



ATTACHMENT I – General Qualifications

ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:
ADSP016-00005912

STATE PROCUREMENT OFFICE
Department of Administration
100 North 15th Avenue, Suite 201
Phoenix, Arizona 85007

DEFINITIONS

Architect Services, Engineer Services, Land Surveying Services, Assayer Services, Geologist Services and Landscape Architect Services: Those professional services within the scope of the practice of those services as provided in ARS § 32-101.

Branch Office: A geographically distinct place of business or subsidiary office of a firm that has a key role on the team.

Discipline: Primary technical capabilities of key personnel, as evidenced by academic degree, professional registration, certification, and/or extensive experience.

Firm: Defined in ARS § 32-101(B.19.).

Key Personnel: Individuals who will have major contract responsibilities and/or provide unusual or unique expertise.

SPECIFIC INSTRUCTIONS:

1. Complete this form for each branch office seeking work under this RFQ.
 - a. – e. **Firm (or Branch Office) Name and Address.** Self-explanatory.
 - f. **Year Established.** Enter the year the firm (or branch office, if appropriate) was established under the current name.
 - g. **Ownership.**
 - (g1). *Type.* Enter the type of ownership or legal structure of the firm (sole proprietor, partnership, corporation, joint venture, etc.).
 - (g2). *Small Business Status.* A firm is a small business if the firm has less than 100 employees **or** has gross revenues of \$4 million or less.
 - h.-j. **Point of Contact.** Provide this information for a representative of the firm that the Customer can contact for additional information. The representative must be empowered to speak on contractual and policy matters.
 - k. **Name of Firm.** Enter the name of the firm.
2. **Employees by Discipline.**
 - a. Select disciplines from the List of Disciplines (Function Code) listed on Page 3 of 4 Instructions. For employees that do not qualify for any of the disciplines, select "Other". *Note: The intended searchable database indicated in the RFQ will be populated from the Qualifications Form I Excel attachment only.*
 - b. Each person can be counted only twice; once for his/her primary function and once for his/her secondary function. Primary and secondary functions should be indicated by including a "P" or an "S" in column b after the Description Title is given.
 - c-d. If the form is completed for a firm (including all branch offices), enter the number of employees by disciplines in column c. If the form is completed for a branch office, enter the number of employees by discipline in column d and for the firm in column c.
3. **Profile of Firm's Experience and Annual Average Revenue for Last Year.**
 - a. Enter the approximate number of projects the firm (or branch) has done attributable by Profile Code listed on Page 3 of 4 Instructions over the last year.



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- b. Enter the appropriate Profile Codes from Instructions Pages 3 of 4 that represent the type of work the firm (or branch) has done over the last year.
 - c. Using the Revenue Index Number on Page 3 of 6 Form, indicate the approximate revenue the firm has earned over the last year per Profile Code entered into the table.
4. **Resumes of Key Personnel Proposed for This Contract.** Complete this section for each key person who will participate in this contract.
- a. Self-explanatory.
 - b. Self-explanatory
 - c. Total years of relevant experience (block c1), and years of relevant experience with current firm, but not necessarily the same branch/office (block c2).
 - d. Name, City and State of the firm where the person currently works, which must correspond with one of the firms (or branch office or a firm, if appropriate) listed in Section 1.
 - e. Provide information on the highest relevant academic degree(s) received. Indicate the area(s) of specialization for each degree.
 - f. Provide information on current relevant professional registration(s) and in which State(s) they are current.
 - g. Provide information on any other professional qualifications relating to this contract, such as education, professional registration, publications, organizational memberships, certifications, training, awards, and foreign language capabilities.
 - h. Provide information on no more than five (5) projects in the last year which the person had a significant role that demonstrates the person's capability relevant to her/his proposed role in this contract. These projects do not necessarily have to be any of the projects presented in Section 5 for the project team if the person was not involved in any of those those projects or the person worked on other projects that were more relevant than the team projects in Section 5. Use the check box provided to indicate if the project was performed with any office of the current firm. If any of the professional services or construction projects are not complete, leave Year Completed blank and indicate the status in Brief Description and Specific Role.
5. **Example Projects Which Best Illustrate Firms Qualification for this contract.** Select project where multiple team members worked together, if possible, that demonstrate the team's capability to perform work similar to that required for this contract. Complete one Section 5 for each project. List no more than five (5) projects.
- a. Title and Locations of project or contract. For an indefinite delivery contract, the location is the geographic scope of the contract.
 - b. Enter the year completed of the professional services (such as planning, engineering study, or design), and/or the year completed if construction. If any of the professional services or the construction projects are not complete, leave Year Completed blank and indicate the status in Brief Description of Project and Relevance to This Contract (block f).
 - c. Project Owner or user, such as a government agency or installation, an institution, a corporation or private individual.
 - d. Provide the original budget or not to exceed dollar amount for the project.
 - e. Provide the Total Cost of the Project. If any of the professional services or construction projects is not complete, indicate the percentage complete and whether this project will be on budget, over or under budget.
 - f. Brief Description: Indicate scope, size, and length of project, principle elements and special features of the project. Discuss the relevance of the example project to this contract.
6. **Additional Information.** Use this section to provide additional information you feel may be necessary to describe your firm's qualifications for this contract.
7. **Annual Average Professional Services Revenues of Firm for Last 3 Years.** Complete this block for the firm or branch office for which this form is completed. In column a, enter an approximate percentage of total work attributable to State, Federal or Municipal Work. In column b, enter an approximate percentage of total work attributable to Non-Government work. Percentages should take into consideration work completed over the last 3 years.



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8. **Authorized Representative.** An authorized representative of the firm or branch office must sign and date the completed form. Signing attests that the information provided is current and factual. Provide the name and title of the authorized representative who signed the form.

List of Disciplines (Function Codes) for Question 2

- | | | |
|---------------------------|--|--------------------------|
| Aeronautical Engineer | Environmental Engineer | Mining Engineer |
| Agricultural Engineer | Environmental Scientist | Nuclear Engineer |
| Archeologist | Fire Protection Engineer | Petroleum Engineer |
| Architect | Geodetic Surveyor | Photogrammetrist |
| Architectural Engineering | Geographic Information System Specialist | Project Manager |
| Biologist | Geological Engineer | Sanitary Engineer |
| CADD Technician | Geologist | Soils Engineer |
| Chemical Engineer | Hydrographic Surveyor | Structural Engineer |
| Civil Engineer | Hydraulic Engineer | Technician/Analyst |
| Construction Manager | Hydrologist | Transportation Engineer |
| Construction Inspector | Industrial Engineer | Water Resources Engineer |
| Control Systems Engineer | Landscape Architect | |
| Cost Engineer/Estimator | Mechanical Engineer | |
| Ecologist | Metallurgical Engineer | |
| Electrical Engineer | | |

List of Experience Categories (Profile Codes for Question 3)

- | | |
|---|--|
| Acoustics, Noise Abatement | Dams (<i>Concrete; Arch</i>) |
| Aerial Photography; Airborne Data and Imagery Collection and Analysis | Dams (<i>Earth; Rock</i>); Dikes; Levees |
| Activity Centers | Desalinization (<i>Process and Facilities</i>) |
| Air Pollution Control | Design-Build - Preparation of Requests for Proposals |
| Airports; Navajds; Airport Lighting; Aircraft Fueling | Digital Elevation and Terrain Model Development |
| Airports; Terminals and Hangars; Freight Handling | Digital Orthophotography |
| Agricultural Development; Grain Storage; Farm Mechanization | Dining Halls; Clubs; Restaurants |
| Animal Facilities | Dredging Studies and Design |
| Anti-Terrorism/Force Protection | Design & Planning Structured Parking Facilities |
| Area Master Planning | Detention Security Systems |
| Auditoriums and Theaters | Disability / Special Needs |
| Automation; Controls; Instrumentation | Ecological and Archeological Investigations |
| Barracks; Dormitories | Educational Facilities; Classrooms |
| Bridge Design: Bridges | Electrical Studies and Design |
| Cartography | Electronics |
| Cemeteries (<i>Planning and Relocation</i>) | Elevators; Escalators; People-Movers |
| Chemical Processing and Storage | Energy / Water Auditing Savings |
| Child Care/Development Facilities | Energy Conservation; New Energy Sources |
| Codes; Standards; Ordinances | Environmental Impact Studies, Assessments or Statements |
| Cold Storage; Refrigeration and Fast Freeze | Fallout Shelters; Blast-Resistant Design |
| Commercial Building (<i>Low Rise</i>); Shopping Centers | Fire Protection |
| Community Facilities | Fisheries; Fish Ladders |
| Communications Systems; TV; Microwave | Forensic Engineering |
| Computer Facilities | Garages; Vehicles Maintenance Facilities; Parking |
| Conservation and Resource Management | Gas Systems (<i>Propane; Natural, Etc.</i>) |
| Construction Management | Geodetic Surveying: Ground and Airborne |
| Construction Surveying | Heating; Ventilating; Air Conditioning |
| Corrosion Control; Cathodic Protection Electrolysis | Highways; Streets; Airfield Paving; Parking Lots |
| Cost Estimating; Cost Engineering and Analysis; Parametric Costing; Forecasting | Historical Preservation |
| Cryogenic Facilities | Hospital and Medical Facilities |
| Construction Materials Testing | Hotels; Motels |
| | <i>Housing (Residential, Multi-Family; Apartments; Condominiums)</i> |



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Hotels; Motels
Hydraulics and Pneumatics
Hydrographic Surveying
Industrial Buildings; Manufacturing Plants
Industrial Processes; Quality Control
Industrial Waste Treatment
Intelligent Transportation Systems
Infrastructure
Irrigation; Drainage
Judicial and Courtroom Facilities
Laboratories; Medical Research Facilities
Land Surveying
Landscape Architecture
Libraries; Museums; Galleries
Lighting (*Interior; Display; Theater, Etc.*)
Lighting (*Exteriors; Streets; Memorials; Athletic Fields, Etc.*)
Labs - General
Labs – Research – Dry
Labs – Research – Wet
LEED Accredited A/E
LEED Independent 3rd Party Building Commissioning
Mapping Location/Addressing Systems
Materials Handling Systems; Conveyors; Sorters
Metallurgy
Materials Testing
Measurement / Verification / Conservation Water Consumption Savings
Mining and Mineralogy
Medical Related
Modular Systems Design; Fabricated Structures or Components
Mold Investigation
Museums
Nuclear Facilities; Nuclear Shielding
Office Buildings; Industrial Parks
Outdoor Recreation
Petroleum and Fuel (*Storage and Distribution*)
Photogrammetry
Pipelines (*Cross-Country - Liquid and Gas*)
Phase I Environmental
Prisons & Correctional Facilities
Plumbing and Piping Design
Prisons and Correctional Facilities
Product, Machine Equipment Design Pneumatic Structures, Air-Support Buildings Power Generation, Transmission, Distribution Public Safety Facilities
Radar; Sonar; Radio and Radar Telescopes
Radio Frequency Systems and Shielding's
Railroad; Rapid Transit
Recreation Facilities (*Parks, Marinas, Etc.*)
Refrigeration Plants/Systems
Rehabilitation (*Buildings; Structures; Facilities*)
Research Facilities
Resources Recovery; Recycling
Roof Infrared Imaging to Identify Water Leaks

Roofing
Safety Engineering; Accident Studies; OSHA Studies
Security Systems; Intruder and Smoke Detection
Seismic Designs and Studies
Sewage Collection, Treatment and Disposal
Soils and Geologic Studies; Foundations
Solar Energy Utilization
Solid Wastes; Incineration; Landfill
Special Environments; Clean Rooms, Etc.
Structural Design; Special Structures
Surveying; Platting; Mapping; Flood Plain Studies
Sustainable Design
Swimming Pools
Storm Water Handling and Facilities
Specifications Writing
Toxicology
Testing and Inspection Services
Traffic and Transportation Engineering
Topographic Surveying and Mapping
Towers (*Self-Supporting and Guyed Systems*)
Tunnels and Subways
Traffic Studies
Transportation
Urban renewals; Community Development
Utilities (*Gas and Steam*)
Value Analysis; Life-Cycle Costing
Warehouse and Depots
Water Resources; Hydrology; Ground Water
Water Supply; Treatment and Distribution
Wind Tunnels; Research/Testing Facilities Design
Waste Water Treatment Facility
Water Well Rehabilitation; Water Well Work
Zoning; Land Use Studies



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(If a firm has branch offices, complete for each specific branch office seeking work.)

1. Annual Request for Qualifications

a. FIRM (OR BRANCH OFFICE) NAME:	Sunrise Engineering, Inc.
b. FIRM (OR BRANCH OFFICE) STREET:	2152 South Vineyard Street, Suite 123
c. FIRM (OR BRANCH OFFICE) CITY:	Mesa
d. FIRM (OR BRANCH OFFICE) STATE:	AZ
e. FIRM (OR BRANCH OFFICE) ZIP CODE:	85210-6882
f. YEAR ESTABLISHED:	1989 (Mesa Branch)
(g1). OWNERSHIP - TYPE:	Utah Sub-S Corporation
(g2) OWNERSHIP - SMALL BUSINESS STATUS:	Not a small business.
h. POINT OF CONTACT NAME AND TITLE:	Gregory D. Potter, P.E., Principal/ Vice President
i. POINT OF CONTACT TELEPHONE NUMBER:	(480) 768.8600
j. POINT OF CONTACT E-MAIL ADDRESS:	gpotter@sunrise-eng.com
k. NAME OF FIRM (If block 1a is a branch office):	Sunrise Engineering, Inc.



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1. Annual Request for Qualifications

g. FIRM (OR BRANCH OFFICE) NAME:	Sunrise Engineering, Inc.
h. FIRM (OR BRANCH OFFICE) STREET:	25 East 500 North
i. FIRM (OR BRANCH OFFICE) CITY:	Fillmore
j. FIRM (OR BRANCH OFFICE) STATE:	UT
k. FIRM (OR BRANCH OFFICE) ZIP CODE:	84631-3513

l. YEAR ESTABLISHED:	1983 (Corporate Office)
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(g1). OWNERSHIP - TYPE:	Utah Sub-S Corporation
(g2) OWNERSHIP - SMALL BUSINESS STATUS:	Not a small business.

h. POINT OF CONTACT NAME AND TITLE:	Evan Simpson, P.E., President & CEO
i. POINT OF CONTACT TELEPHONE NUMBER:	(307) 885.8500
j. POINT OF CONTACT E-MAIL ADDRESS:	esimpson@sunrise-eng.com

k. NAME OF FIRM (If block 1a is a branch office):	N/A
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1. Annual Request for Qualifications

m. FIRM (OR BRANCH OFFICE) NAME:	Sunrise Engineering, Inc.
n. FIRM (OR BRANCH OFFICE) STREET:	12227 South Business Park Drive, Suite 220
o. FIRM (OR BRANCH OFFICE) CITY:	Draper
p. FIRM (OR BRANCH OFFICE) STATE:	UT
q. FIRM (OR BRANCH OFFICE) ZIP CODE:	84020-8191
r. YEAR ESTABLISHED:	1983 (Draper Branch)
(g1). OWNERSHIP - TYPE:	Utah Sub-S Corporation
(g2) OWNERSHIP - SMALL BUSINESS STATUS:	Not a small business.
h. POINT OF CONTACT NAME AND TITLE:	Kelly Pond, Corporate Business Manager
i. POINT OF CONTACT TELEPHONE NUMBER:	(801) 838.8319
j. POINT OF CONTACT E-MAIL ADDRESS:	kpond@sunrise-eng.com
k. NAME OF FIRM (If block 1a is a branch office):	Sunrise Engineering, Inc.



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1. Annual Request for Qualifications

s. FIRM (OR BRANCH OFFICE) NAME:	Sunrise Engineering, Inc.
t. FIRM (OR BRANCH OFFICE) STREET:	11 North 300 West
u. FIRM (OR BRANCH OFFICE) CITY:	Washington
v. FIRM (OR BRANCH OFFICE) STATE:	UT
w. FIRM (OR BRANCH OFFICE) ZIP CODE:	84780-1524

x. YEAR ESTABLISHED:	1983 (Washington Branch)
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(g1). OWNERSHIP - TYPE:	Utah Sub-S Corporation
(g2) OWNERSHIP - SMALL BUSINESS STATUS:	Not a small business.

h. POINT OF CONTACT NAME AND TITLE:	Marvin Wilson, P.E., Sr. Vice President/ Principal
i. POINT OF CONTACT TELEPHONE NUMBER:	(435) 652.8450
j. POINT OF CONTACT E-MAIL ADDRESS:	mwilson@sunrise-eng.com

k. NAME OF FIRM (If block 1a is a branch office):	Sunrise Engineering, Inc.
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2. EMPLOYEES BY DISCIPLINE

a. Discipline Title	b. Function: Primary (P) or Secondary (S)	c. No. of Employees - Firm	d. No. of Employees - Branch
CADD Technician	P	19	
CADD Technician	S	2	
Civil Engineer	P	5	
Civil Engineer	S	10	
Construction Inspector	P	20	
Construction Inspector	S	4	
Electrical Engineer	P	7	
Electrical Engineer	S	3	
Environmental Engineer	P	1	
Environmental Engineer	S	1	
Geodetic Surveyor	P	5	
Geodetic Surveyor	S	3	
Geographic Information System Specialist	P	3	
Hydraulic Engineer	P	1	
Hydraulic Engineer	S	1	
Project Manager	P	12	
Structural Engineer	P	1	
Structural Engineer	S	1	
Technician/ Analyst	P	6	
Other	P	33	
Total		197	



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3. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST YEAR

a. Approximate No. of Projects	b. Experience	c. Revenue Index Number (see below)
75	Construction Surveying	6
5	Dams (Earth; Rock); Dikes; Levees	3
30	Digital Elevation and Terrain Model Development	3
25	Electrical Studies and Design	4
14	Environmental Impact Studies, Assessments or Statements	2
5	Fisheries; Fish Ladders	3
300	Gas Systems (Propane; Natural, Etc.)	6
5	Geodetic Surveying: Ground and Airborne	1
35	Highways; Streets; Airfield Paving; Parking Lots	5
10	Housing (Residential; Multi-Family)	4
20	Irrigation; Drainage	5
75	Land Surveying	5
50	Sewage Collection, Treatment and Disposal	6
40	Surveying; Platting; Mapping	4
5	Storm Water Handling and Facilities	4
30	Traffic and Transportation Engineering	6
30	Topographic Surveying and Mapping	5
15	Water Resources; Hydrology; Ground Water	3
75	Water Supply; Treatment and Distribution	6

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

- | | |
|---|---|
| 1. Less than \$100,000 | 6. \$2 million to less than \$5 million |
| 2. \$100,000 to less than \$250,000 | 7. \$5 million to less than \$10 million |
| 3. \$250,000 to less than \$500,000 | 8. \$10 million to less than \$25 million |
| 4. \$500,000 to less than \$1 million | 9. \$25 million to less than \$50 million |
| 5. \$1 million to less than \$2 million | 10. \$50 million or greater |



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4. Resumes of Key Personnel Proposed for this Contract *(Complete one Section #4 for each key person.)*

a. NAME Gregory Potter, P.E.	b. ROLE IN THIS CONTRACT Water & Sewer Team Leader	c. YEARS EXPERIENCE	
		1. TOTAL 22	2. WITH CURRENT FIRM 22

d. LOCATION *(City and State)*
Sunrise Engineering, Inc. (Mesa Branch) Mesa, AZ

e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> B.S. Civil Engineering, Arizona State University	f. PROFESSIONAL TRAINING - REGISTRATIONS AZ P.E.#35581; UT P.E. #266266-2202
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g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*
Mr. Potter is an active member in the Arizona Chapters for the American Society of Civil Engineers' (ASCE), the Arizona Floodplain Management Association (AFMA) and Valley Partnership. Mr. Potter's experience includes project management, budgets, schedules, quality assurance, quality control and construction phasing, and a broad range of projects types. However, the main focus of his twenty-two year career at Sunrise Engineering has been in the study, computer modeling, master planning, engineering, and the design and construction administration of water and wastewater systems. His project water experience includes: distribution projects for new waterlines and the renovation and reconstruction of older water systems; water campus facilities including concrete and steel water storage tanks, hydro-pneumatic tanks, booster pumps and equipment buildings; membrane filtration treatment plants; well drilling and equipping; and spring development. His sewer project experience includes: collection systems, modeling, treatment, lift stations and force mains.

