

Golden Valley Artificial Recharge Program



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Program Update

- Program Background/History
- Program Status Report
- Community Driven Process
- Next Steps

Program Background/History

- 1980's pilot study – Observed failing domestic wells and declining water levels in Golden Valley
- Federal Funding
 - Stopped 1997 – No recharge for 4 years
- Community requested County create a program
- 2002 Washoe County program
 - Ordinances 1166 (2002) and 1548 (2014)
 - Established Enterprise Fund and \$22.66 monthly fee for each APN

Golden Valley Artificial Recharge Program



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Program Service Area and Infrastructure

- 596 residential lots, 2 commercial
- Water meter, pipeline and four injection wells
- Potable water source - TMWA
- Domestic and monitoring wells for measuring water levels
- Three monitoring wells for measuring injection water quality

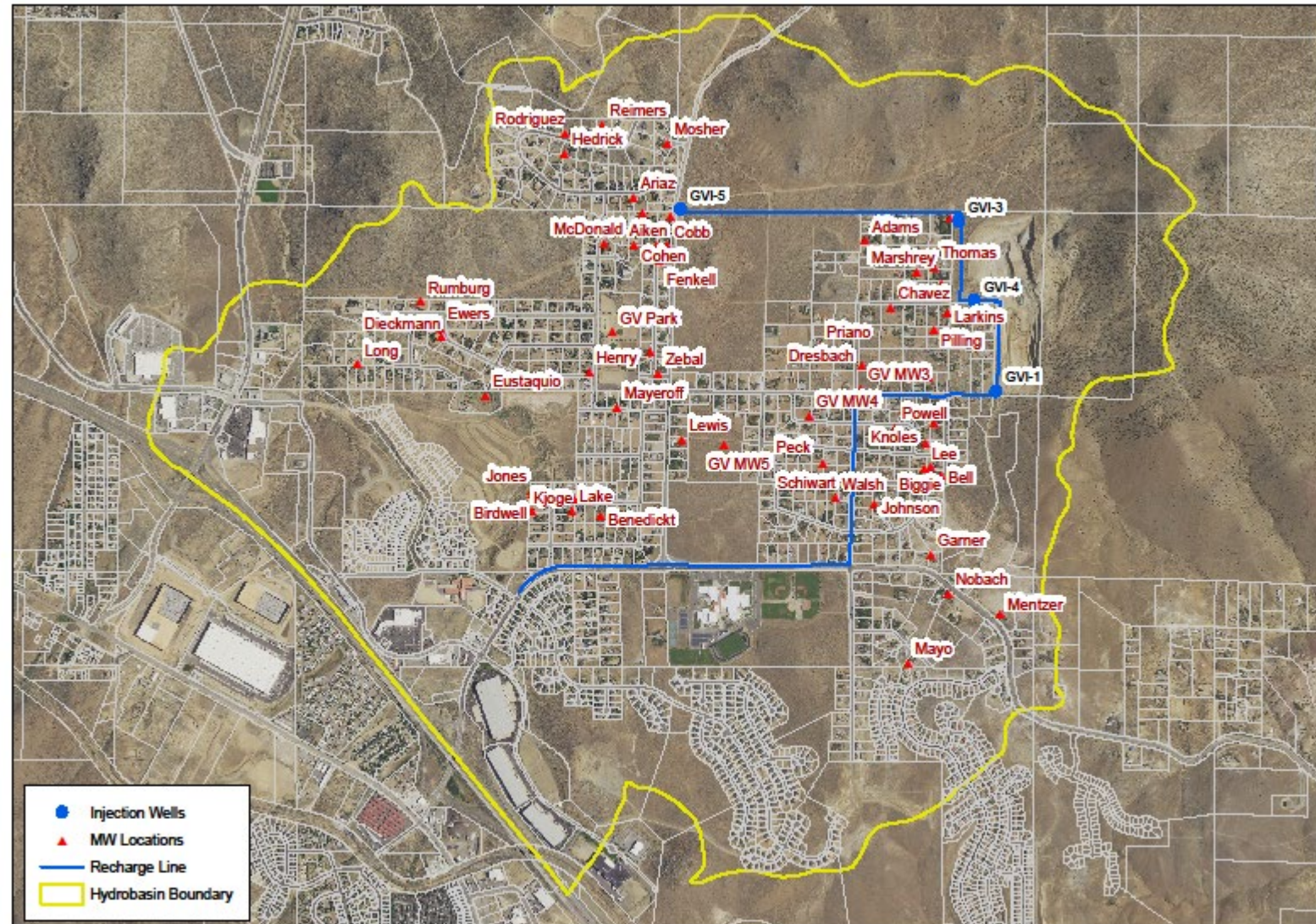


Figure 1
Golden Valley Groundwater Recharge System

Program Elements

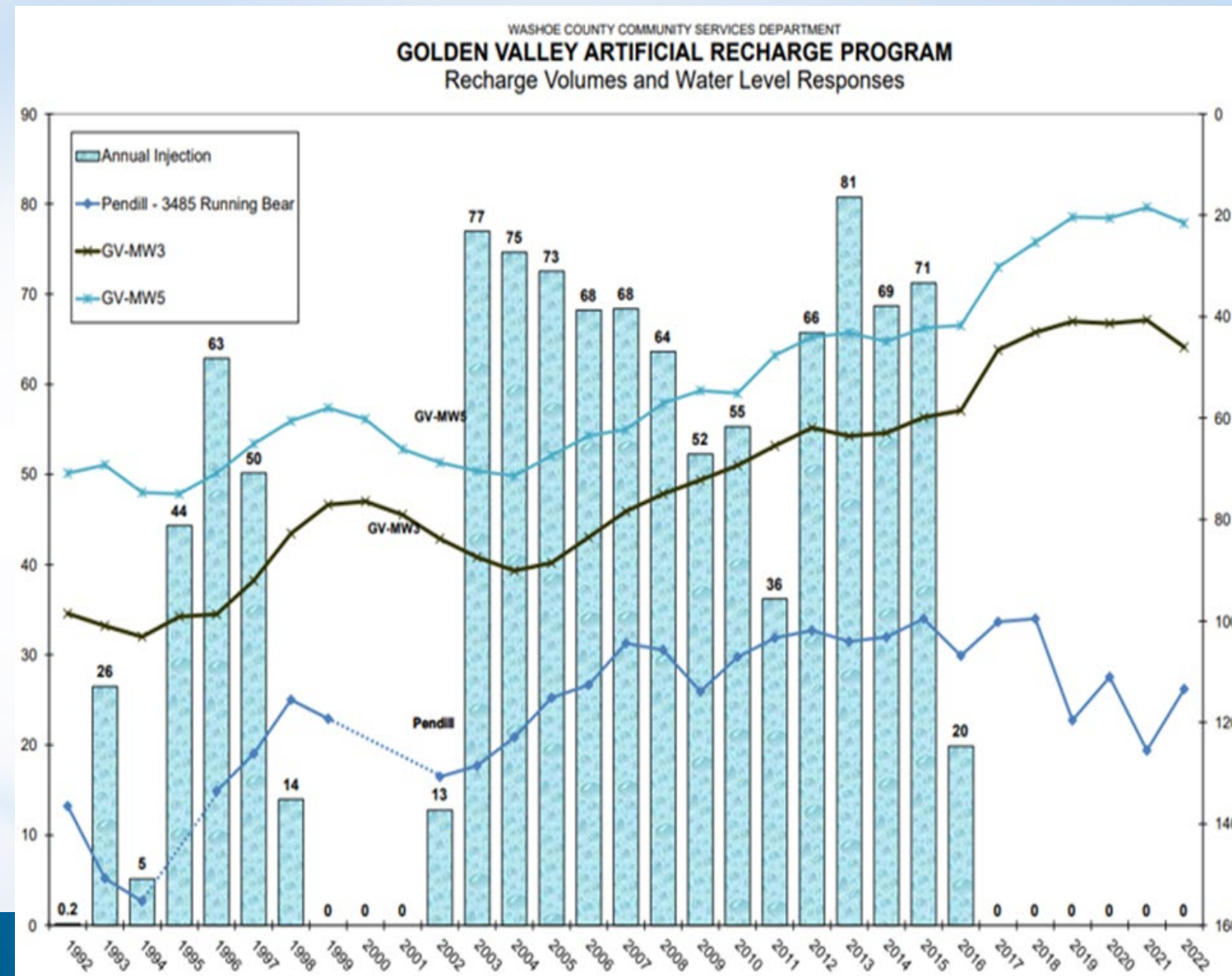
- Management
- Field Work
 - Water Levels
 - Injection Water Quality
 - Aquifer Water Quality
- Permits
 - Nevada Department of Environmental Protection
 - Nevada Division of Water Resources
- Billing
- Agreements
 - NV Energy
 - Truckee Meadows Water Authority
- Water Rights/Credits
 - Own/Manage Annually
- Customer Assistance/Questions/Meetings

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- Ground water near surface in “Gun Streets”
- Groundwater generally stabilized throughout subbasin
- **Stopped injecting water as of April 2016**
- Program management and oversight has not stopped



Questions?

Why are groundwater levels near surface in “Gun Streets”?

What is the source of water?

Was the recharge program causing the water level increase? Is new development? The school?

Will artificial recharge be needed in the future?



