

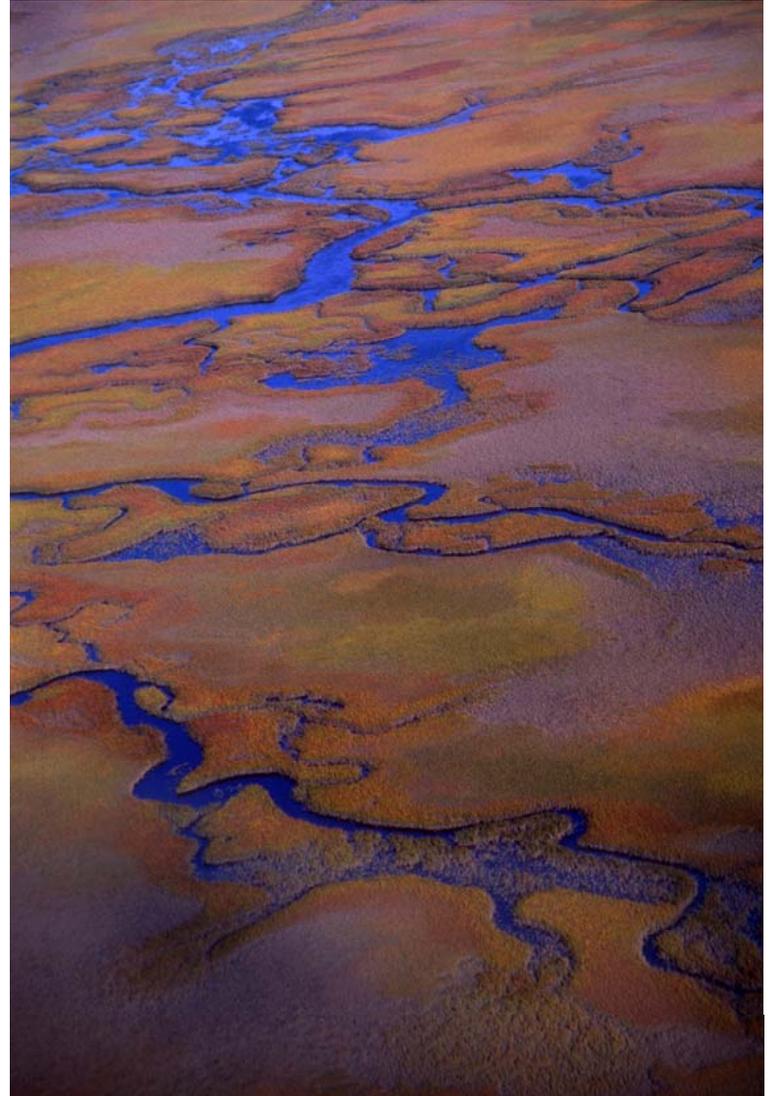
Participating in Development
Processes and Partnering with Others
to Exceed TMDL Requirements in the
Lower St. Johns River Basin
A Utility Perspective

Paul Steinbrecher, PE
JEA Director of Environmental Permitting

2006 EPB/FCCJ Environmental Partnering Workshop

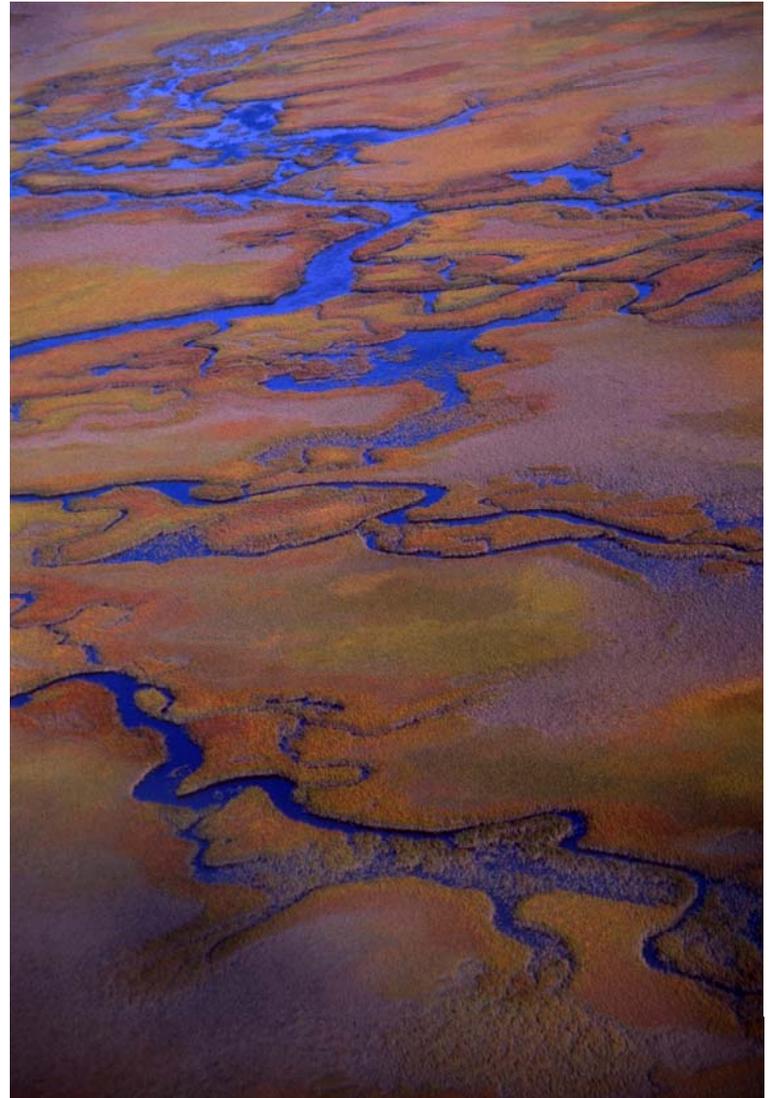
Overview

- Nature of problem in River
- What drives utility thinking & participation
- JEA participation in rulemaking processes
- Partnering with others to exceed environmental requirements cost effectively



