

Lutheran South Site

SWG-2016-00105

Avoidance, Minimization and Compensation

Multiple sites were considered for the proposed project. These include the preferred site that is the subject of this application, a nearby site that is disconnected from the existing location of LSA, and the existing site of LSA itself. An examination of alternatives yielded the following results:

- There is no room on the existing LSA campus to support the required facilities.
- Site selection was restricted to the area immediately surrounding LSA due to the logistical and safety requirements of transporting students to and from facilities that are distant “off-site” locations.
- A search of surrounding and properties adjacent to LSA did not yield viable alternatives that would fulfill the project purpose and need, nor would the “no action” alternative.
- LSA is land-locked, with all of the surrounding sites supporting existing development.

Using the preferred alternative site, four different alternative site layouts were created and examined. Graphic depictions of these layouts can be found in **Attachment F** along with the Alternatives Analysis.

While alternative site layouts could potentially avoid and/or minimize impacts to WOUS, none of the layouts would serve the project purpose and need because:

- A pipeline easement containing one of more pipelines bisects the site. Structures cannot be built on this easement, and this restricts the orientation of the facilities that are integral parts of the proposed project.
- There is a well-head location on the site, and no facilities can be constructed within a 100 foot radius of this well-head.
- There are drainage issues associated with the site, and the Harris County Flood Control District (HCFCD) requires construction of the detention basins shown. HCFCD will not allow runoff to drain to Dixie Farm Road. The site requires 5.2 acres of detention at a minimum depth of 7'. One 2.6-acre basin out of the total required detention is located west of the field. Since this area is triangular in shape, retainage is its most efficient use. This area is bounded by a 60' wide pipeline easement on the east, which constrains the athletic field to run north and south parallel to the pipeline easement.
- Dixie Farm Road creates a “dam” adjacent to the site, causing water to pond on the property that results in wetlands creation. In addition, the site is surrounded by development constructed on fill that makes adjacent properties higher than the proposed site. These surrounding developments drain onto the site, causing the creation of wetlands. Site drainage must be corrected in order to support the proposed facilities. Thus, the proposed detention basins depicted on the preferred site layout are strategically located on the site.
- The proposed stadium must run north-south due to the angle of the sun. Sun-angle is critical for competitive sports fields.
- The locations of the press box and concession and field house building are critical to the function of the facility. The press box must be close to the parking lot as well as the school and it

is part of the bleachers. The concession and field house building has to be close to the parking lot, the school and stadium. None of these features can impinge on the pipeline easement.

Utilizing the preferred site and the preferred layout would result in impact to six WOUS (wetlands) totaling 4.95 acres out of the 20.84-acre site.

Compensation

The Applicant has held discussions with the Armand Bayou Nature Center (ABNC), located within the same watershed as the impact site, regarding performing a mitigation project within its boundaries. ABNC has allowed permittees to mitigate within the nature center in the past, with excellent results. Benefits of utilizing the ABNC in lieu of the GBWMB include:

- Mitigation will be “in kind”. The impact site is part of the larger overall Texas Coastal Prairie system and supported prairie habitat in the distant past (see historical aerial photo from 1944 located in **Attachment H** While there is one area of forested wetlands on the site, trees in this location appear to post-date 1978, when the site appears to be leveled.
- Proximity to the impact site. ABNC is only 7 miles from the site (to the east), while the GBWMB is 23 miles from the site (in north Harris County).
- The mitigation project would restore 10 acres of valuable prairie habitat, which is a scarce resource both locally and nationally. Research estimates indicate that less than 1% of native prairie is still intact.
- Water quality benefits would be realized closer to the impact site.
- Vegetation and wildlife benefits would be generated closer to the impact site.
- The mitigation would be more valuable locally to the surrounding community as well as all Harris County users of the ABNC. In particular, there are educational benefits, as ABNC has a very strong education program.
- ABNC is managed and maintained in perpetuity. The Application would provide funds to ABNC to monitor and maintain the mitigation site once the permittee responsible maintenance has been satisfied (five years).
- ABNC is part of a very large preserve (2,500 acres), supporting scarce and valuable aquatic and terrestrial resources. Preserve size is directly related to biological sustainability.

Mitigation at ABNC would involve the following steps:

- Mechanical removal of all woody vegetation from a 10-acre restoration site (2:1 ratio).
- Direct treatment of cut stumps with a herbicide effective in controlling woody vegetation (tallow and privet) that has been demonstrated to work in ABNC.
- Performing a treatment of the entire site with a broad spectrum herbicide that treats both woody and unwanted herbaceous vegetation. This would be applied once sprouting has occurred.
- Revegetate the site with high quality prairie vegetation that will either be harvested (borrowed) from nearby sites and transplanted in the mitigation site or cultivated by ABNC for this purpose.
- Five years of monitoring and maintenance will be performed by the Applicant.
- Funds will be provided to ABNC for the continued maintenance of the site.

Preliminary Texas Rapid Assessment (TXRAM) modeling has been performed both on the impact site and on the proposed mitigation project. Modeling results indicate that a 2:1 mitigation ratio will compensate for wetland losses. As a result, the Applicant proposes to restore 10 acres of prairie in the ABNC. See Attachment I for a graphic presentation of these results.