Development of a Watershed Protection Plan for Cedar Bayou

Regional Watershed Coordination Steering Committee
Columbus, TX 6/2/11

Development of a Watershed Protection Plan for Cedar Bayou

- Cedar Bayou Watershed Characterization
- Impetus for the project
- Project goals
- Current progress
- Next steps

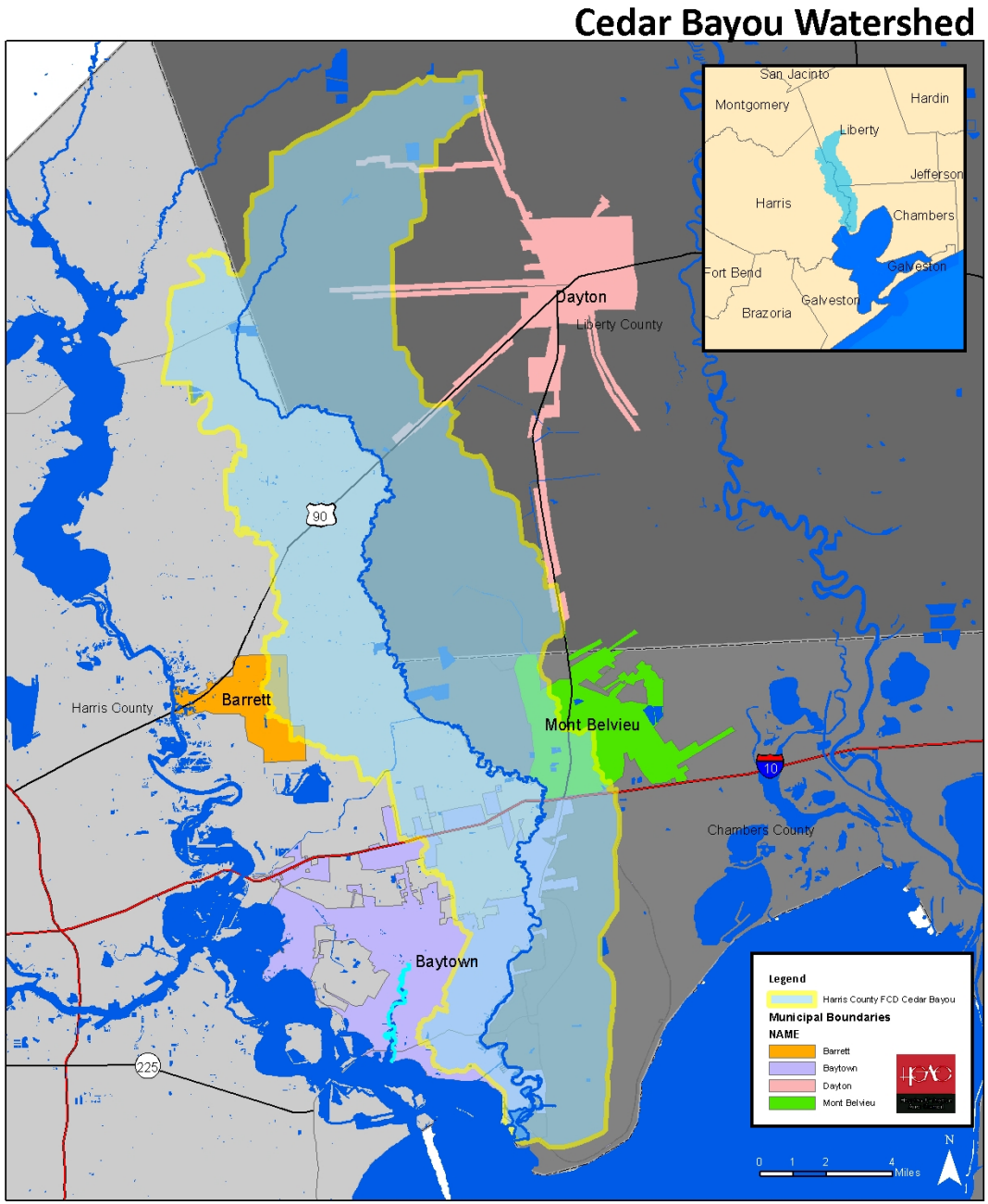
Soil Water TSSWCB

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

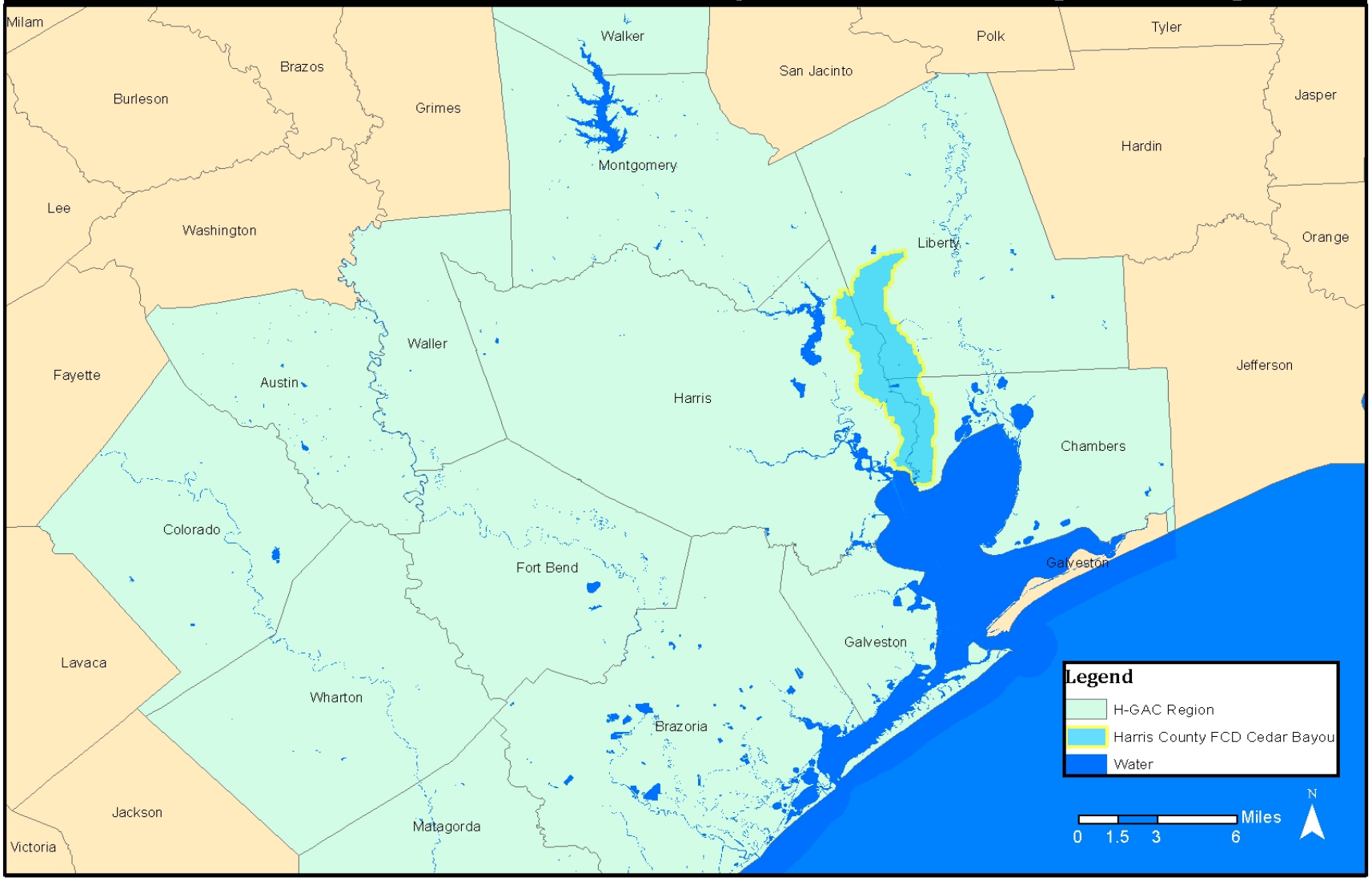
Houston-Galveston Area Council

The Cedar Bayou Watershed

- ~200 square miles
- Bayou is boundary between Harris, Liberty, and Chambers Counties
- Drains to Galveston Bay system