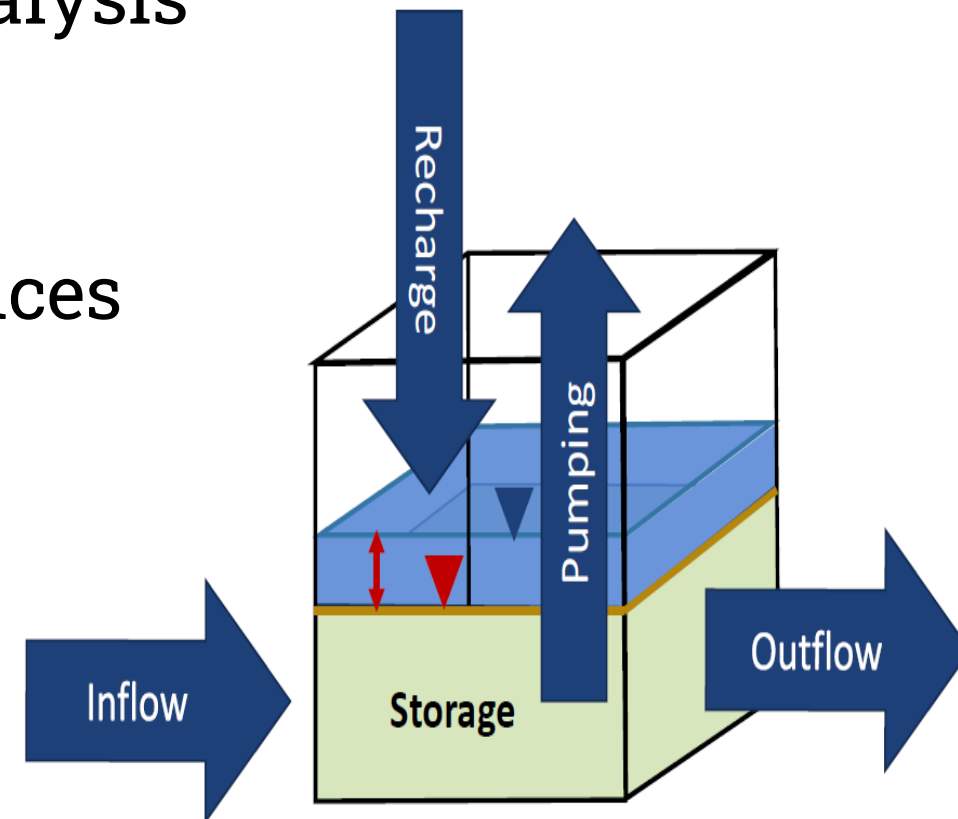
Initiated comprehensive hydrogeological study to answer these and other questions.

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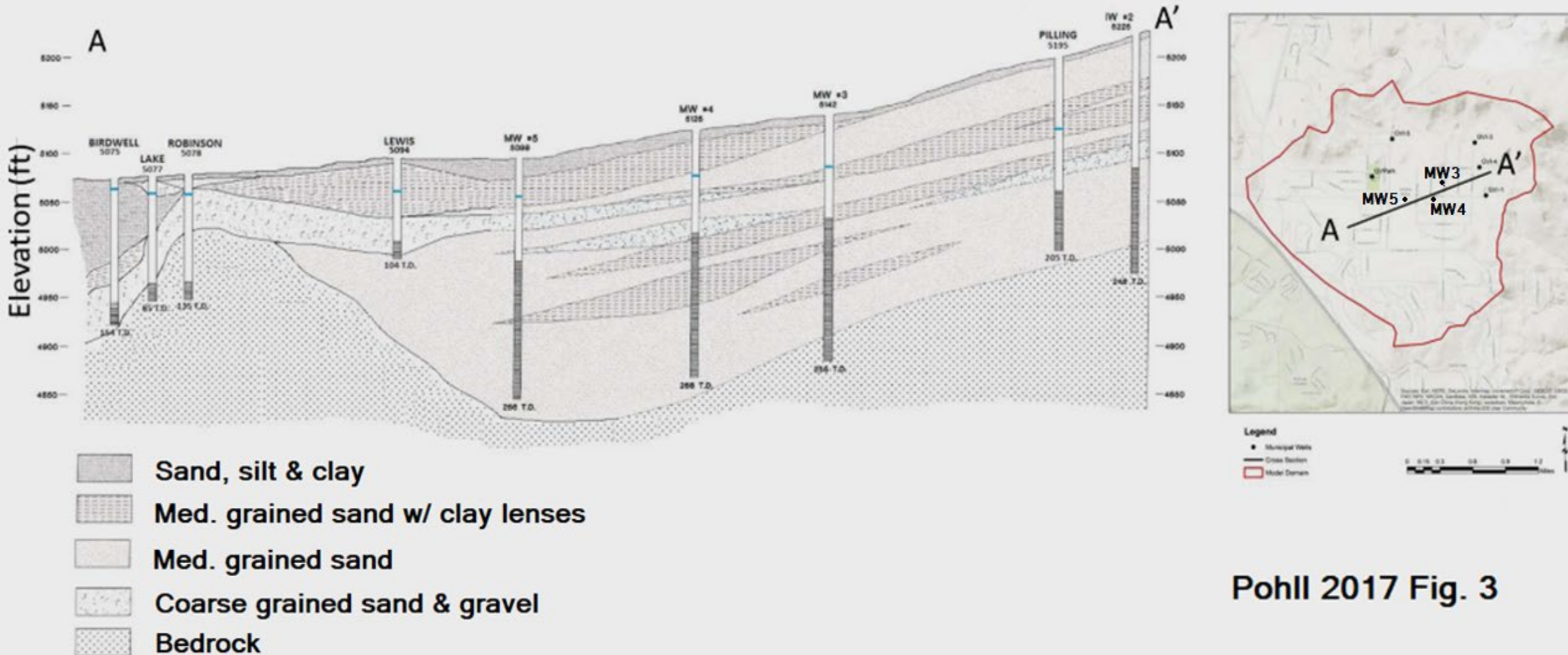


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- Hydrogeological analysis and developed predictive groundwater model
- Comprehensive geological review and analysis
- Precipitation data – Peavine outflow and precipitation within valley
- Considered natural and manmade influences on aquifer
 - Septic system contribution
 - New development irrigation
 - Surface water drainages
 - Artificial injection



