



Offer and Acceptance

State of Arizona
State Procurement Office
100 N. 15th Ave. Suite 201
Phoenix, AZ 85007

SOLICITATION NO.: ADSP016-00005912 Request
for Qualifications: 2016 Annual Professional
Services List

PAGE
1

Offeror: Souder, Miller & Associates

OF
1

OFFER

TO THE STATE OF ARIZONA:

The Undersigned hereby offers and agrees to furnish the material, service or construction in compliance with all terms, conditions, specifications and amendments in the Solicitation and any written exceptions in the offer. Signature also certifies Small Business status.

Souder, Miller & Associates

Company Name

3451 Candelaria Road, NM Suite D

Address

Albuquerque

NM

87107

City

State

Zip

karl.tonander@soudermiller.com

Contact Email Address

Signature of Person Authorized to Sign Offer

Karl E. Tonander, P.E., P.G.

Printed Name

Sr. Vice President / COO

Title

Phone: (800) 647-0799

Fax: (575) 647-0680

By signature in the Offer section above, the Offeror certifies:

1. The submission of the Offer did not involve collusion or other anticompetitive practices.
2. The Offeror shall not discriminate against any employee or applicant for employment in violation of Federal Executive Order 11246, State Executive Order 2009-9 or A.R.S. §§ 41-1461 through 1465.
3. The Offeror has not given, offered to give, nor intends to give at any time hereafter any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor, or service to a public servant in connection with the submitted offer. Failure to provide a valid signature affirming the stipulations required by this clause shall result in rejection of the offer. Signing the offer with a false statement shall void the offer, any resulting contract and may be subject to legal remedies provided by law.
4. The Offeror certifies that the above referenced organization IS/ IS NOT a small business with less than 100 employees or has gross revenues of \$4 million or less.

ACCEPTANCE OF OFFER

The Offer is hereby accepted.

The Contractor is now bound to sell the materials or services listed by the attached contract and based upon the solicitation, including all terms, conditions, specifications, amendments, etc., and the Contractor's Offer as accepted by the State.

This Contract shall henceforth be referred to as Contract No. ADSP016-00005912

The effective date of the Contract is March 1, 2016

The Contractor is cautioned not to commence any billable work or to provide any material or service under this contract until Contractor receives purchase order, contract release document or written notice to proceed.

State of Arizona
Awarded this 29 day of February 2016

Procurement Officer



ATTACHMENT I – General Qualifications
**ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:
ADSP016-00005912**

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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:	Miller Engineers, Inc. dba Souder, Miller & Associates
b. FIRM (OR BRANCH OFFICE) STREET:	3451 Candelaria NE, Suite D
c. FIRM (OR BRANCH OFFICE) CITY:	Albuquerque
d. FIRM (OR BRANCH OFFICE) STATE:	NM
e. FIRM (OR BRANCH OFFICE) ZIP CODE:	87107
f. YEAR ESTABLISHED:	1985
(g1). OWNERSHIP - TYPE:	Corporation
(g2) OWNERSHIP - SMALL BUSINESS STATUS:	N/A
h. POINT OF CONTACT NAME AND TITLE:	Karl E. Tonander, P.E., P.G.
i. POINT OF CONTACT TELEPHONE NUMBER:	(800) 647-0799
j. POINT OF CONTACT E-MAIL ADDRESS:	Karl.tonander@soudermiller.com
k. NAME OF FIRM (If block 1a is a branch office):	



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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
Biologist	P		3
CADD Technician	P		18
Civil Engineer	P		8
Construction Inspector	P		7
Environmental Engineer	P		6
Environmental Scientist	P		11
Geodetic Surveyor	P		11
Geographic Information Systems Specialist	P		1
Geologist	P		12
Hydrologist	P		2
Project Manager	P		4
Sanitary Engineer	P		5
Structural Engineer	P		2
Technician / Analyst	P		28
Transportation Engineer	P		14
Water Resources Engineer	P		25
Other	P		47
Total			204



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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 <i>(see below)</i>
82	Phase I Environmental	2
214	Construction Surveying; Geodetic Surveying; Land Surveying; Topographic Surveying and Mapping	6
116	Petroleum Storage Tank	5
32	Solid Wastes; Incineration; Landfill	4
70	Petroleum and Fuel (Storage and Distribution) Tank Site Remediation	4
164	Water Supply; Treatment and Distribution; Sewage Collection, Treatment and Disposal; Waste Water Treatment Facility	7
50	Highways; Streets; Intelligent Transportation Systems; Traffic and Transportation Engineering; Transportation;	6
117	Recreation Facilities; Storm Water Handling and Facilities	5

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

a. NAME Douglas W. Mize, P.E.	b. ROLE IN THIS CONTRACT Principal / General Civil Engineer	c. YEARS EXPERIENCE	
		1. TOTAL 23	2. WITH CURRENT FIRM 20
d. LOCATION <i>(City and State)</i> Farmington, New Mexico			
e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> B. S. Civil Engineering, New Mexico State University, Las Cruces, NM, 1992		f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Engineer, Arizona (47952); Colorado (32805); New Mexico (13678); Utah (6920709-2202)	
g. OTHER PROFESSIONAL QUALIFICATIONS <i>(Organizations, Awards, etc.)</i> American Public Works Association; New Mexico Society of Professional Engineer			

H. RELEVANT PROJECTS

	(1) TITLE AND LOCATION <i>(City and State)</i>	(2) YEAR COMPLETED	
		Professional Services	Construction Scheduled for
1.	Foothills Enhancement Project, Farmington, NM	2015	2016
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Mr. Mize completed Quality Assurance and Quality Control (QA/QC) oversight for the development of the reconstruction design plans for the City of Farmington Public Works Department. The QA/QC of the design involved reviewing and verifying grading and drainage, horizontal and vertical curve criteria, signage, development of design speeds, and reviewing geometric design of the intersection for conformance with City of Farmington and New Mexico Department of Transportation (NMDOT) design standards.		
2.	Bloomfield School District Water Rights	2015	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Mr. Mize prepared water right applications, maps, and lease agreement for the Bloomfield School District to lease water to the City of Bloomfield for their use. Mr. Mize coordinated with the School District, City, Office of the State Engineer (OSE), plus attorney to complete the water right lease.		
3.	Ute Mountain Ute Tribe, Towaoc, CO and White Mesa, UT	2015 - Present	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Souder, Miller & Associates was selected to complete four (4) Preliminary Engineering Reports (PER) for the Ute Mountain Ute Tribe (UMUT), two in Towaoc, CO and Two in White Mesa, UT. There are one water and one wastewater PER for each community. Mr. Mize negotiated the contracts with the Tribe, has oversight on the PER's, coordination with the Tribe, USDA, and IHS. These PER are currently ongoing and are expected to be completed in the Spring of 2016.		
4.	Letter of Map Revision, Grand Junction CO	2015	N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Working with a private developer, Mr. Mize coordinated with the City of Grand Junction, CO and had oversight of the application and maps that were prepared to obtain an Acknowledgement Letter from the City, plus provide a package to be submitted to the Federal Emergency Management Agency (FEMA). This work included oversight of survey data and collection, interpretation of the inundation limits of the Colorado River, grading and drainage plans, and completion of all maps and applications.		



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

Koogler Middle School, Aztec, NM

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2011	2011

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

Check if project performed with current firm

5.

Mr. Mize completed site civil grading and drainage, i.e. storm drainage system both surface and piped, curb and gutter, sidewalk, bus loop, parent drop-off, parking lot, utility, and retaining wall designs. The project was completed through Greer Stafford SJCF architects in Albuquerque, New Mexico. In addition, SMA is currently providing construction support services to Greer Stafford, the School District, and Contractor during the construction of the project. SMA also provided coordination for the proposed improvements, i.e. driveway locations, signage, and a Traffic Impact Analysis (TIA) through the NMDOT utilizing a New Mexico-based sub-consultant. In addition, SMA coordinated with the school district representatives, architect, landscape architect, and the City of Aztec to complete the project design.



