

Water Quality Action Plan

Green & Grey Infrastructure for a Cleaner, Greener St Tammany Parish



League of Women Voters of St Tammany
January 28, 2013

STP Environmental Protection & Mitigation Management Plan: Justification

In the last six years, significant regulatory pressure has been applied to parish government to address environmental issues while providing greater number of services to a larger population.

With fewer, more competitive funding sources the parish must:

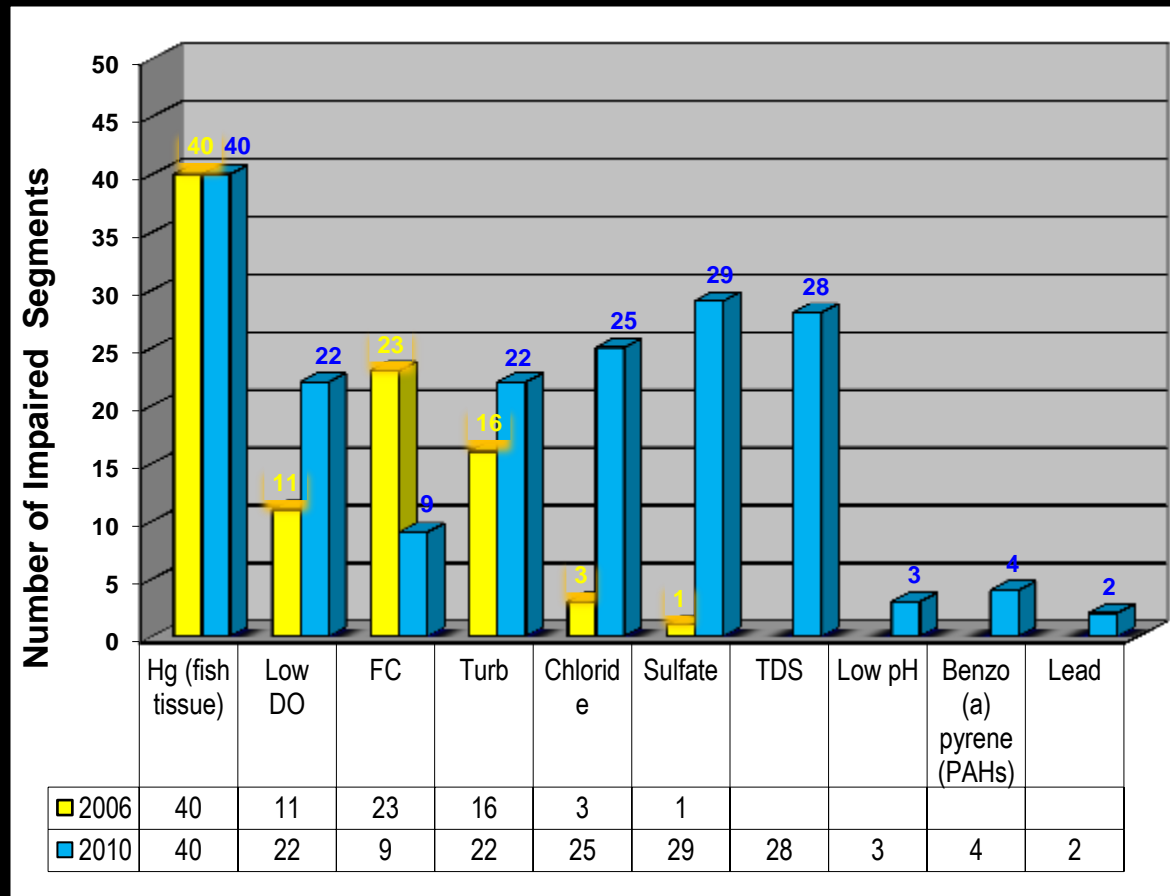
- Improve drainage without flooding vulnerable downstream areas
- Protect against coastal surge & erosion
- Provide water & sewerage
- Protect critical & sensitive wetland areas
- Assure water quality improvements in all parish watersheds

The DRIVER for Water Quality Improvements

EPA 303(d) List of Impaired Waterbodies

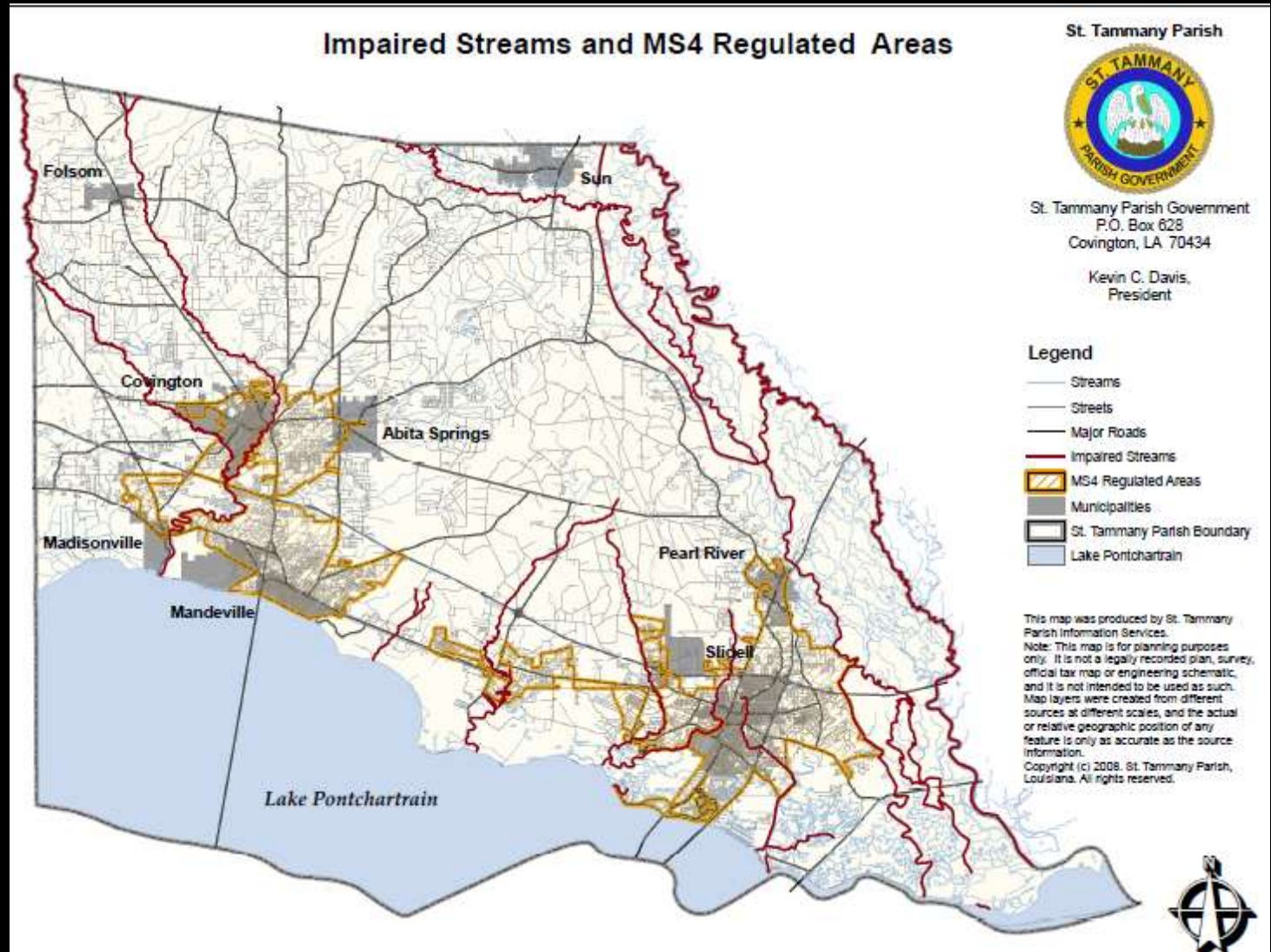
Dissolved Oxygen
Impairments in
all watersheds
from:

