

Northern Nevada Water Planning Commission

STAFF REPORT

DATE: June 1, 2017
TO: Chairman and Members, Northern Nevada Water Planning Commission
FROM: Chris Wessel, Water Management Planner,
SUBJECT: Discussion and possible recommendation to the Western Regional Water Commission (“WRWC”) to approve a proposal from the Desert Research Institute (“DRI”) for continuation of the regional precipitation monitoring project, in an amount not to exceed \$20,000 from the RWMF; and possible direction to staff.

SUMMARY

Washoe County, and subsequently the WRWC have sponsored a precipitation gauge monitoring program over the last 18+ 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, recognizing the importance and value of precipitation data for regional water planning, took over the program in 2016 as part of its regional water planning statutory mandate.

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 the monitoring and maintenance of the Network, at a cost not to exceed \$20,000, for Fiscal Year 2017-2018.

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 review the proposal, and, if acceptable, recommend that the WRWC approve the proposal, in an amount not to exceed \$20,000, to continue the project for Fiscal Year 2017-2018.

CW:df

Attachment: DRI Proposal

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

Personnel: Dan McEvoy, Greg McCurdy, and Albert Wolf, Desert Research Institute (DRI) and Western Regional Climate Center (WRCC)

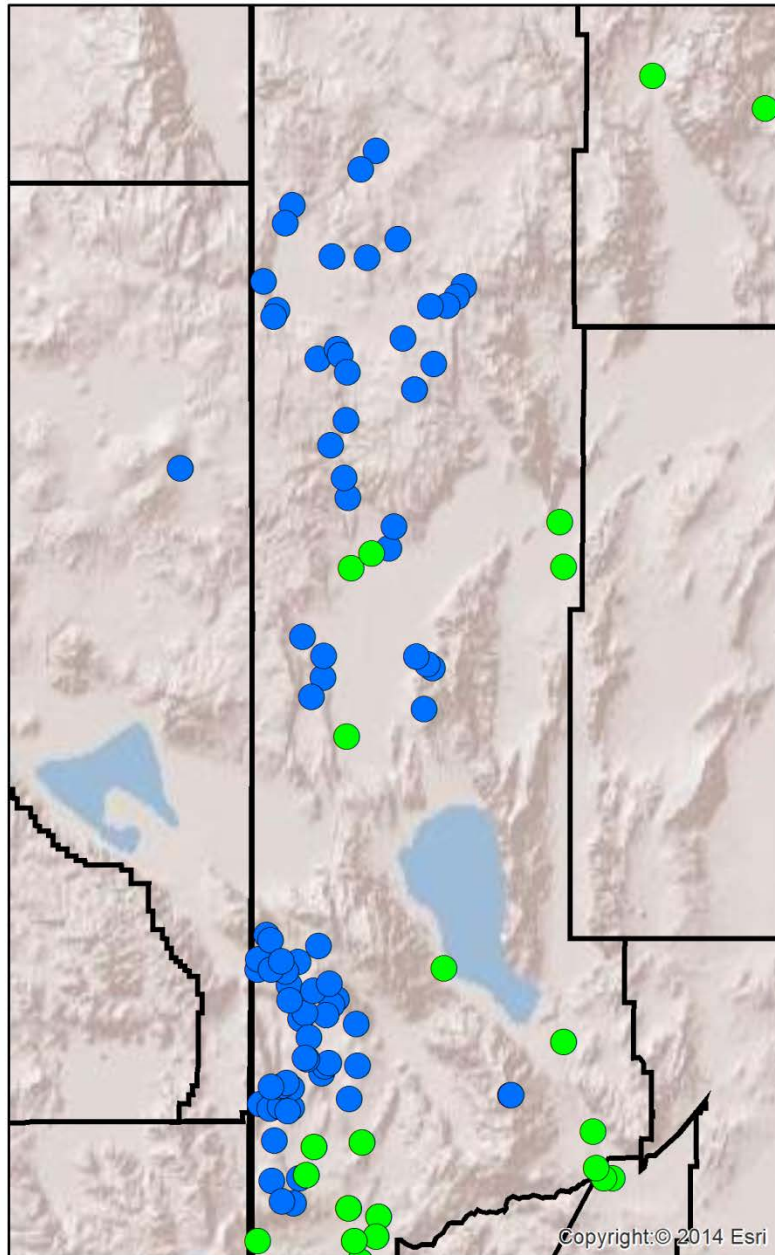
Purpose

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 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 and Albert Wolff have extensive experience in this field and have spent significant time in remote regions of Nevada. DRI will assist WRWC staff in the collection 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.



- Network locations
- PRISM control points

Figure 1. Network locations (blue dots) and PRISM control points (green dots) used in Jeton et al. (2005).

Cost Estimate

The *Network Monitoring and Maintenance* cost is estimated not to exceed \$20,000 for fiscal year 2017-2018 .