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PROJECT UNDERSTANDING

Lake County, in cooperation with the City of Mount Dora and the City of Tavares, has campaigned aggressively to complete the Wekiva Trail Extension to connect Mount Dora to Seminole County. Earlier this year, the County reapplied for a federal BUILD (Better Utilizing Investment to Leverage Development) grant to fund design to advance this rails to trails project. Segment 1 extends 5.5 miles along the inactive CSX rail corridor, beginning just west of Tremain Street in historic Mount Dora to State Road (S.R.) 46 in Sorrento. The proposed 14-foot-wide eco-friendly multi-use trail will provide a safe, comfortable, accessible, paved facility for bicyclists, pedestrians, and non-motorized users.

Based on current FDOT standards, the recommended asphalt pavement design for a shared-use path is 12" of stabilized subgrade, optional base group 1 (4" of limerock bases), and 1 ½" of asphalt structural course. The trail will also have 2-foot sodded shoulders and a uniform cross slope of 2% to drain stormwater to one side for collection. Side slopes will be at a maximum of 1:2 to tie into existing ground. The alignment will follow the preferred alignment designated in the Preliminary Engineering Report (PER). The horizontal and vertical

geometry will meet FDOT design criteria, Lake County standards, ADA requirements, and the mitigating strategies agreed to in the Memorandum of Agreement. This agreement includes items such as maintaining historical rail elements, interpretive markers and/or kiosks, and continued coordination with an aesthetics committee and HABS/HAER documentation. There is significant erosion throughout the project limits, and drainage analysis will be needed to adequately design for stormwater along the trail to determine impacts to existing conditions, including wetlands.

There are two bridges and two underpasses that will be within the project limits. The first bridge is at Tremain Street. The existing timber bridge will carry the trail over Tremain Street. The PER calls for an 8-foot timber deck to be installed on the bridge once the existing rails and ballast are removed. JMT recommends that Tremain St. under the bridge be closed and North Baker St. be extended to intersect with Charles Ave. This would create a safe North/South connection without raising or replacing the existing historical timber bridge over Tremain St. Additionally, this will allow for sidewalk connection from the Mount Dora Marina to the trailhead.

TRAIL DESIGN APPROACH

The Lake Wekiva Trail, Segment 1 begins at the proposed trailhead and will extend 5.5 miles ending at SR 46. The recommended PD&E alignment utilizes existing CSX right-of-way, and public right-of-way. We understand that the County’s vision for this project is not to design a trail that “only meets” required design criteria but to design a trail showcase project. We share in the County’s vision, and our goals for the project include:

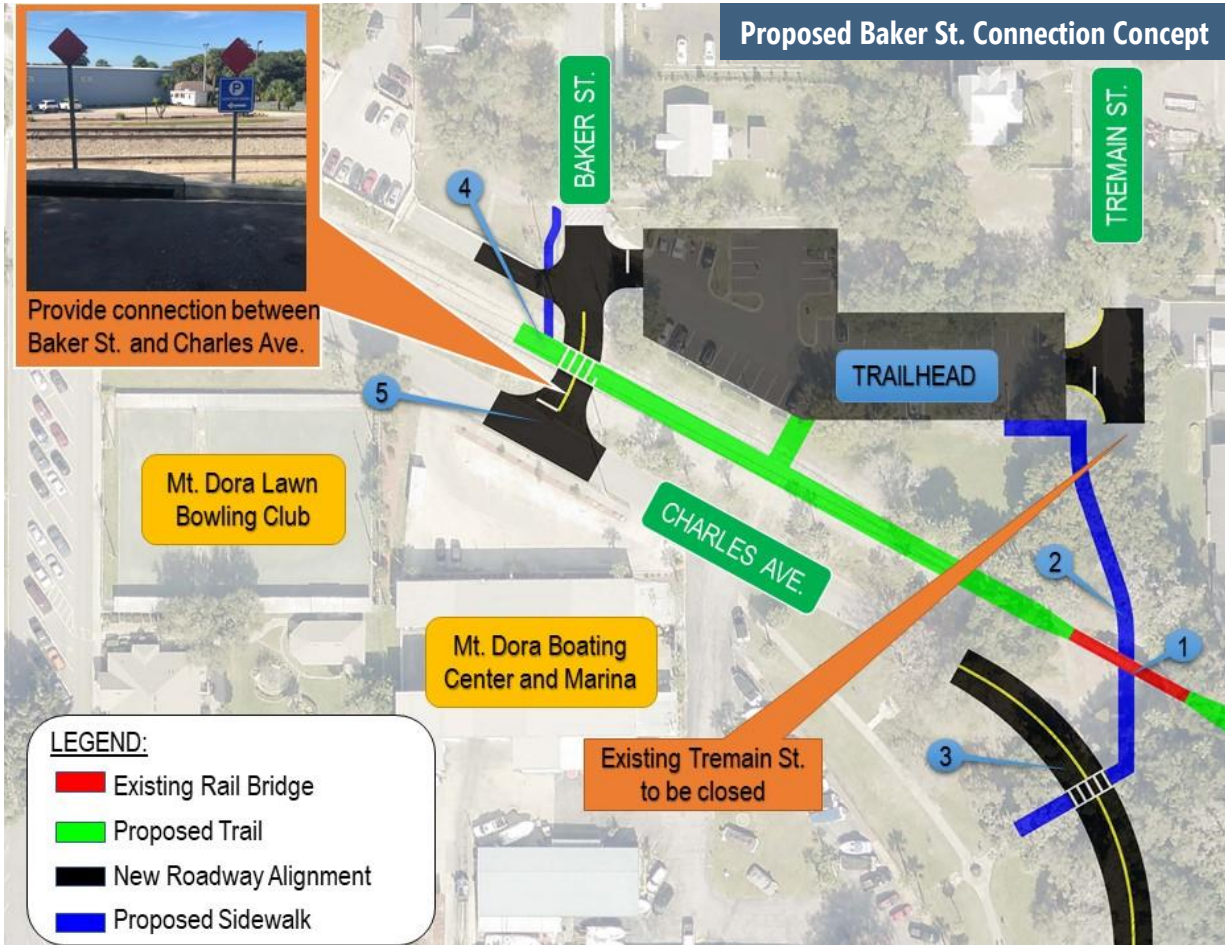
- Providing a ***safe trail*** for all users in harmony with its surroundings
- Provide a ***connection*** between waypoints such as parks, schools, local communities, and businesses
- Provide a ***scenic destination*** to attract local citizens and visitors to the trail
- Provide a ***low maintenance*** and ***self-sustaining trail***

