

# **Final Report**

## **Lick Creek Greenway Trail Corridor Placement Evaluation – City of College Station**

August 13, 2012



August 13, 2012  
Halff AVO 28475

Ms. Danielle Charbonnet, PE, CFM  
Assistant City Engineer  
Public Works Department  
City of College Station  
300 Krenek Tap Road  
College Station, TX 77840

**MEMORANDUM:** Lick Creek Greenway, Segment "A" Recommended Route

Dear Ms. Charbonnet:

Please refer to the attached graphic that illustrates the Recommended Route for Segment "A" of the Lick Creek Greenway. This trail alignment for Segment "A" has been prepared at the direction of City staff, as a departure from the preferred alignment detailed in the feasibility study for Lick Creek Greenway. This recommended alignment provides a reasonable alternative route for Segment "A", in lieu of the proposed trail development along the common space/greenway corridor to residential areas within the SpringBrook Home Owners' Association (HOA).

Development of the trail along this recommended alignment will most likely include minimum upgrades to existing facilities such as bike lane striping; widening narrow walkways; minor intersection improvements; and the addition of way finding and regulatory signage.

Please feel free to contact us at your convenience with any questions or comments that you may have.

Sincerely,

HALFF ASSOCIATES, INC.

A handwritten signature in blue ink that reads "H. Wayne Cooper". The signature is fluid and cursive, extending to the right with a long horizontal stroke.

H. Wayne Cooper, ASLA, AICP  
Vice President

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## **ACKNOWLEDGEMENTS**

Halff Associates, Inc. (Halff) was retained by the City of College Station to prepare a Corridor Placement Evaluation of the Lick Creek Hike and Bike Trail. Throughout the evaluation and planning processes, the Halff Associates Design Team has benefitted from the participation of a wide range of local and municipal agency staff persons, and stakeholder and interest groups. The exchange of ideas, communication of project goals and objectives, and ready participation and cooperation from the internal and external stakeholder groups was a great catalyst to the planning and design process. Participants listed below have our thanks and gratitude for the assistance they extended during the initial evaluation and planning phases of this important project.

### **City of College Station**

Public Works Department – Danielle Charbonnet

Planning Development Services – Venessa Garza

### **SpringBrook Homeowners Association Board and Members**

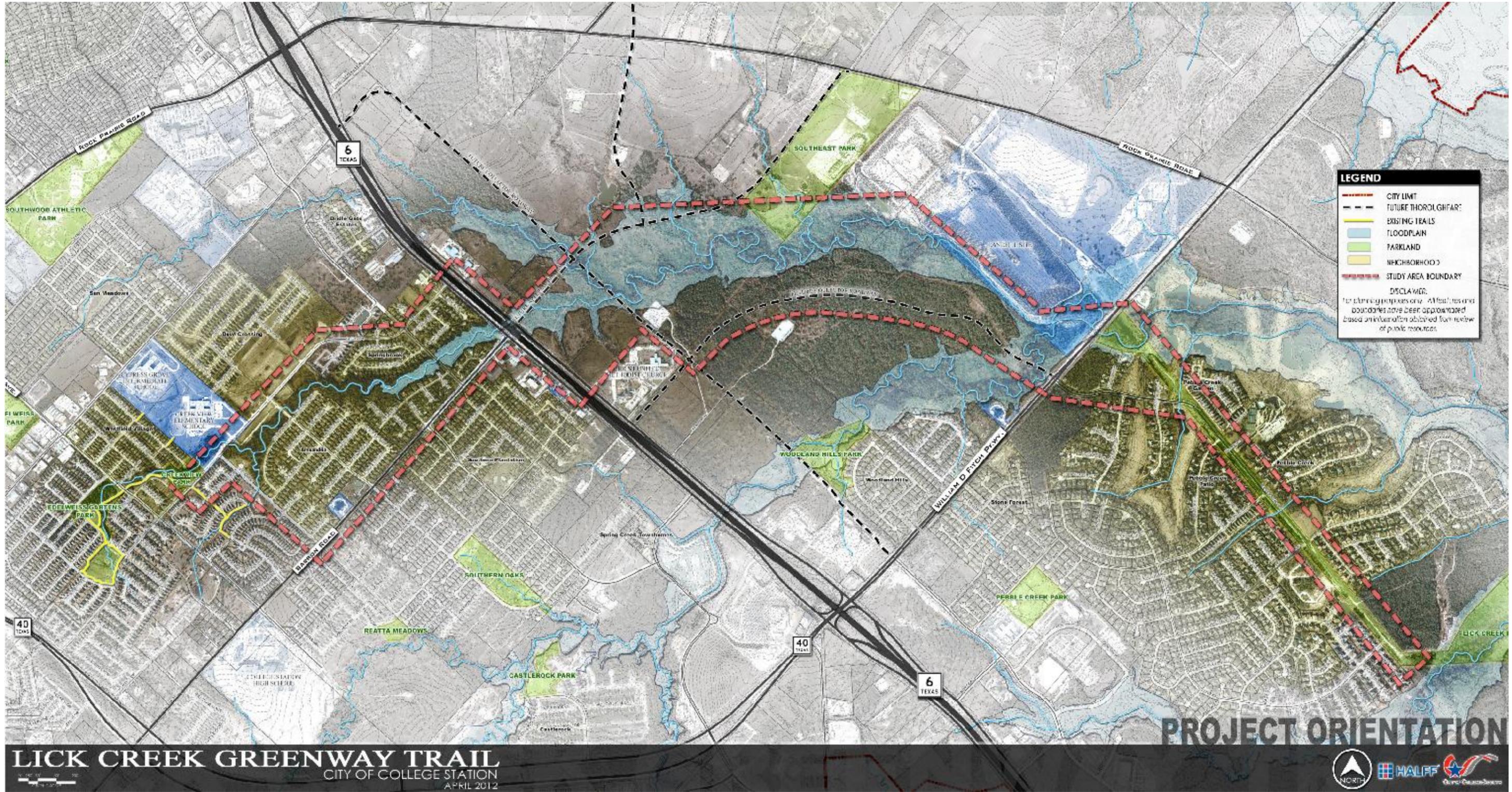
### **Pebble Creek Homeowners Association Board and Members**

# EXECUTIVE SUMMARY

## **Introduction**

The *Lick Creek Hike and Bike Trail Corridor Placement Evaluation* was prepared as a tool to assist the City of College Station with assessing the feasibility of a pedestrian/bicycle connection along Lick Creek within the city limits of College Station. The limits of this evaluation are along the greenway of Lick Creek between Victoria Avenue near Creek View Park to Lick Creek Park (see Fig. #1-Project Orientation Map). The information and graphics in this evaluation report describe the process the Halff Design Team utilized to identify existing and future conditions within the project limits, determine potential trail routes within the project corridor, illustrate acceptable, alternative locations for the trail, trailheads and other associated trail amenities, and to finally identify the preferred trail route.

Map: (Figure #1) Project Orientation



## Summary of Findings

The evaluation of the project corridor occurred in three phases: data gathering; corridor examination and existing conditions analysis; and trail layout and evaluation. In addition the project corridor was divided into three segments, each with its own distinct set of existing and future conditions that might affect alignment and placement of the trail and associated facilities. (See Fig. #2-Preliminary Trail Corridor Options Map)

Segment “A” includes the beginning of the project corridor at Creek View Park, along Victoria Avenue, and generally ends at the southwest corner of the intersection of Barron Road and State Highway 6. This segment of the project includes the Lick Creek corridor that runs through the SpringBrook Home Owner’s Association common area, as well as several corridor options that run along and within existing roadway corridors and rights-of-way (See Fig. #3-Segment “A” Map). It should be noted that the potential placement of the trail along existing roadway corridors and rights-of-way presents additional challenges to implementation of the trail facility. In addition to navigating through a range of natural conditions and challenges, such as grade and elevation changes; drainage ways; avoiding significant trees and vegetation; etc., a trail facility along existing roadways will also have to address limited right-of-way widths in which to locate a trail; impacts to existing fences, flower beds, landscapes and other amenity improvements; and existing utilities such as light poles, manholes, vent pipes and other elements. These existing conditions may limit the possibility of the trail being anything more than a sidewalk through some areas of the corridor.

