Status Report for the Legislative Oversight Committee on the Western Regional Water Commission

Groundwater Management and Domestic Well Mitigation Issues

June 28, 2012
Washoe County
Department of Water Resources

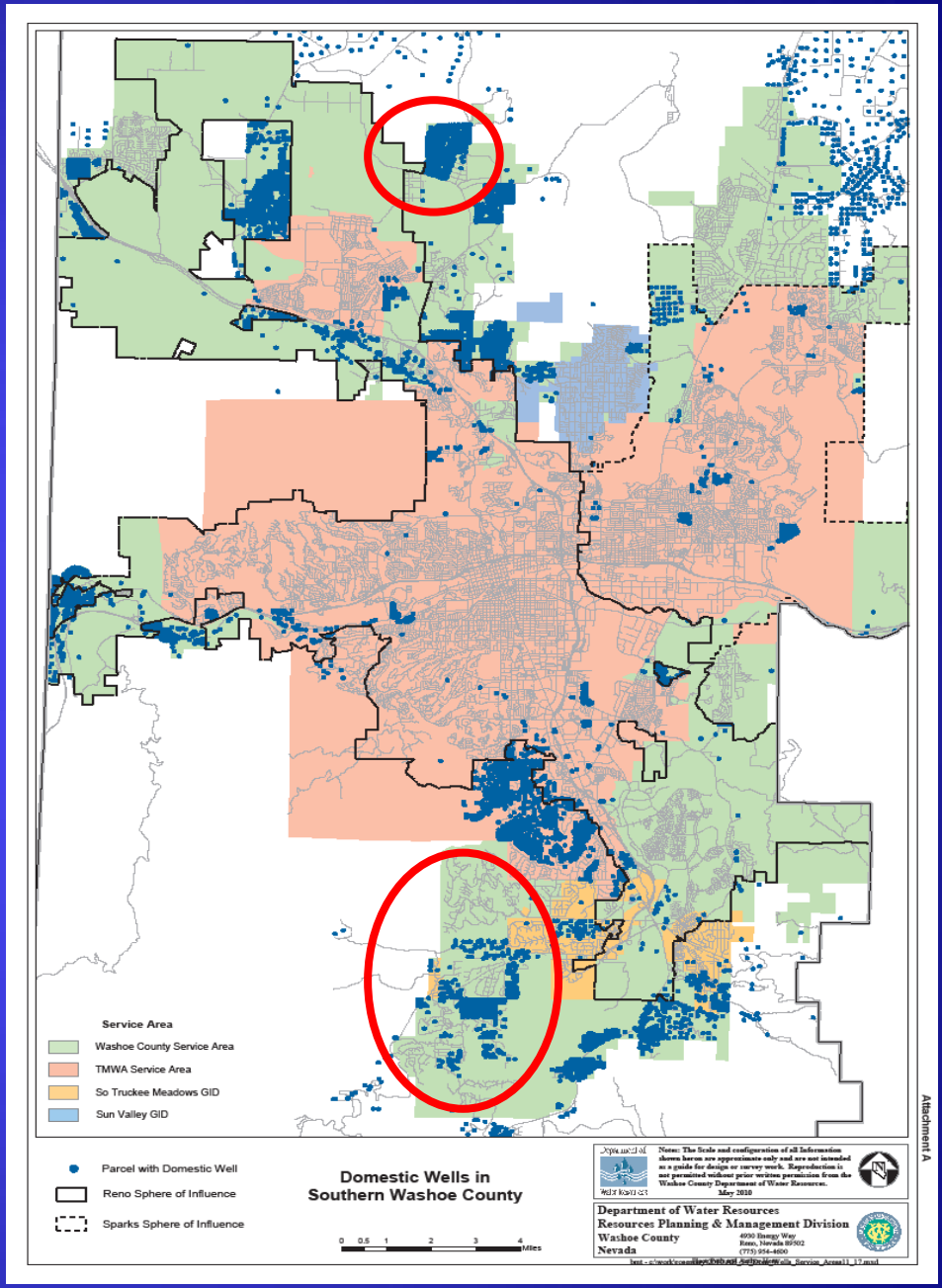


Exhibit B – WRWC
Meeting Date: 06-28-12
Document consists of 31 slides.
Entire Exhibit provided.

Key Provisions of Nevada Water Law

- Municipal pumping is subject to limitation based on water rights issued by the State Engineer;
- The State Engineer takes into account the perennial yield of groundwater basins when issuing water rights;
- Water suppliers must operate in compliance with the provisions of their water rights and actively monitor aquifer levels.

The Legislature has declared that “It is the Policy of this State:

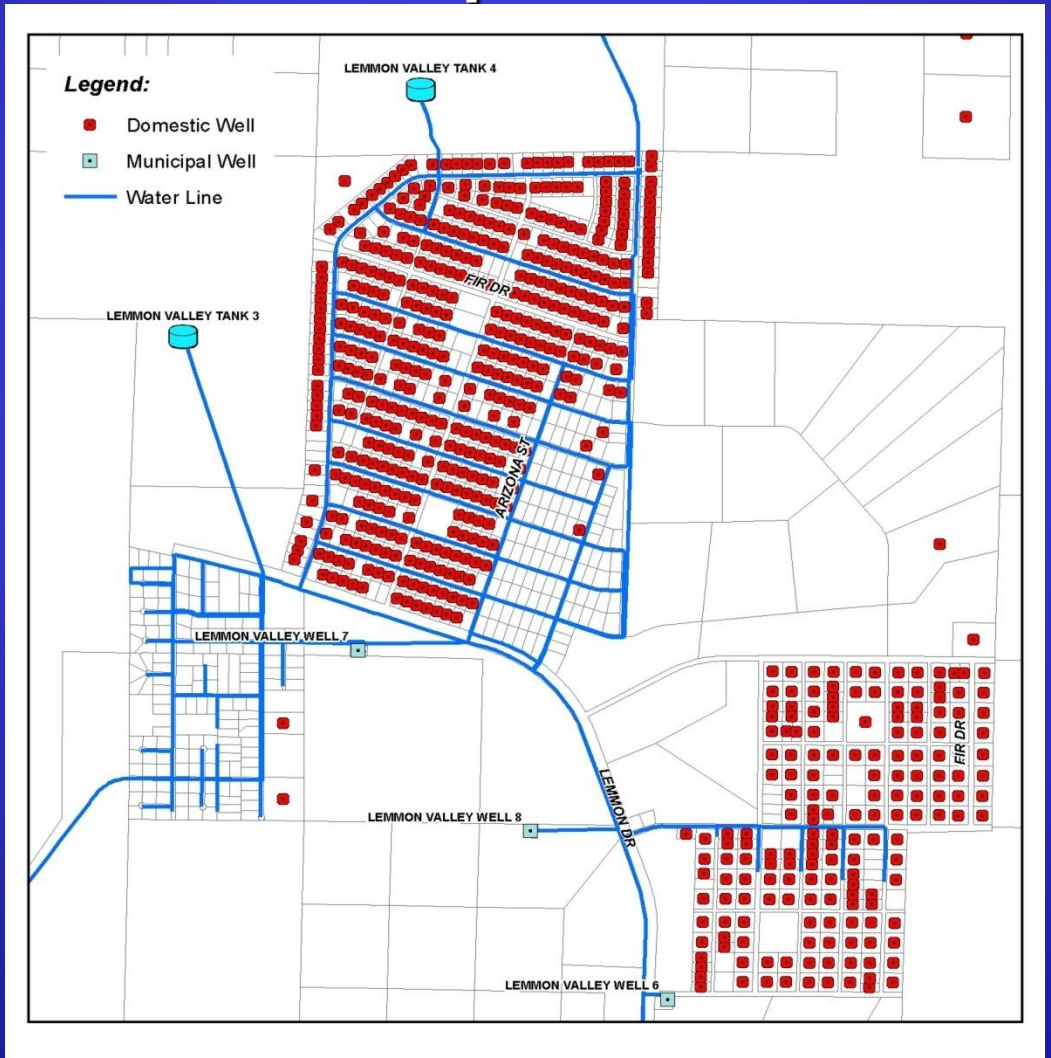
- To recognize the importance of domestic wells as appurtenances to private homes, to create a protectable interest in such wells and to protect their supply of water from unreasonable adverse effects which are caused by municipal, quasi-municipal or industrial uses and which cannot reasonably be mitigated.” NRS 533.024.1(b)
  - Language added to Statute in 1993

