



September 25, 2014

Ron Pine, P.E., CFM
Engineering Division Manager
Town of Prescott Valley Public Works
7501 E. Civic Circle
Prescott Valley, AZ 86314
928-759-3035

Subject: Engineering Design Services Scope and Estimated Fees for Viewpoint Drive Stormwater Mitigation Study & Floodplain Revision, CIP#S168.4, Town of Prescott Valley

Dear Mr. Pine:

Lyon Engineering (LE) is pleased to provide this scope of services and fee estimate for the Viewpoint Drive Stormwater Mitigation Study & Floodplain Revision (Viewpoint Study), and look forward to the opportunity to expand on our working relationship with the Town of Prescott Valley (PV). Exhibit 1 includes the approximate limits of analysis and design associated with the major task categories listed herein. The scope of services, standard terms and conditions, and fee estimates detail the tasks and associated fees required for this project. The proposed completion date for the project is Friday, June 19, 2015. We propose to perform the following services associated with the project:

Proposed Total Contract Amount **Fixed Fee of \$199,680:**

Tasks 1000 – Pre-Design **Fixed Fee of \$34,140:**

Task 1001-1006: Data Acquisition, Analysis, and Field Survey

This task includes attending a pre-design meeting with the Town, verifying, researching and acquiring the following items/data; recorded plats and easements, property ownership, rights-of-way (ROW) documents, existing FEMA studies, existing Town Masterplan hydrologic data, Town Masterplan addendums, Viewpoint Drive proposed infrastructure improvements/reports, existing conditions for Manning’s roughness coefficients, and existing utility data. Also to be acquired and analyzed are the existing Arizona State Land Department and U.S. Army Corps of Engineers permits, correspondence, and documentation relevant to the project. Lyon will coordinate with utility companies to obtain infrastructure data of the existing utilities.

Task 1007-1008: Field Survey

This task includes LE surveying existing Viewpoint Drive floodplain corridor and PV Unit 19 infrastructure (drainage, water, and sewer) within the project limits, supplemental topographic information for floodplain mapping, and the supplemental topographic information within PV Unit 19 required for the analysis and design.

Tasks 2000 – Master Drainage Plan and 30% Design

Fixed Fee of \$88,240:

Task 2001: Existing/Proposed Town Infrastructure Hydraulic Analysis

This task includes the evaluation of existing and PV proposed drainage infrastructure and respective capacity including storm drains, culverts, and channels. LE will utilize HEC-RAS to analyze and evaluate the overall depth and extents of 100-year flooding within the project area as defined in Exhibit 1.

Task 2002-2006: Existing Condition Hydraulic Report with 15% Proposed Design Alternatives

This task includes the preparation of the design report to discuss the evaluation of existing drainage infrastructure together with the Viewpoint Drive roadway, Multi-Use Path (MUP), and floodplain containment design alternatives to improve the existing hydraulic conditions where necessary within the project scope. The design alternatives will be evaluated using a Design Alternative Matrix that will include items such as: impact to private property, construction cost, utility realignments, and congruency with existing drainage designs completed by the Town (Dava & Associates). The design matrix will identify the preferred design alternative for the preparation of 30% design. A flood risk map will be prepared that shows the areas of highest risk to life or property within the project area defined in Exhibit 1. Town staff meetings, stakeholder meetings, and informative exhibits/materials are included in this task following the PV review.

Task 2007-2011: 30% Preliminary Design and Phasing Report

This task will include the preparation of the 30% design plans for the preferred design alternatives identified in tasks 2002-2006. The design alternatives and 30% design will identify the horizontal and vertical locations of Viewpoint Road, Viewpoint MUP, proposed drainage infrastructure including storm drain, culverts, and channels, required right-of-way, proposed easements and/or property acquisition, and roadway improvements for the following:

- 1) Viewpoint Drive, MUP, and adjacent unnamed drainageway from the Long Look Drive existing detention pond outlet approximately one (1) mile north to the northern boundary of PV Unit 19 (S11-T14N-R01W).
- 2) The Viewpoint Drive, MUP, and unnamed drainageway from the northern boundary of PV Unit 19 (S11-T14N-R01W) to the northern boundary of Arizona State Land (S02-T14N-R01W) at the confluence with the Agua Fria River FEMA Zone AE floodplain.