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

a. NAME Andrew Robertson, P.E.	b. ROLE IN THIS CONTRACT Principal / Water Resources Engineering	c. YEARS EXPERIENCE	
		1. TOTAL 17	2. WITH CURRENT FIRM 11
d. LOCATION (<i>City and State</i>) Albuquerque, New Mexico			
e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) M.S.-Civil Engineering, University of Texas, Austin, TX, 1996 B.S.-Chemistry, Rice University, 1994		f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Engineer: New Mexico (15805) Licensed Contractor (MS03)	
g. OTHER PROFESSIONAL QUALIFICATIONS (<i>Organizations, Awards, etc.</i>) USDA Award for Most Outstanding Service to New Mexico Rural Communities, 2007 BRICK Award for Top 10 National Community Leaders under Age 30, New York, 2000 Commissioner's Award for Outstanding Service, Hidalgo County, TX, 1998			

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION (<i>City and State</i>) Navajo Nation - Mariano Lake Chapter Water System Improvements, NM	(2) YEAR COMPLETED	
		Professional Services 2015	Construction (if applicable) 2015
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm		
	The water system improvements project is comprised of five (5) phases to supply water to approximately 200 families. Phases 1A, 1B, and 1C are near completion, which include extension of approximately nine miles of PVC water distribution lines and service lines with meters to serve 28 homes. Completion of Phase 1 is anticipated to leverage funding from the IHS by reducing the unit cost per home and thereby boost the overall project's SDS score, thus allowing IHS to complete Phases 2 through 5. IHS is also anticipated to provide wastewater service to all of these families as part of their follow-on project phases. SMA also provided bidding and construction observation/management services to ensure a successful project. Construction of the project is substantially complete and the project is in process of being inspected and accepted by the Navajo Tribal Utility Authority (NTUA). SMA also assisted in securing over \$1.7 million dollars in funding for the project, with \$1 million coming from TIF.		
2.	(1) TITLE AND LOCATION (<i>City and State</i>) Ramah Navajo Chapter New Water Well/Rocky Ridge Water System Extension for Ramah Development Project, NM	(2) YEAR COMPLETED	
		Professional Services 2015	Construction (if applicable) 2015
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm		
	Mr. Robertson is the Principal-in-Charge of this project. The first phase of the development, the Detention Center, is currently under construction, and is the initial project of a master plan including a judicial complex and a residential subdivision. The original water project was to provide water service to the site via a new water well. The well was to be located within the site's 15-acre property boundary and provide potable water and fire protection for the entire development, including future developments. SMA completed environmental clearance, topographical surveying, NMDOT and BIA parallel utility permits/easements and project plans for the waterline on a fast-tracked schedule to ensure water service would be made available in time for completion of the Detention Center project, anticipated for the summer of 2015. Construction of the waterline is currently underway by RNUA, with limited construction management assistance provided by SMA, and is anticipated to be completed in time for the opening of the Detention Center facility.		
3.	(1) TITLE AND LOCATION (<i>City and State</i>) Eastern Navajo Water Pipeline (a.k.a. Cutter Lateral) – Eastern Navajo Agency, NM	(2) YEAR COMPLETED	
		Professional Services On-going	Construction (if applicable) On-going
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm		
	Mr. Robertson was responsible for fundraising, inter-chapter, and inter-agency coordination, field alignment staking, oversight of archaeological and environmental clearances, rights-of-way acquisition, coordination of multiple sub-consultants, project design, and QA/QC. He assisted the owner with negotiation between owner and non-Navajo water users, set-up of O&M fund for operating utility, and development of new contract templates and engineering standards for future water projects. This is a multi-phase and multi-year project, currently in progress. The total project budget is \$28.4 million.		
4.	(1) TITLE AND LOCATION (<i>City and State</i>)	(2) YEAR COMPLETED	



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Planning for the Ramah Mountain View Waterline Extension Project, NM

Professional Services
2012

Construction (if applicable)
N/A

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

Check if project performed with current firm

Mr. Robertson completed the PER for the proposed Ramah Mountain View waterline project, in accordance with USDA RUS Bulletin 1780-2. The PER evaluated several possible scenarios for providing water service to the area. A hydraulic model was completed for each scenario and identified potential areas of low service pressure/flow. Several constraints were associated with planning of this project, including limitations on placement of the waterline alignment to coincide with existing roadways, bypassing an inaccessible allotment and matching the layout of the existing subdivision, which already has constructed houses. With assistance provided by SMA, the Chapter was able to secure Tribal Infrastructure Funding (TIF) for the project for design of the recommended alternative.

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

Green Ridge Water Innovation Project – Green Ridge, NM

(2) YEAR COMPLETED

Professional Services
2015

Construction (if applicable)
On-going

5.

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

Check if project performed with current firm

Mr. Robertson was responsible for fundraising, origination of innovative treatment concept, planning, pilot testing, design, and construction management of innovative technology to remove fluoride and arsenic from drinking water. Total project budget: \$740,000. Project currently underway in pilot testing phase. This project was awarded the American Public Works Association, First Place for Best Emergency Construction Project in New Mexico, 2005.



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

<p>a. NAME William F. Brewster, P.L.S., CFedS</p>	<p>b. ROLE IN THIS CONTRACT Principal / Survey and Mapping</p>	<p>c. YEARS EXPERIENCE</p> <table border="1"> <tr> <td>1. TOTAL 36</td> <td>2. WITH CURRENT FIRM 8</td> </tr> </table>		1. TOTAL 36	2. WITH CURRENT FIRM 8
1. TOTAL 36	2. WITH CURRENT FIRM 8				
<p>d. LOCATION <i>(City and State)</i> Albuquerque, New Mexico</p>					
<p>e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> B.S.-Business Administration, University of Phoenix, 1998</p>	<p>f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Surveyor: New Mexico (#10855); Professional Land Surveyor: Arizona (#30345); Arkansas (#1556); California (#6722); Idaho (#8746); Missouri (#19231); Nevada (#9445); Texas (#5058); Utah (#190107-2201); Washington (#34128); Kansas (#1628); Certified Federal Surveyor: CFedS (#1184)</p>				
<p>g. OTHER PROFESSIONAL QUALIFICATIONS <i>(Organizations, Awards, etc.)</i> National Society of Professional Surveyors</p>					

H. RELEVANT PROJECTS

(1) TITLE AND LOCATION <i>(City and State)</i>		(2) YEAR COMPLETED	
ADOT Interstate 10 Widening, Casa Grande, Arizona		Professional Services 2013	Construction (if applicable) 2013
(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE		<input checked="" type="checkbox"/> Check if project performed with current firm	
<p>1. Mr. Brewster was the Principal Surveyor for the construction surveying of I-10 Widening Project, Val Vista to Earley Roads, Casa Grande, Arizona, ADOT TRACS #758501C. The client was Ashton Contractors and Mr. Brewster was responsible for staking all structures, main line roadway, ramps, utilities, striping and quantities for this 10-mile project. Professional Services Costs: \$120,000 Construction Costs: \$30MM</p>			
(1) TITLE AND LOCATION <i>(City and State)</i>		(2) YEAR COMPLETED	
Tsaile Dam Reconstruction, Navajo Indian Reservation, Lukachukai, Arizona		On-Going	
(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE		<input checked="" type="checkbox"/> Check if project performed with current firm	
<p>2. Mr. Brewster is the Principal Surveyor in charge of construction surveying for this Bureau of Indian Affairs Project in Northeastern Arizona. The client is Weeminuche Construction and the survey team is responsible for staking inlet and outlet works, earthen dam with keyway and all other appurtenant items. Professional Services Costs: \$106,000 Construction Costs: \$12MM</p>			
(1) TITLE AND LOCATION <i>(City and State)</i>		(2) YEAR COMPLETED	
Lukachukai Bridge, Navajo Indian Resrvation, Lukachukai, Arizona		On-Going	
(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE		<input checked="" type="checkbox"/> Check if project performed with current firm	
<p>3. Mr. Brewster is the Principal Surveyor in charge of construction surveying for this Bureau of Indian Affairs 3-span bridge replacement over the Lukachukai Wash. The client is Weeminuche Construction and the survey team is responsible for control verification, pre-construction topographic surveys, bridge layout, approaches layout, roadway staking, as-built drawings and right-of-way monumentation. Professional Services Costs: \$65,000 Construction Costs: \$3MM</p>			