The Trail typical section includes a 14-foot asphalt paved trail with 2-foot sodded shoulders, and 8-foot horizontal clearance on each side of the trail will be provided in accordance with Lake County’s preference. ADA compliant curb ramps with truncated domes will be installed where the trail intersects with existing roadways. Rapid flashing beacons are proposed at high-volume street crossings. We will supplement these beacons with high emphasis pavement markings for additional visibility. The trail will have a 2% cross slope to provide positive drainage to one side of the trail as determined. A maximum longitudinal grade of 5% will be maintained to avoid the addition of handrails. It is anticipated that we will need to transition the change in elevation 1-foot vertically for every 20-foot longitudinally based on vertical change of the structure.

As an innovative and value-added approach, JMT proposes to provide a connection at North Baker St. and Charles Ave. (with a maximum profile grade of 4.5%) and connect N. Tremain St. at the new trailhead. This will allow the existing rail bridge over Tremain St. to remain and eliminate the existing unsafe traffic under the bridge due to the unprotected timber piles and deficient vertical clearance. Additionally, this will allow the sidewalk connection to be constructed without the need for retaining walls and will allow for a freeflow movement from Charles Ave. on to S. Tremain St. to the south of the bridge (see the following page for further detail). As another added value concept, the sidewalks along US 441 could be connected to the trail at the pedestrian bridge with a series of switchbacks or stairs. A shallow drainage swale will be provided on one side to provide stormwater attenuation. Stormwater treatment for trail impervious should not be required, per 62-330.051(10) FAC. Cross-drains will be considered at areas where stormwater is eroding the existing rail bed or where needed to provide positive drainage. We will perform a culvert hydraulic analysis to determine if the cross-drain sizes and slopes are adequate or if they need to be adjusted or upsized to provide a design level of service for the 10-year rainfall event and to eliminate nuisance flooding. No mapped floodplains will be impacted. We will use existing drainage outfalls to maintain drainage patterns and minimize impacts to the existing basins. Some outfalls, such as at Tremain Bridge will require structures or energy dissipating measures to slow down the stormwater as there is significant erosion. We have also identified areas where aesthetic landscaping areas could be designed into the trail for scenic/historic rest areas. These areas would also provide opportunities to re-purpose rail elements.



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List of Improvements

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| <p>1 Existing Historical Rail Bridge can remain in place and in original condition.</p> | <ul style="list-style-type: none"> With the removal of Tremain St. below the bridge, the vertical clearance and exposed piers are no longer a safety issue. The construction of the sidewalk below the rail bridge does not require the construction of new retaining wall under the bridge. Avoids the need for schedule intensive design exceptions and variations with FDOT due to lane width, vertical clearance and pier protection. |
| <p>2 Full sidewalk connectivity between the Marina and the proposed trailhead.</p> | <ul style="list-style-type: none"> This alternative provides full connectivity between the marina and the trailhead without the need for additional retaining wall design and construction costs. |
| <p>3 The conflict point at Charles Ave. and Tremain St. will be removed and replaced with a freeflow movement.</p> | <ul style="list-style-type: none"> Provides for a freeflow movement between Charles Ave. and Tremain St. without impact to the existing Live Oak trees and existing hardscaping features. |
| <p>4 Direct sidewalk access to trail along Baker St.</p> | <ul style="list-style-type: none"> Allows for direct access to the trail along Baker St. without the need to access through the trailhead. |
| <p>5 Maintain N-S connectivity in the area along Baker St. with the closure of Tremain St.</p> | <ul style="list-style-type: none"> A new N-S connection can be constructed between Baker St. and Charles Ave with minimal reconstruction. Connectivity at Baker St. allows better access to emergency vehicles. Current connection at Tremain St. does not allow for fire truck and emergency vehicle access due to deficient lane width and vertical clearance. Maintains historical rail infrastructure |

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Tremain Street Bridge Railing

STRUCTURES | This project includes modification to two existing railroad overpass bridges, one at Tremain Street and one at US 441 (Bridge No. 110067).

