



ATTACHMENT I – General Qualifications
**ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:
ADSP015-00004729**

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

(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:	Narasimhan Consulting Services, Inc. DBA – NCS Engineers
b. FIRM (OR BRANCH OFFICE) STREET:	202 East Earll Drive, Suite 110
c. FIRM (OR BRANCH OFFICE) CITY:	Phoenix
d. FIRM (OR BRANCH OFFICE) STATE:	Arizona
e. FIRM (OR BRANCH OFFICE) ZIP CODE:	85012
f. YEAR ESTABLISHED:	1998
(g1). OWNERSHIP - TYPE:	S. Corporation
(g2) OWNERSHIP - SMALL BUSINESS STATUS:	MBE/DBE
h. POINT OF CONTACT NAME AND TITLE:	Ramesh Narasimhan, P.E., President
i. POINT OF CONTACT TELEPHONE NUMBER:	602-629-0206
j. POINT OF CONTACT E-MAIL ADDRESS:	ram@ncseng.com
k. NAME OF FIRM (If block 1a is a branch office):	N/A



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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>
5	Construction Management	3
10	Cost Estimating and Analysis; Parametric Costing; Forecasting	2
3	Dams (Earth; Rock); Dikes; Levees	2
4	Energy/Water Auditing Savings	2
5	Environmental Impact Studies, Assessments or Statements	1
10	Hydraulics and Pneumatics	2
3	Industrial Waste Treatment	2
3	Pipelines (Cross Country – Liquid and Gas)	4
5	Sewage Collection, Treatment and Disposal	3
5	Structural Design; Special Structures	2
5	Storm Water Handling and Facilities	3
10	Toxicology	3
3	Water Resources; Hydrology; Ground Water	2
5	Water Supply; Treatment and Distribution	4
5	Waste Water Treatment Facility	3
5	Water Well Rehabilitation; Water Well Work	2

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 Ramesh Narasimhan, P.E.	b. ROLE IN THIS CONTRACT Project Principal and Project Manager	c. YEARS EXPERIENCE	
		1. TOTAL 26	2. WITH CURRENT FIRM 17
d. LOCATION (City and State) Phoenix, AZ			
e. EDUCATION (DEGREE AND SPECIALIZATION) M.B.A. and M.S. and B.S. in Civil Engineering		f. PROFESSIONAL TRAINING – REGISTRATIONS P.E. in Arizona, California and New Mexico, Certified Operator: Arizona Grade 2 – Water Distribution, Water Treatment, and Wastewater Collection	
g. OTHER PROFESSIONAL QUALIFICATIONS (Organizations, Awards, etc.) American Water Works Association, American Society of Civil Engineers, Arizona Water and Pollution Control Association, American Membrane Technology Association			

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION (City and State) Washington Aqueduct Water Treatment Projects, Washington D.C.	(2) YEAR COMPLETED	
		Professional Services 2011	Construction (if applicable) 2012
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Mr. Narasimhan serves as project principal and technical advisor for several treatment projects for the McMillan and Dalecarlia WTPs, with a combined capacity of over 300 MGD, that serve Washington, DC and surrounding areas. This includes review of design memoranda and testing plans for several	<input checked="" type="checkbox"/> Check if project performed with current firm	
2.	(1) TITLE AND LOCATION (City and State) Cave Creek WTP Optimization Study; Golbal Water, AZ	(2) YEAR COMPLETED	
		Professional Services 2008	Construction (if applicable) 2010
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Mr. Narasimhan served as Project Manager for this project. He was retained as a prime consultant to assist in evaluating the process elements and optimizing the design and performance of this CAP WTP. Tasks performed included assessment of preoxidation, mixing, coagulation, filtration, and disinfection. A list of recommended process optimization techniques and plant improvements was prepared. County approvals were obtained for plant modifications and process control testing to reduce disinfection by-products. Mr. Narasimhan assisted the plant staff to optimize physical and chemical processes and operating pH levels.	<input checked="" type="checkbox"/> Check if project performed with current firm	
3.	(1) TITLE AND LOCATION (City and State) CAP Water Quality and Operations Study; Aqua Fria District	(2) YEAR COMPLETED	
		Professional Services 2008	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Mr. Narasimhan served as Project Principal and Project Manager for this project. He oversaw the CAP treatment assessment and impacts of integrating the various water systems in the Agua Fria District operated by EPCOR. The objectives of this project include using water quality and hydraulic modeling to develop strategies for operations, controls, SCADA interface, water resources, drinking water regulatory compliance and aesthetics. Water quality issues such as arsenic, corrosion control, total dissolved solids (TDS), disinfection, disinfection by-products (DBPs), nitrates, and other contaminants that are identified, will also be addressed in the modeling efforts.	<input checked="" type="checkbox"/> Check if project performed with current firm	
4.	(1) TITLE AND LOCATION (City and State) Multiple Treatment Projects for Turbidity and TOC Removal, Phoenix, AZ and Glendale, AZ WTP's	(2) YEAR COMPLETED	
		Professional Services 2008	Construction (if applicable) 2010



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5.	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Narasimhan served as Project Manager for these projects. For the past several years, Mr. Narasimhan has assisted these water systems with enhanced coagulation (EC) activities for five surface WTPs (Verde, Val Vista, Deer Valley, Cholla and Squaw Peak) as part of several projects. These included the first documented bench and full scale EC studies to optimize both arsenic and TOC removal in surface WTPs. The secondary effects of enhanced coagulation were also evaluated (corrosion, impacts on filter operations, impacts on disinfection, aluminum residual, residuals dewaterability, disposal constraints, and recycle streams). Mr. Narasimhan also assisted with implementation activities.	<input checked="" type="checkbox"/>	Check if project performed with current firm
	(1) TITLE AND LOCATION (<i>City and State</i>) City of Baltimore Water Treatment Program; Baltimore, MD	(2) YEAR COMPLETED Professional Services 2011	Construction (if applicable) 2013
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Narasimhan serves as project principal and technical advisor for several water quality and treatment projects for the City of Baltimore. This includes review of design memoranda and testing plans for several projects relating to UV, disinfection and storage.	<input checked="" type="checkbox"/>	Check if project performed with current firm

