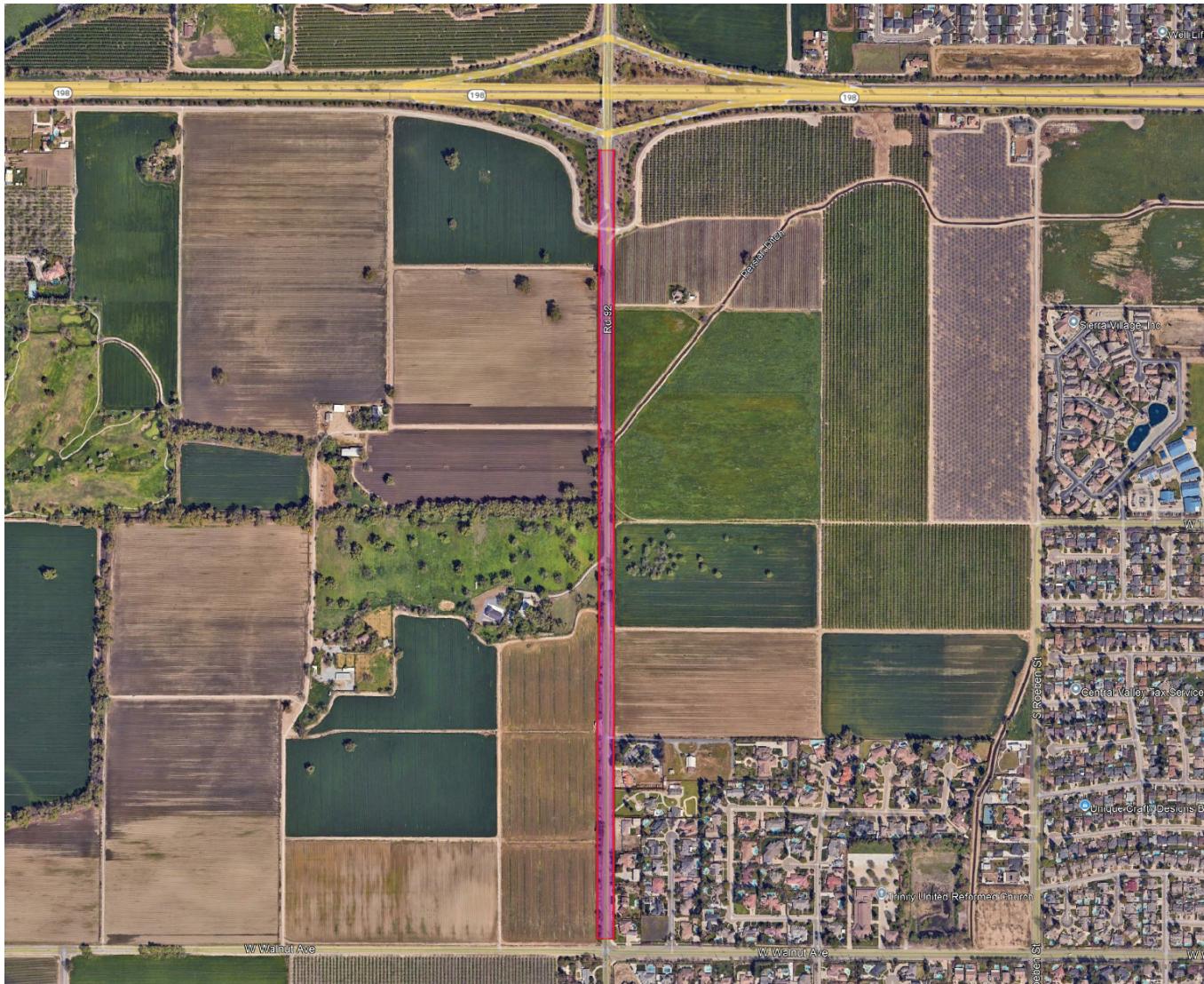


City of Visalia

30% Professional Engineering Services for Shirk Road



Prepared For:

City of Visalia
Engineering & Building Department
315 E. Acequia Avenue
Visalia, CA 93291
ATTN: Chris Crawford, PE
City Engineer