Segment “B” begins on the northeast side of the intersection of Barron Road and State Highway 6, and then runs along Lick Creek to its intersection with William D. Fitch Parkway, ending on the east side of William D. Fitch Parkway, after crossing under the bridge over the creek. This portion of the project corridor traverses a mostly undeveloped area that is largely owned by the City of College Station. (See Fig. #4-Segment “B” Map)

Segment “C” begins on the east side of William D. Fitch Parkway, and then travels along a city owned greenway and parkland easement, intersecting with Pebble Creek Parkway, and then

traveling south along Pebble Creek Parkway within a utility easement and right-of-way on the south side of the roadway, past St. Andrews Drive, and eventually terminating at the western boundary of Lick Creek Park. (See Fig. #5-Segment “C” Map)

Alternate trail alignments were initially located with each of the three segments to illustrate potential routes from beginning to end of each segment of the trail, providing stakeholders and other project participants with the opportunity to discuss and evaluate each alternative alignment and to better understand how the trail and its facilities would work within layouts provided for each alternate location (See Fig. #2-Preliminary Trail Corridor Options Map). Halff’s Design Team discussion items with stakeholder groups and the public included items such as:

- pavement widths, crossing locations and visibility for users, and the affects on user safety and traffic impacts from different locations
- trail user experience
- educational/interpretive opportunities
- accessibility and ties to other trails and community facilities
- floodplain and floodway impacts of trail placement
- impacts to and from adjacent developments and land uses

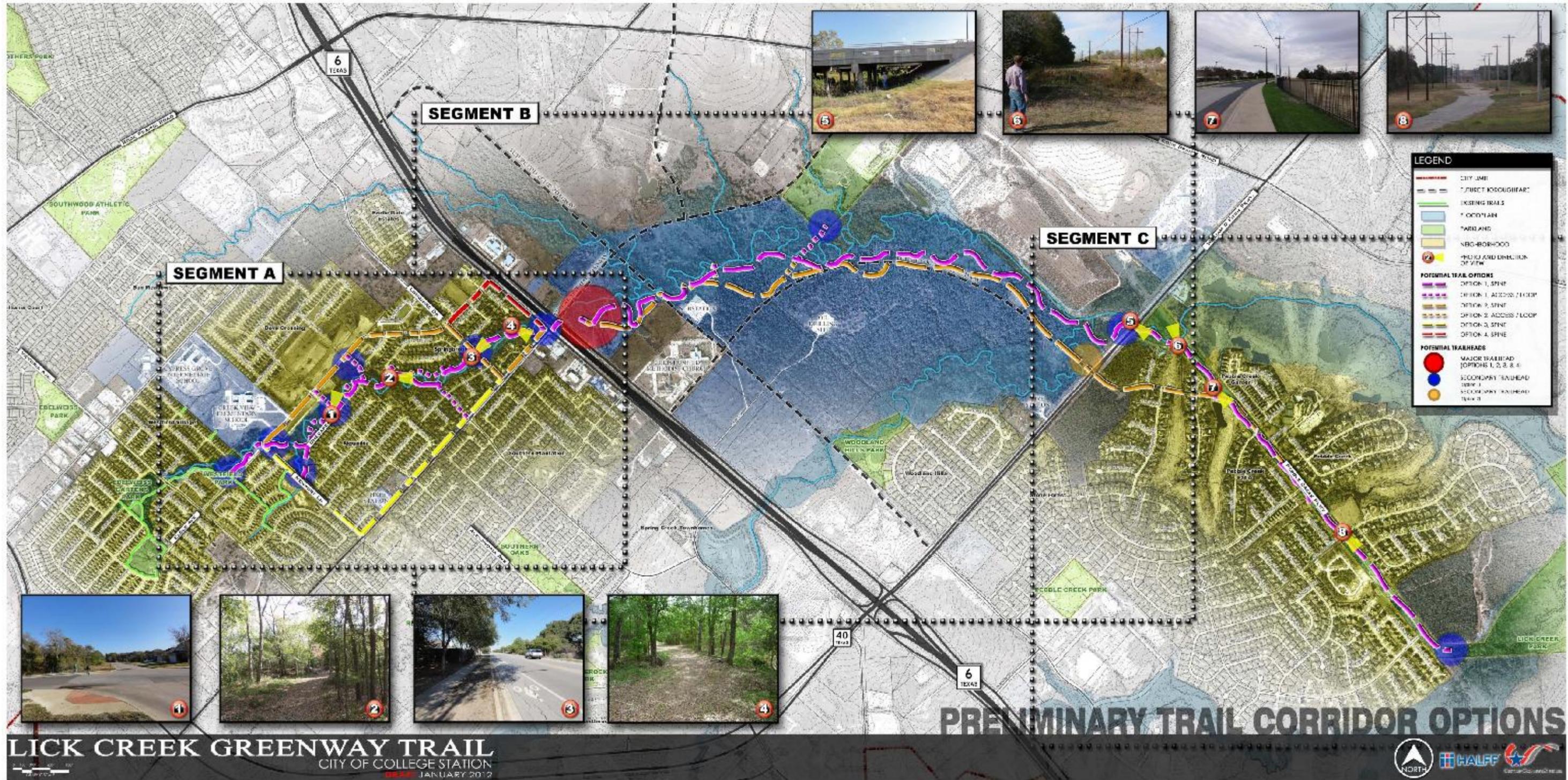
After a series of stakeholder and public meetings, and based on input and comments from project participants and an analysis of each trail corridor alternative, the Halff Design Team prepared an initial Preferred Trail Alignment that was again brought before the public for review and comment. The Preferred Trail Alignment illustrates a trail corridor that provides an additional level of experience for trail users, while providing a different choice to get from one location to another within the corridor. (See Fig. #7-Preferred Trail Corridor Map)

Illustrative graphics for the Corridor Evaluation were prepared utilizing digital data provided by the City, along with an actual on-the-ground assessment of the corridor to confirm existing conditions. The Preferred Trail Alignment shown in this report will require coordination with a variety of City departments, as well as Federal and State agencies and franchise utilities as the trail crosses state owned properties as well as franchise utility easements. Specific examples of additional coordination with various City of College Station departments include the trail’s

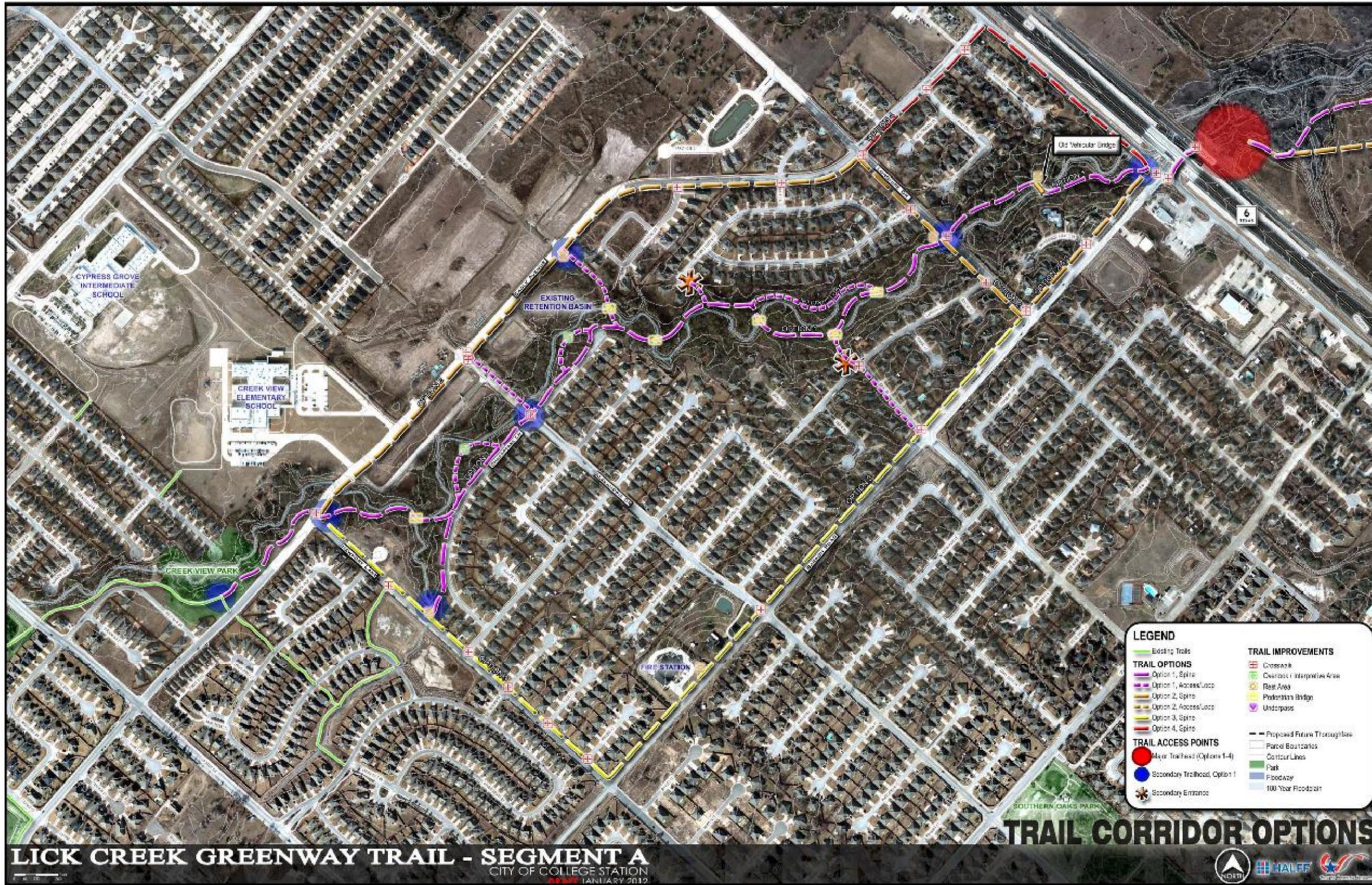
intersection with State Highway 6 as well as crossings with electrical easements and connections to parks.

