



June 9, 2014

Norm Davis, P.E., Director
Town of Prescott Valley Public Works
7501 E. Civic Circle
Prescott Valley, AZ 86314
928-759-3072

**Subject: Engineering Design Services Scope and Estimated Fees for Agua Fria Floodplain
Revision Final Design Planset,
Town of Prescott Valley**

Dear Mr. Davis:

Lyon Engineering (LE) is pleased to provide you with this scope of services and fee estimate for the completion of the Agua Fria River Floodplain Containment Project Planset as identified in the *Agua Fria Floodplain Revision & Unit 16 Stormwater Mitigation Study Preliminary Design and Hydraulic Report* (Agua Fria Report) dated June 2013. LE staff looks forward to the opportunity to expand on our working relationship with the Town of Prescott Valley (Town). Exhibit 1 includes the approximate limits of analysis and design associated with the major task categories listed herein.

This scope of services, standard terms and conditions, and fee estimates describes the tasks and associated fees required to prepare 100% construction drawings based on the 30% design plans contained in Appendix E of the Agua Fria Report. This scope and fee proposal is for plan preparation only, and does not include permitting and ancillary design/analysis previously identified in the Agua Fria Report. The proposed completion date for the deliverables described herein is April 1, 2015. We propose to perform the following services associated with the project:

Proposed Total Contract Amount **Fixed Fee of \$100,000:**

Tasks 1000–Pre-Design **Fixed Fee of \$6,370:**

Task 1001-1003: Data Acquisition and Coordination

This task includes attending a pre-design meeting with the Town, coordination with utility companies, and incorporating the survey as-built data required for the final design into the existing 30% CAD base file. LE will coordinate with utility companies to obtain infrastructure data and design blue stake of the existing utilities to supplement the existing utility data shown in the 30% design plans. The 30% CAD base file will also be updated with field verified property corners and boundary data.

Task 1004-1005: Field Survey

This task includes LE surveying existing utility infrastructure (drainage, water, sewer, gas, and power poles) within the project limits to supplement information shown in the 30% construction plans. LE survey crews will also locate property corners for subject parcels within the project limits that will be affected by the proposed infrastructure. LE survey crews will as-built design blue stake markings for other underground utilities if available.

Task 2000–Agua Fria Channelization 60% Design

Fixed Fee of \$46,900:

Task 2001: 60% Agua Fria River Channelization Construction Planset

This task includes updating the 30% design plans per the additional survey data and 60% drainage report and analysis. The plans will be updated to show field verified utility locations where applicable. Updates will also include design and details for scour protection, erosion protection including lateral migration, and special considerations. Details and cross sections will be included for each area where erosion protection is warranted. The 60% design plans will also include grading for the placement of channel export material within and directly adjacent to the project boundary as shown in Exhibit 1. Utility relocations with the immediate vicinity of the channel will be shown. It is anticipated that roadway and utility relocations outside of the immediate vicinity of the channel as identified in the Agua Fria Report will be designed in future subsequent construction documents and design reports. Additional ASLD right-of-way will be identified and updated as necessary.

Task 2002: 60% Drainage Report and Analysis

This task includes updating the 30% drainage report to include additional analysis and design for scour protection, erosion protection, lateral migration, and erosion setbacks. Aggregation, degradation, and stable open channel analysis will be included. The 60% drainage design will include analysis and discussion regarding channel velocities for varying frequency events (10-yr, 50-yr, and 100-year) and the evaluation of permissible surface treatment options.

Task 2003-2004: 60% Roadway and Utility Plans

This task includes the preparation of 60% construction plans for the new Robert Road crossing of the modified Agua Fria River channel. Also included in this task will be analysis and design for localized mitigation and/or relocation of the gravity sewer main at the eastern extent of the project limits identified in Exhibit 1. The sewer main in this location is already exposed in the existing condition. Coordination with Town Staff is expected to determine the extent of mitigation necessary at this location.

