

REQUEST FOR PROPOSAL

Euclid Roadway and Sewer Reconstruction
from Williamson to Fern

**ONWARD
ENGINEERING**

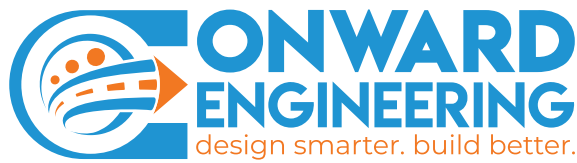
300 S. Harbor Blvd.
Suite 814
Anaheim, CA 92805
www.oe-eng.com



for the City of

FULLERTON

Attn: Paul Lubliner - Associate Engineer
303 W. Commonwealth Avenue
Fullerton, CA 92832



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City of Fullerton
Attn: Mr. Paul Lubliner, Associate Engineer
City of Fullerton
Public Works Department - Engineering Division
303 West Commonwealth Avenue,
Fullerton, CA 92832-1775

October 15th, 2019

SUBJECT: REQUEST FOR PROPOSAL EUCLID ROADWAY AND SEWER RECONSTRUCTION FROM WILLIAMSON TO FERN PROJECT

Onward Engineering (OE) is delighted to provide professional engineering services for the Euclid Roadway and Sewer Reconstruction from Williamson to Fern Project. OE's desire to be selected as the City's partner on this project is amplified by our preparedness and readiness, as we have taken a pre-emptive initiative and have conducted and outlined field observations, reviewed the RFP and supporting documentation, and coordinated with our design team and subconsultant. By doing this, we were able to tailor both the proposal and our scope of work to the specialized and unique needs the City has for this project.

Our team is the heart of our business. Our innovative Project Engineers, led by Justin Smeets as the Project Manager, will apply their professional skills to prepare a complete PS&E package for the City of Fullerton. The City can feel confident in our abilities as we have harnessed experience on similar projects, including a previously completed sewer main replacement project for the City of Brea which required coordination with the City of Fullerton.

Having worked as a Deputy Director and City Engineer for over 18 years, I have an intimate understanding of the quality and standards that Cities expect. In fact, I worked closely with Fullerton City staff a little over 10 years ago providing mentoring and plan check services between 2005 and 2007. If you have any questions, please feel free to contact me at (714) 533-3050 or by email at mataya@oe-eng.com. **We acknowledge receipt of Addendum No. 1.** We hope that our team is selected, we are sure that we will exceed your expectations!

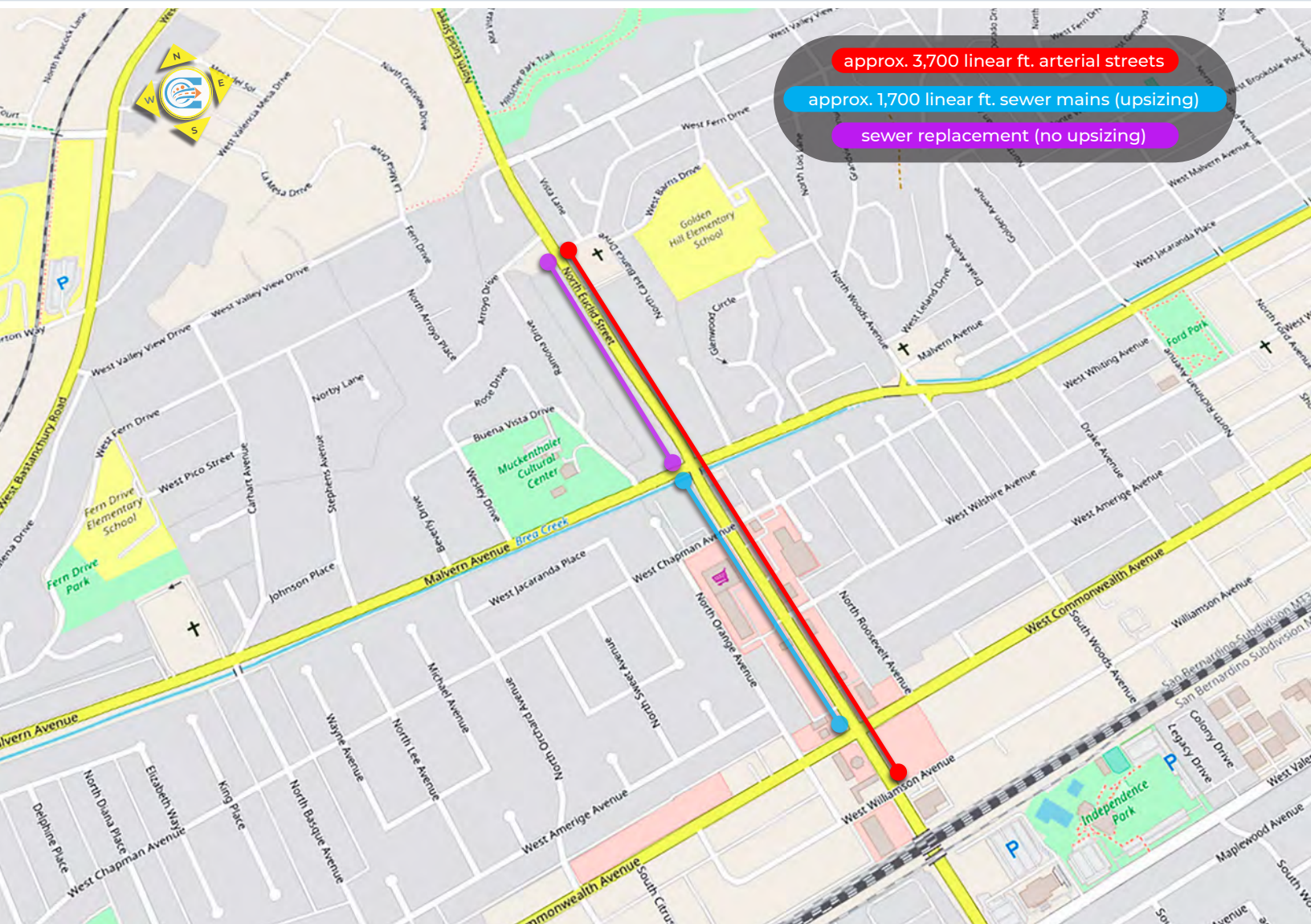
Thank you,

A handwritten signature in blue ink that reads 'Majdi Ataya'.

Majdi Ataya, PE
President

SECTION 1**PROJECT UNDERSTANDING & APPROACH****PROJECT UNDERSTANDING**

The City of Fullerton is seeking a qualified firm to provide design engineering services for the Euclid Roadway and Sewer Reconstruction from Williamson to Fern Project. The project consists of reconstructing or resurfacing approximately 3,700 linear feet of arterial streets between Fern Drive and Williamson Avenue and replacing approximately 1,700 feet of sewer mains between Malvern Avenue and Commonwealth Avenue. Additional tasks include constructing new curb and gutter where gutter is absent, constructing ADA compliant curb ramps, and repairing curb, gutter, cross gutters, sidewalks and driveways where required. The City will be utilizing SB1 funds for the road rehabilitation and local funds for the sewer improvements. The project limits for the street reconstruction and sewer main replacement are presented on the map below.





MAIN PROJECT OBJECTIVES

1

Identify all existing above ground and underground utilities and verify pertinent utility data (i.e. location, size, depth, type, etc.). Notify all utility owners of planned construction and modify, relocate, or protect in place all utilities.

2

Collect high-resolution aerial photographs and conduct a detailed field evaluation of the site to verify sewer manhole invert elevations, street conditions, concrete infrastructure conditions, drainage issues, utility appurtenance locations, street striping configurations, and other site features to facilitate the development of the engineering design and construction plans.

3

Review available as-built records, geotechnical reports, and topographic survey data provided by the City, as well as other data available from third-party sources to assist in the preparation of the engineering design and construction plans.