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION <i>(City and State)</i> City of Payson's C.C. Cragin Raw Water Resource Supply Project – Payson, AZ	(2) YEAR COMPLETED	
		Professional Services 2009-2018	Construction (if applicable) 2012-2018
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Potter is currently serving as the Project Manager for this \$5,000,000 contract which includes the preliminary design of the 12 mile long transmission main, the final design and studies for the tailrace connection, raw water pipeline and new hydroelectric generating station (Phase I), equipment piloting and water treatment plant preliminary design (Phase II), and overall project management assistance and support services as needed for other phases of the project.	<input checked="" type="checkbox"/>	Check if project performed with current firm

2.	(1) TITLE AND LOCATION <i>(City and State)</i> Casa Grande - East Area Sewer Expansion – Casa Grande, AZ	(2) YEAR COMPLETED	
		Professional Services 2014-2015	Construction (if applicable) 2015

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE
The City of Casa Grande selected Sunrise Engineering for the design and construction administration of an addition to the City's existing sewer collection system to facilitate future development of the City incorporated area east of Interstate 10. This interceptor included a new 18,500 foot long, 36-inch, 27-inch and 24-inch gravity sewer interceptor on Kortsen, Hacienda and Cottonwood Roads. The primary driver for this project is to service the new Phoenix Mart development.

There are several factors and challenges for this project that made it unique. Sunrise Engineering worked with the City, contractor and approval agencies to work through these issues, as a team, to make this project a success. These factors are as follows:

Schedule - The main reason for this project was to facilitate the connection of Phoenix Mart to the City's system. To meet the developers schedule the City had to have the sewer designed, constructed and operational by December 31, 2015 to Phoenix Mart. This allowed a very short timeframe all of this work to be completed. In response to this the City elected to perform the construction using a CM@Risk delivery method to bring the contractor on early for constructability, bidding and early start to construction.

Approvals - In addition, Sunrise worked closely with the City to obtain approvals from utility companies, ADOT, HoHoKam Irrigation and Drainage District, ADEQ and El Paso Natural Gas. Any one of the approvals required by these agencies could have delayed moving forward with the construction of the project. Due to the diligence by all members of the team all permits were secured on or before the project schedule time frame.

Boring & Jacking - The sewer installation required the crossing of Interstate 10. Due to this fact a jack and bore was required using a 54-inch diameter casing. The casing totaled approximately 250-feet in length. SEI worked closely with City staff, ADOT and Jacobs Engineering. SEI prepared the preliminary design for the actual crossing and Jacobs prepared CD's for review and approval by ADOT.

Construction Administration - Our project team coordinated with the City to supplement existing City staff and inspectors during the duration of the project. This included field review of the construction, regular project meetings, contract record drawings and final approvals. The engineering fee for this project was \$380,000 and the estimated construction cost is \$100M.



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3.	(1) TITLE AND LOCATION (<i>City and State</i>) Sewer Master Plan – Casa Grande, AZ	(2) YEAR COMPLETED 2014
		Professional Services 2013-2014
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE The City of Casa Grande required an update to its Sewer Master Plan and selected Sunrise because of our experience with sewer master plans and the H2OMap sewer modeling computer program. Sunrise's modeling approach includes building a solid existing system model by surveying all interceptor mains in the City and using historic flow data to model the existing system. Future areas will be modeled by land use. Sunrise has spent extra time with the City to determine if general plan land uses and proposed flow rates match each other. These should all add up to a sewer model that matches what is exiting and correctly predicts future sewer lines sizes. In addition, correct line sizes prevent building oversized lines or removal and replacement of lines, which equals a significant cost savings for the City. Lastly, this project includes a review and update of the City's design and construction standards as they relate to sewer. The engineering fee for this project was \$225,000.	<input checked="" type="checkbox"/> Check if project performed with current firm
4.	(1) TITLE AND LOCATION (<i>City and State</i>) Phase III Water Main Replacement Project – Chandler, AZ	(2) YEAR COMPLETED
		Professional Services 2013-2014
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE This Project includes the design and construction administration for Chandler's third phase water main replacements. The design relocates approximately 15,000 feet of water mains, valves, hydrants and meters from alleys within the project area to the public street. This required on-lot work to be performed to relocate the water service lateral to each home. Individual house sheets were created using aerial mapping for each lot where a meter will be relocated from the alley to the street. Each house sheet showed the lot and surface features; it also allowed for a discussion with each property owner on where the new meter locations and service lateral would be installed from the meter to the house. Each homeowner was contacted and interviewed to obtain their preferred location and approval signature for the service lateral and meter location. This effort was completed through a combination of door-to-door visits for owner-occupied houses and phone calls/emails for rental homes or out-of-state owners. A spreadsheet of the names, addresses and approval statuses was kept to track the information for each lot. In situations where there were issues in obtaining approval signatures from the home owner, the team coordinated with the City's assigned public relations consultant. In addition, the team provided construction services including bid assistance, construction administration, construction observation and contract record drawings. The engineering fee for this project was \$280,000 and the estimated construction cost is \$3M.	<input checked="" type="checkbox"/> Check if project performed with current firm
5.	(1) TITLE AND LOCATION (<i>City and State</i>) Chandler Pecos Well Equipping – Chandler, AZ	(2) YEAR COMPLETED
		Professional Services 2014-2015
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE The City of Chandler is installing well equipment at their Pecos Well site, where they have abandoned an existing well and a new well has been drilled. The site will be expanded in order to provide room for the new well. The existing well seal and yard piping will be demolished. The existing submersible pump will be reconfigured with VFD's and converted over to a water-lube pump to meet the City's requirements and then be re-used in the new well. The new well will be set to a depth of 300-feet and will produce approximately 1,800 GPM. New 12-in DIP transmission lines will be installed, and will include a new 12-in Cla-Valve and misc. appurtenances. For long term discharging of the well, a new 10-in PVC pump to waste line will be installed to an existing SRP irrigation box off site. For short term discharging of the well, the existing 10-in DIP pump to waste line will be used. The existing chlorination system will be re-used. New electrical and SCADA controls will be designed for the re-configured pump. Since the site will be expanded, it will be re-graded and will receive additional retention. A new drywell will be installed in the new retention basin. A new asphalt pavement drive aisle will be installed to the new well location on site. A new perimeter wall with site lighting will be installed on the expanded side of the site. The engineering fee for this project is \$84,621.	<input checked="" type="checkbox"/> Check if project performed with current firm



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Phoenix, Arizona 85007**

4. Resumes of Key Personnel Proposed for this Contract (*Complete one Section #4 for each key person.*)

a. NAME Geoffrey Child, P.E.	b. ROLE IN THIS CONTRACT Traffic & Transportation Engineering, Traffic Testing & Inspection Services Team Leader	c. YEARS EXPERIENCE	
		1. TOTAL 15	2. WITH CURRENT FIRM 12
d. LOCATION (<i>City and State</i>) Sunrise Engineering, Inc. (Mesa Branch) Mesa, AZ			
e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) M.S. Construction, Arizona State University B.S. Civil Engineering, Utah State University		f. PROFESSIONAL TRAINING - REGISTRATIONS AZ P.E.#41184;CA P.E. #67822; ID P.E. #12936; MT P.E. #PEL-PE-LIC-18919; UT P.E. #375046-2202	

g. OTHER PROFESSIONAL QUALIFICATIONS (*Organizations, Awards, etc.*)

Mr. Child is an active member of the American Society of Highway Engineers (ASHE), the American Society of Civil Engineer's Construction Institute (ASCE-CI) and the American Public Works Association (APWA). Prior to joining Sunrise Engineering, Mr. Child worked for the Arizona Department of Transportation for three and a half years. He spent two years in their EIT Rotational Program and a year and a half as a Transportation Engineering Specialist/Project Supervisor in their Phoenix Construction District. His recent experience includes serving as project manager for several City of Mesa projects including over five miles of arterial roadway reconstruction, over 23 miles of residential and minor collector ADA upgrades and overlays, and two miles of 16-inch waterline along Signal Butte Road.

H. RELEVANT PROJECTS

	(1) TITLE AND LOCATION (<i>City and State</i>)	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	Ray-Dobson Right Turn Lane – Chandler, AZ	2014-2015	TBD
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE The City of Chandler selected Sunrise Engineering to assist in the addition of a right turn lane from eastbound Ray Road to southbound Dobson Road. This intersection is one of the most congested intersections in the City, particularly during the morning and afternoon rush hours. The City has received complaints from an adjacent neighborhood rearding cut-through traffic during high traffic times. An eastbound right-turn deceleration lane would help to ease congestion and reduce the potential for shortcutting along parallel local and collector streets. The scope of work for the project included topographic survey, right-of-way survey, utility coordination, signal design, lighting design, permitting plans, specifications and cost estimates. The addition of the turn lane also encroached on an existing retention basin. Our team evaluated the both the grading and drainage impacts to this basin to ensure that the total volume of the basin met the storm drain design requirements. The engineering fee for this project is \$60,000 and the estimated construction cost is \$120,000.	<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	City of Tempe's Broadway & Priest Intersection Improvements - Tempe, AZ	2009-2013	2013-2014
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Child served as the Project Manager for this \$500,000 contract which included civil engineering and surveying services for the addition of a right turn lane, 2 bus bays, ADA upgrades, signal modifications, street lighting, geotechnical investigations, signing and striping, and pavement overlay design. Services provided included conceptual layouts, field investigations, utility research, geometrics, general civil design and survey services.	<input checked="" type="checkbox"/>	Check if project performed with current firm
3.	Solarez Phase II Curb, Gutter & Sidewalk Improvements – Guadalupe, AZ	2012	2012
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE The Town of Guadalupe selected Sunrise Engineering under a multiple year, task order contract as the Town Engineer. Services primarily will encompass design for roadway and drainage projects within the Town limits, but can also include review, cost estimates and other engineering support services as needed. The first assignment for this contract included the Solarez Phase II project. The Solarez Phase II project was completed as part of a Community Development Block Grant (CDBG) rehabilitation project. Constructed in the early 1960s, the neighborhood's streets were a pavement section that only included pavement. This project added 8,400 feet of rolled curb and sidewalks on both sides of all streets including ADA compliant curb ramps at corner and mid-block locations. The design also incorporated driveway retrofits and specialty curb ramps in some locations. Work included completion of plans, specifications, cost estimates, construction administration and construction observation services. The engineering fee for this project was \$45,000.	<input checked="" type="checkbox"/>	Check if project performed with current firm
4.	Mesa – University Drive Reconstruction & Water Main Replacement	2011-2012	2012



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	<p>(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE The City of Mesa hired Sunrise to prepare roadway reconstruction and water main documents, for 1.6 miles of University Drive from Sossaman Road to ADOT Right-of-Way (650' east of 88th Street). The scope of work included preparing plans, specifications and estimates. The pavement in this street was in very poor condition and the City wanted to revitalize it by full depth asphalt pavement rehabilitation (removal and replacement down to sub-grade). Additional design tasks included replacing/abandoning existing water mains with a new DIP water main along a new alignment for a 12-inch water main in University Drive from just west of 82nd Way to east of 83rd Place (approximately 700 linear feet) and a new 8-inch water main from 86th Street to 88th Street (approximately 1,200 linear feet). This required extensive utility coordination and potholing to avoid conflicts and determine the best possible alignment.</p>	<table border="1"> <tr> <td align="center"><input checked="" type="checkbox"/></td> <td>Check if project performed with current firm</td> </tr> </table>	<input checked="" type="checkbox"/>	Check if project performed with current firm		
<input checked="" type="checkbox"/>	Check if project performed with current firm					
	<p>(1) TITLE AND LOCATION (<i>City and State</i>) Knox Road Traffic Calming – Chandler, AZ</p>	<table border="1"> <tr> <td colspan="2">(2) YEAR COMPLETED 2012</td> </tr> <tr> <td>Professional Services 2009-2012</td> <td>Construction (if applicable) 2012</td> </tr> </table>	(2) YEAR COMPLETED 2012		Professional Services 2009-2012	Construction (if applicable) 2012
(2) YEAR COMPLETED 2012						
Professional Services 2009-2012	Construction (if applicable) 2012					
<p>5.</p>	<p>(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE This ARRA funded traffic calming project was initiated after Chandler residents raised concerns about traffic speeds on Knox Road between Alma School and Arizona Avenue. After previous attempts were made to slow traffic speeds by reducing the posted speed limit, Sunrise was contracted to complete the design and prepare the final engineering plans for Knox Road's traffic calming devices. Sunrise collaborated with the City to modify the existing plans and develop solutions that both constricted traffic and improved drainage at and between the intersections involved. The enhanced design incorporated several types of traffic constrictions including the addition of new median landscaped islands at California Street, the restriping of Knox Road to restrict traffic, and additional narrowing at Hartford Street to reduce speeds and crossing distances for pedestrians. The design also included a new bicycle lane, defined parking areas, curbs, gutters, and the addition of several drainage catch basins and storm drain relocations. Ramps were upgraded to meet ADA standards and a raised pedestrian crosswalk and roadway narrowing at Evergreen Street was incorporated. This not only achieved a safe crossing for children in route to and from the nearby school, but it also maintained SRP well site access – a key project focus that required significant coordination with SRP.</p>	<table border="1"> <tr> <td align="center"><input checked="" type="checkbox"/></td> <td>Check if project performed with current firm</td> </tr> </table>	<input checked="" type="checkbox"/>	Check if project performed with current firm		
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4. Resumes of Key Personnel Proposed for this Contract (*Complete one Section #4 for each key person.*)

a. NAME Ricky Holston, P.E., CFM, LEED AP	b. ROLE IN THIS CONTRACT Drainage Rivers/ Canals/ Waterways/ Flood Control Team Leader	c. YEARS EXPERIENCE	
		1. TOTAL 15	2. WITH CURRENT FIRM 10

d. LOCATION (*City and State*)
 Sunrise Engineering, Inc. (Mesa Branch) Mesa, AZ

e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) B.S. Civil Engineering, San Diego State University	f. PROFESSIONAL TRAINING - REGISTRATIONS AZ P.E.#43301; CA P.E. # 67363; NM P.E. #20643
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g. OTHER PROFESSIONAL QUALIFICATIONS (*Organizations, Awards, etc.*)
 Mr. Holston is an active member of the Association of State Floodplain Managers (ASFPM), American Society of Civil Engineers (ASCE), Home Builders Association of Central Arizona (HBACA) and Valley Partnership. The main focus of his career at Sunrise has been in the area of drainage design and planning including: hydrology and hydraulic studies, design concept reports, HEC-RAS analysis, drainage studies, hydrologic and hydrograph modeling, feasibility alternatives, drainage mitigation and erosion control, culvert crossings and drainage channel conveyance structures, diversion structures, split-flow analysis and FEMA Letter of Map Revisions. In addition, Mr. Holston is also a LEED Accredited Professional and has completed extensive training in Storm Water Pollution Prevention Planning (SWPPP).

