San Lorenzo Valley Water District – 2018 Multiproject Engineering Services RFQ

20180320 - Request for Information #1

1. The RFQ indicates Environmental Permitting as a required service. Does this include CEQ/NEPA compliance, or limited to typical environmental resource agency permits such as 401/404 permits, USFWS permits. Please clarify.

   RESPONSE: Consultant will be expected to have the expertise necessary to complete all environmental permitting needs of the projects. This includes CEQA/NEPA compliance where necessary.

2. What is the status of the environmental reviews and compliance documents for the listed projects. Is NEPA and/or CEQA requirements complete? If not, will the selected consultant(s) be providing this service? Please clarify.

   RESPONSE: Most projects have simply been identified and have not reached the predesign stage. NEPA/CEQA requirements have not been completed. The District expects the consultant to have the expertise necessary to complete all NEPA/CEQA requirements, if necessary.

3. Does the District have standardized design criteria and front-end/technical specification to be used for design projects? If so, are the said standards up-to-date and complete?

   RESPONSE: The District has standard design criteria that is not up to date. The District has front-end/technical specifications that are up to date.

4. Have the identified projects been defined and sized through a master planning process? If yes, can we get a copy of the master plan?

   RESPONSE: The projects have simply been identified as needed. No engineering has been completed. The District does not currently have a master plan.

5. Does the District have a hydraulic model that will be provided to the consultant? What software was used to create the model? If no, do you expect the consultant to evaluate/confirm the system hydraulics and sizing of the proposed facilities?

   RESPONSE: The District does not currently have a hydraulic model. The District is expected to issue an RFP in the next month or two for creation of a hydraulic model, under a Prop 1 grant, for the North System. A future RFP for completion of the system model (South and Felton) is planned but not scheduled. The District will be requiring the hydraulic model be created using the most current Bentley modeling program. Regrettably, consultant should not expect the model to be functional for project analysis.

6. The proposed Gantt chart at the end of the RFP indicates that certain projects are grouped together. What is the basis for this grouping? If beneficial to the District, can the projects be shuffled or is the project grouping to be strictly maintained?

   RESPONSE: Originally the District was going to award three design contracts with projects pre-assigned. The Gantt chart grouping is a residual of that plan. The grouping was attempting to equalize professional contract costs between the three firms. The current plan, which this RFQ is

based on, is to award three or four professional contracts, assigning projects based on specific skill-sets of the hired firms. The projects will be 'shuffled' based on consultant's area of expertise.

7. The proposed Gantt chart does not indicate a schedule for the LCWD projects. Is there a preferred schedule and/or grouping for these projects?

   RESPONSE: The LCWD projects are funded through a ten year pay-as-you-go Assessment District. Construction of these projects will be based on available funds. District will work with assigned professional consultant to develop an appropriate schedule.

8. Is there a SCADA system currently installed at the District (SCVWD or LVWD)? Is it the intent to install a new SCADA system or expand the existing system?

   RESPONSE: Yes, the District has an operational SCADA system. It is the intent to install new SCADA components at appropriate facilities (tanks, booster stations, prvs, etc.).

9. Are there any special requirements for Pre-design reports specific to a USDA Loan application package?

   RESPONSE: WSC, Inc. is currently contracted with the Distinct to complete the USDA Loan application package. Attached is a description of the USDA Loan Package Preliminary Engineering Report (PER) for water facilities. Working with WSC, Inc., the professional consultant will be expected to provide a majority of information for the following sections of the PER for their assigned projects; Section 4 – Alternatives Considered, Section 5 – Selection of an Alternative, Section 6 – Proposed Project, Table 1 – PER Cost Estimate.

Preliminary Engineering Report (PER)

Water Facilities

Notes

- The submittal of a PER for USDA Rural Development review and acceptance is required by Code of Federal Regulations (CFR) Part 1780 as part of the funding application for proposed projects. This document provides guidance for the preparation of a PER that meets these Federal funding requirements.
- Please provide a draft PER for review by a USDA Rural Development State Engineer in a hard copy bound format. Provide contact information for PER review discussion including contact name, phone number, and email.
- USDA Rural Development funded projects currently contain a requirement to utilize only American-Made Iron & Steel. All cost estimates contained in the PER will need to reflect his requirement.
- The PER is required to be signed and stamped by a California registered civil engineer.
- The required project Environmental Report will need to be based on the project defined in the PER. Environmental issues will need to be evaluated based on alternatives considered in the PER.

