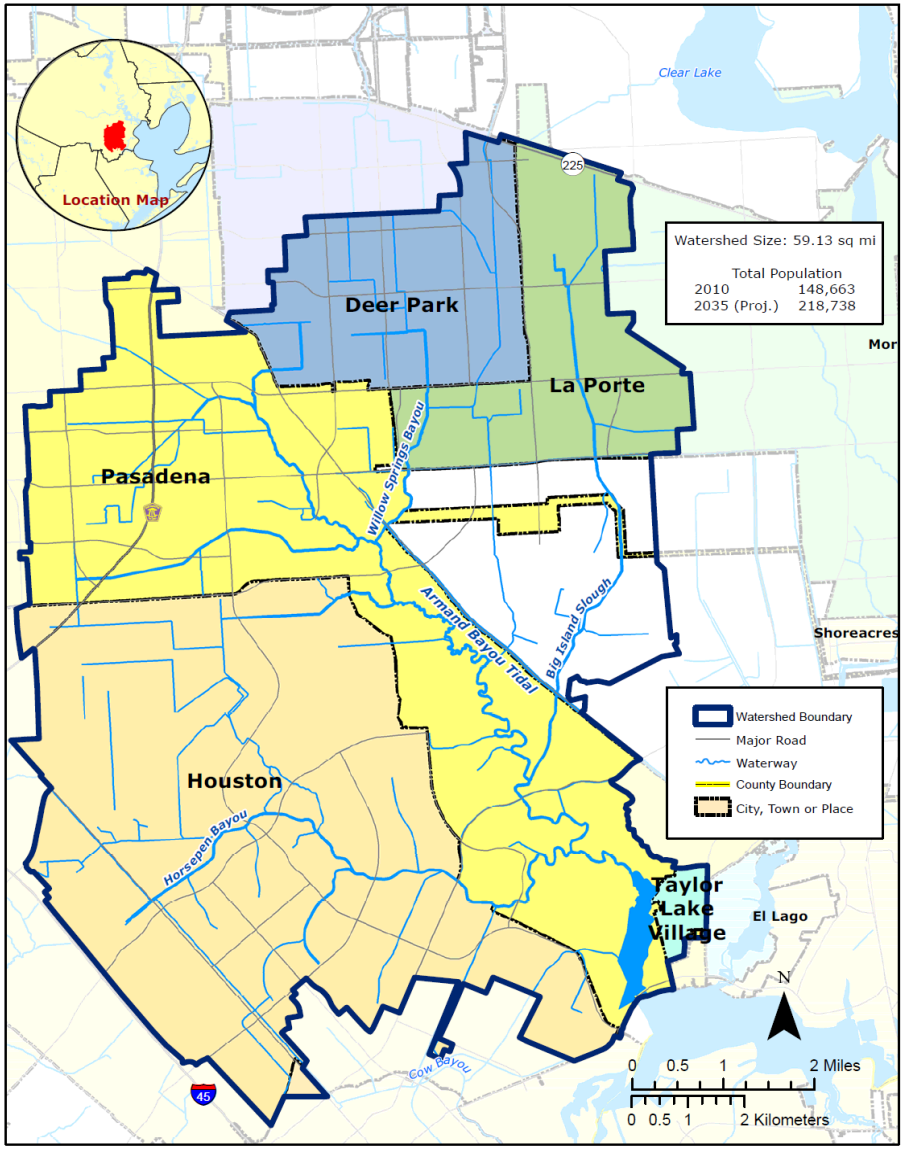
Armand Bayou I-Plan

Stormwater, Industry, MS4 and Development Work Group

Aubin Phillips, Houston Galveston Area Council

Jurisdictions Involved



Harris County

City of Pasadena
City of La Porte
City of Houston
City of Deer Park
Taylor Lake Village

Ellington Air Field
Johnson Space Center
Armand Bayou Nature Center
University of Houston Clear Lake

Option to Join the BIG I-Plan

- The Coordination Committee has discussed the possibility of joining the BIG I-Plan as opposed to creating their own I-Plan
  - This would require having a completed TMDL and could be discussed at the next BIG annual meeting in May 2014
- The Coordination Committee has also discussed using the BIG I-Plan as a “menu”

