. In addition, all segments of U.S. 1, as identified in the U.S. 1 Level of Service Task Force Methodology, which would be impacted by a proposed development's access to U.S. 1, shall have sufficient available capacity to operate at LOS C.
- b. Development may be approved, provided that the development in combination with all other permitted development will not decrease travel speed by more than five percent (5%) below LOS C, as measured by the U.S. 1 Level of Service Task Force Methodology. While development may be approved within 5% of LOS C, the proposed development shall be considered to have an impact that needs mitigation. Development mitigation may be in the form of specific improvements or proportioned shared contribution towards improvements and strategies identified by the County, and/or FDOT to address any level of service

degradation beyond LOS C and/or deficiencies.

This LOS standard is used within the County's Concurrency Management System to review development proposals and ensure that the transportation facilities needed to serve development will be in place when the impacts of the development occur; to evaluate any potential degradation in the adopted LOS; and to determine the need for improvements in order to achieve and maintain the adopted LOS standard.

Policy 101.1.5

Transportation facilities needed to serve new development shall be in place when the impacts of the development occur. If transportation facilities are needed to ensure that the adopted level-of-service standards are achieved and maintained, prior to commencement of construction, a developer is required to enter into a binding and legally enforceable commitment to the County to assure construction or improvement of proportionate share of required improvements, or to assure the provision of the proportionate share contribution of the costs for the necessary transportation facilities. The development of a single family residential unit shall be considered de minimis and shall not be subject to this requirement.

Policy 301.2.3

Monroe County shall not permit new development which would significantly degrade the LOS below the adopted LOS standards on U.S. 1 (overall) unless the proportionate share of the impact is mitigated. The development of one single family residential unit, on a single parcel, shall be considered de minimis and shall not be subject to this requirement. A five percent projected decrease in travel speeds, below LOS C, is a significant degradation in the level of service on U.S. 1. Traffic volume which exceeds the LOS D standard by more than five percent is a significant degradation in the level of service on any other County road.

Although the 2021 US1 Arterial Travel Time and Delay Study shows that overall US1 and all segments within unincorporated Monroe County are operating at a LOS C or greater, per LDC Section 114-2, concurrency review for proposed development within the unincorporated county takes into account all other permitted development since the time of the 2021 study as well. Development may only be approved if the proposed development in combination with all other permitted development will not decrease travel speed by more than five percent (5%) below LOS C for the overall length of US1 or for any individual segment. While development may be approved within 5% of LOS C, the proposed development shall be considered to have an impact that needs mitigation. Concurrency must be satisfied at the time a development permit is issued; at the time a certificate of occupancy; or through a binding contract or agreement for the necessary facility and/or service improvements or proportionate share contribution.

III. POTABLE WATER

The Florida Keys Aqueduct Authority (FKAA) is the sole provider of potable water in the Florida Keys. FKAA's primary water supply is the Biscayne Aquifer, a shallow groundwater source. The FKAA's wellfield is located within an environmentally protected pine rockland forest west of Florida City. The location of the wellfield near Everglades National Park, along with restrictions enforced by state and local regulatory agencies, contributes to the unusually high water quality. These wells contain some of the highest quality groundwater in the state, meeting all regulatory standards prior to treatment. Additionally, the FKAA is continually monitoring, assessing, and working to eliminate potential hazards to our water source, including inappropriate aquifer utilization, unsuitable land uses, and the potential for saltwater intrusion.

The groundwater from the wellfield is treated at the FKAA's Water Treatment Facility in Florida City, which currently has a maximum water treatment design capacity of 29.8 million gallons per day (MGD). The primary water treatment process is a conventional lime softening/filtration water treatment plant and is capable of treating up to 23.8 MGD from the Biscayne Aquifer. The secondary water treatment process is the newly constructed Reverse Osmosis water treatment plant which is capable of producing 6 MGD from the brackish Floridan Aquifer. The product water from these treatment processes is then disinfected and fluoridated. The FKAA treated water is pumped 130 miles from Florida City to Key West supplying water to the entire Florida Keys.

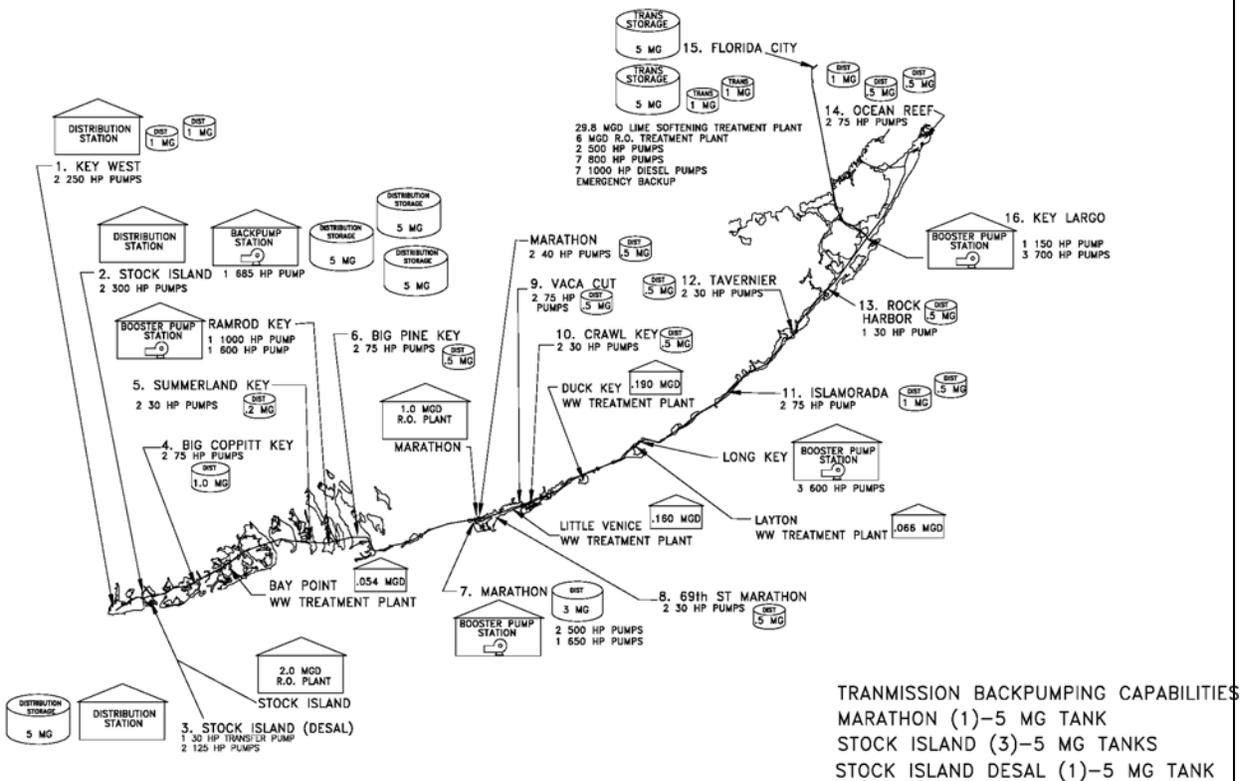
The FKAA maintains storage tank facilities which provide an overall storage capacity of 45.2 million gallons system wide. The sizes of tanks vary from 0.2 to 5.0 million gallons. These tanks are utilized during periods of peak water demand and serve as an emergency water supply. Since the existing transmission line serves the entire Florida Keys (including Key West), and storage capacity is an integral part of the system, the capacity of the entire system must be considered together, rather than in separate service districts.

Also, the two saltwater Reserve Osmosis (RO) plants, located on Stock Island and Marathon, are available to produce potable water under emergency conditions. The RO desalination plants have design capacities of 2.0 and 1.0 MGD, respectively.

At present, Key West and Ocean Reef are the only areas of the County served by a flow of potable water sufficient to fight fires. Outside of Key West, firefighters rely on a variety of water sources, including tankers, swimming pools, and salt water either from drafting sites on the open water or from specially constructed fire wells. Although sufficient flow to fight fires is not guaranteed in the County, new hydrants are being installed as water lines are replaced to make water available for fire-fighting purposes and pump station/tank facilities are being upgraded to provide additional fire flow and pressure. A map of the key FKAA transmission and distribution facilities is shown in Figure 3.1.

