The Florida Senate

COMMITTEE MEETING EXPANDED AGENDA

BUDGET SUBCOMMITTEE ON GENERAL GOVERNMENT APPROPRIATIONS
Senator Hays, Chair
Senator Benacquisto, Vice Chair

MEETING DATE: Wednesday, January 12, 2011
TIME: 10:45 a.m.—12:45 p.m.
PLACE: *James E. "Jim" King, Jr., Committee Room,* 401 Senate Office Building

MEMBERS: Senator Hays, Chair; Senator Benacquisto, Vice Chair; Senators Bullard, Diaz de la Portilla, Hill, Jones, and Latvala

TAB	BILL NO. and INTRODUCER	BILL DESCRIPTION and SENATE COMMITTEE ACTIONS	COMMITTEE ACTION
1		Total Maximum Daily Loads and Numeric Nutrient Criteria Update - Financial Impacts to Florida	
2		State Risk Management and Safety Programs - Department of Financial Services	
3		Presentation by the Florida Catastrophic Storm Risk Management Center at Florida State University	

Florida Department of Environmental Protection

Total Maximum Daily Loads & Numeric Nutrient Criteria

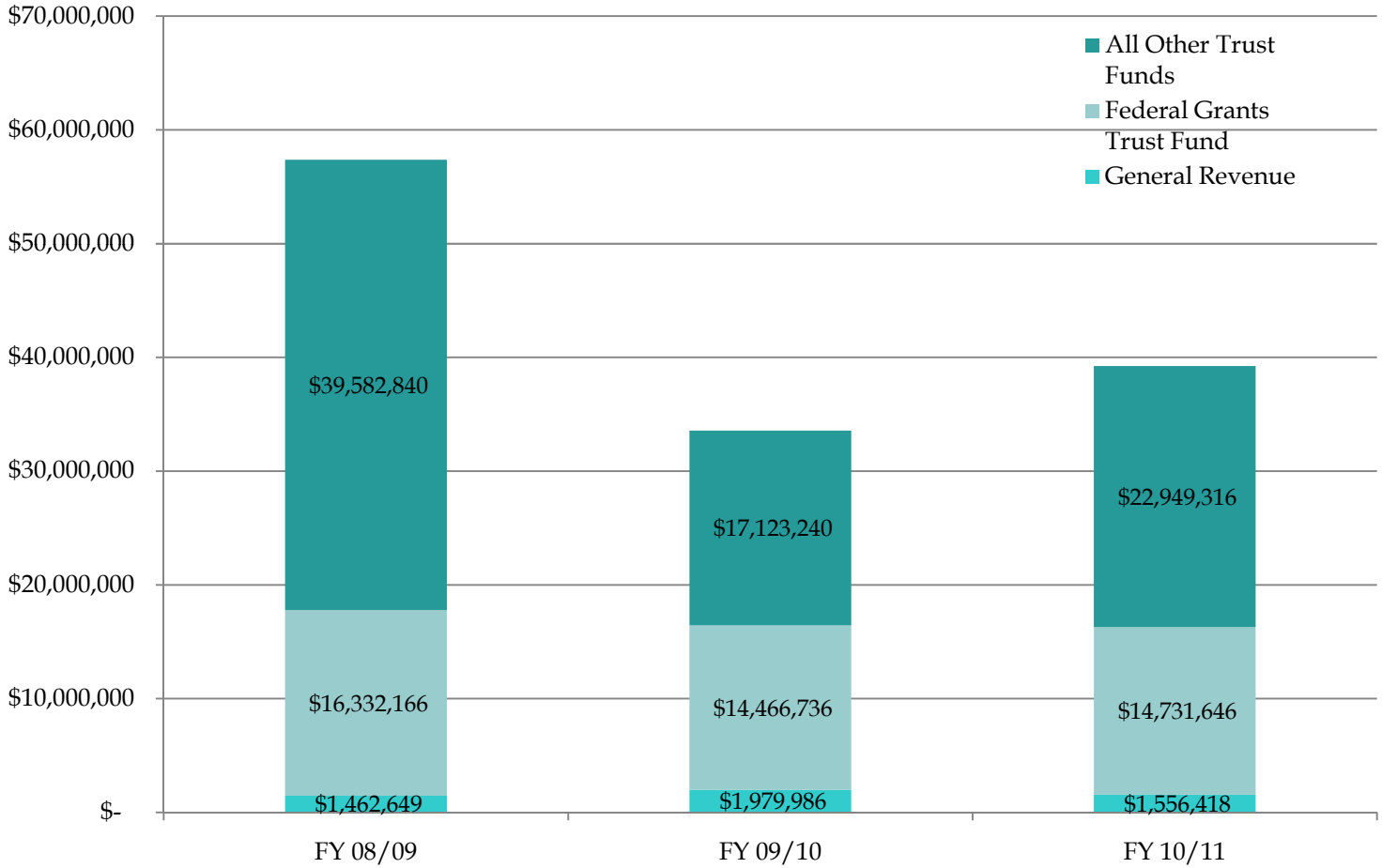
Division of Environmental Assessment & Restoration
Jerry Brooks, Director

Prepared for: *Senate Budget Subcommittee on General Government Appropriations, January 12, 2011*
Chair: *Senator D. Alan Hays*

