



SHORELINE PARK DEVELOPMENT BACKGROUND

This document was created to provide information regarding the proposed development of Shoreline Park in the extraterritorial jurisdiction area (ETJ) of the City of Boerne. The proposed 100-acre development by KB Homes is part of a 12,500-acre watershed area and represents less than 1% of that area. Neither the city or the county has the power to regulate the density of this development which is planned for 360 homes.

The development will have 19.8 acres of open space and will be served water and wastewater treatment utility services from Kendall West Utilities (KWU). Wastewater will not be treated on site – it will flow via pipeline to the KWU wastewater treatment plant at Tapatio Springs. The property is scheduled to be developed in 3 or more phases. Each will require a preliminary and final plat subject to review and approval by city staff and/or by the Planning and Zoning Commission.

There will be multiple opportunities during the development process to monitor and verify progress on all aspects of the development including drainage and stormwater pollution mitigation. Approximately half of the property will drain toward Boerne City Lake while the other half will drain onto City of Boerne property and eventually to Cibolo Creek.

The engineering and drainage reports for Shoreline Park have been performed by TetraTech Engineering. This firm was recommended by the City of Boerne to the developer (KB Homes) and the same firm provided consulting services for the city's recent updates to its Low Impact Development (LID) requirements in accordance with San Antonio River Authority (SARA) guidelines. The city hired Jeff Moeller (Moeller & Associates) to review the TetraTech reports and to assist the City with the technical review of both stormwater quality and quantity as it relates to the Shoreline Park development.

Water quantity, quality, and pollution control is of the utmost concern to the city. The design engineer (TetraTech) states in their report that “the proposed development as presented in this master drainage study will not cause any adverse impacts to water quality or quantity downstream of the project”.

This statement applies to water impacts to Boerne City Lake as well as to the Cibolo Creek. Licensed engineers are required to protect the health safety and welfare of the public. An engineer can lose their license if they sign and seal a plan that has a negative effect on the health, safety and welfare of the public.

Stormwater quality requirements often address the filtration of the “first flush” of stormwater runoff, which is where most pollutants are contained during a rainfall event. The City of Boerne ordinance applicable to a development near the lake requires the first one-half inch of rainfall runoff to be diverted and treated. The proposed design also includes buffers between treatment features and streams and lakes that will provide additional, natural filtration to remove additional pollutants.

The City of Boerne requirements for stormwater treatment and buffer zones are equal to or exceed the norms for water quality treatment in most Texas cities. Many cities do not have any requirements (Kerrville and Fredericksburg for example) and Boerne's requirements are equal to those of much larger cities with adjacency to environmentally sensitive areas such as New Braunfels. Stormwater runoff in that city impacts the Guadalupe River and the Comal River which is home to several endangered species. New Braunfels is also located in the Edwards Aquifer Recharge Zone, and the aquifer is the primary drinking water source for over 2 million people. The City of Boerne's largest water supply source is Canyon Lake and there are thousands of homes built in close proximity to it with no watershed quality restrictions, LID requirements, or water quality buffers required.

Matkin-Hoover Engineering has reported on behalf of KB Homes that their preliminary calculations show that the stormwater treatment features planned for Shoreline Park will remove just under 80% of pollutants captured in the first flush that drains to the LID features. In addition, the proposed 300' natural buffer between the lot lines and the lake, which exceeds City of Boerne and most other city's surveyed buffer requirements, will remove approximately 60% of whatever pollutants remain for an estimated 92% pollutant removal total. The standard target for total suspended solids (TSS) pollutant removal is 70-80% and this information indicates the Shoreline Park Development will exceed those standards. KB Homes has committed to providing deed restrictions through Conditions, Covenants and Restrictions (CCRs) that will allow for ongoing maintenance and inspection of stormwater pollution features.

The stormwater that does not flow toward Boerne City Lake will be directed to a detention pond and then released. The stormwater will then travel across 2000' of natural vegetation on city owned property to the Cibolo Creek.

While not required by any ordinance or rule, KB Homes hired geological and environmental consultants Frost Geosciences, Inc. to conduct independent studies of wildlife habitat on the 100-acre site specifically to include Bald Eagle and Golden Cheeked Warbler habitat. The studies determined that there were no areas of concern on the site that would be impacted by development.

The City is presently drawing samples once a month from 4 locations at the lake and testing for bacteria, pesticide and herbicide levels to establish a baseline for the lake. The 12,500 acres of open space, farm and ranch land and other residential developments in the watershed above the lake all have an impact on pollutants in the lake as do the fish and wildlife within and around the lake itself. The City's water treatment plant has been functioning well for over 30 years treating the water impounded at the lake and the city has no reason to believe that the Shoreline Park Development will negatively impact the plants proper functioning. The City of Boerne has been recognized with a Superior water supply system designation by TCEQ.

The new precipitation data that was provided recently by NOAA (Atlas 14) impacts stormwater quantity, but not quality. It has no impact on the city's current ordinance requirements for LID features which are designed to capture and treat the first ½ inch flush of a storm event, which holds most of the pollutants. Rainfall amounts above that amount is rerouted to not overrun the LID features and is treated by the natural vegetated buffers (300 feet to the lake and 2000 feet to the Cibolo Creek).