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

a. NAME Larry Hanson, P.E.	b. ROLE IN THIS CONTRACT Civil Design Team Leader	c. YEARS EXPERIENCE	
		1. 39	2. WITH CURRENT FIRM 15
d. LOCATION (<i>City and State</i>) Phoenix, AZ			
e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) B.S. in Civil Engineering		f. PROFESSIONAL TRAINING – REGISTRATIONS P.E. in Arizona, Nevada, New Mexico and Wisconsin	
g. OTHER PROFESSIONAL QUALIFICATIONS (<i>Organizations, Awards, etc.</i>) American Society of Civil Engineers, National Society of Professional Engineers, American Public Works Association/AZ Water Association, Water Environment Federation			

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION (<i>City and State</i>) Chinle Water System Improvements - Phases 1 and 2, Navajo Tribal Utility Authority; Chinle, AZ	(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. Hanson served as project manager for design of 2.1 MGD water treatment plant, 0.5 miles of well water collection and treated water pipelines, and modifications to Wells 2, 3A, 4, and the BIA Well. The plant was designed to reduce elevated levels of iron, manganese, and turbidity. Treatment units included chlorination, flocculation, sedimentation, and catalytic media filtration. The project included a high lift pump station consisting of three 800 gpm vertical turbine pumps. The project also included a 6,000 square foot masonry building to house the plate and frame press, chlorination equipment, catalytic media filters, and lab sink and	<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	(1) TITLE AND LOCATION (<i>City and State</i>) Well 23 Equipping and Water Treatment Facility; City of Rio Rancho, NM	(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. Hanson served as Assistant project manager and technical reviewer for design of 1.8 MGD (which is blended with a 1.7 MGD bypass stream) water treatment plant. The plant was designed to reduce elevated levels of arsenic, iron, gross alpha, TDS, and uranium. Treatment units include chlorination with catalytic media filtration, and reverse osmosis membranes. Project also included design of well equipping for 3.5 MGD well, and 2 miles of raw water and treated water pipelines (16 inch and 18 inch diameter).	<input checked="" type="checkbox"/>	Check if project performed with current firm



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3.	(1) TITLE AND LOCATION (<i>City and State</i>) Arsenic Treatment Facility, Site 10 Water Complex; City of Rio Rancho, NM	(2) YEAR COMPLETED	
		Professional Services 2009	Construction (if applicable) 2010
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE - Mr. Hanson served as Assistant project manager and technical reviewer for design of 7.9 MGD (which is blended with a 7.9 MGD bypass stream) water treatment plant. The coagulation filtration plant was designed to reduce elevated levels of arsenic. The project also included a 7,000 square foot masonry building to house chemical handling systems, restroom, treatment vessels, and lab sink.	<input checked="" type="checkbox"/> Check if project performed with current firm	

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

a. NAME Steve Wedwick, P.E.	b. ROLE IN THIS CONTRACT Wastewater Team Leader	c. YEARS EXPERIENCE	
		1. TOTAL 16	2. WITH CURRENT FIRM 3
d. LOCATION (<i>City and State</i>) Phoenix, AZ			
e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) B.S. Agricultural and Biosystems Engineering		f. PROFESSIONAL TRAINING – REGISTRATIONS P.E. in Arizona and Texas	
g. OTHER PROFESSIONAL QUALIFICATIONS (<i>Organizations, Awards, etc.</i>) Arizona Water Association			

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION (<i>City and State</i>) Wastewater Treatment Plant 3 Facility Evaluation and Masterplan; City of Rio Rancho, NM	(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. Wedwick served as project manager for this evaluation of equipment and process units at the existing WWTP. He developed cost estimates for rehabilitation, process optimization, and CIP development. He assisted with preparing the WWTP Facility master plan report.	<input checked="" type="checkbox"/> Check if project performed with current firm	
2.	(1) TITLE AND LOCATION (<i>City and State</i>) Johnson Utilities Phasing Plan; Queen Creek, AZ	(2) YEAR COMPLETED	
		Professional Services 2012	Construction (if applicable) 2014
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Wedwick was the Project Manager and Technical Engineering Lead for a phasing plan for a 0.3 MGD wastewater treatment plant that will serve a new community in Florence, AZ. Wastewater flows will begin very low and increase over time as the community grows. Therefore provisions are needed for handling flows that are too far below design flows to allow the plant to operate properly and continuously meet permit limits. The plant uses the sequencing batch reactor (SBR) process and contains filters and disinfection to produce A+ effluent. The phasing plan involved using the aerobic sludge digester as a temporary vault and haul plant (ultra low flows), then as a temporary flow through activated sludge plant with nutrient removal (low flows), using of one SBR vessel along with influent equalization (intermittent flows), then final design flows. Considerations for this plan included creative use of structures, meeting A+ treatment levels, ease of operation, and ease of transitioning from flow phases.	<input checked="" type="checkbox"/> Check if project performed with current firm	



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3.	(1) TITLE AND LOCATION (<i>City and State</i>) Sewer Flow Monitoring, Town of Paradise Valley, AZ	(2) YEAR COMPLETED	
		Professional Services 2009	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Wedwick served as a project engineer. They continuously analyzed sewage flow data from monitored sewer manholes. Tasks included importing new flow data from City of Scottsdale, determining anomalies, researching flow anomalies with the Town of Paradise Valley and City of Scottsdale, and flow projections. This project involved use of MS Access as well as software developed specifically for this application (KVL Consulting). Before this project started, monitoring stations were designed for each of the metered manholes. The designs incorporated Palmer Bowlus Flumes and level sensors with data continuously collected and	<input type="checkbox"/> Check if project performed with current firm	
4.	(1) TITLE AND LOCATION (<i>City and State</i>) City of Phoenix Relief Sewers for Basins 7D/8A and 8B	(2) YEAR COMPLETED	
		Professional Services 2009	Construction (if applicable) 2010
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Wedwick served as a project engineer. Evaluation and design of relief sewers to alleviate flows that are too large for existing sewers. Evaluation, design, permitting, and engineer's estimate of probable cost were completed. Public relation efforts were also required for the 7D/8A basin project due to the need to obtain permanent and temporary construction easements from Bourgade High School. Exhibits were prepared for the easements, which were sealed by a Registered Land Surveyor.	<input type="checkbox"/> Check if project performed with current firm	
5.	(1) TITLE AND LOCATION (<i>City and State</i>) Entrada Del Oro WWTP, Gold Canyon, AZ	(2) YEAR COMPLETED	
		Professional Services 2008	Construction (if applicable) 2010
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Wedwick was project manager for the design, permitting, and construction related services of a 0.30 mgd wastewater treatment plant that produces A+ effluent. The plant consists of an influent and effluent pump station, headworks with flow measurement, partially buried concrete secondary treatment with nitrification and denitrification (mLE process) and clarifier, tertiary filtration, UV disinfection, woodchip biofilter odor control and effluent pump station, and AZPDES discharge. The treatment plant is expandable to 0.45 MGD. Construction management services included: site observation; review of contractor submittals and pay requests, RFI response, maintaining construction records, training, and preparation of the O&M Manual and record drawings.	<input checked="" type="checkbox"/> Check if project performed with current firm	