Figure 3.1

FLORIDA KEYS AQUEDUCT AUTHORITY
TRANSMISSION & DISTRIBUTION
SYSTEM OVERVIEW
45.2 MG STORAGE CAPACITY



Demand for Potable Water

The Figures 3.2, 3.3 and 3.4 provides an overview of the water demands in the FCAA service area including Water Use Permit (WUP) allocation limits, yearly percent changes, and remaining water allocations. In March 2008, South Florida Water Management District (SFWMD) approved the FCAA’s modification of WUP 13-00005-5-W for a 20-year allocation from the Biscayne and Floridan Aquifers. As shown in Figure 3.5, the WUP provides an annual allocation of 8,751 Million Gallons (MG) or 23.98 MGD and a maximum monthly allocation of 809.01 MG with a limited annual withdrawal from the Biscayne Aquifer of 6,492 MG

In order to meet the requirements of this limitation, the FCAA constructed a new Floridan Aquifer Reverse Osmosis (RO) water treatment system. This RO water treatment system is designed to withdraw brackish water from the Floridan Aquifer, an alternative water source approximately 1,000 feet below the ground surface, and treat the water to drinking water standards. The RO water treatment plant provides added capability to limit Biscayne aquifer withdrawals and is designed to meet current and future water demands. The RO water treatment system provides an additional 6.0 MGD of potable water.

Along with the new reverse osmosis water treatment plant, compliance with withdrawal limits can also be accomplished by using other alternative water sources (blending of the Floridan Aquifer,

reclaimed water and operation of the RO desalination plants), pressure reduction, public outreach, and assistance from municipal agencies in enforcing water conservation ordinances.

| Figure 3.2. Annual Water Withdrawals 2002-2019 | | | | |
|---|-------------------------------|-----------------|-----------------------|---------------------------------------|
| Year | Annual Withdrawal (MG) | % Change | WUP Limit (MG) | WUP +/- Annual Allocation (MG) |
| 2002 | 6,191 | 10.03% | 7,274 | 1,083 |
| 2003 | 6,288 | 1.57% | 7,274 | 986 |
| 2004 | 6,383 | 2.74% | 7,274 | 813 |
| 2005 | 6,477 | 0.16% | 7,274 | 803 |
| 2006 | 6,283 | -2.49% | 7,274 | 964 |
| 2007 | 5,850 | -7.35% | 7,274 | 1,428 |
| 2008 | 5,960 | 1.89% | 8,751 | 2,791 |
| 2009 | 5,966 | 0.09% | 8,751 | 2,785 |
| 2010 | 5,919 | -0.79% | 8,751 | 2,832 |
| 2011 | 6,327 | 6.89% | 8,751 | 2,424 |
| 2012 | 6,042 | -4.50% | 8,751 | 2,709 |
| 2013 | 6,105 | 1.04% | 8,751 | 2,646 |
| 2014 | 6,377 | 4.46% | 8,751 | 2,374 |
| 2015 | 6,530 | 2.40% | 8,751 | 2,221 |
| 2016 | 6,462 | -1.04% | 8,751 | 2,289 |
| 2017 | 6,324 | -2.13% | 8,751 | 2,427 |
| 2018 | 6,526 | 3.10% | 8,751 | 2,225 |
| 2019 | 6,809 | 4.16 | 8,751 | 1,942 |

Source: Florida Keys Aqueduct Authority, 2021

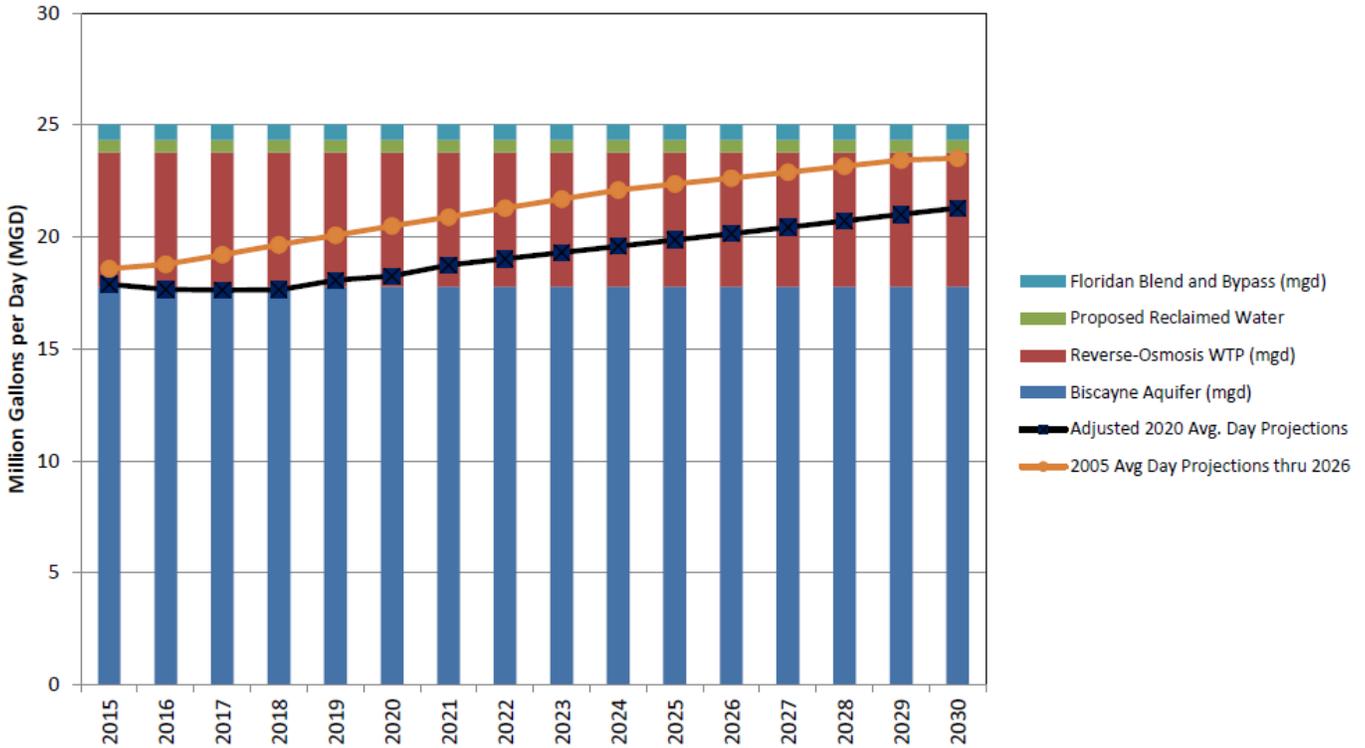
Figure 3.3. 2020-2021 Potable Water Demand Summary

| FLORIDA KEYS AQUEDUCT AUTHORITY | | | | |
|--|----------------------------------|------------------------------|-------------------------------------|--------------------------------------|
| Potable Water Demand Summary - New Water Demand, Actual Water Demand, and Expected Water Demand | | | | |
| Municipality | Year - 2020 | | Year - 2020 | Year 2021 |
| | New Water Service - Gallons/Year | Metered Water - Gallons/Year | Actual Water Demand - Gallons/Year* | Expected Water Demand - Gallons/Year |
| Unincorporated Monroe County | 1,568,600 | 2,258,801,352 | 2,933,092,284 | 2,934,660,884 |
| City of Key West | 1,227,500 | 1,494,197,833 | 1,940,241,505 | 1,941,469,005 |
| City of Marathon | 258,100 | 590,319,098 | 766,539,470 | 766,797,570 |
| City of Key Colony | 23,600 | 116,185,572 | 150,868,957 | 150,892,557 |
| City of Layton | 0 | 10,768,347 | 13,982,883 | 13,982,883 |
| City of Islamorada | 413,000 | 663,275,728 | 861,274,905 | 861,687,905 |
| Entire Florida Keys | 3,490,800 | 5,133,547,930 | 6,666,000,004 | 6,669,490,804 |
| SFWM WUP Annual Allocation | | | 8,751,000,000 | 8,751,000,000 |

*metered + unmetered water demand (ie, flushing, leaks, etc.)

