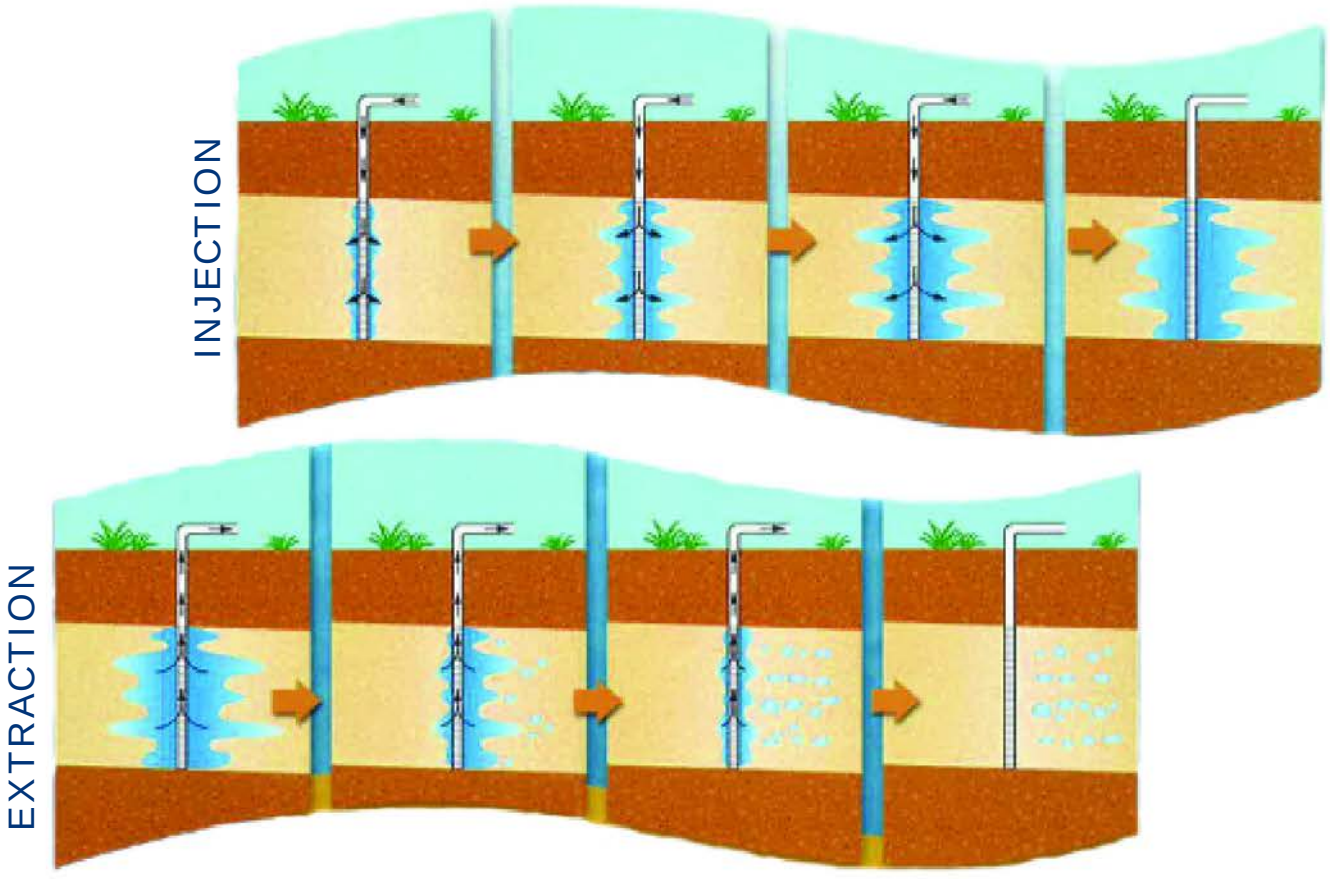
Aquifer Storage and Recovery Program
Final Environmental Impact Report

SCH NO. 2009072018



CITY OF ROSEVILLE CALIFORNIA

March 2012

City of Roseville Aquifer Storage and Recovery Program

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CHAPTER 1.0
INTRODUCTION

This document, in conjunction with the Draft Environmental Impact Report (EIR), constitutes the Final EIR for the City of Roseville Aquifer Storage and Recovery (ASR) Program. This Final EIR was prepared pursuant to the State of California Environmental Quality Act (CEQA) of 1970 (as amended) (California Public Resources Code 21050 *et seq.*) and the State Guidelines for the California Environmental Quality Act (CEQA Guidelines). The City of Roseville is the Lead Agency for the proposed project as defined by CEQA and will have principle responsibility for project approval and implementation. The State Water Resources Control Board would serve as a Responsible Agency under CEQA and would issue the appropriate approvals for project operations. If approved and implemented as proposed, the City's ASR program would complete construction of 13 specially designed wells to improve water supply operational flexibility and provide the ability for conjunctive use of available surface and groundwater supplies consistent with City policy.

1.1 Final EIR CEQA Requirements

Under the California Environmental Quality Act (CEQA), the Lead Agency must prepare and certify a Final EIR prior to approving a proposed project. The contents of a Final EIR are specified in Section 15132 of the CEQA State Guidelines, which state that a Final EIR shall include:

a) The Draft EIR or a revision of the Draft.
b) Comments and Recommendations received on the Draft EIR either verbatim or in summary.
c) A list of person, organizations, and public agencies commenting on the Draft EIR.
d) The responses of the Lead Agency to significant environmental points rasied in the review and consultation process.
e) Any other information added by the Lead Agency.

The Lead Agency must provide each agency that commented on the Draft EIR with a copy of the Lead Agency's proposed response at least 10 days before certifying the Final EIR. Additionally, the Lead Agency may also provide an opportunity for members of the public to review the Final EIR prior to certification.

1.2 Overview and Use of the Final EIR

The Final EIR allows the public and City an opportunity to review revisions to the Draft EIR and the Responses to Comments. The Final EIR serves as the environmental document to support approval of the proposed project, either in whole or in part.

After completing the Final EIR, and before approving the project, the Lead Agency must make the following three certifications, as required by Section 15090 of the State CEQA Guidelines:

- The Final EIR has been completed in compliance with CEQA.

- The Final EIR was presented to the decision-making body of the Lead Agency, and that the decision-making body reviewed and considered the information in the Final EIR prior to approving the project.
- The Final EIR reflects the Lead Agency's independent judgment and analysis.

As required by Section 15091 of the State CEQA Guidelines, no public agency shall approve or carry out a project for which an EIR has been certified that identifies one or more significant environmental effects of the project unless the public agency makes one or more written findings (Findings of Fact) for each of those significant effects, accompanied by a brief explanation of the rational for each finding supported by substantial evidence in the record. The possible findings are:

1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effects as identified in the Final EIR.

2) Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

3) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives in the Final EIR.

Additionally, pursuant to Section 15093(b) of the State CEQA Guidelines, when a Lead Agency approves a project that would result in significant and unavoidable impacts, the agency must state in writing the reasons supporting its action. This Statement of Overriding Considerations is supported by substantial evidence in the record, which includes this Final EIR. Since the proposed project would result in significant and unavoidable temporary construction noise impacts, the City would be required to adopt a Statement of Overriding Consideration if it approves the proposed project.

The Findings of Fact and the Statement of Overriding Considerations for the proposed ASR Program are included in a separate Findings document that will be considered for adoption by the City Council at the time of project approval.

All comments on the content and adequacy of the Draft EIR, and comments on the merits of the project, that were submitted to the City prior to close of the comment period on January 24, 2012, are included in Chapter 2 of this Final EIR. Responses to those comments are also included in Chapter 2.

Chapter 3 contains additions, corrections, and revisions to the text and supporting materials of the Draft EIR, including three alternatives suggested during the public review period.

