



2018 Port Everglades Master/Vision Plan Update

Environmental Stakeholder Meeting
October 11, 2019



Environmental Efforts since 2014 Update

- Planting of 70,000+ mangroves/native plants – net increase of 7.8 acres of Port conservation area
- West Lake Park environmental restoration and enhancement project (permitting phase)
- Supporting removal of offshore tire reef
- Optimizing habitat value of vegetated areas
- Electric reefer plugs (King Ocean, Crowley, FIT)
- Electric RTGs (PET)
- Voluntary air emissions reduction strategy
- Green Marine certification program
- LEED certification (T4, T25)
- Solar power (T2/T4 garage)
- Turtle-friendly lighting initiative (Portwide)
- Climate change/sea level rise action plan (County)
- Artificial tire reef removal
- Implementation of Physical Oceanographic Real-Time System (PORTS®) in partnership with NOAA
- Other wildlife studies and management (analysis of behaviors and risks)

Sector	Strategy Description
Ocean Going Vessels	Reduce hoteling time by 5% or 10%
	Alternative control technology at berths (e.g., capture and treat)
	Use of lower-sulfur and alternative (e.g., LNG) fuels
	Application of shore power to reduce engine operations while dockside
Harbor Craft	Engine and vessel replacement
Cargo Handling Equipment	Engine and equipment electrification
	Diesel particulate filters and oxidation catalysts
On-Road Vehicles	Truck replacement to Model Year 2010+
	Battery electric vehicles (BEVs)
	Reduction of truck idling times
Rail	Increase modal shift of cargo from truck to rail

Mission

Port Everglades is Florida's powerhouse global gateway. A respected leader in trade, travel and financial stability, we create economic and social value by working in partnership with world-class clients.

We achieve advancements focusing on efficient facilities, trade and cruise expansion, jobs growth, safety, security and **environmental stewardship** for our customers, stakeholders and community.

As part of a regional transportation system, the purpose of Port Everglades is to create and promote commerce and industry by developing, marketing, maintaining, operating, improving, regulating, and managing the Port and harbor facilities.

Plan Objectives

Add value to the industry and to the community

- Define local, regional, national and global role
- Identify stakeholder needs and enhance ability to meet stakeholder needs
- Identify opportunities to grow volume and revenue within a diversified portfolio
- Balance economic, environmental and community interests

Outreach

Key stakeholders

- Tenants, customers, other Port users
- Environmental community
- Government partners (USCBP, USCG, USACE, etc.)
- Board of County Commissioners
- Other Broward County agencies (BCAD, CVB, etc.)
- Cities (Fort Lauderdale, Hollywood, Dania Beach) within Port
- Public

Environmental Conditions



Environmental Conditions

Considerations

- Wildlife and habitat protection and management
- Contamination assessment and remediation
- Water quality
- Air quality
- Energy efficiency
- Cultural resource protection
- Climate change resiliency initiatives
- Other environmental initiatives

Environmental Conditions

Habitat, species and wildlife

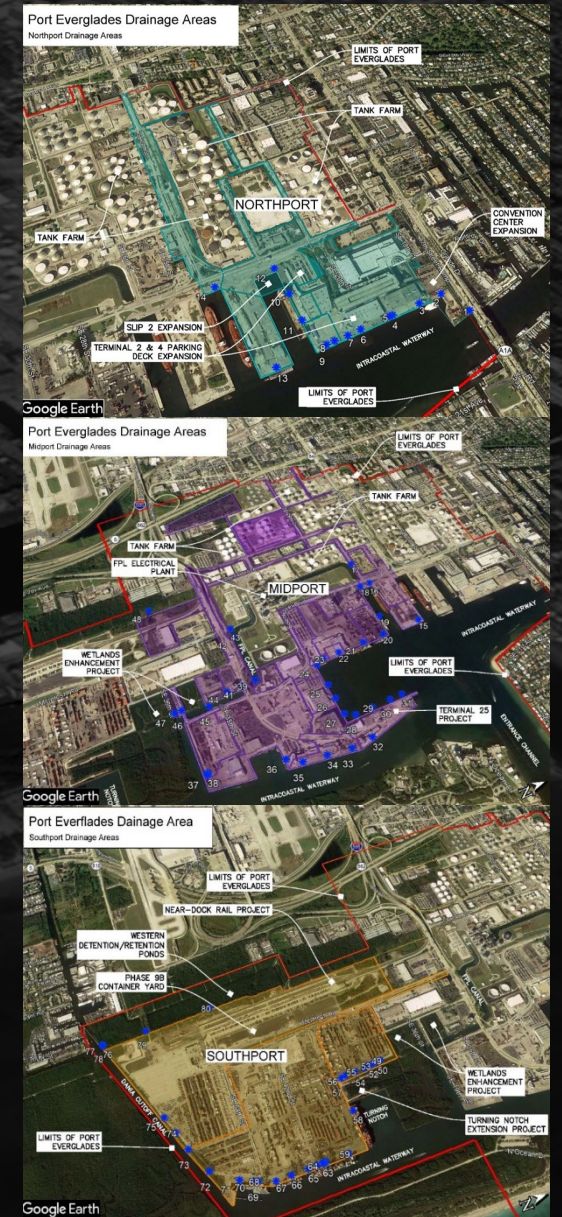
- Mangroves
- Seagrass
- Coral reefs/hardbottom
- Artificial reefs
- Manatees
- Sea turtles
- Shorebirds
- Other species
- Beach and dune systems



Environmental Conditions

Environmental initiatives

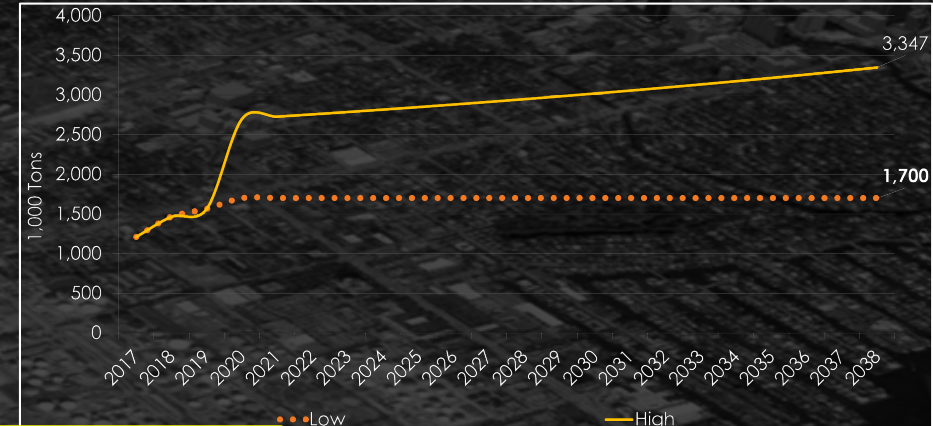
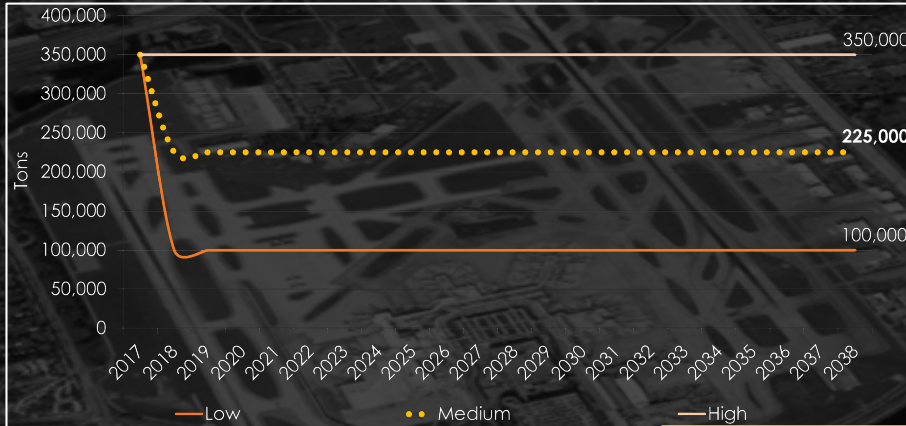
- Water quality/stormwater management
- Air quality
 - Voluntary air emissions baseline study and reduction strategies
 - Electric reefer plugs (King Ocean, Crowley, FIT)
 - Electric RTGs (PET)
- Green Marine certification program
- Energy efficiency
 - LEED certification (T4, T25)
 - Solar power (T2/T4 garage)
 - LED lighting (Portwide)



An aerial photograph of an airport and surrounding urban area, rendered in a dark, monochromatic style. The airport's runways, taxiways, and terminal building are visible in the upper left. A complex highway interchange with multiple overpasses and ramps is situated in the center. The surrounding urban landscape is densely packed with buildings and streets. A body of water is visible along the bottom edge of the frame.

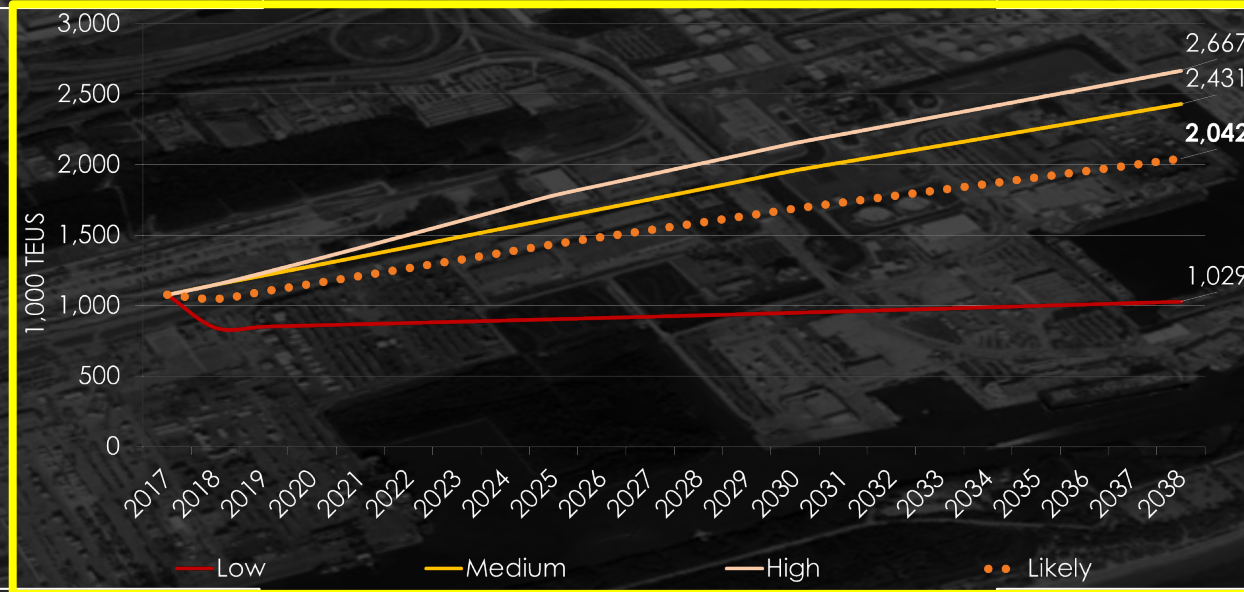
Market Assessments

2019-2038



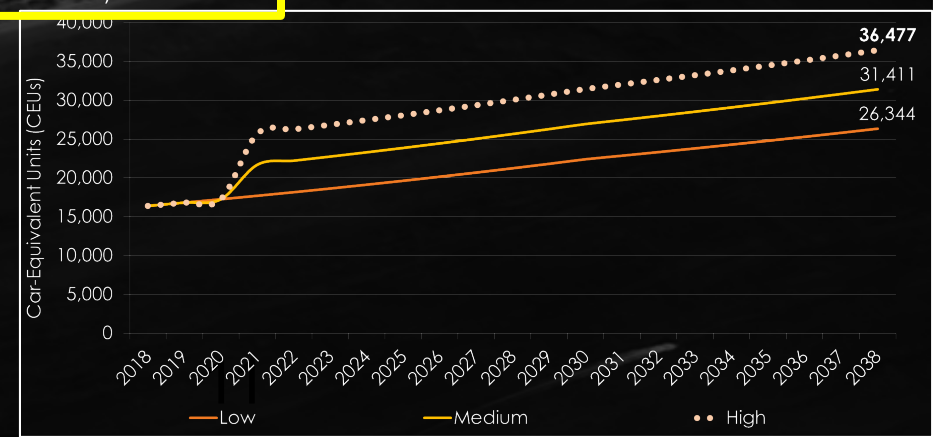
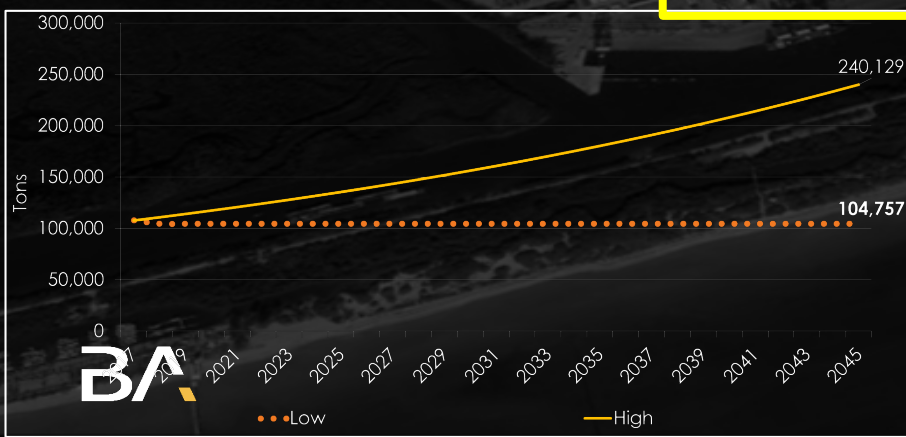
Break-bulk