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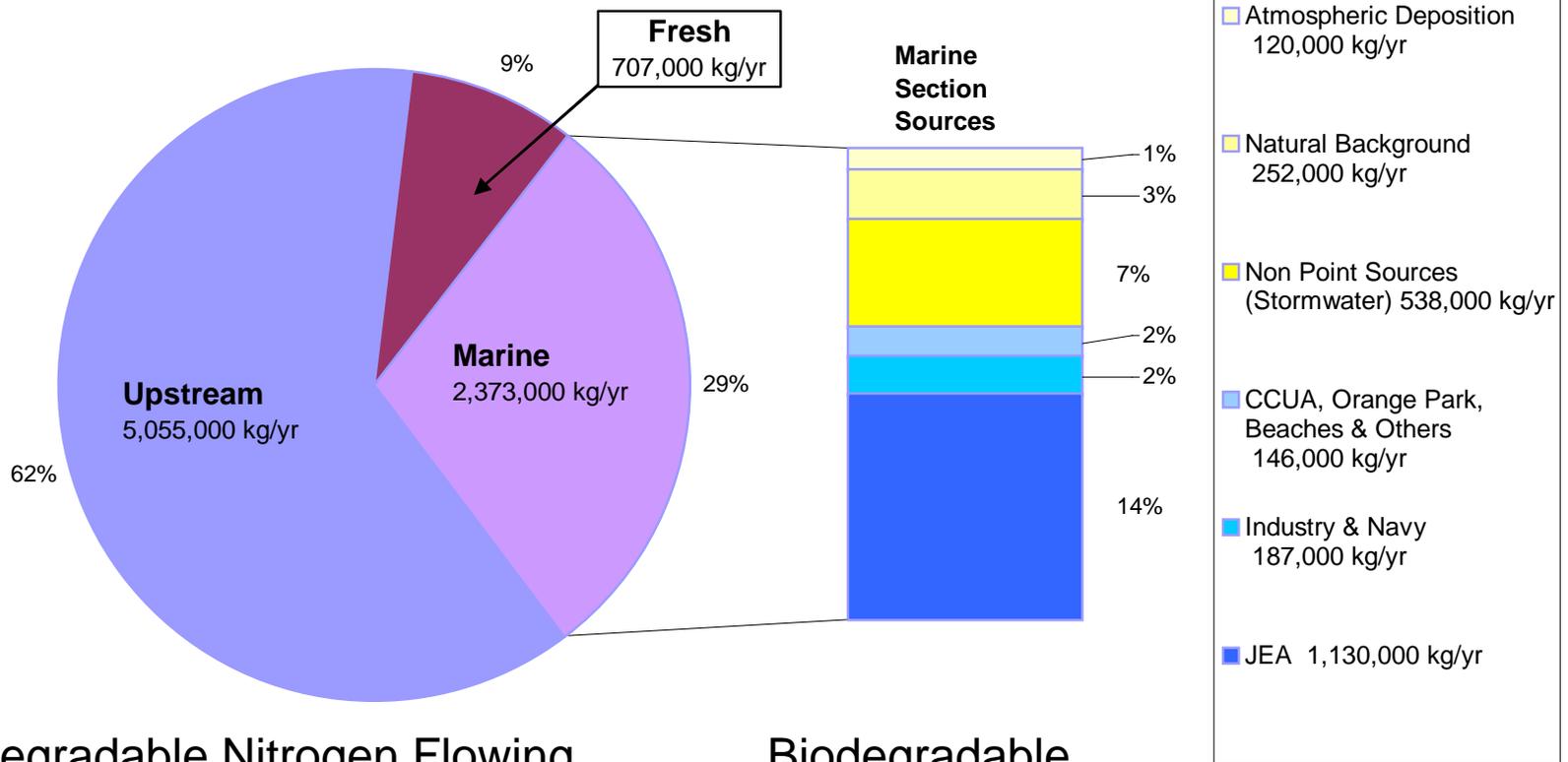
Obviously - The River Has a Problem

- Over-abundance of nutrients exceeds amount river can receive and maintain its health
- Effects – Algae Blooms



