



PRINCIPLES OF STREAM CORRIDOR RESTORATION

The stream corridors and watersheds of our region are vital resources, forming the foundation for our rich natural history. Yet they have been significantly altered by human activity, stressing the capacity of the streams to achieve a generally stable condition, one that can provide the multiple benefits of a healthily functioning corridor, with its wealth of recreational opportunities, mitigation of flood risk, and protection of water quality.

The Bayou Preservation Association seeks and supports nature-based solutions – working with, not against, nature – to restore the physical, chemical, and biological processes of stream corridor ecosystems. The following guiding principles of stream corridor restoration are fundamental, overarching prerequisites for successful restoration. They will promote a sustainable and resilient landscape to support Houston’s unique cultural and biological diversity. Whenever willing partnerships make it possible, we will prioritize restoration initiatives in areas that have been overlooked and that are located in underserved communities.

Principle 1. Incorporating Outreach for Successful Stream Corridor Restoration. Successful stream restoration starts with community support; it is essential that the community must understand, care about, and help protect their streams. Community engagement from the beginning and throughout the restoration effort is essential. Successful engagement will: consider effective methods of outreach, include early and frequent notifications, and provide for meaningful community input. The content of community communications will utilize common terminology and describe the “why” of restoration, more than the specific methods, all with the goal of cultivating ownership and appreciation for our bayous and the ecosystem services they provide.

Principle 2. Applying a Comprehensive Approach to Preserve, Improve, and Restore Stream Corridors. Stream corridors should be managed comprehensively, i.e., by watershed & floodplain, not just by political or agency boundaries. The entire stream must be considered, including riparian, aquatic, and benthic resources as well as the channel-floodway-floodplain relationships. Furthermore, restoration, enhancement, and improvement of streams should aim to optimize their natural functions and values. Improving the health of the region’s streams and bayous should strive to keep what is good in the stream as well as preserve floodplains. The future health of our stream corridors demands that we avoid or reduce negative outcomes, ensure future adjacent activities (e.g., over development of trails) do not degrade waterways, and require no net loss of riparian function. This is ideally accomplished with a multi-disciplinary approach to project design.

Principle 3. Using Best Practices to Support Stream Form, Functions, and Values. Clearly stated restoration goals with measurable objectives will guide restoration design to accommodate the water and sediment that the stream will carry. Design will incorporate attention to the form of the stream channel’s shape (river morphology), specifically its cross-sectional dimensions (from bank to bank), its meander pattern (when viewed from above), and its upstream-downstream changes in elevation (profile). Best practices to achieve successful stream corridor restoration start with a thorough evaluation of the stream and its current setting in the landscape. This evaluation includes a baseline assessment of physical,

hydrological, and biological conditions, a review of historical conditions, characterization of the watershed, and identification of suitable stream segments, for use as references (morphology templates).

Understanding and following these natural, stable channel design principles will encourage best practices that promote additive stream functions, such as aquatic habitat, riparian habitat, flood mitigation, water quality, among other functions. Additionally, the use of regionally native, diverse vegetation will support ecological diversity.

Principle 4. Planning for Sustainability and Resilience in Future Benefits, Impacts, and Needs.

Successful stream restoration projects not only embrace a comprehensive approach using best design practices, but are also tied to the three interconnected components of sustainable development – the ecologic-economic-social triangle. Addressing sustainability and resiliency requires consideration of both short- and long-term benefits and costs. For stream corridors, this entails, for example, supporting water quality and flood reduction targets, accounting for changes in rainfall/climate, considering future needs of the region, and embracing adaptive management.

Adherence to these four principles for preserving, enhancing, and restoring our stream corridors will help meet the needs of our city and region – both now and into the future – while creating places where people are able to live, work, and play, with all the natural assets these corridors provide.