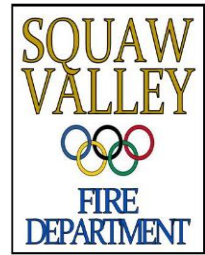




# SQUAW VALLEY PUBLIC SERVICE DISTRICT



## Truckee River Siphon Replacement Project

**DATE:** March 26, 2019  
**TO:** District Board Members  
**FROM:** Dave Hunt, District Engineer  
**SUBJECT:** **Approval of Professional Services Agreement with NV5 for geotechnical construction inspection services for the Truckee River Siphon Replacement Project**

**BACKGROUND:** The District's Truckee River Siphon Replacement Project (Project) is expected to begin construction in June 2019. To ensure that the Project is constructed according to the plans and specifications, and agency permit requirements, the District will be providing nearly full-time field inspection as well as construction management. The District has assembled a well-qualified team to provide inspection services throughout construction. Daily inspection and construction management will be performed collectively by District staff and Farr West Engineering. Earthwork observation, materials testing, and special inspection will be performed by NV5 (Holdrege & Kull), and survey support will be provided by Andregg Psomas,

**DISCUSSION:** District staff is proposing to contract with NV5 to provide geotechnical inspection services for the Project. NV5 prepared the original geotechnical engineering report (July 31, 2017) for the Project. NV5s scope of services will include:

- Observation of subsurface conditions encountered with respect to the original geotechnical engineering report;
- Field density testing of subgrade, engineered fill, bore pit backfill, trench backfill, and aggregate base;
- Laboratory testing of samples for maximum dry density evaluations (compaction curves) and gradation;

- Special inspection of reinforcing steel placement for the TTSA cast-in-place manhole base;
- Sampling and testing of concrete for the case-in-place manhole base; and
- Materials submittal review for conformance with the technical specifications.

**ALTERNATIVES:** 1. Approval of the proposal from NV5 to provide geotechnical construction inspection services for an amount not to exceed \$10,715.

2. Do not approve the proposal.

**FISCAL/RESOURCE IMPACTS:** The Truckee River Siphon Replacement Project is being funded through a combination of Sewer Capital and Sewer FARF. The total construction cost is estimated to be approximately \$2,250,000.

**RECOMMENDATIONS:** Staff recommends approval of the proposal from NV5 for providing geotechnical construction inspection services and recommends the General Manager be authorized to execute a Professional Service Agreement with NV5 in an amount not to exceed \$10,715.

**ATTACHMENTS:**

- NV5 Proposal dated February 13, 2019

**DATE PREPARED:** March 20, 2019



February 13, 2019  
Proposal No. PT19013

Squaw Valley Public Service District  
P.O. Box 2026  
Olympic Valley, California 96146

Attention: Dave Hunt, P.E., District Engineer

**Reference: Squaw Valley Public Service District – Truckee River Siphon Project**  
Olympic Valley/Placer County, California

**Subject: Proposal for Earthwork Observation, Materials Testing and Special Inspection**

This letter presents NV5's proposal to provide earthwork observation, materials testing and special inspection services for the Squaw Valley Public Service District Truckee River Siphon Project located in Olympic Valley/Placer County, California. NV5, formerly Holdrege & Kull, previously prepared a geotechnical engineering report for the project dated July 31, 2017 (Project No. 42275-01). The purpose of our services will be to provide the owner and project engineer with field data and information to assess compliance with the project plans and specifications. Included in this proposal are a brief summary of our understanding of the project, the scope of services we can provide, and an estimate of our fees.

Our proposal is based on our review of project plans titled, "2018 Truckee River Siphon Project" prepared by Farr West Engineering, dated December, 2018, and our previous experience at the project site.

## **PROPOSED CONSTRUCTION**

The project will involve construction of a 12-inch HDPE and 16-inch HDPE sanitary sewer pipeline crossing under State Route 89 and the Truckee River using directional drilling and boring techniques. Anticipated cut/fill depths for the bore pits and underground structures are on the order of five feet. Appurtenant construction will include underground pipelines and utility vaults and a cast-in-place concrete manhole base.

## **SCOPE OF SERVICES**

Based on our review of the project plans by Farr West Engineering, we anticipate providing the following services:

- Observation of the subsurface conditions encountered with respect to our geotechnical engineering report for the project.
- Field density testing of subgrade, engineered fill, bore pit backfill, trench backfill, and aggregate base.
- Laboratory testing of soil samples for maximum dry density evaluations (compaction curves) and gradation.
- Special inspection of reinforcing steel placement for the cast-in-place manhole base.