A Mitigation Monitoring Program (MMP) has been prepared under separate cover and is proposed for adoption by the City Council as required for compliance with Sections 21080(a) and 21081.6 of the Public Resources Code. All mitigation measures included in the Final EIR for this project would be monitored by the appropriate entity and reported as indicated in the MMP.

1.3 Project Description Summary

The ASR Program is proposed by the City to improve water supply reliability, maintain groundwater as a sustainable resource, improve operational flexibility, and meet local and regional conjunctive use program goals and policies. ASR is a process where treated surface water is injected through specially designed groundwater wells into the groundwater aquifer for storage. It is later recovered, when needed, for municipal use thereby increasing the City's water supply reliability during peak demand times, or during dry rainfall years. The City is exploring ASR as a component of the its overall water supply strategy in order to maximize the ability to fully utilize allocated surface water supplies; manage the groundwater aquifer for its cost-effective, large-scale storage capability not otherwise readily available above-ground; meet regional conjunctive use program goals as outlined in the City's General Plan and Regional Water Management Plans; and ensure no net impact to the groundwater aquifer from potential use during peak shaving operations and/or during drier and driest years when City surface water supplies are cut back.

The amount of surface water available for injection and the demand for extraction will vary based on the type of water year (i.e., wet/normal water year, or a drier water year). The minimum amount of water available for injection could be as low as 0 AF a year during a driest year and as much as 13,786 AF during a wet year based on population demand and how effective the City is in complying 20% conservation factor as mandated by State law.

The ASR program would involve the use of thirteen (13) specially designed and metered wells capable of both water injection and extraction. Figure 1-1: ASR Well Sites shows existing and planned location of proposed ASR wells; while Table 1-1: ASR Program Wells, provides a status summary for each well.

Table 2-1. ASR Program Well Sites

Well No.	Well Name & Plan Area	Constructed	CEQA Status for Well Construction	Top Side Infrastructure
4	Darling*	1958	Completed	Completed
5	Oakmont*	1977	Completed	Completed
6	Diamond Creek	2003	Completed	Completed
7	Woodcreek North	2008	Completed	Completed
8	Hayden Parkway (Fiddyment Ranch)	Drilled in 2006.	Completed as part of West Roseville Specific Plan	Addressed in this EIR
9	West Side Dr	Drilled in 2006.	Completed as part of West Roseville Specific Plan.	Addressed in this EIR
11	Woodcreek West	Yet to be drilled.	None. Addressed in this EIR	Addressed in this EIR
12	Del Webb	Yet to be drilled.	Addressed in this EIR	Addressed in this EIR
13	Hewlett Packard (HP)	Yet to be drilled.	None. Addressed in this EIR	Addressed in this EIR
14	Fiddyment Road	Yet to be drilled.	Completed as part of West Roseville Specific Plan.	Addressed in this EIR
TBD	Sierra Vista Specific Plan #1	Yet to be drilled	Completed as part of Sierra Vista Specific Plan.	Addressed in this EIR
TBD	Sierra Vista Specific Plan #2	Yet to be drilled	Completed as part of Sierra Vista Specific Plan	Addressed in this EIR

Well No.	Well Name & Plan Area	Constructed	CEQA Status for Well Construction	Top Side Infrastructure
TBD	Creekview	Yet to be drilled	Completed as part of Creekview Specific Plan	Addressed in this EIR

* Have been retrofitted for injection (ASR) capability.

As shown in Figure 1-1, ASR wells are proposed primarily on the City's western side. This is due to the more favorable geologic and groundwater conditions found on the west side of town compared to the east. Well sites average between 0.5 and 1 acre in size, and are currently in varying stages of development. As shown in Table 1-1, the City has constructed six wells, four of which are equipped for both extraction and injection. Seven more wells have been planned as components of previously approved Specific Plan projects, and approved along with certification of those Specific Plan EIRs.

The City's municipal wells typically include "top side" (above ground) and below ground (well casing) improvements. Top side improvements typically include a small structure to house and secure the ASR well equipment and support infrastructure such as pumps, electrical and disinfection equipment (Figure 1-2: Typical "Top Side" Well Improvement).

1.4 Environmental Impact and Mitigation Summary

Table 1-2 Summary of Impacts and Mitigation Measures is presented in final form at the end of this chapter. The final version includes all staff and public comment initiated corrections and revisions initiated in Final EIR Chapter 3Revisions to the Draft EIR. Table 1-2 includes a summary of EIR identified project impacts, the level of significance of the impact before mitigation, recommended mitigation measures for significant impacts, and the level of significance after implementation of the mitigation measures. The Summary Table also lists issue areas found to be less than significant based on analyses and mitigation measures contained in the Draft EIR and Initial Study. All Initial Study mitigation measures have been incorporated into the project as described in the Draft EIR Project Description, Section 2.6 Environmental Commitments.

1.5 Project Alternatives Summary

CEQA requires that an EIR describe a range of reasonable alternatives to the project which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project. The EIR need not consider every conceivable alternative, but must consider a "reasonable range of potentially feasible alternatives that will foster informed decision making and public participation." (CEQA Guidelines, § 15126.6, subd. (a).) The Draft EIR included evaluation of the following alternatives to the proposed project:

- Alternative 1: No Project Alternative
- Alternative 2: Upgrade Water Treatment Plant to Ultraviolet (UV) and Ozone with Separate Pipeline
- Alternative 3: Surface Storage Alternative

- Alternative 4: On-Site Groundwater Treatment at ASR Wells

Analysis of the above 4 original alternatives is contained in Draft EIR Chapter 6 Alternatives. In response to comments received on the Draft EIR this Final EIR also incorporates the following three (3) new alternatives:

- Alternative 5: Pump ASR Extracted Groundwater to the East Side of Town to Blend with Treated Surface Water and Deliver Equally throughout the City
- Alternative 6: Construct Storage Tanks at Well Sites to Facilitate Blending
- Alternative 7: Supply ASR Water to Industrial Zones before Introducing ASR Water to Residential Zones

All of the above alternatives are summarized and compared in Final EIR Chapter 2 Response to Comments. A CEQA level alternatives analysis for Alternatives 5 through 7 is provided in Chapter 3, Revisions to the Draft EIR.

1.6 Areas of Controversy

Areas of controversy have evolved since those identified during the Draft EIR scoping process. Issues of concern were first identified in written responses to the June 30, 2009 Draft EIR Notice of Preparation and as part of oral comments received during two public scoping meetings held July 15 and 29, 2009. At that time the following concerns/ areas of controversy were identified:

Water quality, including:

- Increased hardness of water and the associated effects on skin, plumbing, household items and clothing,
- Odor, taste, and appearance of ASR water,
- Potential for health effects due to higher sodium levels and other constituents, in particular on the aging population, and
- General water quality concerns including potential for surface water contamination, mixing with contaminated groundwater in other areas, and the testing and monitoring process.

Growth Inducement:

- Would ASR water be used to support new development?

The following areas of controversy were identified in written and oral comment provided during the Draft EIR public review period:

Fairness:

- All Roseville residents would benefit from the proposed ASR program but only western Roseville residents would receive ASR groundwater which has different aesthetic characteristics compared to treated surface water (i.e., while ASR water meets all state and federal primary drinking water standards, it is considered "harder" and contains a higher

concentration of certain constituents and total dissolved solids when compared to treated surface water).

Alternatives

- Commenters suggested that the ASR program implement a project alternative to ensure ASR water is either blended with surface water or otherwise treated in a manner that ensures water deliveries in all areas of the City are of equal aesthetic quality.

Peak Shaving

- Commenters suggested that Peak shaving operations be limited to only "critically dry years" reducing operational flexibility when compared to the project as proposed.

All written and oral comment received during the Draft EIR review period are presented and responded in the Final EIR Chapter 2 Comments and Responses.

