



3. PROPOSED SOLUTION

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PROJECT APPROACH AND PROCESS

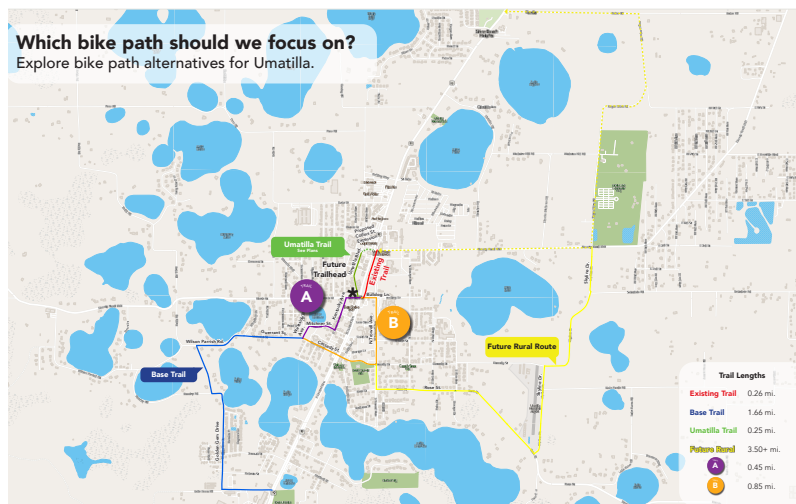
Stantec will utilize a proactive approach in the delivery of the required services for this assignment. This includes early and frequent coordination with applicable permitting agencies and utility companies. It also includes keeping the County project manager informed, particularly of issues that may impact budget and schedule. When project issues arise, Stantec will suggest alternative solutions or possible approaches to the County to keep the project on schedule. Finally, our staff is experienced in developing construction costs in concert with constructability reviews.

The general objective of this project approach is to provide documented information necessary for Lake County to reach a decision on the type, design, and location of improvements for Phase 3 of the North Lake Trail. The Project Development Process follows procedures set forth as part of National Environmental Policy Act (NEPA). The project documentation detailed in the approach will be prepared in accordance with NEPA and shall follow applicable State and Federal laws, executive orders, and regulations. The documentation will be developed based on the guidance of all applicable local, long-range transportation and comprehensive plans governing the content and development of this type of study. The study information will be objective and complete. Additionally, in the preparation of the study, the Stantec team will seek out and bring attention to unforeseen information and issues which are relevant to the project. The following tasks summarize the major items included in the scope of work for this PD&E Study:

- After years of study and conversation, Phase 3 of the North Lake Trail is on its way to transition from a concept to reality; completing the PD&E study moves this trail section one step closer to construction. There is an urgency among many stakeholders to “get it done” while making sure that the North Lake Trail is eligible for a range of funding sources (including NEPA clearance for federal and state funding). The Stantec team has worked on numerous corridor and PD&E studies with extensive experience in addressing NEPA requirements (technical analysis and inclusive outreach). In many cases, we have streamlined the standard FDOT PD&E study process (as done for the Round Lake Road PD&E study) so we meet NEPA criteria within a compressed time frame.
- The Stantec team recognizes that the PD&E study cannot be completed in a vacuum. Phase 3 of the North Lake Trail begins at East Collins Street in Umatilla and then passes through unincorporated Lake County, including Altoona, Pittman, and the Ocala National Forest; each with its own distinct setting. The southern section (outside the Ocala National Forest) generally follows SR 19, beginning in downtown Umatilla until it reaches the Ocala National Forest. Local businesses and residential communities (Olde Mill RV

Park, Countryside Villas, Twin Lakes Estates, and Lakeview Retirement Community) line this corridor in addition to several community assets (McTureous Memorial Park, Altoona Charter School, United Methodist Church of Altoona, and Lake County Fire Station No. 14). Lake County owns a number of parcels along this section.

- We want to position the North Lake Trail Phase 3 project so it can quickly move into subsequent project phases (design, right-of-way acquisition, and construction) as funding opportunities become available. By building on the previous work that has been completed, we will confirm the impacts and make any necessary adjustments due to changing conditions, rules, policies, or legislation. As trail components and amenities are identified, we will note what can and cannot be included as well as what will be considered during the PD&E study and what will be examined during design; all included in the Commitments and Recommendations section of the study’s final documentation. While details will be determined during design, the Stantec team will keep an eye on how the North Lake Trail Phase 3 would seamlessly connect to the other phases of North Lake Trail.
- Through discussions with Scott Blankenship (City Manager) and Aaron Mercer (Public Works Director) at the City of Umatilla, we have learned that the City is looking at how to thread a trail through the City from Eustis to Umatilla that would connect to the southern end of the North Lake Trail Phase 3 project. On July 13, 2021, the City of Umatilla held a community workshop to begin this conversation.



Source: City of Umatilla Bike Path Alternatives Workshop; July 13, 2021

The following sections document the research and approach that the Stantec team will successfully follow to complete this PD&E Study. While working with the The Florida Department of Environmental Protection (FDEP) Office of Greenways and Trails (OGT), Stantec provided design and permitting services of roughly 25 miles of the Florida Keys Overseas Heritage Trail, located on property owned largely by FDOT. Trail design and engineering, landscape architecture, surveying, and ecological services have been provided for four separate segments of the innovative trail with a fifth segment underway. Stantec's design incorporated "outdoor classroom" theming for the keys' citizens, school children, and visitors and promotes sustainable economic development within the Florida Keys through increased interaction between trail users and local businesses by providing convenient, non-motorized trail access to and from US 1 businesses located along the trail.

PROJECT NEED

Development of a Needs Statement

Developing a draft Purpose and Need Statement helps us define the project in detail, streamline the process for later funding needs, and quickly engage the community. This step helps us hone in on the needs, related issues, and potential solutions for the transportation challenges ahead. It helps streamline the overall project development process—especially the NEPA portion in case federal funding is sought later. Finally, we find it helps to more effectively engage stakeholders and the general public. Ultimately, this documentation will contribute to efficiently developing the preliminary design.

A review of local transportation plans was performed to ensure the consistency of this project with regional and local transportation planning efforts. FDEP OGT identifies this project as a "Land Trail Opportunity" based on the 2018 Florida Greenways and Trails System Plan (FGTS). The North Lake Trail has been a part of Lake County's trails planning with its inclusion in the 2008 Master Trails Plan and its update in 2018. Currently, it is ranked #2 of PD&E Projects and ranked #3 of Trail Priorities of the Lake Sumter MPO 2021 List of Priority Projects.

The corridor is characterized by a diverse array of land uses throughout the study corridor. Existing land uses range from predominantly commercial and residential area in the City of Umatilla to rural throughout the other sections of the corridor. Ultimately the potential alignments will run through the Ocala National Forest which is the second largest nationally protected forest in the state of Florida. It covers 607 square miles of Central Florida and is located three miles east of Ocala, and was established in 1908. As the oldest national forest east of the Mississippi River and the southernmost national forest in the continental U.S., Stantec recognizes that this project has several unique characteristics and we have tailored our approach accordingly.