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION (<i>City and State</i>) Star Valley Low Water Crossings – Star Valley, AZ	(2) YEAR COMPLETED	
		Professional Services 2014	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE The Town of Star Valley inherited numerous drainage issues when it was incorporated in 2005. Two of these issues were the drainage crossings at Sprague Ranch Road and Moonlight Drive. These crossings with Houston Creek historically have flooded during storm events and created a safety hazard as well as leaving local residents stranded on either side of the flowing creek. The engineering fee was \$4,400.	<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	(1) TITLE AND LOCATION (<i>City and State</i>) Avondale City Center Phase II Drainage Report – Avondale, AZ	(2) YEAR COMPLETED	
		Professional Services 2014	Construction (if applicable) 2014
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE The City of Avondale planned to add a transit center to its City Center area. The City asked Sunrise to update the original Drainage Master Plan that the City had prepared when the Sports Complex was constructed. The transit center serves a park and ride and in the future light rail stop. The City of Avondale City Center is area a planned downtown area for the City. The area has been master planned as high density multi-level buildings. The City developed the sports complex to anchor the area and attract growth. The Drainage Master Plan proposed a system of retention and detention basins to hold the required retention while routing off-site flow through the area in the same basins. The system of basins minimized open space to maintain high density the City wanted. Sunrise prepared a basin routing model with all the existing and proposed basins and updated the off-site flow HEC-1 model. Sunrise proposed revisions to the Drainage Master Plan that allows the transit center to have minimal retention by routing its runoff to an existing basin. The modeling showed the water level increase in the basin without creating adverse flood conditions. The hydrology and hydraulic modeling by Sunrise created savings for the City by not having to construct additional basins. Mr. Holston served as project manager and hydraulics engineer for the project. The fee for this project was \$26,445.00	<input checked="" type="checkbox"/>	Check if project performed with current firm
3.	(1) TITLE AND LOCATION (<i>City and State</i>) Sky Wash Alluvial Fan Apex Regional Drainage Solution – Buckeye, AZ	(2) YEAR COMPLETED	
		Professional Services 2013	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Holston served as the Project Manager for this \$82,500 time and materials contract which included improvement plans for the development of Phoenix Skyline West II, an existing 215 lot subdivision left un-platted since the 1970's due to the site's floodway and floodplain designation. An alluvial fan hydraulic study was performed to verify that 100-year/2-hour storm event flow depths did not exceed maximum requirements for emergency vehicle access. Additionally, three alternative conceptual designs were completed as a regional solution for the area, each of which required hydrologic and hydraulic modeling and routing of the apex flows.	<input checked="" type="checkbox"/>	Check if project performed with current firm
4.	(1) TITLE AND LOCATION (<i>City and State</i>) Harquahala Off-Site Drainage	(2) YEAR COMPLETED	
		Professional Services 2011	Construction (if applicable) 2011
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE New Harquahala Generating Company operates a three-turbine gas powered electricity generating plant in Tonopah, Arizona under a special use permit from Maricopa County issued in the early 00's. The original permit needed to be finalized with the County. The County rejected the original Off-Site Drainage Report stating it was out of date. Sunrise Engineering was hired to provide an updated study and provide a professional recommendation regarding the integrity of an existing berm constructed for flood protection. Sunrise conducted field visits to delineate the contributing water shed which is downstream of the Saddleback Flood Retarding structure and a network of irrigation canals, ditches and farm roads. Using the latest County methods Sunrise	<input checked="" type="checkbox"/>	Check if project performed with current firm



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determined the flow will safely be conveyed around the site with adequate freeboard. The report was approved on the first submittal with no comments received. The engineering fee for this project was \$10,200.

(1) TITLE AND LOCATION (*City and State*)

Flood Control District of Maricopa's Van Buren Street Drainage Design Concept Report Phase I – Avondale, AZ

(2) YEAR COMPLETED

Professional Services
2010

Construction (if applicable)
N/A

5.

(3) BRIEF DESCRIPTION (*Brief scope, size, cost, etc.*) AND SPECIFIC ROLE

Mr. Holston served as the Project Manager for this \$103,500 contract which included a DCR for storm water conveyance along Van Buren to alleviate flooding at the intersection of Van Buren and 99th Avenue. Tasks included collection/compilation of existing utility and general base mapping information from several sources; manipulation/analysis of the existing hydrology models and rainfall data for the project; and creation/ analysis of existing and future hydrologic/hydrograph models. The team also created exhibits for each of three alternative design concepts and 100 scale Conceptual Design Plan and profile drawings for the selected design alternative.

Check if project performed with current firm



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4. Resumes of Key Personnel Proposed for this Contract (*Complete one Section #4 for each key person.*)

a. NAME Dave Dirren	b. ROLE IN THIS CONTRACT Housing Team Leader	c. YEARS EXPERIENCE	
		1. TOTAL 34	2. WITH CURRENT FIRM 12
d. LOCATION (<i>City and State</i>) Sunrise Engineering, Inc. (Mesa Branch) Mesa, AZ			
e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) A.A. Architecture, Phoenix Institute of Technology		f. PROFESSIONAL TRAINING - REGISTRATIONS N.I.C.E.T. # 75594 – Level II Underground Utility Construction, Level III Highway Design; Gila County Health Dept. Site Suitability & Percolation Testing # 200041	
g. OTHER PROFESSIONAL QUALIFICATIONS (<i>Organizations, Awards, etc.</i>) Mr. Dirren has 34 years experience in Civil Engineering throughout the state of Arizona and has been certified by N.I.C.E.T. since 1989 in the areas of Highway Design and Underground Utility Construction. He has managed projects from conceptual stage through construction inspection and possesses extensive experience in paving, water, sewer, gas and drainage design for both public and private sector projects. In addition, Mr. Dirren is proficient in the use of computer-aided drafting and design tools, such as AutoCAD and Civil 3D applications, to enhance overall quality and accuracy of projects.			

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION (<i>City and State</i>) Bellerio Subdivision Final Plat and Improvement Plans – Queen Creek, AZ	(2) YEAR COMPLETED	
		Professional Services 2014-Present	Construction (if applicable) 2014-Present
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Sunrise Engineering was hired to assist in the development of a new 122 acre single family residential subdivision located in the Town of Queen Creek. The project consists of two phases and will provide 178 new home sites. Sunrise assisted with the preparation of the final plat and improvement plans including grading and drainage, on-site paving, water, sewer plans, signing and striping, SWPPP, cost estimates and MCESD approval for construction. The engineering fee for this project is \$93,690.	<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	(1) TITLE AND LOCATION (<i>City and State</i>) Encantada @ Tierra Del Rio – Peoria, AZ	(2) YEAR COMPLETED	
		Professional Services 2006-2008	Construction (if applicable) 2006-2008
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Sunrise Engineering was contracted by Fairfield Development for a new 15-acre apartment home community named Encantada. This project is part of the Tierra Del Rio master planned community and includes 16 buildings with a total of 271 units, a club house and pool area. Sunrise Engineering worked with Fairfield Development and the project team for the preliminary engineering, construction documents and final approvals for this project. One of the challenges with this project was coordination of ongoing construction surrounding the site by the master planned community developer. This created a never ending need to update the existing conditions that effected the design of this site. Due to the height of the existing intersection of Tierra Del Rio Blvd. and Happy Valley Parkway it was necessary to use retaining walls ranging from 2' to 13' in height. By incorporating these retaining walls into the design it was possible to provide ADA accessibility routes throughout the site. In some areas the retaining walls were combined with noise walls to acheve a noise barrier as required by the City of Peoria. Underground and standard retention was used to maximize the building and parking areas. Underground retention was achieved by the use of 96" diameter corrugated metal pipes in conjunction with a storm drain system and multiple drywells. The engineering fee for this project was \$199,900.	<input checked="" type="checkbox"/>	Check if project performed with current firm
3.	(1) TITLE AND LOCATION (<i>City and State</i>) Belara Apartments @ Dynamite Mountain Ranch – Phoenix, AZ	(2) YEAR COMPLETED	
		Professional Services 2006-2008	Construction (if applicable) 2006-2008
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Sunrise Engineering was contracted by Fairfield Development for a new 15-acre apartment home community named Belara. This project is part of the Dynamite Mountain Ranch master planned community and includes 16 buildings with a total of 307 units, a club house and pool area. Sunrise Engineering worked with Fairfield Development and the project team for the preliminary engineering, construction documents and final approvals for this project. One of the challenges with this project was the 40+ feet of fall across the site and working around two 404 jurisdictional washes. Underground and standard retention was used to maximize the building and parking areas. Sunrise Engineering worked closely with Contech Bridge Solutions to span one of the 404 washes with a pre-cast arch bridge structure. This type of bridge was chosen to minimize the impact to the 404 wash due to its wide span and ability to carry construction equipment over the wash area during the construction process. Due to the amount of slope on the site numerous retaining walls ranging from 2' to 9' high were utilized to create ADA compliant parking and circulation paths throughout the site. The engineering fee for this project was \$310,000.	<input checked="" type="checkbox"/>	Check if project performed with current firm
4.	(1) TITLE AND LOCATION (<i>City and State</i>) Wyngate @ Sycamore Farm – Surprise, AZ	(2) YEAR COMPLETED	
		Professional Services 2006-2007	Construction (if applicable) 2006-2007



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	<p>(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Sunrise Engineering was contracted by Fairfield Development for a new 9.5-acre apartment home community named Wyngate. This project is part of the Sycamore Farms master planned community and includes 10 buildings with a total of 166 units with a club house and pool area. Sunrise Engineering worked with Fairfield Development and the project team for the preliminary engineering, construction documents and approvals for this project. Sunrise Engineering was recommended for this project by the Landscape Architect (Land Group) whom we had worked together on a previous multi-family project. This project was successful in bringing affordable housing to the area. One of the challenges with this project was using underground retention for this type of project within the City of Surprise. In the past the City of Surprise was not familiar with using underground retention on a residential project of this type. A major reason for going to the underground retention was due to the parking requirements imposed upon this site by the City of Surprise. The engineering fee for this project was \$120,000.</p>	<input checked="" type="checkbox"/> Check if project performed with current firm		
	<p>(1) TITLE AND LOCATION (<i>City and State</i>) Laredo Ranch Subdivision – Pinal County, AZ</p>	<p>(2) YEAR COMPLETED</p> <table border="1"> <tr> <td data-bbox="945 573 1247 630">Professional Services 2004-2005</td> <td data-bbox="1247 573 1485 630">Construction (if applicable) 2005</td> </tr> </table>	Professional Services 2004-2005	Construction (if applicable) 2005
Professional Services 2004-2005	Construction (if applicable) 2005			
5.	<p>(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Sunrise Engineering was contracted by Taylor Morrison, one of the nation's top home builders, to prepare the improvement plans for this 276 acre, 966 lot subdivision located in Pinal County. This master planned community encompassed a variety of product types within nine phases that included entry-level and single-family housing on smaller lots and move-up housing on larger lots. The community's layout centralized three large open space parks for recreational opportunities such as baseball and soccer fields, trails and various other outdoor amenities. In addition, the design included smaller pocket parks with tot lots and ramadas within each phase. Sunrise assisted the client from the entitlement phase through to final construction of the project. The engineering design included: water, sewer, drainage, lot grading, paving and platting services. An offsite sewer lift station and force main was required to connect the development's sewer collection system to the treatment plant located on the opposite side of Queen Creek Wash. The final engineering fee for this project was \$600,000.</p>	<input checked="" type="checkbox"/> Check if project performed with current firm		



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4. Resumes of Key Personnel Proposed for this Contract (*Complete one Section #4 for each key person.*)

a. NAME Tyson Glock, P.E.	b. ROLE IN THIS CONTRACT Water, Waste Water & Sewer Team Leader	c. YEARS EXPERIENCE	
		1. TOTAL 8	2. WITH CURRENT FIRM 4
d. LOCATION (<i>City and State</i>) Sunrise Engineering, Inc. (Mesa Branch) Mesa, AZ			
e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) M. Engineering, Chemical Engineering, Oregon State University B.S. Environmental Engineering, Oregon State University		f. PROFESSIONAL TRAINING - REGISTRATIONS AZ P.E.#52543	

g. OTHER PROFESSIONAL QUALIFICATIONS (*Organizations, Awards, etc.*)
 Mr. Glock is an active member in the Arizona Chapter for Arizona Water Association (AZ Water). Prior to joining Sunrise Engineering, Mr. Glock spent four years gathering experience in the industry as an Environmental Technician, an Engineering Aide, a Geotechnical Technician and a Staff Engineer. His experience to date includes: site investigations for both public and private entities; municipal permitting processes for Right-of-Way, well installation and abandonment, and construction and use permits; feasibility studies and site characterization reports for Wastewater Treatment Plants; preliminary design work of Water Treatment Plants; and fieldwork supervision of SVE system installations, ground/vapor well installations and abandonments, removals of septic tanks and site demolitions.

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION (<i>City and State</i>) Big Park's Wastewater Treatment Plant Replacement/Expansion – Big Park, AZ	(2) YEAR COMPLETED	
		Professional Services 2011-2015	Construction (if applicable) 2014-2016
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Glock served as the Project Manager for this \$535,000 contract which included: a feasibility study for options to replace/upgrade the existing WWTP and to dispose of the treated effluent; the analysis of four treatment alternatives, three discharge options and two alternatives to meet new setback requirements; and evaluation/recommendation of a .65 MGD Single train Biolac system capable of servicing all equipment without taking the system offline.	<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	(1) TITLE AND LOCATION (<i>City and State</i>) Orange Blossom Waterline Replacement – Scottsdale, AZ	(2) YEAR COMPLETED	
		Professional Services 2014	Construction (if applicable) 2014
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Sunrise was contracted to design a 3,500 LF water line replacement project. The existing 4" water line was located in an aging neighborhood and required upsizing along with replacement. The project involved abandoning the existing 4" water line and replacing it with 6" and 8" water lines, while bring the water line up to current code. About a third of the current connection required new 1" service lines and meters. The design included 4 tie-in locations with the most critical one being at N. Scottsdale Rd. The existing neighborhood only contained two fire hydrants so locations for seven additional hydrants needed to be addressed. The project received approval from MCESD and City of Scottsdale. Mr. Glock was the project engineering overseeing the design of the water line. Sunrise will also be assisting EPCOR in the bidding process and will be the Engineer of Record. The engineering fee was \$30,800.	<input checked="" type="checkbox"/>	Check if project performed with current firm
3.	(1) TITLE AND LOCATION (<i>City and State</i>) City of Payson's C.C. Cragin Water Treatment Plant – Payson, AZ	(2) YEAR COMPLETED	
		Professional Services 2013-2018	Construction (if applicable) 2016-2018
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Glock is currently serving as the Project Engineer for this \$133,000,000 portion of the larger C.C. Cragin contract which includes a new 4.5MGD Water Treatment Plant. The WTP includes water storage, pre-treatment, membrane filtration, GAC polishing, backwash handling facilities, sludge handling facilities and other facilities. Sunrise Engineering assisted the Town in the site selection, membrane equipment selection (Pall Water Processing), piloting of the equipment and preliminary design of the water treatment which included site planning, hydraulic profile, process diagrams, building floor plan and preliminary design report.	<input checked="" type="checkbox"/>	Check if project performed with current firm
4.	(1) TITLE AND LOCATION (<i>City and State</i>) Silver Creek Tank 2 – Bullhead City, AZ	(2) YEAR COMPLETED	
		Professional Services 2014-2015	Construction (if applicable) 2015
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE SEI was contracted to design a 300,000 gal potable water tank at the existing Silver Creek Tank Site in order to improve storage capacity and maintenance flexibility. The new tank was connected to the existing reservoir piping so both tanks would operate at the same hydraulic grade-line. The new reservoir also required cathodic protection and level controls. Additional requirements also included new fencing, landscaping, and site irrigation. The project required the obtaining of a Conditional Use Permit and Building Permit from Bullhead City and an Approval to Construct and Approval of Construction from ADEQ. The engineering fee is \$48,900.	<input checked="" type="checkbox"/>	Check if project performed with current firm



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5.	(1) TITLE AND LOCATION (<i>City and State</i>) CCWC Equipping Well #11 & Related Water Mains/Reservoir #2 – Fountain Hills, AZ	(2) YEAR COMPLETED	
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE The project includes converting the Kingstree Boulevard Distribution Main to a well water transmission main, re-routing all services currently on the main and making related improvements to the CCWC Reservoir 2. The engineering fee is \$84,900. In addition, this project includes the re-equipping of Well #11 to provide 2,400 gpm of source water to the Chaparral City Water Company Reservoir #2.	Professional Services 2014-2015	Construction (if applicable) 2015
		<input checked="" type="checkbox"/>	Check if project performed with current firm



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4. Resumes of Key Personnel Proposed for this Contract (*Complete one Section #4 for each key person.*)

a. NAME Randy Perham, P.E.	b. ROLE IN THIS CONTRACT Sewage Team Leader	c. YEARS EXPERIENCE	
		1. TOTAL 7	2. WITH CURRENT FIRM 6

d. LOCATION (*City and State*)
Sunrise Engineering, Inc. (Mesa Branch) Mesa, AZ

e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) B.S. Civil Engineering, Northern Arizona University	f. PROFESSIONAL TRAINING - REGISTRATIONS AZ P.E.#58514
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g. OTHER PROFESSIONAL QUALIFICATIONS (*Organizations, Awards, etc.*)
Randy Perham holds a B.S.E. in Civil Engineering from Northern Arizona University. His interest in civil design began while working in the summers both in and around Payson, Arizona for his father's land surveying company. Upon graduating from college, he continued land surveying before accepting a job with Sunrise Engineering. He is both a certified Engineer-in-Training and Floodplain Manager whose work experience includes the preparation of technical reports (drainage, water, sewer, SWPPP), drafting construction documents for a wide range of projects from new subdivisions to road reconstruction, utility coordination, conducting project research both for current and up-coming jobs, and water/wastewater modeling.

