

ROGO Infrastructure Study

Monroe County, Florida

Submitted to:

Monroe County, Florida

DRAFT

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Prepared by:



4701 Sangamore Road
Suite S240
Bethesda, Maryland 20816
www.tischlerbise.com



TischlerBise
4701 Sangamore Road
Suite S240
Bethesda, Maryland 20816

www.tischlerbise.com

ROGO Allocation Infrastructure Study Monroe County, Florida

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EXECUTIVE SUMMARY

Overview

TischlerBise¹ has been retained by Monroe County, Florida, to evaluate the potential infrastructure impacts of additional Rate of Growth Ordinance (ROGO)² permit allocations. This report documents the findings of this evaluation as of December 2024.³

The scope of work and the following report seek to:

- Identify current levels of service in major County infrastructure (including utilities).
- Project functional population over multiple potential future growth scenarios assuming the following ROGO allocations:
 - Additional housing units: 220; 600; 1,000; 2,000; 3,000; and 8,000 units (assuming all single family with an allocation of half each to the Upper and Lower Keys).
- Project resulting demand from the potential ROGO allocations.
- Identify and project deficiencies/needs in each infrastructure category.

This is a high-level evaluation of the relative impacts of different amounts of residential development at buildout. It is an exercise to identify where infrastructure has current documented capacity to potentially accommodate additional growth and if not, a generalized estimate of costs. In reality, growth will occur in a phased manner, due to both the regulatory environment and market conditions, and as such, infrastructure planning and construction of capital improvement projects will need to continue to work in lockstep with growth to meet those demands over time.

Furthermore, the study is not meant to be a comprehensive evaluation of environmental or social impacts to the County or community. While these are important issues to be explored, this study is limited to an evaluation of current infrastructure levels of service, the need for additional infrastructure capacity due to growth, and the potential costs to provide additional capacity.

¹ TischlerBise is a fiscal, economic, and planning consulting firm specializing in fiscal impact analysis and impact fees. During the firm's almost 50-year history, we have conducted over 1,000 fiscal impact studies and 1,000 impact fees, primarily for local governments across the United States.

² See Monroe County, Florida, Comprehensive Plan Policy 101.3.1 and Land Development Code, Chapter 138 RATE OF GROWTH RESTRICTIONS (ROGO/NROGO).

³ This report is based on estimates, assumptions and other information obtained from sources as cited herein and/or developed by TischlerBise. Every reasonable effort has been made to ensure that the data contained in this report is accurate as of the date of this report; however, factors exist that are outside the control of TischlerBise and that may affect the estimates and/or projections noted herein. TischlerBise does not guarantee outcomes or take responsibility for their continuing applicability, as actual outcomes will depend on future events and circumstances beyond TischlerBise's control.

Infrastructure categories included in the analysis are:

- Transportation
- Wastewater
- Potable Water
- Public Schools
- Solid Waste
- Parks
- Electric
- Public Safety/First Responders: Sheriff and Fire

Scenarios

The analysis uses a range of growth scenarios to test the impacts of additional residential development on infrastructure. It is not intended to be a **prediction or forecast** but rather an examination of a hypothetical set of **what-if** future conditions.

Residential development will generate population, public school enrollment, vehicle trips, and demand on utilities. A summary of projected demand under each scenario is shown in Figure 1. **It should be noted that the study does not assume timing or absorption of growth, rather the analysis is based on the total demand at buildout from the assumed number of units.**

The study also does not assume variety in unit type but instead assumes single family unit development. Finally, assumptions about specific locations of growth are not made, other than a hypothetical equal split between Upper and Lower Keys.

Figure 1. Summary of Projected Demand under Each Scenario

| DEMAND SUMMARY | | | | | | | |
|---|-----------------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Monroe County, Florida, ROGO Infrastructure Study | | | | | | | |
| Category | Unit | SCENARIO | | | | | |
| | | 1. 220 ROGO Units | 2. 600 ROGO Units | 3. 1000 ROGO Units | 4. 2000 ROGO Units | 5. 3000 ROGO Units | 6. 8000 ROGO Units |
| FUNCTIONAL POPULATION | Persons | 711 | 1,938 | 3,230 | 6,460 | 9,690 | 25,840 |
| YEAR ROUND POPULATION | Persons | 343 | 936 | 1,560 | 3,120 | 4,680 | 12,480 |
| TOTAL UNITS | Housing Units | 220 | 600 | 1,000 | 2,000 | 3,000 | 8,000 |
| TOTAL EDUS | Equivalent Dwelling Unit | 220 | 600 | 1,000 | 2,000 | 3,000 | 8,000 |
| TOTAL ENROLLMENT | Public School Students | 30 | 81 | 135 | 271 | 406 | 1,083 |
| VEHICLE TRIPS | Average Daily Vehicle Trips | 1,037 | 2,829 | 4,715 | 9,430 | 14,145 | 37,720 |
| WATER USAGE | Gallons per Day | 44,000 | 120,000 | 200,000 | 400,000 | 600,000 | 1,600,000 |
| WASTEWATER USAGE | Gallons per Day | 15,400 | 42,000 | 70,000 | 140,000 | 210,000 | 560,000 |
| SOLID WASTE GENERATION | Pounds per Day | 8,108 | 22,113 | 36,854 | 73,709 | 110,563 | 294,834 |
| ELECTRIC DEMAND | Megawatts | 1.1 | 2.9 | 4.9 | 9.8 | 14.6 | 39.1 |

Summary of Approach and Key Findings

A key assumption throughout this study is that improvements identified in this report would not be necessary **but for** the additional allocations. Many infrastructure improvements either currently in process or planned for the near term may provide better/usable capacity in the systems for which they are made. However, indication from staff is that these improvements would likely be made regardless of additional ROGO allocations. Further detail is provided below and in the body of the report.

- **Transportation:** Transportation monitoring is limited to capacity availability on US 1. The County conducts an analysis every two years (*2021 US 1 Arterial Travel Time and Delay Study, Monroe County, FL (AECOM, July 2021)*) to identify the amount of “reserve capacity” available on each segment of US 1, with the last adopted study from 2021.⁴ Reserve capacity, expressed in average daily vehicle trips, reflects the amount of capacity remaining on each segment of US 1 to maintain a minimum level of service (LOS) C, per the adopted LOS methodology. The County monitors and tracks ongoing reserve capacity by road segment based on actual reserve capacity less projected vehicle trips from permitted development.

The ROGO Study allocates growth by scenario equally into Lower and Upper Keys, generates average daily trips from projected hypothetical growth (with a further allocation along US 1 segments for study purposes), and compares projected demand to actual remaining reserve capacity. The study then identifies whether any segment results in a calculated deficiency due to the additional ROGO allocation per respective scenario (less the current reserve capacity).

- *Findings:* Current deficiencies exist on two segments in the Upper Keys: segment 19, Upper Matecumbe, and segment 20, Windley. Starting at 1,000 additional units, an additional segment in the Upper Keys (segment 17, Lower Matecumbe) is projected to exceed capacity. The next growth scenario that reaches a capacity threshold is the maximum of 8,000 units where segments 16 (Long, Fiesta, Craig) and 21 (Plantation) are projected to be over capacity. Capacity on US 1 in the Lower Keys is available through all scenarios except the maximum at 8,000 units where one segment is projected to be over capacity (segment 3, Big Coppit).
- **Wastewater:** Demand from each scenario is compared to existing and available wastewater (sanitary sewer) capacity. The current system has excess operational capacity of approximately 2.5 million gallons per day.
 - *Findings:* Capacity exists even at the maximum ROGO scenario. It is noted that current debt for capital improvements that are anticipated to provide reliable capacity are not included as those costs would have been incurred otherwise. Because wastewater

⁴ A study update was conducted in 2023 but not adopted by the Monroe County Board of County Commissioners. Current monitoring uses the official 2021 figures.

systems operate as enterprise funds, rates and fees are calculated to recover operating, maintenance, and capital improvement costs that are not covered by grant funding.

- **Potable Water:** Projected demand from each scenario is compared to available capacity provided by Florida Keys Aqueduct Authority (FKAA), supplier of potable water on the Keys. The current system has excess operational capacity of approximately 3.39 million gallons per day today and will have a total of 7.39 million gallons per day by March 2025.⁵ FKAA's Five-Year Capital Improvement Plan includes approximately \$307 million in projects to augment water treatment, improve transmission by replacing segments of the 130-mile water main, upgrade distribution, improve storage capabilities, and expand supply through reverse osmosis facilities.
 - *Findings:* Given existing operational capacity and projected demand in each scenario, sufficient potable water capacity is available as of the date of this report to serve growth under each ROGO allocation. As noted, current and short-term capital improvements are planned to improve reliability and ensure capacity is available to existing and future customers. Because the water system operates as an enterprise fund, rates and fees are calculated to recover operating, maintenance, and capital improvement costs that are not covered by grant funding.

- **Schools:** Enrollment is projected from new housing units based on current ratio of public school enrollment to housing units and compared to existing capacity in school facilities and the bus fleet.
 - *Findings:* Capacity exists even at the maximum ROGO scenario. It is noted that renovation/remodeling costs are not included as these are costs assumed to be incurred regardless of additional growth. New buses are projected to accommodate additional student enrollment.

- **Solid Waste:** Solid waste generation is projected from new housing units based on the demand generation factor in the Comprehensive Plan and compared to current capacity at the existing four transfer stations in the County (three owned and operated by Monroe County and one owned and operated by the City of Key West).
 - *Findings:* Current Solid Waste Transfer Stations are essentially at capacity and therefore require system expansions today. Because additional sites are unlikely to be acquired due to land constraints, it is anticipated that capacity expansions will take the form of improvements to tipping floors. Again, this is needed regardless of additional growth, so these costs are not included in the study. In addition, staff indicate that an expansion of the fleet deployed for illegal dumping cleanup is likely to be needed to continue to provide the same level of service. This cost is modeled.

⁵ Per FKAA, while there was a decrease in operational system capacity in 2023, full capacity of 23.8 mgd is available to FKAA today as well as an anticipated 4 mgd from the Stock Island Reverse Osmosis facility scheduled to come online in March 2025.

- **Parks:** Additional park infrastructure is modeled based on the number of acres needed to maintain park levels of service for active and passive parks in excess of current available capacity. Adopted levels of service of 1.5 acres per 1,000 functional population each for passive and active parks is used to project acres needed from new housing units in each scenario.
 - *Findings:* Currently, passive parks are at capacity while active parks have excess capacity in the system at adopted levels of service. Therefore, all scenarios project a need for additional passive acres. Sufficient excess capacity exists in active parks such that no scenario triggers a need for additional acres.

- **Electric:** The study approach is to project increased demand on the electric grid from the growth scenarios and consult with current providers, Keys Energy Services (KEYS) and Florida Keys Electric Cooperative (FKEC), regarding capability of the system to accommodate additional demand.
 - *Findings:* Major providers indicate that capital projects for system improvements and redundancy will continue to be planned and implemented based on current annual growth⁶ as well as any future additional growth allocations. Similar to the approach for other infrastructure, these costs are not included in the analysis given that the improvements need to occur otherwise. As growth continues to occur, both electric providers indicate a need and likelihood of continued investment in infrastructure to ensure management of peak load demands and redundancy. While the system has capacity to address current peak hour demands, current practice is for KEYS to use local generation. It is noted that additional growth is likely to exacerbate the practice of local generation unless other system improvements are made; however, according to KEYS, transmission line upgrades are not necessary but would provide an alternative to local generation. Additionally, the location and timing of future growth will affect the need for system improvements.

- **Public Safety/First Responders-Sheriff:** The study identifies whether new law enforcement stations and vehicles are needed to serve growth modeled in the scenarios. Monroe County Sheriff's Office staff have indicated that operational capacity exists to serve additional demand of approximately 6,000 units, therefore the study assumes that this additional amount of growth can be absorbed.
 - *Findings:* Per the Monroe County Sheriff's Office, additional stations or expansions will not be needed regardless of future growth. Vehicle costs are modeled based on expanding the inventory to serve the maximum growth scenario.

- **Public Safety/First Responders-Fire:** The study identifies whether new fire stations and apparatus are needed based on current levels of service, including services provided in municipalities. This

⁶ Assumed as 1 percent growth by electric providers.

is a high level examination and not location specific. To capture potential impacts to the County from additional growth, costs are included for portions of facilities.

- *Findings:* The maximum growth scenario projects a need for approximately two and a half new stations based on current levels of service. As noted, locations and timing of growth are not included in this study, therefore a more refined analysis accounting for specific geographic locations of growth, capacity of existing stations, and projected calls for service would need to be conducted if additional growth allocations were pursued.

Summary of Findings

Findings of the analysis are summarized in Figure 2. As noted above, the evaluation is a comparison of current available capacity and projected demand under each category. In some cases, the analysis generates a portion of a facility. This is included in the study and the table below (with estimated costs) to provide an order of magnitude estimate as well as a comparison among scenarios. The label shows “Partial” to indicate less than a full facility or vehicle.

