



Division of
WATER RESOURCES

**Boomtown
Development
Public Meeting
Verdi, NV**

August 16, 2016

Jason King, P.E.
State Engineer

Rick Felling
Deputy
Administrator

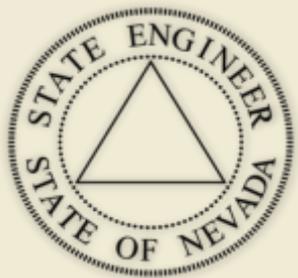
State Engineer's Role: Subdivisions and Water Supply



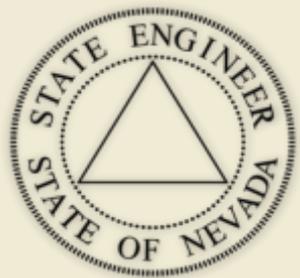
DEPARTMENT OF
**CONSERVATION &
NATURAL RESOURCES**

Boomtown Project Overview

- Tentative Map submitted for 273 Lots, 121 afa water commitment
- Boomtown water rights total 887 acre feet
- 133 acre-feet certificated
- Historical pumping averages 150 acre-feet annually
- Priority dates of 1964 to 1978
- Final map not yet submitted
- Numerous letters of concern from public
 - Water levels/failing wells
 - Need for additional study
 - Basin overappropriated
 - Need for additional monitoring and water use inventory



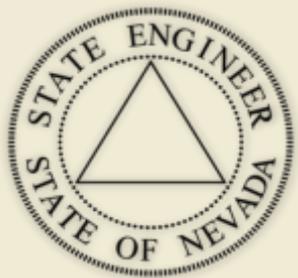
Subdivision Review Process



Subdivision Process

Tentative Map Review

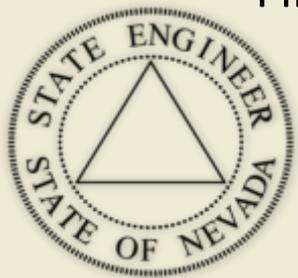
- Tentative Map submitted to DWR, DEP, PUC
- Each reviewing agency has 15 days for recommendations
- DWR
 - Verify subdivision lies within the service territory of the utility AND within the place of use of the water right serving the subdivision (if known)
 - Verify the accuracy of the lot dedication rates and total amount of water required to serve the subdivision (if known)
 - Verify that there is uncommitted and unappropriated water available to serve the subdivision lots
 - 90% of the time, the tentative map is given a **tentative** approval due to lack of a will-serve
 - Review fee of \$180 + \$1 per lot (NRS 533.435)



Subdivision Process

DWR Final Map Review

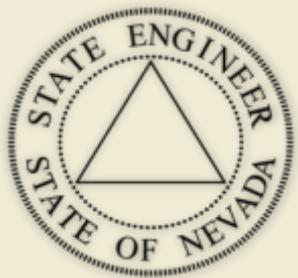
- Verify that there are no more lots on the final map than on the tentative map and that the footprints match-up
- If water dedication rate is based on lot size, verify each lot demand and cumulative dedication
- Examine final map for other water needs/requirements i.e. parks, green strips etc.
- Verify that the water right cited in the will-serve letter :
 - Is for the correct manner of use
 - Is for the correct place of use
 - has uncommitted water available to serve the subdivision lots
- Final Map Review fee of \$120



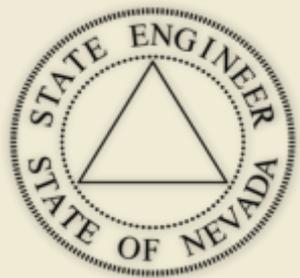
Subdivision Process

DWR Final Map Approval

- If DWR knows beforehand that the water system in question has ***water quantity*** issues, it is incumbent upon DWR to further evaluate the situation and decide whether the final subdivision map can be approved.



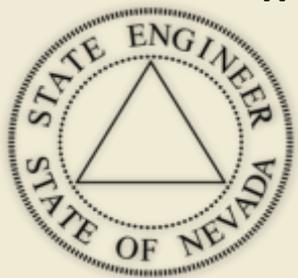
Domestic Wells Relevant Statutes



Domestic Wells

Statutes addressing domestic wells

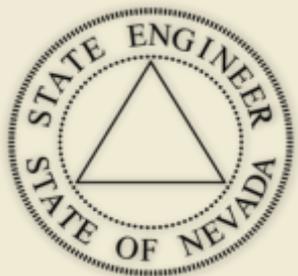
- Domestic use includes culinary and household uses in a single family dwelling, the watering of a family garden and lawn and the watering of livestock and any other domestic animals or household pets. (NRS 534.013(1) & (2))
- Maximum withdrawal from domestic well at 2 acre-feet per year. (NRS 534.180(1))
- Legislature established a protectable interest in domestic wells and protects their supply of water from unreasonable adverse effects ... which cannot reasonably be mitigated. NRS 533.024(1)(b)
- The priority date of a domestic well is the date of completion of the well. (NRS 534.080)



Domestic Wells

Statutes addressing domestic wells

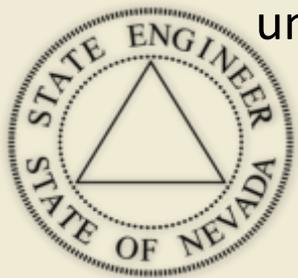
- For QM wells pumping 0.5 cfs or more (224 gpm), pumping water under the permit may be limited or prohibited to prevent unreasonable adverse effects on existing domestic wells located within 2,500 ft of the well. (NRS 534.110(5)(b))
- If the average annual replenishment to the groundwater supply is not adequate for the needs of all permittees and all vested-right claimants, the State Engineer may order that withdrawals, including, without limitation, withdrawals from domestic wells, be restricted to conform to priority rights. (NRS 534.110(6))