These design plans will identify phasing and construction limits based the Arizona State Land boundary and, where practical, on anticipated future available funding from the Town. Lyon will also prepare an Estimate of Probable Construction Cost based on the final 30% design plans and phasing limits. The proposed improvements within the 30% design plans will be based on the infrastructure proposed in the Viewpoint Drive Design Report. This report will provide the evaluation and hydraulic analysis of the proposed drainage infrastructure to be constructed. See 30% Design Plan Set Content at the end of this proposal for a complete list of items that will be included within the 30% Design. The design plans and report will be revised based on FEMA and Arizona State Land Department (ASLD) design review comments.

Tasks 3000 – FEMA LOMR and CLOMRs

Fixed Fee of \$64,500

Task 3001-3002: Hydrology Analysis and FEMA Existing Condition LOMR

According to the FEMA Flood Insurance Study for the project area, there is not a FEMA-approved hydrologic analysis or hydraulic study for the unnamed drainageway adjacent to Viewpoint Drive. In order to prepare a CLOMR submittal for FEMA, Lyon Engineering will prepare a hydrology and existing condition LOMR submittal to FEMA, utilizing the Town Masterplan hydrologic study. In the event that the Town Masterplan hydrology is not approved by FEMA, LE will prepare a hydrologic analysis specific to the Viewpoint basin to accompany the FEMA LOMR submittal. The extents of the LOMR will be from the Long Look Drive existing detention pond, approximately two (2) miles north to the northern boundary of Arizona State Land (S02-T14N-R01W) at the confluence with the Agua Fria River FEMA Zone AE floodplain.

Task 3003: Existing Floodplain HEC-RAS Analysis

Lyon will evaluate and model the existing floodplain utilizing HEC-RAS. The HEC-RAS analysis will be based on the Town Masterplan hydrologic analysis (if approved by FEMA), 2008 PV topography, and PV aerial imagery as supplemented by Lyon Engineering survey crews.

Task 3004-3006: Hydraulic Analysis of Proposed Floodplain Management Options

Lyon will prepare preliminary hydraulic analysis of proposed design alternatives to show the potential impacts of the floodplain management options to contain the Viewpoint Drive floodplain to minimize impact to Prescott Valley Unit 19 and Arizona State Land. The floodplain management options will be designed to prevent flooding of private property and to determine the preliminary horizontal and vertical location of the Viewpoint Drive as described in tasks 2002-2006. Stakeholder meetings, review agency meetings, and informative exhibits/materials are included in this task following the PV review.

Task 3007-3011: Proposed Floodplain and FEMA CLOMR Submittals

Based on the design plans developed in Tasks 2007-2011, Lyon will prepare the FEMA Endangered Species Act (ESA) documentation, proposed floodplain analysis, CLOMR reports, property owner notifications and newspaper ads, and MT-2 forms and report letters. Lyon Engineering will coordinate with stakeholders, including, but not limited to the State Land Department, impacted State Land leasees, impacted property owners, and utility companies. Two CLOMR applications will be submitted to FEMA; one for the State Land section including the Viewpoint Drive/Manley Drive intersection, the other for PV Unit 19 at the proposed Spouse Drive/Viewpoint Drive intersection.

Tasks 4000 – Subconsultants/Reimbursables

Fixed Fee of \$12,800

Task 4001: Existing Utility Potholing

LE will coordinate with a sub-contractor to provide up to eight (8) potholes along the Viewpoint Drive corridor to identify the location and depth of existing utilities in anticipated critical areas. LE survey crews will field locate the utilities once exposed by the potholing sub-contractor. Utility potholing is anticipated during the 30% design process after selection of the preferred alternative design option.