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

a. NAME Pranam Joshi, P.E.	b. ROLE IN THIS CONTRACT Infrastructure Master Planning and Studies	c. YEARS EXPERIENCE	
		1. 12	2. WITH CURRENT FIRM 7
d. LOCATION (<i>City and State</i>) Phoenix, AZ			
e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) B.E. Chemical Engineering, M.S. Environmental Engineering		f. PROFESSIONAL TRAINING – REGISTRATIONS P.E. in Arizona and Missouri	
g. OTHER PROFESSIONAL QUALIFICATIONS (<i>Organizations, Awards, etc.</i>) American Water Works Association and American Society of Civil Engineers			



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H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION (<i>City and State</i>) Wastewater Model Development and Calibration; City of Rio Rancho, NM	(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. Joshi served as a Hydraulic Modeling Engineering for this project. The CORR is using InfoSWMM for wastewater modeling purposes. The project involves developing an all pipe model from GIS data. He serves as a project manager and hydraulic modeling team leader on this project. The scope of the project involves developing a wastewater collection model from the GIS data. It also involves surveying to identify discrepancies in the elevation for the inverts. Development of a sewer loading to water consumption is also a part of this scope. When model is developed and ready, a thorough calibration will be performed on the data to identify how	<input checked="" type="checkbox"/> Check if project performed with current firm	
2.	(1) TITLE AND LOCATION (<i>City and State</i>) Water System Process Control and Water Quality Optimization Study; City of Phoenix, AZ	(2) YEAR COMPLETED	
		Professional Services 2008	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Joshi served as a Hydraulic Modeling Engineering for this project. Mr. Joshi was involved in performing and calibrating four EPS runs for this large network. In this project, Mr. Joshi developed a strategy which included looking at possible solutions to reduce the level of treatment at various water treatment plants and yet maintain the required water quality. The simulation ran through thousands and hundreds of thousands of cost based water quality simulations to identify the most cost-effective solution for treatment.	<input checked="" type="checkbox"/> Check if project performed with current firm	
3.	(1) TITLE AND LOCATION (<i>City and State</i>) Sequencing Study and Base Model Development; City of Phoenix, AZ	(2) YEAR COMPLETED	
		Professional Services 2010	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Joshi served as a Hydraulic Modeling Engineering for this project. Mr. Joshi assisted the City with a sequencing study to compare an analysis of GIS and water model data and integration of GIS data. Mr. Joshi developed a comparison between GIS data comprising of more than 360,000 pipes with current	<input checked="" type="checkbox"/> Check if project performed with current firm	
4.	(1) TITLE AND LOCATION (<i>City and State</i>) Water Model Development; City of Phoenix, AZ	(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. Joshi served as a Hydraulic Modeling Engineering for this project. Mr. Joshi developed a water model for the City by integrating GIS data into the water model and developing synchronization. The was model is one of the largest modes in the country with over 80,000 pipes in the model and over 360,000 pipes in the GIS. Mr. Joshi developed this model and performed necessary quality checks to ensure the connectivity is correct.	<input checked="" type="checkbox"/> Check if project performed with current firm	
5.	(1) TITLE AND LOCATION (<i>City and State</i>) Agua Fria Optimization Study, Arizona American Water Company	(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. Joshi served as a Hydraulic Modeling Engineering for this project. Mr. Joshi developed and calibrated a large network model (20,000 pipes) that initially consisted of sever smaller water systems, using WaterCAD. He subsequently ran several seven-day EPS runs to evaluate water quality and energy consumption seasonally. This project also involved model development and calibration of a medium-sized network with seven zones. Stressed and EPS calibration was performed. Mr. Joshi is assisting the Arizona American Water Company in developing a strategy for incorporating a new surface water treatment plant into the service area of the	<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 Sudheera Addepally, P.E.	b. ROLE IN THIS CONTRACT Water/Wastewater Engineer	c. YEARS EXPERIENCE	
		1. 12	2. WITH CURRENT FIRM: 10
d. LOCATION (City and State) Phoenix, AZ			
e. EDUCATION (DEGREE AND SPECIALIZATION B.S. Environmental Engineering and M.S. Environmental Engineering		f. PROFESSIONAL TRAINING – REGISTRATIONS P.E. in Arizona, LEED Accredited Professional, Licensed Grade II Water Treatment Operator	
g. OTHER PROFESSIONAL QUALIFICATIONS (Organizations, Awards, etc.) American Water Works Association and Arizona Water Association			

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION (City and State) Water Quality Master Plan; City of Phoenix, Arizona	(2) YEAR COMPLETED	
		Professional Services 2007	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Ms. Addepally served as a project Engineer for this project. Ms. Addepally conducted studies for the evaluation of treatment capabilities, for reducing DBPs in drinking water and removal of other inorganics at the City's surface WTPs. She also conducted an evaluation of the impacts of varying coagulant doses on the solids handling facility at Val Vista WTP, AZ. Sampling and analyses under enhanced coagulation conditions was performed of the final sedimentation basin blowdown, gravity thicker effluent, centrifuge	<input checked="" type="checkbox"/> Check if project performed with current firm	
2.	(1) TITLE AND LOCATION (City and State) Distribution System Water Quality Enhancements and DBP Mitigation Assistance; City of Phoenix, AZ	(2) YEAR COMPLETED	
		Professional Services 2008	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Ms. Addepally served as a project Engineer for this project. Ms. Addepally assisted the City in meeting distribution system water quality goals with a focus on minimizing THM formation in the distribution system. The activities under the project included closely working with WTP operations staff to conduct treatment optimization tests, and optimize operational parameters such as chlorine feed points, pH control, and coagulation parameters; and bench scale tests to simulate WTP performance	<input checked="" type="checkbox"/> Check if project performed with current firm	
3.	(1) TITLE AND LOCATION (City and State) Town of Wellton System Evaluation and Disinfection By-products Treatment Evaluation Studies	(2) YEAR COMPLETED	
		Professional Services 2013	Construction (if applicable) 2013
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Ms. Addepally served as a Project Engineer for this project. Ms. Addepally prepared the Disinfection By-products (DBPs) Treatment Evaluation Report evaluating the existing treatment system and summarizing various alternatives for improving treatment to meet the Town's water quality goals, including reducing DBPs formation in the distribution system. Ms. Addepally performed bench scale tests to simulate treatment alternatives such as coagulation using ferric chloride, alum, polyaluminum chloride at ambient and reduced pH conditions and preoxidation using chlorine dioxide. Design criteria and costs were developed for various treatment	<input checked="" type="checkbox"/> Check if project performed with current firm	
4.	(1) TITLE AND LOCATION (City and State) Drinking Water Compliance Plans, Litchfield Park Service Company, AZ (LPSCO)	(2) YEAR COMPLETED	
		Professional Services 2007	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Ms. Addepally served as a Project Engineer for this project. Ms. Addepally has assisted LPSCO with the development of several sampling plans to assist with drinking water compliance monitoring. These include plans for THMs, microbiological monitoring, and all entry point to the distribution system monitoring (inorganics, VOCs, SOCs, and unregulated contaminants). Sampling plans were developed and negotiated	<input checked="" type="checkbox"/> Check if project performed with current firm	



