

# EAHCP STEWARD

News from the Edwards Aquifer Habitat Conservation Plan - November 2020



Bioretention basins come in all shapes and sizes. Some can look like a mere swale in the landscape and others can be highly-landscaped and decorative components of a city's infrastructure. Whatever the outward appearance each bioretention project might be, the engineered water filtering functionality predominantly takes place below ground and out of sight.

"Cities across the country began implementing stormwater treatment practices or green stormwater infrastructure back in the early 1990s to help protect the water quality of streams and rivers flowing through communities," explained Mark Enders, the City of New Braunfels Watershed Program Manager. "Over time, bioretention ponds were studied and proven to be effective at filtering out many pollutants that gather in streets and parking areas and washed away by rainfall. And that is why we located the bioretention pond on the dead-end street of North Houston Avenue that emptied into the Upper Comal [River] Spring Run."

## Bioretention Basins - Continued



*Mark Enders in front of the North Houston Avenue bioretention basin.*

Enders explained that the design of city drainage systems collects stormwater runoff and directs it toward the nearest creek, river or waterbody. The difficult part of that equation is that streets and other impervious surfaces also collect dirt, car oils and grease, pet waste, pesticides from yards and other pollutants as well. After a rain, all of those pollutants are swept up in the stormwater runoff and flow directly into a waterbody. That decreases the water quality of the receiving stream and is doubly problematic for environmentally-sensitive areas like the headwaters of the Comal Springs that are home to endangered species.

The North Houston Bioretention Pond Project in New Braunfels involved the removal of approximately 2,000 square feet of street pavement. The existing asphalt was replaced with a bioretention pond that is designed to collect, filter and treat stormwater runoff prior to entering Landa Lake at the Upper Spring Run. Engineers calculated that the bioretention pond would prevent approximately 700 pounds of sediment, solids and associated pollutants from entering Landa Lake each year.

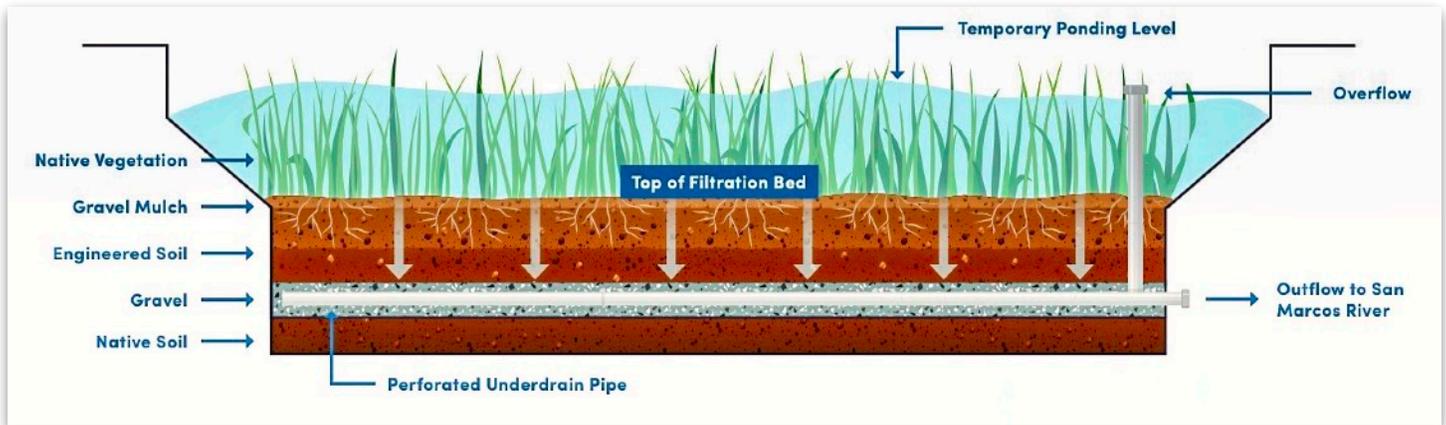
“The project was coordinated through the Edwards Aquifer Habitat Conservation Plan (EAHCP) as it helps the City of New Braunfels to meet endangered species protection requirements in the Edwards Region’s permit with the U.S. Fish and Wildlife Service,” Enders said. “In fact, the EAHCP contributed approximately \$100,000 to the project which covered both design and construction”. The City of New Braunfels will be responsible for its maintenance in the future.

The greatest benefit of bioretention ponds is in capturing and treating the “first-flush” of a storm event. The first-flush is the initial runoff from a storm event that typically transports the most pollutants from impervious surfaces such as streets and parking areas.

In San Marcos, the city incorporated several bioretention ponds in the CM Allen Project, [which recently won an U.S. Environmental Protection Agency award](#), near its city hall and the San Marcos River which included street improvements, large multi-use paths, reoriented crosswalks and drainage improvements. As part of the project, San Marcos rehabilitated one large bioretention pond and added several other small facilities, planted 50 trees and directed much of the stormwater runoff created east of the San Marcos River to the bioretention ponds for filtering out pollutants before the water eventually reached the San Marcos River.