4

Develop construction plans, specifications and estimates (PS&E) that include sewer main realignment and replacement, steel conduit installation for future fiber optic cable, street reconstruction, concrete infrastructure construction and repairs, utility appurtenance adjustments/relocation, and signing and striping.

5

Ensure all designs adhere to ADA requirements.

OE understands that the completion of the design engineering in a timely manner is critical and will work diligently to achieve this goal. As such, OE has taken the liberty of visiting the site to get a better understanding of the current conditions and identify site-specific challenges. The following section highlights potential areas of concern observed during the site visit along with potential mitigative measures and design approaches.

PROJECT APPROACH

COMMUNICATIONS & PUBLIC OUTREACH

The commencement of the project could result in disruption to residences, businesses, and traffic within the areas of construction. Early and effective communication with affected citizens, stakeholders, and the City will be imperative to the successful completion of the project. OE has at its disposal several public outreach and administrative services including project hotlines and collaborative scheduling/communication software that the City may utilize to improve communication with the community, maintain a positive public perception of the project, and enhance communication between OE and the City as the project progresses.

PRELIMINARY SITE ASSESSMENT

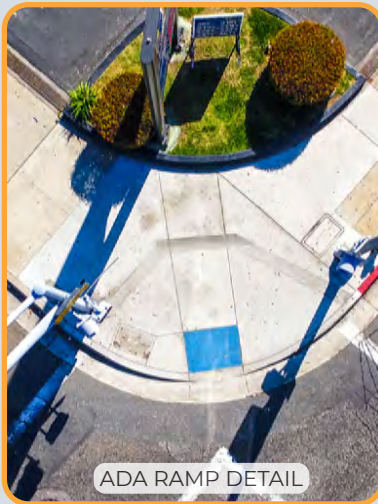
SITE EVALUATION

Project success will be achieved in part by collecting sufficient data to formulate an accurate model of the existing site conditions. OE begins each project with a detailed inspection of the site including visual observations and measurements (i.e. sewer manhole invert elevations) and review of available documentation to begin the initial development of the engineering design and potential alternatives. The findings of this detailed assessment will be used to identify the optimal design for rehabilitating the streets and replacing the sewer mains via a cost-benefit analysis.

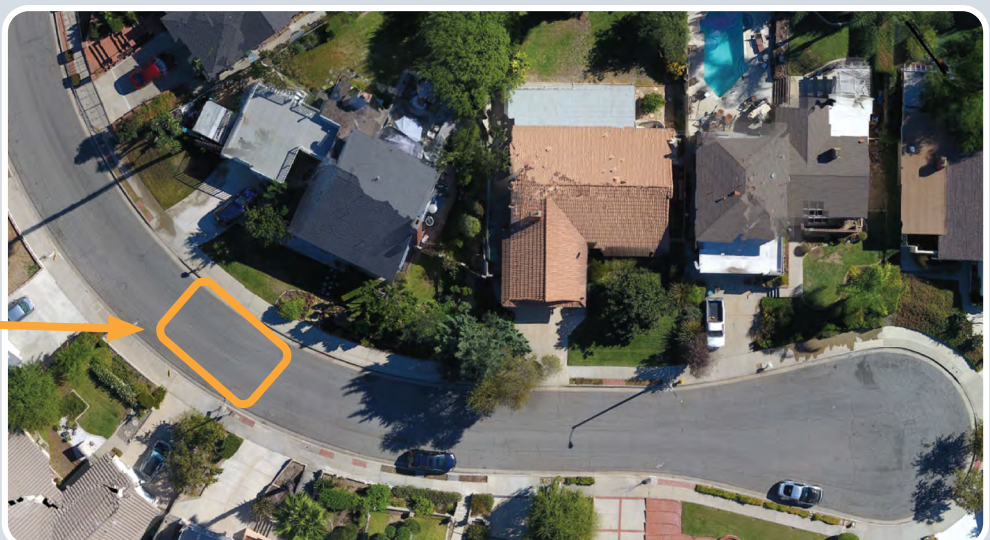
OE will also summarize the deficiencies noted on sidewalks, driveways, curb ramps, curb, gutter, and cross gutters and will categorize the severity of the deficiencies (i.e. ADA non-compliance, public safety issue, current/future drainage issue, aesthetics, etc.). The City will be provided with an inventory of deficiencies along with recommended actions for consideration and feedback, which will be included in the final plans.



DRONE MAPPING



The site assessment will be enhanced with the collection of high-resolution aerial photographs of the street using our drone. Our team has three remote pilots licensed by the FAA to fly drones for commercial use. The aerial photographs allow us to accurately denote site surface features, areas of excessive pavement distress, utility notification markings, and street striping, as well as providing us with highly detailed reference data that cannot be achieved through traditional site evaluation methods. Additionally, the images collected are at a higher resolution than images provided by other sources and are ideal for use in the preparation of exhibits. The image below, collected for a previous project, demonstrates the level of detailed information that can be collected using drone technology. The aerial photos collected are merged together in post-processing to create complete street segments with very high levels of detail.



SUPPLEMENTARY DATA COLLECTION

Based on the anticipated scope of work, it is expected that the collection of additional data will be required to effectively develop the construction plans.

The required investigations would include:

1 A geotechnical assessment of the streets to verify existing pavement compositions and subgrade conditions, and to develop recommendations for the optimal structural composition - **provided by City.**

2 A detailed topographic survey to identify, document, and inventory all surface utilities, site features, and vertical elevations to accurately develop the engineering design and PS&E - **provided by City.**

3 Utility research and field locating to identify existing underground utilities (**initial request for as-builts from select utilities conducted by City.**)

4 Potholing to verify underground utility locations where conflicts are anticipated.

5 Aerial photography to assist in the development of the base sheets.

6 A follow-up site evaluation to verify the accuracy of the base maps.

ENGINEERING DESIGN

STREET REHABILITATION

The PCIs of the project streets as reported in the 2018 Pavement Management Plan range from 24 to 39 with an average PCI of 33, which is equivalent to a road condition rating of "Very Poor". The preliminary field assessment observations were consistent with the PCI ratings as the streets exhibited widespread block cracking, alligator cracking, potholing, and rutting.

OE concurs with the City's proposition to grind and overlay the majority of the street and reconstruct select areas. The City has also expressed a desire to incorporate rubberized asphalt into the design and secure funds through the CalRecycle Rubberized Pavement Grant Program. It should be noted that the deadline to submit applications for the grant was October 3, 2019 and priority will be given to recipients that did not receive funding in the previous fiscal year. A final determination of the limits of each rehabilitation method to be applied will be made following a detailed site evaluation, review of the geotechnical report, development of a preliminary cost estimate for all construction components, confirmation of the available construction budget, and discussions with the City.

The existing street sections will be evaluated by converting topographic survey data into a 3-dimensional surface in AutoCAD Civil 3D. The existing street crown heights and cross-slopes will be assessed and adjusted as necessary to tie into the curb and gutter design. The proposed street surface, curb, and gutter will also be created as a 3-dimensional surface. The software allows for surface elevations and slopes to be reported at any given point and will dynamically update the values when changes are made to the design. The software also allows for the simulation of rainfall to ensure surface run-off flows from the street crowns to the gutters as intended.

In addition to traditional rehabilitation methods, OE can assess the potential benefits of incorporating emerging technologies into the design at the City's request. The cost of incorporating these technologies varies; however, they typically result in upfront cost savings in labor and material costs or long-term savings by providing a street with service life comparable to one that has been reconstructed at a reduced price.



RECLAIMED ASPHALT PAVEMENT (RAP)

Options for recycling the material milled from the streets can be evaluated if there is sufficient surface area to be rehabilitated for it to be economically viable. There are several methods that utilize RAP including hot recycling, hot in-place recycling, cold in-place recycling, cold central plant recycling, and full depth reclamation. The determination of which methods may be feasible for the project will depend on street geometry and structural section, project logistics, and available construction budgets.

