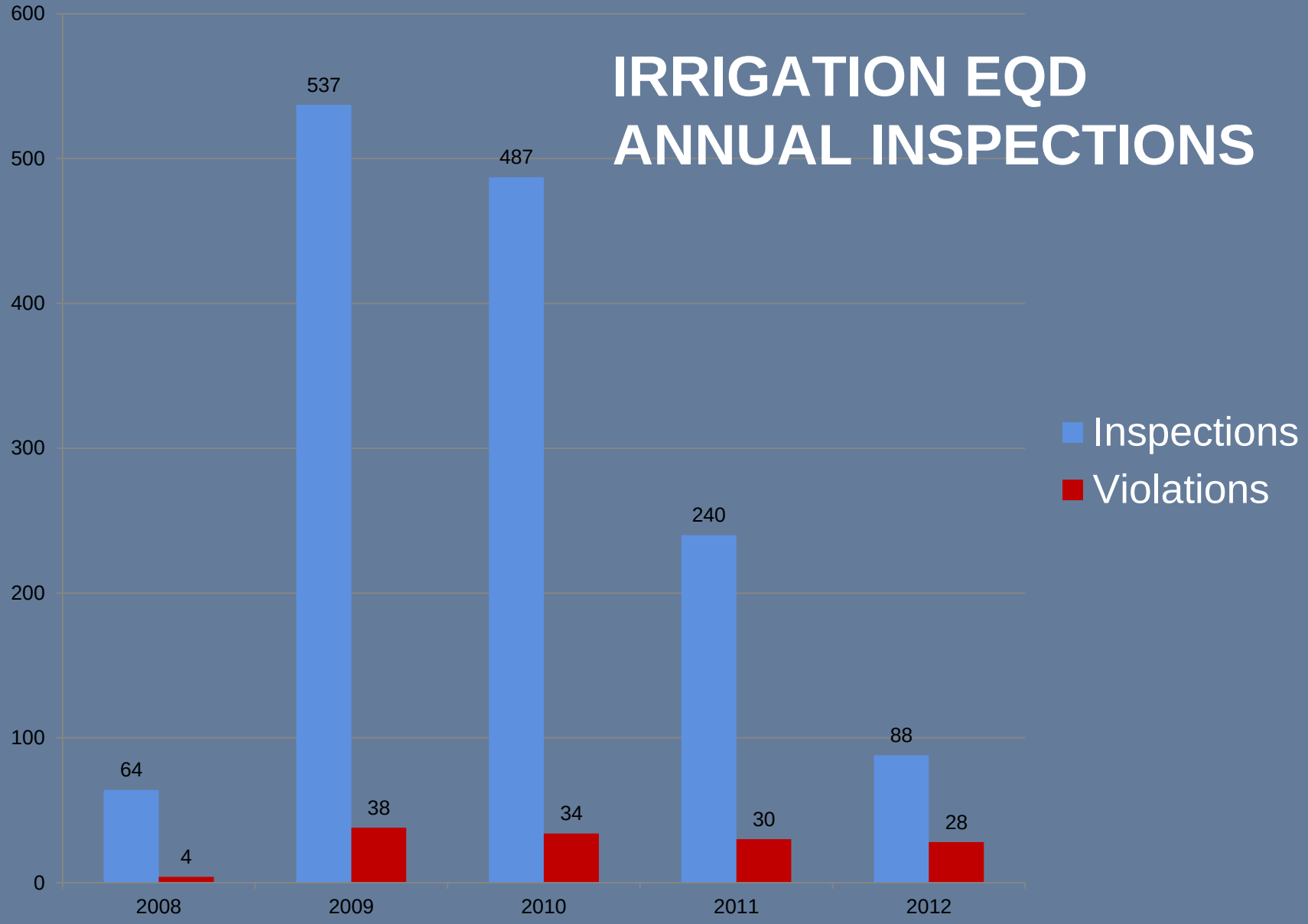
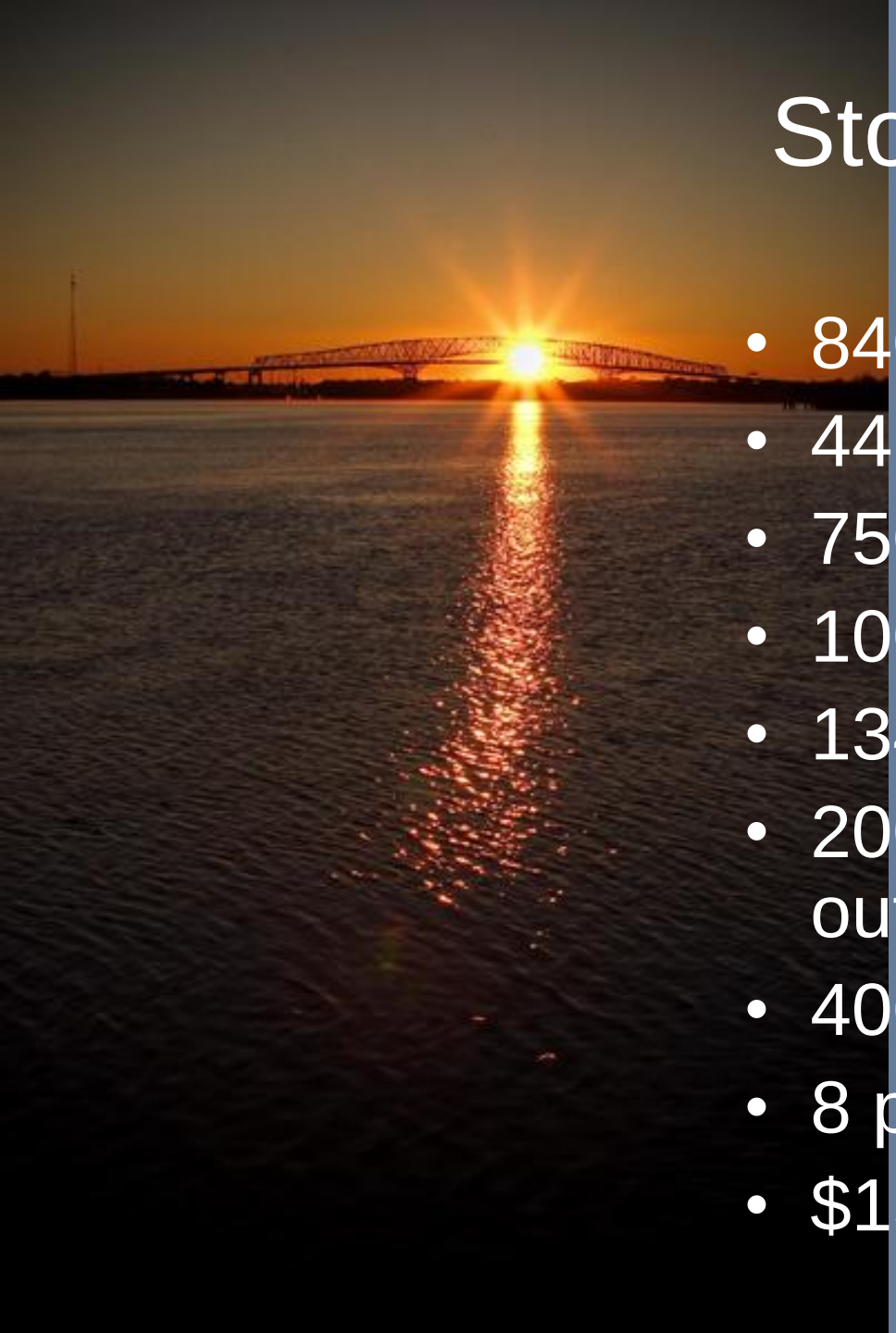
St. Johns River Accord
2013 Annual Progress Report

by Melissa M. Long, P.E.
Program Administrator
Department of Environmental Protection