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	(1) TITLE AND LOCATION (<i>City and State</i>)	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
4.	ALTA Land Title Surveys Within State Lands, Cochise County, Willcox, Arizona	2014	
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE	<input checked="" type="checkbox"/> Check if project performed with current firm	
	Mr. Brewster was the Principal Surveyor for land title and Right-of-Way Surveys Across State Lands within T13S, R22E; T14S, R22E; T14S, R21E; G&SRM, Cochise County, Arizona for Torch Energy Group for the future site of 100 MW wind farm. Professional Costs: \$30,000		
	Thornton Road Improvements, Casa Grande, Arizona	2014	
5.	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE	<input checked="" type="checkbox"/> Check if project performed with current firm	
	Mr. Brewster was Principal Surveyor for topographic, design and right-of-way surveys for Thornton Road from Cottonwood to SR 285 (1.5 miles) for Schlesinger Consulting Engineering (SCE) and Parsons Brinckerhoff (PB) Team under contract to the City of Casa Grande . Project features included location of utilities, Union Pacific Rail crossing, existing irrigation structures and pavement. Professional Costs: \$60,000		



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

a. NAME Karl E. Tonander, P.G., P.E., C.P.G.	b. ROLE IN THIS CONTRACT Principal / Engineering / Environmental	c. YEARS EXPERIENCE	
		1. TOTAL 23	2. WITH CURRENT FIRM 22

d. LOCATION *(City and State)* Las Cruces, New Mexico

e. EDUCATION *(DEGREE AND SPECIALIZATION)*

- M.S.-Mineral Engineering, New Mexico Institute of Mining and Technology, Socorro, NM, 1993
- B.S.-Geological Engineering, New Mexico Institute of Mining and Technology, Socorro, NM, 1991
- 24-Hour MSHA Surface Mine Site Worker Training
- 40-Hour OSHA Hazardous Waste Site Worker Training
- 8-Hour OSHA Hazardous Waste Site Supervisor Training
- Arizona Qualified (Petroleum Storage Tank) Consultant
- Colorado Petroleum Storage Tank Listed Consultant #5789
- Texas Commission on Environmental Quality LPST Project Manager #PM0000245
- Mine and Mill Closure 2-Day Short Course (Society for Mining, Metallurgy and Exploration)
- Construction Inspection 4-Hour Short Course (Miller Engineers & Scientists)
- Surface Mine Driver Safety Course (Phelps Dodge Mining Co.)

f. PROFESSIONAL TRAINING - REGISTRATIONS

- Professional Geologist: Alaska (PG-487); Louisiana (PG-443); Texas (PG-563); Utah (5355949-2250); Washington (PG-1509); Wyoming (PG-2606)
- Professional Engineer: Colorado (48460); New Mexico (18742); Texas (102725); Civil-Arizona (49014)
- American Institute of Professional Geologists-Certified Professional Geologist (CPG-10220)

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

- Professional Organizations: Society for Mining, Metallurgy and Exploration; American Institute of Professional Geologists (NM Section Vice President 2002, President 2003-2004, Acting President 2012)
- Hydrologist, Santa Fe County Mine Plan Review Board 1994-1996
- Member, New Mexico Institute of Mining and Technology, Mineral Engineering Department Industry Advisory Board 2000–present
- Member, New Mexico Institute of Mining and Technology, Civil and Environmental Engineering Department Industry Advisory Board 2014-present
- Member, New Mexico Board of Licensure for Professional Engineers and Professional Surveyors 2014-present (Board Secretary 2015, Professional Engineering Committee Chair 2015)

PRESENTATIONS

- Multiple presentations as New Mexico Rural Water Association conferences and New Mexico Water and Wastewater Associations Conferences for operator certification:
 - *Advanced Water/WW Math*
 - *Hydrology & Wells*
 - *Pumps & Motors*
 - *Beginning Wells & Pumps*
 - *Advanced Hydrology*
 - *Beginning Wells & Pumps*
 - *Pumps & Wells*
 - *NEPA Compliance for Funding Access*
 - *Hydrology, Well Construction, and Pumps*
 - *Hydrology, Well Construction, Pumps, and Basic System Hydraulics*
 - *Basic Well Construction & Hydrology*
 - *NEPA Nuts & Bolts*
 - *Basic Well Siting and Construction*
- Tonander & Kemp, 2001, *Environmental Site Assessments for Real Estate Transactions*, continuing education credit presentation series to regional group members of the Realtors Association of New Mexico, Ruidoso, Silver City, Las Cruces, Carlsbad & Roswell, New Mexico
- Tonander, Karl E., 1999, *Closure Plans for New Mexico Mines Mills & Smelters*, presentation at New Mexico Institute of Mining & Technology, Socorro, New Mexico



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PUBLICATIONS

- Tonander, Karl E., 1993, *Interpretation of Seismic Reflection Data from the Piledriver Event Area, Nevada Test Site: A Case Study for Evaluation of Technique for Characterization of Void and Chimney Features*, Masters Thesis, New Mexico Institute of Mining & Technology, Socorro, New Mexico
- Tonander, Karl E., 1992, *Evaluation of Geophone Coupling Methods for High Frequency Seismic Reflection*, prepared for Los Alamos National Laboratory (under contract from New Mexico Institute of Mining & Technology)

H. RELEVANT PROJECTS

	(1) TITLE AND LOCATION (<i>City and State</i>)	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	Butterfield Trail Regional Landfill, Deming, NM	2012	2012
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Principal engineering review for design of the first operational solid waste disposal cell at the Butterfield Trail Regional Landfill. Project costs: engineering \$80k, construction \$1,000k.		
2.	Groundwater Contaminant Remediation System, Las Cruces, NM	2009	2010
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Principal and design engineer for R. C. Sanders Trucking soil and groundwater contaminant remediation system. System includes soil vapor extraction with thermal oxidation and contingency in-situ air stripping. Project costs: engineering \$60,000, construction \$280,000.		
3.	40-Year Water Plan, Doña Ana, NM	2011	n/a
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Principal geoscientist and author of 40-Year Water Plan for Doña Ana Mutual Domestic Water System. Project costs: planning \$35,000.		
4.	Environmental Information Document for Water & Wastewater Improvements, Chaparral, NM	2013	n/a
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Principal engineer and author of Environmental Information Document (Environmental Assessment level of effort) for Desert Aire Mutual Domestic Water and Sewer Works Association water and wastewater improvements project. Project costs: planning \$60,000.		
5.	Site Characterization Studies, Horseshoe/Gold/Copperplate Gulches, Morenci, AZ	2007	n/a
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Principal geoscientist, data collection and author of Horseshoe Gulch, Gold Gulch and Copperplate Gulch site characterization studies for Phelps Dodge Morenci, Inc. Project costs: planning \$100,000.		



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

a. NAME Reid S. Allan, P.G.	b. ROLE IN THIS CONTRACT Principal / QA/QC / Environmental / Geology	c. YEARS EXPERIENCE	
		1. TOTAL 23	2. WITH CURRENT FIRM 20
d. LOCATION <i>(City and State)</i> Farmington, New Mexico			
e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> M.S. Geology, New Mexico Institute of Mining and Technology, 1988 B.S. Geology; Computer Science Minor, Dickinson College, 1985		f. PROFESSIONAL TRAINING - REGISTRATIONS <ul style="list-style-type: none"> Professional Geologist, Utah #5554617-2250, Wyoming #PG-2732; American Institute of Professional Geologists (10331); Colorado Registered Consultant #5788 Arizona Qualified Consultant; 40-Hour HAZWOPER; 8-Hour HAZWOPER Manager/Supervisor 	
g. OTHER PROFESSIONAL QUALIFICATIONS <i>(Organizations, Awards, etc.)</i> National Water Well Association, AGWSE Division; Society of Mining, Metallurgy and Exploration, Environmental Division; National Ground Water Association			