Studies have historically demonstrated that the inclusion of RAP in the pavement design results in a pavement of similar or better quality than pavement constructed using conventional methods. Depending on the RAP method utilized, cost savings can be realized by reducing the amount of new asphalt cement or binder used, transportation costs, and disposal costs. Cold-mix methods can also result in reduced disruptions to traffic flow due to reduced curing times.

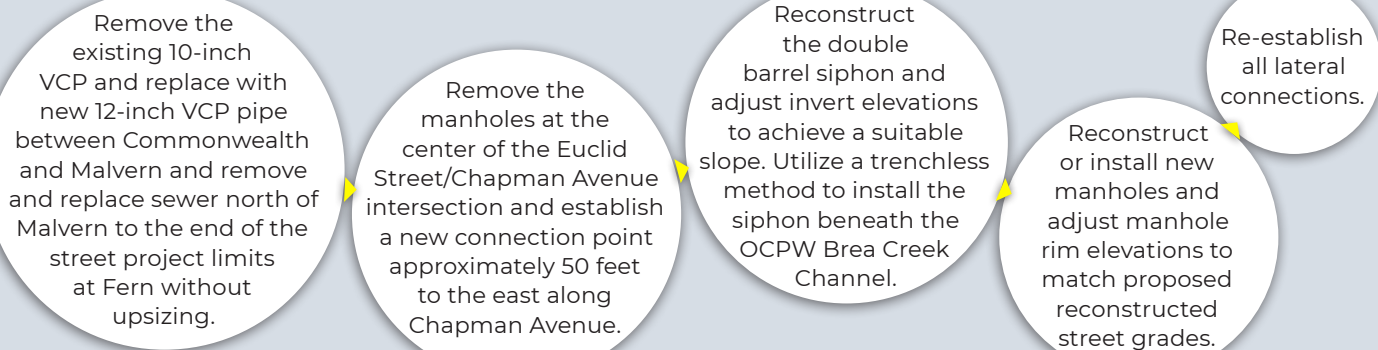
Utilizing RAP methods also demonstrates Environmental Stewardship by recycling non-renewable resources, reducing waste to landfills, minimizing air emissions, and conserving energy.

FIBER REINFORCED ASPHALT

Fiber additives can be incorporated into full depth pavement layers, overlays, and slurry seals to improve the tensile strength, crack resistance, and service life of the pavement. Fiber reinforced asphalt has been utilized on projects by numerous Cities and Counties throughout Southern California. Cost savings can be realized by extending the pavement life and by reducing the required pavement thicknesses, as compared to conventional asphalt mixes.

SEWER MAIN REPLACEMENT

The design will generally consist of the following components:



Invert elevations will be measured in each sewer manhole to verify as-built records or used in lieu of as-built information when it conflicts with measured values or does not exist. Underground utility alignments and appurtenance locations will be added to the base maps using available as-built and topographic survey data. A conceptual alignment and vertical profile will be developed based on these site constraints and alternative options will be provided where warranted. Permits required for working in the vicinity of the OCPW Brea Creek Channel will be obtained by the City and comments provided by the regulators will be incorporated into the plans.

The size upgrade of the existing 10-inch and 12-inch pipelines as well as potential changes to the alignment could introduce new conflicts depending on the depths and clearances of existing underground utilities. Storm drain, water, gas, oil, telecommunication, and other miscellaneous utility lines will be identified to ensure that conflicts are addressed and resolved. Locations of existing sewer laterals will also be verified via existing record drawings, video, and field observations. Potential conflicts with the proposed alignment and existing underground utilities will be verified via potholing.

PIPE BURSTING

In addition to traditional trenching methods, OE can evaluate the feasibility of using pipe-bursting to replace the sewer mains, if requested by the City. Pipe-bursting is an effective method for replacing pipelines with minimal surface disruptions which would be advantageous due to the high volumes of traffic on the street. Since the new pipe is pushed through the existing pipe, the possibility of striking another utility is limited and there is less chance the advancement of the pipe will be impeded by cobbles or tree roots. Another benefit of this method is that the existing pipe alignment is maintained.

SEWER BYPASS PLAN

Whether designing for pipe-bursting or utilizing traditional trenching, a sewer bypass will be required. Construction specifications will dictate that the Contractor must submit for approval a bypassing and dewatering plan prior to disturbing the existing sewer flows. This plan must illustrate and explain how the flows will be maintained and contained during construction. All sewage must be contained within a closed conduit at all times during construction. Included with this plan shall be a schedule identifying the order in which the system shall be redirected at each junction. An emergency clean-up plan will also be included. If sewage backup occurs and enters buildings, the Contractor will be responsible for clean-up, repair property damage cost and claims.

DUAL MANHOLE REPLACEMENT

It is anticipated that replacement of the sewer mains will consist of working between two manholes at a time. This would include plugging the manhole and using a Sump Pump to ensure minimal interruption of services. Once the work between two manholes is complete, work would shift to the adjacent two manholes until the entire stretch is replaced. This design method ensures no utility conflicts. It will also not require lengthening or shortening the laterals.

CONCRETE INFRASTRUCTURE IMPROVEMENTS



Select portions of existing curb, gutter, cross-gutters, and sidewalk exhibited extensive cracking, breakage, or drainage issues. These areas will be assessed and identified for repair in the construction plans. At a minimum, curb and gutter should be reconstructed where drainage is affected, and sidewalk should be replaced where not in compliance with ADA requirements (i.e. heaved sidewalk panels, minimum path widths). Additional reconstruction to replace sections where minor cracking or breakage has occurred could also be undertaken to improve aesthetics and prevent further degradation that could affect ADA compliance, drainage, or public safety in the future.

Damage to pavement, curb, gutter, and sidewalks due to the infiltration of tree roots was observed in select locations throughout the project limits. Tree roots under affected infrastructure to be reconstructed should be exposed and assessed by a licensed arborist to determine if the roots can be removed without affecting the health of the tree. If safe to do so, the roots can be trimmed, and a barrier can be installed to prevent the roots from re-infiltrating areas of concern.



ADA CURB RAMPS



A total of 13 curb returns within the project limits do not have curb ramps present or have curb ramps that do not appear to satisfy ADA requirement. New curb ramps will be constructed in these locations to comply with ADA requirements such as maximum allowable slopes and minimum travel path/landing widths. The ramps will be designed as 3-dimensional surfaces in Civil 3D to ensure that the ADA slope and dimension requirements are adhered to. Individual curb ramp details will be prepared for the construction plans and will include horizontal geometrics and design elevations. Due to the steepness of some streets, it is anticipated that complete ADA compliance may not be achievable at select ramp

locations. These ramps will be designed to be as compliant as possible. If a ramp cannot be designed to achieve complete ADA compliance due to limiting site factors such as street slopes, the ramp will be designed to be as compliant as possible and a Curb Ramp Memo signed by a Professional Engineer will be prepared.

DRIVEWAYS

Select driveways throughout the project do not appear to be ADA compliant. It is the City's intention to only reconstruct driveways where necessary to accommodate construction of the new facilities. Any driveways requiring reconstruction will be denoted on the plan and profile sheets with reference to an ADA compliant standard detail. Reconstruction of all the ADA non-compliant driveways can be added to the plans if requested by the City.