Public Involvement

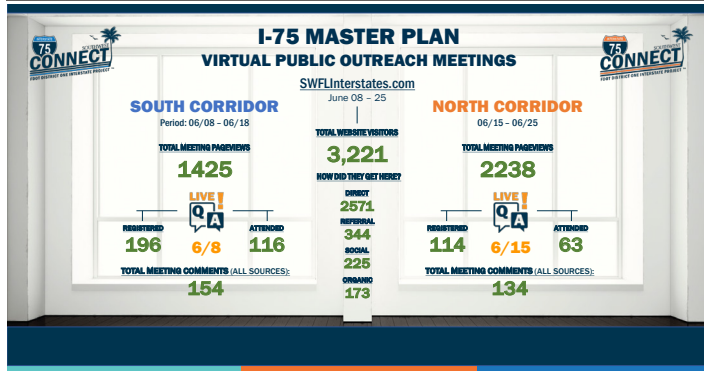
The Stantec team recognizes the critical role engagement plays in the transportation process. Our communication strategies flow from three areas – education, communication/consultation, and governance. With approximately 30,000 residents within the study area and a variety of stakeholders, the key is to employ a three-way communication process that educates, encourages meaningful input, and addresses concerns. We understand the overarching concerns related to respecting the environment, rural lifestyle, and ecotourism. Often there is always a public perception of a lack of transparency, a forcing of consensus at the expense of the No Build alternative and a desire for information that would support the need for this North Lake Trail project.

Our Public Engagement team, led by Laura Turner, AICP (LTPS) will tailor outreach activities to address known concerns and anticipate others based on the needs of the variety of players – agencies, advocacy groups, residents, visitors, elected officials, and the public record. Our team's experience in planning, policy, systems, future corridors, and public engagement along with our local, regional, and state relationships allows the team to craft and deliver messages that facilitate collaboration and highlight the benefits of the North Lake Trail, as well as the opportunities to actively participate in developing solutions for Lake County's future. Our methods range from traditional and grassroots efforts to high tech approaches including small group meetings, town halls, traveling road shows, wikimapping, geofencing with embedded surveys, social media, pop-up meetings, attendance at local events, dashboard applications that track outreach, renderings, visualizations, videos, and augmented and virtual reality.

Branding, data driven outreach, and web page management will ensure message continuity and inclusive conversations that facilitate communication, consensus building and placemaking.



Our team has successfully employed these inclusive techniques to reach traditionally underrepresented stakeholders and encourage participation by all, including project supporters who do not understand the need to have their voices heard. These tools are designed to meet stakeholders where they are and how they prefer to engage. As required by the State, we will conduct hybrid public meetings (virtual and in-person). The Stantec team has recent proven experience in developing innovative outreach tools such as a virtual meeting room set up by Stantec for the I-75 Southwest Connect project in southwest Florida. Virtual meeting rooms can be integrated into a project website; they can remain open as virtual pre-view, updated throughout the project and used to hold virtual meetings. Statistically speaking, virtual public outreach is proving to be a very effective way of reaching the public at-large. The Stantec team believes that a transparent and interactive approach to public involvement allows for issues to be resolved as they surface. Input will feed into the technical evaluations, demonstrating what can be accommodated and what cannot and why. We want to make that there are no surprises as the final recommendations are presented to the Board of County Commissioners (BCC) for approval.



The outreach activities for the North Lake Trail will be structured to address NEPA requirements (legal notification deadlines, Title VI, and information accessible to all), yet streamlined from the standard FDOT PD&E study process so that the overall study can be completed in a shorter time frame. The Stantec team will work closely with Lake County, and its partners (Umatilla and U.S. Forest Service) to ensure that information is shared openly, that there is a platform for the exchange of ideas, and for input to be considered as technical evaluations are completed.

We will begin with the Public Involvement Plan, which provides the blueprint for the study's outreach activities and will be prepared at the beginning of the study. The foundation of this plan is the identification of affected property owners and other stakeholders. In addition to the agencies that participated in the FDOT Corridor Planning Study, we intend to reach a range of interested groups and individuals that will include elected and appointed officials, local governments and agencies, civic groups, neighborhoods, local business operators, and caretakers of the area's community assets.

Elected and Appointed Officials

- U.S. Senator Marco Rubio
- U.S. Senator Rick Scott
- U.S. Congressman Michael Waltz (District 6)
- Governor Ron DeSantis
- Lt. Governor Jeanette Nunez
- State House Representative Keith L. Truenow (District 31)
- State Senator Dennis Baxley (District 12)
- Lake County BCC (in District 5 – Josh Blake)
- Lake County Sheriff Peyton C. Grinnell
- City of Umatilla City Council (all elected city-wide)
- Lake County School Board
- Lake County Water Authority (in District 5 – Amy Stone, Chairman)
- Lake-Sumter Metropolitan Planning Organization (MPO) Board, TAC, CAC

Local Governments and Agencies **Stakeholders interviewed by the Stantec team*

- Lake County* (including Parks, Engineering, Recreation and Trails Advisory Board)
- City of Umatilla* (including City Manager, Public Works, CRA)
- Lake-Sumter MPO
- FDOT – District 5 (including EMO and Bike/Ped Coordinator)
- U.S. Forest Service (Managers of the Ocala National Forest) – Carrie Sekerak*
- Florida Fish and Wildlife Conservation Commission
- Florida Department of Environmental Protection
- St. Johns River Water Management District
- East Central Florida Regional Planning Council
- Lake County Water Authority
- Lake County Public Schools

Civic Groups

- Umatilla Chamber of Commerce – Julie Rogers*
- Friends of Lake County Trails – Mike Stephens*
- Friends of the Umatilla Library
- Umatilla Rotary
- Umatilla Kiwanis
- The Greater Umatilla Historical Society
- Astor Community Association

Neighborhoods

- Countryside Villas
- Olde Mill Stream RV Community
- Lakeview Retirement Community
- Silver Beach Heights
- Twin Lakes Estates
- Pearl Lane
- Shockley Heights

Business Community

- Dan's Discount Feed & Fence
- Backwoods Trail Veterinary Clinic (Altoona)
- Old Crow Bar-B-Que
- Steel Around Forest Tavern
- Pizza Over Yonder
- Wild Woods Campground
- Dollar General

Community Assets

- Ocala National Forest – Carrie Sekerak*
- Alexander Springs
- Seminole Ranger Station Lake County Fire Station #14
- Umatilla Baptist Church
- Altoona Charter School – Walter Schmidt*
- Hilltop Community Center
- Umatilla Seventh Day Adventist Church
- First Baptist Church of Altoona
- United Methodist Church of Altoona

- McTureous Memorial Park
- Umatilla Middle School
- North Lake Park Regional Park
- Umatilla Veteran's Memorial Hall/American Legion Post 21
- Umatilla High School
- Altoona Post Office
- Astor Post Office

These individuals will be included in the study's master contact list (mailing and email addresses). We want to make sure that they are informed about the study's progress and upcoming meetings as well as have multiple opportunities to share input and study feedback.

