

County Backup Wells

Public Meetings

April, May 2010

Karen Torres

Conjunctive Application Focus Group

Focus Group

- County Commissioners decided to use a public process to determine the locations, capacity and pumping conditions for the backup wells
- Focus Group formed to advise County Staff on the well applications and public outreach
- Focus Group consists of one resident appointed by each Commissioner
- Focus Group started work mid-January with completion expected in June
- All information presented today is supported by the Focus Group and County Staff

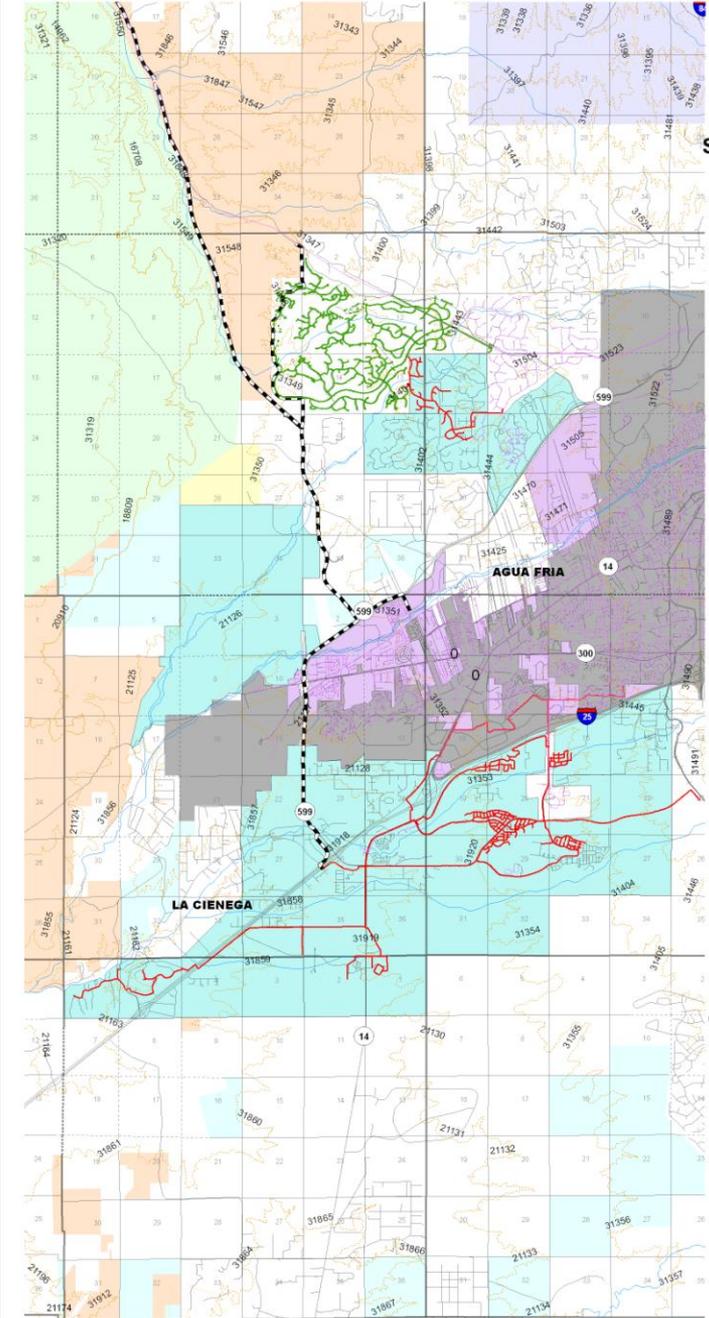
Topics

- What is the Conjunctive Management Plan?
- What are the Key Benefits to County Residents?
- What are the objectives for the Backup Wells?
- Why was a Focus Group appointed?
- What are the proposed locations for these Wells?
- How will existing water users be protected from impact?
- Why did we pick these particular locations?
- What happens next with the Application to the OSE?

Conjunctive Management Plan

- Use Buckman Direct Diversion Facility (BDD) to import Surface Water from the Rio Grande (RG) into the County Water Utility
- County has water rights for Native Rio Grande, and San Juan Chama water
- Only use County wells to backup RG supply when BDD is unable to provide adequate supply – during repair or drought
- Stop relying on City to provide water to County Utility and Las Campanas

Santa Fe County Water System



- City of SF Water Lines
- Las Campanas Lines
- SFC
- SFC Utility Service Area
- Future Annexation Area
- City of Santa Fe
- BLM Land
- BLMX
- County Landfill
- CDE
- CTVBLM
- FARBLM
- Forest Service Land
- Forest Service Exchange Land
- Pueblo Land
- NM National Guard
- National Park Service
- CUT
- PUT
- State Land
- STGMFI
- State Park
- State Penitentiary
- UNKNOWN