The preferred trail alignment was located within the corridor to be in general conformance with Texas Accessibility Standards (TAS) and American Association of State Highway and Transportation Officials (AASHTO) design standards. (See Fig. #7-Preferred Trail Corridor Map) Curves in the alignment, depicted in the trail corridor graphic, although illustrative in nature, comply with AASHTO guidelines. The layout of the trail, including switchbacks up and down areas with significant elevation change, includes sufficient length to keep the slope of the trail within accessible standards established by TAS. The amenities, rest areas, overlooks, and trailheads currently shown on project plans have been placed at locations throughout the project based on the level of need for each item. A secondary trailhead is shown on City owned park land adjacent to Creek View Park, to act as a doorway to the trail in the existing neighborhood area. This trailhead would include a monument or signage element that identifies the trail corridor, a seating area, and possibly an interpretive sign. Rest areas occur along the trail in areas that do not have access points nearby, or in close proximity to areas that may offer interesting views. Rest areas include a seating area on a paved surface adjacent to the trail. Overlooks are short trail spurs that depart from the main trail and take the potential trail user to a place of interest that cannot be seen directly from the trail. These features would include a bench or similar seating device, as well as an interpretive feature.

Map: (Figure #2) Preliminary Trail Corridor Options



Map: (Figure #3) Segment "A" Trail Corridor Options

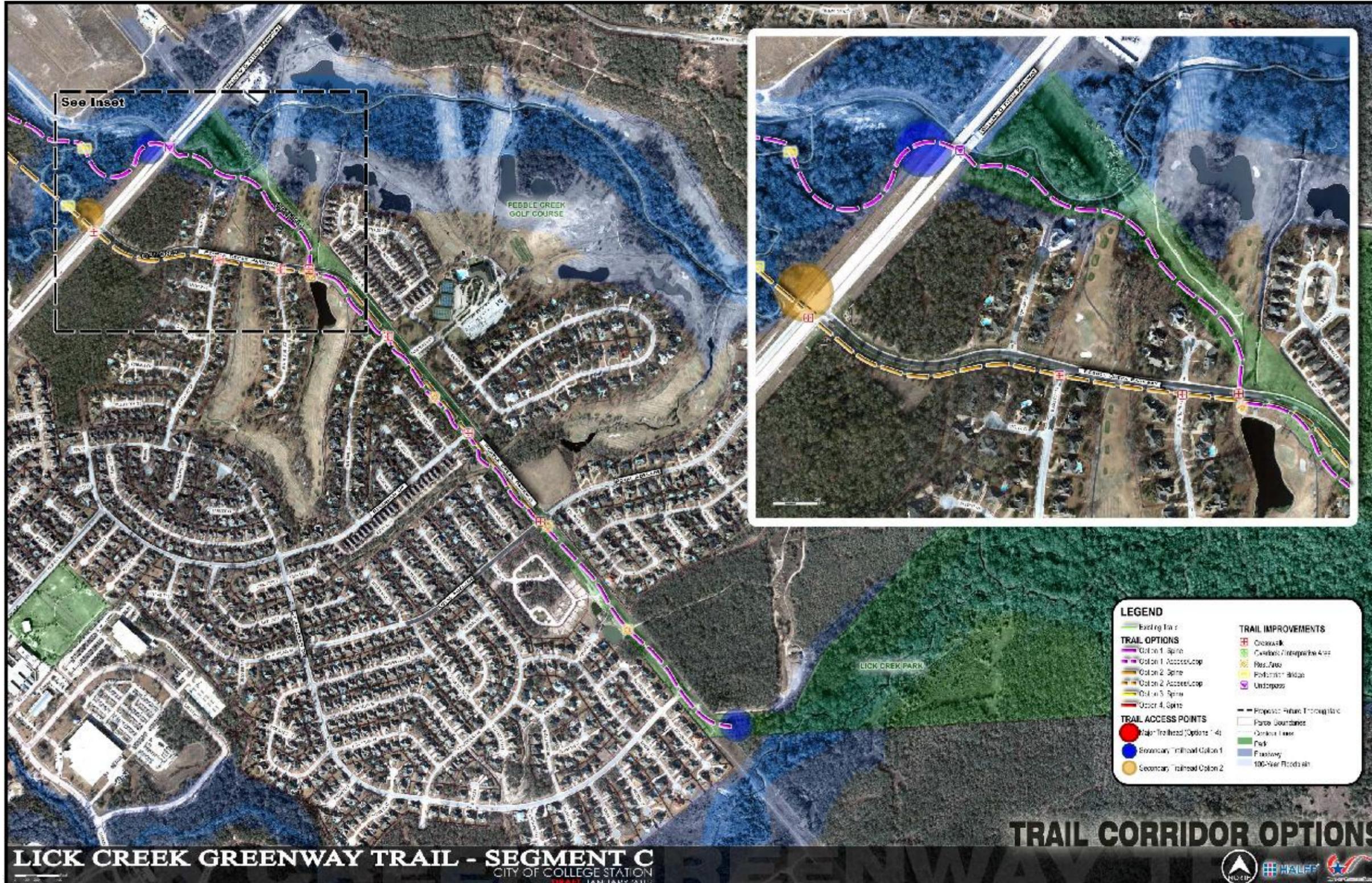


Map: (Figure #4) Segment "B" Trail Corridor Options



**LICK CREEK GREENWAY TRAIL - SEGMENT B**  
CITY OF COLLEGE STATION  
REDACTED - JANUARY 2012

Map: (Figure #5) Segment "C" Trail Corridor Options



**LICK CREEK GREENWAY TRAIL - SEGMENT C**  
CITY OF COLLEGE STATION  
DRAFT JANUARY 2012

**TRAIL CORRIDOR OPTIONS**

# PLANNING PROCESS

## Data Gathering

The data for this project was gathered from GIS data files provided by the City of College Station.

GIS data reviewed includes:

2011 Aerial Files	Existing Zoning (August 2011)
Hydraulic Models for Alum Creek, Lick Creek, Spring Creek, and Stream AC-1	Floodway Data Tables
Bicycle Plan Network	College Station City Limits
Comprehensive Plan 2009 Future Land Use	Easements
Comprehensive Plan 2009 Thoroughfare Plan Network	Flood Hazard Areas
Pedestrian Plan Network	Published Environmental Reports
Texas Historical Commission	Parcel Boundaries
	Surface Water
	Surface Water Lines

Additionally, city staff provided the Planning Team with digital files of flood elevations and hydrology models as well as subdivision plats of properties filed with the City that were not yet reflected in the City's GIS datasets. The Planning Team also gathered on site data by walking the greenway corridor with City Staff to collect GPS located points of interest (i.e. areas of erosion, steep slopes, potential overlook locations, potential trail locations, and photos) along the corridor.

## Data Compilation

All data assembled for the project was compiled into a base map, which was then used to perform an analysis of the Lick Creek corridor. Using aerial photography, digital topography and the other GIS data, an initial trail alignment was identified and drawn on the base map. Additional data analysis, review of existing physical conditions and future proposed improvements along the trail corridor were also documented and evaluated. These additional factors were considered during the evaluation process and subsequent identification of alternative trail routes and finally, identification of a preferred trail route.

## EXISTING CORRIDOR CONDITIONS

During the evaluation of the existing and proposed conditions data, opportunities and constraints were identified that affected the layout and configuration of a trail facility within the corridor. The attached Opportunities and Constraints Map provides a graphic overview of existing conditions along the project Corridor.

### Parcel Ownership

Parcel ownership was the first mapping data set used to identify potential trail routes. During the review of ownership data, several different categories of land ownership were identified within the corridor. Potential trail routes were evaluated in an effort to minimize the number of encroachments on private landowners.