The Stantec team interviewed many of these stakeholders by listening to what is important to them and how this Trail will enhance their lives, as summarized in the matrix below. Connectivity is on the minds of local trail advocates. Mike Stephens (Chair of Lake 100's Friends of Lake County Trails) noted the importance of the North Lake Trail – Phase 3 in completing the northern leg of a regional and statewide trails network. Through the Ocala National Forest, the group supports the corridor that passes Alexander Springs (CR 445) with the CR 445A option as the second choice. The SR 19 option is the last choice due to the numerous driveway and roadway crossings. The Umatilla Chamber of Commerce sees the economic development potential of a regional trails system, as Julie Rogers (Executive Director) noted. In fact, the chamber's home page has a link to Friends of Lake County Trails and her office was filled with trails information.

Stakeholder Interviews & Input on North Lake Trail - Phase 3						
Stakeholders	Issues					
	Completes Trails Network	CR 455 Option	SR 19 Option	Connectivity	Coordination Needed with USFS	Economic Development Catalyst
Ocala National Forest/U.S. Forest Service						
Carrie Sekerak - Deputy District Ranger	X		X	X	X	
Umatilla						
Scott Blankenship - City Manager	X	X		X	X	X
Aaron Mercer - Development & Public Services Director	X	X		X	X	X
Julie Rogers - Chamber of Commerce Executive Director	X	X		X		X
Lake County						
Jeff Earhart - Engineering Manager	X	X		X	X	X
Gallus Quigley - Recreation Coordinator for Trails	X	X		X	X	X
George Gadiel - Traffic Engineering Supervisor	X	X		X	X	X
Tracy Garcia - Elevate Lake Director		X		X	X	X
Additional Interests						
Mike Stephens - Friends of Lake County Trails Chair (Lake 100)	X	X		X	X	X
Walter Schmidt - Altoona Charter School (Principal)	X			X		

The City of Umatilla is all about trails. Scott Blankenship (City Manager) and Aaron Mercer (Development and Public Services Director) support the Phase 3 option along CR 445 in the Ocala National Forest since Alexander Springs should be a destination. For the sections between Umatilla and the Ocala National Forest, there should be some distance between the trail and SR 19 for safety reasons. The City is currently looking at the North Lake Trail “gap” between Eustis and Umatilla and want to make sure that this piece of the North Lake Trail ties into the Phase 3 southern terminus. The City favors the inclusion of a North Lake Trail connector to North Lake Regional Park.

During our meeting with Walter Schmidt, principal at Altoona Charter School, he indicated that the east side of SR 19 would be the logical location for the North Lake Trail south of Ocala National Forest. It was noted that a trailhead at the school is not wanted due to safety considerations. Deliberate measures have been taken to ensure that outsiders don’t come on campus during school hours.



Carrie Sekerak, Deputy District Ranger for the Ocala National Forest (U.S. Forest Service) shared her insights about how the trail will work within Ocala National Forest. As a cyclist, she appreciates the value of a regional trails network. However, she favors the SR 19 option through the Ocala National Forest in light of several conditions.

- The trail cannot interfere with USFS routine activities, such as logging and controlled burns. The trail may need to be closed periodically where these activities intersect.
- USFS is not responsible for trail construction and maintenance; Lake County will need to demonstrate a dedicated funding source for these activities.
- County landscaping maintenance will need to differentiate between invasive and native vegetation, so no adjacent vegetation is contaminated.
- An Environmental Impact Statement (EIS) may be required with in-depth evaluations of potential impacts to cultural resources (including the “intact village” found between Alexander Springs and the St. Johns River) and threatened and endangered species.
- While the permitting process generally begins one year prior to construction, the USFS will want specific commitments out of the PD&E Study process, which will be incorporated into

the Commitments and Recommendations section of the NEPA documentation. The USFS will treat these commitments as obligations; if they are not met, trail operations will be halted.

Conversations with Lake County staff indicate a clear preference for the CR 445 option through the Ocala National Forest since it is the most scenic route and provides a connection to the Alexander Springs Recreation Area. Jeff Earhart noted that the North Lake Trail user should feel like they are in the wilderness and not next to a highway. Gallus Quigley emphasized the need to work closely with the USFS throughout the PD&E study in order to satisfy their conditions of approval. South of the Ocala National Forest, the County prefers an alignment along SR 19 threading through the parcels already County-owned. All would like to include a North Lake Trail connection to North Lake Regional Park, the County’s largest.

We want to capture this momentum and continue to engage these stakeholders throughout the PD&E Study. An effective way to communicate ideas and feedback is through regular agency coordination meetings. Similar to the Project Visioning Team used during the Planning and Corridor Study, agencies and key stakeholders for the North Lake Trail will be invited to participate as project advisors, known as the Project Advisory Group (PAG). This valuable input will be used as the team prepares for each public meeting.

In addition, a study website will be created as a means to digitally provide study updates and to receive public input and feedback. There will be an educational component about trails such as the Rails to Trails Conservancy video clips already posted on the County’s Trails home page about standard trail rules and etiquette. In addition, we want to convey the benefits of trails, why North Lake Trail is important to Lake County, Umatilla, and Altoona, and success stories in other communities. The North Lake Trail website will be linked to Lake County’s site (Citizens First and Public Works pages) as well as with other sites (like the City of Umatilla, the MPO, Umatilla Chamber of Commerce, and HOA’s), making it easy for the user to learn about the study’s activities while visiting their favorite sites.

The interactive community meetings provide the opportunity for individuals to learn about project details, to have one-on-one conversations with study team members, and to share their ideas and concerns. While our preference is to hold these meetings in person (at locations near the corridor and ADA accessible), the Stantec team can easily pivot to a virtual meeting format (having done so for the M-COREs – Northern Corridor meetings and public hearings for FDOT District 5). This ability to quickly adjust to changing circumstances will allow the study to remain on schedule. Regardless of platform, each meeting will include a project presentation and the opportunity to review study information.

Three community meetings will be held throughout the PD&E study. The Project Overview Meeting will introduce the study, share initial data collection activities, and summaries of previous studies, while also receiving comments and ideas from the public. Input received will be considered as trail features are refined, leading to a set of recommendations; balancing input received with the technical evaluations. At the Public Alternative Concepts Workshop, the FDOT Corridor Planning Study corridors become the alternative concepts. They will be presented, along with related evaluations, for public review and feedback. At the final Public Meeting on the Draft Recommendation, the public will have the opportunity to review the draft recommendations for Phase 3 of the North Lake Trail, noting how this segment will fit into the overall trail network. Input received at this meeting will guide any refinements that may be needed before the Lake County Board of County Commissioners Public Hearing.