4Creeks, Inc.
324 S. Santa Fe Street
Visalia, CA 93292
(559) 802-3052

1. Introductory Letter

Tuesday, January 21, 2025

Chris Crawford, PE, City Engineer
City of Visalia
315 E. Acequia Avenue
Visalia, CA 93291



4CREEKS

City of Visalia 30% Professional Engineering Services for Shirk Road

Dear Mr. Crawford,

We are pleased to submit this proposal of services for the 30% Professional Engineering Services for Shirk Road from Walnut to CR 198 project. At 4Creeks, we take pride in the creative and detail-oriented nature of our engineers, surveyors, and staff. These attributes have ensured our clients' projects run smoothly and effectively from start to finish. We are confident we can provide the necessary services to help meet the City's goals for the Shirk Road project as outlined herein.

Our Design Division staff has years of expert knowledge of engineering, surveying, environmental compliance, planning services, construction management, and construction inspection. 4Creeks is made up of leading engineering professionals, land surveyors, construction and project managers, and an exceptional administrative staff. We have the skills, knowledge, and experience within the City and surrounding the project area, which 4Creeks will leverage to the benefit of the City and this project.

4Creeks is committed to serving the City of Visalia and we believe we are best suited to provide the requested services for the Shirk Road project. Thank you for your consideration, we hope to continue building a strong working relationship with City of Visalia.

Respectfully,

Matt Ainley, PE
Chief Executive Officer

2. Firm Overview & Experience



4CREEKS

Corporate Headquarters:

324 S. Santa Fe Street
Visalia, CA 93292

Phone: (559) 802-3052

Fax: (559) 802-3215

Email: info@4-creeks.com

Website: 4-creeks.com

Point of Contact:

Matt Ainley, PE
matta@4-creeks.com
Mobile: (559) 737-3748

Business Type:

S-Corporation

Tax ID:

4Creeks, Inc.: 26-2565232

**Department of Industrial
Relations Registration No.:**

1000012032

Sureties:

4Creeks, Inc. carries standard insurance policies for an engineering and surveying firm.

Principals:

David De Groot, PE #70992

Randy Wasmick, PLS #8163

Matthew Ainley, PE #66233

Matt Razor, PE #81897

David Duda, AICP #29216

Karl Schoettler

Will Ruoff, AIA #C-36886

Doug Janzen #C-14260

Lisa Wallis Dutra, PE, TE, PTOE, RSP₁

#71262 #TR 1888

Kyle McDonald, PE, QSD, MBA
#82531

Mark Sorhouet, SE, PE #71479
#6308

Jason Margraf, PE #37782

FIRM OVERVIEW

4Creeks, Inc. is dedicated to providing progressive civil engineering, architecture, planning, surveying, and construction management and inspection services with logical solutions and designs. Many of our principals and staff have significant work experience with local municipalities as well as federal and state agencies. Our multiple disciplines within the company allow our teams to gather all levels of review efficiently and with a high level of knowledge for our clients. These specialties are a great resource to have and collaborate on for all projects. We currently have a staff of over 210 full-time and part-time employees working in Visalia, Hanford, Tulare, Clovis, San Luis Obispo, and Denver. Our experience and services include:

- Water Resources
- Construction Management
- Municipal Engineering & Planning
- Project Management
- Street Rehabilitation
- Roundabout Design
- Traffic Engineering Design & Analyses
- Bicycle & Pedestrian Facility Design
- Land Surveying
- Utility Design & Coordination
- Construction Management & Inspection
- Parks & Recreation Engineering
- Residential, Commercial, & Industrial Design & Planning
- Educational Institution Design
- Environmental Design & Compliance
- Structural Engineering
- Landscape Architecture
- ADA Design & Compliance
- Geographical Information Systems (GIS)
- Land Use Planning
- Urban Design
- General Contracting

We build our reputation one project at a time with consistent, high-quality products and time-sensitive delivery. Our goal on every project is open communication, honesty, and integrity.

Economical design considerations, environmental stewardship, and resource efficiencies are tenets of every project we undertake. We pride ourselves on pioneering innovative solutions for our clients that enhance the value of their projects, keep their costs in check, and deliver lasting results.