1) PROJECT PLANNING

a) Location

- Provide a map using a USGS 7.5 minute Topographical Map as a base showing the location of the existing facilities.
- Provide an aerial photo based map (aerials can be downloaded from a free mapping website) that show the following:
  - The location of the existing facilities.
  - The boundary of the land currently owned by the applicant in the area of the existing facilities.

b) Environmental Resources Present

- Describe the significant project environmental impacts and the associated required engineered environmental mitigation work that would need to be included in the project engineering plans and specifications. The environmental impact and mitigation work would be based on the findings of significant project environmental impact as described in the NEPA and CEQA Environmental Reports.

c) Population Trends

- Population based on U.S. Census data (for the projected 20 year facilities design criteria).

Year	Population
1990	
2000	
2010	

- Estimated annual growth rate based on the historical 20 year annual rate: _____%
- If U.S. Census data is not available or you have access to more appropriate historical growth data for this project (e.g. owner connection records), please describe.

d) Community Engagement

- Provide a summary of project public participation and describe how the community will be engaged in the project planning process including the need for a Proposition 218 vote.

2) EXISTING FACILITIES

a) Location Map

Provide a facilities map that clearly shows the layout of the components (supply source(s), treatment plant, storage, pump stations, main lines) of the existing water system and the boundary of the general service area. Also show the boundary of any different pressure zones within the general service area.

b) History

System Component	Name	Year Constructed	Year(s) Renovated	Description of Renovation
Water Source(s)				
Treatment Plant				
Storage				
Pipeline				
Pump Station(s)				

c) Condition of Existing Facilities

- Water Supply Capacity:
  - Surface Water Supply:
    - Source/Supplier of surface water:_____
    - Describe the current permitted water allocation rights.
    - Source supply capacity:_____
    - Water treatment plant capacity:_____
  - Groundwater Supply:

Number/Name					
Pumping/Flow Rate (gpm)					
Pump Motor Size (HP)					
Pump Depth (ft)					
Well Depth (ft)					
Well Capacity (gpm)					
Well Casing Material					
Well Casing Diameter					
Age (yrs)					
Regulatory Contaminants					

    - Describe the condition of the groundwater supply wells.
  - Standby and Emergency Supply: Describe any standby or emergency connection sources and the water supply capacity.
  - Storage:

Reservoir/Tank No.				
Storage Capacity (gal)				
Elevated or on-grade				
Material (steel, concrete, plastic, etc.)				
Construction type (bolted, welded, etc.)				
Age (years)				

    - Describe the condition of the system storage structure(s).
  - Regulatory Capacity (reference Title 22 - California Waterworks Standards):

- Maximum Day Demand (MDD) estimated for this system:_____.
- Peak Hour Demand (PHD) estimated for this system:_____.

  - Water Supply Capacity Evaluation:
    - Number of water service connections:_____.
    - For systems with 1,000 or more service connections, can the system meet four hours of PHD with source capacity, storage capacity and/or emergency source connections?
    - For systems with less than 1,000 service connections, does the system have storage capacity equal or greater than MDD? Or, does the system have an additional source of supply or an emergency source connection that can meet the MDD requirement?
    - Describe any current water supply capacity regulatory violations for the system. A copy of current regulatory violation letter(s) for water supply capacity is in Appendix ___.