Several notification techniques will be used to announce these meetings. The study newsletter will be emailed and mailed (to property owners and those individuals without email addresses) before each meeting. Additional copies will be left at key gathering spots and will be posted to the study website. In addition to newspaper advertisements, the study team will provide the County with information for news releases. For existing stakeholder websites, we'll provide articles (in digital formats) and links to make it easy for those site visitors to learn about this study's activities. Social media will be incorporated into the outreach activities, broadening the study's reach to community leaders and stakeholders.

While these community-wide meetings meet NEPA/PD&E study process requirements, we suggest that the study team be available for more local, focused gatherings. Monthly progress meetings will be held with the Stantec team (as done for the Round Lake Road PD&E Study), the Lake County Project Manager and the Office of Parks & Trails. Other agency coordination meetings will occur with the USFS (Ocala National Forest), City of Umatilla, Lake-Sumter MPO (including briefings before the TAC, CAC, and Board), FDOT, FDEP, SJRWMD, Lake County Public Schools, and utilities. In addition, they will be consulted prior to each public meeting which will allow for making any needed adjustments before study information is shared with the public.

Small group meetings will be held, providing the opportunity for discussions about specific issues and concerns. We want to go where people already are (whether in person or virtually); making it easy for them to learn about the latest study news and to share their thoughts. We would expect to meet with groups such as the Umatilla, Friends of Lake County Trails, neighborhood HOA's, and major property owners. The Stantec team can be available at local events such as holiday festivals and school fairs. We can also augment our availability by holding monthly office hours, either in person (at a local gathering spot like Umatilla City Hall, Umatilla

Public Library, or Altoona Charter School Community Building), virtually, or through Town Hall phone-in meetings. We intend to use established networks to "spread the word" – Umatilla Chamber of Commerce, Friends of Lake County Trails, Friends of Umatilla Library, and local businesses.



While we prefer to hold these meetings in person, we understand the need to be flexible in responding to current circumstances and the Stantec team can pivot between in person meetings and virtual formats. We will need to make sure that those without internet availability have options for participating. Building on the virtual format used for the Lake County BCC meetings during the pandemic, the "call in" feature (to listen to the meeting and to provide verbal comments) will be available as well as the "chat room" or "raise hand" features for meeting participants. We already intend to mail meeting notices to all adjacent parcels (owners and tenants/business operators) and hand deliver to key gathering spots. To supplement this outreach, we will work closely with Umatilla, Altoona Charter School, civic groups, neighborhoods, and local places of worship to make sure no one is left out.

By using this outreach approach, the final recommendations for Phase 3 of the North Lake Trail will be well vetted before it is presented to the Lake County BCC for adoption.

DATA COLLECTION

Data collection efforts are important for the environmental analysis, community features, identification of stakeholders and development of feasible alignments. Available data will be collected utilizing several sources including GIS databases, agency databases, such as the St. Johns River Water Management District (SJRWMD) and the property appraiser.

Aerial Photography

Scale-verified aerial photography will be obtained from Lake County and will be used as a basis for plotting various data necessary for both engineering and environmental analysis, alternative corridor and design studies, and the development of the preliminary plans of conceptual design. Aerial photography also becomes the primary source of information used to convey project considerations to the public at public meetings. Stantec will develop a CAD data base compatible for use on aerial photography. In developing CAD system data, Stantec will adhere to the FDOT's Roadway Plans Preparation Manual, FDOT CAD Procedures Manual and other procedures or special instructions, as appropriate in the performance of these services.

Survey

Field survey work will be performed as necessary on the sections involved in the selected alignment. The selected areas will be mapped providing existing rights-of-way and parcel lines as a basis for the centerline of construction and parcel acquisitions. Legal descriptions and sketches will be prepared for any additional required right-of-way. Additional survey services will include wetland locations and boring locations, if deemed

necessary. Stantec is aware that Lake County has a continuing services contract for services including appraisal, acquisition, and right-of-way support. As part of this project, Stantec will coordinate with the Lake County right-of-way team and land appraisal firm to complete the assessment and determine project costs for the North Lake Trail Phase 3 project.

Potential Alternatives

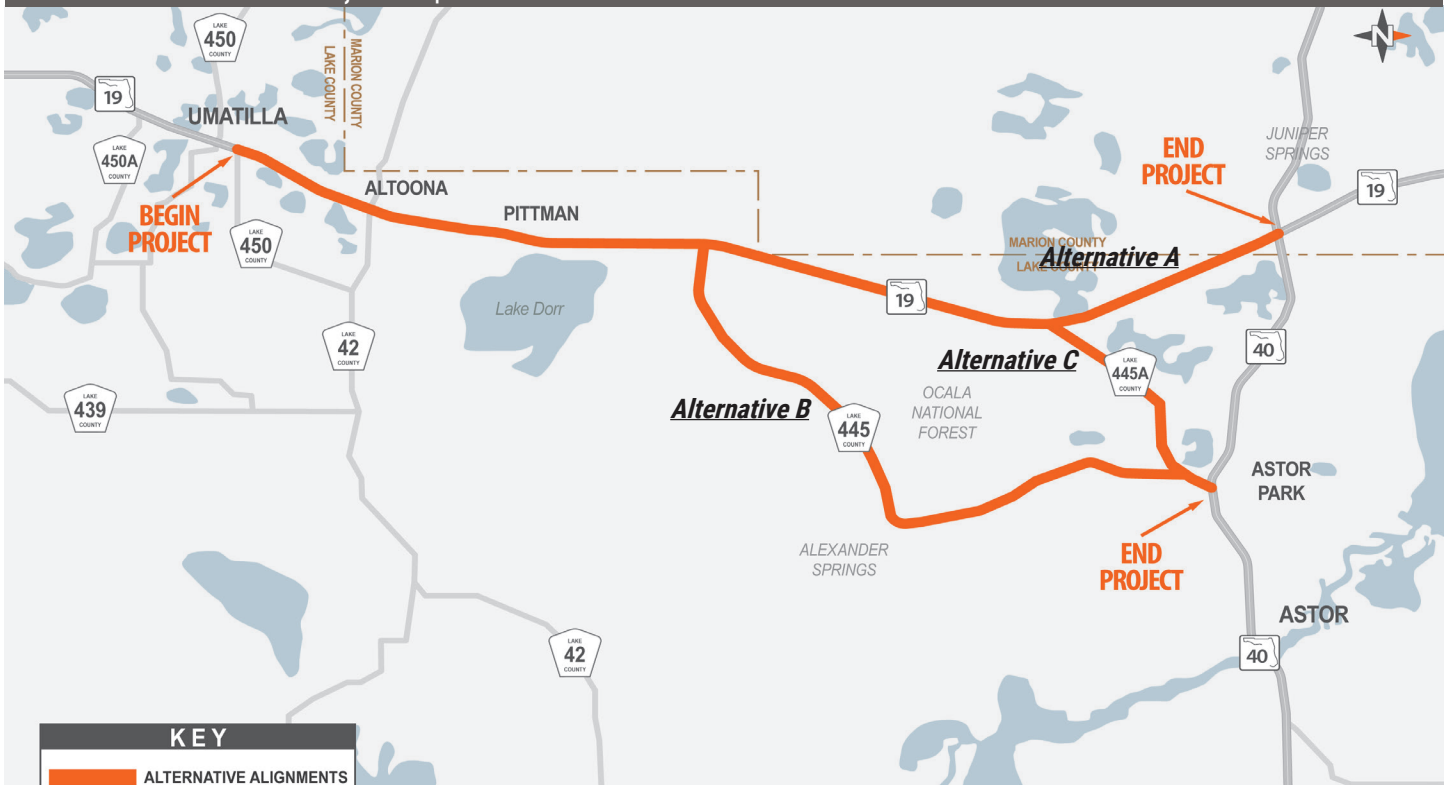
The North Lake Trail Phase 3 begins at CR 450 and ends at SR 40 either at SR 19 or near Astor Park in Marion and Lake Counties. The study area includes the area surrounding SR 19, CSX Railroad, CR 445, and CR 445A. The study area intersects the City of Umatilla and the local communities of Altoona, Pittman, and Astor Park. There is an existing 10-foot sidewalk between Bulldog Lane and East Collins Street, so the trail alternatives will begin at Collins Street and SR 40. Based on our research we believe that the trail alignment is fairly set from E. Collins Street to E. Altoona Road; likely using the County's right-of-way (old RR line).