Task 2005: 60% Operation and Maintenance Plan

Per the requirement of the Arizona State Land Department (ASLD), an Operations and Maintenance (O&M) Plan will be developed to describe the inspection schedule and inspection items relevant to the channelization project. Coordination with Town Staff is expected to be included in this item because maintenance and inspection of the channelization project will be the responsibility of the Town.

Task 2006-2007: Stakeholder Coordination

Although no permitting is included in this scope, it is important to have the ASLD engineering and right-of-way staff to continue their review of the project to make sure that the ASLD will have no major objections once project permitting is pursued in the future. It is also important to continue coordination with major stakeholders identified in the Agua Fria Report to ensure that the design remains consistent with their expectations. LE will provide construction drawings to both Kinder Morgan and Fain Land & Cattle Company for review and feedback. One stakeholder meeting with Fain Land & Cattle Company is assumed in this task item.

Task 3000–Agua Fria Channelization 90% Design

Fixed Fee of \$25,650:

Task 3001: 90% Agua Fria River Channelization Construction Planset

This task includes updating the 60% design plans per Town, ASLD, or stakeholder comments and LE QA/QC review. The 90% design will incorporate design item changes warranted by cost/benefit analysis and discussions with Town Staff. Private property impact, ASLD impact and required additional ROW will be updated and identified.

Task 3002: 90% Drainage Report and Analysis

This task includes updating the 60% drainage report per Town, ASLD, or stakeholder comments and LE QA/QC review. The 90% drainage design will analyze any design item changes warranted by cost/benefit analysis and discussions with Town Staff.

Task 3003-3004: 90% Roadway and Utility Plans

This task includes updating the 60% design plans per Town, ASLD, or stakeholder comments LE QA/QC review. The 90% design will incorporate design item changes warranted by cost/benefit analysis and discussions with Town Staff.

Task 3005: 90% Operation and Maintenance Plan

The O&M plan will be updated to account for changes between the 60% and 90% design plans. The plan will also be updated to incorporate Town Public Works and Maintenance Staff review comments and anticipated budgetary constraints.

Task 3006-3007: Stakeholder Coordination

This task includes continued stakeholder coordination in response to feedback and requirements generated during the 60% stakeholder review. Another submittal to the ASLD is anticipated and one stakeholder meeting is assumed in this task item.

Task 4000–Agua Fria Channelization 100% Design

Fixed Fee of \$16,175:

Task 4001: 100% Agua Fria River Channelization Construction Planset

This task includes updating the 90% design plans per Town, ASLD, or stakeholder comments and LE QA/QC final review. Property impact and required acquisition will be finalized and identified. Areas where future utility relocation will be required will be finalized and identified. A final ASLD right-of-way map will be prepared and incorporated into the planset. The 100% planset will also include a temporary erosion control design sheet to propose control measures per State stormwater pollution prevention requirements for construction activities.

Task 4002: 100% Drainage Report and Analysis

This task includes updating the 90% drainage report per Town, ASLD, or stakeholder comments. The 100% drainage design will analyze any design item changes based on Town Staff review and LE QA/QC final review.

Task 4003-4004: 100% Roadway and Utility Plans

This task includes updating the 90% design plans per Town, ASLD, or stakeholder comments. The 100% design will incorporate design item changes based on Town Staff review and LE QA/QC final review.

Task 4005: 100% Operation and Maintenance Plan

The O&M plan will be updated to account for changes between the 90% and 100% design plans. The plan will also be updated to incorporate Town Public Works and Maintenance Staff review comments and changes (if any) to anticipated budgetary constraints.

Task 4006-4007: Stakeholder Coordination

This task includes continued stakeholder coordination in response to feedback and requirements generated during the 90% stakeholder review. A final submittal to the ASLD is anticipated and one stakeholder meeting is assumed in this task item.

Task 4008: Engineer's Estimate of Probable Construction Cost

An engineer's cost estimate will be prepared based on the 100% design plans.

Task 5000–Subconsultants/Reimbursables

Fixed Fee of \$4,905:

Task 5001: Geotechnical Report Update

LE has subcontracted Ninyo & Moore Geotechnical and Environmental Sciences Consultants to provide a geotechnical report update based on the quantity, depth, and location of proposed fill material placed adjacent to the channel excavation within ALSLD and/or Fain Land & Cattle Company property. A recommendation regarding fill placement and suitability for future uses will be included.