City of Jacksonville Progress

IRRIGATION EQD ANNUAL INSPECTIONS





Stormwater Utility :

- 840 sq miles
- 44,000 Catch Basins/Inlets
- 7500 Manholes
- 1000 miles of pipe
- 134 ponds
- 2000 miles of major outfalls
- 4000 miles of ditches
- 8 pump stations
- $15 million annual budget

Construction Projects - I

Project	Drainage Basin	Status	Treatment
Melba/Green Street	LSJRU Trout River	Complete	Flood Control Only
Smith Broward Pond	LSJRU Trout River	Complete	Wet Detention
Woodland Acres/Oakwood Villa Area Drainage Phase I	Arlington River	Complete	Wet Detention
Hugh Edwards Road Drainage	Ortega River	Complete	Wet Detention
Pine Forest/Larsen Acres	LSJRU Trout River	Complete	Wet Detention
Upper Deer Creek Phase 3	LSJRU Trout River	Complete	Wet Detention
Venetia Terrace Drainage	Ortega River	Complete	Erosion Control & Wet Detention
Newtown Drainage main trunk-line improvement (Myrtle & Beaver)	LSJRU Trout River	1st Phase of construction Complete	Wet Detention

Construction Projects - II

Project	Drainage Basin	Status	Treatment
McCoys Creek Pond C	LSJRU Trout River	Complete	Wet Detention
Air Liquide Pond Retrofit	LSJRU Trout River	Under Construction	Wet Detention
Mireulo Circle	LSJRU Trout River	Under Construction	Flood Control Only
Paul Avenue Outfall	LSJRU Trout River	Under Construction	Wet Detention
Hamilton Jersey Outfall	LSJRU Trout River	Design in Progress, Permitting	Erosion Control
Pinedale Area	Ortega River	Design in Progress	Flood Control Only
Country Creek Area Drainage Improvements	Ortega River	Study Complete; Pending Design	Wet Detention

Construction Projects - III

Project	Drainage Basin	Status	Treatment
Avenue "B"/Zinia Outfall	Trout River	Design in Progress	Erosion Control Only
Crystal Springs Area	Ortega River	Design in Progress	Wet Detention
Bunche Rd. Drainage	Trout River	Design in Progress	Wet Detention
Noroad/Lambing Drainage	Ortega River Basin	Design in Progress	Wet Detention
Old Plank Rd. Drainage	Ortega River Basin	Design in Progress	Wet Detention
Mandarin Area Drainage (Grand Crique)	LSJR Upstream of Trout River	Design in Progress	Wet Detention
County Creek Area	Ortega River	Design in Progress	Flood Control Only
Messer Area Drainage	LSJR	Design in Progress	Flood Control Only
Septic Tank Phase-Out Program	LSJR	Phase I - Design Beginning	Water Quality
City-Wide Drainage System Rehabilitation	LSJR - Countywide	Under Construction	Erosion Control & Flood Control

Improving Public Access

Michael B. Scanlan Mayport Boat Ramp

- Completed design to double the floating docks & add 1 new launch lane
- Construction is pending

Ortega River Channel Markers

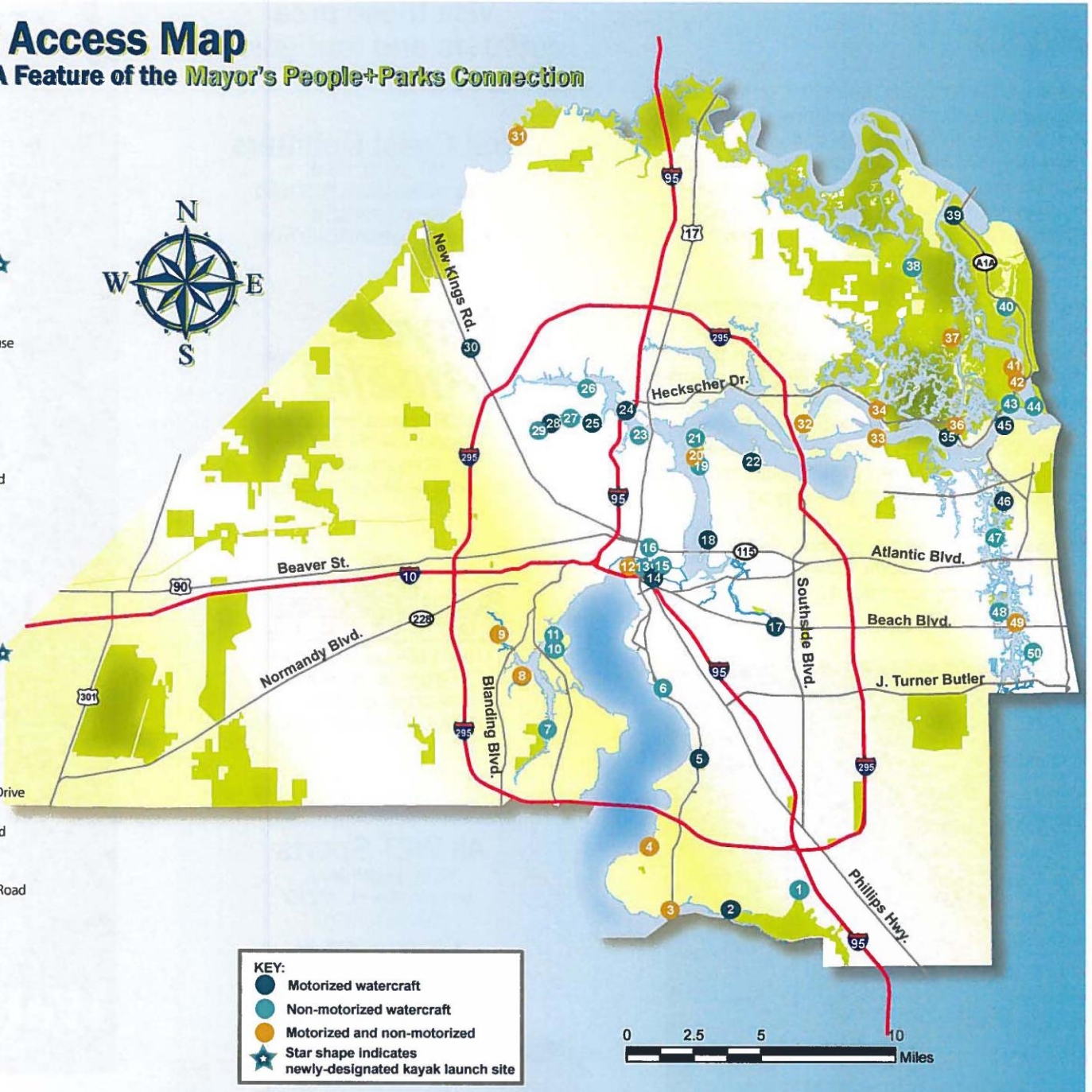
- Completed design/permitting for channel markers and mooring buoys
- Applied for a FIND grant to install 8 new channel marker buoys and replace 3 existing buoys