10775 Pioneer Trail Suite 213 | Truckee, CA 96161 | www.NV5.com | Office 530.587.5156 | Fax 530.587.5196

CONSTRUCTION QUALITY ASSURANCE - INFRASTRUCTURE - ENERGY - PROGRAM MANAGEMENT - ENVIRONMENTAL

- Sampling and testing of fresh concrete for the cast-in-place manhole base. Field tests will be performed for temperate, slump and air content. A set of five, four-inch by eight-inch compressive strength cylinders will be cast for each day's placement. Cylinders will be tested at 7 days (one cylinder) and 28 days (three cylinders) with one hold cylinder.
- Project management and review including attending a pre-construction meeting for the project, material submittal review, scheduling and supervision of our technicians, review of data and reports, and report preparation.

Special inspection services will be performed in accordance with Chapter 17 of the California Building Code. Our services will not include supervision or direction of construction personnel or acceptance of the contractor's work; interpretation or modification of the project plans or specifications; or job site safety.

### **ESTIMATED FEE**

Fees for our services would be provided on a time-and-expense basis in accordance with the enclosed 2019 Fee Schedule. We understand the project will be subject to state prevailing wage requirements. For the scope of services outlined above, we estimate our fees will range up to approximately \$10,715. A summary of our estimated fees is presented in Table 1, attached. Preparation of this proposal and our fee estimate required the following assumptions:

- Submittal review will include review of materials for use in backfill of the excavations and a concrete mix design for the cast-in-place manhole. We anticipate reviewing up to three submittals for earthwork materials and one concrete mix design. We anticipate attending one pre-construction meeting for the project.
- Site earthwork including underground utility construction and backfill, and subgrade preparation will require up to ten site visits by a field soils and materials tester. Field density testing performed within the CalTrans and Placer County right-of-way will be performed in accordance with current State of California Department of Transportation (CalTrans) test methods. We anticipate both ASTM and CalTrans Test Methods will be specified. We anticipate three ASTM laboratory compaction curves and two laboratory sieve analyses will be required during construction. We anticipate one to two site visits by an engineer to observe subsurface conditions encountered during construction.
- Special inspection and materials testing for cast-in-place concrete will require one site visit by an ICC certified special inspector to observe reinforcing steel placement for the cast-in-place manhole. One concrete placement will be required for one cast-in-place manhole base. We will provide an ACI concrete tester to sample the fresh concrete and perform field tests. We estimate one set of compressive strength cylinders will be cast. Cylinders will be picked up the following day and transported to our laboratory.

In the event that conditions arise which are beyond our control, unknown at the time this proposal was prepared, unanticipated based on available information, or differ significantly from the assumptions outlined above, we may need to revise our scope and estimated fee in order to complete the project. Should this occur, we would contact you for authorization before

proceeding with additional work. Actual time required may vary, depending on the contractor's schedule, weather, changes in engineering design, and other unexpected factors. We anticipate our services will be provided during regular business hours, 7:00 AM to 3:00 PM Monday through Friday. Services requested and performed outside of this time frame will be billed at overtime rates in accordance with our fee schedule. Additional services performed at the request of the Squaw Valley Public Service District will be billed on a time-and-expense basis based on the fee schedule applicable at the time services are provided. Progress billing for the project will be monthly.

## LIMITATIONS

Testing and observation services provided by NV5 will be performed consistent with generally accepted practices currently employed in Northern California. The owner and contractor are hereby informed and acknowledge that even with diligent monitoring, construction defects or irregularities may occur. In all cases the contractor is solely responsible for the direction and quality of the work, adherence to plans and specifications, and repair of defects regardless of when they are discovered.

## AUTHORIZATION

If this proposal meets your needs, please sign the enclosed Agreement for Construction Materials Testing Services and return a copy as our authorization to proceed.

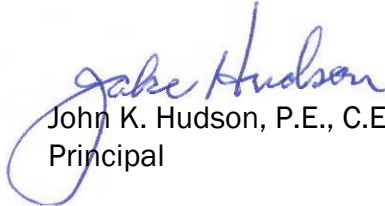
We appreciate the opportunity to work with you on this project. If you have any questions regarding this proposal or require additional information, please contact the undersigned.

