

Serpa Lift Station Replacement City of Fallon, Nevada



ESEngr.com

Brian Fitzgerald, P.E.

Eastern Sierra Engineering
4515 Towne Drive
Reno, NV 89521
(775) 828-7220
bfitzgerald@esengr.com

Presented to City of Fallon



SOQ: City of Fallon, Nevada – Serpa Lift Station Replacement (2026 September)

September 25, 2026

City of Fallon

Public Works Department
55 West Williams Avenue
Fallon, NV 89406

RE: Proposal for Engineering Services – Serpa Lift Station Replacement

Dear City of Fallon Public Works Staff:

Civil Solutions Associates, Inc., doing business as Eastern Sierra Engineering (ESE), is pleased to submit this proposal for professional engineering services associated with the Serpa Lift Station Replacement project for the City of Fallon, Nevada. ESE brings a dedicated team of civil and infrastructure engineers with direct experience in municipal wastewater systems, pump station design, and Nevada regulatory requirements.

The Serpa Lift Station serves as a critical component of the City's wastewater collection system. ESE understands the urgency and complexity of replacing aging lift station infrastructure while maintaining reliable service to the community. Our approach is designed to minimize disruption, ensure regulatory compliance, and deliver a durable, maintainable replacement facility that meets the City's long-term operational needs.

The following proposal outlines our project understanding, scope of services, technical approach, project schedule, and proposed fee for the Serpa Lift Station Replacement.

We appreciate the opportunity to support the City of Fallon on this important infrastructure project and look forward to the possibility of working with your team.

Sincerely,

Brian Fitzgerald, P.E.

Senior Engineer
Eastern Sierra Engineering
(775) 828-7220 | bfitzgerald@esengr.com

Our Philosophy and Values

At Civil Solutions Associates, Inc. and Eastern Sierra Engineering (ESE), our work is grounded in trustworthiness, respect, quality, responsiveness, and passion for the profession. These values guide every engagement, from initial design through construction support, and define how we partner with our clients.

This approach is reinforced by our philosophy of Net-Zero Engineering, which emphasizes balanced solutions that consider performance, cost, and environmental responsibility. For municipal infrastructure projects such as lift station replacement, we identify opportunities to optimize system efficiency and reduce long-term operational costs while meeting all applicable regulatory requirements.

Civil Solutions Associates, Inc. was founded in 2011 by Jeff Barrow, P.E., LEED AP, with a vision of building a client-focused engineering firm rooted in technical excellence, practical solutions, and long-term client relationships. Through its partnership with ESE, this platform has been extended into the western United States, combining Civil Solutions' depth of experience with ESE's long-standing regional expertise in Nevada municipal and infrastructure engineering.

Project Understanding

The Serpa Lift Station is an existing wastewater pump station within the City of Fallon's collection system. The existing facility has reached the end of its serviceable life and is in need of full replacement, including wet well, pump system, associated force main connections, electrical and control systems, and site improvements.

The replacement project will require coordination with the Nevada Division of Environmental Protection (NDEP), the City of Fallon Public Works Department, and local utility providers. ESE understands that maintaining continuous wastewater service during construction is a critical project constraint.

Key project considerations include:

- Evaluation of existing flow data, hydraulic conditions, and system capacity requirements to size replacement pumps and wet well.
- Coordination with NDEP for project permitting under NAC 444, including application preparation and agency review response.
- Design of bypass pumping or phased construction sequencing to maintain service continuity throughout construction.
- Integration of the replacement station with the City's existing SCADA and telemetry systems.
- Site civil improvements including access road, fencing, emergency overflow provisions, and site drainage.

- Preparation of construction documents suitable for competitive public bidding in accordance with Nevada public works requirements.

Scope of Services

ESE proposes to provide the following professional engineering services for the Serpa Lift Station Replacement project, organized by phase.

Phase 1 – Project Management

ESE will provide comprehensive project management services throughout all phases of the Serpa Lift Station Replacement project. Project management activities include coordination with City staff, subconsultants, and regulatory agencies; maintenance of the project schedule; quality oversight of all deliverables; and monthly reporting on project status, budget, and schedule.

- Project management and team coordination throughout the project duration.
- Monthly progress reports and project invoicing.
- Client and City communications, meetings, and ongoing coordination.