RECENT PUBLIC PROJECTS

Caldwell Avenue Widening



Contracting Agency:

City of Visalia
Mr. Fred Lampe
(559) 713-4270
fred.lampe@visalia.city
707 W. Acequia Avenue
Visalia, CA 93291

Funding Source: Measure R

Original Engineer's Estimate: \$17,055,018

Actual Bid Amount Received: Currently at 95% Design

Contract Amount: \$1,325,469

This project will widen and improve approximately 1.5 miles of Avenue 280 in the City of Visalia between Santa Fe Street and Lovers Lane. This section of Avenue 280 is a principal arterial east-west roadway that links State Route 99 and the Cities of Visalia, Farmersville, and Exeter as well as unincorporated areas of Tulare County.

Riggin Avenue Widening



Contracting Agency:

City of Visalia
Diego Corvera
(559) 713-4447
diego.corvera@visalia.city
707 W. Acequia Avenue
Visalia, CA 93291

Funding Source: Measure R

Original Engineer's Estimate: \$3,807,493

Actual Bid Amount Received: \$4,059,549

Contract Amount: \$143,300

This project was a full roadway widening from a two-lane roadway to a four-lane roadway including replacing underground wet utilities for approximately one mile of Riggin Avenue from Akers Street to Kayenta Street. This project provided infill for concrete curb and gutter, sidewalk, and designated bicycle lanes that now provide continuity along the entire Riggin Avenue corridor. Class II bicycle lanes were installed with buffer lanes and delineator posts and raised medians were constructed to add left-turn lanes in order to provide additional safety measures throughout the project.

Akers Street and Riggin Street Improvements and Roundabout



Contracting Agency:

City of Visalia
Mr. Nick Macias
Supervising Civil Engineer
(559) 713-4331

315 E. Acequia Avenue
Visalia, CA 93291

Funding Source:

Local Funds
Original Engineer's Estimate: \$4,166,803
Actual Bid Amount Received: \$2,865,802
Contract Amount: \$129,632

The construction of the newest Middle School within the Visalia Unified School District created several changes in the traffic impact which required the City of Visalia to provide major off-site street improvements. The major street improvement project included the following:

- Full construction and design of 1/3 mile of Sedona Avenue, which included a full roundabout
- Removal of 1/2 mile of Akers Street
- Full construction and design of 3/4 of a mile of Akers Street
- Full construction and design of 1/2 mile of Riggin Avenue
- A new Traffic Signal at Akers/Riggin designed by TJKM
- 1,000 linear feet of Modoc Ditch relocation and piping
- Right of way acquisition and legal descriptions
- Utility coordination, including SCE transmission poles
- 12" sanitary sewer extension
- Storm drainage design and hydrology
- 12" water main extension in coordination with California Water Service Company
- Full striping and signage for the new traffic corridor

REFERENCES

City of Porterville

Name Javier Sanchez
Email jsanchez@ci.porterville.ca.us
Phone (559) 782-7462

City of Lindsay

Name Daymon Qualls
Email dqualls@lindsay.ca.us
Phone (559) 562-7102

City of Tehachapi

Name Jay Schlosser
Email jschlosser@tehachapicityhall.com
Phone (661) 822-2200

City of Dinuba

Name George Avila
Email gavila@dinuba.ca.gov
Phone (559) 591-5924



3. Project Understanding & Approach

PROJECT UNDERSTANDING & APPROACH

PROJECT MANAGEMENT

What sets 4Creeks apart from our competition is our ability to successfully manage large and complex projects. 4Creeks has a unique approach to overall project management that not only delivers projects to our agency clients on time and within budget, but fosters a collaborative partnership. At 4Creeks, we have developed what we call a "Project Status List". The main purpose of the Project Status List is to track critical path schedule items to ensure the project is delivered on time and to track funding and design tasks that need to be completed to make sure the end product meets the City's expectations and goals.