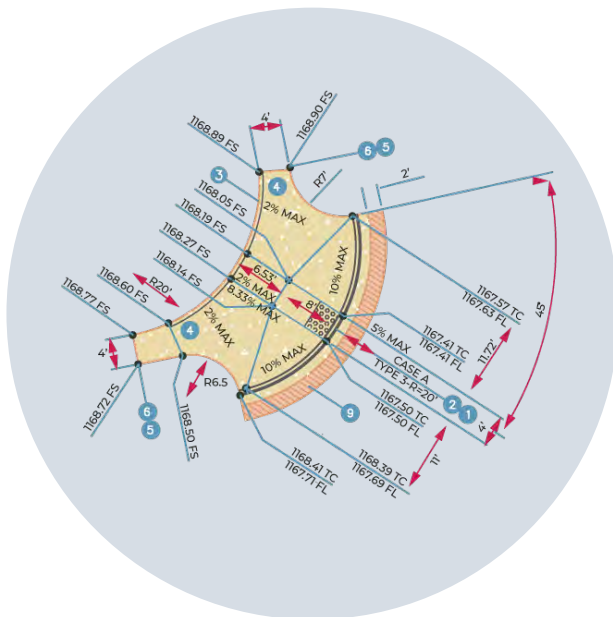
CONSTRUCTION PLANS & SPECIFICATIONS DEVELOPMENT

All designs and construction plans will be ADA compliant and will adhere to the latest editions of the City of Fullerton Standard Drawings, or the Standard Plans for Public Works Construction, whichever takes precedence. The latest edition of the Standard Specifications for Public Works Construction "Greenbook" will be adhered to for the specifications. All signing and striping required will be designed in accordance with the Caltrans California Manual on Uniform Traffic Devices. City of Fullerton boilerplate templates will be used when available.

All plans will be developed using current AutoCAD Civil 3D software. OE's design team has extensive experience with the software and can use it to its full potential. The Civil 3D environment dynamically links objects allowing us to immediately see the effects to material quantities and costs as design changes are implemented. The software also provides us with tools to simulate the drainage surface run-off, instantly calculate grades at any given point on the surface of the design and visualize the designs in 3-dimensions as they would appear when constructed. The combination of these tools assists in efficiently and accurately developing the optimal design for each project.

AUTOCAD 3D ADA RAMP RENDER SAMPLES

Horizontal Ramp Detail



Isometric Ramp Detail - 3D





SECTION 2

SCOPE OF WORK

Our corporate culture thrives on innovation, and we are dedicated to keeping up with industry standards and new technologies. OE provides ingenuity in its engineering solutions. As a company, we feel it's important to base our goals and objectives on a solid foundation of good corporate ethics. The following is our scope of work for design engineering services integrated with the site-specific tasks outlined in the City's Request for Proposal, *to which no exceptions are taken*.

PHASE #1

PRELIMINARY ENGINEERING

1 KICK-OFF-MEETING

OE will set up a design kick-off meeting with City staff to discuss the scope of work, objectives, design criteria, technical requirements, and project schedule. It is important that the scope of work and schedule be reviewed and finalized by the City at this meeting to ensure a smooth and successful project. For the purpose of this proposal it has been assumed that three coordination meetings will be required (one meeting per month). Additional meetings throughout the development of the plans and during construction will also be conducted as described in the following sections.

MEETING MINUTES & AGENDA

digital copy

PROJECT SCHEDULE

digital copy (to be updated as necessary)

2 RESEARCH & REVIEW AVAILABLE DATA

The OE team will compile and review all records and documents from the City. Existing documentation research that will be reviewed includes the County, City, utility, and other pertinent records and documents, existing street, signal, storm drain, gas, sewer, and water main improvement plans, topographic data maps, geotechnical reports, record drawings, utility plans, survey centerline and private property monument data, and other important information. All records will be compiled and returned to the City upon project completion. OE will conduct existing records research and coordination with utilities in the area and all design work will be coordinated with the affected utilities.

EXISTING RECORDS MATRIX

COPIES OF EXISTING RECORDS

*roadway/right-of-way/utility
digital copies*

3 UTILITY RESEARCH & NOTIFICATION

OE will conduct a detailed local utility investigation to confirm the most recent contacts for all affected utilities and cross-reference the findings with any information provided by the City. Any companies not included in the City's original contact list will be initially contacted via letter to inform them of the upcoming project and request information pertaining to their utilities such as verification of the sizes, depths, and locations of their underground lines, facilities, and substructures within the project vicinity. Once the requested information is received from the utility owners, OE will cross-check the plotted locations with field review information to ensure the existing utility lines are shown in their proper locations. The compiled information will be integrated into the 60% construction plans and provided to all affected utility owners with the second utility notification letter. OE will ensure that the final design is compatible with all utilities to be installed, relocated, adjusted, or otherwise modified within the project area and a final utility notification letter containing the final construction plans will be sent to all affected utility owners. OE will meet as many times as necessary with the affected utility owners throughout the development of the plans. OE will also contact utilities that have not responded to the City's initial notification to confirm receipt, or to coordinate re-sending the notice.

UTILITY CONTACT MATRIX

digital copy

2ND & FINAL UTILITY NOTICES

UTILITY NOTIFICATION LOG

UTILITY OWNER CORRESPONDENCE

digital copies





4

SITE EVALUATION

OE will schedule a site inspection and evaluation. OE will verify records drawings and data, evaluate pavement and concrete infrastructure conditions, take measurements of sewer manhole inverts, identify proposed improvements and requirements for private property improvements, and inventory roadway signage and existing pavement markings. Site features and utility appurtenance locations will be further documented by taking aerial photographs using a drone. Street level photographs will also be taken of key project areas.

SITE EVALUATION NOTES AND PHOTOS

digital copies

PAVEMENT MARKINGS & STREET INVENTORY

digital copy

5

BASE SHEETS

The base sheets will be prepared through the compilation of the research records, topographic survey, aerial photographs, site visit findings, and underground utility line records obtained from as-built plans from utility companies. All plans will be developed using the latest AutoCAD Civil 3D software at 1" = 40' scale and will be drafted using conventional line style and text annotation will be stored as a separate layer.

STREET, RIGHT-OF-WAY, & UTILITY BASE MAPS

digital copies

6

PRELIMINARY DESIGN

Once the site evaluation, topographic survey, geotechnical investigation, utility research, and base maps for the project area have been completed, OE will immediately begin assessing viable design alternatives for street reconstruction and sewer main replacement. Our team will assess construction costs, utility locations, impacts to residents and businesses, and encroachment permit requirements associated with each design option and develop an accurate cost-benefit analysis. Design alternatives will be discussed with the City and approval to proceed with preparing plans for the chosen design will be acquired. Preliminary plans and a construction cost estimates of the design alternatives will be submitted to the City for approval prior to commencing with the 60% PS&E.

PRELIMINARY PLANS AND CONSTRUCTION COST ESTIMATE

*digital & hard copies*PHASE
#2

FINAL PS&E

7/8

60% & 90% PS&E

Once the preliminary plans have been approved, OE will continue to develop the plans to make submissions at 60% and 90% completion. Our design team will begin to populate the plan set with the necessary plan information and coordinate with adjacent agencies or utilities and submit the plans for their review or approval. Feedback from impacted stakeholders will be discussed with the City and incorporated into the plans. The plans will be drafted using the City's standard title block, notes, and formatting, as well as conventional line styles.

Designs will adhere to the existing governing standards for each design component, which may include the following:

- City of Fullerton Standard Drawings
- Standard Plans for Public Works Construction
- Caltrans California Manual on Uniform Traffic Devices
- Americans with Disabilities Act Standards for Accessible Design

60% PS&E PACKAGE

90% PS&E PACKAGE

digital & hard copies

SUBMITTAL REVIEW COMMENTS/RESPONSES, AND RED-LINED PLANS

each submittal - USB flash drive



All plans will be developed using the latest AutoCAD Civil 3D software at the following scales unless instructed otherwise by the City:

DESCRIPTION	HORIZONTAL SCALE	VERTICAL SCALE
Plans and Profiles	1" = 40'	1" = 4'
Street Cross Sections	1" = 10'	1" = 1'
Construction Details	variable scales	vertical scales
Ramp Details	1" = 5'	n/a

COST ESTIMATE

The cost estimate development will be a continuous process which begins at project inception and ends with design completion. Our office constantly updates the unit price records from recent local projects to provide the most accurate project estimated costs. OE will provide an updated cost estimate at each submittal. With the use of our modern Civil 3D software, we can track the quantities and costs while preparing the plan set. This allows us to monitor the costs as the design evolves. The cost estimate for the construction shall be based on the quantity take-offs for the project. OE will coordinate and conduct value engineering study/analysis for any proposed improvements.

