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WATER RESOURCES

April 17, 2018 (revised May 1, 2018)

Josie Lantaca, Assistant Engineer
City of Salinas
Public Works Department
200 Lincoln Avenue
Salinas, California 93901

Subject: Boronda Road Congestion Relief Project; CIP No. 9510
Phase 1 (Dartmouth Way to McKinnon Street) Final Design and
Planning for Phase 2 and 3 Ultimate Design

Dear Ms. Lantaca:

We at Wallace Group are truly appreciative of the opportunity to continue our work with the City on the Boronda Road Congestion Relief Project. This is an exciting and large project for the City that with estimated preliminary construction cost of twenty-four million dollars. These improvements are a significant City investment to accommodate near term growth and the Future Growth Areas consisting of the West Area Specific Plan (WASP) and the Central Area Specific Plan (CASP) that are concurrently being planned to for the economic vitality of the City. The current corridor improvements will proceed in 3 Phases that will accommodate the growth the City is anticipating in the WASP/CASP areas and also include the safety and smart congestion management benefits of a roundabout corridor. This proposal includes higher detail planning for the two miles of corridor in order to define Right of Way preservation limits and environmental clearance for the full project as well as final design for the first half mile of corridor and the dual lane roundabout at McKinnon Street.

PROJECT UNDERSTANDING AND APPROACH

Much has been accomplished to date, preliminary planning and traffic analysis allowed City leaders to consider signalized intersections and roundabout controlled intersections, public workshops were held, and the roundabout corridor concept has been approved to go forward. Additionally, to expedite the schedule the City approved the initial topographic and Right of Way delineation mapping for design and our surveyors have created that mapping. In consideration of the potential long lead schedule for environmental review and permitting the City initiated a first step corridor level environmental analysis. Wallace Group has been working with EMC Planning on that effort, through consultation with the United States Army Corp of Engineers (USACE) EMC has determined permitting will need to be handled in two distinct ways for the proposed improvements. Specifically, the approximately two miles of widening on East Boronda Road from Dartmouth Way to Independence Boulevard may be permitted in two sections, along the westerly side of the corridor and along the easterly limits for those improvements that will directly affect the Gabilan Creek resource. For funding, traffic phasing and environmental considerations, the City directed that the corridor widening proceed with the initial construction to four lanes and a median along the entire corridor completed in 3 Phases.

Phase 1 design will begin at Dartmouth Way and include a dual lane roundabout at the McKinnon Street intersection then transition back to the current two-lane facility, approximately 0.7 miles. Phase 2 will design the widening of E Boronda Road from the prior four-lane widened section east of McKinnon through the El Dorado Drive and Natividad Road intersections to then transition back to the existing two-lane facility before the Gabilan Creek crossing. Both of those intersections will also be improved as dual lane roundabouts, the phase

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2 corridor improvement length is approximately 1.3 miles. The third phase will widen E Boronda Road from the prior widened section east of the Natividad Road intersection over a widened structure crossing of Gabilan Creek through the Independence Way intersection to then transition back to the existing two-lane facility on the east. Independence Way is also to be improved as a dual lane roundabout. It is understood that dependent on todays knowledge of future build out scenarios the future widening of Boronda Road may include additional expansion of lanes along the corridor and at the roundabouts. The most recent traffic analysis (KHA Memo dated March 22, 2018) included a phasing analysis as part of the corridor review.

The City wishes to expedite the project schedule as much as possible for the Phase 1 design while identifying the needs for the expected future build out corridor. To that end, we have prepared this scope of services to include both a corridor level preliminary design of a full build out (ultimate) 6 lane facility with associated roundabouts including the Right of Way needs for those ultimate improvements as well as the interim or "design year" widening for Phase 1 improvements. The drainage and water quality treatment facilities for the interim and buildout improvements will vary with the future development. In the interim condition it is expected that the drainage and water quality needs will be accommodated by a drainage channel and basins on the north side of the corridor. For the buildout the development north of the corridor will remove or modify the drainage channel and basins to provide for drainage and water quality treatment needs of the corridor as well as the development runoff with other future facilities that are yet to be determined. The future development will also provide sidewalks and a landscaped buffer zone on the north perimeter of the corridor. Therefore, the corridor level assessment drainage and water quality needs will be limited to an analysis based on the previous City approved concept for a four lane roundabout corridor). The corridor level assessment will also review structure type alternatives and associated footprints for the widening of the Gabilan Creek crossing, hydraulic performance of the creek crossing structure and creek drainage will also be considered as will environmental specifics and permitting needs as known at this time for the two permit process. The corridor level assessment will also plan for water and sewer facilities as well as and other utilities will be accommodated in the planning.

SCOPE OF SERVICES

The following scope of services is integrally connected with the Project Understanding, the submitted budget and schedule for the project. As such those are hereby incorporated by reference into this scope of services.

Task 1.0: PROJECT MANAGEMENT, MEETINGS, and QUALITY CONTROL

Task 1.1: Project Management
This task consists of project management and coordination throughout the duration of the project shown on the attached schedule. This effort is to deliver the drainage and water quality recommendations for the corridor, as well as the Gabilan Creek structure recommendations and the final PS&E construction documents for the East Boronda Road Phase 1 improvements from Dartmouth to McKinnon. This task includes project setup with staff and subconsultants, internal administration, budget/schedule monitoring, monthly reporting and services invoicing for the project.

Task 1.2: Team Meetings
It is anticipated that key members of the Wallace Group team will attend a project design phase kick-off meeting with City staff. Additionally, Wallace Group will coordinate review meetings following the receipt of written comments from the City pertaining to the Draft PS&E

(65%) and Draft Final PS&E (95%) submittals to solidify our strategy moving forward. Wallace Group will prepare an agenda for each meeting and follow up with relevant notes and action item listings. In addition to the City specific meetings, the project team will conduct internal coordination meetings at each stage of the design process. This coordination effort will serve to confirm team members are current in project goals and criteria, as well as apprised of any project adjustments.

Deliverables:
- Attend Final Design kick-off meeting at City offices
- Attend two (2) submittal review meetings at City offices
- Prepare and distribute meeting agendas and notes

Task 1.3: Quality Control
At each design submittal, as detailed in the production delivery tasks of this proposal, submittal documents will undergo a Quality Control (QC) review by senior staff not integrally involved in the design of the materials undergoing the review. This QC process is a critical component of effective and successful project delivery and will ensure that the project team delivers a fully developed and polished product to the City. Please note that the QC review may be accomplished both in-house and with external team members providing specialty reviews.