Figure 2. Summary of Infrastructure Analysis Findings

| OUTPUT SUMMARY Monroe County, Florida, ROGO Infrastructure Study | | | 1. 220 ROGO Units | | | 2. 600 ROGO Units | | | 3. 1000 ROGO Units | | |
|---|------------------|-----------|-------------------|----------------------------|-----------|-------------------|----------------------------|-------------|--------------------|----------------------------|-------------|
| Unit | Reserve Capacity | | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost |
| Transportation Lower Keys | Veh. Trips | * | 519 | Yes | \$0 | 1,415 | Yes | \$0 | 2,358 | Yes | \$0 |
| Transportation Upper Keys | Veh. Trips | * | 519 | No | \$157,000 | 1,415 | No | \$429,000 | 2,358 | No | \$714,000 |
| Wastewater | GPD | 2,509,000 | 15,400 | Yes | \$0 | 42,000 | Yes | \$0 | 70,000 | Yes | \$0 |
| Potable Water | GPD | 7,390,000 | 44,000 | Yes | \$0 | 120,000 | Yes | \$0 | 200,000 | Yes | \$0 |
| School Facilities | Seats | 3,473 | 30 | Yes | \$0 | 81 | Yes | \$0 | 135 | Yes | \$0 |
| School Buses | Vehicle | 0 | 0.2 | Partial | \$24,000 | 0.5 | Partial | \$65,000 | 0.9 | Partial | \$108,000 |
| Solid Waste Sites [^] | Sites | 0 | 0.0 | Partial | \$0 | 0.0 | Partial | \$0 | 0.1 | Partial | \$0 |
| Solid Waste Vehicles | Vehicle | 0 | 0.0 | Yes | \$0 | 0.0 | Yes | \$0 | 0.0 | Yes | \$0 |
| Passive Parks | Acre | -12 | 1.1 | No | \$226,000 | 2.9 | No | \$618,000 | 4.8 | No | \$1,031,000 |
| Active Parks | Acre | 172 | 1.1 | Yes | \$0 | 2.9 | Yes | \$0 | 4.8 | Yes | \$0 |
| Electric [#] | Megawatts | NA | 1.1 | Yes | \$0 | 2.9 | Yes | \$0 | 4.9 | Yes | \$0 |
| Sheriff Stations | Station | NA | 0.0 | Yes | \$0 | 0.0 | Yes | \$0 | 0.0 | Yes | \$0 |
| Sheriff Vehicles and Equipment | Vehicle | NA | 0.0 | Yes | \$0 | 0.0 | Yes | \$0 | 0.0 | Yes | \$0 |
| Fire Stations | Station | 0 | 0.1 | Partial | \$665,000 | 0.2 | Partial | \$1,805,000 | 0.3 | Partial | \$3,135,000 |
| Fire Vehicles and Equipment | Vehicle | 0 | 0.3 | Partial | \$91,000 | 0.8 | Partial | \$247,000 | 1.3 | No | \$413,000 |

| | | | 4. 2000 ROGO Units | | | 5. 3000 ROGO Units | | | 6. 8000 ROGO Units | | |
|--------------------------------|------------------|-----------|--------------------|----------------------------|-------------|--------------------|----------------------------|-------------|--------------------|----------------------------|--------------|
| Unit | Reserve Capacity | | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost |
| Transportation Lower Keys | Veh. Trips | * | 4,715 | Yes | \$0 | 7,073 | Yes | \$0 | 18,860 | No | \$5,714,000 |
| Transportation Upper Keys | Veh. Trips | * | 4,715 | No | \$1,428,000 | 7,073 | No | \$2,143,000 | 18,860 | No | \$5,714,000 |
| Wastewater | GPD | 2,509,000 | 140,000 | Yes | \$0 | 210,000 | Yes | \$0 | 560,000 | Yes | \$0 |
| Potable Water | GPD | 7,390,000 | 400,000 | Yes | \$0 | 600,000 | Yes | \$0 | 1,600,000 | Yes | \$0 |
| School Facilities | Seats | 3,473 | 271 | Yes | \$0 | 406 | Yes | \$0 | 1,083 | Yes | \$0 |
| School Buses | Vehicle | 0 | 1.8 | No | \$217,000 | 2.7 | No | \$326,000 | 7.2 | No | \$869,000 |
| Solid Waste Sites [^] | Sites | 0 | 0.1 | Partial | \$0 | 0.2 | Partial | \$0 | 0.6 | Partial | \$0 |
| Solid Waste Vehicles | Vehicle | 0 | 0.1 | Partial | \$15,000 | 0.2 | Partial | \$30,000 | 0.7 | Partial | \$105,000 |
| Passive Parks | Acre | -12 | 9.7 | No | \$2,064,000 | 14.5 | No | \$3,095,000 | 38.8 | No | \$8,256,000 |
| Active Parks | Acre | 172 | 9.7 | Yes | \$0 | 14.5 | Yes | \$0 | 38.8 | Yes | \$0 |
| Electric [#] | Megawatts | NA | 9.8 | Yes | \$0 | 14.6 | Yes | \$0 | 39.1 | Yes | \$0 |
| Sheriff Stations | Station | NA | 0.0 | Yes | \$0 | 0.0 | Yes | \$0 | 0.0 | Yes | \$0 |
| Sheriff Vehicles and Equipment | Vehicle | NA | 0.0 | Yes | \$0 | 0.0 | Yes | \$0 | 6.0 | No | \$390,000 |
| Fire Stations | Station | 0 | 0.7 | Partial | \$6,270,000 | 1.0 | Partial | \$9,405,000 | 2.7 | No | \$25,175,000 |
| Fire Vehicles and Equipment | Vehicle | 0 | 2.7 | No | \$829,000 | 4.0 | No | \$1,246,000 | 10.6 | No | \$3,327,000 |

* Reserve capacity for transportation is determined on a segment by segment basis; the "available capacity" determination shown is based on whether any segment along US 1 is deficient. Costs are generalized based on average cost per trip and applied to total trips generated when capacity thresholds are triggered and do not reflect planned road improvement projects or County expenditures.

[^] Improvements are assumed to take the form of improvements to existing sites; costs are unavailable at this time.

[#] See report narrative.

TRANSPORTATION

Transportation monitoring is limited to capacity availability on US 1. The County conducts an analysis every two years (*2021 US 1 Arterial Travel Time and Delay Study, Monroe County, FL (AECOM, July 2021)*) to identify the amount of “reserve capacity” available on each segment of US 1 with the last adopted study from 2021.⁷ Reserve capacity, expressed in average daily vehicle trips, reflects the amount of capacity remaining on each segment of US 1 to maintain a minimum level of service (LOS) C, per the adopted LOS methodology.

The County monitors and tracks ongoing reserve capacity generated from permitted development by road segment. Figure 3 provides a summary of “Actual Remaining Capacity,” as of November 2024, reflecting 2021 reserve capacity less the demand from permitted projects on each segment. As of 2024, two segments (segments 19 and 20) are over capacity.

⁷ A study update was conducted in 2023 but not adopted by the Board of County Commissioners. Current monitoring uses the official 2021 figures.

Figure 3. US 1 Actual Remaining Capacity (2024)⁸

| | 2021 Reserve Capacity ¹ | LOS (2021) ¹ | Actual Remaining Capacity = Reserve Capacity - Permitted Projects ² |
|--|------------------------------------|-------------------------|--|
| 1 South Stock Island, Key Haven (4.0-5.0) | 3279 | A | 2,416.00 |
| 2 Boca Chica, Rockland (5.0-9.0) | 6265 | A | 5,529.00 |
| 3 Big Coppit (9.0-10.5) | 1391 | B | 748.00 |
| 4 Shark, Saddlebunch (10.5-16.5) | 4130 | B | 3,604.00 |
| 5 Lower Sugarloaf, Upper Sugarloaf (16.5-20.5) | 9752 | A | 9,293.00 |
| 6 Cudjoe (20.5-23.0) | 3064 | A | 2,577.00 |
| 7 Summerland (23.0-25.0) | 2040 | B | 1,657.00 |
| 8 Ramrod (25.0-27.5) | 2285 | A | 1,881.00 |
| 9 Torch (27.5-29.5) | 2886 | A | 2,448.00 |
| 10 Big Pine (29.5-33.0) | 4561 | A | 3,602.00 |
| 11 W Summerland, Bahia Honda, Ohio (33.0-40.0) | 7998 | A | 7,776.00 |
| 12 7-Mile Bridge (40.0-47.0) | 3716 | B | 3,698.00 |
| 13 Marathon, Key Colony Beach (47.0-54.0) | 21276 | A | 21,258.00 |
| 14 Fat Deer Crawl, Grassy (54.0-60.5) | 3603 | C | 3,603.00 |
| 15 Duck, Conch (60.5-63.0) | 1207 | C | 1,207.00 |
| 16 Long, Fiesta, Craig (63.0-73.0) | 1639 | C | 1,623.00 |
| 17 Lower Matecumbe (73.0-77.5) | 149 | C | 116.00 |
| 18 Tea Table, Fill (77.5-79.5) | 2222 | A | 2,177.00 |
| 19 Upper Matecumbe (79.5-84.0) | -3531 | E | (3,584.00) |
| 20 Windley (84.0-86.0) | -378 | D | (482.69) |
| 21 Plantation (86.5-91.5) | 1921 | C | 1,622.39 |
| 22 Tavemier, Key Largo (91.5-99.5) | 12983 | A | 12,500.07 |
| 23 Key Largo (99.5-106.0) | 11148 | A | 10,352.46 |
| 24 Key Largo, Cross Key (106.0-112.5) | 2259 | C | 2,013.00 |

1. 2021 US 1 Arterial Travel Time and Delay Study, Monroe County, FL (AECOM, July 2021)
2. Monroe County Planning Department.

To identify potential capacity issues on US 1 under each growth scenario, the analysis:

- Allocates the respective growth by scenario equally into Lower and Upper Keys,
- Generates average daily trips from projected hypothetical growth (with a further allocation along US 1 segments for study purposes), and
- Compares projected demand to remaining reserve capacity and identifies whether any segment results in a calculated deficiency due to the additional ROGO allocation per respective scenario (less the current/real time reserve capacity).

Results for each scenario are summarized below in Figure 4 with further detail provided in a series of figures beginning with Figure 5.

As shown, six total segments (four in addition to the two that are currently over capacity) are projected to be over capacity in the maximum growth scenario (8,000 units), given the assumptions and methodologies described.

⁸ The analysis is based on actual reserve capacity without assuming a 5 percent allocation below Level of Service C identified in the “2021 US 1 Arterial Travel Time and Delay Study, Monroe County, FL,” (AECOM, July 2021).

- Upper Keys: Two segments in the Upper Keys are currently over capacity. Starting at 1,000 additional units, an additional segment in the Upper Keys (segment 17) is projected to exceed capacity. The next growth scenario that reaches a capacity threshold is the maximum of 8,000 units where segments 16 and 21 are projected to be over capacity.
- Lower Keys: The maximum growth scenario of 8,000 units propels one segment over capacity (segment 3).

Figure 4 summarizes the segments projected to be over capacity in each scenario:

Figure 4. US 1 Segments Projected to be Over Capacity under Each Scenario

| Scenario | Road Segments Projected to be Over Capacity | | | | | |
|--------------------|---|------------------------|--------------------------------|------------------------------------|---------------------------|-------------------------|
| | UPPER KEYS | | | LOWER KEYS | | |
| Current Condition | 19 Upper Matecumbe (79.5-84.0) | 20 Windley (84.0-86.0) | | | | |
| 1. 220 ROGO Units | 19 Upper Matecumbe (79.5-84.0) | 20 Windley (84.0-86.0) | | | | |
| 2. 600 ROGO Units | 19 Upper Matecumbe (79.5-84.0) | 20 Windley (84.0-86.0) | | | | |
| 3. 1000 ROGO Units | 19 Upper Matecumbe (79.5-84.0) | 20 Windley (84.0-86.0) | 17 Lower Matecumbe (73.0-77.5) | | | |
| 4. 2000 ROGO Units | 19 Upper Matecumbe (79.5-84.0) | 20 Windley (84.0-86.0) | 17 Lower Matecumbe (73.0-77.5) | | | |
| 5. 3000 ROGO Units | 19 Upper Matecumbe (79.5-84.0) | 20 Windley (84.0-86.0) | 17 Lower Matecumbe (73.0-77.5) | | | |
| 6. 8000 ROGO Units | 19 Upper Matecumbe (79.5-84.0) | 20 Windley (84.0-86.0) | 17 Lower Matecumbe (73.0-77.5) | 16 Long, Fiesta, Craig (63.0-73.0) | 21 Plantation (86.5-91.5) | 3 Big Coppit (9.0-10.5) |

Detail for each scenario is provided below.