- Water Quality:
  - Water Quality Regulatory Compliance:
    - Describe any current water quality regulatory violations for the system. A copy of current regulatory violation letter(s) for water quality is in Appendix ___.
    - A summary of recent water quality analytical report results is located in Table ____.
  - Water Treatment Plant
    - Describe the type of water treatment that is currently required for the system.
    - The water treatment plant location is shown on Figure _____.
    - Describe the water treatment plant operating condition.
    - Describe the adequacy of the water treatment plant.
- Pipeline:
  - The distribution system pipeline location and size are shown on Figure _____.
  - Describe the distribution pipeline material and condition.
  - Leakage in the distribution pipeline is estimated to be _____% loss.
  - Areas of high pipeline leakage and repair work are shown on Figure ____.
  - Describe the ability of the pipeline to maintain at least 20 psi.
  - Describe the adequacy of the distribution pipeline system.
- Pump Stations:
  - The location and size of pump stations are shown on Figure _____.
  - Describe the condition of the pump station(s).
  - Describe the adequacy of the pump station(s).
- Water Meters:
  - Number of connections with water meters: _____; number without meters: _____.
  - Number of supply wells with production water meters: ____; number without meters: ____.
  - Describe the (a) age, (b) type and (c) working condition of the water meters.
  - Describe the type of water meter reading system.
- SCADA System:
  - Describe the (a) age, (b) type and (c) components of the current SCADA system.

- Describe the current working condition and adequacy of the SCADA system.

- Other System Management Issues:
  - Level of licensed operator required and number of licensed operators currently employed.
  - Control Valves
  - Security Issues
  - (Describe any other issues).

d) Financial Status of Existing Facilities

- Describe the current annual income and rate structure with a tabulation of current user categories.
- Equivalent Dwelling Unit (EDU) Calculation. EDUs are used by USDA RD to determine the income for the system:
  - Example: Review the example below to calculate the number of EDUs that are currently being served by type of user.

    The average monthly single-family residential water use (based on the last 12 months) divided by the current number of single-family residential users (connections) equals the average single-family residential usage, which is the EDU Factor (b). The EDU Factor is then used to determine the equivalent residential (dwelling) unit water usage for other types of users.

User Type	(a) Average Monthly Water Usage (Gallons)	÷ Number of Users (connections)	= Average Monthly Usage per connection (Gallons)	(a) ÷ (b) Number of EDUs
Residential (Single-Family)	15,191,667	1,575	9,646 (b)	1,575
Other - Commercial	1,335,000	100		138
Other – Industrial	2,670,833	37		277
Other – School	100,000	1		10

  - Equivalent Dwelling Unit (EDU) Information:

    Provide the following current information (within the last 12 months). Describe how the volume of water use was measured or determined:

User Type	Average Monthly Water Usage (Gallons)	Number of Users (connections)	Average Monthly Usage per connection (Gallons)	Number of EDUs
Residential (Single-Family)				
Commercial				
Industrial				
(other)				
			TOTAL EDUs:	

- Provide a detailed breakdown of the current annual O&M expenses for the water system.
  - Examples of O&M expense breakdown items include salaries, benefits, water purchase, taxes, professional service fees, interest, utilities, insurance, annual repairs and maintenance, supplies, etc.
  - Include a description of any extraordinary annual expense for repairs to wells, treatment equipment, pumps, storage tanks, pipeline leaks and other significant expenses to maintain system operation.

- Describe any existing capital improvement programs.
- Describe the status of existing debts and required reserve accounts.

e) Audits - Water/Energy/Waste

- If a Water Audit has been completed for the system please append a summary of findings.
- If the system has a water pressure issue and hydraulic system modeling has been completed please append a summary of findings. Please do not append modeling data, only a summary discussion of findings.
- A copy of the most recent Sanitary Survey for the water system prepared by the lead regulatory agency (CDPH or County Health) is located in Appendix _____.

3) NEED FOR PROJECT

a) Health, Sanitation, and Security

- Describe water supply and/or water quality regulatory violation letters.
- Describe other current compliance issues with the California Department of Public Health (CDPH) or the County Health Department.
- Describe the water system compliance issues with any other regulatory agency or industry standard for water supply and distribution.

b) Infrastructure and O&M

- Describe the significant repair/maintenance expenses needed to keep the system operational (include water loss issues).
- Describe system needs based on the condition and useful life expectancy issues for the existing facilities.
- Describe system needs based on the existing system operational issues including those related to the previous system design.
- Describe system needs based on existing operational management issues. Please note that it is agency policy that all water connections be metered for water facilities project financing.

c) Reasonable Growth

- Describe a reasonable 20 yr. design period growth capacity - what will the estimated population and MDD be in 20 yrs. and what will the needed capacity be for supply, treatment, storage and distribution? The population growth estimate should be based on the annual growth rate estimated in section 1.c.
- Provide an estimate for the number of new customers and the potential need for a phased capacity increase.