H. RELEVANT PROJECTS

	(1) TITLE AND LOCATION (<i>City and State</i>)	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	Casa Grande WWMP – Casa Grande, AZ	2014	N/A
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE The City of Casa Grande required an update to its Sewer Master Plan and selected Sunrise because of our experience with sewer master plans and the H2OMap sewer modeling computer program. Sunrise's modeling approach includes building a solid existing system model by surveying all interceptor mains in the City and using historic flow data to model the existing system. Future areas will be modeled by land use. Sunrise has spent extra time with the City to determine if general plan land uses and proposed flow rates match each other. These should all add up to a sewer model that matches what is exiting and correctly predicts future sewer lines sizes. In addition, correct line sizes prevent building oversized lines or removal and replacement of lines, which equals a significant cost savings for the City. Lastly, this project includes a review and update of the City's design and construction standards as they relate to sewer. The final engineering fee was \$225,000.		<input checked="" type="checkbox"/>
2.	Casa Grande East Area Sewer – Casa Grande, AZ	2014	N/A
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE The City of Casa Grande selected Sunrise Engineering for the design and construction administration of an addition to the City's existing sewer collection system to facilitate future development of the City incorporated area east of Interstate 10. This interceptor included a new 18,500 foot long, 36-inch, 27-inch and 24-inch gravity sewer interceptor on Korsten, Hacienda and Cottonwood Roads. The primary driver for this project is to service the new Phoenix Mart development. There are several factors and challenges for this project that made it unique. Sunrise Engineering worked with the City, contractor and approval agencies to work through these issues, as a team, to make this project a success. These factors are as follows: Schedule - The main reason for this project was to facilitate the connection of Phoenix Mart to the City's system. To meet the developers schedule the City had to have the sewer designed, constructed and operational by December 31, 2015 to Phoenix Mart. This allowed a very short timeframe all of this work to be completed. In response to this the City elected to perform the construction using a CM@Risk delivery method to bring the contractor on early for constructability, bidding and early start to construction. Approvals - In addition, Sunrise worked closely with the City to obtain approvals from utility companies, ADOT, HoHoKam Irrigation and Drainage District, ADEQ and El Paso Natural Gas. Any one of the approvals required by these agencies could have delayed moving forward with the construction of the project. Due to the diligence by all members of the team all permits were secured on or before the project schedule time frame. Boring & Jacking - The sewer installation required the crossing of Interstate 10. Due to this fact a jack and bore was required using a 54-inch diameter casing. The casing totaled approximately 250-feet in length. SEI worked closely with City staff, ADOT and Jacobs Engineering. SEI prepared the preliminary design for the actual crossing and Jacobs prepared CD's for review and approval by ADOT. Construction Administration - Our project team coordinated with the City to supplement existing City staff and inspectors during the duration of the project. This included field review of the construction, regular project meetings, contract record drawings and final approvals. The final engineering fee was \$38,000.		<input checked="" type="checkbox"/>
3.	C.C. Cragin Raw Water Penstock – Payson, AZ	2012	2013
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE		<input type="checkbox"/>



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	<p>(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE The Town of Payson has secured a 3,000 acre feet annual allocation of water from the C.C. Cragin Reservoir to provide a long term solution to the Town's water resource needs. The Town selected Sunrise Engineering to assist them in taking this project of over 40-years in the making to the finish line. In order for the Town to receive their water right a connection was necessary to an existing SRP hydroelectric facility located at the headwaters of the East Verde River. This portion of the project includes a tailrace connection concrete box, meter vault, valving, piping and other appurtenances. The challenges for this portion of the project include the limited space for construction, rock excavation and environmentally sensitive area. After the tailrace connection the project included a 12.2 mile long, 18 inch diameter transmission main to deliver water to a new hydroelectric facility. The alignment for the project is located adjacent to Houston Mesa Road in through the Tonto National Forest requiring the NEPA approval process. This pipeline is ductile iron and steel pipe due to the high pressures experienced in the pipeline and longevity of the materials. In addition, the project included air/vacuum relief valves, valving and cathodic protection. Some of the challenges for this portion of the project are rock excavation, tight working conditions along the roadway, over 70 culvert crossings and 3 crossings of the East Verde River. The final fee for this project was \$1,338,530.</p>	<input checked="" type="checkbox"/> Check if project performed with current firm	
4.	<p>(1) TITLE AND LOCATION (<i>City and State</i>) Gila Bend Highway Sewer Interceptor – Casa Grande, AZ</p> <p>(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE The City of Casa Grande intends to design and construct an addition to the City's existing sewer collection system to facilitate future development. In order to accomplish this, the City intends to install a new 24-inch gravity sewer interceptor on Gila Bend Highway from Burris Road to an existing lift station near Adams Avenue as shown in Exhibit A. This project will be divided into two phases. Phase I will be from Burris Road to the railroad tracks (approximately 2500 lineal feet). Phase II extends from the railroad tracks to the existing lift station at the Adams Avenue alignment. (approximately 2,000 lineal feet).</p>	<p>(2) YEAR COMPLETED</p>	
		Professional Services 2014	Construction (if applicable) N/A
		<input checked="" type="checkbox"/> Check if project performed with current firm	
5.	<p>(1) TITLE AND LOCATION (<i>City and State</i>) Bailey Street Waterline – Florence, AZ</p> <p>(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE The scope of services for this project includes the replacement of several 2", 3", 4" 6" and 8" pipes in the existing street with approximately 2,700 linear feet of new 12-inch PVC waterline in Downtown Florence. This replacement will serve as the backbone water infrastructure for the downtown area. The scope of work is limited to the project limits: south on Bailey St from Ruggles St to Butte Ave (SR-79) then west to Granite St then northward to 10th St . This project also includes ADEQ "Approval to Construct", bidding assistance, construction staking and engineer of record services. The engineering fee for this project was \$94,000.</p>	<p>(2) YEAR COMPLETED 2015</p>	
		Professional Services 2014	Construction (if applicable) 2015
		<input type="checkbox"/> Check if project performed with current firm	



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4. Resumes of Key Personnel Proposed for this Contract (*Complete one Section #4 for each key person.*)

a. NAME Justin Van De Graaff, P.E.	b. ROLE IN THIS CONTRACT Project Engineer	c. YEARS EXPERIENCE	
		1. TOTAL 6	2. WITH CURRENT FIRM 4

d. LOCATION (*City and State*)
Sunrise Engineering, Inc. (Mesa Branch) Mesa, AZ

e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) B.S. Civil Engineering, Arizona State University	f. PROFESSIONAL TRAINING - REGISTRATIONS AZ P.E.#60459
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g. OTHER PROFESSIONAL QUALIFICATIONS (*Organizations, Awards, etc.*)
Justin Van De Graaff graduated with a B.S.E. in Civil Engineering from Arizona State University. Upon graduation, he held an internship as an EIT performing Commercial Land Development and Site design. He also worked under a Geotechnical Engineer as a Soils and Building Materials Inspector. He is a registered professional engineer whose work experience includes the preparation of technical reports (drainage, water, sewer, SWPPP), drafting construction documents for a wide range of projects from new water service line design to road reconstruction, utility coordination, and conducting project research both for current and upcoming jobs.

H. RELEVANT PROJECTS

	(1) TITLE AND LOCATION (<i>City and State</i>)	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	Arizona State Fair Sewer Rehab Project – Phoenix, AZ	2015	2015
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE The Arizona State Fair needed emergency repairs to a broken sewer line prior to the fair's opening. This \$11,000 design provided a repair solution for the broken eight-inch line between manholes. The selected repair option was a sewer relining with continuous structural resin impregnated tube liner. SEI also provided construction overview and inspections.	<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	Arizona School for the Deaf and Blind Project – Phoenix, AZ	2015	2015
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Within the ADOA jurisdiction, Sunrise worked with LSW Engineers to complete a \$2,500 design a solution for a broken 4-inch ACP waterline and 2-inch steel waterline while doing electrical work at the Arizona School for the Deaf & Blind. SEI's solution cut and capped the abandoned 2-inch steel waterline and cut out the broken section of the 4-inch ACP waterline, replacing it with a 4-inch DIP coupled on both ends. SEI prepared plans for repair and abandonment, and specifications for the handling and disposal of ACP pipe, as well as construction inspection.	<input checked="" type="checkbox"/>	Check if project performed with current firm
3.	Guadalupe Phase IV Pavement Replacement – Guadalupe, AZ	2014-2015	2015
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Provided cradle-to-grave services for a \$30,000 project including removal and replacement of 8,400 square yards of asphalt pavement across four local streets. SEI provided construction documents, cost estimates, specifications and bidding documents. Managed contractor throughout the project.	<input checked="" type="checkbox"/>	Check if project performed with current firm
4.	Tempe Gardens Neighborhood Waterline Replacement Phase II – Tempe, AZ	2013-2014	2015
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE SEI was the lead engineer for the design for a waterline replacement project within the Tempe Gardens and Superstitions neighborhoods in Tempe. The \$4.6 million project included replacement of 11,960 linear feet of 8-inch waterline and 340 linear feet of 6-inch waterline within the city ROW, with connections to 142 existing residential meters and 23 fire hydrants. SEI prepared project plans, specifications, cost estimates and bid tabs, as well as providing potholing for the entire project.	<input checked="" type="checkbox"/>	Check if project performed with current firm
5.	Chandler Pecos Well Equipping – Chandler, AZ	2015	N/A
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE		



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(3) BRIEF DESCRIPTION (*Brief scope, size, cost, etc.*) AND SPECIFIC ROLE

Check if project performed with current firm

For this \$62,000 project, Sunrise was contracted for the preliminary and final design of well equipment installation at their Pecos Well site, where they had abandoned an existing well and drilled a new well. The existing well seal and yard piping was demolished, but the existing submersible pump was reconfigured with VFD's and converted to a water-lube pump in order to meet the City's requirements for re-use.



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4. Resumes of Key Personnel Proposed for this Contract (*Complete one Section #4 for each key person.*)

a. NAME Tony Elley, R.L.S., CFedS	b. ROLE IN THIS CONTRACT Construction, Land & Topographic Surveying and Mapping Team Leader	c. YEARS EXPERIENCE	
		1. TOTAL 22	2. WITH CURRENT FIRM 16

d. LOCATION (*City and State*)
Sunrise Engineering, Inc. (Mesa Branch) Mesa, AZ

e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) Coursework in Boundary Law & Boundary Corner Determination	f. PROFESSIONAL TRAINING - REGISTRATIONS AZ R.L.S. & CFedS #43994; CO R.L.S. & CFedS #PLS-0038239; UT R.L.S. & CFedS # 8101874-2201
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g. OTHER PROFESSIONAL QUALIFICATIONS (*Organizations, Awards, etc.*)
Mr. Elley is an active member of the Arizona Professional Land Surveyors Association (APLS), Home Builders Association of Central Arizona (HBACA) and Valley Partnership. He began his surveying career in 1993 and has performed numerous survey assignments to include mapping, right of way and boundary surveys, legal descriptions, mining claims (retracement), industrial mapping, as-built and existing utility surveys, NGS blue booking, ALTA's, final plats and construction staking. He manages the survey operations in Sunrise's Phoenix metro office, overseeing the activities of three survey crews and additional registrants and has extensive experience with both conventional and GPS surveys.

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION (<i>City and State</i>) Casa Grande – East Area Sewer Expansion (<i>Easements / Topography</i>) – Casa Grande, AZ	(2) YEAR COMPLETED 2015
		Professional Services 2014-2015 Construction (if applicable) 2015
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE The City of Casa Grande selected Sunrise Engineering for the design and construction administration of an addition to the City's existing sewer collection system to facilitate future development of the City incorporated area east of Interstate 10. This interceptor included a new 18,500 foot long, 36-inch, 27-inch and 24-inch gravity sewer interceptor on Kortsen, Hacienda and Cottonwood Roads. The primary driver for this project is to service the new Phoenix Mart development. There are several factors and challenges for this project that made it unique. Sunrise Engineering worked with the City, contractor and approval agencies to work through these issues, as a team, to make this project a success. These factors are as follows: Schedule - The main reason for this project was to facilitate the connection of Phoenix Mart to the City's system. To meet the developers schedule the City had to have the sewer designed, constructed and operational by December 31, 2015 to Phoenix Mart. This allowed a very short timeframe all of this work to be completed. In response to this the City elected to perform the construction using a CM@Risk delivery method to bring the contractor on early for constructability, bidding and early start to construction. Approvals - In addition, Sunrise worked closely with the City to obtain approvals from utility companies, ADOT, HoHoKam Irrigation and Drainage District, ADEQ and El Paso Natural Gas. Any one of the approvals required by these agencies could have delayed moving forward with the construction of the project. Due to the diligence by all members of the team all permits were secured on or before the project schedule time frame. Boring & Jacking - The sewer installation required the crossing of Interstate 10. Due to this fact a jack and bore was required using a 54-inch diameter casing. The casing totaled approximately 250-feet in length. SEI worked closely with City staff, ADOT and Jacobs Engineering. SEI prepared the preliminary design for the actual crossing and Jacobs prepared CD's for review and approval by ADOT. Construction Administration - Our project team coordinated with the City to supplement existing City staff and inspectors during the duration of the project. This included field review of the construction, regular project meetings, contract record drawings and final approvals. The Land Surveying tasks included the determination of Rights-of-way for 4 miles along each side of the alignment, geodetic control, aerial mapping, legal description for land acquisition, section corner determination (Cadastral surveying), and utility mapping.	<input checked="" type="checkbox"/> Check if project performed with current firm
2.	(1) TITLE AND LOCATION (<i>City and State</i>) Orange Blossom Waterline Replacement – Scottsdale, AZ	(2) YEAR COMPLETED 2014
		Professional Services 2014 Construction (if applicable) 2014
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Sunrise was hired by EPCOR Water to provide engineering services for the replacement of approximately 3,500 linear feet of waterline in a neighborhood located in Scottsdale, Arizona. Sunrise provided surveying, design/ construction documents, bidding assistance and construction administration. The total engineering fee for this project was \$38,900.	<input checked="" type="checkbox"/> Check if project performed with current firm
3.	(1) TITLE AND LOCATION (<i>City and State</i>) Emmett Drive Right-of-Way Dedication – Chandler, AZ	(2) YEAR COMPLETED
		Professional Services 2014 Construction (if applicable) N/A



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	<p>(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Sunrise was hired through on-call platting contract, with the City of Chandler, to prepare the legal descriptions required to dedicate the Right-of-way for Emmett Drive South of the Chandler Airport. The fee for this project was \$4,770.</p>	<input checked="" type="checkbox"/> Check if project performed with current firm		
	<p>(1) TITLE AND LOCATION (<i>City and State</i>) Palm Lane Minor Land Division – Chandler, AZ</p>	<p>(2) YEAR COMPLETED</p> <table border="1"> <tr> <td>Professional Services 2012</td> <td>Construction (if applicable) N/A</td> </tr> </table>	Professional Services 2012	Construction (if applicable) N/A
Professional Services 2012	Construction (if applicable) N/A			
4.	<p>(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Sunrise was hired through an on-call platting contract, with the City of Chandler, to perform a minor land division. A parcel of land with two existing homes. Tasks included a topographic survey, ALTA/ACSM Survey and a Minor Land Division, etc. The City's goal was to divide the parent parcel into smaller lots and sell each separately to generate revenue. The fee for this project was \$9,900.</p>	<input checked="" type="checkbox"/> Check if project performed with current firm		
	<p>(1) TITLE AND LOCATION (<i>City and State</i>) Colorado Street Plat Amendment – Chandler, AZ</p>	<p>(2) YEAR COMPLETED</p> <table border="1"> <tr> <td>Professional Services 2012</td> <td>Construction (if applicable) N/A</td> </tr> </table>	Professional Services 2012	Construction (if applicable) N/A
Professional Services 2012	Construction (if applicable) N/A			
5.	<p>(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Sunrise was hired through our on-call platting contract to perform a minor land division which eventually was changed to an Amended Final Plat. The parcel of land contained six exiting homes that were occupied. Our tasks included a Topographic survey of the Parcel, and ALTA/ACSM Survey of the Parcel and an Amended Final Plat. The City's goas was to divide the parent parcel into six parcels and sell each parcel separately to generate revenue. The fee for this project was \$13,990.</p>	<input checked="" type="checkbox"/> Check if project performed with current firm		



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4. Resumes of Key Personnel Proposed for this Contract (*Complete one Section #4 for each key person.*)

a. NAME Robert Worley, P.E.	b. ROLE IN THIS CONTRACT Water & Waste Water Team Leader	c. YEARS EXPERIENCE	
		1. TOTAL 15	2. WITH CURRENT FIRM 15

d. LOCATION (*City and State*)
Sunrise Engineering, Inc. (Corporate Office) Fillmore, UT

e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) B.S. Civil Engineering, Utah State University	f. PROFESSIONAL TRAINING - REGISTRATIONS AZ P.E.#35581; UT P.E. #266266-2202
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g. OTHER PROFESSIONAL QUALIFICATIONS (*Organizations, Awards, etc.*)
Mr. Worley received his B.S. in Civil Engineering from Utah State University in 2000 and is a registered Professional Engineer in Utah. He brings with him fourteen years of experience in the engineering industry, most of which have been with Sunrise Engineering. His career has been focused on projects involving mechanical treatment of wastewater and water facilities with areas of expertise including: collection and distribution systems, hydraulic modeling and providing feasibility studies, detailed design, and construction management and inspection for water and wastewater systems.