Scale 1: 99,032
1 inch represents 1.41 mile



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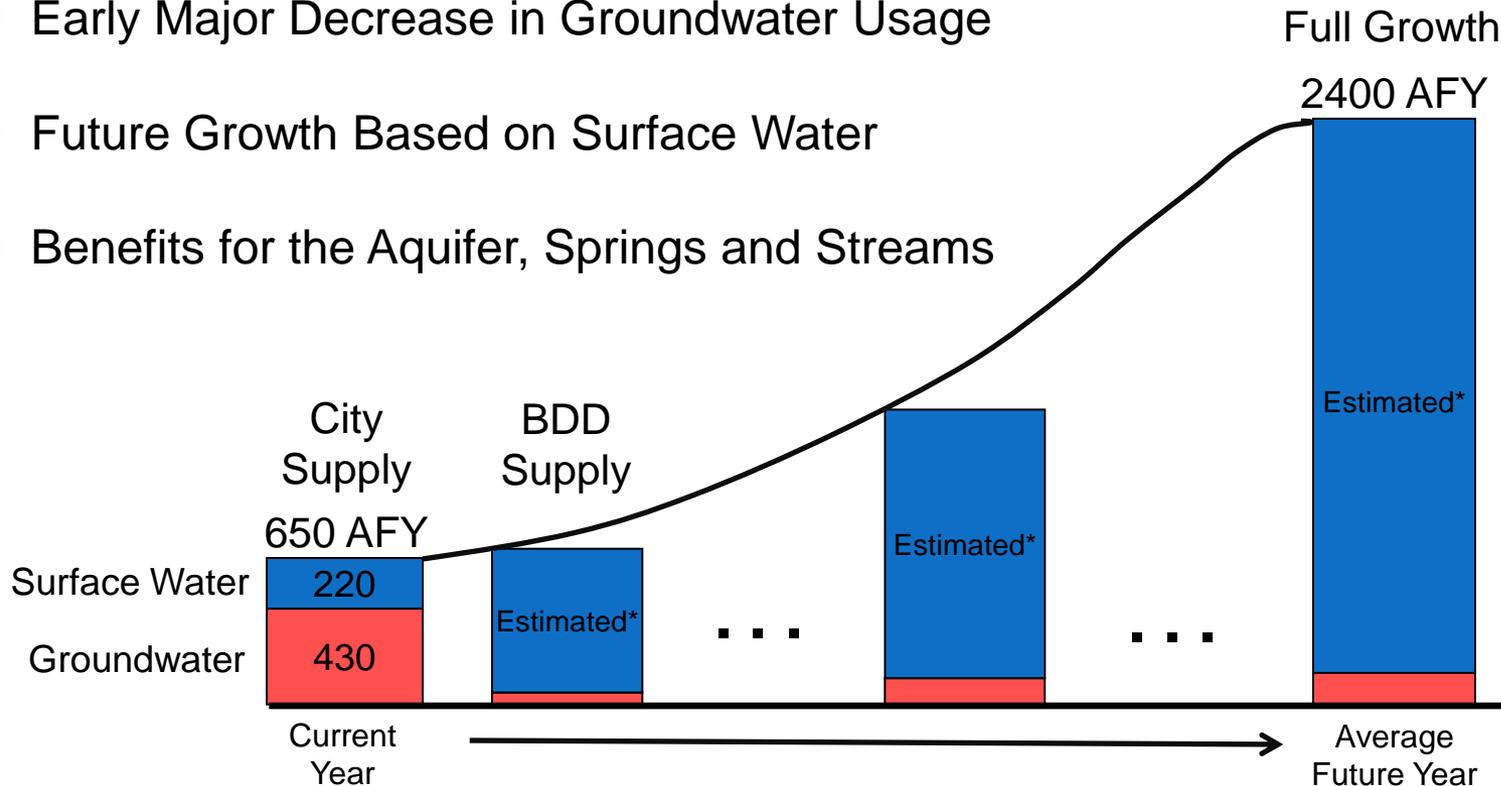


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Key Benefits

Importing RG Water for the County Utility provides:

- Early Major Decrease in Groundwater Usage
- Future Growth Based on Surface Water
- Benefits for the Aquifer, Springs and Streams



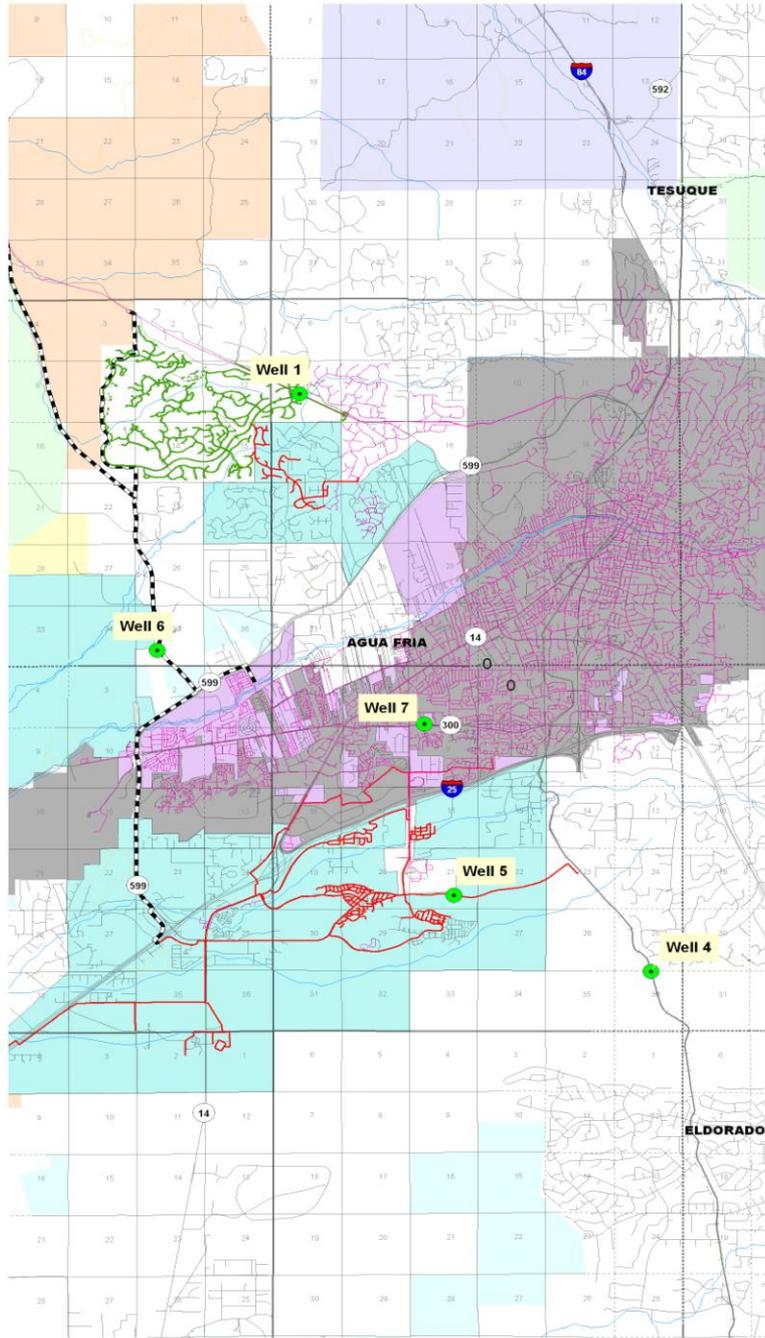
* Groundwater is used when BDD is down or during severe drought. Amount will vary from year to year