Dry Bulk

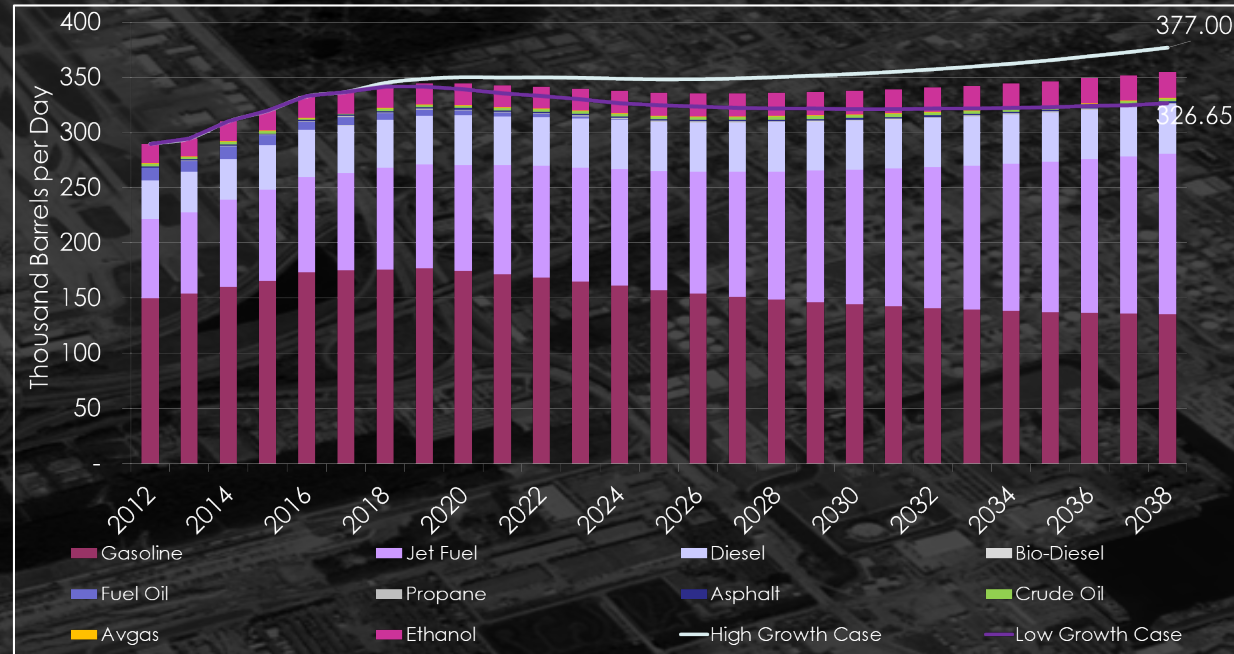


Used Ro-Ro + Yachts

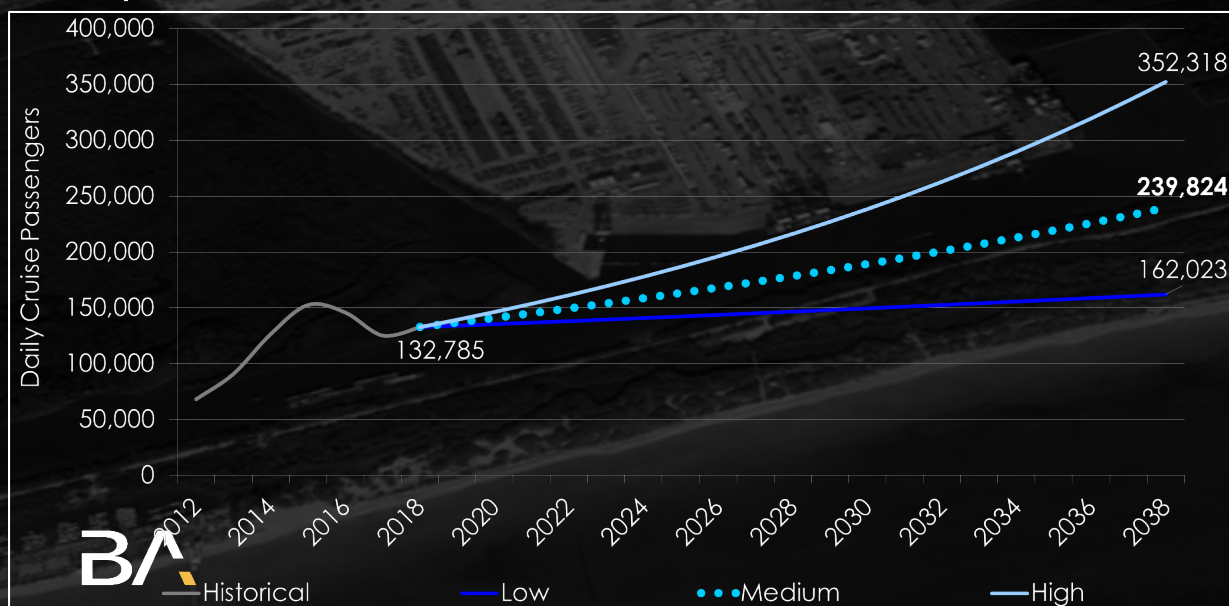
New Autos



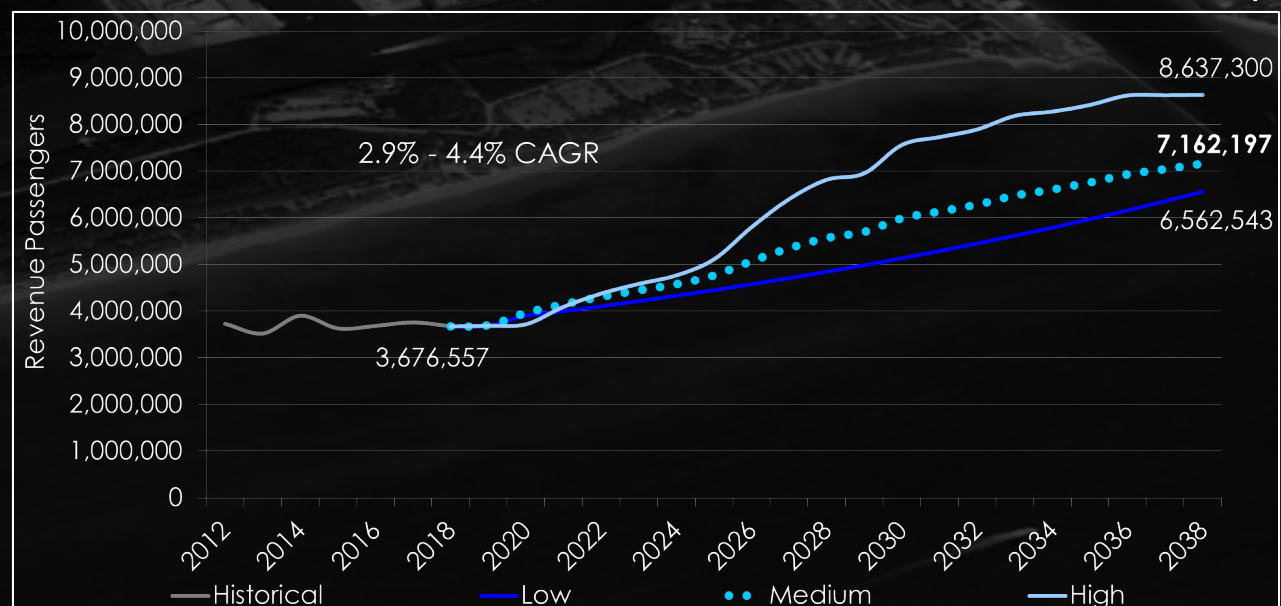
Liquid Bulk



Daily



Multi-Day



An aerial photograph of an airport and surrounding urban area, rendered in a dark, monochromatic style. The airport's runways, taxiways, and terminal building are visible in the upper left. A complex highway interchange with multiple overpasses and ramps is situated in the center. The surrounding urban landscape is densely packed with buildings and streets. A body of water is visible along the bottom edge of the frame.

Master/Vision Plan

2019-2038

Proposed NEW Projects by Area by Year									
Location	0-5 Year Projects	Start Year	Completion Year	5-10 Year Projects	Start Year	Completion Year	10-20 Year Projects	Start Year	Completion Year
Northport	T2 / T4 Parking Garage	2018	2020	Break-bulk Yard	2024	2026	Slip 3 Expansion (Berths 11-13 Bulkheads)	2033	2038
	Maintenance Facility Consolidation	2019	2023	Slip 1 / Phase 2 (Berths 7, 8, 8A & 32 Bulkheads)	2025	2027	LNG Bunkering + Storage Facility	TBD	TBD
	Port Access Road	2019	2023						
	Slip 1 / Phase 1 (Berths 9 / 10 Bulkheads)	2019	2025						
Midport	T21 Redevelopment	2020	2023	Tracor Basin Fill	2024	2026	Ro-Ro Yard Expansion	2030	2033
	Ro-Ro Yard Relocation / Expansion	2020	2023	Ro-Ro Yard Expansion	2024	2027	Berth 19 Finger Pier	2033	2037
				T29 Redevelopment	2024	2027	T19 / T20 Redevelopment	2035	2038
				T26 Redevelopment	2026	2030	T19 / T20 Parking Structure	2035	2038
				T29 / T26 Parking Structure	2026	2030			
Southport	3 SPP STS Cranes	2017	2020	Phase 9C-1	2024	2025	Phase 9C-2	2029	2032
	PEV ILC	2019	2020	Griffin Road Extension / NE 7th Avenue Improvements	2024	2026	1 Small STS Cranes	2029	2032
	Phase 9A	2018	2022	McIntosh Road Realignment	2024	2027			
	STNE	2015	2023	Container Terminal Reconfiguration	2024	2028			
	SP Crane Rail	2015	2023						
	3 SPP STS Cranes	2021	2023						
Portwide/Other	USACE Deepening & Widening (USCG Relocation)	2019	2023	APM/Rail Extension (TBD)	2024	2028	Commercial Consolidation	2031	2035
	Former Dynegy Logistics Development	2020	2023						
	Auto Terminal West	2020	2023						
	USACE Deepening & Widening	2019	2025						
	I-595 Flyover	2021	2025						
Bulkheads Replacements/Improvements	Berths 21 & 22 Bulkheads	2019	2022	Berth 29 Bulkheads	2024	2026	Berths 14 & 15 Bulkheads (construction)	2027	2031
	Berths 7, 8, 8A & 32 Bulkheads (USACE Design)	2019	2023	Berths 14 & 15 Bulkheads (Design Only)	2023	2027	Berths 11-13 Bulkheads (Slip 3 Expansion)	2033	2038
	Entrance Channel North Wall	2020	2024	Berths 7, 8, 8A & 32 Bulkheads (Slip 1 / Phase 2)	2025	2027	Berths 19 & 20 Bulkheads	2034	2038
	Berths 9 & 10 Bulkheads (Slip 1 / Phase 1)	2019	2025	Berths 4-6 Bulkheads	2025	2029	Berth 23 Bulkhead	2034	2039
	Berths 1A, 1B, 2, & 3 Bulkheads	2021	2025				Berths 24 & 25 Bulkheads	2034	2039
	Berths 16-18 Bulkheads	2022	2026				Berths 26 & 27 Bulkheads	2034	2039

Berth Requirements 2018-2038

		Berth Requirements (berths)				KPIs	Δ 2018-2038
		2018	2023	2028	2038		
Cruise (including parking)		9.0	8.0	8.0	9.0		0.0
	Multi-Day	8.0	8.0	8.0	9.0		
		467,676	556,130	696,455	795,800	PAX/berth	
	Daily	1.0	0.0	0.0	0.0		
		128,934	n/a	n/a	n/a	PAX/berth	
Liquid Bulk		3.0	3.0	3.0	3.0		0.0
		112,698	113,291	112,046	118,280	BPD/berth	
Containers		5.5	8.5	8.5	8.5		3.0
	Southport (w/ cranes)	4.0	6.0	6.0	6.0		
		252,116	193,730	254,484	330,529	TEUs/berth	
		80,037	64,577	65,252	78,697	Moves/crane	
	Southport (w/o cranes)	0.0	2.0	2.0	2.0		
		n/a	29,600	29,600	29,600	TEUs/berth	
	Midport	1.5	0.5	0.5	0.5		
		66,667	200,000	200,000	200,000	TEUs/berth	
Break-bulk		0.9	0.5	0.5	0.5		-0.4
		403,396	409,514	409,514	409,514	Tons/berth	
Dry Bulk		3.6	2.5	2.5	2.5		-1.1
		416,553	680,000	680,000	680,000	Tons/berth	
Automobiles		1.0	0.5	0.5	0.5		-0.5
		107,208	53,740	60,140	72,954	CEUs/berth	
Commercial		n/a	n/a	n/a	n/a		
		n/a	n/a	n/a	n/a		
Warehousing/Logistics/Miscellaneous		n/a	n/a	n/a	n/a		
		n/a	n/a	n/a	n/a		
Vacant/Other		n/a	n/a	n/a	n/a		
		n/a	n/a	n/a	n/a		
Total		23.0	23.0	23.0	24.0		1.0