As shown in Figure 3.3, FCAA expected 2021 water demands for the entire Florida Keys is 6,669 Million Gallons and can be accommodated within the South Florida Water Management WUP annual allocation of 8,751 Million Gallons (MG). For unincorporated Monroe County, the 2020 actual demand was 2,933 MG and this is expected to slightly increase to 2,934 MG for 2021.

Figure 3.4. FCAA Water Supply Available vs. Water Demand Projections through 2030



As shown in Figure 3.4, the FKAA water demand projections through 2030, based on the two projections provided by FKAA, can be fulfilled through the use of the Biscayne permitted water supply of 17.79 MGD, the 6.0 MGD RO water treatment plant, the new reclaimed water systems, and the ability to operate the 3.0 MGD RO desalination plants during emergency situations.

As shown in Figure 3.5, in 2020, the FKAA distributed an annual average of 17.23 MGD from the Biscayne Aquifer plus 0.93 MGD from Floridan RO Production. This table also provides the water treatment capacities of the emergency RO plants. Since the emergency RO plants utilize seawater, a WUP is not required for these facilities.

| Figure 3.5 - Projected Water Demand in 2021 (in MG) | | | |
|---|-------------------------------|--------------------------|------------------------------------|
| | FKAA Permit Thresholds | 2020 Water Demand | 2021 Water Demand Projected |
| Annual Allocation (Raw Water) | | | |
| Average Daily Demand | 23.98 | 18.41 | 20.25 |
| Maximum Monthly Demand | 809.01 | 612.65 | 654.20 |
| Annual Demand | 8,751 | 6,736 | 7,392 |
| Biscayne Aquifer Annual Allocation/Limitations (Raw Water) | | | |
| Average Daily Demand | 17.79 | 17.23 | 17.79 |
| Annual Demand | 6,492 | 6,307 | 6,492 |
| Floridan RO Production | | | |
| Average Daily Demand | 6.00 | 0.93 | 0.56 |
| Emergency RO WTP Facilities | | | |
| Kermit L. Lewin Design Capacity | 2.00 (MGD) | 0.00 (MGY) | 0.30 |
| Marathon RO Design Capacity | 1.00 (MGD) | 0.00 (MGY) | 0.00 |
| <i>All figures are in millions of gallons</i> | | | |
| <i>Source: Florida Keys Aqueduct Authority, 2021</i> | | | |

Figure 3.6 provides the amount of water used on a per capita basis. Based on Functional Population and average daily demand, the average water consumption for 2019 was approximately 114 gallons per capita (person), which reflects the entire FKAA service area, including unincorporated Monroe County, Key West, Marathon, Islamorada, Key Colony Beach, and Layton.

Figure 3.6 - Per Capita Water Use

| Year | Functional Population¹ | Daily Demand (gallons)² | Average Per Capita Water Consumption (gallons)² |
|-------------|--|---|---|
| 2000 | 153,080 | 17,016,393 | 111 |
| 2001 | 153,552 | 15,415,616 | 100 |
| 2002 | 154,023 | 16,962,082 | 110 |
| 2003 | 154,495 | 17,228,192 | 112 |
| 2004 | 154,924 | 17,652,596 | 114 |
| 2005 | 156,150 | 17,730,000 | 114 |
| 2006 | 155,738 | 17,287,671 | 111 |
| 2007 | 155,440 | 16,017,315 | 103 |
| 2008 | 154,728 | 16,285,383 | 105 |
| 2009 | 155,441 | 16,345,205 | 105 |
| 2010 | 155,288 | 16,210,959 | 104 |
| 2011 | 156,054 | 17,334,247 | 111 |
| 2012 | 156,391 | 16,508,197 | 106 |
| 2013 | 156,727 | 16,836,164 | 107 |
| 2014 | 157,063 | 17,472,362 | 111 |
| 2015 | 157,400 | 17,890,400 | 114 |
| 2016 | 157,730 | 17,704,100 | 112 |
| 2017 | 158,060 | 17,632,900 | 112 |
| 2018 | 158,391 | 17,643,800 | 113 |
| 2019 | 158,721 | 18,070,000 | 114 |

Source: 1. Monroe County Population Projections - Monroe County Planning Department, 2011
 2. Florida Keys Aqueduct Authority, 2021

Improvements to Potable Water Facilities

FKAA has a 20-year Water System Capital Improvement Master Plan for water supply, water treatment, transmission mains and booster pump stations, distribution mains, facilities and structures, information technology, reclaimed water systems, and Navy water systems.

In 1989, FKAA embarked on the Distribution System Upgrade Program to replace approximately 190 miles of galvanized lines throughout the Keys. FKAA continues to replace and upgrade its distribution system throughout the Florida Keys and the schedule for these upgrades is reflected in their long-range capital improvement plan.

Figure 7 provides the schedule and costs projected for the capital improvements to the potable/alternative water systems planned by the FKAA. The total cost of the scheduled improvements is approximately \$ 169,050,000 million over the next 5 years. These projects are to be funded by the water rate structure, long-term bank loans, and grants.

Figure 7 - FCAA Projected 5 Year Capital Improvement Plan

| | FY 2021 | FY 2022 | FY 2023 | FY 2024 | FY 2025 | Total |
|---|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|
| Repair/upgrade subaqueous crossing | 1,900,000 | | | | | 1,900,000 |
| Repair/upgrade cathodic protection | 2,000,000 | | | | | 2,000,000 |
| Rockland yard building | 750,000 | | | | | 750,000 |
| Grassy Key transmission line replacement | 2,300,000 | | | | | 2,300,000 |
| Stock Island pump station and generator replacement | 3,000,000 | 3,000,000 | | | | 6,000,000 |
| Stock Island RO | 8,000,000 | 25,500,000 | 8,000,000 | | | 41,500,000 |
| Stock Island RO generator | 500,000 | 9,500,000 | | | | 10,000,000 |
| Key West administration building | 11,900,000 | 4,300,000 | | | | 16,200,000 |
| Islamorada transmission line replacement | 200,000 | 13,000,000 | 13,000,000 | | | 26,200,000 |
| Front/Whitehead/Eaton distribution line replacement | 1,750,000 | | | | | 1,750,000 |
| Transmission terminus rehabilitation | | | 1,000,000 | 4,500,000 | | 5,500,000 |
| Cross Key water distribution upgrade | 200,000 | | | | | 200,000 |
| South/United Street water distribution upgrade | | | 1,500,000 | 1,500,000 | | 3,000,000 |
| Utility coordination relocates | 1,700,000 | | | | | 1,700,000 |
| Navy-connection tank feed | 110,000 | | | | | 110,000 |
| Navy-connection A distribution | | 600,000 | 750,000 | 1,500,000 | 1,300,000 | 4,150,000 |
| Navy-connection B distribution | | | 340,000 | | | 340,000 |
| Navy-second feed to Boca Chica | | | 500,000 | | | 500,000 |
| Navy-fire system West | 1,400,000 | | | | | 1,400,000 |
| Navy-fire system East | | 1,000,000 | 1,000,000 | 950,000 | | 2,950,000 |
| No Name Key | 1,300,000 | | | | | 1,300,000 |
| Stock Island garage replacement | | | | | 520,000 | 520,000 |
| Electrical improvement at Florida City -phase 1 | 2,200,000 | 2,000,000 | | | | 4,200,000 |
| Chemical system improvements at Florida City | | | | | 950,000 | 950,000 |
| Box girder bridge coating/coupling | | | 3,000,000 | 6,000,000 | 6,000,000 | 15,000,000 |
| Transmission system valve replacement | | | 500,000 | 1,000,000 | 1,000,000 | 2,500,000 |
| Marathon pump station tank installation | | | | 500,000 | 3,800,000 | 4,300,000 |
| Coco Plum 3 | | | | | 2,300,000 | 2,300,000 |
| Ocean Reef distribution and storage improvements | | | | 3,200,000 | 4,000,000 | 7,200,000 |
| Complete MIU collection system | | | 200,000 | 2,000,000 | | 2,200,000 |
| Roof replacmenet-building K1 | 130,000 | | | | | 130,000 |
| Totals | 39,340,000 | 58,900,000 | 29,790,000 | 21,150,000 | 19,870,000 | 169,050,000 |