- Individual Sewer Systems
- Construction & Development
- Illicit Discharges



The VEHICLE for WQ Improvement:

**LDEQ
Multiple
Separate
Storm
Sewer
Permit
(MS4)**



The GOAL: Water Quality Improvement

the TMDL Process

- Calibration Model - Current Conditions
- TMDL Model – Projection to “worst case” conditions

TMDL = Allowable quantity of pollutant to meet standard...*“pollutant budget”*

- WLA for point sources
- LA for Nonpoint sources (Headwater, runoff, resuspended material)

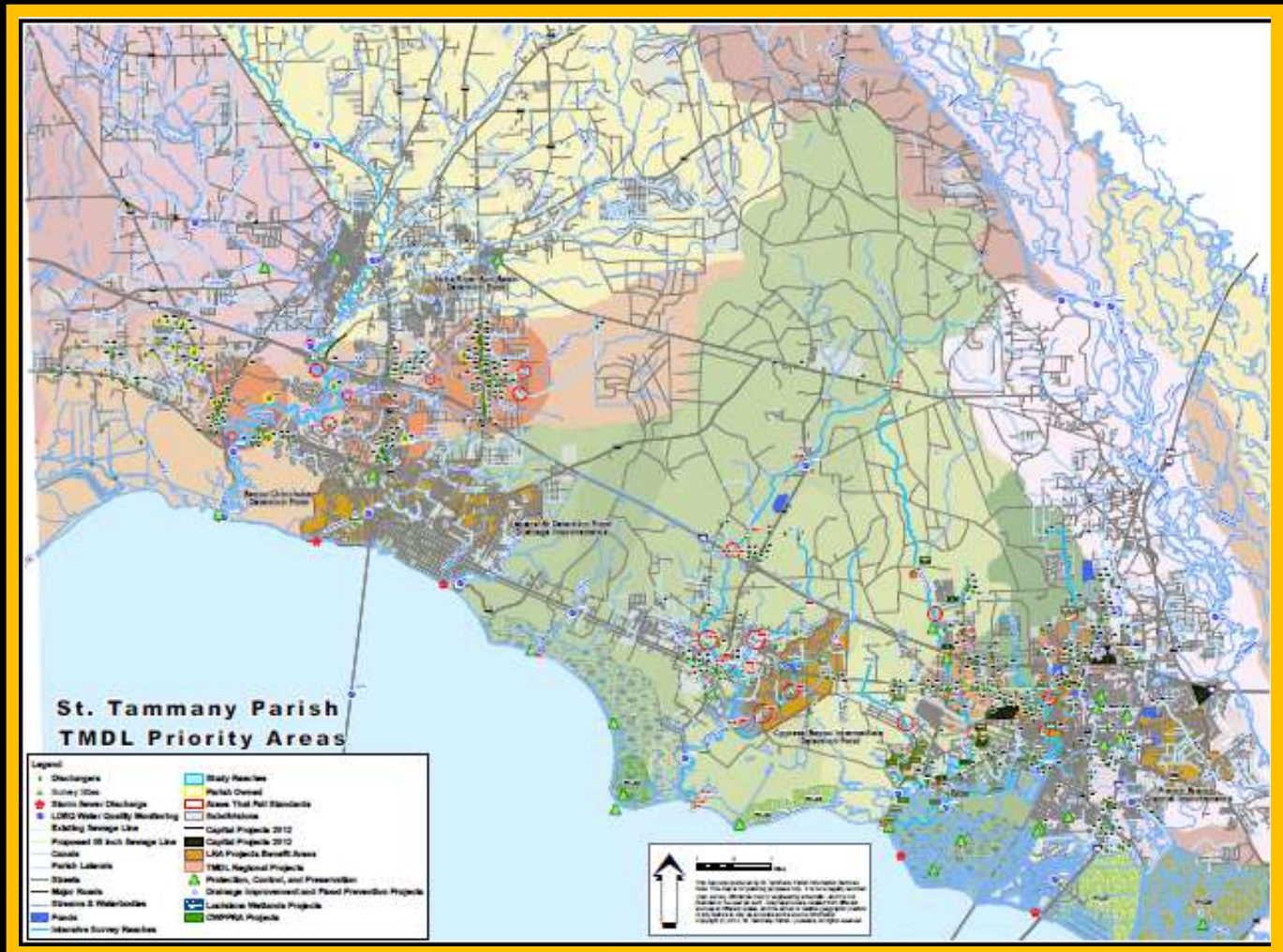
37 TMDLs Prepared for STP Impaired Waterbodies

Subsegment	Waterbody	Impairment
40802	Tchefuncte River	BOD (13)
40803		
40901	Bayou Lacombe	
40902		
40903	Bayou Cane	
40904		
40905	Bayou Liberty	
40906	Bayou Paquet	
40907	Bayou Vincent	
40908	Bayou Bonfouca	
90105	Pearl River Navigation Canal	
90204		
90207	Middle & West Middle River	
40909	W-14 Diversion Canal	Fecal Coliform (4)
40910	Salt Bayou	
90101	Pearl River	
90207	Middle & West Middle River	

40801	Tchefuncte River	Mercury (13)
40905	Bayou Liberty	
40906	Bayou Paquet	
90101	Pearl River	
90107		
90102	East Pearl River	
90103		
90105	Pearl River Navigation Canal	
90204		
90106	Holmes Bayou	
90201	West Pearl River	
90205	Wilson Slough	
90207	Middle & West Middle River	
90105	Pearl River Navigation Canal	Nitrate (3)
90204		
90207	Middle & West Middle River	
40903	Bayou Cane	TSS
90106	Holmes Bayou	Turbidity (3)
90201	West Pearl River	
90202	Morgan River	
Total		37

LDEQ Data: What we found out about St. Tammany (aka “the TMDL Effect”)

- 530+ LPDES dischargers impacted in STP
- Five significant areas of impact “Clusters”
(Orange areas)
- 35 “hot spots” where waterbodies failed DO standard
(Red circles)