PLANS, SPECIFICATIONS, & ESTIMATES AND PAYMENTS

OE will draft the specifications package utilizing any boilerplate templates the City has available. Clarity of bid items, site control, and payment method for each item of work are crucial in the preparation of the project specifications. We will ensure that each pay item is clearly referenced and described in each applicable section of work. The specifications will have all necessary contacts for utilities or residents that have special concerns and will delineate all items needing relocation on the Contractor's part. If specific details or photographs are required in the specifications, they will be included as well. Close attention will be paid to the delineation of each bid item to ensure that the specified project scope covers the City's intent.

SUBMITTALS

Prior to submitting hard copies to the City and to other affected agencies and utility companies, OE will submit electronic copies (in PDF format) to the City for review and feedback. OE will coordinate a Plan Check Meeting with the City for each submittal following the distribution of electronic copies. OE will also prepare a summary of the submittal review comments and scanned red-lined plans in electronic format on a USB flash drive.

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100% PS&E

Once the City has completed the second review of the PS&E, OE will incorporate the plan check comments into the 100% PS&E Submittal. OE will expeditiously work towards the completion and submittal of the 100% PS&E. It is not anticipated that any major changes will be required for the 100% Submittal and it will be our goal to have a quick turnaround so that the City can actively pursue getting this project out to bid. At this phase, plans will meet the 5 C's, consistent, clear, correct, constructible, and complete.

FINAL CONSTRUCTION PLANS

hard copy - 24" x 36" double matte 4mm Mylar sheets - signed and stamped

MASTER SET OF SPECIFICATIONS

hard copy - bound

FINAL CONSTRUCTION COST ESTIMATE

hard copy

COMPLETE PS&E PACKAGE

digital copies - USB flash drive

AUTOCAD & PDF DESIGN FILES

digital copies - USB flash drive





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POTHOLING

If it is determined upon completing the design for the project that the utility research data gathered is not sufficient to accurately determine the locations of the utilities or there is a concern that conflicts may exist that require field verification, the recommendation will be made for utility potholing to be conducted prior to construction. For the purpose of this proposal it has been assumed that a total of 12 potholes will be required for the entire project area.

POTHOLING LOCATION MAP

digital copy

POTHOLING SUMMARY

digital copy

11

UTILITY COORDINATION

OE will meet as many times as necessary with the affected utility owners throughout the development of the plans. Contact information, notification requirements and special provisions provided by the utility owners will be incorporated into the construction plans and specifications and arrangements will be made to have all utility appurtenances impacted by the construction relocated, set to grade, or protected in place.

CORRESPONDENCE WITH EACH UTILITY OWNER

digital copies

TRUNK CONNECTION PERMIT

*digital & hard copies*PHASE
#3

CONSTRUCTION SUPPORT

12

CONSTRUCTION SUPPORT

Revisions to the PS&E package or providing additional administrative support can be done at the City's request on a time and materials basis using the hourly rates in our fee proposal. Additionally, OE can provide full-service construction management and inspection services upon City request.

OE will provide the following ongoing support services during the bid and construction phases:

ATTEND PRE-CONSTRUCTION MEETINGS

RESPOND TO REQUESTS FOR INFORMATION

REVIEW SUBMITTALS

PREPARE AS-BUILT DRAWINGS

PHASE
#4

AS-BUILTS

13

AS-BUILTS

As-builts will be prepared and provided following the completion of construction activities. All red-lined revisions from the contractor and any revised elevations from post-construction surveys will be incorporated into the plans.

AS-BUILT DRAWINGS

*hard copy – 24" x 36" double matte
4mm Mylar sheets – signed & stamped*

AUTOCAD & PDF DESIGN FILES

digital copies-USB flash drive

DESIGN ENGINEERING QA/QC

QUALITY ASSURANCE

Achieving design quality is the foundation for keeping costs under control during construction. Nothing is more important than design quality. It must be stressed during all stages of project delivery, including concept development, preliminary design, detailed design, and bid and award.

Effective Construction Management (CM) begins during design because the costs of CM, including change orders and claims, are largely determined by design quality. Emphasizing design quality and design clarity is the surest way to minimize the amount of change orders and construction costs.

There is no better or more effective way to control total project costs and return on investment than producing well-documented, well designed plans and specifications (PS&E). Quality assurance is a proactive measure taken to ensure the systems and procedures are in conformance with the City's requirements and expectations. Plans and specifications must be of high quality, which means they must be clear and understandable, complete, accurate, consistent, and constructible.

THREE - TIERED REVIEW

Allows for *Error Mitigation* on Three Separate Levels of Detail



Drafting & Calculations
Document Formatting



PROJECT MANAGEMENT
LEVEL

Design Intent Compliance
Project Intent Compliance



QUALITY ASSURANCE
LEVEL

Document Completion
Ensure "Biddable" Plans

QUALITY CONTROL

Plan checks ensure that the plans meet the 5 C's: consistent, clear, correct, constructible, and complete. Our Project Engineers and Project Managers recognize that quality is the result of several processes. It requires many individuals performing many appropriate activities at the right time during the plan development process. Quality Control does not solely consist of a review after a product is complete. It is an approach and a realization that quality is something that occurs throughout the design process. Quality Control means performing all activities in conformance with valid requirements, no matter how large or small their overall contribution would be to the design process. Good CAD techniques, attention to detail, and ensuring plans are correct and useful to the contractor are also essential to quality.

OE's design team follows the Firm's established design policies, procedures, standards and guidelines in the preparation and review of all design products for compliance and good engineering practice, as directed by the Project Quality Control Plan.

SUBMITTED DOCUMENTS:

Three Levels of Review Prior to Each Submittal



INITIAL PEER
REVIEW



PROJECT MANAGER
REVIEW



QUALITY ASSURANCE
&
QUALITY CONTROL
REVIEW




PROJECT CONTROLS

OE utilizes a set of technology-based Project Control systems equip with specialized tools designed to seamlessly store, access, share and disseminate the details of all project-related records and information. These Systems are capable of advancing the progress of infrastructure projects in multi-faceted ways, such as delivering immediate, real-time project-related updates; providing 24/7 access to City project personnel; and the processing of complex data and accounting for all project variables to then calculate solutions for working toward maximizing production, schedules, and to quantify error-mitigating analysis to prevent set backs. As a result, the City benefits from great increases in project transparency, collaboration, clarity and communication, the reduction of errors, and the increase in both productivity and time efficiency, thus both meeting and exceeding project scheduled deadlines, and reducing costs for the City.

COST CONTROL

One of our core corporate philosophies is honesty and transparency. We use [Advanced Financial Software](#) to prepare invoices and reports, which allows the City to request billing statements at any time in the billing cycle. We can also send a real-time report of hours and expenses, letting the City easily compare proposed resources to resources used and/or remaining.

DOCUMENT CONTROL

OE operates on a cloud filing system that will be used on all documents and folders to ensure proper documentation and transparency. We map all of the City's standards, folder structure, templates and document formats and store it on our cloud-based  **ENTERPRISE** account for implementation. This cloud-based account allows for secure, remote access and review of our entire filing system by City staff, to ensure that documentation and filing is done in compliance with the project requirements. Each City staff member attached to the project will be able to select a password which provides access to view, upload, or download any of the project files - [PS&E](#) · [Schedule](#) · [Utility Logs](#) · [Field Observations](#) · [Daily Reports](#) · [Photo Diaries](#) - without any changes required within the City's existing IT framework. This document control system is also compliant with Caltrans' LAPM filing requirements. Additionally, this flexibility allows the City staff access to the project files anywhere and on any device, as well as provide access to select files (like photos) to other collaborators.