Domestic Wells

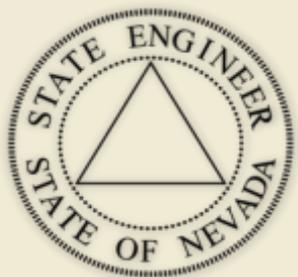
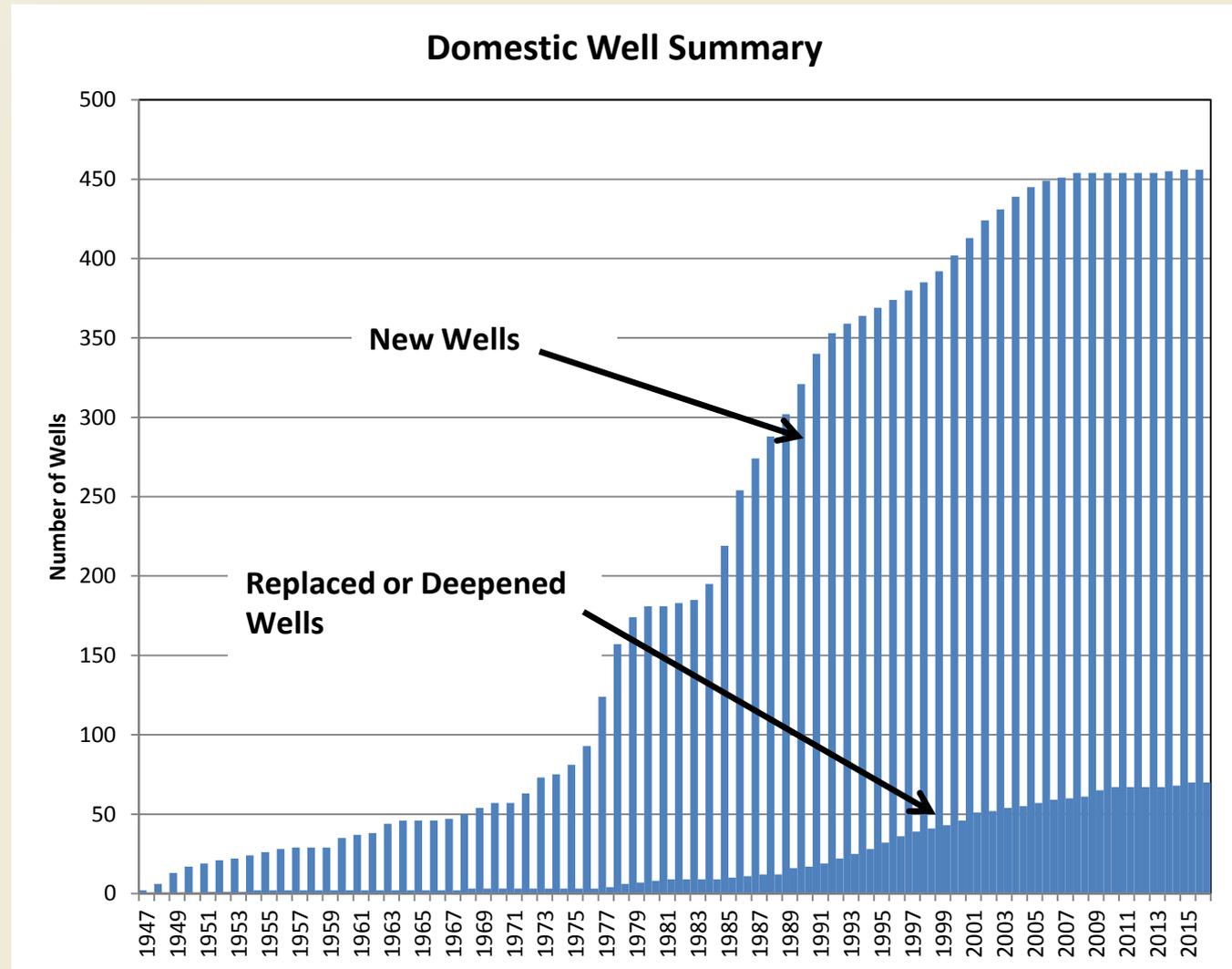
Statutes addressing domestic wells

- Where there is no unappropriated water in the proposed source of supply, or where its proposed use or change conflicts with existing rights or with protectable interests in existing domestic wells as set forth in NRS 533.024, or threatens to prove detrimental to the public interest, the State Engineer shall reject the application and refuse to issue the requested permit. (NRS 533.370(2))
- Allows the granting of permits to applicants later in time on the ground that the diversions under the proposed later appropriations may cause the water level to be lowered at the point of diversion of a prior appropriator... or domestic well, so long as any protectable interests in existing domestic wells as set forth in NRS 533.024 ... can be satisfied under such express conditions. (NRS 534.110(5))

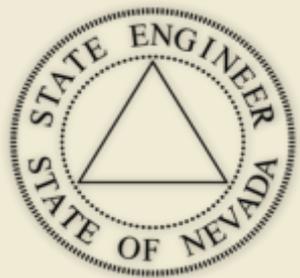


Domestic Wells in the Truckee Canyon Segment

- 450 Domestic Well Logs on file
- 70 wells deepened or replaced
- 46 domestic wells 1964 or earlier
- 157 domestic wells 1978 or earlier



Groundwater Supply & Management



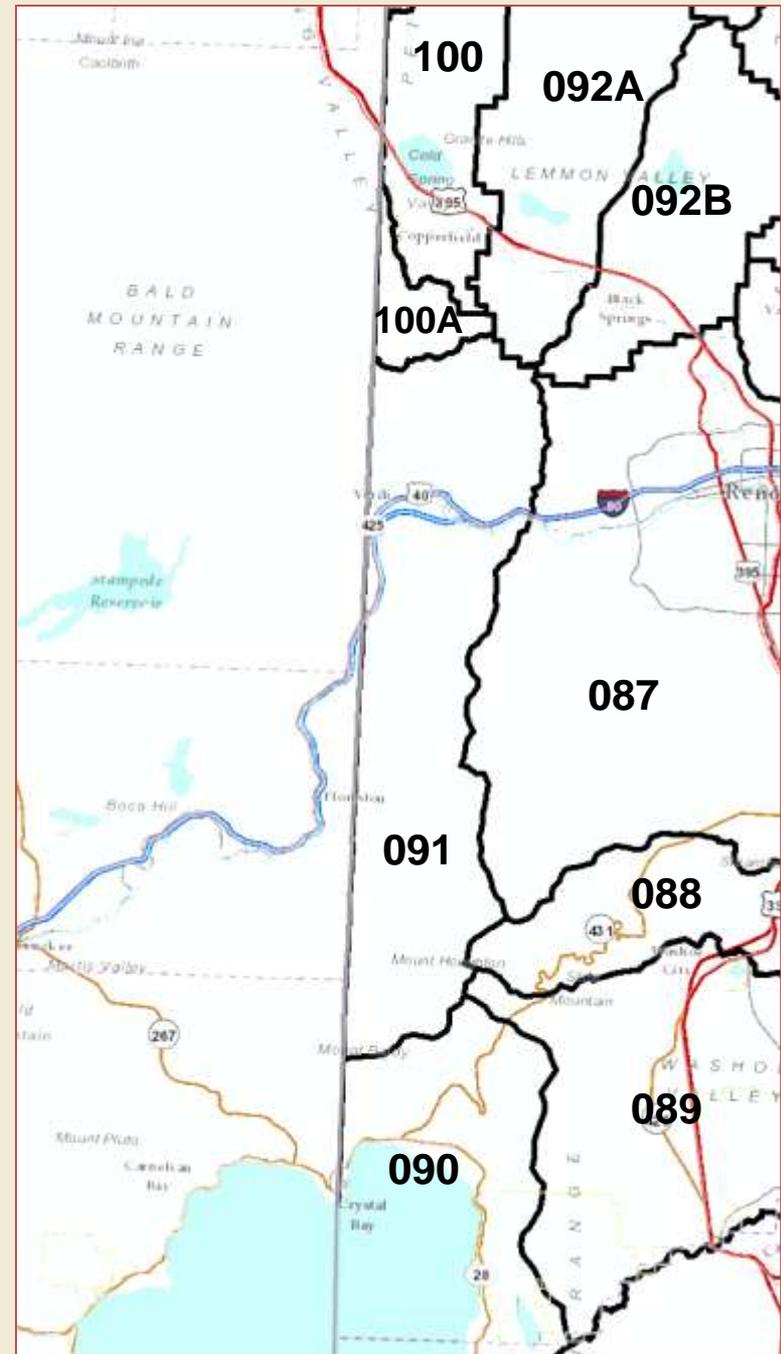
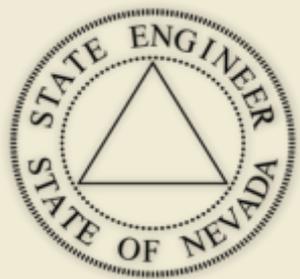
Groundwater Management In Nevada