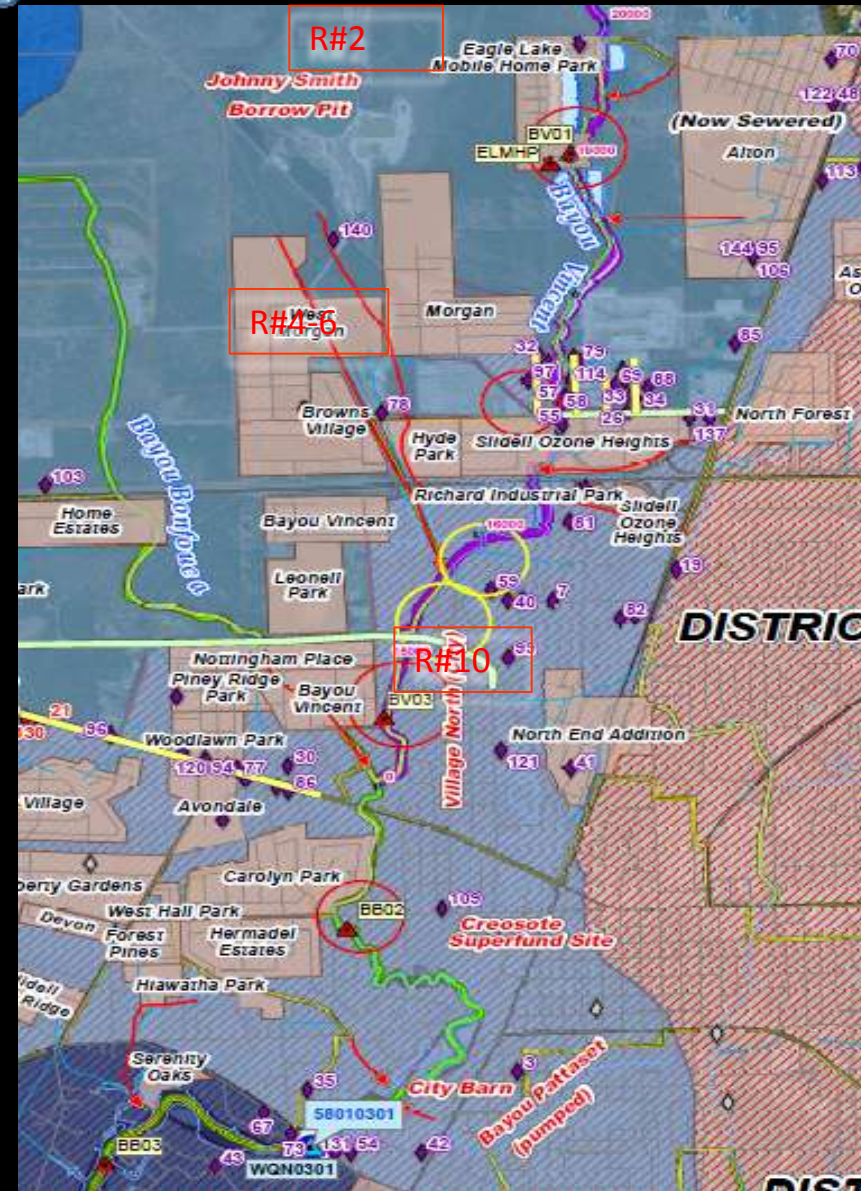
Point & Nonpoint Source LOADS Create DO “Hot Spots”

“Hot spots” - Red Circles on map

Failed sites usually located near

- Multiple Point Sources
- Unsewered S/Ds

*Failed sites characterized by
HIGH Nonpoint Source (NPS) loads
in TMDL models*



The “TMDL Effect” On STP Dischargers

- *Drastic reduction of discharge limits for LPDES permittees*
- Distinct areas where loadings must be reduced
- “No Parish Action” is NOT an option
- “No Parish Action” will severely impact permittees in the next permitting cycle

LDEQ Subseg	Watershed	Permitted Dischargers	Total Permitted GPD
40802 & 40803	Lower Tchefuncte, Ponchitolawa, Tete L'Ours, DeZaire (Dissolved Oxygen)	211	4,347,327
40901	Bayou Lacombe (Dissolved Oxygen)	61	129,641
40902	Cypress Bayou & Big Branch (Dissolved Oxygen)	17	282,979
40903	Bayou Cane (Dissolved Oxygen)	4	287,500
40905 - 40908	Bayous Liberty, Vincent, Bonfouca, Paquet (Dissolved Oxygen)	184	1,223,107
40909	W-14 Canal (Fecal Coliform)	47	7,093,471
40910	Salt Bayou (Fecal Coliform)	6	37,426
TOTALS		530	13,401,451

Four-Pronged Approach Water Quality Improvement Areas (WQIAs)

