

## La Nana Bayou Watershed Protection Plan

### Chapter 1 – Watershed Management

#### i. Watershed approach

A watershed is the area of land that water flows across or through as it makes its way to a specific point in a stream, river, lake or even the ocean. That water can come from lots of sources; rainfall, snow melt, springs, even your water hose. Every bit of land on our planet is part of a watershed. Watersheds can contain smaller sub watersheds, and can also be contained within larger watersheds, similar to the way that a city can be within a county, and a county can be within a state. They can be as large as a continent, or as small as a backyard. A healthy watershed, according to the US Environmental Protection Agency (EPA), is an area that supports dynamic environmental processes, habitats of sufficient size and connectivity to support native species, and meets the physical and chemical water quality standards needed to support biological communities. (2) The water that flows into a waterbody directly impacts the quality of that waterbody due to the natural processes and human activities that occur within a watershed.

Watershed-based planning is widely recognized by state, national, and international natural resource agencies as the preferred management method for protecting and restoring the quality of surface water and planning for its future use. (1) Since watersheds do not follow political boundaries such as county lines or city limits, key stakeholders must work together in unique ways to address water quality issues in their watershed. Key stakeholders include individuals, agencies, and organizations that live, work, or have some other relevant interest in the watershed. Involvement from these stakeholders ensures that only the most appropriate activities are selected and implemented for their watershed-based plan.

#### ii. Watershed protection plans

A Watershed Protection Plan (WPP) is a framework developed by stakeholders to address pollution problems through voluntary means. These problems can come from point source pollution, such as industrial discharges or wastewater treatment facilities (WWTFs), or nonpoint source (NPS) pollution, like surface water runoff that carries pollutant loads from urban and rural areas. Within the WPP framework, the technical and financial resources needed to address pollution issues can be better coordinated across stakeholder entities depending on local priorities and needs.

While WPPs can vary greatly across the state and country in terms of content and strategies, the La Nana Bayou WPP will incorporate the EPA's nine key elements of effective watershed protection planning, which include:

1. Identification of causes and sources of impairment
2. Expected load reductions from management strategies
3. Proposed management measures
4. Technical and financial assistance needed to implement management measures
5. Information, education, and public participation needed to support implementation
6. Schedule for implementing management measures

7. Milestones for measuring progress of WPP implementation
8. Criteria for determining the success of WPP implementation
9. Water quality monitoring

iii. Working Together & Partnerships [excerpt from the La Nana Bayou Public Participation Plan]

Stakeholders can participate in the development of the WPP through three main avenues: general participation, indirect participation (coordinating partners), and direct project participants.

*General Participation:* Public involvement is an important aspect of WPP development. General participation is open to any individuals interested in restoring and protecting their watershed. The process of general participation includes public involvement in various outreach events, providing feedback and comments on watershed issues, and give the opportunity to become familiar with the watershed projects.

*Indirect Participation:* Other stakeholder organization groups may have overlapping goals or interests as stakeholders developing the WPP. Those stakeholder organization groups can participate by sharing resources, which increases efficiency and helps to achieve mutual targeted goals. The coordinating partners can be non-governmental organizations, local government, community groups, river authorities, local media outlets, etc. The main goal of establishing coordinating partners in the public participation plan is to include any potential watershed issues that direct project participants may have overlooked.

Coordinating partners can participate in WPP development in the following ways:

- Finding common goals and objectives and overlapping projects with the WPP.
- Identify emerging issues mutual to both the projects.
- Work and plan together with WPP stakeholders WPP to solve the issues.
- Provide feedback and recommendations to WPP stakeholders for consideration.
- Participate in general meetings.
- Develop ideas and strategies to implement the plan.

*Direct Project Participants:* Direct project participants are the stakeholders that actively participate and provide input during the watershed planning and implementation process. These stakeholders work together to make recommendations as to how the pollutant of interest can most efficiently be reduced so that water quality standards are met.

Direct project participants of the La Nana Bayou WPP include but are not limited to:

- Texas Water Resources Institute (TWRI)
- Texas Commission on Environmental Quality (TCEQ)
- Residents of the watershed and surrounding area
- Texas A&M AgriLife Research and Extension Service
- Angelina & Neches River Authority (ANRA)
- Stephen F. Austin State University (SFASU)

- Texas A&M Forest Service (TFS)
- City of Nacogdoches
- Nacogdoches County
- Texas State Soil & Water Conservation Board (TSSWCB)
- Nacogdoches County Soil & Water Conservation District (SWCD)
- Resilient Nacogdoches
- State Representatives Office
- Local Business Owners

Direct project participants can participate in WPP in following ways:

- Provide guidance on potential sources of bacteria and estimated pollutant loads
- Guide identification of measures that could be implemented to address bacteria
- Organize future meetings and discussion
- Set goals and objectives
- Identify level of implementation that is reasonable
- Identify outreach and education that is needed
- Foster implementation of the plan

The stakeholder group represented at the first La Nana Bayou WPP planning meeting agreed to an informal stakeholder group structure where the group would meet to work through the WPP rather than dividing based on interests, unless needed. A fluid stakeholder structure allows the group to have additional meetings outside of the regular meetings to discuss specific portions of the WPP. Decisions about what will or will not be included in the WPP will be determined by consensus. If consensus cannot be reached, a simple majority vote by those present at the meeting will determine the outcome.

#### iv. Education and Outreach

Throughout the process of developing a WPP, stakeholders may choose to participate in relevant education programs that will help inform them on activities and practices that are typically included in WPPs. Education is an integral part of the success of the development and the implementation of a WPP. *\* This section will include an overview of the education and outreach events included in the WPP development process. \**

#### v. Taking Action

Part of the successful development and implementation of any plan - whether watershed-based or otherwise - is incorporating a systematic, iterative approach through adaptive management. The goals of the La Nana Bayou WPP can be reached by learning from favorable and unfavorable outcomes, adjusting inputs, and exploring alternative solutions based on information gathered throughout its implementation. Typically, WPPs are developed based on management measures and goals over a ten-year period; however, adaptive management allows for adjustments to be made as needed based on feedback, needs, and new knowledge.

1. <https://www.epa.gov/sites/default/files/2015-06/documents/watershed-approach-framework.pdf>
2. <https://www.epa.gov/hwp/basic-information-and-answers-frequent-questions>