4) ALTERNATIVES CONSIDERED

a) Description

- Use the following table format to describe the alternatives considered for evaluation of technical feasibility for each system component that needs to be included in the proposed project. The alternatives should be consistent with the alternatives considered in the environmental review and should involve appropriate technology for the applicant's capability to operate a sustainable system.

Proposed Project Component	Description of Alternatives Considered for evaluation of technical feasibility
Water Supply	(List water supply alternatives considered) (Describe any water rights issues.)
Treatment	(List water treatment alternatives considered)
Storage	(List storage alternatives considered)
Pipeline	(List pipeline alternatives considered)
Pump Station	(List pump station alternatives considered)
Water Meters	(List alternatives considered)
SCADA	(List alternatives considered)

- The following should also be evaluated as appropriate for project component(s) that need to be included in the project:
  (1) optimize the current facilities operation (no construction),
  (2) upgrade the current facilities operation,
  (3) interconnect with other existing systems,
  (4) build new facilities for regional/joint management use.

b) Technical Feasibility Evaluation of Alternatives

1) Agreements: Describe the necessary agreements that would be needed for operational and/or for connection agreements and contracts or other legal issues that would need to be in place to make the alternative technically feasible. Provide a determination of the feasibility of these issues being resolved for the alternative.

2) Groundwater Supply: For a new well supply alternative, describe the following for the project area groundwater:
   a) Describe the depth(s) of known useable aquifer zones in the project area.
   (Reference nearby well information, Calif. DWR Bulletin 118, Calif. Integrated Water Resource Information System -IWRIS, other source)
   b) Describe groundwater quality issues/contaminants associated with the aquifer(s) in the project area, include corrosive and incrusting potential.

3) Surface Water Supply: For a surface water supply alternative, describe the availability of surface water supply in terms of access, rights and cost.

4) Compliance Issues/Design Criteria: Describe the design parameters and other compliance issues used for the evaluation of alternatives. Describe how these parameters comply with Federal, State and Local regulatory requirements or why they are included due to project engineering technical reasons. For proposed projects that include water treatment plants, provide the particle sizes and concentrations of impurities in the raw water that need treatment to meet drinking water regulations.

5) Map: Provide a layout showing the location of the alternative components and a process diagram if applicable.

6) Environmental Impacts: Provide information about how the specific alternative may impact the environment. Only describe the significant direct or indirect environmental impacts of the specific alternative. Include the generation and management of any treatment residuals and wastes.

7) Land Requirements: Identify sites and easements required. Specify whether these properties are currently owned, to be acquired, leased, or have access agreements. Show the land requirements on the map layout described above. Provide a determination of the feasibility of the land requirements and/or access issues being met for the alternative.

8) Potential Construction Problems: Describe construction related issues for each alternative. Include construction issues such as high water table, shallow rock, loose soil, steep slope, access, underground utility conflicts, or any other conditions that may affect the cost or feasibility of the alternative.

9) Sustainability Considerations:
   i. Water Efficiency: Describe water conservation and efficient use practices and water waste/loss management.
   ii. Energy Efficiency: Describe energy efficient design and renewable generation of energy if applicable to the alternative.
   iii. Other: Describe any other sustainable aspects of the alternative such as operational simplicity and the use of appropriate technology for the system size and need.

c) Alternative Cost Estimates: Provide cost estimates only for alternatives that were evaluated to be technically feasible. Include a breakdown for the following costs associated with the alternative. These costs will be used in the alternatives cost analysis described in the next section.
   - Construction costs.
   - Non-Construction costs.
   - Annual Operations and Maintenance (O&M) costs.
     Examples of O&M cost breakdown items to be included are salaries, benefits, water purchase, taxes, professional service fees, interest, utilities, insurance, annual repairs and maintenance, supplies, etc.

d) Describe the alternatives that were determined to be technically unfeasible and document the reasons for that determination. Alternatives that are technically feasible yet perceived to be “too expensive” are to be included in the cost analysis/feasibility in the next section.