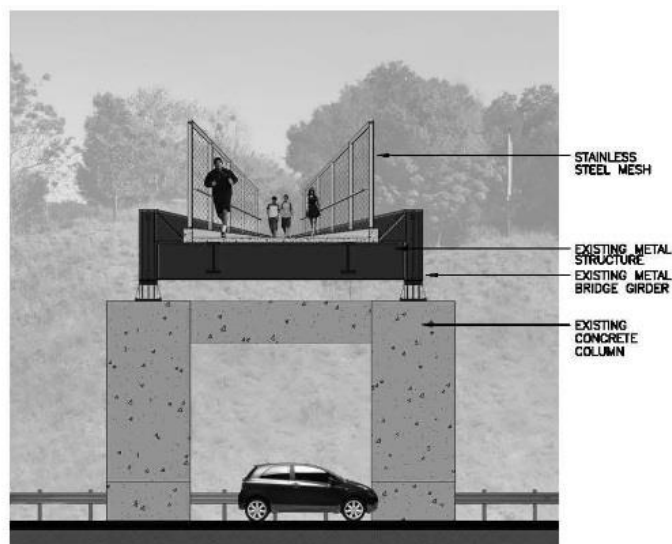
Tremain Street Bridge: The existing bridge at Tremain Street was built circa 1880 and consists of 6 spans with varying lengths of approximately 7.5' minimum to 14.0' maximum for a total approximate length of 69.0'. The superstructure consists of two sets of four 8" wide x 14" deep stringers that support 10" x 10" timber ties which in turn carry the existing railroad tracks. The existing superstructure has a total depth of 24" and is supported on timber pile bents with round timber piles and square timber caps. The end bents consist of timber pile bents with timber retaining walls located behind the end bents and supporting the approach embankment earth fill. Timber elements and sand cement bags form a retaining wall supporting the fill slope at the edge of the roadway at Intermediate Bent 5. Intermediate Bent 4 is located at the middle of Tremain Street and has no pier protection or roadway guardrails to protect it from vehicular collision. The vertical clearance at the bridge is only 9.5' and the horizontal roadway clearance is approximately 11.0' between the pile bents. Based on our field visit, the slopes are experiencing erosion with a major scour hole right behind Intermediate Bent 5 retaining wall with exposed drainage pipe and catch basin. Intermediate Bent 5 and its retaining wall appear to be unstable and show major movement towards the roadway. The PD&E study's Bridge Memo recommends maintaining the major structural components of the existing bridge in place and replacing and/or strengthening the deteriorated elements to support the proposed trail. ***JMT's proposed value-added roadway alternative of closing Tremain Street and opening North Baker Street will allow the existing bridge to remain***

in place as requested by the local residents to maintain the original characteristics of the timber bridge. Since the proposed trail will have a width of 8 to 10 feet at this bridge site, the bridge will be considered a pedestrian bridge and will be designed and load rated based on AASHTO LRFD Bridge Design Specifications, AASHTO LRFD Guide Specifications for the Design of Pedestrian Bridges, and the AASHTO Manual for Bridge Evaluation. Since the trail clear deck width is between 7 and 10 feet, the bridge must also be designed for the H5 maintenance vehicle per AASHTO LRFD Guide Specifications for the Design of Pedestrian Bridges. To avoid this type of vehicular traffic on the existing bridge, we propose installing one bollard at each end in the middle of the trail and provided detour signs for the maintenance vehicles to the nearest at-grade intersection. A new sidewalk under the bridge will be constructed to connect the trailhead and sidewalk along Tremain Street to Charles Street at the south end. The existing bridge will be tested for hazardous material and contamination, prior to construction.



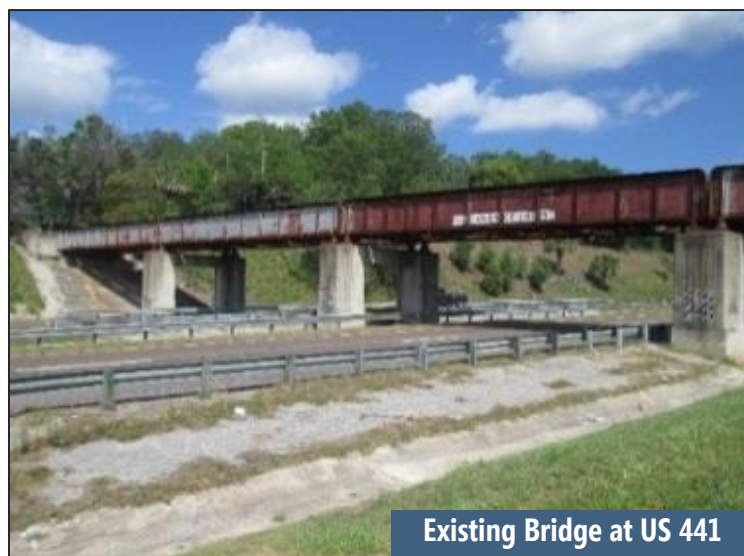
Existing Tremain Street Bridge

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3 US HWY. 441 BRIDGE - TRAIL CROSSING SECTION A-101