H. RELEVANT PROJECTS

	(1) TITLE AND LOCATION <i>(City and State)</i> National King Coal (GCC Energy) General Environmental & Engineering Support, NM & CO	(2) YEAR COMPLETED	
		Professional Services 2010	Construction (if applicable)
1.	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Souder, Miller & Associates has provided professional services to GCC Energy/National King Coal mining facilities in New Mexico and Colorado for 10 years. Mr. Allan oversaw a number of prior and ongoing projects for this client. The projects include audits of mining and coal transportation activities for compliance with hazardous materials, storm water, air quality, and contaminant spill prevention regulations. The hazardous materials inventory resulted in material documentation and subsequent disposal activities. Permits were completed for stormwater pollution prevention and sediment control at several facilities, air quality permit revisions, above ground storage tank spill prevention. Additional projects for GCC Energy have included Phase 1 and Phase 2 Environmental Site Assessments involving historical records review for issues of environmental concern, field confirmation of findings, and further confirmatory sampling and laboratory analysis. Findings of these ESA projects were documented in technical reports.	<input checked="" type="checkbox"/>	Check if project performed with current firm
	(1) TITLE AND LOCATION <i>(City and State)</i> Environmental Site Assessments for 14 Industrial Facilities, Various Sites in NM & CO	(2) YEAR COMPLETED	
		Professional Services 2013	Construction (if applicable)
2.	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Souder, Miller & Associates was selected by a private client to assess and document environmental concerns at 14 bulk petroleum storage facilities located in New Mexico and Colorado. The goal of the project was to determine potential financial liabilities associated with the properties. Mr. Allan led the project team. The scope of work involved historical records review pertaining to site ownership and the nature of the materials stored at the facilities, review of reported petroleum releases on record with regulatory agencies, determination of the scope of site visits for field confirmation of potential concerns, preparation of standardized field note forms for recording field observations, field work, collation of data, and report preparation.	<input checked="" type="checkbox"/>	Check if project performed with current firm
	(1) TITLE AND LOCATION <i>(City and State)</i> Copper Smelter Environmental Audit, Inventory and Compliance,	(2) YEAR COMPLETED	
		Professional Services 2000	Construction (if applicable)
3.	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Mr. Allan completed field and office work to inventory a major copper smelter and ancillary properties for environmental issues related to ore processing. All aspects of the operation were reviewed, from ore delivery and handling to smelter fuel oil storage to acid byproduct handling and transportation. Data for the multi-acre facility was recorded in a project specific data base and related to CAD-generated maps. Recommendations were made for specific site remediation, revised hazardous materials handling practices, and spill reporting and control.	<input checked="" type="checkbox"/>	Check if project performed with current firm



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

Uranium Mill Tailings Investigation Project, Navajo Nation

(2) YEAR COMPLETED

Professional Services
2010

Construction (if applicable)

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

Check if project performed with current firm

4.

Mr. Allan is presently directing a project to further investigate potential subsurface soil and ground water contamination at a Uranium Mill Tailings Remediation Act project on the Navajo Nation. While the Department of Energy has already investigated the site and installed a remedial system, the Navajo Nation remains concerned about off-site migration of contaminants in ground water. Monitoring wells of up to 350 feet in depth will be installed, developed, and sampled. Of additional concern are at least two off-site areas which may have been contaminated during operation of the primary milling facility now being addressed under UMTRA. These properties will be investigated by drilling and sampling soil borings to document conditions from the surface to 15 feet below grade. Detailed core sampling and analysis plans for documentation of potential milling artifacts (such as milling balls), uranium ore, and other evidence of ore processing operations at the off-site properties were prepared.

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

Unocal Molycorp Tailings Seepage Assessment and Control Project, Questa, NM

(2) YEAR COMPLETED

Professional Services
2002

Construction (if applicable)
2002

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

Check if project performed with current firm

5.

Unocal operates the Molycorp Mine in Questa, New Mexico. A mill tailings transport piping system carries processed tailings from the mill down the Red River canyon to ponds, where the tails dewater over time. Mr. Allan conducted the investigation, remedial design, construction, and operation of a tailings dam seepage control system. The project involved review of historical tailings disposal practices, review of the existing National Priority Discharge Elimination System permit conditions in order to allow for additional discharge, installation of monitoring and pumping wells, aquifer testing and water quality analysis, work with engineers on pumping system design, construction oversight, pumping well trouble shooting, and discharge sampling.



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

a. NAME Eric L. Krch, P.E., C.F.M.	b. ROLE IN THIS CONTRACT Engineering Manager / Senior Civil Engineer / Lead Drainage Engineer	c. YEARS EXPERIENCE	
		1. TOTAL 31	2. WITH CURRENT FIRM 5 years
d. LOCATION <i>Las Cruces, New Mexico</i>			
e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) B.S. Engineering Science University of Northern Arizona Flagstaff, AZ 1981		f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Engineer in Arizona #24992 (first license), Colorado, Utah, New Mexico and Texas. Licensure in Wyoming pending application acceptance.	
g. OTHER PROFESSIONAL QUALIFICATIONS (<i>Organizations, Awards, etc.</i>)			

New Mexico Certified Floodplain Manager

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION (<i>City and State</i>) 100 MW Solar Array – Preliminary Site Design, Bakersfield, Texas	(2) YEAR COMPLETED	
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Preliminary site development design for a 100 mega-watt solar array project in West Texas. Work include site surveying of range land, hydrologic analysis of offsite watersheds, onsite flood routing and control structures, Mass-grading of 1,000,000 cubic yards, and quantification of all recommended civil site work.	Professional Services 2015	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>) 30 MW Solar Array (phase II) – Preliminary Site Design, Fort Stockton, Texas	(2) YEAR COMPLETED	
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Preliminary site development design for a 30 mega-watt solar array project in West Texas. Work include site surveying of range land, hydrologic analysis of offsite watersheds, onsite flood routing and control structures, Mass-grading of 15,000 cubic yards, and quantification of all recommended civil site work.	Professional Services 2015	Construction (if applicable) N/A
<input checked="" type="checkbox"/>		Check if project performed with current firm	
3.	(1) TITLE AND LOCATION (<i>City and State</i>) 30 MW Solar Array (phase I) – Preliminary Site Design, Fort Stockton, Texas	(2) YEAR COMPLETED	
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Final site design for construction for a 30 mega-watt solar array project in West Texas. Work include fencing and move-on facility design, hydrologic analysis of offsite watersheds, onsite flood routing and control, Mass-grading of 25,000 cubic yards, and quantification of all civil site work.	Professional Services 2013	Construction (if applicable) 2014
<input checked="" type="checkbox"/>		Check if project performed with current firm	
4.	(1) TITLE AND LOCATION (<i>City and State</i>) North Carlsbad Interception Channel (Phase I and II), Carlsbad, New Mexico	(2) YEAR COMPLETED	
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE North Carlsbad area sees flooding from several large arroyos that have been cut off from the Pecos River. Project goal is to develop an interception and storage system and reconnect these arroyos to the river while avoiding developed lands. Phase I and II (feasibility and detailed hydraulic modeling) have identified a solution for Eddy county (project sponsor). Phase III will be detailed design of the interception channel and storage pond.	Professional Services 2015	Construction (if applicable) N/A
<input checked="" type="checkbox"/>		Check if project performed with current firm	



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

(2) YEAR COMPLETED

I-25 MP 123.5 Box Culvert Restoration, San Antonio, New Mexico

Professional Services
2014

Construction (if applicable)
2015

5.

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

Check if project performed with current firm

Project under New Mexico Department of Transportation oversight/funding addressed large concrete box culvert (2 14'x 12") stabilization, capacity reduction and erosion scour protection. Design slip lining of CBC with 8' diameter HDPE pipe, Saint Antony Fall style energy dissipater using gabions, and under pinning design to two destabilized wing walls.



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

a. NAME Robert L. Porter	b. ROLE IN THIS CONTRACT Project Engineer / Civil Engineer / Hydrology	c. YEARS EXPERIENCE	
		1. TOTAL 37	2. WITH CURRENT FIRM 7
d. LOCATION <i>(City and State)</i> Safford, Arizona			
e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> B.S. & M.S. in Civil Engineering, University of Illinois, 1974		f. PROFESSIONAL TRAINING – REGISTRATIONS Professional Engineer 16386, AZ Certified Floodplain Manager Professional Engineer 19252	
g. OTHER PROFESSIONAL QUALIFICATIONS <i>(Organizations, Awards, etc.)</i> Arizona Certified Floodplain Manager			

