

An aerial photograph of a diver underwater, illuminated by a bright flashlight beam. The diver is wearing a blue wetsuit and a red life preserver. The water is dark blue with some green algae or plants visible.

EAHCP STEWARD

News from the Edwards Aquifer Habitat Conservation Plan - Jan.-Feb. 2023

An aerial photograph showing the Landa Park Aquatic Center, a large blue swimming pool, and a large, mostly empty parking lot. The pool is surrounded by green grass and some trees. The parking lot is paved and has several cars parked. A road runs along the right side of the parking lot, and a bridge is visible in the distance.

New and Environmentally Improved

EAHCP and City of New Braunfels converting a landmark parking lot to protect endangered species.

The two-acre parking lot that has served the Landa Park Aquatic Center for decades is not only getting a top to bottom overhaul, but a brand new bioretention system as well to improve the quality of water the property catches and funnels toward the Comal River. While this major project has been on the drawing board for a while, it wasn't until the Edwards Aquifer Habitat Conservation Plan (EAHCP) stepped in to assist in this project that directly effects the threatened and endangered species living in the Comal River.

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New and Environmentally Improved - Continued

“The Aquatic Center’s parking lot is only a stone’s throw away from where federally protected endangered species thrive in the Comal Springs and new channel of the Comal River,” said City of New Braunfels Watershed Coordinator Phillip Quast. “Once we started talking with the EAHCP team, we knew that we could elevate this typical parking lot



Phillip Quast is working with EAHCP staff on this project implementation.

repaving into a water quality enhancement type project. And so with the infusion of EAHCP funding and the EAHCP team’s planning and administrative assistance, we were able to get to work in moving the project forward late last year.”

“There are some additional costs for including a bioretention basin to a parking lot like this. However, when you weigh the minimal extra investment against the major reduction in pollutants to the environment and benefits to the Comal River that draws so many people here, this is definitely a step in the right direction for the future of our city and how we protect endangered species over time.”

In addition to the traditional paving and striping work, the Aquatic Center parking lot is being retrofitted with a bioretention basin in the center of the lot to treat stormwater runoff from the entire parking lot which flows directly to the Comal River. Native plants and trees will be planted in the basin to enhance appearance, improve water quality and provide much needed shade for the parking lot.

Vehicle wheel stops along with a ribbon curb are designed so that parking lot runoff will shift stormwater flow into the filtering basin, thus, avoiding concentrated discharge points and the potential for sediment accumulation that can impeded water flow. Existing trees will be preserved and the bioretention outlet will use a 24” reinforced concrete pipe to connect to an existing stormwater pipe that currently discharges to the Comal River.

“The bioretention basin water quality component was designed per the Texas Commission on Environmental Quality (TCEQ) Edwards Aquifer Protection standards,” Quast noted. “We will also be adding layers of TCEQ-approved filtering media such as sand, compost and other loamy soil types. These filtering media are specifically designed not to compact as water flows through it and, most importantly, filter out pollutants. We will also be installing a bio-swale with a slight slope of 0.6% to promote filtering and nutrient uptake as stormwater runs through the bioretention basin. Finally, the City of New Braunfels will be responsible for monitoring and maintaining the new basin to ensure that it efficiently removes typical parking lot pollutants from rainwater runoff before they can reach the Comal River.”

New and Environmentally Improved - Continued

Quast explained that the bioretention basin project is similar to French drains that homeowners and business owners might install in their landscapes to divert large amounts of rainfall in order to prevent ponding and erosion from occurring. One major difference the Aquatic Center's bioretention basin will have from a typical



Here's a look at some of the early construction at the Landa Park parking lot.

French drain is its maintenance access piping. From time to time, the City of New Braunfels will be able to bring in vacuum trucks and tie into strategically placed PVC pipes that slightly protrude from the basin to remove accumulated sediment.

These types of projects come under the heading of “low impact development.” The term refers to systems and practices that mimic natural processes that result in the filtration of stormwater which protects water resources and associated aquatic habitat.

Non-point source pollution is a prevalent problem throughout the world, and bioretention basins have been deployed worldwide to treat stormwater runoff to protect a community's water resources. Today, they are now considered a Best Management Practice by the U.S. Environmental Protection Agency for removing potentially toxic pollutants from stormwater runoff. Over the past few decades numerous studies have been conducted to test the water quality before and after biofiltration and the results have been impressive.

One particular study by Washington State University for the City of Seattle, an area of the country with seemingly nonstop rainfall, showed that a bioretention basin can significantly reduce pollutants from the stormwater stream.

Researchers chemically analyzed the water before being passed through a bioretention system and found various pollutants including metals, copper and zinc, and hydrocarbons which are products of vehicles. After filtration, results showed that those pollutants were greatly reduced from around 70-100 percent. Washington State concluded that a relatively inexpensive approach such as bioretention basins and/or rain gardens made up of sand and compost, can greatly reduce pollutant loads to aquatic systems, resulting in greatly reduced toxicity to aquatic organisms.