Generalized Cross-Section of Golden Valley

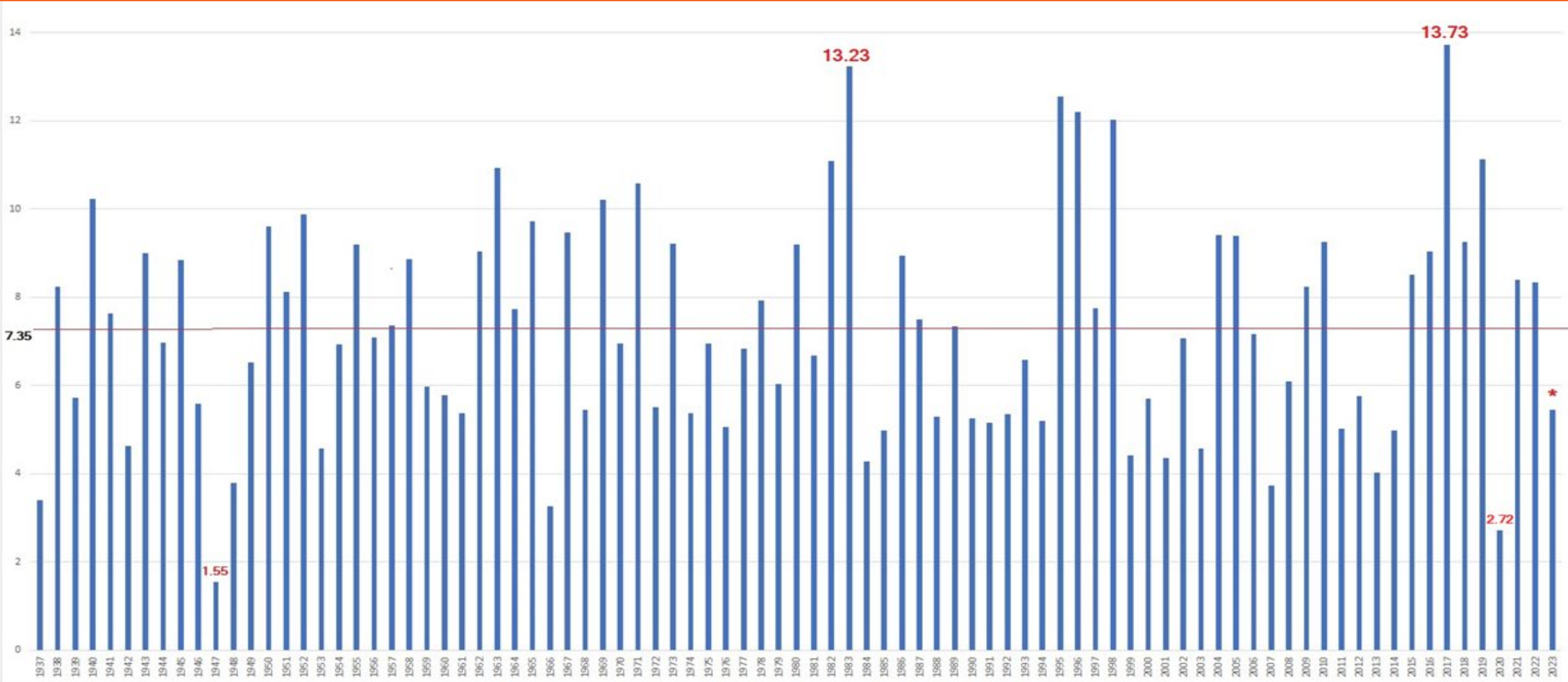


Pohll 2017 Fig. 3

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Average 1937-2023 = 7.31 inches
Average 1980-2023 = 7.47 inches