Task 2.0: ENVIRONMENTAL SUPPORT

Task 2.1: ENVIRONMENTAL DOCUMENTATION
The design and planning team will continue to support environmental documentation for the project. This includes finalizing the Habitat Assessment Report for Tiger Salamander and California Red-Legged Frog and comments from the City on the draft Initial Study. A second permitting process with the United States Army Corp of Engineers (USACE) which was not originally determined to be required when the first environmental review scope was executed. The USACE has decided to take jurisdiction over the existing drainage that drains to the west, through the city's system and Markeley Swamp, the Reclamation ditch, and ultimately to Monterey Bay. However, the USACE have indicated that the phase 1 work may be able to be covered under a simple Nationwide Permit, as they would only consider the ditch area with significant water flow located adjacent to McKinnon School as jurisdictional.
Wallace Group staff will provide calculation, exhibit and other support review for EMC Planning environmental staff to enable a timely completion of the environmental efforts. Due to the indeterminate nature of this effort it is being scoped for the budgeted efforts shown if additional support is needed the City will be notified and additional authorization requested.

Task 2.2: PERMITTING
A jurisdictional wetland/waterway delineation will be conducted where the proposed project will impact Drainages in Western Portion of Site. Research and delineation information will be coordinated with Wallace Group and the City of Salinas. The delineation report will be submitted to the USACE for jurisdictional determination. After a site visit with a USACE representative to verify field conditions, a written determination and stamped jurisdictional features map will be provided to the city.

Jurisdictional Delineation Report (Drainages in Western Portion of Site)
This task includes preparing a preliminary wetland/waterway delineation report identifying the potentially jurisdictional drainage feature, including calculation of acreage and length of the drainage feature to be impacted. Wallace Group and the City of Salinas will be provided with a draft electronic version of the report and may submit one combined set of comments. Three

(3) bound hard-copy revised documents will then be produced and delivered to Wallace Group and the City of Salinas; and the USACE San Francisco District - Regulatory South Branch with a request for a formal jurisdictional determination.

Jurisdictional Determination Consultation (Drainages in Western Portion of Site)
Once the USACE has received and reviewed the preliminary jurisdictional delineation report, a meeting will be set at the project site to review the findings of the report and finalize the boundaries of impacted jurisdictional waters. This task includes follow-up with the USACE regarding review of the preliminary jurisdictional delineation report, one site meeting, and follow-up with the Wallace Group and the City of Salinas regarding the results of the jurisdictional determination and the next steps required to obtain regulatory permits.

USACE Section 404 Nationwide Permit
This task includes preparation of the permit application package including all required maps, figures, photographs, and other attachments. The Wallace Group and the City of Salinas will be provided with a draft electronic version of the application package and may submit one combined set of comments. One (1) hard-copy revised application package will then be produced and delivered to the regulatory agency. The project proponent will need to sign the application and provide a check for the appropriate application fee (not included in the attached budget) at the time of submittal.

RWQCB Section 401 Water Quality Certification
This task includes preparation of the permit application package including all required maps, figures, photographs, and other attachments. The Wallace Group and the City of Salinas will be provided with a draft electronic version of the application package and may submit one combined set of comments. One (1) hard-copy revised application package will then be produced and delivered to the regulatory agency. The project proponent will need to sign the application and provide a check for the appropriate application fee (not included in the attached budget) at the time of submittal.

Project Team and Regulatory Agency Coordination
EMC Planning Group will coordinate with Wallace Group and the City of Salinas along with the regulatory agencies to facilitate (and expedite to the extent feasible) this permitting process. It is assumed that the permit will be obtained within one year of the notice to proceed; if the permitting process is extended beyond this time period, a contract amendment may be necessary to complete the permitting process. It is also assumed that the RWQCB or the CDFW will not request a site visit, and that neither agency will request a formal meeting, but rather that coordination will be conducted via phone and email.

Task 3.0: GEOMETRIC APPROVAL DRAWINGS AND TECHNICAL STUDIES

In the services described within this following section our roadway design team will coordinate the analysis of multiple disciplines and interrelated activities for the design of the Phase 1 interim improvements as well as the planning for the ultimate improvements for the corridor from the westerly limits at Dartmouth Way to the easterly project limits just past Independence Blvd.

Task 3.1: Roundabout Layouts (4 Intersections, Ultimate and Design Year)
As directed by the City of Salinas, the Boronda Road corridor street section is to be designed as the interim or "design year" 4-lane arterial, the ultimate or "future City build-out" year will be a wider corridor with up to a 6-lane arterial. The number of approach and departure lanes at all legs of the McKinnon, El Dorado Drive, Natividad Road, and Independence Boulevard will be

determined based on the Boronda Road Corridor ICE analysis and the Phase 1 Corridor Operations Update – Continuous Median Alternative. Our services for roundabout specific layouts includes the following:

- Evaluation of pedestrian hybrid beacons (Hawk Signals) on all legs of each roundabout
- Horizontal geometric refinement of the four multi-lane roundabouts for the ultimate condition and of the four two-lane roundabouts for the design year
- Vertical geometric design of the two-lane roundabout at McKinnon Street
- Peer review of operations and layout configurations across team firms

Regarding the El Dorado Drive, Natividad Road, and Independence Boulevard roundabouts, the layout work will include the horizontal concepts and will not include either vertical or final design services.

Roundabout Operations – Hybrid Beacon
Using the forecast volumes described in the Corridor Operations Update, KHA will evaluate the operations of pedestrian hybrid beacons at the Boronda Road intersections of McKinnon Street, El Dorado Drive, Natividad Road, and Independence Boulevard roundabouts for the interim conditions (2025 Design Year). The evaluation will estimate the number of queued vehicles on Boronda Road because of the beacon being activated during one peak hour period with the heaviest likely pedestrian volumes (assume AM peak hour). The result of the evaluation will inform the placement of the beacons and the distance between the crosswalks and the circulatory roadway of the roundabout.

KHA will use existing pedestrian count data provided by the City (assumed count dates from year 2014 unless newer counts are provided) to estimate future design year 2025 pedestrian crossing volumes for each leg of the study intersections identified above where a pedestrian hybrid beacon is proposed.

The Traffic Index (TI) value will be calculated per Caltrans methodology and vehicle classification data gathered as part of this task. Vehicle classification data will be gathered at McKinnon Street, Natividad Road, and Independence Boulevard. We assume vehicle classification at El Dorado will be similar to vehicle classification data collected at McKinnon Street. This TI value will be provided to the Geotechnical Engineer for development of roadway structural section recommendations.

Results of the roundabout operations evaluation will be summarized and documented in a technical memorandum format. Standard Sidra operation summary reports will be attached to the memorandum to document approach lane flows as well as lane use and performance. KHA will prepare and submit an electronic (PDF) copy of the memorandum to Wallace Group, KAI and City staff. KHA has budgeted to address one set of consolidated, non-conflicting comments on the memorandum. If the comments require additional analysis or data collection beyond that provided for that work will be considered as an additional service.