Sincerely,

**NV5**



Chris O'Malley  
Construction Services Manager



John K. Hudson, P.E., C.E.G. (No. C 50923)  
Principal

encl: Table 1 - Cost Estimate  
2019 Fee Schedule  
Agreement for Construction Materials Testing Services

**TABLE 1  
MATERIALS TESTING AND SPECIAL INSPECTION COST ESTIMATE  
SVPSD - Truckee River Siphon Project**

Task					Estimated Units	Unit Rate	Total
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<b>Pre-Construction</b>							
Supervisory Technician - Pre-construction Meeting	1	Days @	2	hrs/day	2	\$ 123.00	\$ 246.00
Associate Engineer - Submittal Review	5	Hours			5	\$ 175.00	\$ 875.00
Mileage	1	Trips @	25	miles/trip	25	\$ 0.70	\$ 17.50
						<b>SUBTOTAL = \$</b>	<b>1,138.50</b>

<b>Earthwork</b>							
Field Soils and Materials Tester	10	Days @	4	hrs/day	40	\$ 117.00	\$ 4,680.00
Associate Engineer	2	Days @	2	hrs/day	4	\$ 175.00	\$ 700.00
Laboratory Compaction Curve	3	Tests			3	\$ 226.00	\$ 678.00
Laboratory Sieve Analysis	2	Tests			2	\$ 139.00	\$ 278.00
Mileage	12	Trips @	25	miles/trip	300	\$ 0.70	\$ 210.00
						<b>SUBTOTAL = \$</b>	<b>6,546.00</b>

<b>Concrete</b>							
ICC Certified Structural Inspector	1	Days @	2	hrs/day	2	\$ 120.00	\$ 240.00
ACI Concrete Tester	1	Days @	4	hrs/day	4	\$ 117.00	\$ 468.00
ACI Concrete Tester - cylinder pick up	1	Days @	2	hrs/day	2	\$ 117.00	\$ 234.00
Laboratory Compression Tests	1	Sets @	5	cylinders/set	5	\$ 32.00	\$ 160.00
Mileage	3	Trips @	25	miles/trip	75	\$ 0.70	\$ 52.50
						<b>SUBTOTAL = \$</b>	<b>1,154.50</b>

<b>Report Preparation and Project Management</b>							
Associate Engineer	5	Weeks @	0.5	hrs/week	2.5	\$ 175.00	\$ 437.50
Supervisory Technician	5	Weeks @	2	hrs/week	10	\$ 123.00	\$ 1,230.00
Project Assistant	5	Weeks @	0.5	hrs/week	2.5	\$ 82.00	\$ 205.00
						<b>SUBTOTAL = \$</b>	<b>1,872.50</b>

**TOTAL: \$ 10,711.50**

## 2019 FEE SCHEDULE

PERSONNEL	HOURLY RATE
Project Assistant.....	\$82
AutoCAD Operator .....	\$105
Technical Editor .....	\$85
Assistant Engineer/Geologist .....	\$120
Staff Scientist .....	\$140
Staff Engineer/Geologist.....	\$140
Project Engineer/Geologist.....	\$155
Senior Engineer/Geologist.....	\$165
Associate Engineer/Geologist.....	\$175
Principal .....	\$235
Expert Testimony and Deposition (four-hour minimum) .....	\$340
Engineering Technician I.....	\$92
Engineering Technician II.....	\$97
Engineering Technician III.....	\$103
Certified Welding Inspector (CWI/AWS) .....	\$114
Non-Destructive Testing (NDT) Technician .....	\$114
ASNT Level III .....	\$167
Supervisory Technician .....	\$123
Construction Services Manager I.....	\$150
Construction Services Manager II.....	\$165

PREVAILING WAGE SERVICES	HOURLY RATE
Field Soils and Materials Tester, Soils/Asphalt .....	\$117
ACI Concrete Tester .....	\$117
ICC Fireproofing.....	\$115
Proofload/Torque Testing .....	\$115
AWS/CWI Certified Welding Inspector.....	\$123
ASNT Level II Non-Destructive Testing (NDT).....	\$129
ICC Certified Structural Inspector.....	\$120
DSA Masonry/Shotcrete and Lead Inspector .....	\$129
Travel Time – Tester/Inspector .....	\$92

FIELD EQUIPMENT	UNIT RATE
All-Terrain Vehicle .....	\$50/Day
Cone Penetrometer .....	\$90 Half Day/\$160 Full Day
Core Drill Machine .....	\$150 Half Day/\$255 Full Day
DAQ III/Seismic Refraction Survey .....	\$355/Day
Ground Penetrating Radar/Profometer .....	\$400/Day
Schmidt Hammer .....	\$25/day
pH/Conductivity Meter .....	\$54/Day
Photoionization Detector (PID) .....	\$110/Day
Tension Ram.....	\$32/Day
Turbidity Meter .....	\$54/Day
Water Quality Meter (pH, conductivity, temperature, DO).....	\$110/Day
1.5-Inch Pump and Controllers.....	\$145/Day
4-Inch Pump with Trailer .....	\$170/Day

### Notes

- Mileage and hourly rates will be charged portal to portal. Mileage will be billed at \$0.70 per mile.
- Outside services will be billed at our cost plus 20 percent.
- Overtime rates for Saturday, Sunday, holiday, or over 8 hours/day: hourly rate plus \$35/Hour.
- Prevailing wage overtime rates for Saturday or over 8 hours/day: hourly rate plus \$35/Hour.
- Prevailing wage double time rates for Sunday, holiday, or over 12 hours/day: hourly rate plus \$70/Hour.
- Prevailing wage second shift rates: hourly rate plus \$16/Hour.
- A minimum 2-hour fee will be charged for scheduled site visits not cancelled in advance of arrival.
- Per Diem will be billed at cost plus 20 percent unless other arrangements are made.