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"user friendly" data entry and scheduling. Ms. Addeppally also assisted with development and implement of a nitrate blending plan.	
5.	(1) TITLE AND LOCATION (<i>City and State</i>) Biosphere 2 Ranch Water Reclamation Facility Design - Phase 1, CDO - Ranching and Development Genpar, LLC, Oracle, AZ
	(2) YEAR COMPLETED Professional Services 2009 Construction (if applicable) 2010
5.	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Ms. Addeppally served as a Project Engineer for this project. She assisted with the design of a new 360,000 GPD mechanical water reclamation facility. The water reclamation facility will be designed in three phases. This project involves the first phase design of 120,000 GPD capacity, with the influent and
	<input checked="" type="checkbox"/> Check if project performed with current firm

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

a. NAME Sriram Barigeda, P.E.	b. ROLE IN THIS CONTRACT Water Facilities Engineer and Construction Manager	c. YEARS EXPERIENCE	
		1. 7	2. WITH CURRENT FIRM: 5
d. LOCATION (<i>City and State</i>) Phoenix, AZ			
e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) B.S. Environmental Engineering and M.S. Civil Engineering		f. PROFESSIONAL TRAINING – REGISTRATIONS P.E. in Arizona	
g. OTHER PROFESSIONAL QUALIFICATIONS (<i>Organizations, Awards, etc.</i>)			

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION (<i>City and State</i>) Steel Tank Design and Improvements Groups B, C and D; City of Phoenix, AZ	(2) YEAR COMPLETED	
		Professional Services 2012	Construction (if applicable) 2013
1.	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Barigeda served as a project and design engineer for this project. Potable water tank modifications and improvements were made at 38 steel tanks in two phases. Mr. Barigeda assisted with hydraulic design of the facilities, design of off-site overflow piping and erosion control improvements, development of tank coating specifications, design of a cathodic protection system, electrical and instrumentation systems, preparation of project specifications and drawing submittal packages, and design of new steel tanks for four locations. He also assisted with construction phase services. As such, he has gained invaluable knowledge of the	<input checked="" type="checkbox"/> Check if project performed with current firm	
	2.	(1) TITLE AND LOCATION (<i>City and State</i>) I-40 Water Reservoir Rehabilitation; Mohave County, AZ	(2) YEAR COMPLETED
		Professional Services 2012	Construction (if applicable) 2014
2.	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Barigeda served as Project Engineer to conduct an assessment and rehabilitation design for an existing 1.5 million gallon (MG) welded steel water storage reservoir in the I-40 corridor. This ten-year old reservoir has never been taken out of service and will be drained and inspected during a scheduled shutdown period in the first quarter of 2012. The project includes review of record drawings, field inspection, preparation of a preliminary design memorandum, final design of rehabilitation improvements, bidding assistance, and observation during construction.	<input checked="" type="checkbox"/> Check if project performed with current firm	
	3.	(1) TITLE AND LOCATION (<i>City and State</i>) City of Santa Fe Hospital Tank; Santa Fe, NM	(2) YEAR COMPLETED
		Professional Services 2012	Construction (if applicable) 2013



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	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Barigeda served as Project engineer to evaluate the overall condition of the 1.5 4MG Hospital Tank and develop rehabilitation alternatives to ensure a 30-year life and reduce leakage. He provided planning, field investigation, final design and construction management services.	<input checked="" type="checkbox"/>	Check if project performed with current firm
	(1) TITLE AND LOCATION (<i>City and State</i>) Phase 2 and Phase 3 Arsenic Treatment Facilities; City of Phoenix, AZ	(2) YEAR COMPLETED Professional Services 2008	Construction (if applicable) 2013
4.	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Barigeda served as Construction Engineer for the design of eight ATFs for the City of Phoenix. The treatment technology selected was adsorption. The challenge faced in designing these facilities was aesthetics consideration as the well sites were located in residential neighborhoods. Prepared the	<input checked="" type="checkbox"/>	Check if project performed with current firm
5	(1) TITLE AND LOCATION (<i>City and State</i>) Juniper Crest, HEC-RAS, WaterCAD, AutoCAD Civil 3D 2008; Snowflake, AZ	(2) YEAR COMPLETED Professional Services 2002	Construction (if applicable) 2002
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Barigeda served as a project engineer for this project. Juniper Crest is a residential subdivision with three phases of construction. In this project, around 330 lots were developed on approximately 127 acres. Upon completion of the project, new 38-foot wide local roads, water distribution system, waste water collection system and storm drains were constructed. Mr. Barigeda completed the drainage study as well as the cut and fill quantity estimation. He oversaw the water distribution system and wastewater collection system design, and completed construction and grading plans using AutoCAD Civil 3D. effluent pump station and other	<input type="checkbox"/>	Check if project performed with current firm