Roundabout Geometric Approval Drawings (RGAD's) at McKinnon Street
Working with the initial roundabout traffic operations analysis Kimley-Horn Associates (KHA) staff will then use the corridor layouts provided by Wallace Group designers to prepare ultimate concept and design year two-lane Roundabout Geometric Approval Drawings (RGAD's) that will be checked by Wallace Group staff. Layout information for the McKinnon intersection roundabout will include horizontal and vertical geometry (finished surface contours), pavement markings, and typical cross-sections for the design year and ultimate roundabouts.

Geometric approval drawings and roundabout design check calculations will be initiated by KHA to obtain geometric approval for the preferred ultimate roundabout concept. Geometric approval plans for the roundabout are assumed to extend to the point where the roundabout conforms with existing street infrastructure or proposed street typical section, whichever is less. Design checks specific to this ultimate roundabout intersection will be calculated and documented. Roundabout design will be adjusted to achieve target values for estimated speeds, design vehicles, and sight lines. The following design checks will be evaluated:

- Fastest path estimation for R1 through R5
- Swept path and tire tracking for design vehicles (Assume up to two (2) design vehicles)
- Intersection Sight Distance (Assume tc=5.0 seconds)
- Stopping Sight Distance
- Path overlap estimation for multi-lane entries and departures

Horizontal design limits of geometric elements such as curb geometry, lane widths, channelization, lane transitions, pavement markings, sightlines, and conform conditions will be established. Typical sections of each leg, including the roundabout circulatory roadway and central island will be included.

After approval of the ultimate condition roundabout layout, design check calculations will be prepared and documented for the design year two-lane roundabout. This approach of first designing the ultimate and from that basis designing the two-lane roundabout is intended to establish the ultimate footprint (for preservation of Right of Way) while then designing the near-term roundabout to more readily be expanded in the future to the ultimate condition. Centerline and curb profiles will be generated for the roundabout to a level sufficient to identify estimated grading of the roadway finished surface and to identify drainage patterns. A preliminary contour plan of the finished surface of the roundabout will be prepared as a design check for drainage, Right of Way, sight line, and driver comfort. We will initiate vertical design after the horizontal design checks for the ultimate and interim condition concepts have been approved. If the vertical design starts prior to approval of the horizontal geometry, the vertical design should be considered an "at-risk" effort the redesign of vertical layout is not included in these services therefore changes to this design work or additional comment responses, or changes in horizontal geometry after geometric approval, regardless of origin, will necessarily be considered an additional service.

Noting the importance of the initial layout of the multi-lane roundabouts in the corridor and the safety goals for this major arterial we are taking a robust approach to design quality assessment and peer review. Wallace Group staff will review the conform and transition design as well as assess various performance measures for the roundabout. However, it is imperative that the design stand up to the highest levels of scrutiny, so we will have an independent senior level peer review by Kittelson Associates Inc. (KAI) staff. KAI staff helped author or contributed to much of the National Cooperative Highway Research Program (NCHRP) and Federal Highway Administration (FHWA) such as NCHRP Report 672 "Roundabouts, An Informational Guide Second Edition" related to not only site but corridor assessments. KAI will assist in the review of both the traffic operations analysis and the design layout work.

RGAD's at El Dorado Drive, Natividad Road, and Independence Boulevard
The same approach for ultimate horizontal layout will be undertaken for these RGAD's that will include horizontal geometry, pavement markings, and typical cross-sections for the design year and ultimate roundabouts at El Dorado Drive, Natividad Road, and Independence Boulevard.

Design check calculations will be prepared for the horizontal geometric approval plans assumed to extend to the point where the roundabout conforms with existing street infrastructure or proposed street typical section.

Design checks specific to roundabout intersections will be calculated and documented. Roundabout curb geometry and lane markings will be adjusted to achieve target design values for estimated speeds, design vehicles, and sight lines. The following design checks will be evaluated:

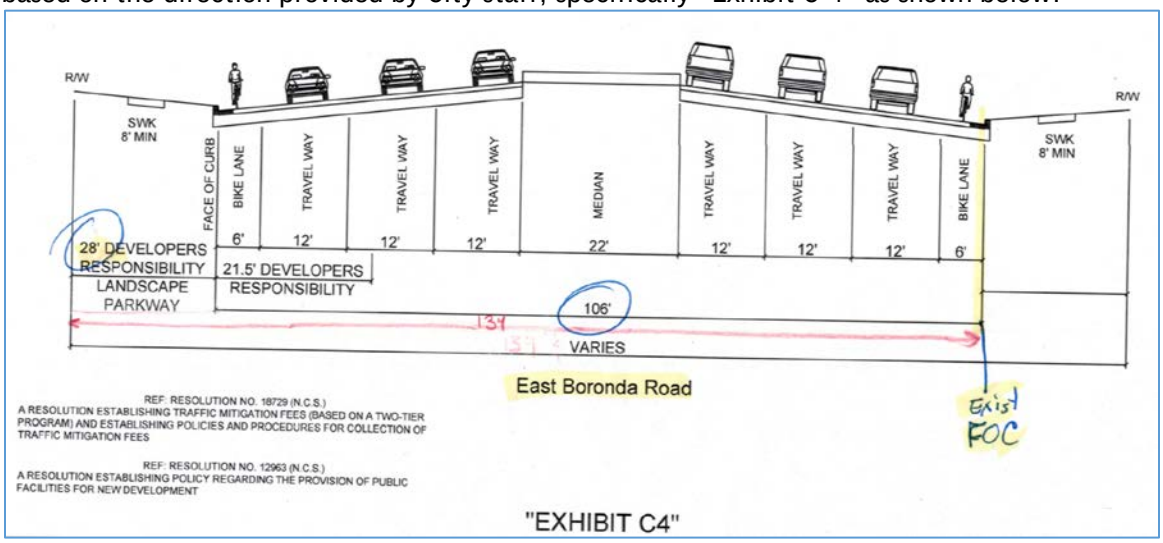
- Fastest path estimation for R1 through R5
- Swept path and tire tracking for design vehicles (Assume up to two (2) design vehicles)
- Intersection Sight Distance (Assume tc=5.0 seconds)
- Stopping Sight Distance
- Path overlap estimation for multi-lane entries and departures

Horizontal design limits of geometric elements such as curb geometry, lane widths, channelization, lane transitions, pavement markings, sightlines, and conform conditions will be established. Typical sections of each leg, including the roundabout circulatory roadway and central island will be included.

After approval of the ultimate condition roundabout layout, design check calculations will be prepared and documented for the design year condition roundabout. The RGAD's and the operations analysis for all roundabouts will undergo the same independent peer review process by Wallace Group and KAI staff.

Task 3.2: Roadway Widening Layouts (Ultimate and Design Year)
The Wallace Group design team will layout the 6-lane (ultimate) and the 4-lane (design year) sections based on current topographic and Right of Way (ROW) information. These layouts will serve as the base for the revised roundabout concepts and will facilitate reviews of current and future Right of Way needs.