SCHEDULE CONTROL

The OE team values time, for both our clients and our team members. To keep projects efficient, on track, and to maintain transparency, we invest in scheduling tools such as [Microsoft Project](#) and [Microsoft Primavera](#), operated by our course trained in-house staff. Every time we submit a proposal, we prepare a [Critical Path Method](#) (CPM) schedule which corresponds to our

OE Staff Trained In:

Microsoft
Project



&

MICROSOFT
PRIMAVERA



resource allocation chart and fee proposal. [CPM scheduling](#) is highly useful as it allows OE to digitally input, analyze, modify, and share project scheduling. When preparing the schedules, OE consider resources, tasks, relationships and durations. OE makes use of this

information to maximize efficiency. When awarded a contract, our team updates the schedule with the [Notice to Proceed](#) date. This is then imported into our proprietary solution "[Onward Collab](#)" which the City will then have full access to. From there, OE can seamlessly document and assign tasks and subtasks. The result is that the details and the progress of the project would be available at all times to be tracked by the City and by our QA/QC team in real-time. Project Managers are then enabled to assess the workload of every team member at any given time, so that immediate adjustments can be made to the project. For example, if additional resources are needed to meet a milestone, the City would have immediate access to all change details. This system also allows for back and forth dialogue regarding a specific task or subtask. The full conversation addressing that item is centralized and can be reviewed at any point.

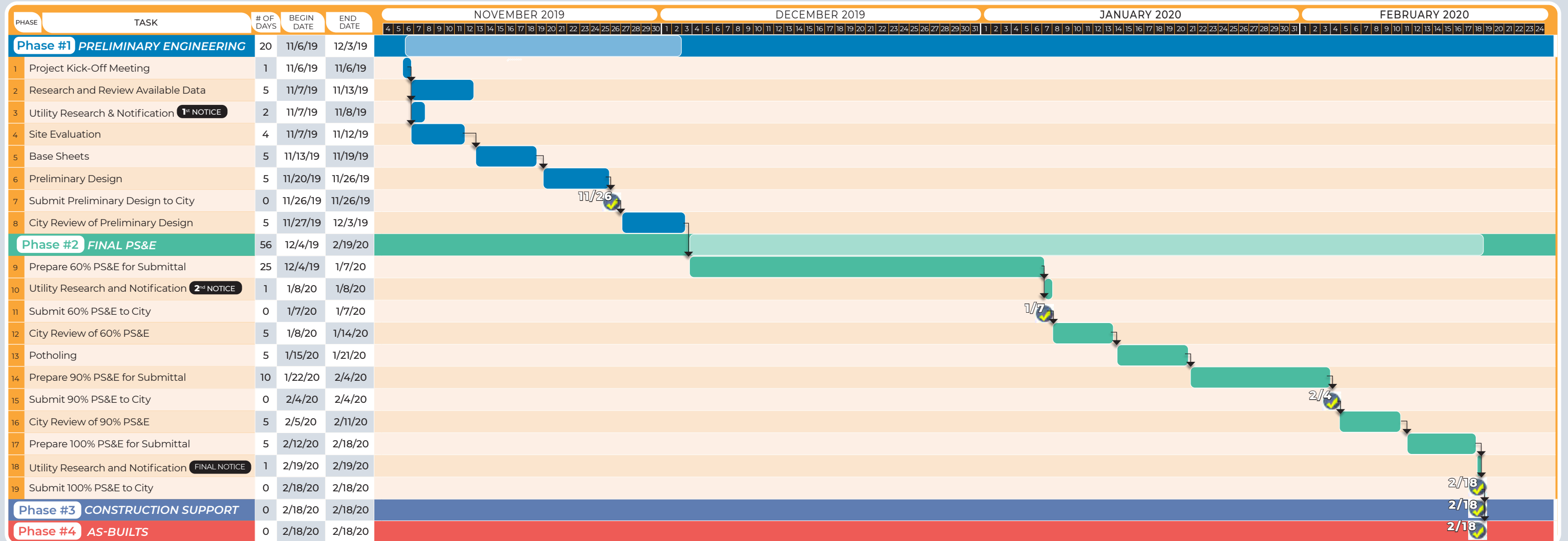
Another view that can be utilized is the [Board View](#). This shows buckets of tasks, with each bucket representing a team member. Moving tasks by a drag and drop, this gives the City clarity as to who is doing what and how much work is on their plate.





PROJECT SCHEDULE

For Professional Engineering Services for Euclid Roadway & Sewer Reconstruction





SECTION 4

PROJECT PERSONNEL

STAFF ORGANIZATION CHART

MAJDI ATAYA, PE
PRINCIPAL-IN-CHARGE
QA/QC MANAGER

37 Years of Experience
BS Civil Engineering, *CSULB*, 1981
MPA All CourseWork, *CSULB*, 1993
PE **REGISTERED** Civil Engineer #39392
FORMER Deputy Director of Public Works
FORMER City Engineer

JUSTIN SMEETS, PE, PLS, QSD
PROJECT MANAGER

14 Years of Experience
BS Civil Engineering, *CSUF*, 2007
PE **REGISTERED** Civil Engineer, #78314
PLS **PROFESSIONAL** Land Surveyor
QUALIFIED SWPPP Developer
California Stormwater Quality Association

ANDY BUI, PE
PROJECT ENGINEER

21 Years of Experience
BS Civil Engineering, *CSULB*, 1998
BS Construction Engineering, *UT*, 1991
PE **REGISTERED** Civil Engineer, #78314
US CAD **CERTIFIED PROFESSIONAL**
CIVIL3D AUTODESK AUTOCAD Westech College
ite Institute of Transportation Engineers
ASCE American Society of Civil Engineers

RYAN DENNIS
PROJECT ENGINEER

12 Years of Experience
BS Civil Engineering, *UC Calgary*
MINOR Environmental Engineering
APEGA **REGISTERED** Civil Engineer
AUTOCAD **CERTIFICATE** of Completion

DAYTON LOWE
PROJECT ENGINEER

18 Years of Experience
COURSE WORK Civil Engineering Technology & Construction Management - *BROWARD*
US CAD **CERTIFIED** USCAD Professional
OCTA **CERTIFIED** Pavement Rehabilitation

STEVE MACBRIDE
PROJECT ENGINEER

26 Years of Experience
AA **DEGREE** Drafting Technology
US CAD **CERTIFIED** USCAD Professional
AUTOCAD and **AUTODESK** **CIVIL3D**

SUB
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info@cbelow.com300 S. Harbor Blvd. Suite 814
Anaheim, CA 92805
www.oe-eng.com

SECTION 4

PROJECT PERSONNEL



SECTION 5

FIRM EXPERIENCE



City of ALHAMBRA

SB1 FUNDED STREET REHABILITATION PROJECT

OE provided the City of Alhambra with Design Engineering services for the FY17-18 SB1 Street Rehabilitation Project (RFP 2M18-8). The project entailed the rehabilitation of a total of approximately 21,972 feet (4.2 miles) of asphalt concrete (AC) streets located within the City limits and a small portion of street located within the City of South Pasadena. The project was financed using SB1 funds with an estimated construction budget of \$954,000. Initially, the City was considering reconstruction, but the cost to rehabilitate the proposed street segments was \$2,227,066 based on the reported PCIs and preferred reconstruction methods. To remain within the allotted budget of \$954,000, OE prepared a cost-benefit analysis to maximize the budget while utilizing multiple rehabilitation methods.