- State's groundwater managed on a basin scale
- 256 Groundwater Basins
- Each has a perennial yield – an amount of groundwater determined to be available for appropriation
- Perennial Yield is based on the basin's water budget - groundwater recharge and discharge



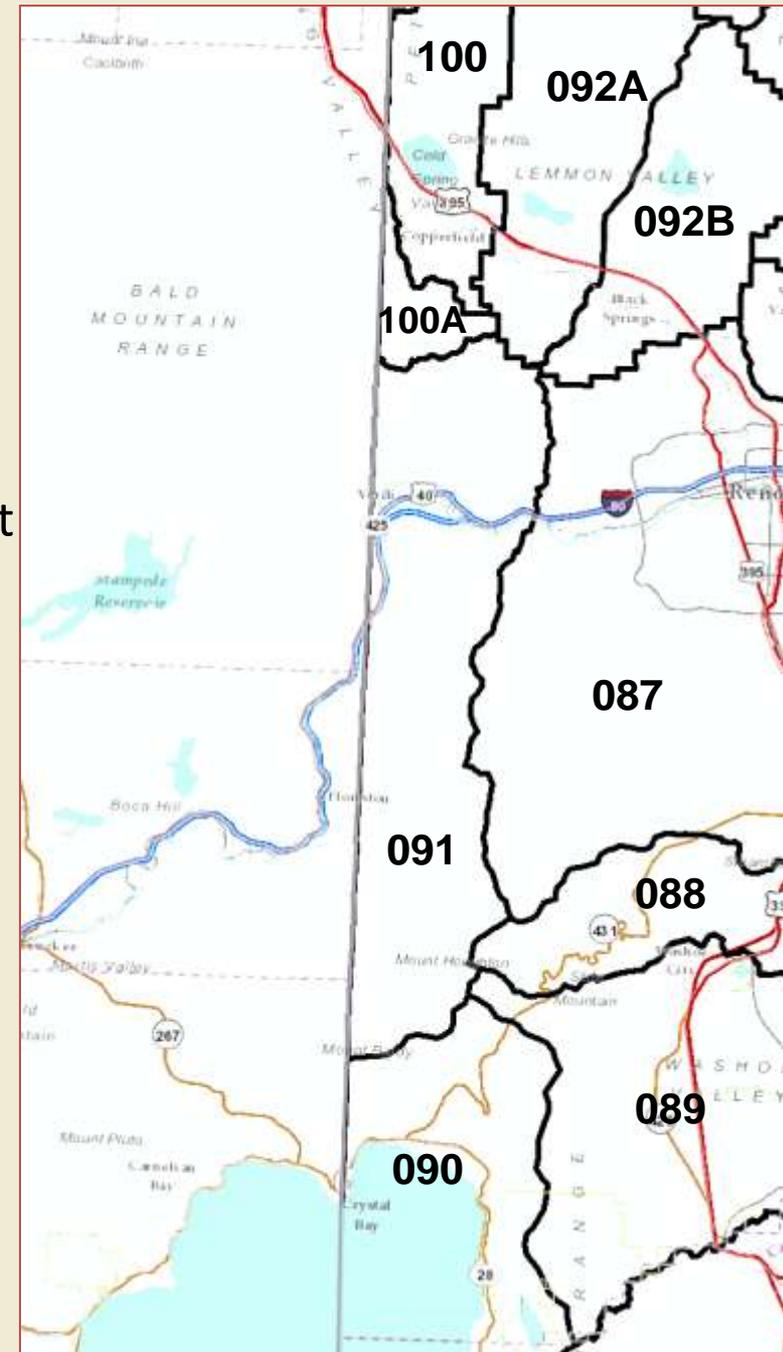
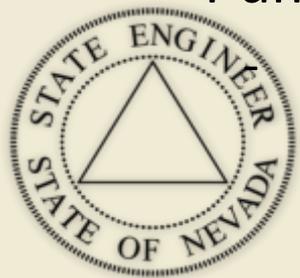
Groundwater Supply

- Truckee Canyon Segment (091)
- Water Resource Reconnaissance Report 57, 1973
- Basin recharge estimate is 27,000 afa
- Recharge below Farad estimated to be 10,000 afa
- Perennial Yield: 2,000 af



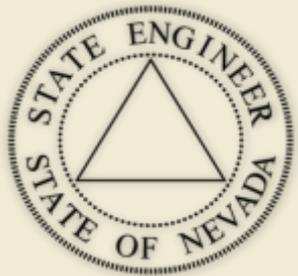
Groundwater Supply

- Boomtown Area Studies
 - TMWA 2008 – groundwater model
 - By Aqua Hydrogeologic Consulting
 - Updated in 2015
 - TMWA 2016 – Resource assessment
 - By HYDRO-GEO Consulting
 - Numerous pumping tests
- Appropriations 3,569 af
 - RLD et al: 887 af
 - Somerset: 573 af
 - 460 domestic wells
- Pumpage ~ 2,000 afa
 - Boomtown pumpage ~150 afa



Meridian 120 North Subdivision

- Tentative Map – 273 lots
- Estimated water demand is 121.30 acre-feet
 - Based on TMWA's Rule 7 (lot size)
- Sewer: City of Reno to TMWRF
- Owner-Developer: Reno Land Development Co.
- Water Purveyor: Boomtown Water System
- December 9, 2015 – DWR issued tentative approval of the tentative map pending acceptance of water will-serve
- No Final Map submitted yet