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION <i>(City and State)</i> LOMR of Pecos River to establish Base Flood Elevations, City of Carlsbad, NM	(2) YEAR COMPLETED:	
		Professional Services 2015	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Souder, Miller & Associated completed HEC-RAS analysis of 6,400 feet of the Pecos River on the north side of Carlsbad. SMA mapped the proposed floodplain on AUTOCAD drawings and a copy of the Flood Insurance Rate Map. The services were completed for the City of Carlsbad. SMA completed a MT-2 application to FEMA on behalf of the City of Carlsbad. FEMA approved the Letter of Map Revisions establishing base flood elevations for this portion of the Pecos River. Cost for services = \$30,000.	<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	(1) TITLE AND LOCATION <i>(City and State)</i> San Jose Blvd Improvements, Carlsbad, NM	(2) YEAR COMPLETED 2015	
		Professional Services 2015	Construction (if applicable) Anticipated 2016
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE SMA planned and design the improvements of San Jose Blvd in the City of Carlsbad. Improvements included grading and drainage, curb and gutter, pavement, storm sewers for approximately 1.5 miles of urban roadway. SMA prepared the construction plans and completed construction administration. Cost estimate = \$2,000,000 total project. SMA completed the surveying for the project. Engineering costs = \$537,000.	<input checked="" type="checkbox"/>	Check if project performed with current firm
3.	(1) TITLE AND LOCATION <i>(City and State)</i> Union, Montana, Berrendo Corridor, Roswell, NM	(2) YEAR COMPLETED: 2015	
		Professional Services 2015	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE SMA planned and designed the improvements of 2.6 miles of Roadway on the Union Avenue-Monanta Avenue-Berrendo Road corridor. The improvements included grading and drainage, curb and gutter, storm sewers, and sidewalks. Drainage Analysis and report. Estimated Engineering costs = \$206,000. Construction Cost estimate = \$4,000,000. Roswell is planning to construct the project in the future. (Robert Porter planned and design the drainage system improvements).	<input checked="" type="checkbox"/>	Check if project performed with current firm
4.	(1) TITLE AND LOCATION <i>(City and State)</i> S.R. 80 Waterline Improvements, Saint David, 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 SMA surveyed the alignment, prepared the plans, permits, design report, specifications, and bidding documents for the Saint David Domestic Water Improvement District. The project included the installation of a new 8" diameter waterline for 2000 feet along State Route 80 in Saint David Arizona. ADOT approved the work. Engineering costs = \$52,000. Construction costs = \$200,000. (Robert Porter was the Engineer of Record on the plans and permits.)	<input checked="" type="checkbox"/>	Check if project performed with current firm



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

Fairgrounds Road Waterline Improvements, Greenlee County, Arizona

(2) YEAR COMPLETED: 2015

Professional Services
2015

Construction (if applicable)
2015

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

Check if project performed with current firm

5.

SMA surveyed the alignment, prepared the plans, permits, design report, and specifications for Greenlee County and the Town of Duncan to install approximately 6,000 LF of 8" diameter waterline including valves, services, and fire hydrants. The waterline is owned and operated by the Town of Duncan, but serves the Greenlee County Fairgrounds and several properties along the alignment.

Engineering costs = \$60,000; Estimate Construction Costs = \$200,000

Greenlee County and Town of Duncan constructed the improvements. (Robert Porter was the engineer of record on the plans).



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

a. NAME Greta Quintana, P.E.	b. ROLE IN THIS CONTRACT Project Manager / Structural / Civil Engineer	c. YEARS EXPERIENCE	
		1. TOTAL 25	2. WITH CURRENT FIRM 15
d. LOCATION <i>(City and State)</i> Farmington, New Mexico			
e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> B. S. Civil Engineering, University of Colorado-Boulder, 1990 M.S. Civil Engineering/Structural Emphasis, University of Colorado-Denver, 1997		f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Engineer, Arizona (53465); Colorado (31464); New Mexico (13561); Utah (8829137)	
g. OTHER PROFESSIONAL QUALIFICATIONS <i>(Organizations, Awards, etc.)</i> President, New Mexico Society of Professional Engineers, San Juan Chapter			

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION <i>(City and State)</i> Mancos Wastewater Treatment Upgrade - Mancos, CO	(2) YEAR COMPLETED	
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Ms. Quintana designed the headworks building foundations, mechanical supports, retaining walls. The building is a pre-engineered metal building approximately 3600 square feet. The building includes catwalks, hoists, office area, lab area, as well as the process and mechanical rooms. The project also included the design of a concrete 320,000 gallon MSABP tank. The tank is 45'-0" x 47'-8" x 20'-0" high. There were many challenges in the design of the building and tank due to the limited site area, the sloped site, high ground water and existing soil conditions.	Professional Services 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> First Solar – Array Supports, Foundations and PCS structures NM, AZ, CO, TX	(2) YEAR COMPLETED	
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Ms. Quintana provides structural QA/QC for structural construction drawings and calculations for solar array supports, piers and pre-cast structures.	Professional Services 2015	Construction (if applicable) N/A
<input checked="" type="checkbox"/>		Check if project performed with current firm	
3.	(1) TITLE AND LOCATION <i>(City and State)</i> Dennehotso Multi-Purpose Center, Dennehotso, AZ	(2) YEAR COMPLETED	
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Ms. Quintana provided structural engineering/design for the project. The Multi-Purpose Center is approximately 8,100 square feet, masonry, light gage steel, structural steel and timber construction. Ms. Quintana was responsible for final design and construction plans.	Professional Services 2008	Construction (if applicable) 2009
<input checked="" type="checkbox"/>		Check if project performed with current firm	
4.	(1) TITLE AND LOCATION <i>(City and State)</i> Cutter Lateral, Eastern Navajo Agency, NM	(2) YEAR COMPLETED	
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Ms. Quintana provided structural engineering/design for the project, including foundations surge tank and well house buildings, tanks supports and various structural design.	Professional Services 2015	Construction (if applicable) N/A
<input checked="" type="checkbox"/>		Check if project performed with current firm	



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

Williams Midstream, Ignacio, CO

(2) YEAR COMPLETED

Professional Services
2015

Construction (if applicable)
N/A

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

Check if project performed with current firm

Ms. Quintana provided a site visit and structural evaluation of over 150 concrete foundations and supports at a gas plant for Williams Midstream. Ms. Quintana provided a visual evaluation, recommendations for additional testing and evaluation in addition to recommendations for repair and/or removal.



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

a. NAME Thomas M. Dupont, PLS	b. ROLE IN THIS CONTRACT Professional Surveyor	c. YEARS EXPERIENCE	
		1. TOTAL 15	2. WITH CURRENT FIRM 10
d. LOCATION <i>(City and State)</i> Safford, Arizona			
e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i>		f. PROFESSIONAL TRAINING - REGISTRATIONS Professional Land Surveyor, AZ 52050	
g. OTHER PROFESSIONAL QUALIFICATIONS <i>(Organizations, Awards, etc.)</i>			

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION <i>(City and State)</i> Red Horse 2 Wind and Solar located near Willcox, Arizona	(2) YEAR COMPLETED:	
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Construction of a new 30 MW wind turbine electrical facility and a 55 MW solar facility. Souder, Miller & Associates role in the project was to provide boundary surveying services for the acquisition of AZ State Trust Land and private lands for the development as well as topographic surveying for engineering design and construction surveying services. Mr. Dupont was the Project Manager and Surveyor of Record for this project and was responsible for all aspects of the services provided for this project. Cost of consulting services for this project was \$299,000.	Professional Services 2015	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> Thornton Road Reconstruction, Casa Grande, Arizona	(2) YEAR COMPLETED:	
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Reconstruction of 2 miles of Thornton Road in Casa Grande, Arizona. Souder, Miller & Associates role in the project was to provide Right of Way mapping and topographic surveying for engineering design. Mr. Dupont was the Project Surveyor for this project and was responsible for the field surveying efforts and the preparation of the mapping deliverables. Cost of consulting services for this project was \$31,000.	Professional Services 2015	Construction (if applicable) N/A
		<input checked="" type="checkbox"/> Check if project performed with current firm	
3.	(1) TITLE AND LOCATION <i>(City and State)</i> Safford Regional Airport – Taxiway A2 RSAT Removal and Runway 12-30 Repairs. Safford, Arizona	(2) YEAR COMPLETED:	
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Souder, Miller & Associates role in the project was to provide construction survey and layout for the project which included staking the removal limits, runway lighting, and runway markings. Mr. Dupont was the Project Manager and Surveyor of Record for this project and was responsible for all aspects of the services provided for this project. Cost of consulting services for this project was \$6,600.	Professional Services 2015	Construction (if applicable) N/A
		<input checked="" type="checkbox"/> Check if project performed with current firm	
4.	(1) TITLE AND LOCATION <i>(City and State)</i> FedEx Distribution Center, Safford, Arizona	(2) YEAR COMPLETED:	
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Souder, Miller & Associates role in the project was to provide construction survey and layout for the project which included staking the new building, parking areas, roadway, hardscape, storm drainage, and utilities. Mr. Dupont was the Project Manager and Surveyor of Record for this project and was responsible for all aspects of the services provided for this project. Cost of consulting services for this project was \$15,800.	Professional Services 2014	Construction (if applicable) N/A
		<input checked="" type="checkbox"/> Check if project performed with current firm	