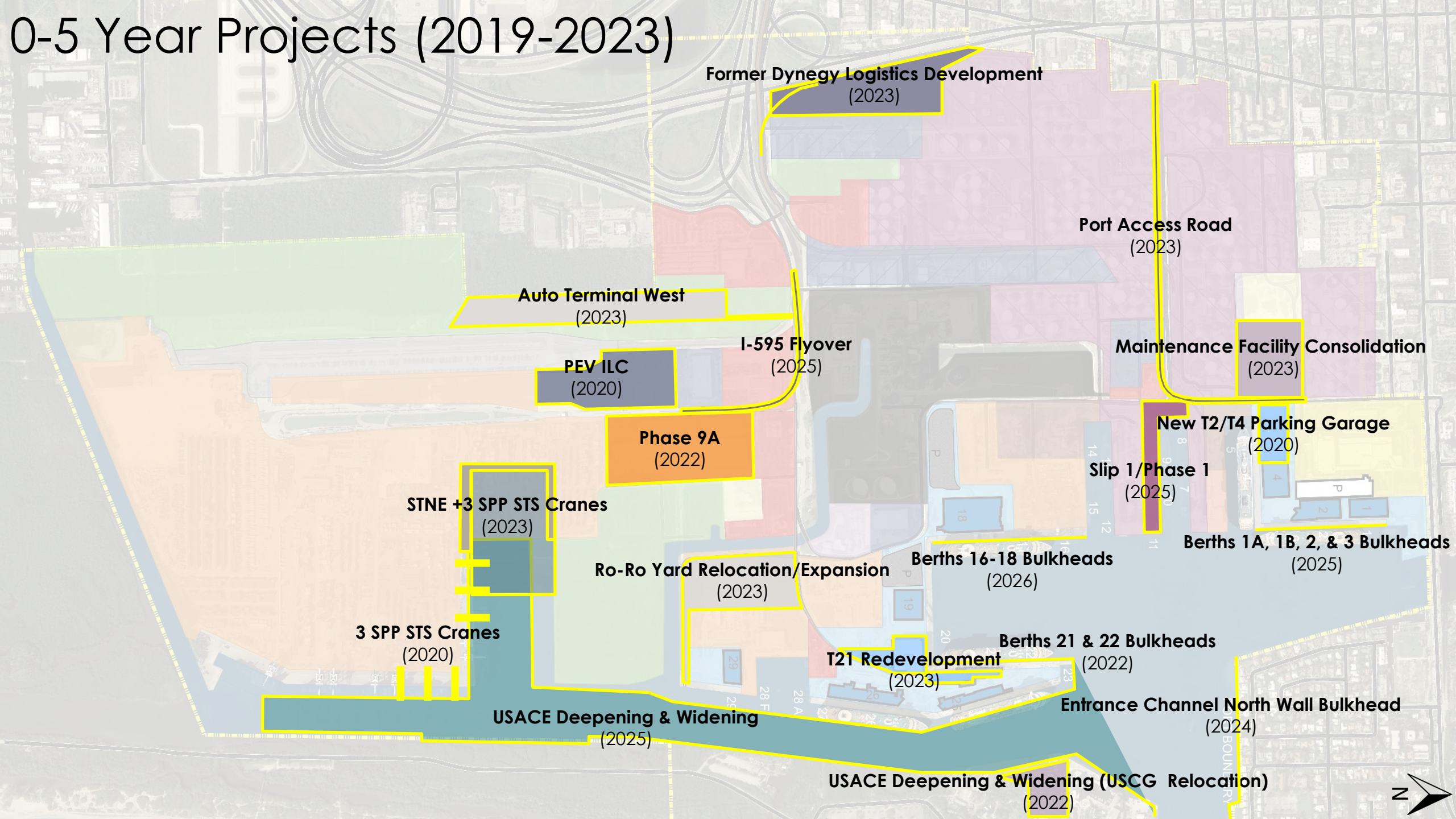
Land Requirements 2018-2038

		Land Requirements (acres)				KPIs	Δ 2018-2038
		2018	2023	2028	2038		
Cruise (including parking)		88.0	85.0	103.0	116.0		28.0
	Multi-Day	84.0	85.0	103.0	116.0		
		44,541	52,342	54,094	61,743	PAX/acre	
	Daily	4.0	0.0	0.0	0.0		
		32,234	n/a	n/a	n/a	PAX/acre	
Liquid Bulk		23.0	19.0	15.0	15.0		-8.0
		14,700	17,888	22,409	23,656	BPD/acre	
Containers		321.0	308.0	298.0	312.0		-9.0
	Southport (w/ cranes)	279.0	272.0	276.0	290.0		
		3,615	4,491	5,747	7,043	TEUs/acre	
	Southport (w/o cranes)						
	Midport	42.0	36.0	22.0	22.0		
		2,381	2,778	4,545	4,545	TEUs/acre	
Break-bulk		14.0	14.0	10.0	10.0		-4.0
		25,933	14,625	20,476	20,476	Tons/acre	
Dry Bulk		16.0	16.0	16.0	16.0		0.0
		93,724	106,250	106,250	106,250	Tons/acre	
Automobiles		9.0	15.0	17.0	25.0		16.0
		3,219	1,791	1,769	1,459	CEUs/acre	
Commercial		20.0	20.0	29.0	13.0		-7.0
		n/a	n/a	n/a	n/a		
Warehousing/Logistics/Miscellaneous		46.0	75.0	75.0	67.0		21.0
		n/a	n/a	n/a	n/a		
Vacant/Other		68	34	41	32		-36.0
		n/a	n/a	n/a	n/a		
Total		605.0	586.0	604.0	606.0		1.0

Existing Conditions



0-5 Year Projects (2019-2023)



2023 Land Use

Griffin Rd

NE 7th Avenue

Wetland/Vacant/FPL Transmission Lines

Spoils (6 acres)

FEC ICTF (43 acres)

Containers (20 acres)

McIntosh Loop Rd

PEV ILC (16 acres)

Logistics (7 acres)

Private (Commercial)

Private (Miscellaneous)

Logistics (19 acres)

Private (Miscellaneous)

Stormwater Storage (8 acres)

Wetland (2 acres)

Private (Commercial)

Private (Petroleum)

Logistics (8 acres)

Commercial (3 acre)

Maintenance (11 acres)

Vacant (7 acres)

Eisenhower Blvd

CVB - County

Cruise (19 acres)

Dry Bulk (13 acres)

Containers (22 acres)

Liquid Bulk (19 acres)

Dry/Break-bulk (6 acres)

Cruise (66 acres)

Commercial (3 acres)

Containers (14 acres)

Break-bulk (11 acres)

Ro-Ro (15 acres)

Vacant (4 acres)

Commercial (14 acres)

Private (Commercial)

FPL - Private

Fire Station (5 acres)

Logistics (5 acres)

Conservation Area

Containers (252 acres)

Port Boundary

SE 17th St

North arrow

Griffin Rd

NE 7th Avenue

Logistics
(19 acres)

Private (Miscellaneous)

Stormwater Storage (8 acres)

Wetland (2 acres)

Private
(commercial)

Private
(Petroleum)

Private (Miscellaneous)

Vacant
(7 acres)

Maintenance
(11 acres)

Eisenhower Blvd

CVB - County

Cruise

Dry/Break-bulk
(6 acres)

Dry Bulk
(13 acres)

Commercial
(3 acre)

Logistics
(8 acres)

FPL - Private

Commercial
(14 acres)

Vacant
(4 acres)

Fire Station
(5 acres)

Break-bulk
ers (11 acres) ←

Cruise
(66 acres)

Commercial
(3 acres)

Ro-Ro
(15 acres)

Containers
(14 acres)

Conservation Area

Auto-Terminal West (20 acres)

FEC ICTF (43 acres)

Containers (20 acres)

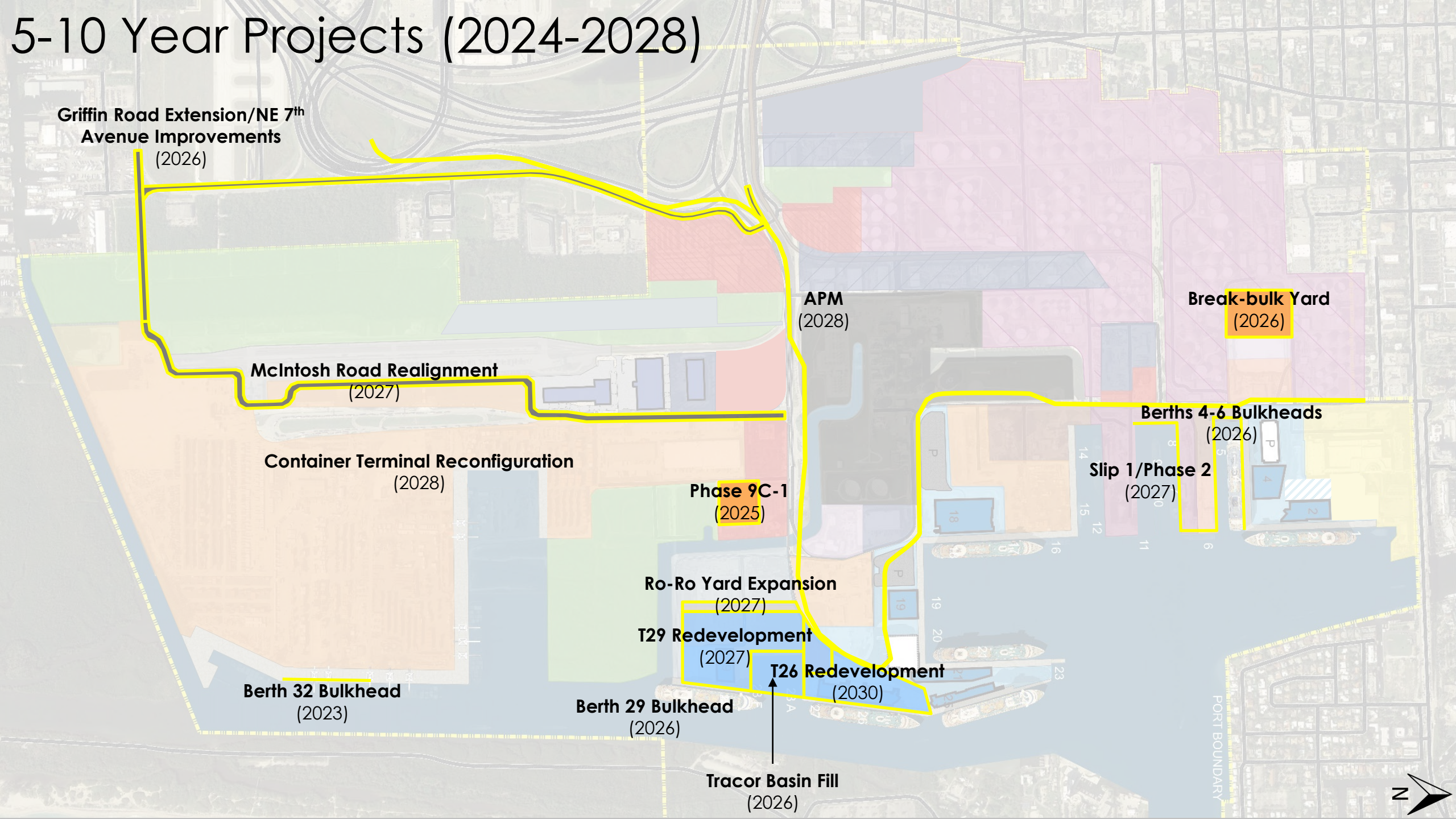
McIntosh Loop Rd

Containers (252 acres)

Spoils
(6 acres)

Wetland/Vacant/FPL Transmission Lines

5-10 Year Projects (2024-2028)



Griffin Road Extension/NE 7th Avenue Improvements
(2026)

McIntosh Road Realignment
(2027)

Container Terminal Reconfiguration
(2028)

Phase 9C-1
(2025)

Ro-Ro Yard Expansion
(2027)

T29 Redevelopment
(2027)

T26 Redevelopment
(2030)

Berth 32 Bulkhead
(2023)

Berth 29 Bulkhead
(2026)

Tracor Basin Fill
(2026)

APM
(2028)

Break-bulk Yard
(2026)