Average Precipitation (1937-2023)
Reno International Airport

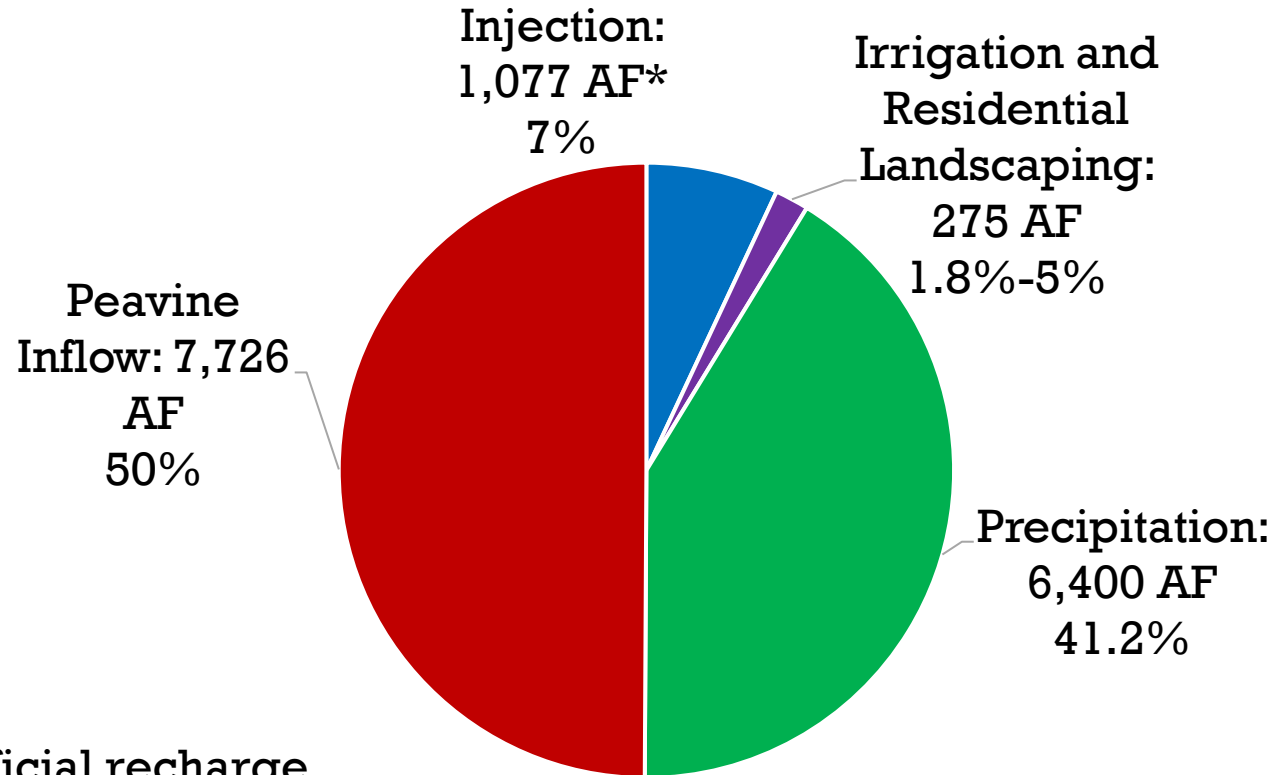
* 2023 = Jan-Feb-Mar
5.46 inches

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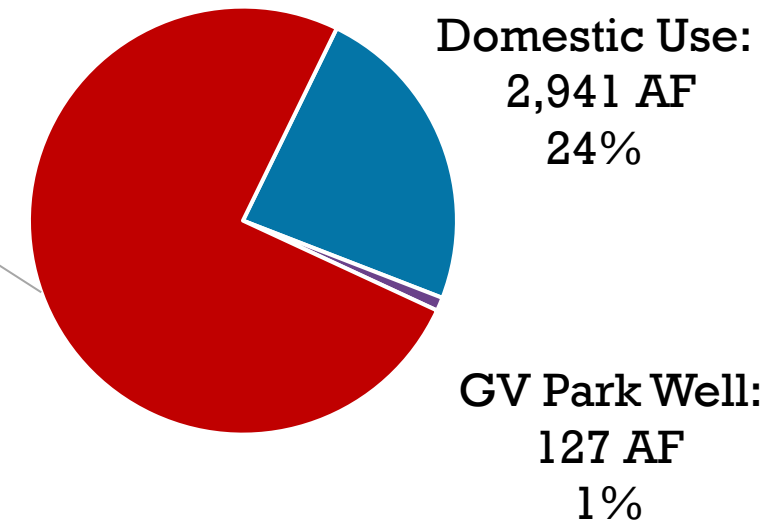


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Golden Valley Cumulative Aquifer Influence, 1991-2021