Florida's Surface Water Restoration Program
Total Maximum Daily Loads (TMDLs)

- Required by Federal Law – Defined by Florida Watershed Restoration Act 1999
- Based on Sound Science
  - Water Quality Standards
  - Monitoring
  - Data Analysis
  - Equitable Allocation of Responsibilities
  - Development of Restoration Plans
- Stakeholder Involvement

Budget History



Stakeholder Costs

Waterbody Specific

- Long Branch - $50,000
- Orange Creek - $110 million
- Lake Jesup - $570 million
- Lower St. Johns River - $1.5 billion

Numeric Nutrient Criteria

- Lawsuit Filed Against EPA in 2008
- EPA Declares NNC "Necessary" – Jan 2009
- EPA Consent Agreement – Aug 2009
- Proposed Criteria – Jan 2010
- Finalized Criteria – Dec 2010

COST IMPLICATIONS?

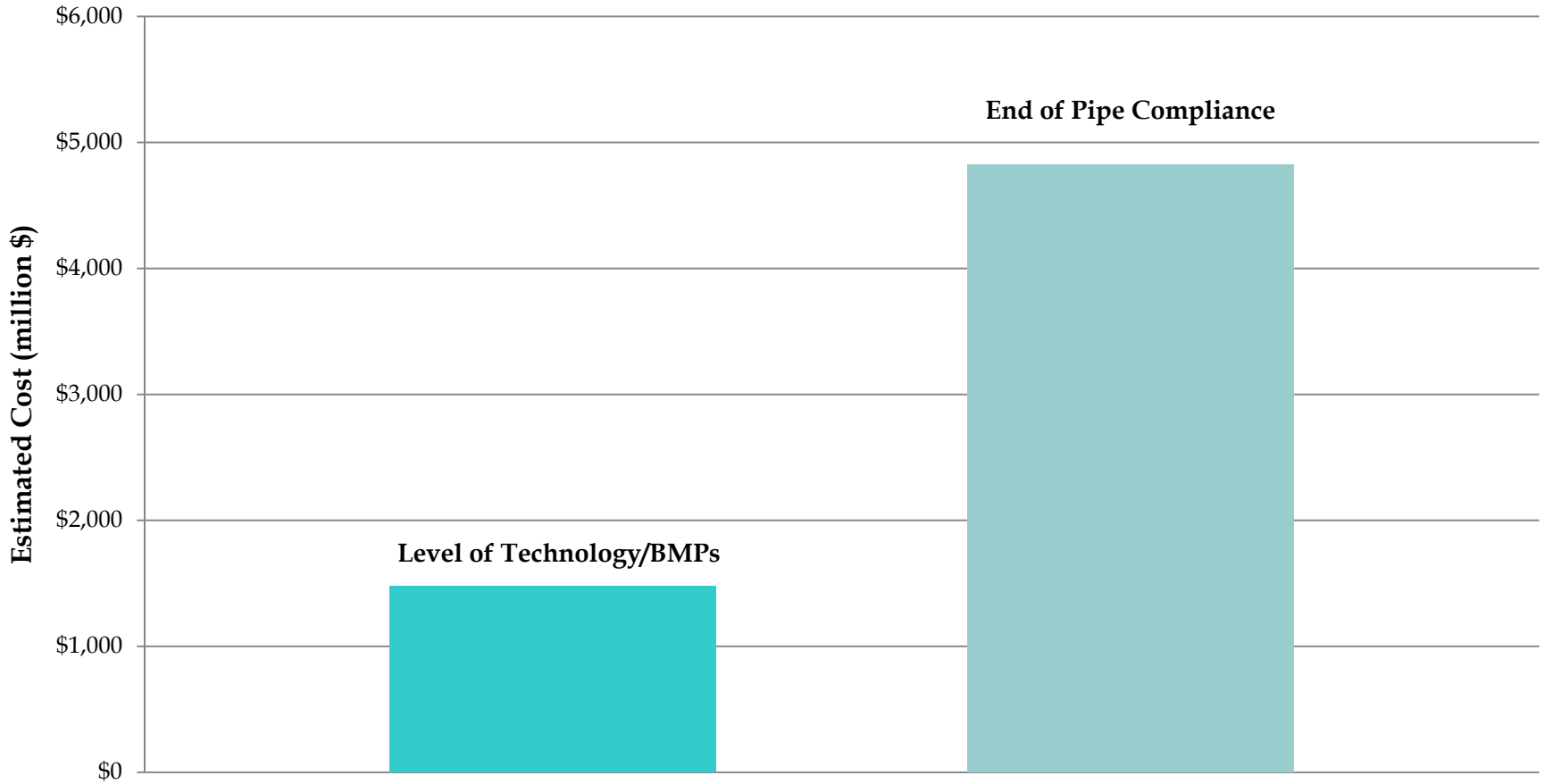
Costs of EPA Criteria

- Impact not limited to TMDL listed waters
- Criteria apply to the entire state
- Costs to stakeholders - significant

Lack of Clarity with EPA Rule

- Is compliance required at "End of Pipe"?
- What is the status of TMDLs?
- How is waterbody attainment determined?
- How are treatment technology limits addressed?

Cardno ENTRIX Cost Estimate - Nov 2010



Questions?