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

a. NAME Ashish Agrawal, P.E.	b. ROLE IN THIS CONTRACT Project Engineer	c. YEARS EXPERIENCE	
		1. 6	2. WITH CURRENT FIRM: 6
d. LOCATION (<i>City and State</i>) Phoenix, AZ			
e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) B.E. Environmental Engineering and M.S. Environmental Management		f. PROFESSIONAL TRAINING – REGISTRATIONS P.E. in Arizona, Certified EPA Method 9 Visible Emission testing, 40-Hour Hazwoper Certification C, C#, and VBA Programming, GIS Certification, and ArcGIS/Arc Map, GWR, Erdas Imagine, Geoda, MS Access	
g. OTHER PROFESSIONAL QUALIFICATIONS (<i>Organizations, Awards, etc.</i>)			

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION (<i>City and State</i>) AZPDES DeMinimus Permit for City of Mesa, City of Phoenix, Apache Junction Water Company, and Litchfield Park Service Company, AZ	(2) YEAR COMPLETED Professional Services 2010	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Agrawal served as a project engineer for this project. In this project, Mr. Agrawal assisted these water agencies in obtaining potable water DeMinimus permit for potable water discharges into the "Water of United States". This involved identification of point and non-point sources based on their discharges to the "Water of United States". All the sources, which discharge potable water to the "Water of United States", must be under compliance as per the AZPDES regulation. Under this project, Mr. Agrawal also developed monitoring plans and best management practices plans.	<input checked="" type="checkbox"/>	Check if project performed with current firm



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2.	(1) TITLE AND LOCATION (<i>City and State</i>) - San Simon Domestic Water Improvement District Fluoride Removal Pilot Testing; San Simon,, AZ	(2) YEAR COMPLETED	
		Professional Services 2010	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Agrawal served as a project engineer for this project. The primary objective of this pilot study was to recommend the most feasible fluoride removal technology based on water chemistry and local conditions. In order to accomplish this objective, four different treatment technologies were tested. Adsorption and IX treatment technologies were pilot tested. To compare the performance of CF and lime softening with adsorption and IX treatment technologies, the chemistry of fluoride removal was evaluated on bench scale. Capital costs, and annual operation and maintenance costs were estimated for each treatment technology. Both cost and non-cost factors were considered for the final selection of the treatment technology.	<input checked="" type="checkbox"/> Check if project performed with current firm	
3.	(1) TITLE AND LOCATION (<i>City and State</i>) City of Tolleson Aeration Study; Tolleson AZ	(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. Agrawal served as a project engineer responsible for pilot testing. The City retained NCS to develop and compare alternatives for reducing THMs in the distribution system. NCS developed an engineering report that compared granular activated carbon adsorption and aeration technologies at the City's interconnections with the City of Phoenix. NCS conducted water quality testing using tray aeration and spray aeration using several nozzle types at the Well 4 site. Based on pilot testing, the study recommended spray aeration using Bete TF30FC (60 deg) nozzles for control of THMs. The pilot study report recommended constructing a 6 MGD	<input checked="" type="checkbox"/> Check if project performed with current firm	
4.	(1) TITLE AND LOCATION (<i>City and State</i>) Regulatory Compliance Excellence Program (RCEP) For Water Remote Facilities; City of Phoenix, AZ	(2) YEAR COMPLETED	
		Professional Services 2009	Construction (if applicable) 2012
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Agrawal is served as a design engineer for evaluating the City's chemical facilities to identify improvements necessary to comply with chemical handling, fire code, and hazardous materials and waste regulations; to improve operator safety and access to controls when chemical spills are present; to mitigate corrosion of piping and equipment; and to upgrade electrical and instrumentation systems to meet codes, prevent corrosion, and improved accessibility.	<input checked="" type="checkbox"/> Check if project performed with current firm	
5	(1) TITLE AND LOCATION (<i>City and State</i>) Western Canal Pilot Study; City of Phoenix, AZ	(2) YEAR COMPLETED	
		Professional Services 2008	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Agrawal served as a process engineer. The overall water recovery rate of a reverse osmosis system is generally around 80%. Approximately 20% of water is wasted as RO concentrate. The primary goal of this project was to increase the overall recovery rate of a RO system (up to 95%) by treating the brine. In this project, brine generated from the primary RO was stabilized using softening process and was then passed through secondary RO. NCS was primarily responsible for studying optimization of lime dosage without compromising foulant removal efficiency, optimization of sludge recycling to improve performance of softening process, and analysis of lime	<input type="checkbox"/> P 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 Camila Fernandez, E.I.T.	b. ROLE IN THIS CONTRACT Hydraulic Modeling and Infrastructure Handling	c. YEARS EXPERIENCE	
		1. 11	2. WITH CURRENT FIRM: 4
d. LOCATION <i>(City and State)</i> Phoenix, AZ			
e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> B.S. Civil Engineering		f. PROFESSIONAL TRAINING – REGISTRATIONS : Registered Engineer –in- Training, Certified Master Modeler with Haestad Methods Inc., Bentley Systems Inc.	
g. OTHER PROFESSIONAL QUALIFICATIONS <i>(Organizations, Awards, etc.)</i>			

