

Northern Nevada Water Planning Commission

STAFF REPORT

DATE: May 31, 2018

TO: Chairman and Members, Northern Nevada Water Planning Commission

FROM: Chris Wessel, Water Management Planner,
Dr. Dan McAvoy, Applied Climatologist

SUBJECT: Discussion and possible approval of a Third Amendment to the Interlocal Agreement ("ILA") with the Desert Research Institute ("DRI") for the Regional Precipitation Monitoring project, extending the agreement to continue the project for a term of one year, in an amount not to exceed \$20,000 from the Regional Water Management Fund ("RWMF").

SUMMARY

Washoe County, and subsequently the WRWC, has sponsored a precipitation gauge monitoring program over the last 19+ years, as part of regional water resource planning efforts. After the consolidation of the County's municipal water utility with the Truckee Meadows Water Authority, the WRWC assumed responsibility for the program in 2016 as part of its regional water planning statutory mandate, recognizing the importance and value of precipitation data for regional water planning.

The program involves data collection and maintenance of 77 manual gauges (the "Network") where measurements are collected. The gauges are serviced twice a year. The intended use of the precipitation data is to validate existing perennial groundwater recharge estimates within the targeted hydrobasins. The Network data has recently been compiled electronically and provides a unique opportunity to analyze the quality of Network precipitation records and use the data to validate spatial estimates of precipitation, while potentially improving existing groundwater recharge estimates. At staff's request, the Desert Research Institute ("DRI") has submitted the attached proposal to provide DRI personnel to assist in continuing the monitoring program and maintaining the Network, at a cost not to exceed \$20,000, for Fiscal Year 2018-2019.

FISCAL IMPACT

If approved, the fiscal impact to the RWMF will be \$20,000. Budget authority is located in Fund Group 766, Fund 7066, Account Number 710100, Professional Services, Cost Object WP310007.

RECOMMENDATION

Staff recommends that the NNWPC approve a proposed Third Amendment to the ILA with DRI in an amount not to exceed \$20,000, to continue the project for Fiscal Year 2018-2019, and authorize the WRWC Water Resources Program Manager to execute the Amendment to the ILA for that purpose.

CW:jp

Attachment: DRI Proposal



05/29/2018

Washoe County Rain Gauge Network: Continued Operation Plan and Historical Data Analysis

Personnel: Dan McEvoy, Greg McCurdy, and Pamela Lacy

Purpose

Washoe County installed and maintained a storage rain gauge network (Network) of over 80 gauges with records that date back to the late 1990s. Following the recent merger of the Washoe County water utility with Truckee Meadows Water Authority, the Network program responsibilities have been assumed by the Western Regional Water Commission (WRWC). The program involves data collection and maintenance of manual gauges where measurements are collected and gauges are serviced twice a year. The intended use of the precipitation data was to validate and potentially improve existing groundwater recharge estimates that are commonly calculated using Hardman maps or Parameter Regression on Independent Slopes Model (PRISM; Daly et al. 1994) data. Additionally, Network could be used to provide improved monitoring of regional water sources and supplies. Precipitation measurements outside of the Network are sparse in this region, especially central and northern Washoe County, and minimal efforts have been put into validating spatial estimates of precipitation. The Network data has recently been compiled electronically and provides a unique opportunity to analyze the quality of Network precipitation records, use the Network data to validate spatial estimates of precipitation, and potentially improve existing groundwater recharge estimates. We are proposing to 1) have Desert Research Institute (DRI) continue assisting in the monitoring and maintenance of the network.

Scope of Work - Network Monitoring and Maintenance

DRI has a long history of weather station installation and maintenance and Greg McCurdy has extensive experience in this field and has spent significant time in remote regions of Nevada. DRI will assist WRWC staff in the collection of data and maintenance of the Network. This partnership between WRWC and DRI staff will help to develop familiarity with the locations of gauges, routes to follow, measurement process, precipitation record keeping, and gauge maintenance. Fieldwork will be conducted twice a year, one in the Fall and one in the Spring, to the Network to empty gauges, record precipitation measurements, and perform maintenance on all gauges. The proposed work also includes basic post data collection processing to analyze data integrity and develop products for commission and public consumption.

Cost Estimate

Estimated total project cost (07/01/18 – 06/30/19): Not to exceed \$20,000

References

McEvoy, D. J., Mejia, J. F., Huntington, J. L., 2014: Use of an Observation Network in the Great Basin to Evaluate Gridded Climate Data, *J. Hydrometeorol.*, **15**, 1913-1931.