H. RELEVANT PROJECTS

	(1) TITLE AND LOCATION (<i>City and State</i>)	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	Payson City Dual Water Storage Tanks – Payson, UT	2012	2013
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Municipal Water and Sewer; Water/Wastewater Treatment; Municipal General Engineering; and Construction Administration Our design approach to the requested 5.0 million gallons of storage was to provide two 2.5 million gallon concrete storage tanks. With two tanks of identical size, only one set of tank design plans and structural calculations was necessary. Consequently, we were able to save on costs to the City without sacrificing operational flexibility in the event one tank would need to be offline. The site boundary and mountainous terrain was very restrictive and became a challenge for this project. The major limiting factors included the steep slope on the south side of the property and the elevation difference between the site and the road leading up Payson Canyon. With these two limiting factors in consideration, establishing a tank floor elevation was limited. Our innovative approach has optimized the tank size, location, and excavation depth for the best overall site design. The tank siting and design also maximizes the use of existing site piping and greatly lessens the inconvenience of disrupting the water service to Payson City citizens. Despite a competitive bid environment, our Team did not cut corners that would impact the longevity and the overall satisfaction of the tanks to the City. We were able to increase the storage capacity available and meet the water storage requirements for the local hospital as well as the citizens of the growing City. With these new tanks in operation, the whole community now has a dependable supply of clean, safe drinking water.	<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	Perry/ Willard Regional Wastewater Treatment Plant – Willard/ Perry, UT	2010	2011-2012
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Sunrise Engineering was contracted by both Willard and Perry Cities. Both were in need of wastewater system upgrades. The Willard City wastewater system consisted of individual septic tanks. Perry City needed upgrades to its Wastewater Treatment Facility. Sunrise coordinated with both Cities to assist with the master planning and design of these upgrades. The work also included approximately 425 manholes, six separate borings totaling over 700 feet and the crossing of State Highway 89, State Road 315, and the Union Pacific Railroad. The project also involved the relocation of approximately 5,000 feet of C-900 culinary water pipe, 30 water connections and service lines, and numerous natural gas mains that interfered with the project alignment along State Highway 89. After the work of this design was completed, GIS was implemented as a mapping service to both cities.	<input checked="" type="checkbox"/>	Check if project performed with current firm
3.	Big Park's Wastewater Treatment Plant Replacement/Expansion – Big Park, AZ	2011-2015	2014-2015
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Worley acted as the Project Principal for this \$535,000 contract which included: a feasibility study for options to replace/upgrade the existing WWTP and to dispose of the treated effluent; the analysis of four treatment alternatives, three discharge options and two alternatives to meet new setback requirements; and evaluation/recommendation of a .65 MGD Single train Biolac system capable of servicing all equipment without taking the system offline.	<input checked="" type="checkbox"/>	Check if project performed with current firm
4.	City of Payson's C.C. Cragin Water Treatment Plant – Payson, AZ	2013-2018	2016-2018



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	<p>(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Worley is currently serving as the Project Principal for this \$133,000,000 portion of the larger C.C. Cragin contract which includes a new 4.5MGD Water Treatment Plant. The WTP includes water storage, pre-treatment, membrane filtration, GAC polishing, backwash handling facilities, sludge handling facilities and other facilities. Sunrise Engineering assisted the Town in the site selection, membrane equipment selection (Pall Water Processing), piloting of the equipment and preliminary design of the water treatment which included site planning, hydraulic profile, process diagrams, building floor plan and preliminary design report.</p>	<input checked="" type="checkbox"/> Check if project performed with current firm		
	<p>(1) TITLE AND LOCATION (<i>City and State</i>) Ogden City Culinary Water Treatment Plant – Ogden, UT</p>	<p>(2) YEAR COMPLETED</p> <table border="1"> <tr> <td data-bbox="941 493 1242 556">Professional Services 2013-2015</td> <td data-bbox="1242 493 1485 556">Construction (if applicable) 2014-2015</td> </tr> </table>	Professional Services 2013-2015	Construction (if applicable) 2014-2015
Professional Services 2013-2015	Construction (if applicable) 2014-2015			
5.	<p>(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Worley served as the Lead Engineer on this project. The existing conventional treatment plant was at the end of its useful life and needed to be replaced. The proposed membrane filtration plant was constructed on the existing five acre treatment plant site. However, the existing filter plant needed to remain in service during construction to meet peak day demands. Leaving the existing conventional facility in operation yielded a small footprint available (10,000 SF) to construct a new membrane facility. It was anticipated that the new membrane facility was to be constructed between the influent piping to the filter building and the pretreatment building. The City also needed the proposed membrane treatment plant be capable of operating year round, which requires an alternative method of sludge dewatering. The City also needed to increase the chlorine contact time and fire flow storage for the canyon residents located just down-stream of the treatment plant and proposed to construct a storage reservoir on-site with the associated pumps and piping. Once the new membrane facility became operational in 2014, the existing filter building and sludge drying beds were demolished and the site landscaped.</p>	<input checked="" type="checkbox"/> Check if project performed with current firm		



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4. Resumes of Key Personnel Proposed for this Contract (*Complete one Section #4 for each key person.*)

a. NAME John Sevey, P.E.	b. ROLE IN THIS CONTRACT Electrical & Design Team Leader	c. YEARS EXPERIENCE	
		1. TOTAL 37	2. WITH CURRENT FIRM 5

d. LOCATION (*City and State*)
Sunrise Engineering, Inc. (Corporate Office) Fillmore, UT

e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) B.S. Electrical Engineering, Brigham Young University	f. PROFESSIONAL TRAINING - REGISTRATIONS CA P.E. #12863; UT P.E. #150755-2202
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g. OTHER PROFESSIONAL QUALIFICATIONS (*Organizations, Awards, etc.*)
 Mr. Sevey has 33 years of electrical engineering and project leadership experience in the utility industry. He has performed and supervised the engineering design and construction management of numerous electrical distribution, sub-transmission and substation construction projects. He has frequently worked on multi-discipline projects requiring coordination and leadership of both technical and non-technical team members. He has experience meeting with private citizens and local community organizations to answer questions and to explain the needs and impacts of various projects. Mr. Sevey has performed a variety of planning studies and prepared many technical reports for utility management and governing agencies. In the course of many projects, he has become very familiar with and successfully navigated the numerous Federal, state and local regulations that govern utility construction and operations.

H. RELEVANT PROJECTS

	(1) TITLE AND LOCATION (<i>City and State</i>)	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	Distribution Line Extension – Victorville, CA	2014	N/A
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Sevey is currently supervising work for a one half mile underground 15KV electric distribution line extension in Victorville, California that will serve expansion facilities at the Southern California Logistics Airport.	<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	Revenue Analysis – Ephraim, UT	2014	N/A
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Sevey recently provided revenue analysis and demonstrated the impacts on customer billing for various electric rate alternatives as compared with the existing commercial demand rate for the City of Ephraim Utah.	<input checked="" type="checkbox"/>	Check if project performed with current firm
3.	City of Burbank Water & Power – Burbank, CA	2009-2010	N/A
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Sevey supervised the Electrical Distribution engineering and mapping section for Burbank Water and Power. He was responsible for managing the construction contract for the Olive Underground District that replaced and under grounded the existing overhead 69 kV and 34 kV get-a-ways and all overhead lines along Olive Avenue between Flower and Victory and along Lake Street between Olive and Magnolia. He served on the project coordination committee during the construction of the new Burbank Substation which replaced a sixty year old 34.5 kV to 4.16 kV open rack substation with a new low footprint substation incorporating Gas Insulated 34.5 kV Switchgear and dual 56 MVA transformers. He had specific responsibility for the coordination and construction management of the 34.5 kV and 12.47 kV underground "getaways" and for ensuring proper protection coordination of field devices with substation relays and breakers. He served on the project feasibility and conceptual design team for the proposed new 69 kV – 12.47 kV Empire Substation. He participated in the major planning discussions regarding the substation's ultimate capacity and configuration which included review and debate on the aesthetic and economic tradeoffs between open rack, metal clad, and GIS switchgear designs. He also provided key economic and operational insight in the decision to select 69 kV as the supply voltage over a 34.5 kV option. He also participated in many of the meetings to develop, review, and revise the specifications for the transformers and switchgear. He worked on long range distribution and substation planning studies to optimize the capacity, circuit configurations, and operating criteria for future 12.47 kV substations that would eventually be required to replace aged 4 kV substations as the remaining 4kV Burbank distribution load is converted to 12 kV.	<input checked="" type="checkbox"/>	Check if project performed with current firm
4.	(1) TITLE AND LOCATION (<i>City and State</i>)	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)



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	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE	<input type="checkbox"/> Check if project performed with current firm
	(1) TITLE AND LOCATION (<i>City and State</i>)	(2) YEAR COMPLETED Professional Services Construction (if applicable)
5.	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE	<input type="checkbox"/> Check if project performed with current firm



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4. Resumes of Key Personnel Proposed for this Contract (*Complete one Section #4 for each key person.*)

a. NAME Zane Pentz, P.E.	b. ROLE IN THIS CONTRACT Bridge Design Team Leader	c. YEARS EXPERIENCE	
		1. TOTAL 26	2. WITH CURRENT FIRM 25

d. LOCATION (*City and State*)
Sunrise Engineering, Inc. (Corporate Office) Fillmore, UT

e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) B.S. Civil Engineering, Brigham Young University	f. PROFESSIONAL TRAINING - REGISTRATIONS AZ P.E.#26871; ID P.E. #11260; UT P.E. #186897-2203
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g. OTHER PROFESSIONAL QUALIFICATIONS (*Organizations, Awards, etc.*)
Mr. Pentz has over two decades of engineering experience. He has worked with wide range of disciplines, including Utah Department of Transportation, DFCM, Division of Wildlife Resources, as well as private contractors. Mr. Pentz handles a large amount of the structural engineering for Sunrise. His areas of expertise include bridges, plan review, and paving projects, and road design.

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION (<i>City and State</i>) Minersville Bridge – Beaver County, UT	(2) YEAR COMPLETED	
		Professional Services 2003	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE This project included right-of-way acquisitions, utility relocations, environmental assessments detail design, and bid documents. Mr. Pentz developed a new bridge involving environmental clearances, grading/drainage, surfacing, traffic control, signing, mobilization, bridge replacement and design.	<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	(1) TITLE AND LOCATION (<i>City and State</i>) I-70 and SR-191 Bridge Rehabilitation – Grand/ San Juan, UT	(2) YEAR COMPLETED	
		Professional Services 2010	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE This project consisted of traffic control, reconstruction, bridge deck & structure repair/ UDOT construction management, inspection and materials Q/A testing. The bridges were on I-70 and SR-191 in various locations.	<input checked="" type="checkbox"/>	Check if project performed with current firm
3.	(1) TITLE AND LOCATION (<i>City and State</i>) Telegraph Road Improvements, Phase I,II, and III – Washington, UT	(2) YEAR COMPLETED	
		Professional Services 2001	Construction (if applicable) 2001
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Pentz was the project design and construction engineer for this project, widening of 0.8 miles through historic downtown Washington City. The widening of this road required easements from property owners, demolition and removal of two buildings. A new box type bridge was to replace the old bridge as to accommodate the extra lanes. Construction consisted of relocations and reconstruction of most of the underground infrastructures, including water lines, irrigation lines, storm drains, telephone, power and fiber optic facilities. This portion of the road received new paving, curb and gutter, street lights and traffic control devices. The center islands were enhanced with trees, shrubs, planter boxes and stamped color concrete.	<input checked="" type="checkbox"/>	Check if project performed with current firm
4.	(1) TITLE AND LOCATION (<i>City and State</i>) Thermo Road Phase II – Beaver County, UT	(2) YEAR COMPLETED	
		Professional Services 2001	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Pentz worked as the design and construction engineer for the reconstruction of an existing 11-mile dirt road. The improvements included road widening, a drainage system, and an enzyme treated base and surfacing. Mr. Pentz was responsible for project management and completing the plans, specifications and engineer's estimates which included right-of-way acquisitions, utility relocations, environmental assessments, detail design and bid documents.	<input checked="" type="checkbox"/>	Check if project performed with current firm
5.	(1) TITLE AND LOCATION (<i>City and State</i>) Uintah Special Services District: Duchesne River Bridge – Uintah County, UT	(2) YEAR COMPLETED	
		Professional Services 2003	Construction (if applicable) N/A



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(3) BRIEF DESCRIPTION (*Brief scope, size, cost, etc.*) AND SPECIFIC ROLE

Check if project performed with current firm

Mr. Pentz was the project manager for the construction management phase of this project. He worked with the Special Services District to replace an existing bridge over the Duchesne River. Mr. Pentz was responsible for tasks including hydrology models, wetland delineation, design coordination with FEMA and the Army Corps of Engineers, structural design, survey and road design.



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4. Resumes of Key Personnel Proposed for this Contract *(Complete one Section #4 for each key person.)*

a. NAME Darren Fox, P.E.	b. ROLE IN THIS CONTRACT Pipeline & Utility Team Leader	c. YEARS EXPERIENCE	
		1. TOTAL 22	2. WITH CURRENT FIRM 22
d. LOCATION <i>(City and State)</i> Sunrise Engineering, Inc. (Corporate Office) Fillmore, UT			
e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> B.S. Engineering Technology, Utah State University		f. PROFESSIONAL TRAINING - REGISTRATIONS AZ P.E.#38769	
g. OTHER PROFESSIONAL QUALIFICATIONS <i>(Organizations, Awards, etc.)</i>			

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION <i>(City and State)</i> Paiute Pipeline Company, Various Projects – Northern Nevada	(2) YEAR COMPLETED	
		Professional Services 2013-2014	Construction (if applicable) 2013-2014
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Projects <ul style="list-style-type: none"> • Elko Reinforcement Project • Fort Churchill Reg Replacement • Humbolt River Replacement • Mainline Piggng • Highway 50 Replacement • Ruby Pipeline Interconnect • Washoe Gate Rebuild • Eagle Picher MSA 	<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	(1) TITLE AND LOCATION <i>(City and State)</i> Southwest Gas Corporation, Southern Nevada Division – Las Vegas, NV	(2) YEAR COMPLETED	
		Professional Services 2013-2014	Construction (if applicable) 2013-2014
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Pressure Limiting Stations <ul style="list-style-type: none"> • Craig & 5th Street PIS • Horizon Ridge PLS • Robindale PLS • Kern/ Centennial Tap MAOP Increase • Lone Mountain Tap MAOP Increase • Blue Diamond Block Wall 	<input checked="" type="checkbox"/>	Check if project performed with current firm
3.	(1) TITLE AND LOCATION <i>(City and State)</i> Southwest Gas Corporation, Southern Nevada Division – Las Vegas, NV	(2) YEAR COMPLETED	
		Professional Services 2013-2014	Construction (if applicable) 2013-2014
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Pipeline Piggng/ Filters/ Separators <ul style="list-style-type: none"> • East Valley Piggng @ Boulder • East Valley Piggng @ Clark • East Valley Piggng @ Sunrise • Pig Launcher/ Receivers @ GVPLS • Blue Diamond Tap Pressure Vessel Uprate 	<input checked="" type="checkbox"/>	Check if project performed with current firm
4.	(1) TITLE AND LOCATION <i>(City and State)</i> Southwest Gas Corporation, Southern Nevada Division – Las Vegas, NV	(2) YEAR COMPLETED	
		Professional Services 2013-2014	Construction (if applicable) 2013-2014
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Pipe Replacement Projects <ul style="list-style-type: none"> • Needles, CA (28 different projects) • Bullhead City, AZ (8 different projects) • Lake Mead 6" Steel • Miracle Mile MHP • Wyoming Avenue 2" HD • Boulder Bypass 10" Steel 	<input type="checkbox"/>	Check if project performed with current firm



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5.	(1) TITLE AND LOCATION (<i>City and State</i>) Southwest Gas Corporation, Southern Nevada Division – Las Vegas, NV	(2) YEAR COMPLETED	
		Professional Services 2013-2014	Construction (if applicable) 2013-2014
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE System Improvement Projects <ul style="list-style-type: none"> • Downtown Henderson 6" Steel • Craig 16" Steel • GVPLS Inlet Modifications • Anode Installations • Cactus @ Rainbow • Union Park 	<input checked="" type="checkbox"/>	Check if project performed with current firm



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4. Resumes of Key Personnel Proposed for this Contract (*Complete one Section #4 for each key person.*)

a. NAME Derek Anderson, P.E.	b. ROLE IN THIS CONTRACT Dams/ Dikes/ Levees & Solar Energy Utilization Team Leader	c. YEARS EXPERIENCE	
		1. TOTAL 10	2. WITH CURRENT FIRM 9
d. LOCATION (<i>City and State</i>) Sunrise Engineering, Inc. (Draper Branch) Draper, UT			
e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) M.S. Civil Engineering – Hydraulics & Fluid Mechanics, Utah State University; B.S. Civil & Environmental Engineering, Utah State University; A.A. General Education, Dixie State College of Utah		f. PROFESSIONAL TRAINING - REGISTRATIONS NV P.E. #022919; UT P.E. #7549969-2202	

g. OTHER PROFESSIONAL QUALIFICATIONS (*Organizations, Awards, etc.*)
 Mr. Anderson's expertise includes hydroelectric evaluation and design, geothermal resource investigations and assessments, hydraulics, hydrology, geotechnical and environmental engineering. He has performed comprehensive evaluation and feasibility studies on both small and large scale hydroelectric projects and hydroelectric facility design for more than 20 projects in the western states.

His expertise includes hydraulics and hydrology and has recent project experience in drainage studies, sediment transport analysis, dam break studies, and hydraulic structure designs including culverts, inverted siphons, detention basins, and energy dissipation structures. He also has experience preparing CLOMR and LOMR requests to the Federal Emergency Management Agency.

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION (<i>City and State</i>) JUWI Solar, Inc. Pavant Solar SPCCP – Holden, UT	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE A 50 MW solar facility in Millard County, Utah, the Pavant Solar project consists of approximately 415 acres of solar tracking arrays. Under contract with juwi solar, Inc., the project owner, Sunrise completed the Millard County permitting and re-zoning processes; prepared the Phase I Environmental Site Assessment, Stormwater Pollution Prevention Plan, and Spill Prevention Control and Countermeasure Plan; conducted a detailed geotechnical investigation of the site, developed the pile design for the support of the tracking arrays, and conducted on-site pull-out and load resistance testing of piles; prepared the hydrology study and drainage report for the site; developed civil construction and foundation design drawings for the facility; provided construction administration services, construction staking and site survey.	<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	(1) TITLE AND LOCATION (<i>City and State</i>) Tuacahn Wash Detention Pond Dam – Santa Clara, UT	(2) YEAR COMPLETED	
		Professional Services 2013	Construction (if applicable) 2013-2014
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE In September of 2012, the city of Santa Clara, in Southern Utah, experienced a devastating flood causing significant damage to the city's homes and businesses downstream. The flood was the result of a breached and antiquated earthen flood control dam - the Laub Wash Retention Dam - built nearly 100 years ago. Sunrise Engineering was selected to perform the studies, design and construction administration required to replace the failed structure. Studies for the dam included hydrologic study, geotechnical field investigations, geologic and seismic study, dam break analysis, standard operating and emergency action plans. The new dam allows for Inundation Mapping. This mapping is being done by the National Weather Service, showing the extent of possible flooding for roadways, streets, buildings, airports. The dam has a clay core that will not allow water to pass through and is surrounded by a granular rock material and a "rip rap" exterior. The design of the new earthen embankment includes a cutoff wall design, embankment design, abutment treatment, low-level outlet and emergency spillway design. It is also not as steep but wider than the old retention dam. A larger outlet pipe allows water to drain into Santa Clara's 36-inch storm drain at a much faster rate. The engineering fee for this project was \$484,300 and the construction cost was \$2.2M. The dam is an earthen structure, similar to the old one, but now built according to the modern engineering regulations of the Utah State Dam Safety. With the design support of Sunrise Engineering, Santa Clara has completed the new state-of-the-art retention dam.	<input checked="" type="checkbox"/>	Check if project performed with current firm
3.	(1) TITLE AND LOCATION (<i>City and State</i>) Chester Dam Hydroelectric Project – Chester, ID	(2) YEAR COMPLETED	
		Professional Services 2011	Construction (if applicable) N/A