At project initiation, we will hold a project meeting with all internal project staff to develop a Project Task List that includes the tasks to be completed to bring the project to successful completion. This meeting will be led by our Senior staff and applicable department managers. We then hold meetings with other agencies involved with the project such as City staff, Caltrans, permitting agencies, ditch companies, utility companies, etc. to get a full understanding of everyone's expectations and needs for the project. Our Project Status List is then filled out with all pertinent project data to provide a roadmap for successful project completion. This list is updated and added to throughout the project as new information arises. Throughout the project, our Project Manager and staff members use this Project Status List to develop monthly updates to the client, meeting agendas, meeting minutes, and other documents. Below is a generalized list of example topics that are tracked on our status lists. We customize tracked topics for each project to drive success.

- **Funding Requirements** – Tracks funding deadlines, major milestones, and out of the normal requirements.
- **Project Task List** – Contains a list of tasks that need to be incorporated into the project for successful completion.
- **Agency Needs** – Tracks items needed from the City so the Project Manager can diligently follow up.
- **Environmental Status** – Typically broken into subsections to track CEQA and NEPA status and requirements along with special studies like historical, biological, cultural, or flood related.
- **Right of Way Status** – We have found that this is best broken down into subsections by property owner. We maintain a general update of right of way acquisitions under this heading.
- **Utility Coordination** – This is broken down into subsections by utility company.
- **Engineering Design** – This is used to list all agency expectations/desires for the project that need to be incorporated into the design. Items are added to this list as the project progresses. Towards the 30% PS&E stage, our Project Manager will review this list along with the 30% PS&E to make sure the design complies with the agency's expectations.
- **Permit Status** – To track the status of pending permits needed from agencies that are impacted by the project.
- **Schedule** – This section is tied to an overall Microsoft Project schedule that is maintained for the project duration.
- **Bidding Phase and Construction Assistance** – Used on an as needed basis.

Consistent Project Communications

4Creeks believes in proactively communicating throughout the project lifecycle. For scheduled meetings, agendas are provided and meeting minutes are recorded to ensure accurate documentation of project directives and are distributed in a timely manner for review. We check in frequently and meet as necessary to ensure the project remains on schedule. The Project Manager will also remain available and responsive to the City for their questions, comments, and/or concerns.

Site Investigations and Data Collection

4Creeks staff will perform an initial site investigation of the project and begin discussions with the local utility companies. We will research and collect available information including utility plans, record drawings of existing facilities, and other relevant information. This information will be presented to the City at the project kick-off meeting. Throughout the project, our engineers will visit the site to verify the design will function properly with the surrounding improvements. These site visits help our design engineers produce higher quality plans, emphasizing constructability.

INITIAL CITY KICK-OFF MEETING & COMPREHENSIVE WORK PLAN

The 4Creeks Team will establish a comprehensive work plan and maintain that plan throughout the project. Since fees are based on the work required, the work plan clearly reflects the tasks, deliverables, and overall schedule. At the kick-off meeting, we will discuss the City's requirements and expectations for the project, including the following items:

- A detailed schedule that will incorporate the project tasks
- Caltrans coordination and specific project requirements
- Design and utility coordination issues
- Construction document layout
- Project expectations
- Responsibilities of each party

PRELIMINARY ENGINEERING PHASE

In this stage of the project, the 4Creeks Team will prepare the roadway preliminary horizontal alignment and analyze impacts to potential underground and overhead utility conflicts, impacts to properties adjacent to the project, interactions with existing, protected trees, right of way that is available for construction, connections with on-going City projects at the Walnut and State Route 198 intersections, evaluate planned roadway connections, determine impacts to existing, private access points, and potential FEMA flood zone issues. The horizontal alignment will be evaluated and updated based on input from City staff to determine the optimal alignment for the Shirk widening.

Once the optimal alignment has been determined, the need for interim connections to existing intersections will occur. If warranted, those interim connections will be horizontally designed and presented to the City for discussion and concurrence. The interim connection at County Road 198, if warranted, will be coordinated with CalTrans.

The Persian Ditch crossing and required improvements will be evaluated and coordinated with the Ditch Company. The existing alignment crosses Shirk at an acute angle and runs parallel to Shirk directly adjacent to the western road edge. Determining a preliminary alignment early in the design process will be critical to minimizing impact to the adjacent parcels.