- For more information please contact Jerry Brooks at:
  - Jerry.brooks@dep.state.fl.us
- More information on Numeric Nutrient Criteria :
  - DEP's website at: http://www.dep.state.fl.us/water/wqssp/nutrients/index.htm
  - EPA's website at: http://water.epa.gov/lawsregs/rulesregs/florida_index.cfm

Financial Impacts to Small Florida Cities Total Maximum Daily Loads and Numeric Nutrient Criteria

Keith D. Riger, P.E
City of DeLand, Florida

January 12, 2010

Operations Affected

- Wastewater Treatment
- Reclaimed Water
- Stormwater Management

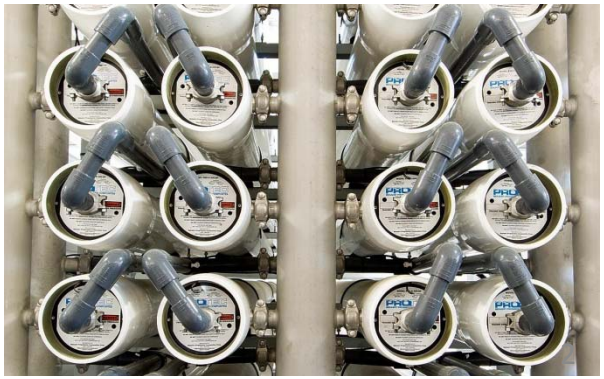
Wastewater Treatment

Current Plant Discharge

- Regulations narrative based
- Advanced wastewater treatment provides approximately 90% Total Nitrogen (TN) removal and 85% Total Phosphorus (TP) removal
- TN discharged = 4-5 ppm
- TP discharged = 1-2 ppm

NNC Requirement

- Regulations numerically based
- Additional membrane (RO) treatment required
- Total Nitrogen (TN) = 1.54 ppm
- Total Phosphorus (TP) = 0.12 ppm



Wastewater Treatment Compliance Costs - Numeric Nutrient Criteria

Per "*Technologies to Meet Numeric Nutrient Criteria at Florida's Domestic Water Reclamation Facilities*", Carollo Engineers, November, 2009 - transmitted to Gov. Christ by Florida Water Environment Federation:

Capital Costs

- AWT Upgrade Costs - $8.20/Design Gallon
- Reverse Osmosis Costs - $5.00/Design Gallon
- Brine Concentration Costs - $3.10/Design Gallon

Operating Costs

- AWT and RO - $1.00/1000 Gallons
- Brine Concentration - $3.00/1000 Gallons

Costs for DeLand Compliance

DeLand Plant has 6 MGD capacity, operating at 3 MGD

Capital Cost:
RO treatment plus brine concentration
6 MGD x ($5.00+$3.10) = **$48,600,000**

Operating Cost:
$1/1000 gal. for RO plus $3.00/1000 gal. brin
3 MGD x ($1.00+$3.00) = $12,000/day
or **$4.3 million/year**

Capital Cost Will Likely Exceed City Bonding Capacity
City NPDES Permit for Wastewater Expires 2013
Added cost to citizens est. $673-$726 per year (Carollo Engineers)

Energy and Environmental Costs

- Additional treatment projected to consume 26 million megawatt-hours/yr statewide – a 5% increase in statewide power consumption!
- CO2 and other greenhouse gasses could increase by 17.4 million tons per year.

Source: "*Technologies to Meet Numeric Nutrient Criteria at Florida's Domestic Water Reclamation Facilities*", Carollo Engineers, November, 2009

Reclaimed Water

- 100% reused except during extended wet weather
- 80% reused on annual basis
- Current quality exceeds that of river
- TMDL will require treatment to high levels at unaffordable expense
- To save costs, City will have to restrict use to applications with no discharge
  - Less water saved from aquifer
  - Stranded investment in existing reclaimed lines and facilities

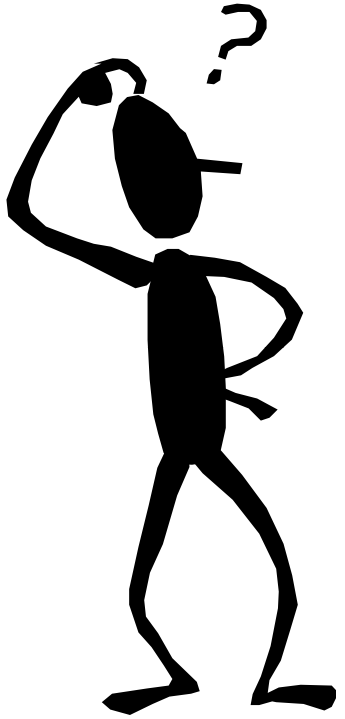
Stormwater Treatment and Disposal

- Fortunately, DeLand currently has only a few stormwater discharge points
- Retrofit of existing discharge points estimated to cost up to $5 million
- Time for compliance unrealistic – 2014 NPDES Permit Renewal (Rule goes into effect 15 months from Dec. 6, 2010)

Issues

- Cost too high – Add $56 - $60 per month to sewer bills
- Environmental “benefit” questionable – most nutrients to be removed are “refractory” – not biodegradable
- Will discourage reclaimed water use in areas where potential for discharge exists
- Energy consumption unsustainable
- CO2 emissions unacceptable
- Florida singled out for this unfunded mandate

Questions?