## 2019 LABORATORY TESTING SERVICES

Soil	Aggregate	Concrete	Asphalt	ASTM TEST METHODS	UNIT COST
		■		ASTM A615, Reinforcing Steel Tensile Test to #8	\$91
		■		ASTM A615, Reinforcing Steel Bend Test to #8	\$30
		■		ASTM C39, Concrete Compressive Strength, 4x8	\$32
		■		ASTM C39, Concrete Compressive Strength, 6x12	\$40
		■		ASTM C78, Flexural Strength of Concrete	\$108
		■		ASTM C140, CMU Strength, Unit Weight, Absorption	\$205
		■		ASTM C780, Compressive Strength Mortar	\$31
		■		ASTM C1019, Compressive Strength Grout	\$31
		■		ASTM C1314, Compressive Strength Masonry Prisms	\$116
■	■	■		ASTM C136, D422A Full Sieve Particle Size Analysis	\$139
■				ASTM D422B, Long Hydrometer Particle Size Analysis (specific gravity not included)	\$139
■	■			ASTM D422C, Full Sieve w/ Long Hydrometer Particle Size Analysis (spec. gravity not incl.)	\$183
■	■			ASTM D698, D1557, Compaction Curves (4-inch mold)	\$216
■	■			ASTM D698, D1557, Compaction Curves (6-inch mold)	\$226
■	■			ASTM D854, Specific Gravity	\$95
■	■	■		ASTM C117, D1140, No. 200 Mesh Wash Particle Size Analysis	\$92
■				ASTM D2166, Unconfined Compression Shear Strength	\$116
■	■			ASTM D2216, Oven Moisture Content	\$31
■	■			ASTM D2419, Sand Equivalent	\$114
■	■			ASTM D2434, Constant Head Permeability	\$184
■	■			ASTM D2435, One-Dimensional Consolidation	\$265
■	■			ASTM D2844, Resistance Value	\$280
■	■			ASTM D2850, Unconsolidated, Undrained, Triaxial Shear Strength (per point)	\$154
■	■			ASTM D2937, Density-Moisture	\$37
■				ASTM D3080, Direct Shear Strength (3 points minimum)	\$318
■				ASTM D4318, Atterberg Indices (Dry Method)	\$160
■				ASTM D4546, One-Dimensional Settlement or Swell	\$556
■				ASTM D4767, Consolidated, Undrained, Triaxial Shear Strength (per point)	\$184
■				ASTM D4829, Expansion Index (UBC Expansion Index)	\$160
■				ASTM D4832, Strength of CLSM	\$46
■				ASTM D5084, Falling Head Permeability	\$262
CALIFORNIA TEST METHODS					UNIT COST
■	■	■	■	CTM 202, Analysis of Fine Coarse Aggregate	\$139
	■		■	CTM 205, Percent of Crushed Particles	\$91
	■	■	■	CTM 206, Specific Gravity/Absorption Coarse Aggregate	\$112
	■	■	■	CTM 207, Specific Gravity/Absorption Fine Aggregate	\$112
	■		■	CTM 208, Apparent Specific Gravity of Fine Aggregate	\$103
■	■			CTM 216, Maximum Wet Density Determination	\$226
■	■	■	■	CTM 217, Sand Equivalent	\$114
■	■	■	■	CTM 226, Moisture Content by Oven	\$31
■	■	■		CTM 227, Evaluating Cleanness of Coarse Aggregate	\$108
	■	■		CTM 229, Durability Index	\$159
	■	■	■	CTM 234, Uncompacted Void Content of Fine Aggregate	\$112
	■		■	CTM 235, Percent of Flat and Elongated Particles	\$92
			■	CTM 308, Bulk Density Hot Mix Asphalt (HMA)	\$40
			■	CTM 309, Max Specific Gravity of HMA	\$170
			■	CTM 370, Moisture Content with Microwave	\$26
			■	CTM 382, Asphalt Content by Ignition Method	\$167
			■	CTM 382, Asphalt Content by Ignition Method Correction Factor Development	\$514
			■	Caltrans LP 2, 3, 4 Aggregate Asphalt and Dust Proportion	\$170

This is a partial list of the most common laboratory tests. ASTM/CTM Standards are used as guidelines.