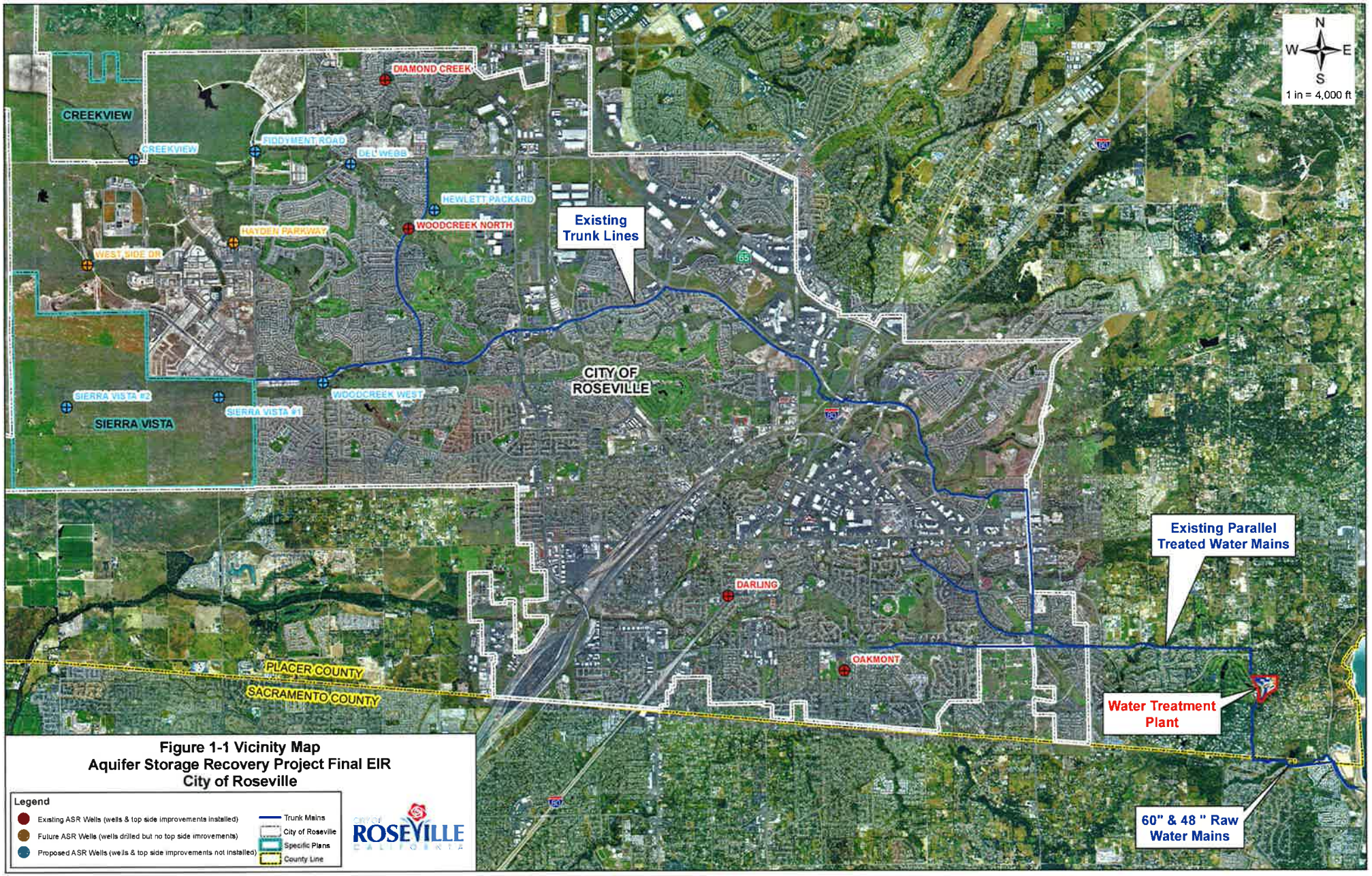

Figure 1-1 Vicinity Map
Aquifer Storage Recovery Project Final EIR
City of Roseville

Figure 1-2 Typical "Top Side"
Well Improvement
Aquifer Storage Recovery Project Final EIR
City of Roseville

ROSEVILLE

Table 3-1: Summary of Impacts and Mitigation Measures

Impact Statement	Mitigation Measure	Significance Before Mitigation	Significance After Mitigation
4.1 Hydrology and Water Quality			
4.2-1: POTENTIAL CHANGES TO GROUNDWATER QUALITY – Injection Water	No mitigation is required.	LTS	LTS
4.2-2: POTENTIAL CHANGES TO DRINKING WATER QUALITY – Extracted Water .	No mitigation is required.	LTS	LTS
4.2-3: POTENTIAL HEALTH EFFECTS FROM GROUNDWATER USE Effects to Taste, Odor and Aesthetics	ASR water would meet all primary potable water quality standards for public water systems. While customers may notice a decrease in aesthetic, or secondary standards, these would be considered adverse but less than significant impact as the secondary standards are not enforceable, but rather are guidelines for predicting consumer acceptance. Therefore, the potential for decreased secondary standards would be considered adverse, but would not trigger a CEQA threshold that would be categorized as a significant impact.	LTS	LTS

Impact Statement	Mitigation Measure	Significance Before Mitigation	Significance After Mitigation
Noise			
4.3-1:Short Term Drilling Noise Levels at Nearest Residences. Implementation of the proposed project would result in well drilling noise in the vicinity of the Woodcreek West, Del Webb, Hayden Parkway and Hewlett Packard well sites. The predicted noise levels at the adjacent residences range between 75 dB and 78 dB Leq. Therefore, the noise levels would exceed the nighttime noise level standard of 45 dB Leq by approximately 30 dB. Although well drilling activities are temporary (expected to occur for no more than one to two weeks) the noise levels would be substantial and would be a cause for annoyance. This is considered to be a potentially significant impact.	**4.2-1:** Use of sound attenuation measures during well drilling operations. One such method to reduce noise levels is to erect a temporary sound barrier on the sides facing the residences. An example would be barriers such as noise blanket panels mounted to steel framing. Noise blanket panels can be mounted horizontally or vertically and attached to vertical steel I-beam supports. Such barriers can reduce overall noise levels by approximately 17 dB. **4.3-4:** Prior to well drilling the City will provide notice to all residents subject to noise impacts. The notice will include information about the need for 24-hour construction during a portion of the drilling phase, and the related noise, as well as information to contact the City with any concerns. The City will work with individual residents on an as-needed basis in the event that the drilling construction noise causes extenuating circumstances.	PS	SU
4.3-2: Temporary Construction-Generated Noise Levels at Nearest Residences. The City's Noise Ordinance would be enforced and would restrict top-side construction activities between 7 a.m.-7 p.m. Monday through Friday and 8 a.m. – 8 p.m. Saturday and Sunday, hours that are exempt from applicable noise standards.	No mitigation is required	LTS	LTS

Impact Statement	Mitigation Measure	Significance	
		Before Mitigation	After Mitigation
4.3-3: Well Pump (Operational) Noise Levels. Without attenuation, well pump operational noise levels would exceed the City's nighttime noise level standard of 45 dB leq at residences located nearest to the Woodcreek West, Del Webb, Hewlett Packard and Hayden Parkway well sites, which is considered a potentially significant impact.	**4.3-3:** Reduce noise levels associated with the well pump by providing a full or partial enclosure. The enclosure can take the form of a block house or surrounding barrier designed to accommodate a pump motor 5-feet in height, and elevated off the ground by 18 inches. A full enclosure with a roof would sufficiently reduce noise levels, however, ventilation openings should be located on the side of the building opposite the nearest residences. If a traditional barrier is constructed around the well site, it would need to be a minimum of 8-feet in height. A variety of suitable sound attenuation options would be available. In order to ensure that sound levels are adequately mitigated, a qualified acoustical expert shall be consulted regarding placement, orientation, size, and density of acoustical barriers.	PS	LTS
4.3-4: Ground-Borne Noise and Vibration Levels at Sensitive Receptors. Implementation of the proposed project could result in exposing sensitive noise-receptors to ground-borne noise and vibration levels during well drilling. These ground-borne noise and vibration levels could result in annoyance or architectural/structural damage. Based on the extent of ground-borne vibration during drilling of previous wells, the distance of adjacent development, and the absence of historic architectural resources. This impact is considered less than-significant.	No mitigation is required.	LTS	LTS

Impact Statement	Mitigation Measure	Significance Before Mitigation	Significance After Mitigation
4.3 Impacts Previously Identified as Less than Significant in the NOP/Initial Study (Appendix A)			
– Aesthetics			
– Agricultural Resources			
– Air Quality			
– Greenhouse Gas Emissions and Global Climate Change			
– Biological Resources			
– Cultural Resources			
– Geology, Soils and Seismicity			
– Hazards and Hazardous Materials			
– Land Use Planning			
– Mineral Resources			
– Public Services			
– Transportation and Circulation			
– Utilities and Service Systems			
5.0 CEQA Considerations			
5.2-3. Potentially Growth Inducing Impacts	No Mitigation is required.	PS	PS

CHAPTER 2.O
DRAFT EIR COMMENTS AND RESPONSES

This chapter presents comments received on the Draft EIR and City Responses.