Many of the members on our project team have extensive experience with FEMA's National Flood Insurance Program and hydraulic calculations. Our experience includes hydraulic studies in Caltrans right of way, storm drain and drainage basin analysis, surface water hydrologic analysis with varying rainfall events, open and closed channel flow analysis, and water and sewer analysis. Drainage impacts of the proposed improvements will be preliminarily evaluated and understood for future design considerations.

30% ENGINEERING DESIGN PHASE

Construction Drawings

4Creeks and its team members have excellent reputations for preparing comprehensive and biddable sets of construction documents. This is achieved through in-house and team member reviews at set milestones during the preparation of construction documents. Construction Plans will be submitted to the City at 30% and are understood to become the basis of the subsequent 65%, 90%, and 100% construction plan sets. Review, comments, and value engineering of the design are anticipated to occur through monthly meetings, design exhibits, and coordination efforts. Modifications to the plans are easily accommodated at each milestone, resulting in plans that will allow for the future clear, biddable set of final construction documents. Additionally, we will prepare a Roadway Memorandum discussing project history, the design process, next steps, and outline design constraints.

Cost Estimation and Phasing Programs

As a design-build firm, 4Creeks has a unique ability to understand and track dynamic material and labor costs. Controlling the cost of a project is extremely important. The 4Creeks Team tracks costs on each project it undertakes to ensure costs are quantified for future reference. This is accomplished by utilizing the following sources of information for unit prices and project costs:

- Historic cost data received by our team and the City for similar projects
- Strong working relationships with public sector contractors
- Track records of performance and cost data obtained from industry and manufacturers' representatives

Our estimation process is based on the development of an initial construction cost using the above noted sources. This budget can be used to determine the project's design elements and features. Our experience will be leveraged to provide a best estimate for the projects 30% engineer's cost estimate to allow the City to anticipate construction funding needs.

The 30% engineer's cost estimate will include costs for right-of-way and easement acquisition and for dry utility relocations based upon pricing from previous projects. It is understood that estimated costs may not capture all costs specific for this project since acquisition negotiations and final dry utility design will not be completed.



QUALITY ASSURANCE AND CONTROL

The ultimate success of any project hinges on the solid foundation of its leadership and management methodologies and procedures. Quality assurance and control are paramount on every project we undertake. Essential elements of our quality assurance and control procedures can be summarized as follows:

- Establishment of a detailed and comprehensive work plan - Project Status List
- Task-specific project schedule that identifies key milestones and deliverables
- Budget review and control to eliminate "scope creep"
- Project management of internal staff and sub-consultant team members
- Consistent project communications (agendas, meeting minutes, status reports)
- Consistent proactive communication with the City's Project Manager/Staff
- Document preparation standards
- Agency submittal checklist and procedures
- Internal document review and plan checking procedures by multiple qualified and licensed engineers
- Thorough cross checking between all sub-consultant documents for consistency

PROJECT CHALLENGES AND CRITICAL TASKS

Many projects maintain similar elements, but each has its own unique set of considerations and challenges. Among those that stand out for the Shirk Road Widening project, are the following:

- Obtaining permissions from adjoining property owners. Relational/people issues can quickly lend themselves to more surprises and challenges than even technical problems. This requires clear and honest communication, patience with all questions and concerns, and a strict adherence to agreed upon schedules.
- Conducting an interim and future intersection analysis. While not uncommon, these analyses can sometimes prove to be rather complicated. 4Creeks approaches problems from multiple perspectives simultaneously (regulation, engineering, constructability, cost-effectiveness, etc.). As a result, understanding the current conditions and the future improvements and goals is imperative and leaning on our experience and knowledge of the area is critical.
- Existing encumbrances are within the anticipated corridor and will impact the design and the efforts to maintain minimum construction costs. Those encumbrances include existing wet and dry utilities, the Persian Ditch, access points, and trees that may require protection or augmentation. These encumbrances will be vetted early within the design process.
- It is anticipated that the City Arborist will perform a tree survey to verify the tree types, value, and protection requirements along the Shirk Road corridor and that finding will be available prior to the Project Kick-off meeting. Tree protection will drive, in part, the Shirk Road alignment and all trees are anticipated to be depicted within the City's provided survey.
- Dry utilities within the project area may impact the design and construction time frames. In an effort to expedite this project and to validate dry utility encumbrances, 4Creeks will request a rights check with Southern California Edison separate from the relocation process early in the 30% efforts. This process requires a fee, which will be passed along to the City for payment and is not included within the design fee.
- The 30% documents will depict the existing trees as identified by the City Arborist and will call out trees for removal and replacement and/or protection in place.
- The City has updated the storm drain master plan and 4Creeks will work with the City's master plan and its application to the project. 4Creeks will identify the basin location and will provide a 30% design for the basin to facilitate land acquisition and storm sewer system design.