Stephanie Camorlinga - Engineering Associate

(626) 570-5067
scamorlinga@cityofalhambra.org
111 S. First Street,
Alhambra, CA 91801



City of BREA

BERRY ST. & IMPERIAL HWY. SEWER MAIN REPLACEMENT PROJECT

OE provided design engineering services to the City of Brea for this sewer main replacement project. The project spanned 3,000 LF from Lambert Road to Imperial Highway (within Caltrans right-of-way), and on Imperial Highway from Berry Street to the Orange County flood control channel. This project required coordinating with Union Pacific Railroad and filing for a Caltrans encroachment permit, due to the segment within Caltrans right-of-way. The design of this project was split into two phases to accelerate the portion on Lambert Road where a roadway overlay was separately planned. The ultimate design included the installation of 100 feet of 10-inch VCP, 2,570 feet of 12-inch VCP, 300 feet of 15-inch VCP, and a total of 15 new manholes. Special sewer bypass designs were required at the railroad crossings to maintain railroad access at all times. OE also coordinated utility relocations for Chevron, AT&T, and water department and storm drain lines in conflict with the proposed line. To avoid future maintenance and access issues, OE also proposed a new alignment for the sewer main that would avoid encroachment in Caltrans right-of-way.

Raymond Contreras - Project Manager

(714) 990-7763
raymond@c.brea.ca.us
1 Civic and Cultural Center
Brea, CA 92821



City of BREA

MASTER PLAN SEWER UPGRADES (PHASE V) CHERRY & ALDER STREETS

OE provided design engineering, construction management, and inspection services to the City of Brea to ultimately upgrade 2,530 LF of sewer on Cherry and Alder and upgrade 1,100 LF of water line. The project limits fell within both the Cities of Brea and Fullerton right-of-way, requiring OE to coordinate with both throughout the project. Using CCTV video, the pipe's interior revealed sagging, cracking, and deformation of the existing VCP sewer main. The final design called for replacing the existing 8-inch sewer main with 12-inch VCP. Midway through the design, Fullerton requested extending the design by 1,050 LF within the City of Fullerton to the original 1,480 LF in Brea. The scope was expanded a second time near the end of design to include upgrading 1,100 LF of 6-inch DCP to 8-inch DCP and replacing 27 water service connections. The OE design team coordinated with the City of Fullerton and the City of Brea as the scope expanded. The additional pipeline activated a Regional Water Quality Control Board requirement to complete an MS-4 Permit, including drafting a Non-Priority Project Water Quality Plan.

Raymond Contreras - Project Manager

(714) 990-7763
raymond@c.brea.ca.us
1 Civic and Cultural Center
Brea, CA 92821





City of

WHITTIER**WALNUT STREET & SEWER MAIN INFRASTRUCTURE IMPROVEMENTS**

OE provided Design Engineering services for the City of Whittier for the Walnut Street Water and Sewer Main Improvement Project. The proposed project limits included 3,000 feet of Walnut Street from Pickering Avenue to Painter Avenue, consisting of commercial buildings as well as single-family and multi-family residential developments. OE removed an existing 6-inch cast iron water main and a 6-inch VCP sewer main and replaced them with 12-inch and 10-inch mains, respectively. All laterals and intersecting mains were to be reconnected and sewer manholes reconstructed. The existing plain cement concrete (PCC) roadway was to be replaced from curb to curb following the replacement of the water and sewer mains. Areas of sidewalks in disrepair were to be repaired, and ramps were to be retrofitted or reconstructed as needed to meet ADA requirements.

Carl Hassel, PE - Capital Projects Administrator

(562) 567-9302
chassel@cityofwhittier.org
13230 Penn Street,
Whittier, CA 90602



City of

SANTA FE SPRINGS**GREENSTONE AVENUE ASPHALT AND PAVEMENT RECONSTRUCTION**

OE provided design engineering services for the city of Santa Fe Springs for pavement reconstruction project. The project limits were Lakeland Avenue to Sunshine Ave and Sunshine Avenue from Greenstone to Shoemaker Avenue. The surrounding business included heavy commercial and industrial with mostly large truck traffic. The existing roadway was severely distressed asphalt that had alligator cracking throughout the roadway. OE worked with the city and came up with an alternative approach to give this roadway extended life. The method of reconstruction used was Roller Compacted Concrete (RCC). It uses a machine similar to an asphalt paving machine in order to place a low slump concrete that is then compacted with a roller. This method drastically reduced the cure time of traditional concrete down to hours instead of days, limiting negative impact to surrounding businesses. This method lowers the downtime for residents and businesses, and because it uses paving machines, it can be completed quickly and at a much lower cost per square foot. The scope of work included 317,500 square feet of pavement reconstruction, 1,270 lineal feet of curb reconstruction, 2,700 square feet of sidewalk reconstruction, 1,510 square feet of cross gutter reconstruction, 6,800 square feet of driveway reconstruction and 26 manhole adjustments along with various other items of work.

Noe Negrete, PE - Director of Public Works & City Engineer

(562) 866-0511
noenegrete@santafesprings.org
11710 Telegraph Road
Santa Fe Springs, CA 90670



City of

INDIO**DR. CARREON BOULEVARD & JACKSON AVENUE INTERSECTION**

OE provided design engineering services for the City of Indio at the Intersection of Dr. Carreon Boulevard and Jackson Avenue. The scope of work included the reconstruction of pavement and cross-gutters, as well as improvements to the intersection to ease drivability through it. The project lowered the roadway profile at the intersection to allow cars to travel through it at a normal speed. OE also analyzed the existing drainage to ensure that the new design would allow for adequate drainage across the intersection. The improvements included new ADA-compliant curb ramps, curb and gutter construction, pavement reconstruction, signing, and striping.

Jerry Stock - City Engineer

(562) 804-1424 ext. 2218
jstock@bellflower.org
16600 Civic Center Drive
Bellflower, CA 90706



City of

WEST COVINA**CAMERON AVENUE SEWER MAIN REHABILITATION PROJECT**

OE provided Design Engineering for the City of West Covina on the Cameron Avenue Sewer Main

Monica Heredia, PE - Deputy Director & City Engineer

Rehabilitation Project. This project upgraded the sewer main on Cameron Avenue between Citrus Street and 750 feet east of Inman Road. The improvements, classified High Priority by the City's Sewer System Management Plan, entailed upsizing the 10-inch sewer main to a 15-inch vitrified clay pipe using the pipe bursting method. Six manholes and approximately 27 laterals were part of the project, and alignment of the sewer was about 10 feet south of the centerline. The sewer main was connected to a 10-inch Los Angeles County line about 200 feet west of Citrus Avenue. OE contacted the County to recommend expediting its upgrade so all work could be done at once.

(now in Pico Rivera)
(562) 801-4965
mheredia@pico-rivera.org
6615 Passons Boulevard
Pico Rivera, CA 90660



City of

IRVINE**YALE AVENUE REHABILITATION PROJECT**

OE provided Design Engineering services to the City of Irvine on Yale Avenue from Deerfield Avenue to the I-5 Overpass. Yale Avenue serves

Kal Lambaz - Project Manager

as a major Northeast Southwest arterial for the City of Irvine. This segment of Yale Avenue varies between a 2-lane arterial with bike lanes to a 4-lane arterial with bike lanes and raised medians. The limits of this project were entirely within residential neighborhoods with Heritage Park and a fire station located at the northwest corner of Yale Avenue and Walnut Avenue. The first segment from Deerfield Avenue to approximately Edgmere Avenue entailed a 2" mill and a 2" Rubberized Hot Mix Asphalt Type G (RHMA-G) overlay with some full depth structural sections where the street is severely deteriorated. The second segment of roadway from Edgmere Avenue to the I-5 Overpass required a 6" mill and placement of 2.5" of RHMA-G over 4" Hot Mix Asphalt (HMA) in the street with a 2" to 2½" transitional grind at the bike lanes. This project also corrected ADA deficiencies for sidewalks and ramps. Our design team checked for existing roadway signs and striping for compliance with both the City standards as well as the 3R federal design requirements. Another important aspect of this project was its proximity to Caltrans right-of-way. Traffic control through the I-5 bridge overcrossing required obtaining a Caltrans Encroachment Permit.