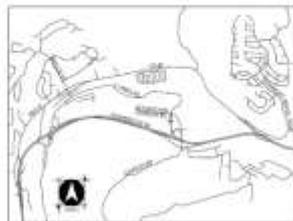


MERIDIAN 120 NORTH

TENTATIVE MAP

TITLE SHEET

OWNER/DEVELOPER:
 RENO LAND DEVELOPMENT COMPANY, LLC
 3095 KETZKE LANE, SUITE 111
 RENO, NV 89501
 (775) 452-7110



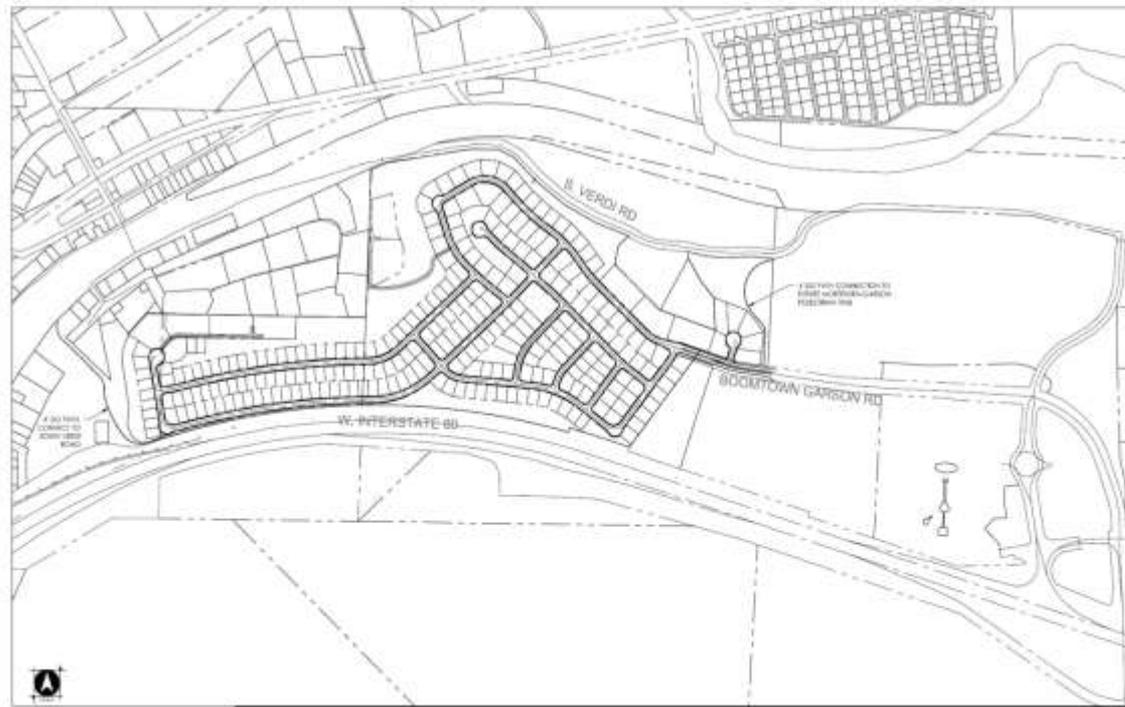
VICINITY MAP
 NOT TO SCALE

BASE OF BEARINGS

VERTICAL CURVE POINT CALCULATIONS, WHEEL TRACK, NORTH-SOUTH BEARING, BEARING OF 180.0000 DEGREES, AND ALL OTHERS REFERENCED HEREON, SHALL BE MEASURED AS DESCRIBED HEREON. THE BEARING OF ANY OTHER DESCRIBED HEREON, CORRECTED TO THE POINT OF BEGINNING OF THE CURVE, SHALL BE MEASURED AS DESCRIBED HEREON. THE BEARING OF ANY OTHER DESCRIBED HEREON, CORRECTED TO THE POINT OF BEGINNING OF THE CURVE, SHALL BE MEASURED AS DESCRIBED HEREON. THE BEARING OF ANY OTHER DESCRIBED HEREON, CORRECTED TO THE POINT OF BEGINNING OF THE CURVE, SHALL BE MEASURED AS DESCRIBED HEREON. THE BEARING OF ANY OTHER DESCRIBED HEREON, CORRECTED TO THE POINT OF BEGINNING OF THE CURVE, SHALL BE MEASURED AS DESCRIBED HEREON.

BASE OF ELEVATION

THE BASE OF ELEVATION IS BASED ON THE NORTH AMERICAN DATUM, 1983. THE ELEVATION OF THE POINT OF BEGINNING OF THE CURVE IS 5200.00 FEET. THE ELEVATION OF THE POINT OF BEGINNING OF THE CURVE IS 5200.00 FEET. THE ELEVATION OF THE POINT OF BEGINNING OF THE CURVE IS 5200.00 FEET. THE ELEVATION OF THE POINT OF BEGINNING OF THE CURVE IS 5200.00 FEET. THE ELEVATION OF THE POINT OF BEGINNING OF THE CURVE IS 5200.00 FEET. THE ELEVATION OF THE POINT OF BEGINNING OF THE CURVE IS 5200.00 FEET.



SITE PLAN
 NOT TO SCALE

SITE INFORMATION:

BY AUC NUMBER:
 001A, NUMBER OF LOTS: 120
 001A, NO. LOTS: 120
 001A, NO. LOTS: 120
 001A, NO. LOTS: 120
 001A, NO. LOTS: 120

ENGINEERS STATEMENT:

I, GUYTON BURGESS, DO HEREBY CERTIFY THAT I HAVE PREPARED THIS TENTATIVE MAP AND THAT I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF NEVADA.

SHEET INDEX

NO.	TITLE	DATE
1	01	01/01/01
2	02	02/01/01
3	03	03/01/01
4	04	04/01/01
5	05	05/01/01
6	06	06/01/01
7	07	07/01/01
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11	11	11/01/01
12	12	12/01/01