Issues Raised

- Pasadena Fairgrounds
- Pasadena School District
- Landfills?
- Illicit dumping from waste haulers
- Restaurant and Food service grease traps

Examples From Other Plans

- **Implementation Activity 5.1**: Increase Compliance with and Enforcement of Storm Water Management Permits
  Sub-activity 5.1.1: Increase enforcement at construction sites by increasing percentage of sites inspected
  Sub-activity 5.1.2: Develop and distribute educational material to inform contractors, construction site owners, developers, MS4 operators, and citizens of proper construction site practices
  Sub-activity 5.1.3: Conduct training workshops for contractors, construction site owners, developers, and MS4 operators regarding storm water management best management practices and encourage them to in turn require training of their crews
- Implementation Activity 6.2: Develop Model Ordinances for Pet Waste and Waste Haulers

Example From Other Plans

- **Implementation Activity 4.1:** Continue Existing Programs

  Implementation Activity 4.2: Model Best Practices
  Sub-activity 4.2.1: Create and maintain an online library of best practices
  Sub-activity 4.2.2: Coordinate networking meetings

  Implementation Activity 4.3: Encourage Expansion of Storm Water Management Programs
  Sub-activity 4.3.1: Encourage permitted MS4 communities to voluntarily expand and refine elements of their storm water programs that address bacteria
  Sub-activity 4.3.2: Encourage local governments without MS4 permits to voluntarily develop and implement a storm water management program to address bacteria loading
  Sub-activity 4.3.3: If voluntary measures are not implemented or bacteria reduction is not being acchieved, petition the TCEQ to madate storm water program development

  Implementation Activity 4.4: Promote Recognition Programs for Developments that Voluntarily Incorporate Bacteria Reduction Measures
  Sub-activity 4.4.1: Encourage voluntary participation in existing recognition programs
  Sub-activity 4.4.2: Develop a recognition program specific to storm water and land development in the BIG area

  Implementation Activity 4.5: Provide a Circuit Rider Program
  Implementation Activity 4.6: Petition the TCEQ to Facilitate Reimbursement of Bacteria Reduction Measures

Example 9 Element Table

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
	Causes/Sources	**Implementation Activities and Targeted Critical Areas**	**Estimated Potential Load Reduction**	**Technical and Financial Assistance Needed for Each Activity**	**Education Component for Each Activity**	**Schedule of Implementation for Each Activity**	**Interim, Measureable Milestones for Each Activity**	**Indicators to Measure Progress**	**Monitoring Component**	**Responsible Entity**
Construction	Runoff from construction sites	**IA 5.1 -** Increase compliance with and enforcement of storm water quality permits through: Increases in the percentage of sites inspected through increases in inspectors Development and distribution of educational materials Training workshops for contractors, construction site owners, developers, and MS4 operators regarding storm water quality best management practices	The amount of bacteria leaving individual construction sites may be reduced by up to 85% if water quality best management practices are implemented for the first time and to the full extent possible.	Technical- The expertise and assistance of storm water quality professionals will be necessary to develop educational and training materials. Financial- salaries for additional inspectors, both in local communities and at TCEQ, and financial support for educational materials and trainings will be funded through a mixture of state, local, and grant funding.	Education materials explaining proper construction site practices will be developed and distributed to contractors, construction site owners, MS4 operators, developers, and citizens. Training workshops will be held for contractors, construction site owners, developers, and MS4 operators regarding storm water quality best management practices.	Year 1: MS4s must evaluate the need or requirement for staffing an appropriate construction inspection program. If needed, additional inspectors must be hired as resources are available. Year 2: Develop and begin distributing/offering educational materials and trainings.	Evaluations conducted regarding the need or requirement for staffing an appropriate construction inspection program and subsequent increases in staffing levels as needed Development, distribution, and offering of educational materials and trainings	Increases in inspection capacity Number of educational materials distributed and the number of groups receiving educational materials Number of trainings offered and the number of attendees	H-GAC will collect reports from MS4s and data from H-GAC staff records.	MS4s: evaluate the need or requirement for staffing an appropriate construction inspection program and increase staffing levels as needed and as resources are available H-GAC: develop and distribute educational materials, develop and offer trainings, report on the progress made each year BIG: Evaluate progress, make recommendations as appropriate

