City of Jacksonville Progress
IRRIGATION EQD
ANNUAL INSPECTIONS

- Inspections
- Violations
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

<table>
<thead>
<tr>
<th>Project</th>
<th>Drainage Basin</th>
<th>Status</th>
<th>Treatment</th>
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</thead>
<tbody>
<tr>
<td>Melba/Green Street</td>
<td>LSJRU Trout River</td>
<td>Complete</td>
<td>Flood Control Only</td>
</tr>
<tr>
<td>Smith Broward Pond</td>
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<td>Wet Detention</td>
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<tr>
<td>Woodland Acres/Oakwood Villa Area Drainage Phase I</td>
<td>Arlington River</td>
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<td>Hugh Edwards Road Drainage</td>
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<tr>
<td>Pine Forest/Larsen Acres</td>
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<td>Upper Deer Creek Phase 3</td>
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<td>Venetia Terrace Drainage</td>
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<td>Complete</td>
<td>Erosion Control &amp; Wet Detention</td>
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<tr>
<td>Newtown Drainage main trunk-line improvement (Myrtle &amp; Beaver)</td>
<td>LSJRU Trout River</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; Phase of construction Complete</td>
<td>Wet Detention</td>
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<tr>
<td>Project</td>
<td>Drainage Basin</td>
<td>Status</td>
<td>Treatment</td>
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<td>McCoys Creek Pond C</td>
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<td>Wet Detention</td>
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<tr>
<td>Air Liquide Pond Retrofit</td>
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<td>Mireulo Circle</td>
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<td>Paul Avenue Outfall</td>
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<td>Wet Detention</td>
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<td>Hamilton Jersey Outfall</td>
<td>LSJRU Trout River</td>
<td>Design in Progress, Permitting</td>
<td>Erosion Control</td>
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<tr>
<td>Pinedale Area</td>
<td>Ortega River</td>
<td>Design in Progress</td>
<td>Flood Control Only</td>
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<tr>
<td>Country Creek Area Drainage Improvements</td>
<td>Ortega River</td>
<td>Study Complete; Pending Design</td>
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## Construction Projects - III

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<th>Project</th>
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<tr>
<td>Avenue &quot;B&quot;/Zinia Outfall</td>
<td>Trout River</td>
<td>Design in Progress</td>
<td>Erosion Control Only</td>
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<td>Crystal Springs Area</td>
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<td>Design in Progress</td>
<td>Wet Detention</td>
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<td>Bunche Rd. Drainage</td>
<td>Trout River</td>
<td>Design in Progress</td>
<td>Wet Detention</td>
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<tr>
<td>Noroad/Lambing Drainage</td>
<td>Ortega River Basin</td>
<td>Design in Progress</td>
<td>Wet Detention</td>
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<tr>
<td>Old Plank Rd. Drainage</td>
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<td>Design in Progress</td>
<td>Wet Detention</td>
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<tr>
<td>Mandarin Area Drainage (Grand Crique)</td>
<td>LSJR Upstream of Trout River</td>
<td>Design in Progress</td>
<td>Wet Detention</td>
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<tr>
<td>County Creek Area</td>
<td>Ortega River</td>
<td>Design in Progress</td>
<td>Flood Control Only</td>
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<td>Messer Area Drainage</td>
<td>LSJR</td>
<td>Design in Progress</td>
<td>Flood Control Only</td>
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<td>Septic Tank Phase-Out Program</td>
<td>LSJR</td>
<td>Phase I - Design</td>
<td>Water Quality</td>
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<tr>
<td>City-Wide Drainage System Rehabilitation</td>
<td>LSJR - Countywide</td>
<td>Under Construction</td>
<td>Erosion Control &amp; Flood Control</td>
</tr>
</tbody>
</table>
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
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
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
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.
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)** — $4.2 million ($2.2 million Navy, $2 million 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
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
The first tributaries BMAP addressed the 10 worst-case tributaries impaired for fecal coliforms.

Most of these tributaries have improved since the TMDL period.