The Legislature has also authorized the State Engineer to:

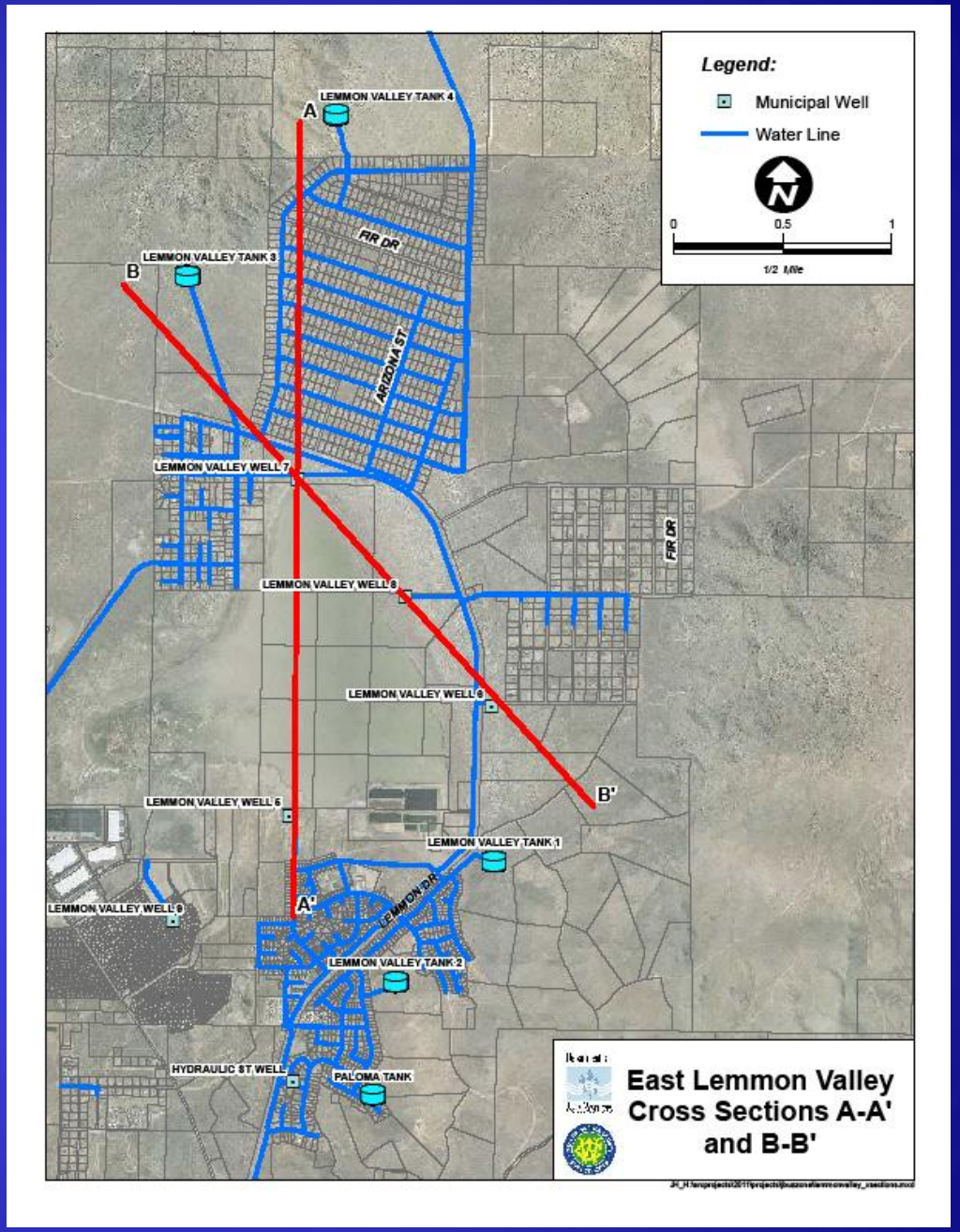
- "prohibit the drilling of wells for domestic use, as defined in NRS 534.013, in areas where water can be furnished by an entity such as a water district or a municipality presently engaged in furnishing water to the inhabitants thereof." NRS 534.120.3(d)
  - Language added to statute in 1955

The Heppner Subdivision in Northeast Lemmon Valley has more than 500 domestic wells in an area that is about a mile and a half square