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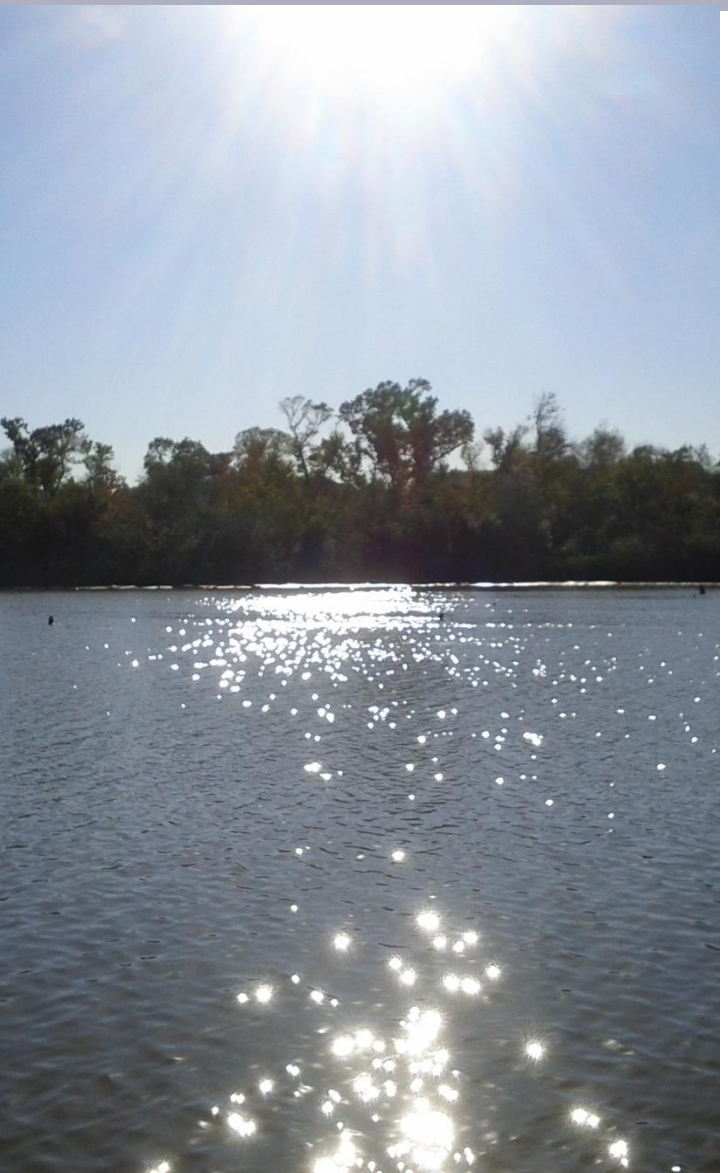
Storm Water & Land Development	Storm water runoff	Implementation Activity 4.1: Continue Existing Programs	In conjunction, IAs 4.1 through 4.6 are expected to reduce bacteria loading from storm water and land development by up to 20% over the entire implementation process	Technical- No additional technical assistance is needed to undertake this activity Financial- existing local funding and grant funding as available	Education will be provided as specified in existing programs.	As resources are available, implementation of this activity will begin immediately and will continue for the entire implementation process.	[need to identify the number of existing MS4 permits in our area-- this will determine # of programs that will be continued] XX programs will continue.	Reports provided by stakeholders to the BIG regarding continuation of the programs The number of programs continued	H-GAC will collect reports from appropriate entities	Cities, counties, TCEQ, and permitted MS4 communities, and other stakeholders: Continue existing programs, report progress to the BIG H-GAC: collect progress reports, provide annual report to BIG BIG: Evaluate progress
		Implementation Activity 4.2: Model Best Practices	In conjunction, IAs 4.1 through 4.6 are expected to reduce bacteria loading from storm water and land development by up to 20% over the entire implementation process	Technical- technical assistance will be provided by stakeholders through the participation process Financial- existing local funding and grant funding as available	As resources allow, collaborative networking meetings will be offered on an ongoing basis to address the topics of minimum control measures required in MS4 permits and/or related BMPs Website highlighting best practices	As resources are available, implementation of this activity will begin immediately and will continue for the entire implementation process.	Four to six networking meetings each year Five local programs highlighted on H-GAC or other appropriate website each year	Number of meetings each year Number of attendees at networking meetings Number of programs highlighted on website Number of visitors to the web library Number of programs modified as a result of meetings or evaluation of model programs	H-GAC will collect reports from appropriate entities	Cities, counties, TCEQ, and permitted MS4 communities, and other stakeholders: Provide information to the BIG regarding model programs, attend meetings, view website H-GAC: coordinate meetings, develop website, collect progress reports, provide annual report to BIG BIG: Evaluate progress