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION <i>(City and State)</i> Wastewater Model Development and Master Plan; City of Rio Rancho, NM	(2) YEAR COMPLETED	
		Professional Services 2011	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Ms. Fernandez served as a Project Engineer on this project. The City of Rio Rancho, NM is using InfoSWMM for wastewater modeling purposes. The project involves developing an all pipe model from GIS data. The scope of the project involves developing a wastewater collection model from the GIS data. It also involves surveying to identify discrepancies in the elevation for the inverts. Development of a sewer loading to water consumption was also a part of this scope. A thorough calibration will be performed on the data to identify how closely the model matches reality. Ms. Fernandez subsequently performed masterplanning and system	<input checked="" type="checkbox"/> Check if project performed with current firm	
2.	(1) TITLE AND LOCATION <i>(City and State)</i> - Bullhead City and Other Comprehensive Planning Studies, AZ	(2) YEAR COMPLETED	
		Professional Services 2009	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Ms. Fernandez served as a modeling engineer for this project. Ms. Fernandez performed data collection, review and approval of water models for the Bullhead City Water System (4945 pipes), Desert Foothills Water System (600 pipes), and Lake Mohave Highlands Water System (230 pipes). The project included using model builder to develop the network, clean up the model, review, assign elevation and calibrate the model.	<input type="checkbox"/> Check if project performed with current firm	
3.	(1) TITLE AND LOCATION <i>(City and State)</i> Havasu Model Development and Comprehensive Planning Study, Havasu, AZ	(2) YEAR COMPLETED	
		Professional Services 2009	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Ms. Fernandez served as a modeling engineer for this project. Ms. Fernandez developed a water system model for the City of Havasu. She also served as Project Manager for the study and calibrated the model (1000 pipes). The project included using model builder to develop the network, clean up the	<input type="checkbox"/> Check if project performed with current firm	
4.	(1) TITLE AND LOCATION <i>(City and State)</i> Agua Fria Master Plan, Agua Fria, AZ	(2) YEAR COMPLETED	
		Professional Services 2009	Construction (if applicable) 2012
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Ms. Fernandez served as a modeling engineer for this project. Ms. Fernandez performed data collection, fire flow testing for steady state calibration, and review of consultants submissions for approval of the master plan and hydraulic model (2,949 pipes). Ms. Fernandez performed extensive fire flow analysis for this project.	<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>) Wastewater Model Development, Update and On-the-Job Training; City of Phoenix, AZ	(2) YEAR COMPLETED	
		Professional Services 2012	Construction (if applicable) N/A
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Ms. Fernandez served as a modeling engineer for this project. The City has a goal of migrating to SewerGEMS from the Pipedreams wastewater modeling platform and using it for making short and long-term decisions regarding operations and planning of the sewer systems. The City has already purchased SewerGEMS. NCS is assisting the City with the development of a wastewater model and calibration for this system with approximately 100,000 pipes. This is one of the largest models in the country. This model will be calibrated for approximately 65 meters with flow, velocity and depth. As a part of this project, NCS will also define a system to calculate the water consumption to wastewater loading ratio for each basin and create a diurnal pattern for the basin representation. NCS has in-house tools that assist in this exercise and eliminate or reduce all labor intensive manual work. NCS is also working in close coordination with the City to train City staff on the use of the model. Furthermore, NCS is also providing skeletonized views to the model to allow the City staff to respond to localized questions such as Laveen/Estrella capacity analysis without requiring to run the entire model. The project involves network development, hydrograph predictions, developing correlations of demand consumption to wastewater loadings as well as identifying and allocating the inverts to the infrastructure. Ms. Fernandez served as a Project Engineer for this project.	<input type="checkbox"/> Check if project performed with current firm	

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

a. NAME Clarence Campbell, P.E.	b. ROLE IN THIS CONTRACT Structural Engineer	c. YEARS EXPERIENCE	
		1. 38	2. WITH CURRENT FIRM: 5
d. LOCATION (<i>City and State</i>) Phoenix, AZ			
e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) B.S. and M.S. Civil Engineering		f. PROFESSIONAL TRAINING – REGISTRATIONS P.E. in Arizona, Colorado, California and Nevada	
g. OTHER PROFESSIONAL QUALIFICATIONS (<i>Organizations, Awards, etc.</i>) Structural Engineers Association of Arizona, National Council of Structural Engineers Association, American Consulting Engineers Association			

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION (<i>City and State</i>) Steel Tank Design and Improvements Groups B, C and D; City of Phoenix, AZ	(2) YEAR COMPLETED	
		Professional Services 2012	Construction (if applicable) 2013
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Campbell served as a structural engineer for this project. Potable water tank modifications and improvements were made at 38 steel tanks in two phases. Mr. Campbell assisted with construction phase services. As such, he has gained invaluable knowledge of the chlorination, instrumentation, and site	<input checked="" type="checkbox"/> Check if project performed with current firm	
2.	(1) TITLE AND LOCATION (<i>City and State</i>) Entrada Del Oro WWTP; Gold Canyon, AZ	(2) YEAR COMPLETED	
		Professional Services 2008	Construction (if applicable) 2010
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Campbell was a structural engineer for the design and construction related services of a 0.30 mgd wastewater treatment plant that produces A+ effluent. The plant consists of an influent and effluent pump station, headworks with flow measurement, partially buried concrete secondary treatment with nitrification and denitrification (mLE process) and clarifier, tertiary filtration, UV disinfection, woodchip biofilter odor control and effluent pump station, and AZPDES discharge. The treatment plant is expandable to 0.45 MGD. Construction management services included: site observation; review of contractor submittals and pay requests, RFI response, maintaining construction records, training, and preparation of the O&M Manual and record drawings.	<input checked="" type="checkbox"/> Check if project performed with current firm	



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3.	(1) TITLE AND LOCATION (<i>City and State</i>) Chinle Water System Improvements - Phases 1 and 2, Navajo Tribal Utility Authority; Chinle, AZ	(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. Campbell served as structural engineer for the design of this 2.1 MGD water treatment plant, 0.5 miles of well water collection and treated water pipelines, and modifications to Wells 2, 3A, 4, and the BIA Well. The plant was designed to reduce elevated levels of iron, manganese, and turbidity. Treatment units included chlorination, flocculation, sedimentation, and catalytic media filtration. The project included a high lift pump station consisting of three 800 gpm vertical turbine pumps. The project also included a 6,000 square foot masonry building to house the plate and frame press, chlorination equipment, catalytic media filters, and lab sink and	<input checked="" type="checkbox"/> Check if project performed with current firm	

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

a. NAME Vahid Bagheri, P.E.	b. ROLE IN THIS CONTRACT Electrical Engineer	c. YEARS EXPERIENCE	
		1. 21	2. WITH CURRENT FIRM: 9
d. LOCATION (<i>City and State</i>) Phoenix, AZ			
e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) B.Sc. Electrical Engineering and MBA		f. PROFESSIONAL TRAINING – REGISTRATIONS : Registered Electrical Engineer, Arizona	
g. OTHER PROFESSIONAL QUALIFICATIONS (<i>Organizations, Awards, etc.</i>) International Association of Electrical Inspectors			

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION (<i>City and State</i>) Apache Junction Water District: Well and Booster Pump Station SCADA and Programming	(2) YEAR COMPLETED	
		Professional Services 2012	Construction (if applicable) 2013
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Bagheri provided electrical, instrumentation, and control engineering services to the water and wastewater community. Projects include the following Electrical, Instrumentation, and Control design and construction administration services: for Well 5, Well 6, Well 8, Mesa Interconnect Booster Pump Station, Booster Pump, Station 1, Booster Pump Station 2 for the Apache Junction Water District.	<input checked="" type="checkbox"/> Check if project performed with current firm	
2.	(1) TITLE AND LOCATION (<i>City and State</i>) - Apache Junction Water District: On-Call Services for SCADA and Programming	(2) YEAR COMPLETED	
		Professional Services 2012	Construction (if applicable) 2014
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Bagheri provided Troubleshooting and maintenance of the existing SCADA system including PLCs, radios, and misc programming tasks.	<input type="checkbox"/> Check if project performed with current firm	
3.	(1) TITLE AND LOCATION (<i>City and State</i>) City of Phoenix Val Vista WTP – A CAP Water Treatment Plant	(2) YEAR COMPLETED	
		Professional Services 2010	Construction (if applicable) 2014
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Bagheri provided electrical, instrumentation, and control engineering services to the water and wastewater community. Projects include the following Electrical, Instrumentation, and Control design and construction administration services: Major Electrical Rehabilitation, East and	<input checked="" type="checkbox"/> Check if project performed with current firm	