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<p>(1) TITLE AND LOCATION (<i>City and State</i>)</p> <p>Cold Creek Canyon Br to Old Safford RD, ADOT Project No. 191 GE 154 H823101C located near Clifton, Arizona</p>	(2) YEAR COMPLETED	
	<p>Professional Services Surveying 2014</p>	<p>Construction (if applicable) N/A</p>
<p>5. (3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE</p> <p>Construction of a new 5-span bridge on a new alignment, scour protection, and pavement rehabilitation, and retaining wall. Souder, Miller & Associates role in the project was to provide construction survey and layout for the project which included staking the new 5-span bridge, new roadway on the new bridge alignment, 9 plus miles of pavement rehabilitation, storm drainage, guardrail, pavement markings, and a soil nail wall, Mr. Dupont was the Project Manager and Surveyor of Record for this project and was responsible for all aspects of the services provided for this project. Cost of consulting services for this project was \$57,600.</p>	<p><input checked="" type="checkbox"/> Check if project performed with current firm</p>	



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5a. 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	
Santa Fe River – Bishop Gardens Diversion Structure, Santa Fe, NM	PROFESSIONAL SERVICES 2013	CONSTRUCTION <i>(If applicable)</i> 2013

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
City of Santa Fe	\$40,000	\$101,156

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

This project received Honorable Mention by the ACEC-NM Engineering Excellent Award Program in 2013.

The Bishops Garden Diversion Structure dates back to the late 1800's when it served to hold the grade for the irrigation diversion (acequia) to Bishop Lamy's garden near the cathedral of Santa Fe. The rock work in this area and for substantial reaches upstream and downstream is on the National Register of Historic Properties. The rock work was modified by the Civilian Conservation Corps (WPA) back in the 1930's. The structure now serves an important function of preventing down-cutting of the river bed in the core of the City's historic downtown district.

The structure was in imminent threat of failure due to scour below the structure and failure of previous repair attempts which involved placing grouted stonework underneath the historic boulders. The grouted stones began to separate from the boulders above, thus pulling the foundation out from under it. The large grade differential created a scour condition that exacerbated the situation and led to the threat of imminent failure. To correct the problem, two grade control structures were constructed in series with the existing one in order to stabilize the existing structure and adjacent stone walls, bring the river back up to a stable grade and prevent future erosion downstream. This design was based on the City's Santa Fe River Corridor Master Plan and Drop Structure Design Guidelines. Using hydraulic models to verify hydraulic performance, the conceptual design was refined to ensure that there would not be an adverse impact to the existing FEMA flood plain and make sure that the new structures would fit in with adjacent historic stone work.

The City of Santa Fe was looking for a project that protects a historic structure in one of the highest profile recreation areas in the City. This project provides a permanent solution to the stabilization of the river, while protecting the structure. The City even installed benches on both sides of the river so that passing pedestrians can stop and enjoy the river.



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5b. 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	
Water Resources Planning Study Rio Rancho, NM	PROFESSIONAL SERVICES 2013	CONSTRUCTION <i>(If applicable)</i>

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
City of Rio Rancho	\$128,900	\$128,900

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

SMA prepared a Water Resources Planning Study for Sandoval County to summarize groundwater resources in the Rio Rancho Estates area and evaluate potential options for development of a water supply for the area. Rio Rancho Estates is situated west of and adjacent to the City of Rio Rancho and comprises of 41,323 acres with approximately 41,000 platted lots. It is generally bounded by Rainbow Road on the east and the Rio Grande Valley escarpment to the west, the Sandoval County line to the south and Perlman Road to the north.

Work included evaluating a variety of water supply options, including individual domestic supply wells, utility-scale supply wells, and use of desalinated brackish water from outside the Rio Grande Basin. The evaluation included utilizing the New Mexico Office of the State Engineer's (NMOSE) administrative groundwater flow model for the Rio Grande Basin. The model included all NMOSE approved water rights and associated pumping schedules in the area, including those of Rio Rancho and the Albuquerque Bernalillo County Water Utility Association (ABCWUA). Using the model, groundwater drawdown was predicted below Rio Rancho Estates for each scenario to determine if the NMOSE limit of 2.5 feet per year of aquifer drawdown would be exceeded, thus causing the formation of Critical Management Areas. A variety of build-out phases were evaluated, allowing Sandoval County to conduct land use planning.

As part of the project, SMA also completed conceptual engineering and cost estimates for several water supply scenarios and wastewater collection, treatment and disposal scenarios. Results were summarized in a single report, and presented to County boards and agencies at public meetings.



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5c. 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	
San Jose Boulevard Improvements Phases I & II Carlsbad, NM	PROFESSIONAL SERVICES 2013	CONSTRUCTION <i>(If applicable)</i> 2014

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
City of Carlsbad	\$237,839	\$1,348,542

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

SMA designed roadway improvements including the reconstruction of San Jose Boulevard from Diaz Street south 0.7 miles to Harper Street. The first phase of the construction was completed in January 2013. Included in the scope of the project was expanding the 2-lane road with no sidewalk or curbs to a 3-lane roadway with 2 travel lanes, bicycle lanes, and a center left turn lane from BOP to EOP. New sidewalks with curb and gutter were constructed on both sides of the roadway. Sidewalks, driveways, and intersections were designed to be ADA compliant. A storm drain was constructed to take existing surface drainage to Dark Canyon underground draining the new roadway via curb drop inlets. Drainage at Dark Canyon was analyzed to develop a low-flow structure to replace the current concrete water crossing. Prior to the drainage improvement, the road had to be closed during storm events. The project was split into 2 phases due to funding. SMA assisted the City in their application for MAP funds which they were successful in acquiring.

The construction of the second phase was approximately 80% complete when flooding destroyed the partially constructed low water crossing. SMA was asked to analyze the flood event and prepare a new design on short notice. The City chose to increase the capacity of the structure and SMA was able to complete a new design for the crossing within 3 weeks of notice to proceed from the City. Construction of the new structure was completed in spring 2014. The new structure will eliminate road closures during smaller storm events.

SMA was able to complete the design of the roadway in less than 5 months so that the City could get Federal Highway Administration authorization prior to the end of the federal fiscal year. This was significant in that there were earmark funds, approximately \$980,000.00, which would have otherwise been lost.



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5d. 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	
Survey services – Eleven Dollar General Store Sites Various locations throughout NM	PROFESSIONAL SERVICES 2013	CONSTRUCTION <i>(If applicable)</i> NA

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Dollar General	\$80,675	\$80,675

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

SMA provided survey, mapping & platting services for eleven (11) Dollar General Stores located in Alamogordo, Deming, Dexter, Eunice, Hobbs, La Luz, Las Cruces, Lordsburg, Mesquite, Roswell and Santa Rosa, New Mexico.

Services included: ALTA Land Title Surveys, Topographic Surveys, Subdivision Plats, Flood Certifications, Construction Staking and As-Built Drawings.



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5e. 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	
RC Sanders Trucking Remediation System Operation and Maintenance (Phase V), Las Cruces, NM	PROFESSIONAL SERVICES 2015	CONSTRUCTION <i>(If applicable)</i>

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Wells Fargo / Ms. Billi Ruth Simpson Estate	\$35,767 (Phase V)	\$772,768

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

Petroleum storage tank (PST) remediation and investigation services were provided for a former trucking site. SMA installed the remediation system and is currently operating and maintaining the soil vapor extraction equipment and reporting the monitoring results. SMA started provided environmental services as part of a contract awarded in 2005 and recently completed Phase V services for system operation and monitoring.

SMA provided environmental and petroleum storage tank release investigation and remediation services to the owner. Such services include a primary soil vapor extraction (SVE) system supplemented with an optional Non-Aqueous Phase Liquids (NAPL) skimmer system to directly address the contamination plume at the site. SMA prepared a Conceptual Remediation Plan that included a description of the recommended remediation approach including conceptual design, description of technology, justification for chosen methods, and a basic economic and timeline analysis of the selected method compared to alternatives. Following a review and feedback of the plan by the New Mexico Environment Department, the plan was completed as a Final Remediation Plan and supplemented with information on the goals of the remediation, a proposed implementation schedule, a contingency plan, copies of all required permits, disposal information for removed media, and information pertaining to public notice.