(714) 765-6935
(now in Anaheim)
klambaz@anaheim.net
200 S Anaheim Blvd,
Anaheim, CA 92805



City of

CERRITOS**DEL AMO BOULEVARD PROJECT**

OE provided Design Engineering services on Del Amo Boulevard, which is a major arterial oriented east/west and

Freddy A. Bonilla, PE - Project Manager

is used as a thoroughfare to adjacent cities. The project limits consist of a total of approximately 2,900 linear feet (approximately 0.55 miles) of Del Amo Boulevard between Pioneer Boulevard and Norwalk Boulevard. The project is limited to the north half of the street as the south half is under the City of Lakewood's jurisdiction. The project requirements included rehabilitation of pavement, concrete removal and replacement of damaged curb, gutter and sidewalks, identifying and addressing storm water drainage concerns, retrofitting or reconstructing curb access ramps and driveways with the latest ADA standards, and updating signing, striping and traffic loops. Overgrown trees were present throughout the project limits and were significantly impacting roadway, sidewalk, and gutter conditions. Close collaboration with the selected landscape architect was necessary to ensure all issues regarding tree root infiltration were addressed to accommodate the civil and landscape designs and to ensure that the City received a cohesive package of civil, landscape, and irrigation plans. The plans included Low Impact Development (LID) Improvements to divert urban run-off from the storm drain system.

(562) 916-1229
fbonilla@cerritos.us
18125 Bloomfield Ave.
Cerritos, CA 90703





City of

NEWPORT BEACH**OCEAN AVENUE & MARGUERITE AVENUE RECONSTRUCTION**

OE provided design engineering services on the Ocean Avenue & Marguerite Avenue Reconstruction Project for the City of Newport Beach. The project limits consisted of Marguerite Avenue from E. Pacific Coast Highway (PCH) to Ocean Avenue, and Ocean Avenue from Marguerite Avenue to Carnation Avenue, a total distance of nearly 4,000 LF. Marguerite Avenue and Ocean Avenue serve as the main route from the PCH to Newport Beach's Corona Del Mar beach. These two residential streets are one lane in each direction with on-street parking and consisted of Portland Cement Concrete. Newport Beach selected OE to investigate the condition of the concrete pavement and arrive at a financially feasible solution that minimized impacts to the residents and did not impact access to the beach during the warm season. The project included the design of approximately 350 feet of narrowing the existing street section and introducing a new landscaped parkway using plants and materials agreeable with the City's Architectural and Landscape Review Committee. The work also entailed coring the existing pavement to determine the existing section configuration and subgrade strength, extensive topographic survey, and resetting monuments.

Frank Tran - Associate Civil Engineer

(949) 644-3340
ftran@newportbeachca.gov
100 Civic Center Drive
Newport Beach, CA 92660



City of

NORWALK**SHOEMAKER AVE. REHABILITATION & DRAINAGE IMPROVEMENT**

OE provided design engineering services for the City of Norwalk for this pavement rehabilitation and drainage improvement project. The project limits on Shoemaker Avenue started on Rosecrans Avenue and ended at the Firestone Frontage Road. This 0.25-mile collector street segment was heavily distressed and showed block cracking, alligator cracking, and potholes. The scope of work included preparing plans, specifications, and estimates for this 2,000-LF roadway. The project involved grind and overlay, full-depth reconstruction, AC cap, sidewalk construction, cross-gutter construction, and drainage improvements. Furthermore, the roadway and adjacent parkway had a major drainage issue; OE provided the most cost-effective solution for the City to relieve water ponding and increase resident safety. Because of Caltrans' impact on the I-5 widening, OE was able to persuade Caltrans to design and implement the drainage improvements.

Bill Zimmerman - City Engineer

(562) 594-8589
bzimmerman@norwalkca.gov
12700 Norwalk Blvd., Rm 12
Norwalk, CA 90650



City of

DIAMOND BAR**7-YEAR ANNUAL RESIDENTIAL REHABILITATION PROJECT**

OE provided Management and Design Engineering services to the City of Diamond Bar on their annual

Kimberly Molina Young - Senior Civil Engineer

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(now in the City of Fontana)
kyoung@fontana.org
8353 Sierra Ave,
Fontana, CA 92335

arterial and residential roadway maintenance projects for an annual period of 7 years. Years 2010 and 2011 were awarded as separate contracts. The City awarded OE an additional 3-year contract for 2012-2014. In 2015, the City of Diamond Bar awarded OE yet another annual rehabilitation project. The project sizes and costs were: 2010: 11.8 miles of arterial & residential streets (\$908 K), 2011: 19 miles of arterial & residential streets (\$1.8 M), 2012: 10 miles of arterial & residential streets (\$1.1 M), 2013: 13 miles of arterial & residential streets (\$1.3 M), 2014: 14.5 miles of residential, arterial & collector streets (\$1.8 M), 2015: 14 miles of residential, arterial & collector streets (\$1.75 M) and 2016/2017: 16.6 miles of residential and collector streets (\$1.58 million). The general scope of work for each year's project included localized R&R patching, grind and overlay, cape and slurry seal, traffic loops, traffic striping, and required heavy traffic phasing and traffic control review. OE assisted the City through the project bidding phase, developing text and stipulations for the bid package to ensure contractor availability during the desired working months. Due to the proximity to freeways, OE also coordinated with Caltrans to obtain encroachment permits for the City for four of the projects, which was essential.





FEE PROPOSAL

For the City of
FULLERTON
 For Professional Engineering Design Services
 for the Euclid Roadway and Sewer Reconstruction
 from Williamson to Fern Project

MAJDI ATAYA QA/QC MANAGER \$130.00 per hour	JUSTIN SMEETS PROJECT MANAGER \$120.00 per hour	ANDY BUI DAYTON LOWE RYAN DENNIS STEVE MACBRIDE PROJECT ENGINEERS \$100.00 per hour	SUB CONSULTANTS LUMP SUM
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Phase #1 PRELIMINARY ENGINEERING					total
1	Project Kick-off Meeting & Coordination Meetings- <i>assume 3 coordination meetings</i>	8	12		\$2,480.00
2	Research and Review Available Data	4	24	16	\$5,000.00
3	Utility Research and Notification		4	24	\$2,880.00
4	Site Evaluation	2	8	24	\$3,620.00
5	Base Sheets	2	4	40	\$4,740.00
6	Preliminary Design	8	24	80	\$11,920.00
	<i>Preliminary Engineering Sub-Total</i>	24	76	184	\$30,640.00
Phase #2 FINAL PS&E					
7	60% PS&E	16	60	350	\$44,280.00
8	90% PS&E	8	40	180	\$23,840.00
9	100% PS&E	2	24	80	\$11,140.00
10	Potholing - <i>Assume 12 Potholes</i>	2	4		\$13,800.00
11	Utility Coordination	4	40	16	\$6,920.00
	<i>Final PS&E Sub-Total</i>	32	168	626	\$100,720.00
Phase #3 CONSTRUCTION SUPPORT					
12	Construction Support	4	12		\$1,960.00
	<i>Construction Support Sub-Total</i>	4	12		\$1,960.00
Phase #4 AS-BUILTS					
13	As-Builts	2	4	30	\$3,740.00
	<i>As-Builts Sub-Total</i>	2	4	30	\$3,740.00
GRAND TOTALS		\$8,060.00	\$31,200.00	\$84,000.00	\$13,800.00
OPTIONAL SERVICES					
14	Additional Utility Potholes - <i>Price Per Pothole</i>				\$1,150.00

*The hourly rates above are our fee schedule. Any additional work will be negotiated utilizing those hourly rates.