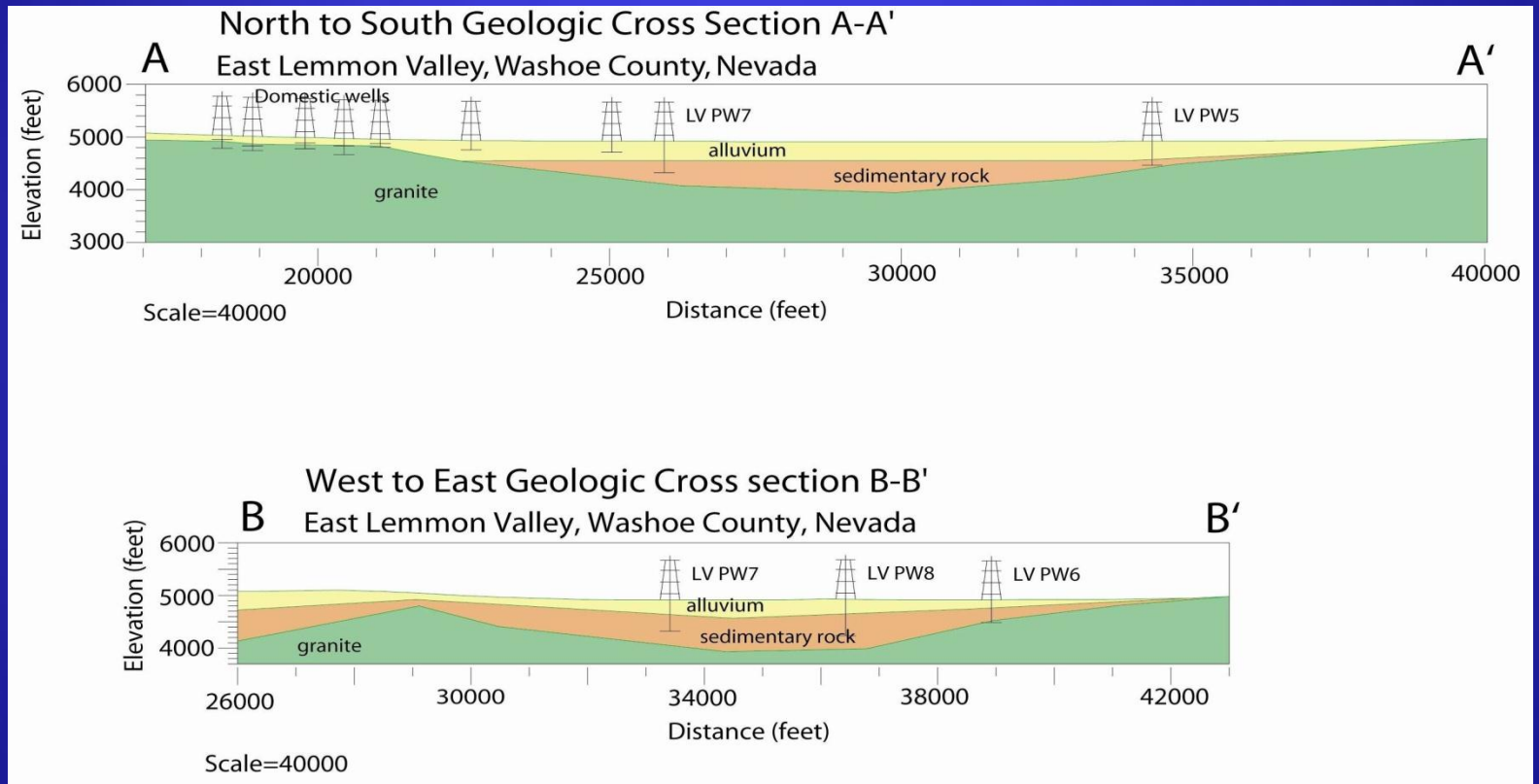
Northeast Lemmon Valley



Location of Hydro-geological Cross Sections in Northeast Lemmon Valley

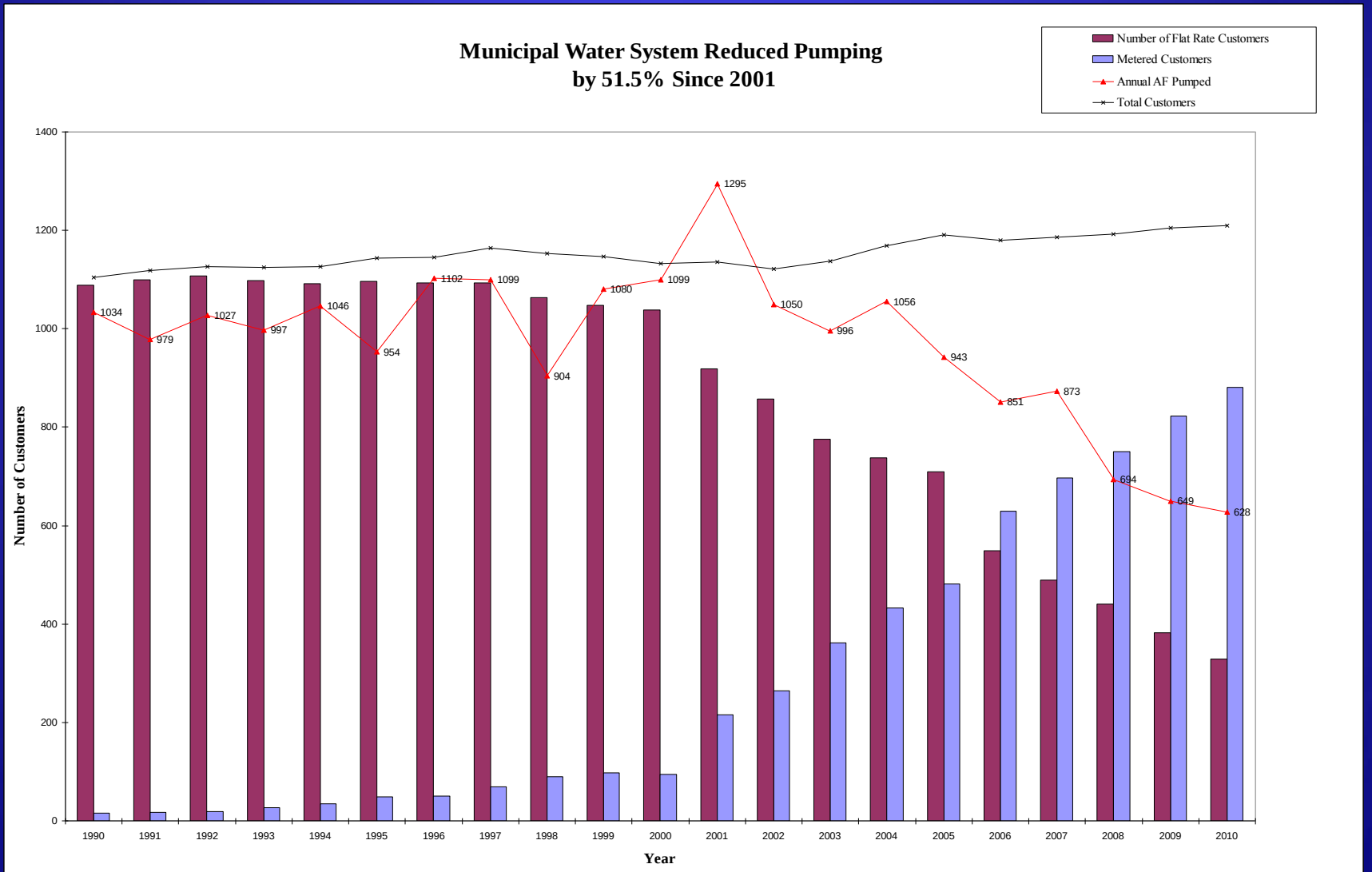


Hydro-geologic conditions, such as fractured granite, make some areas less suitable as sources of water for either domestic or municipal wells



Geologic cross sections for Lemmon Valley Production Wells. Derrick figures mark location and depth of wells. Lithology shows depth to granite, sedimentary rock and alluvium in East Lemmon Valley. Note the domestic wells are mostly completed in granite.