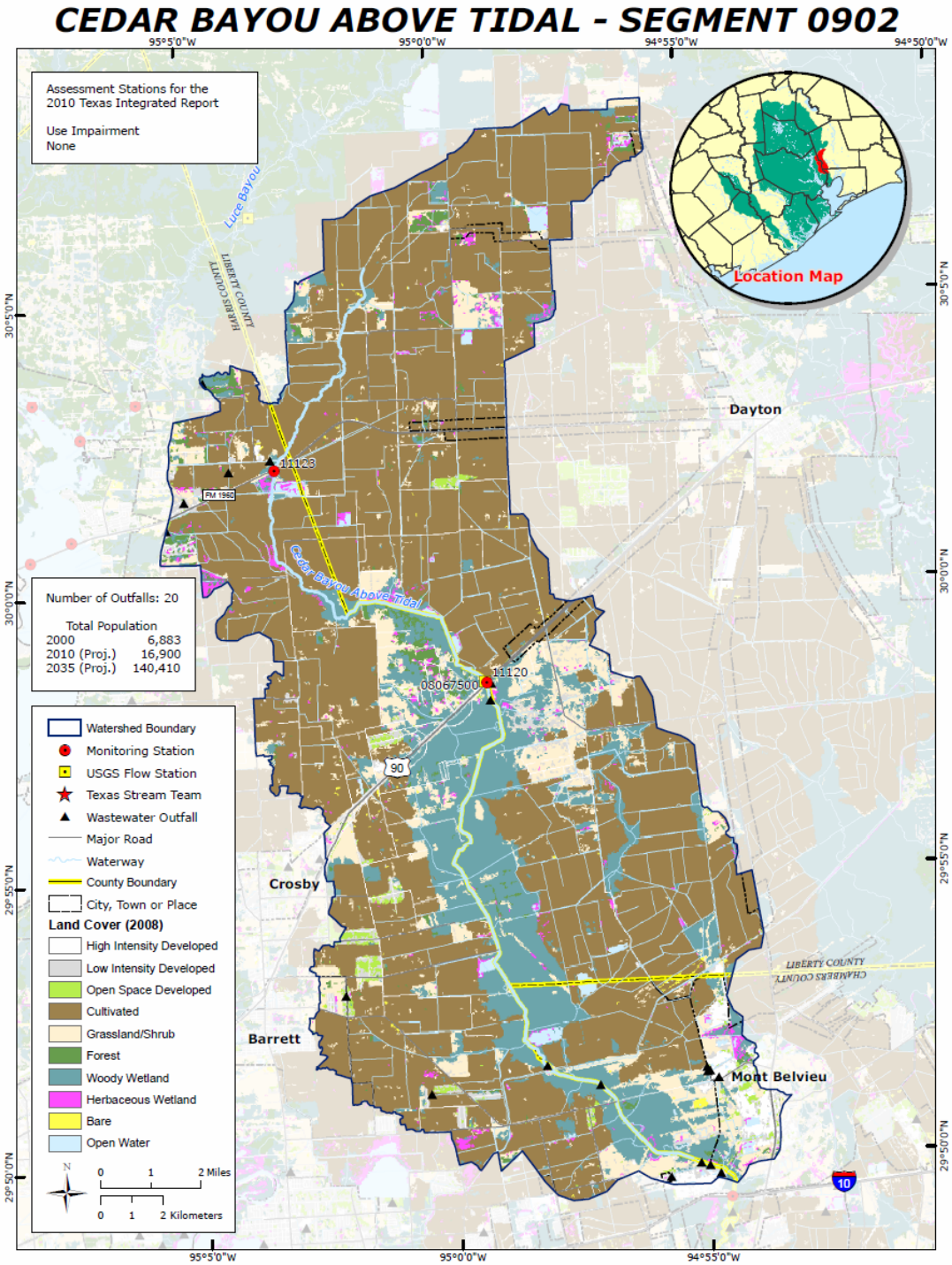


Cedar Bayou Watershed - Regional Perspective



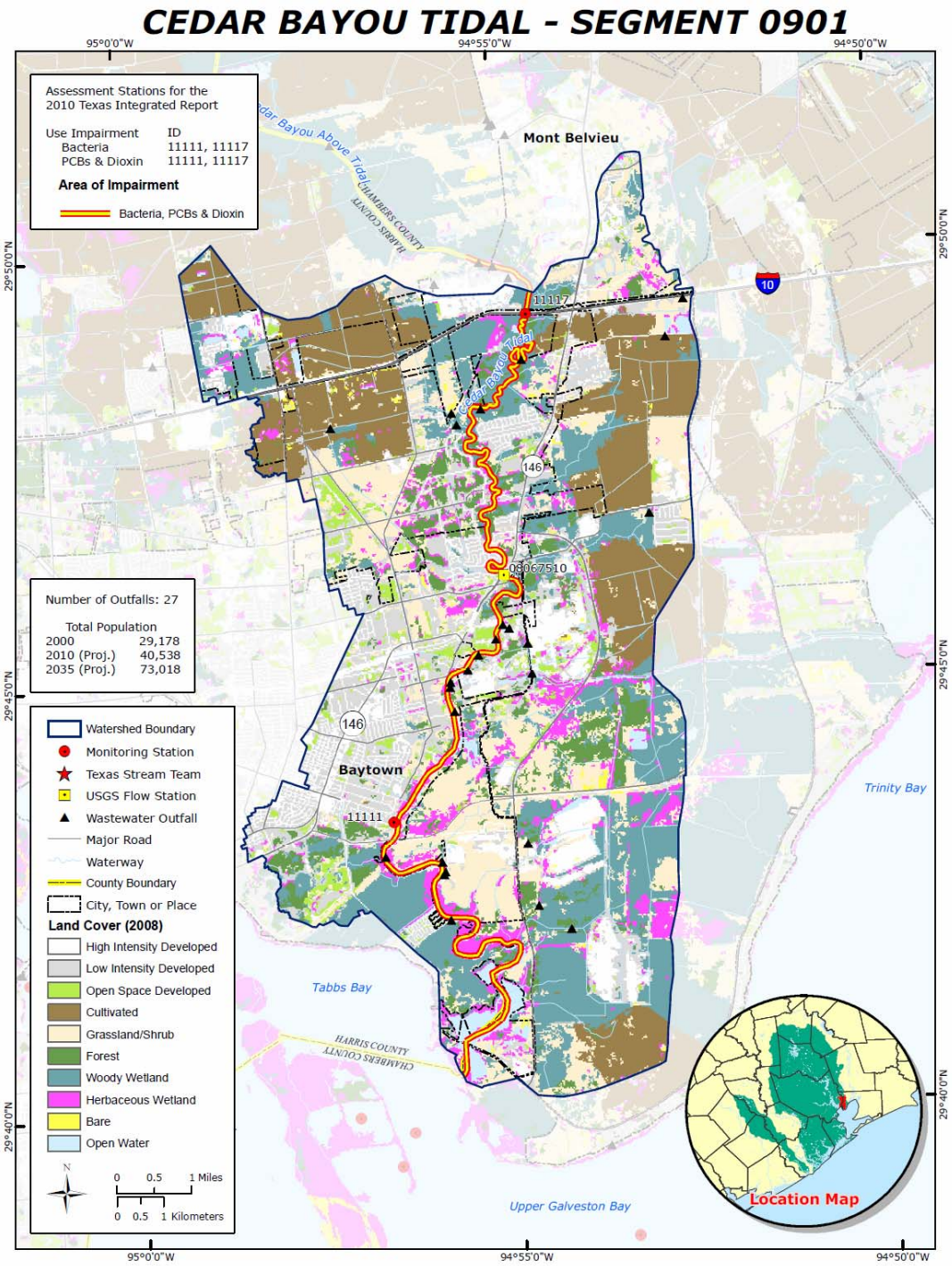
Cedar Bayou Above Tidal

- Originates north of Hwy 90, Liberty Co.
- Parts of the Cities of Crosby, Barrett, Mont Belvieu
- Primary land uses:
  - Rural/agricultural
  - Wetlands
  - Some suburban/urban