POTWs and MS4s are large contributors of nitrogen in Marine Section of LSJRB

**Biodegradable Nitrogen Load
Average of Years (1995 to 1999)**

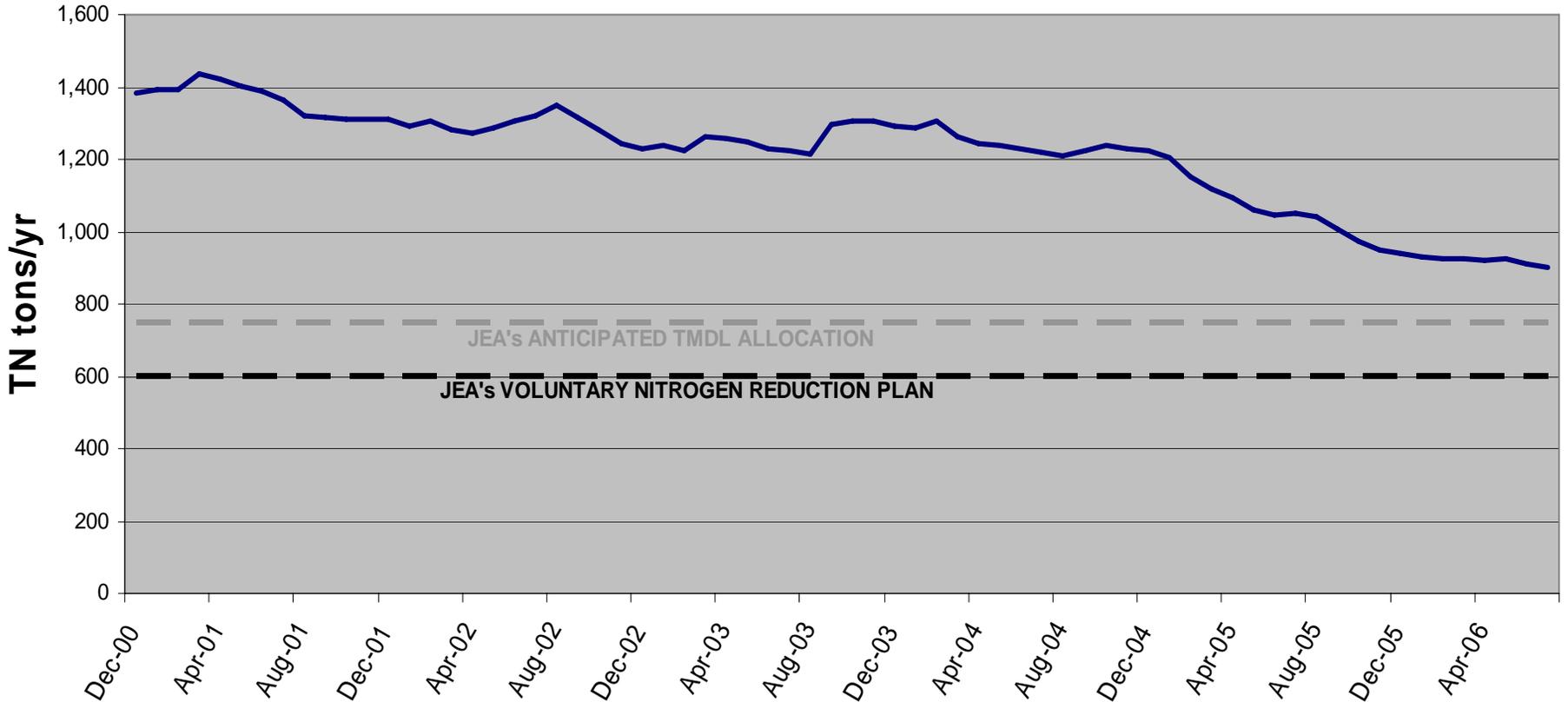


Biodegradable Nitrogen Flowing Into, and added, in the Lower St. Johns River

Biodegradable Nitrogen Added in Marine Section

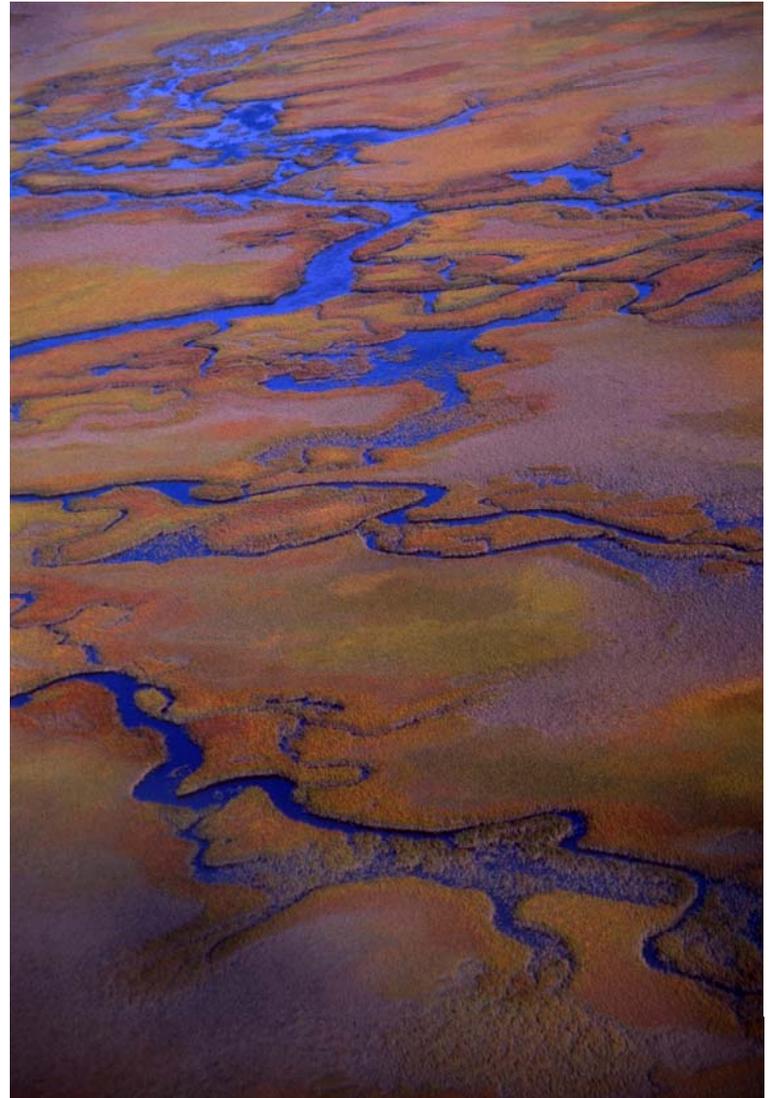
Recognizing the significance of this load JEA undertook a voluntary N reduction initiative in 1999/2000