Water Use by County Customers in Northeast Lemmon Valley 1990 to 2010

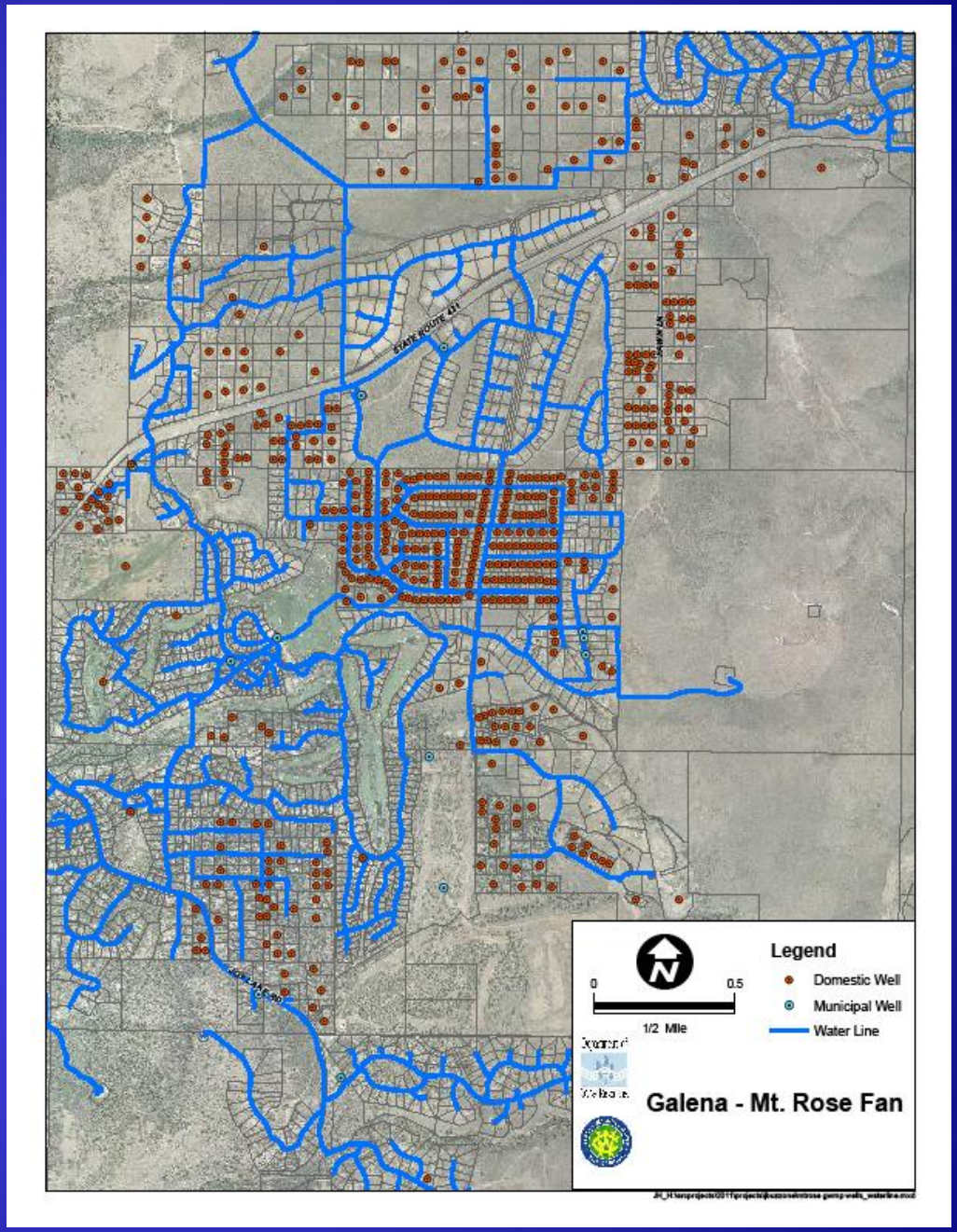


Domestic Well Issues in Northeast Lemmon Valley have been addressed by:

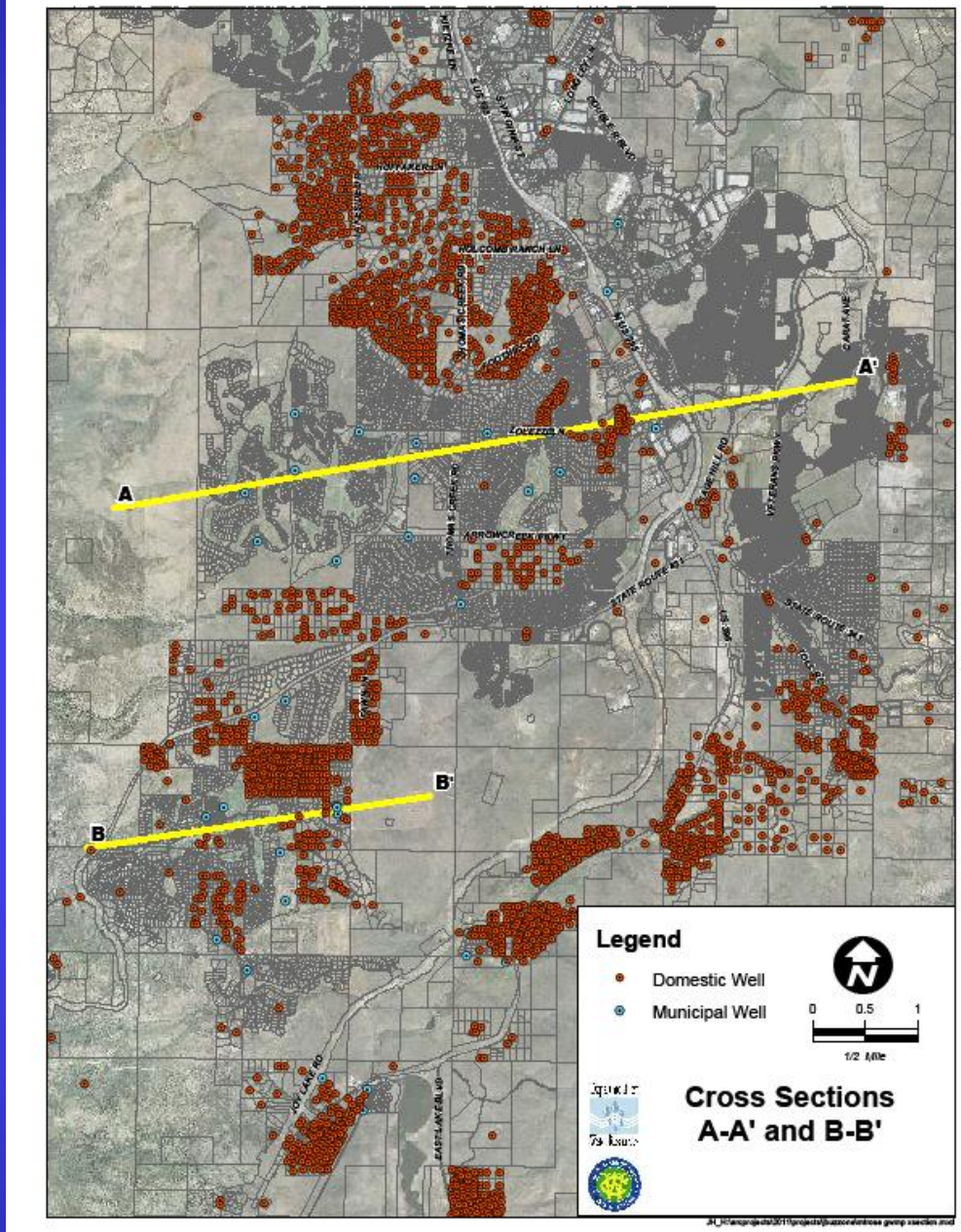
- Transitioning flat rate municipal customers to metered rates has cut demand by more than 50 % since 2001;
- Obtaining federal construction grants reduced by 58% the cost to residents of connecting to the municipal system when their domestic wells fail;
- Obtaining Community Development Block Grant Funds has assisted 22 low income property owners connect to the municipal system at no cost; and
- Providing loans from the Water and Sewer Financial Assistance program to assist property owners needing to hook up but who are unable to afford the ‘up front’ costs of doing so.