Cedar Bayou Tidal

- East of Ship Channel, west of Trinity River
- Parts of the Cities of Baytown, Mont Belvieu
- Primary land uses:
  - Urban
  - Industrial
  - Rural/agricultural
  - Wetlands



Water Quality Impairments

- Bacteria (Tidal, 2008/Draft 2010)

- PCBs/Dioxins (edible tissue, Tidal 2008/Draft 2010)

- Macrobenthic communities (Above Tidal, 2008)

Water Quality Concerns

- Chlorophyll-*a* (Tidal, Draft 2010)
- Macrobenthic communities (Above Tidal, Draft 2010)
- Depressed dissolved oxygen (Above Tidal, Draft 2010)

Potential Future Water Quality Concerns

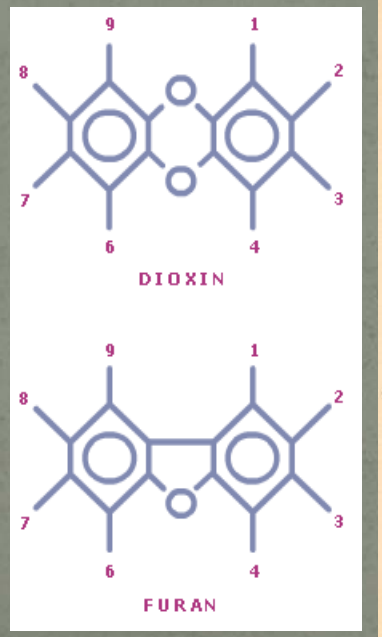
- Nutrients
- Sediment/ channelization
- Loss of riparian buffers
- Increased barge traffic

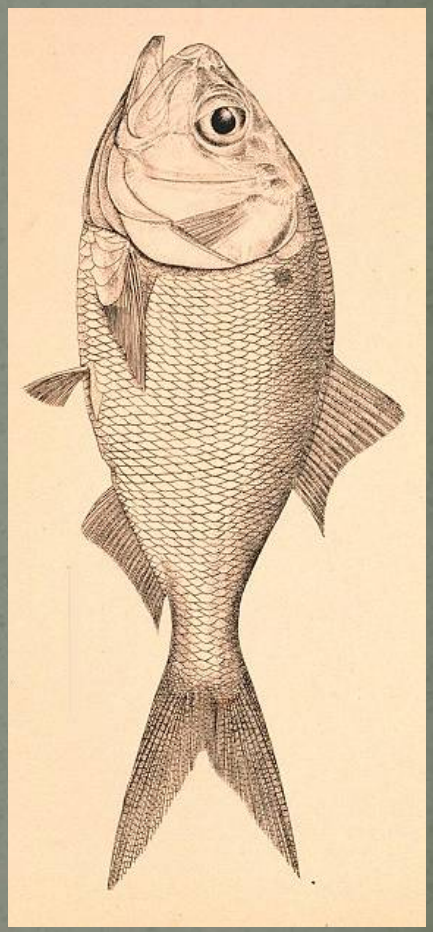
Potential Bacteria Sources

- Agriculture
  - Cattle
  - Other cultivation
- Urban runoff/pets
- WWTFs/OSSFs
- Wildlife

Potential PCBs and Dioxin Sources

- Sampled in fish tissue
- Industry in watershed
- Fish from Bay/Ship Channel
- Ongoing TMDL effort for Upper Galveston Bay





Potential Causes for Impaired Macrobenthic Communities

- Development

- Agricultural activity potential causes

- Conditions in Above Tidal section variable in flow and character

Project Impetus

- 303(d) impairments and concerns
- Affects Galveston Bay, local health and economy
- Strong local involvement
- Urban growth to continue