5) SELECTION OF AN ALTERNATIVE

a) Cost Evaluation of Alternatives

Cost evaluation of alternatives is to be determined by Life Cycle (net present worth) cost analysis to compare the technically feasible alternatives for each project component using the format shown below. Provide an explanation if a Present Worth cost analysis is considered to be not applicable due to either the absence of technically feasible alternatives to compare or when all alternatives have similar O&M costs and similar useful lives.

The Present Worth cost analysis is a basic evaluation of alternative costs utilizing the Present Worth Factors (P/A) and (P/F) as presented in the following example. The interest rate used in the analysis should be the "real" 20-year federal discount rate from Appendix C of OMB Circular A-94 found at www.whitehouse.gov/omb/circulars/a094/a94_appx-c-html.

Project Component Alternatives	A **CAPITAL COST***	B **ANNUAL O & M**	C **P.W. O & M P/A, 1.2%, 20 yrs.** (PW Factor = 17.693)	D **SALVAGE VALUE***	E **P.W. SALVAGE P/F, 1.2%, 20 yrs.** (PW Factor = 07888)	A+C-E **NET PRESENT WORTH**
ALTERNATIVE A	$1,500,000	$50,000	$884,650	$300,000	$236,640	$2.15 million
ALTERNATIVE B	$2,000,000	$30,000	$530,790	$400,000	$315,520	$2.21 million
ALTERNATIVE C	$1,000,000	$90,000	$1,592,370	$100,000	$78,880	$2.51 million

*NOTE

**Capital Cost* includes total construction and non-construction costs to complete the project buts excludes contingency.

**Salvage Value* is estimated based on the assumed life of an alternative. The Salvage Value can simply be straight-lined depreciated for the analysis period (typically 20 years). For example: a project with a 25 year useful life have a Salvage Value of 20% of the Capital Cost after 20 years.

b) Non-Monetary Factors Analysis

Non-monetary factors can be considered when evaluating alternatives if the range of present worth values is small. These would include things such as simplicity of operation, ability to meet future regulations, etc. These should be presented along with the project cost in a weighted matrix ranking system in which the various criteria are assigned values based on the needs of the Owner. The report should clearly discuss the factors considered and the rationale for the selection of the project alternative.

6) PROPOSED PROJECT (RECOMMENDED ALTERNATIVE)

a) Description:

- Provide a proposed project description based on the findings of the alternatives analysis for the proposed project components.

Proposed Project Component	**Proposed Alternative Description**
Water Supply	(Include requirements for quality and quantity and recommended source including site and allocation allowed. Describe depth, diameter, pump size, casing material, and screen type for groundwater wells)
Treatment	(Describe the type of treatment process, waste disposal and plant capacity and location)
Storage	(Describe the size, type and location)
Pipeline	

	(Describe the location of line improvements and lengths, diameters and key components)
Pump Station	(Describe the size, type and location and any special power requirements)
Operational Management	(Describe the type of water meter system and/or SCADA system proposed)

- A layout map of the proposed project showing the location of the planned system components is located in Figure _____.
- A schematic diagram for any treatment processes is located in Figure _____.

b) Project Schedule:
Identify proposed dates for submittal and anticipated approval of all required documents, land and easement acquisition, permit applications, advertisement for bids, loan closing, contract award, initiation of construction, substantial completion, final completion, and operation startup.

c) Permit Requirements:
Identify any permits that will/may be required for project completion.

d) Sustainability Considerations (if applicable):

1) Water Efficiency: Describe water conservation and efficient use practices and water waste/loss management.
2) Energy Efficiency: Describe energy efficient design and renewable generation of energy if applicable.
3) Other: Describe any other sustainable aspects of the project such as operational simplicity and the use of appropriate technology for the system size and need.

e) Total Project Cost Estimate:
Complete Table 1 (last page of document) to provide a Total Project Cost Estimate. A separate project Construction Cost Estimate breakdown will need to be provided. Attach the Construction Cost Estimate behind Table 1 and include a note that the construction costs are based on using only American-Made Iron & Steel.

f) Annual Operating Budget Estimate:

Note: If the Engineer is not providing a proposed rate schedule, please indicate below who will be providing that information. The Engineer is to provide detailed O&M estimated cost information and Short-Lived Asset Reserve information for the proposed project as described below.