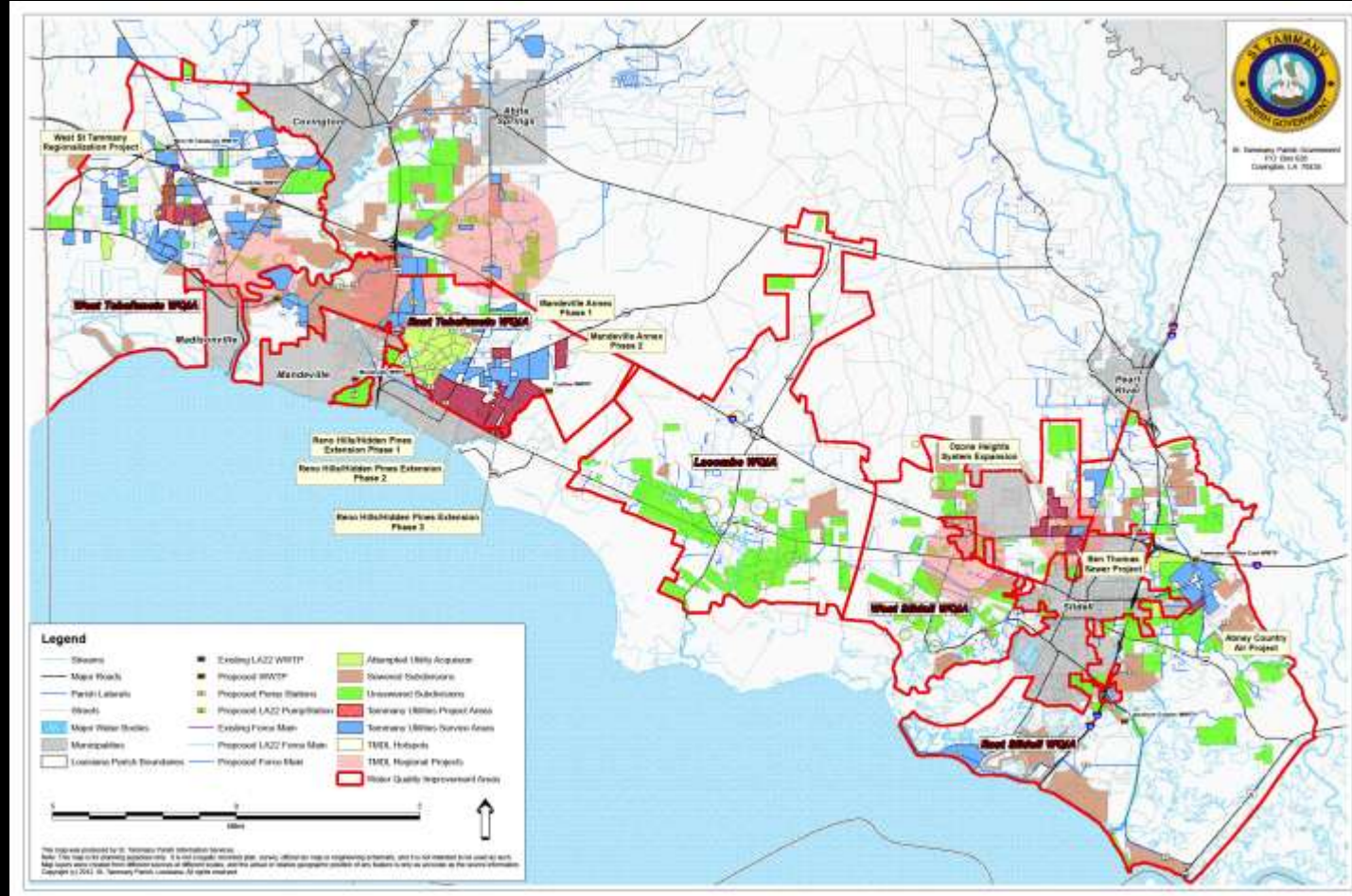
*An Integrated,
“green & grey” concept*

1. Wastewater
2. Stormwater
3. Conservation & Mitigation
4. Education & Outreach



STP Wastewater Regionalization Program
(\$160.0 Million Spent to Date with \$79.3 Million
Needed to Address TMDLs)

- Focus on unsewered SDs near “cluster” areas
- Promote interconnections from private utility providers to reduce discharge points



Regional Wastewater Proposed Projects

(\$27.1 Million)

*STP Priority WW
Projects address
discharger
clusters &
“hot spots”*

Region	Watershed	Estimated Completion Date	Estimated Cost	Shovel ready	Eligible for Categorical Exclusion
LA 22 Pump Station			\$3,600,000	✓	✓
Design		2012			
Construction		2013			
Mandeville	Tete L'Ours		\$4,534,813	✓	✓
Feasibility		2012			
Design		2013			
Construction		2013-2014			
LA 59	Ponchitolowa		\$7,900,632	x	maybe
Feasibility		2012-2013			
Design		2013-2014			
Construction		2015-216			
Highway 190	Bayou Liberty		\$6,040,129	✓	✓
Feasibility		2012-2013			
Design		2013-2014			
Construction		2014-2015			
Brownsville Road	Bayou Vincent		\$1,439,160	✓	✓
Feasibility		2012-2013			
Design		2013			
Construction		2013			
Madisonville	Tchefuncte		\$3,605,551	✓	✓
Feasibility		2012-2013			
Design		2013			
Construction		2013-2014			
TOTALS			\$27,120,285		

Wetland Assimilation Project (\$4 Million)

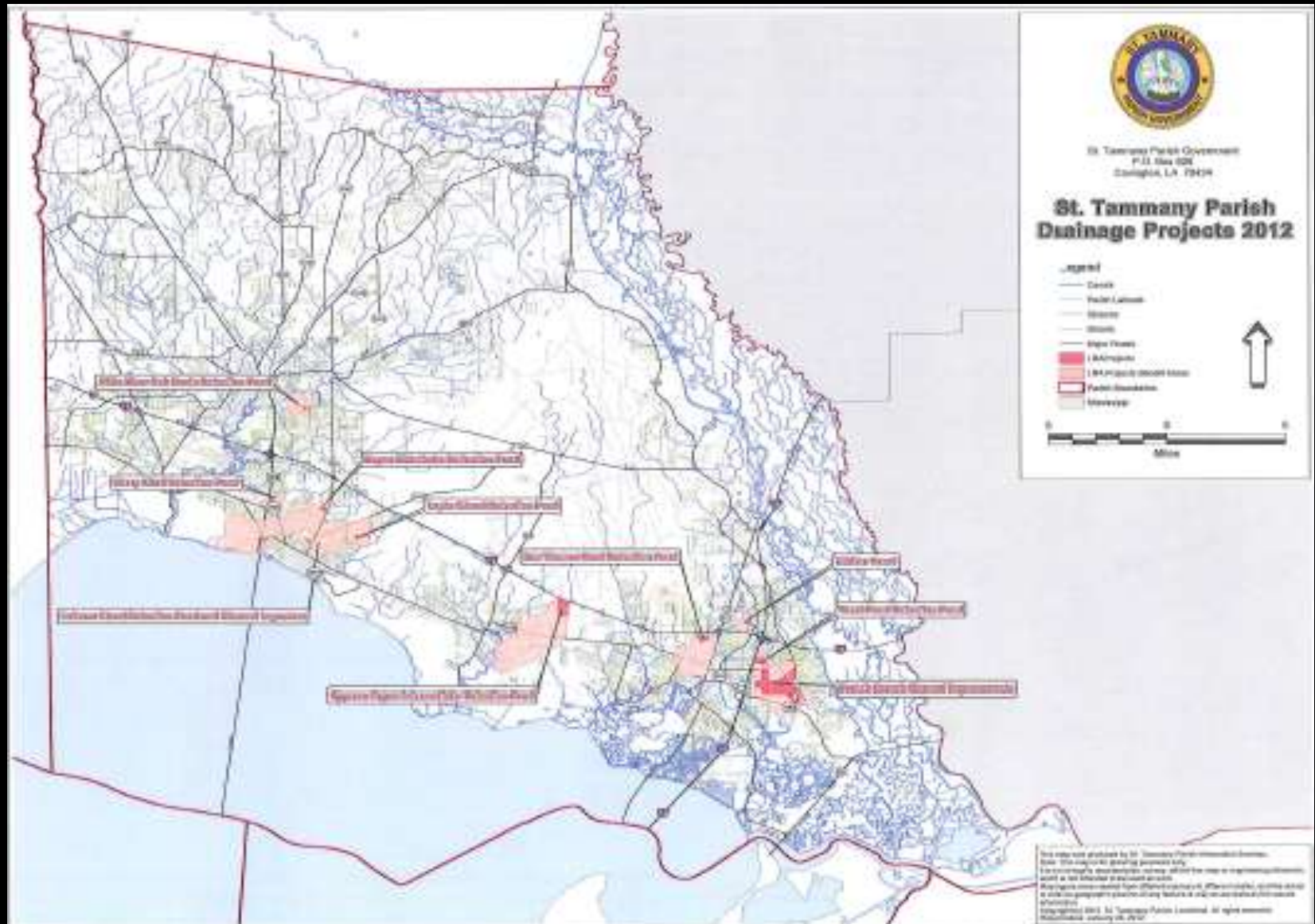
City of Mandeville & STP will increase assimilation rate to 4 MGD

- Provides WQ filter
- Recycles nutrients & sediment
- Promotes less stringent permit limits
- “Green” due to lower energy requirements for WW treatment
- Nourishes wetlands
- Enhances coastal restoration