A majority of the trail corridor is located on land owned by the City of College Station. It utilizes existing parkland, City greenway corridors, and transportation right-of-way corridors. One significant exception is the common area owned by the SpringBrook Home Owners Association. Here, existing natural footpaths exist where residents have travelled the common area over time. Approximately 20 homes back up to the common area. Within this area, trail routes should be aligned to maximize the distance the trail facility is from the private property lines while also taking into consideration the alignment of the creek. This will afford existing residents a buffer area from the trail and also keep the trail as far away from flood waters as much as possible. A secondary benefit to this trail location is its ability to provide an additional barrier against erosion along the creek. Implementation of the trail in this area will include additional vegetated buffers along the creek banks disturbed by construction activities, and the trail itself will provide a mechanical barrier to erosion in this area.

The trail corridor must also traverse property controlled by the Brazos Valley Solid Waste Management Agency (BVSWMA) as it crosses beneath William D. Fitch Parkway, close to the now closed Rock Prairie Road Landfill. Final trail alignment will be coordinated with the BVSWMA.

## **Utilities**

During the evaluation process, potential conflicts with gas, telecommunications, electricity, and other utility corridors were identified that may affect the final alignment of the trail. These areas included the rights of way along existing public roadways, and intersections with power lines along the trail corridor. Pebble Creek Parkway presents a significant challenge due to the presence of several utilities in the existing easement along side the road. Coordination with these utility companies will be necessary when designing and constructing the final configuration of the Lick Creek Greenway Trail.

## **Floodplain and Floodway**

Several portions of the preferred trail alignment are located within or adjacent to the 100 year floodplain of Lick Creek and its tributaries. The final design of the trail and associated facilities will address the potential impacts from flooding, by incorporating armoring and reinforcing techniques in the final trail design that will allow the trail to withstand the impacts from floodwaters. In addition, residents who live adjacent to the Lick Creek Corridor in Segment “A” were initially very concerned with the impact of the proposed trail improvements on the flood elevations of the creek as it runs through the common areas in their neighborhood, voicing these concerns at several meetings with stakeholders, neighborhood residents and the general public. Concerns ranged from questions about the impacts to existing flood elevations, to concerns that the trail and associated facilities would wash away during storm or flooding events. Using data and information supplied by the City of College Station, Halff conducted a preliminary analysis of the effects of a paved trail surface on the floodplain elevations to confirm potential impacts that may result from placing the trail in the existing greenway. A Preliminary Floodplain Impact Analysis is included in the Appendix. The results of Halff’s preliminary analysis indicate the trail has a negligible effect on floodplain elevations. The final location and configuration of creek crossings will need to be thoroughly analyzed and designed to withstand these periodic flooding events in this area, and to not have a net affect on the flood elevations in this area as a result of the trail construction in compliance with the City’s No Adverse Impact policy.

## **Future and Existing Roadways**

The potential trail corridor passes a number of local roads as well as several major arterials and collector streets. Where feasible, the trail route passes under existing roadways; but in some cases this is not possible. Where at-grade crossings are proposed, improved crossings are recommended to enhance safety of crossing these streets.

The trail corridor intersects nine existing roadways. The preferred trail corridor is proposed to cross at grade at Eagle Avenue, Alexandria Avenue, Longmire Drive, SH 6 access roads (underneath the main freeway lanes), Pebble Creek Parkway (at an existing golf-cart crossing), Firestone Drive, Spearman Drive, and Royal Adelaide Drive. The trail's intersection with Longmire Drive at a mid-block crossing utilizing a crossing currently utilized by the existing SpringBrook HOA trail in this area, includes a proposal for additional safety signage to be installed at this mid-block crossing to improve visibility of the crossing since Longmire Drive is a mid-volume, 2-lane major collector street. A proposed trail underpass crossing is located at William D. Fitch Parkway. Several factors contributed to the decision to show this crossing as an underpass instead of an at-grade crossing at Pebble Creek Parkway, including the limited right of way along Pebble Creek Parkway available to implement a trail; high traffic volumes at the intersection of Pebble Creek Parkway and William D. Fitch Parkway; and elevation changes from roadway paving to the adjacent ground surfaces which would require extensive ramping to move trail users across the road and onto the trail.

The future east and west extensions of Pebble Creek Parkway and the extension of Lakeway Drive may have an impact on the trail alignment. The trail corridor has been moved closer to the Lick Creek corridor to avoid the future road extension to the west between SH 6 and William D. Fitch Parkway, that aligns with Pebble Creek Parkway at its intersection with William D. Fitch Parkway. This alignment helps to avoid the potential impacts and conflicts between the trail and the future roadway. The future extension of Pebble Creek Parkway to the east will require that the trail cross the road at Lick Creek Park. Design evaluations for trail placement and potential trail design solutions within this area of the corridor will need to be considered to address future conditions when the eastward extension of Pebble Creek Parkway actually occurs. The future

northwestward extension of Lakeway Drive to the other side of William D. Fitch Parkway will cross the trail corridor between the Methodist Church property and Lick Creek. This road extension will most likely require a bridge structure over Lick Creek, presenting an opportunity to include an under-bridge trail crossing in the design of the bridge structure.

### **Topography**

Existing topography within the corridor was one of the primary factors that was used to determine the potential placement of trail facilities. The attached Opportunities and Constraints graphic (See Fig. #6) shows areas of significant slope where retaining walls might be required. The proposed trail route has been located in areas where a longitudinal slope under five percent could be maintained when the trail is actually designed. The proposed trail route also has several creek crossings that may require bank stabilization measures at each crossing. These conditions will need to be analyzed in detail before the final locations of the creek crossings are designed.

### **Access to Existing Bicycle and Pedestrian Facilities**

The potential trail routes of the Lick Creek Greenway Trail Corridor come in contact with City of College Station bicycle facilities. On-street bicycle lanes are located on Longmire Drive and Barron Road. Additionally, several streets that the trail corridor intersects or travels along have existing sidewalks, including Eagle Avenue, Newport Lane, Alexandria Avenue, Longmire Drive, Barron Road, Pebble Creek Parkway, Spearman Drive, and Royal Adelaide Drive. Access to these existing facilities increases the connections to nearby neighborhoods and civic facilities.

### **Access to Neighborhoods and Facilities**

The Lick Creek Greenway Trail will be in proximity and in some cases have a direct connection to the following facilities and subdivisions:

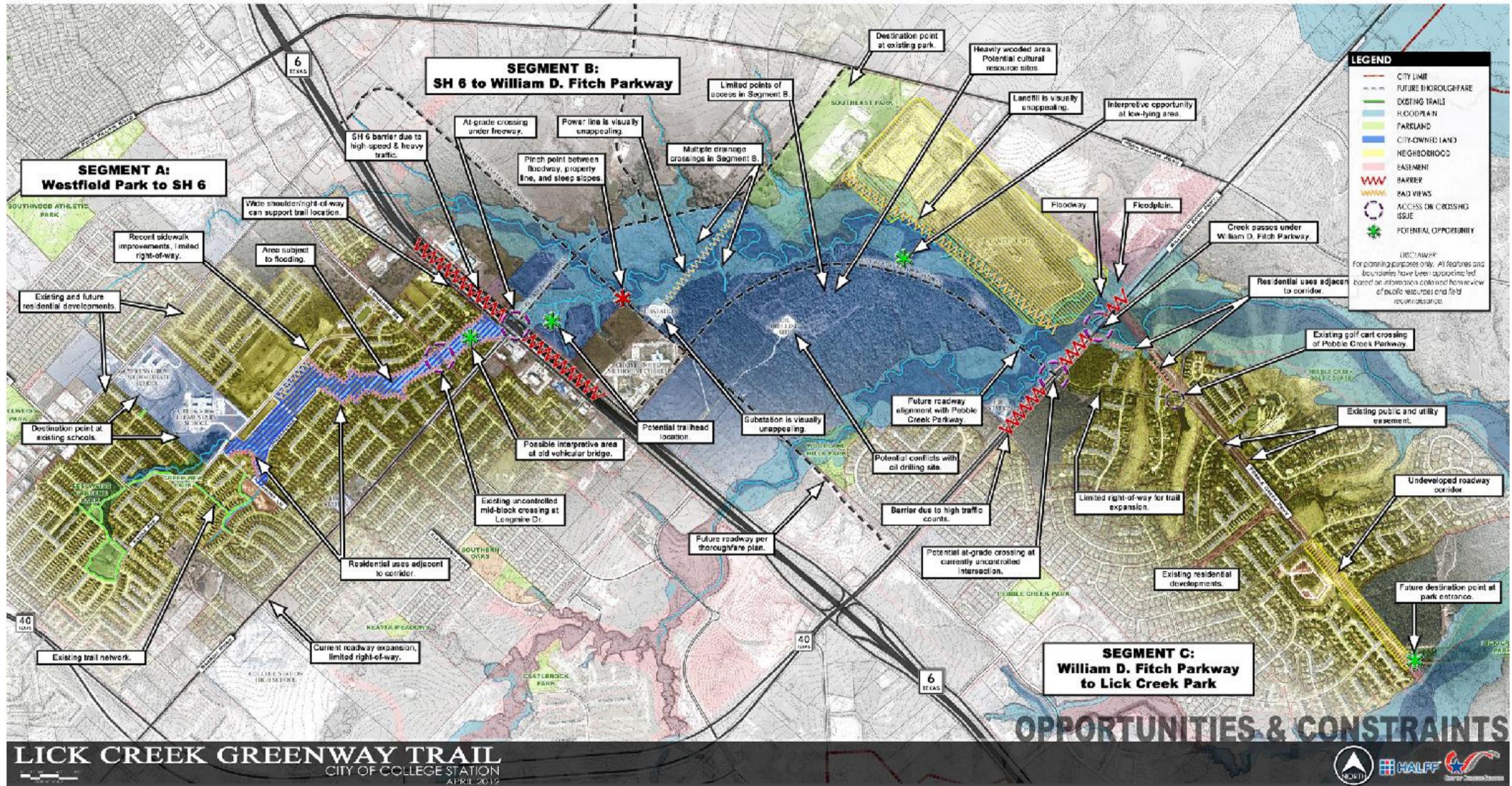
- Westfield Residential Subdivision
- Creek View Park
- Edelweiss Gartens Park
- Alexandria Residential Subdivision