Figure 5. Transportation Capacity Modeling: 220 ROGO Units

| | | 1. 220 ROGO Units | | | | | |
|-------|---|-------------------|----------------|---------------------|--------|---|---------------------|
| | | Hsg. Units | Trips/Hsg Unit | Miles (w/o 7-mi br) | | | |
| | | LOWER | 110 | 4.72 | 35.7 | | |
| | | UPPER | 110 | 4.72 | 65.8 | | |
| | Segment | Lngh | % mile | ROGO Units | ADT | Actual Remaining Capacity (2021 Reserve Capacity less Permitted Projects) | Capacity after ROGO |
| LOWER | Lower Uninc 1 South Stock Island, Key Haven (4.0-5.0) | 1.1 | 3.08% | 3 | 15.98 | 2,416.00 | 2,400.02 |
| | 2 Boca Chica, Rockland (5.0-9.0) | 3.9 | 10.92% | 12 | 56.66 | 5,529.00 | 5,472.34 |
| | 3 Big Coppit (9.0-10.5) | 1.5 | 4.20% | 5 | 21.79 | 748.00 | 726.21 |
| | 4 Shark, Saddlebunch (10.5-16.5) | 5.8 | 16.25% | 18 | 84.26 | 3,604.00 | 3,519.74 |
| | 5 Lower Sugarloaf, Upper Sugarloaf (16.5-20.5) | 3.9 | 10.92% | 12 | 56.66 | 9,293.00 | 9,236.34 |
| | 6 Cudjoe (20.5-23.0) | 2.5 | 7.00% | 8 | 36.32 | 2,577.00 | 2,540.68 |
| | 7 Summerland (23.0-25.0) | 2.2 | 6.16% | 7 | 31.96 | 1,657.00 | 1,625.04 |
| | 8 Ramrod (25.0-27.5) | 2.3 | 6.44% | 7 | 33.41 | 1,881.00 | 1,847.59 |
| | 9 Torch (27.5-29.5) | 2.1 | 5.88% | 6 | 30.51 | 2,448.00 | 2,417.49 |
| | 10 Big Pine (29.5-33.0) | 3.4 | 9.52% | 10 | 49.40 | 3,602.00 | 3,552.60 |
| | 11 W Summerland, Bahia Honda, Ohio (33.0-40.0) | 7.0 | 19.61% | 22 | 101.70 | 7,776.00 | 7,674.30 |
| | 7-Mile Bridge 12 7-Mile Bridge (40.0-47.0) | 6.8 | | 0 | - | 3,698.00 | 3,698.00 |
| UPPER | Marathon 13 Marathon, Key Colony Beach (47.0-54.0) | 7.3 | 11.09% | 12 | 57.54 | 21,258.00 | 21,200.46 |
| | 14 Fat Deer Crawl, Grassy (54.0-60.5) | 6.4 | 9.73% | 11 | 50.45 | 3,603.00 | 3,552.55 |
| | Uninc 15 Duck, Conch (60.5-63.0) | 2.7 | 4.10% | 5 | 21.28 | 1,207.00 | 1,185.72 |
| | 16 Long, Fiesta, Craig (63.0-73.0) | 9.9 | 15.05% | 17 | 78.03 | 1,623.00 | 1,544.97 |
| | Islamorada 17 Lower Matecumbe (73.0-77.5) | 4.5 | 6.84% | 8 | 35.47 | 116.00 | 80.53 |
| | 18 Tea Table, Fill (77.5-79.5) | 2.2 | 3.34% | 4 | 17.34 | 2,177.00 | 2,159.66 |
| | 19 Upper Matecumbe (79.5-84.0) | 4.1 | 6.23% | 7 | 32.32 | (3,584.00) | (3,616.32) |
| | 20 Windley (84.0-86.0) | 1.9 | 2.89% | 3 | 14.98 | (482.69) | (497.67) |
| | 21 Plantation (86.5-91.5) | 5.8 | 8.81% | 10 | 45.72 | 1,622.39 | 1,576.67 |
| | Uninc 22 Tavemier, Key Largo (91.5-99.5) | 8.0 | 12.16% | 13 | 63.06 | 12,500.07 | 12,437.01 |
| | 23 Key Largo (99.5-106.0) | 6.8 | 10.33% | 11 | 53.60 | 10,352.46 | 10,298.86 |
| | 24 Key Largo, Cross Key (106.0-112.5) | 6.2 | 9.42% | 10 | 48.87 | 2,013.00 | 1,964.13 |
| | | 108.3 | | 220 | | | |

Sources: 2021 US 1 Arterial Travel Time and Delay Study, Monroe County, FL (AECOM, July 2021); Monroe County Planning Dept.; TischlerBise analysis.

Figure 6. Transportation Capacity Modeling: 600 ROGO Units

| | | 2. 600 ROGO Units | | | | | |
|-------|---|-------------------|----------------|---------------------|--------|---|---------------------|
| | | Hsg. Units | Trips/Hsg Unit | Miles (w/o 7-mi br) | | | |
| | | LOWER | 300 | 4.72 | 35.7 | | |
| | | UPPER | 300 | 4.72 | 65.8 | | |
| | Segment | Lngh | % mile | ROGO Units | ADT | Actual Remaining Capacity (2021 Reserve Capacity less Permitted Projects) | Capacity after ROGO |
| LOWER | Lower Uninc 1 South Stock Island, Key Haven (4.0-5.0) | 1.1 | 3.08% | 9 | 43.58 | 2,416.00 | 2,372.42 |
| | 2 Boca Chica, Rockland (5.0-9.0) | 3.9 | 10.92% | 33 | 154.53 | 5,529.00 | 5,374.47 |
| | 3 Big Coppit (9.0-10.5) | 1.5 | 4.20% | 13 | 59.43 | 748.00 | 688.57 |
| | 4 Shark, Saddlebunch (10.5-16.5) | 5.8 | 16.25% | 49 | 229.81 | 3,604.00 | 3,374.19 |
| | 5 Lower Sugarloaf, Upper Sugarloaf (16.5-20.5) | 3.9 | 10.92% | 33 | 154.53 | 9,293.00 | 9,138.47 |
| | 6 Cudjoe (20.5-23.0) | 2.5 | 7.00% | 21 | 99.05 | 2,577.00 | 2,477.95 |
| | 7 Summerland (23.0-25.0) | 2.2 | 6.16% | 18 | 87.17 | 1,657.00 | 1,569.83 |
| | 8 Ramrod (25.0-27.5) | 2.3 | 6.44% | 19 | 91.13 | 1,881.00 | 1,789.87 |
| | 9 Torch (27.5-29.5) | 2.1 | 5.88% | 18 | 83.21 | 2,448.00 | 2,364.79 |
| | 10 Big Pine (29.5-33.0) | 3.4 | 9.52% | 29 | 134.71 | 3,602.00 | 3,467.29 |
| | 11 W Summerland, Bahia Honda, Ohio (33.0-40.0) | 7.0 | 19.61% | 59 | 277.35 | 7,776.00 | 7,498.65 |
| | 7-Mile Bridge 12 7-Mile Bridge (40.0-47.0) | 6.8 | | 0 | - | 3,698.00 | 3,698.00 |
| UPPER | Marathon 13 Marathon, Key Colony Beach (47.0-54.0) | 7.3 | 11.09% | 33 | 156.93 | 21,258.00 | 21,101.07 |
| | 14 Fat Deer Crawl, Grassy (54.0-60.5) | 6.4 | 9.73% | 29 | 137.58 | 3,603.00 | 3,465.42 |
| | Uninc 15 Duck, Conch (60.5-63.0) | 2.7 | 4.10% | 12 | 58.04 | 1,207.00 | 1,148.96 |
| | 16 Long, Fiesta, Craig (63.0-73.0) | 9.9 | 15.05% | 45 | 212.82 | 1,623.00 | 1,410.18 |
| | Islamorada 17 Lower Matecumbe (73.0-77.5) | 4.5 | 6.84% | 21 | 96.74 | 116.00 | 19.26 |
| | 18 Tea Table, Fill (77.5-79.5) | 2.2 | 3.34% | 10 | 47.29 | 2,177.00 | 2,129.71 |
| | 19 Upper Matecumbe (79.5-84.0) | 4.1 | 6.23% | 19 | 88.14 | (3,584.00) | (3,672.14) |
| | 20 Windley (84.0-86.0) | 1.9 | 2.89% | 9 | 40.84 | (482.69) | (523.53) |
| | 21 Plantation (86.5-91.5) | 5.8 | 8.81% | 26 | 124.68 | 1,622.39 | 1,497.71 |
| | Uninc 22 Tavemier, Key Largo (91.5-99.5) | 8.0 | 12.16% | 36 | 171.98 | 12,500.07 | 12,328.09 |
| | 23 Key Largo (99.5-106.0) | 6.8 | 10.33% | 31 | 146.18 | 10,352.46 | 10,206.28 |
| | 24 Key Largo, Cross Key (106.0-112.5) | 6.2 | 9.42% | 28 | 133.28 | 2,013.00 | 1,879.72 |
| | | 108.3 | | 600 | | | |

Sources: 2021 US 1 Arterial Travel Time and Delay Study, Monroe County, FL (AECOM, July 2021); Monroe County Planning Dept.; TischlerBise analysis.

Figure 7. Transportation Capacity Modeling: 1,000 ROGO Units

| | | 3. 1000 ROGO Units | | | | | | |
|-------|-------------|--|------------------------------|---------------------|-----|---|---------------------|------------|
| | | Hsg. Units | Trips/Hsg Unit | Miles (w/o 7-mi br) | | | | |
| | | LOWER | UPPER | | | | | |
| | | 500 | 4.72 | 35.7 | | | | |
| | | 500 | 4.72 | 65.8 | | | | |
| | Segment | Lngh | % mile | ROGO Units | ADT | Actual Remaining Capacity (2021 Reserve Capacity less Permitted Projects) | Capacity after ROGO | |
| LOWER | Lower Uninc | 1 South Stock Island, Key Haven (4.0-5.0) | 1.1 | 3.08% | 15 | 72.64 | 2,416.00 | 2,343.36 |
| | | 2 Boca Chica, Rockland (5.0-9.0) | 3.9 | 10.92% | 55 | 257.54 | 5,529.00 | 5,271.46 |
| | | 3 Big Coppit (9.0-10.5) | 1.5 | 4.20% | 21 | 99.05 | 748.00 | 648.95 |
| | | 4 Shark, Saddlebunch (10.5-16.5) | 5.8 | 16.25% | 81 | 383.01 | 3,604.00 | 3,220.99 |
| | | 5 Lower Sugarloaf, Upper Sugarloaf (16.5-20.5) | 3.9 | 10.92% | 55 | 257.54 | 9,293.00 | 9,035.46 |
| | | 6 Cudjoe (20.5-23.0) | 2.5 | 7.00% | 35 | 165.09 | 2,577.00 | 2,411.91 |
| | | 7 Summerland (23.0-25.0) | 2.2 | 6.16% | 31 | 145.28 | 1,657.00 | 1,511.72 |
| | | 8 Ramrod (25.0-27.5) | 2.3 | 6.44% | 32 | 151.88 | 1,881.00 | 1,729.12 |
| | | 9 Torch (27.5-29.5) | 2.1 | 5.88% | 29 | 138.68 | 2,448.00 | 2,309.32 |
| | | 10 Big Pine (29.5-33.0) | 3.4 | 9.52% | 48 | 224.52 | 3,602.00 | 3,377.48 |
| | | 11 W Summerland, Bahia Honda, Ohio (33.0-40.0) | 7.0 | 19.61% | 98 | 462.25 | 7,776.00 | 7,313.75 |
| | | 7-Mile Bridge | 12 7-Mile Bridge (40.0-47.0) | 6.8 | | 0 | - | 3,698.00 |
| UPPER | Marathon | 13 Marathon, Key Colony Beach (47.0-54.0) | 7.3 | 11.09% | 55 | 261.55 | 21,258.00 | 20,996.45 |
| | | 14 Fat Deer Crawl, Grassy (54.0-60.5) | 6.4 | 9.73% | 49 | 229.30 | 3,603.00 | 3,373.70 |
| | Uninc | 15 Duck, Conch (60.5-63.0) | 2.7 | 4.10% | 21 | 96.74 | 1,207.00 | 1,110.26 |
| | | 16 Long, Fiesta, Craig (63.0-73.0) | 9.9 | 15.05% | 75 | 354.70 | 1,623.00 | 1,268.30 |
| | Islamorada | 17 Lower Matecumbe (73.0-77.5) | 4.5 | 6.84% | 34 | 161.23 | 116.00 | (45.23) |
| | | 18 Tea Table, Fill (77.5-79.5) | 2.2 | 3.34% | 17 | 78.82 | 2,177.00 | 2,098.18 |
| | | 19 Upper Matecumbe (79.5-84.0) | 4.1 | 6.23% | 31 | 146.90 | (3,584.00) | (3,730.90) |
| | Uninc | 20 Windley (84.0-86.0) | 1.9 | 2.89% | 14 | 68.07 | (482.69) | (550.76) |
| | | 21 Plantation (86.5-91.5) | 5.8 | 8.81% | 44 | 207.80 | 1,622.39 | 1,414.59 |
| | | 22 Tavemier, Key Largo (91.5-99.5) | 8.0 | 12.16% | 61 | 286.63 | 12,500.07 | 12,213.44 |
| | | 23 Key Largo (99.5-106.0) | 6.8 | 10.33% | 52 | 243.63 | 10,352.46 | 10,108.83 |
| | | 24 Key Largo, Cross Key (106.0-112.5) | 6.2 | 9.42% | 47 | 222.14 | 2,013.00 | 1,790.86 |
| | | 108.3 | | 1,000 | | | | |

Sources: 2021 US 1 Arterial Travel Time and Delay Study, Monroe County, FL (AECOM, July 2021); Monroe County Planning Dept.; TischlerBise analysis.