2.1 Draft EIR Public Review Process

The City issued the Draft EIR on December 9, 2011 for a 47 day public review period that closed on January 24, 2012. Availability of the Draft EIR was noticed in the Roseville Press Tribune, on the City's internet home page and by direct mailing to the Sun City Roseville Homeowners Association, the Roseville Coalition of Neighborhood Associations (RCONA) and all interested parties that requested written notices. The Draft EIR was also delivered to the State Clearinghouse for distribution to state agencies and made available on the City's web site.

Three meetings were held during the Draft EIR public review period to solicit public comment on the proposed ASR Program and EIR:

- January 10, 2012 presentation to the Sun City Governmental Affairs Committee
- January 12, 2012 public workshop at the Martha Riley Library/Utility Exploration Center
- January 24, 2012 Public Hearing before the Roseville Public Utilities Commission.

In addition to these public meetings, staff met with any individual or group requesting a meeting.

2.2 Draft EIR Public Comment

The City received both oral and written comment on the Draft EIR. The topical areas of oral comment and a listing of Draft EIR comment letters is provided below. City responses to topical areas and individual letter follows in Section 2.3

Summary of Oral Comment Provided at Public Meetings

Oral comment received during public meetings focused on the following seven major topical areas:

- Topic 1: Resident concerns experienced during the Phase II Pilot Test relating to groundwater "hardness," smell, taste and odor;
- Topic 2: Questions on proposed ASR operational parameters, in particular how aquifer blending would be accomplished and when peak shaving operations are expected to occur;
- Topic 3: Questions concerning why ASR wells are primarily located on the west side of town;

- Topic 4: Concerns regarding fairness of distribution of ASR water throughout the City;
- Topic 5: A desire for enhanced treatment of ASR extracted water prior to delivery to residential customers;
- Topic 6: Recommendations for evaluation of additional project alternatives that address groundwater quality concerns and "fairness" issues; and,
- Topic 7: Groundwater health concerns regarding sodium, calcium and chromium, particularly for the elderly.

City staff provided oral responses during the above meetings to all comments and questions raised. During the January 24th Public Utilities Commission (PUC) meeting, PUC commissioners asked several clarifying questions generally consistent with the topical comments summarized above. In addition, Commissioner Bruce Houdesheldt summarized internet research he conducted on Chrome 6 and provided a list of frequently asked questions and answers on the topic for the record (included in Final EIR Appendix A). One member of the public residing in Sun City provided public comment during the PUC meeting asking for clarification regarding when peak shaving would be implemented under the ASR program and when the Final EIR would be available for review. Following public and commission comments the commission unanimously approved a recommendation to the City Council to certify the Final EIR and approve the ASR project. Minutes of the January 24th PUC meeting are included as Final EIR Appendix A.

Comment Letters Submitted During the Public Review Period

All comment letters received on the Draft EIR are listed below in Table 2-1. Each letter is presented in its entirety in the following section with each individual comment assigned an index number (e.g., 1-1 which corresponds to Letter 1, Comment 1). City responses are then presented following each letter.

Table 2-1
List of Commenting Agencies and Persons

1.	Carolyn Myhre	December 14, 2011
2.	M.G. Taylor	December 17, 2011
3.	M.G. Taylor	December 17, 2011
4.	Sun City Governmental Affairs Committee	January 20, 2012
5.	M.G. Taylor, III and Martin Kaufmann	January 22, 2012
6.	Central Valley Flood Protection Board	December 28, 2011
7.	California Department of Transportation	January 20, 2012
8.	United Auburn Indian Community	January 23, 2012

2.3 Response to Comment

This section presents the City's response to the topical issues raised during public meetings as well as the individual comment letters received during the Draft EIR public review period.

Oral Comment Topical Responses

Topic 1: Resident concerns experienced during the Phase II Pilot Test relating to groundwater "hardness," smell, taste and odor

Some residents attending Draft EIR project workshops were dissatisfied with the quality of water delivered during the Diamond Creek Well Phase II Pilot test and were concerned that water of a similar quality would be delivered during proposed ASR operations. The Phase II Pilot Test was conducted beginning December 14, 2005 with injection occurring over a 142 day period. Injection was halted on May 5, 2006. Beginning on July 17, 2007, ASR water was extracted from the aquifer and delivered to customers through February 28, 2008. During the test, treated surface water was injected into the groundwater aquifer and stored for 14 months prior to extraction. Following the storage period three times the amount of injected waster was extracted.

Even though the groundwater delivered to customers during the test met all applicable drinking water standards, the City received complaints regarding the water's "hardness", taste and odor (referred to as aesthetic qualities). Customers also complained of spotting residue and perceived health effects, and some complained that valves in water lines began leaking during the test.

A potential reason for the high complaint rate during the Phase II Test was that the injected water was stored in the underground aquifer for a fairly long period allowing for greater groundwater migration and aquifer contact time period. In addition a much greater amount of groundwater was extracted from the aquifer compared to the volume of injected surface water to ensure all disinfection by-products associated with injected water were removed from the aquifer, a condition of the Phase II Pilot test required by the Regional Water Quality Control Board. As a result the extracted water was more likely to be groundwater (i.e., harder with more minerals) than the City's typical surface water supply which in comparison is softer with less mineral deposits. These and other ASR Program/groundwater concerns were expressed in Notice of Preparation (NOP) comments and during Draft EIR public comment meetings.

Unlike the Phase II Test which required over extraction of injection water and therefore delivery of undiluted groundwater, the proposed ASR Program should result in greater aquifer mixing of surface and groundwater prior to ASR water delivery. Consequently, while some customers may still notice a change in the aesthetic qualities of ASR supplied groundwater when compared to treated surface water, the same degree of change that was experienced during the Phase II test is not expected.

It's important to note that absent an ASR program, during drier and driest years when the City's surface water supplies are reduced, undiluted groundwater would be the City's only available backup supply option and customers can expect aesthetic qualities similar to what was experienced during the latter stages of the Phase II test. The proposed ASR program provides opportunity for aquifer blending which can improve the aesthetic qualities of native groundwater.

Topic 2: Questions on proposed ASR operational parameters, in particular how aquifer blending would be accomplished and when peak shaving operations are expected to occur

Aquifer Blending - Questions were asked about how ASR operations would blend ASR groundwater with treated surface water to mitigate or dilute the perceived negative aesthetic qualities of serving groundwater. Commenters also wanted to better understand the correlation between the duration of surface water storage and its acquisition of groundwater characteristics.

Aquifer blending refers to injecting treated surface water supplies into the aquifer where it mixes with native groundwater prior to extraction and customer delivery. Depending on the duration of storage, more or less blending would be accomplished. Injected water that is subject to shorter periods of aquifer storage will more likely retain the original surface water characteristics (i.e., relatively low TDS and sodium levels). Groundwater modeling indicates that groundwater migration occurs at a rate of approximately 20 feet per year. Because of the slow moving characteristics of groundwater underlying Roseville, injected surface water is expected to remain close to ASR wells and accessible for extraction, but is very site dependent.