Using the recommendations from the North Lake Trail Planning and Corridor Study, four alternatives will be evaluated as part of the PD&E process and are described below.

Alternative A

Alternative A has the North Lake Trail following SR 19 from CR 450 to SR 40. It begins within the existing railroad corridor and travels north on the eastern side of SR 19. It then crosses to the western side of SR 19 at Beach Street and continues north. Upon reaching W. Altoona Road, a dirt road parallel to the west SR 19, the Trail then continues north along the western side of W. Altoona Road and crosses Lake Daisy Drive, shifting over to the east side of W.

North Lake Trail Phase 3 - Project Map



Altoona Road and when reaching SR 19 and turns north on the western side of the road. The path continues on the western side of SR 19 until terminating at SR 40.

Alternative B

Alternative B follows a similar path as Alternative A, until reaching CR 445. At CR 445, the trail crosses from the west side of SR 19 to the east and follows CR 445 on the north/west side of the road. The trail crosses Alexander Springs Creek and continues until reaching CR 445A. Once at CR 445A, the path crosses to the southern/eastern side of CR 445A, continuing north until reaching SR 40.

Alternative C

Alternative C also begins at CR 450, following the Alternative A alignment until reaching CR 445A. Upon reaching CR 445A, the trail alternative then proceeds to follow CR 445A until reaching the intersection it shares with SR 40. The path of the trail would ultimately end at the intersection of CR 445A and SR 40.

No Build Alternative

As a baseline for comparison (and required by the NEPA process), the No Build Alternative will be considered. The No Build Alternative considers what would happen if the facilities in the area continue to operate with no changes. If, in the course of the study, all of the remaining alignments are found to have significant environmental impacts that outweigh the No Build Alternative's inability to meet the Purpose and Need, the No Build Alternative could be selected as the Preferred Alternative.

Other alternatives resulting from the corridor evaluation could potentially be evaluated as part of the overall process.

As part of the alternatives review, the Stantec team will review the typical sections that were prepared as part of the previous Planning and Corridor Study and will develop revisions, if necessary, for Lake County and agency approval. Conceptual trail alternatives will be developed within the identified corridors, and graphical representations will be developed to present the different alternative alignments and cross-sections to the public and project stakeholders. The trail alternatives, including the No Build Alternative, will be assessed for their environmental impacts and right-of-way requirements, and detailed project costs will be developed. The merits, impacts, right-of-way requirements, and costs of the alternatives will be included in an evaluation matrix for presentation at a public meeting and to assist in the selection of a preferred build alternative. The preferred Build Alternative will be advanced for further refinement and environmental analysis, and detailed concept plans of the preferred alternative will be developed. The alternatives analysis activities and details of the preferred Build Alternative will be documented in the Preliminary Engineering Report and presented at the public hearing, in compliance with NEPA requirements.

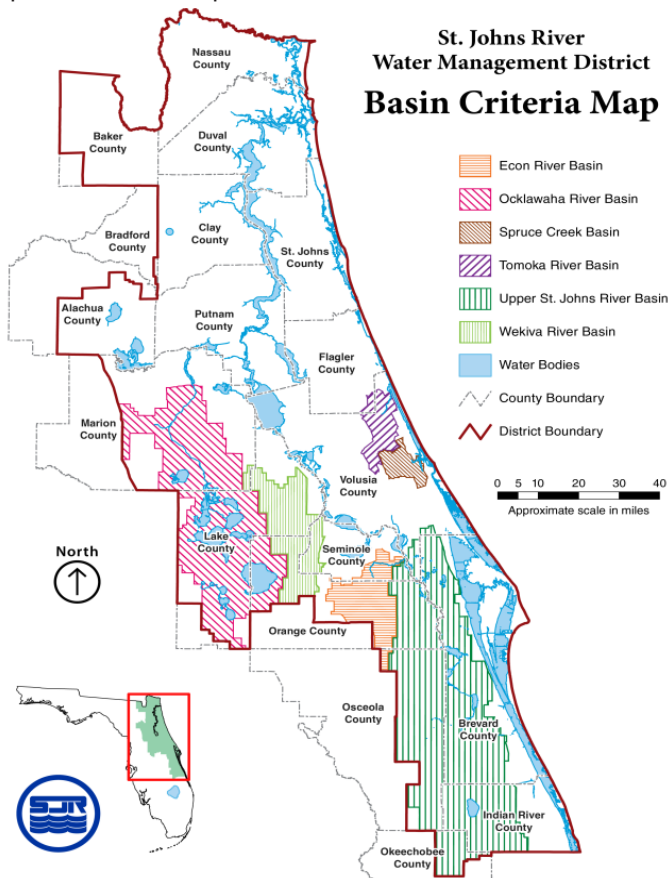
We feel the user's experience is more comfortable having the trail in its own corridor at a distance from existing traffic. However, on past trail projects, we have received the corridor from the railroad in varying conditions, for example on the Cross Seminole Trail between Oviedo and Winter Springs, the railroad removed the rails and ties and mined the majority of the ballast. However, on the Lehigh Trail in Flagler County, they left the railbed intact and the County was responsible for clearing it. The surplus value of the materials would not offset the labor costs of removal and the open graded ballast material does not perform well as a base material for an asphalt trail. Contamination may also affect the final trail configuration as FDEP would require two feet of clean fill above a contaminated sub-surface before the asphalt trail is placed to effectively seal the contamination thus creating a "brownfield site". Vertical control points will be the termini and road crossings to minimize roadway reconstruction. Standard trail crossing improvements will be utilized at all trail and road crossings. Our team will evaluate trailhead treatments in the City of Umatilla to transition between the different phases of the North Lake Trail.