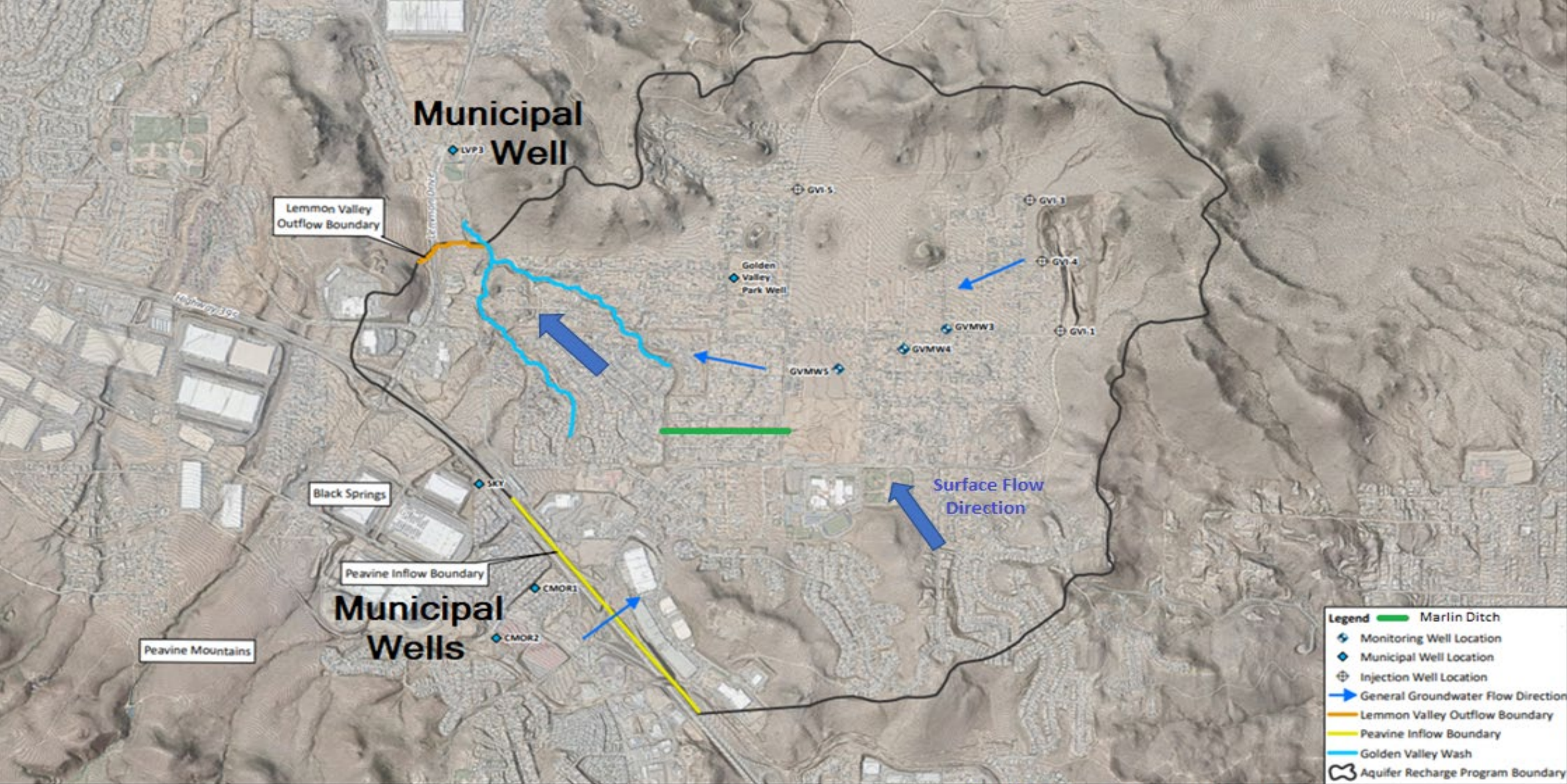
Lemmon Valley Outflow: 9,362 AF
75%



*Artificial recharge occurred 1992-2016

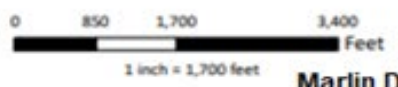
Total In: 15,479 AF

Total Out: 12,430 AF



- Legend**
- Marlin Ditch
 - ◆ Monitoring Well Location
 - ◆ Municipal Well Location
 - ⊕ Injection Well Location
 - ➔ General Groundwater Flow Direction
 - Lemmon Valley Outflow Boundary
 - Peavine Inflow Boundary
 - Golden Valley Wash
 - Aquifer Recharge Program Boundary

Aerial Imagery Source: Nearmap, June 1st, 2022



Marlin Ditch



SAFETY FIRST

CLIENT:	Washoe County Engineering and Capital Projects
PROJECT:	Golden Valley Aquifer Recharge Assessment - Golden Valley, NV
PROJECT NUMBER:	N022.001.001

Golden Valley Aquifer Recharge Program Boundary

FIGURE 2

Findings

- Complicated geology, varied water movement rates – but generally fast across basin