The street cross-sections and alignment of Boronda Road will be determined by Wallace Group based on the direction provided by City staff, specifically "Exhibit C-4" as shown below:



This includes a corridor Right of Way width of 134 feet to the north of the typical southerly face of curb location on Boronda Road. The westbound direction is to be laid out to accommodate a future third lane on the north side along with the sidewalks to be built by others in the future, the eastbound direction will also include a wide shoulder set aside for a future third lane. Westbound lanes are to slope to cross drain into the median.

The layouts will include newly identified "Right-In/Right-Out" (RIRO) access points at the 4 local intersections identified in the West Area Specific Plan (WASP) and Central Area Specific Plan (CASP). These access locations ("Road A", "Village Center", "Road B" and "Commercial") are shown graphically in exhibits and non-design level CAD files used by local developers.

These access locations will be laid out by Wallace Group in a close but still "best fit" manner to the City for delivery to and review by the stakeholder designers for those areas. It is assumed that this layout can be accomplished early on and that the review by these stakeholders will require up to five working days with one (1) minor relocation required to the locations. The access points will then be used for assessment of proximity to roundabout geometric features such as the merge/diverge tapers and consideration tapers for these connections.

Layouts will be coordinated with RGAD's, Gabilan Creek crossing alternatives, utility and water quality design staff information. The corridor length along Boronda Road is approximately 10,000 feet, we will prepare layout sheets at a 1" = 20' scale on 22"x34" borders for both the ultimate and design year improvements. We will also include a typical section sheet and a key map (Not To Scale, NTS) showing coverage of the corridor on a "per layout sheet" basis. Where possible layout strips may be combined on the appropriate sheets, drainage ditch and basins will also be shown. Roadway Right of Way will remain constant regardless of design scenario.

Deliverables:
- Updated ultimate design year roadway layouts (PDF)
- Updated design year roadway layouts (PDF)

Task 3.3: Gabilan Creek Crossing (Culver Extension and Bridge)
While not specific for final design at this time, the anticipated footprint and preliminary details for improvements at this crossing will be necessary for environmental clearance efforts and roundabout layout at Independence Way. Based on the phasing of the latest traffic analysis, we have assumed Boronda Road will be widened at this crossing to an ultimate four lane (2 westbound/2 eastbound lanes) with median separation to conform to roundabout splitter island needs. It has not yet been determined if a potential right turn bypass lane for southbound to westbound moves will affect this crossing so this task will work in conjunction with the ultimate RGAD layout of that intersection. For schedule reasons a general width will be assumed at the onset to conservatively account for the necessary width and proceed concurrently with the creation of the RGAD's. The widening will accommodate pedestrian and bicycle shared use paths as well as the roadway lanes. As part of the design team Quincy Engineering Inc (QEI) structure design staff will lead this effort with review by Wallace Group designers. The existing Gabilan Creek box culvert crossing located at East Boronda Road was constructed in 1989 and will require analysis to verify suitability for the intended lifespan of the project. To ensure that the existing structure will meet current loading conditions and capacity we will verify that the structure meets current AASHTO LRFD Bridge Design Specifications.

Advanced Planning Studies
The design team will prepare Advanced Planning Studies (APS's) for two bridge widening alternatives at Gabilan Creek. We have assumed the following structure types:

- **Alternative 1** - Box Culvert Extension (to match existing buried box culvert and extend with paving of the travelled way surface)
- **Alternative 2** - Cast-in-Place, Post-tensioned Slab Bridge (approximately 60 feet long to span over lined channel area adjacent to and upstream of existing structure, this bridge is also expected to be buried then covered with backfill and paving of the travelled way surface)

Planning level costs for each APS alternative will be determined utilizing approximate square foot costs.

Bridge General Plans and General Plan Estimates
Following review of the APS's by the City, we will expand on the APS's and convert them to Bridge General Plans. We will prepare a General Plan Estimate for the two Bridge General Plans and these estimates will be prepared in accordance with the Caltrans Bridge Design Aids manual (see General Plan Estimates section 11, pg. 11-4).

Type Selection Report
The project team will prepare a Type Selection Report, which will contain a General Plan and General Plan Estimate for the two alternatives as detailed above. The report will summarize issues related to geotechnical, hydraulic, aesthetic, Right of Way, environmental constraints, construction access and costs along with providing a recommendation for the crossing alternative. Prior to finalizing the Type Selection Report a draft will be circulated to the City and the project team for review and comment. It is assumed that one written and consolidated comments review document will be provided to allow efficient review and revision of the report.

Deliverables:
- Bridge Advanced Planning Studies (PDF, two (2) total)
- Draft Type Selection Report (PDF)
- Final Type Selection Report (PDF)

Task 3.4: Hydrology and Hydraulics, Stormwater Quality Analysis

Offsite Drainage Report
Wallace Group staff will perform a hydrologic and hydraulic analysis for mitigating offsite (non-roadway area) runoff from the agricultural properties located north of the project site and prepare an Offsite Drainage Report. This study will encompass the offsite area north of the East Boronda Road Widening Project from Dartmouth Way to approximately 1,000 feet east of Gabilan Creek. Currently, agricultural ditches capture the area's runoff and convey it to the City's storm drain system within inlets at Dartmouth Way and McKinnon Street to the west, or to Gabilan Creek to the east. Design criteria will be based on the following:

- ***Design Concept –*** Capture current agricultural runoff upstream (north) of East Boronda Road in an agricultural ditch and route it into retention/detention ponds to decrease run-on to East Boronda Road.

- ***Hydrologic Calculations Methodology*** – EPA SWMM using InfoSWMM (as allowed per section 5.6.1 of the City of Salinas Stormwater Development Standards).

- ***Agricultural Ditch*** – 100-year, 24-hour design storm capacity. Ditch sizing will be based on ***existing*** conditions and will not account for future growth.

- ***Detention/retention Ponds*** – Two ponds will be designed to maximize retention and infiltrate retained runoff within 72 hours. Runoff from larger storm events up to the 100-year, 24-hour design storm will be detained and released at less than the 10-year, 24-hour pre-project rate, but not greater than the capacity of the downstream facilities (per Section 5.9 of the City of Salinas Stormwater Development Standards). Pond sizing will be based on ***existing*** conditions and will not account for future growth. Ponds will be designed to be aesthetically pleasing (i.e., shallow side slopes, minimal depth) if feasible based on the size of the construction easement.

- ***Pre-treatment*** – It is our understanding that runoff from the agricultural fields is often sediment laden. With infiltration facilities, the long-term infiltration rate can be substantially decreased due to sediment build up. Therefore, pre-treatment of runoff is recommended prior to entering the infiltration facilities. Our scope includes the design of in-line sediment forebays, located within the agricultural ditch upstream of the ponds.

- ***Infiltration*** – Infiltration testing has been completed by Earth Systems Pacific. These results will be considered in the pond design.

- ***Ditch/Ponds Ownership –*** The ditch and ponds will be constructed within a temporary construction easement to be obtained by the City and will be owned and maintained by the existing land owners.