Figure 8. Transportation Capacity Modeling: 2,000 ROGO Units

| | | 4. 2000 ROGO Units | | | | | | |
|-------|-------------|--|------------------------------|---------------------|-----|---|---------------------|------------|
| | | Hsg. Units | Trips/Hsg Unit | Miles (w/o 7-mi br) | | | | |
| | | LOWER | UPPER | | | | | |
| | | 1,000 | 4.72 | 35.7 | | | | |
| | | 1,000 | 4.72 | 65.8 | | | | |
| | Segment | Lngh | % mile | ROGO Units | ADT | Actual Remaining Capacity (2021 Reserve Capacity less Permitted Projects) | Capacity after ROGO | |
| LOWER | Lower Uninc | 1 South Stock Island, Key Haven (4.0-5.0) | 1.1 | 3.08% | 31 | 145.28 | 2,416.00 | 2,270.72 |
| | | 2 Boca Chica, Rockland (5.0-9.0) | 3.9 | 10.92% | 109 | 515.08 | 5,529.00 | 5,013.92 |
| | | 3 Big Coppit (9.0-10.5) | 1.5 | 4.20% | 42 | 198.11 | 748.00 | 549.89 |
| | | 4 Shark, Saddlebunch (10.5-16.5) | 5.8 | 16.25% | 162 | 766.02 | 3,604.00 | 2,837.98 |
| | | 5 Lower Sugarloaf, Upper Sugarloaf (16.5-20.5) | 3.9 | 10.92% | 109 | 515.08 | 9,293.00 | 8,777.92 |
| | | 6 Cudjoe (20.5-23.0) | 2.5 | 7.00% | 70 | 330.18 | 2,577.00 | 2,246.82 |
| | | 7 Summerland (23.0-25.0) | 2.2 | 6.16% | 62 | 290.56 | 1,657.00 | 1,366.44 |
| | | 8 Ramrod (25.0-27.5) | 2.3 | 6.44% | 64 | 303.77 | 1,881.00 | 1,577.23 |
| | | 9 Torch (27.5-29.5) | 2.1 | 5.88% | 59 | 277.35 | 2,448.00 | 2,170.65 |
| | | 10 Big Pine (29.5-33.0) | 3.4 | 9.52% | 95 | 449.05 | 3,602.00 | 3,152.95 |
| | | 11 W Summerland, Bahia Honda, Ohio (33.0-40.0) | 7.0 | 19.61% | 196 | 924.51 | 7,776.00 | 6,851.49 |
| | | 7-Mile Bridge | 12 7-Mile Bridge (40.0-47.0) | 6.8 | | 0 | - | 3,698.00 |
| UPPER | Marathon | 13 Marathon, Key Colony Beach (47.0-54.0) | 7.3 | 11.09% | 111 | 523.09 | 21,258.00 | 20,734.91 |
| | | 14 Fat Deer Crawl, Grassy (54.0-60.5) | 6.4 | 9.73% | 97 | 458.60 | 3,603.00 | 3,144.40 |
| | Uninc | 15 Duck, Conch (60.5-63.0) | 2.7 | 4.10% | 41 | 193.47 | 1,207.00 | 1,013.53 |
| | | 16 Long, Fiesta, Craig (63.0-73.0) | 9.9 | 15.05% | 150 | 709.40 | 1,623.00 | 913.60 |
| | Islamorada | 17 Lower Matecumbe (73.0-77.5) | 4.5 | 6.84% | 68 | 322.45 | 116.00 | (206.45) |
| | | 18 Tea Table, Fill (77.5-79.5) | 2.2 | 3.34% | 33 | 157.64 | 2,177.00 | 2,019.36 |
| | | 19 Upper Matecumbe (79.5-84.0) | 4.1 | 6.23% | 62 | 293.79 | (3,584.00) | (3,877.79) |
| | Uninc | 20 Windley (84.0-86.0) | 1.9 | 2.89% | 29 | 136.15 | (482.69) | (618.84) |
| | | 21 Plantation (86.5-91.5) | 5.8 | 8.81% | 88 | 415.61 | 1,622.39 | 1,206.78 |
| | | 22 Tavemier, Key Largo (91.5-99.5) | 8.0 | 12.16% | 122 | 573.25 | 12,500.07 | 11,926.82 |
| | | 23 Key Largo (99.5-106.0) | 6.8 | 10.33% | 103 | 487.26 | 10,352.46 | 9,865.20 |
| | | 24 Key Largo, Cross Key (106.0-112.5) | 6.2 | 9.42% | 94 | 444.27 | 2,013.00 | 1,568.73 |
| | | 108.3 | | 2,000 | | | | |

Sources: 2021 US 1 Arterial Travel Time and Delay Study, Monroe County, FL (AECOM, July 2021); Monroe County Planning Dept.; TischlerBise analysis.

Figure 9. Transportation Capacity Modeling: 3,000 ROGO Units

| | | 5. 3000 ROGO Units | | | | | | |
|-------|-------------|--|----------------|---------------------|------|---|---------------------|------------|
| | | Hsg. Units | Trips/Hsg Unit | Miles (w/o 7-mi br) | | | | |
| | | LOWER | 1,500 | 4.72 | 35.7 | | | |
| | | UPPER | 1,500 | 4.72 | 65.8 | | | |
| | Segment | Lngh | % mile | ROGO Units | ADT | Actual Remaining Capacity (2021 Reserve Capacity less Permitted Projects) | Capacity after ROGO | |
| LOWER | Lower Uninc | 1 South Stock Island, Key Haven (4.0-5.0) | 1.1 | 3.08% | 46 | 217.92 | 2,416.00 | 2,198.08 |
| | | 2 Boca Chica, Rockland (5.0-9.0) | 3.9 | 10.92% | 164 | 772.63 | 5,529.00 | 4,756.37 |
| | | 3 Big Coppit (9.0-10.5) | 1.5 | 4.20% | 63 | 297.16 | 748.00 | 450.84 |
| | | 4 Shark, Saddlebunch (10.5-16.5) | 5.8 | 16.25% | 244 | 1,149.03 | 3,604.00 | 2,454.97 |
| | | 5 Lower Sugarloaf, Upper Sugarloaf (16.5-20.5) | 3.9 | 10.92% | 164 | 772.63 | 9,293.00 | 8,520.37 |
| | | 6 Cudjoe (20.5-23.0) | 2.5 | 7.00% | 105 | 495.27 | 2,577.00 | 2,081.73 |
| | | 7 Summerland (23.0-25.0) | 2.2 | 6.16% | 92 | 435.84 | 1,657.00 | 1,221.16 |
| | | 8 Ramrod (25.0-27.5) | 2.3 | 6.44% | 97 | 455.65 | 1,881.00 | 1,425.35 |
| | | 9 Torch (27.5-29.5) | 2.1 | 5.88% | 88 | 416.03 | 2,448.00 | 2,031.97 |
| | | 10 Big Pine (29.5-33.0) | 3.4 | 9.52% | 143 | 673.57 | 3,602.00 | 2,928.43 |
| | | 11 W Summerland, Bahia Honda, Ohio (33.0-40.0) | 7.0 | 19.61% | 294 | 1,386.76 | 7,776.00 | 6,389.24 |
| | | 12 7-Mile Bridge (40.0-47.0) | 6.8 | | 0 | - | 3,698.00 | 3,698.00 |
| UPPER | Marathon | 13 Marathon, Key Colony Beach (47.0-54.0) | 7.3 | 11.09% | 166 | 784.64 | 21,258.00 | 20,473.36 |
| | | 14 Fat Deer Crawl, Grassy (54.0-60.5) | 6.4 | 9.73% | 146 | 687.90 | 3,603.00 | 2,915.10 |
| | Uninc | 15 Duck, Conch (60.5-63.0) | 2.7 | 4.10% | 62 | 290.21 | 1,207.00 | 916.79 |
| | | 16 Long, Fiesta, Craig (63.0-73.0) | 9.9 | 15.05% | 226 | 1,064.10 | 1,623.00 | 558.90 |
| | Islamorada | 17 Lower Matecumbe (73.0-77.5) | 4.5 | 6.84% | 103 | 483.68 | 116.00 | (367.68) |
| | | 18 Tea Table, Fill (77.5-79.5) | 2.2 | 3.34% | 50 | 236.47 | 2,177.00 | 1,940.53 |
| | | 19 Upper Matecumbe (79.5-84.0) | 4.1 | 6.23% | 93 | 440.69 | (3,584.00) | (4,024.69) |
| | | 20 Windley (84.0-86.0) | 1.9 | 2.89% | 43 | 204.22 | (482.69) | (686.91) |
| | Uninc | 21 Plantation (86.5-91.5) | 5.8 | 8.81% | 132 | 623.41 | 1,622.39 | 998.98 |
| | | 22 Tavemier, Key Largo (91.5-99.5) | 8.0 | 12.16% | 182 | 859.88 | 12,500.07 | 11,640.19 |
| | | 23 Key Largo (99.5-106.0) | 6.8 | 10.33% | 155 | 730.90 | 10,352.46 | 9,621.56 |
| | | 24 Key Largo, Cross Key (106.0-112.5) | 6.2 | 9.42% | 141 | 666.41 | 2,013.00 | 1,346.59 |
| | | 108.3 | 3,000 | | | | | |

Sources: 2021 US 1 Arterial Travel Time and Delay Study, Monroe County, FL (AECOM, July 2021); Monroe County Planning Dept.; TischlerBise analysis.

Figure 10. Transportation Capacity Modeling: 8,000 ROGO Units

| | | 6. 8000 ROGO Units | | | | | | |
|-------|-------------|--|----------------|---------------------|------|---|---------------------|------------|
| | | Hsg. Units | Trips/Hsg Unit | Miles (w/o 7-mi br) | | | | |
| | | LOWER | 4,000 | 4.72 | 35.7 | | | |
| | | UPPER | 4,000 | 4.72 | 65.8 | | | |
| | Segment | Lngh | % mile | ROGO Units | ADT | Actual Remaining Capacity (2021 Reserve Capacity less Permitted Projects) | Capacity after ROGO | |
| LOWER | Lower Uninc | 1 South Stock Island, Key Haven (4.0-5.0) | 1.1 | 3.08% | 123 | 581.12 | 2,416.00 | 1,834.88 |
| | | 2 Boca Chica, Rockland (5.0-9.0) | 3.9 | 10.92% | 437 | 2,060.34 | 5,529.00 | 3,468.66 |
| | | 3 Big Coppit (9.0-10.5) | 1.5 | 4.20% | 168 | 792.44 | 748.00 | (44.44) |
| | | 4 Shark, Saddlebunch (10.5-16.5) | 5.8 | 16.25% | 650 | 3,064.09 | 3,604.09 | 539.91 |
| | | 5 Lower Sugarloaf, Upper Sugarloaf (16.5-20.5) | 3.9 | 10.92% | 437 | 2,060.34 | 9,293.00 | 7,232.66 |
| | | 6 Cudjoe (20.5-23.0) | 2.5 | 7.00% | 280 | 1,320.73 | 2,577.00 | 1,256.27 |
| | | 7 Summerland (23.0-25.0) | 2.2 | 6.16% | 246 | 1,162.24 | 1,657.00 | 494.76 |
| | | 8 Ramrod (25.0-27.5) | 2.3 | 6.44% | 258 | 1,215.07 | 1,881.00 | 665.93 |
| | | 9 Torch (27.5-29.5) | 2.1 | 5.88% | 235 | 1,109.41 | 2,448.00 | 1,338.59 |
| | | 10 Big Pine (29.5-33.0) | 3.4 | 9.52% | 381 | 1,796.19 | 3,602.00 | 1,805.81 |
| | | 11 W Summerland, Bahia Honda, Ohio (33.0-40.0) | 7.0 | 19.61% | 784 | 3,698.04 | 7,776.00 | 4,077.96 |
| | | 12 7-Mile Bridge (40.0-47.0) | 6.8 | | 0 | - | 3,698.00 | 3,698.00 |
| UPPER | Marathon | 13 Marathon, Key Colony Beach (47.0-54.0) | 7.3 | 11.09% | 444 | 2,092.37 | 21,258.00 | 19,165.63 |
| | | 14 Fat Deer Crawl, Grassy (54.0-60.5) | 6.4 | 9.73% | 389 | 1,834.41 | 3,603.00 | 1,768.59 |
| | Uninc | 15 Duck, Conch (60.5-63.0) | 2.7 | 4.10% | 164 | 773.89 | 1,207.00 | 433.11 |
| | | 16 Long, Fiesta, Craig (63.0-73.0) | 9.9 | 15.05% | 602 | 2,837.60 | 1,623.00 | (1,214.60) |
| | Islamorada | 17 Lower Matecumbe (73.0-77.5) | 4.5 | 6.84% | 274 | 1,289.82 | 116.00 | (1,173.82) |
| | | 18 Tea Table, Fill (77.5-79.5) | 2.2 | 3.34% | 134 | 630.58 | 2,177.00 | 1,546.42 |
| | | 19 Upper Matecumbe (79.5-84.0) | 4.1 | 6.23% | 249 | 1,175.17 | (3,584.00) | (4,759.17) |
| | | 20 Windley (84.0-86.0) | 1.9 | 2.89% | 116 | 544.59 | (482.69) | (1,027.28) |
| | Uninc | 21 Plantation (86.5-91.5) | 5.8 | 8.81% | 353 | 1,662.43 | 1,622.39 | (40.04) |
| | | 22 Tavemier, Key Largo (91.5-99.5) | 8.0 | 12.16% | 486 | 2,293.01 | 12,500.07 | 10,207.06 |
| | | 23 Key Largo (99.5-106.0) | 6.8 | 10.33% | 413 | 1,949.06 | 10,352.46 | 8,403.40 |
| | | 24 Key Largo, Cross Key (106.0-112.5) | 6.2 | 9.42% | 377 | 1,777.08 | 2,013.00 | 235.92 |
| | | 108.3 | 8,000 | | | | | |