 - Existing north-south fault is a consideration
 - Over 90% of new water entering valley system is from precipitation
 - Municipal wells not removing groundwater from west, not inducing downstream gradient – Since 2002-03
 - Existing and new development contribute less than 5% new water
 - When operating, artificial recharge contributed \approx 7%-10%
 - Shallow/questionable domestic well drilling – 1970's – 1980's
- **Findings indicate artificial recharge will not resume in foreseeable future.**

Community Input

- Program Analysis Timeline
 - Community requested comprehensive analysis, extending timeline
- Community Outreach Meetings
 - 5 public meetings
 - April 2022 to current
 - Between 45 and 100 people generally attend meetings
- Focus Group Meetings
- Calls, Discussions and Meetings (POA)

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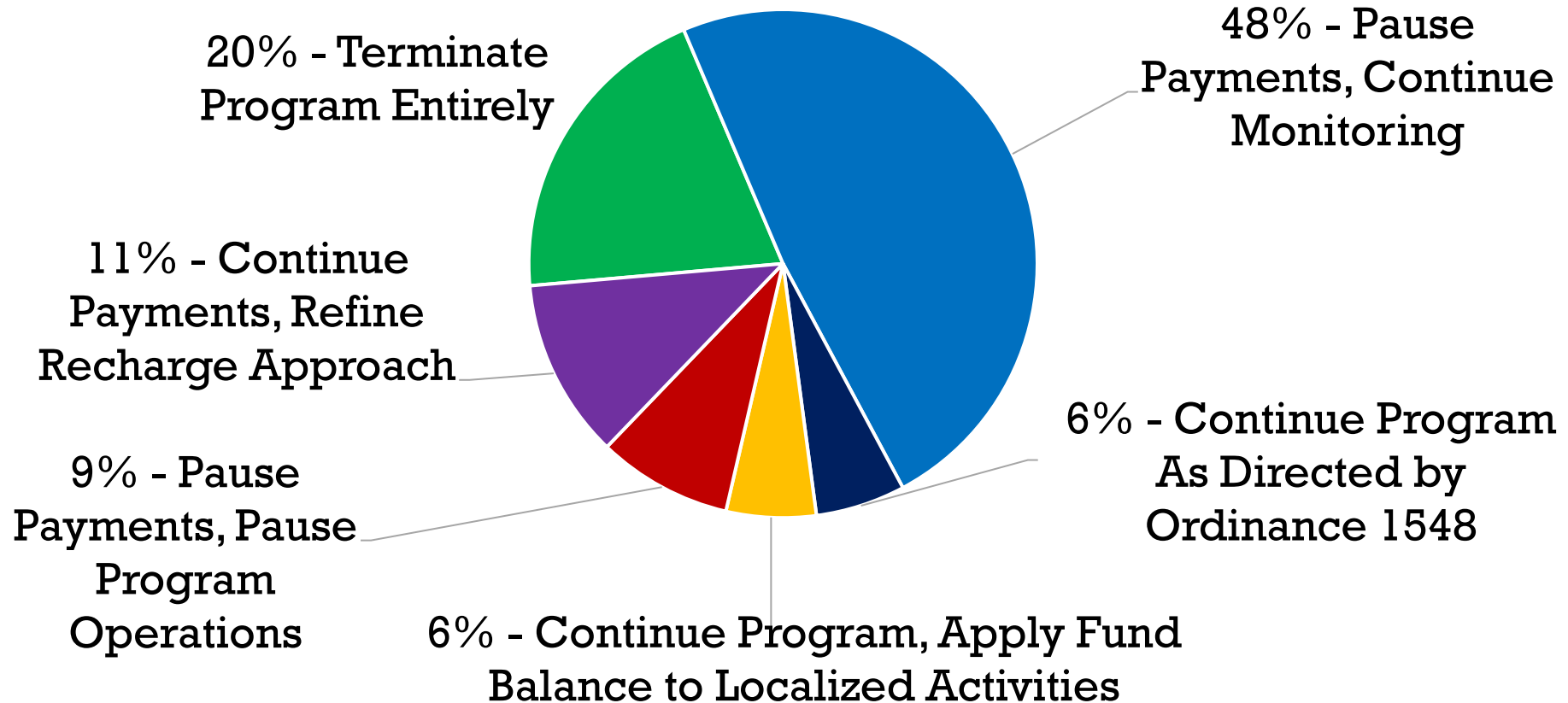