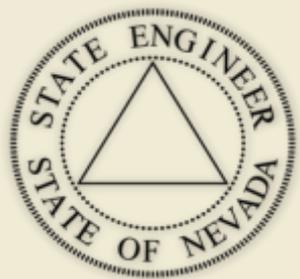
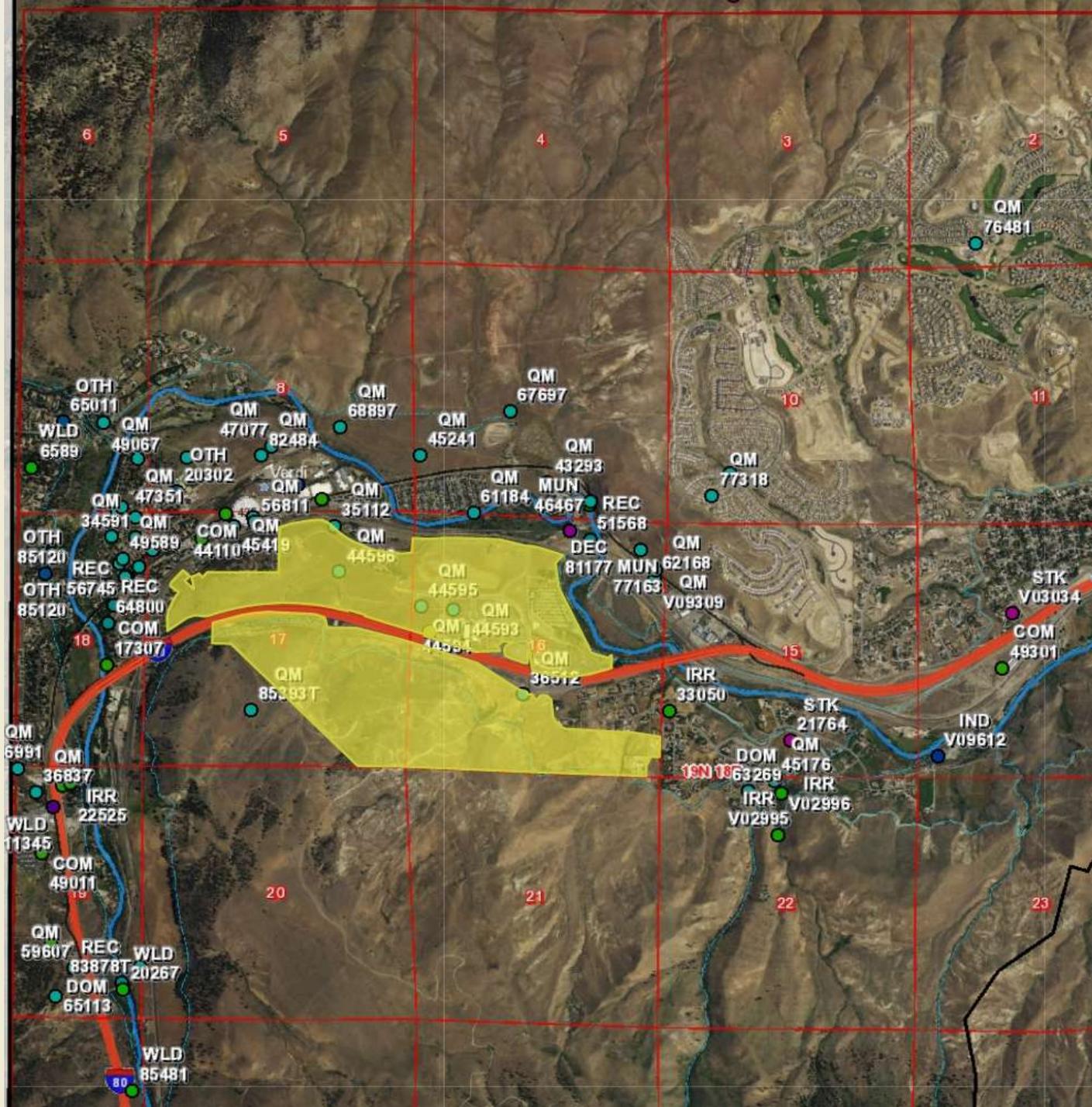
MERIDIAN 120 NORTH
 TITLE SHEET



WOOD RODGERS
 DEVELOPERS INNOVATIVE DESIGN SOLUTIONS
 5445 Reno Corporate Blvd. Reno, NV 89511
 Tel: 775.833.4088 Fax: 775.833.4088

JOB NO. 3173.000 OCTOBER, 2015
 SHEET T-1 OF 14

Place of Use for RLD Water Rights





River Pines

West Meadows

Verdi Mutual

Riverbelle

Verdi Meadows

River Bend

Crystal TP

Boomtown

Well #10

Well #9

Well #8

Well #12

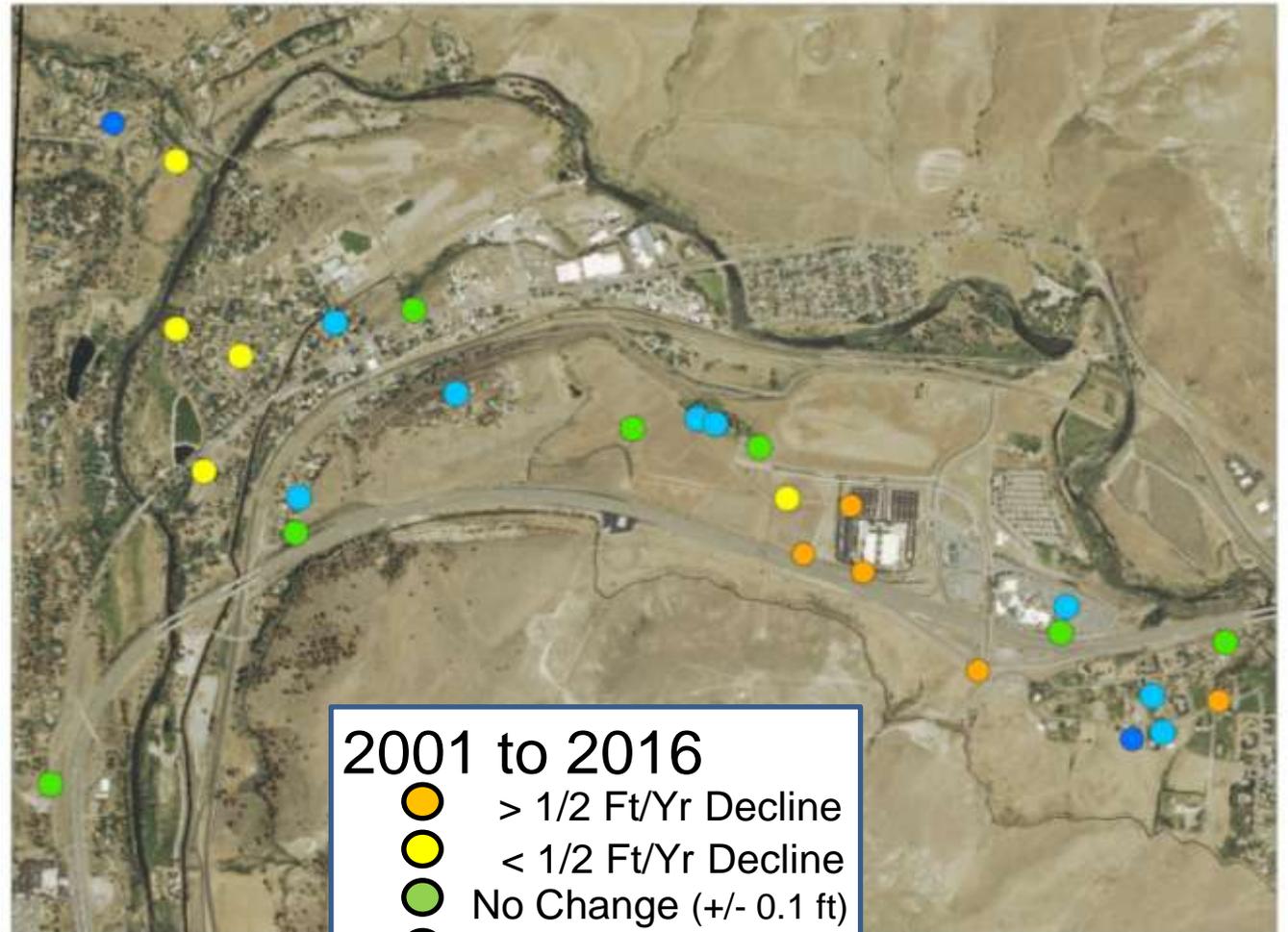
Well #7

Well #5

- Wells
- Boomtown Wells
- Boomtown Water Main
- TMWA Water Main
- ▭ Parcels
- ▭ TMWA Service Area