Phase 2 – Project Initiation and Data Collection

ESE will conduct a project kickoff meeting with City staff to confirm project objectives, schedule, and design criteria. ESE will review all available record drawings, flow monitoring data, as-built information, and maintenance records for the existing Serpa Lift Station, and will conduct a site visit to document existing conditions. Geotechnical investigation and land survey services will be performed by in-house ESE team members Nelson Pearson, P.E. and Jon Loder, L.S., respectively.

- Project kickoff meeting and site visit.
- Review of record drawings, flow data, and maintenance history.
- Coordination with City to confirm design criteria, pumping requirements, and system integration needs.
- In-house geotechnical investigation performed by Nelson Pearson, P.E., including site reconnaissance, subsurface exploration, and geotechnical report with design recommendations.
- In-house topographic and boundary survey performed by Jon Loder, Licensed Land Surveyor, to establish existing site conditions and legal boundaries for design.
- Subconsultant coordination for electrical/controls design.

Phase 3 – Preliminary Engineering and Alternatives Analysis

ESE will prepare a Preliminary Engineering Report (PER) evaluating replacement alternatives, including pump configuration, force main options, and site layout alternatives. The PER will include hydraulic calculations, pump selection criteria, and preliminary cost estimates. ESE will present findings to City staff and obtain concurrence on the preferred alternative prior to advancing to final design.

- Hydraulic analysis and pump sizing calculations.
- Alternatives evaluation report with conceptual layouts and opinion of probable cost.
- Presentation to City staff and documentation of preferred alternative selection.
- Preliminary coordination with NDEP regarding permitting pathway and submittal requirements.

Phase 4 – Final Design (30%/60%/90%/100%) and Permitting

Following approval of the preferred alternative, ESE will prepare complete construction documents at 60%, 90%, and final (100%) submittal milestones for City review.

Civil and Site Design

- Site plan, grading and drainage, erosion control, access road, and fencing.
- Wet well and structure layout, including plan and profile views.
- Force main connection and piping layout.
- Bypass pumping plan and construction sequencing notes.

Mechanical and Process Design

- Pump selection, equipment specifications, and mechanical plan and profile drawings.
- Valve vault, check valve assembly, and discharge piping design.
- Coordination with pump manufacturer for equipment submittals and startup services.

Electrical and Controls Design

- Electrical design by PK Electric our subconsultant, including service entrance, motor control center, and emergency generator provisions.
- SCADA/telemetry integration with City's existing control system.
- Instrumentation and control diagrams (I&C), including level monitoring and alarm systems.

Structural Design

- Wet well structure design coordinated with geotechnical recommendations.
- Access hatch, valve vault, and control building or enclosure structure, as applicable.

Project Manual and Specifications

- Technical specifications in CSI format for all trades.
- General and special conditions for public works bidding.
- Opinion of probable construction cost at 60%, 90%, and final.

Phase 5 – Bidding and Procurement

- Pre-bid meeting and site walk with prospective bidders.
- Response to bidder requests for information (RFIs) and preparation of addenda.
- Bid evaluation assistance and recommendation for award.

Phase 6 – Construction Administration

ESE will provide construction administration and periodic observation services during construction. This phase is proposed as a time-and-materials allowance based on the anticipated construction duration.

- Review of contractor submittals, shop drawings, and material certifications.
- Response to Requests for Information (RFIs) during construction.
- Periodic site observations and field observation reports.
- Coordination of testing, startup, and commissioning of pump equipment and control systems.
- Preparation of record drawings upon project completion.

Technical Approach

ESE's technical approach to the Serpa Lift Station Replacement is grounded in a thorough evaluation of existing conditions, system performance data, and the City's long-term operational goals. A key component of the preliminary engineering phase is a structured alternatives analysis to identify the most cost-effective and operationally efficient improvement strategy. Two primary alternatives have been identified for evaluation.

Alternatives Analysis

Alternative 1 – Rehabilitation of Existing Bar Screen and Wet Well

This alternative involves rehabilitation of the existing bar screen structure and wet well to extend the serviceable life of the facility while evaluating the mechanical, electrical, and control systems. The existing civil infrastructure would be retained and refurbished where feasible, reducing the extent of excavation, concrete work, and site disruption associated with a full replacement.

Key elements of this alternative include structural rehabilitation of the wet well (coating, crack repair, joint sealing), replacement of the bar screen and screenings handling equipment, evaluation of guide rail systems, evaluation of electrical service and motor control center (MCC), and integration with the City's SCADA system. Hydraulic capacity will be confirmed through flow analysis and pump curve matching to verify the rehabilitated system meets current and projected future demands.