Total Nitrogen Discharged Annually



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Wastewater Utilities have an inherent environmental stewardship role –

- Environmental protection is their primary mission
- TMDL Interests:
 - Ensure problem is solved – designated use restored
 - Cost effectiveness – ensure that projects result in measurable environmental and community benefit



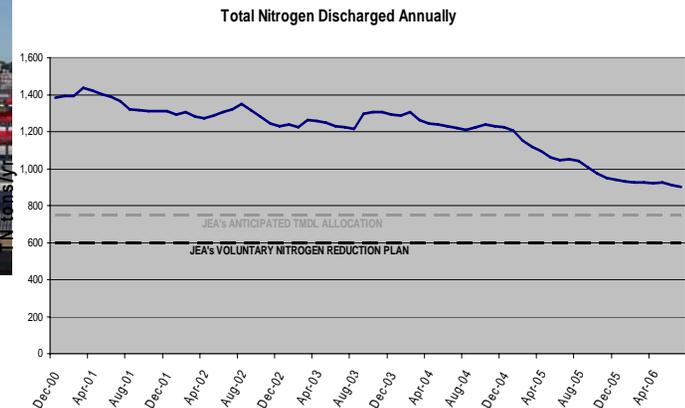
Environmental Stewardship

JEA has spent approximately \$1.9B since 1997 on water/wastewater systems in the service territory

- Providing wastewater collection and treatment services to an expanding service area to meet growth
- Purchase of other utilities where citizenry desired a provider change to provide more cost effective services
- Repair and rehabilitation of the collections systems taken over
- Institution of reuse in service territory
- Enhancement of those facilities beyond regulatory mandates when a benefit to the local community is discernable and cost effective.

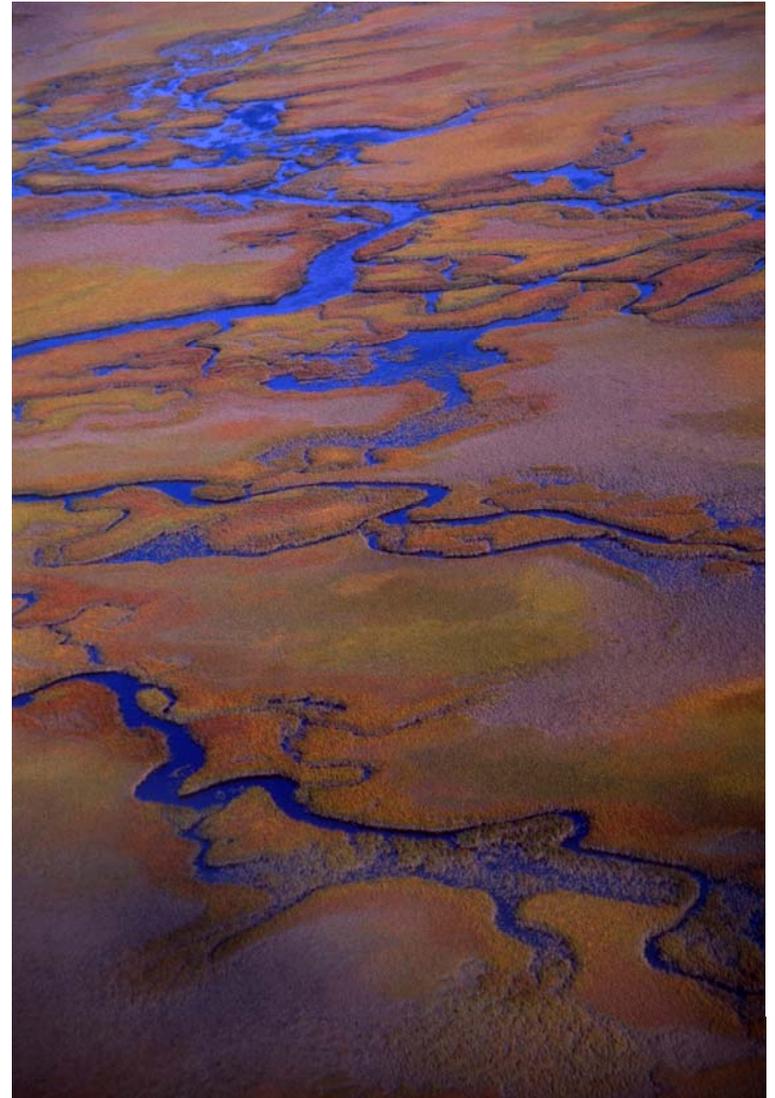
Some Efforts to Benefit Community

- Green Edge – biosolids production facility
- Chlorine to UV Disinfection Conversions
- Voluntary Nitrogen Reduction Program



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Municipal Utilities Interest in the TMDL

- Setting science based standards to ensure problem is fixed
- Equitable distribution of burden and flexibility in achieving reductions
- Evaluating cost effective solutions and looking for partnerships to exceed regulatory standards while maintaining fiduciary responsibility to rate payers

JEA Participated in Process to Evaluate TMDL Targets

- Active Participation in 3 Year Agency sponsored Stakeholder Committees (Executive & Technical Committees)
 - Multiple Objectives of EC/TAC
 - Enhance Stakeholder understanding of LSJR ecosystem
 - Increase understanding for collective role in restoring river
 - Review and provide feedback on model
 - Collectively establish load reduction obligations (allocations)

The SSAC

- Hmmmm – try to explain SSAC to a large group, or shoot myself in the head?