Our analysis will be summarized in an Offsite Drainage Report and we will provide recommended size and alignment of the relocated agricultural ditch and proposed retention pond sizing and locations.

Onsite Drainage Report, Stormwater Control Plan, and Operations and Maintenance (O&M) Manual

Wallace Group will prepare a Stormwater Control Plan and Onsite (roadway corridor) Drainage Report for the Phase 1 widening of East Boronda Road and improvements at the McKinnon Street intersection. We will include an Operations and Maintenance Manual for the Phase 1 street facilities. These road improvements extend from Dartmouth Way to approximately 1,900 feet east of McKinnon Street. The total length of the proposed improvements is approximately 3,200 feet with taper lengths back to the existing roadway width.

Flows generated within the roadway section will discharge into a bioretention and/or biofiltration facilities for infiltration and treatment of stormwater runoff and to traditional stormwater infrastructure such as storm drains to meet flood control requirements. Depending on the location of highpoints, Phase 1 improvements may also need to accommodate offsite flows. Therefore Phase 1 work will include a preliminary analysis of the future Phase 2 and Phase 3 improvements to identify potential offsite flows. We also understand that the Phase 1 improvements will need to accommodate limited flows from the recent Lowe's development street widening. We will use the City provided information for the tributary area from Lowe's for calculation of additional flow rates and volumes from those areas. Design criteria will be per the initial analysis 2/1/2016 Memorandum prepared by Wallace Group and the following outline:

- ***Design Concept*** –
  - Westbound lanes will drain to new bioretention facilities in the median for infiltration of the 95th percentile storm event.
  - Eastbound lanes will drain to new biofiltration planters on the south side of East Boronda Road as deemed feasible. From there, to the extent feasible, runoff will be collected in underdrains and routed to the infiltration facilities in the median.
  - Runoff from storms greater than the 95th percentile storm event will overflow into a storm drain system with a peak flow equal to or less than the pre-project peak flow for the 2 through100-year, 24-hour storm events (per Section 2.2.5 of the City of Salinas Stormwater Development Standards). Peak flows will be managed within a new underground storage system (e.g. dry wells or underground chambers.)

- ***Stormwater quality requirements*** – Per Section 2.2 the City of Salinas Stormwater Development Standards, it is our understanding that the project, to the extent feasible, will be required to comply with the following requirements:

  - Requirement # 1 – LID site design per section 2.2.1
  - Requirement # 4 - 95% runoff retention per section 2.2.4.
  - Requirement # 5 – Match post-development peak flows to pre-development peak flows for the 2 through 100-year rainfall events per section 2.2.5.

- ***Infiltration*** – For this project the City of Salinas has granted a waiver from Table 1 of Section 3.4 of the City of Salinas Stormwater Development Standards to allow for infiltration within the roadway footprint even though the infiltration facilities will not meet the setback criteria specified in Table 1. Infiltration testing is complete, and our design will use the information outlined in the Geotechnical Report prepared by Earth Systems Pacific.

- ***Storm Drain Sizing*** – Per Part II, Section II of the City of Salinas Standard Specifications, Design Standards and Standard Plans, Section 5.0 of the City of Salinas Stormwater Development Standards and Section 3 of the City of Salinas Stormwater Master Plan.

  - Design Storm – 20 Year
  - Inlet Spacing – As required to meet the maximum allowable depth of water in street shoulders criteria.
  - Maximum Depth of Water in Streets – Not to exceed the height of the curb for the 20-year design storm.

The roadway planning concept cross sections provided by the City indicate that dry wells will be included in the median of Boronda Road. We understand that the primary intended purpose of the dry wells is to provide detention, and that underground chambers may be used in lieu of the dry wells. If the project does include dry wells, then, the project team will design the dry wells to meet the minimum requirements for these facilities as set forth by the US EPA and the Safe Drinking Water Act. We assume that the City will complete the online registration of these facilities through the EPA website following construction.

Drainage calculations will be prepared in accordance with the City's Stormwater Development Standards and Storm Water Master Plan. We assume that downstream water surface elevations in the storm drain system will be available from the Storm Water Master Plan. We also assume that topographic data for the offsite agricultural area outside of the project limits will be obtained from the 2010 AMBAG LiDAR survey.

The Onsite Drainage Report will summarize our analysis, provide recommended size and alignment of the new storm drain system and infiltration/treatment facilities, and is expected to demonstrate compliance with the City's Stormwater Development Standards.

Hydraulic Analysis for Gabilan Creek
Wallace Group will prepare a hydraulic analysis for Gabilan Creek at the project site utilizing the US Army Corp of Engineers HEC-RAS computer program. The analysis is needed for the planning of the future widening of the roadway and crossing structure underneath Boronda Road. This analysis is intended to confirm and recommend an adequate bridge opening/box culvert size to accommodate the 100-year 24-hour peak flows without adversely impacting the upstream or downstream water surface areas as well as preventing inundation of the roadway. A separate Technical Memorandum will be prepared detailing the findings of the hydraulic analysis and outlining recommendations as to the sizing of the bridge/culvert, as well as creek scour protection upstream and downstream of the crossing. Hydrology for the creek analysis will be based on existing studies to be provided by the City of Salinas. A new hydrologic analysis is not anticipated and is therefore not included in our services scope or budget.

Deliverables:
- Offsite Drainage Report (PDF)
- Stormwater Control Plan (PDF)
- Onsite Drainage Report (PDF)
- Operations and Maintenance Manual (PDF)
- Gabilan Creek Hydraulics Memo (PDF)

Task 3.5: Geotechnical Analysis
The previously prepared Draft Geotechnical Analysis report will be updated and expanded by Earth Systems Pacific (ESP) by the services in this task. In order to refine the construction approach and look for construction cost savings alternatives it is intended that sample excavations and subsequent testing be conducted to assess the potential for cement treatment of the subgrade in the widening area. Coring of the existing Boronda Road section will also be conducted to review the ability of that pavement to sustain expected TI's for the future traffic volumes being expected.

Based on existing geotechnical information we anticipate that full depth pavement structural sections may consist of cement or lime-treated subgrade soils. This chemically-treated base material may be a suitable, and cost effective, replacement for traditional Class 2 aggregate base. Additionally, for the existing pavement, we anticipate that a milling and overlay operation may facilitate adequate pavement life-cycle at a reduced cost when compared to full depth replacement of that pavement. This geotechnical scope of services has been prepared based on these assumptions.

Sampling and Laboratory Testing for Chemically-Treated Subgrade Soils
Soil samples will be obtained for laboratory testing for properties of chemically-treated subgrade materials. Prior to initiating the sampling, Underground Service Alert (USA) will be contacted to locate utilities that fall within their scope of services. Authorization to enter and conduct work on the site will be obtained as necessary. We request the City's assistance in obtaining such authorization. Samples of the upper 4 feet of soil will be obtained at 12 locations using a backhoe. The backhoe excavations will be backfilled with on-site soils. The soil samples will be reviewed by a Geotechnical Engineer, and 6 of the 12 samples will be selected for laboratory testing for unconfined compressive strength of chemically (cement) treated soils. The samples will be compacted to approximately 95 percent of the maximum dry density of the soil/cement mixture, as determined by ASTM Test Method D 1557 (modified).