[You can read more about that study here.](#)

New and Environmentally Improved - Continued



“The overall project will be completed this spring and we’re definitely anxious to get the bioretention system online,” Quast commented. “In addition to being a consequential improvement to the Landa Park infrastructure, this will also be a great way for us to let visitors know about our efforts to protect the river’s water quality and the endangered species. There will be several signs associated with the bioretention basin that will explain its purpose. And we all know Landa Park is a favorite recreational destination for those living in this part of the State, so we’re expecting to reach a lot of people with our pollution prevention message.”

Key Landa Park Aquatic Center statistics:

- Drainage area = 1.91 acres
Impervious area = 1.59 acres (83%)
- Water quality volume provided = 3,241 cubic feet at elevation 624.5. Biofiltration media elevation = 623.1
- Total suspended sediment managed per year = 1,427 pounds

You can learn more about low impact development at this link to EPA website. [Just click this link.](#)

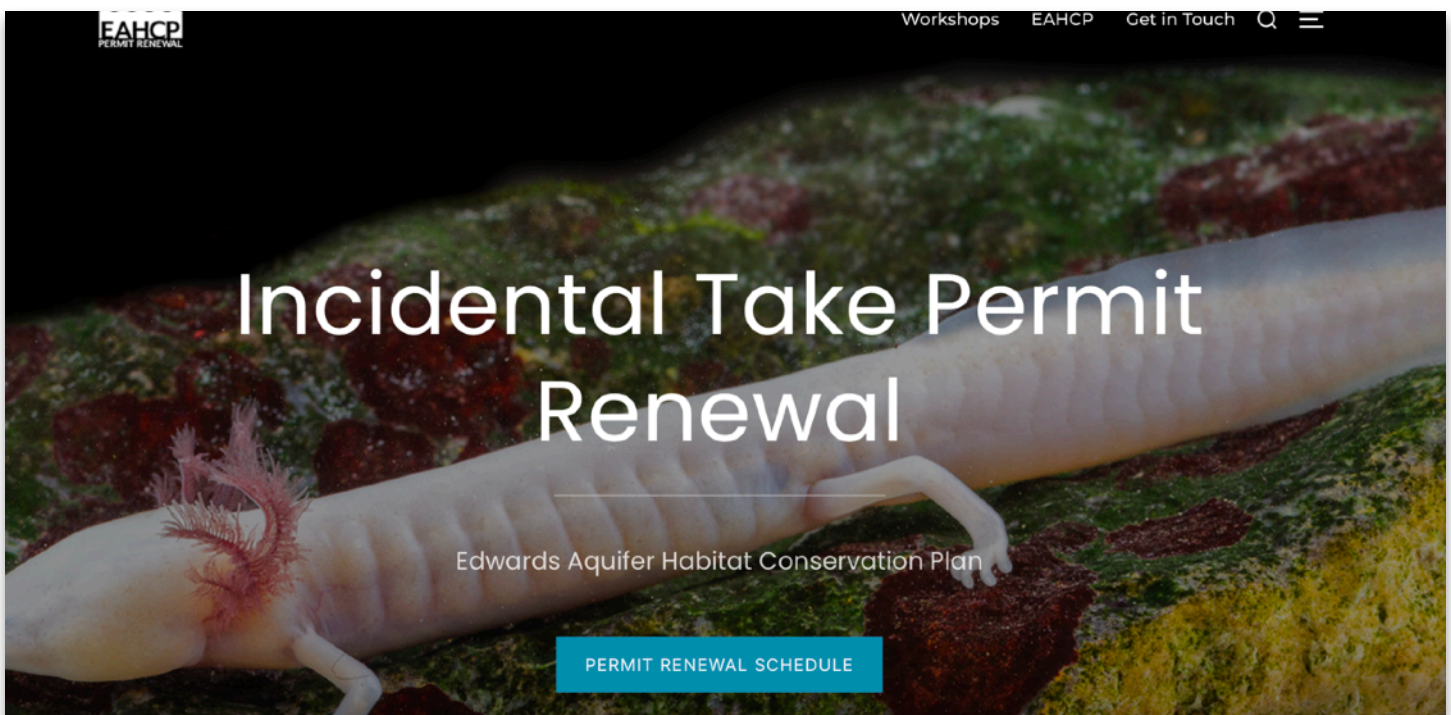


EAHCP STEWARD SHORT TAKES

EAHCP Stakeholder Committee Meeting - February 9

The next meeting of the EAHCP Stakeholder Committee will be held Thursday, Feb. 9 at the Edwards Aquifer Authority offices in San Antonio.

Follow the Progress of the ITP Renewal Process Online



The current Edwards Aquifer Recovery Implementation Program Incidental Take Permit (ITP) expires March 31, 2028. The Edwards Aquifer Authority Board approved a contract in April 2022 to perform technical services to plan for a permit renewal. The permit renewal of the Edwards Aquifer Habitat Conservation Plan is a four phase process. You can keep up with all of the ITP progress by bookmarking the website at: www.eahcprenewal.org.