Advantages of this alternative include lower capital cost relative to full replacement and reduced construction duration. Limitations include the potential for residual service life constraints associated with aging concrete infrastructure and continued maintenance burden of the bar screen equipment.

Alternative 2 – In-Line Pump Station Replacement with Elimination of Bar Screen and Wet Well

This alternative involves complete replacement of the existing lift station with a modern Over-watch in-line pump station system, eliminating the conventional bar screen and wet well entirely. In-line systems of this type are equipped with self-cleaning geometry and chopper-style or vortex pumps designed to handle solids without a preliminary screening step.

By eliminating the bar screen and associated screenings handling equipment, this approach significantly reduces long-term operations and maintenance (O&M) costs, eliminates odor and nuisance conditions associated with screenings disposal, and reduces the mechanical complexity of the facility. The in-line configuration is compact, requires a smaller site footprint, and is well-suited for sites such as the Serpa Lift Station location.

Key elements of this alternative include demolition of the existing bar screen structure and wet well, installation of a new Over-watch system, new electrical service and MCC, force main connection modifications, and full SCADA integration. A geotechnical investigation (performed by ESE's in-house geotechnical engineer Nelson Pearson, P.E.) will be conducted to confirm subsurface conditions and inform wet well foundation and dewatering design.

Advantages of this alternative include improved long-term O&M efficiency, elimination of screenings handling, reduced odor potential, modern equipment with extended service life, and a reduced operational footprint. This alternative is expected to carry a higher initial capital cost than Alternative 1, which will be quantified and compared in the Preliminary Engineering Report.

Recommended Approach

ESE will evaluate both alternatives against criteria including capital cost, life-cycle cost, constructability, site constraints, O&M burden, and regulatory compliance. A recommendation will be presented to the City in the Preliminary Engineering Report, along with conceptual layouts and opinion of probable construction cost for each alternative, to allow an informed decision prior to advancing to final design.

Structural and Geotechnical Considerations

ESE's in-house geotechnical engineer, Nelson Pearson, P.E., will lead the subsurface investigation program for the project site. The geotechnical scope will include site reconnaissance, a borings program to characterize subsurface soil and groundwater conditions, laboratory testing, and preparation of a geotechnical report with design recommendations. The report will address wet well foundation type and bearing capacity, dewatering requirements during construction, lateral earth pressures for buried structures, trench backfill specifications, and pavement design.

Structural design of below-grade structures will be performed by Jennifer Roman, ESE's structural engineer, in accordance with ACI 350 (Code Requirements for Environmental Engineering Concrete Structures) and applicable seismic requirements per ASCE 7 for the Fallon, Nevada site. The structural design will incorporate waterproofing, chemical resistance coatings, and corrosion-resistant materials appropriate for a wastewater environment.

For the rehabilitation alternative, the existing concrete wet well will be evaluated for structural integrity through visual inspection and non-destructive testing as appropriate. Recommendations for crack repair, surface coating, and joint sealing will be incorporated into the rehabilitation design to extend the service life of the structure.

Electrical, Controls, and SCADA Integration

Electrical and controls design will be performed by ESE's electrical/controls subconsultant PK Electric, coordinated under Brian Fitzgerald, P.E. as Engineer of Record. The scope includes design of a new motor control center (MCC), variable frequency drives (VFDs) for pump motors, automatic transfer switch (ATS) with provisions for emergency backup power (generator connection or permanent standby generator), and 120/240V convenience power for site lighting and auxiliary equipment.

The control system will include a programmable logic controller (PLC) with local HMI and remote telemetry integration with the City's existing SCADA system. Control logic will provide for lead-lag pump sequencing, wet well level monitoring via ultrasonic or pressure transducer, high-level and fail-to-start alarm annunciation, and VFD speed control for flow optimization. All instrumentation and controls will be designed in conformance with NEMA 4X enclosure requirements for outdoor wastewater service.

ESE will coordinate with the City's SCADA administrator during design to confirm communication protocols, I/O point list, and alarm notification requirements. The electrical design will be coordinated with Nevada Energy for service entrance requirements and any necessary utility upgrades.

Bypass Pumping and Construction Sequencing

Maintaining continuous wastewater conveyance throughout the construction period is a critical constraint for the Serpa Lift Station project. ESE will develop a detailed bypass pumping plan as part of the construction documents, specifying bypass pump sizing, staging area, temporary pipe routing, power source, and monitoring requirements to ensure uninterrupted service to City customers.