Supported the SSAC as an integral part of the original TMDL process and is more protective of the River (legal defect was that DEP did not promulgate the SSAC in a timely manner)

This methodology provides for a more appropriate DO target than the criterion because it addresses both absolute minimum DO values for the protection against acute effects and sublethal DO values for the protection against reductions in growth and recruitment. These values are combined into one relationship, termed the “persistent exposure criteria,” that can be used to evaluate the intensity and duration of a given low DO event. It should be noted that the nutrient TMDL for the estuarine portion of the St. Johns River is based on maintaining DO levels above those that have been calculated using this EPA method rather than the applicable state DO criterion. In acknowledgement of this distinction, the SJRWMD and Department are pursuing development of a SSAC for DO for this portion of the river in accordance with Rule 62-302.500(2)(f) F.A.C.

Total Maximum Daily Load for Nutrients For the Lower St. Johns River

Dr. Wayne Magley and Daryll Joyner

Watershed Assessment Section
Bureau of Watershed Management
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 3555
Tallahassee, FL 32399-2400
August 1, 2003

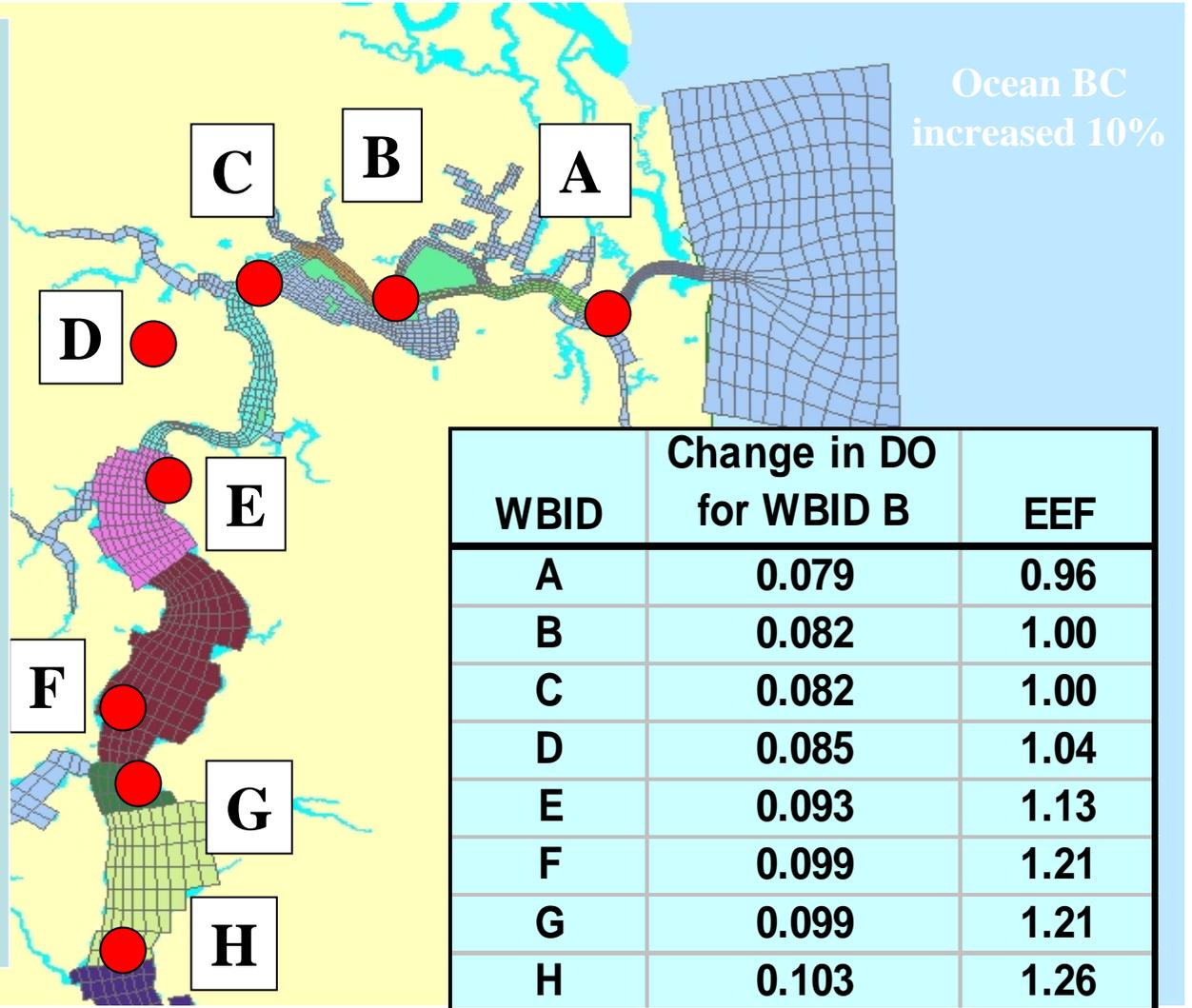
TMDL for the Lower St. Johns River, FDEP August 2003 pp 8-9

Participating in Pollutant Trading PAC to ensure flexibility for those required to make reductions

- 1999 Florida Watershed Restoration Act authorized DEP to adopt rules for
 - “procedures for pollutant trading, including a mechanism for the issuance and tracking of pollutant credits... (that) may be implemented through permits or other authorizations and must be legally binding.”
- Benefits of a trading program
 - Provides economic benefits of lower cost and environmental benefit of greater/faster reductions in loading for same fixed costs
 - Provides mechanism to offset loads from new growth
- How do we handle effect of trades from different locations?