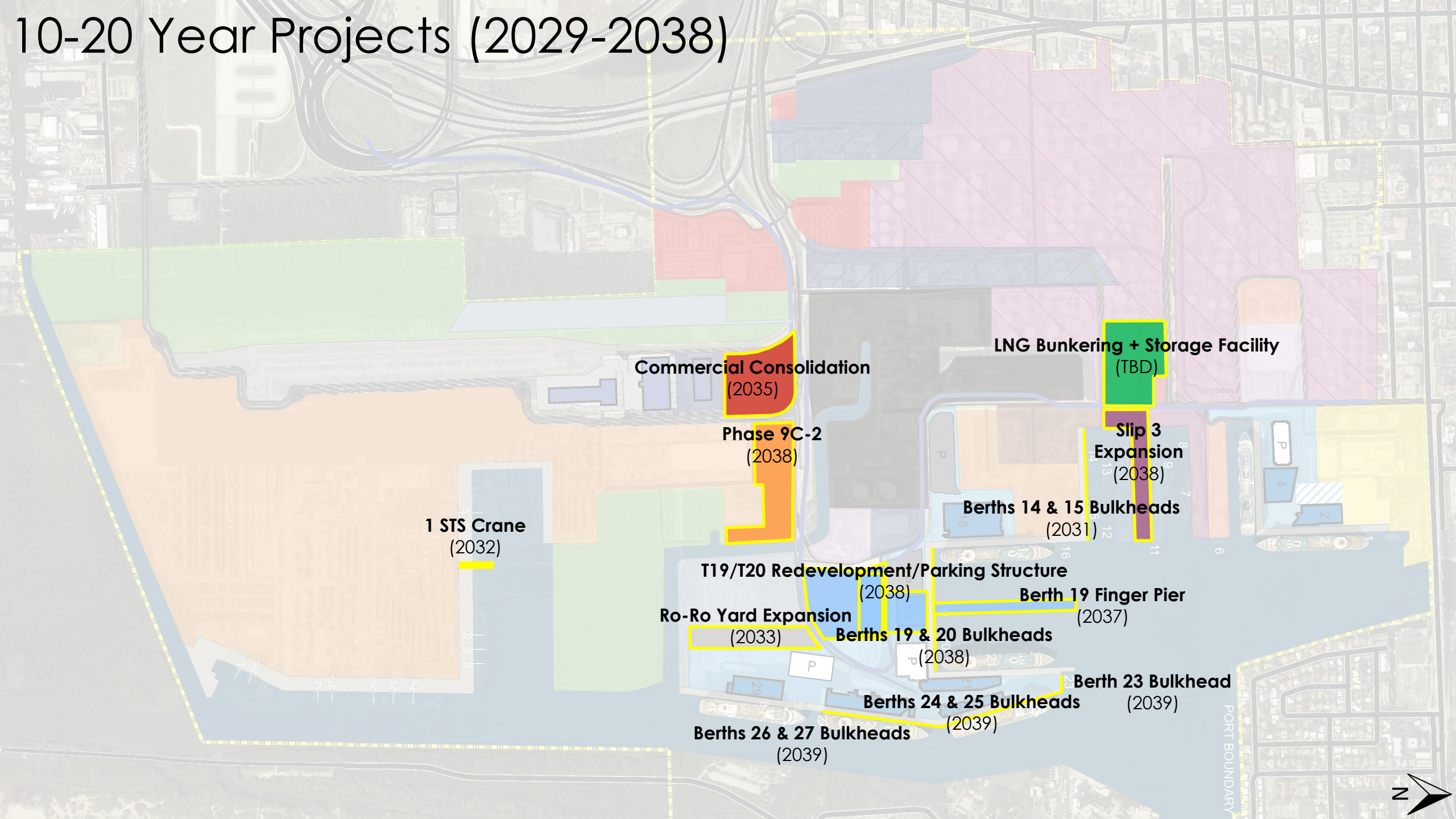
Berths 4-6 Bulkheads
(2026)

Slip 1/Phase 2
(2027)

PORT BOUNDARY



10-20 Year Projects (2029-2038)



2038 Land Use



2018 Update – Transportation Projects

Project	Start Date	Completion Date
Port Access Road	2019	2025
I-595 Flyover	2021	2025
Griffin Road Extension / NE 7th Avenue Improvements	2024	2026
McIntosh Road Realignment	2024	2027
APM/Rail Extension (TBD)	2024	2028

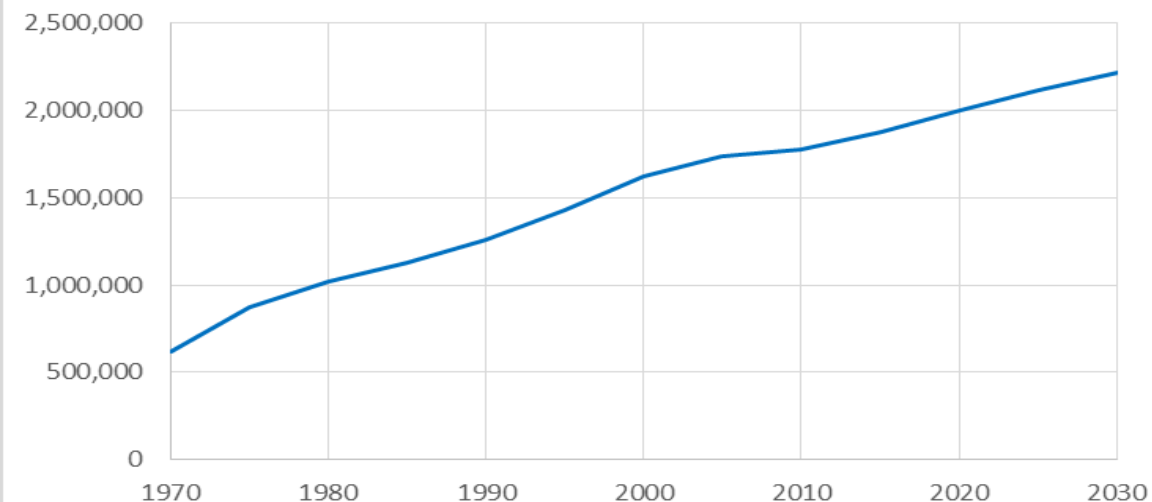
Anticipated Impact vis-à-vis Existing Conditions

Project	Existing Conditions	Future Conditions
Port Access Road	N/A	2025+
I-595 Flyover	2021	2025+
Griffin Road Extension / NE 7th Avenue Improvements	2024	2026+
McIntosh Road Realignment	2024	2027+
Automated People Mover	N/A	2028

An aerial photograph of an airport and surrounding urban area, heavily darkened with a black overlay. The airport's runways and taxiways are visible in the upper left, while a dense grid of city streets and buildings covers the rest of the frame. A body of water is visible along the bottom edge.

Master/Vision Plan Environmental Considerations

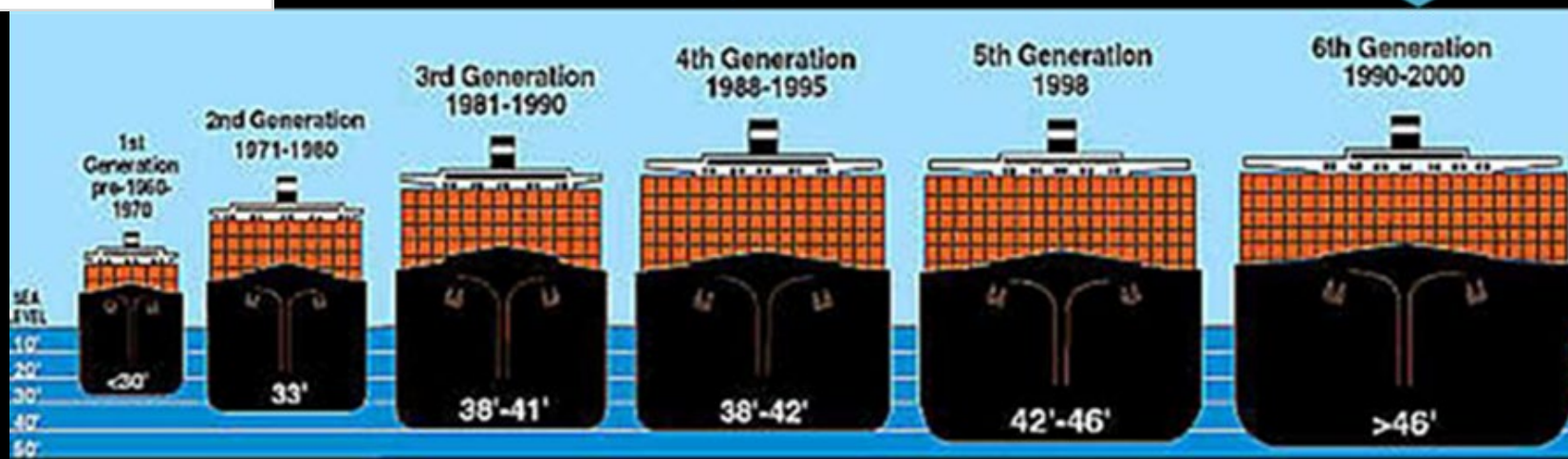
Broward Population



Calling
PEV
Today

Calling PEV
Today Lightly
Loaded

Possible
After
Deepening



Population & Cargo Vessel Growth

Master Plan Environmental Considerations

Social & Economic

1. Social
2. Economic
3. Land Use Changes
4. Mobility
5. Aesthetic Effects
6. Relocation Potential
7. Farmland

Cultural

1. Parks (if Federally Funded)
2. Historic Sites/Districts
3. Archaeological Sites
4. Recreational Areas

Natural

1. Wetlands and Other Surface Waters
2. Aquatic Preserves and Outstanding Florida Waters
3. Water Quality and Water Quantity
4. Wild and Scenic Rivers
5. Floodplains
6. Coastal Zone Consistency
7. Coastal Barrier Resources
8. Protected Species and Habitat
9. Essential Fish Habitat

Physical

1. Traffic Noise
2. Air Quality
3. Contamination
4. Utilities and Railroads
5. Construction

	Social	Economic	Land Use Changes	Mobility	Aesthetic Effects	Relocation Potential	Farmland
Berth							
Channel	x	x	x	x		x	
Cruise Terminal	x	x		x	x		
Logistics	x	x	x	x			
Parking				x			
Transportation	x	x		x	x		

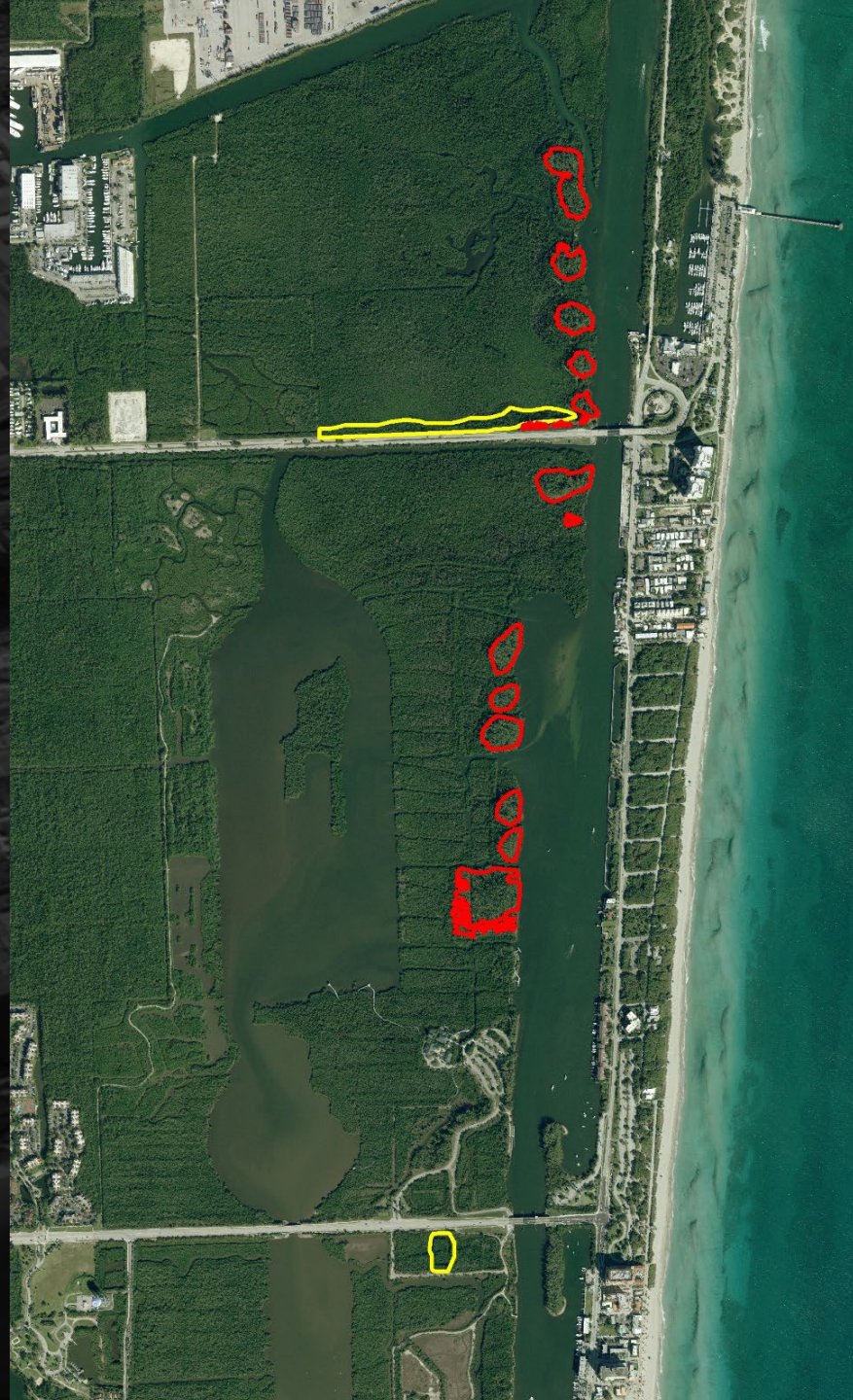
	Parks (if Federally Funded)	Historic Sites/Districts	Archaeological Sites	Recreational Areas
Berth				
Channel		x		
Cruise Terminal				
Logistics				
Parking				
Transportation				

	Wetlands and Other Surface Waters	Aquatic Preserves and Outstanding Florida Waters	Water Quality and Water Quantity	Wild and Scenic Rivers	Floodplains	Coastal Zone Consistency	Coastal Barrier Resources	Protected Species and Habitat	Essential Fish Habitat
Berth	x				x	x		x	x
Channel	x		x		x	x	x	x	x
Cruise Terminal						x			
Logistics	x		x			x			
Parking			x			x			
Transportation	x		x			x		x	

	Traffic Noise	Air Quality	Contamination	Utilities and Railroads	Construction
Berth			x		x
Channel		x	x	x	x
Cruise Terminal		x	x		x
Logistics					x
Parking		x	x		x
Transportation	x	x	x	x	x

