Regional Planning Council Meeting
Key Largo

Roads to Resilience in the Florida Keys

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January 27, 2025

MONROE COUNTY
FLORIDA

Road Vulnerabilities

Current Vulnerability

Avenue G- Big Pine(2020)

Stillwright Point – N Blackwater Lane (2020)

Lake Surprise Estates – Key Largo (2020)

Future Predictions

Monroe County Roadway Vulnerability Analysis and Adaptation Plan

Monroe County Roadway Vulnerability Analysis and Adaptation Plan

49 Neighborhood areas	10 Neighborhood areas	10 Neighborhood areas	28 Neighborhood areas
Areas for 2025	Areas for 2030	Areas for 2035	Areas Beyond 2035
$888,825,245	$179,591,227	$159,316,236	$378,007,456
$1,630,803 (O&M)	$339,356 (O&M)	$307,851 (O&M)	$683,432 (O&M)

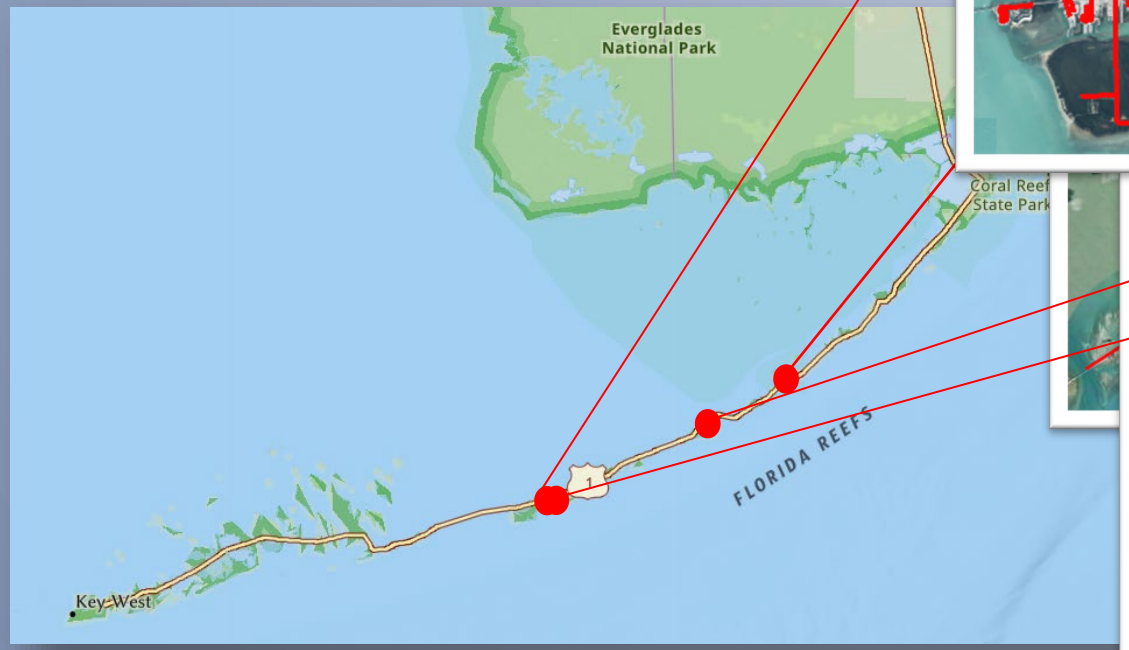
$1.6 Billion*
(Avg $9.6 Million / Mile)