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	<p>(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE This project will provide 3.3 MW of renewable power at the Chester diversion structure on the Henry's Fork of the Snake River, a world-class fishery with associated environmental attention.</p> <p>Our design incorporates several unique features to provide a combined generating capacity of 3.3MW at a stream flow of 3,500 cfs. Water flow to the three horizontal Kaplan turbines will be controlled by wicket gates immediately upstream from the turbine units. The low-profile powerhouse contains the generator system and facility monitoring/control equipment with a minimum of aesthetic impact.</p> <p>Trash racks and an ice deflection boom placed at the entry of the power canal will prevent debris and ice from entering and damaging the turbine equipment. A fish ladder was designed to re-establish migration across the diversion structure and accommodates fish population studies. To maximize power generation potential, an inflatable rubber dam was designed for the crest of the dam that will increase the head potential by three feet. The engineering fee for this project was \$650,000 and the construction cost was \$20M.</p>	<input checked="" type="checkbox"/> Check if project performed with current firm		
4.	<p>(1) TITLE AND LOCATION (<i>City and State</i>) Juniper Ridge Hydroelectric Power Generation Project – Bend, OR</p> <p>(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE The design of a hydropower generation facility for the Central Oregon Irrigation District with a capacity of 5 MW. The project included piping nearly three miles of an existing canal and installing a powerplant at the end of the pipeline. The design consisted of an intake structure, 108" diameter penstock, powerplant, vertical Francis turbine, powerplant bypass facilities, stilling basin, and tailrace. Assisted in all hydraulic calculations, design and specifications including intake structure design, pipeline capacity and layout, hydraulic transient analysis, irrigation turnout design, control valve closing procedure, bypass valve selection, bypass pipeline design, bypass stilling basin design, and tailrace design.</p>	<p>(2) YEAR COMPLETED</p> <table border="1"> <tr> <td>Professional Services</td> <td>Construction (if applicable)</td> </tr> </table> <input checked="" type="checkbox"/> Check if project performed with current firm	Professional Services	Construction (if applicable)
Professional Services	Construction (if applicable)			
5.	<p>(1) TITLE AND LOCATION (<i>City and State</i>) Geothermal Resource Evaluation - NV</p> <p>(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Derek assisted in the implementation of developed work plans for a geothermal exploration project at an area in Nevada which at this time remains confidential. Sunrise was given an area of 15,000 square miles in which to conduct geothermal resources exploration and evaluation. All available data regarding geology, seismic activities, hydrogeology, wells and springs (geothermometers), sensitive environmental areas and relevant study reports were initially collected, as well as multispectral satellite imagery covering the area, to identify any "hot spots" with good geothermal potential. Following data review, analysis and compilation, a field geologic reconnaissance was conducted to confirm or refute any geologic features that have been mapped and to identify new geologic features that are not mapped, including any surface manifestations of active faulting, young volcanics and intrusions, and hydrothermal alterations. Based on the above-mentioned work, nine sites were identified, and soil samples were collected at these sites to determine whether there were any high mercury concentration anomalies along the major faults at those sites. Based on the results from the laboratory analyses of these soil samples and other data collected and generated, a geothermal evaluation matrix system (GEMS) for prioritizing identified potential resources sites was developed and used to help narrow the exploration down to six sites wherein geophysical surveys were conducted. Two-meter temperature boreholes and deeper temperature gradient holes were also drilled at these six sites. Results from these activities helped narrow the exploration even further to four sites. The paperwork for two of these sites has been filed for the U.S. Bureau of Land Management's geothermal land lease auction.</p>	<p>(2) YEAR COMPLETED</p> <table border="1"> <tr> <td>Professional Services</td> <td>Construction (if applicable)</td> </tr> </table> <input checked="" type="checkbox"/> Check if project performed with current firm	Professional Services	Construction (if applicable)
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4. Resumes of Key Personnel Proposed for this Contract (*Complete one Section #4 for each key person.*)

a. NAME Steve Hansen, S.E., P.E.	b. ROLE IN THIS CONTRACT Structural Design & Special Structures Team Leader	c. YEARS EXPERIENCE	
		1. TOTAL 11	2. WITH CURRENT FIRM 7

d. LOCATION (*City and State*)
Sunrise Engineering, Inc. (Draper Branch) Draper, UT

e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) M.S. Civil Engineering, Brigham Young University; B.S. Civil Engineering, Brigham Young University	f. PROFESSIONAL TRAINING – REGISTRATIONS CA P.E. #70192; ND P.E. # PE-8015; NVP.E. # 018101; UT P.E. #5048199-2203
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g. OTHER PROFESSIONAL QUALIFICATIONS (*Organizations, Awards, etc.*)
 Steve Hansen is a licensed engineer in Utah, California, Nevada, and North Dakota. His past experience has given him the opportunity to participate in a broad spectrum of Civil and Structural engineering projects that include booster stations, culinary water storage tanks, water system modeling and design, wastewater system modeling, a wastewater treatment plant, a powerhouse for a hydropower project, and a water treatment facility for arsenic. He's also had the opportunity of working with clients face to face, assisting them in procuring funding for projects and help them advance simple ideas into real life projects.

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION (<i>City and State</i>) 4.0 and 1.0 MG Concrete Storage Tanks – Ogden, UT	(2) YEAR COMPLETED	
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Steve Hansen designed, as project engineer, a four million-gallon concrete water storage tank, a separate one million-gallon tank, and keystone retaining wall. The dynamic analysis and design of the tanks and retaining wall were important on this project because the tanks are located in a region that has the potential to experience a significant seismic event. The four million gallon tank has an inner diameter of one hundred seventy-five feet and exterior walls that are twenty-four feet tall. The roof structure is a ten inch thick slab that is supported by fifty-two concrete columns that are twenty-two inches in diameter. The one million gallon tank has an inner diameter of eighty-eight feet with twenty-four foot high exterior walls. The total project cost was over \$5.6M.	Professional Services 2009	Construction (if applicable) 2009
		<input checked="" type="checkbox"/> Check if project performed with current firm	
2.	(1) TITLE AND LOCATION (<i>City and State</i>) Ogden 9 th Street Booster Station – Ogden, UT	(2) YEAR COMPLETED	
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE The 9th Street Booster Station is a masonry building that contains (3) booster pumps for the northern pressure zones in Ogden City. The booster station pumps culinary water to the 9th Street 1,000,000 gallon concrete water tank. Steve Hansen was the structural engineer who designed the masonry building and all of the appurtenances. This booster station had to be carefully designed to resist relatively large seismic forces because of it is located in a region that has the potential to experience a significant seismic event. This project also involved detailed coordination with the civil engineer designing the booster pump piping and equipment.	Professional Services 2011	Construction (if applicable) 2012
		<input checked="" type="checkbox"/> Check if project performed with current firm	
3.	(1) TITLE AND LOCATION (<i>City and State</i>) Mt. Ogden Golf Course Pavilion – Ogden, UT	(2) YEAR COMPLETED	
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE As structural engineer, Steve Hansen completed the structural design of a 3,200 square foot pavilion. The structure was constructed of reinforced masonry and included multiple masonry pilasters. The primary lateral force resisting elements included specially reinforced masonry shear walls. The challenge of this project included providing sufficient lateral stiffness in the structure to resist the potentially large seismic loads.	Professional Services 2012	Construction (if applicable)
		<input checked="" type="checkbox"/> Check if project performed with current firm	
4.	(1) TITLE AND LOCATION (<i>City and State</i>) Bear Lake Water Co. Well and Transmission Line – Bear Lake, UT	(2) YEAR COMPLETED	
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Hansen performed structural design of a well-house and designed the well-piping system, chlorination system, and transmission line. Mr. Hansen also designed a site plan and assisted in the plan approval process at DEQ.	Professional Services 2012	Construction (if applicable)
		<input checked="" type="checkbox"/> Check if project performed with current firm	
5.	(1) TITLE AND LOCATION (<i>City and State</i>) Birch Springs Well Design – Manila, UT	(2) YEAR COMPLETED	
		Professional Services 2009	Construction (if applicable) N/A



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(3) BRIEF DESCRIPTION (*Brief scope, size, cost, etc.*) AND SPECIFIC ROLE

Mr. Hansen performed engineering design of culinary water well, including permitting, well design, well-house design, transmission line design, and obtaining operator permits. This project was particularly challenging due to the required depth of the well and the remote location of the well and well house. The project also involved detailed coordination with Town officials, the Power Company, and suppliers. Also included in the project were bid administration and construction management services.

Check if project performed with current firm



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4. Resumes of Key Personnel Proposed for this Contract (*Complete one Section #4 for each key person.*)

a. NAME Li Qi, P.E., CFM	b. ROLE IN THIS CONTRACT Water & Dams/ Dikes/ Levees Team Leader	c. YEARS EXPERIENCE	
		1. TOTAL 33	2. WITH CURRENT FIRM 16
d. LOCATION (<i>City and State</i>) Sunrise Engineering, Inc. (Draper Branch) Draper, UT			
e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) M.S. Hydraulics & River Dynamics, North China Institute of Water Conservancy & Hydropower; B.S. Engineering Mechanics, North China Institute of Water Conservancy & Hydropower		f. PROFESSIONAL TRAINING - REGISTRATIONS AZ P.E.#36032; UT P.E. #324020-2202; WY P.E. # 9268	
g. OTHER PROFESSIONAL QUALIFICATIONS (<i>Organizations, Awards, etc.</i>) Mr. Qi has extensive experience in water resources and civil engineering related projects. He is a licensed professional engineer registered in Arizona, Utah, and Wyoming, and an ASFPM certified floodplain manager. He has solid scientific knowledge in hydraulics, hydrology, mathematics and numerical modeling. As a project engineer or project manager, Mr. Qi has worked on various categories of design and study projects since he joined Sunrise's civil energy team in 1998. These projects include natural and urban storm drainage, flood control, city storm drain system, open channel hydraulics, two-dimensional surface water hydraulics, FEMA floodplain map revision, water supply system (trunk and distribution lines, tanks, valve and pump stations); roadway drainage system, hydroelectric power generation, dam safety, and drinking water source (well and spring) development and protection.			

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION (<i>City and State</i>) Van Buren Street – 99th Ave. To Agua Fria River Design Concept Report Flood Control District Of Maricopa County – Avondale, AZ	(2) YEAR COMPLETED	
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Sunrise has been retained with the Flood Control District of Maricopa County to perform a drainage design study to provide alternative solutions to the flooding hazards in Avondale and the City of Tolleson. The study modified the preferred alternative proposed by the Durango Area Drainage Master Plan through hydrologic modeling and conceptual drainage system design. The second purpose of this project is to convey the storm water from 99th Avenue to the Agua Fria River to reduce the flows that previously discharged to the Durango Outfall Project channel. Sunrise conducted a series of HEC-1 model runs to analyze the hydrology for different storm frequencies and durations. Based on the model results, relative federal, state and county regulations, and site conditions, Sunrise conceptually designed the food control system that includes two detention basins, open channels, storm water trunk lines, box and pipe culverts, and erosion protections.	Professional Services 2013-2014	Construction (if applicable) N/A
		<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	(1) TITLE AND LOCATION (<i>City and State</i>) Skywash DCR– Buckeye, AZ	(2) YEAR COMPLETED	
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Sunrise was contracted to prepare improvement plans for the development of Phoenix Skyline West II, an existing 215-lot subdivision that had not been developed since it was platted in the 1970's due to the site's floodway and floodplain designation. An alluvial fan hydraulic study was performed by Sunrise to verify that 100-year/two-hour storm event flow depths did not exceed maximum requirements for emergency vehicle access on at-grade arterial roads around the development. Three alternative conceptual designs were also completed for the region's apex drainage solution. The Sunrise team coordinated private partnerships with the Town of Buckeye and the Flood Control District of Maricopa County in order to secure the design and construction funding for the project through the FCDMC's Capital Improvement Program. Ultimately, the proposed apex drainage solution will remove a total of 881 acres of land from the floodplain and will provide the Town of Buckeye with park amenities and a gateway to the White Tank Mountain Regional Park. Mr. Qui served as the Hydrologist for this project.	Professional Services 2014	Construction (if applicable)
		<input checked="" type="checkbox"/>	Check if project performed with current firm
3.	(1) TITLE AND LOCATION (<i>City and State</i>) Hydrologic Study For Magma Flood Retarding Structure (FRS) – Magma, AZ	(2) YEAR COMPLETED	
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE The Magma FRS, located in Pinal County, Arizona, is a 5.3 mile long earth dam that was designed and built in early 1960's for the purpose of retarding the storm runoff contributed from the upper drainage area. Current regulations classify this structure a high hazard dam. Many deficiencies have been determined and need to be fixed. This hydrologic study was prepared for the future Magma FRS rehabilitation design. The off-site and on-site hydrology was modeled to develop the design needed hydrologic data in compliance with current State of Arizona and National NRCS regulations and to preliminarily estimate the height of the new Magma FRS using both the broadly used level-pool and a State suggested dynamic-wave reservoir routing procedures.	Professional Services 2009-2010	Construction (if applicable) 2010
		<input checked="" type="checkbox"/>	Check if project performed with current firm
4.	(1) TITLE AND LOCATION (<i>City and State</i>) Hydrologic/Hydraulic/Sediment Transport Analysis And Conceptual Flood Control Design For The Meadow Valley Wash Linear Park Improvements Project – Caliente, NV	(2) YEAR COMPLETED	
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE The Meadow Valley Wash Linear Park Improvements Project is a 5.3 mile long earth dam that was designed and built in early 1960's for the purpose of retarding the storm runoff contributed from the upper drainage area. Current regulations classify this structure a high hazard dam. Many deficiencies have been determined and need to be fixed. This hydrologic study was prepared for the future Meadow Valley Wash Linear Park Improvements Project. The off-site and on-site hydrology was modeled to develop the design needed hydrologic data in compliance with current State of Arizona and National NRCS regulations and to preliminarily estimate the height of the new Meadow Valley Wash Linear Park Improvements Project.	Professional Services 2012	Construction (if applicable) N/A
		<input type="checkbox"/>	Check if project performed with current firm



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(3) BRIEF DESCRIPTION (*Brief scope, size, cost, etc.*) AND SPECIFIC ROLE

Repeated flooding through Caliente, Nevada has been documented since 1906.

Check if project performed with current firm

The FEMA flood plain covers the majority of Caliente. The Meadow Valley Wash and Clover Creek watersheds that drain 1343 square miles to Caliente from the north and east have caused serious problems such as flooding, property loss, sedimentation, and threat to environmental and biological conditions within the watersheds. In January 2005, a major flood occurred in this area and caused significant damage to private and public properties.

The primary goal of the project is to build a linear park along the Meadow Valley Wash for environmental enhancement and recreational purposes. However, because of serious flooding hazards to the proposed park improvements and the City in general, a necessary element in the park design is the consideration of how flood events could affect the park improvements. The ultimate objective is to design the park in such a manner that flood waters may pass through the park without significantly damaging the park improvements or the adjacent community. Thus, the first phase of the project is to identify and summarize the problems existing in the drainage system (i.e. in the watershed above and through the project limits), to evaluate the watershed hydrology and to complete a preliminary drainage/ sediment control system design for the proposed Meadow Valley Wash Linear Park. The total project cost was \$5,648,500.

(1) TITLE AND LOCATION (*City and State*)

Tuacahn Wash Detention Pond Dam – Santa Clara, UT

(2) YEAR COMPLETED

Professional Services
2012-2013

Construction (if applicable)
2013-2014

(3) BRIEF DESCRIPTION (*Brief scope, size, cost, etc.*) AND SPECIFIC ROLE

In September of 2012, the city of Santa Clara, in Southern Utah, experienced a devastating flood causing significant damage to the city's homes and businesses downstream.

Check if project performed with current firm

The flood was the result of a breached and antiquated earthen flood control dam - the Laub Wash Retention Dam - built nearly 100 years ago.

Sunrise Engineering was selected to perform the studies, design and construction administration required to replace the failed structure. Studies for the dam included hydrologic study, geotechnical field investigations, geologic and seismic study, dam break analysis, standard operating and emergency action plans.

5.

The new dam allows for Inundation Mapping. This mapping is being done by the National Weather Service, showing the extent of possible flooding for roadways, streets, buildings, airports.

The dam has a clay core that will not allow water to pass through and is surrounded by a granular rock material and a "rip rap" exterior.

The design of the new earthen embankment includes a cutoff wall design, embankment design, abutment treatment, low-level outlet and emergency spillway design.

It is also not as steep but wider than the old retention dam. A larger outlet pipe allows water to drain into Santa Clara's 36-inch storm drain at a much faster rate. The engineering fee for this project was \$484,300 and the construction cost was \$2.2M.

The dam is an earthen structure, similar to the old one, but now built according to the modern engineering regulations of the Utah State Dam Safety.

With the design support of Sunrise Engineering, Santa Clara has completed the new state-of-the-art retention dam. Mr. Qi served as the Project Hydrologist.



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4. Resumes of Key Personnel Proposed for this Contract (*Complete one Section #4 for each key person.*)

a. NAME Jerrold Randy Knapp, P.E.	b. ROLE IN THIS CONTRACT Electrical & Prisons and Correctional Facilities Team Leader	c. YEARS EXPERIENCE	
		1. TOTAL 17	2. WITH CURRENT FIRM 4

d. LOCATION (*City and State*)
Sunrise Engineering, Inc. (Draper Branch) Draper, UT

e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) B.S. Electrical Engineering, University of Utah	f. PROFESSIONAL TRAINING - REGISTRATIONS AZ P.E.#53659; ID P.E. # P-15092; NV P.E. # 022519; UT P.E. #362066-2202
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g. OTHER PROFESSIONAL QUALIFICATIONS (*Organizations, Awards, etc.*)
As a Project Manager for Sunrise Engineering, Mr. Knapp brings to the table 16 years of experience designing, power and control systems for commercial, municipal, utility and light industrial projects. His expertise includes the design, programming, start-up, and support for many control and data acquisition projects.