Task 4002: FEMA CLOMR Application Fees

This task covers the FEMA fee for two (2) CLOMR submittals at \$4,400 each.

Project Deliverables:

Final deliverables will include a hard copy of all plans and the design report, electronic copy in PDF format, and CADD files for all 30% design plans. The anticipated deliverables for this project include the following:

- FEMA Hydrology packet, existing condition LOMR, submittal, and approval
- Project alternative options, 15% concept plans, cost estimates, and decision matrix
- Viewpoint Drive and MUP State Land Section 02-T14N-R01W 30% design plan set and 30% Opinion of Probable Construction Cost
- Viewpoint Drive and MUP PV Unit 19 Section 11-T14N-R01W 30% design plan set and 30% Opinion of Probable Construction Cost
- State Land Section 02 FEMA CLOMR packet, submittal, and approval
- PV Unit 19 Section 11 FEMA CLOMR packet, submittal, and approval
- Potential WoUS impact assessment for State Land Section 02-T14N-R01W
- Design Report document which will include the following items:
 - Design parameters, constraints, and existing condition analysis
 - Alternative options and selection process
 - Proposed infrastructure
 - Proposed phasing limits
 - Location of required right-of-way and easement acquisitions
 - Affected property owner data sheet
 - Approved FEMA LOMR and CLOMR documentation

30% Design Plan Set Content For Viewpoint Drive Improvements

- a) Existing conditions including
 - i. Right-of-way and easements
 - ii. Topography (Town of Prescott Valley 2008 Aerial Topography)
 - iii. Benchmarks
 - iv. Adjacent property lines (based on Yavapai County GIS)
 - v. Existing pavement limits (Town of Prescott Valley 2008 Aerial Topography)
 - vi. Existing vertical and centerline alignments
 - vii. All existing utility information based on the best information available at the time (electric, gas, fiber, water, sewer, effluent and storm drain) located within project limits
- b) Proposed preliminary improvements including:
 - i. Road and drainage alignment and configuration as described in tasks 2000 and 3000 above
 - ii. Cut and fill catch points
 - iii. Wall locations if required
 - iv. Drainage structures
 - v. Water mains conflicts and relocations
 - vi. Sewer mains conflicts and relocations
 - vii. Dry utility anticipated conflicts and relocations

- viii. Centerline plan & profile for all required facilities including – road and drainage
 - ix. Roadway typical sections and erosion protection
 - x. All required FEMA CLOMR submittal items including; reports, plans, and hydraulic models
 - xi. Pavement sections
 - xii. Conceptual erosion control
 - xiii. Right-of-way including parcel and owner information
- c) 30% Engineers Cost Estimate

Items not included in this Scope/Fee Agreement:

- a) Arizona State Land Department right-of-way permitting and implementation
- b) Environmental analysis, cultural analysis, permitting and mitigation
- c) Clean Water Act Section 404 delineation, permitting, mitigation, and coordination
- d) Utility company relocation coordination and approval (APS, Unisource, CableOne, Century Link, etc)
- e) Traffic impact analysis and/or report
- f) Geotechnical analysis and/or report
- g) Town of Prescott Valley sewage collection system analysis and offsite relocation design
- h) Town of Prescott Valley water distribution system analysis and offsite relocation design
- i) Town of Prescott Valley Master Drainage Plan revisions or amendments
- j) Master Drainage Study – Fain Property Downtown Prescott Valley, AZ Detention Pond Design, verification, analysis, and/or revisions

We appreciate the opportunity to provide engineering design services for the Town of Prescott Valley on this project. Please call or email if you have any questions regarding the Tasks included in this proposal.

Regards,

Lyon Engineering



Scott A. Lyon, P.E., R.L.S.
Vice President

Attachments:

- Exhibit 1 – Project Scope Areas
- Town of Prescott Valley Professional Services Agreement
- Project Schedule