Project Impetus

- H-GAC worked with TSSWCB to develop 319(h) grant
  - $804,000 in federal funds,
  - $353,876 local match
  - $1,157,876 total

- Initiated late 2010

Project Goals - Purpose

- Evaluate and understand the Cedar Bayou watershed
- Engage local stakeholders and facilitate development of a WPP
- Maintain and improve water quality
- Plan for future watershed concerns

Meeting Project Goals

- Develop QAPPs to monitor and model water quality

- Foster public participation
  - Create Public Participation Plan
  - Develop and engage stakeholder group
  - Hold Texas Watershed Stewards training

Meeting Project Goals

- Characterize the Watershed
  - GIS inventory
  - Land Use/Land Cover Analysis
  - Source Survey
  - Analysis of historical water quality data

Meeting Project Goals

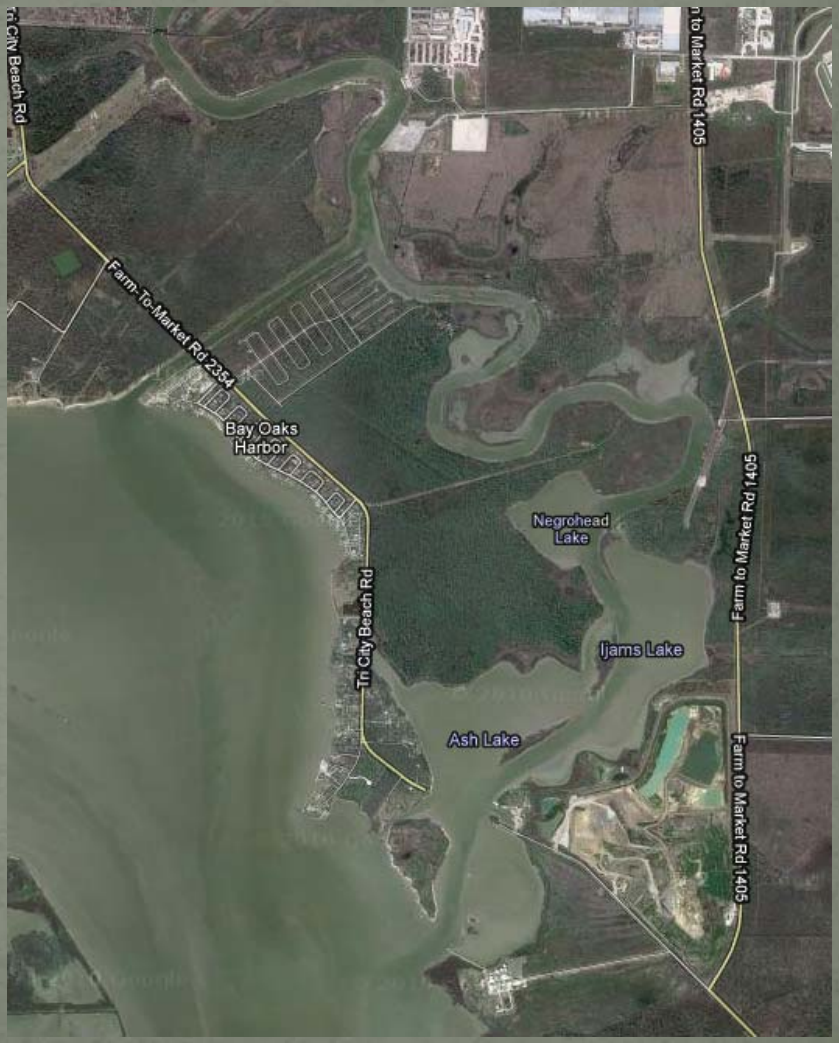
- Monitor water quality
  - Increased ambient monitoring
  - Storm flow monitoring
  - Effluent monitoring (if needed)
  - DO monitoring
  - Biological Assessment

Meeting Project Goals

- Modeling water quality
  - Load duration curves
  - SELECT
  - Tidal
  - Biological (CADDIS)
- Develop Watershed Protection Plan
- Develop Watershed Protection Plan
  - Facilitate stakeholder meetings
  - Evaluate solutions
  - Compile WPP document