4. Proposed Scope of Work

PROPOSED SCOPE OF WORK

The Scope of Work outlined herein is based on conversations with City staff, our expertise, and review of available documentation. We will work with City staff to refine the scope, if needed, to tailor our design and deliverables to meet expectations. Additionally, after project kickoff and during the design phase, we will notify the City if unexpected field conditions, encumbrances, or design requirements necessitate a change order. The general scope of work presented herein, is for the 30% design of the Shirk Road improvements between Walnut Road and the State Route 198 Interchange. For the purposes of our proposal and associated design, we anticipate the southern project limit to be the connection at the northern curb returns of the planned improvements at the Walnut Road intersection, currently under design by others. The northern project limits are anticipated to be the southern access ramps of the State Route 198 intersection, which will require an interim design to tie to existing conditions and an ultimate design for the four (4) thru lane section. We understand that Shirk Road is anticipated to be a 110' Rights-Of-Way, Arterial Road standard section with a Class I bike lane, per the City's planning map.

4Creeks will use a number of staff members and sub-consultants to perform the various components of this project. Our Project Manager will coordinate with all staff members to work concurrently to achieve timely results and meet the project goals.

Task 1: Project Management

4Creeks will manage project tasks including work needed to:

- Lead, direct, coordinate, and monitor the team
- Prepare for, attend, and document project kick-off meeting, field review, alignment selection meeting, monthly team meetings, and action items
- Prepare, coordinate, and maintain a critical path method schedule using MS Project or accepted alternative, including identifying major delivery milestones and tasks
- Miscellaneous coordination and support including assisting the City with meetings and coordination efforts with the Dry Utility Companies, the Persian Ditch, Caltrans, and adjacent property owners
- Prepare monthly invoices including a summary of specific work completed (including breakdown of hours by task to assist City with budget tracking)
- Prepare monthly progress reports (to be submitted with monthly invoices) including discussion of critical items or decisions, recommendations to address items, work accomplished during that month, and anticipated work for the following month

Project development team (PDT) virtual meetings will be held monthly between the 4Creeks, City, and sub-consultants (as needed). 4Creeks will prepare and distribute the meeting agenda including ensuring all necessary participants are invited and have access to join the meeting (for virtual meetings) including arranging all meeting times, locations, etc. 4Creeks will prepare and distribute meeting minutes to all participants within five working days after the meeting. The meeting minutes shall include an updated schedule, if necessary, and a list of "Action Items" explaining the action, when it is due, who is responsible, and the date it was completed.

4Creeks will have a quality control plan for the Project to

ensure design calculations, exhibits, plans, reports, etc. are independently checked, corrected, and "back-checked" for accuracy, completeness, and constructibility.

Task 2: Surveys, Mapping, and Right-of-Way

4Creeks anticipates the City will provide the topo surveying and mapping for this project. However, we understand we will perform a topographic base map check and base file set up for use during the design process. It is anticipated that the horizontal datum used in surveying and mapping shall be the California Coordinate System of 1983 (CCS83), Zone IV, using the latest published epoch from either the California Spatial Reference Center or the National Geodetic Survey datum. The elevation shall be based on the North American Vertical Datum of 1988 (NAVD88 or the City's current datum implemented on the provided topo survey and mapping) and if a GEOID model is used, it shall be the latest published model.

Task 2.1 Project Survey Control

Prepare a base map, in imperial units, showing property boundaries, easements, rights-of-way, existing utilities and topographic information provided by the City. 4Creeks will prepare the base sheet in accordance with City CAD standards.