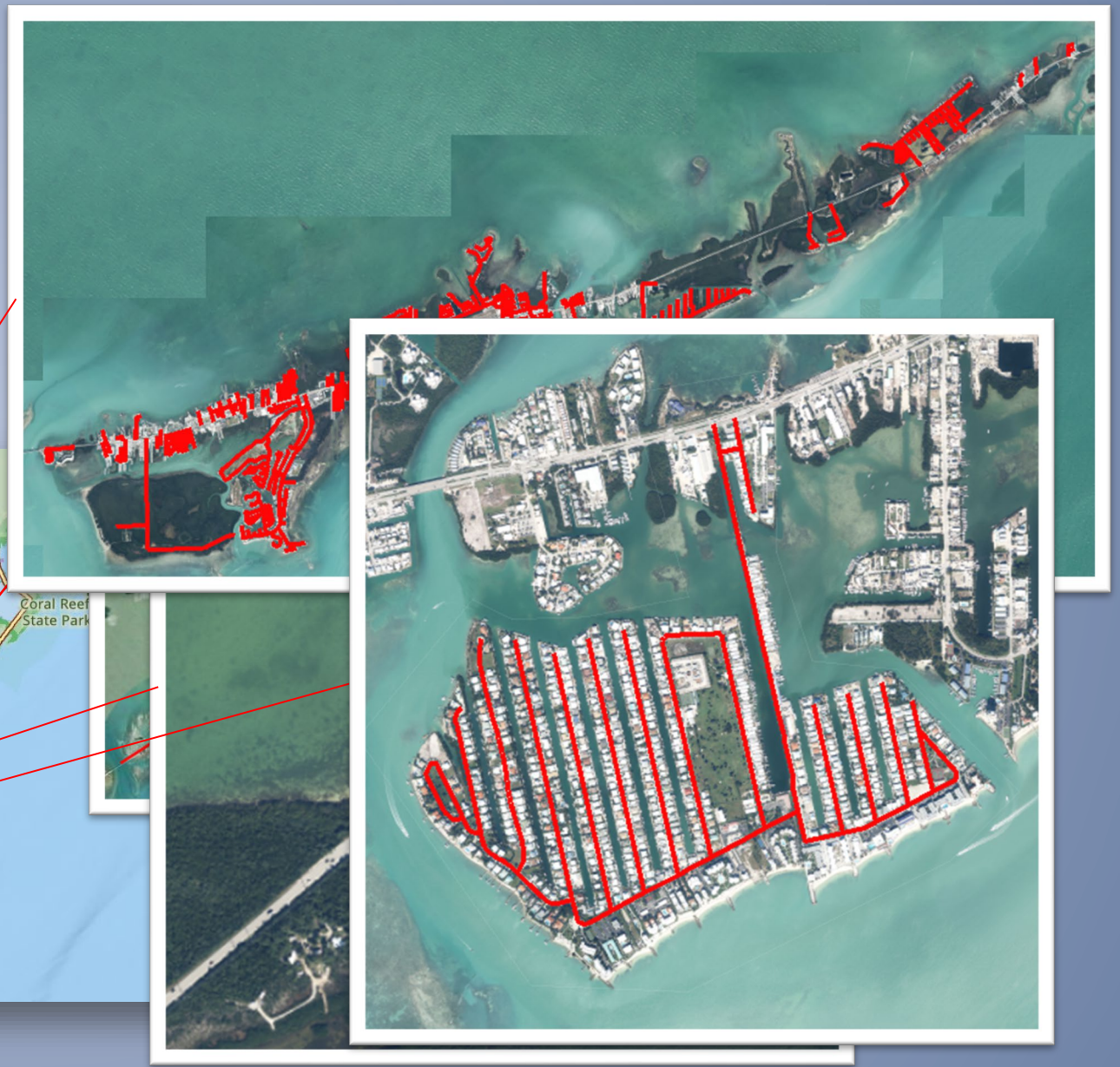
$3.0 Million
(Annual Operation & Maintenance)

* Cost estimate is conceptual and does not include design, right-of-way acquisition, harmonization/cost to cure, and legal fees. Cost estimates are preliminary and subject to change. Cost Estimate is based on 2020 Dollars.

Monroe County Municipalities Roadway Vulnerability Study

Total Length of Roads	156	Miles
Village of Islamorada	69 Miles	
City of Layton	2 Miles	
City of Marathon	78 Miles	
City of Key Colony Beach	7 Miles	





County Road Adaptation Projects in Design and Construction

Design Phase

- Key Deer Boulevard (Big Pine Key) – Length: 2.3 Miles
- Stillwright Point (Key Largo) - Length: 1.7 Miles $49.4 M
- Winston Waterways (Key Largo) - Length: 2.5 Miles $49.4 M
- Conch Key - Length: 0.5 Miles $12 M
- Big Coppitt Key - Length: 4.5 Miles $83 M
- Flagler Avenue (Key West) - Length: 2.0 Miles $72 M

Total: 13.5 Miles
$265.8 Million +

Construction Phase (Pilot Projects)

- Twin Lakes (Key Largo) – Length: 4,633 linear feet .87 Miles $23.1 M
  - CEI Services - $1.4 M
- Sands (Big Pine Key) – Length 1705 LF or 0.323MI $25 M

Total: $49.5 Million

Twin Lakes – Need for a Solution

- Experiencing frequent, persistent flooding and prolonged inundation due to heavy rainfall, storm surge, high tides, and seasonal “King Tides,” causing damage to its public roadways and property.

- Flooded roads block access to the community by homeowners, businesses services, public services, and emergency services. The significant flooding jeopardizes emergency response and the ability to clear road debris, restore power lines, and assess damage.

- Without functioning roadways, operational storm water systems, and supporting infrastructure the Twin Lakes community cannot remain safe and secure or viable.