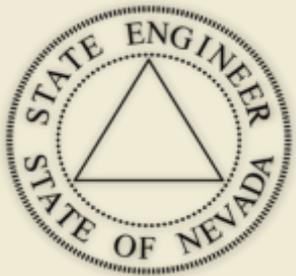
Observed Water Level Changes

- Washoe Co. DWR measurements 2001-2009
- 22 WL measurements by NDWR 2016
- No dramatic changes over time period
- Largest decline 1 ft/yr
- Boomtown rate of decline < 1 ft/yr



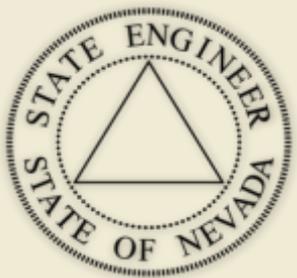
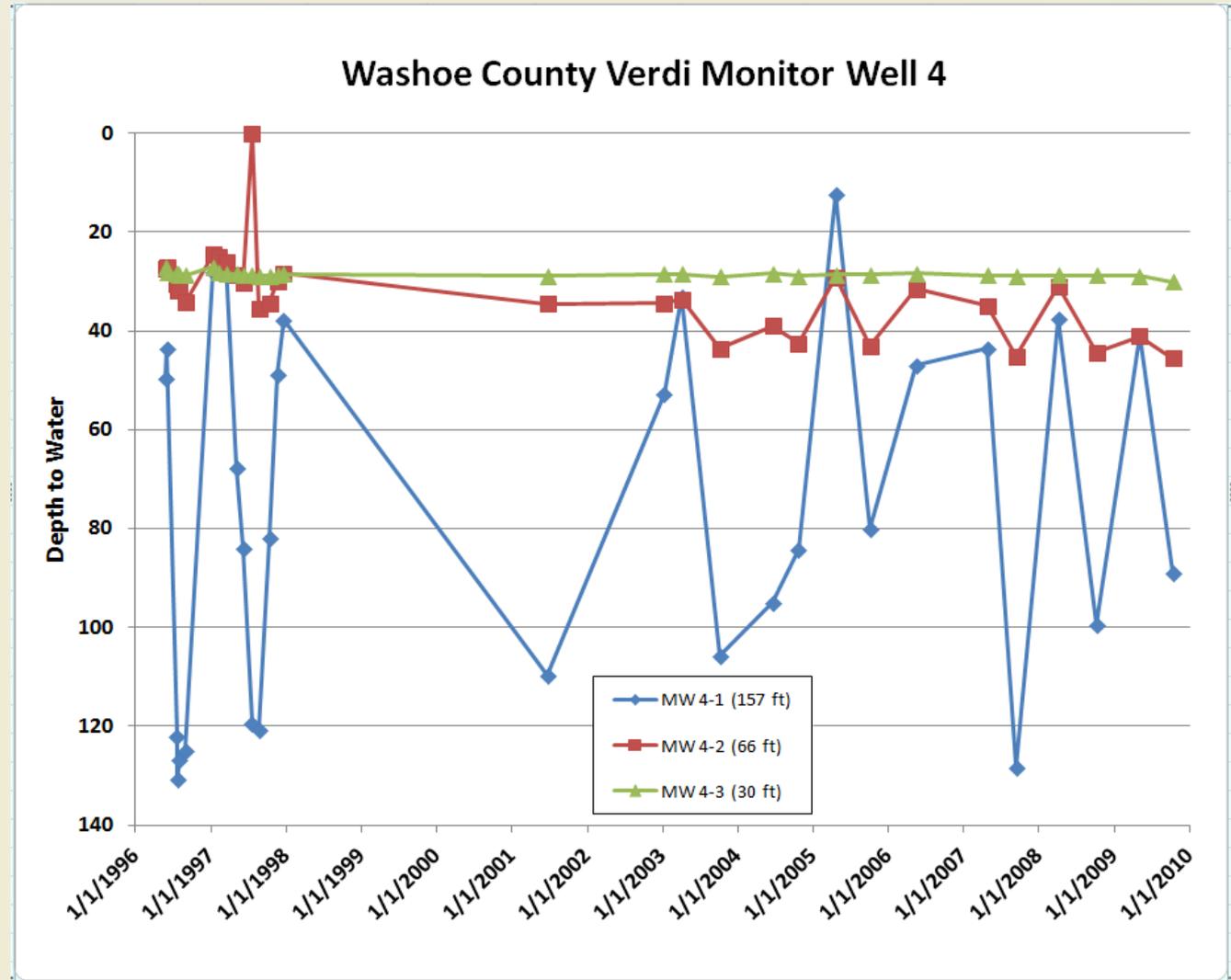
2001 to 2016

- > 1/2 Ft/Yr Decline
- < 1/2 Ft/Yr Decline
- No Change (+/- 0.1 ft)
- < 1/2 Ft/Yr Rise
- > 1/2 Ft/Yr Rise



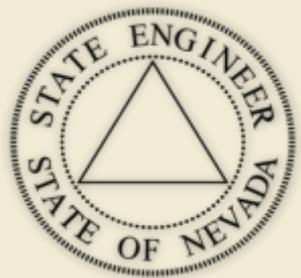
Observed Water Level Changes

- Water level changes in Washoe Co. Monitor Well 4
- Water level lowest in summer
- Recovery in winter
- Larger annual swing in deeper aquifers
- Annual rate of change 0.1 to 1 ft/yr