Mt. Rose-Galena Fan Area

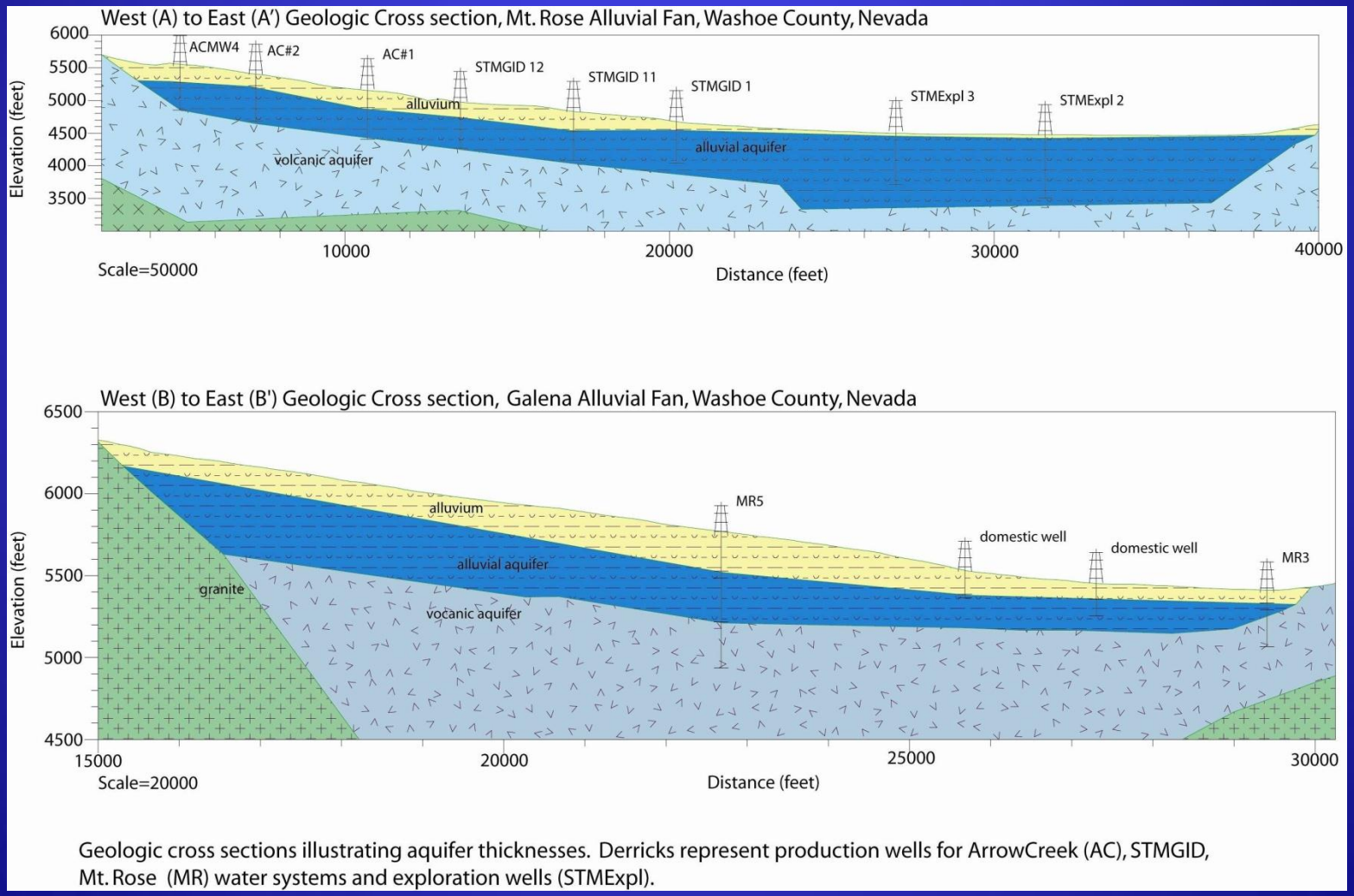
Over 500 domestic wells are located on the Upper Mt. Rose-Galena Fan, with most being South of the Mt. Rose Highway



Locations of Mt. Rose-Galena Fan hydro-geological cross-sections

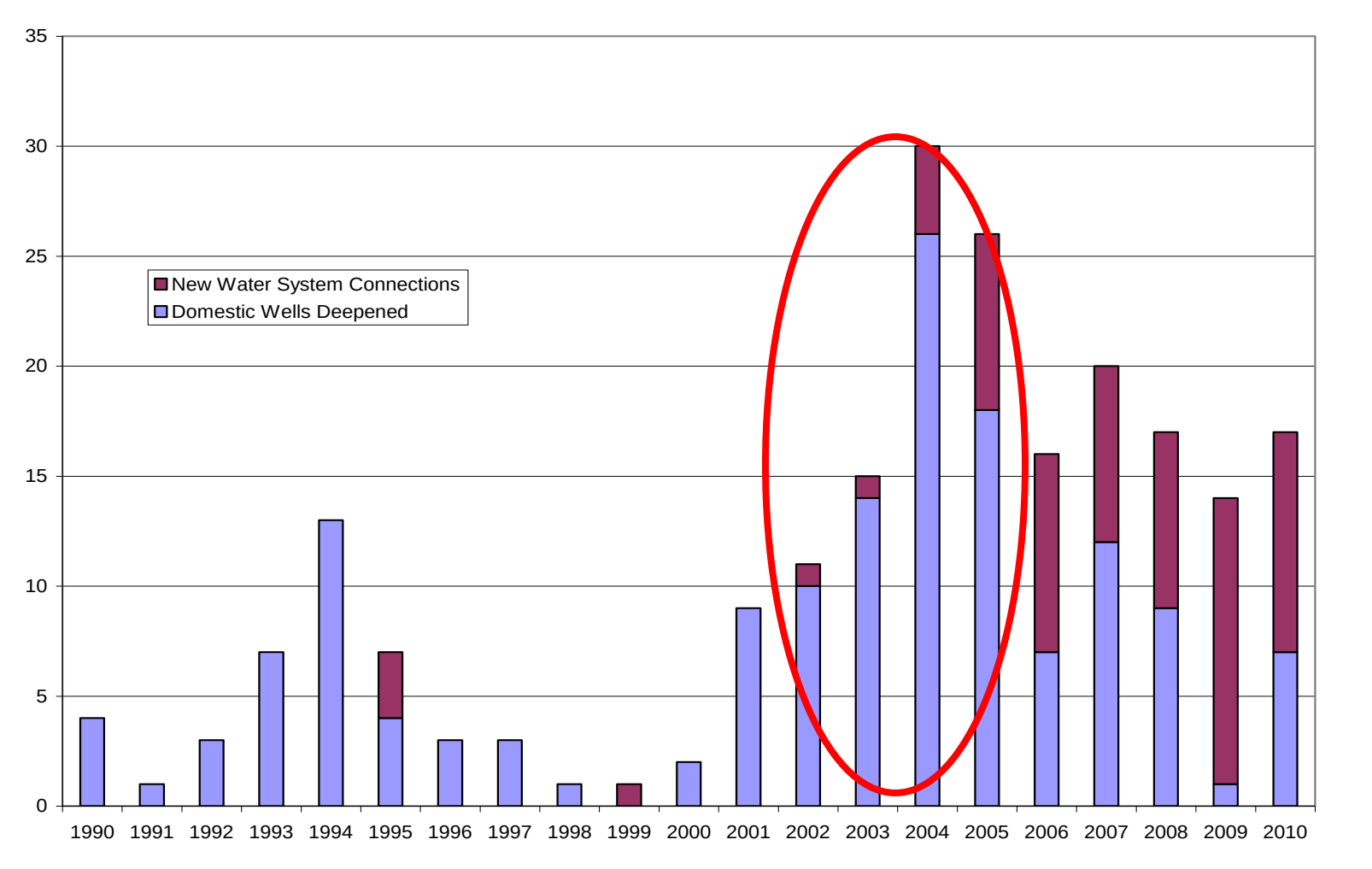


Southwest Truckee Meadows and Upper Galena Fan hydro-geologic Formations



Geologic cross sections illustrating aquifer thicknesses. Derricks represent production wells for ArrowCreek (AC), STMGID, Mt. Rose (MR) water systems and exploration wells (STMExpl).