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Number of Responses
Washoe311: 13
Written: 51
Verbal: 60
12 duplicate verbal/written responses

Community Direction

Public meetings, Washoe311, emails, phone calls



Fiscal Considerations

- Current fund balance \approx \$713,000
- \$100,000 held in reserve by Ordinance
- \approx \$13,550 monthly revenue
- Average monthly costs during recharge \approx \$7,600
- Average monthly costs after recharge \approx \$4,900
- Estimated future monthly costs \approx \$2,200*

*no injection, no billing, no state permits, minimum sampling/measurement, 5-year model update, 10-year program reassessment

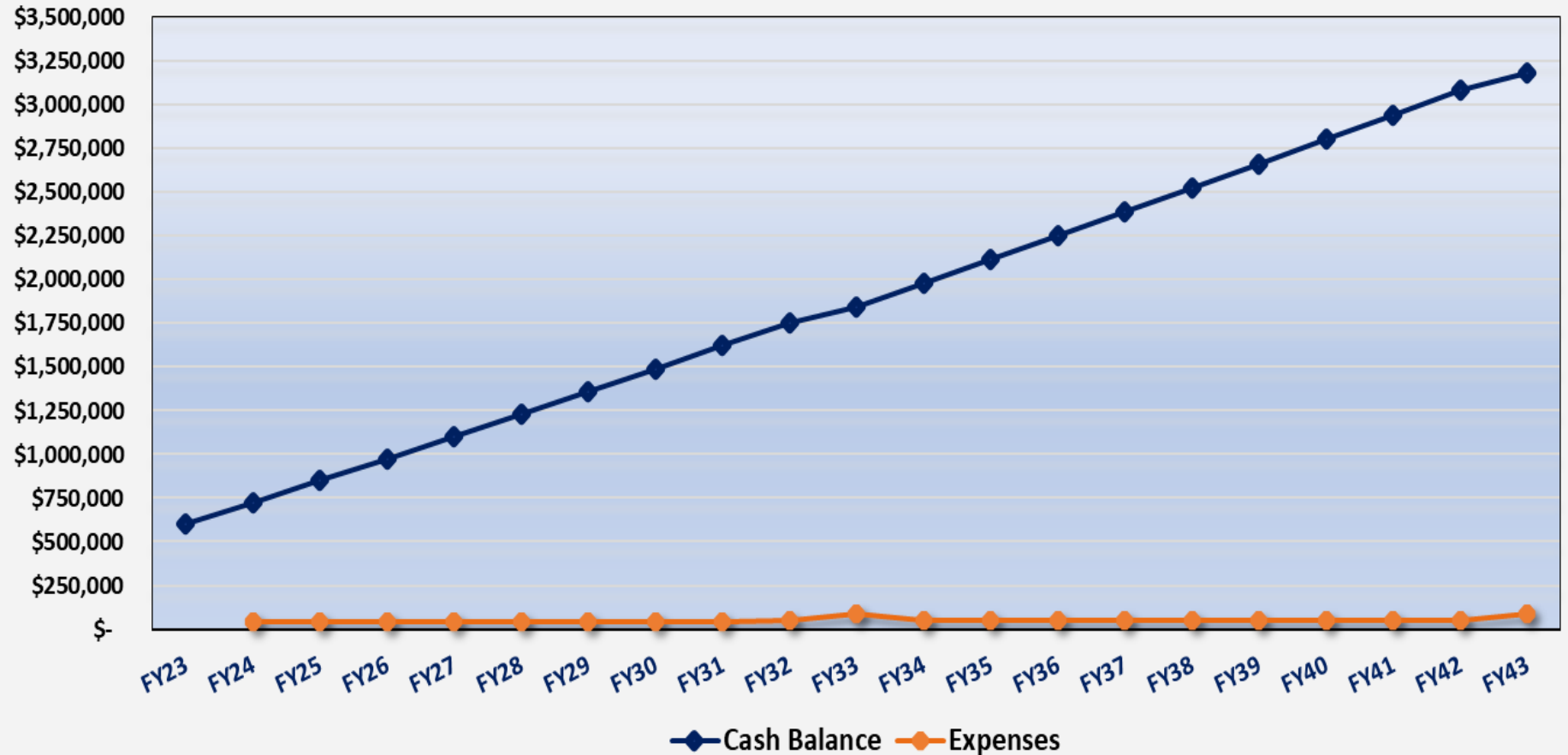
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Fund Projection – Status Quo