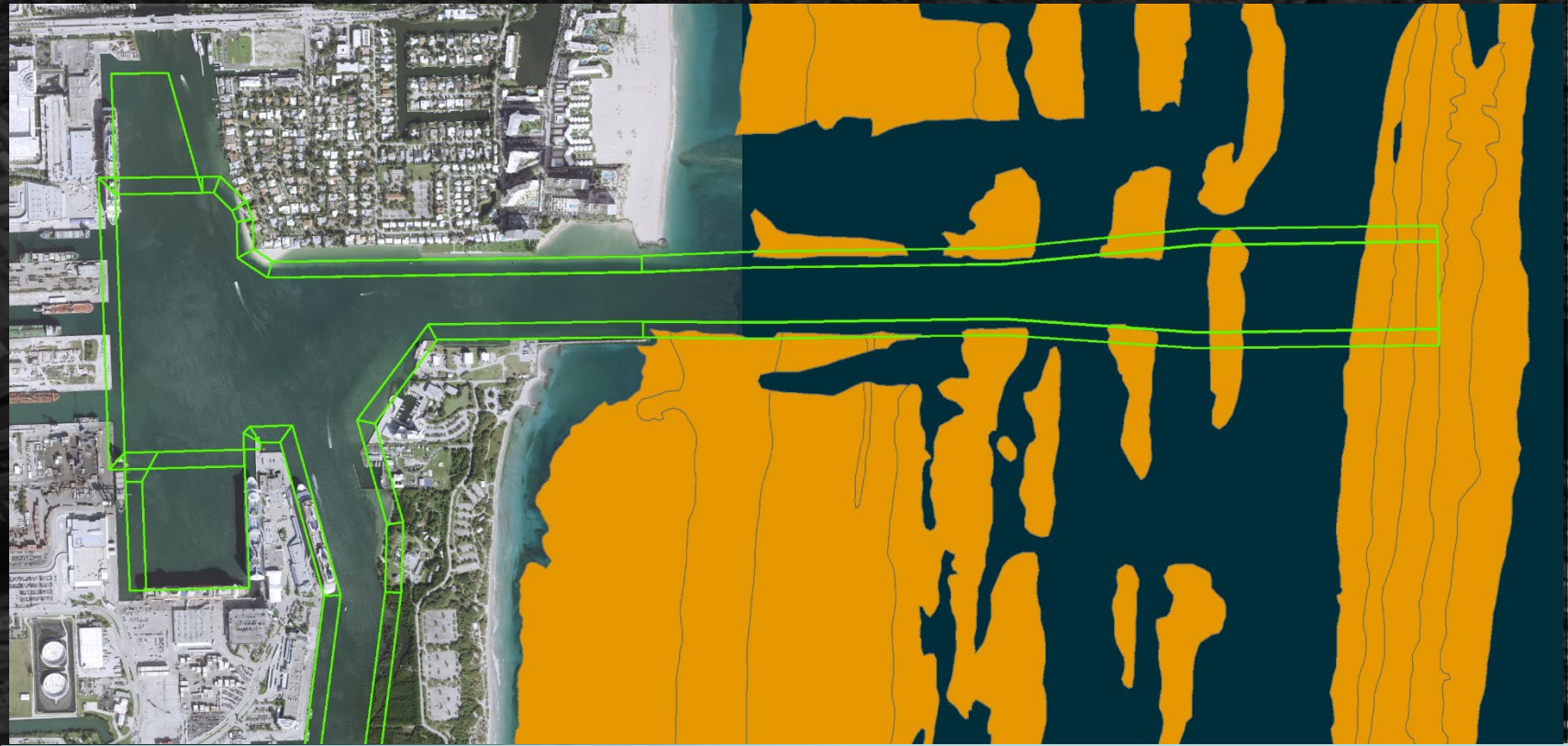
West Lake Natural Area Restoration

- Broward County Park
- USACE Navigation Improvements Project
- Joint-Project with FLL Runway Extension
- 168 acres of flushing, mangrove and seagrass
- Purchased wetland parcels for conservation
- More improvements scheduled (Segment 4)



Coral Reef Restoration

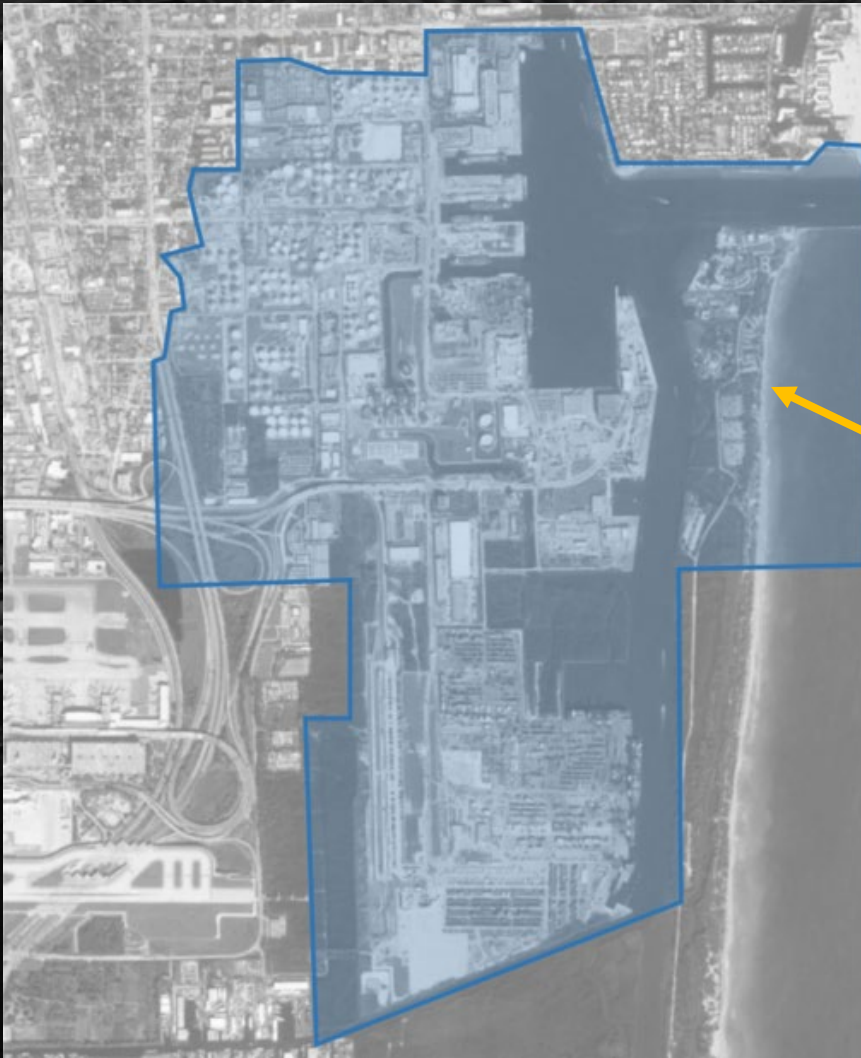
- USACE Navigation Improvements Project
- 103,000 new nursery-raised corals will be outplanted on 18 acres of existing reef
- Relocation existing corals in the project area to another 5 acres of existing reef



Beaches & Dunes

Mizell-Johnson State Park is one of Florida's 36 Index Nesting Beaches for sea turtles and provides beach and dune habitat.

- Mizell-Johnson State Park may be an option for placement. Coordination required.
- Beneficial to nesting sea turtles, shorebirds and other wildlife



Mangroves = dominant vegetation along Port's waterfront; removal and loss of some suitable habitat due to:

- Transportation projects; Southport Turning Notch Expansion (STNE)
- Implemented & Planned Mitigation Projects:
 - 16.5 acres of mangrove wetlands created to offset STNE impacts
 - 25 acres of mangrove wetlands created at Mizell-Johnson State Park
 - More acreage of mangrove wetlands to be created within West Lake Park to cover future impacts

Impacts from:

- Direct loss through dredging
- Expansion of berths creates more sea bottom, but it will not likely be colonized by seagrass
- Temporary impacts from increased turbidity during construction

Endangered Species Act (ESA)-listed species:

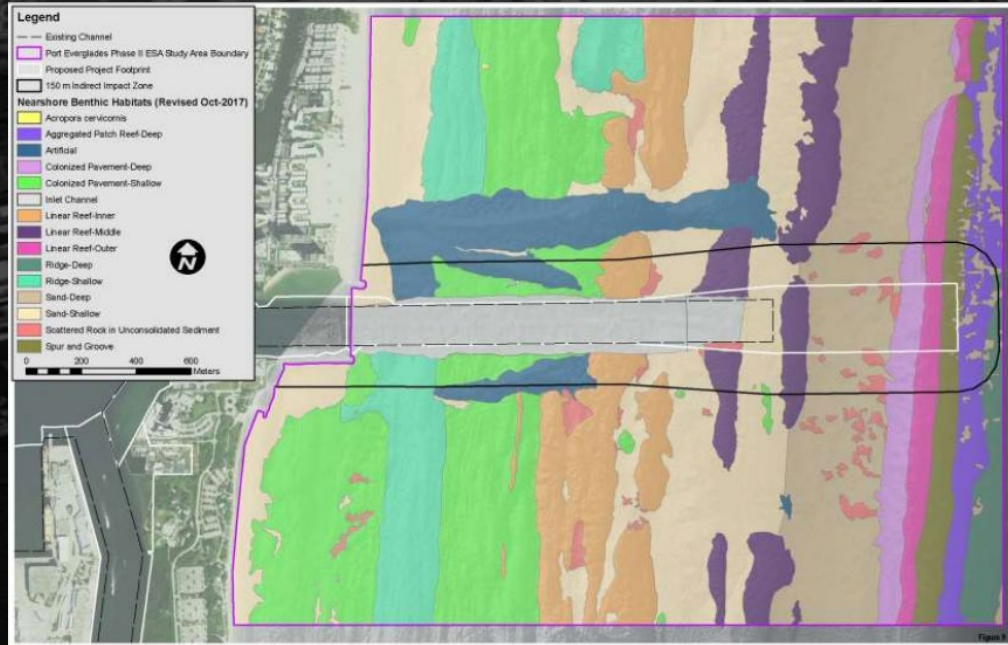
Johnson's Seagrass

Turbidity curtains and *Best Management Practices* will be implemented during construction. Most seagrass Impacts will be mitigated at the West Lake Park site.



Coral, Reef & Hard-bottom

14.62 acres of hard-bottom and reef habitat to be lost during outer channel expansion



- 5 acres of off-shore artificial reef to be constructed
- 9,713 coral colonies documented within the STNE

ESA-listed species:
Several Coral Species

Manatees abundant in waters in and around Port Everglades; Port contains **Manatee Essential Habitat**

- Potential **direct** impacts:
 - Entrainment
 - Collision
- Potential **indirect** impacts:
 - Removal of foraging habitat (seagrass)
 - Disturbance from construction activity and noise

ESA-listed species:

West Indian Manatee

USFWS's Standard Manatee Construction Conditions for In-Water Work will be implemented during construction. All work will be designed with manatee protection measures per the Broward County Manatee Protection Plan.

Fish & Mobile Marine Species

Potential **direct** impacts:

- Entrainment
- Collision

Potential **indirect** impacts:

- Removal of habitat
- Disturbance from construction activity and noise

Long-term, adverse effects are not anticipated given the temporary nature of dredging

ESA-listed species:

Smalltooth Sawfish

NMFS's Sea Turtle and Smalltooth Sawfish Construction Conditions will be implemented during construction.

Potential **direct** impacts:

- Entrainment
- Collision

Potential **indirect** impacts:

- Removal of habitat
- Disturbance from construction activity and noise

Long-term, adverse effects are not anticipated given the temporary nature of dredging

ESA-listed species:

Sea Turtles

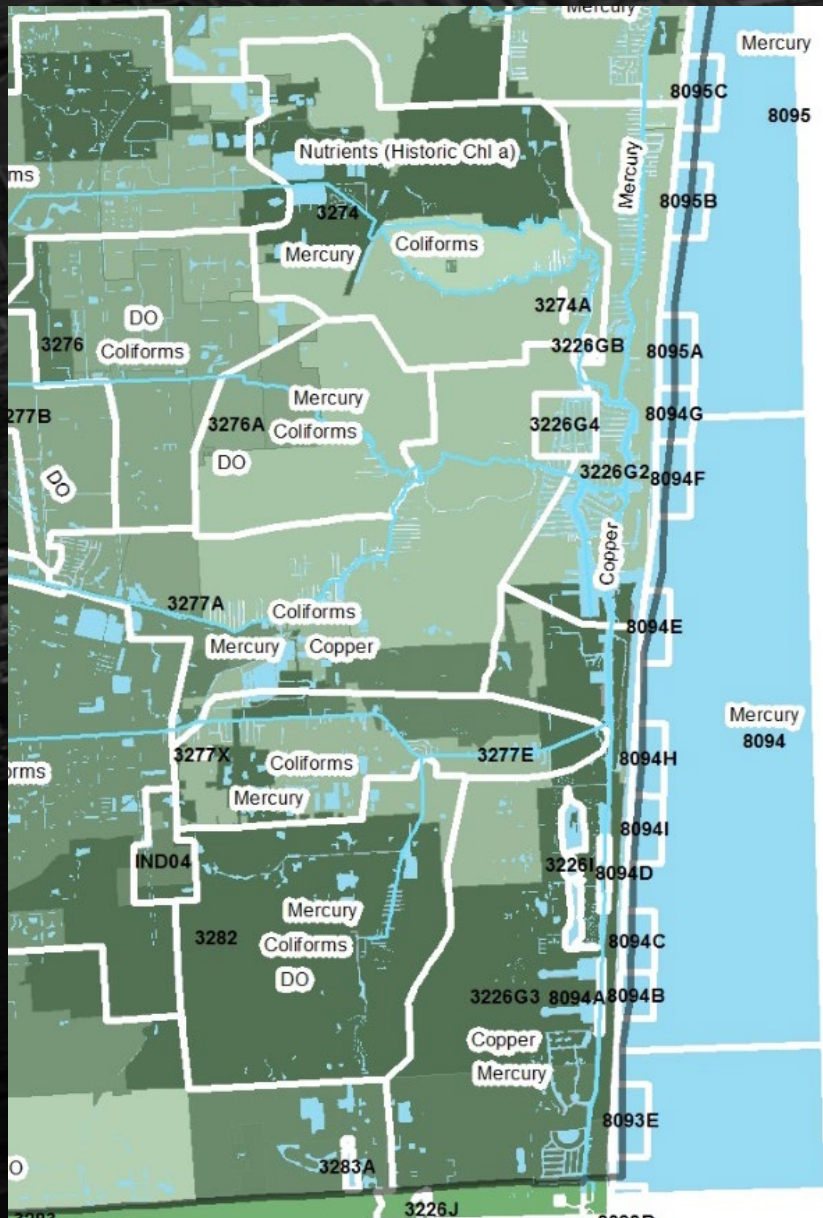
“Turtle friendly” lighting and NMFS’s *Sea Turtle and Smalltooth Sawfish Construction Conditions* will be implemented during construction.