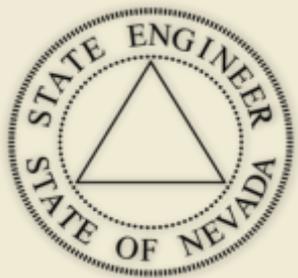
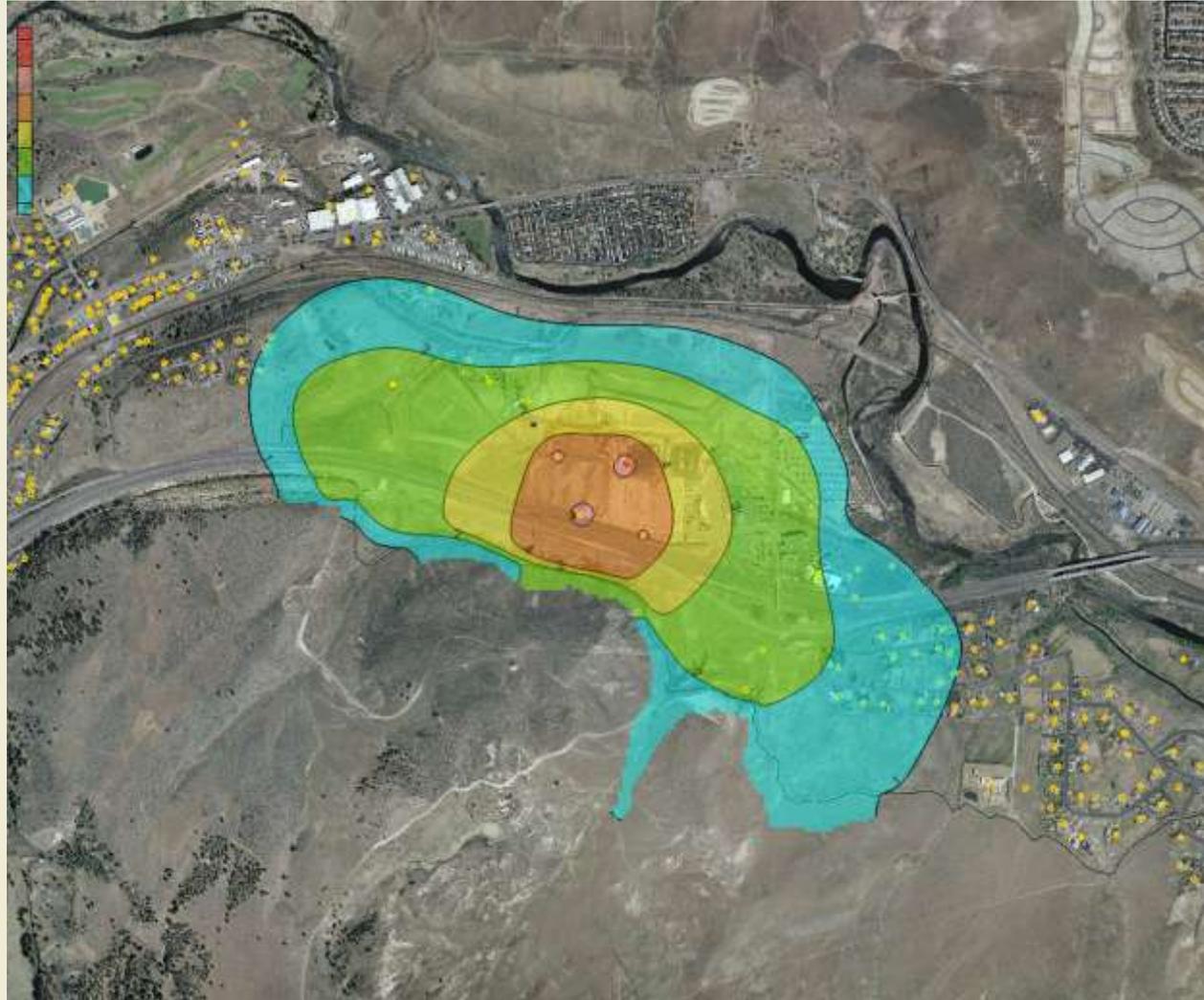
Groundwater Model Simulations

- Boomtown Consultant's calibrated model
- NDWR used model to simulate drawdown from additional 120 acre-feet/year of new pumping at Boomtown wells



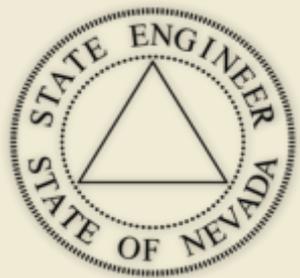
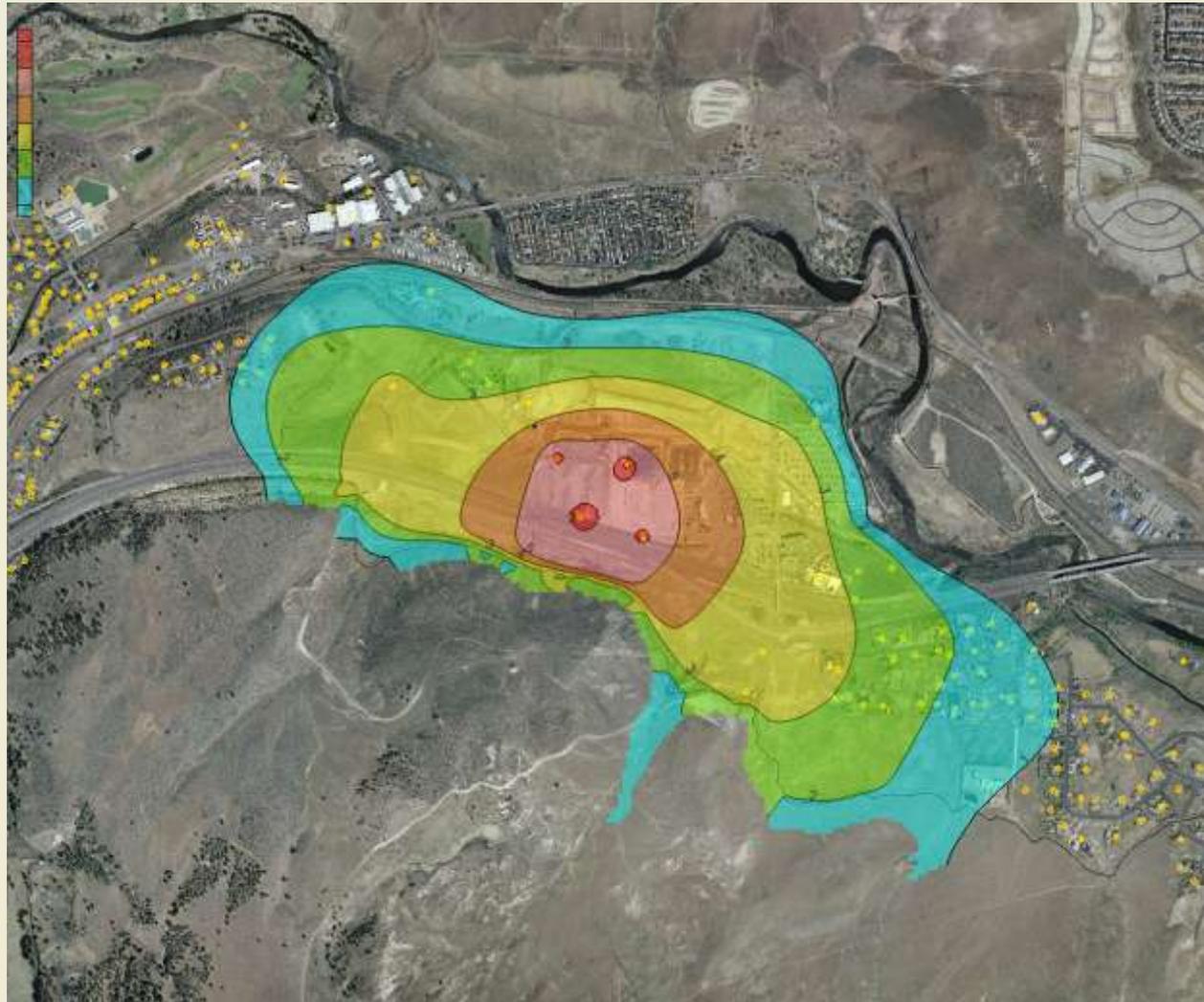
Groundwater Model Simulations