Ortega River

JaxParks Water Access Map

A Feature of the Mayor's People+Parks Connection

1. Palmetto Leaves Park, 13799 Old St. Augustine Road
2. Hood Landing, 12804 Hood Landing Road
3. Mandarin Park, 14780 Mandarin Road
4. County Dock, 2403 County Dock Road
5. Goodby's Lake, 9021 San Jose Blvd.
6. Nathan Krestul Park, 2001 LaVaca Road
7. Ringhaver Park, 5198 118th St.
8. Wayne B. Stevens, 4555 Ortega Farms Blvd.
9. Curtis Lee Johnson Marina Park, 5434 San Juan Ave.
10. Seminole Park, 4170 McGirts Blvd.
11. Stinson Park, 4050 San Juan Ave.
12. St. John's Marina, 901 Musuem Circle
13. Southbank Riverwalk, Water taxi dock near Chart House
14. Bee Street Park, Bee St. and Utah Ave.
15. Metro Park Marina, 4110 Gator Bowl Dr.ive
16. Catherine Street, north end of Catherine St.
17. Pottsburg Creek/Beach Boulevard., 8540 Beach Blvd.
18. Arlington Road, 5103 Arlington Road
19. Blue Cypress Park, 4012 University Blvd. N.
20. Arlington Lions Club Park, 4322 Richard D. Gatlin Road
21. Reddie Point Preserve, 4499 Yachtsman Way
22. Lonnie Wurn, 4131 Ferber Road
23. North Shore Park, 7901 Pearl St.
24. Bert Maxwell, 680 Broward Road
25. T.K. Stokes, 2120 Riverview Ave.
26. Riverview Park, 9620 E. Water St.
27. Ribault River Preserve, 2617 Ribault Scenic Drive
28. Harborview, 4100 Harbor View Drive
29. Charles Reese Memorial Park, 1200 Ken Knight Drive
30. Dinsmore, 11001 New Kings Road
31. Thomas Creek Preserve, 17198 Ethel Road
32. New Berlin, 9002 Frederick St.
33. Fulton Road Landing, 5099 Fulton Road
34. Palms Fish Camp, 6359 Heckscher Drive
35. Joe Carlucci, 8414 Heritage River Road
36. Sister's Creek Marina/Jim King Park, 8203 Heckscher Drive
37. Cedar Point Preserve, 9023 Cedar Point Road
38. Pumpkin Hill Creek Preserve, 13990 Pumpkin Hill Road
39. Big Talbot Island State Park, 15500 Heckscher Drive
40. Kayak Amelia, 13030 Heckscher Drive
41. Fort George Island (Ribault Club), 11241 Fort George Road
42. Alimacani, 11080 Heckscher Drive
43. Haulover Creek, 10980 Heckscher Drive
44. Huguenot Memorial Park, 10980 Heckscher Drive
45. Mayport (Michael B. Scanlon), 4870 Ocean St.
46. Oak Harbor, 2428 Seaway St.
47. Dutton Island Preserve, end of Dutton Island Drive
48. Castaway Island Preserve, 2921 San Pablo Road S.
49. Intracoastal Waterway, 2510 2nd Ave. N.
50. Cradle Creek Preserve, 15th St. South & Fairway Lane



St. Johns River Blueway

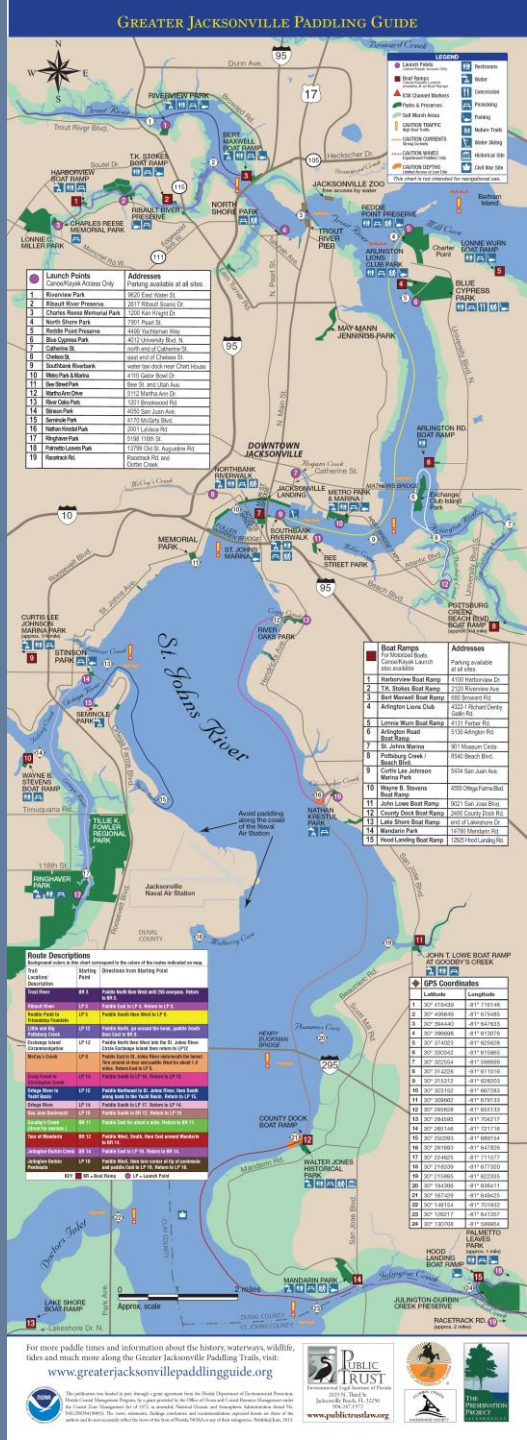
- In support of request to designate the river as a paddling trail or "blueway"

