

Berry Creek Interceptor

Answers to Questions from Open House on Oct. 4, 2018

- **Will this project cut off the flow of water to the Spring?**
 - No. The Edwards Aquifer feeding Berry Springs flows from south to north. The proposed alignment is north of Berry Springs and will NOT bisect groundwater flow into the Park.
 - Additionally, in consideration for groundwater to the north of the spring, we will install seep collars along the length of the pipe to block migration of ground water down the length of the pipe trench. We will also install pipes under and perpendicular to springs to maintain groundwater flow across the pipe zone. These safeguards will ensure groundwater movement is not affected by the line.
- **Will the line be visible? Will the surface be damaged?**
 - The line will be buried underground. Only manholes will be visible from the surface, but those will be spaced between 500 and 1,000 feet apart. They will also be flush with the ground. Any surface damage done by trenching during construction will be repaired and returned to as-good or better condition, under supervision of Williamson County, when construction is complete.
- **I think there should be more thought given to creating a wastewater treatment facility close to where this development is happening. The upstream land developer should build a new wastewater treatment plant next to the property.**
 - We feel that a wastewater treatment plant presents significantly more risk to the Berry Springs Park, the Edwards Aquifer, and the overall environment. Additionally, there are many developments upstream that will utilize the proposed line. The line is not intended to serve any singular development, but the entire basin shown above.
- **If the pipe is damaged and flows into the creek, how much flow is needed for it to be detected by simple observation?**
 - Practically speaking, it's highly likely that any flow will be noticeable due to odor and debris. However, all wastewater lines in the city are visually inspected once every 5 years. Any issues or degradation with the pipe is likely to be caught well ahead of any damage that causes a sewage leak.
- **The best way to spread Cholera is to let sewage mix with the local water supply. Has this been considered?**
 - There will be NO mixing of sewage with the local water supply. Additionally, all city water treatment facilities have disinfection capabilities to guard against potential contaminants.
- **One of my biggest concerns about a pipeline along Berry Creek is the damage to the Riparian Zone.**
 - The riparian zone will largely be avoided. Much of the route is proposed to be along the uplands so as to avoid key environmental features. To the extent that riparian zone is damaged, vegetation will be reestablished as quickly as possible.
- **Economic concerns - If the pipeline permanently damages this parkland [sales tax] revenue will be negatively impacted**
 - While a detailed economic evaluation of sales tax revenue generated by the park has probably never been done, we will return the land and vegetation back to as-good or better conditions. When complete, there will be no noticeable scaring of the land and park attendance should remain constant.
- **Many trees will have to be removed to build this pipeline. Has there been a study to determine the loss of value to the neighborhood and the county from the destruction of trees involved in this pipeline? And how could anyone say that the sewer line would have no or minimum impact? When you dig up and destroy what is there already, it never goes back as well as it was before.**
 - The proposed route through Berry Springs Park results in less tree removal than other options. Additionally, any disturbed vegetation will be reestablished to as-good or better condition as quickly as possible.

- **Construction will also disturb park activities for the people for whom the park was planned.**
 - We expect construction through the park to occur during the winter months when the park is less busy. Any construction closures in the park would be minimized to the immediate working area. Large holes and large portions of the park would not be closed, only where work was immediately occurring.
- **What are the guidelines for the County Commissioners? Are they obligated to support sewer line development if requested? Is it for development of a new area?**
 - We do not speak for the Commissioners, but do not feel they are obligated to support any infrastructure. The line is for existing customers as well as continued growth in the Berry Creek basin.
- **How much will rerouting cost compared to the true value of the park as a resource for park visitors, clean watershed, wildlife habitat, and other less tangible costs?**
 - We feel that the route through Berry Springs Park presents the best economic alternative AND has the least environmental impact.
- **How will possible leakage be monitored? How often, where, and to what extent is the water in the River both upstream and downstream from the park tested, and what tests are performed? Is there testing for fecal coliform, for example, or just nitrogen and such?**
 - Wastewater lines are inspected once every 5 years to exfiltration. Any deficiencies are immediately corrected. We are unaware of any upstream testing currently occurring. Downstream monitoring of the effluent discharge from existing Pecan Branch Wastewater Treatment Plant is daily. Downstream is tested for E. coli, but not fecal coliform.
- **Will Blackland Prairie native wildflowers/grasses be planted in easement zone?**
 - The city is willing to agree to any reasonable vegetation reestablishment guidelines that Williamson County may request.
- **If trees are damaged/killed when boring underneath will they be appropriately replaced?**
 - The city is willing to agree to any reasonable tree mitigation that Williamson County may request.
- **Can the proposed wastewater line follow the Dry Berry Creek instead?**
 - The Dry Berry Creek is a proposed route for an entirely different drainage sub-basin. To utilize this route would require a large (16 million gallon per day) lift station just upstream of Berry Springs Park and go against the natural terrain. We feel that lift station would put Berry Springs Park at greater risk than a gravity line as lift stations are prone to electrical and mechanical failures.
- **We prefer other options. If park route is chosen, don't want to see parts of the park closed off during construction.**
 - Any construction closures in the park would be minimized to the immediate working area. Large holes and large portions of the park would not be closed, only where work was immediately occurring. Disruptions would be minimized as much as possible.
- **How can you dig up an area that is designated a preserve? Why is this an issue at all? Say no to development.**
 - Any disturbed areas would be returned to pre-existing conditions. Tree removal would be minimized and environmentally sensitive areas will be avoided. This line is needed to support continued growth within Williamson County, as well as to remove a large (4 million gallon per day) lift station from the Berry Creek drainage basin.
- **I am concerned about the well that supplies water to parts of Georgetown and its proximity to the line.**
 - Wastewater lines are inspected once every 5 years to exfiltration. Any deficiencies are immediately corrected. Additionally, all city water treatment facilities have disinfection capabilities to guard against potential contaminants.
- **Please consider not bringing the wastewater line through our beautiful preserve. Construction will make our park such a mess. It will disrupt wildlife and uproot the amazing trees. The thought of all this gives me such a heavy heart not only for the effects it will have on our park but our group's classes and park availability in particular.**