- Drawdown due to additional 120 afa pumping at Boomtown after one year
- Contour interval one foot



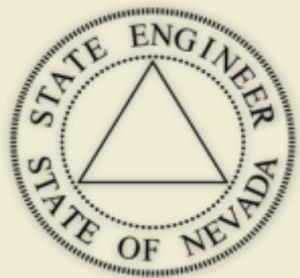
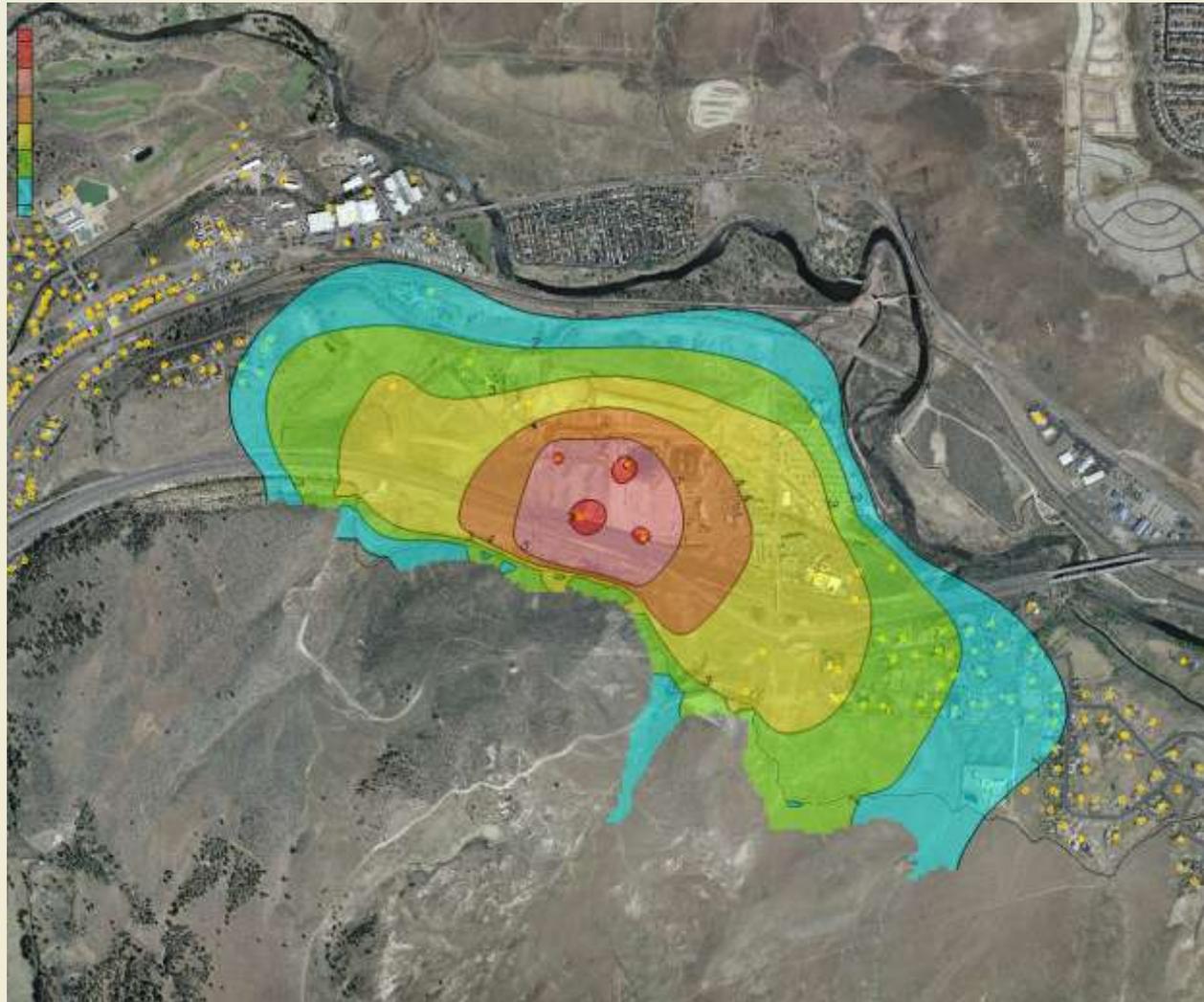
Groundwater Model Simulations

- Drawdown due to additional 120 afa pumping at Boomtown after ten years
- Contour interval one foot



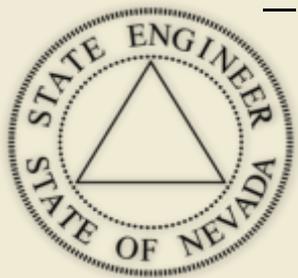
Groundwater Model Simulations

- Drawdown due to additional 120 afa pumping at Boomtown after twenty years
- Contour interval one foot



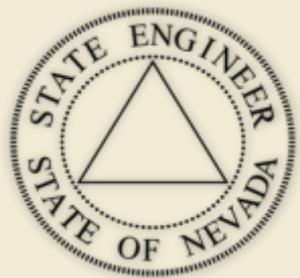
Truckee Canyon Segment Water Supply Summary

- Perennial yield significantly less than basin recharge estimate
- Current pumping has resulted in minimal water level decline
- Deeper aquifers have high seasonal variability
- Preliminary analyses of water table drawdown due to proposed project is estimated to be one to two feet at nearest domestic wells after one year, three feet after 20 years
- Additional monitoring will be required if subdivision map is approved



Thank You!

Questions?



water.nv.gov

Nevada, Climate Division 1, PDSI, October-September