US 441 Bridge The existing bridge at US 441 (Bridge No. 110067) was built in 1960 and consists of 4-59' spans for a total length of approximately 236'. The superstructure consists of 2-column concrete piers. The existing superstructure is considered a Girder-Floorbeam-Stringer system which includes a concrete tub-shaped deck filled with ballast. The railroad tracks are supported on timber ties that rest inside the ballast and the concrete tub. The vertical clearance at the bridge is 14.4' minimum due to the recent resurfacing of US 441. Based on our field visit, the existing structural steel exhibits major loss of protective coating and some minor corrosion. Due to the low vertical clearance, we have observed minor vehicular impact damages to the main girders bottom flanges in both main spans and completely missing connection bolts at one cross bracing location in Span 3. The existing concrete tub appears to be in good condition from the bridge underside. The JMT Team agrees with the PD&E study's Bridge Memo recommendation of maintaining and reusing the existing bridge, jacking the superstructure by about 3.0' to meet the required vertical of 17.5' per FDOT PPM, and modifying the retaining walls at the approaches due to the change in the profile. Cleaning, painting, and repairing the existing structural steel will also be required. The existing concrete tub will also remain in place to support the proposed trail. The existing bridge will be load rated for the new loading by researching and obtaining the original construction plans.



If plans are not available, field measurements can easily be obtained during a field inspection to perform an accurate load rating analysis. ***As a value-added alternative***, the JMT Team recommends removing the existing ballast and using the existing concrete tub as the trail pavement. Installing a new 4" concrete slab may not be required if inspection of the existing concrete tub shows it to be in good condition after removal of the ballast. This alternative will reduce the dead load significantly, enhance the load-carrying capacity, and increase the useful life of the existing structure. The existing bridge would require testing for hazardous material and contamination such as asbestos and lead-based paint.

ENVIRONMENTAL CONSIDERATIONS | The JMT Team is experienced in wetland assessments, federal, state, and local permitting, protected species studies, GIS mapping and analyses, NEPA documentation, habitat evaluation, and environmental impact mitigation and is knowledgeable in developing effective resolutions to conflicts between natural resources and project development, as well as a thorough understanding of Florida's ecology. The JMT Team has extensive trail experience, having conducted environmental planning and permitting for recreational trails throughout Florida, including Cross Seminole Trail, Dunnellon Trail, South Lake Trail, South Sumter Trail, and a recreational trail associated with Suncoast Parkway Phase 2. JMT's Cultural Resources staff brings a significant amount of experience working on rail projects. Recent work includes documentation of historic railroads and rail stations as part of PennDOT and FTA ongoing Keystone Improvement Project which is

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systematically upgrading the railroad and stations between Philadelphia and Harrisburg, Pennsylvania. We have significant experience with rail to trail projects, as well as with historic bridge rehabilitation projects. These efforts required extensive public involvement and public input.

Wetlands | Freshwater marsh and shrub habitats associated with Wolf Branch occur north the rail corridor, near Mount Dora Disposal & Fill, between approx. STA 110+00 to STA 142+00. Wetland limits will be delineated in the field using the Florida Unified Wetland Delineation Methodology (Chapter 62-340, F.A.C.) by experienced wetland scientists. Wetland lines will be shown on the plans. As the trail is proposed to remain within the existing rail corridor, wetland impacts are not anticipated. Erosion control Best Management Practices will be implemented to assure construction activities do not result in reductions in off-site water quality.



Anticipated Permits | We anticipate this project will be exempt from St. Johns River Water Management District (SJRWMD) Clean Water Act Section 401 permitting per Chapter 62-330.051 (10)(a,b,c), F.A.C. which specifies exempt activities for the construction, alteration, maintenance, removal, or abandonment of recreational paths for pedestrians, bicycles, provided the paths are not located in, on, or over wetlands or other surface waters, have a width of eight feet or less for pedestrian paths, and 14 feet or less for multi-use recreational paths, will not adversely affect conveyance or capacity of stormwater, and is not intended for use by motorized vehicles except when needed for maintenance or emergency purposes. Because no wetland impacts are anticipated, no Clean Water Act Section 404 permits will be required by the US Army Corps of Engineers or Florida Department of Environmental Protection.

Threatened and Endangered Species | Segment 1 of the trail corridor follows the existing railroad corridor through Mount Dora and paralleling south of SR 46 to Sorrento. Minimal natural habitat remains within and adjacent to the corridor with land uses primarily consisting of residential, commercial, and industrial, with minimal scattered natural forested uplands. Little natural habitat was observed either within or adjacent to the trail corridor. Based on field observations, the potential occurrence of listed species within this land use type is low.

Sand Skink | Elevated berms, rails, and ballast do not provide suitable habitat for the sand skink. US Fish and Wildlife Service has concurred that the construction of the trail within the existing rail corridor will have "*no effect*" on the sand skink due to the developed nature of the corridor and the lack of suitable habitat.