- Cypress Grove Intermediate School
- Creek View Elementary School
- SpringBrook Residential Subdivision
- Dove Crossing Residential Subdivision
- Shenandoah Residential Subdivision
- College Station Fire Station #3
- First United Methodist Church
- Southeast Park
- Future Pebble Creek Parkway Extension between SH 6 and William D. Fitch Parkway
- College Station Fire Station #5
- Pebble Creek Residential Subdivision
- Pebble Creek Elementary School
- Lick Creek Park
- Future Lakeway Drive Extension

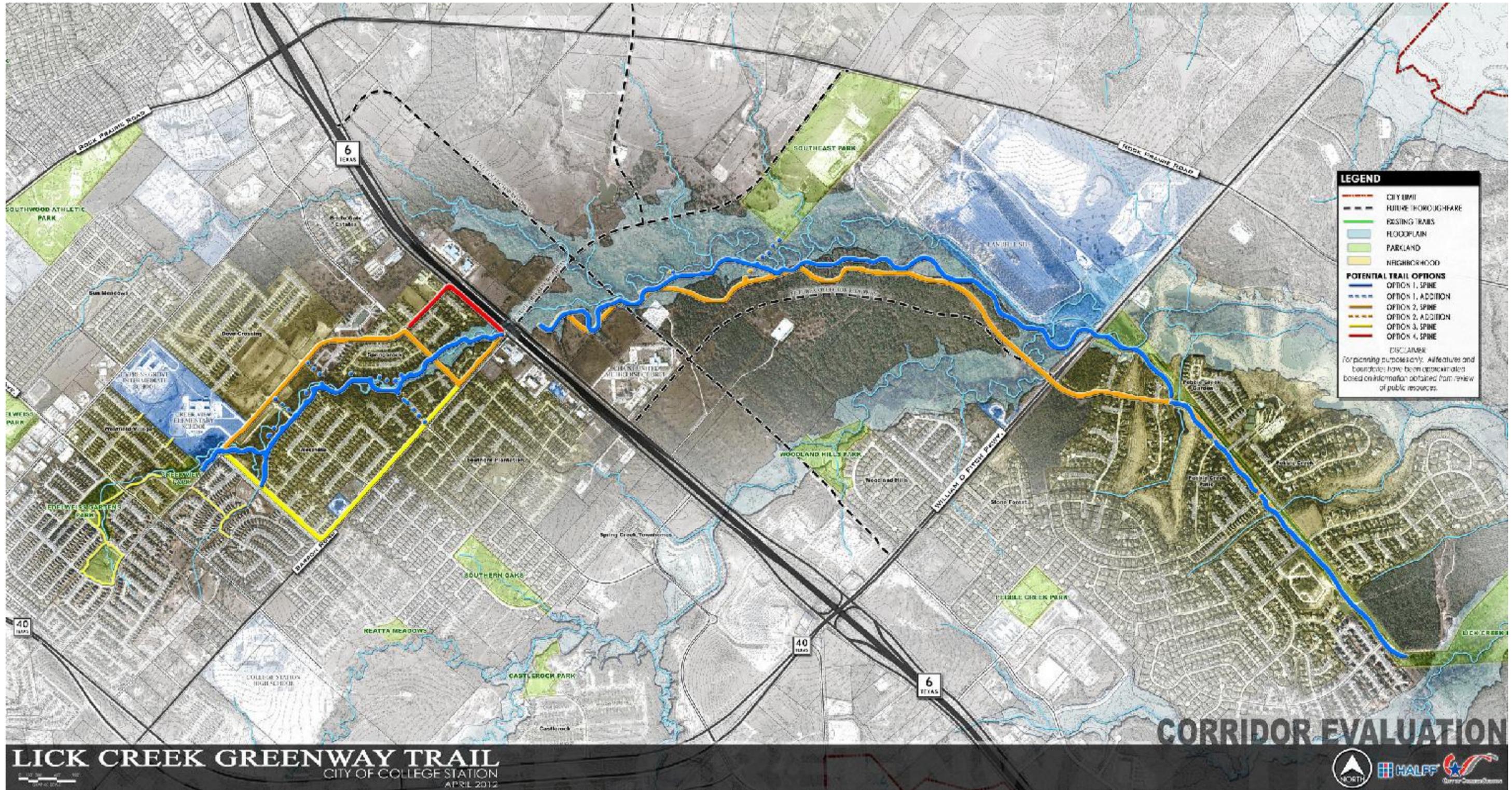
### **Significant and Specimen Trees**

The trail corridor is a unique urban trail in that a majority of the corridor lies within heavily vegetated, undeveloped properties within the city limits. Through careful planning, detailed on-site observations, and the implementation of design and construction techniques that are sensitive to existing trees and vegetation, trail construction impacts to the significant trees can be minimized or avoided all together.