Keith D. Riger, P.E.
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Financial Implications of Numeric Nutrient Criteria to Small Florida Communities

Dave Denny
Deputy City Manager
Deltona, Florida

January 12, 2011

Background

- Florida currently has Total Maximum Daily Loads (TMDL's) to address nutrient impairment of water bodies
- Utilizing Advanced Waste Treatment (AWT) technologies the 5BOD/5TSS/3TN/1TP limits are achievable
- EPA's Numeric Nutrient Criteria (NNC) imposes much stricter standards

Table 2 Comparison of Maximum Pollutant Concentrations Allowed by Water Reclamation Standards

Pollutant	Secondary Limits[1]	AWT Limits[2]	Proposed Numeric Nutrient Limits[3]
$cBOD_5$, mg/L	20-30	5	-
TSS, mg/L	20-30	5	-
TN, mg/L	No limit	3	0.82 – 1.73
TP, mg/L	No limit	1	0.069 – 0.415

Notes:
1. Nationwide technology based standards required by the Clean Water Act for all wastewater treatment plants.
2. Florida standards required by state law for discharge to specific nutrient sensitive water bodies.
3. Proposed in-stream water quality standards that would become end-of-pipe limits unless a facility obtains a mixing zone or site-specific alternative criteria.

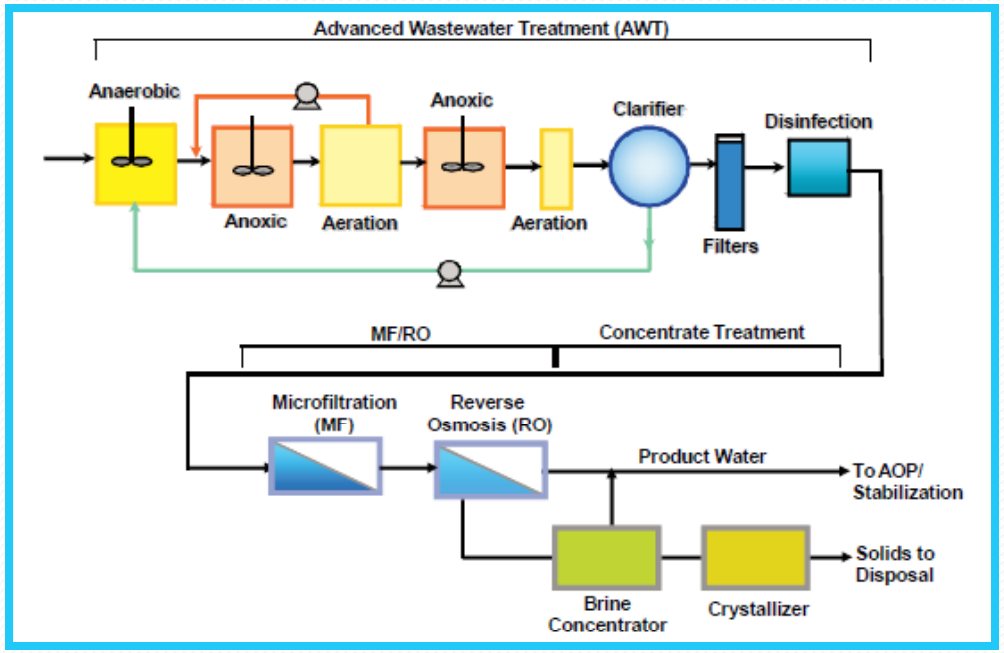
Carollo FWEA report

Cost estimates

- The EPA estimates that the annual cost to address additional waters listed as impaired under this rule is between $135 and $206 million. It assumes Reverse Osmosis will not be required to comply
- The EPA Economic Analysis estimates costs of implementing BMPs and upgrading current technology, but notes “it may be infeasible to meet the criteria instream due to technology limitations (p. 6)”.

Technology Limitations to meet NNC

- Currently available technologies
  - Reverse Osmosis (RO)
  - Adsorption (Activated Carbon)
  - Oxidation (Ozone, UV)
  - Chemical Coagulation
  - Ion Exchange
- RO is leading candidate and is currently in use in the U.S. and other countries and is a proven process
- Requires significant capital investment and high annual operating costs e.g. brine disposal and power consumption



Carollo FWEA report

Cost Projections

EPA *Cost Analysis*	**Cardno Study** *Florida Water Quality Coalition*	**Carollo Study** *Florida Water Environment Association*
135-206 Million*	0.8-2.1 Billion/yr**	1.6-3.3 Billion/yr

* assumes RO is not required
** yearly cost projected by debt service of 30 years