Under the Clean Water Act it is unlawful to discharge pollutants from a point source into navigable waters without a permit. This would apply to a commercial/industrial type of development or to a wastewater treatment plant such as the two the city operates. It does not apply to individual homes, farms or ranches unless they are discharging wastewater directly into the lake (like a malfunctioning septic system).

Documents submitted for approval by the Shoreline Park developer were also reviewed by the County Engineer's office as well as the Kendall County Fire Marshal due to its location outside the city limits. Documents submitted for final plats will include letters/memos of compliance to applicable rules and regulations from all reviewing agencies including the City, Kendall County, Cow Creek Groundwater Conservation District, and Bandera Electric Cooperative.

In summary:

- The City of Boerne proactively implemented stormwater runoff and pollutant protection ordinances over ten years ago to protect Boerne City Lake, an important water supply and recreational amenity for the citizens of Boerne.
- The water filtration features proposed for the development meet or exceed all City of Boerne ordinances and standards and are comparable to the standards of other cities in the state and will remove approximately 92% of pollutants that might flow toward the lake, a much higher percentage than is typical in other cities including those with environmentally sensitive areas, creeks, streams and aquifers.
- Engineering studies state that Boerne City Lake & the Cibolo Creek will not be harmed by pollutants from the Shoreline Park Development due to adherence to those ordinance requirements and the city's existing rules and regulations.
- Water quantity, quality, and pollution control is of the utmost concern to the city. The design engineer (TetraTech) states in their report that "the proposed development as presented in this master drainage study will not cause any adverse impacts to water quality or quantity downstream of the project".

Cal Chapman
301 Lake View Drive
Boerne, Texas 78006

May 22, 2021

The Honorable Mayor Tim Handren
City of Boerne
402 East Blanco Road
Boerne, Texas 78006

Via E-Mail: thandren@boerne-tx.gov

Dear Mayor Handren:

This letter is being sent to you, and to the San Antonio River Authority's environmental investigation team by e-mail. It recounts a rainfall event during the day of May 18, 2021, which resulted in major storm-water flows out of the Shoreline Park water detention pond. I took photos and videos of these water flows, all of which were heavily laden with silts, clays, muds and other debris.



The aerial photo above is from Google Maps, showing the contaminated storm-water flow path from the Shoreline Park detention pond to beyond the Ranger Creek Road bridge across Cibolo Creek. This distance of contamination travel is more than 1.37 miles. In my experience, this rain event was not an unusually large storm, in terms of either total rainfall or intensity.

I drove from my Boerne office out to Ranger Creek Road during this rain event. My sense is that a half-inch to three-quarters of an inch had fallen at most, when I took the “during storm” pictures. Some photos and video excerpts are provided in this report, and I offer all of my information on file to support this letter’s descriptions. Overall, they show the following impacts:



1. Possible erosion damage to City land (above) about 60 feet to east of small road that runs from Ranger Creek Road to the City Surface Water Treatment Plant. This was being caused by the concentrated flow coming out of detention pond and then under the City road through two existing culverts. When I took photos and videos, water was no longer flowing across the road but debris lines show what had been an earlier flow across it (below);



2. Heavy silt, clay and mud “turbidity” impact at small “tank” at far east end of City Treatment Plant property, and shown by “middle” red circle drawn on aerial photo above.

This tank is about 2,100 running feet downslope/downstream of the Shoreline Park detention pond outlet. The City-owned pond or tank water level remains higher, as of May 21 and 22 than seen before, three and four days after last significant rainfall. This may be due to a culvert or other drainage outfall being clogged with silt and debris from Shoreline Park detention pond;



- I then took two photos of turbidity/mud impact to the flowing surface water on Cibolo Creek, at its crossing under the Ranger Creek Road bridge. The mud discoloration was clearly linked back to the Shoreline Park detention pond, as I and other residents in the area have never before seen this type of silt impact at the bridge, from rain runoffs in “other than flood stage” conditions.



South side of Ranger Creek Road Bridge Over Cibolo Creek, May 18, 2021, 6:54 PM CDT

This location, in above photo, is about 1.37 miles downslope of the Shoreline Park detention pond's outlet structure. The photo shows a clean, clear water surface in far right background, where a very small eddy area is unaffected by the new mud contamination. The rest of the creek surface and first few inches of depth show mud/silt/clay suspended in the moving creek water. By this time of day, the storm event had been "over and done with" for at least three hours, I believe. The next photo shows the muddy impact downstream toward Interstate 10:



I did not drive farther into Boerne to see whether turbid/muddy water was visible at other creek crossings, on May 18th. During the next storm event, I plan to go to the next bridge east of Interstate 10, which appears to be at Johns Road. That is another 2.15 miles of creek run, plus or minus, below the Ranger Creek Road bridge.