Integrates all 4 Prongs of the WQ Action Plan

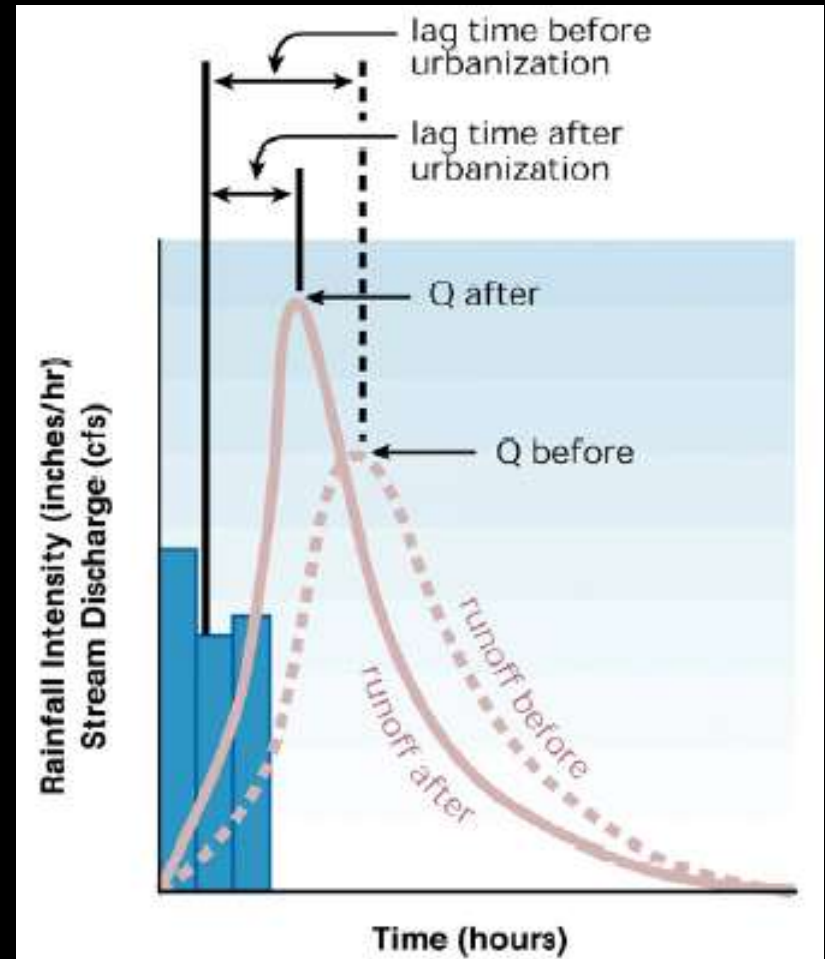
#2. Stormwater Management Program (\$60.4 Million spent to date)



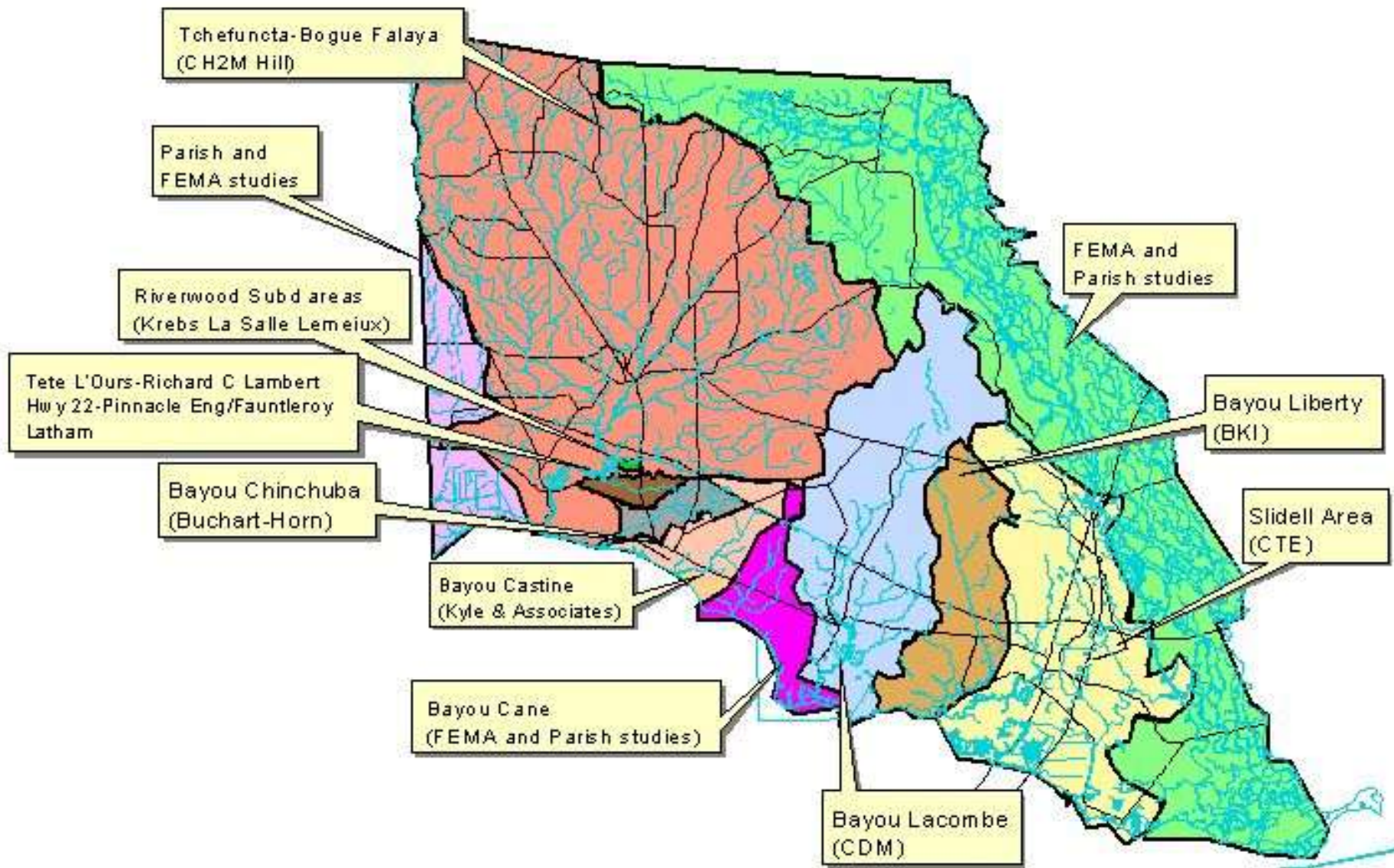
STP Stormwater Management Plan

Originates from need to protect STP from WQ & quantity problems caused by past practices and future development

- Enhance public safety due to land development
- Reduce flooding
- Decrease volume and intensity of runoff
- Improve water quality in streams
- Minimize loss of wetlands
- Improve stream habitat
- Enhance economic growth
- Enhance aesthetics of watersheds



Watershed Management Plan



Completed Drainage Projects

(\$60.4 Million to date)