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION (<i>City and State</i>) Kennecott Copperton Electrical Sustainability Project (CESP) Phase 1 & 2 – Salt Lake City, UT	(2) YEAR COMPLETED	
		Professional Services 2012	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Knapp assisted in the design of the electrical system upgrade of several MCCs and Switchgear for facilities undergoing modernization upgrades. Responsibilities include site investigation, records research, electrical design and coordination, and submittal review.	<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	(1) TITLE AND LOCATION (<i>City and State</i>) Kennecott Advance Copper Cementation Protective Relay Configuration – Salt Lake City, UT	(2) YEAR COMPLETED	
		Professional Services 2014	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Knapp provided design services to include protective relay configuration for the upgrade of the electrical system in an existing facility. Responsibilities include performing electrical system studies, and designing the interconnection between the new and existing equipment. The engineering fee was \$29,224.	<input checked="" type="checkbox"/>	Check if project performed with current firm
3.	(1) TITLE AND LOCATION (<i>City and State</i>) Center Creek Hydro Upgrade – Parowan, UT	(2) YEAR COMPLETED	
		Professional Services 2014	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Knapp assisted in the electrical design upgrade of an existing hydro-electric generation facility to include the replacement of an existing generator with a new 420 KW Synchronous generator, and upgrading the existing electrical service to the facility.	<input checked="" type="checkbox"/>	Check if project performed with current firm
4.	(1) TITLE AND LOCATION (<i>City and State</i>) Camp Williams (480V-4160V) Wind Turbine Equipment Upgrade – Lehi, UT	(2) YEAR COMPLETED	
		Professional Services 2014	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Knapp designed the new infrastructure and control methodology that will allow the Wind Turbines to operate in conjunction with a Diesel Generator as a Microgrid. The completed Microgrid will supply power to The Camp whenever normal utility power is interrupted. The design included the addition of diesel generators and modifications to the existing 12.47 kV distribution system, main switchgear and relay protection scheme.	<input checked="" type="checkbox"/>	Check if project performed with current firm
5.	(1) TITLE AND LOCATION (<i>City and State</i>) White City Power Quality Analysis – Sandy, UT	(2) YEAR COMPLETED	
		Professional Services 2011	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Knapp provided a power quality analysis for the White City Water Improvement District. Responsibilities included assisting with the placement of instruments to record the quality of power delivered to several pumping facilities, and providing analysis of the data.	<input checked="" type="checkbox"/>	Check if project performed with current firm



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4. Resumes of Key Personnel Proposed for this Contract (*Complete one Section #4 for each key person.*)

a. NAME Dao Yang	b. ROLE IN THIS CONTRACT Environmental & Water Resources Team Leader	c. YEARS EXPERIENCE	
		1. TOTAL 33	2. WITH CURRENT FIRM 17
d. LOCATION (<i>City and State</i>) Sunrise Engineering, Inc. (Draper Branch) Draper, UT			
e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) M.S. Civil & Environmental Engineering, Utah State University; B.S. Civil Engineering, Wuhan Univeristy of Hydraulic & Electrical Engineering		f. PROFESSIONAL TRAINING - REGISTRATIONS CA P.E. #77573; UT P.E. #260122-2203	

g. OTHER PROFESSIONAL QUALIFICATIONS (*Organizations, Awards, etc.*)
 Mr. Yang has been involved in a variety of different disciplines over his 31 years of professional experience: including geothermal resource investigations and assessment, hydraulics, hydrology, geotechnical engineering, environmental investigations, hydrogeology, environmental assessments and groundwater flow and contaminant modeling. His recent project experience includes comprehensive evaluations and feasibility studies of large-scale hydro-electrical and geothermal resource exploration projects. He also has recent experience in performing environmental assessments.

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION (<i>City and State</i>) EA For Wastewater Treatment Project For Virgin River Domestic Wastewater Improvement District (VRDWID) - Arizona	(2) YEAR COMPLETED	
		Professional Services 2004	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE The VRDWID plans to construct 190 acres of lagoons and 25 miles of wastewater pipeline. Because the 190-acre lagoons and part of the sewer pipeline are to be located on BLM-administered public lands, an EA was prepared to meet the BLM requirements. The EA addressed the following identified issues: (1) vegetation, (2) soils, (3) air quality, (4) visual resource management, (5) area of crucial environmental concern, (6) wild and scenic rivers, (7) waste, (8) cultural resources, (9) surface water and groundwater quality, (10) airport, (11) riparian zones, (12) threatened and endangered species, (13) utilities, (14) livestock grazing, (15) social and economic conditions, (16) transportation/traffic, and (17) recreation.	<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	(1) TITLE AND LOCATION (<i>City and State</i>) Center Creek Hydroelectric Plant And Penstock Project Environmental Assessment - Parowan, UT	(2) YEAR COMPLETED	
		Professional Services 2013-2014	Construction (if applicable) 2015
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Parowan City's Center Creek Hydroelectric Project was initially constructed in 1925 and was originally licensed with the Federal Energy Regulatory Commission (FERC) in 1935. The FERC license was recently renewed in 2003. The run-of-the-river hydropower plant presently has an installed capacity of 600 kilowatts (kW). Historic power generation records from 1985 to 2001 indicate that the power plant had not generated above 400 kW of instantaneous power and only 10% of flows exceeded 11.5 cubic feet per second (cfs) during this period. The existing penstock and hydropower plant equipment were significantly oversized. Moreover, the majority of the penstock leaks and failures have occurred in the upper sections of the penstock. Parowan City has proposed to replace 17,725 feet of the penstock and replace the existing 600-kW turbine-generator unit with a 420-kW unit. As a result of the proposed project modification, a FERC non-capacity license amendment is required. Most part of the penstock is located on public lands administered by the Bureau of Land Management (BLM). As authorized by FERC, Sunrise conducted all agency and public scoping for the project. The BLM interdisciplinary review team completed a NEPA review checklist. The project scoping identified the following environmental concerns that needed to be addressed in the environmental document (Exhibit E of the FERC License Amendment Application): (1) air quality, (2) vegetation resources, (3) wetland/riparian zones, (4) fish and wildlife resources, (5) water quality and quantity, (6) floodplain, (7) land and water uses, (8) recreational uses, (9) historical and archaeological resources, (10) soil resources, and (11) scenic and aesthetic resources.	<input checked="" type="checkbox"/>	Check if project performed with current firm
3.	(1) TITLE AND LOCATION (<i>City and State</i>) Atlanta Mine Exploration Environmental Assessment - Pioche, NV	(2) YEAR COMPLETED	
		Professional Services 2013	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Sunrise prepared an environmental assessment (EA) for Meadow Bay Gold Corporation's proposed exploratory drilling program. The purpose of the exploratory drilling program was to further define the extent and nature of the quality and quantity of minerals within the claim boundaries at Atlanta Mine. The work would be conducted on 11,365 acres of public lands administered by the Bureau of Land Management (BLM). The project included the following activities: 1) construction of up to 62 drilling pads and reserve pits; and 2) drilling up to 44 reverse circulation (RC) holes and up to 18 core holes (including 2 deep angled holes). Based on an operations plan prepared by Sunrise, the BLM interdisciplinary review team completed a NEPA review checklist and identified the following issues that needed to be addressed in the EA: (1) soils, (2) cultural resources, (3) paleontological resources, (4) socioeconomics, (5) wildlife, (6) special status species, (7) vegetation, (8) visual resources, (9) recreation resources, (10) land use, (11) water quality, and (12) land with wilderness characteristics.	<input checked="" type="checkbox"/>	Check if project performed with current firm



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A cultural resource inventory was conducted to cover the entire project area. Biological surveys, including two special helicopter aerial surveys for a 2-mile buffered project area for raptor nests, were conducted. A visual resource evaluation was conducted from 10 key observation points. Environmental protection measures were also developed to protect or avoid/minimize impacts to cultural resources, paleontological resources, air quality, soil and water resources, vegetation resources, wildlife resources (including special status species), and visual resources.

(1) TITLE AND LOCATION (<i>City and State</i>) Hydrogeologic Study In Herriman And Adjacent Areas In Southwest - Salt Lake County, UT	(2) YEAR COMPLETED	
	Professional Services 2011	Construction (if applicable) N/A

(3) BRIEF DESCRIPTION (*Brief scope, size, cost, etc.*) AND SPECIFIC ROLE
In the Herriman area, there is limited surface water resource. The groundwater north of Herriman had been contaminated with high total dissolved solids (TDS) by historic mining and milling activities at the Kennecott Copper Mine. Good-quality groundwater existed only in southern and eastern Herriman. If too much groundwater was developed in southern Herriman, contaminated groundwater in the northern area would be pulled into the Herriman area. To better manage the groundwater resources in the area, an integrated public water system was necessary. Sunrise inventoried water rights in the area and evaluated hydrogeologic conditions for development of new sources. Sunrise also negotiated with independent water companies. In the end, an economically viable municipal water system was formed for Herriman City. Independent water systems were integrated into an integrated system. New sources were developed, and necessary infrastructure improvements were made in several different phases.

Check if project performed with current firm

4.

During 2000 through 2010, Herriman City's population grew from 1,523 in 2000 to 21,785 with an average annual growth rate of approximately 30%. As population continues to grow, more water sources and infrastructure improvements are required. In planning water source development to meet future water demands, Herriman City retained Sunrise to conduct a hydrogeologic study in the Herriman and adjacent areas, Salt Lake County, Utah in 2011 to evaluate the groundwater availability from the local aquifer where several communities derive culinary water and Kennecott Utah Copper Corp (KUCC) operates a remedial system in an effort to clean a groundwater contamination plume resulting from historic mining and milling activities at the Kennecott Utah Copper Mine. The study area encompasses 74 square miles. Precipitation data were collected from 22 weather stations surrounding the study area. The data were then analyzed to estimate the mean annual precipitation distribution within the study area. The topographic data were digitized to generate a 3-dimensional data file and then used to estimate the areal recharge distribution within the study area using two different empirical precipitation-recharge models. The two models generated similar results. Surface water runoffs were also estimated using empirical equations generated by the U.S. Geological Survey and was then used to estimate seepage losses from the surface water bodies to the local aquifer within the study area. Seepage losses from four local canals were also estimated using measured seepage rate per unit length and water conveyance duration. Infiltration to the local aquifer from irrigation water was also estimated. Water rights were searched and analyzed to determine how much groundwater has been appropriated and how much has been developed. Water master plans from neighboring communities were reviewed to estimate their water demands at build-out. With all the information, the available groundwater from the local aquifer to Herriman City was estimated. The water deficit for Herriman City at build-out was also estimated. Water level measurements were performed and water samples were collected for laboratory analysis of sulfate and TDS from selected wells within the study area. A potentiometric surface map, and sulfate and TDS concentration contour maps were generated. Using specific yields and pumping test data from wells, a transmissivity distribution map was also generated. Using a water balance approach, new well sites were selected for future groundwater development to minimize well interference and avoid depleting the local aquifer. Additional wholesale water purchase from the Jordan Valley Water Conservancy District was also recommended.

(1) TITLE AND LOCATION (<i>City and State</i>) Groundwater Study And Septic Tank Density Analysis, Upper Kolob Plateau And Oak Valley - Washington County, UT	(2) YEAR COMPLETED	
	Professional Services 2003	Construction (if applicable) N/A

5.

(3) BRIEF DESCRIPTION (*Brief scope, size, cost, etc.*) AND SPECIFIC ROLE
As the request of the Ash Creek Special Service District, a groundwater study and septic tank density analysis was conducted at Upper Kolob Plateau and Oak Valley in Washington County, Utah. Well data, geologic information, precipitation data and pumping test data were collected and analyzed. A potentiometric surface contour map was generated. Based on well logs and geologic data, generalized geologic cross-sections were generated. Based on the pumping test result, potentiometric surface contour, recharge rate from precipitation and irrigation, Utah Water Quality Board's drinking water standard for nitrate in groundwater, and Washington County's Disturbance Standards, average septic density on buildable areas was estimated for different slope zones within the study area using a mass balance approach.

Check if project performed with current firm



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4. Resumes of Key Personnel Proposed for this Contract (*Complete one Section #4 for each key person.*)

a. NAME Rick Snyder, P.E., P.L.S., PTOE	b. ROLE IN THIS CONTRACT Traffic & Transportation Engineering Team Leader	c. YEARS EXPERIENCE	
		1. TOTAL 16	2. WITH CURRENT FIRM 8

d. LOCATION (*City and State*)
Sunrise Engineering, Inc. (Washington Branch) Washington, UT

e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) B.S. Civil Engineering, University of Utah A.P.E.Pre-Engineering, Dixie State College of Utah	f. PROFESSIONAL TRAINING - REGISTRATIONS UT P.E. #5569330-2202; UT R.L.S. # 5569330-2201
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g. OTHER PROFESSIONAL QUALIFICATIONS (*Organizations, Awards, etc.*)
Mr. Snyder has experience in the Land Surveying and Civil Engineering field dating back to 1999. His experience with Sunrise Engineering Inc. includes transportation projects including new road design, road reconstruction and improvement design, intersection design, and signal design. His experience also includes drainage projects, residential developments, commercial developments, industrial developments, parks and trails projects, agricultural projects, surveying and right of way projects.

H. RELEVANT PROJECTS

	(1) TITLE AND LOCATION (<i>City and State</i>)	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	Snow Park Frontage Road – St. George, UT	2007	2007
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE The City of St. George contracted with Sunrise to provide design and construction administration engineering services for the Snow Park Frontage Road Project. This project included constructing approximately 1,600 lineal feet of roadway from 1160 South to 400 East and the construction of a detention basin on the south portion of Snow Park. Mr. Snyder's responsibilities included Project Management, design, plan production, project accounting, client coordination, contract and specification writing, bidding and negotiating, construction administration, construction staking, construction observation and preparing contract record documents. The fee for this project was \$129,000 and the construction cost was \$440,000.	<input type="checkbox"/> Check if project performed with current firm	
2.	400 South Block Project – Ivins, UT	2010	2010
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE As part of the 400 South Block Project Mr. Snyder participated in the preparation a preliminary roundabout design for the 400 South and 200 East Intersection. During the preliminary design process Sunrise, with the input for the City Staff, looked at several different roundabout options including an option that was centered at the existing intersection and an option that was offset from the existing intersection to try to avoid developed areas. The option selected by the City Staff was rendered and presented to the City to help in the decision making processes.	<input checked="" type="checkbox"/> Check if project performed with current firm	
3.	Middleton Drive Widening & Traffic Signaling – Washington, UT	2003	N/A
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Sunrise developed plans and specifications for the installation of a traffic signal at the intersection of Middleton Drive and Green Springs in Washington, Utah. Pole foundations were located to avoid critical above and underground utilities. Traffic modeling was performed to help determine signal head type and provide for optimal traffic flow. Striping and lane configurations were determined using the WB-67 design vehicle, existing survey, and traffic modeling with the adjacent interchange. Mr. Snyder's responsibilities included signal design, preparing right of way documents, roadway design, and plan production.	<input checked="" type="checkbox"/> Check if project performed with current firm	
4.	Diagonal & Bluff Street Intersection Project – St. George, UT	2008	2009
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Designed a free right for Diagonal Street traffic turning onto Bluff Street and designed a series of medians on Bluff Street to improve the operation and safety of the intersection. In the past this intersection had a significant crash history including a 5 car pile up and also had long delays for vehicles turning right off of Diagonal Street onto Bluff Street. Responsibilities included design, plan production, data collection and topography, and utility coordination.	<input checked="" type="checkbox"/> Check if project performed with current firm	
5.	Telegraph Road (UDOT SR-212) Widening and Improvements – Washington City, UT	2011	2011
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE		



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(3) BRIEF DESCRIPTION (*Brief scope, size, cost, etc.*) AND SPECIFIC ROLE

Check if project performed with current firm

Telegraph Road is not only a critical transportation corridor through

Washington City from other communities, but also an integral part of the downtown historic district. Sunrise has been involved with all phases of design and construction of this road since 1995. Most recent was the widening of the road through the downtown area; adding two lanes in each direction, along with pedestrian, landscaping and lighting improvements. The project includes a creek crossing, multiple historic properties, two public parks, numerous right-of-way takes and utility relocations. To meet the City's vision of the historic downtown, the project included custom made planter boxes with the City logo, landscaping, and colored and stamped concrete areas. Sunrise facilitated the challenging process of meeting ADA accessibility requirements while tying together old and new street and pedestrian improvements. We also assisted UDOT and the City in addressing the concerns of citizens and businesses. Formal public involvement meetings with public representatives along with on-site discussions with concerned individuals helped keep everyone informed and involved. The construction cost was over \$10M.



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4. Resumes of Key Personnel Proposed for this Contract (*Complete one Section #4 for each key person.*)

a. NAME Joe Phillips, P.E.	b. ROLE IN THIS CONTRACT Outdoor Recreation Team Leader	c. YEARS EXPERIENCE	
		1. TOTAL 14	2. WITH CURRENT FIRM 14
d. LOCATION (<i>City and State</i>) Sunrise Engineering, Inc. (Washington Branch) Washington, UT			
e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) M.S. Civil Engineering, Brigham Young University B.S. Civil Engineering, Brigham Young University		f. PROFESSIONAL TRAINING - REGISTRATIONS AZ P.E.#43311; NV P.E. # 017304; NV State Water Right Surveyor # 017304; UT P.E. #4777017-2202	

g. OTHER PROFESSIONAL QUALIFICATIONS (*Organizations, Awards, etc.*)
Mr. Phillips has experience in the planning, design and construction of many municipal engineering projects. Much of his experience has come from serving as a contracted City or District Engineer; this has given Mr. Phillips considerable knowledge of the day-to-day operations and technical issues experienced by municipalities and improvement districts. Mr. Phillips also has extensive real experience in planning, design, and construction of community parks and recreation facilities. Many of his projects have required acquisition and management of public funding packages and coordination with federal and state governmental agencies.