Because we recognize the long-term well-being of your community infrastructure is just as essential, we will look at long term implication of this project to make sure it meets your future transportation needs. While a number of evaluation tools and techniques can be applied, it's important to remember the big picture: the evaluation must be multi-dimensional, and we can help with that. We address and prioritize all the key aspects of a project. By looking at capacity, safety, operations, and maintenance costs; improved accessibility; and multimodal benefits together, we can see how they influence one another and to identify which aspects are critical to the determination of the recommended improvement.

Stormwater Management

The North Lake Trail project is subdivided by multiple basins under the jurisdiction of the St. Johns River Water Management District. The first two miles along SR 19 from CR 450 to Keene Road are located within the Ocklawaha River Hydrologic Basin, which special basin criteria identifies as having to comply with the 10-year storm event in combination with the 25-year permitting storm event. The following six miles along SR 19 from Keene Road to south of Shockley Trail Road are located within the Wekiva River Hydrologic Basin which has special basin criteria regarding the 100-year floodplain. The project is not located within the Wekiva Recharge Protection Basin; therefore, no recharge volume is required for the construction of the North Lake Trail. According to FDEP, the remaining segments are within various sub-basins of the Middle St. Johns Basin that ultimately drain to Buck Lake, Sellers Lake, Jumping Gulley Creek, Juniper Creek and/or Alexander Springs Creek. Since FDEP has not adopted Total Maximum Daily Loads within the project area, nutrient loading analysis is not required. Additionally, there are no sensitive Karst areas or Florida Aquatic

Preserves within project limits. Although several of the water bodies in the area including Juniper Creek, Alexander Springs Creek and Lake Dorr, are considered Outstanding Florida Waters, impacts are not anticipated.



For the majority of the project, the stormwater runoff currently sheet flows to shallow roadside swales. Since the project is a trail, treatment is not required per rule 62-330.051. Attenuation of increased runoff is expected to be provided in roadside swales. Existing ditches that are impacted by the trail will be evaluated to ensure that adequate storage and conveyance is provided and to determine if additional right-of-way is needed. While most of the corridor is located above the 500-year floodplain in FEMA Zone X, there are multiple areas that are in or adjacent to FEMA Zones A and AE or 100-year floodplain. Impacts to the 100-year floodplain can be compensated cup for cup within roadside ditches. Also, there are numerous cross drains that may be impacted due to the construction of the trail. The impacted cross drains will be evaluated for hydraulic capacity and structural integrity to determine whether extension, rehabilitation, or replacement is warranted in coordination with Lake County.

A Location Hydraulic Report (LHR) will be completed as part of the PD&E study. The primary objective of the LHR is to evaluate the hydraulic conditions along this future corridor in the existing and proposed conditions. This evaluation will be accomplished by assessing and quantifying all floodplain impacts and providing recommendations to mitigate any impacts. The LHR will also include the evaluation of the hydraulic capacity and structural integrity of the existing culverts that are impacted by the trail. The

results of this evaluation will provide the County with information necessary to reach a decision on the type, design and location of improvements that are required within the project study limits.

Stantec will strive to minimize impacts to the wetland areas located throughout the study corridor. A couple of ways in which wetland impacts can be minimized is through the use of gravity walls and elevated boardwalks. Due to the potential threshold of wetland impacts, it is anticipated that an environmental resource permit will be required.

Structures

The existing two-lane bridge (#114047) over the Alexander Springs tributary went into service in 1959 and its last inspection in August 2017 yielded a sufficiency rating of 80.5. During the PD&E Study we will evaluate concepts for crossing the tributary for any alternative utilizing the CR 445 corridor. We will evaluate several options for the trail that include widening the existing bridge, attaching to the bridge, and constructing a new dedicated independent bridge. Intuitively, a new bridge would seem most expensive; however, other factors can offset the added cost with value. For example, any widening or attachment would place the trail user directly adjacent to the traffic which periodically consists of logging trucks. Bark or sticks from the trucks can present a safety issue. Additionally, widening the bridge may require bringing it to current standards, may have hydraulic implications, and may require collection of stormwater via a deck drainage system; currently there are scuppers. A new crossing could be offset from the roadway and the profile of the trail would be independent. Since we wouldn't have to include vehicular traffic, the structure could use longer spans with fewer pile groups in the water thus having less hydraulic and environmental impacts. The offset bridge would provide a more pleasant user experience opposed to being adjacent to the road. We will evaluate all options but would expect that the cost of a separate structure would be competitive when comparing the impacts that could be generated by the other options.



Environmental Features

Much of the study area is contained within the Ocala National Forest, which provides a vast array of different habitat types both upland and wetland and also represents a potential 4(f) resource. The Forest provides a significant opportunity for listed species involvement as the diverse ecosystems are known to be home to abundant wildlife. Species such as the Florida scrub-jay, red cockaded woodpecker, bald eagle, sand skink, eastern indigo snake, gopher tortoise, and wood stork have all been documented, as well as a number of protected plant species endemic to this area. Bald eagle nests are located throughout the study area including nest LA192 which is near Alexander Springs just off CR 445. Although the Florida black bear is no longer a listed species in Florida, Florida Fish and Wildlife Conservation Commission does have a bear management plan in place in order to manage and conserve bears in their local communities. The project occurs within the Central Bear Management Unit (BMU) which is the most densely populated with bears in the state. Coordination will occur to help the project meet its goals while limiting human-bear and vehicle-bear conflicts. Research of existing databases and published material as well as field surveys will be conducted to determine the potential involvement of the project with listed species. Surveys for some of the species can only be conducted during certain times of the year (sand skink, scrub-jay, flowering plants), so early identification of potential habitat types will be important for planning purposes to ensure timing of surveys will be able to meet the project schedule. Coordination with park service personnel and wildlife agencies will also be included in the environmental analysis.



Wetlands and surface waters classified as jurisdictional to both state and federal regulatory agencies are present in the study area. These include a number of wetland systems within the area, Outstanding Florida Waters such as Lake Dorr and Alexander Springs Creek, and the springshed for Alexander Springs. Impacts to wetlands and/or surface waters will likely result in the need for both state and federal permits. A recent change in the jurisdiction of the federal 404 program has given the state of Florida jurisdiction over waters of the US, though the US Army

Corps maintains jurisdiction over certain waters that have been “retained”. Alexander Springs Creek is a waterbody that has been retained, so if the project is going to occur within 300 feet of this creek and proposes any impacts to wetlands associated with it, the Corps will be the federal regulatory body. If there will not be any impacts associated with this system but will have wetland impacts elsewhere, then FDEP will administer the federal program. The St. John’s River Water Management District will oversee any state related permitting. The Environmental Analysis will document all potential involvement with jurisdictional features for the project alternatives, avoidance, and minimization techniques, and will include a draft mitigation plan to address potential unavoidable impacts to wetlands and surface waters proposed by the project.