As discussed under Topical Response 1 above, during the Phase II Pilot Test, surface water was stored for 14 months before extraction with only one injection cycle. Furthermore, the permit for the Pilot Test required that the City extract three times the volume of injected water to ensure all disinfection by-products contained in the treated injection water was removed from the aquifer. The combination of extended storage time and the requirement for over extraction eventually resulted in delivery of pure groundwater, rather than a blended water supply. Delivery of similar groundwater quality under ASR operations would only be expected during drought or extended storage periods. Absent ASR no opportunity for aquifer blending would be available and the City would have no option but to deliver groundwater when surface supplies are cut due to drought, the water treatment plant is taken off line for maintenance, or surface supply is otherwise interrupted by emergency.

Peak Shaving - During the public review period, questions were asked about the extent to which ASR would be used for "peak shaving." Peak shaving refers to supplementing available surface water supplies with banked surface water (i.e., ASR stored surface water) during high demand periods in the same year resulting in enhanced water treatment and distribution operational flexibility. Peak shaving operations include injecting or "banking" treated surface water during the spring and/or fall "shoulder" periods (when customer demands are low and surplus treatment

capacity is available) and then extracting the stored surface water during summer months when customer demand and treatment requirements are highest. Peak shaving could also occur when the water treatment plant capacity is reduced for maintenance or to meet permit requirements that may be imposed on City ASR operations. Approval of the ASR program as proposed would allow peak shaving for operational flexibility in any water year at the Environmental Utilities Director's discretion. However given current demands and available storage and treatment capacities, peak shaving operations are not expected in the near future. However the need for and frequency of peak shaving is expected to increase as the City nears buildout and related water demands increase.

The City's General Plan policy is to meet normal customer demands with surface water, and to use groundwater only during emergencies or when surface water supplies have been reduced. At the same time, General Plan policies require the City to monitor groundwater resources and investigate strategies for enhanced sustainable use. The proposed project is consistent with both these policies. Storing surface water helps to ensure that ASR banked surface water is available to "shave peaks" without impacting groundwater resources, thereby increasing both surface and groundwater reliability when it may be needed for emergency backup supply.

The volume of injected and extracted surface water is accounted for as part of ASR operations. As a matter of practice, the amount of water extracted during peak shaving would not exceed the amount of surface water injected. This would be consistent with the ASR objective to ensure no net impact to the groundwater aquifer. As discussed above, the only exception to this practice would be during during times of drought or an emergency such as an unexpected service interruption. In these situation both ASR and native groundwater would be extracted as needed to meet demands.

Topic 3: <u>Questions concerning why ASR wells are primarily located on the west side of town</u>

Draft EIR section 4.2.1 provides an overview of the regional geologic and hydrogeology setting. As explained in the Draft EIR, the City of Roseville lies over the North American River Groundwater Sub-basin which includes north Sacramento, south Sutter and West Placer Counties. As shown in Draft EIR Figures 4-1 and 4-3, the eastern City boundary slightly overlaps the eastern boundary of the North American Subbasin. As such the City is positioned along a transitional area of regional strategraphy which greatly influences opportunities for successful well drilling and groundwater production on the east side of the City. The ground surface on the City's east side is higher in elevation and comprised of "hard rock" geologic substructure when compared to the west side. As a result well drilling on the City's east side is significantly more problematic and costly compared to the west. The ground surface on the west side of the City is comprised of the Riverbank and Turlock formations. These formations provide more favorable conditions for well drilling and access to the Mehrten Formation which is a highly productive water bearing formation targeted by most municipal wells in the region.

Consequently Roseville's hydrogeologic setting dictates that municipal production wells are most appropriately located in the western portion of the City.

Topic 4: Concerns regarding fairness of distribution of ASR water throughout the City

Fairness – The City's primary water supply is surface water from Folsom Reservoir located at approximately elevation 350 feet above sea level. The City of Roseville slopes from east to west with elevations ranging from generally 350 feet to 150 feet above sea level. With few exceptions, this allows for primarily gravity flow delivery of the City's treated water supply from the City's Barton Road Water Treatment Plant on the east to the City's western limit. It also dictates the need to maintain pressure zones within the City's water distribution system to prevent pressure spikes from occurring at lower elevations on the City's west side. While these topographic and pressure characteristics are optimal for water delivery from the City's primary supply source, they represent a constraint to transporting ASR extracted ground water from west to east. To do so requires a separate dedicated pipeline and pump station with related siting and right-of-way needs. Such separate system could be used to pump ASR extracted groundwater from the City's west side up elevation to the City's east side while bypassing the pressure zone barriers inerrant in the Ctiy's gravity flow distribution system. Final EIR Alternative 5 was suggested to accomplish this but was found to result in additional environmental impacts and substantially higher costs when compared to the proposed project (see Topical Response 7 and Final EIR Chapter 3 for further discussion of this alternative).

While it is understood why some residents question the "fairness" of only delivering ASR water to the west side of town, as discussed above there are legitimate environmental, infrastructure and cost constraints that prevent locating ASR wells and equal delivery of ASR water throughout the City.

Regarding the issue of equity, it's worth noting that inequality in the provision of City services is not limited to water supply. For example, while the City strives for equality, City service cannot always be provided equally. Locations of services such as police, fire stations, libraries and parks are not always equidistant from all customers because doing so would be cost prohibitive.

Topic 5: A desire for enhanced treatment of ASR extracted water prior to delivery to residential customers

Alternative 4: Onsite Groundwater Treatment at ASR Wells, was developed to evaluate what is needed to improve the aesthetic qualities of ASR extracted groundwater prior to customer delivery. This would be accomplished via a reverse osmosis system. The capital costs to design and construct such a system at each well head is estimated at $37 million with annual operation and maintenance costs of $4 million per year. The treatment process would generate a

concentrated brine solution which would require temporary onsite storage before being hauled away to an approved waste disposal facility.

As discussed in Draft EIR Section 6.4.4, while Alternative 4 would meet most project objectives, it would create additional land use, energy demand, waste disposal, traffic, noise public services and utilities and air quality impacts compared to the proposed project. Extracted groundwater currently meets potable water quality standards. Consequently the high costs of adding, operating and maintaining the required treatment facilities is difficult to justify. It is not uncommon for groundwater to have aesthetic qualities that are different from surface water. Given that the groundwater extracted from City wells is of similar quality to other municipalities served solely by groundwater and meets all State Department of Public Health Primary drinking water standards and regulations, the need to justify the high capital and operational costs significantly decreases the feasibility of the alternative compared to the proposed project. As such Alternative 4 was rejected as infeasible.

Topic 6: Recommendations for evaluation of additional project alternatives that address groundwater quality concerns and "fairness" issues.

Additional Project Alternatives - As required by CEQA the Draft EIR included analyses of the following alternatives, with the purpose of reducing or avoiding identified significant environmental effects:

- Alternative 1: No Project Alternative
- Alternative 2: Upgrade Water Treatment Plant to Ultraviolet (UV) and Ozone with a Separate Water Main Alternative
- Alternative 3: Surface Storage Alternative
- Alternative 4: Onsite Groundwater Treatment at ASR Wells Alternative

Several commenters requested evaluation of additional alternatives capable of treating ASR groundwater to a quality equivalent to treated surface water prior to customer delivery. The objective of such an alternative is to ensure as best as possible that all City water customers receive a water supply that is of equal quality regardless of location or supply source. The following three alternatives were suggested to accomplish this:

- Alternative 5: Pump ASR Extracted Groundwater to the East Side of Town to Blend with Treated Surface Water and Deliver Equally throughout the City
- Alternative 6: Construct Storage Tanks at Well Sites to Facilitate Blending
- Alternative 7: Supply ASR Water to Industrial Zones before Introducing ASR Water to Residential Zones

The environmental impact and cost of these alternatives is evaluated in Final EIR Chapter 3 below and compared to those of the proposed project. As discussed below, while the

environmental impact of each alternative varies, none would mitigate significant impacts identified for the proposed project but each would introduce additional potential land use and visual impacts, and Alternative 5 would result in temporary transportation impacts due to pipeline construction within existing roadways. All three result in substantially higher costs compared to the proposed project because the proposed ASR program relies primarily on existing infrastructure and zero added costs for nearly unlimited storage within the existing groundwater aquifer. Therefore each of the new alternatives is rejected due to the significant incremental cost increase compared to the project as proposed.