Map: (Figure #6) Opportunities & Constraints



Map: (Figure #7) Corridor Evaluation



## TRAIL LAYOUT

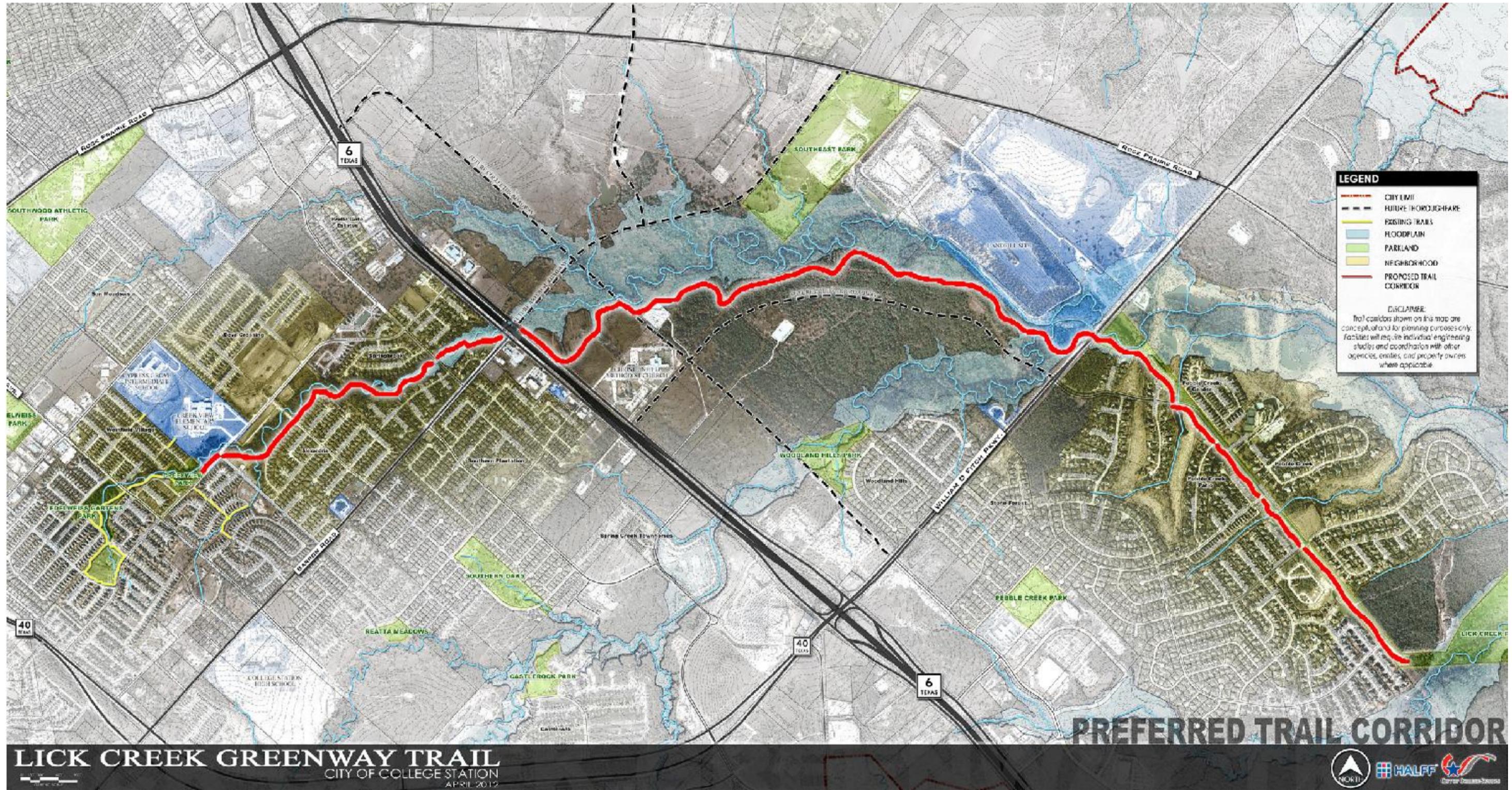
The preferred trail layout was located after an in-depth analysis of existing conditions and physical characteristics within the corridor was concluded and after an in-depth evaluation of the alternate trail layouts was completed. (See Fig. #7-Corridor Evaluation Map). The evaluation process for alternate trail alignments included input from residents at several meetings throughout the process. To facilitate gathering public input and perceptions, the public input process divided the corridor into two major pieces, comprised of the SpringBrook and Pebble Creek areas. These areas can be generally identified as the residential areas around the trail corridor on maps of Segment A and Segment C of the project corridor. Segment B is largely undeveloped, with no apparent constituent base. Two initial meetings were held with stakeholder groups from each neighborhood, to discuss the project and identify a set of preferences that should be considered during planning activities for the project. The input gathered at these meetings was used to further refine potential alignment alternatives for the trail corridor. A second series of general neighborhood meetings was held in each neighborhood to gather input from a broader section of the residents regarding each area. Alternative trail alignments were presented at these meetings, and participant comments were gathered for inclusion in the process to evaluate and select the final trail corridor. A final, community-wide public meeting was held to provide an opportunity for all residents and participants to review the preferred trail alignment and provide input on the project and proposed final alignment. Public input and commentary was a valuable part of the trail corridor evaluation process as participants provided ground level perspectives regarding the proposed trail and its facilities to the trail design team.

A portable GPS unit was uploaded with existing conditions data for the project area, and taken into the field to document actual conditions in an effort to help facilitate the existing conditions review. GPS data was supplemented with photographs from standard digital cameras as well as cameras that used GPS markers to identify photo location and orientation. Data loaded on the GPS unit included aerial photography, topography, parcel lines and roadway rights-of-way, floodplains, and available utility information. The proposed route was either verified or a potential alternate

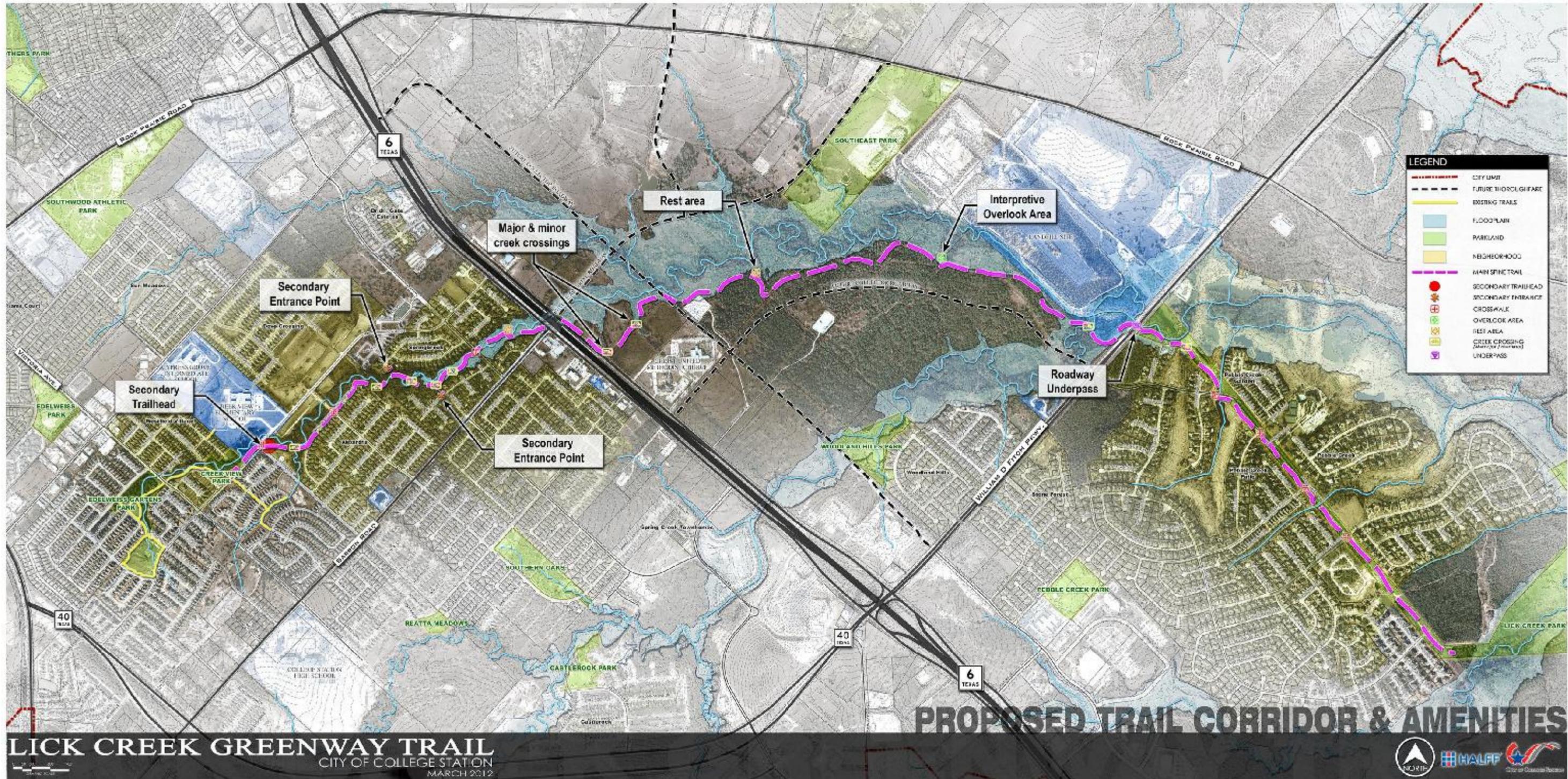
route was identified over a series of field visits to the project site. Trail facilities, amenities, and features were located on each of the proposed route alternatives to establish opportunities for these features, and to establish the potential costs for each of the various trail alignment options. The location of amenities was initially based on a combination of typical distances along each segment of the trail corridor between specific elements. This criteria was supplemented with proposed locations for various amenities and trail elements that were location specific, such as overlooks or rest areas. The preferred trail routes also considered the effects that future roadway projects would have on the trail and its associated facilities. These future affects included potential trail heads, trail access sites, and potential crossing conditions that would require an alternative trail layout or design coordination with future road improvements, or the potential that the future improvement might actually be an impediment or obstacle to the trail and its associated facilities. City of College Station staff members were consulted throughout the trail corridor evaluation process, allowing the consultant team to benefit from their knowledge of city policies and pending developments. The final designation of the preferred route benefitted from research regarding existing and future conditions that may affect the trail corridor, public input and perceptions regarding the trail and associated facilities, and incorporated City staff input related to City policies and requirements for proposed development in the project corridor. (See Fig. #7- Preferred Trail Corridor Map)

Illustrative graphics for the preferred trail layout within the project corridor are divided into three segments. Each segment is presented at an enlarged scale to show the preferred route, and significant trail features and facilities, such as potential creek crossings, trailheads, rest areas, and overlooks.