Exchange Club Island Park

- Working with NPS to develop conceptual plan
- Public workshop on 7/25/13
- Applied for FIND grant to design/permit:
  - Small floating dock
  - Kayak landing
  - 2 picnic shelters
  - Nature trail

Greater Jacksonville Paddling Guide

- In partnership with the Public Trust, developed a new paddling guide for River from Julington Creek to Trout River
- www.GreaterJacksonvillePaddlingGuide.org



DEP grant for Bakersfield Drive

- Design of riparian wetland restoration of FEMA properties
- Improve localized flooding, water quality & wildlife habitat
- Kayak launch

Greater Jacksonville Kingfish Tournament

- Another successful year!
- 208 boats competed for cash and prizes
- Youth involvement:
  - 164 in Jr. Angler Off-Shore Tournament
  - 97 in Jr. Angler Dock Tournament
  - 56 from JaxParks Summer Camp

J E A Progress

JEA
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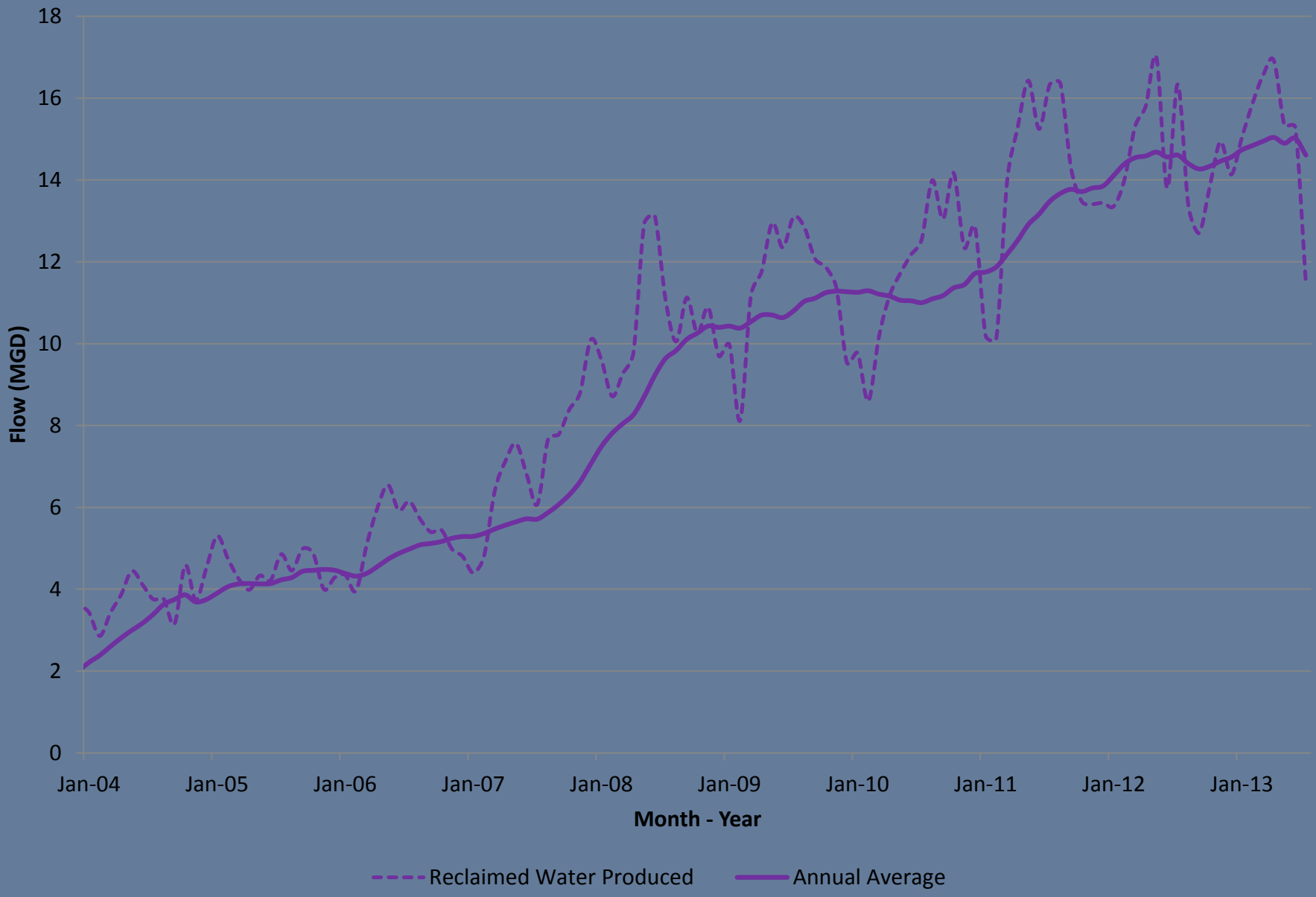
JEA Progress - Wastewater

- JEA is in the last phase of construction of a number of wastewater treatment related projects totaling over $150 million.
  - A $22 million improvement project to the Buckman regional treatment plant is nearing completion
  - The last 3 of 5 older technology plants will be phased out in 2013 at a cost of $17 million
- Once complete, the total projects completed to date are expected to result in a total reduction of over 1,600,000 lbs./yr of total nitrogen entering the River.
  - JEA's loading will be reduced from 1400 tons of TN/yr in 2000 to approximately 580 Tons TN/yr, a reduction of 58%