Construction sequencing will be developed to minimize the duration of bypass pumping operations, reduce risk of overflow or spill events, and allow phased tie-in of the new force main and electrical systems. For the in-line replacement alternative, demolition of the existing wet well and bar screen structure will be sequenced to occur only after the new prefabricated wet well and pump system have been installed, tested, and commissioned, ensuring a reliable cutover.

The bypass pumping and sequencing plan will be prepared in conformance with NDEP spill prevention requirements and will be submitted for City review and approval prior to bid. Contractor submittals for bypass equipment will be required prior to commencing any work that takes the existing station out of service.

Permitting Strategy

ESE will prepare and submit all required permit applications on behalf of the City of Fallon. The primary regulatory approval will be a Nevada Division of Environmental Protection (NDEP) Approval to Construct

(ATC) under NAC Chapter 445A for the lift station modification or replacement. ESE will prepare the ATC application package including design drawings, technical specifications, hydraulic calculations, and the engineer's report required by NDEP.

Additional permits and approvals anticipated for this project include a City of Fallon building permit for below-grade structures and electrical work, an encroachment permit if work occurs within City right-of-way, and any required stormwater pollution prevention plan (SWPPP) if disturbed area thresholds trigger permit requirements under the NDEP NPDES Construction General Permit. ESE will coordinate with Churchill County and other applicable agencies as required based on project location and scope.

ESE has an established working relationship with NDEP and experience navigating the ATC process for wastewater infrastructure projects in Nevada, which will support timely review and approval of the project.

Qualifications, Schedule & Fee



Firm Qualifications

Eastern Sierra Engineering (ESE) is a professional civil engineering firm with extensive experience in municipal infrastructure design throughout Nevada and the western United States. ESE's team has designed and managed lift station and pump station projects for municipalities of varying scale, including new construction and replacement of aging facilities.

Our relevant experience includes wastewater collection system design, pump station hydraulic analysis, NDEP permitting, force main design, and construction administration for public works projects. ESE maintains professional engineering licensure in the State of Nevada.

Key Personnel

Brian Fitzgerald, P.E. – Project Manager / Engineer of Record

- Licensed Professional Engineer responsible for overall project management, engineering deliverables, and agency coordination.
- Engineer of Record for the Serpa Lift Station Replacement; responsible for signing and sealing all construction documents.
- Experience in municipal wastewater infrastructure, pump station design, and Nevada regulatory permitting.
- Primary point of contact for City of Fallon project coordination.

Jennifer Roman – Structural Engineer

- Responsible for structural design of the wet well, valve vault, and associated structures.
- Coordinates structural design with geotechnical recommendations and project civil/mechanical requirements.
- Experience in buried and below-grade concrete structures for municipal infrastructure applications.

Nelson Pearson, P.E. – Geotechnical Engineer

- Responsible for geotechnical investigation, subsurface exploration, and laboratory testing at the Serpa Lift Station site.
- Provides geotechnical recommendations for wet well foundation design, dewatering, trench backfill, and pavement design.
- Prepares the Geotechnical Investigation Report for use by the design team and reviewing agencies.
- Provides geotechnical observation and consultation during construction as needed.

Jon Loder, P.L.S. – Licensed Land Surveyor

- Responsible for topographic survey and existing conditions mapping of the Serpa Lift Station site and surrounding area.
- Provides field survey data sufficient to support civil site design, including existing utility locations, grades, and site features.
- Coordinates with the design team to ensure survey control and benchmarks are consistent with project datums and City records.
- Provides construction staking services during construction, if authorized as an additional service.

Project Schedule

ESE proposes the following representative schedule for the Serpa Lift Station Replacement. Specific milestone dates will be confirmed at the project kickoff meeting.

Phase	Description	Est. Duration
1	Project Initiation, Site Visit, and Data Collection	3 weeks
2	Preliminary Engineering Report and Alternatives Analysis	6 weeks
3	60% Construction Documents	8 weeks
4	90% Construction Documents and NDEP Submittal	4 weeks
5	Final (100%) Construction Documents and Bidding	4 weeks
6	Construction Administration	TBD

Fee and Compensation

ESE proposes to provide the services described in this proposal on the following basis. A detailed fee breakdown will be provided upon request or as part of a negotiated agreement. The following fees are time and material not to exceed.