Source: Florida Keys Aqueduct Authority, 2020 Budget & Financial Plan

SUMMARY

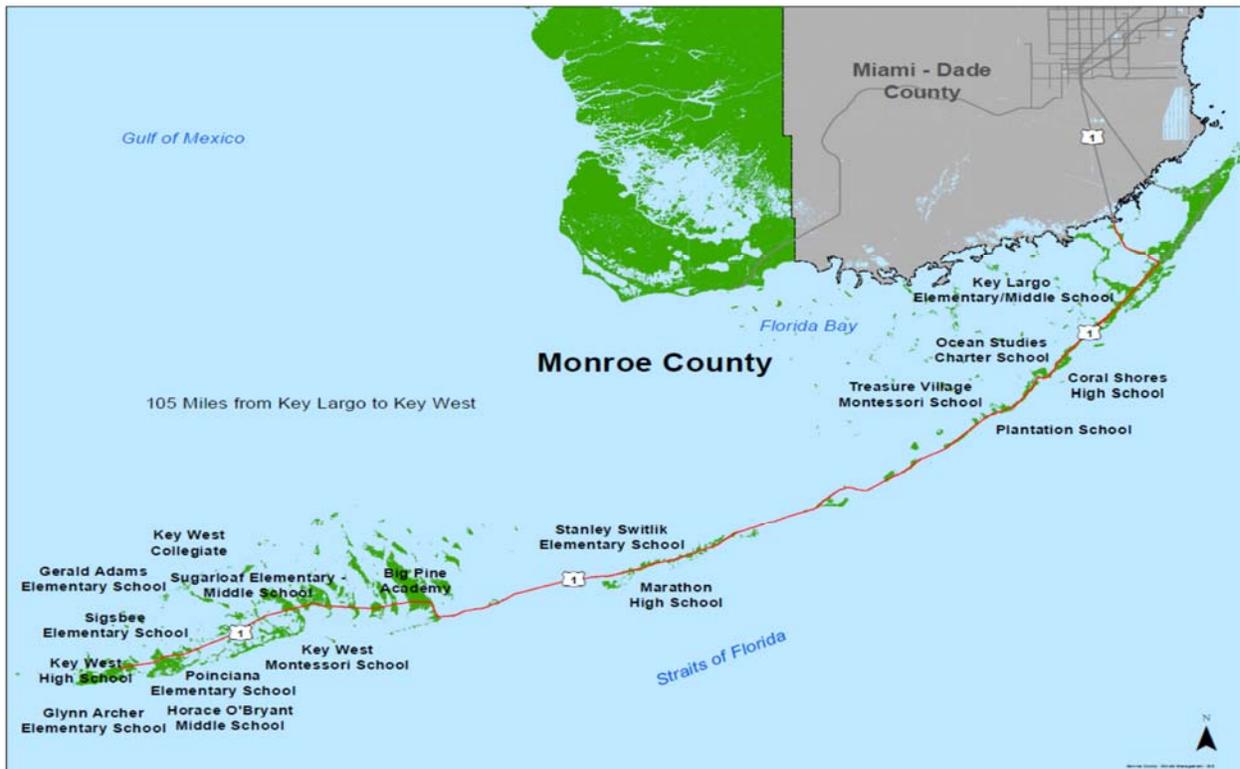
Based on current conditions and projects, an adequate supply of water to meet current and future demands is provided by the following: The Biscayne permitted water supply of 17.79 MGD, the 6.0 MGD RO water treatment plant, the new reclaimed water systems, and the ability to operate the 3.0 MGD RO desalination plants during emergency situations. The FCAA continues to monitor and track conditions and events that could negatively impact the existing water supply. Any such impacts will be evaluated to determine future changes necessary to continue servicing Monroe County with adequate water supply.

IV. EDUCATION FACILITIES

The Monroe County School Board oversees the operation of 10 traditional and 6 charter public schools located throughout the Keys. School Board data includes both unincorporated and incorporated Monroe County. The system consists of three high schools, one middle school, three middle/elementary schools, and four elementary schools. Each school offers athletic fields, computer labs, bus service and a cafeteria. Seven (7) cafeteriums serve as both a cafeteria and an auditorium. In addition to these standard facilities, all high schools and some middle schools offer gymnasiums. All three high schools offer a performance auditorium with a working stage.

The Monroe County school system is divided into three (3) sub-districts (see map below). School concurrency ensures coordination between local governments and school boards in planning and permitting residential developments that affect school capacity utilization rates.

Sub-district 1 covers the Upper Keys from Key Largo to Lower Matecumbe Key and includes the islands that make up Islamorada and Fiesta Key and includes one high school and two elementary/middle schools. Sub-district 2 covers the Middle Keys from Long Key to the Seven Mile Bridge and includes one high/middle school and one elementary school. Sub-district 3 covers the Lower Keys, from Bahia Honda to Key West and includes one high school, one middle school, one elementary/middle school, and three elementary schools.



School concurrency ensures coordination between local governments and school boards in planning and permitting residential developments that affect school capacity utilization rates.

The Florida Inventory of School Houses (FISH) capacity rate is 9,839 students and the Capital Outlay of Full-Time Equivalent (COFTE) is 7,363. The actual utilization during 2020-2021 was 74.83%.

| LOCATION | ACTUAL 2020-2021 FISH CAPACITY | ACTUAL 2019-2020 COFTE | ACTUAL 2020-2021 UTILIZATION |
|---|--------------------------------------|------------------------------|------------------------------------|
| CORAL SHORES SENIOR HIGH | 960 | 742 | 77.00% |
| KEY WEST SENIOR HIGH | 1,349 | 1,197 | 89.00% |
| HORACE O'BRYANT MIDDLE | 1,152 | 1,067 | 93.00% |
| MARATHON SENIOR HIGH | 1,370 | 664 | 48.00% |
| GERALD ADAMS | 631 | 523 | 83.00% |
| PLANTATION KEY SCHOOL | 647 | 590 | 91.00% |
| POINCIANA ELEMENTARY | 672 | 525 | 78.00% |
| SUGARLOAF ELEMENTARY | 935 | 597 | 64.00% |
| STANLEY SWITLIK ELEMENTARY | 736 | 564 | 77.00% |
| KEY LARGO SCHOOL | 1,243 | 795 | 64.00% |
| MAY SANDS SCHOOL | 144 | 99 | 69.00% |
| GLYNN ARCHER ELEMENTARY ¹ | 0 | 0 | 0.00% |
| BIG PINE ACADEMY ¹ | 0 | 0 | 0.00% |
| TOTAL | 10,453 | 7,161 | 68.51% |
| ¹ Data not available in School Work Plan | | | |

The projected COFTE for 2024-2025 is 7,633 students with 77.58 % of utilization.

Annually, prior to the adoption of the district school budget, each school board must prepare a tentative district facility work program that includes a major repair and renovation projects necessary to maintain the educational and ancillary facilities of the district. Some of the items listed in the 2020-2021 Monroe County School District Work Plan include HVAC, flooring, paint, roofing, safety to life, electrical, parking, fencing, maintenance/repair, fire alarms, telephone/intercom systems and closed circuit television for various schools. Other items include concrete repairs, site work and drainage maintenance, plumbing, ADA updates, elevator repair, carpentry and small construction projects and maintenance and repair.

The 2020-2021 Monroe County School District expenditures from local funding sources were \$27,135,024. Additional revenue sources include proceeds from ½ cent sales surtax at \$17,000,000 and funds carried forward at \$31,762,460 were available for this period.