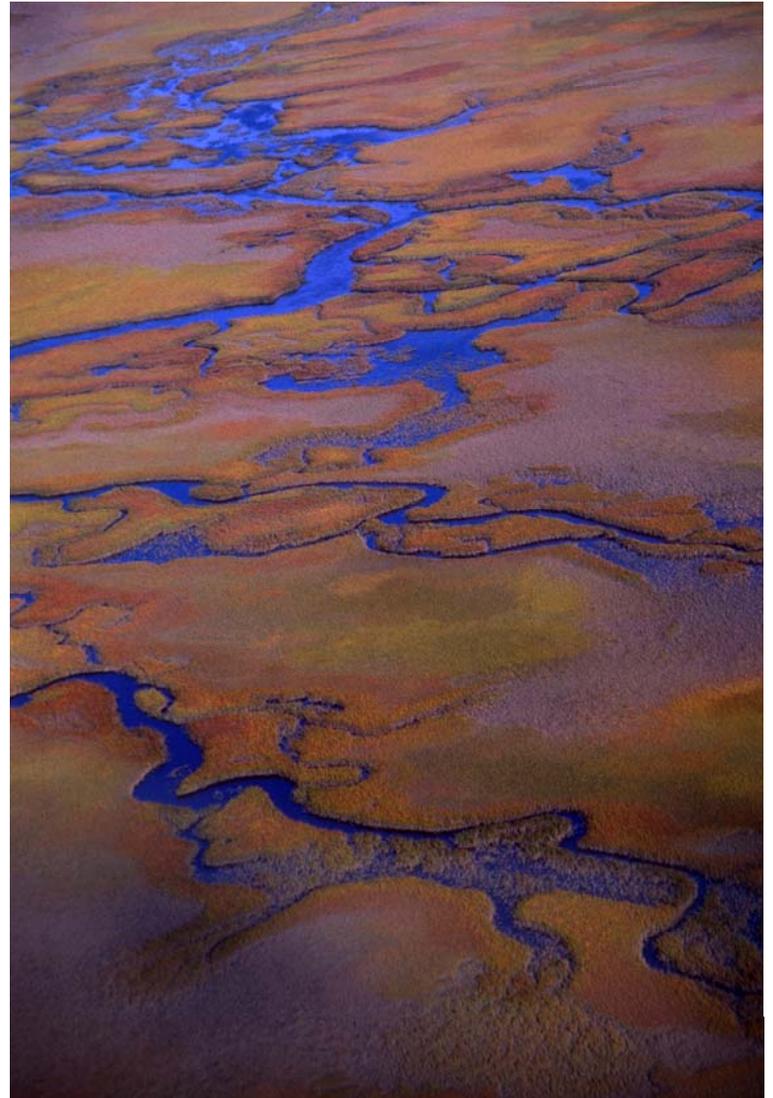
Example - Equivalency Factors allow trading of reduction obligation from one area of the river to another

- In model, sequentially moved identical load to each segment to discern relative impact on worst case WBID



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With understanding of reduction targets and flexibility to trade, agencies cooperated in optimization effort to identify and fund cost effective reduction opportunities

- COJ, SJRWMD, and JEA jointly funded a project to identify the most cost effective means to exceed TMDL.
 - Optimization study – covers entire basin
 - IDd cost effective treatment projects for point and non-point sources
 - IDd cost effective ways to employ wastewater reuse
- Results were used in formulating River Accord



Several concurrent efforts were brought together in a community wide plan

- 1) Sustainable Growth -
Mayors growth task force groups identified needs/means – March 06
- 2) The Target - DEP SSAC technical work concluded
- 3) Cost Effective Solutions to exceed target -
SJRWMD/COJ/JEA Optimization Study
- 4) Funding opportunities through Legislature and SJRWMD

How were these brought together?