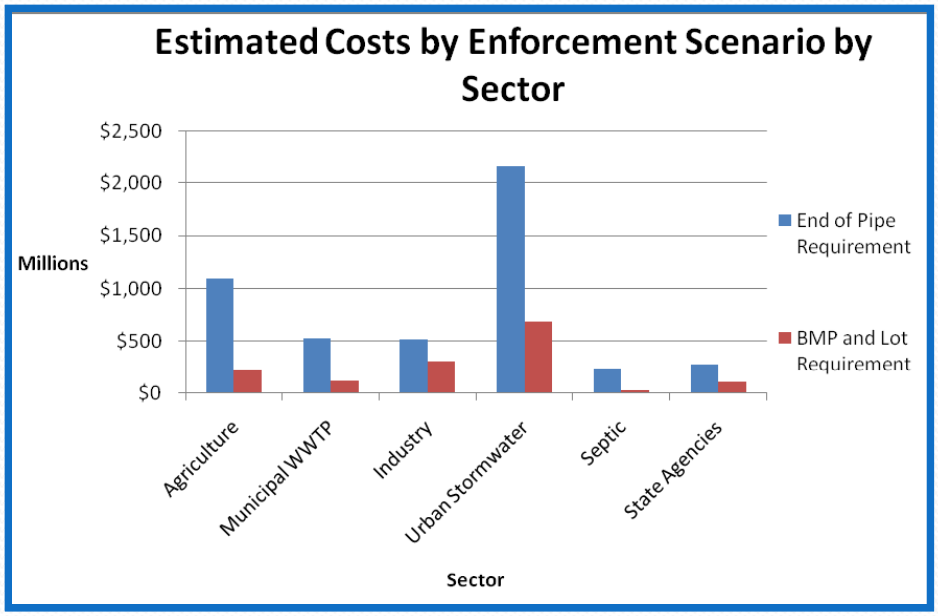
Affected Sectors

- Wastewater
- Stormwater

- Stormwater and municipal WWTP costs are largely borne by local city and county governments, and thus are passed on to rate payers or tax payers.

Economic Analysis of the Proposed Federal Numeric Nutrient Criteria for Florida[1]

- Prepared For Florida Water Quality Coalition as an independent review of the EPA Economic Analysis
- Utilized Monte Carlo analysis It was first developed for the Manhattan Project and has been used for over 60 years. The EPA recognizes the value of Monte Carlo techniques
- End of pipe discharge costs:
- WWTP – 500 million
- Stormwater – 2.1 billion

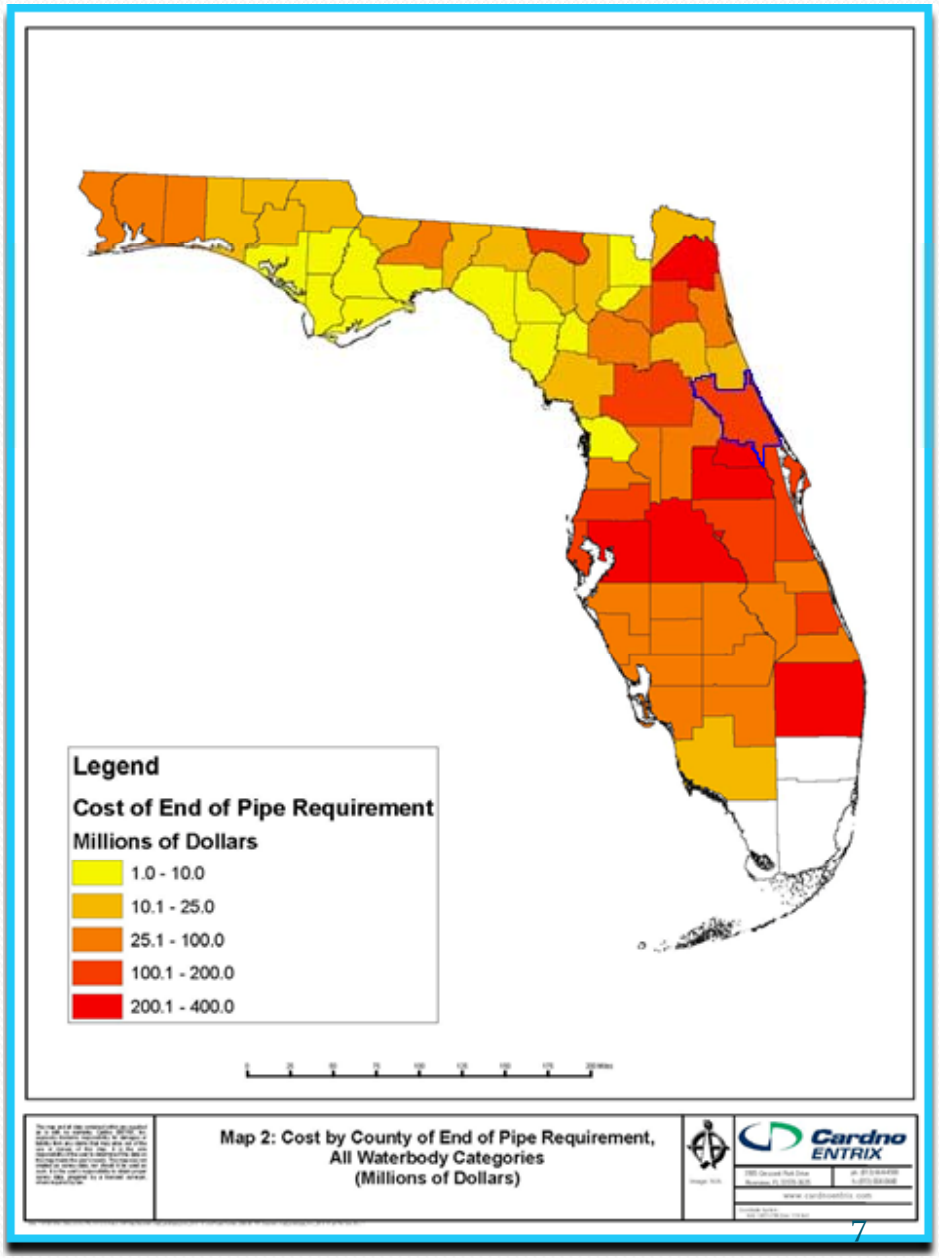


[1]Prepared by Cardno ENTRIX , November 2010

Costs by County

Cardno Study -
Estimated costs for
Volusia County is
100 – 200 million dollars

Associated Industries of Florida stated that Panhandle wastewater utilities estimated treatment costs could range from $4-8/gallon with a 71% increase in utility fees