The total project costs for construction, maintenance, repair and renovation during 2020-2021 was \$38,517,735. The projected revenue/expenditures for new construction and remodeling projects

only, for 2021-2022 and 2022-2023 are \$46,326,470 and \$21,913,847, respectively.

SUMMARY

The overall 2020-2021 utilization is 74.83% of the school system capacity and is projected for 2024-2025 at 77.58 % utilization of the school capacity. Enrollment figures for 2020-2021 indicate that there is adequate capacity in the Monroe County school system for the next two years.

V. SOLID WASTE FACILITIES

Solid waste management is a critical issue in the Florida Keys. While problems of landfill sitings, facilities, financing, and hazardous waste disposal have increased throughout Monroe County, the unique setting of the Keys makes waste management even more difficult. The geographic isolation, the limited land area, the environmental constraints, and the presence of nationally significant natural resources adds to the challenge of responsibly and efficiently managing the Keys' solid waste stream.

Comprehensive Plan Policy 801.1.1 establishes the level of service for solid waste as 11.41 pounds per capita per day. Policy 801.4.2 establishes within three (3) years after the adoption of the 2030 Comprehensive Plan, Monroe County shall implement a county-wide, mandatory recycling program for residential and commercial locations. The Comprehensive Plan requires sufficient capacity shall be available at a solid waste disposal site to accommodate all existing and approved development for a period of five years from the projected date of completion of the proposed development of use.

The Monroe County Land Development Code (LDC), in compliance with State concurrency requirements, requires that “Sufficient capacity shall be available at a solid waste disposal site at a level of service of 11.41 pounds per capita per day. The county solid waste and resource recovery authority may enter into agreements, including agreements under F.S. Section 163.01, to dispose of solid waste outside of the county” (LDC, Section 114-2(a)(2)). This regulation went into effect on February 28, 1988 and serves as a level of service (LOS) standard for solid waste disposal.

The LDC also requires that solid waste management plans be completed before any proposed development of a Major Conditional Use is reviewed by the Growth Management Department. Solid waste generation rates and capacity assessments must be submitted for review and coordination with the Public Works Division, Department of Solid Waste/Recycling (PWD-DSW/R).

The table below summarizes historical solid waste generation for the service area.

| Solid Waste Generation in Tons per Year | | | |
|--|------------|-----------|----------|
| FY | FDEP Total | Recycling | Disposal |
| 1998 | N/A | N/A | N/A |
| 1999 | N/A | N/A | N/A |
| 2000 | 158,327 | 59,798 | 131,825 |
| 2001 | 125,893 | 51,435 | 96,075 |
| 2002 | 134,950 | 68,738 | 113,071 |
| 2003 | 134,734 | 34,619 | 113,427 |
| 2004 | 112,102 | 13,757 | 110,333 |
| 2005 | 212,470 | 73,085 | 212,470 |
| 2006 | 200,338 | 12,206 | 200,338 |
| 2007 | 134,467 | 12,497 | 134,467 |
| 2008 | 130,245 | 13,743 | 130,245 |
| 2009 | 116,884 | 12,099 | 95,327 |

| | | | |
|--|---------|---------|---------|
| 2010 | 156,465 | 33,071 | 123,394 |
| 2011 | 125,402 | 27,808 | 97,594 |
| 2012 | 145,889 | 38,985 | 106,904 |
| 2013 | 173,774 | 57,272 | 116,502 |
| 2014 | 177,312 | 61,421 | 115,891 |
| 2015 | 276,710 | 110,140 | 166,570 |
| 2016 | 353,658 | 200,845 | 152,813 |
| 2017 | 656,783 | 352,156 | 304,618 |
| 2018 | 441,165 | 259,322 | 181,843 |
| 2019 | 302,589 | 110,372 | 192,217 |
| <i>Source: Monroe County Technical Document July 2011; Monroe County Public Works 2013 Florida Department of Environmental Protection 2019 Annual Report</i> | | | |
| <i>Data collection calendar year is January 1 to December 31.</i> | | | |
| <i>These are scale tonnages.</i> | | | |
| <i>Fluctuations in yearly data may be a result of major storm events, economic conditions, and other generation factors.</i> | | | |
| <i>FDEP calendar years do not coincide with Monroe County's calendar years, thus creating a differential in datum between departments.</i> | | | |

The historical solid waste generation values for Monroe County show a steady increase of total solid waste generation between the years 1998-2001. During the period 2005-2006 and 2015-2019, the County's solid waste generation was significantly higher. These higher values do not correspond to normal solid waste generation trends within the County and in actuality result from a cluster of outliers. The outliers are functions of favorable economic conditions (greater consumption of goods and services) and storm events that cause a significant amount of over generation due to debris. Furthermore, during the period of 2007-2008, an economic recession affected solid waste generation, significantly reducing standard trends for generation growth.

The tourism industry in the Florida Keys is another large factor in solid waste generation that needs to be accounted for in projected demands calculations. The Monroe County Tourist Development Council estimated 4.3 million county-wide tourist visits occurred in 2011. The County and tourist population are expected to continue increasing, which will impact solid waste generation within the County.

Solid waste is collected by franchise and taken to the three historic landfill sites, which serve as transfer facilities. At the transfer stations, the waste is compacted and loaded on Waste Management, Inc. (WMI) trucks for haul out. Recyclable materials, including white goods, tires, glass, aluminum, plastic bottles, and newspaper are included as part of the solid waste haul out contract. A recent (2009) amendment to the contract includes WMI and the County's commitment to increase annual recycling rate to 40 percent by 2014. Based on the information obtained by Florida Department of Environmental Protection solid waste management this goal was met.

| Solid Waste Transfer Facility Sizes and Capacities | | |
|---|------------|--------------|
| Transfer Facility | Acreage | Capacity |
| Cudjoe Key Transfer Station | 20.2 acres | 200 tons/day |
| Long Key Transfer Station | 29.5 acres | 400 tons/day |
| Key Largo Transfer Station | 15.0 acres | 200 tons/day |
| <i>Source: Waste Management Inc., 1991</i> | | |

Any future declines will also reflect the diligent efforts by the citizens of the County to reduce the amount of solid waste they generate, through the conscious consumption of goods, composting, mulching or other sustainability efforts. Additional factors which are less easily quantifiable could also affect solid waste generation. The amount of construction taking place in the County, and thus the amount of construction debris being disposed of, also significantly affects the total amount of solid waste generated. Periods with less construction could have contributed to the decline in total waste generation. Finally, the weather affects the rate of vegetative growth, and therefore affects the amount of yard waste generated. Drier years could result in less total waste generation.

The analysis below represents a general trend of solid waste generation with respect to functional population growth. The LOS creates a conservative rate of solid waste generation in comparison to the increasing trend of solid waste generation between the years 1998-2000, thus predicting a comparative or slightly higher annual solid waste production in relation to population. Limitations on future growth should reduce the amount of construction and demolition debris generation. Recycling efforts in Monroe County have increased and should reduce the amount of solid waste generation.

| Solid Waste Generation Trends | | | | | |
|--------------------------------------|------------|------------|----------|------------|---------------|
| | GENERATION | POPULATION | | | |
| Year | (Tons/Yr) | Permanent | Seasonal | Functional | (LBS/CAP/DAY) |
| 2000 | 158,327 | 36,036 | 33,241 | 69,277 | 12.52 |
| 2001 | 125,893 | 36,250 | 33,263 | 69,513 | 9.92 |
| 2002 | 134,950 | 36,452 | 33,285 | 69,737 | 10.6 |
| 2003 | 134,734 | 36,543 | 33,307 | 69,850 | 10.57 |
| 2004 | 112,102 | 36,606 | 33,329 | 69,935 | 8.78 |
| 2005 | 212,470 | 37,164 | 33,351 | 70,515 | 16.51 |
| 2006 | 200,338 | 36,466 | 34,019 | 70,485 | 15.57 |
| 2007 | 134,467 | 35,749 | 34,568 | 70,317 | 10.48 |
| 2008 | 130,245 | 34,788 | 35,550 | 70,338 | 10.15 |
| 2009 | 116,884 | 36,268 | 35,043 | 71,311 | 8.98 |
| 2010 | 156,465 | 35,368 | 35,440 | 70,808 | 12.10 |
| 2011 | 125,402 | 35,917 | 35,249 | 71,166 | 9.7 |
| 2012 | 145,889 | 39,371 | 35,438 | 74,089 | 11.65 |
| 2013 | 173,774 | 35,806 | 35,658 | 71,464 | 12.94 |
| 2014 | 177,312 | 35,751 | 35,862 | 71,613 | 13.12 |

| | | | | | |
|------|---------|--------|--------|--------|-------|
| 2015 | 276,710 | 35,696 | 36,067 | 71,763 | 20.43 |
| 2016 | 353,658 | 35,632 | 36,277 | 71,909 | 25.48 |
| 2017 | 656,783 | 35,567 | 36,488 | 72,055 | 49.94 |
| 2018 | 441,165 | 35,503 | 36,698 | 72,201 | 33.48 |
| 2019 | 302,589 | 35,438 | 36,909 | 72,348 | 22.92 |