Groundbreaking

Project Summary

- Improvements to 4,633 linear feet of roadway
- Elevating low sections to the target elevation of 13 inches NAVD
- Installation of a concrete gravity wall adjacent to the wetlands
- Installation of an engineered storm water collection system, a treatment unit and a pump station with wet wells, electrical controls and a back-up generator.
- Storm water disposal will be via force main and 5 injection wells.
- Will protect 105 homes.

Under Construction

- Notice to Proceed: July 15, 2024
- Completion: 660 days
  May 05, 2026
- % of Completion: 20%
- King tide, hurricane and rain weather issues slowed some progress

- Installation of a concrete gravity wall adjacent to the wetlands

Funding for Twin Lakes

Federal appropriation	$ 5.4 M
State Res FL grant	$ 3.9 M
County Funds	$ 9.6 M
FKAA (water line)	$ 1.4 M
TOTAL:	$23.1 Million

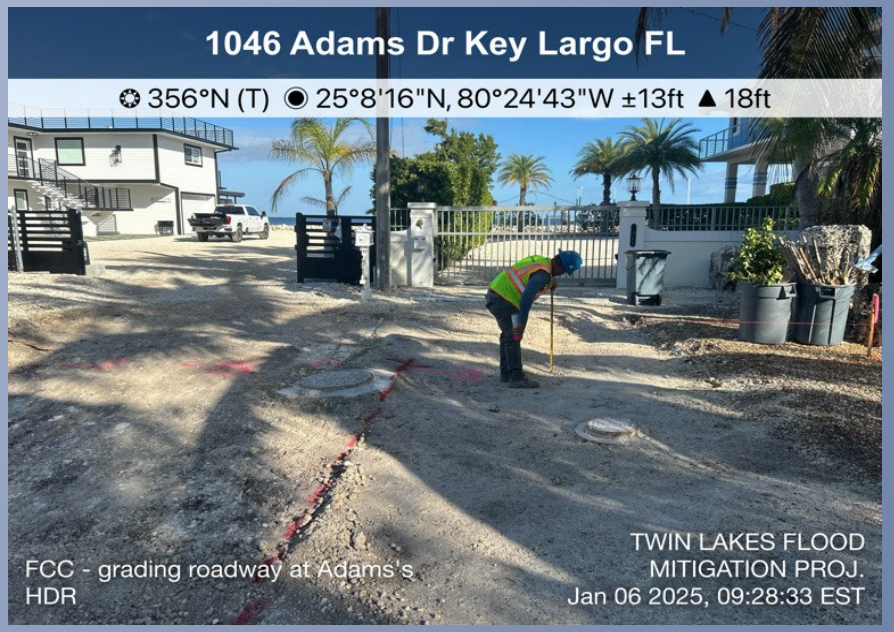
Community Impacts

- Maintenance of Traffic
- Driveway Harmonization
- Noise Control
- Property Impacts
- Delays from tidal flooding and weather
- Utilities including sewer, water and electric need to be relocated.
- Easements needed

Recent Progress

Pump Station work

Roadway Grading



Challenges and Best Practices

Public Involvement

- **Planned Approach** – Develop a plan before starting design and construction
- **Identify All Stakeholders**
- **Proactiveness** – Start as soon as you can!
- **Consistent Communication** – Throughout Construction
- **Document and Address Feedback**
- **Use various Communication Channels** – Public Meetings, online surveys, and community advisory boards
- **Provide Regular Updates**

Raise Awareness

Build Trust

Cooperation

Challenges and Best Practices Summary

Challenges
State Stormwater Regulations
Right-of-way Constraints Easements for drainage / utilities
Connectivity/Harmonization of driveways, fences and gates
Groundwater Table rising
Utility Impacts – sewer, water and electric to be relocated
Pump Station Site
Maintenance of Traffic
Public Outreach
Construction Costs