The unconfined compressive strength tests will be conducted on soil samples mixed with 3, 4 and 5 percent Portland cement. The tests will be performed in general conformance with the methods described in the Caltrans Guidelines for the Stabilization of Subgrade Soils in California (Guideline: UCPRC-GL-2010-01).

Coring and Analysis of Existing Pavement
The existing pavement thickness on East Boronda Road will be determined by cores drilled at 12 locations. Prior to initiating the coring, Underground Service Alert (USA) will be contacted to locate utilities that fall within their scope of services. If required, an encroachment permit will be obtained from the City of Salinas, and a traffic control plan will be developed by our traffic control subcontractor. The subcontractor will also provide traffic control during the course of the pavement coring work.

The unconfined compressive strengths will be reviewed to assess the optimum cement content that will provide the minimum gravel factor required by the Caltrans Highway Design Manual for treated subgrade soils. Pavement structural sections will then be developed based on the specified Traffic Index.

An assessment of the existing pavement sections on East Boronda Road will be conducted to estimate the Traffic Index that the pavement is capable of sustaining. The assessment will be based on a review of the available as-built plans and the pavement thicknesses measured at the core locations. If the existing pavement is not capable of sustaining the design Traffic Index, overlay thicknesses required to increase the Traffic Index will be developed based on Caltrans methods.

Soils Engineering Report
The previously-obtained geotechnical information for the project will be reviewed to develop alternative foundation types and design criteria for the proposed bridge or culvert to cross Gabilan Creek near the Independence Boulevard intersection. The potential for soil liquefaction at the bridge/culvert site will be considered, and alternative foundation types will be discussed with the design team.

Upon completion of the above-described work, a report will be prepared to summarize our conclusions and recommendations. The report will also include the information and recommendations contained in our previously-submitted draft geotechnical investigation report for the project. A draft copy of the final report will be submitted to the client for review prior to its publication.

Deliverables:
- Draft Soils Engineering Report (PDF)
- Final Soils Engineering Report (PDF)

Task 4.0: 65% PLANS, SPECIFICATIONS AND ESTIMATE (PS&E)

Based on the engineering layouts and analysis prepared and reviewed in the previous tasks we will commence preparation of 65% design level draft plans, specifications, and an Engineer's Opinion of Probable Cost. The direction for the design will be based on the coordination with the City to date and it is not expected that the future design concepts will vary from the approved concepts in the GAD submittals.

Prior to submittal of the 65% PS&E package the design team will conduct an internal peer review. We will review construction plans and the results of the peer review will be

documented by red-line mark-ups on the construction plans. This plan review will be limited to general conformance with roundabout design principles per NCHRP Report 672: Roundabouts: An Informational Guide, Second Edition.

During this next stage Wallace Group staff will lead the design effort for roadway, landscaping, utilities as listed, drainage and water quality elements. KAI staff will design the Pedestrian Hybrid Beacons (PHB's) at each departure and approach for each of the legs of this roundabout (up to eight (8) total) as well as the lighting for the roundabout design at McKinnon. KHA staff will conduct a final peer review of the initial design package for roadway design refinements related to the roundabout.

Task 4.1: 65% Plans

The project team will develop the project design plan sheets to a 65% level of detail. The design plan set is expected to include a Title sheet with project information, general project notes, a survey control monumentation sheet for future staking control, typical sections and layouts for the widening of East Boronda Road to a 4-lane cross-section, storm drain facilities, bio-infiltration facilities within the median, lighting, cycle track layout and details, landscaping, pavement delineation and signing, and details related to roundabout geometrics. The plans will assist in further identifying specific project needs and recommend solutions to meet those needs.

Electrical (lighting and pedestrian signal facilities) will include the following typical design activities:

- Coordinate with City of Salinas to confirm the type of lighting fixtures and poles to be used on the project.
- Coordinate with the City of Salinas and/or the local electrical utility to determine the location and routing of electrical service for the PHB systems.
- Coordination assumes up to two (2) phone conferences and concurrence of the lighting fixtures and poles prior to conducting the photometric analysis.
- Perform street lighting photometric analysis to determine the street light pole layout. Confirm the layout and results of the analysis with City.
- Coordinate with the City of Salinas and/or the local electrical utility to determine the location and routing of electrical service for the lighting system. Coordination assumes up to two (2) phone calls and concurrence of the electrical service location and routing prior to KAI preparing 65% street lighting plans.

Wallace Group will design and prepare plan, profile and detail sheets for a proposed 18-inch PVC Sanitary Sewer Main located within the traveled way, extending from the western side of Dartmouth Way to a connection point in McKinnon Street. The sewer main within the Phase 1 project area is approximately 1,500 long and will be placed at a minimum depth of 5-feet with a minimum slope of 0.2%. A manhole will be placed a maximum of every 500 feet and at locations where the main changes horizontal or vertical alignment and at future pipe junctions. The design will also include accommodation for sanitary sewer requirements for future growth north of East Boronda Road. Sanitary sewer stubs will be included from the East Boronda Road mainline to within 5-feet of the northerly right-of-way and within proposed intersections. This cost includes an analysis of the preliminary sanitary sewer alignment from Natividad Road to McKinnon Street to ensure adequate grades and cover can be achieved for future phases of East Boronda Road Widening projects.

This task includes the placement of a conduit per the City requirements for future fiber optic needs at a minimum depth of 3-feet. The City will provide Wallace Group with the preferred horizontal location and conduit diameter for design.

The project team will develop landscape planting and irrigation plan sheets for the median and LID features. The landscape plan set is expected to include a planting plan, planting notes, schedule and details, irrigation plan, irrigation notes, schedule, details and water demand calculations.