Fairness - While the City understands why some residents question the "fairness" of only delivering ASR water on the west side of town, as discussed in Topical Response 4 there are legitimate environmental, infrastructure and cost constraints that prevent locating ASR wells and equal delivery of ASR water throughout the City.

Topic 7: Groundwater health concerns regarding calcium and chromium, particularly for the elderly

Elevated sodium levels in native groundwater was a concern expressed during the Draft EIR NOP comment period and was addressed in the Draft EIR. Similar concerns over levels of calcium, and chromium-6 were also expressed during public workshops.

Potential health effects from groundwater use during ASR operations is addressed in the Draft EIR under Impact 4.2-3 beginning on page 4-26. The DEIR notes that while calcium levels detected at the Diamond Creek Well were slightly higher than that measured in Roseville's treated surface water, because local groundwater supplies meet state and federal Primary Drinking Water Standards, the potential for adverse health effects was found to be less than significant. Nevertheless, similar to sodium, consultation with a personal physician is recommended for anyone with ongoing calcium concerns.

Chromium in groundwater is more of an emerging regulatory issue. Chromium is a metallic element of the earth and is commonly found in rocks and soils. Chromium can be found in the environment commonly in a trivalent chromium state (chromium-3, Cr-3, chromium III, or Cr3+) and hexavalent chromium (chromium-6, Cr-6 chromium VI, or Cr6+) state. Chromium has many industrial and manufacturing uses such as steel production, welding, wood preservatives, textile dying, leather tanning, and therefore, anthropogenic chromium contaminations have occurred around the country, especially from large industrial releases. Chromium is a micronutrient but at high concentrations, it can be carcinogenic and/or toxic.

Because of its potential health effects, chromium has been regulated as a drinking water contaminant since the 70's. California MCL of chromium at 50 ug/L (50 ppb) was effective in 1977 and US EPA's MCL of 100 ug/L (100 ppb) was revised in 1991. The MCL is based on total chromium concentration which includes both Cr3+ and Cr6+. In the greater Sacramento

Region, groundwater from the North American Subbasin contains Cr3+ and Cr6+ as both forms of chromium are naturally occurring with the rock and alluvial deposits underlying the area. The levels are generally less than 10 ppb in municipal wells in the basin.

Cr6+ and its compounds have long been recognized as an inhalation hazard and have been regulated by OSHA to protect industrial workers. In 2000, with the release of Hollywood film Erin Brockovich[1], media and political attention raised public awareness and concerns about hexavalent chromium. Concerns about the impact of chromium-6 in water have prompted subsequent legislation to determine Cr6+ levels in drinking water as well as develop drinking water standards for Cr6+. Currently, there is no federal or state Maximum Contaminant Level (MCL) specific to hexavalent chromium.

In California, prior to development of an MCL for Cr6+, a public health goal (PHG) is need to establish a concentration that poses no significant health risk if consumed by a lifetime based on risk assessment principles and practices. Typically, this risk assessment is a lifetime *de minimis* risk based on a life-time ingestion of 2 liters of water a day for 70 years by an adult weighing 70 kg. PHGs are adopted by the state's Office of Environmental Health Hazard Assessment (OEHHA) and are **goals, not standards, to protect public health**. Primay drinking water standard MCLs are enforceable standards established by California Department of Public Health (CDPH) to ensure the quality of water is safe for everyday consumption.

As part of the legislation requirements, CDPH (or its predecessor CDHS), requested OEHHA to prepare a PGH for chromium-6 in 2001. In August 2009, OEHHA released a draft PHG of 0.06 ug/L (0.06 ppb) for Cr6+. Subsequently, in December 2010, OEHHA released a revised draft PHG for Cr6+ that lowered the concentration to 0.02 ug/L (0.02 ppb). This change is due to consideration of early-in-life exposures for cancer potency. In July 2011, OEHHA finalized the Cr6+ PHG to be 0.02 ug/L.

With the adoption of PHG by OEHHA, CDPH has begun the process of establishing an MCL for Cr6 at a level as close as is technically and economically feasible in accordance with Health and Safety Code §116365(a). It is estimated that CDPH will establish an MCL, at a level significantly higher than the public health goal, in 3 to 4 years.

Because Cr6 is naturally occurring in rocks and soils, groundwater percolating through the mineral deposits picks up dissolved (water soluble) materials. Therefore, Cr6 is naturally present in the groundwater in the North American groundwater basin, underlying the greater Sacramento and Placer Counties. Monitoring data since 2001 have shown that Cr6 is present in small

[1] In the movie Erin Brockovich, groundwater underneath the town of Hinkley was contaminated with Cr6+ by PG&E's Hinkley Compressor Station. This facility added Cr6 as corrosion inhibitor and subsequently the Cr6 containing wastewater was discharged into unlined ponds from 1952 to 1964. The ponds were taken out of service in 1966 and replaced with lined ponds. Chromium contamination exceeding the CA MCL was reported in 1987. As of February 2008, the contamination plume extended 2 miles long and 1.3 miles wide with a concentration of total chromium at 2,120 ppb and hexavalent chromium at 2,270 ppb.

amounts about 2 – 8 ug/L in the groundwater basin in the area. Because of the low levels of Cr6 in the groundwater, the City does not anticipate any problems with future Cr6 MCL.

Comparatively, surface water from Folsom Lake is snowmelt from the Sierra Nevada mountains and does not come into long term contact with rocks and soils. Therefore, Cr6 is not present in surface water.

The City's ASR program is intended to withdraw **stored** surface water in times of need. During the Phase II ASR Demonstration Test at Diamond Creek Well (DCW), the water was stored for 14 months and the extraction amount was three times of injection amount as required by the Regional Board. During the extraction phase of the Demonstration Test between July 2007 and February 2008, all indication suggested that extracted water was predominantly native groundwater and not stored surface water.

There is also possibility that future stored surface water would mix with the native groundwater and the City fully anticipated the occurrence. Because of the low level of Cr6 currently in the groundwater basin, the City does not anticipate violation with the future Cr6 MCL. In any event Cr6 exceeds the future MCL, the well(s) would be removed from service to determine what if any additional treatment may be needed.

Written Comments and Responses

Written comments received on the Draft EIR and responses are provided in this section. Copies of all comment letters are provided in their entirety with individual comments indexed in the letter margin. Cross referenced responses for each individual comment immediately follow each comment letter.

1

December 14, 2011

To: Cathy Lee
From: Carolyn Myhre, 7088 Mule Team Way, Roseville, CA 95747
Subject: Aquifer Storage and Recovery (ASR) Project Draft Environmental Impact Report (DEIR) Public Review

I can't let another day, month, or year go by without sharing what I know about the ASRs in Roseville. I am not going to quote dates and times, specific titles, etc.; I'm simply going to tell you what happened, decide if I want to go more public with it, and let the burden be on the head of you, the Mayor, Derrick Whitehead, etc.

I attended the Water Board meeting in Folsom when Derrick presented his case to the Water Board concerning the ASRs. Two things stick out in my mind: one so major, it has haunted me since that day.

