

August 23, 2023

Erin Young, R.G.
Water Resources Manager
City of Flagstaff Water Services
211 W. Aspen Avenue
Flagstaff, AZ 86001

RE: Request for proposal to take over the SRP Lake Mary Monitoring

Dear Erin:

Thank you for requesting professional engineering services from JE Fuller Hydrology & Geomorphology, Inc. (JE Fuller). This letter outlines our proposed scope of services, schedule, and fee estimate for the referenced project.

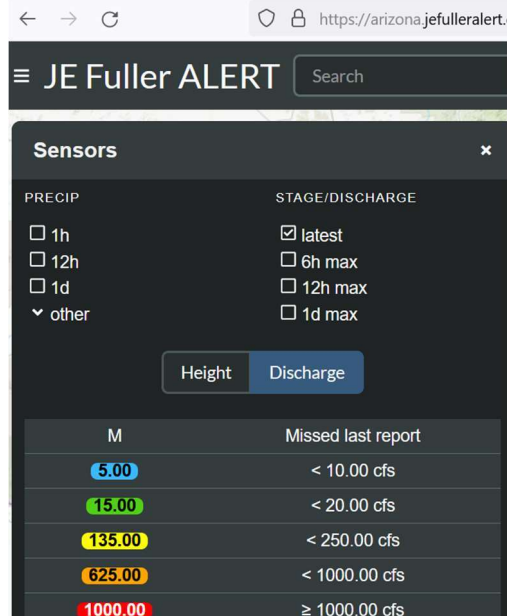
Scope of Work

The City of Flagstaff would like to transition the Lake Mary Monitoring project to local management. JE Fuller is a local firm that has the capability and experience necessary for performing the tasks as requested. Below JE Fuller describes their approach to this transition and answers Flagstaff's questions in blue:

- Operate and maintain existing equipment at 7 locations. Each location is equipped with 2 cameras with solar, one graduated rebar stake, and one pressure transducer
 - Every 2 months collection and archive of high-resolution photos at the backup camera
 - JE Fuller will collect and archive these high-resolution photos and make them available for Flagstaff, NAU, and others as requested. JE Fuller also believes they'll be able to make them available for timelapse viewing to the public. It is JE Fuller's understanding that SRP would provide the images that they have already collected and that the size would be Terabytes of data. If these photos are provided, JE Fuller will archive these photos and will program internally to make them available for public viewing.
 - Maintain current Vosker camera service (or provide the name and cost for another platform for viewing low-resolution photos)
 - JE Fuller can either maintain the current Vosker cameras that have one-way communication or can switch to a more robust system of cameras that are capable of two-way communication. JE Fuller currently maintains and installs a wide variety of cameras that have two-way communication. A sample website that JE Fuller hosts and maintains is available at <https://coconino.jefulleralert.com/pipelinefireeast/>. JE Fuller will coordinate with Flagstaff on the preferred method of moving forward. Of the possibilities, JE Fuller can either build a system to ingest the Vosker images or can switch to a comparable camera such as the RidgeTec that allows for two-way communication. Either option would roughly cost \$6K in either programming or new supplies for all 7 sites. This fee is included in the cost estimate provided in this scope.
 - Operations and maintenance of cameras, solar, stream gages, and OTT pressure transducers every 2 months
 - JE Fuller will take over the maintenance of the existing system. JE Fuller helps various agencies maintain and install OTT systems. One system that JE Fuller believes the City will be interested in exploring is OTT's Pressure Transducer that has the capability to transmit the data via cell. It

would fit well within the existing system and although there would be supply costs, the data could be provided each day on a public facing webpage hosted by JE Fuller. The costs for these sensors is not included in the scope as written but can be provided if requested.

- Explain how stage height and discharge data will be made available to the public
 - JE Fuller maintains and hosts data with and for multiple agencies. Please visit <https://arizona.jefulleralert.com/jefmap/> and note the stage and discharge data available to the public. A similar page for this Lake Mary project would be created.



- Explain how photos will be made available to the public
 - JE Fuller would build a page similar to the following website <https://coconino.jefulleralert.com/museumfirecameras/>. Please click on any of the photos at this link to see how you can view time lapse of past photos as well. This functionality would also be built into the websites built for the Lake Mary Project.
- Provide the proposed data management platform and whether the 2014-2023 data managed by the Salt River Project can be imported into the database with SRP's data grade information maintained.
 - JE Fuller will archive the data provided from SRP. The data grade information will be imported as notes for the data. The data could be provided on a requested bases in a text format. JE Fuller would perform the data grade rankings in the future using the categories as implemented by SRP in the past.
- Summarize the qualifications that your team brings to administer the project
 - Cory Helton would serve as the project manager on this project and he has worked with Flagstaff, Coconino County, and other agencies on numerous remote monitoring projects. Key personnel for this project will be Dave Tapley (for websites and programing) and Karlie Kessel (for maintenance, websites and data management). JE Fuller has worked on similar projects with Maricopa County, Coconino County, Arizona Game and Fish, Pinal County, Mohave County, Pima County, Yavapai County, Greenlee County, Bureau of Land Management to name a few. Please see attached resumes.

Project Understanding

JE Fullers role pertains to the aforementioned items. JE Fuller’s understanding is that permitting is the responsibility of Flagstaff. JE Fuller understands that SRP at one time was maintaining heated rain stations but that is not an aspect of the project moving forward. JE Fuller also believes that past rating curves for the stage to discharge ratings will be provided as well as the modeling used to create the relationship.

Fee Estimate

The estimated fee for this scope would be \$89,000 for the first year. JE Fuller believes that annual costs in future years could be less than the first year, which includes some one-time programming needs that won’t be necessary in subsequent years. Please note that fee estimate projections for Years 2 and 3 may need to be adjusted when that time comes. Also please note that JE Fuller is assuming that in Year 1 that equipment is fully functional and is not adding a budget for spare equipment but adding that to years 2 and 3.

	<i>Dave</i>	<i>Cory</i>	<i>Karlie</i>	
Hourly Rates	\$180	\$160	\$130	
Maintenance and Data Collection		140	200	\$48,400
Replace Vosker with RidgeTec Cameras				\$4,900
Build JEFMAP for photos, Stage, Discharge	30			\$5,400
Import SRP grades into NG Database	40			\$7,200
Import old low-resolution photos into website viewing	30			\$5,400
Report and Data Cleanup		8	80	\$11,680
JEFMAP Website and Hosting				\$6,000
Total (Year 1)				\$88,980
Hourly Rates	\$198	\$168	\$137	
Maintenance and Data Collection	8	140	200	\$52,404
Budget for Spare Equipment				\$10,000
Report and Data Cleanup		8	80	\$12,264
JEFMAP Website and Hosting				\$6,600
Total (Year 2)				\$81,268
Hourly Rates	\$218	\$176	\$143	
Maintenance and Data Collection	8	140	200	\$55,103
Budget for Spare Equipment				\$12,000
Report and Data Cleanup		8	80	\$12,877
JEFMAP Website and Hosting				\$7,260
Total (Year 3)				\$87,241

Schedule

JE Fuller would be available to start immediately for this project upon receiving an NTP. JE Fuller anticipates that a website could be available for public viewing in approximately two months after receiving the NTP. If you have any questions regarding this scope of services or the fee estimate, please do not hesitate to contact me. Thanks for this opportunity to serve the City of Flagstaff.

Sincerely,
JE Fuller/Hydrology & Geomorphology, Inc.



Cory Helton, PE, MS