JEA Progress-Reuse

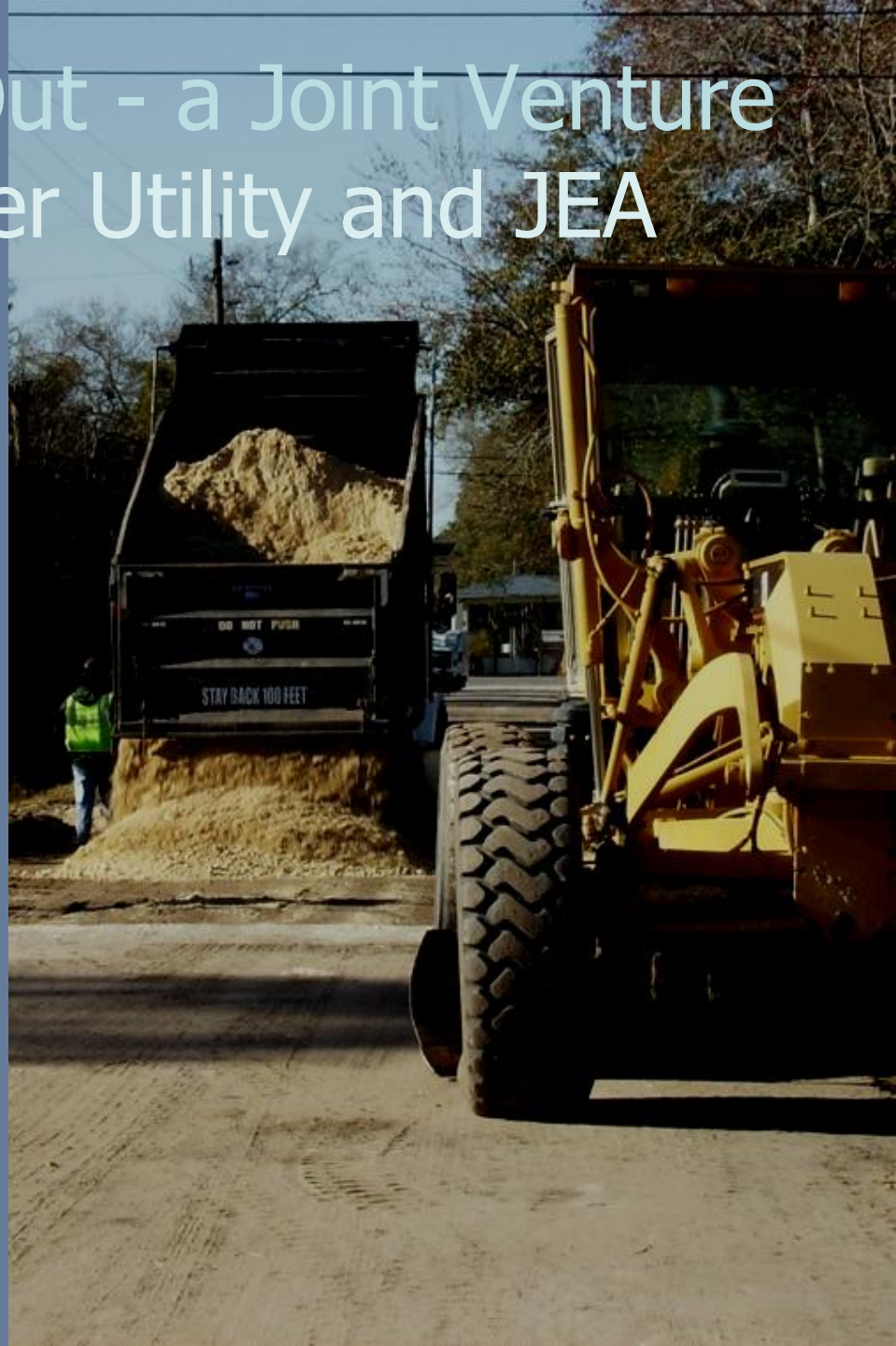
- JEA has completed 168 miles of reclaimed water lines.
  - In 2013, JEA will recycle 15 mgd of treated wastewater as reclaimed water to reduce our TN loading to the River.
- JEA placed into service this year a $2 million project to provide an additional 2-3 MGD of reclaimed water from the District II wastewater plant to our power generating facilities at Northside and St. Johns River Power Park.

JEA's Increasing Reclaimed Water Production



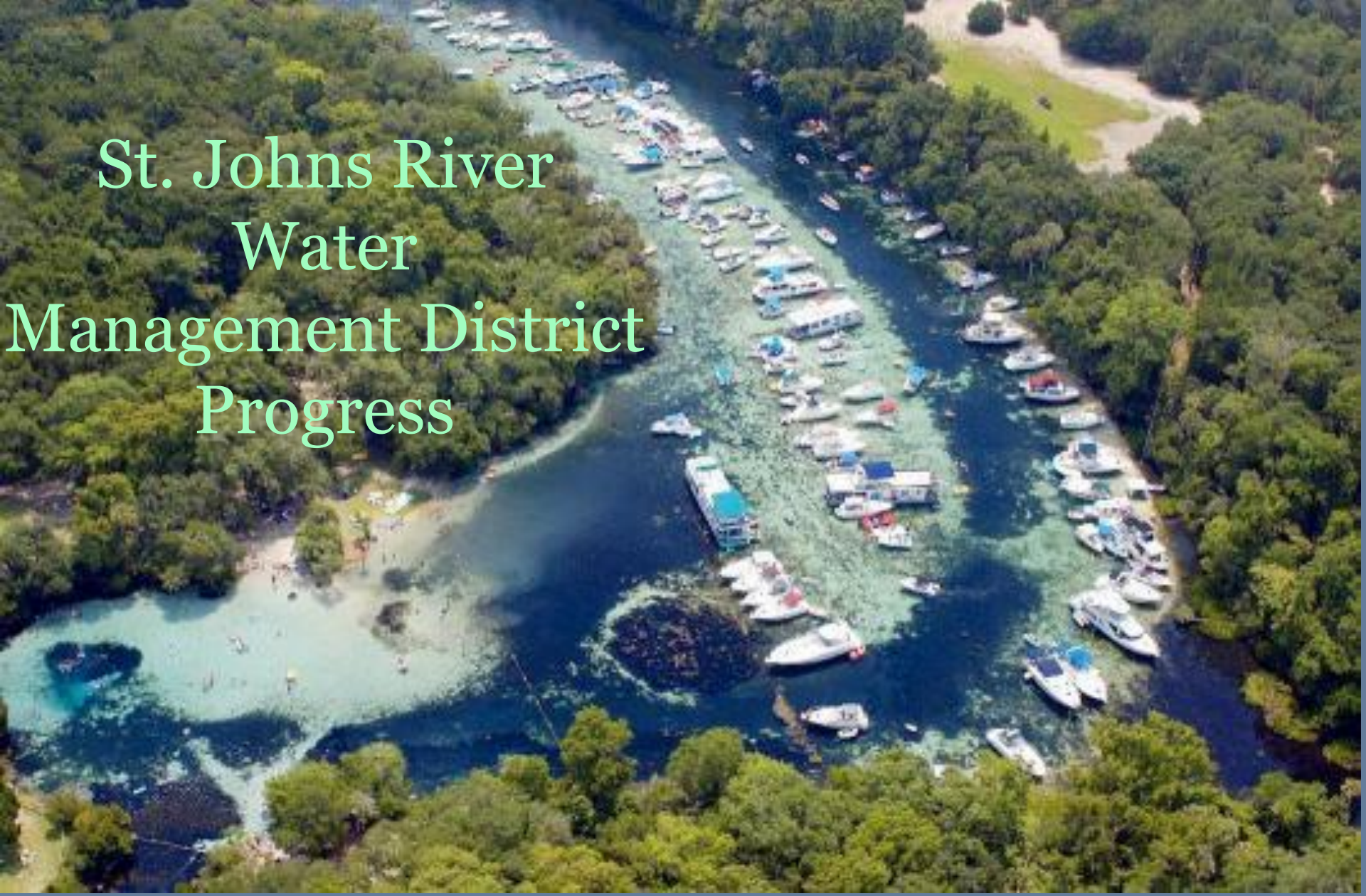
Septic Tank Phase Out - a Joint Venture of COJ Stormwater Utility and JEA

- City of Jacksonville's Storm Water Utility has committed to annual funding for Septic Tank Phase Out (STPO)
- JEA has committed to $1 million for design work and internal services, as well as $650K in capacity fees for work completed by Storm Water funding
- Water and Sewer Expansion Authority dissolved June 30, 2011
- COJ is focused on STPOs that will have a direct impact on the River and provide credits toward their BMAP obligation



Florida Department of Health
Duval County

- Identified and remedied failing septic systems within 8 WBIDs listed in LSJR Tributary BMAP 2.
  - 3,269 parcels were investigated
  - 150 were discovered to be connected to JEA
  - 207 parcels were vacant
  - 46 property owners refused access
  - 64 properties received official notices to correct sanitary nuisance violations
- Violations included direct laundry discharge and sewage on the ground surface, unsealed and broken septic tank lids, damaged drainfields, collapsed septic tanks, plumbing back-up, and illicit discharge pipes.
- Enforcement continued until all sanitary nuisances were abated.