Sources: 2021 US 1 Arterial Travel Time and Delay Study, Monroe County, FL (AECOM, July 2021); Monroe County Planning Dept.; TischlerBise analysis.

Costs

Monroe County’s Comprehensive Plan includes a Transportation CIP⁹ identifying Florida DOT projects at a cost of \$340 million and Sea Level Rise Adaptation Projects estimated at a cost of \$890 million and unfunded. The FY25 Monroe County Budget includes a transportation capital improvement plan with a 5-year projected cost of approximately \$100 million (with an additional \$36 million previously appropriated). Planned total costs are shown below in Figure 11. These are costs and projects that have been identified and planned to accommodate current development as well as already allocated ROGO units. These costs are provided for informational purposes.

Figure 11. Transportation Capital Improvement Program (All Programs)

| Source | Agency | Fund/Funding Source | 5-Year Projected Costs | Previously Appropriated | Total |
|-----------|------------------------------------|--|------------------------|-------------------------|---------------|
| Comp Plan | FDOT Projects | FDOT | \$340,200,000 | n/a | \$340,200,000 |
| CIP | Monroe County | 102: Road and Bridge Countywide Capital Projects | \$54,540,323 | \$29,269,620 | \$83,809,943 |
| | | 130: Impact Fees | \$598,515 | \$3,041,744 | \$3,640,259 |
| | | 304: One Cent Infrastructure Surtax | \$44,088,112 | \$3,999,380 | \$48,087,492 |
| | | Subtotal | \$99,226,950 | \$36,310,744 | \$135,537,694 |
| Comp Plan | Sea Level Rise Adaptation Projects | Unfunded | \$890,000,000 | n/a | \$890,000,000 |

Costs modeled for this analysis assumes an average based on total construction costs regardless of funding source or whether funding is available. Given that the deficiencies projected are on US 1, a state-owned and operated facility, the assumption for financial planning is that FDOT will be responsible for funding the improvements. However, for purposes of this evaluation, an estimate is provided reflecting costs to increase capacity.

⁹ Monroe County, Florida – Comprehensive Plan: 3.14 Capital Improvements, https://library.municode.com/fl/monroe_county/codes/comprehensive_plan?nodeId=n3.0GOOBPO_3.14CAIM

Figure 12. State-Funded Road Improvement Cost Estimates

| State Projects | Cost | Center Line | Cost per Linear Mile |
|---|---------------------|-------------|----------------------|
| SR 5/US 1 MM 108.4 to MMM 112.8 | \$19,000,000 | 4.4 | \$4,318,182 |
| SR 5/US 1/Overseas Hwy on Bahia Honda Key from MM 36.6 to MM 38.4 | \$4,640,000 | 1.8 | \$2,577,778 |
| SR 5/Frontage at Boca Chica Key | \$1,577,859 | 0.5 | \$3,155,718 |
| SR 5/Whitehead St from Fleming St to W of Truman Ave | \$2,600,000 | 0.2 | \$13,000,000 |
| SR 5/Overseas Hwy from MM 97.0 to MM 100.0 | \$7,800,000 | 3 | \$2,600,000 |
| SR 5/US 1/Overseas Hwy from MM 19.4 to MM 19.8, MM 20.6 to MM 23.1 and MM 26.2 to MM 27.4 Roadway Project | \$17,400,000 | 4.1 | \$4,243,902 |
| Total | \$53,017,859 | 14 | \$3,786,990 |

| | |
|-------------------------------|--------|
| Vehicle trips per Linear Mile | 12,500 |
| Cost per Trip | \$303 |

Source: FDOT (<https://www.fdotmonroe.com/>)

The above average cost per vehicle trip is applied to total trips generated in scenarios where one segment on US 1 is over capacity. It is noted that the cost estimates in Figure 13 do not reflect planned road improvement projects or County expenditures and may not reflect the true cost for road expansion if additional lanes are needed on the roadway and/or bridges.

Figure 13. Transportation Infrastructure Analysis Findings

| OUTPUT SUMMARY | | | 1. 220 ROGO Units | | | 2. 600 ROGO Units | | | 3. 1000 ROGO Units | | |
|---|------------|---|-------------------|----------------------------|-----------|-------------------|----------------------------|-----------|--------------------|----------------------------|-----------|
| Monroe County, Florida, ROGO Infrastructure Study | | | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost |
| Transportation Lower Keys | Veh. Trips | * | 519 | Yes | \$0 | 1,415 | Yes | \$0 | 2,358 | Yes | \$0 |
| Transportation Upper Keys | Veh. Trips | * | 519 | No | \$157,000 | 1,415 | No | \$429,000 | 2,358 | No | \$714,000 |

| | | | 4. 2000 ROGO Units | | | 5. 3000 ROGO Units | | | 6. 8000 ROGO Units | | |
|---------------------------|------------------|---|--------------------|----------------------------|-------------|--------------------|----------------------------|-------------|--------------------|----------------------------|-------------|
| Unit | Reserve Capacity | | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost |
| Transportation Lower Keys | Veh. Trips | * | 4,715 | Yes | \$0 | 7,073 | Yes | \$0 | 18,860 | No | \$5,714,000 |
| Transportation Upper Keys | Veh. Trips | * | 4,715 | No | \$1,428,000 | 7,073 | No | \$2,143,000 | 18,860 | No | \$5,714,000 |

* Reserve capacity for transportation is determined on a segment by segment basis; the "available capacity" determination shown is based on whether any segment along US 1 is deficient. Costs are generalized based on average cost per trip and applied to total trips generated when capacity thresholds are triggered and do not reflect planned road improvement projects or County expenditures.

WASTEWATER

Wastewater demand is projected based on the current planning level of service of 70 gallons per day per equivalent dwelling unit (EDU) (per FKA).¹⁰ The analysis assumes growth is in single family units. One single family unit is one EDU, therefore the ROGO units assumed in each scenario equal that number of EDUs. The analysis projects demand in each scenario and compares it to existing and available wastewater (sanitary sewer) capacity.

Four entities provide sewer services in the County: Florida Keys Aqueduct Authority (FKAA), Key Largo Wastewater Treatment District, North Key Largo Utilities Corporation, and Key West Resort Utilities. Current capacity and demand is shown in Figure 14 with a reserve capacity of approximately 2.5 million gallons per day.

Figure 14. Existing Wastewater System Level of Service, Demand, and Capacity

| FKAA facilities | Current Avg daily flow (gpd) | Current Estd Capacity (gpd) |
|---|-------------------------------------|------------------------------------|
| Key Haven WW (decommissioned) | 0 | 0 |
| Big Coppitt | 295,000 | 323,000 |
| Bay Point | 36,000 | 54,000 |
| Duck Key | 122,000 | 274,000 |
| Layton/Long Key | 29,000 | 66,000 |
| Cudjoe Regional | 689,000 | 940,000 |
| Cross Key | 4,000 | 26,000 |
| Total | 1,175,000 | 1,683,000 |
| Key Largo Wastewater Treatment Plant and District | 1,970,000 | 3,450,000 |
| North Key Largo Utilities Corp | 250,000 | 499,000 |
| Key West Resort Utilities | 577,000 | 849,000 |
| Total | 2,797,000 | 4,798,000 |
| GRAND TOTAL | 3,972,000 | 6,481,000 |
| | Reserve Capacity | 2,509,000 |
| | Avg gpd per EDU¹ | 70 |

1. FKA

Source: FKA; 2023-2025 Monroe County Biennial Public Facilities Capacity Assessment Report

¹⁰ It is noted that the Monroe County Code (Article V, Sec. 20-102) and Monroe County Year 2030 Comprehensive Plan Policy 901.1.1 identifies required level of service at 167 gallons per day per EDU. At this higher level of service standard, wastewater capacity exists to serve each allocation scenario.

Shown below is wastewater usage projected under each scenario assuming 70 gallons per day per EDU (housing unit).

Figure 15. Summary of Projected Demand under Each Scenario: Wastewater

| DEMAND SUMMARY | | | | | | | |
|---|-----------------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|
| Monroe County, Florida, ROGO Infrastructure Study | | | | | | | |
| Category | Unit | SCENARIO | | | | | |
| | | 1. 220 ROGO Units | 2. 600 ROGO Units | 3. 1000 ROGO Units | 4. 2000 ROGO Units | 5. 3000 ROGO Units | 6. 8000 ROGO Units |
| FUNCTIONAL POPULATION | Persons | 711 | 1,938 | 3,230 | 6,460 | 9,690 | 25,840 |
| YEAR ROUND POPULATION | Persons | 343 | 936 | 1,560 | 3,120 | 4,680 | 12,480 |
| TOTAL UNITS | Housing Units | 220 | 600 | 1,000 | 2,000 | 3,000 | 8,000 |
| TOTAL EDUS | Equivalent Dwelling Unit | 220 | 600 | 1,000 | 2,000 | 3,000 | 8,000 |
| TOTAL ENROLLMENT | Public School Students | 30 | 81 | 135 | 271 | 406 | 1,083 |
| VEHICLE TRIPS | Average Daily Vehicle Trips | 1,037 | 2,829 | 4,715 | 9,430 | 14,145 | 37,720 |
| WATER USAGE | Gallons per Day | 44,000 | 120,000 | 200,000 | 400,000 | 600,000 | 1,600,000 |
| WASTEWATER USAGE | Gallons per Day | 15,400 | 42,000 | 70,000 | 140,000 | 210,000 | 560,000 |
| SOLID WASTE GENERATION | Pounds per Day | 8,108 | 22,113 | 36,854 | 73,709 | 110,563 | 294,834 |
| ELECTRIC DEMAND | Megawatts | 1.1 | 2.9 | 4.9 | 9.8 | 14.6 | 39.1 |

Given existing capacity and projected demand in each scenario, capacity is available to serve growth at each allocation. However, it should be noted that current debt for wastewater capital improvements issued to improve and enhance capacity is not included as a cost, as these improvements were assumed to be needed regardless of new growth.

Figure 16. Wastewater Infrastructure Analysis Findings

| OUTPUT SUMMARY | | | | | | | | | | | |
|---|------------------|--------------------|----------------------------|------|--------------------|----------------------------|------|--------------------|----------------------------|------|-----|
| Monroe County, Florida, ROGO Infrastructure Study | | | | | | | | | | | |
| Unit | Reserve Capacity | 1. 220 ROGO Units | | | 2. 600 ROGO Units | | | 3. 1000 ROGO Units | | | |
| | | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost | |
| Wastewater | GPD | 2,509,000 | 15,400 | Yes | \$0 | 42,000 | Yes | \$0 | 70,000 | Yes | \$0 |
| Unit | Reserve Capacity | 4. 2000 ROGO Units | | | 5. 3000 ROGO Units | | | 6. 8000 ROGO Units | | | |
| | | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost | |
| Wastewater | GPD | 2,509,000 | 140,000 | Yes | \$0 | 210,000 | Yes | \$0 | 560,000 | Yes | \$0 |

POTABLE WATER

Florida Keys Aqueduct Authority (FKAA) is the sole provider of potable water in the Florida Keys. Current water capacity and demand is shown in Figure 17. Capacity is approximately 27.79 million gallons per day serving demand of approximately 20.40 million gallons per day resulting in reserve capacity of 7.39 million gallons per day on average.¹¹ (In addition to the capacity shown, emergency capacity of 3 million gallons per day is available from desalinization at Stock Island and Marathon.)