Backup or Supplemental Wells

- Wells will only be used for BDD backup, and minor maintenance pumping
- It will be a permit condition that Wells are not for production use
- County needs its own wells so they can be proactive in aquifer management for support of residents and the environment
- Use several smaller Wells around the County to avoid concentrating impact on water users in just one location
- Wells are sited to minimize impact on existing water users, and to support current and future growth areas
- It seems paradoxical, but by adding these backup wells, less groundwater will be used overall by the County

Priority Discussion

- In basin groundwater rights have a 1956 priority date
- Most domestic wells are around the 1970's or more recent
- La Cienega and La Cieneguilla Springs are senior water right holders in the basin (prior to 1907)



**Santa Fe County
Water System**

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Scale 1 : 89,032
1 inch represents 1.11 mile



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Protecting Users and Supplies

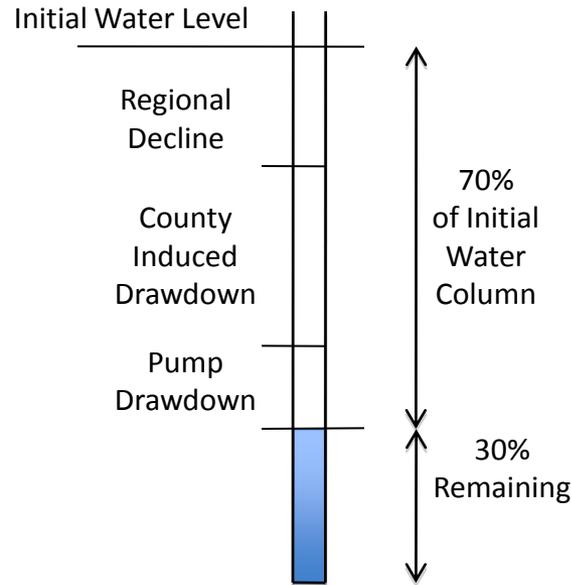
- Current users and supplies (domestic wells, springs and streams) will be protected by the following facts:
 - In general, there will be an overall decrease in groundwater usage by the County Utility
 - Well permit conditions will only allow use as Backup Wells, not as Production Wells
 - Wells are sited to minimize impact to existing users and supplies
 - There will be a monitoring program in place to regularly evaluate impact and take corrective action if ever needed
 - Wells will be operated to minimize by projecting impacts to nearby wells, streams and springs by adjusting pumping centers.

Monitoring Plan

Springs and Streams

- Establish a baseline, examine patterns of change and identify factors influencing surface waters in the Santa Fe Basin
 - Monitor flow from City Wastewater Treatment Plant
 - Monitor flow on Santa Fe River
 - Monitor overall pumping in the Basin
 - Monitor available precipitation data
 - Monitor groundwater levels
- Provide annual report with data, synthesis and recommendations for future action

Criteria for Impairment of Domestic Well



- OSE Guideline for Impairment is when the initial water column is reduced by 70%
- Drawdown is total of Regional Decline, County Induced Drawdown, and Dynamic Drawdown due to action of the well pump
- Impairment does not mean the well goes dry ... 30% of water column remains
- Initial water level is determined by a baseline survey of domestic wells in the area

Prevention of Impairment

- Proposed low pumping will prevent excessive draw down
- Check Water levels in monitoring well on a monthly basis
- Project (calculate) measured drawdown into the future to insure no possibility of impairment

Monitoring Plan

Domestic Wells

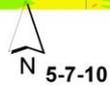
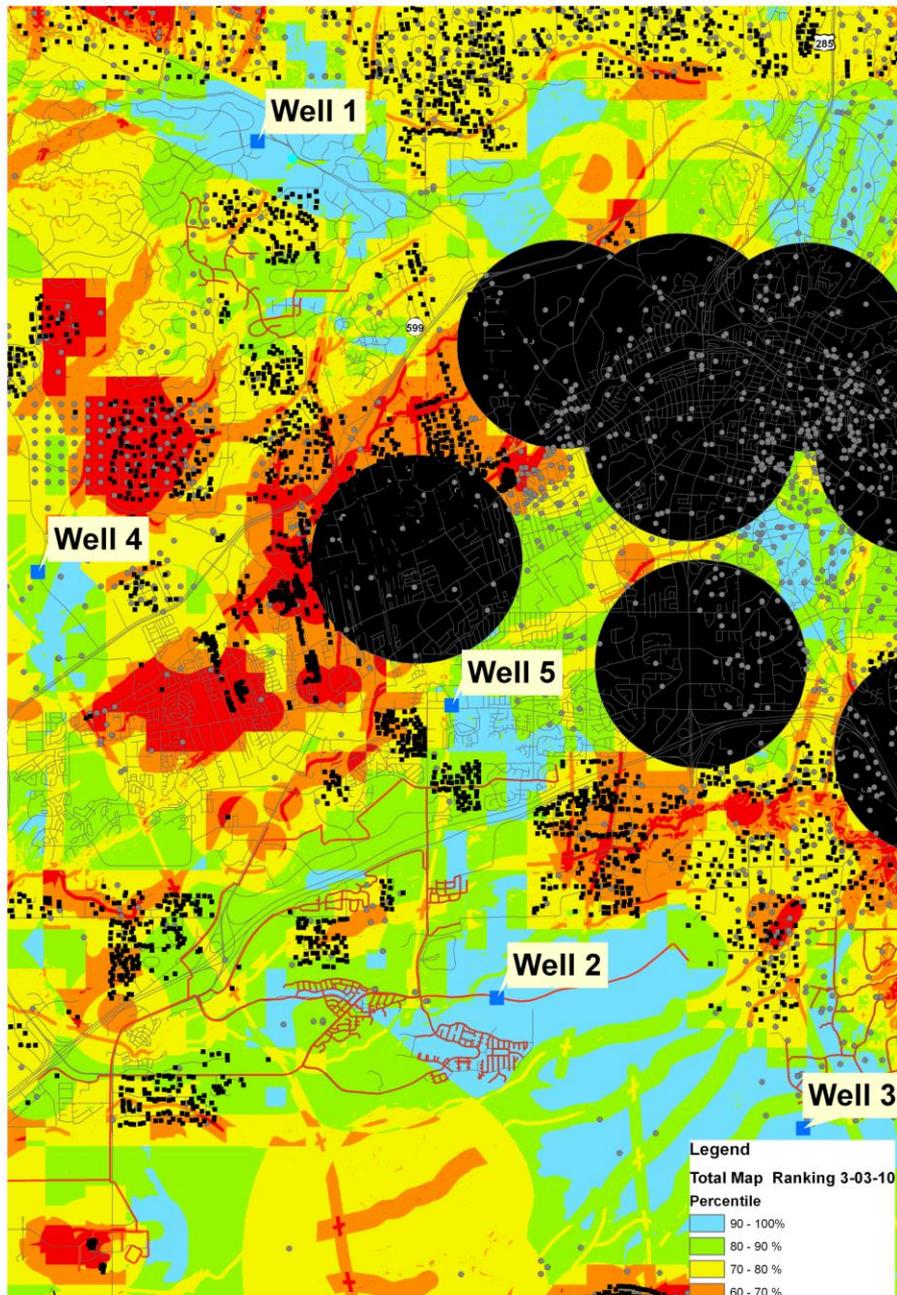
- A few domestic wells near a Well may see a minor drawdown effect over time
- To protect these wells, each Well will have a 2 mile monitoring area
- Within this area, drawdown will be measured in specific monitor wells on a regular basis
- Corrective action will be taken if drawdown rate shows impairment is possible within 40 years
- If impairment occurs anyway, there will be a mitigation plan to ensure water users are made whole