<table>
<thead>
<tr>
<th>Tributary Name (BMAP I)</th>
<th>TMDL Median (#/100 mL) (1996-2003)</th>
<th>Current Median (#/100 mL) (2007-2011)</th>
<th>% Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newcastle Creek</td>
<td>2,500</td>
<td>870</td>
<td>65.2%</td>
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<tr>
<td>Hogan Creek</td>
<td>5,000</td>
<td>1,200</td>
<td>76.0%</td>
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<td>Butcher Pen Creek</td>
<td>2,400</td>
<td>3,050</td>
<td>-27.1%</td>
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<tr>
<td>Miller Creek</td>
<td>5,000</td>
<td>3,900</td>
<td>22.0%</td>
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<tr>
<td>Miramar Creek</td>
<td>7,000</td>
<td>1,400</td>
<td>80.0%</td>
</tr>
<tr>
<td>Big Fishweir Creek</td>
<td>3,000</td>
<td>2,200</td>
<td>26.7%</td>
</tr>
<tr>
<td>Deer Creek</td>
<td>2,765</td>
<td>360</td>
<td>87.0%</td>
</tr>
<tr>
<td>Terrapin Creek</td>
<td>1,367</td>
<td>685</td>
<td>49.9%</td>
</tr>
<tr>
<td>Goodbys Creek</td>
<td>3,000</td>
<td>500</td>
<td>83.3%</td>
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<tr>
<td>Open Creek</td>
<td>1,000</td>
<td>550</td>
<td>45.0%</td>
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</table>
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.
<table>
<thead>
<tr>
<th>Tributary Name (BMAP II)</th>
<th>Data Period in TMDL</th>
<th>TMDL Median (#/100 mL)</th>
<th>Current Median (#/100 mL) (2007-2011)</th>
<th>% Reduction</th>
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</thead>
<tbody>
<tr>
<td>Craig Creek</td>
<td>2001-2007</td>
<td>3,000</td>
<td>2,400</td>
<td>20.0%</td>
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<td>Deep Bottom Creek</td>
<td>1991-2007</td>
<td>2,200</td>
<td>890</td>
<td>59.5%</td>
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<td>Cormorant Branch</td>
<td>2001-2007</td>
<td>1,500</td>
<td>320</td>
<td>78.7%</td>
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<td>Hopkins Creek</td>
<td>2001-2007</td>
<td>1,200</td>
<td>650</td>
<td>45.8%</td>
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<td>Fishing Creek</td>
<td>2001-2007</td>
<td>1,300</td>
<td>400</td>
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<td>Blockhouse Creek</td>
<td>1991-2006</td>
<td>2,200</td>
<td>660</td>
<td>70.0%</td>
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<td>Williamson Creek</td>
<td>1991-2002</td>
<td>2,400</td>
<td>2,200</td>
<td>8.3%</td>
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<td>Pottsburg Creek</td>
<td>2001-2007</td>
<td>800</td>
<td>260</td>
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<td>Middle Trout River</td>
<td>1996-2007</td>
<td>1,184</td>
<td>345</td>
<td>70.9%</td>
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<td>Greenfield Creek</td>
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<td>1,354</td>
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<td>McCoy Creek</td>
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<td>780</td>
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<td>Moncrief Creek</td>
<td>1991-2002</td>
<td>2,600</td>
<td>500</td>
<td>80.8%</td>
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<td>Sherman Creek</td>
<td>1996-2008</td>
<td>1,400</td>
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<td>4,000</td>
<td>480</td>
<td>88.0%</td>
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<td>Lower Trout River</td>
<td>1998-2000</td>
<td>1,000</td>
<td>90</td>
<td>91.0%</td>
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</tbody>
</table>
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.

- "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 TN TMDL in the marine section

Progress towards the TN TMDL in the freshwater section

Progress towards the TP TMDL in the freshwater section
Freshwater TMDL Criteria Performance

Chlorophyll-a Trends at the Racy Point Station

LSJR Freshwater WBID K Chlorophyll-α Trend

Maximum Chlorophyll a (μg/L) and Days Chlorophyll a > 40 μg/L

- Max Chlorophyll
- Days Chla > 40
and still more to come........

THE RIVER ACCORD
A PARTNERSHIP FOR THE ST. JOHNS