As you well know, Derrick brought "experts" to justify his ASRs, lowering standards, etc. 1-1

> The expert who haunts me is the gentleman from the mid-west. He explained their Aquifers are successful BUT he also said, and obviously no one listened, was: "Our (Mid West) aquifers are 'x' amount of feet under the ground. By the time the ground water gets there, the contamination is gone. Unfortunately, the aquifers in this area (Roseville) are too close to the surface and the ground water contamination drains down into them; the water is still contaminated. They are not deep enough to make this program safe. 1-2

Another factor which everyone ignores, is that the water is constantly moving out of the aquifers and no matter what is put in the water to "make it safe" there is no guarantee the contamination is gone. This is true, you all know it, and yet these Million dollar disasters (and embarrassment having to explain any of this to the taxpayers) has to be covered up and washed over. I know it is 'tested'...don't even go there... 1-3

When Sun City was on well water, I personally, got H-pylori, requiring three anti-biotics to get rid of. My Doctor was literally stunned because he said this comes directly from contaminated well water, which was supposedly taken care of in the 1960s. 1-4

At the town meeting Linda Manion and I, and many residents from Sun City who had become so ill when on well water, begged the Council to reconsider the ASRs. I received a call recently inquiring if we were on well water again because her symptoms of hair falling out and itching scalp were back-symptoms she'd had on well water. I gave her the city number to call. 1-5

What haunts me the most is when you put us on the well water permanently, or even temporarily, and we all know this is your plan, what's going to happen to the seniors? But, more serious – the babies, pregnant mothers, children – what??? 1-6

It will be on your head, not mine. I do not have the personality or the strength to take on a City who can do this to its residents. I will not be at the public forum. I have learned from watching how this City is run, that whatever is in the works is a done deal and these are simply lip service gatherings. Again, it is on your head, not mine. 1-7

Thank you. Carolyn Myhre

Letter 1 Response	Carolyn Myhre December 14, 2011
1-1	Comment noted.
1-2	The commenter expresses concern regarding the depth of the aquifer and potential for groundwater contamination. The DEIR fully analyzes the potential for groundwater contamination. A description of regional and local sources of groundwater contamination is found beginning on page 4-15 of the DEIR. See also Impact 4.2-1: Potential Changes to Groundwater Quality – Injection Water, and Impact 4.2-2: Potential Changes to Groundwater Quality- Extracted Water. As stated in the DEIR, known contaminated areas are monitored and managed by EPA, California Department of Toxic Substance and Control, Central Valley Regional Water Quality Control Board. The City also monitors and tests for contaminants in coordination with the Regional Water Authority, and Western Placer County Groundwater Management Plan partners. The DEIR concludes that local groundwater within the influence of proposed ASR wells meets federal and state Maximum Contaminant Levels (MCLs) for Primary drinking water standards. Furthermore, because the quality of injection water exceeds drinking water standards, proposed ASR operations would not impact groundwater quality.
1-3	The commenter expresses concern regarding groundwater migration, and the possibility of groundwater contamination. Groundwater migration is addressed in the DEIR, Section 4.2, Water Quality, page 4-10. Consistent with State law, the City monitors groundwater flow and elevation on a monthly basis. The DEIR recognizes that localized contamination exists within the North American Groundwater Basin. For example, as discussed in the Draft EIR (page 4-15) groundwater beneath the McClellan Air Force Base and Aerojet facilities are known to be contaminated. However, because these areas are "downstream" of Roseville, they are not of concern to the proposed ASR project. Furthermore, as discussed in Response 1-2, and as indicated in recent groundwater tests, the groundwater aquifer beneath Roseville meets all federal and state drinking water standards.
1-4	The commenter states that she contracted H-pylori when Sun City was on well water. Sun City was on well water during the Phase II Demonstration test. During the test period the City did not receive any other reports of H-Pylori, and H-Pylori has not been identified in any of the ongoing weekly distribution system water testing. The Placer County Department of Public Health[i] was contacted and stated they have no record of H-Pylori, as it is not a reportable communicable disease under the California Code of Regulations, Title 17. Furthermore, H-pylori has not been identified as a known contaminant within the North American Subbasin Aquifer. Therefore, while the City does not dispute the commenter's diagnosis, based on the information available, it appears unlikely this commenter contracted H-pylori from groundwater delivered during

the Phase II test.

1-5 Comment noted. The most recent time ASR/groundwater was delivered to the Sun City area was for the Phase II Pilot test, which occurred from July 17, 2007 through February 28, 2008. Subsequent to that, groundwater has only been delivered to the Sun City service area on one occasion during a two-day period in December, 2009. Based on the information provided, it is impossible to determine whether the recent illness cited in this comment was due to the delivery of groundwater in 2009.

1-6 The commenter expresses concern for the welfare of seniors, babies, pregnant mothers, and children in the event that well water is delivered permanently or temporarily. The ASR project purpose and objective are presented in the DEIR Chapter 2, Project Description, Section 2.2.1. Serving groundwater permanently as a primary supply source is not a project objective. Furthermore, groundwater is the primary water source for at least 75% of Americans. Groundwater that meets federal and state drinking water standards has not been linked to illness in babies, pregnant mothers, children and the elderly.

1-7 Comment noted.

2

Comment Letter #2

-----Original Message-----
From: M. G. Taylor, III [mailto:mtaylo9392@aol.com]
Sent: Saturday, December 17, 2011 7:52 PM
To: Environmental Utilities
Cc: maros@surewest.net
Subject: ASR DEIR

Attention: Cathy Lee, Sr. Eng.,

Why doesn't the DEIR for the ASR address the apparent fact that injected ASR water will rapidly migrate beyond the boundaries of the City of Roseville. Indeed, it appears that the over-drafting of groundwater within the the service area of the California American Water Company and farther south (in Sacramento County) may frustrate storage and recovery of injected water within the City of Roseville? I feel that I am misunderstanding something. Please help me understand how the ASR project will be able to fulfill its stated purpose. Thanks. 2-1

Buck Taylor
mtaylo9392@aol.com

Letter 2 Response	Buck Taylor December 17, 2011
2-1	The commenter questions the extent to which the Draft EIR addresses groundwater migration, and the potential for localized over-drafting to effect proposed ASR operations. Local groundwater elevation and migration is addressed in Draft EIR Section 4.2, Water Quality, page 4-10. As discussed in the Draft EIR, based on review of available groundwater elevation and migration data and data gathered during the Phase II Pilot test, no adverse groundwater gradient impacts are anticipated as a result of ASR operations. The project will meet its stated purpose by closely monitoring and tracking (i.e., banking) injection and extraction water, regardless of migration, to ensure no net impact to the aquifier and therefore increased groundwater supply reliability (a stated project purpose).

3

Comment Letter #3

-----Original Message-----
From: M. G. Taylor, III [mailto:mtaylo9392@aol.com]
Sent: Saturday, December 17, 2011 3:06 PM
To: Whitehead, Derrick
Cc: maros@surewest.net
Subject: DEIR for ASR Project

I have been reviewing the ASR DEIR and related sources of information pertaining to the proposal. I note that many of the proposed injection wells (e.g., Woodcreek West and the Sierra Vista wells) are a very short distance from wells (within the California American Water Company service area) that are reported to be over drafting basin groundwater. On the face of things, it appears that City residents will be charged for delivering water from the American River and injecting the water at a location that will principally benefit the California American Water Company and/or persons residing in their service area. What is going on here? Thanks for your help? 3-1

Buck Taylor
mtaylo9392@aol.com

Letter 3 Response	Buck Taylor December 17, 2011
3-1	The commenter states that proposed injection wells are close to wells in other service areas reported to be over drafting groundwater, and that Roseville customers will be charged for delivering water from the American River and injecting the water at locations that will principally benefit others. Draft EIR Section 4.2.1, Regional Groundwater-North American Subbasin, evaluates groundwater levels. The Draft EIR concludes that groundwater levels have stabilized and groundwater pumping is currently in balance with the natural groundwater recharge rate. The groundwater model prepared for the proposed project accounts for hydrologic gradient variations. Also see response to Comment 2-1. ASR operations will benefit Roseville rate payers by including metering and tracking of injection and extraction volumes to ensure a net positive impact to the North American Subbasin and therefore improved groundwater reliability to the City of Roseville.