## Bioretention Basins - Continued

“We located the bioretention ponds along CM Allen Parkway because it stands between downtown San Marcos and the San Marcos River,” City of San Marcos Senior Engineer Greg Schwarz explained. “The downtown area obviously contains a lot of impervious cover that collects and directs stormwater toward the San Marcos River. The filtering ponds are situated and designed to slow down the flow of water and filter out pollutants before the below ground drainage pipes carry a better quality of water to the river.”



Schwarz noted that constructing a bioretention pond is not extremely difficult but does require care in making sure the work is done properly and according to specifications. Using an incorrect type of filter fabric between the media and gravel layer, or installing gravel that includes fines, or inadvertently compacting the subgrade where infiltration is wanted can lead to improper function at best or failure at worst. Proper installation will allow as much water as possible to sift through the underground filtering media while also capturing maximum pollutants.

“Most of the funding for the large pond came from the EAHCP and a TCEQ grant acquired by the Meadows Center at Texas State University,” Schwarz said. “But now, the City of San Marcos is responsible for maintaining these facilities, and that really is a key piece of this water quality enhancing puzzle. We will be transitioning the maintenance work from the original contractor to the city. We are studying their techniques and others to make sure that we can efficiently take care of the ponds over time. The effectiveness of the ponds keeping pollutants out of the San Marcos River is only as good as how well they are maintained.”

Schwarz talked about how the city continues to focus on aligning development regulations and city projects with the EAHCP goals. In 2018 the city’s Land Development Code was revised to include regulations calling for more post construction stormwater pollution prevention facilities to be included with each project in areas considered to be environmentally sensitive. One unique component of the regulations includes an opportunity for development projects located in and near the downtown area where higher development density is allowed to pay a fee instead of constructing their own water quality structures. The city uses those dollars to build a regional stormwater pollution reducing system to gather stormwater from a larger area. Additionally, the city looks at creative ways to incorporate stormwater controls in their Capital Improvement Projects.

“These bioretention ponds are a part of a larger effort to ensure we protect our overall environment and especially the most sensitive areas which include the springs systems supporting the endangered species in San Marcos and New Braunfels,” Schwarz concluded. “We know that the general public is more aware of these issues today and are definitely supportive of measures we are implementing to improve the natural environment which sustains us all. That is what we strive to do each day and finding new and better ways to get that job done is always top of mind.”



# EAHCP STEWARD SHORT TAKES

## Make Plans to Attend the National Habitat Conservation Plan Coalition Annual Meeting - November 17-18

The 2020 National Habitat Conservation Plan Coalition Annual Meeting will be held November 17-18 via video conference. Topics include updates from the USFWS, tracking HCP successes and lessons learned from HCP planning. Additionally, Dr. Kimberley Meitzen will be providing a presentation on the impacts of recreation on Texas wild-rice and aquatic vegetation and Dr. Chad Furl will be presenting an overview of managing groundwater-dependent threatened and endangered species. This year's keynote speakers are Bruce Babbitt (former Secretary of the Interior and Governor of Arizona) and Dr. Mamie Parker (former Assistant Director of Fisheries and Habitat Conservation for the USFWS).

To register to this free event, please visit: <https://www.nhpccoalition.org/>



Join us!  
National Habitat Conservation Plan Coalition's  
**ANNUAL MEETING**  
virtual! free! 2020

NOVEMBER 17 & 18  
10 AM - 2 PM PST

**KEYNOTE SPEAKERS**  
Bruce Babbitt  
Dr. Mamie Parker

The annual meeting brings together HCP practitioners from across the country, including federal, state, and local agency staff, consultants, stakeholders, policy experts, and scientists.

**TOPICS INCLUDE**

- Updates from USFWS Headquarters
- Communicating and tracking HCP success
- Agriculture's role in conservation
- Monitoring species' response to management actions
- Impacts of COVID/pandemic policies on HCP implementation
- Management of groundwater-dependent ecosystems for species
- Permit integration (aligning ESA, 404, NEPA, NDAA for streamlined permitting processes)
- Lessons learned from HCP planning and implementation

Visit [www.nhpccoalition.org](http://www.nhpccoalition.org)  
Register by 11/6 at <http://tiny.cc/nhpc>

**QUESTIONS** John Hopkins | (530) 756-6455 (Note: PST) | [john4ubi@gmail.com](mailto:john4ubi@gmail.com)

## Mark Your Calendars - Final EAHCP Meetings for 2020

### Joint Implementing and Stakeholder Committees Meeting

When: December 17, 2020 - 10:00 AM

Location: Teleconference via Microsoft Teams

### Springflow Habitat Protection Work Group Meeting (11)

When: November 19, 2020

Location: Web-Conference via Microsoft Teams; 9 a.m.