Sources:

1. Florida Department of Environmental Protection

2. Monroe County 2012-2030 Monroe County Population Projections, Keith & Schnars, and Fishkind & Associates, 3-15-11 (Unincorporated Population -Table 9)

SUMMARY

Monroe County has a contract with Waste Management (WMI). The contract authorizes the use of in-state facilities through September 30, 2024; thereby, providing the County with approximately three (3) years of guaranteed capacity. There is adequate capacity for solid waste generation for 2021-2023.

VI. PARKS AND RECREATION

The Level of Service standards for parks and recreational facilities is provided in Policy 1201.1.1 and 1201.1.2 of the Monroe County Year 2030 Comprehensive Plan.

Parks and Recreational Facilities Level Of Service Standard

The level of service (LOS) standard for neighborhood and community parks in unincorporated Monroe County is 1.64 acres per 1,000 functional population. To ensure a balance between the provisions of resource- and activity-based recreation areas the LOS standard has been divided equally between these two types of recreation areas. Therefore, the LOS standards are:

- 0.82 acres of resource-based recreation area per 1,000 functional population; and
- 0.82 acres of activity-based recreation area per 1,000 functional population

Resource-based recreation areas are established around existing natural or cultural resources of significance, such as beach areas or historic sites. Activity-based recreation areas can be established anywhere there is sufficient space for ball fields, tennis or basketball courts, or other athletic events.

| LEVEL OF SERVICE ANALYSIS | | | | |
|--|--|---------------------|----------------------|---------------------------------------|
| Comprehensive Plan Policy 1201.1.1, Parks and Recreation | Monroe County Functional Population 2020 | Existing Acreage | Demand in Acreage | Surplus or (Deficit) in Acreage |
| 1.5 acres per 1,000 functional population of passive, resourced-based neighborhood and community parks | 159,051 | 2,502 | 130.4 | 119.8 |
| 1.5 acres per 1,000 functional population of passive, activity-based neighborhood and community parks | 159,051 | 4,343 | 130.4 | 303.9 |
| <p><i>Source: Monroe County Technical Document, Chapter 13, Recreation and Open Space, May 11, 2011, Section 13.5.1.1.2.</i></p> <p>There are approximately 10,900 acres of resource-based recreation lands currently available in the County for public use. Removing beaches which are primarily Federal and State owned from the resource-based lands results in approximately 250 acres remaining.</p> | | | | |

Level of Service Analysis for Activity-Based Recreation Areas

The Year 2030 Comprehensive Plan allows activity-based recreational land found at educational

facilities to be counted towards the park and recreational concurrency. A total of 108.86 acres of developed resourced-based and 117.23 acres of activity-based recreation areas are either owned or leased by Monroe County and the Monroe County School Board.

The activity-based recreational facilities that are inventoried include facilities and activities such as baseball/softball, football/soccer, tennis courts, basketball courts, picnic tables and picnic pavilions, volleyball courts, handball/racquetball courts, equipped play areas, multi-use areas, benches, tracks, piers, bike paths, boat ramps, fishing, swimming, swimming pools, barbeque grills, shuffleboard courts, beaches and restrooms. Additionally, other recreation uses and facilities are indicated such as historic structures, bandshells, dog parks, skateboard facilities, aquatic parks, museums, and concessions.

The subareas for park and recreational facilities include the Upper Keys, north of Tavernier; Middle Keys, between Pigeon Key and Long Key; and the Lower Keys, south of the Seven Mile Bridge.

The tables below provide resource- and activity-based parks and recreation in acres for the three subarea planning areas.

| MIDDLE KEYS RECREATION AND OPEN SPACE PLANNING AREA MM 38.5-73 | | | | | |
|---|------------------------|----------------|--|------------------------|----------|
| Name | Location | Mile Marker | Facilities | Classification (Acres) | |
| | | | | Resource | Activity |
| Sunset Bay Park | Grassy Key | 58 | Beach | 0.6 | NA |
| Yacht Club (1) | Vaca Key (Marathon) | 54 | Boat ramp, teen club, 2 tennis courts, basketball court | NA | 2 |
| Sombrero Beach (Switlik Park) | Marathon | 50 | Beach, picnic pavilions, ball field, 2 volleyball courts, equipped play area, dog park, pier, fishing, BBQ | 0.6 | 8 |
| Old 7-Mile Bridge | Monroe County | 41-47 | Fishing, Bicycling, Beaches | 5 | NA |
| 7-Mile Bridge | Pigeon Key | 45 | Historical structures | 5 | NA |

**UPPER KEYS RECREATION AND OPEN SPACE
PLANNING AREA MM 73-112**

| Name | Location | Mile Marker | Facilities | Classification (Acres) | |
|---|-----------------------|-------------|--|------------------------|----------|
| | | | | Resource | Activity |
| Garden Cove Park | Key Largo | 106 | Boat ramp | 1.5 | NA |
| Rowell's Waterfront Park | Key Largo | 104.5 | Picnic tables, benches, paddle-sports launch, swimming area | 8 | NA |
| Murray Nelson Waterfront Park | Key Largo | 102 | Boat basin, pier, dock, five pavilions, restrooms, picnic tables, benches | 1.2 | NA |
| Hibiscus Park (Buttonwood Lane) | Key Largo | 101.5 | Vacant, inaccessible waterfront | 0.5 | NA |
| Friendship Park | Key Largo | 101 | Ball field, 3 basketball courts, picnic shelters, Play equipment, restrooms, trail | NA | 2.38 |
| Key Largo Community Park-Jacob's Aquatic Center | Key Largo | 99.6 | Play equipment, aquatic park, 3 swimming pools, ballfields, soccer field, tennis, pickleball, basketball, restrooms | 1.5 | 13.6 |
| Sunset Point Park | Key Largo | 95.2 | Vacant, waterfront access, boat ramp | 1.2 | 0.9 |
| Harry Harris County Park | Key Largo (Tavernier) | 93 | Beach, two ball fields, play equipment, swimming, boat ramp, BBQs, shuffleboard, beach, picnic tables, restrooms, basketball | 2 | 15.1 |
| Old Settlers Park | Key Largo (Tavernier) | 91.9 | Play Equipment, picnic, shelter, beach, butterfly garden | NA | 3 |
| Burr Beach Park (Sunny Haven) | Key Largo | 91 | Vacant, waterfront access | 0.1 | NA |
| Old State Rte. 4A | Upper Matecumbe Key | 82.5 | Vacant | 0.3 | NA |
| Old State Rte. 4A, Hurricane Monument | Upper Matecumbe Key | 81 | Historical Marker | 1.2 | NA |
| Anne's Beach, Lower Matecumbe Beach (5) | Lower Matecumbe Key | 73.5 | Beach, swimming, bike path, picnic pavilions, boardwalk | 6.1 | 6 |