St. Johns River Water Management District Progress

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SJRWMD reuse and treatment plant improvement partnership

- **JEA** — $31.7 million. Expansion of reclaimed water systems. Estimated TN reduction to river by 2014: 181,240 lbs./yr. (Totals do not include other wastewater treatment improvements not associated with reuse expansion.)
  - Status: In progress.
- **Clay County Utility Authority** — $30.7 million. Redirection of treated effluent from the Miller Street WWTF and the Town of Orange Park to western high-growth areas. Estimated TN reduction to river by 2012: 107,396 lbs./yr.
  - Status: Complete.
- **City of Palatka** — $7.7 million. Expansion of reuse to the city's golf course, Ravine State Gardens and various recreational ball fields and ultimately remove all discharges from the river. Estimated TN reduction to river by 2012: 158,600 lbs./yr. Estimated TP reduction to river: 21,100 lbs./yr.
  - Status: Complete.
- **Town of Orange Park** — $5.5 million. Wastewater treatment upgrades and expansion of reclaimed water systems. Estimated TN reduction to river by 2011: 47,940 lbs./yr.
  - Status: Complete.

SJRWMD reuse and treatment plant improvement partnership

- **NAS Jacksonville (U.S. Navy)** — $4.2million ($2.2millon Navy, $2millon State) Remove all treated wastewater from the river (except in wet weather) and apply it for reuse and sprayfields on Station. Estimated TN reduction to river by 2015: 54,412 lbs/yr.
  - Status: Phase I construction by City of Jacksonville from Station reuse pond to Station golf course complete ($400K State grant). Ph II construction by City of Jacksonville from the Station reuse pond to the South Antenna Farm completed in 2014 under $1.4M State grant.
- **Neptune Beach** — $2.3 million. Wastewater treatment upgrades and expansion of reclaimed water systems to municipal properties. Estimated TN reduction to river by 2014: 17,380 lbs./yr.
  - Status: Complete.
- **City of Atlantic Beach** — $12 million. Wastewater treatment upgrades. Estimated TN reduction to river by 2012: 61,791 lbs./yr.
  - Status: Complete.
- **City of Jacksonville Beach** — $15 million. Wastewater treatment upgrades. Estimated TN reduction to river by 2011: 65,000 lbs./yr.
  - Status: Complete.
- **Clay County Utility Authority —** $5.5M (50/50 cost share CCUA & SJRWMD) Storage reservoir at Mid-Clay WWTF. 9,961 lbs/yr TN reduction to river with a 1.09 mgd reduction in groundwater withdrawals from the Floridan aquifer.
  - Status: Agreement initiated FY 2013 extending through FY 2015.

Next steps: Upstream efforts

- **Tri-county Agricultural Area (TCAA)**
  - FDACS, FDEP, SJRWMD, NRCS and TCAA growers have established a TCAA Water Management Partnership to cost share the implementation of alternative irrigation and fertilization methods to reduce groundwater use and nutrients entering the river.
  - Status: $2.25M committed initially ($1.5M SJRWMD, $750k legislative) ~$1.8M has been contracted with local farmers for improved BMP installation. FDEP has committed an additional $1.75M for BMPs
- **Ocklawaha**
  - Examining modification of Rodman Reservoir drawdown to better control nuisance invasive plants, enhance fisheries and potentially reduce nutrient impacts to the main stem of the river.
- **Lake George**
  - Rough fish harvest initiated June 2013. As of mid-August ~800,000 lbs of gizzard shad had been harvested equating to over 5,400 lbs of TP removed from the lake.

Next steps: LSJRB

- **Improved technologies**
  - Working with NOAA and FDOH to develop satellite remote sensing methods to assess the expansion and extent of algal blooms
  - Exploring genetic identification methods to reduce subjectivity in algal monitoring and add bacterial identification capabilities
- **Enhanced interagency coordination**
  - UNF developing a web tool for the LSJRB TAC to facilitate events monitoring and interagency information exchange
- **Expansion of the “virtual” St. Johns**
  - TMDL model being expanded from middle St. Johns to the Atlantic inner shelf, from 1995 – 2008

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Total Maximum Daily Loads (TMDLs)

- Science based
- Water quality targets
- Based on Florida water quality standards
- TMDLs established for:
  - Lower St. Johns River (LSJR) Main Stem
  - LSJR Tributaries
- Basin Management Action Plans (BMAPs) adopted to address these TMDLs:
  - LSJR Main Stem BMAP for nutrients – October 2008
  - LSJR Tributaries BMAP 1 for fecal coliforms – December 2009
  - LSJR Tributaries BMAP 2 for fecal coliforms – August 2010

BMAP Progress

- BMAP stakeholders report project progress and monitoring results annually . They also meet annually to review the events of the past year and steps moving forward.
- Adopted BMAPs and annual progress reports can be found on FDEP's website at: http://www.dep.state.fl.us/water/watersheds/bmap.htm

Tributaries TMDLs Load Reductions

- The first tributaries BMAP addressed the 10 worst-case tributaries impaired for fecal coliforms.
- Most of these tributaries have improved since the TMDL period.