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Gopher tortoise | Upland, xeric habitats and ruderal, disturbed areas are common habitats for gopher tortoises. Potentially occupied GT burrows were observed at numerous locations along the existing rail berm, including



Existing Gopher tortoise nest

inside the existing rails. A formal 100% species-specific survey for GT burrows will be conducted. JMT staff are Florida Fish and Wildlife Conservation Commission (FWC) permitted Authorized Agents, approved to survey, permit, and relocate gopher tortoises. All tortoises within potentially occupied burrows within 25 feet of construction activities will be protected or relocated in accordance with FWC guidelines. A Conservation Permit will be obtained from FWC within 6 months prior to project construction. Efforts to relocate tortoises will also benefit protected species commensal to GT burrows, such as Florida mouse, gopher frog, Florida pine snake, and Eastern indigo snake.

Eastern Indigo Snake | This state and federally Threatened snake occupies similar habitat as gopher tortoise and is known to take refuge within GT burrows. This project is not likely to impact 25 acres of xeric habitat or 25 GT burrows, therefore, per the USFWS Eastern Indigo Snake Effect Determination Key, it is "*Not Likely to Adversely Affect*" this species. As a precaution to minimize the potential for harm to this species, Standard Protection Measures for the Eastern Indigo Snake will be implemented during construction.

Cultural Resources | All the Cultural Resources work will be completed in full compliance with the National Historic Preservation Act of 1966 (as amended). JMT will work closely with the County to ensure that the appropriate actions are

taken regarding the Section 106 process. Our experience working with local and state governments, combined with our experience with federal agencies, ensures that the work will be completed in a timely and appropriate manner. The Section 106 process is a key component to the successful completion of this project. Three historic resources are located within the project area, including the National Register eligible Seaboard Coast Line Railroad (SCLRR), the Railroad Bridge over Tremain Street, and the Seaboard Coast Line Railroad Bridge over US 441. Per the Section 106 consultation that was previously conducted, the project will result in an Adverse Effect to the SCLRR and a no Adverse Effect to the two bridges. A Memorandum of Agreement (MOA) was executed for the project on December 12, 2016, specifying the necessary mitigation for the Adverse Effect to the SCLRR. The mitigation includes several components, including the recordation of the railroad to HAER standards as well as the salvaging of key material components of the railroad and the installation of trail exhibits. During the PD&E study, a Cultural Resource Committee was formed. This Committee will continue through the Design Phase as the Design and Aesthetics Committee. Representatives from FHWA, SHPO, FDOT, Lake County, the City of Mount Dora, and the Public are part of this Committee. JMT will coordinate with the Committee throughout the Design process to ensure that the Committee stays involved throughout the project. Per the MOA, no significant design changes will be made without consultation with the FHWA and the SHPO. The JMT Team will ensure that the project proceeds in compliance with the Section 106 process and the mitigation commitment in the MOA. While no major changes are anticipated, per the MOA,



Existing Rail

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if any major changes are necessary, the proposed changes will be coordinated efficiently and appropriately with the signatories of the MOA as well as with the Design and Aesthetics Committee.

GEOTECHNICAL ASSESSMENT | Geotechnical and Environmental Consultants, Inc. (GEC) will lead the geotechnical and contamination assessment activities for the team. GEC's staff has extensive experience with trail projects including the Lake Wekiva Trail Segment 2, Cross-Seminole Trail, the Seminole-Wekiva Trail, the West Orange Trail, the City of Lakeland Fort Fraser Trail, the Osceola County Babb Citrus Park Boardwalk, the Lake County Tav-Lee, and Lee-Wild Trails and the Orlando Dinky Line Trail. GEC's local experience also includes the Wekiva Parkway Sections 2 and 3 which are located along the Lake Wekiva Trail Segment 1. In addition, GEC performed the Level 1 Contamination Screening Evaluation for the Wekiva Parkway Trail PD&E Study and Wekiva Parkway Trail Feasibility Study.

Geotechnical Conditions | Soil conditions along the majority of the trail alignment include upland, gently to moderately sloping, sands with seasonal high groundwater levels ranging from 3.5 feet to greater than 6 feet below the natural ground surface. However, the trail alignment crosses several isolated areas of depressional, poorly drained sands with seasonal high groundwater levels ranging from 2 feet above to 1.5 feet below the natural ground surface. These depressional areas are typically composed of several circular features indicative of relic sinkholes. Relic sinkhole features are generally water-filled and many of the lakes in this area of Lake County are composed of one or more relic sinkholes. In some cases, relic sinkholes may contain deep organic soil (muck) deposits.

Geotechnical Design Considerations | The primary geotechnical considerations for this project include establishing accurate groundwater levels along the trail alignment as well as delineating any surface or buried muck deposits. Geotechnical services will also include corrosion series testing for optional pipe material analysis for new cross-drain pipes. GEC's field crews have extensive experience working on rail corridors and will obtain all necessary roadway work protection training in accordance with CSX access requirements.