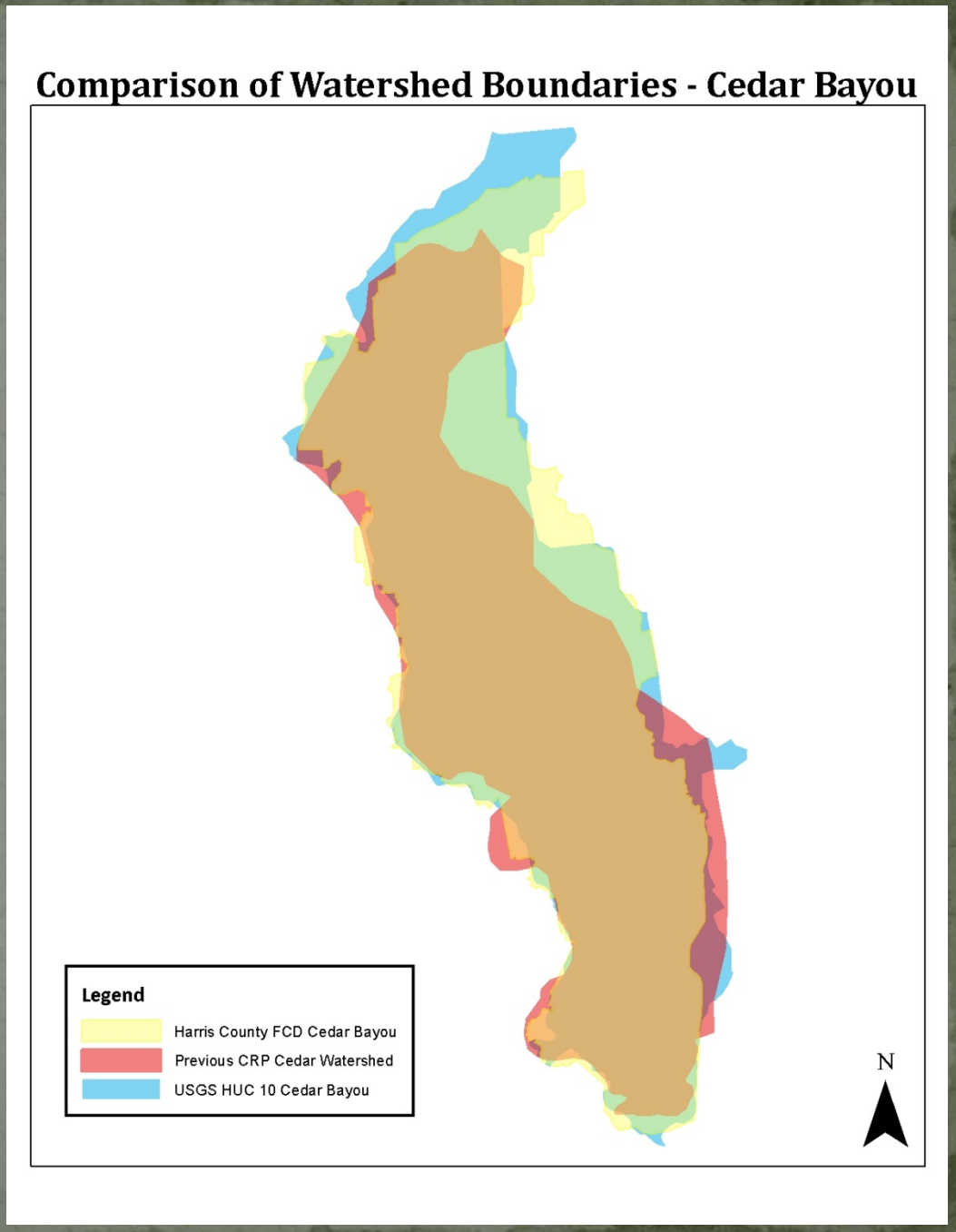
Cedar Bayou – A Complex Challenge

- Diverse land uses
- Uneven development
- Array of contaminants, legacy pollutants
- Complex hydrology
- Diverse stakeholders



For Example

- Watershed boundaries
- Unique hydrology



Current Status

- Held first watershed tour with TSSWCB, GBEP staff
- Developed GIS Inventory
- Developed stakeholder list
- Developed website, Facebook page

About Us | Contact Us | 713-499-6653

CedarBayouWatershedPartnership

Home | Project Background | Project Documents | News | How Can I Get Involved?