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4.	(1) TITLE AND LOCATION (<i>City and State</i>) City of Phoenix 24th Street WTP – A CAP Water Treatment Plant	(2) YEAR COMPLETED	
		Professional Services 2008	Construction (if applicable) 2010
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Bagheri provided electrical, instrumentation, and control engineering services to the water and wastewater community. Projects include the following Electrical, Instrumentation, and Control design and construction administration services: Plant Wide Rehabilitation (Raw Water Pump Station, Copper Sulphate System, Polymer Feed System), Process Control Optimization Study Various JOC Projects.	<input checked="" type="checkbox"/> Check if project performed with current firm	
5	(1) TITLE AND LOCATION (<i>City and State</i>) City of Phoenix Union Hills WTP – A CAP Water Treatment Plant	(2) YEAR COMPLETED	
		Professional Services 2008	Construction (if applicable) 2010
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Mr. Bagheri provided electrical, instrumentation, and control engineering services to the water and wastewater community. Projects include the following Electrical, Instrumentation, and Control design and construction administration services: Main Electrical Upgrades, Process Control Optimization Study, Finished Water Pump Control Rehabilitation (a JOC Project), Electrical Multi Rehab (a JOC Project)	<input checked="" type="checkbox"/> Check if project performed with current firm	

5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT		
<i>(Present no more than five (5) projects. Complete one Section 5 for each project.)</i>		
TITLE AND LOCATION (<i>City and State</i>) Well 244 to Well 275 Pipeline	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES 2007	CONSTRUCTION (<i>If applicable</i>) 2008

23. PROJECT OWNER'S INFORMATION		
c. PROJECT OWNER City of Phoenix	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT \$110,000 (Engineering Budget)	e. TOTAL COST OF PROJECT \$750,000

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

Scope - NCS designed 3/4-mile of an 8-inch pipeline to connect Well 244 with Well 275 along a busy corridor on 56th Street. The project included surveying, plan/profile drawings, specifications, traffic control plan, pavement replacement and coordinating with various agencies. This was the first pipeline project designed by the City's Water Services Department in the Right of Way (ROW). NCS provided construction administration services and coordinated testing activities during construction. **Size** – 12 diameter ¾ mile **Length of Project** – 2 years **Value Added** - No change orders, Reduced overall costs by optimized design concepts, Project under budget, Corrected design issues from a prior project/consultant



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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> Chinle Wells 2,3 and 4 Equipping, Navajo Tribal Utility Authority	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES 2012	CONSTRUCTION <i>(If applicable)</i> 2014

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER Navajo Tribal Utility Authority	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT \$460,000 (Engineering Budget)	e. TOTAL COST OF PROJECT \$7.2 M (Construction)
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g. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

Scope - NCS provided preliminary and final design services for equipping these three wells with a combined capacity of 1,450 gpm. These 200 foot deep wells were hydraulically modeled for integration into the treatment plant and distribution system. Each of the wells have an 18-inch casing and a 100 HP motor. The well design featured a vertical lineshaft configuration with turbine pumps and a water lubricated system. The upgrades include a electrical service, well lube apparatus, 12 inch well header, flow meter, and SCADA interface. **Size** - 450 gpm each **Length of Project** – 3 years **Value Added** - No change orders, Reduced overall costs by optimized design concepts, Project under budget, Corrected design issues from a prior project/consultant

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> Site 10 Water Complex; City of Rio Rancho, NM	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES 2009	CONSTRUCTION <i>(If applicable)</i> 2010

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER City of Rio Rancho, NM	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT \$650,000 (Engineering Budget)	e. TOTAL COST OF PROJECT \$9.2 M (Construction)
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h. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

Scope - This \$8.3 million project included a new treatment facility for Wells 10A, 21 and 22 (total flow of 9,000 gpm) housed in a 7,600 square foot masonry treatment building and chemical storage and handling facilities; a 7,200 square foot wood frame water operations building; two 20-foot wide motorized entrance gates to the site; 2.3 acres of site work (asphalt concrete pavement roads and erosion control); and 0.2 mile of new asphalt concrete pavement City street (two 13 foot lanes) with storm drain and storm water detention basin. The project included civil, architectural, process, structural, plumbing, HVAC, electrical, and instrumentation and control type work. NCS provided construction phase engineering services including construction administration, construction inspection, review of contractor provided shop drawings, review of contractor provided operation and maintenance manuals, preparation of an operations manual, and preparation of record drawings. Construction administration included processing contractor pay requests, responding to RFIs, and leading bi-weekly construction meetings over a two-year construction period.

Size – 5,000gpm **Length of Project** – 2 years **Value Added** No change orders, Project under budget, Increased facility life by 20 years



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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> Apache Junction Water Company Model Development and Master Plan; Apache Junction AZ	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES 2010	CONSTRUCTION <i>(If applicable)</i> N/A

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER Apache Junction Water District	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT \$72,000	e. TOTAL COST OF PROJECT
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i. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

Scope - NCS completed this water system master plan to address issues related to water resources, water distribution, water quality, and system improvements to meet current and future criteria. NCS developed a water system model in AutoCAD/GIS and imported into WaterGEMS. NCS assigned facility information, performed fieldwork, calculated demand patterns and updated model controls. NCS ran Darwin Optimization for water distribution system design for short term CIP, intermediate CIP and Build-out conditions. The CIP was optimized and reduced to \$11 M to ensure that rate increases were affordable. **Size** – N/A **Length of Project** – 1 year **Value Added** No change orders, Reduced overall costs by optimized design concepts, Increased facility life by 20 years, Corrected design issues from a prior project/consultant.