Forestry Services

The Ocala National Forest is managed by the U.S. Forest Service, was established in 1908 with 128,000 acres, and has grown to its current size of 386,000 acres. Alexander Springs is one of 27 first-magnitude springs within Florida with the recreation area entry located off of CR 455. Logging is one of the revenue-generating operations within the Ocala National Forest and logging trucks can weigh about 97,000 pounds. They do not have road connection restrictions as state forests do. Regular controlled burns occur, generally in 500-acre sections, generating up to 6,000 BTUs. Each section will have one controlled burn every five years. However, control burns occur every two years along CR 445. There are no existing paved trails within Ocala National Forest; all are unpaved. The USFS will own the property underneath the North Lake Trail so the trail will be approved “by permit”; there will not be a lease. All of these factors will need to be considered as the recommendations for the new trail take shape.

Stantec is very familiar with working with the United States Department of Agriculture (USDA) Forest Service as it pertains to NEPA projects themselves or third-party projects for the Bureau of Reclamation, US Fish and Wildlife Service, and FHWA. Much of this experience has come from hydroelectric and liquified natural gas projects; however, a recent Environmental Assessment (EA) at the Chequamegon-Nicolet National Forest assessed realignment and access issues as well as river-bank restoration after severe flood damage. Federal Highway Administration (FHWA) was a cooperating agency in this action. Stantec understands the issues associated with working within lands under the Department of



the Interior recognizing that each agency has a specific mission that must be respected. In the case of the Ocala National Forest some of those elements are recreation, timbering, and Department of Defense needs at the bombing range. Having this understanding and experience allows us to develop strategies that can be presented to the USFS to achieve the County's objectives. Paul Uncapher will be the Stantec adviser on this project. He has assembled and managed large interdisciplinary teams that prepared a wide array of environmental documents (EIS, EIRs, Resource Plans) and the supporting technical investigations and studies for more than 30 years. Prior to his consulting experience he worked for the USDA Forest Service and US Department of the Interior-Bureau of Land Management in multiple capacities.

Cultural Resources

SEARCH will support the PD&E initially by preparing a detailed desktop analysis of the alternatives developed for the project. The desktop analysis will include identification of known cultural resources that have been recorded with the Florida Master Site File (FMSF), research regarding unrecorded historic resources, and the development of archaeological probability models in order to develop an understanding of the cultural resource's issues associated with each corridor under consideration.

Upon selection of a preferred Build Alternative, a cultural resource assessment survey (CRAS) of the project Area of Potential Effect, which should include the existing and proposed right-of-way in addition to a 330-foot (100-m) buffer. The area will be surveyed to investigate and document evidence of historic or prehistoric occupation or use within the project limits and to evaluate these for their potential eligibility for listing in the National Register of Historic Places. The CRAS will include an archaeological and architectural history survey, the results of which will be presented in a Phase I CRAS report that meets the guidelines of the FDOT PD&E Manual and Chapter 1A-46 of the Florida Administrative Code. The field methods will follow the recommendations presented in Section 2 (Cultural Resource Assessment Surveys) of the Florida Division of Historical Resources Cultural Resource Management Standards & Operations Manual.

Alternative A

Previously Recorded Resources: A review of the FMSF indicates there are 18 previously recorded historic structures, two archaeological sites, and one linear resource within or adjacent to the proposed project limits of Alternative A. Of these, the Pittman Dwelling (8LA00268) at the Pittman Work Center has been determined eligible for listing on the NRHP, as has the Altoona United Methodist Church (8LA02114).

Unrecorded Resources: A review of the Lake County Property Appraiser's database indicates that there are 26 parcels containing potentially unrecorded historic structures within or adjacent to the proposed project limits. Review of historic aerial and topographic imagery further indicates that an unrecorded

segment of the St. John and Lake Eustis Railroad (8LA04716) may intersect the project limits near Ravenswood Road, and the culvert crossing Ninemile Creek north of Sand Hill Pond may also be historic. Archaeological probability within Alternative A is moderate, with higher archaeological potential in well drained upland areas in proximity to fresh water and lower archaeological potential in areas of poorly drained soils.

Alternative B

Previously Recorded Resources: There are 17 previously recorded historic structures, three archaeological sites, and one historic cemetery identified within or adjacent to the proposed project limits of Alternative B. Of these, one archaeological site (8LA00530) has been determined eligible for listing in the NRHP. Two of the historic resources, the Pittman Dwelling (8LA00268) and the Altoona United Methodist Church (8LA02114), have also been determined eligible for NRHP listing.

Unrecorded Resource Potential: A review of the Lake County Property Appraiser's database indicates that there are 25 parcels containing potentially unrecorded historic structures within or adjacent to the proposed project limits. Review of historic aerial and topographic imagery further indicates that an unrecorded segment of the St. John and Lake Eustis Railroad (8LA04716) may intersect the project limits near Ravenswood Road, and FDOT Bridge No. 114047 (CR 445 over Alexander Springs Creek) was constructed ca. 1959. Archaeological probability within Alternative B is moderate to high, with higher archaeological potential in well drained upland areas in proximity to fresh water and lower archaeological potential in areas of poorly drained soils.

Alternative C

Previously Recorded Resources: There are 18 previously recorded historic structures, three archaeological sites, and one linear resource identified within or adjacent to the proposed project limits of Alternative C. Two of the historic resources, the Pittman Dwelling (8LA00268) and the Altoona United Methodist Church (8LA02114), have also been determined eligible for NRHP listing.

Unrecorded Resources: A review of the Lake County Property Appraiser's database indicates that there are 34 parcels containing potentially unrecorded historic structures within or adjacent to the proposed project limits. Review of historic aerial and topographic imagery further indicates that an unrecorded segment of the St. John and Lake Eustis Railroad (8LA04716) may intersect the project limits near Ravenswood Road, and the culvert crossing Ninemile Creek north of Sand Hill Pond may also be historic. Archaeological probability within Alternative C is moderate, with higher archaeological potential in well drained upland areas in proximity to fresh water and lower archaeological potential in areas of poorly drained soils.

Geotechnical

Three alternatives for the trail alignment have been identified. All three alternatives share the same study corridor starting in Umatilla at CR 450 until reaching Pittman. The USCS Soil Survey shows primarily sandy soils that are compatible with the construction of the trail along this portion of the alignment. There is a short portion of the alignment where the land drops off very close to the SR 19 pavement into the littoral zone of a lake. This will likely require substantial fill (and possibly a retaining wall). Soil conditions in this area should be explored early during the preliminary design process to verify foundation soil conditions in the fill zone to evaluate whether there are adverse potential slope/wall stability issues.