Requirements of the Clean Water Act (1972)



- Identify impaired water bodies
- Develop Plans (Total Maximum Daily Loads) to determine extent of problem
- Complete TMDLs and Implementation Plans to bring the water up to standards

Total Maximum Daily Load (TMDL) Has Two Meanings

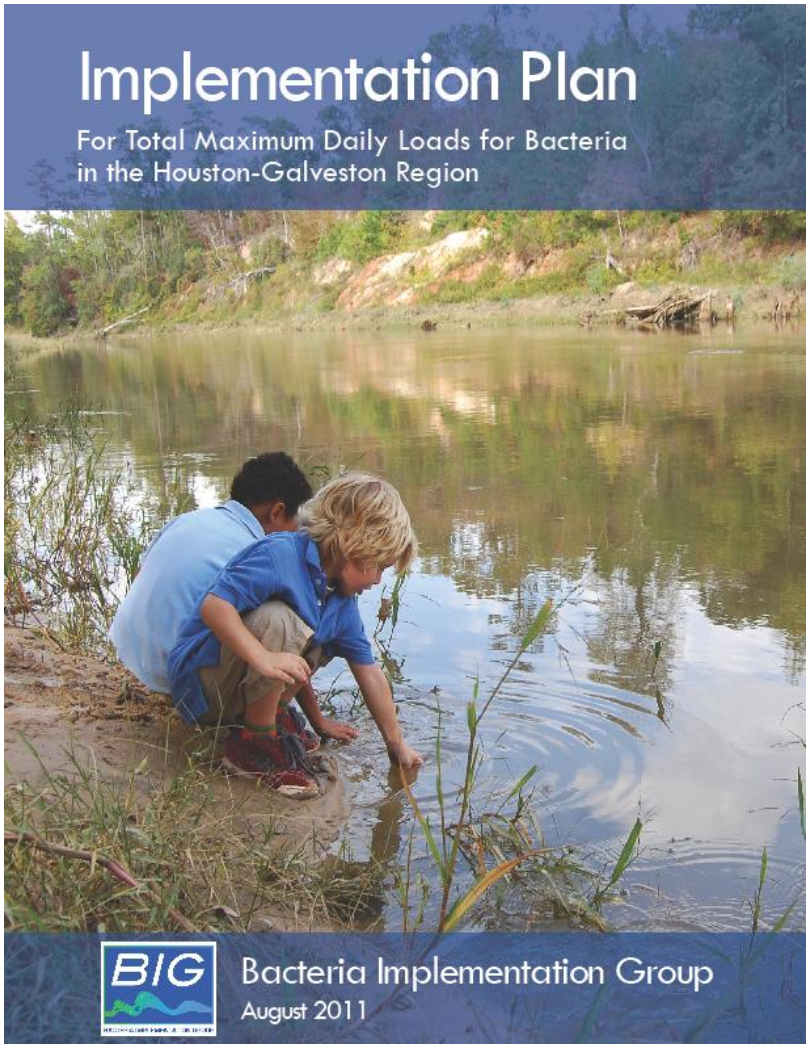
A TMDL is a tool which:

Determines the maximum amount of a Particular pollutant (load) that a water body can absorb and still maintain its standards

A TMDL is also a document submitted to the EPA that:

Identifies the pollutant of concern and its sources, specifies the allowable amount and serves as a framework for corrective action

Elements of an Implementation Plan (I-Plan)