Task 2.2 Right-of-Way Acquisition Support

It is assumed that a total of nine (9) privately owned parcels could potentially be impacted by the project. This task shall include assisting the City with the understanding of the anticipated right-of-way acquisition required with an overall exhibit that will identify the ROW required and anticipated easements for utilities, drainage, slope, temporary construction, and any other acquisition required to implement the project. It is anticipated that a total of nine (9) basic graphical drawings (one drawing for each parcel impacted by the project) will be generated to present to

property owners illustrating anticipated project impacts including but not limited to impacts to: trees, landscaping features, fencing, driveways, structures, farmland, and mailboxes based upon the information within the City provided topographic survey. It is understood that all communication, discussions, and acquisition negotiations shall be the responsibility of the City and that 4Creeks is strictly providing the supporting exhibits outlined herein.

Task 2.3 Potholing Existing Force Main

The existing force main within Shirk will be potholed horizontally and vertically to locate the utility and verify the design constraint. One (1) day of potholing is included to provide approximately eight (8) potholes within the anticipated alignment at assumed critical design locations, including potholes, disposition, backfilling, and traffic control.

30% Design Additional Services

Additional services are services that may be provided to the City, if requested, that are not a portion of the initial scope and fee. Those potential services for the Survey, Mapping and Rights-of-Way Task are as follows:

- Acquisition Staking
- Supplemental Survey, including Topo Survey
- Encroachment Permits
- Permission to Enter Private Property
- Property Surveys and Resolution
- Utility Mapping
- Title Review
- Additional Potholing

Task 3: Preliminary Engineering (30% PS&E)

Task 3.1 Prepare Preliminary Design

This task includes work required to develop preliminary roadway geometrics, proposed water, sanitary and storm main alignments, the Persian Ditch crossing, existing access points, the anticipated W Tulare Ave intersection, the W Noble Ave frontage road intersection, and the existing sewer force main alternatives, as well as, the development of a preferred project design concept for budgeting and for future funding purposes, environmental approval, permitting, and final design. This work includes the following:

Prepare Planning Study Drawing

Prepare drawings that include roadway widening plan/profile inclusive of horizontal design on wet utilities. Plans will be prepared in conformance with City and AASHTO ("A Policy on Geometric Design of Highways and Streets") standards. The Planning Study Drawing will provide the basis for the 30% Construction Plan documents.

Prepare 30% Construction Drawings

Prepare 30% construction drawings that include a cover sheet, general notes, typical sections, topo and demo plans, utilities

and potholing plan, improvement plan and profiles, signing and striping plans, street light plans, intersection/ramp design, irrigation ditch (Persian Ditch) modification plans, and detail sheets. The 30% construction plans will develop the horizontal design and basic vertical design of the proposed or impacted improvements. Dry utilities will be researched with facilities cataloged within the project corridor. Our team will work with those utility owners to understand project impacts and provide preliminary design.

Task 3.2 Drainage and Hydraulics

Drainage analysis shall be performed for the project to determine and evaluate the impacts of the Shirk widening. The City has updated the storm drain master plan and 4Creeks will work with the City's master plan and its application to the project. Drainage sub-basins and the preliminary storm sizes and locations will be implemented and tailored to the 30% design. The basin required to support the widening will be located and preliminarily designed to facilitate land acquisition and storm sewer system design. A preliminary storm sewer system will be developed to meet City requirements with preliminary pipe and inlet sizes determined. Existing off-site drainage patterns will be reviewed for potential impacts and a general review of any FEMA floodplains to support 65%, 90%, and final construction plan efforts will occur. No FEMA modeling or processing is anticipated with the 30% design. A drainage memorandum will be generated outlining calculations performed and next steps.

Task 3.3 Utility Coordination Services

Shall include utility research through requesting and review all dry utility maps in the area, coordination with the utility companies about known future infrastructure within the project limits, and update the project base files, as needed. Utility applications will include submitting improvement plans and applications to the impacted utility companies and coordinate relocations, removals or upgrade service of existing facilities within the proposed project limits. Utility readlines will occur in the form of obtaining on-site point-of-connection locations for the project, determine conduit requirements and joint trench route from the utility companies, and obtain utility company designs on behalf of the City.