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> Town of Superior WWTP PER and Preliminary Design	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES 2013	CONSTRUCTION <i>(If applicable)</i> N/A

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER Town of Superior	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT \$34,000	e. TOTAL COST OF PROJECT \$2.0 M with upgrades that are needed
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j. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

Scope - NCS worked with the Town of Superior to upgrade their wastewater treatment plant and prepared a Preliminary Engineering Report (PER). The 0.5 MGD plant employs activated sludge with biological nutrient removal and tertiary filtration. The plant is in need of repairs, rehabilitation, and upgrades to prevent failure and improve safety. NCS developed approaches to increase reliability of the WWTP. The PER included analysis and recommendations to rehabilitate the plant and create a redundant system that can be used in the event of a needed shutdown for maintenance while retaining its existing treatment level. Other upgrades will be needed for the headworks and influent channel, influent pump station, electrical building, motor control center, and blowers. **Size** – 0.5 MGD **Length of Project** – 1 year **Value Added** No change orders, Reduced overall costs by optimized design concepts, Project under budget, Increased facility life by 20 years.



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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.)

GENERAL INFORMATION

NCS was established in 1998 and specializes in the areas of planning and design of water and wastewater infrastructure, water and wastewater hydraulic modeling, storm water, civil/site design, regulatory compliance, construction administration and inspection, and start up services. Since our inception almost 17 years ago, the company has grown to develop offices in Rio Rancho, New Mexico and Baltimore, Maryland. NCS is a certified small business (SBE) and minority business enterprise (MBE) by the City of Phoenix and ADOT.

Corporate Stability

NCS remains a viable and sound corporation, having remained financially solvent and debt-free since our inception, (DUN and Bradstreet No. 84-155-6694). We remain in good standing with the Arizona Corporation Commission, and carry current business licenses with the Department of Revenue (License No. 07-608637H) and Board of Professional Registration (Firm License No. 12-024). NCS has the capacity and capability to proceed with the work under this contract along with the necessary financial, staff and equipment resources that are needed.

History of Claims and Litigation

NCS is proud of the fact that, in almost 17 years we have been providing Professional Engineering Services, there has never been a claim filed against the company nor have we been involved in any litigation. Further, in \$350 million of construction projects completed by NCS, there has never been any claims or litigation involving any of the parties. This gives the Arizona Game and Fish Department (AGFD) peace of mind! **Few, if any, consultants can make this statement.** This is not only applicable to our referenced projects but to all projects performed by our company. Most other firms will not disclose a complete litigation history like we can. NCS is proud of this fact because it is a testimony to our quality of work, client service and spotless track record.

Customer Service Philosophy

NCS serves our clients with distinction and integrity. We listen to and understand the needs of our clients. We are sensitive to the technical and staffing issues, and budget and funding limitations. NCS will develop and evaluate alternatives for you to consider and provide input on so we can collectively arrive at the best decision. We are dedicated and responsive to meet the needs of the State. NCS will respond to all calls immediately to address your needs.

Advantages of NCS

- NCS offers a 17-year track record of excellence with the State of Arizona, spanning over 70 projects for various State agencies including ADEQ and WIFA.
- NCS offers the State an ideal blend of the smaller local firm’s efficiency and the national firms’ expertise and depth. We have plenty of registered engineers and support staff available locally to mobilize quickly and meet your needs.
- Our average staff tenure with NCS is more than 8 years so we work well together and are efficient.



ATTACHMENT I – General Qualifications

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- We are a medium sized Arizona Firm - however, we offer recognized and proven national-level expertise without the overhead and inefficiencies of larger consulting firms. The AGFD will have access to our experts that are local and available for your projects.
- Our staff is dedicated and committed to the success of the AGFD's projects we take ownership of the projects and do what is necessary to exceed your expectations. As needed, we will work weekends and/or nights and be on site to support field activities – at no additional expense.
- We will design to the project budget and take responsibility for the construction costs. We take pride in the accuracy of our cost estimates and our cost estimating methodologies.
- NCS is a firm that you can have trust and confidence in over the long term. Our quality of engineering design and thoroughness of construction documents means less exposure to change orders for the owner and facilities that operate correctly.

DESIGN PHILOSOPHY, PROCESS, QA/QC (METHOD OF APPROACH)

It is our understanding that engineering services will be required for a multi-year program involving a wide range of civil engineering projects. We have served in a similar capacity for several agencies previously and understand the dedication and commitment required to ensure the success of the program. Accordingly we have developed the following general project approach to fulfill the needs of these anticipated assignments under this contract.

The following provides a brief overview of how we intend to perform work with the AGFD to successfully complete task order assignments on schedule and within budget:

Prepare a Well-Defined and Complete Scope of Work and Services - We will work with the State to define the scope of the project, and the scope of services that NCS is to provide. Our scope of services will be detailed and identify specific deliverables. NCS will walk the project area. We will meet with the AGFD to thoroughly discuss the proposed scope of the project and services so that we have a consensus. This approach eliminates the potential for design change orders. We will not guess at a scope item if it is unknown.

Develop Project Schedule - Using Primavera scheduling software, our team will develop a detailed project schedule identifying report, design, bidding, and construction phase activities.

Maintain Communication with State Staff - We will maintain regular communication with the State's project manager and key staff through phone calls and e-mails. Depending on the level of project activity, we propose monthly meetings with the State to keep the task order (s) on track.

Prompt Distribution of Project Records - NCS will use web-based software for prompt distribution of project meeting minutes, draft construction drawings and specifications at milestones, and other project records.

Project Design Workshops - During the preliminary and final design phases, we would like to conduct design workshops with the City's project manager, operations and maintenance, and other key staff to present our design concept, obtain input on desired equipment manufacturers and model numbers, and types of materials.



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Track Budget and Schedule Progress - We will track actual budget utilization and schedule progress versus planned using software. NCS will keep the State informed on any budget or schedule concerns, and also provide a monthly project status report.

Quality Control Procedures - Our quality control/quality assurance procedures consist of the following:

NCS prepares a project QA/QC plan before starting work on the task order. The plan includes the scope of the project, scope of services that we providing, client provided standard details and specification, identification of the project team members, identification of applicable design codes and standards, and the individuals (by discipline) responsible for performing the QC reviews.

Reports, preliminary hydraulic calculations, design loading rates, construction drawings and specifications (for all milestone deliverables), and calculations will be reviewed by assigned QC reviewer(s).

NCS' project manager is responsible for distributing QC review comments to our design team.

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:	95%
b.	Percentage of Total Work Attributable to Non-Government Work:	5%

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

Signature:

Date: 12/30/2014

Name: Ramesh Narasimhan, P.E. Title: President