Map: (Figure #7) Preferred Trail Corridor



Map: (Figure #8) Preferred Trail Corridor Amenities



## Segment A

Segment A commences at the western end of the proposed trail corridor at Creek View Park, and illustrates the beginning of the preferred trail layout at Eagle Avenue. A secondary trailhead, consisting of an iconic trail marker, trash can, and information sign, is proposed at this location where Eagle Avenue and Newport Lane intersect. This will provide a landmark for potential trail users. Here, the trail enters the College Station greenway, crossing the creek once before coming to Chesapeake Lane. The trail then runs north-eastward parallel to Chesapeake Lane and Chesapeake Cove, crossing Alexandria Avenue, until the end of Chesapeake Cove.

At the end of Chesapeake Cove, the trail enters the greenway again, crossing into the common area property owned by the SpringBrook HOA. Secondary entrance points, consisting of a trail marker, are proposed at the end of Purple Martin Cove and along Cardinal Lane where it intersects with Dove Trail.

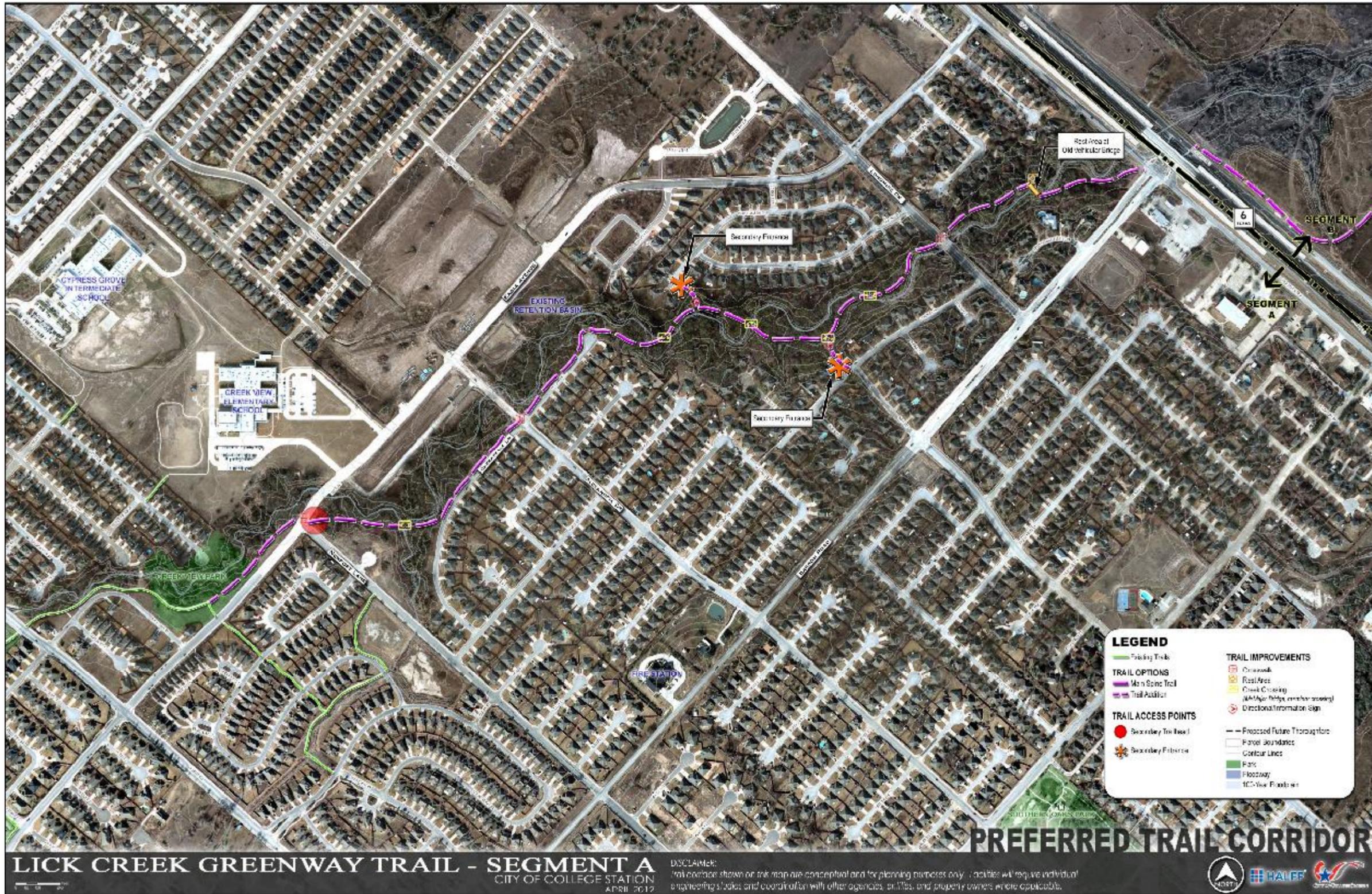
In order to minimize the impact on adjacent private properties, the trail is proposed to be located as central to the greenway corridor as feasible without adjusting the existing creek corridor and also capitalize on secondary entry points. In order to accomplish this, the trail crosses the creek in a number of locations. Detailed topographic analysis and hydrological review will help determine the specific type of creek crossing necessary at each of these locations.

At Longmire Drive, the trail crosses at-grade at a mid-block location. This street currently carries more traffic than that of a typical local residential street, and has the potential to convey an even larger volume of traffic as the residential lots east of Eagle Avenue continue to develop. In order to increase visibility of trail users at this mid-block crossing, vehicular warning signs and a pedestrian crosswalk should be installed. Other safety treatments could be considered during the design phase, including a pedestrian-actuated rapid flash beacon signal.

The trail continues on the northeast side of Longmire Drive in the common areas, crossing the creek at an old vehicular bridge where a rest stop is also proposed. An evaluation of the existing bridge structure during the actual design phases of the project, will determine if the bridge structure is safe to use as a trail crossing of the creek. Segment A terminates at the intersection of

SH 6 frontage road and Barron Road. Crosswalks and wide sidewalks already exist at this intersection, providing a connection across SH 6 into Segment B.

Map: (Figure #9) Segment A Preferred Trail Corridor



## **Segment B**

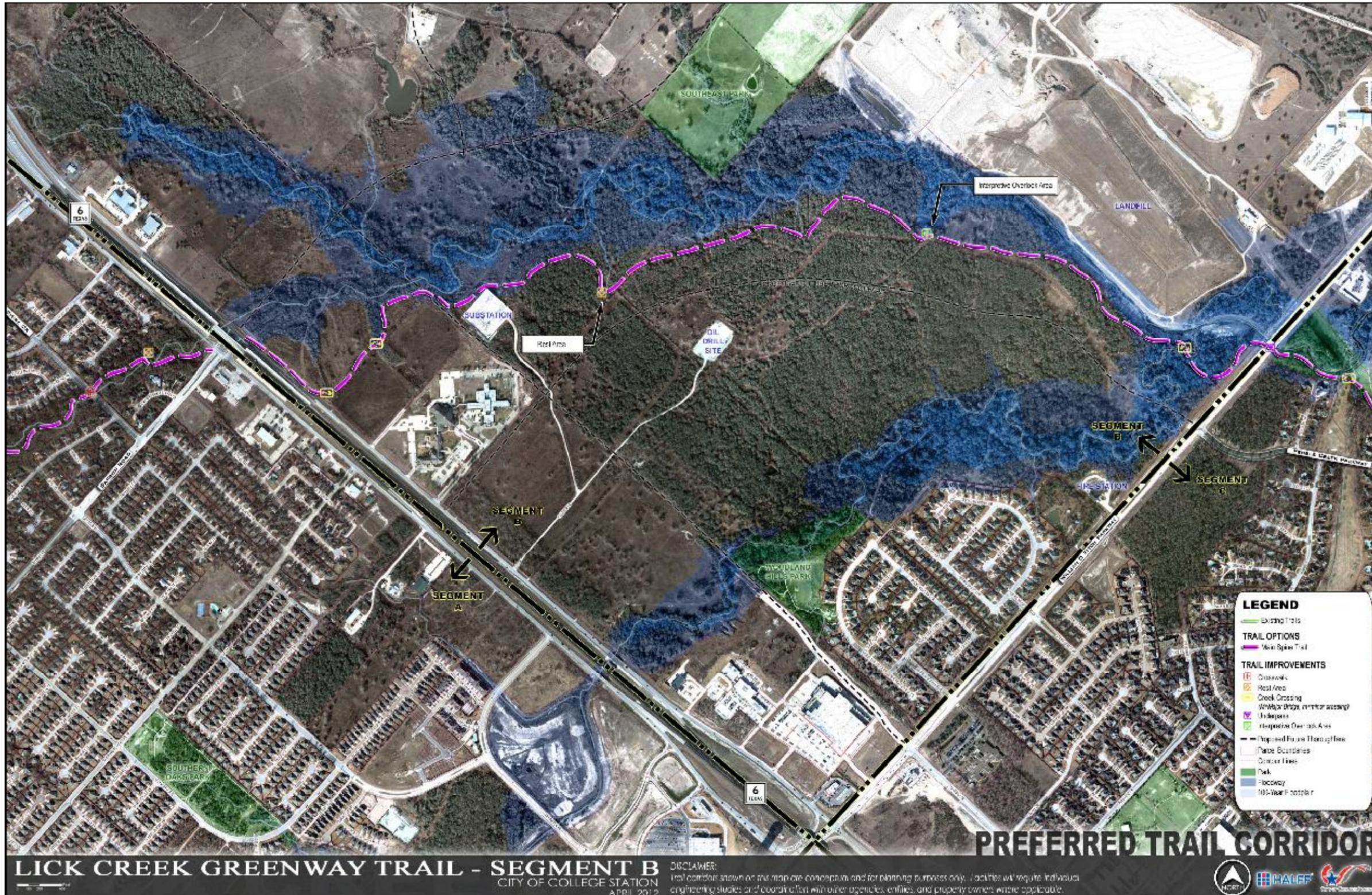
Segment B shows the preferred trail layout continuing northeast of SH 6 south of Lick Creek on property owned by the City of College Station. The property adjacent to SH 6 is an old landfill, so the trail travels southeast along the frontage road to the property line before turning northeast toward the creek. Two creek crossings are necessary, as the trail alignment encounters existing drainage ravines in this area. The trail follows the creek corridor around the edge of the substation to its northwest side to a proposed rest area that is adjacent to a proposed creek crossing. The trail then continues along the edge of the 100-year floodplain toward William D. Fitch Parkway. By locating the trail on higher ground, out of the floodplain, where the topography is less varied, fewer creek crossings are required.