*Drainage projects
present
opportunities
for WQ
improvement*

*“Green & Grey”
Overlay*

Watershed	Funding
Abita River	\$ 1,365,234
Bayou Cane	\$ 6,693,500
Bayou Castine	\$ 367,716
Bayou Chinchuba	\$ 2,507,687
Bayou Lacombe/ Cypress Bayou/ Big Branch Bayou	\$ 6,863,052
Bayou Liberty/ Bayou Paquet	\$ 4,123,757
Bayou Vincent/ Bayou Bonfouca	\$ 3,834,003
Black River	\$ 116,258
Gum Bayou	\$ 282,345
Little Bayou Castine	\$ 3,309,567
Tchefuncte River/ Bayou Tete L'Ours/ Ponchitolawa Creek/ Timber Branch	\$ 2,884,850
W-14 (Bayer Development)	\$ 20,054,051
W-15/ French Branch	\$ 6,918,085
West Pearl River	\$ 1,073,196
Total	\$ 60,393,300

DRIVER: LDEQ MS4 Permit Compliance

Stormwater Ordinance required by the MS4 permit

- Mirrors State program
- Provides incentives for better than minimum BMP standards & innovations

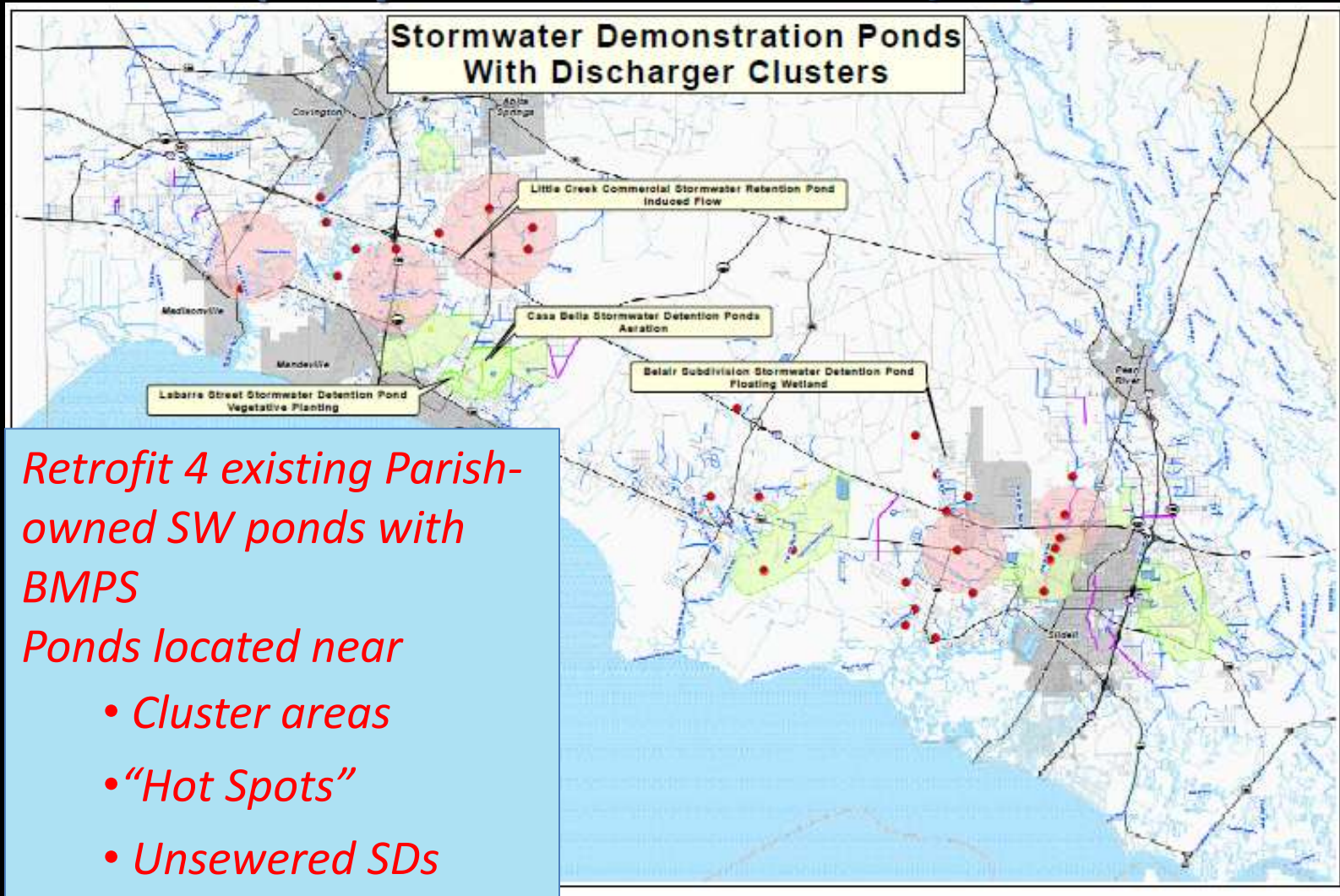
All drainage projects will now give consideration to WQ improvement potential



St. Tammany Parish Stormwater
Quality Ordinance



SW Demonstration Ponds & “Hot Spot” Monitoring (Proposed \$0.9 Million/3 years)



SW Demonstration Ponds

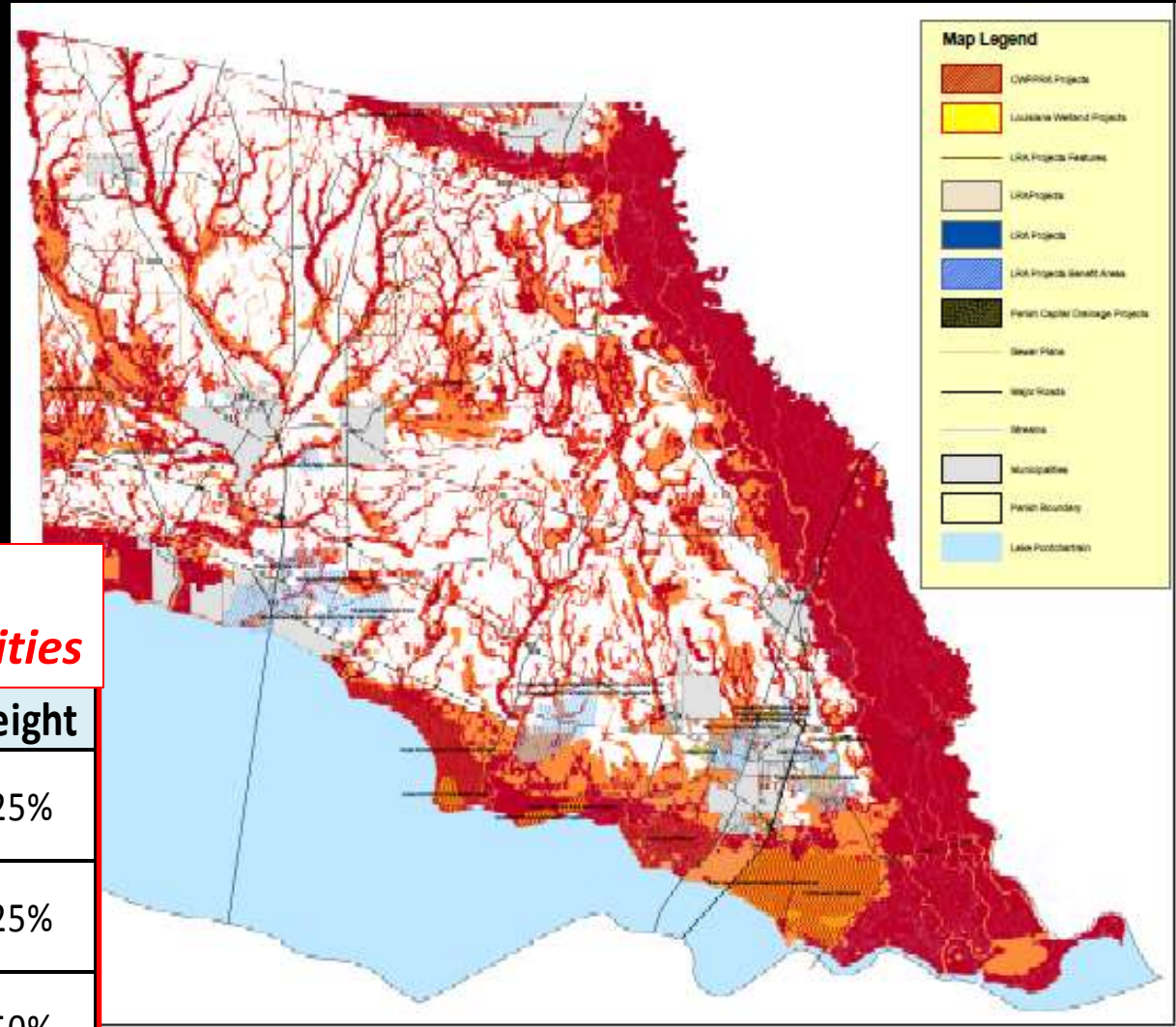
Project	Pond name	Proposed Treatment	BMP Costs	
			Capital	O&M, Monitoring, Inspections
1	Labarre Street	Vegetative Planting	\$ 100,000	\$ 128,580
	Tammany Hills			
2	Belair Pond #3	Floating Wetland	\$ 250,000	\$ 85,320
3	Casa Bella S/D Pond #1	Aeration	\$ 7,500	\$ 86,280
4	Little Creek Commercial	Induced Flow	\$ 105,000	\$ 86,280
Hot Spot Analysis & Monitoring (32 hot spots Parishwide)			\$ 14,000	\$ 109,650
3-Year Totals (\$972,610)			\$ 476,500	\$ 496,110