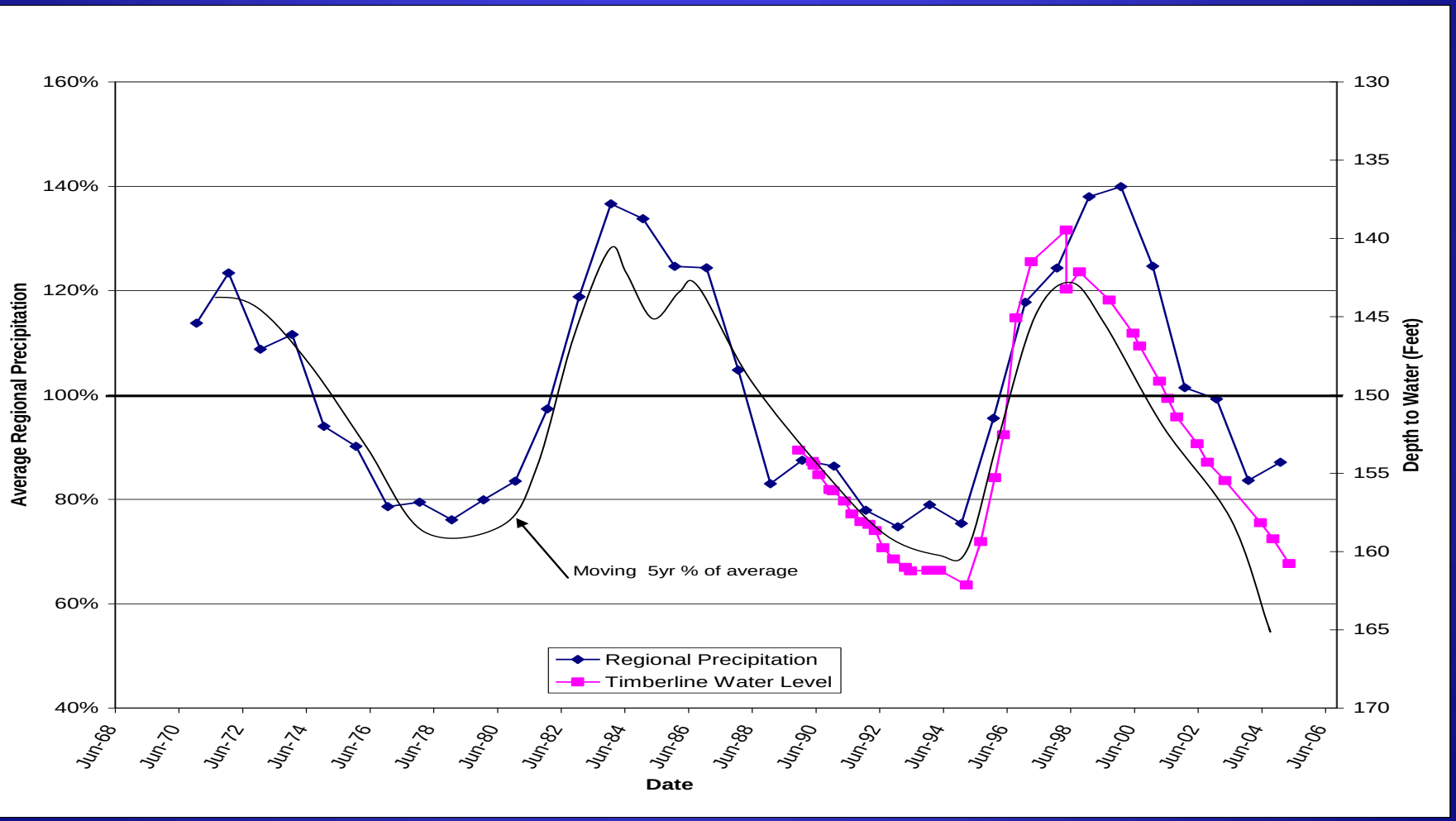
Callahan Ranch area wells deepened versus those connected to the municipal water system



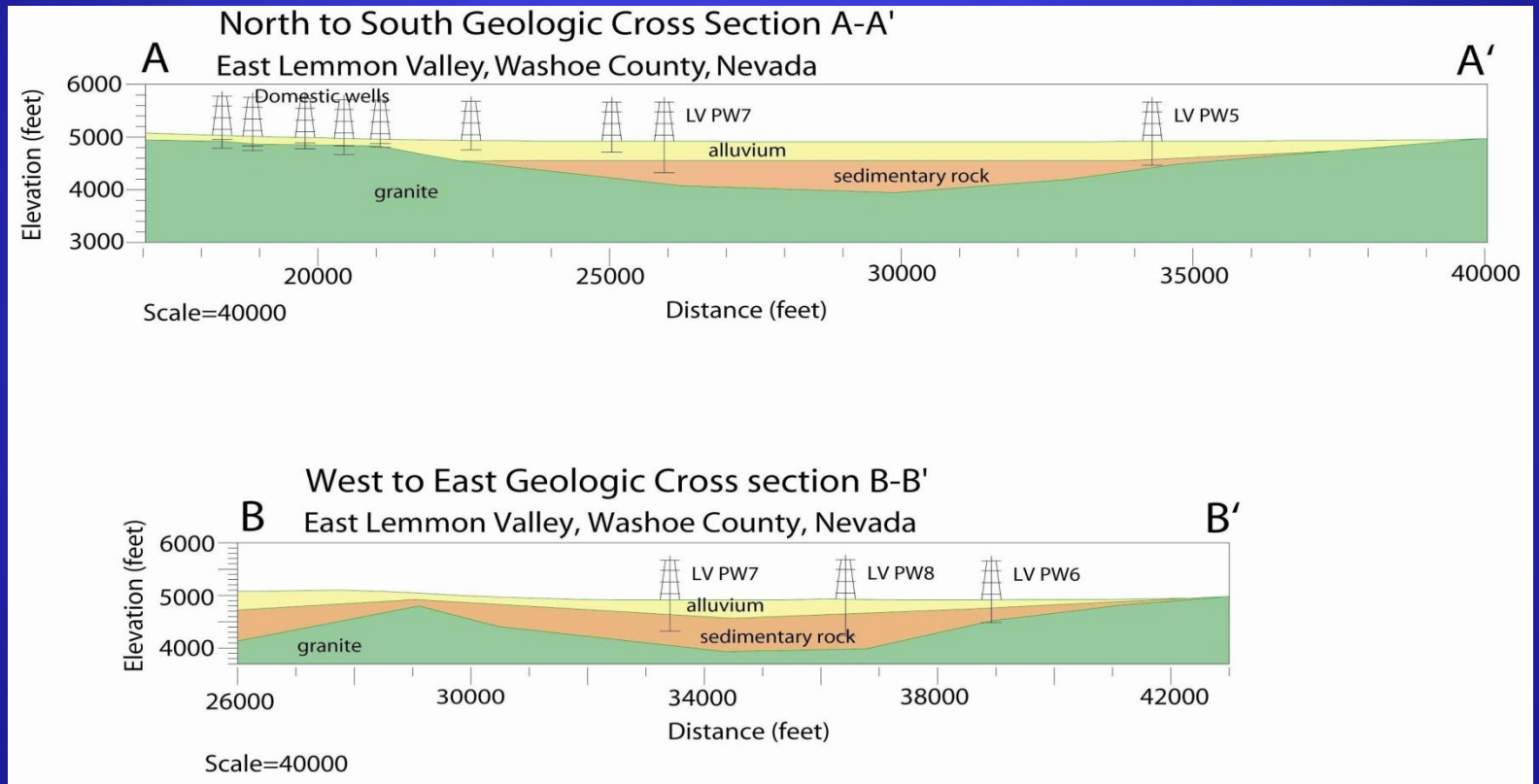
Several Factors Can Affect the Productivity of Domestic Wells:

- Natural variability of annual precipitation and multi-year droughts;
- Poor hydro-geologic conditions;
- Shallow well construction;
- High concentration of domestic wells in an area; and
- Municipal pumping.

Documented Strong Correlation Between Groundwater Levels and Annual Precipitation