Possible Mitigation

- Reduction of pumping or change in pumping center
- Plan of Replacement for well
- Connection of SFC water system

Finding the Best Locations

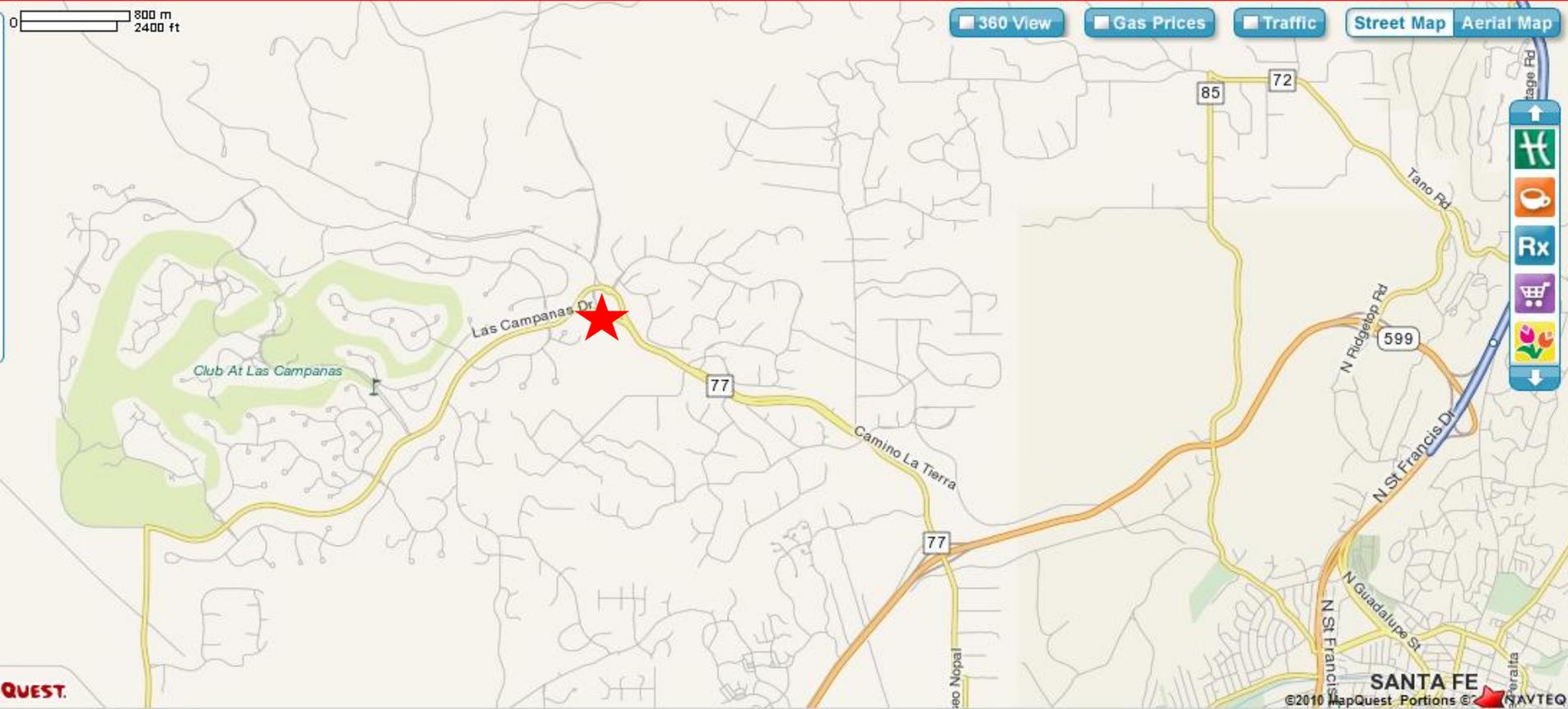
1. Give preference to areas of favorable hydrogeology
2. Stay away from areas of existing natural groundwater contamination
3. Stay away from areas served by domestic wells
4. Give preference to higher pressure zones
5. Stay away from drainages
6. Stay away from springs
7. Stay away from faults
8. Stay away from areas of aquifer decline
9. Give preference to areas of lower slope
10. Give preference to areas allowing distribution to the most users
11. Stay away from Community and Municipal wells
12. Black out areas where man made contamination is documented.