#3. Conservation & Mitigation Program

- Protect coastal areas
- Protect stream channels
- Promote conservation:
- Encourages stakeholder buy-in

Greenprint Conservation Priorities

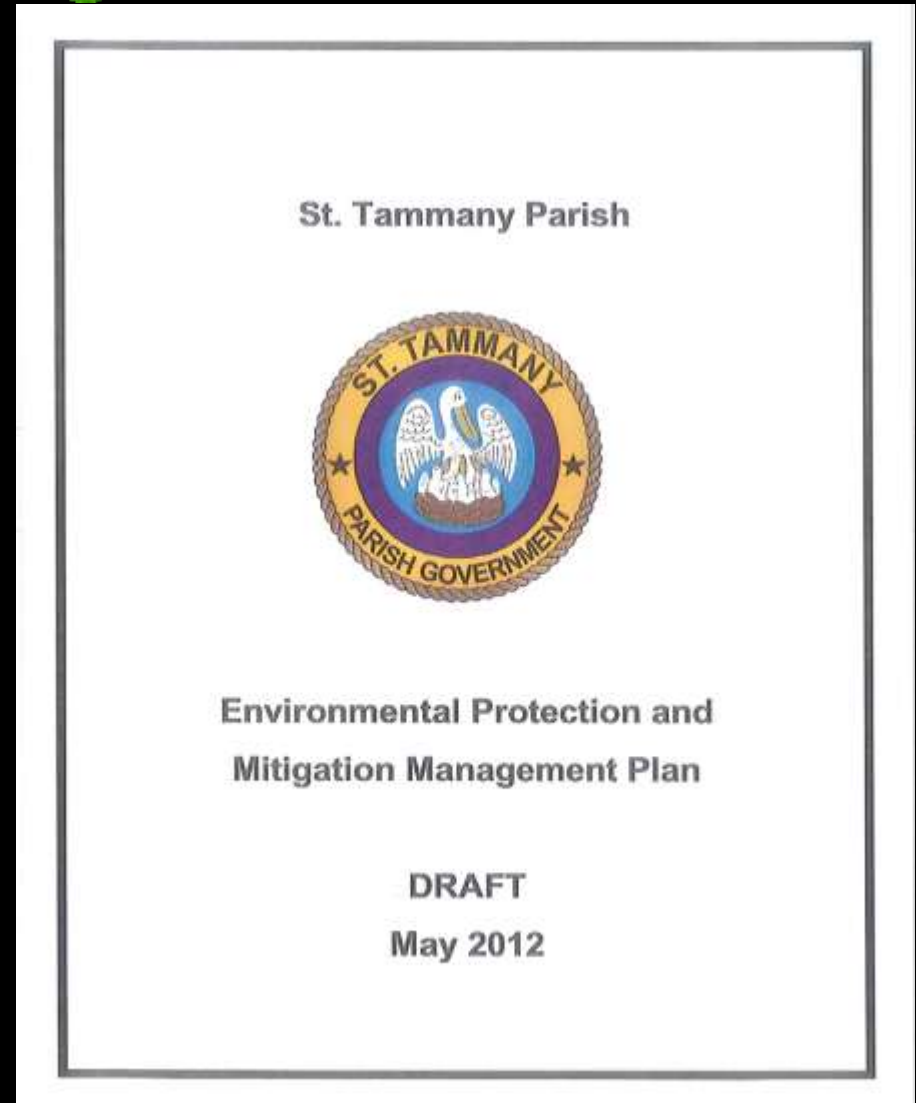
Criteria	Weight
Mitigate Floods & Stormwater	25%
Protect Critical & Sensitive Areas	25%
Protect & Restore Wetlands	50%



“STP Environmental Protection & Mitigation Management Plan”

Use Greenprint Model to ID priority wetlands for

- acquisition
 - preservation
 - enhancement
- Develop projects that complement existing wildlife management areas
 - Ordinances to support the environmental Plan
 - Develop a funding strategy to implement the Plan



Conservation Easements & Property Acquisitions (\$12.59 Million to date)

A Strong Start since 2008 (2,093 acres)