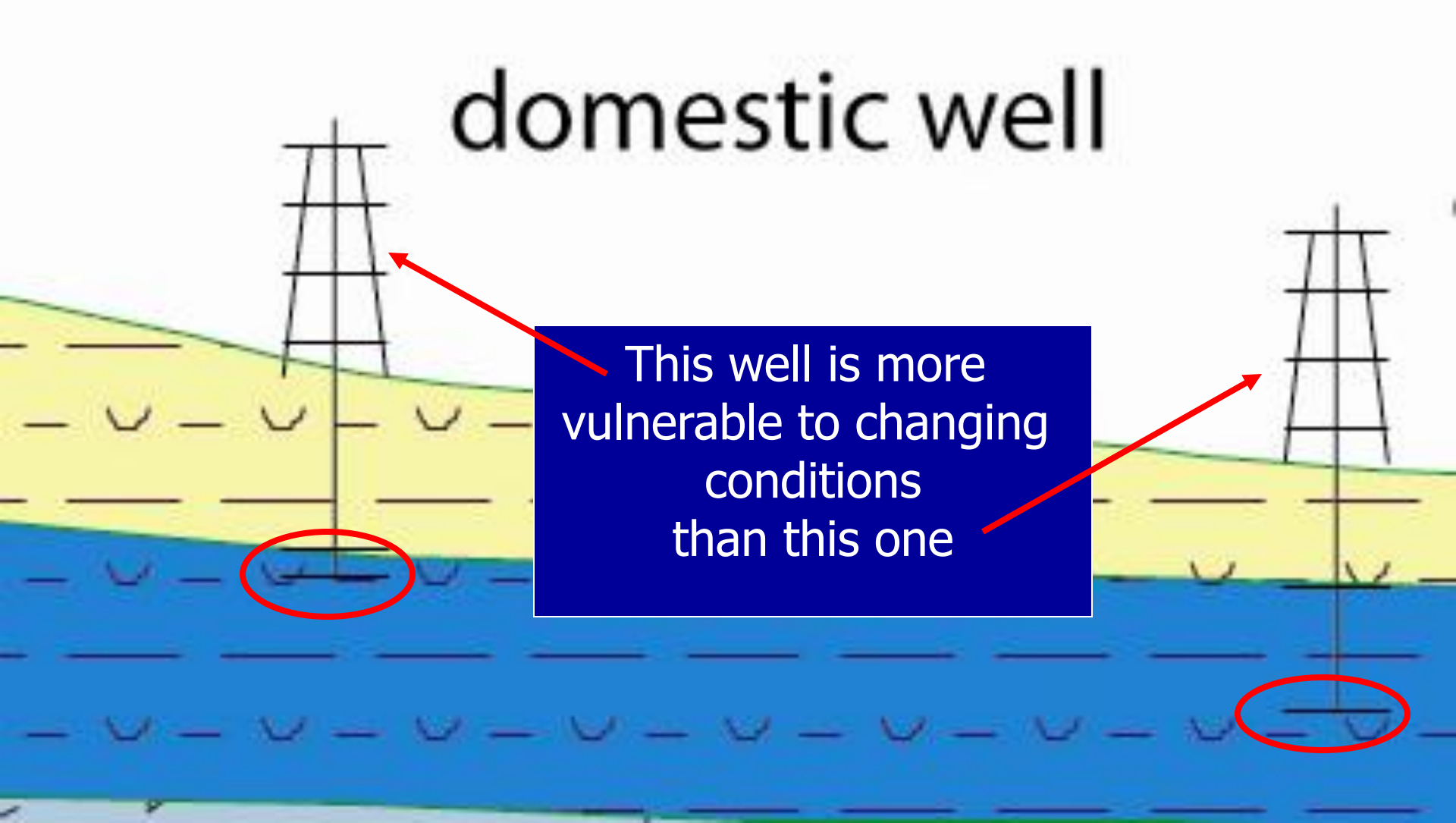


Hydro-Geologic Conditions, such as fractured granite, make some areas less suitable as sources of water for either domestic or municipal wells



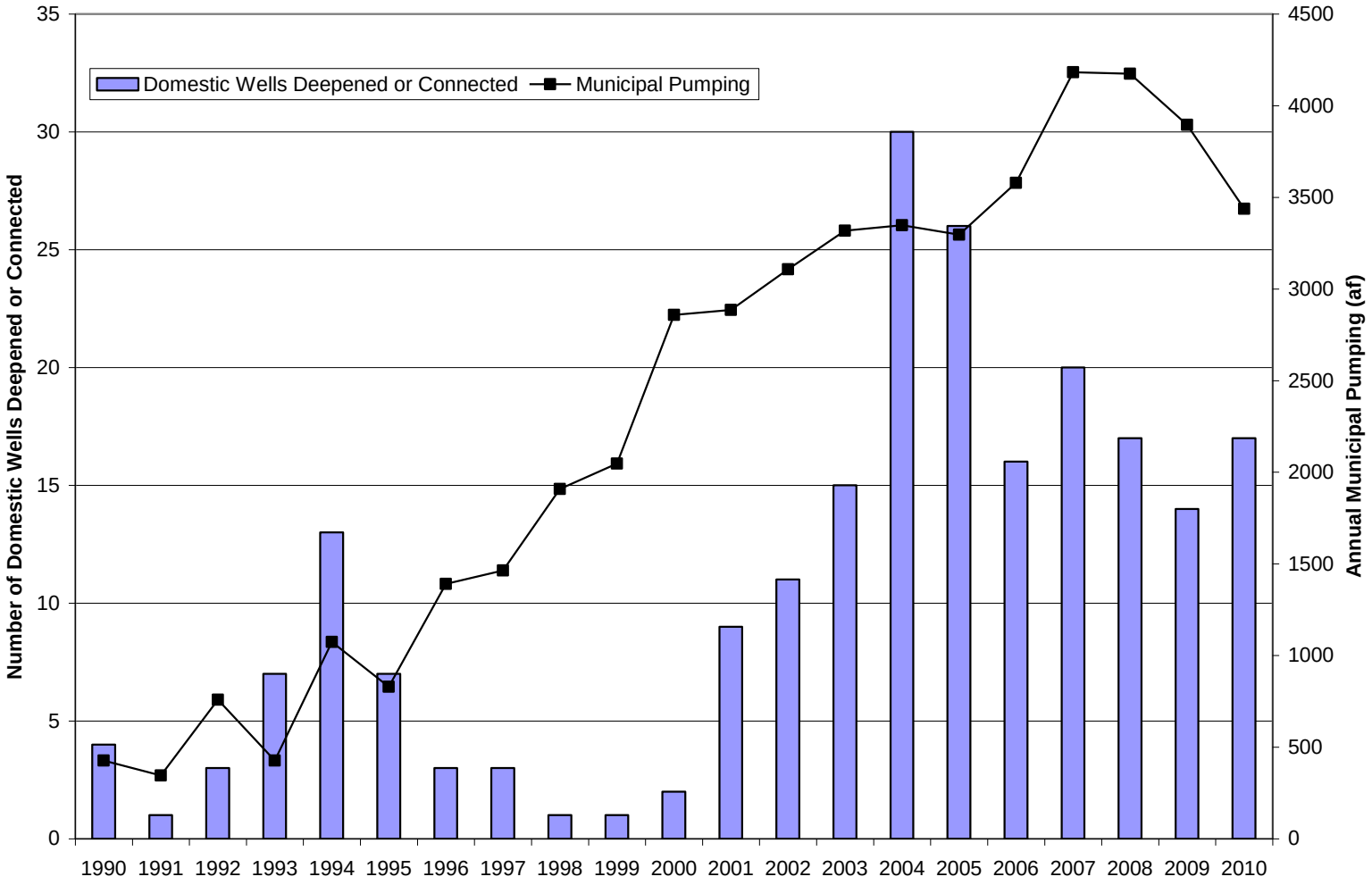
Geologic cross sections for Lemmon Valley Production Wells. Derrick figures mark location and depth of wells. Lithology shows depth to granite, sedimentary rock and alluvium in East Lemmon Valley. Note the domestic wells are mostly completed in granite.

A Domestic Well's Depth to Water Is Critical to the Well's Viability Over Time



High Concentration of Domestic Wells in a Small Area

Effects of municipal pumping on domestic wells in Callahan Ranch area



Recommended Domestic Well Mitigation Policy Statement

- The purpose of the policy is to provide direction on the creation of domestic well mitigation programs and the settlement of individual claims for domestic well mitigation that are determined to be necessary to:
  - improve management and protection of groundwater resources, including preventing over-pumping the aquifer, and
  - address any unreasonable adverse effects of municipal pumping on domestic wells in the Washoe County water service area.