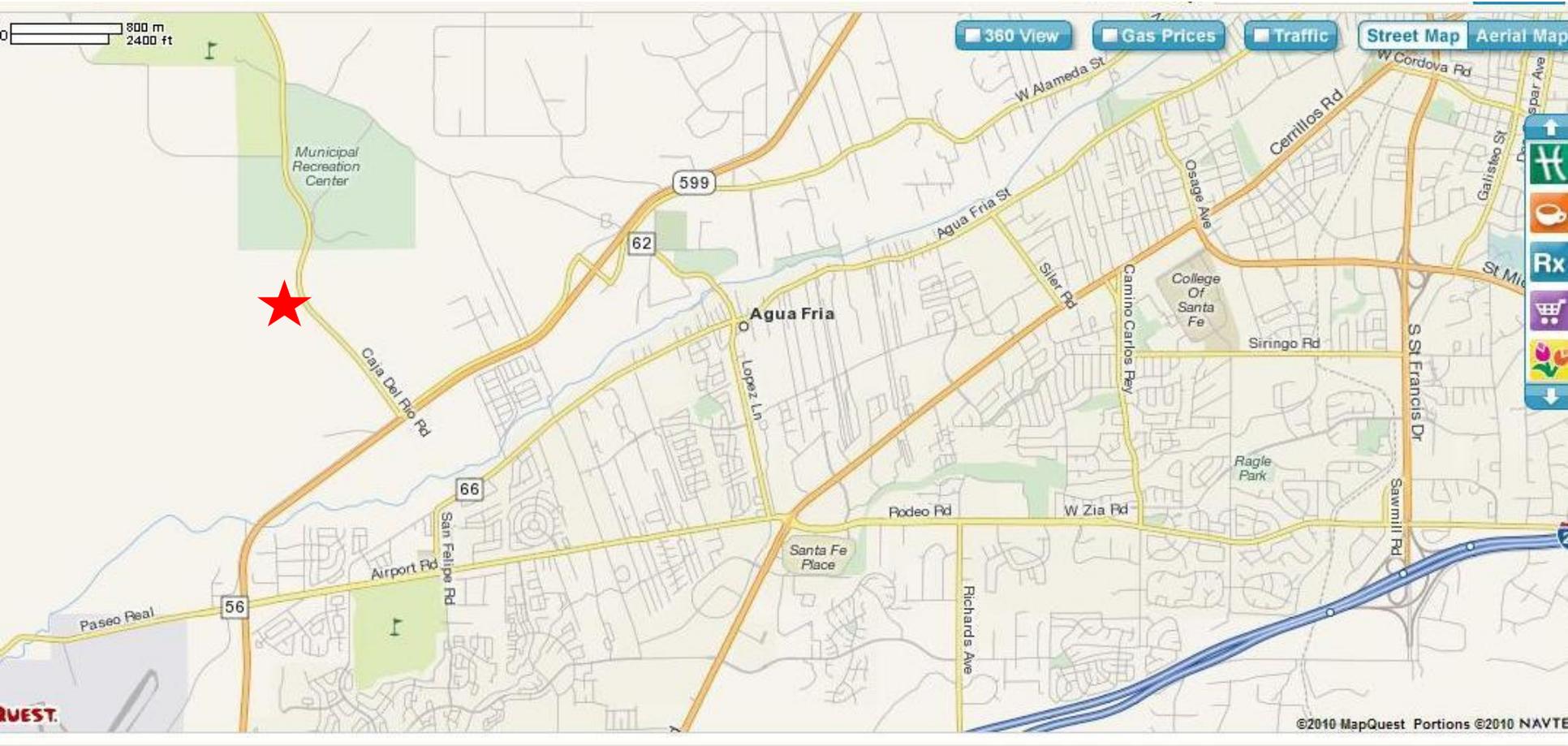
Map Based Total:
Factors 1 - 12 Added Together