Deltona Estimates

- Annual user fees for affected facilities will increase an average of $673 - $726 per year[2] .
- Costs estimates were calculated using this study.
- <u>Capital Costs</u>
  - AWT Upgrades - $8.20/gallon (Deltona currently does not have AWT)
  - Reverse Osmosis - $5.00/gallon
  - Brine Concentration - $3.10/gallon
- <u>Operating Costs</u>
  - AWT and RO- $1.00/1000 gallons
  - Brine Concentration - $3.00/1000 gallons

[2] Carollo Study, November 18,2009

Deltona Estimates

- City of Deltona Reclamation Facility has 1.4 MGD capacity currently at 57% capacity

- <u>Capital Costs</u>
- 1.4 MGD x ($5.00 + $3.10) = $11,340,000

- <u>Operating Costs</u>
- 57% capacity (0.800 MGD) x ($1.00 + $3.00 per 1,000 gallons) = $3,200/day or $1,168,000/yr
- 100% capacity (1.4 MGD) x ($1.00 + $3.00 per 1,000 gallons) = $5,600/day or $2,044,000/yr

Stormwater Estimates

- The Florida Department of Environmental Protection is using "Evaluation of Current Stormwater Design Criteria within the State of Florida"[3]
- Table 4-17 indicates that rainfall from undeveloped land traveling to a receiving body through a ditch or canal (considered a point source discharge under the CWA) would not meet current NCC requirements

SUMMARY OF LITERATURE-BASED RUNOFF CHARACTERIZATION DATA FOR GENERAL LAND USE CATEGORIES IN FLORIDA

LAND USE CATEGORY	TYPICAL RUNOFF CONCENTRATION (mg/l)						
	TOTAL N	TOTAL P	BOD	TSS	COPPER	LEAD	ZINC
Low-Density Residential[1]	1.61	0.191	4.7	23.0	0.008[4]	0.002[4]	0.031[4]
Single-Family	2.07	0.327	7.9	37.5	0.016	0.004	0.062
Multi-Family	2.32	0.520	11.3	77.8	0.009	0.006	0.086
Low-Intensity Commercial	1.18	0.179	7.7	57.5	0.018	0.005	0.094
High-Intensity Commercial	2.40	0.345	11.3	69.7	0.015	--	0.160
Light Industrial	1.20	0.260	7.6	60.0	0.003	0.002	0.057
Highway	1.64	0.220	5.2	37.3	0.032	0.011	0.126
Agricultural							
Pasture	3.47	0.616	5.1	94.3	--	--	--
Citrus	2.24	0.183	2.55	15.5	0.003	0.001	0.012
Row Crops	2.65	0.593	--	19.8	0.022	0.004	0.030
General Agriculture[2]	2.79	0.431	3.8	43.2	0.013	0.003	0.021
Undeveloped / Rangeland / Forest	1.15	0.055	1.4	8.4	--	--	--
Mining / Extractive	1.18	0.15	7.6[3]	60.0[3]	0.003[3]	0.002[3]	0.057[3]

[3]Harper,HH and D,M. Baker, Environmental Research and Design,Inc, June 2007

Water Policy Issues for the 2011 Legislative Session (Florida Association of Counties)

- EPA estimates for compliance are dramatically lower than those of DEP and the FWEA Utility Council.
- The cost to municipal separate storm sewer systems (MS4s) is much less predictable, but will be much greater than for wastewater.
- The Florida Stormwater Association (FSA) has estimated that the current cost to comply with the Clean Water Act (CWA) is anywhere from **$31.5 to $105 billion.**
- FSA estimates that the NNC rule will **DOUBLE those costs.**

DEP Stormwater Estimates

- City of Deltona currently has three (3) outfalls servicing forty seven (47) square miles under the current MS4 permit
- Engineering estimates for capital including land acquisition is at 8-10 million dollars

Economic Analysis[4]

- The impacts of these costs will be felt not only by local agricultural and industrial producers, but also by residents in the form of higher utility rates, and potentially, fewer employment opportunities. Increased utility rates to pay for capital upgrades to municipal WWTP and urban stormwater facilities may depress housing prices and further depress the retail and commercial development industry.
- Expending large amounts of money will have direct adverse impacts to the citizens and businesses of Deltona

[4]Prepared by Cardno ENTRIX , November 2010

Unfunded Mandate

- The Unfunded Mandates Reform Act of 1995 (UMRA) requires an examination of the potential disproportionate impacts on state, local, and tribal governments; urban or rural or other types of communities; or particular segments of the private sector. Office of Management and Budget (OMB) Best Practices require that when distributional effects are thought to be important, the analysis should include their magnitude, likelihood, and incidence of effects on particular groups.