At the far eastern end of the corridor in Segment B, the trail crosses the floodplain and floodway of a tributary to Lick Creek. A major creek crossing will be necessary through this crossing, and trail and creek bank reinforcement will most likely be required. The trail is proposed to cross under William D. Fitch Parkway at the existing roadway bridge. The underpass was selected at this location for numerous reasons. An at-grade crossing was evaluated earlier in the planning process in this area, but the difference in elevation between the top of the roadway at the bridge, and the proposed trail corridor adjacent to the creek is significant enough to require an extensive series of ramps and switchbacks to allow the trail grades to comply with current Texas Accessibility Standards. This approach would add a significant cost to this segment of the trail. In addition, during public input sessions, a majority of the residents of Pebble Creek preferred the under pass crossing option because it provided a definitive separation of trail users from vehicular traffic along William D. Fitch Parkway that the at-grade option did not provide. Implementation of the underpass may require stabilization of the trail and creek bank beneath and adjacent to the William D. Fitch Parkway bridge structure.

The future east and west extensions of Pebble Creek Parkway and the extension of Lakeway Drive will have a future impact on the trail alignment. The trail corridor has been moved closer to the Lick Creek corridor to avoid the future road extension to the west between SH 6 and William D. Fitch Parkway, that aligns with Pebble Creek Parkway at its intersection with William D. Fitch

Parkway. This alignment helps to avoid the potential impacts and conflicts between the trail and the future roadway. The future northwestward extension of Lakeway Drive to the other side of William D. Fitch Parkway will cross the trail corridor between the Methodist Church property and Lick Creek. This road extension will most likely require a bridge structure over Lick Creek, presenting an opportunity to include an under-bridge trail crossing in the design of the bridge structure.

Map: (Figure #10) Segment B Preferred Trail Corridor



## **Segment C**

On the east side of William D. Fitch Parkway, the preferred trail corridor continues toward the Pebble Creek Golf Course along the south bank of Lick Creek, on city-owned parkland. Between the road and golf course, the trail is located as far into the trees as feasible, to provide as much buffer area as possible between the trail corridor and adjacent private residences. The trail crosses the golf course near Hole 13 and continues along the city-owned parkland before turning toward Pebble Creek Parkway. Along this portion of the golf course, the trail runs parallel to a golf cart path, eventually intersecting and crossing Pebble Creek Parkway at the same location that the golf cart path does. Some improvements to this existing crossing will be necessary to make it compliant with Texas Accessibility Standards, and compliant with the Manual of Uniform Traffic Control Devices (MUTCD) requirements. These improvements might include improvements to the curb ramps, and the installation of signage improvements, crosswalk signs and pavement markings.

The trail continues parallel to Pebble Creek Parkway on the south side of the street within a city-owned linear park and utility corridor. An existing 5' sidewalk exists adjacent to the roadway; the trail is proposed to meander along the berms in this linear Parkland, to provide separation from the street and maintain a trail-like character. Between the golf cart crossing and the end of Pebble Creek Parkway, the trail will intersect 3 streets: Firestone Drive, Spearman Drive, and Royal Adelaide Drive (where Pebble Creek Parkway currently ends). At each of these intersections, the trail should be brought up toward Pebble Creek Parkway, where curb ramps and crosswalk improvements will need to be made.

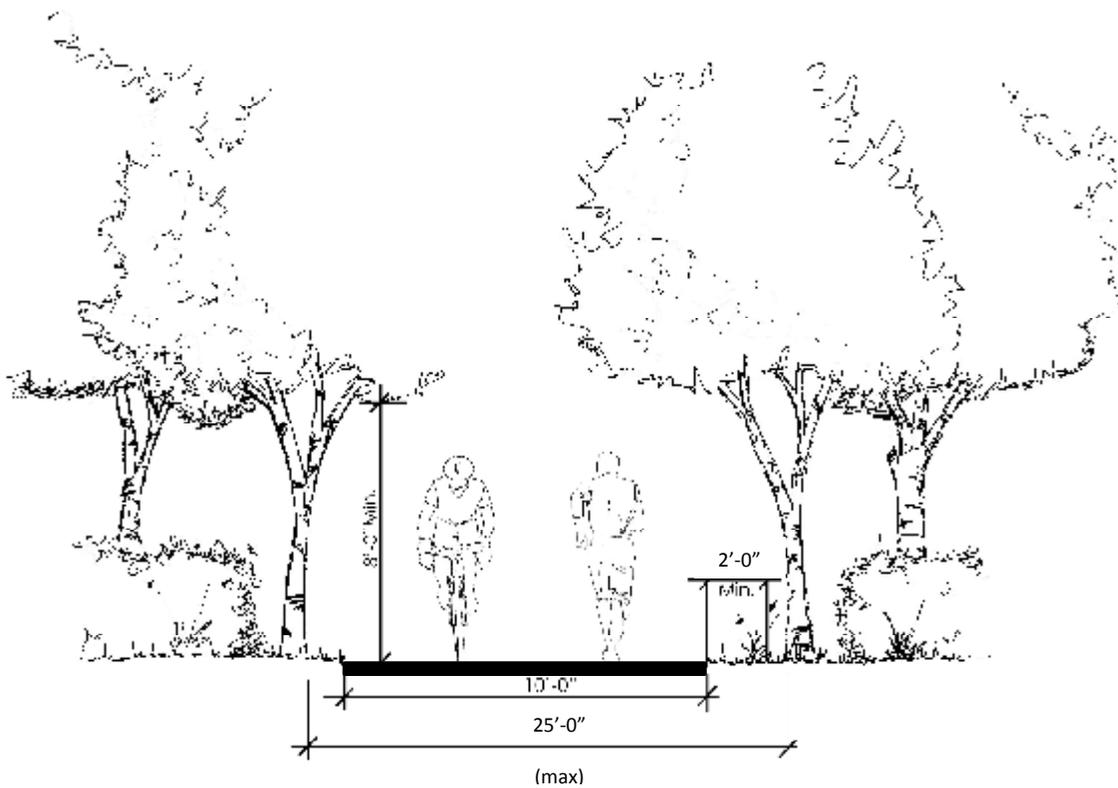
East of Royal Adelaide Drive, Pebble Creek Parkway does not exist. The shared linear Parkland and public-utility corridor continues, which the trail will utilize to continue toward Lick Creek Park. Evaluations for the trail placement and potential trail design solutions within this area of the corridor will need to be considered closely, to accommodate the future design of the Pebble Creek Parkway eastward extension.

Map: (Figure #11) Segment C Preferred Trail Corridor



## TYPICAL TRAIL SECTION

The preferred trail alignment and associated construction estimated cost is based on a 10' wide concrete trail. Per AASHTO standards the trail will require an additional two feet of clearing on each side of the trail for a total clearance including the trail of 14'. The preferred trail alignment will also require a minimal overhead clearance of eight feet.



## RETAINING WALL SECTION

Trail placement along creeks and drainage channels may require the implementation of retaining walls or other erosion control measures. Example retaining wall sections are shown below.