I have lived in the Lake Country subdivision, about two miles to the west of Interstate 10 out Ranger Creek Road, since February 2006. Even during flood events, I have never seen this sort of muddy discoloration in Cibolo Creek at this bridge. As of Saturday morning, May 22nd, the muddy coloring and high water level in the “tank” on City property, more than 2,000 feet below the Shoreline Park outlet, is still present, as seen in photo below:



On June 27, 2019, the City of Boerne issued a press release (copy attached) about Shoreline Park. Multiple statements by City staff gave assurance that this development would not cause adverse impacts to Cibolo Creek or Boerne Lake. The release of contaminants shown in photos above does represent adverse impact to Cibolo Creek and at least four different “tanks” along its course in just the 1.37 miles described in this letter. Also, the Cibolo is habitat for the Guadalupe Bass, state fish of Texas, which is in spawning season now. There have already been negative environmental effects on fish, crustaceans, insect larvae, and other organisms in the Cibolo, based on the water quality damage observed and documented.

The last few weeks have been wetter, compared to prior months, which is fortunate for our community, water supplies, and general comfort. What I see, though, with respect to this development work, is that the Shoreline Park detention pond has already filled to several inches, or even to a couple of feet of depth with muds. This loss of capacity is probably causing faster water outflows from the detention structure, and much more transport of mud and debris. Whether the engineering design and construction has been performed properly or not, the developer has responsibilities to clean out and properly maintain/manage all of the “best management practices” (BMP’s) used for storm-water control, and to perform regular inspections. One inspection part is to document failures of BMP’s, and then to state the actions that will be taken to correct the failures. All of these physical circumstances, and the related documentation need thorough review by the City of Boerne, San Antonio River Authority environmental investigations personnel, Texas

Commission on Environmental Quality (the regulating agency), and concerned citizens/local residents.

Please contact me with questions or comments, at your earliest convenience.

Sincerely,

A handwritten signature in blue ink, appearing to read "Cal Chapman". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Cal Chapman, P. E.
Cell 210-748-3311

cc: San Antonio River Authority, Environmental Investigations Team,
saralab@sariverauthority.org

Cal Chapman
301 Lake View Drive
Boerne, Texas 78006

May 25, 2021

Mr. Ronnie Hernandez, Environmental Investigator
San Antonio River Authority
Via E-Mail: ronnie@sariverauthority.org

Dear Mr. Hernandez:

Thank you for getting to the field to see conditions along the Cibolo Creek drainage, and starting at the under-construction Shoreline Park development shown in mapping below. In the rain event of May 18, 2021, I documented major storm-water flows out of the Shoreline Park water detention pond. This document, though, includes photos and comments pertaining to a rainfall of early morning, May 24, 2021, which at my house (about one mile by air west-northwest of the Shoreline Park detention pond) delivered about 0.7 inch of rain. This was a minor storm, but I found heavy impact once again to the tributary pond (middle red circle below), and then down the Cibolo Creek drainage.



The aerial photo above is from Google Maps, showing the contaminated storm-water flow path from the Shoreline Park detention pond to beyond the Ranger Creek Road bridge across Cibolo Creek. This distance of contamination travel is more than 1.37 miles. My photos in this letter were taken for a much greater distance downstream, finding muddy water more than 3.5 creek miles from the Shoreline Park boundary.

Once again, I found heavy impact to the pond on City property, about 2,100 running feet downslope/downstream of the Shoreline Park detention pond outlet. The City-owned pond or tank water level remains higher, as of May 25 than seen before, likely due to a culvert or other drainage

outfall being clogged with silt and debris from Shoreline Park detention pond. The clear storm water on grass in foreground gives stark comparison to brown, mud-laden water in pond.



I then took two photos of turbidity/mud impact to the flowing surface water on Cibolo Creek, at its crossing under the Ranger Creek Road bridge. The mud discoloration was clearly linked back to the Shoreline Park detention pond, same as that seen after May 18 rainfall.



South side of Ranger Creek Road Bridge Over Cibolo Creek, May 24, 2021, 7:44 AM CDT

This location, in above photo, is about 1.37 miles downslope of the Shoreline Park detention pond's outlet structure. The next photo shows impact downstream at the Johns Road bridge across the Cibolo. That is another 2.15 miles of creek run, plus or minus, below the Ranger Creek Road bridge.



From this point, I drove south on School Street, crossed the Cibolo on that road's bridge and saw the same brown, muddy impact. I parked beside Frederick Creek, the next creek crossing to the south, and took the following photo. Though slightly blurry, it is running with mostly clear water, showing no impact similar to the Cibolo.

The time of this Frederick Creek photo was about 7:57 AM on the 24th, so only about 13 minutes after my picture at the Ranger Creek Road bridge.



Though I did not drive to the downtown “duck pond,” that must have had impact. From the Shoreline Park detention pond to the Cibolo’s crossing of Main Street in downtown Boerne comes to about 4.65 creek miles. The number of surface water impoundments along that entire path, when looking at Google Maps data, is probably more than 10, all of which are now storing water with suspended clays, silts, etc.

Cibolo Creek has now suffered two significant discharges of high-turbidity water, in less than a week. If you would like me to provide my evidence in more detail, please contact me.

Sincerely,

Cal Chapman, P. E.
Cell 210-748-3311

cc: Mayor Tim Handren, City of Boerne