H. RELEVANT PROJECTS

	(1) TITLE AND LOCATION (<i>City and State</i>) Meadow Valley Wash Shared Use Trail – Caliente, NV	(2) YEAR COMPLETED	
		Professional Services 2011-2012	Construction (if applicable) 2011-2012
1.	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE The Meadow Valley Wash Shared Use Trail project includes all aspects of project development from funding administration through environmental clearance, hydrologic analysis, conceptual design, final design, construction administration and observation and project closeout.	<input checked="" type="checkbox"/> Check if project performed with current firm	
	<p>Amenities include hardscape features such as pathways, access routes, and service routes, landscape features such as sod, trees, shrubs, planters and an irrigation system, patron facilities such as benches and trash receptacles, lighting improvements, channel stabilization and erosion control structures, earthwork, and various other amenities.</p> <p>The project was funded through the SNPLMA program in the State of Nevada, the grantee being Lincoln County, Nevada. Significant challenges were overcome in development of the project including absence of existing rights-of-way and easements, consideration of flood volumes through the channel, conformance with environmental regulatory agencies, constrained potential alignments, etc. to complete an aesthetic, functional, and low maintenance trail.</p> <p>The construction cost for this project was \$4.32M</p>		
	(1) TITLE AND LOCATION (<i>City and State</i>) Little Valley Pickleball Facility	(2) YEAR COMPLETED	
		Professional Services 2012	Construction (if applicable) 2012
2.	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE The Little Valley Pickleball Facility is a twelve-court dedicated pickleball facility with a future phase that may add up to twelve additional courts. Sunrise Engineering completed the design and bidding documents. The Owner provided the architectural design through a separate consultant and the Owner provided landscape and irrigation design through staff. Sunrise Engineering coordinated and compiled all the documents in a single bid set. Coordination with interested parties included a series of design iteration meetings with the Owner's staff and the Southern Utah Pickleball Association.	<input checked="" type="checkbox"/> Check if project performed with current firm	
	<p>Site features and amenities include post-tensioned concrete courts with chain link fence and wind screens, court lights, engraved donation brick pavers, planter areas, a restroom and storage building, drainage improvements, parking improvements, ADA accessibility, shade structures, etc.</p> <p>The courts are particularly valuable as a venue for the Huntsman World Senior Games.</p> <p>The final construction cost for this project was \$759,000.</p>		
	(1) TITLE AND LOCATION (<i>City and State</i>) Firehouse Park – St. George, UT	(2) YEAR COMPLETED	
		Professional Services 2009	Construction (if applicable) 2009
3.	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Site utility design, local presence, agency coordination, bidding, negotiating, and construction observation.	<input checked="" type="checkbox"/> Check if project performed with current firm	
	<p>Sunrise Engineering was selected as sub-consultant for local presence and for civil and utility design on the Firehouse Park, a 4.0-acre park in St. George City, Utah. Sunrise's responsibilities included providing project startup and site evaluation services, design development - including a secondary water feasibility evaluation, and preparation of the civil drawings for the project. The drawings included site grading,</p>		



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erosion control and a drainage plan, horizontal control and a layout plan, paving and parking lot plans and striping and traffic signage plan, and a utility plans, profiles and details.

The design process also included submitting and managing the drawings through the City's Joint Utilities Commission (JUC). The construction phase required Sunrise to attend the pre-bid conference, respond to bidder's questions regarding the project, and assist the City in analyzing the bids. It also required Sunrise to attend the pre-construction conference, review all shop drawings and submittals from the Contractor, and attend construction progress meetings. Sunrise provided the Storm Water Pollution Prevention Plan (SWPPP) for the project as well.

The construction cost for this project was \$780,000.

(1) TITLE AND LOCATION (<i>City and State</i>) Echo Canyon Campground – Pioche, NV	(2) YEAR COMPLETED	
	Professional Services 2014	Construction (if applicable) 2014

4.

(3) BRIEF DESCRIPTION (*Brief scope, size, cost, etc.*) AND SPECIFIC ROLE
The Echo Canyon Recreational Vehicle (RV) Campground Project is located a dozen miles east of Pioche, Nevada on the southwest side of the Echo Canyon Reservoir, within the Echo Canyon State Park. The Project consisted of construction of 20 individual RV campground sites and associated amenities such as pavilions, fire pits, pedestal grills, picnic tables, kiosks, fee boxes, signage, etc. Major roadway improvements, including a new entrance and loop, were constructed at the existing day use area to provide access for RV's to the site. New water, sewer, and electrical systems were installed at the site to provide utility hook-ups for each campsite. Upgrades were made to the existing water system including well house, pump, and SCADA improvements. Three separate septic systems including leach fields, distribution boxes, and septic tanks were installed. Minimal hardscape features such as sidewalks, curbs, parking, and ramps were constructed to provide an ADA compliant facility with one accessible campsite near the new restroom and shower building. Finally, a new irrigation system was installed along with landscaping for completion of the Project. The project was funded by the Bureau of Land Management through the Southern Nevada Public Land Management Act. The final construction cost of this project was \$1.75M.

Check if project performed with current firm

(1) TITLE AND LOCATION (<i>City and State</i>) Parks and Recreation Master Plan – Washington City, UT	(2) YEAR COMPLETED	
	Professional Services 2014	Construction (if applicable) 2014

5.

(3) BRIEF DESCRIPTION (*Brief scope, size, cost, etc.*) AND SPECIFIC ROLE
Washington City retained Sunrise Engineering to complete a parks and recreation master plan for the purpose of directing future development of parks, to serve as an impact fee facilities plan and to establish maximum impact fee levels.

The City was specifically interested in considering its parks, trails, and community center as unique and specific offerings to the community. Accordingly, levels of service were determined in acreage per 1,000 people for trails, and square footage per 1,000 people for the community center. Future improvements were proposed to maintain existing levels of service as growth occurs in the community. Sunrise worked closely with the City during formulation of the plan to ensure that the City's vision for future projects and existing assets were held to review important details which would govern the direction of the plan. Also, the City asked Sunrise to work specifically with the Southern Utah Homebuilders Association (SUHBA) to ensure that their input was considered in the calculation of impact fee levels.

The adopted plan represents a comprehensive plan for managing the future development of the community's parks, trails, and recreation facilities.

Check if project performed with current firm



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5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present no more than five (5) projects. Complete one Section 5 for each project.)

<p>a. TITLE AND LOCATION <i>(City and State)</i> C.C. Cragin Raw Water Resource Supply Project</p>	<p>b. YEAR COMPLETED</p> <table border="1"> <tr> <td data-bbox="987 449 1256 527"> <p>PROFESSIONAL SERVICES In Progress</p> </td> <td data-bbox="1256 449 1559 527"> <p>CONSTRUCTION <i>(If applicable)</i> 2018 (Estimated)</p> </td> </tr> </table>		<p>PROFESSIONAL SERVICES In Progress</p>	<p>CONSTRUCTION <i>(If applicable)</i> 2018 (Estimated)</p>
<p>PROFESSIONAL SERVICES In Progress</p>	<p>CONSTRUCTION <i>(If applicable)</i> 2018 (Estimated)</p>			

23. PROJECT OWNER'S INFORMATION

<p>c. PROJECT OWNER Town of Payson</p>	<p>d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT \$3,750,000</p>	<p>e. TOTAL COST OF PROJECT \$33,750,000</p>
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f. **BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT** (include scope, size, and length of project)
 The Town of Payson has secured a 3,000 acre-feet annual allocation of water from the C.C. Cragin Reservoir. The Town plans to divert its allocation of water from the existing Hydroelectric Power Plant, operated by the Salt River Project (SRP), on the downstream side of the power generation turbine. The water will be diverted into a new raw water pipeline (Phase I) and delivered to a new water treatment plant (Phase II). Once the water is treated to drinking water standards it will be delivered via a treated water pipeline (Phase III) into the Town's drinking water system. The scope of work for this contract includes the preliminary design and studies for the raw water pipeline (Phase I) and support services as needed for other phases of the project. The main goals for the end of this project was to have the information required to complete the Environmental Assessment for the project and Preliminary Design/Plans that will be used in the solicitation of a Design-Build Team to complete the design and construction of the project.

The scope of work for this contract includes the preliminary design of the 12 mile long transmission main, the final design and studies for the tailrace connection, raw water pipeline and new hydroelectric generating station (Phase I), equipment piloting and water treatment plant preliminary design (Phase II), and overall project management assistance and support services as needed for other phases of the project. A brief description of this on-going project's major components and services are as follows:

Tailrace Connection: In order for the Town to receive their water right a connection was necessary to the existing SRP hydroelectric facility located at the headwaters of the East Verde River. This portion of the project includes a tailrace connection concrete box, meter vault, valving, piping and other appurtenances. The challenges for this project include the limited space for construction, rock excavation and environmentally sensitive area. Our project team had to coordinate with the Tonto National Forest and Salt River Project (SRP) for the approvals.

Raw Water Penstock: After the tailrace connection the project included a 13.5 mile long, 18" diameter transmission main to deliver water to a new hydroelectric facility. The alignment for the project is located adjacent to Houston Mesa Road in through the Tonto National Forest. This pipeline will be constructed of ductile iron and steel pipe due to the pressures experienced in the pipeline and longevity of the materials. In addition, the project included air/vacuum relief valves, valving and cathodic protection. Some of the challenges for this portion of the project are rock excavation, tight working conditions along the roadway, over 70 culvert crossings and 3 crossings of the East Verde River.

Hydroelectric Generating Station: Hydroelectric (renewable) power generation can be generated based on the elevation difference (approximately 550-feet) between the Tailrace Connection and WTP site and flow. At the design head and flow rate, a small Pelton turbine will produce approximately 234 kilowatts of power. The power generated will primarily be used to run the WTP and excess sold back to the power company. Sunrise worked with the Town on the preliminary and final design of this facility which included the turbine equipment selection, electrical design, valving, bypass sleeve valve design and control strategy between the WTP, tailrace connection and hydro generator.

Water Treatment Plant: Because C.C. Cragin Water is a surface water source a WTP is required to treat the water to drinking water standards. The new 4.5MGD WTP includes water storage, pre-treatment, membrane filtration, GAC polishing, backwash handling facilities, sludge handling facilities and other facilities. Sunrise Engineering assisted the Town in the site selection, membrane equipment selection (Pall Water Processing), piloting of the equipment and preliminary design of the water treatment which included site planning, hydraulic profile, process diagrams, building floor plan and preliminary design report. One challenge to the project was the need to develop a way to mitigate the creation of disinfection-by-products (DBP's) within the treated water. Our team worked to include a pre-treatment regimen of adding PACl and post-treatment with granular activated carbon (GAC) within the treatment train on the pilot to effectively reduce the DBP formation to levels well below the maximum contaminate level.



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5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present no more than five (5) projects. Complete one Section 5 for each project.)

a. TITLE AND LOCATION <i>(City and State)</i>	b. YEAR COMPLETED	
Big Park Wastewater Treatment Plant Replacement/Expansion	PROFESSIONAL SERVICES 2014	CONSTRUCTION <i>(If applicable)</i> 2015-2016

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER Big Park Wastewater Improvement District	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT \$800,000 (Design)	e. TOTAL COST OF PROJECT \$4,700,000
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f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

Sunrise Engineering (SEI) was contracted to provide a preliminary and final design for the Big Park WWTP Improvements. The existing plant was made up of a headworks, DAVCO extended aeration activated sludge package plant, traveling bridge filter, UV disinfection, effluent pump station (with reuse pumps), a belt press, and onsite lift station. The DAVCO package plant also includes a clarifier and sludge thickener. The existing DAVCO system had no way of accessing equipment below the water surface for repairs/maintenance. Due to this the plant was reaching the end of its design life. Additionally the Client wanted to increase the capacity of the plant from 0.5 MGD to 0.7 MGD.

Based on a feasibility study completed by SEI a Biolac extended aeration activated sludge system was selected to replace the existing DAVCO system. The headworks, traveling bridge filter, UV disinfection, effluent pump station, belt press, and onsite lift station all continued to be part of the treatment plant. The existing onsite lift stations function was reduced to just handling backwash water from the filter. The new structures included the biolac system (bio P reactor, BNR basin, and two clarifiers), FEQ tank, FEQ lift station, and a sludge thickener. The new system was able to biologically reduce phosphorus, nitrify and denitrify, and reduce BOD and TSS levels. The new system was designed so all equipment can be accessed from the water surface without taking the plant offline. The plant will produce B+ effluent that is either discharged to an unnamed wash or used offsite on a golf course.

The capacity of the new infrastructure is 0.7 MGD but at the time of construction the plant was permitted for 0.5 MGD with the ability to expand.



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(Present no more than five (5) projects. Complete one Section 5 for each project.)

a. TITLE AND LOCATION <i>(City and State)</i> Van Buren Street Drainage Design Concept Report Phase I	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES 2010	CONSTRUCTION <i>(If applicable)</i> 2016 (Estimated)

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER Flood Control District of Maricopa County	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT \$103,500 (Design)	e. TOTAL COST OF PROJECT \$103,500 (Design)
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- f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)
- Sunrise Engineering was contracted by Maricopa County Flood Control District to complete a Design Concept Report for a storm water conveyance structure or channel along Van Buren Street in Avondale Arizona. The purpose of the project was to look at ways to alleviate flooding at Van Buren and 99th Avenue and if possible reduce retention requirements for the Avondale City Center project. The project analyzed existing and future conditions and recommended alternatives to convey flow along Van Buren Street to the Agua Fria River. The study went on to select one of three alternatives for which the conceptual design documents were to be created. The City ultimately decided a 100-yr sized option was not within budget.

Project tasks included: collection and compilation of existing utility and general base mapping information from several sources; manipulation and analysis of the existing hydrology models and rainfall data for the project; and creation and analysis of existing and future hydrologic and hydrograph models. Additional project tasks included the preparation of numerous memorandums and reports including Hydrology Technical Memo, Data Collection Memo, and Preliminary Alternatives Memo.

Furthermore the design team created exhibits for each of three alternative design concepts and 100 scale Conceptual Design Plan and Profile drawings for the selected design alternative. The design team is currently scoping out a phase 2 study to look at 10-year event sized facilities in hopes of bringing costs down to manageable levels.



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(Present no more than five (5) projects. Complete one Section 5 for each project.)

a. TITLE AND LOCATION <i>(City and State)</i> Casa Grande Citywide Control Network	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES 2012	CONSTRUCTION <i>(If applicable)</i> N/A

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER City of Casa Grande	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT \$23,210	e. TOTAL COST OF PROJECT \$23,210
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f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

The City of Casa Grande communicated to Sunrise Engineering (SEI) the need to establish benchmarks throughout the City. Sunrise Engineering proposed an economic solution to this need. Sunrise Engineering was contracted to establish a Citywide Vertical Datum. The City of Casa Grande requested 60 Benchmarks on a 1 mile grid within the City limits. Greg Smith, the City engineer, informed Sunrise that the City had never established City benchmarks or an approved vertical datum.

Using Trimble GPS Receivers, SEI survey crews observed/measured the positions of 67 existing monuments at the direction of Terry McKeon PE (City Engineer). The observations were post processed utilizing the NGS service called "OPUS". The Vertical Datum for the benchmarks is The North American Vertical Datum of 1988 (NAVD88). 7 National Geodetic Survey (NGS) monuments were utilized as control and redundant RTK observations were performed for each of the benchmarks established.



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5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present no more than five (5) projects. Complete one Section 5 for each project.)

a. TITLE AND LOCATION <i>(City and State)</i> Chandler Water Main Replacements Phase III	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES 2012-2014	CONSTRUCTION <i>(If applicable)</i> 2015

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER City of Chandler	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT \$273,666	e. TOTAL COST OF PROJECT \$3,251,171
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- f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)
- This project includes the design and construction administration for Chandler's third phase of water main replacements. The design relocated approximately 15,000 feet of water mains, valves, hydrants and meters from alleys within the project area to the public street. This required on-lot work to be performed to relocate the water service lateral to each home. Individual house sheets were created using aerial mapping for each lot where a meter would be relocated from the alley to the street. Each house sheet showed the lot and surface features; it also allowed for a discussion with each property owner regarding where the new meter locations and service lateral would be installed from the meter to the house. Each homeowner was contacted and interviewed to obtain their preferred location and approval signature for the service lateral and meter location. In situations where there were delays in obtaining approval signatures from the homeowner, the team coordinated with the City's assigned public relations consultant in obtaining the required approval. In addition, the team provided construction services including bid assistance, construction administration, construction observation and contract record drawings.



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6. ADDITIONAL INFORMATION

a. PROVIDE ANY ADDITIONAL INFORMATION YOU FEEL MAY BE NECESSARY TO DESCRIBE YOUR FIRMS QUALIFICATIONS. (ATTACH ADDITIONAL SHEETS AS NEEDED.)

PARTNERING WITH CLIENTS TO ACHIEVE SUCCESS

Sunrise Engineering establishes partnership relationships with our clients in order to develop solutions that work best within the client's constraints. Our goal is to achieve an optimal balance between cost and operational performance. We recognize that there are multiple solutions to every problem, and that both economic and operational trade-offs with local practices and preferences must be weighed when choosing feasible alternatives.

Sunrise's longevity within the engineering industry is largely attributed to the success of this partnership approach and the enthusiasm of our repeat clients in referring our services. As a testament to this, Sunrise was again awarded the **National PSMJ Premier Client Satisfaction Award in 2014 (for services provided in 2013) for the fifth year in a row**. Based solely upon anonymous Client Feedback, this award honors only those A/E/C firms who provide their clients with top quality communications, impressive performance and cost effective solutions. As one of only six firms awarded this international honor, Sunrise Engineering exceeded the average award winner with 89% of our scores at **"Exceeded Expectations"** or above and the majority of our scores landing in the highest bracket; **"Exceptional."** We also received additional recognition for top scores in the category of **"Managing Budgets."**

UNIQUE SERVICE CAPABILITIES - HD LASER SCANNING

One of the services that distinguish Sunrise Engineering is our ability to provide high definition (HD) laser scanning for our clients. HD Survey utilizes a laser to capture millions of 3-dimensional points. The resulting "point cloud" is used to create highly detailed and accurate base mapping. The level of detail and accuracy is such that even a paint stripe can be visible in the point cloud.

Typical applications include quantifying inaccessible roadway cuts or fills, quantifying irregular or inaccessible stockpiles, mapping of intersections for design (especially where drainage patterns are not clear or are of extreme importance), overhead clearances, accurate mapping of pavement especially critical where matching of existing paving is necessary, and mapping of otherwise inaccessible or highly detailed areas. We have also used this technology successfully in mapping water campuses and treatment plants for various clients.

Although not appropriate for all situations, when used the cost is comparable to conventional techniques and the amount of information it provides is superior. **The increase in available data eliminates the need to interpolate between shots and therefore minimizes the occurrence of errors in design.**



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7. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

a. Percentage of Total Work Attributable to State, Federal and Municipal Government Work:	70%
b. Percentage of Total Work Attributable to Non-Government Work:	30%

8. AUTHORIZED REPRESENTATIVE. The foregoing is a statement of facts.

Signature: _____

Date: December 21, 2015

Name: Gregory D. Potter, P.E.

Title: Principal/ Vice President