A Watershed Protection Plan for Cedar Bayou

A Watershed Protection Plan provides a better understanding of the sources of water pollution and what area governments, individuals, community groups, and business and industry can do to improve water quality. Cedar Bayou is a tributary to the Galveston Bay system, thus any sources of contamination potentially impact a wide range of economic and ecological interests even beyond their watershed of origin.

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Development of a Watershed Protection Plan for Cedar Bayou
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Texas Stream Team volunteers help monitor water quality
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Friends of Cedar Bayou United
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Current Status (cont.)

- Finalizing Draft QAPPs
- Draft monitoring site selection
- Developing RFPs (as needed)
- Reaching out to partners, public
  - Friends of Cedar Bayou United
  - Baytown CAP
  - SWCDs for Harris, Liberty, Chambers

Next Steps

- QAPP submittal
- RFPs for subcontractors
- Begin monitoring
- Begin LDC/SELECT

Next Steps

- Initiating Public Involvement
  - Engaging local Stakeholders
  - Working with strategic partners
- Continue with Plan Development

Any Questions?

For more information, contact:

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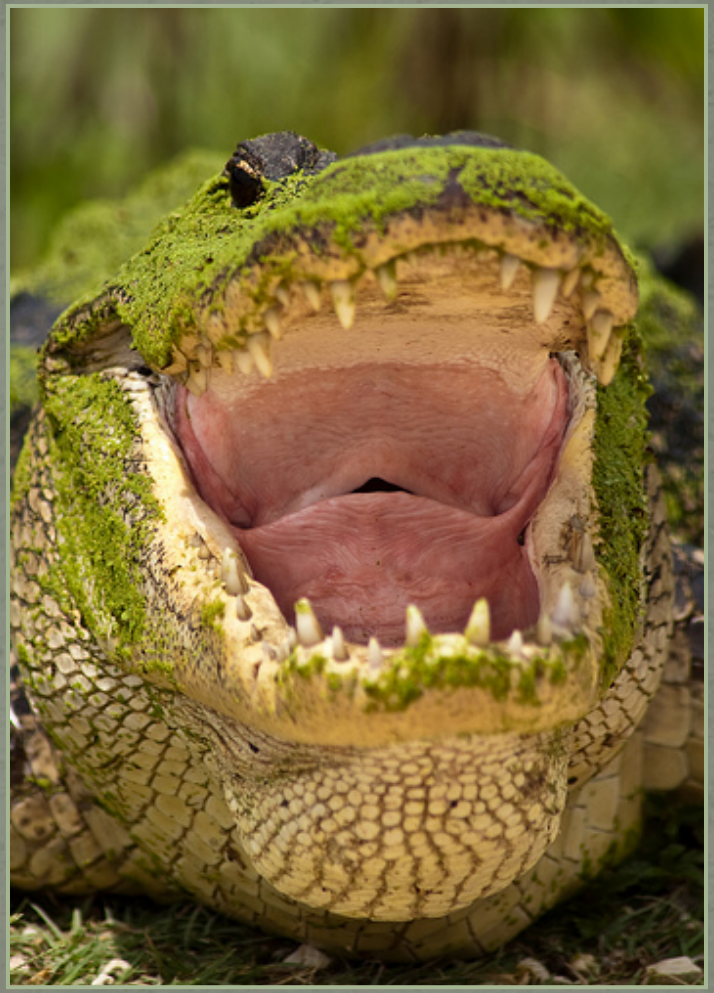

H-GAC's Role with Water Quality

•Work with local p
sample water quali

velop plans
to improve water quality