QUESTIONS

Dave Denny
Deputy City Manager
Deltona, Florida

Florida's Risk Management Program
Initiatives to Address Program Cost Drivers

Presentation to the Senate General Government Appropriations Committee
January 12, 2011

Jeff Atwater
Chief Financial Officer
State of Florida

Florida Department of Financial Services

Risk Management Program Overview

- Florida self-insurance program for property and casualty risks. Administered by the Department of Financial Services.
- Designed to administer certain claims of state agencies and provide them with loss prevention guidance.
- Covers executive, legislative, judicial branches of Florida government & state universities.
- Funded by yearly assessments to participating state agencies.

Claims Data for last three Fiscal Years

PROGRAM	FY 07/08		FY 08/09		FY 09/10		FY 10/11 (Thru Nov. 2010)	
	New Claims Reported	Loss Payments	New Claims Reported	Loss Payments	New Claims Reported	Loss Payments	New Claims Reported	Loss Payments
Workers' Compensation	13,644	$103,452,439	13,842	$109,646,128	14,900	$118,915,603	6,120	$43,043,218
State Property	54	$138,947	146	$344,639	40	$514,852	24	$40,335
Liability	2,462	$44,244,615	2,332	$32,653,697	2,242	$26,617,045	875	$5,323,630

Specific Claims Cost Drivers

1. Rising medical costs, including pharmacy. Increase in medical costs of $12.2M in FY 09/10, but decrease in indemnity (lost salary) payments of $2.5M.
2. Substantially lower recoveries on claims. Decrease from $19.2M in FY 07/08 to $4.4M in FY 09/10.
3. Current law – Presumption Claims (112.81 F.S). Increased cost of $8.4M for FY 09/10 – Over $30M in additional cost since law implementation in 2003.
4. Mandated “Cost of Living” supplement on PTD claims – 3% to 5% per year.
5. Occasional and unexpected large awards on civil rights violation claims.

Initiatives to Address Cost Drivers

- Best approach is to prevent all claims from occurring, and to return injured workers to work as soon as possible.

  -Loss prevention staff working with agencies to evaluate high loss areas and develop prevention strategies, including reducing presumption claims.

  - Certain agencies such as DOH and FDLE have already seen large reductions in workers' compensation costs.

- More proactive medical care to get injured employees back to work faster, reducing “lost time” claims. These claims account for 80% of all costs but only 10% of claims.

- Reviewing employment discrimination and civil rights claims to identify opportunities for early settlement.

- Premium calculation methodology changed to highlight state agencies that proactively reduce claims.

- 2010 legislative proposal to enhance loss prevention (HB 5603)
  - Require agencies to develop workers' compensation "Return-to-work" programs.
  - Give DRM authority to audit and monitor agency risk management systems and loss prevention programs, including requiring agencies to submit corrective action plans.
  - Base agency RM premiums on retrospective as well as agency-specific outcome measures, to incentivize reduction in claims costs.
  - Legislation was vetoed – estimated costs of not enacting legislation $500,000 due to lack of return-to-work and other cost savings measures.

Foundation for Effective Loss Prevention

- Every project is data driven.

- We have a two level focus.

  + Drive statewide loss prevention program development by providing standards, guidelines, and policy.

  + Devote staff to working special projects where we see high claims cost and frequency and a good ROI.

- We collaborate and facilitate instead of criticize.

Accomplishments/Projects

- Developed and issued Loss Prevention Standards for all agencies and universities.
- Developed model Return-to-Work Guidelines.
- Provide data analysis support so agencies can see where risks lie.
- Support Interagency Advisory council on Loss Prevention at quarterly meetings, and monthly committee meetings.

Accomplishments/Projects

- Provided average of 1 to 2 statewide web-based trainings monthly for last 10 months.
- Staff Consultation Services provided or in process for 16 agencies.
- Contractor Consultation Services engaged for 7 agency projects.
- Consulting visits to four of 11 state universities.
- Annual Safety Program Evaluation Survey process improvements underway.

Accomplishments/Projects

- Three Lunch and Learn trainings scheduled for first of 2011.
- Onsite agency training confirmed for two agencies.
- Annual Safety Academy scheduled for July 27th and 28th of 2011.
- Agency Review Completed for Department of Juvenile Justice.

Patrick F. Maroney,
Kathryn Magee Kip
Professor and Director

Lori Medders, Ph.D.
Associate Director

Chuck Nyce, Ph.D.
Associate Director

THE FLORIDA STATE UNIVERSITY
COLLEGE OF BUSINESS
The Florida Catastrophic Storm Risk Management Center

Section 1004.647 F.S.