Tributary Name (BMAP I)	TMDL Median (#/100 mL) (1996-2003)	Current Median (#/100 mL) (2007-2011)	% Reduction
Newcastle Creek	2,500	870	65.2%
Hogan Creek	5,000	1,200	76.0%
Butcher Pen Creek	2,400	3,050	-27.1%
Miller Creek	5,000	3,900	22.0%
Miramar Creek	7,000	1,400	80.0%
Big Fishweir Creek	3,000	2,200	26.7%
Deer Creek	2,765	360	87.0%
Terrapin Creek	1,367	685	49.9%
Goodbys Creek	3,000	500	83.3%
Open Creek	1,000	550	45.0%

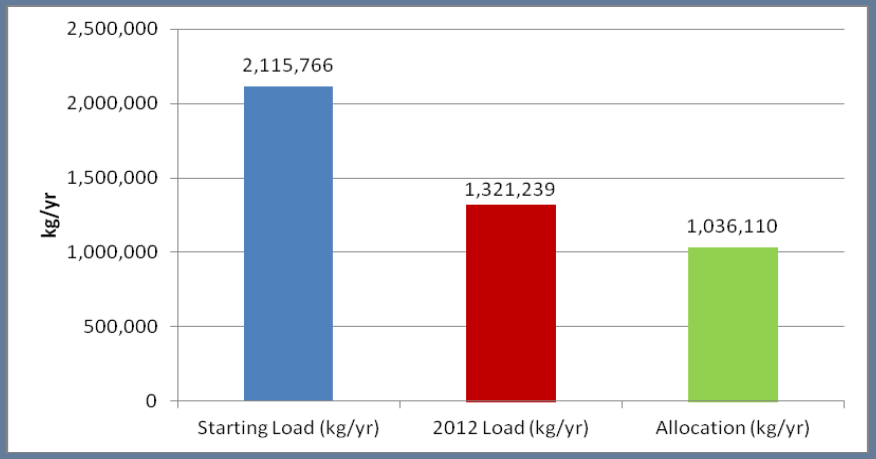
Tributaries TMDLs Reductions, con't

- The second tributaries BMAP addressed the next 15 worst-case tributaries impaired for fecal coliforms.
- All of these tributaries have improved since the TMDL period.

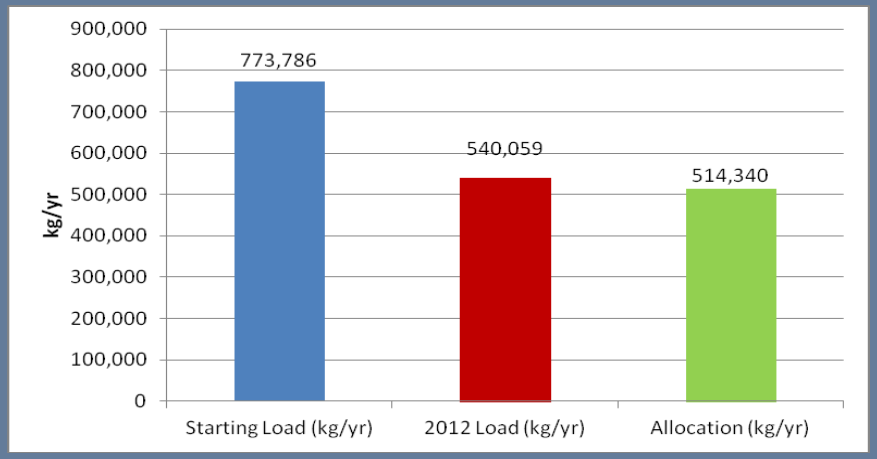
Tributary Name (BMAP II)	Data Period in TMDL	TMDL Median (#/100 mL)	Current Median (#/100 mL) (2007-2011)	% Reduction
Craig Creek	2001-2007	3,000	2,400	20.0%
Deep Bottom Creek	1991-2007	2,200	890	59.5%
Cormorant Branch	2001-2007	1,500	320	78.7%
Hopkins Creek	2001-2007	1,200	650	45.8%
Fishing Creek	2001-2007	1,300	400	69.2%
Blockhouse Creek	1991-2006	2,200	660	70.0%
Williamson Creek	1991-2002	2,400	2,200	8.3%
Pottsburg Creek	2001-2007	800	260	67.5%
Middle Trout River	1996-2007	1,184	345	70.9%
Greenfield Creek	2001-2007	1,354	200	85.2%
McCoy Creek	1995-2007	2,510	780	68.9%
Moncrief Creek	1991-2002	2,600	500	80.8%
Sherman Creek	1996-2008	1,400	200	85.7%
Wills Branch	1991-2002	4,000	480	88.0%
Lower Trout River	1998-2000	1,000	90	91.0%

Main Stem TMDL Load Reductions

- The figures below illustrate load reductions made by the stakeholders and the remainder of nutrient loading in each river segment to achieve the TMDLs.