The alignment for Alternative A diverges from SR 19 in Pittman and follows a dirt road until it converges again with SR 19. Along this portion of the alignment, the United States Conservation Service (USCS) Soil Survey shows primarily sandy soils, some of which have characteristically shallow groundwater levels. However, the fact that there is a serviceable road along this portion of the Alternative A alignment, it appears unlikely that significant foundation soil issues are present except for the possibility of deleterious organic muck at some low-lying wetland areas. These low-lying areas should be explored early during preliminary design. After converging with and following the west side of SR 19 to the end of the project, it appears that another area that may have foundation soil issues is near the public boat ramp by Beakman Lake. This area should be explored early in the preliminary design process.

The alignments for Alternatives B and C share the same corridor from Pittman to the intersection of SR 19 and CR 445 where the trail alignments diverge. Over this portion of the Alternatives B and C shared alignment, the USCS Soil Survey shows primarily sandy soils that are compatible with development. However, in this portion of the alignment, SR 19 crosses a low-lying wetland type area, and the road is on a relatively high embankment. Deleterious organic muck may be present in this area. This area should be explored early during the preliminary design process.

The Alternative B alignment continues along SR 19 until SR 19 intersects with CR 445A, then the trail alignment follows CR 445A until the trail alignment converges with the Alternative C trail alignment at the intersection of CR 445A and CR 445 near Astor. Along this portion of the Alternative B alignment, the USCS Soil Survey shows primarily sandy soils that are compatible with construction of the trail. The alignment crosses some low-lying wetland-type areas that may contain deleterious muck, and these areas should be explored early in the preliminary design process.

After diverging from the Alternative B shared alignment that ends at the intersection of SR 19 and CR 445, the Alternative C alignment continues along CR 445 until CR 445 intersects with CR 445A. Along this portion of the Alternative C alignment, the USCS Soil Survey again shows primarily sandy soils compatible with

construction of the trail, and again with some low-lying areas that may contain organic muck, and which should be explored early in the design process. The biggest extra foundation/site work associated with the Alternative 3 alignment is the bridge crossing of Spring Creek and the associated wetlands adjacent to Spring Creek. The USCS Soil Survey maps the wetlands in this area as "Terra Ceia Muck, Frequently Pondered". Deleterious organic muck is likely present, and this area should be explored early in the preliminary design process.

From the convergence of the Alternative B and C trail alignments at the intersection of CR 445 and CR 445A, the Alternative B and C trail alignment continues along CR 445A to the intersection of CR 445A and SR 40. The USCS Soil Survey shows sandy soils that should be compatible with construction of the trail along this portion of the alignments.

Contamination

Contamination within or adjacent to proposed project corridors can significantly impact project costs and schedules and can also endanger construction crews and the environment. Sites of potential concern for a project will be identified during preparation of a Contamination Screening Evaluation Report (CSER) following the methodology presented in Chapter 22 (Contamination Impacts) of the FDOT Project Development and Environmental Guidelines. Review of available data during the CSER will classify most potential concerns as having NO or LOW potential to significantly impact the project cost or schedule. Those deemed to have a MEDIUM or HIGH impact potential may require further study. Recommendations for actions, such as soil and groundwater sampling and testing, asbestos surveys, dewatering effluent monitoring and treatment, soil removal and replacement, etc., will be provided as necessary.



Preliminary review of FDEP GIS data indicates 20 registered fuel tank facilities exist within 500 feet of the project corridor. Many of these have reported petroleum contamination and remain contaminated. Further, two hazardous waste cleanup sites and 15 hazardous waste generators were found in the vicinity of the project. No solid waste landfills or dry cleaners were noted near the project corridor during our preliminary review.

The project corridor may include a segment along a former railroad grade, much of which has been converted to roadway. Railroad right-of-ways often have contaminants which can significantly impact project costs. Of primary concern are polynuclear aromatic hydrocarbons from creosoted railroad ties, arsenic from herbicides and wood preservation, and residual pesticides and herbicides. Also of concern are potential unreported discharges of fuel and chemicals from railroad cars and tankers during transportation of goods via the railroad.

Cost Analysis

Cost estimates will be developed for each design alternative, and will include the following:

- Construction cost estimates for all alternatives.
- Estimates of right-of-way acquisition costs, based on per square foot values from County Property Appraiser's assessment.

Utilities

Based on the information provided by the utility companies during early coordination, an assessment package will be prepared and will be provided to the project manager. This Utility Coordination Package will contain the following information:

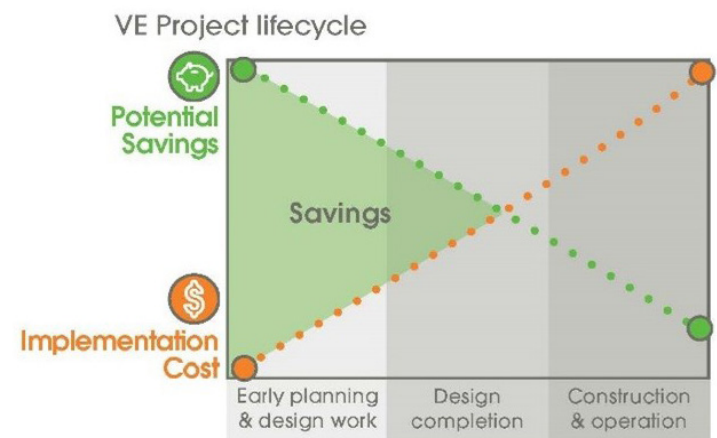
- The names of major utility companies within the project corridor.
- A set of aeriels denoting the location of major existing and proposed utilities along the project corridor.
- A description of all utilities located along the corridor (as set out above).
- A cost estimate furnished by the utility agencies for each alternative being considered.
- A discussion of joint right-of-way acquisition, if appropriate; and
- A discussion of any mitigative recommendations which could be taken by the County and utility companies to minimize community disruption.

Recognizing that this corridor could be used by local governments for underground utilities, we included BESH on the team for this coordination as they have an extensive history of providing utility work for the municipalities.

VALUE ENGINEERING

Stantec applies Value Engineering (VE) to deliver your project with the same performance and purpose, but for lower total installed cost. Our team assesses design and execution alternatives for client value, ranging from design standardization to reducing civil earthworks costs during construction. Selected alternatives can save thousands or even millions on your next project. When applying VE, we work closely with our clients to determine the best fit and never sacrifice the performance, quality, or safety requirements of your project.

VE ideas should be examined and implemented as early as possible in the project lifecycle. Value is highest during early planning and design work because implementation cost is lowest. As the project moves towards design completion and construction, potential savings are reduced because committed costs increase. Early implementation helps to avoid design rework and maximize value for a client.



PREFERRED IMPROVEMENT CONCEPTS

After the selection of a preferred alternative, the Stantec team will prepare a Preliminary Engineering Report (PER) to document all activities leading to the selection of the preferred concept. This report will include refinement of right-of-way requirements, social impacts (if applicable), costs, and other features needed to advance the project to the design phase.