American crocodile
Federally Protected

Noise and disturbance will likely cause species to avoid construction area

→ Direct impacts unlikely

Water Quality



New projects will impact pervious areas.
New or revise Surface Water Management permits

NPDES requires pollution prevention measures, treatment, monitoring, BMPs and other practices

Periodical monitoring for TN, TP, chlorophyll-H and copper

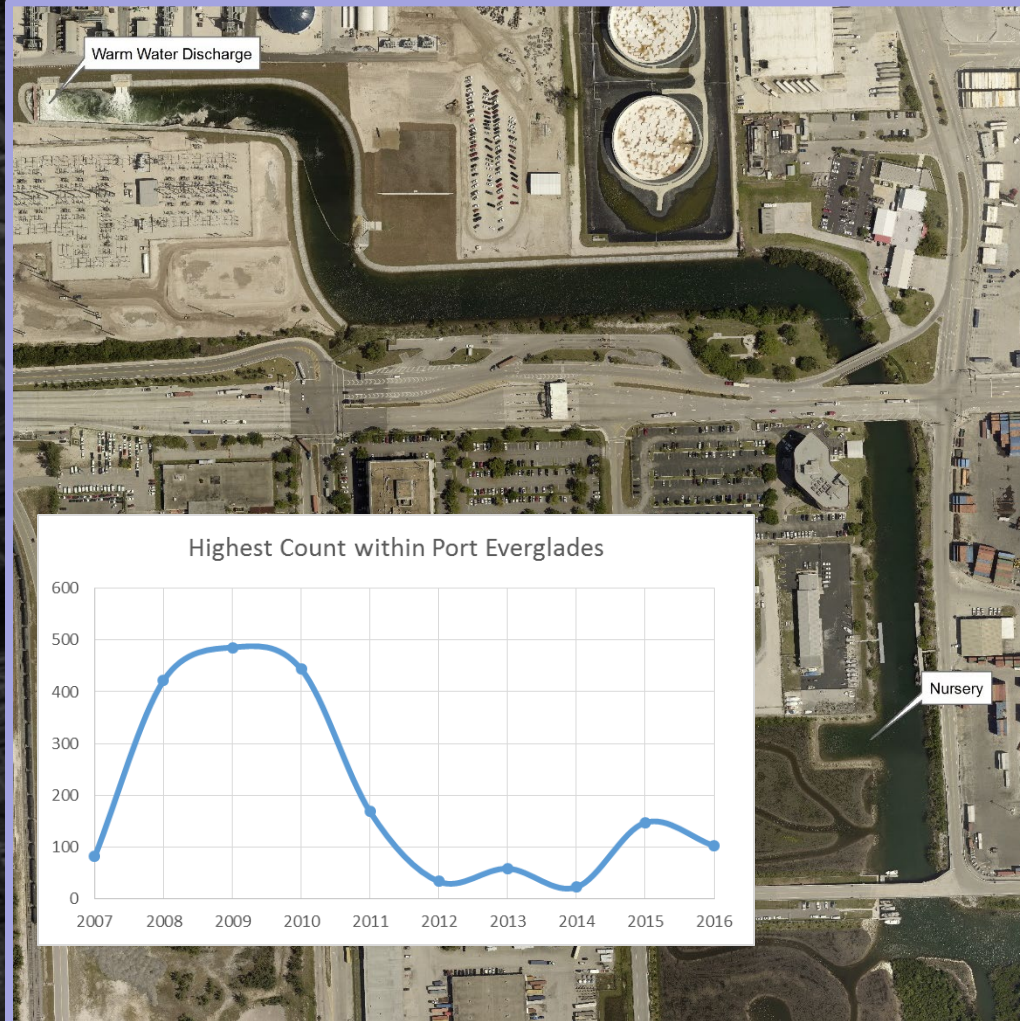
SLR impact to stormwater management

An aerial photograph of an airport and surrounding urban area, heavily darkened with a black overlay. The airport's runways and taxiways are visible in the upper left, while a dense grid of city streets and buildings covers the rest of the frame. A body of water is visible along the bottom edge.

Voluntary Environmental Stewardship Initiatives

Manatee Aggregation Area

- Second Largest in Broward
- FPL Cooling Canal
- 455 Manatees in 2010
- Year-Round Presence
- Manatee Protection Plan and Tariff Requirements
- 3' Manatee Fenders on 26,000' of Bulkhead
- Manatee Exclusion Devices on Stormwater Outfalls
- Enhanced "Nursery Area"



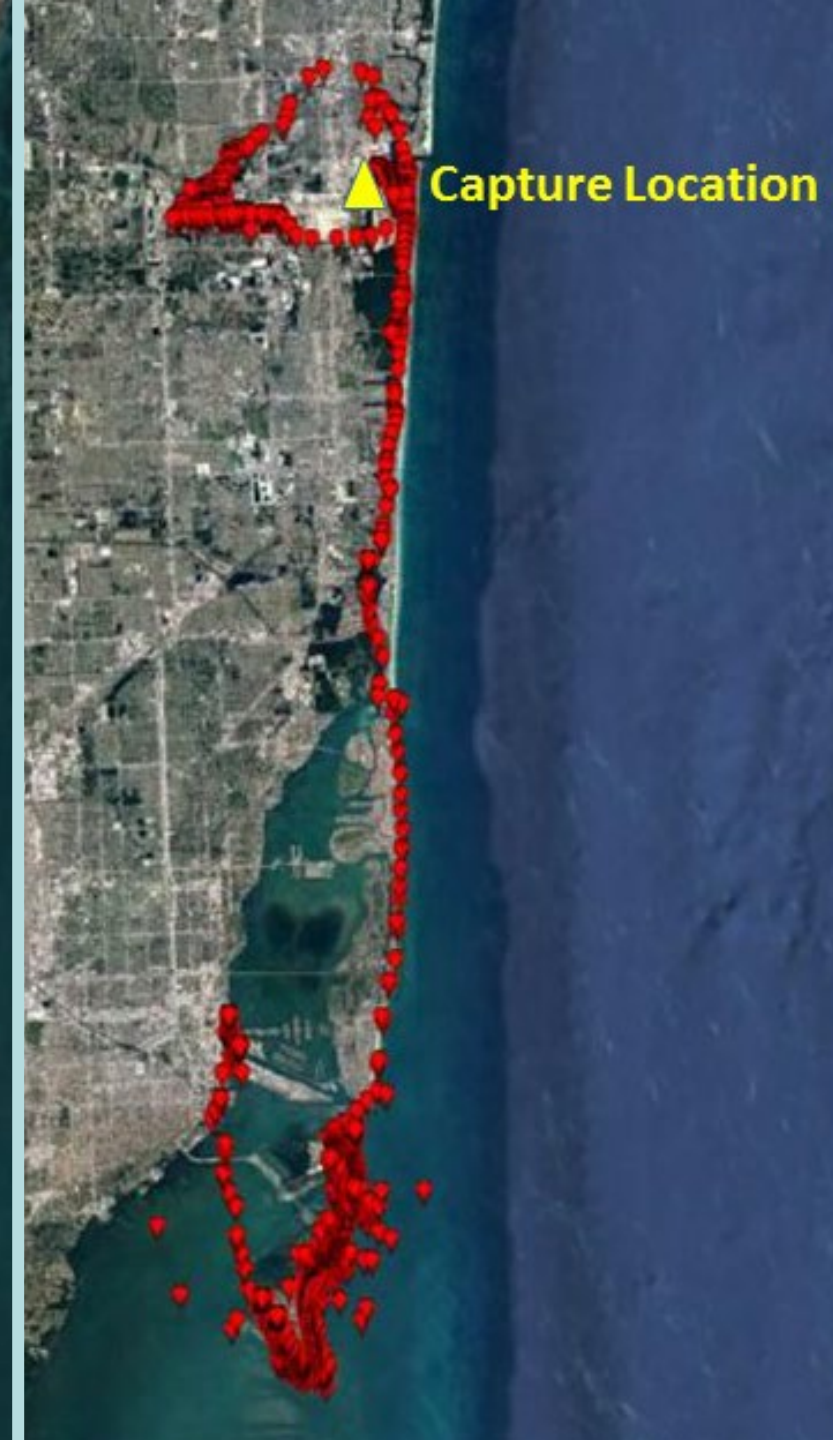
Manatee Satellite Tagging

- Joint effort between USGS, FWS, FWC, FPL, FIU, NSU, Miami Seaquarium & Port Everglades coordinated by Sea-to-Shore Alliance
- Port Everglades has funded FWS satellite telemetry device for statewide tracking



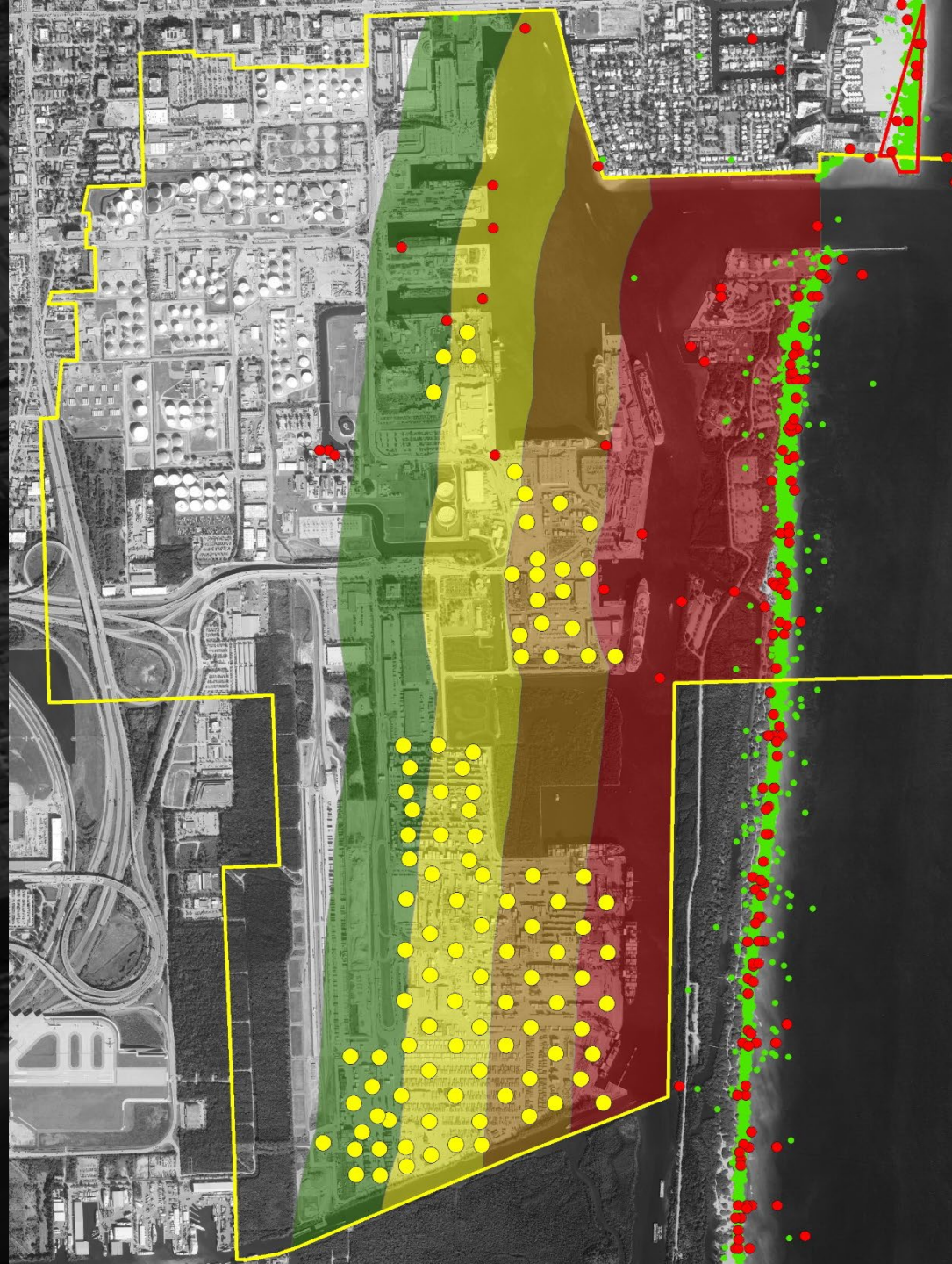
Manatee Satellite Tagging

- Manatee “Apollonia”
- January 11 – 18, 2017 near Port Everglades
- January 19-26, 2017 to Key Biscayne