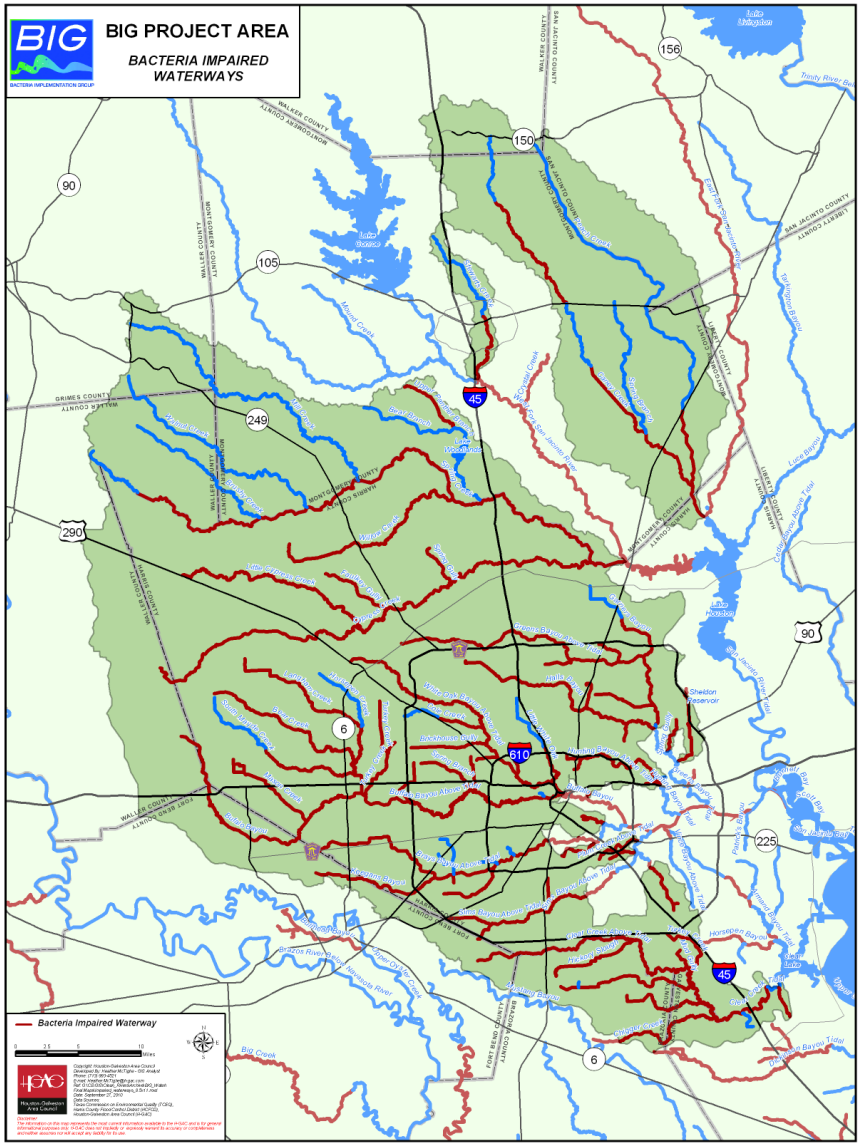


- Management Measures
- Implementation Schedule
- Follow-up Monitoring Plan
- Voluntary Implementation on Non-Point Source Pollution
- Measurable Outcomes

Basic Contents of the Final I-Plan Report

- **Summary of the TMDL**
- **Sustainability** (tracking progress over time)
- **Implementation Strategy** *(adaptive management, check-ins)*
- **Water Quality Indicators** (monitoring results)
- **Management Measures and Control Actions** *(implementation activities)*
- **Communication Strategy** (information out to the public)

Areas Where I-Plans are Completed



Process Conclusions

- Mechanism to address regulated sources
- Mechanism to address complex water quality issues of NPS pollution
- Promote intergovernmental cooperation
- Require community support and input

Project Timeline and Milestones

- ✓ January to April 2013
  - ✓ Coordination Committee Forms
  - ✓ Appoint Work Groups
- ❑ April to May 2013
  - ❑ Work Groups Begin Meeting
  - ❑ Work Groups Develop Recommendations
- ❑ May to August 2013
  - ❑ Report drafting, editing, building support

Thank You!

TCEQ

Houston-Galveston Area Council