4Creeks will request a rights check with Southern California Edison separate from the relocation process early in the 30% efforts. This process requires a fee, which will be passed along to the City for payment. Furthermore, coordination with CalWater will occur to determine water main infrastructure requirements to accommodate the future main alignment within the street section, if any.

A budget has been provided within this scope and fee to address optional potholing to locate utilities within the roadway corridor that may create a design constraint. Since the number of utilities and potholing needs are unknown at

this time, the optional potholing line item assumes three (3) additional days of potholing to obtain information, if directed by the City.

Task 3.4 Preliminary Traffic Signal Design

4Creeks will generate the preliminary traffic signal design at the intersection of Shirk Road and Tulare Avenue. It is assumed that Shirk Road and Tulare Avenue will be developed as a "T" intersection and may be modified to extend Tulare west in the future. The preliminary design will be generated to accommodate the proposed T and the future, assumed Tulare Avenue extension at a scale of 1" = 20' and will layout the signal phase diagram, controller assembly, equipment enclosure, signal heads, video detection system, emergency vehicle preemption equipment, conduits and cables and will provide the equipment and conduit schedules, based on City provided standards. The preliminary design excludes traffic counts, signal warrant studies, interconnect or fiber system designs, and signal timing plan.

Task 3.5 Prepare Preliminary Cost Estimate

Prepare engineer's estimate of probable cost. Costs will be based on preliminary quantities developed in general conformance with City requirements and shall include a contingency amount of 25% or as directed by City staff.

Task 3.6 Prepare 30% Project Memorandum

Prepare a Project memorandum for review and use by the City that includes:

- Summary of the preliminary plans, ROW requirements, including temporary easements for construction, construction staging and access, utility relocation and accommodation, drainage parameters, and roadway design parameters including access road impacts
- Preliminary Quantities and Estimated Construction Cost
- List of issues to be resolved during final design
- List of design decisions needed by the City

Task 3.7 Geotechnical Engineering and Reporting

Krazan & Associates, Inc. as a subconsultant to 4Creeks will perform geotechnical engineering services to support the project, which is scoped to include:

- Site reconnaissance to evaluate subsurface conditions at project site
- Obtain City of Visalia Encroachment Permit
- Set up traffic control for the work
- Field investigation consisting of coring/drilling 6 borings approximately 10 to 15 feet for evaluation of asphalt concrete and subsurface conditions
- Backfill borings with soil covered with asphalt cold patch
- Perform laboratory, 6 R-Value tests on representative soil samples obtained from the borings
- Provide 6 Gradations and Sand Equivalent Tests on the on-site materials
- Evaluate physical and index properties of the subsurface soils

- Provide 4 ASTM D-1557 Curves for pipe backfill soil
- Evaluate existing Ag Base for suitability for re-use with the new project
- Prepare pavement design recommendations based on R-Values, traffic index, and load equivalency factors; for Full Depth Pavement Reclamation and conventional asphalt over aggregate base

Total Project Deliverables (electronic submittal only)

- Meeting Minutes
- Overall ROW/Easement Exhibit
- Nine Basic Survey Graphic Exhibits
- Planning Study Drawing
- 30% Engineer's Cost Estimate
- 30% Construction Plans (22" x 34")
- Preliminary Traffic Signal Design (Shirk/Tulare)
- Preliminary Drainage Memorandum
- 30% Project Memorandum
- Geotechnical Engineering and Report

Future Design Services

The following Future Design Services are those services anticipated or that may be required to complete the project design for construction. It is understood that the Future Design Services will issued in an RFP or as a sole source contract at a later date.

- 65% Construction Plans
- Environmental Studies, including but not limited to:
 - Initial Site Assessment
 - Asbestos/ADL/Lead Paint Survey
 - NEPA
 - CEQA
- 90% Construction Plans
- 100% Construction Plans
- Assistance During Bidding
- Traffic Study
- Final Traffic Signal Design
- Technical Specifications
- Bidding, Environmental Monitoring, & Construction Services

Any items not explicitly stated to be included within this scope of services, except those reasonably inferred, shall be considered excluded and a portion of Future Design Services.



4CREEKS

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(559) 802-3052
4-creeks.com