Wallace Group will prepare a plant palette for suitability with climate, drought tolerance, low maintenance and performance in the LID planter areas. The plant palette will be designed to complement the existing development vegetation and character. Preliminary irrigation plan will identify point of connection and indicate proposed equipment types, including manufacturer. The landscape design will include coordination with electrical consultant KAI for electrical power source/connection for the proposed irrigation controller.
The following sheets are anticipated:

- 1 - Title Sheet
- 1 - General Notes
- 1 - Survey Control Sheet
- 8 - Typical Cross-Sections
- 4 - Layout Sheets
- 8 - Storm Drain Plan and Profile Sheets
- 4 - Sewer Plan and Profile Sheets
- 4 - Construction Details
- 4 - Signing and Pavement Delineation Plan
- 4 – Temporary Water Pollution Plan
- 8 - Traffic Handling Plan
- 4 – Electrical Layouts
- 2 – Electrical Details
- 4 - Planting Plans
- 4 - Planting Notes, Schedule and Details
- 4 - Irrigation Plan
- 2 - Irrigation Notes, Schedule and Details
- 1 - Water Demand Calculations

Task 4.2: 65% Technical Specifications
A draft list of construction specifications will be produced based on applicable City and State standards, details, and specifications as appropriate and will be formatted per Caltrans 2015 Construction Contract Specification format. Technical special provisions for a contractor prepared Storm Water Pollution Prevention Plan (SWPPP) will be included. At this stage, the design plans will include a preliminary Temporary Water Pollution Control plan which is to be the basis by which the Contractor will eventually prepare the SWPPP. Our specifications will direct the Contractor to initiate all power connection service requests with the local power company. The surface treatment for the existing portion of East Boronda Road will be outlined in the technical special provisions and no plan sheets are anticipated for this work. We anticipate that the City will prepare boiler plate or front-end documents and we will technical specifications related to the bid items.

Task 4.3: 65% Engineer's Opinion of Probably Constructions Costs (Estimate)
Preliminary quantity takeoffs will be generated based on the draft 65% design. Relevant unit bid information will be acquired from the City and State's "As-Bid" data bases and adjusted as needed to accurately represent anticipated project costs. Based on this information a Draft Engineer's Opinion of Probable Construction Costs (EOPCC) will be generated and submitted to the City for review.

Deliverables:
- Draft 65% Design Plans (PDF, three (3) hard copies, 11x17)
- Draft 65% Specifications (PDF, three (3) hard copies)
- Draft 65% EOPCC (PDF, three (3) hard copies)

Task 5.0: 95% PLANS, SPECIFICATIONS AND ESTIMATE (PS&E)

Task 5.1: 95% Plans
At the beginning of this task we anticipate receiving written comments on the 65% PS&E task deliverables.

As discussed in Task 1, we will coordinate, attend, and provide notes on the 65% submittal review meeting with City staff. The final design will proceed based upon the comments and direction received. It is anticipated that comments will be relatively minor and adjustments to the approved configuration will not be required at this stage of design. We will formalize our understanding of the City's feedback and verify comments have been addressed using our Comment Resolution forms as we proceed with preparations of the 95% construction document submittal. The project design, reports, and plans will be finalized and further developed with relevant details, notes and pay item callouts. Upon completion, the plan sheets and reports will be delivered to the City for review.

Task 5.2: 95% Technical Specifications
The project team will further refine the construction specifications based on City feedback, project development progress, and applicable State and City standards as appropriate. The specifications will be formatted per Caltrans 2015 Construction Contract Specifications guidelines. We anticipate that the City will prepare boiler plate documents and we will assist in providing particular details if needed.

Task 5.3: 95% Engineer's Opinion of Probably Constructions Costs (Estimate)
Draft final quantities and bid prices will be reviewed and re-calculated following the completion of this layout and design task. The Engineer's Opinion of Probable Construction Costs (EOPCC) and bid sheet will be for review by the City.

Deliverables:
- Draft Final 95% Plans (PDF, three (3) hard copies 22x34)
- Draft Final 95% Specifications (PDF, three (3) hard copies)
- Draft Final 95% EOPCC) (PDF, three (3) hard copies)

Task 6.0: FINAL PLANS, SPECIFICATIONS and ESTIMATE (PS&E)

Task 6.1: Final Plans
At the beginning of this task we anticipate receiving minor written comments on the 95% PS&E task deliverables. The design will be finalized based upon the comments and direction received. We will formalize our understanding of the City's feedback and verify comments have

been addressed using our Comment Resolution forms as we proceed with preparations of the final construction document submittal.

Task 6.2: Final Technical Specifications
Technical specifications will be finalized based on minor revisions if needed to the plans or bid items. We assume we will work closely with the City who will be responsible to advise if there are specific conditions that are to be reflected in the technical specifications that aren't typical to other agencies or required by the "boiler plate" sections of the bid package.

Task 6.3: Engineer's Opinion of Probably Constructions Costs (Estimate)
Based upon the City's review of the 95% Draft Final Plans, Reports, Specifications, and Estimate the Wallace Group design team may request a design review teleconference to review any questions, respond to comments, and revise the bid documents. Only minor modifications are expected at this stage of the project. Following these revisions, the bid documents will be stamped, sealed, and presented to the City for advertisement for construction.

Deliverables:
- Final Plans (PDF, three (3) bond hard copies 22x34) – stamped and signed
- Final Specifications (PDF, three (3) hard copies) - stamped and signed
- Final EOPCC (PDF, three (3) hard copies) – stamped and signed

TASK 7.0: UTILITY COORDINATION, OUTREACH AND ADDITIONAL SUPPORT SERVICES

Task 7.1: Utility Coordination
Based upon the contact previously initiated with utility facility owners Wallace Group will continue to coordinate with affected utilities throughout the PS&E design tasks. Between the Draft design (65%) and Draft Final (90%) design deliverables we will send out "B" letters, also known as a Notice to Owners, informing utility owners that we have identified a conflict with the location of their utility facilities, and request potholing as needed (note: potholing is not included in this scope of services).

During the 65% production process we will arrange for a meeting with the City and each of the affected utility owner to go over the proposed project and discuss potential relocation strategies. We will discuss with each utility company the North Boronda Future Growth Area and confirm that the existing utilities do or do not meet the future growth needs and determine if upgrades require accommodation.

If as-built information previously provided by Utility Companies is not satisfactory or clear, we will discuss questions with the Utility Companies and the City and may recommend additional pot holing services (not currently included in this scope) to clearly identify the location of their facilities.

During the final design phase, we will work with the City to send the Utility Companies a "C" letter, also known as a Utility Agreement. The Utility Agreement is to spell out each party's responsibilities for utility relocation such as timing of relocation and payment for the relocation. As is the case with many local agencies, we have assumed the City has a standard Utility Agreement that we will utilize for this task.

Wallace Group will coordinate with dry utility companies for gas, electric, communications and for water planning needs (PG&E, AT&T, CableCom and Cal Water) and the City for any line upsizing needs or potential utility relocation. This task includes attendance at up to two onsite meetings.