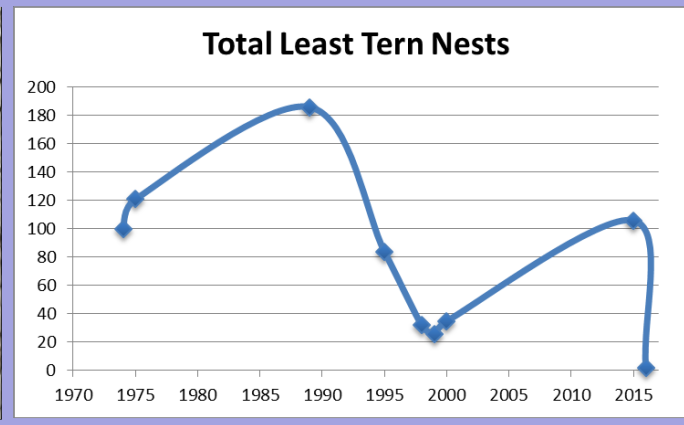
Sea Turtle Nesting and Stranding

- Nesting beach ¼-mile
- Critical Loggerhead breeding habitat offshore
- Occasionally enter port
- FWC stranding response
- Shields on garage lights
- High mast “turtle-friendly” LED lighting evaluation
- Evaluating tree screening, false crawls and hatchling disorientation



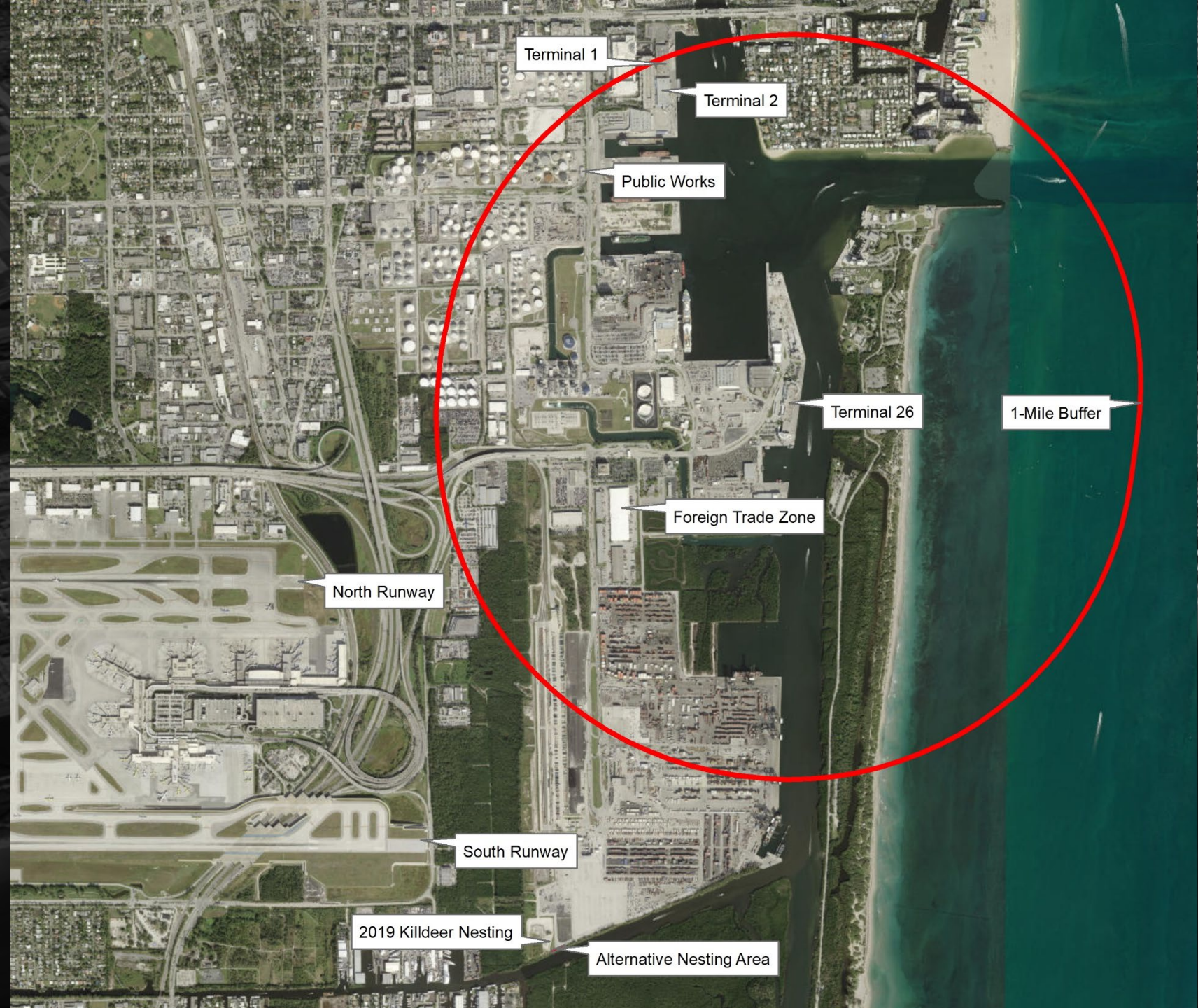
Shorebird Nesting Colonies

- Rooftop Nesting since 1974
- T-26 Largest in Broward
- Four Previous Rooftops
- Least Terns 186 in 1989
- Black Skimmer 20 in 1976
- Evaluating Building Code and Roofing Warranties
- Protective Community (two months with no A/C)
- FWC Shorebird Alliance (flshorebirdalliance.org)



Fort Lauderdale Air Show

- In 2017, used south runway and provided one-mile buffer around Terminal 26
- In 2018, had to use north runway but used steep departure angle, except...
- ~50 least terns directly observed being flushed
- In 2019, had to use north runway but used steep departure angle, except...



Alternative Shorebird Nesting Area

- 0.1 acres along north bank of Dania Cutoff Canal
- Landscaping fabric and two loads of pea gravel
- Cleared tall vegetation
- Created 40 least tern decoys on “Earth Day”
- Possibly attracted killdeer to nest on adjacent area
- Trapped several cats and other predators
- 3 of 5 chicks fledged.



Upland Habitat Restoration

- Most landscaping native.
- Removing Florida Exotic Pest Plant Council Categories I-II plants
- Facilities maintenance planting native Broward species for replacement landscaping
- Certified Wildlife Habitat
- Committed to optimizing habitat in green areas



Bioswales

- Many challenges
- Voluntarily investing substantial resources in stormwater management
- Currently GIS mapping and categorizing all pervious areas
- Planted Bioswale Project at Eisenhower Boulevard
- Additional bioswales planned in green areas.



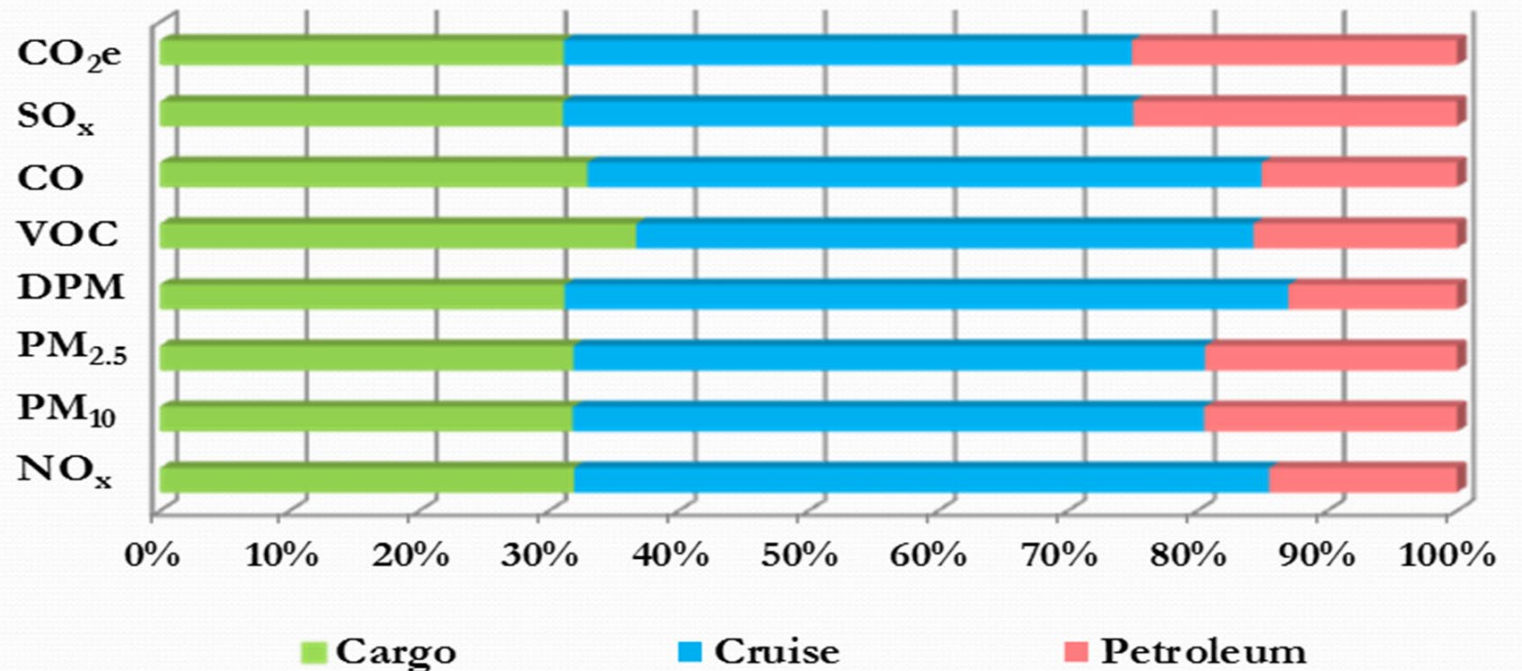
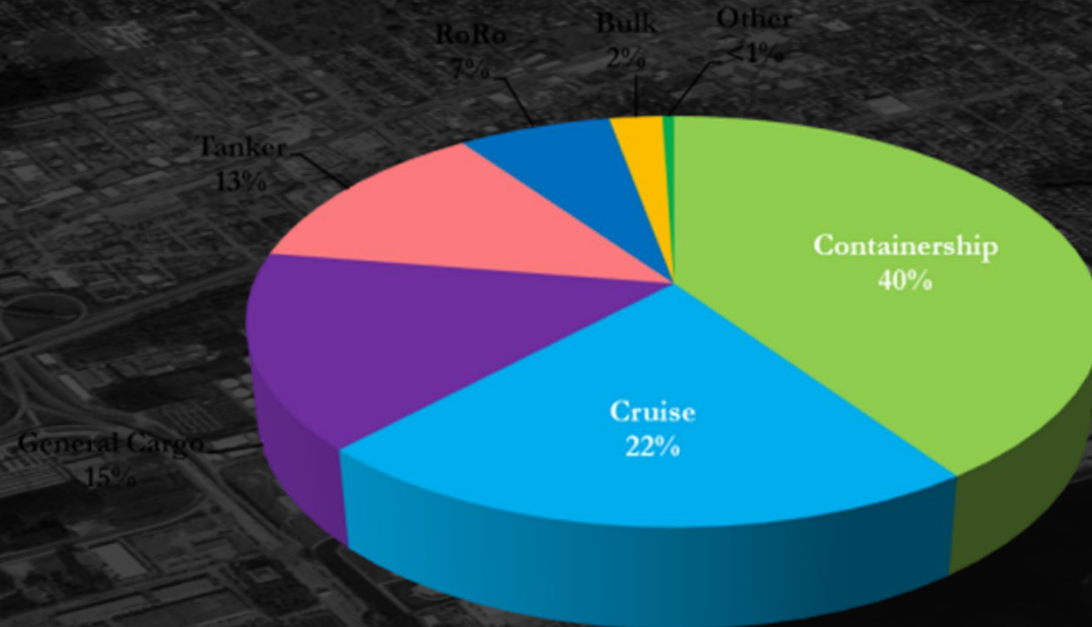
Sustainable Facilities

- \$4.4 million energy-efficient building upgrades.
- USGBC LEED certifications
- Broward County's *GoGreen Seal of Sustainability*
- *Green Supply Chain Award*
- Green Marine certification
- Vehicle & boat engine energy-efficient retrofits.
- Florida Recycling Partnership 75% Goal



Air Emissions Baseline Inventory

- First seaport to voluntarily partner with EPA
- Categories:
 - Ocean Going Vessels
 - Harbor Craft
 - Cargo Handling Equipment
 - Onroad Vehicles
 - Locomotives
- Will be used for air quality management.