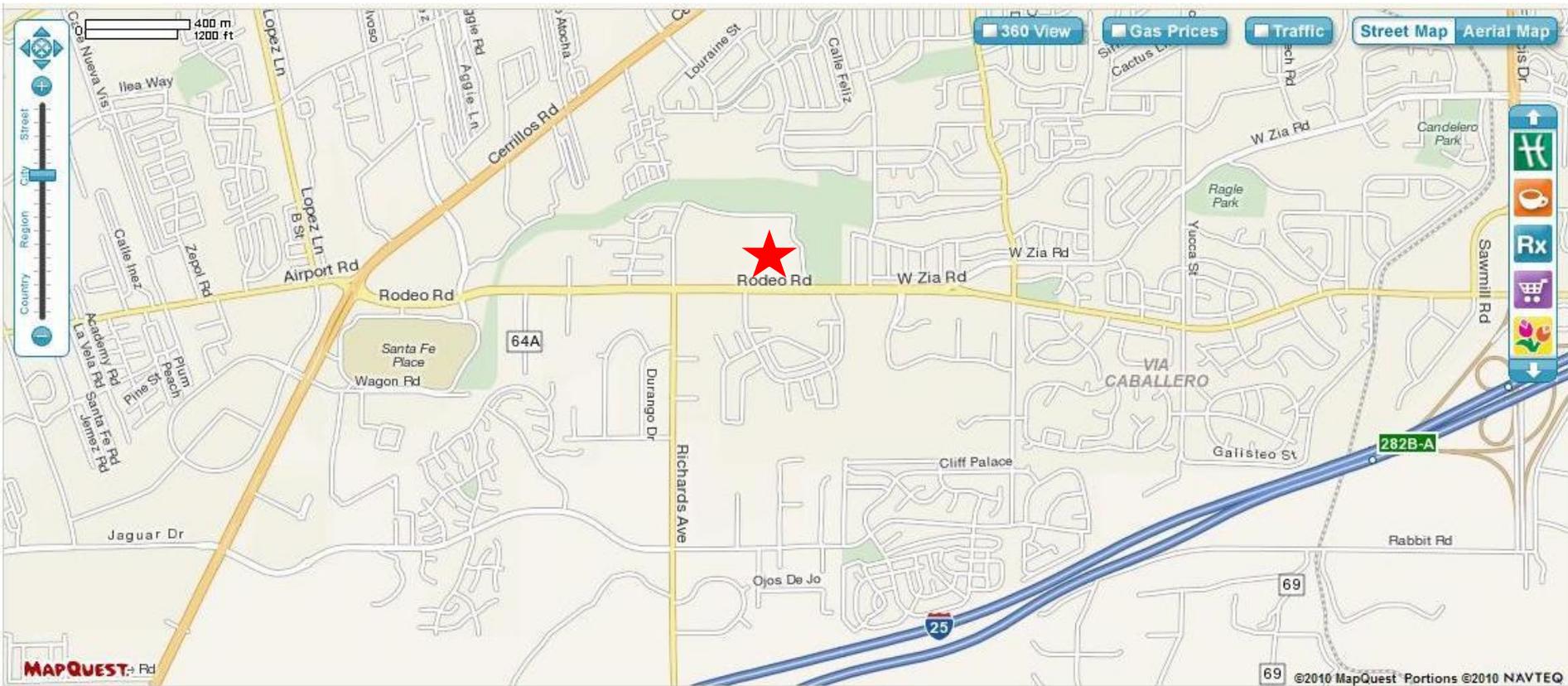
Las Campanas Well Site



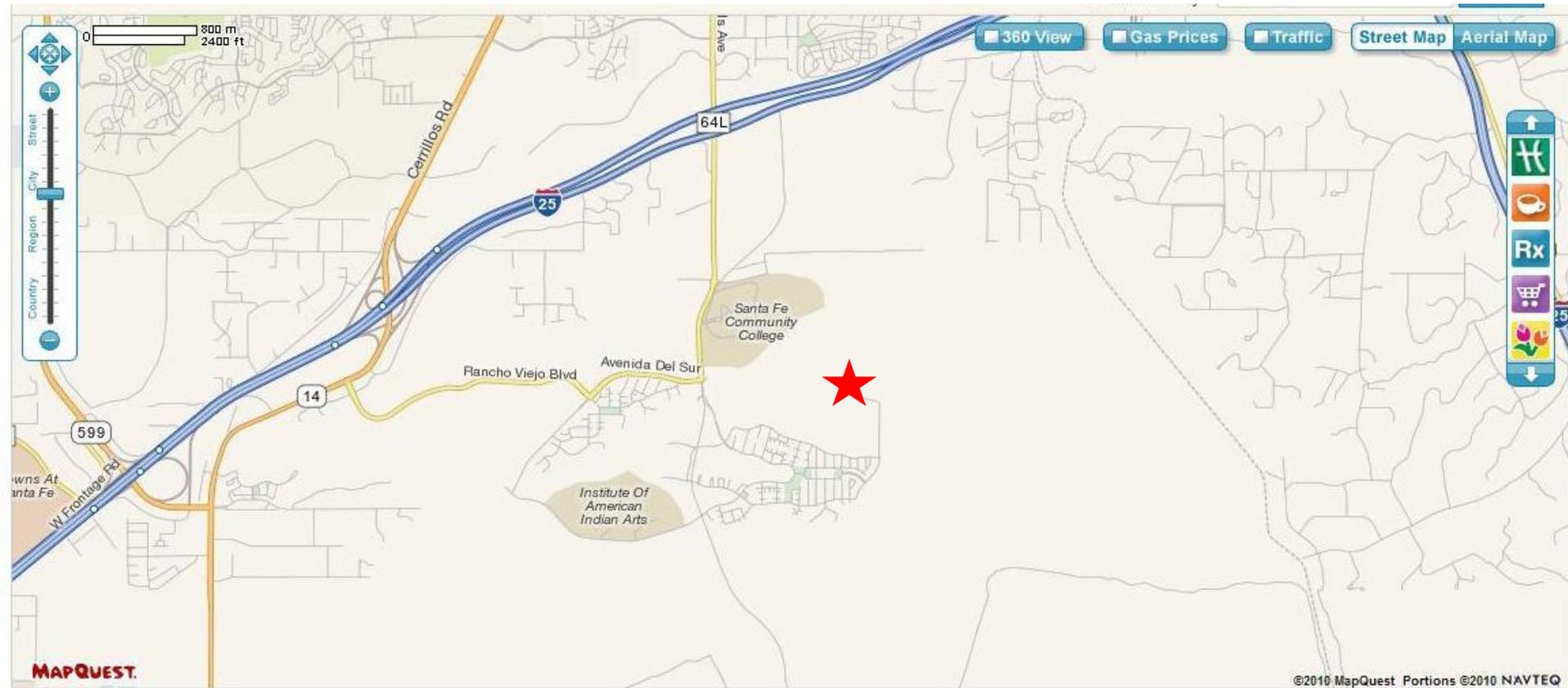
Caja del Rio Well Site



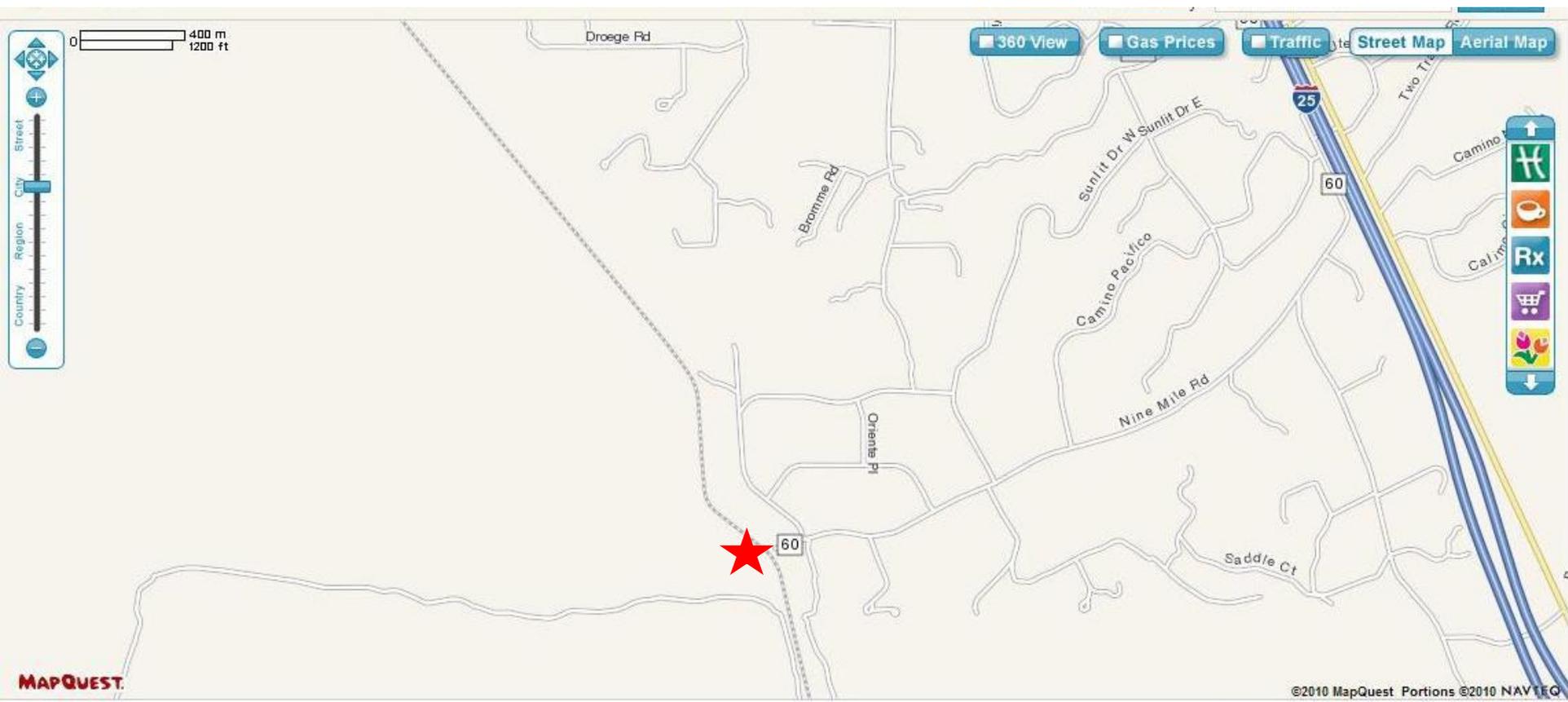
Fairgrounds Well Site



Tank Line Well Site



Rail Trail Well Site

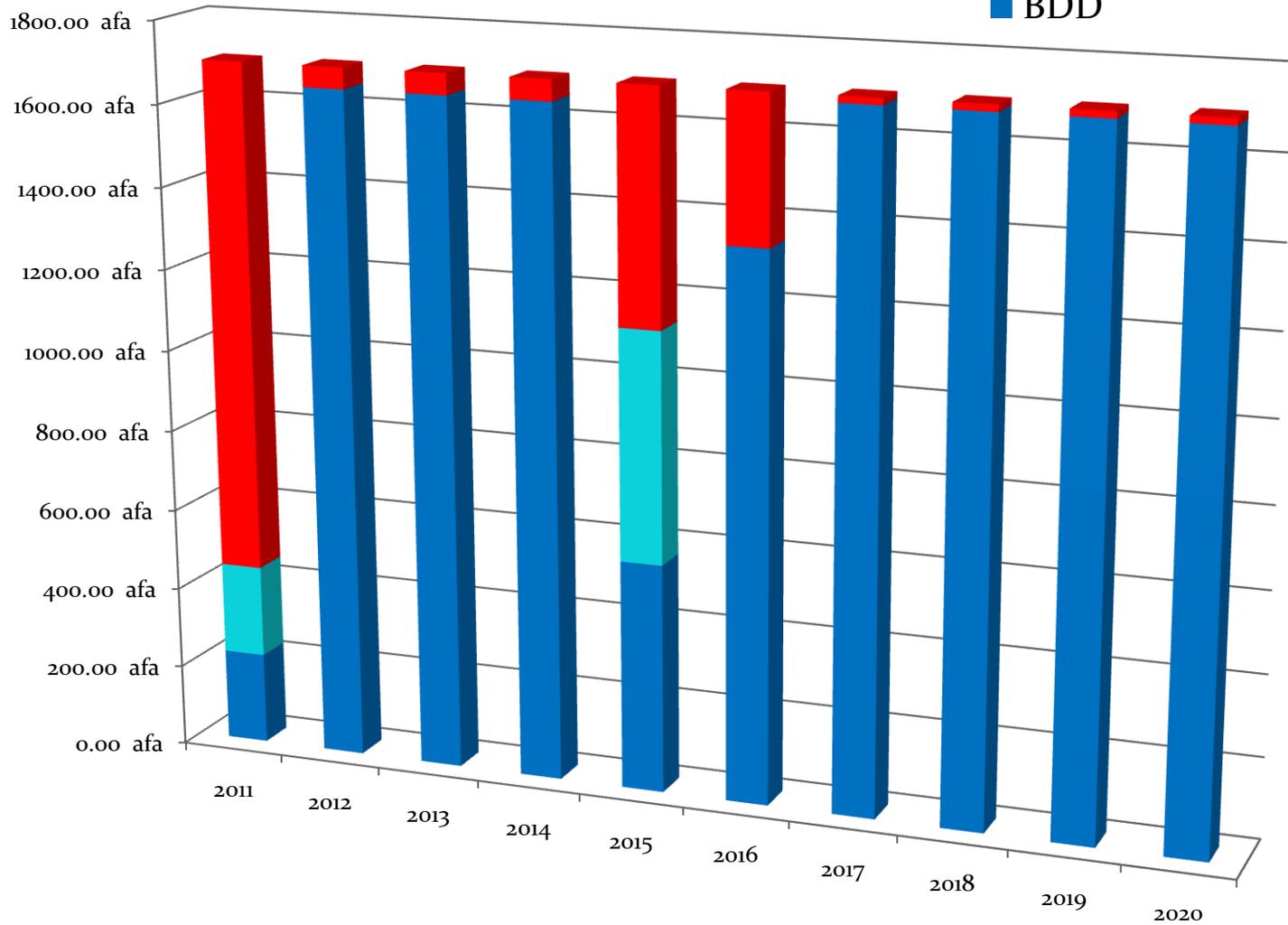


How Impact is Estimated

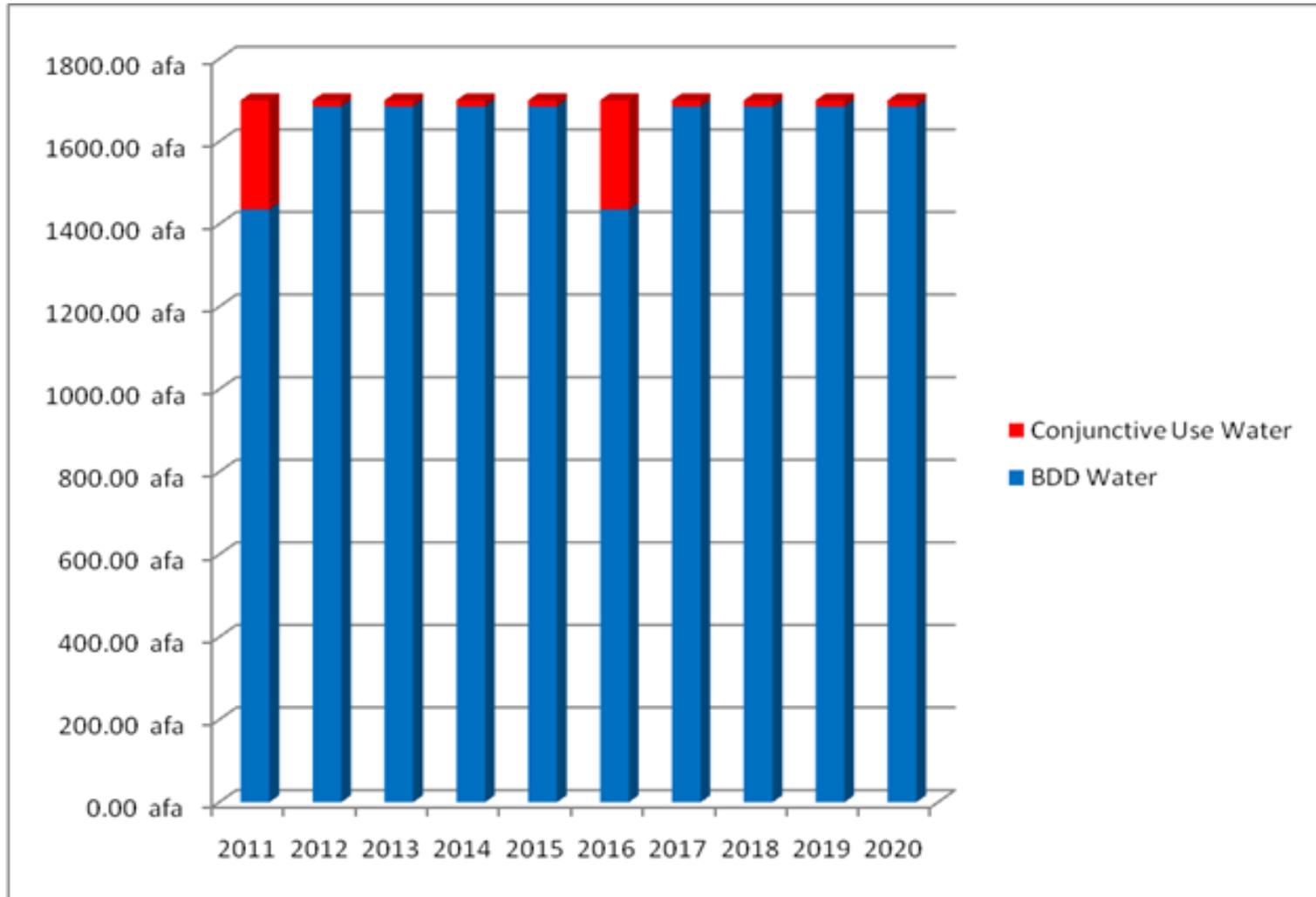
- Worst Case Scenario
 - Full Build Out
 - Buckman Diversion facility down for 8 months in one year including summer months (peak demand)
 - Followed by almost five extreme drought years causing complete curtailment of diversion of native RG water during summer months
 - Repeated every 10 years for 100 years
- Most Likely Scenario
 - Full Build Out
 - Buckman Diversion facility down for 1 month in one year during summer
 - Some years of drought but not sufficient to cause significant curtailment of diversion of native RG water
 - Repeated every 5 years for 100 years

Ten Year Worst Case Rolling Average Scenario

- Conjunctive Well Supply
- City Back-up Supply
- BDD