Golden Valley Recharge Program
Cash Balance (net of required \$100K reserve) - Montly Fees Continued



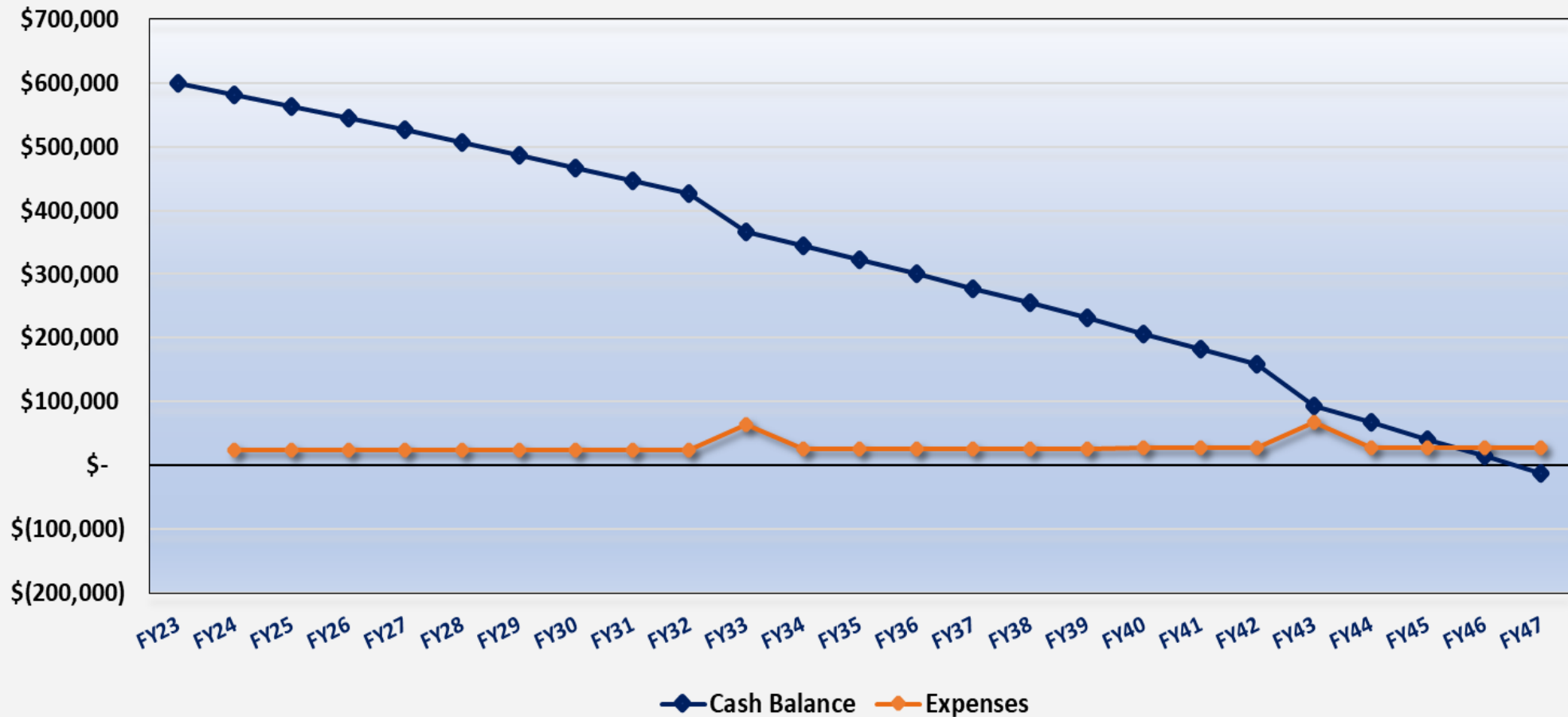
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**Fund
Projection
- No Fee,
Utilize
Balance**

Golden Valley Recharge Program
Cash Balance (net of required \$100K reserve) - Monthly Fees Discontinued



Direction from Majority of Property Owners

- No Monthly Fee
 - Keep Water Rights/Credits For Program
 - Keep Uninterruptable Water Agreement with TMWA
 - Maintain \$100,000 for Future Considerations
 - Use Existing Fund Balance to Continue Water Level and Water Quality Monitoring
 - Update Predictive Model on 5-year basis
 - Revisit the Need of Program in 10 years.
- Existing fund balance will support minimum functions through ≈2045

Next Steps

- Present first reading of ordinance change to Washoe County Commission to correctly capture property owners' direction on May 9th *
- Second reading and resolution to follow according to NRS 244 and NRS 318
- Effective date for Ordinance changes on or before July 2023.
- Remove all late fees, in consideration of program pause for analysis and public input/direction and allow all residents to come current on billing

Thank you



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