CONTAMINATION ASSESSMENT | GEC performed an August 2012 Contamination Screening Evaluation Report (CSER) for the portion of Wekiva Trail west of US 441. The CSER identified 15 potential contamination sites and assigned risk ratings of Low to 12 sites, Medium to one site, and High to two sites. In addition, GEC performed a current preliminary review of the Florida Department of Environmental Protection (FDEP) Map Direct website for potential contamination sites located within the PD&E Manual, Part 2 Chapter 20 search distances for project alignment. We identified the following listings: 16 petroleum tank facilities, three petroleum-contaminated sites, six hazardous material generators, one Brownfield-designated zone, three solid waste sites, and the railroad corridor. Potential contamination sites near the alignment and possible contamination related to former railroad operations along most of the trail are important project concerns. Railroad ties were typically coated with inorganic and/or petroleum-based preservatives and would likely require special disposal provisions. Herbicides were used surrounding the ties for weed control and contained hazardous chemicals, possibly including arsenic. Such materials may have resulted in soil and/or groundwater impacts along the railway corridor. Soils that contain chemical concentrations above cleanup criteria or above toxic characteristic concentrations must be handled and disposed of properly. Chemicals of concern include volatile and semi-volatile organics, arsenic, chromium, cresol compounds, pentachlorophenol, and pesticides. During the Contamination Screening Evaluation, soil samples will be collected along the rail bed to evaluate the presence of contaminants. This data will be used to develop recommendations for trail design and construction that will protect construction workers and trail users from exposure to rail bed contaminants. The existing Railroad bridges will be evaluated for asbestos and metals-based coatings as part of the contamination screening process.

Aerostar SES LLC (ASL) is a State of Florida Department of Business and Professional Regulation (DBPR)-Licensed Asbestos Business Organization and is certified by the Environmental Protection Agency, Pesticides and Toxic Substances Branch, to conduct lead-based paint (LBP) activities in the State of Florida under Certification Number FL-1654-5. ASL will perform an asbestos and LBP survey of all areas throughout the various bridge(s) or structure(s). All

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asbestos survey work will be performed by Asbestos Hazard Emergency Response Act (AHERA)-certified inspectors under the direction of a DBPR-Licensed Asbestos Consultant (LAC). All LBP survey work will be performed by EPA-certified LBP inspectors or risk assessors. The survey will include all accessible areas where asbestos-containing materials (ACM) or LBP could occur. The asbestos inspection and sampling activities will be conducted in general accordance with AHERA protocols set forth by the EPA under 40 CFR 763.86 to satisfy the asbestos National Emission Standard for Hazardous Air Pollutants (NESHAP) guidelines focusing on demolition/renovation requirements. The LBP inspection and sampling activities will be conducted in general accordance with the United States Housing and Urban Development (HUD) guidelines. The asbestos survey requires locating and identifying suspect ACMs, quantifying the material, and separating it into unique areas for further assessment. Homogeneous sampling areas of suspect ACM, defined as an area of material of the same type (texture and color) which was applied during the same general time period, are determined by visually assessing and touching accessible suspect materials throughout the bridge/structure. Bulk samples are collected from each individual homogeneous sampling area. All bulk samples are delivered to a US National Institute of Standards and Technology (NIST)-accredited laboratory under the National Voluntary Laboratory Accreditation Program (NVLAP) for analysis of asbestos bulk samples by Polarized Light Microscopy (PLM) using dispersion staining techniques in accordance with EPA Method EPA/600/R-93/116 of July 1993. The LBP survey requires locating and identifying painted surfaces along the bridges and structures, collecting samples from the painted surfaces, and submitting the samples for laboratory analysis according to the Flame Atomic Absorption Spectroscopy (Flame AAS) method SW 846 3050B/7000B. Lead concentrations within painted surfaces can also be evaluated using an X-ray fluorescence (XRF) device. ASL prepares a report to detail the findings of the investigation. The report includes a general description of federal, state, and local regulations; methodology used; laboratory analysis and results; descriptions, locations, approximate quantities, and conditions of identified ACMs and LBP; and a description of applicable federal, state, and local handling requirements for identified ACMs and LBP.

SURVEY/RIGHT OF WAY/SUE | Survey is one of the critical items that was discussed with the Lake County project manager during the pursuit phase. The JMT Team proposes an innovative method to obtain survey for this project. ESP will provide railroad mobile radar survey along the project and ECHO UES, Inc. will support additional survey and SUE efforts. Communication will be key during the survey data collection, and we understand that as the project progresses there may be changes to the survey scope and we will incorporate into the existing schedule to provide the final deliverables. We will provide Surveying and SUE services in compliance with all pertinent Florida Statutes and applicable rules in the Florida Administrative Code. All Surveying and SUE work will be accomplished in accordance with the FDOT's Surveying and Mapping Procedures and Standards and the Standards of Practice for Professional Surveyors and Mappers.

Railroad Mobile Radar Survey | ESP will lead the mobile radar survey of the railroad corridor. PM, Walter J. Smith, P.S.M., P.L.S. will meet with JMT and the County to discuss the assignments in detail, identify milestones and priorities for the Rails to Trails project, secure available information such as existing horizontal and vertical control, existing surveys, and the alignment and schematic footprint for route or rail. Our Project Team also will visit the project site to identify project challenges and any safety concerns. ESP upholds safety to the highest standard and has an EMR under 1. ESP's Safety Manager will mitigate incidents, costly delays and keep team



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and the Rail Corridor safe by developing and diligently enforcing a stringent Safety Work Plan for this project.

Establish Horizontal and Vertical Control | The JMT Team will establish primary control to facilitate Mobile Scanning, Terrestrial Scanning along with control for the boundary, planimetric, construction and/or topographic surveys for the project. The project control will be based on North American Datum of 1983, 2011 Adjustment, Florida East Zone Projection, and the North American Vertical Datum of 1988, utilizing Geoid 12B. If requested, control will be constrained to provided existing control to confirm that newly collected survey data matches seamlessly with existing/legacy data.