Figure 17. Existing Water System Level of Service, Capacity, and Demand

| | |
|------------------------------------|-----------------|
| Demand per EDU ¹ | 200 gpd |
| FKAA Current Capacity ² | 27.79 mgd |
| Current Demand ³ | 20.40 mgd |
| Reserve Capacity | 7.39 mgd |

1. FKAA.
2. FKAA as of March 2025 (23.8 current capacity plus 4 mgd from Stock Island Reverse Osmosis facility anticipated completion in March 2025).
3. FKAA, Year to Date 2024.

Source: FKAA.

Shown below is the projected demand for water under each scenario assuming FKAA’s planning figure of 200 gallons per day per EDU.¹² Demand ranges from 44,000 gallons per day for 220 units to a high of approximately 1.6 million gallons per day for the maximum 8,000 unit scenario.

¹¹ Per FKAA, total annual capacity is 27.79 mgd, comprised of 23.79 mgd (17.79 from Biscayne Aquifer and 6 mgd from a reverse osmosis plant) plus 4 mgd from the new Stock Island Reverse Osmosis Plant intended to be used as regular supply and scheduled to be operational by March 2025. A second Reverse Osmosis Plant at Marathon Key providing another 4 mgd is scheduled to be completed by 2029.

¹² Per Monroe County Year 2030 Comprehensive Plan Policy 701.1.1, adopted level of service is 100 gallons per capita per day. At this level of service standard, water capacity exists to serve each allocation scenario.

Figure 18. Summary of Projected Demand under Each Scenario: Potable Water

| DEMAND SUMMARY | | | | | | | |
|---|-----------------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|
| Monroe County, Florida, ROGO Infrastructure Study | | | | | | | |
| Category | Unit | SCENARIO | | | | | |
| | | 1. 220 ROGO Units | 2. 600 ROGO Units | 3. 1000 ROGO Units | 4. 2000 ROGO Units | 5. 3000 ROGO Units | 6. 8000 ROGO Units |
| FUNCTIONAL POPULATION | Persons | 711 | 1,938 | 3,230 | 6,460 | 9,690 | 25,840 |
| YEAR ROUND POPULATION | Persons | 343 | 936 | 1,560 | 3,120 | 4,680 | 12,480 |
| TOTAL UNITS | Housing Units | 220 | 600 | 1,000 | 2,000 | 3,000 | 8,000 |
| TOTAL EDUS | Equivalent Dwelling Unit | 220 | 600 | 1,000 | 2,000 | 3,000 | 8,000 |
| TOTAL ENROLLMENT | Public School Students | 30 | 81 | 135 | 271 | 406 | 1,083 |
| VEHICLE TRIPS | Average Daily Vehicle Trips | 1,037 | 2,829 | 4,715 | 9,430 | 14,145 | 37,720 |
| WATER USAGE | Gallons per Day | 44,000 | 120,000 | 200,000 | 400,000 | 600,000 | 1,600,000 |
| WASTEWATER USAGE | Gallons per Day | 15,400 | 42,000 | 70,000 | 140,000 | 210,000 | 560,000 |
| SOLID WASTE GENERATION | Pounds per Day | 8,108 | 22,113 | 36,854 | 73,709 | 110,563 | 294,834 |
| ELECTRIC DEMAND | Megawatts | 1.1 | 2.9 | 4.9 | 9.8 | 14.6 | 39.1 |

Given documented capacity and projected demand in each scenario, sufficient potable water capacity is available to serve growth under each ROGO allocation. Results of the ROGO evaluation are provided in Figure 19.

Figure 19. Water Infrastructure Analysis Findings

| OUTPUT SUMMARY | | | | | | | | | | | |
|---|-----|-----------|--------------------|----------------------------|------|--------------------|----------------------------|------|--------------------|----------------------------|------|
| Monroe County, Florida, ROGO Infrastructure Study | | | | | | | | | | | |
| Unit | | | 1. 220 ROGO Units | | | 2. 600 ROGO Units | | | 3. 1000 ROGO Units | | |
| | | | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost |
| Potable Water | GPD | 7,390,000 | 44,000 | Yes | \$0 | 120,000 | Yes | \$0 | 200,000 | Yes | \$0 |
| Unit | | | 4. 2000 ROGO Units | | | 5. 3000 ROGO Units | | | 6. 8000 ROGO Units | | |
| | | | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost |
| Potable Water | GPD | 7,390,000 | 400,000 | Yes | \$0 | 600,000 | Yes | \$0 | 1,600,000 | Yes | \$0 |

The FCAA Five-Year (FY2025-2029) Capital Improvement Plan includes \$307.3 million in projects to augment water treatment, improve transmission by replacing segments of the 130-mile water main,¹³ upgrade distribution, improve storage capabilities, and expand supply through an additional reverse osmosis facility at Marathon Key. Because the water system operates as an enterprise fund, rates and fees are calculated to recover operating, maintenance, and capital improvement costs that are not covered by grant funding.¹⁴ **Phasing within scenarios was not considered in this study, however, the timing of additional development would need to be coordinated with project timelines for certain planned improvements.** As with other infrastructure categories in this study, planned water capital improvements programmed to occur regardless of additional ROGO allocations are not identified as cost impacts in this analysis.

¹³ Islamorada and Windley Key pipeline segments have been completed; Plantation Key pipeline segment is slated to be constructed by the end of 2026. These planned improvements are expected to address recent water pressure issues. (Water pressure issues have been documented in the 2023-2025 Monroe County Biennial Public Facilities Capacity Assessment Report.)

¹⁴ FCAA CIP Project Update, November 2024, identifies grant funding of \$95.1 million.

PUBLIC SCHOOLS

Public School infrastructure is based on an evaluation of existing public school capacity compared to demand from growth calculated using an average public school student generation rate derived from current enrollment divided by total number of housing units in the County. Figure 20 provides the student generation rate (SGR) used to project demand from new housing units.

Figure 20. Monroe County Student Generation Rate (SGR)

| | |
|---------------------|--------|
| 2023-24 Enrollment | 7,330 |
| Total Housing Units | 54,146 |
| Total SGR | 0.135 |

Sources: Florida Dept. of Education, Florida Inventory of School Houses (FISH) data, 2023-24 School Year

Current public school enrollment and capacity for Monroe County Public Schools (MCPS) is available from the Florida Department of Education. Current utilization (enrollment to capacity) is at 71 percent for pre-Kindergarten through grade 12 indicating excess capacity in the school system today.

Figure 21. Current Public School Enrollment and Capacity

| | Capacity | Enrollment PK-12 | Enrollment K-12 | Utilization (PK-12) | Excess Capacity |
|--------------|---------------|------------------|-----------------|---------------------|-----------------|
| Elementary | 2,039 | 1,647 | 1,600 | 81% | 392 |
| Combination | 5,498 | 3,572 | 3,527 | 65% | 1,926 |
| Senior High | 2,600 | 2,026 | 2,026 | 78% | 574 |
| Exceptional | 144 | 85 | 85 | 59% | 59 |
| Total | 10,281 | 7,330 | 7,238 | 71% | 2,951 |

Source: Florida Department of Education, FISH Data, January 2024

The analysis includes demand on the bus fleet as well. MCPS' current inventory of 49 school buses serves a total enrollment of 7,330. Additional buses are projected to serve growth at a current cost per bus of \$120,000.

Enrollment projections for each scenario are provided in Figure 22. New enrollment is projected in the range of 30 for the lowest growth scenario to 1,083 for the highest growth.

Figure 22. Summary of Projected Student Enrollment Demand under Each Scenario: Schools

| DEMAND SUMMARY | | | | | | | |
|---|-------------------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|
| Monroe County, Florida, ROGO Infrastructure Study | | | | | | | |
| Category | Unit | SCENARIO | | | | | |
| | | 1. 220 ROGO Units | 2. 600 ROGO Units | 3. 1000 ROGO Units | 4. 2000 ROGO Units | 5. 3000 ROGO Units | 6. 8000 ROGO Units |
| FUNCTIONAL POPULATION | Persons | 711 | 1,938 | 3,230 | 6,460 | 9,690 | 25,840 |
| YEAR ROUND POPULATION | Persons | 343 | 936 | 1,560 | 3,120 | 4,680 | 12,480 |
| TOTAL UNITS | Housing Units | 220 | 600 | 1,000 | 2,000 | 3,000 | 8,000 |
| TOTAL EDUS | Equivalent Dwelling Unit | 220 | 600 | 1,000 | 2,000 | 3,000 | 8,000 |
| TOTAL ENROLLMENT | Public School Students | 30 | 81 | 135 | 271 | 406 | 1,083 |
| VEHICLE TRIPS | Average Daily Vehicle Trips | 1,037 | 2,829 | 4,715 | 9,430 | 14,145 | 37,720 |
| WATER USAGE | Gallons per Day | 44,000 | 120,000 | 200,000 | 400,000 | 600,000 | 1,600,000 |
| WASTEWATER USAGE | Gallons per Day | 15,400 | 42,000 | 70,000 | 140,000 | 210,000 | 560,000 |
| SOLID WASTE GENERATION | Pounds per Day | 8,108 | 22,113 | 36,854 | 73,709 | 110,563 | 294,834 |
| ELECTRIC DEMAND | Megawatts | 1.1 | 2.9 | 4.9 | 9.8 | 14.6 | 39.1 |

Figure 23 shows projected enrollment along with available capacity for each ROGO scenario. Even at the maximum growth scenario, school facility capacity is available. A need for new buses (or fraction of a vehicle) is projected in each scenario. As noted elsewhere, prorated costs for “partial” buses are shown to capture impacts in each scenario.

Figure 23. School Infrastructure Analysis Findings

| OUTPUT SUMMARY | | | | | | | | | | | |
|---|------------------|-------|--------------------|----------------------------|-----------|--------------------|----------------------------|-----------|--------------------|----------------------------|-----------|
| Monroe County, Florida, ROGO Infrastructure Study | | | | | | | | | | | |
| | | | 1. 220 ROGO Units | | | 2. 600 ROGO Units | | | 3. 1000 ROGO Units | | |
| Unit | Reserve Capacity | | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost |
| School Facilities | Seats | 3,473 | 30 | Yes | \$0 | 81 | Yes | \$0 | 135 | Yes | \$0 |
| School Buses | Vehicle | 0 | 0.20 | Partial | \$24,000 | 0.54 | Partial | \$65,000 | 0.90 | Partial | \$108,000 |
| | | | 4. 2000 ROGO Units | | | 5. 3000 ROGO Units | | | 6. 8000 ROGO Units | | |
| Unit | Reserve Capacity | | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost |
| School Facilities | Seats | 3,473 | 271 | Yes | \$0 | 406 | Yes | \$0 | 1,083 | Yes | \$0 |
| School Buses | Vehicle | 0 | 1.8 | No | \$217,000 | 2.7 | No | \$326,000 | 7.2 | No | \$869,000 |

SOLID WASTE

Solid waste generation is projected from new housing units based on the average demand generation factor in the Monroe County Public Facilities Capacity Assessment Report and compared to the current capacity at four transfer stations in the County (three owned and operated by Monroe County and one owned and operated by the City of Key West). The current demand factor is shown in Figure 24.

Figure 24. Solid Waste Level of Service

Level of Service 11.41 pounds per functional capita per day

Source: Monroe County 2023-2025 Public Facilities Capacity Assessment Report (PFCR)

Solid waste generation is projected for each scenario as shown in Figure 25.