Item	Description	Fee Basis
1	Phase 1 – Project Management	\$4,810
2	Phase 2 – Project Initiation and Data Collection	\$39,520
3	Phase 3 – Preliminary Engineering and Alternatives Analysis	\$25,565
4	Phase 4 – Final Design (30%/60%/90%/100%) and Permitting	\$77,860
5	Phase 5 – Bidding and Procurement	\$5,440
6	Phase 6 – Construction Administration	\$22,150
	TOTAL PROJECT FEE (Phases 1–6)	\$175,345

Additional services not described in the Scope of Services above shall be authorized in writing by the City prior to commencement and billed on a time-and-materials basis at ESE's then-current standard hourly rates.

Assumptions and Exclusions

This proposal is based on the following assumptions. Services not described in the Scope of Services are excluded from the base fee and may be provided as additional services upon written authorization from the City.

Assumptions

- Fee is based on the general project description provided; scope and fee are subject to revision upon receipt of additional project information from the City.
- The City will provide all available record drawings, as-built information, flow monitoring data, SCADA documentation, and maintenance records in a timely manner to support design.
- Agency permit, application, and review fees are paid directly by the City and are not included in ESE's fee.

- Base scope includes one complete NDEP permit submittal and one round of agency review comment response. Additional review cycles are additional services.
- The base scope assumes one primary design alternative will be advanced following the Preliminary Engineering Report. Evaluation of more than two alternatives requires additional fee.
- Construction administration services (Phase 6) are provided on a time-and-materials basis; actual fee will be negotiated based on the contractor's schedule and construction duration.
- This proposal assumes the existing force main and downstream collection system have adequate capacity to receive flows from the replacement station at design conditions.

Exclusions

The following services are specifically excluded from the base scope and are not included in ESE's proposed fee. These items may be provided as additional services upon written authorization.

Environmental and Regulatory

- Phase I or Phase II Environmental Site Assessments.
- Hazardous materials assessment, abatement design, or contaminated soils management.
- Cultural resource surveys, archaeological investigation, or Section 106 consultation.
- NEPA environmental documentation (Environmental Assessment or Environmental Impact Statement).
- Wetlands delineation, Waters of the U.S. determination, or Section 404/401 permitting.
- Air quality permitting or odor dispersion modeling.
- Threatened and endangered species surveys or biological assessments.

Design and Engineering

- Electrical engineering and controls design (by qualified subconsultant, separate contract).
- Odor control system design, chemical feed systems, or air scrubber design.
- Design of off-site force main extensions, gravity sewer modifications, or collection system improvements beyond the immediate lift station site.
- Water quality analysis, effluent characterization, or treatment system design.
- SCADA programming, software development, or PLC/RTU programming (coordination only is included; programming is by others).
- Hydraulic modeling of the downstream collection or conveyance system beyond pump station sizing calculations.
- Generator sizing, utility coordination for service upgrades, or power company design submittals (coordination included; electrical design is by others).

- Vibration analysis, noise impact study, or acoustical engineering.
- Value engineering studies beyond those incorporated in the normal design process.

Permitting and Agency Coordination

- SWPPP preparation and NDEP Construction General Permit (CGP) administration, unless added by written amendment.
- Air quality permits, industrial stormwater permits, or other environmental operating permits.
- Easement acquisition, right-of-way negotiations, or title searches.
- Property appraisals or condemnation support.
- Public hearing support, community outreach materials, or public involvement services.

Construction Phase

- Resident project representative (RPR) or full-time on-site construction inspection services.
- Special inspections (concrete, welding, soils) during construction; these are typically coordinated by the contractor or City.
- Materials testing and geotechnical observation during construction.
- Construction staking and layout surveying.
- Startup, commissioning, and performance testing beyond coordination with the pump manufacturer's factory representative.
- Post-construction monitoring or operational support beyond record drawing preparation.

Other

- Legal services, expert witness testimony, or litigation support.
- Cost estimating beyond opinions of probable construction cost included at design milestones.
- Preparation of grant applications or funding assistance documentation.
- Any services resulting from material changes to project scope, design criteria, or program directed by the City after design is underway; these will be addressed by written amendment.

Authorization to Proceed

We sincerely appreciate the opportunity to support the City of Fallon on the Serpa Lift Station Replacement project. We are prepared to mobilize upon issuance of a signed agreement or notice-to-proceed. Please contact us with any questions regarding this proposal or to discuss scope and fee.

Respectfully submitted,

Brian Fitzgerald, P.E.

Senior Engineer

Eastern Sierra Engineering

(775) 828-7220 | bfitzgerald@esengr.com