Resiliency Studies

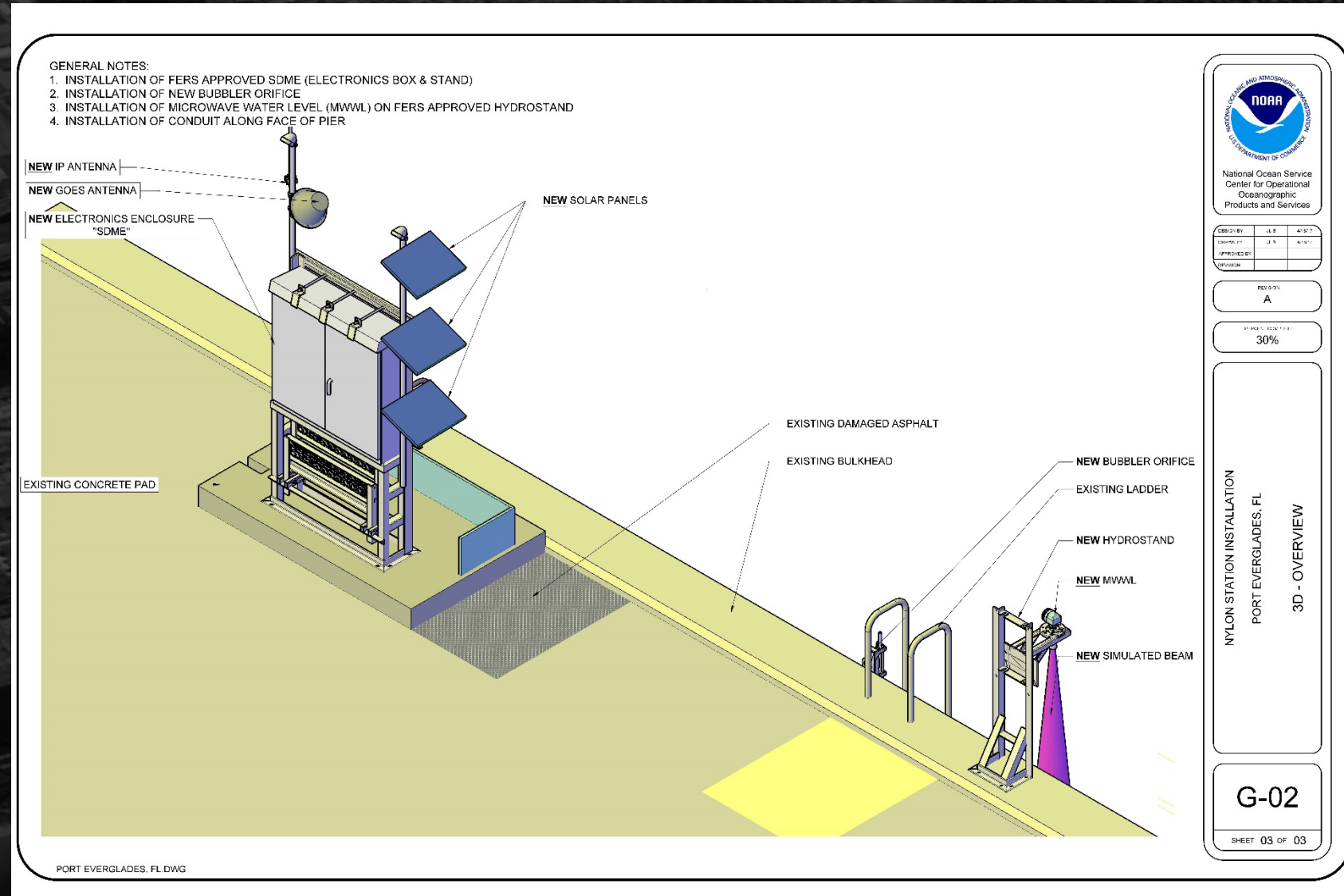
- University of Illinois
- Critical Infrastructure Resiliency Institute
- Florida Atlantic University
- U.S. Coast Guard
- U.S. Department of Homeland Security
- 1.8" Vertical Resolution LIDAR Elevation Data



NOAA PORTS

NWLON Station

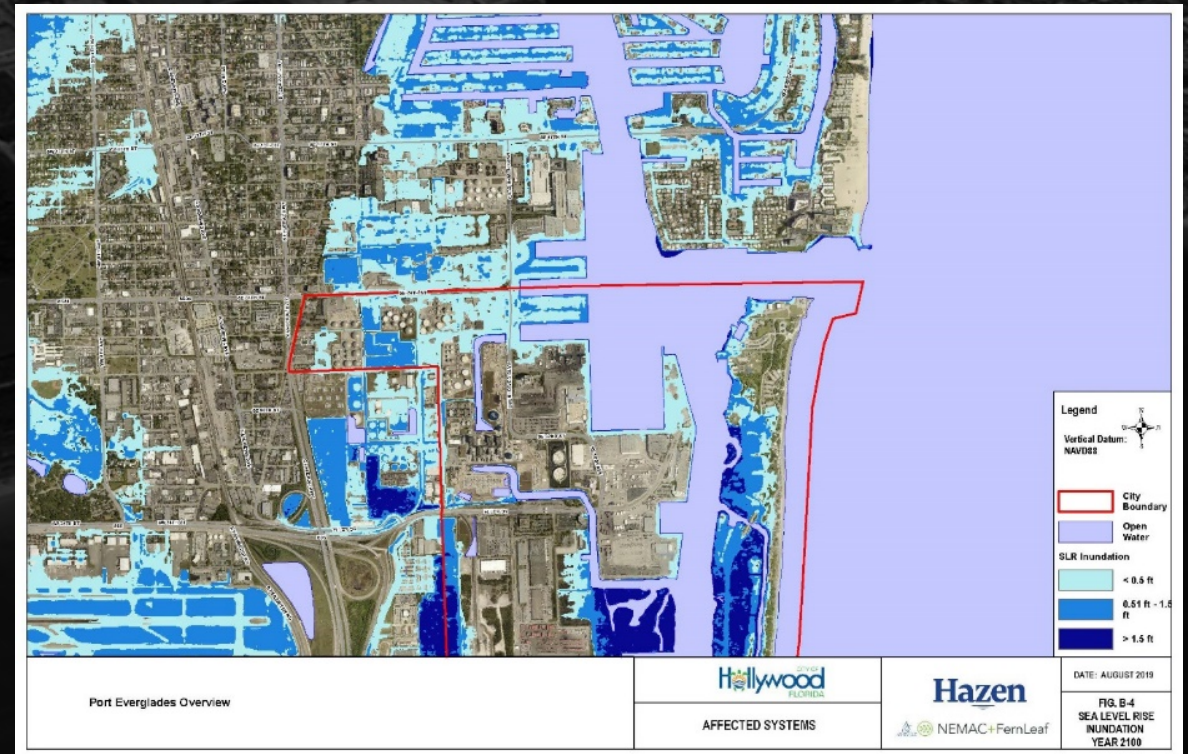
- Physical Oceanographic Real Time System (PORTS®)
- National Water Level Observation Network (NWLON)
- Storm Wind/Surge Resistant Microwave Water Level Station
- Southeast Florida Regional Climate Change Compact



Sea Level Rise & Resiliency

Numerical model development for the evaluation of drainage infrastructure capacity under projected sea level and climate conditions in Broward County, FL

- Future conditions – 100-year flood elevation map
- City of Hollywood – vulnerability assessment
- Framework for a national hydrological analysis – USGS
- Resiliency standard for tidal flood protection – seawall ordinance
- Green infrastructure



Sustainability/Green Initiatives

Recycling program for glass, plastic, colored and white paper, waste oil, absorbent rags, spent absorbent, batteries, tires, fluorescent tubes, print cartridges, and cardboard

Working with EPA to prepare inventory of air emissions

Reduce solid and liquid waste



Environmental Interpretation Through Art

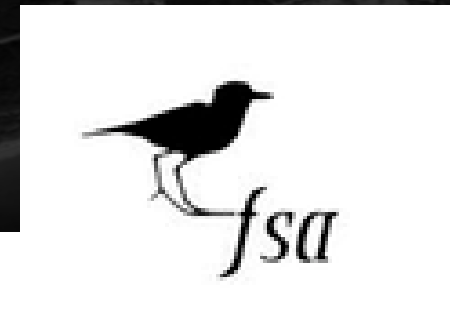
- Exterior Office Building
- Elevator Hallways
- Terminal Floors
- Entryways
- Parking Lots



Terminal 29
Wall Mural
"Oceans Footprint"

Environmental Restoration Collaboration

- Interagency Working Groups
- American Association of Port Authorities Environment Committee
- Broward County NatureScape
- Florida Ports Council Environmental Committee
- Green Marine/GreenTech 2017
- Southeast Florida Coral Reef Initiative
- Southeast Florida Regional Climate Change Compact
- Broward County Sustainability Stewards
- Broward County Critical Infrastructure and Future Flood Risk Workgroup
- Florida Shorebird Alliance
- South Florida Audubon Society
- FAEP/SFAEP



- Phase 1
 - Elements 1 and 2 final report delivered in October, 2018 (completed)
- Phase 2
 - Integrate traffic study findings and refine cost estimates/CIP
 - Recommend final list of projects and CIP based on affordability analysis
 - Identify funding opportunities and other strategies for implementation
 - Present recommended final plan to stakeholders, including BCC
- Phase 3
 - Prepare 3D Animated Video detailing M/VP projects
- Phase 4
 - Integrate M/VP into Port Component of Broward County Comprehensive Plan (#BrowardNEXT)

Remaining Milestones and Meetings

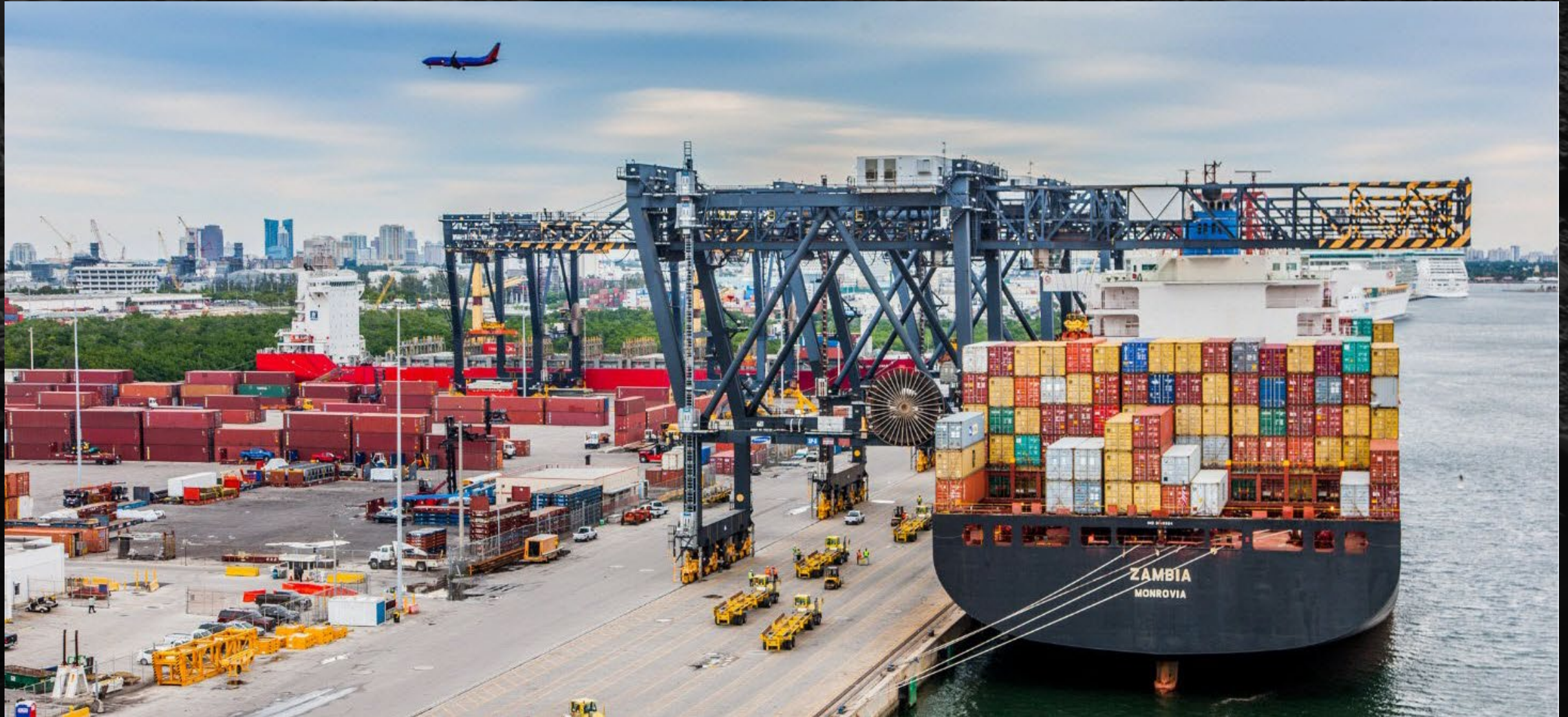
- September-November 2019

- Tenant/Stakeholder Meeting #4
- Port Everglades Association Meeting
- Port Everglades Advocacy Team Meeting
- Board Workshop
- Phase 2 Closeout Workshop

- December 2019

- Final Phase 2 Report (December 20, 2019)
- Port Everglades Association Meeting (Final Plan)
- Public Meeting (Final Plan)
- County Commission Adoption Meeting
- MPO Technical Advisory Committee, MPO Community Roundtable and MPO Board Meetings

Your Input



Your Input

What issues/challenges do you see that we have not identified?

What opportunities do you see?

What other comments, ideas or suggestions do you have?



2018 Port Everglades Master/Vision Plan Update

Environmental Stakeholders Meeting
October 11, 2019