- **Creates the Center** at The Florida State University College of Business, Department of Risk Management/ Insurance.
- **Why is the Center needed?**
  - **Continuity –** Collins Center Report
  - **Coordination –** Bringing together a myriad of entities and disciplines

Legislative Directives, Center Action

1. **Coordinate and disseminate research efforts that are expected to have an immediate impact on policy and practices related to catastrophic storm preparedness.**
2. **Coordinate and disseminate information related to catastrophic storm risk management, including, but not limited to, research and information that would benefit business, consumers, public policy makers.**
   - *Addressing hurricane and climate risk problem*
   - *Engineering stronger homes*
   - *Coastal monitoring program and doppler radar*
   - *Addressing subsidy issues*
   - *Storm Surge*
   - *Mitigation Credits*

3. **Facilitate Florida's preparedness and responsiveness to catastrophic storms and collaborate with other public and private institutions.**

- Florida Coastal Monitoring Program (UF)
- Partnerships include:
  - *Wharton College (University of Pennsylvania)*
  - *University of Miami*
  - *University of Florida*
  - *Center for Ocean Atmospheric Prediction Studies*
  - *University of South Florida*
  - *NOAA Hurricane Research Division*
  - *Society of Insurance Research*
  - *Willis Research Network (Oxford, Princeton, University of Colorado)*
  - *National Alliance for Insurance Education*

4. **Create and promote studies that enhance the educational options available to risk management and insurance students.**

- Curricula – incorporating modeling into courses
- Symposia
- Directly supporting risk management students – assistantships, stipends
- Supporting civil engineering, geography, and meteorology students

5. Publish and disseminate findings primarily related to risk management.

- Symposia Topics Presented:
  - *Explaining Mitigation Credits*
  - *Insurance Industry Performance*
  - *Incentivizing Disaster Mitigation Measures*
  - *Financial Ratings Agencies & Rating Standards for CAT Risks*
  - *The Growing Challenges of Catastrophe Risks*
  - *Subsidies in Florida's Property Insurance Market*
  - *Capital Market Capacity to Fund Catastrophe Risk*
- Provided speakers to conferences, other venues:
  - Federal Alliance for Safe Homes Annual Meeting
  - Competitive Enterprise Institute's Making Reform Work Conference
  - Florida Loss Projection Methodology Commission

- American Risk and Insurance Association Annual Meeting
- Safe Homes for All Leadership Forum
- Presentation to the Florida Hurricane Catastrophe Fund's Participating Insurers Workshop
- 18th Annual PCS Catastrophe Conference
- Meeting of the Florida Panhandle Chambers of Commerce
- Presentation to Tallahassee Business Leaders About Property Insurance Issues
- Insurance Summit – Solvency Matters to Consumers
- Annual Windstorm Insurance Conference
- State of the Insurance Market Summit
- Publishing in academic journals
- Summaries and reports on *stormrisk.org*

Research

- **Determining Whether Consumers Are Willing to Pay for Safety When Buying Homes in Areas Prone to Catastrophic Wind Loss**
  - Measures the capitalization of stricter building codes into house prices
  - Examines whether homebuyers attach greater value to stricter building codes after the 2004-2005 hurricane seasons
  - Areas of focus: Miami and Jacksonville

Research

- **Identifying and Articulating Climate Signals in Historical Insured Property Losses**
  - Proposes a way to identify and articulate climate signals in historical insured property loss data from hurricanes affecting Florida
  - Results to inform Florida consumers, businesses, and public policy makers about the influence climate variability and climate change will have on future catastrophic losses

Research

- **Improved Analysis and Understanding of the Meteorology Underlying Various Components of the Hurricane Risk Problem**
  - Examining role wind shear plays in the genesis stage of a hurricane
  - Seeking breakthroughs in improved understanding and forecasting of short-term hurricane intensity change
  - Addressing question of how to extrapolate winds at significant altitudes above the ground to the surface where we live

Research

- **Investigating the Issue of Rain Penetration Through the Building Envelope**
  - Water intrusion into buildings remains a critical, recurring issue during hurricane impacts
  - This project with the University of Florida investigates the water penetration issues for existing and new infrastructure

Research

- **Preparing Public Libraries to Meet Catastrophe Challenges**
  - Seeking to reduce the state's overall risk by raising the readiness level of all the state's public libraries to meet the challenges posed by catastrophes such as hurricanes
  - Financial Portal

Research

- **Subsidies and Pricing in the Florida Property Insurance Market**
  - Determining whether subsidies exist and the extent of the subsidies
  - Providing evidence regarding whether homeowners premiums accurately reflect differences in expected losses for different geographic regions
  - Looking at granular pricing and the effect on mitigation incentives
  - Mitigation Credits

Research

- **Who Mitigates Against Potential Catastrophic Storm Damage and Why?**
  - Analyzing data from the My Safe Florida Home Program to better answer the question of who participates in mitigation programs and what incentives drive their decisions
- **Storm surge**
  - USF, FSU, NOAA, COAPS

Research

- **Determining Capital Market Capacity of Catastrophe Risk**
  - Seeking to develop realistic models for catastrophe financing in light of current market conditions
  - Special emphasis given to the challenge of financing catastrophic Florida windstorms and the value of public private partnership

Grants

- **Hurricane Mitigation Inspection System Study**
  - *Florida Department of Financial Services*
- **Home Hardening Incentives Programs: Innovative Finance Concepts for Wind Mitigation and Home Hardening**
- **Helping Local Governments Design Financing Programs for Residential Wind Mitigation and Home Hardening**
  - *Residential Construction Mitigation Program (Florida Department of Community Affairs, Division of Emergency Management)*

- **State University Property Characteristics Inventory**

  Purpose:

  - Ascertain Building Characteristics
  - Model Data
  - Determine More Accurate AAL
  - Determine Hardening Measures Needed
  - Provide Common Location Identifier (Long., Plat)
  - Promote Competition Among Reinsurers
  - Assist State with Information Needed for Sound Risk Management

Questions?

Patrick F. Maroney,

Kathryn Magee Kip Professor and Director