Figure 25. Summary of Projected Demand under Each Scenario: Solid Waste

| DEMAND SUMMARY | | | | | | | |
|---|-----------------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Monroe County, Florida, ROGO Infrastructure Study | | | | | | | |
| Category | Unit | SCENARIO | | | | | |
| | | 1. 220 ROGO Units | 2. 600 ROGO Units | 3. 1000 ROGO Units | 4. 2000 ROGO Units | 5. 3000 ROGO Units | 6. 8000 ROGO Units |
| FUNCTIONAL POPULATION | Persons | 711 | 1,938 | 3,230 | 6,460 | 9,690 | 25,840 |
| YEAR ROUND POPULATION | Persons | 343 | 936 | 1,560 | 3,120 | 4,680 | 12,480 |
| TOTAL UNITS | Housing Units | 220 | 600 | 1,000 | 2,000 | 3,000 | 8,000 |
| TOTAL EDUS | Equivalent Dwelling Unit | 220 | 600 | 1,000 | 2,000 | 3,000 | 8,000 |
| TOTAL ENROLLMENT | Public School Students | 30 | 81 | 135 | 271 | 406 | 1,083 |
| VEHICLE TRIPS | Average Daily Vehicle Trips | 1,037 | 2,829 | 4,715 | 9,430 | 14,145 | 37,720 |
| WATER USAGE | Gallons per Day | 44,000 | 120,000 | 200,000 | 400,000 | 600,000 | 1,600,000 |
| WASTEWATER USAGE | Gallons per Day | 15,400 | 42,000 | 70,000 | 140,000 | 210,000 | 560,000 |
| SOLID WASTE GENERATION | Pounds per Day | 8,108 | 22,113 | 36,854 | 73,709 | 110,563 | 294,834 |
| ELECTRIC DEMAND | Megawatts | 1.1 | 2.9 | 4.9 | 9.8 | 14.6 | 39.1 |

While the projected growth does not trigger a net new facility, current Solid Waste Transfer Stations are essentially at capacity and therefore need system expansions today according to County staff. Because additional sites are unlikely to be acquired due to land limitations, it is anticipated that capacity expansions will take the form of improvements to tipping floors. Again, this is needed regardless of additional growth, so these costs are not included in the study.

In addition, staff indicate that an expansion of the fleet deployed for illegal dumping cleanup is likely to be needed to continue to provide the same level of service. This cost is modeled and shown in Figure 26.

Figure 26. Solid Waste Infrastructure Analysis Findings

| OUTPUT SUMMARY | | | 1. 220 ROGO Units | | | 2. 600 ROGO Units | | | 3. 1000 ROGO Units | | |
|---|---------|---|-------------------|----------------------------|------|-------------------|----------------------------|------|--------------------|----------------------------|------|
| Monroe County, Florida, ROGO Infrastructure Study | | | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost |
| Solid Waste Sites [^] | Sites | 0 | 0.02 | Partial | \$0 | 0.04 | Partial | \$0 | 0.07 | Partial | \$0 |
| Solid Waste Vehicles | Vehicle | 0 | 0.00 | Yes | \$0 | 0.00 | Yes | \$0 | 0.00 | Yes | \$0 |

| | | | 4. 2000 ROGO Units | | | 5. 3000 ROGO Units | | | 6. 8000 ROGO Units | | |
|--------------------------------|------------------|---|--------------------|----------------------------|----------|--------------------|----------------------------|----------|--------------------|----------------------------|-----------|
| Unit | Reserve Capacity | | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost |
| Solid Waste Sites [^] | Sites | 0 | 0.1 | Partial | \$0 | 0.2 | Partial | \$0 | 0.6 | Partial | \$0 |
| Solid Waste Vehicles | Vehicle | 0 | 0.1 | Partial | \$15,000 | 0.2 | Partial | \$30,000 | 0.7 | Partial | \$105,000 |

[^] Improvements are assumed to take the form of improvements to existing sites; costs are unavailable at this time.

It is also noted that contracted haulers should be consulted regarding their capacity to accommodate increased demand. In other words, will haulers be able to continue to provide the same level of service or cause a reduction in collection days with additional growth? Will fleet (and staff) need to be expanded to accommodate additional growth, potentially increasing costs for customers?

Further, Monroe County trash haulers currently use a landfill in Miami-Dade County. In early 2025, they will move to a landfill in Okeechobee, increasing the distance traveled and presumably increasing costs to haulers as well as potentially increasing costs for customers (although this change is occurring regardless of any further growth).

PARKS

Additional County park infrastructure is modeled based on the number of acres needed to maintain current park levels of service for active and passive parks in excess of current available capacity. Adopted levels of service of 1.5 acres per 1,000 functional population each for passive and active parks are used to project acres needed from new housing units in each scenario. The level of service summary is shown in Figure 27.

Figure 27. Existing Park System Level of Service

| LOS | | | |
|-----|-------|---|-----------------------|
| # | Unit | Type | Demand base |
| 1.5 | Acres | passive/resource based neighborhood and community parks | Functional Population |
| 1.5 | Acres | activity-based neighborhood and community parks | Functional Population |

Source: Monroe County 2023-2025 Public Facilities Capacity Assessment Report (PFCR)

Current capacity in the park system is shown in Figure 28. As indicated, based on the adopted levels of service, a deficit exists today in passive parks and a surplus in active parks.

Figure 28. Parks Current Demand and Capacity

| | | | | |
|-----------------------|--|--------------------|-------------------|--------------------------|
| FUNCTIONAL POPULATION | 174,993 | | | |
| | ACRES NEEDED TO SERVE CURRENT | | | CURRENT |
| | CURRENT ACRES | ADOPTED LOS | FUNC. POP. | SURPLUS/(DEFICIT) |
| PASSIVE PARKS | 250 | 1.50 | 262 | -12.490 |
| ACTIVE PARKS | 434 | 1.50 | 262 | 171.511 |

Source: Monroe County

Shown below is projected functional population for each scenario used for parks projections.

Figure 29. Summary of Projected Demand under Each Scenario: Parks

| DEMAND SUMMARY | | | | | | | |
|---|-----------------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Monroe County, Florida, ROGO Infrastructure Study | | | | | | | |
| Category | Unit | SCENARIO | | | | | |
| | | 1. 220 ROGO Units | 2. 600 ROGO Units | 3. 1000 ROGO Units | 4. 2000 ROGO Units | 5. 3000 ROGO Units | 6. 8000 ROGO Units |
| FUNCTIONAL POPULATION | Persons | 711 | 1,938 | 3,230 | 6,460 | 9,690 | 25,840 |
| YEAR ROUND POPULATION | Persons | 343 | 936 | 1,560 | 3,120 | 4,680 | 12,480 |
| TOTAL UNITS | Housing Units | 220 | 600 | 1,000 | 2,000 | 3,000 | 8,000 |
| TOTAL EDUS | Equivalent Dwelling Unit | 220 | 600 | 1,000 | 2,000 | 3,000 | 8,000 |
| TOTAL ENROLLMENT | Public School Students | 30 | 81 | 135 | 271 | 406 | 1,083 |
| VEHICLE TRIPS | Average Daily Vehicle Trips | 1,037 | 2,829 | 4,715 | 9,430 | 14,145 | 37,720 |
| WATER USAGE | Gallons per Day | 44,000 | 120,000 | 200,000 | 400,000 | 600,000 | 1,600,000 |
| WASTEWATER USAGE | Gallons per Day | 15,400 | 42,000 | 70,000 | 140,000 | 210,000 | 560,000 |
| SOLID WASTE GENERATION | Pounds per Day | 8,108 | 22,113 | 36,854 | 73,709 | 110,563 | 294,834 |
| ELECTRIC DEMAND | Megawatts | 1.1 | 2.9 | 4.9 | 9.8 | 14.6 | 39.1 |

Cost estimates for recent County park improvements are shown below in Figure 30. The cost per acre is used to project the range of cost impacts from the scenarios. It is noted that park costs vary greatly depending on the types of improvements built, therefore these estimates should be considered placeholders until further detailed study is done.

Figure 30. Parks Cost Estimates

| | Cost | Acres | Cost/Acre |
|---------------------------|--------------------|-------------------------|------------------|
| Higgs Beach Master Plan | \$4,682,781 | 16.5 | \$283,805 |
| Bernstein Park Renovation | \$520,050 | 6.5 | \$80,008 |
| Rowell's Waterfront Park | \$1,400,000 | 8 | \$175,000 |
| Total | \$6,602,831 | 31 | \$212,995 |
| | | ROUNDED PER ACRE | \$213,000 |

Source: Monroe County

Shown below is the projected demand for parks acres under each scenario using the adopted level of service of 1.5 acres per 1,000 people (projected on functional population) for each type of park. Demand ranges from approximately 1 acre of each type of park to almost 39 acres of each.

Currently, passive parks are at the capacity while active parks have excess capacity in the system at adopted levels of service. Therefore, all scenarios project a need for additional passive acres. Sufficient excess capacity is available in active parks such that no scenario triggers a need for additional acres.

Figure 31. Parks Infrastructure Analysis Findings

| OUTPUT SUMMARY | | | | | | | | | | | |
|---|------------------|-----|--------------------|----------------------------|-------------|--------------------|----------------------------|-------------|--------------------|----------------------------|-------------|
| Monroe County, Florida, ROGO Infrastructure Study | | | 1. 220 ROGO Units | | | 2. 600 ROGO Units | | | 3. 1000 ROGO Units | | |
| Unit | Reserve Capacity | | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost |
| Passive Parks | Acre | -12 | 1.07 | No | \$226,000 | 2.91 | No | \$618,000 | 4.85 | No | \$1,031,000 |
| Active Parks | Acre | 172 | 1.07 | Yes | \$0 | 2.91 | Yes | \$0 | 4.85 | Yes | \$0 |
| | | | 4. 2000 ROGO Units | | | 5. 3000 ROGO Units | | | 6. 8000 ROGO Units | | |
| Unit | Reserve Capacity | | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost |
| Passive Parks | Acre | -12 | 9.7 | No | \$2,064,000 | 14.5 | No | \$3,095,000 | 38.8 | No | \$8,256,000 |
| Active Parks | Acre | 172 | 9.7 | Yes | \$0 | 14.5 | Yes | \$0 | 38.8 | Yes | \$0 |

ELECTRIC

For electric infrastructure, the study approach is to project increased demand on the electric grid from the growth scenarios and consult with current providers regarding capability of the system to accommodate additional demand in excess of what is currently planned. Monroe County is served by two electric providers, Keys Energy Services (KEYS) (serving the Lower Keys) and Florida Keys Electric Cooperative Association (FKEC) (serving the Upper Keys). Peak demand, current customers, and peak kilowatts per customer are provided in Figure 32.

Figure 32. Current Electric Level of Service and Demand

| | Keys Energy Services (KEYS) <i>Lower/South of 7 Mile Bridge</i> | Florida Keys Electric Cooperative (FKEC) <i>Upper/North of 7 Mile Bridge</i> | Total |
|-------------------------------------|--|---|--------------|
| 2023 Annual Peak Demand (Megawatts) | 156 | 167 | 323 |
| 2023 Customers | 31,780 | 34,377 | 66,157 |
| Peak MW/Customer | 0.004909 | 0.004858 | 0.004882 |
| Peak kW/Customer (rounded) | 4.909 | 4.858 | 4.882 |

Note: Figures include the total system (residential and commercial customers).

Sources: KEYS and FKEC.

Per KEYS, a peak annual demand of 156 MW was reached in 2023, which was not reached in 2024. Using the demand factor of 4.882 kW per customer (i.e., housing unit or EDU), electric demand can be projected for each scenario as shown in Figure 33.¹⁵

Figure 33. Summary of Projected Demand under Each Scenario: Electric

| DEMAND SUMMARY | | SCENARIO | | | | | |
|---|-----------------------------|-------------|-------------|--------------|--------------|--------------|--------------|
| Monroe County, Florida, ROGO Infrastructure Study | | 1. 220 ROGO | 2. 600 ROGO | 3. 1000 ROGO | 4. 2000 ROGO | 5. 3000 ROGO | 6. 8000 ROGO |
| Category | Unit | Units | Units | Units | Units | Units | Units |
| FUNCTIONAL POPULATION | Persons | 711 | 1,938 | 3,230 | 6,460 | 9,690 | 25,840 |
| YEAR ROUND POPULATION | Persons | 343 | 936 | 1,560 | 3,120 | 4,680 | 12,480 |
| TOTAL UNITS | Housing Units | 220 | 600 | 1,000 | 2,000 | 3,000 | 8,000 |
| TOTAL EDUS | Equivalent Dwelling Unit | 220 | 600 | 1,000 | 2,000 | 3,000 | 8,000 |
| TOTAL ENROLLMENT | Public School Students | 30 | 81 | 135 | 271 | 406 | 1,083 |
| VEHICLE TRIPS | Average Daily Vehicle Trips | 1,037 | 2,829 | 4,715 | 9,430 | 14,145 | 37,720 |
| WATER USAGE | Gallons per Day | 44,000 | 120,000 | 200,000 | 400,000 | 600,000 | 1,600,000 |
| WASTEWATER USAGE | Gallons per Day | 15,400 | 42,000 | 70,000 | 140,000 | 210,000 | 560,000 |
| SOLID WASTE GENERATION | Pounds per Day | 8,108 | 22,113 | 36,854 | 73,709 | 110,563 | 294,834 |
| ELECTRIC DEMAND | Megawatts | 1.1 | 2.9 | 4.9 | 9.8 | 14.6 | 39.1 |

¹⁵ It is noted that providers project growth at 1 percent per year and have indicated that they have ample capacity to serve this amount of growth.