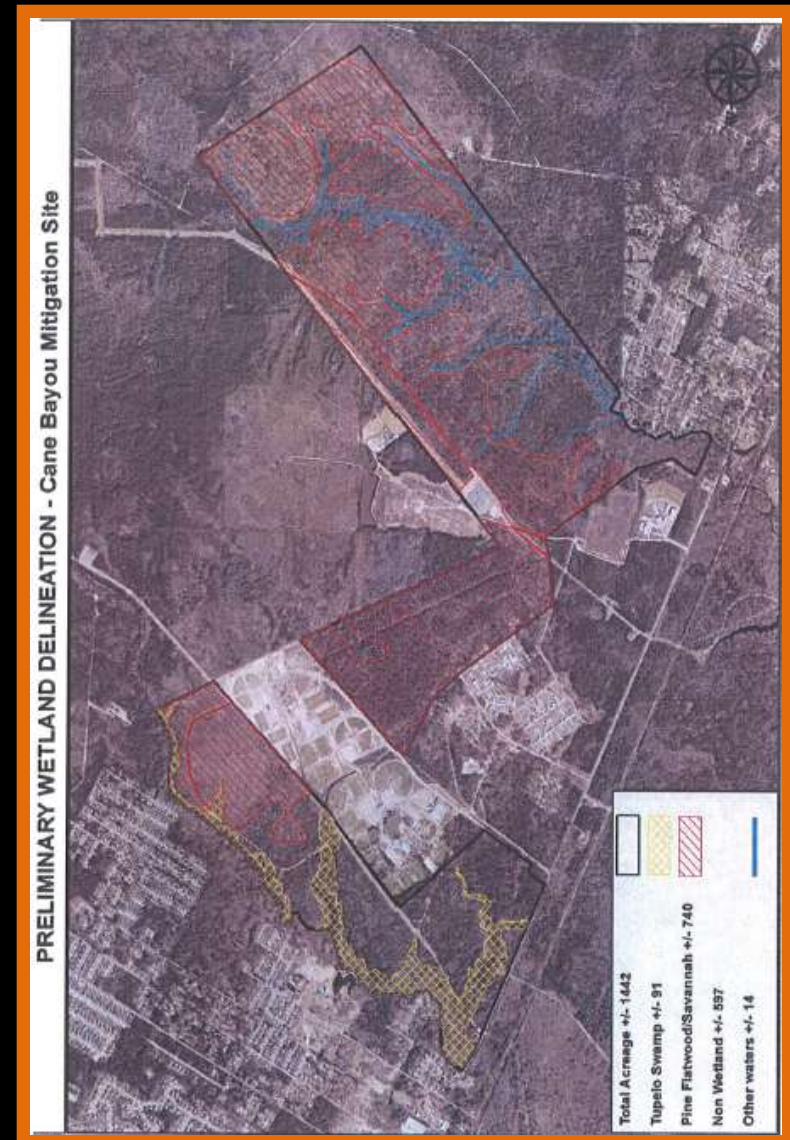
Year	Name	Conservation Easement (E) or Property Acquisition (A)	Watershed	Acres	Commitment by Parish
2004	Bayou Liberty Properties [1]	A	Bayou Liberty	14	\$ 2,700,000
2006	Camp Salmen	A	Bayou Liberty	105	\$ 2,100,000
2011	Green Property	A	Bayou Lacombe	26	\$ 1,300,000
2012	Southeast Hospital Property	A	Bayou Cane	1,442	\$ 6,450,000
			Bayou Castine		
2012	Marsh land near Tammany Trace @ Bayou Lacombe	A	Bayou Lacombe	10	\$ 40,000
2012	Little Creek commercial development	A	Little Creek	6	
			Pontchatolowa Creek		
2012	Bedico Creek S/D	E	Bedico Creek	377	
			Tangipahoa River		
2012	River Club	E	Tchefuncte River	32.5	
2012	Fairway	E	Bayou Chinchuba	80	
Totals				2,093	\$ 12,590,000

[1] North Bayou Liberty Properties: French (\$2.7 million) and Green (\$1 million)

Southeast Hospital Property (1442 acres)

First attempt to use conservation property for environmental & drainage purposes

- Central to drainage projects affecting Bayous Castine & Cane
- Act as a natural buffer b/t development of greater Mandeville & Fountainbleau State Park
- Potential mitigation bank for STP



STP Coastal Restoration Program

(\$26 Million spent to date)

Since 1990 STP has participated in marsh creation and protection projects and purchased properties for preservation

Project Name	Cost
Goose Point Restoration	\$ 21,000,000
Northshore Marsh Restoration	\$ 2,100,000
Fritchie Marsh Restoration	\$ 2,500,000
Christmas Tree	\$ 300,000
Christmas Tree 2009	\$ 12,500
Christmas Tree 2010	\$ 39,175
Big Branch Marsh Planting	\$ 75,000
Total	\$ 26,026,675



#4. Education & Outreach Program

STP is active in WQ improvement Education & Outreach Programs

- TMDL Outreach Meetings
- BMP Workshops
- WQ Task Force Meetings
- LA Urban SW Coalition (LUSC)
- Staff SW Certifications & Training
- Clean Marina Workshops
- Re-Tree St Tammany
- World WQ Monitoring Day
- Household HW Day

TMDL's are Coming to St Tammany Parish



Meeting for Sewer System Installers & Manufacturers
June 12th, 2012 10am-Noon
St Tammany Parish Council Chambers
Koop Drive in Mandeville, LA

- TMDL's, Total Maximum Daily Loads, are the "pollution budget" allowed for an impaired waterway
- WLA, Waste Load Allocations, will be based on what the waterway can handle
- Permits to discharge will require more stringent discharge limits
- Wastewater discharges will likely require upgrades or replacement of existing systems to meet the new limits
- Sewer System/Wastewater installers must offer upgrades such as extended aeration, and filtration to enable their customers to meet the more stringent limits

Parish Financial Commitments to Drainage & WQ (\$160.58 Million to date)

Since 2002 St Tammany Parish has aggressively worked with agencies to fund drainage & watershed studies & construct recommended projects

*A substantial
achievement for any
local government*

Project Element	Commitment
Wastewater	\$ 54,400,000
Utility Acquisitions	\$ 46,000,000
Wetland Assimilation (Mandeville)	\$ 4,000,000
System Expansions (residential)	\$ 4,400,000
Stormwater	\$ 67,559,521
Engineering Drainage Projects & Watershed Studies (from 2004)	\$60,393,300
CIAP	\$ 500,000
Slidell Reine Canal	\$ 1,600,000
USGS Streamgauging Co-operative Funding	\$ 563,375
Levee Systems & Pump Stations	\$ 4,502,846
Conservation	\$ 38,616,675
Coastal Program	\$ 26,026,675
Conservation Easements & Property Acquisitions	\$ 12,590,000
TOTALs	\$ 160,576,196

TMDL Response:

Non-Financial Requests to LDEQ

- No permit changes in TMDL areas until UAA is completed
- Allow businesses to continue operating during this time
- Allow permitting of new facilities until the UAA is completed
- Re-Run TMDL models with more current discharger inventory (after UAA & regionalization)
- Create an LDEQ working group to work with STP to review STP project performance

Project Element	Time for Completion
Scopes	1 month
Procurement	3 months
Feasibility planning	9 months
Preliminary design/environment	9 months
Final design/ ROW acquisition	12 mo's
Procurement	3 months
Construction	12 mo's
Surveillance	quarterly
Minimum time for project completion	49 months

What's Next? TMDL Implementation...

Challenges...

- ✓ EPA/LDEQ have established more stringent discharge limits
 - *Phase I TMDL Implementation* allocates changes to hundreds of permitted facilities
 - *Phase II TMDL Implementation* will be triggered by a DO criteria change for Pontchartrain Basin (UAA); or triggered by projects that will vastly improve water quality.
- ✓ STP must provide local environmental regulation that enhances long-term, stable economic growth
 - BMPs for NPS
 - Regionalization & upgrades
 - Wastewater Assimilation projects

Questions or Comments?