The following information will be used to evaluate the financial capacity of the proposed system after project completion. Provide itemized and detailed proposed budget information for the following:

1) Income:
   - Provide a proposed rate schedule for the water system after the improvements have been completed. Include a description for the number of existing and proposed new users. Also include any additional sources of income.

- The projected income for the water system after improvements have been completed should be based on the number of EDUs calculated using monthly water use for different types of users for the last 12 months (refer to section 2.d.). The projected income is the number of EDUs multiplied by the residential monthly water use fee.

2) Annual Operations and Maintenance (O&M) Costs:

- Provide detailed projected O&M costs for the system after the proposed improvements have been completed. Explain any significant O&M cost changes from the existing system.

Example O&M Cost Estimate	
Personnel (salary, benefits, payroll tax, insurance, training)	
Administrative Costs (office supplies, printing, etc.)	
Insurance	
Energy Cost (fuel and electrical)	
Process Chemical	
Monitoring and Testing	
Professional Services	
Residuals/Waste Disposal	
Other (describe)	
Total:	

3) Debt Repayments:

- Describe existing and proposed financing from all sources. Estimates for USDA RD funding are typically based on loan only, USDA RD may evaluate the project for possible grant funding.
- Any amount of assumed grant assistance should be based on the USDA RD letter of funding eligibility provided to the applicant.

4) Reserves:

- Debt Service Reserve

  The debt service reserve should be established to be one-tenth (1/10) of annual debt payment requirement (including the proposed loan from USDA Rural Development for this project).

- Short-Lived Asset Reserve

  Prepare a schedule of short-lived assets for the complete water system after improvements have been made and a recommended annual reserve deposit to fund the replacement of short-lived assets as described below.

  - Examples of Typical Water System Short-Lived Assets:

    (Based on EPA publication 816-R-03-016, Sept. 2003)

Equipment	**Useful Life Expectancy** (Years)
Pumps	10-15
Chlorination Equipment	10-15

Other Treatment Plant Equipment	10-15
Meters	10-15
Electrical Systems	5-10
Transportation Equipment	5-10
Computers	1-5
Lab/Monitoring Equipment	5-10
Tools and Shop Equipment	10-15
Communications Equipment	5-10

- Provide Short-Lived Asset Reserve Information in the following format:
  - List the Useful Life as 5 years, 10 years or 15 years.
  - Annual Reserve = Replacement Cost ÷ Useful Life

Equipment	Useful Life (years)	Replacement Cost	Annual Reserve
		Total:	

7) CONCLUSIONS AND RECOMMENDATIONS

Describe any additional information and recommendations that should be considered for the project. This may include the need for special studies and coordination, or a recommended plan of action to expedite project development.

TABLE 1

PER - Cost Estimate Sample Format

(Delete all non-applicable line items)

ITEM		Total
Property Purchase / Lease Agreements		$
Easement Acquisition / Right of Way / Water Rights		$
Bond Counsel		$
Legal Counsel		$
Interest/Refinancing Expense		$
Other (identify)		$
Environmental Services	Subtotal	
- CEQA Environmental Report	$	
- NEPA Environmental Report	$	
- Environmental Mitigation Contract Services	$	
Total - Environmental Services:		$
Engineering Services		
Basic Services:	Subtotal	
- Preliminary Engineering Report (PER)	$	
- Preliminary and Final Design Phase Services	$	
- Bidding/Contract Award Phase Services	$	
- Construction and Post-Construction Phase Services (w/o inspection)	$	
- Resident Project Representative Services (resident inspector)	$	
Additional Services:		
- Permitting	$	
- Regulatory Compliance Reports	$	
- Environmental Mitigation Services (Construction Phase)	$	
- Easement Acquisition/ROW's Services (Construction Phase)	$	
- Surveying Services (Construction Phase)	$	
- Operation & Maintenance Manual(s)	$	
- Geotechnical Services	$	
- Hydrogeologist Services	$	
- Materials Testing Services (Construction Phase)	$	
- Other Services (describe)	$	
Total – Engineering Services:		$
Equipment/Materials (Direct purchase using approved USDA methods, separate from construction bid/cost)		$
Construction Cost Estimate (Attach breakdown)		$
Contingency		$
TOTAL PROJECT COST ESTIMATE:		$