Advanced Surveying Application (LiDAR) | The Mobile LiDAR referenced in the scope above will be collected using our two Trimble MX8 systems, our Trimble MX9 system, and our Riegl VMX-1HA system. The MX8 is a hi-rail equipped vehicle-mounted system which includes two 3D laser scanners, front, rear and side-facing cameras, an IMU and two GPS receivers to collect continuous spatial point data while traveling at highway speeds. The system is also equipped with a Dalsa Spyder 3 downward facing line-scan camera to collect pavement imagery. The camera system collects line imagery that 12 ft. x 12 ft. black and white image are extracted. The extracted frames are at a 2048 x 2048-pixel resolution. Use of LiDAR during this phase will mitigate unnecessary costs associated with topographic surveying (re-work) during design and/or construction phase.

The report will outline methodology, equipment, and will include surveyor's certification. To validate the LiDAR calibration, LiDAR TL will task SCs to perform a ground truthing exercise. SCs will measure hard features like corners of pavement and/or paint markings. Validation will be performed between panel locations. Upon validation of LiDAR, PM will task mapping TL to perform planimetric and DTM feature extraction for project. LiDAR techs will use TBC & TopoDOT software to perform automated extraction using ESP's proprietary algorithms to extract features such as: pavement, signage, and overhead utilities. LiDAR techs also will manually extract features such as: fence lines, driveways, curbing, luminaries, delineators, buildings, etc. LiDAR extraction will be quality assured against orthorectified imagery and LiDAR analysis tools. Ground survey data will be mapped and merged

with LiDAR-extracted features to develop planimetric, topographic, and 1-foot contour mapping.

Abstracting data for Right of Way Identification | ESP will task the project abstractor to secure Lake County tax rolls, vesting deeds, and subdivision. If required, Abstractor will chain title to secure adequate property description. Abstractor will coordinate to secure ROW maps and/or block maps for public ROW. Abstractor and TLs will task Survey Technicians (STs) to deed sketch and will require STs to generate accompanying map check closure report. TLs will review the closure reports to confirm descriptions are plotted correctly and descriptions provide adequate mathematical closure. TLs and Abstractor will develop an ownership spreadsheet to include legal description, called acreage, grantor/grantee, execution date, and record instrument information. Spreadsheet will be hyperlinked to CAD files and ArcMap geodatabase. This will avoid scrivener's errors and mitigate duplication of effort. TL will coordinate with STs to develop an abstract map containing the record geometries for each affected property and will contain ownership information along with recordation information.

Subsurface Utility Exploration (SUE) | SUE will include additional information gathering from the UAO's (Level D) Designation (Level B), both electronic and with GPR, of existing facilities and vacuum excavation (Level A) to verify the facilities vertically and horizontally (Vvh) as well as sizes and types of facilities.

UTILITY COORDINATION | Seven utility owners were identified from a Sunshine 811 ticket and information found in the Wekiva Trail PD&E Preliminary Engineering Report: CenturyLink, Charter Communications, City of Mount Dora, Comcast, Duke Energy Distribution, Lake Apopka Natural Gas, and Teco. Critical utility facilities that may be impacted include overhead electric, water, sewer, reuse, gas, and buried telephone and fiber at the proposed bridge foundations, specifically at Tremain St., and US 441. Other impacts may include manhole adjustments at the street crossings, as well as minor adjustments to other above-ground utility features. Underground facilities can remain in place as long as the appropriate clearances are adhered to with the final grade of the trail. The utility coordination approach includes a formal utility contact with the 60% trail plans with all components; a utility design meeting to discuss the project, any conflicts, and

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the schedule with the utility owners; a comprehensive review of all existing utility plans and relocation plans, and all other documentation necessary to ensure that the utility conflicts are resolved and accurately shown in the plans.

LAP COORDINATION | The JMT team will provide LAP coordination between the County and FDOT. JMT has extensive experience and knowledge of state and federally funded local agency project development and coordination and have a thorough understanding of regulations, procedures, and inter-governmental coordination needed for project selection, development, and ultimately, LAP delivery. JMT has successfully completed FDOT LAP projects for local governments, including two trails/shared use path for the City of St. Petersburg. Our previous LAP projects have included structure designs, drainage improvements, and signing and marking improvements. All plan reviews will be coordinated with FDOT District 5 based on the funding agreement. JMT understands the requirements of LAP projects, including utilizing the LAP Specifications for earthwork, asphalt, concrete and landscaping.

PUBLIC INVOLVEMENT | The County and its city partners have invited public involvement throughout the life of this project, including during a Project Development & Environment (PD&E) Study for Segment 1 that was completed in 2017. During the PD&E study, a Cultural Resource Committee was formed. This Committee will continue through design as the Design and Aesthetics Committee. Representatives from the Federal Highway Administration (FHWA), State Historical Preservation Office (SHPO), Florida Department of Transportation (FDOT), Lake County, the City of Mount Dora, and community members are part of this Committee. The JMT Team, led by Quest, will coordinate with the Committee throughout design.