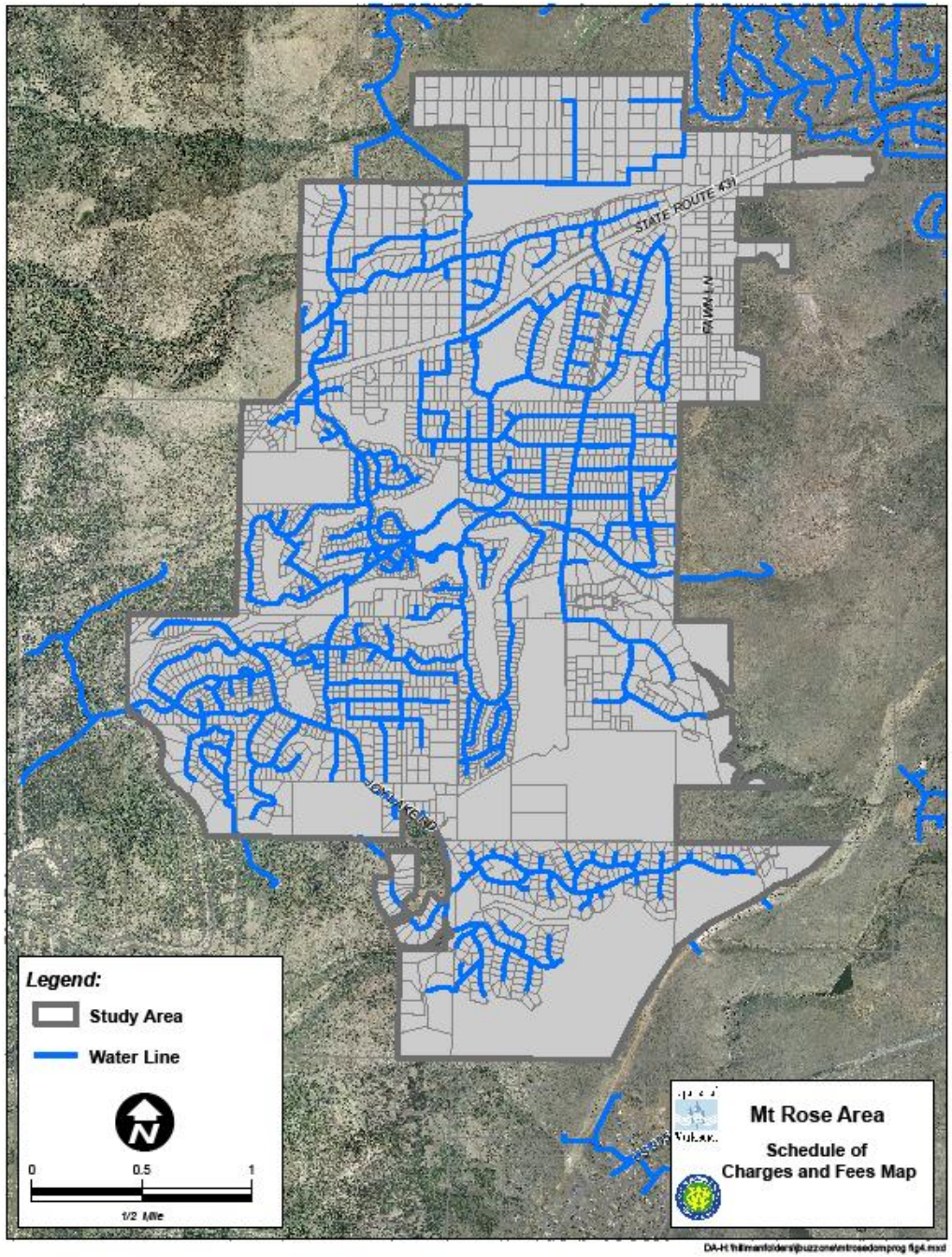
Draft Definition of "Unreasonable Adverse Effect"

- An unreasonable adverse effect caused by a municipal well may be considered to be occurring when all of the following circumstances exist:
  - The impacted domestic well must be experiencing an actual or imminent unreasonable adverse effect that results in the reduction of ground water supply to the well and that leads to an actual well failure, significant pressure losses, persistent problems with sanding and siltation, or must be part of an area with multiple domestic wells where such impacts are being experienced by other domestic well owners.

Unreasonable Adverse Effect Definition
(continued)

- The impacted well must draw from the same source aquifer as the municipal well or wells alleged to be causing the unreasonable adverse effect.
- Objective evidence must exist that clearly relates the pumping of the municipal well or wells to the impairment of the affected well.
- The protectable interest in the impacted domestic well or wells is limited to the 2 acre feet per year of use allowed by NRS 534.180(1).
- The priority date of the domestic well (as defined by NRS 534.080) is more senior than the priority date for the municipal well or wells alleged to be causing the unreasonable adverse impact.

Proposed area on the Upper Mt. Rose-Galena Fan where the domestic well mitigation program would be implemented



Mitigation Program Recommendations Address Three General Situations:

A. Properties with domestic wells where community water service in not now and is not expected to be available in the future;

B. Properties where the availability of community water system facilities will result in the conversion of a domestic well to the community water system; and

C. Properties where a domestic well owner deepened his/her well in advance of the installation of community water system facilities.

A. Properties with domestic wells where community water service is not now and is not expected to be available in the future

- Domestic well owners would receive compensation for deepening wells by 150 feet;
- The compensation amount would be annually updated to adjust for cost changes;
- The compensation amount for FY 2011-2012 is $66 per foot for a total of $9961;
- Property owners in this category who have already deepened their well would receive $9961;
- Property owners would be responsible for covering the cost of appurtenances, estimated at $4650;
- If a well cannot be deepened to provide a long-term, sustainable water supply the mitigation program would cover the cost of drilling a new well of adequate depth;
- Properties where new wells are drilled would be responsible for covering the cost of appurtenances.

B. Properties where the availability of community water system facilities will result in the conversion of a domestic well to the community water system

- Property owners would receive a hook-up credit for the full value of the public right-of-way cost;
- The value of this credit is between $12,500 and $13,600 depending on whether a meter pit was installed at the property with the water system facilities;
- Property owners would be responsible for covering all on-site costs, estimated at $4500 to $7000; and
- Property owners would be eligible to apply for financing of on-site costs under the County's Water and Sanitary Sewer Financial Assistance Program.
- Property owners who have already paid to connect would receive reimbursement for connection fees minus any mitigation funds DWR or STMGID already provided for on-site costs.
- Properties in SAD 5 that were developed with domestic wells prior to the installation of water lines included as part of the SAD, would be reimbursed for the amount of their assessment.

C. Properties where a domestic well owner voluntarily deepened his/her well in advance of the installation of community water system facilities

- Property owners would receive a transferrable, recordable guarantee for a no-cost connection to the infrastructure in the public right-of-way when they ultimately need to connect; and
- Property owners would be responsible for covering all on-site costs associated with connecting to the community system.

Estimated Funding Requirements
(in current dollars)

	Water System Connections	Deepen Wells	Refunds for SAD 5	**Grand Total**
Expected Cash Payments in FY 2011-2012	$311,593	$ 594,683	$ 37,000	**$ 943,276**
Estimated Future Obligations (over 20 years)	$ 57,200	$1,434,384	$ 0	**$1,491,584**
Total Estimated Cost	**$ 368,793**	**$2,029,067**	**$ 37,000**	**$2,434,860**

In General, DWR's Well Mitigation Program for the Mt. Rose-Galena Fan Area:

- Covers about 2/3rds of an impacted property owner's estimated cost;
- Addresses anticipated domestic well mitigation requirements in both DWR and STMGID service territories;
- Provides implementation funding without requiring that surcharges be levied on any group of customers; and
- Identifies a method to equitably share program costs between DWR and STMGID based on a scientific analysis of each agency's responsibility.

Sources of Program Funding

- Connection fees paid by developments that have occurred in the area;
- User fees collected from water rate payers; and
- Proposed contribution from STMGID to address their portion of current and future impacts.

Questions ?