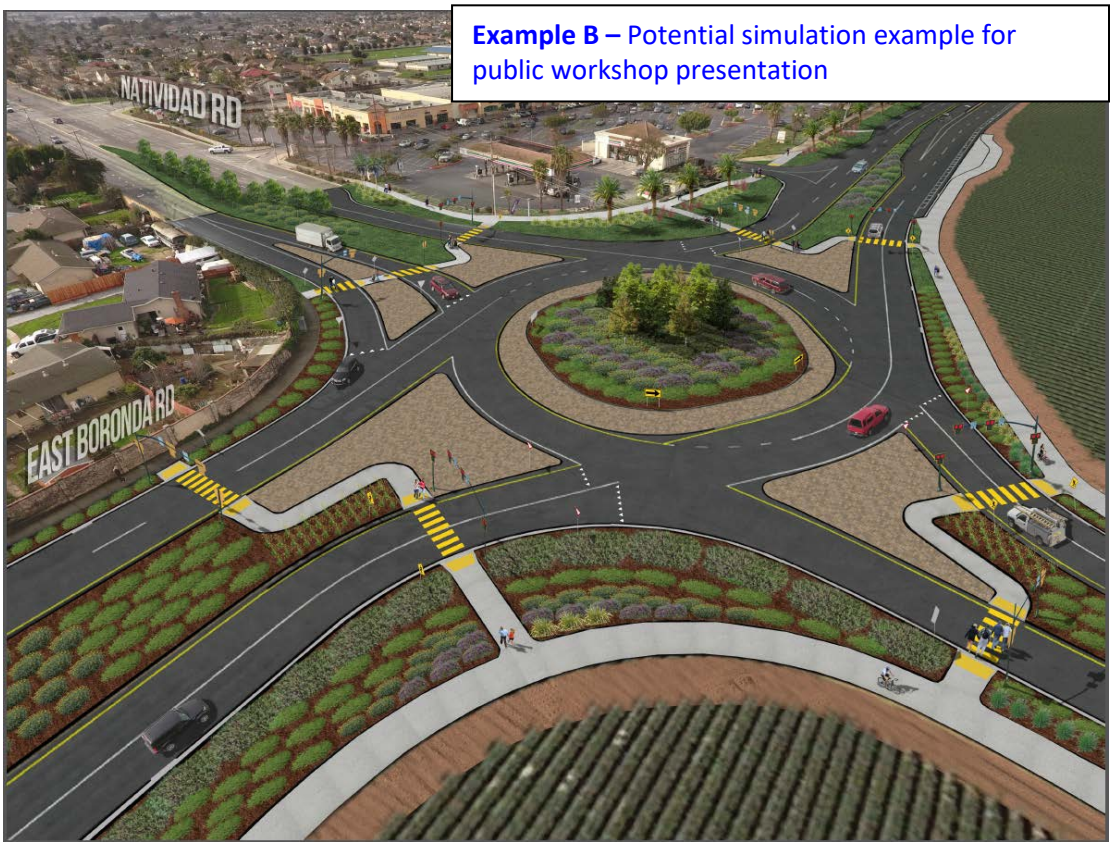
Deliverables:

- "B" Letters for Coordination and Potholing as needed
- "C" Letter Utility Agreements and Final Notice to Relocate (City to provide Utility Agreement template)

Task 7.2: Public Outreach and Presentations

At the discretion of City staff, Wallace Group will produce and present project materials at up to two (2) public workshop meetings. Presentation materials may include project renderings, PowerPoint presentations, cross-sections and/or plan view color exhibits and will be prepared in collaboration with the City while carefully considering the intended audience. The following are samples of renderings that were provided during the initial design concept work.

Example A – Potential simulation example for public workshop presentation



Example B – Potential simulation example for public workshop presentation

Renderings like these one can be further enhanced to provide even more realistic perspectives and users in the graphic.

Similar site videos or readily available instructional materials from other projects will also be provided. If the City desires simulations for the McKinnon roundabout or for other roundabouts on this corridor those simulation may be provided as added services.

Deliverables:

- Up to four (4) project rendering exhibits
- Up to eight (8) full size exhibits, mounted on foam core
- PowerPoint presentation
- Attendance at up to two (2) public meetings

Task 7.3: Additional Survey and Staff Technical Support

The basemapping for the design is complete but the design process will likely identify additional needs as details become apparent. Wallace Group survey staff will provide up to two (2) additional days of field survey densification work in one mobilization effort. This will include a 2-person survey crew and associated office support to create the planimetric delineation and blend that additional mapping into the existing design mapping. No survey requiring traffic control is expected and thus traffic control support is excluded from this task. During the course of preliminary planning and various traffic analysis tasks it became apparent that there are many stakeholders. The history of the project and adjacent development needs resulted in the team technical design staff being requested to provide additional support as needed for initially undefined tasks. To better prepare and support the City staff and various

departments this task also includes general support as needed. Due to the indeterminate nature of the coordination/support requests, this task is currently intended to proceed within the budgeted amount on a time and materials basis to the budgeted amount shown for this task. If more support requests are received, they are to be authorized by the City as additional work as or if needed.

TASK 8.0: BIDDING SUPPORT SERVICES

Task 8.1: Bidding Support
During the advertising phase of the project the design staff will be available to answer bidding related questions and issue addenda if requested.

The Resident Engineer's File will be prepared and submitted as part of this task. Items to be furnished will be as requested by the City and may include:

- Pertinent Correspondence and Contact List
- Quantity calculation records and Working level cross-sections used in design
- Survey notes and monumentation data (does not include slope staking notes)
- Environmental permit information
- Analysis of bids

Our staff will work with City staff to reply to and record Contractor Requests for Information (RFI's) and if necessary issue Addenda to the advertised bid package. We'll also be available to review the City's bid tabulation to provide our input on responsiveness of bidders.

Due to the indeterminate nature of the coordination/support requests, this task is currently intended to proceed within the budgeted amount on a time and materials basis to the budgeted amount shown for this task. If more support requests are received, they are to be authorized by the City as additional work as or if needed.

Deliverables:
- Resident Engineer's File
- Response to RFI's and review of City's Bid Tabulation
- Addenda (if needed)

PROJECT FEES

We appreciate the opportunity to provide the City with this next phase of project development into ultimate planning for the 2 miles of corridor and final design package for the first half mile of widening and two-lane roundabout. We've estimated the budget need for this work at one million, one hundred fifty-two thousand, five hundred and forty-six dollars ($1,152,546) and have shown the budget breakout by major work activities as an attachment for your ease of review.

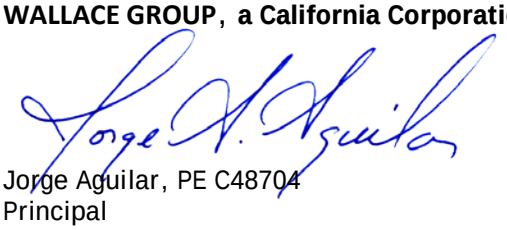
TERMS AND CONDITIONS

To convey a clear understanding of the matters related to our mutual responsibilities regarding this proposal, the City of Salinas Contract Agreement dated October 11, 2017 is considered a part of our proposal agreement.

We want to thank you for the opportunity to continue to support the City of Salinas with our professional services. Please do not hesitate to contact me at 805-544-4011 or jorgea@wallacegroup.us if you have any questions or would like to discuss this proposal in greater detail.

Sincerely,

WALLACE GROUP, a California Corporation



Jorge Aguilar, PE C48704
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Attachments:
Schedule
Standard Rates and Budget Breakout