Task 5002: Reclamation and Re-vegetation Plan

LE will conduct analysis and recommendations regarding reclamation and re-vegetation of areas excavated and disturbed by the proposed project. The project lies within both ALSLD and Fain Land & Cattle Company property, and attention to the restoration of existing rangeland at the completion of the project is necessary per ALSLD engineering review comments on the 30% design. This item will include post construction soil preparation, seed type, seed application, and erosion protection.

Task 5003: Printing and Shipping Fees

This task includes all plan and report printing and reproduction for submittals to the Town and ALSLD. Shipping fees to the ALSLD are also included. This item does not include agency review fees, permit fees, or any other fees not specifically described herein.

Project Deliverables:

Final deliverables will include a hard copy of all plans and reports, electronic copy in PDF format, and CAD files for all 100% design plans. The anticipated deliverables for this project include the following:

- Agua Fria Floodplain Containment 100% design plan set and 100% Engineer's Opinion of Probable Construction Cost. This planset will include the Robert Road and western sewer main mitigation as described herein.
- Drainage Report Containing:
 - Analysis and discussion of scour protection, erosion/lateral migration protection, erosion setbacks, stable bed slope analysis, and design velocities and surface treatment options.
 - Hydraulic modeling update to ensure consistency with approved FEMA CLOMR design and submittal
- Geotechnical Report Update and Memorandum Containing:

- Recommendation about placement of excavated material within the project site and future constraints and limitations.
- Restoration and re-vegetation plan that identifies proper techniques and applications for re-seeding and the establishment of native grasses and plants within excavated, filled, and disturbed areas.

100% Design Plan Set Content Agua Fria 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 and field survey)
 - v. Existing pavement limits (Town of Prescott Valley 2008 Aerial Topography and field survey)
 - 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 100% improvements including:
 - i. Channel, roadway and drainage infrastructure alignment and configuration as described in tasks 2000, 3000, and 4,000 above
 - ii. Cut and fill catch points
 - iii. Drainage structures
 - iv. Water mains conflicts and relocations (within channel only)
 - v. Sewer mains conflicts and relocations (within channel only)
 - vi. Dry utility anticipated conflicts and relocations (within channel only)
 - vii. Centerline plan & profile for all required facilities including roadway and drainage
 - viii. Roadway typical sections and channel cross sections
 - ix. Drainage report submittal items including; reports, plans, and hydraulic models
 - x. Pavement structural section
 - xi. Final erosion control
 - xii. Right-of-way including parcel and owner information
- c) 100% Engineers Cost Estimate

Items Required for Construction not Included in this Scope/Fee Agreement:

- a) Property/easement acquisition coordination, maps, and survey
- b) Arizona State Land Department right-of-way permitting and implementation
- c) Environmental analysis, cultural analysis, permitting and mitigation
- d) Clean Water Act Section 404 permitting, mitigation, and coordination
- e) Utility company relocation coordination and approval (Kinder Morgan, APS, Unisource, CableOne, Century Link, etc)
- f) Traffic analysis and roadway re-design of Prairie Lane, Fulton Drive, Pecos Drive and Roundup Drive at the Santa Fe Loop Road extension east of the proposed Viewpoint Drive roundabout

- g) Town of Prescott Valley sewage collection system analysis, relocation, and upsize design
- h) Town of Prescott Valley water distribution system analysis and relocation design

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.