The SVE system was successfully installed, operated and maintained since 2006. During the most recent quarterly operational period, the remediation system operated at an average of approximately 94% successful operational rate and based on laboratory analytical data achieved an average mass recovery rate of approximately 0.5 pounds per hour (lbs/hr). This recovery rate resulted in the removal of approximately 1,098.7 pounds of hydrocarbons (175.8 gallons).



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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.)

Souder, Miller & Associates (SMA) is a New Mexico-based, engineering, environmental and surveying consulting firm with more than 200 qualified staff members. SMA's professional resources include licensed professional engineers, licensed professional surveyors, and geologists, hydrogeologists, environmental professionals, AutoCAD designers, and support staff. With eleven offices across four states, SMA has the resources – people, equipment, and experience – to assist clients with current and future infrastructure planning, engineering, environmental and surveying needs. Our offices are located New Mexico, Colorado, Texas, Utah and Arizona.

Engineering News-Record (ENR) has consistently ranked SMA in the top 25 of the top design firms in the southwest and in the top 6 of New Mexico design firms. In addition, SMA has been identified as a Top Work Place by the Albuquerque Journal for three consecutive years. SMA offers comprehensive professional services ranging from preliminary planning to final project design, including any necessary environmental support, surveying and right-of-way acquisition; bid administration, permitting, construction observation and support services, including grant administration, funding applications and startup operational services.

BUSINESS STRUCTURE

SMA is organized into three business line – engineering, environmental and surveying. Each of these groups has a responsible principal that oversees workload and staffing to ensure timely delivery of products and adherence to project budgets. Within the three core services offered by SMA, there are areas of specialization as described below.

General Civil Engineering

SMA has contracted with many municipal and private clients to provide services in subdivision design and planning, commercial site development, road design, storm water drainage design, solid waste facility engineering, and renewable resources site design.

SMA also provides structural engineering in support of general civil and infrastructure projects including analysis of existing structures and retrofit design; foundations and interior framing; heavy equipment foundation and support; and containment structures. These services have been provided for projects such as schools, community centers, multi-purpose centers, utility systems, and vehicle maintenance centers. SMA's services include:

- Subdivision Design & Planning
- Site Development
- Stormwater Drainage
- Solid Waste Facility Design
- Preliminary Engineering Reports
- Roads and Streets

Transportation

SMA has completed many substantial road and highway projects. We provide construction management as well as earthwork, pavement, and bridge design on roadway projects. Our clients include the New Mexico Department of Transportation, counties, cities, towns, villages, tribes/pueblos, public schools, and private entities. Recent road design experience includes rural arterial and collector streets in difficult soil and topographic conditions, urban arterial and collector streets, and signalized intersections of state highways.

SMA has been called upon to design large and small projects: small projects to provide quick response, design solutions, and construction plans for traffic signalized intersections; large projects to provide thorough evaluation of all design alternatives, sensitive solutions to cultural resources, biological conditions, public involvement, and cost-effective construction engineering solutions.

Specific project tasks often include feasibility studies, alignment alternative design, utility extension design/utility coordination, right-of-way maps, historical/cultural/biological reports, curb-and-gutter design, sidewalk/bicycle path design, landscape design coordination, structural design, parking lot and driveway design, and public information meetings, as well



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as surveying and storm water drainage analysis and design. SMA's services include:

- Highway, Street, and Road Design
- Intersection, Roundabout and Interchange Design
- Traffic Engineering Design
- Alignment Studies
- Roadway Improvements Recommendations
- Construction Traffic Control Plans
- Traffic Studies and Modeling
- Intelligent Transportation Systems (Its)
- Construction Phase Support
- Public Hearings, Project Presentation, Information Workshops
- Bid Document preparation and bidding support

Water and Wastewater System Design

Water and wastewater engineering involves the entire water cycle, from sourcing drinking water supplies to treating and discharging wastewater. SMA assists many public and private entities in securing and maintaining reliable sources of high quality drinking water and in the proper disposal of liquid wastes. Successfully providing water resources engineering services involves producing preliminary and final engineering designs based on the needs and means of the client and the requirements of the funding agency. These designs often involve supply well and system siting, collection/distribution and treatment system design, storage system design, and permitting.

Many of these projects need to be phased to reduce the financial burden associated with the improvements. The initial phase includes a site investigation, resulting in a preliminary engineering report of the water or wastewater system. This report contains specific information regarding the age of the existing system, the adequacy of the equipment, the required system capacities, and any ancillary data such as possible inflow/infiltration sources (for wastewater projects) or well head/source water protection programs (for water projects). An estimated project cost is then developed and possible funding sources are identified.

During the construction phase, SMA provides construction oversight services as well as many other services critical to the proper installation, operation and maintenance of the new system. SMA is also able to assist with the preparation of operation and maintenance manuals, system as-built diagrams, operator training, and loan closure documentation — services commonly required by public and private entities when installing a new water or wastewater system. SMA's water and wastewater engineering services include the following:

- Conceptual Planning
- Utilities Master Planning
- Preliminary Engineering Reports
- Water Supply
- Wells, Reservoirs and Springs
- Storage Tanks
- Distribution and Transmission
- Treatment Systems
- Hydrogeologic Investigation
- Pump Testing
- Well Siting and Design
- 40-Year Water Plans
- Asset Management Plans
- Wastewater Collection
- Wastewater Treatment
- Wastewater Disposal
- Wastewater Reuse
- Alternative Construction

Environmental Services

SMA has completed thousands of environmental projects over the 30-year history of the company. Areas of expertise include NEPA (Categorical Exclusions, Environmental Assessments and Environmental Impact Statements); solid waste management; hazardous waste management; hydrology and hydrogeology studies; water well siting, testing and analysis; soil and groundwater contamination investigation, remediation and reporting; regulatory compliance planning; environmental policy development; indoor air quality assessment; sampling and evaluation of asbestos containing materials; and Environmental Site Assessments and Transaction Screens for real estate.



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Clients include the public sector (federal and state government agencies as well as local municipalities) and private companies (from sole proprietorships to Fortune 500 firms). SMA services industries as diverse as oil and gas extraction and development, mining, renewable energy, commercial real estate and construction, and also provides technical assistance for legal firms that support many of these areas. Services include:

- NEPA (Categorical Exclusions, Environmental Assessments and Environmental Impact Statements)
- Environmental Reports
- Solid waste management
- Hazardous waste management
- Hydrology and hydrogeology studies
- Water well siting, testing and analysis
- Soil and groundwater contamination investigation, remediation and reporting
- Regulatory compliance planning
- Environmental policy development
- Indoor air quality assessment
- Sampling and evaluation of asbestos containing materials
- Environmental Site Assessments and Transaction Screens for real estate.
- Oil & Gas Industry Services
- Mining Services
- Renewable Energy
- Expert Testimony
- Air Quality

Surveying

SMA provides an extensive range of surveying services, including boundary and right-of-way surveys, topographic mapping, photogrammetric mapping, construction surveys, railroad surveys, and aerial control. Our experience includes projects for municipal and state government agencies; private and commercial clients; and quality verification on both small and large projects.

By combining traditional surveying techniques with advanced surveying technology, SMA provides our clients with the surveying edge throughout the project life cycle. All surveying offices are equipped with state-of-the-art technology such as Trimble Robotic Total Stations and Real Time Kinematic (RTK) Global Positioning Systems (GPS) equipment.

Our staff of licensed professional land surveyors combined with the latest in technology enables us to provide increased productivity and innovative solutions for clients. All field personnel have been trained in safety, time tested survey techniques and cost control measures.

Our survey staff undergoes 10-hour OSHA training and railroad safety certification (BNSF Contractor and e-RAILSAFE verified). SMA's survey services include:

- Precision Surveys Control
- Right-Of-Way and Easement
- Cadastral / Boundary
- Subdivision and Platting
- ALTA/ACSM Land Title Surveys
- Topographic & Mapping
- Construction Staking
- Railroad Staking & Topo
- GIS

Structural

SMA has provided structural engineering consulting services for clients, including foundation analysis for solar, wind, residential, commercial, industrial, waste disposal, mine reclamation and oil and gas facility projects. Depending upon the soil and ground water conditions encountered and the anticipated foundation loads, clients are provided recommendations for a wide variety of practical and cost effective foundation types, including conventional shallow spread footings, deep foundations consisting of driven piles and/or drilled piers, and monolithic mat foundations.