- We expect construction through the park to occur during the winter months when the park is less busy. Tree removal will be minimized as much as possible. In actuality, the route through Berry Springs Park requires significantly less tree removal than other options. We will also minimize any disturbance and return any damaged ground/vegetation to as-good or better condition after construction.
- **I want environmental concerns to matter over cost - minimal damage to habitat, minimal risk of spills in Berry Creek. Costs for protecting environment should be paid for by the developers - not assessed to tax payers.**
 - The proposed line is a city master planned line since 1989 and serves the entire drainage basin, not one specific development. Also, while the route through the park is the least cost option, it is also the most environmentally responsible option. No taxpayer dollars will go towards the project, only wastewater ratepayers and developer impact fees.
- **Please no wastewater through Berry Springs. The trenching alone will mess up the place.**
 - Any and all trenches would be properly backfilled and compacted. Any disturbed areas would be returned to pre-existing conditions.
- **I am opposed to running the wastewater intercept project through Berry Springs Park. Parks and green space are key aspects of the city's infrastructure.**
 - Ultimately, no green space will be removed from the park.
- **Does the William L. Mann property donation deed to Wilco allow for a 50-foot deep trench within a 100-foot wide construction corridor to be run the length of BSPP for a wastewater pipeline?**
 - We have reviewed the deeds for the park and are unaware of any such restrictions.
- **Concern noted about the pipe trench potentially diverting groundwater flow away from the spring.**
 - Professional Geologists from SWCA Environmental Consultants (SWCA) and Cambrian Environmental (Cambrian) found two types of springs: Edwards Aquifer derived springs and perched aquifer derived springs.
 - Edwards Aquifer derived springs are artesian (pressurized) and move water from deep underground (50+ feet) along vertical fractures. These types of springs often move large quantities of water and are found within the Berry Springs Park namesake near the dam. The vertical nature of the Edwards Aquifer derived spring flow means that diverting groundwater flow away from such a spring is very unlikely since the Project is not “upgradient” from these springs.
 - Perched aquifer springs and seeps are derived from water trapped within the soil and cobble. These spring types are shallow and typically feed small springs or seeps for short to intermediate duration after rainfall. These types of springs are found near the paved trail at the western side of Berry Springs Park, not far from the businesses that abut the park near I-35. The Project does have some potential to intersect subterranean flow within perched aquifer springs. However, the Project will be designed with safeguards that permit ground water flow across (above or below) the wastewater interceptor, while preventing ground water flow away from the spring (like a French drain).
 - Finally, the Project complies with the Georgetown Unified Development Code and does not get within 50 meters of any mapped spring.
- **Have all the faults been mapped?**
 - Cambrian Environmental conducted a geologic assessment throughout Berry Springs Park and located several previously unmapped faults. Fault locations are incorporated in current engineering designs as locations where rock formation changes are likely and where spring conduits may send pressurized water from the subsurface into the Project Area. These considerations are taken very seriously, and the Project is designed to incorporate safeguards to protect the natural resources within Berry Springs Park and throughout the entire length of the Project.
- **Has an environmental impact study been obtained? What did it show?**
 - An environmental impact study (often called an “EIS”) is a very lengthy document triggered to satisfy certain federal government oversight obligations. The triggers that prompt a full EIS are not present for this Project; therefore, an EIS was not conducted.

However, local, state, and federal oversight are required for this Project. As such, a series of environmental investigations and reports were conducted as part of the due diligence process. SWCA and Cambrian conducted a geologic assessment (which includes spring and fault mapping), karst survey, waters of the U.S. (wetland, stream delineation) mapping, cultural resource investigations, and potential golden-cheeked warbler mapping.