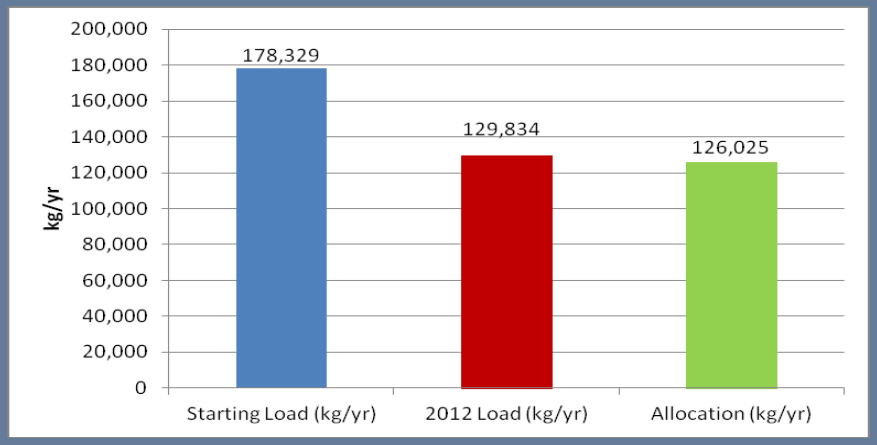


Progress towards the TN TMDL in the marine section



Progress towards the TN TMDL in the freshwater section

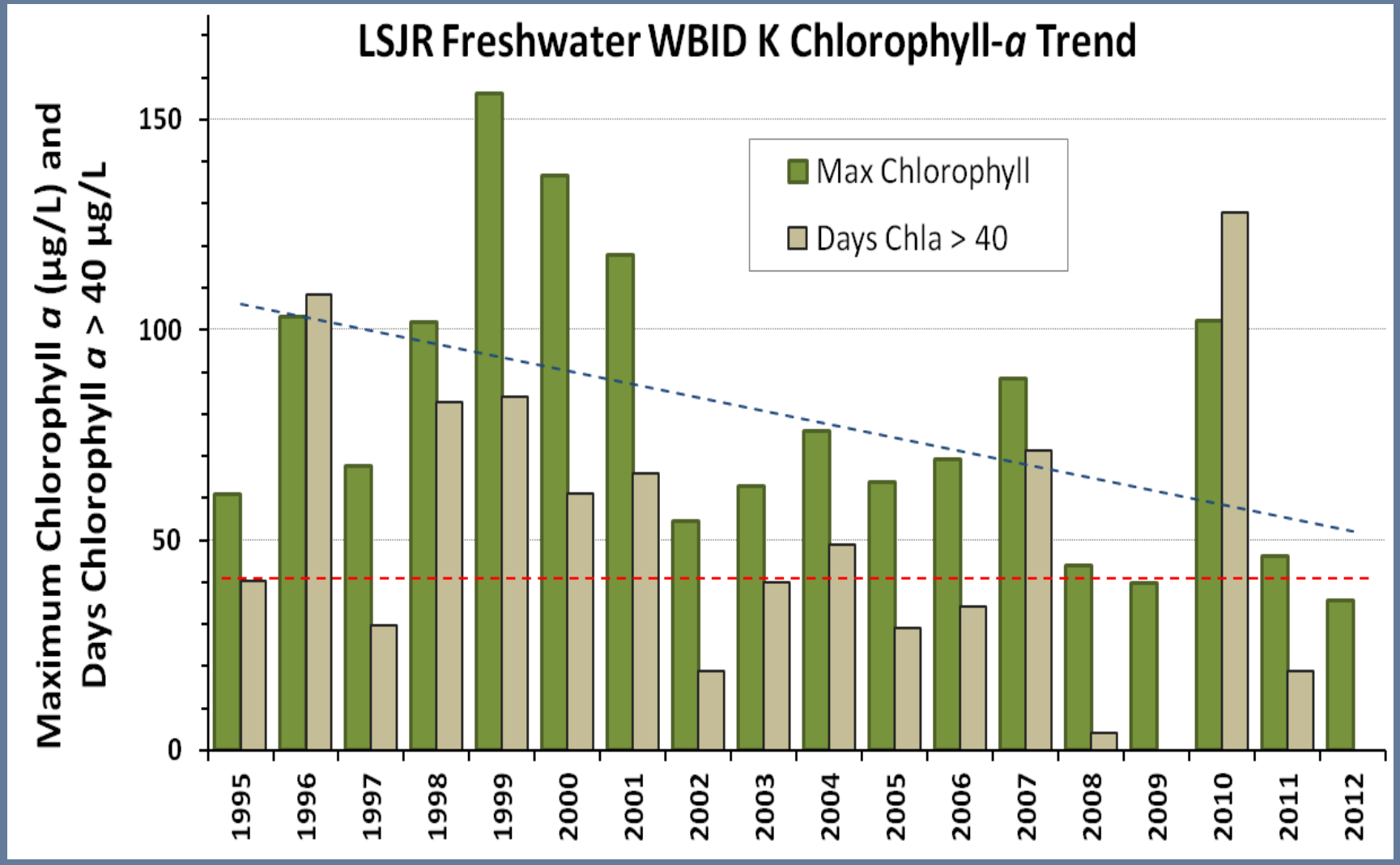
- "Starting Load" is based on the data period used in the TMDL.
- "2011 Load" compared to the starting load shows a significant reduction achieved.
- "Allocation" is the target.



Progress towards the TP TMDL in the freshwater section

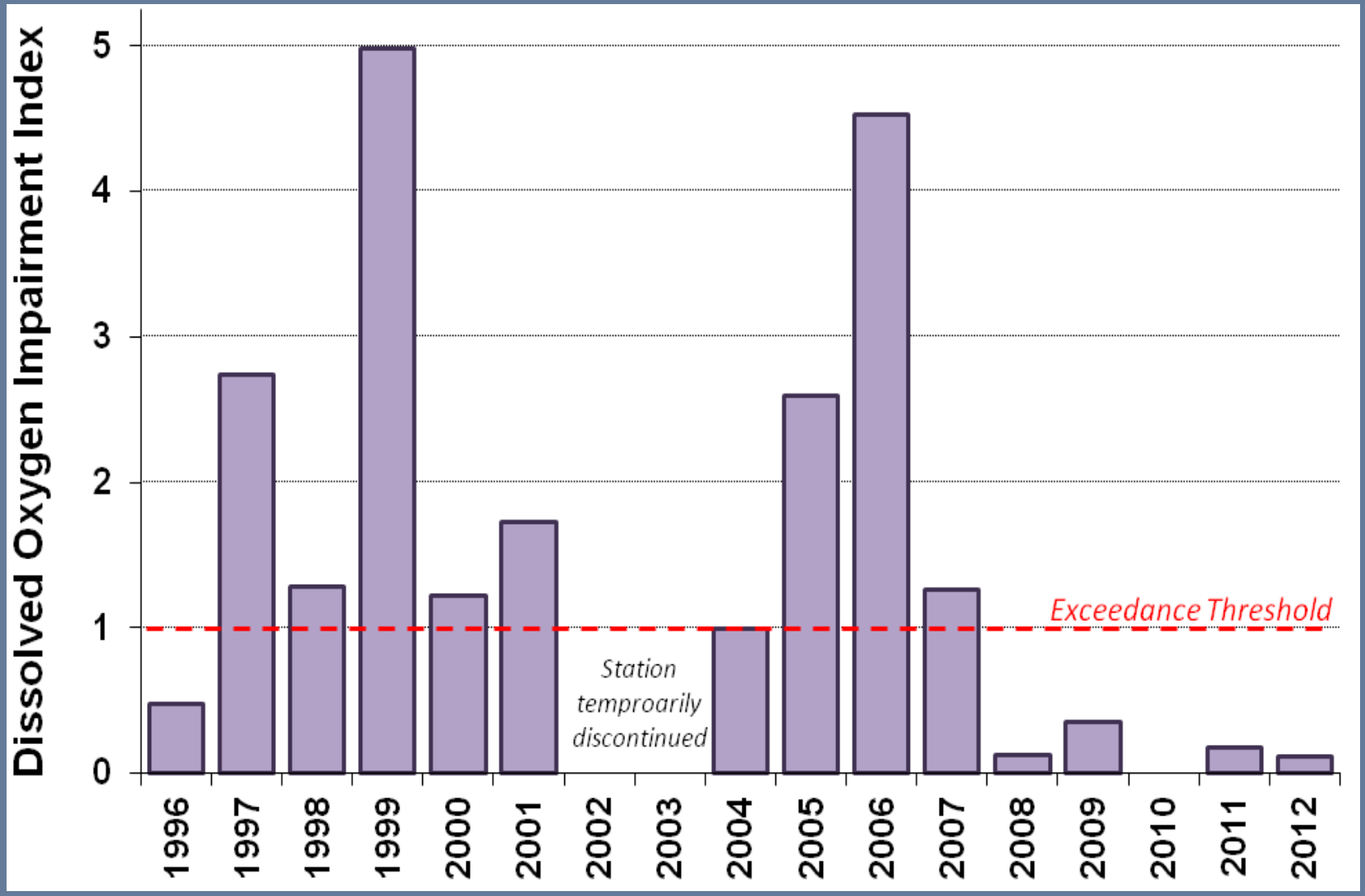
Freshwater TMDL Criteria Performance

Chlorophyll-a Trends at the Racy Point Station



Marine TMDL Criteria Performance

Levels of Low DO Impairment Based on the LSJR Criteria for 1996-2012



and still more to come……..

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