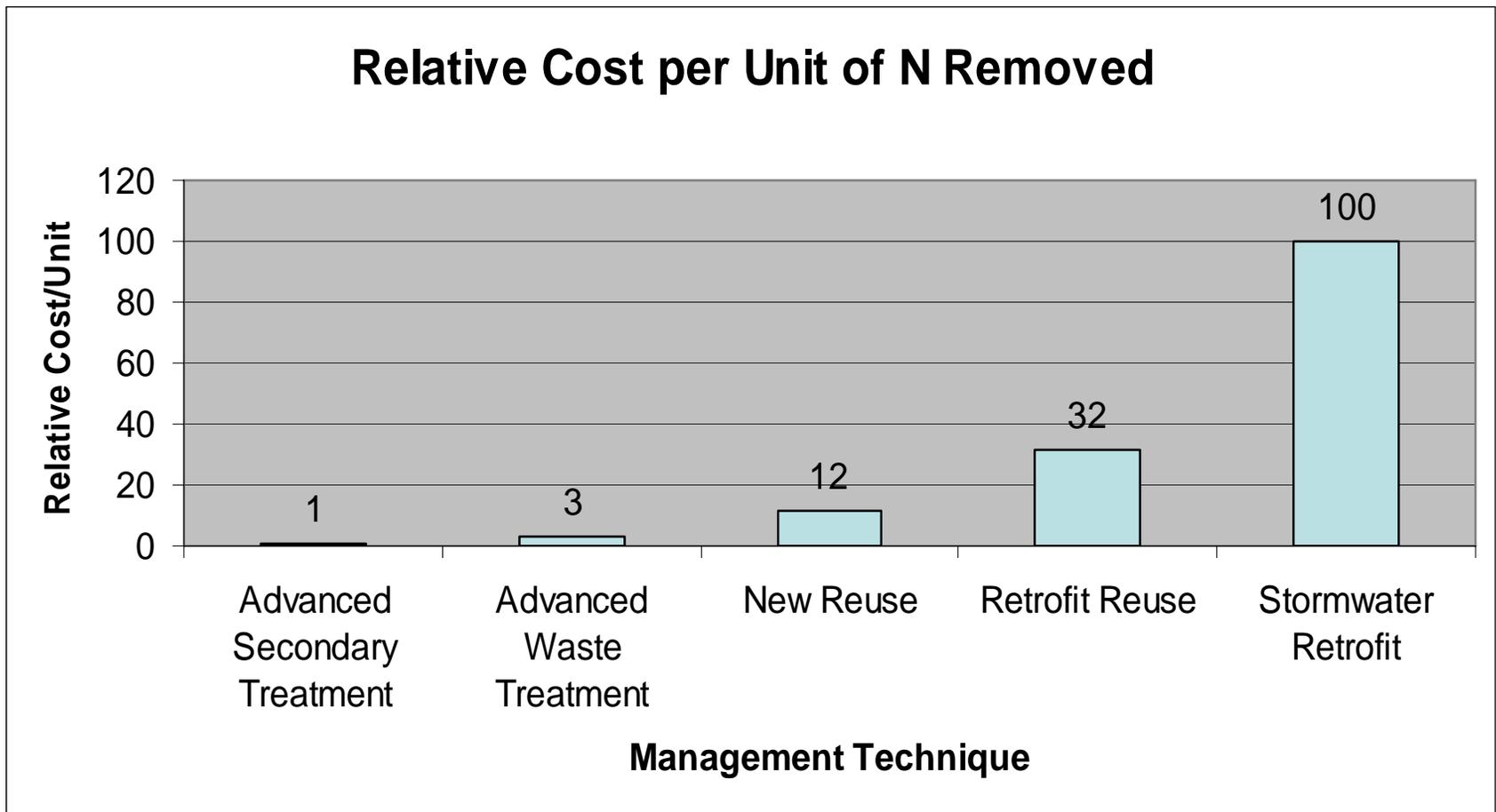


JEA will partner with COJ/SJRWMD on River Accord

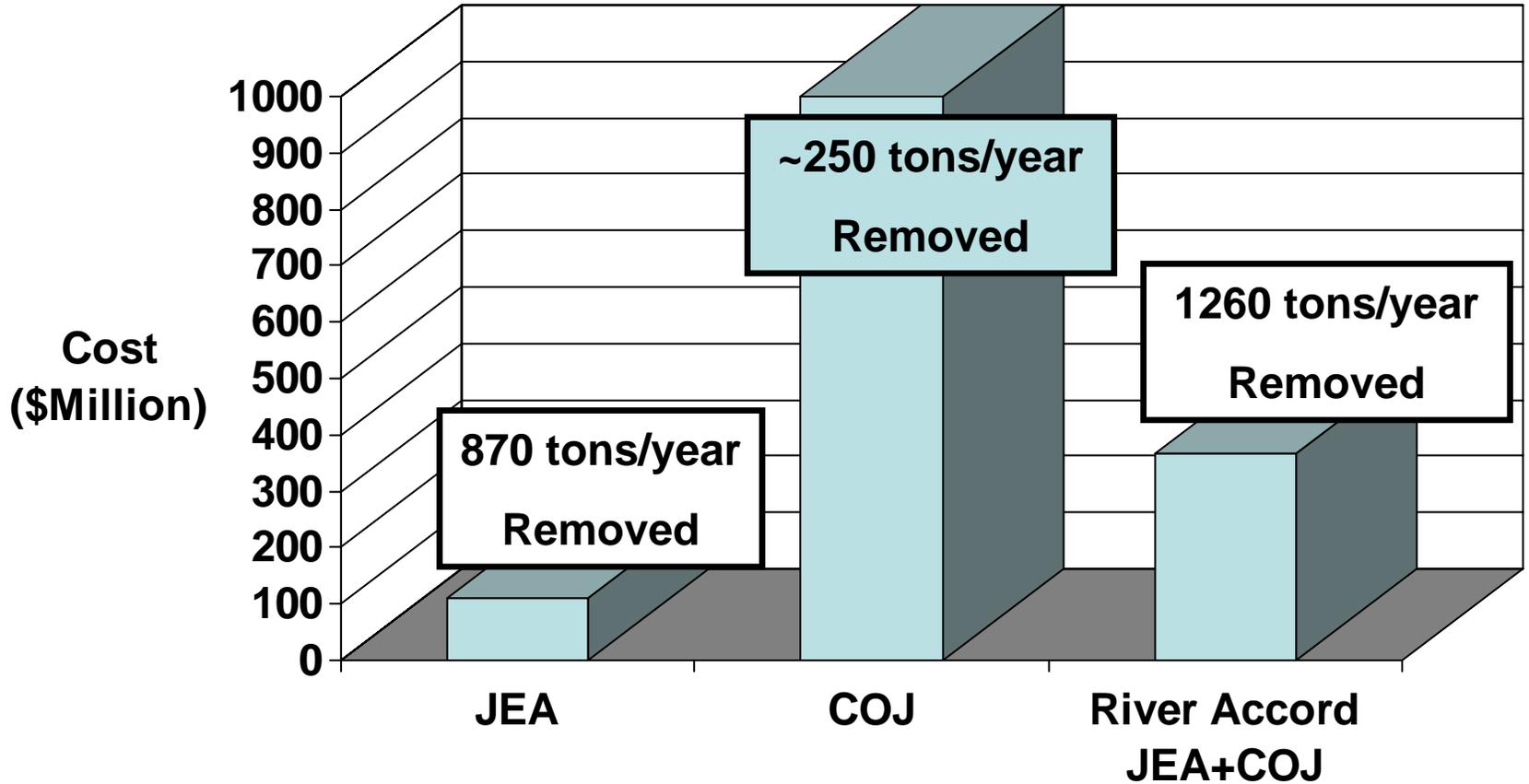


- Nitrogen Reduction through improved wastewater treatment and reuse collaboration
- Fertilizer & Reuse Ordinances
- Tributary Assessment & Improvement
- Stormwater Management
- SJRWMD Reuse Incentivization
- Septic Tank Enforcement/Phase Out Programs
- River Report Card

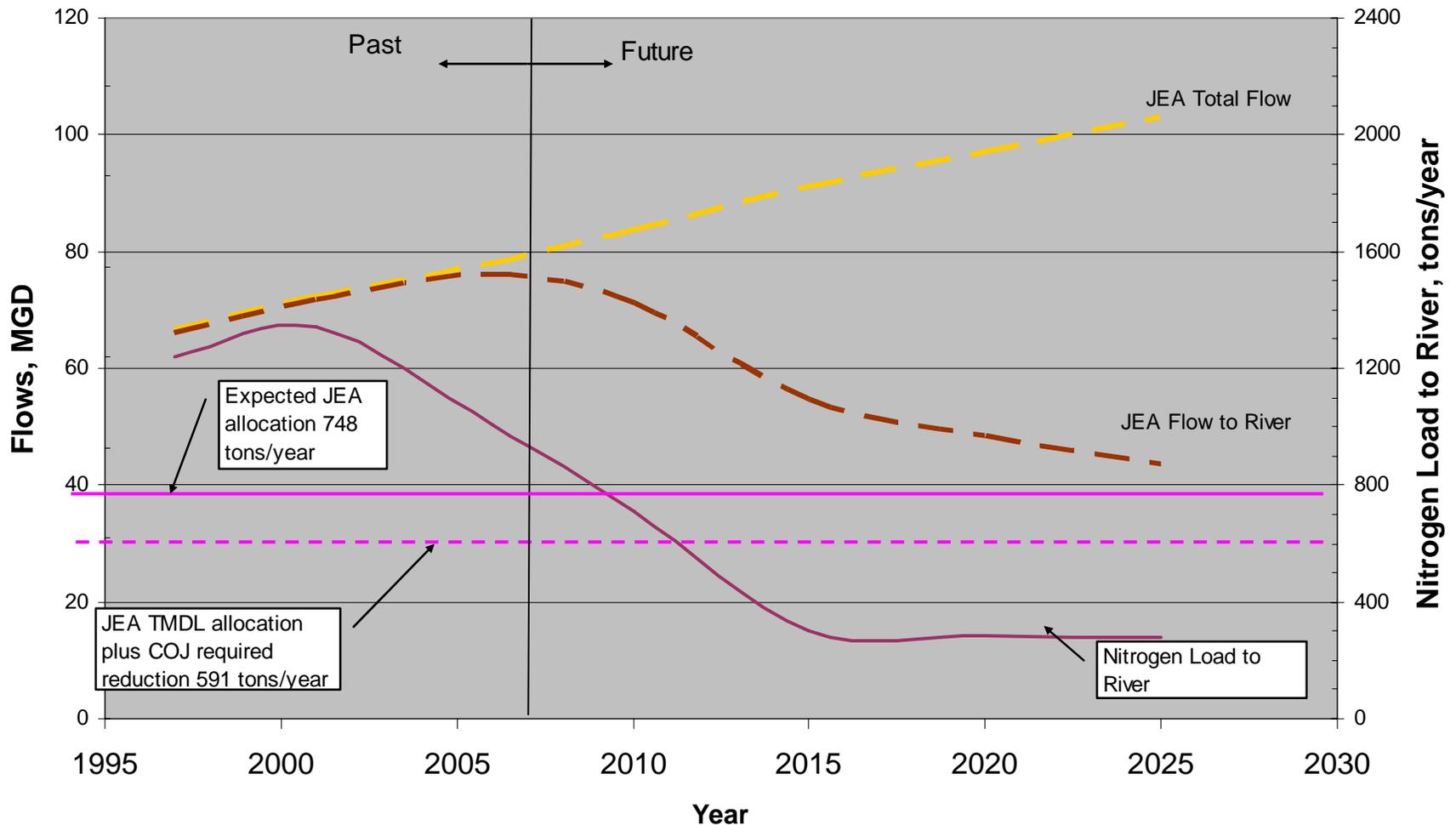
JEA costs per unit are much less than City's costs per unit



How Much for that Doggie in the Window?



JEA River Improvement Achievements and Vision



Environmental Partnerships

- Numerous entities working collaboratively together to achieve much more than we could individually
- Kudos to the leaders and organizational staffs that have worked diligently to facilitate this.





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