Major providers indicate that capital projects for system improvements and redundancy will continue to be planned and implemented based on current annual growth (assumed at 1 percent), as well as any future growth allocations. Similar to the approach for other infrastructure, these costs are not included in the analysis given that the improvements need to occur otherwise. As growth continues to occur, both electric providers indicate a need and likelihood of continued investment in infrastructure to ensure management of peak load demands and redundancy. While the system has capacity to address current peak hour demands, current practice is for KEYS to use local generation, although more expensive to produce, it has a diminutive impact on customer costs.¹⁶ It is noted that additional growth is likely to exacerbate the practice of local generation unless other system improvements are made; however, according to KEYS, transmission line upgrades are not necessary but would provide an alternative to local generation. Additionally, the location and timing of future growth will affect the need for system improvements.

Figure 34. Electric Infrastructure Analysis Findings

| OUTPUT SUMMARY | | | 1. 220 ROGO Units | | | 2. 600 ROGO Units | | | 3. 1000 ROGO Units | | |
|---|------------------|----|--------------------|----------------------------|------|--------------------|----------------------------|------|--------------------|----------------------------|------|
| Monroe County, Florida, ROGO Infrastructure Study | | | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost |
| Electric# | Megawatts | NA | 1.1 | Yes | \$0 | 2.9 | Yes | \$0 | 4.9 | Yes | \$0 |
| | | | 4. 2000 ROGO Units | | | 5. 3000 ROGO Units | | | 6. 8000 ROGO Units | | |
| Unit | Reserve Capacity | | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost |
| Electric# | Megawatts | NA | 9.8 | Yes | \$0 | 14.6 | Yes | \$0 | 39.1 | Yes | \$0 |

See report narrative.

¹⁶ According to KEYS, local generation has been deployed the following amount:

- 2022: 6 generation run days, 14 hours
- 2023: 31 generation run days, 176 hours
- 2024: 30 generation run days, 96 hours

Per KEYS staff, it is noted that local generation does not result in localized price increases. KEYS is one of thirteen cities who purchase power from the Florida Municipal Power Agency’s All Requirements Project with the cost of power production spread over all member cities. Furthermore, the need for local generation is seasonal and driven by demand in the hottest months during a roughly four-hour period between 2 and 6 pm. It is anticipated that the number of days and potentially the number of hours is likely to increase if an additional 8,000 units are added. With the exception of an “EV Charging Rate Class” and a voluntary “Time of Use Rate Class,” KEYS does not vary pricing to customers nor does the power supplier vary the pricing of energy purchased, rather, the costs are blended into an overall rate. At this time, it is unknown how rates would be affected with either additional local power generation due to growth or transmission line capital improvement projects.

PUBLIC SAFETY: SHERIFF AND FIRE & RESCUE

The ROGO Infrastructure Study includes an evaluation of Sheriff and Fire & Rescue infrastructure.

Sheriff: The study identifies whether new law enforcement stations and vehicles are needed based on current levels of service and discussions with Monroe County Sheriff Office staff. Staff have indicated capacity exists to serve approximately 6,000 additional units, therefore the study assumes that this amount of growth can be absorbed and scenarios with more than 6,000 units are evaluated for additional needs.

Fire and Rescue: The study identifies whether new fire stations and apparatus are needed based on current levels of service, including services provided in municipalities. This is a high level examination and not location specific. To capture potential impacts to the County from additional growth, costs are included for portions of facilities.

Both services are projected based on the increase in functional population provided in Figure 35.

Figure 35. Summary of Projected Demand under Each Scenario: Public Safety

| DEMAND SUMMARY | | SCENARIO | | | | | |
|---|-----------------------------|-------------|-------------|--------------|--------------|--------------|--------------|
| Monroe County, Florida, ROGO Infrastructure Study | | 1. 220 ROGO | 2. 600 ROGO | 3. 1000 ROGO | 4. 2000 ROGO | 5. 3000 ROGO | 6. 8000 ROGO |
| Category | Unit | Units | Units | Units | Units | Units | Units |
| FUNCTIONAL POPULATION | Persons | 711 | 1,938 | 3,230 | 6,460 | 9,690 | 25,840 |
| YEAR ROUND POPULATION | Persons | 343 | 936 | 1,560 | 3,120 | 4,680 | 12,480 |
| TOTAL UNITS | Housing Units | 220 | 600 | 1,000 | 2,000 | 3,000 | 8,000 |
| TOTAL EDUS | Equivalent Dwelling Unit | 220 | 600 | 1,000 | 2,000 | 3,000 | 8,000 |
| TOTAL ENROLLMENT | Public School Students | 30 | 81 | 135 | 271 | 406 | 1,083 |
| VEHICLE TRIPS | Average Daily Vehicle Trips | 1,037 | 2,829 | 4,715 | 9,430 | 14,145 | 37,720 |
| WATER USAGE | Gallons per Day | 44,000 | 120,000 | 200,000 | 400,000 | 600,000 | 1,600,000 |
| WASTEWATER USAGE | Gallons per Day | 15,400 | 42,000 | 70,000 | 140,000 | 210,000 | 560,000 |
| SOLID WASTE GENERATION | Pounds per Day | 8,108 | 22,113 | 36,854 | 73,709 | 110,563 | 294,834 |
| ELECTRIC DEMAND | Megawatts | 1.1 | 2.9 | 4.9 | 9.8 | 14.6 | 39.1 |

Sheriff

The Monroe County Sheriff’s Office has 5 locations and approximately 200 vehicles. This infrastructure is used to calculate a level of service serving current functional population.

Figure 36. Existing Sheriff Level of Service and Cost Factors

| | | | |
|-----------------------------------|----------|----------------------------------|----------------------------------|
| Functional Population | 174,993 | | |
| | | Existing Level of Service | Adjusted Level of Service |
| | | Factor (per 1,000) | Factor (per 1,000)* |
| Locations | 5 | 0.03 | 0.00 |
| Vehicles | 200 | 1.14 | 1.03 |
| Fully Loaded Vehicle Cost | \$65,000 | | |
| Sheriff Facility Cost per Sq. Ft. | \$800 | | |

* Assumes existing capacity in stations and vehicles.
 Sources: Monroe County FY25 Budget; Monroe County Sheriff's Office.

Per the Monroe County Sheriff’s Office, the Sheriff develops a budget and staffing requirements based on geography and response times. An increase in population does not necessarily result in an increase in calls for service as the demand for services is driven more by demographics than number of people. Per the MCSO, the projected increase in functional population for the scenarios analyzed would not lead to additional stations or expansions as existing locations are strategically located throughout the County. Furthermore, vehicles needed for additional staff are also unlikely, except for potentially the maximum growth scenario of 8,000 units. Vehicle costs under this scenario are modeled based on an assumed level of service that accounts for capacity of the MCSO to handle additional peak demand today. Results are shown below in Figure 39.

Fire and Rescue

Fire and Rescue services are provided from 18 stations throughout the County including the municipalities. Existing levels of service for Fire and Rescue are shown in Figure 37.

Figure 37. Existing Fire and Rescue Level of Service and Cost Factors

| | | | |
|-----------------------|----------------------|-----------------------|-------------------------------------|
| Functional Population | 174,993 | | |
| | # of Stations | # of Apparatus | Estimated Replacement Value* |
| County ¹ | 8 | 20 | \$6,269,000 |
| Key West | 3 | 15 | \$4,702,000 |
| Marathon | 2 | 12 | \$3,761,000 |
| Islamorada | 3 | 15 | \$4,702,000 |
| Key Largo | 2 | 10 | \$3,135,000 |
| Total | 18 | 72 | \$22,569,000 |

| | | |
|---|-------------|-------------|
| Level of Service per 1,000 Persons | 0.10 | 0.41 |
|---|-------------|-------------|

1. Excludes Airport location.

* Reflects cost to purchase new based on Monroe County vehicle purchase price averages; TischlerBise analysis.

Source: Monroe County; municipal websites.

Current fire station construction costs in the County are estimated based on the most recent project at \$950 per square foot.

Figure 38. Fire Station Construction Cost Estimate

| | Cost | Sq. Ft. | \$/Sq. Ft. |
|------------------------------------|-------------|---------|------------|
| Sugarloaf Fire Station Replacement | \$9,500,000 | 10000 | \$950 |

Source: Monroe County FY25 CIP

The maximum growth scenario projects a need for approximately two and a half new stations based on current levels of service. As noted, locations and timing of growth are not included in this study, therefore a more refined analysis accounting for specific geographic locations of growth, capacity of existing stations, and projected calls for service would need to be conducted with additional growth allocations. Model results are shown in Figure 39.

Figure 39. Public Safety Infrastructure Analysis Findings

| OUTPUT SUMMARY | | | | | | | | | | | |
|---|------------------|----|-------------------|----------------------------|-----------|-------------------|----------------------------|-------------|--------------------|----------------------------|-------------|
| Monroe County, Florida, ROGO Infrastructure Study | | | 1. 220 ROGO Units | | | 2. 600 ROGO Units | | | 3. 1000 ROGO Units | | |
| Unit | Reserve Capacity | | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost |
| Sheriff Stations | Station | NA | 0.0 | Yes | \$0 | 0.0 | Yes | \$0 | 0.0 | Yes | \$0 |
| Sheriff Vehicles and Equipment | Vehicle | NA | 0.0 | Yes | \$0 | 0.0 | Yes | \$0 | 0.0 | Yes | \$0 |
| Fire Stations | Station | 0 | 0.1 | Partial | \$665,000 | 0.2 | Partial | \$1,805,000 | 0.3 | Partial | \$3,135,000 |
| Fire Vehicles and Equipment | Vehicle | 0 | 0.3 | Partial | \$91,000 | 0.8 | Partial | \$247,000 | 1.3 | No | \$413,000 |

| | | | 4. 2000 ROGO Units | | | 5. 3000 ROGO Units | | | 6. 8000 ROGO Units | | |
|--------------------------------|------------------|----|--------------------|----------------------------|-------------|--------------------|----------------------------|-------------|--------------------|----------------------------|--------------|
| Unit | Reserve Capacity | | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost | Scenario Demand | Current Available Capacity | Cost |
| Sheriff Stations | Station | NA | 0.0 | Yes | \$0 | 0.0 | Yes | \$0 | 0.0 | Yes | \$0 |
| Sheriff Vehicles and Equipment | Vehicle | NA | 0.0 | Yes | \$0 | 0.0 | Yes | \$0 | 6.0 | No | \$390,000 |
| Fire Stations | Station | 0 | 0.7 | Partial | \$6,270,000 | 1.0 | Partial | \$9,405,000 | 2.7 | No | \$25,175,000 |
| Fire Vehicles and Equipment | Vehicle | 0 | 2.7 | No | \$829,000 | 4.0 | No | \$1,246,000 | 10.6 | No | \$3,327,000 |

APPENDIX A: BASE YEAR ASSUMPTIONS

Population, Functional Population, and Housing Unit Estimates

The current countywide population is estimated 84,608, which is the BEBR 2023 population estimate plus year-round population in 62 ROGO units. Functional population reflects maximum population of year-round plus seasonal. Current estimated functional population is 174,993, calculated by assuming the same ratio of permanent to seasonal population from the 2023 Public Facilities Capacity Report (PFCR) and adding that to the year-round population. $(82,151 \text{ (2023 seasonal)} / 76,900 \text{ (2023 permanent)} \times 84,608 \text{ (current year-round)}) + 84,608 \text{ (current year-round)} = 174,993$. Current housing unit estimate is 54,146 based on 2020 Census housing unit estimate plus ROGO allocated units. Persons per household (functional population) and per housing unit (year-round population) are shown. Functional persons per household is used in the analysis to project population from ROGO units. The average student generation rate (SGR) is shown as well based on 2023-2024 official enrollment divided by total number of housing units.

Figure 40. Base Year Demand

| | |
|---------------------------------------|---------|
| POPULATION | 84,608 |
| FUNCTIONAL POPULATION | 174,993 |
| TOTAL UNITS | 54,146 |
| Persons per Household (Functional) | 3.23 |
| Persons per Housing Unit (Year Round) | 1.56 |
| 2023-24 Enrollment | 7,330 |
| Total Housing Units | 54,146 |
| Total SGR | 0.135 |

Sources: Florida Dept. of Education, Florida Inventory of School Houses (FISH) data, 2023-24 School Year

Nonresidential Estimates

Figure 41. Nonresidential Estimates

| | |
|--------------------|-------------------|
| RETAIL JOBS | 21,381 |
| OFFICE JOBS | 14,798 |
| INDUSTRIAL JOBS | 6,857 |
| INSTITUTIONAL JOBS | 12,205 |
| TOTAL JOBS | 55,241 |
| <hr/> | |
| RETAIL SF | 10,070,451 |
| OFFICE SF | 4,542,986 |
| INDUSTRIAL SF | 4,367,909 |
| INSTITUTIONAL SF | 4,027,650 |
| TOTAL NR SF | 23,008,996 |