**LOWER KEYS RECREATION AND OPEN SPACE
PLANNING AREA MM 0-38.5**

| Name | Location | Mile Mark er | Facilities | Classification (Acres) | |
|---|----------------------------|--------------------|---|------------------------|----------|
| | | | | Resource | Activity |
| Veteran's Memorial Park | Little Duck Key (Ohio Key) | 40 | Beach, BBQs, swimming temporary port o let restrooms * | 0.6 | 24.9 |
| Missouri Key/South side US 1 | Missouri Key | 39 | Roadside pull-off, beach | 3.5 | NA |
| Big Pine Key Park | Big Pine Key | 31 | Pier, Playground, soccer field, baseball, tennis & basketball courts, skate park, bocce courts, shade structures, restrooms | 5.5 | 4.6 |
| J. Watson Field (Stiglitz Property) (2) | Big Pine Key | 30 | 2 tennis courts, volleyball, play equipment, baseball, picnic, dog park | 1.2 | 2.4 |
| Blue Heron Park | Big Pine Key | 30 | Pickleball | NA | 5.5 |
| Bob Evans/ Chamber of Commerce | Big Pine Key | 30 | Vacant | 0.3 | NA |
| Palm Villa Park | Big Pine Key | 30 | Benches, waterfront, | NA | 0.6 |
| State Road 4 | Little Torch Key | 28 | Boat ramps | 0.1 | NA |
| Ramrod Key Park | Ramrod Key | 27 | Beach*, swimming | 1.2 | 1.2 |
| West Summerland Park | West Summerland Key | 25 | 2 Boat ramps | 31.8 | NA |
| Bay Point Park | Saddlebunch Key | 15 | Play equipment, volleyball, picnic tables, trail, basketball, 2 tennis courts, pavilions, | NA | 1.58 |
| Boca Chica Beach, SR 941 (3) | Boca Chica Key | 11 | Beach, picnic table * | 6 | NA |
| Wilhelmina Harvey Park | Big Coppitt Key | 10 | Play equipment, path, shade structure with picnic table | NA | 0.65 |

| Name | Location | Mile Marker | Facilities | Classification (Acres) | |
|---|-----------------|-------------|--|------------------------|----------|
| | | | | Resource | Activity |
| Volunteer Fireman's Park | Big Coppitt Key | 10 | Pavilion, picnic tables, basketball | | |
| Gulfview Park, Delmar Ave. | Big Coppitt Key | 9.7 | Boat ramp | 0.2 | NA |
| Rockland Hammock | Rockland Key | 9 | Vacant | 2.5 | NA |
| Bernstein Park | Raccoon Key | 4.5 | Play equipment, baseball & soccer fields, basketball, path, fitness center, community rooms, picnic tables, restrooms | NA | 11 |
| East Martello Park | Key West Island | 1.5 | Picnic, Historic Fort, museum | 14.56 | NA |
| Higgs Beach Park, C.B. Harvey, Rest Beach | Key West Island | 1 | 1 beach, concession area, 2 band shells, pier, picnic pavilions and grills, pickleball courts, tennis courts, play equipment, bike path, volleyball, fitness trail, handball court, horseshoes, swimming, Dog Park | 5 | 12.1 |
| West Martello Park | Key West Island | 1 | Historic Fort | 0.8 | NA |
| Whitehead Street Lighthouse | Key West Island | 1 | Historic Fort, Museum | 0.8 | NA |
| Pines Park (S. Roosevelt) | Key West Island | 1 | Picnic | NA | 1.72 |

(1) The total acreage of the Yacht Club is approximately 6.0 acres. The unique layout of this facility restricts active recreation to approximately 2 acres partially leased to the Marathon Yacht Club by Monroe County.

(2) House and yard (1.2 acres) owned by Monroe County. Additional 2.4 acres leased by Monroe County from the Big Pine Athletic Association.

(3) Lands Leased to Monroe County from U. S. Navy.

(4) Church to west of park has public access 2 basketball, volleyball, and bocce courts.

(5) Beach leased to Village of Islamorada

*Denotes approximate acreage; (for beaches the length of the beach x a minimum of 15 ft.)

Source: Monroe County Technical Document July 2011

Acquisition of Additional Recreation Areas

The Monroe County Year 2030 Comprehensive Plan states in Objective 1201.2 that “*Monroe County shall secure additional acreage for use and/or development of resource-based and activity-based neighborhood and community parks consistent with the adopted level of service standards.*” The elimination of deficiencies in LOS standards for recreation areas can be accomplished in a number of ways. Policy 1201.2.1 of the Comprehensive Plan provides six (6) mechanisms that are acceptable for solving deficits in park level of service standards, as well as for providing adequate land to satisfy the demand for parks and recreation facilities that result from additional residential development. The six (6) mechanisms are:

1. *Development of park and recreational facilities on land which is already owned by the county but which is not being used for park and recreation purposes;*
2. *Acquisition of new park sites on a limited basis;*
3. *Interlocal agreements with the Monroe County School Board for use of existing school-based park facilities by county residents;*
4. *Interlocal agreements with incorporated cities within Monroe County for use of existing city-owned park facilities by county residents;*
5. *Intergovernmental agreements with agencies of state and federal governments for use of existing publicly-owned lands or facilities by county residents; and*
6. *Long-term lease arrangements or joint use agreements with private entities for use of private park facilities by county residents.*

Objective 1201.2.3 Comprehensive Plan 2030-“*Priority shall be given to locating new neighborhood and community parks in communities which demonstrate the greatest deficiencies in parks and recreation*”.

To date, the county has employed two of these six mechanisms – acquisition of new park sites and interlocal agreements with the School Board.

SUMMARY

The County continues to maintain a surplus of parks and recreational facilities (acreage).

VII. SANITARY SEWER

Over the years several factors have contributed to the water quality degradation of the Florida Keys, among them are stormwater run-off, changes in flow from Florida Bay and the Gulf of Mexico, but one of the most influential factors is the past wastewater practices. Wastewater from cesspits, septic tanks, injection wells and liveaboard vessels add nitrogen and phosphorus to our waters breaking the ecological balance.

The development of the Sanitary Wastewater Master Plan was the BOCC response toward correcting our water quality problems. Their goal was to improve the water quality of canals and confined nearshore waters through a long-term strategy and bring back the clear waters that characterize our coasts and are the source of tourist attraction.

The Monroe County Year 2010 Comprehensive Plan adopted by the BOCC on April 1993 mandated nutrient loading levels be reduced in the keys marine ecosystem by the year 2010. In 1998, the Florida Governor issued Executive Order 98-309 which directed relevant agencies and entities to coordinate with Monroe County to implement the Year 2010 Comprehensive Plan and eliminate cesspits, failing septic tank systems, and revise the existing 246 treatment plants for capacity and quality of treated wastewater. In 1999, the Florida Legislature set statutory effluent standards and associated compliance schedules for wastewater treatment system in Monroe County. These standards address treatment for several water quality constituents and require treatment to achieve advanced wastewater treatment standards for discharge flows in excess of 100,000 gallons per day and best available technology (BAT) standards for flows less than 100,000 gallons per day. Adopted water quality standards are listed below.

| Water Quality Standards | | |
|---------------------------------|---------------|---------------|
| Constituent | BAT (mg/L) | AWT (mg/L) |
| Biological Oxygen Demand (BODS) | 10 | 5 |
| Total Suspended Solids (TSS) | 10 | 5 |
| Total Nitrogen (TN) | 10 | 3 |
| Total Phosphorus (TP) | 1 | 1 |

Previously in 1992, the U.S. Environmental Protection Agency (USEPA) Oceans and Coastal Protection Divisions produced a report entitled “*Water Quality Protection Program for the Florida Keys National Marine Sanctuary*”. The report provided a list of 84 water quality hot spots with known or suspected water quality degradation. Later in 1999 Monroe County released a new study entitled “*Water Quality ‘Hotspots’ in the Florida Keys: Evaluation for Stormwater Contributions*”, this study identified 88 hotspots. The definition of “Hot Spots” are areas of known or suspected water quality degradation, with known and unknown unsafe sewage disposal practices, that has to be eliminated and would receive a community wastewater collection and treatment system within the next 10 years. In contrast with “Hot Spots”, “Cold Spots” were defined as areas where the on-site system would continue operating until the whole new system is established.