Sincerely,



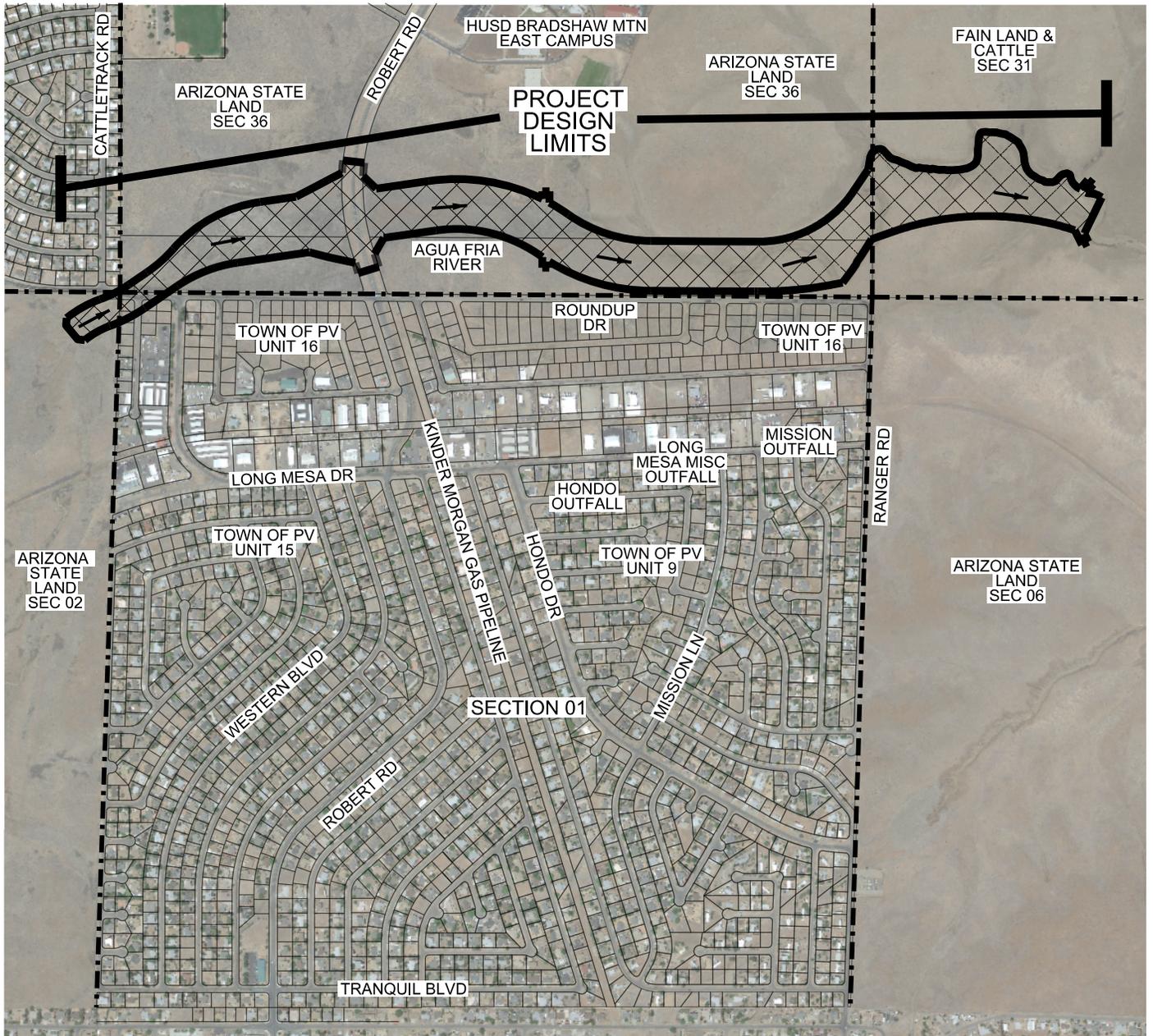
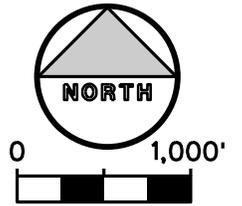
Kevin D. Horton, P.E., CFM
Project Manager
Lyon Engineering & Surveying, Inc.

Attachments:

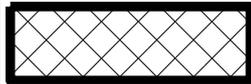
Exhibit 1 – Project Scope Limits

Town of Prescott Valley Professional Services Agreement

EXHIBIT 1 AGUA FRIA FLOODPLAIN REVISION FINAL DESIGN PROJECT SCOPE LIMITS



LEGEND

	PROJECT LIMITS
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