In addition to the Committee and city partners, other notable stakeholders include Lake County Parks and Recreation, Lake County Public Schools, utility owners, local businesses, Florida Department of Environmental Protection, St. Johns River Water Management District, property owners, and residents. A goal of the public engagement activities during design will be to build excitement about the project and work with the community to minimize unanticipated negative impacts and ensure the trail is safe, user-friendly, and enhances the community as expected. Some residents could have security

concerns regarding the people using the trail, especially at night. During the construction of the trail, concerns could include noise, dust, and other construction-related effects. The project team will need to pay special attention to traffic flow in downtown Mount Dora, as this is a top-rated destination for tourists visiting the businesses in the area. Mount Dora also holds several special events throughout the year, drawing large numbers of people.

Upon Notice to Proceed, Quest will develop a Community Awareness Plan (CAP) for the project that includes creating and maintaining a project web page, creating and maintaining a comments log to document all public comments and questions, and coordinating one hybrid public meeting. Quest will follow the County's Public Meeting Requirements as outlined in the scope of work, as well as adhere to all state and federal requirements.

Quest will create and maintain a project mailing list to include elected and appointed officials, local agencies, and property owners. In advance of the public meeting, Quest will evaluate potential meeting locations and prepare a report for County review. Quest will coordinate facility rental and logistics.

Additionally, the JMT Team will ensure that the project proceeds in compliance with the Section 106 process and the mitigation commitment in the MOA. While no major changes are anticipated, per the MOA, if any major changes are necessary, the proposed changes will be coordinated efficiently and appropriately with the signatories of the MOA, as well as with the Design and Aesthetics Committee.

PROJECT MANAGEMENT | JMT's time-tested management approach breaks down and schedules each project component with attention to tasks on the critical path. We have already conducted several site visits, reviewed existing right-of-way maps and the PD&E study, examined long-range transportation plans and reviewed the comments and responses from the previous public meetings. JMT has extensive experience with multi-modal and trail projects



JMT and our team's depth of resources and availability give us the ability to perform multiple projects simultaneously and to deliver fast-track projects.

Proposed Solution

throughout FL, several of which have been designed and constructed using LAP funds.

Administration | This phase involves an NTP kickoff meeting with County staff and the setup of various administrative procedures, quality control (QC) processes, invoicing, file management, final design schedule, construction cost estimates, and utility coordination. Procedures will be established for progress reporting and regular progress meetings as well as a distribution list for project correspondence and meeting minutes.

Schedule | JMT has reviewed the overall project scope and based on previous trial experience, we propose an overall 18-month project schedule from Notice to Proceed to Final Construction Documents. A detailed project schedule will be submitted to the County within 10 days of Notice to Proceed.

Design and Final Plans Preparation | JMT will prepare final design construction documents including plans, specifications, technical specs, all supporting analyses and calculations, cost estimates, and electronic documentation meeting County and FDOT requirements. Efforts will begin immediately with the preparation of the Typical Section and Pavement Design Packages. Based on the estimated construction value being less than \$10 million, this would be classified as a Class C LAP project requiring all structural elements to meet FDOT Design Manual, Structures Manual and Standard Plans documents. All other elements will be designed to meet Florida Greenbook Standards.

Right-of-Way Survey and Mapping | Full right-of-way maps, legal descriptions, and parcel sketches will be produced in accordance with Lake County procedures. Since right-of-way costs are typically the most expensive single element on any project, JMT will work closely with County staff and Real Estate Management to reduce acquisition costs where possible. Additionally, the JMT team includes Ed Barfield, an expert in ROW acquisition and negotiations. JMT has an established working relationship with Mr. Barfield having worked together on several projects.

Construction Estimates/Biddability Reviews | We will prepare detailed construction and right-of-way cost estimates using FDOT pay items, as well as any Technical Special Provisions needed for the project. Another advantage that JMT brings is our ability to assign our senior CEI staff to perform constructability and biddability reviews of the project prior to

Phase III and IV submittals. These reviewers will use the Phase Review Checklist from CPAM to identify potential construction issues and assist with developing with the Construction Time Estimate and the Estimate of Construction Cost.

Quality Assurance/Quality Control (QA/QC) | Our commitment to quality is evidenced by JMT meeting the rigid, internationally recognized ISO 9001:2015 standard for quality management excellence. For this contract, JMT will prepare a detailed Quality Control Plan that details our procedures to verify, independently check, and review all contract documents. A key part of our QA/QC Plan and an advantage that JMT brings to this assignment is that we will assign senior staff from different JMT offices to review the deliverables, thus ensuring that this project receives an independent check.

Bentley OpenRoads Designer Knowledge | JMT has been at the forefront of the implementation of Bentley OpenRoads 3D modeling technology and has been sought out by Bentley to be part of their Premier Scholar Program. **Bentley Premier Scholars** are a prestigious group of industry experts and thought leaders who share insight and industry-specific best practices with their respective infrastructure communities. Within FL JMT has utilized OpenRoads technology, specifically the FDOT Connect Suite software, to model multiple projects for state, county and local clients. Utilizing this software, full 3D models can be produced and used to provide detailed project renderings, fly throughs, and augmented reality (AR) presentations for the use at public meetings to provide the public with a detailed understanding of the project.



Availability | The JMT team is available and has the capacity, technical expertise, the range of services, and uniquely qualified personnel to provide Lake County with all the services required. **All Key Personnel is 65-85% available and ready to begin work immediately.**