- Local oversight includes adherence to the Georgetown Unified Development Code and a vote for Project commencement in County Commissioners Court.
- State regulatory agency oversight comes from the Texas Commission on Environmental Quality (TCEQ) with respect to groundwater issues and Texas Parks and Wildlife Department (TPWD) with respect to Chapter 26 of the Parks and Wildlife Code (for projects involving public land).
- Federal regulatory agency oversight includes the U.S. Army Corps of Engineers, which will conduct a Section 7 consultation with U.S. Fish and Wildlife Service regarding endangered species and cultural resource issues as part of the pre-construction notification process for a nationwide permit application to satisfy Clean Water Act Section 404 regulations.
- SWCA and Cambrian mapped all wetlands, streams, faults, springs, cultural resources, and potential endangered species habitat (no caves or karst features were located, no golden-cheeked warbler habitat was located) throughout the entire Project; including within Berry Springs Park. Terracon Consultants drilled many boreholes throughout Berry Springs Park to determine the rock composition within the subsurface to gain a more thorough understanding of the substrata. Berry Springs substrata is comprised of alluvial deposits and Georgetown Limestone near the surface. SWCA also placed seven piezometers (used to determine groundwater pressure) within two Berry Springs Park boreholes to determine the source of subterranean water. The piezometers confirmed perched aquifer conditions (not Edwards Aquifer water) within both boreholes.
- **Has the area been fully mapped to avoid interrupting or leakage into the underground flow?**
 - Yes, the subterranean strata (Georgetown Formation) was confirmed (mapped) by Terracon core samples and by the Cambrian geologic assessment as existing between the Project and the underlying Edwards Formation, which is at least 50 feet below the Project. The Georgetown Formation is considered very “tight” and is not permeable. Moreover, the Edwards Aquifer (contained within the Edwards Formation) is artesian (pressurized) underneath Berry Springs Park. Not only is it too deep for the Project to access, but water within the Edwards Aquifer is trapped within the rock and will move forcefully towards the surface in Berry Springs Park, if the overlying Georgetown Formation is punctured at sufficient depth. Therefore, the risk of leaking into the Edwards Aquifer is unlikely to due to its depth compared to the Project, the “tightness” of Georgetown Formation (which separates the Project from the Edwards Aquifer), and the pressurized nature of the Edwards Aquifer which forcefully sends water to the surface if punctured (at this location).
 - See answer to Question 1 regarding interrupting underground flow.
- **What mitigative measures are in place to repair the damage to sensitive riparian areas that will occur with installation of the lines?**
 - The Project will avoid all wetlands, but trenching across streams is anticipated. Where continual access to the wastewater lines is not required, the current stream bed and bank restoration plans include reusing native soils, reseeding native plants, restoration of stream bed contours, and installation of erosion control blankets. A Nationwide Permit application is anticipated, and the U.S. Army Corp of Engineers may provide additional input.
- **What studies have been done of the flora and fauna that will be disrupted?**
 - SWCA and Cambrian looked for specific flora (potential golden-cheeked warbler habitat, wetland vegetation) and fauna (endangered species habitat for karst invertebrates) and did not conduct general ecosystem surveys. Tree surveys will be conducted during a

topographic survey (before the final design) to identify significant trees (hardwoods 12-inches in diameter and greater at breast height) within the Project Area.

- **In restored dredging areas, will 1-year mitigation be adequate?**
 - Reseeding and restoration efforts will not be considered acceptable until 90 percent of the disturbed area has been revegetated with grasses and will be warranted by the contractor for 1-year from acceptance. Predicting ecological success within a given time frame is difficult, but using native topsoil (that contains native seeds and roots) along with native plants to restore disturbed areas increases the potential for success. Replanting efforts will pay attention to generally accepted seasonal planting schedules to maximize success, where possible.
- **Will appropriate mycorrhizae (fungus) be in the soil to be added?**
 - There are currently no plans to add mycorrhizae to the Project Area. The narrowness of affected areas will likely allow adjacent, undisturbed populations to be a source for fungal recolonization of disturbed areas. Native topsoil will also be reused, where possible.
- **Restoration time frame should be at least 5 years. It takes decades to restore true biologically valuable habitat.**
 - a. Reseeding and restoration efforts will not be considered acceptable until 90% of the disturbed area has been revegetated with grasses and will be warranted by the contractor for 1-year from acceptance. Predicting ecological success within a given time frame is difficult but using native topsoil (that contains native seeds and roots) along with native plants/seeds to restore disturbed areas increases the potential for success. Replanting efforts will pay attention to generally accepted seasonal planting schedules to maximize success, where possible.
- **I love berry springs park. You could stop wild life for example birds will stop breeding. I love it the way it is. [handwritten, apparently by a child]**
 - We love Berry Springs Park too. We believe the route through the park is the safest option. We will do everything possible to make sure we do no harm to the park.