The Florida Administrative Code created the Rule 28-20.100, which was amended in 1999 to the Year 2010 Comprehensive Plan by the Governor and his cabinet. This rule provided a 5-Year Work

Program to improve water quality emphasizing in the identification and elimination of cesspools required by Objective 901.2 of the Monroe County Comprehensive Plan. Monroe County adopted a new cesspool identification and elimination ordinance, Ordinance 031-1999, which complies with the Work Program. This ordinance establishes an inspection and compliance program for unknown and unpermitted on-site treatment and disposal sewage (OSTDS). The intent of the ordinance is to require operating permits for the (up to) 7,900 existing at that time unpermitted OSTDS.

The Sanitary Wastewater Master Plan was prepared by a multidisciplinary consultant team, under the direction of the Monroe County Department of Marine Resources to determine the acceptable levels of wastewater treatment and the strategy to follow to change the old wastewater collection system for a new modern system in the County. The goals of the Master Plan was to provide responsive, flexible and cost-effective solutions that improve wastewater management practices throughout the keys and must satisfy environmental and regulatory criteria and guidelines.

The implementation of the new wastewater system and the elimination of the old sewer practices in Monroe County has taken years. The planning period used for developing this Master Plan is the 20 years interval between 1998 and 2018. The transition process has been under the supervision of Monroe County, the Florida Keys Aqueduct Authority, Key Largo Wastewater Treatment District, the Municipalities, and special districts established for that purpose. Now the new systems are operating satisfactorily and only a small percentage of households have not been hooked up to the new systems.

At this time there are four entities providing sewer services in the unincorporated areas of the County.

1. Florida Keys Aqueduct Authority (FKAA)
2. Key Largo Wastewater Treatment District
3. North Key Largo Utilities Corporation
4. Key West Resort Utilities

FKAA covers by far more areas of the County than any other operator. The list of their facilities and general services areas are, from south to north:

- Key Haven Wastewater System- FKAA acquired this wastewater system in 2009 . By 2018, FKAA replaced most of the collection system and redirect the wastewater flows from the Key Haven wastewater treatment plant (WWTP) to the Big Coppitt WWTP for Advanced Wastewater Treatment (AWT). The Key Haven collection system currently serves all 450 Equivalent Dwelling Units (EDUs) in the area, with plans to connect a new development consisting of an additional 26 EDUs.
- Big Coppitt Regional Wastewater System- The construction of this wastewater system, with funding provided by Monroe County, began in January 2007 and included service to Rockland Key, Big Coppitt Key, Geiger Key and Shark Key. Connections to the system began in August 2009. Currently, the Big Coppitt collection system contributes 1,601 of 1,746 EDUs (92%) to the AWT system, with the additional 450 EDUs redirected from the Key Haven Wastewater system and an average daily flow of 0.031 million gallons per day (mgd) redirected from Boca Chica Naval Air Station (NAS). The Big Coppitt WWTP will

be expanded to accept flows from a new affordable housing development in the Big Coppitt Key service area and the future capacity needs of the NAS.

- Bay Point Wastewater System- The FKAA began construction of the Bay Point Wastewater Treatment Plant and collection system in 2004, to provide central wastewater service to the Bay Point and Blue Water communities (Saddlebunch Keys). The first wastewater connection began in 2005. 424 EDUs of 439 EDUs (97%) have been connected to this Best Available Technology (BAT) treatment plant.
- Cudjoe Regional Wastewater System- Construction of this wastewater system began in January 2013, with funding provided by Monroe County. The new WWTP has a capacity of 940,000 gpd, and serves Lower Sugarloaf Key, Upper Sugarloaf Key, Cudjoe Key, Summerland Key, Ramrod Key and Little Torch Key, Middle Torch Key, Big Torch Key, No Name Key and Big Pine Key. Connection to this system was phased over several years and is ongoing. Approximately 9,471 EDUs have been invited to connect and of those 7,469 EDUs have completed their connection (79%).
- Duck Key Regional Wastewater System- The FKAA became owner and operator of the Hawk’s Cay WWTP in May 2006. The WWTP, with funding provided by Monroe County, underwent an extensive redesign in 2011 and was upgraded to the rigorous AWT standards. Additionally, the collection system was expanded to serve the remaining residents of Duck Key. The last phase of upgrades was completed in September 2013. The WWTP serves Conch Key, Little Conch Key, Waker’s Island, Hawk’s Cay Resort and Duck Key with a treatment capacity of 275,000 gpd. Currently, 1,445 EDU’s of 1,491 EDUs (98%) have connected to the system.
- Layton Wastewater System- The FKAA began construction of the Layton Wastewater System in 2005, to provide central wastewater services to the City of Layton and Long Key State Park with a treatment capacity of 66,000 gpd. Connection to the system began in 2006 and all 351 EDUs were connected to the system. Subsequent expansion of the Layton service area to incorporate the remaining east and west ends of Long Key is complete. With the expansion, the service area now includes 444 EDUs, which currently has 397 EDUs connected (89%).

In summary, as of August 2021, the following connections have been completed:

| | Connected | Yet to be Connected | EDUs in Region | Percent of Connection |
|------------------------|--------------|---------------------|----------------|-----------------------|
| Key Haven | 450 | | 450 | 100% |
| Big Coppitt | 1,600 | 147 | 1,747 | 92% |
| Bay Point | 425 | 14 | 439 | 97% |
| Duck Key | 1,455 | 36 | 1,491 | 98% |
| Layton/Long Key | 397 | 47 | 444 | 89% |
| Cudjoe Regional | 7,469 | 2,002 | 9,471 | 79% |

| | | | | |
|-------------------------|--------|-------|--------|-----|
| Lower Sugarloaf | 554 | 77 | 631 | 88% |
| Upper Sugarloaf | 266 | 324 | 590 | 45% |
| Cudjoe Key | 1,803 | 152 | 1,955 | 92% |
| Little Torch Key | 678 | 241 | 919 | 74% |
| Ramrod Key | 652 | 74 | 726 | 90% |
| Summerland Key | 771 | 240 | 1,011 | 76% |
| Big Pine Key | 2,655 | 863 | 3,518 | 75% |
| Middle Torch Key | 10 | 5 | 15 | 67% |
| Big Torch Key | 41 | 17 | 58 | 71% |
| No Name Key | 39 | 8 | 47 | 83% |
| | | | | |
| System-Wide Connections | 11,796 | 2,245 | 14,041 | 84% |

Key Largo Wastewater Treatment Plant and District- This system serves Islamorada and the territory consisting of the island of Key Largo, including all lands east of Tavernier Creek, including Tavernier, Key Largo all in Monroe County, Florida with the exception of: all areas north of Summerland Road on US-1, and all areas north of Charlemagne Blvd on County Road 905 including Ocean Reef. The plant capacity is 3,450,000 gpd and does meet LOS for wastewater treatment quality. The District began taking flow from Islamorada on June 16, 2014. The 2021 average daily flow from Islamorada increased to 815,000 gpd. As parcels in Islamorada continue to connect, flow will increase. The combined average flows from Islamorada and Key Largo for the last 365 days is 1,970,000 gpd. In the District service area (does not include Islamorada) there are 10,625 EDUs with 10,610 (99%) that have been connected to the system and 15 are not connected.

North Key Largo Utilities Corporation- This private utility serves the Ocean Reef Community. This WWTP was constructed with Advanced Wastewater Treatment (AWT) technology with a capacity of 499,000 gpd. The volume of sewage the plant is processing at this time is 250,000 gpd. All dwelling units of the community have been connected to the system with a total of 1,620 EDUs (100%).

Key West Resort Utilities- This investor owned utility serves Stock Island. This WWTP was constructed with Advanced Wastewater Treatment (AWT) technology with a capacity of 849,000 gpd. The volume of sewage the plant is processing at this time is 577,000 gpd. There are currently 4,358 EDU's connected to the KWRU system.

SUMMARY

There is sufficient wastewater treatment and disposal facilities and capacity available to satisfy the projected needs of the development for the next two years.