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Construction Management (CM) Experience

SMA provides complete construction management services, including inspections. Our construction management approach involves teamwork between the owner, the project manager / project engineer, and construction inspector. The senior engineer will ensure QA / QC goals are met and will act as an experienced advisor to junior staff. At the pre-construction conference, the lines of communication and chain of command are clearly established between the owner, contractor, and engineer.

The engineer is the owner's representative during construction and is ultimately responsible for the completion of the project to the satisfaction of the owner and the acceptance of the project. During construction, the engineer reviews and approves submittals, pay requests, and change orders and responds to requests for information (RFIs). The engineer performs periodic inspections during construction and keeps the owner informed on the progress of construction. SMA prepares construction certification reports and quality assurance reports that meet all funding and regulatory agency requirements, such as those imposed by the NMED Construction Programs Bureau.

The construction inspector is the engineer's and owner's representative during construction and ensures that the project is constructed according to the plans and specifications, reporting any deficiencies or defective work to the engineer. SMA will prepare daily inspection logs, review material certifications, collect all testing report results and take photographs of all construction activities. Typically, following completion of construction, SMA will prepare construction certification reports including soil and protective material test reports, manufacturer certifications, as-built drawings and construction photographs for the project.

The construction administration personnel work together to achieve the goals of ensuring that the project is completed on time, within budget, and is built according to design and the satisfaction of the owner.

ADDITIONAL SERVICES

SMA strives to exceed its clients' needs through engineering innovation and technical excellence. SMA's clients—communities, municipalities, counties, utilities, tribal and commercial entities—rely on SMA to coordinate projects from initial funding through final project design and construction through contract operation. SMA uses a multidisciplinary approach to problem-solving to provide creative and comprehensive solutions for challenging projects. SMA develops close working relationships with clients to encourage their participation during the engineering process. This allows SMA to focus on developing and executing projects that result in practical solutions to complex engineering problems.

Funding Development and Assistance

At SMA, we take pride in helping communities identify and apply for funding to support their important infrastructure projects. We have experience assisting clients in obtaining funding from various government infrastructure funding agencies and programs including:

- U.S. Department of Agriculture-Rural Development (USDA RD)
- Community Development Block Grant (CDBG)
- Border Environment Cooperation Commission (BECC)/NADBank
- Colonias Infrastructure
- State and Tribal Assistance Grant (STAG)

SMA has years of experience assisting with the grant application process, administration and financial management of various grant programs and providing the necessary project coordination required by each funding agency.

Energy Conserving and Sustainable Measures

Because SMA has a specific focus on environmental engineering it is uniquely positioned to evaluate impacts of projects on the environment, including the issues of energy conservation and sustainability. SMA routinely considers energy conservation measures as part of its design and operation guidance for new facilities. This entails evaluation of motors, lights, and timers that are the best balance of cost and function for the project, whether a remediation system or water pumping system.



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Sustainability is not only a major factor for design but also a product. SMA routinely completes hydrogeologic investigations either as part of larger water system improvement projects or as standalone reports to address sustainable water resources for municipalities and small communities. Other projects are based entirely on sustainable use both in terms of available water resources and beneficial reuse of treated wastewater. Sustainability is a constant factor for SMA projects whether they are design projects, support projects developed with respect to the National Environmental Policy Act (NEPA), or soil and groundwater remediation.

Sustainability and Operational Efficiency through Integrated Planning Tools

SMA has an experienced team of field personnel, surveyors, GIS technicians, utility system operators and engineers who can help agencies, large and small with each step of the asset management planning process. SMA will help inventory your infrastructure, assess your system and assist you with the development an asset management plan. The purpose of an asset management program is to improve your overall knowledge of the facilities for which you are responsible, develop a strategic management plan of your infrastructure, establish expectations of both the customers and the agency and effectively communicate and justify funding requirements.

Services associated with Asset Management include:

- Asset Management Policy Development Support
- Asset Inventory and Condition Assessment
- Level of Services Goal Setting
- Criticality and Business Risk Analysis
- Lifecycle Costing
- Operations and Maintenance Optimization
- Funding Strategy Development
- Management Consulting
- Asset Management Plan Development

Dimensional and Computer Modeling

SMA uses 3D CAD & the 3D capabilities designed within multiple computer software programs to give our designers a better understanding of the existing situation and a better concept of the proposed design before it is actually built. We design highways in 3D, using surveys, contours, spot elevations and other methods to generate (3D) Digital Terrain Models (aka DTM). This DTM accurately represents the existing condition of a site and is the base on which our designers lay out the proposed vertical and horizontal alignment. From the 3D model we generate most of the drawings necessary for the construction of the road including the required roadway cross sections and earthwork quantities. Our designers are skilled at leveraging the 3D information to get a better, more efficient, design.

SMA uses the latest computer programs to create 3D models for both hydrologic and hydraulic analysis. Those programs include ArcGIS, HEC-GEO HMS, Watershed Modeling Software (WMS), Autodesk’s Civil 3D and Hydraflow Extensions, Bentley Systems WaterCAD, SewerCAD, StormCAD, Ponk Pack, HEC-HMS, HEC-RAS and the FHWA’s Hydraulic Toolbox. These programs allow us to perform detailed and accurate hydrology and hydraulic analyses from data collection to final design. The advantage of these methods is a detailed, real world model that accurately shows high water elevations, flood plain delineations, sediment transport, lateral erosion envelopes, hydraulic grade lines and utility crossing conflicts. All of these leading to a more efficient design process and a more accurate result.



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AWARD LIST

SMA's commitment to excellence and service to our clients has been recognized by ACEC New Mexico through numerous awards. The list of awards includes:

- ACEC-NM, 2015 Engineering Excellence, Water Resources Honorable Mention, Mariano Chapter Water System Improvements
- ACEC-NM, 2014 Engineering Excellence, Transportation, I-25/Engler Grade Separation
- ACEC-NM, 2014 Engineering Excellence, Honorable Mention, Small Projects Category –Santa Fe River Improvements-Bishops Garden Diversion Structure
- ACEC-NM, 2012 Engineering Excellence, Special Projects, I-40, Advanced Traveler Information System
- ACEC-NM, 2012 Engineering Excellence, Small Projects, Phase I Business Core Wastewater Collection System
- ACEC-NM, 2012 Engineering Excellence, Honorable Mention, Acequia Trail
- ACEC-NM, 2011 Transportation Award, I-40 West Central Interchange Project
- ACEC-NM, 2011 Honorable Mention, Studies, Research & Consulting, NM 41 Planning & Environmental
- ACEC-NM, 2011 Honorable Mention, Studies, Research & Consulting, NM 41 Planning & Environmental
- Engineering News Record, 2011 Award of Merit, South Meadows Extension
- ACEC-NM, 2010 Engineering Excellence, Honorable Mention, Old Pecos Trail Reconstruction
- ACEC-NM, 2010 NM Project Report, Lyon Blvd. Improvements, Phase I
- Southwest Contractor, 2010 Best of Awards (Engineering Design), West Rim Road Project
- Southwest Contractor, 2009 Best of Awards, (Transportation Engineering Design), I-40 / San Mateo to Pennsylvania Project
- ACEC-NM, 2008 Honorable Mention Transportation Project, US 49/NM 602 Interchange Reconstruction
- National Partnership for Highway Quality, 2008 Make A Difference Award, I-40/West Central Interchange
- ACEC-NM, 2007 Engineering Excellence, Ellison Drive Transportation Improvements
- ACEC-NM, 2006 Honorable Mention Transportation, Tingley Road Transportation Project
- APWA-NM, 2006 Engineering Excellence, Green Ridge MDWCA Water System Improvements
- NMSPE, 2005 Best Transportation Project, Louisiana Blvd. / I-40 Interchange
- Southwest Contractor, 2005 Best Transportation Project, Louisiana Blvd. / I-40 Interchange
- ACEC-NM, 2005 Engineering Excellence, Grand Conceptor Award, Louisiana Blvd. / I-40 Interchange
- APWA-NM, 2004 NM Chapter, Project of the Year, Louisiana Blvd./ I-40 Interchange Reconstruction Project
- NQI National Quality Award, 2002 Environmental, US 550 Aztec to Colorado State Line

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: Karl E. Tonander

Date: 21 Dec 15

Name: Karl E. Tonander, P.E., P.G.

Title: Senior Vice President / COO