Most Likely Scenario



Drawdown to Aquifer Estimates

Well Name	Distance from Well	Worst Case	Most Likely
Las Campanas Site	1000 ft	12.06*	2.9*
	1/2 Mile	5.2	1.4
	1 Mile	3.13	0.84
	2 Miles	1.55	0.42
Rail Trail Site	1000 ft	12.6*	3.07*
	1/2 Mile	5.9	1.6
	1 Mile	4.04	1.1
	2 Miles	2.68	0.7
Tank Line Site	1000 ft	13.38*	3.2*
	1/2 Mile	6.8	1.8
	1 Mile	5.2	1.4
	2 Miles	2.68	0.7
Caja del Rio Site	1000 ft	12.4*	3.01
	1/2 Mile	5.4	1.5
	1 Mile	3.7	0.99
	2 Miles	2.4	0.65
Fair Grounds Site	1000 ft	13.03	3.2
	1/2 Mile	6.1	1.7
	1 Mile	4.08	1.1
	2 Miles	2.54	0.68
	* Reflects feet of drawdown at highest rate during the last 10 years (91 yr - 100 yr) time frame. Average T . Value		

Impacts to Springs and Streams

100 Year Depletions			
Streams	Worst Case Scenario	Most Likely Scenario	Move-From Water Rights
Rio Grande	0.00 afa	0.00 afa	0.00 afa
Pojoaque	0.34 afa	0.06 afa	0.14 afa
Tesuque	2.40 afa	0.40 afa	0.83 afa
Stream Total	2.74 afa	0.46 afa	0.97 afa
Springs			
1. Arroyo Hondo	15.23 afa	2.56 afa	52.31 afa
2. La Cieneguilla	0.74 afa	0.12 afa	2.58 afa
3. La Cienega/Arroyo Hondo	4.69 afa	0.79 afa	15.31 afa
4. La Cienega Flume	16.36 afa	2.75 afa	52.55 afa
5. El Guicu	0.65 afa	0.11 afa	2.11 afa
6. Santa Fe River	0.13 afa	0.02 afa	0.37 afa
Spring Total	37.80 afa	6.36 afa	125.23 afa

What Happens Next

- After public input, and BCC approval, application will be submitted to the Office of the State Engineer (OSE)
- Pending application is under protest at OSE, and new application will be considered in that legal context. New protests can be made
- It is hoped the Focus Group process will avoid any additional protests, and allow the current protest to be resolved quickly
- It is important for the County transition to the Buckman Diversion to have adequate backup water supplies in place
- If you have further questions, contact your local Focus Group member, or Karen Torres. See also the Focus Group webpage at:
http://www.santafecounty.org/committees/water_focus_group
- For information about the current protest, contact Santa Fe Basin Water Association at 471-3974