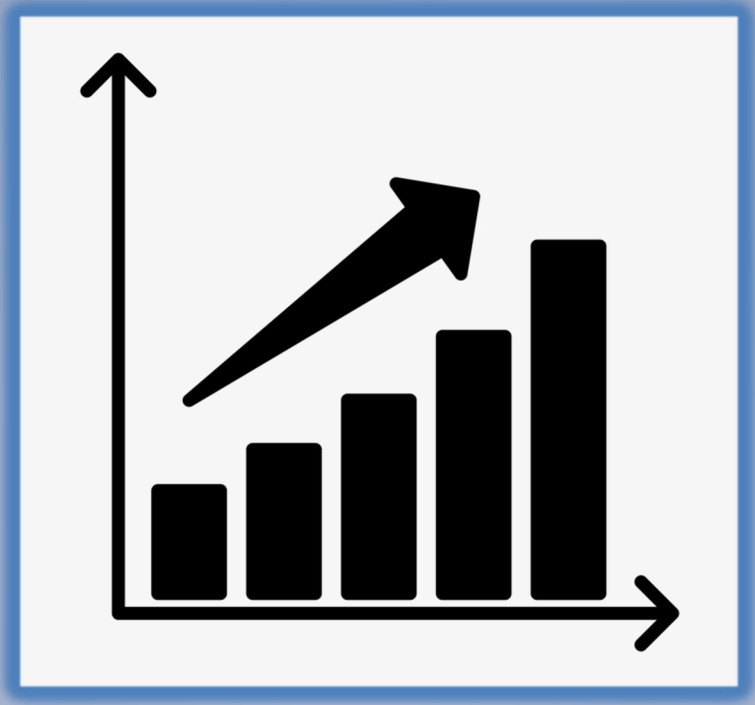
Mitigation Approach

- Communication
  - Early Coordination
  - Availability
  - Documentation
- Working together with the different teams/stakeholders
- Share lessons learned from the multiple ongoing projects to keep improving the design and construction efficiency

Challenges and Best Practices

Rising Construction Costs

- Material Costs
- Mobilization
- Labor



Florida Department of Transportation Item Average Unit Cost based on executed Construction Contracts. (Annual State Averages)

Item Description	UNIT PRICE 2020 ($)	UNIT PRICE 2023 ($)	% Change
SEDIMENT BARRIER	1.68	2.43	45%
REGULAR EXCAVATION	7.17	13.52	89%
EMBANKMENT	8.88	22.95	159%
TYPE B STABILIZATION	5.09	7.67	51%
INLETS, GUTTER, TYPE V	5,064.73	9,066.70	79%

Why?

Market Conditions: Economic factors, such as the availability of materials and fluctuations in labor costs, can impact construction prices.

Location: Coastal areas tend to have higher construction costs than inland regions. Longer Commute time.

Labor shortage: There's a shortage of skilled construction workers in the area.

Material shortages: There's a shortage of construction materials in the area.

Size and Complexity: Larger and more complex projects will naturally have higher costs due to increased materials, labor, and time requirements

Conclusion

1. The County is making the Keys more resilient by having developed a long-term roads adaptation plan to mitigate projected Sea Level Rise (SLR) impacts on roadways and pursue implementation of projects.
2. Grant Opportunities
3. Challenges in Design and Construction
4. Ongoing Policy and Regulation Analysis
5. The Roadways are just one variable in the equation to achieve a comprehensive resilient approach.

Federal HMGP Funds Reserved for Monroe Roads

Project	Funding Reserved
Winston Waterways Road Elevation	$37.5 Million
Big Coppitt Road Elevation	$61 Million
Stillwright Point Road Elevation (construction only)	$20.5 Million
Flagler Avenue Road Adaptation	$56.8 Million (75% of estimate)
Conch Key Road Elevation	$0
Twin Lakes Pilot Road Elevation	$0
Winston Waterways Road Elevation	$37.5 Million

State Resilient FL Project Grants Awarded

2022-23 Grant Cycle Projects *	Match Amount (50%)	2023-24 Grant Cycle Projects	Match Amount (50%)	2024-2025 Grant Cycle Projects	Match Amount (50%)	2025/26 Grant Cycle Projects
Vulnerability Assessment to meet Section 380.093, F.S.	$139,350 + $75,000	Winston Waterways Road Elevation	$15,374,570 (50% project cost)	Sands Road Elevation: DEP award $12.2 M	$12.2 M	Stillwright Point Road Elevation $20.5 Million – Award TBD
Natural Resources Adaptation Plan	$75,000	Conch Key Road Elevation	$3,566,825 (50% project cost)			
Stillwright Point Road Elevation Design	$1,184,995	Big Coppitt) Road Elevation	$24,722,611 (50% project cost)			
Twin Lakes Road Elevation and Stormwater	$3,931,267	Shoreline 1 Long Key Living Shoreline Adaptation $900,000 (100% project cost)	--			
Harry HarrisPark Resilience Design (2021)	$100,000	Shoreline 3 Duck Key Living Shoreline Adaptation $3,327,266 (100% project cost)	--			
Total awarded 2022:23	**$1,574,345 County Share**	**Total awarded 2023-24:**	**$43,664,006 County Share**	**Total awarded 2024/25:**	**$12.2 Million**	
Total Program Funding to Date Awarded to Monroe County from State of Florida: $57,463,640						

*Prior to 2021 following two grants were received:
Resilience Planning Grant to complete Peril of Flood Amendments for Comprehensive Plan $40,400
Vulnerability Assessment and Adaptation Action Areas $75,000

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Thank You