4

January 20, 2012

Terri Shirhall, Administrative Analyst
Roseville Environmental Utilities Department
2005 Hilltop Circle
Roseville, CA 95747

FAX: 916-774-5690

RE: Sun City Roseville Association Comments Concerning the Aquifer Storage and Recovery Project as Described in the City of Roseville ASR DEIR

Dear Ms. Shirhall:

Sun City Roseville (SCR) supports the aquifer storage and recovery (ASR) concept, set forth in DEIR project (SCH NO. 2009072018) in order to ensure that we can meet future water needs for critically dry years. The water reserve envisioned in the DEIR certainly is important to our 3,110 households occupied by our 5,000 residents and the life style they enjoy. 4-1

The Association's Governmental Affairs Committee reviewed the City's recently published Draft Environmental Impact Report (DEIR) and met with City representatives to discuss it. Our representatives were concerned by the view that planners found only two possible outcomes existed, i.e., the ASR program as set forth in the Draft DEIR or rely on straight well water to fill any future emergency needs. While supporting the overall ASR program, the Association feels that there exist other acceptable outcomes. We believe these outcomes lay somewhere between the draft DEIR criteria and the current surface water supply. 4-2

The Association has concerns in several areas.

1. Under the current DEIR plan, we are concerned whether there was adequate consideration given to calcium content in ASR water that could imbalance calcium intake for those on calcium augmentation type of medication. This is of more concern to an older population such as ours. 4-3

2. The Association has concerns whether the controlled environment for testing of Chromium and Chromium 6 content was scientifically adequate to establish safe standards. Specifically, were the samples correctly drawn from the proper point in the system and were they tested 4-4

within the timeframe necessary to determine whether they indeed met EPA recommended standards (See attachment).

3. We recommend consideration be given to preferentially supplying well water to the industrial zones before introducing ASR water to the residential zones. To facilitate this, we suggest drilling additional wells in those zones and/or pipe water into those zones from nearby wellheads. The Draft DEIR addresses neither of these concepts nor the need to consider them. 4-5

4. During the previous well water test, numerous complaints arose over water taste, smell, and aesthetics such as spotting. The DEIR appears to gloss over these areas by simply saying such water is safe. We do not believe that is an adequate response. In addition to those alternatives addressed elsewhere in this letter; we suggest: 4-6

   (a) That the City incorporates into its website a visual display of water quality that depicts when ASR water use is planned;
   (b) When it is in use;
   (c) Its hours of use;
   (d) A map showing the service area in which such water is being used;
   (e) The wells being used;
   (f) The amount of ASR water introduced into the system by wellhead; and
   (g) The reason for ASR use.

   The City website might also maintain an archived record of this information for customer access. The information depicted could display the water quality characteristics at any given time. The City could explain water filtration systems for homes and, minimally, what these can accomplish. It also could cite home filtration systems that meet or exceed the minimal criteria developed by the City. The City could develop a program to respond to Customer queries and this, along with a water filtration system program, could be an ongoing part of the City's ASR outreach program. 4-7

5. We suggest that the City develop a financial incentive program, e.g., a rebate to supplement customer cost for installing home water filtration systems that filter all water entering the home (home filtration and treatment system). 4-8

6. The Association raised the issue of fairness in our letter to the City dated December 17, 2010, e.g., will all Roseville residents use ASR water in time of need or only west Roseville citizens? The City responded in its January 11, 2011 reply that the nature of the City water system essentially precluded east Roseville from being subject to ASR water use. If that is the case, then the Association urges that every effort should be used to ensure that when ASR 4-9

water is used that it be made as nearly as possible to be invisible to the customer in taste, smell, aesthetics, such as hardness and minerals, and its likely effect on health. All Roseville citizens will benefit from an ASR program but not all will receive poorer quality water.

7. Historic documents discuss ASR water as a means of augmenting surface water supplies during periods of critically dry years. In recent public meetings, the City raised the issue of shaving. Shaving is described as introducing ASR water into the system during periods of critical need other than in critically dry years. Further defined, this included peak summer months. In meetings, City planners described the need for shaving as short periods in the summer to address current needs and later as only for peak periods once build out is attained. In either case, this appears to go well beyond the need described earlier by the City when asked by this Association. The Association believes that usage of ASR water normally should occur only in critically dry years and that shaving should follow. Our recommendation is that shaving should occur only when conservation methods (a mandatory 20% usage decrease) prove not sustainable and should be permitted only to maintain the system at acceptable standards. The City should not introduce ASR water to offset events such as usage for a fire, etc. as was suggested by City planners. 4-10

8. The Association feels that blending infrastructure should be installed at the wellheads to establish the capability to ensure satisfactory filtrated, blended, and treated water is introduced from the wellhead facilities into the City's water system. This would make water transition as invisible as possible. As structured, we believe the current DEIR draft is deficient for not addressing an alternative for above ground water tanks at or near the proximity of the various ASR wellhead facilities to accomplish blending. 4-11

9. The Association believes that future development should not encroach on the quality of life of current Roseville citizens. The DEIR suggests that use of ASR water would be a regular summer occurrence in all years and not just very dry years. We believe it reasonable that future growth areas should incur the use of ASR water prior to its introduction in already developed residential areas. Awareness of that by builders and buyers could be ensured up front. 4-12

10. The City planners advise that objectionable noise levels likely will occur from drilling wells. The Association believes that the City should advise residents living within a half mile of the drilling site in advance of said drilling and, where the noise is objectionable, the City should work with residents to mitigate the problem, e.g., temporary hotel rooms, and the like. 4-13

11. The Association suggests that the comment period be extended for an additional 60 days. We recommend that the City revise its Draft DEIR and satisfactorily address the matters raised. The Association thanks the City for meeting with our representatives on this issue. 4-14

Sincerely,

Jeanne Clark
President

cc: Roseville City Council
Ray Kerridge, Roseville City Manager
James Viele, Chairman, Public Utilities Commission, 311 Vernon Street, Roseville, CA 95678

Attachment: Remarks related to Chromium considerations

ATTACHMENT
THE DRAFT DEIR AND CHROMIUM ISSUES

Roseville Environmental Utility Department's data from Phase II Monitoring reports indicate that injected high quality surface water essentially is converted to lower quality ground water upon storage within the aquifer sediments and clays. This is reflected in the increased turbidity, total dissolved solids, and a large group of inorganic chemicals that were monitored. Among the inorganic elements, soluble Cr is of particular interest and concern. No soluble Cr was detected in treated surface water before it was injected into the Diamond Creek Well (DCW) and then stored. On its retraction, however, the total soluble Cr ranged from 3 to 7 ppb, typical of the baseline average 5.5 ppb of soluble Cr in the aquifer. These concentrations are far below the CAEPA and the USEPA allowed maximum concentration limits (MLC) of 50 ppb and 100 ppb, respectively. However, after the DCW Phase II ASR test was completed in mid-2008, the CAEPA office of Environmental Health Hazard Assessment issued a document in August 2009 in support of a public health goal (PHG) of only 2.5 ppb for soluble Cr (Cr3 plus Cr6), but only 0.06 ppb specifically for Cr 6 as safe levels in California drinking water. These marked downshifts were precipitated by recent studies by the U.S. National Toxicology Program and USEPA scientists. These showed that extremely low concentrations of Cr6 were mutagenic and clastogenic in human cells in vitro and that they were carcinogenic in lifetime drinking water studies in mice and rats. Further, standard water treatment chlorination was found to readily oxidize Cr3 to Cr6 in the expected drinking water pH range of 6 to 8.5. Consequently, new lowered maximum contaminate levels (MCL) rulings about total soluble Cr and the Cr6 valence form were expected from the USEPA in late 2011, but apparently is still under review. When this is adopted, CAEPA will follow with its limits, which often are lower than those established by the EPA under the regulatory authority of the Clean Water Act. 4-15

The Roseville City Council should not adopt the Draft DEIR on ASR until the issue is resolved of blending extracted aquifer stored water with treated surface water. We feel this is best done by temporary holding tanks with return piping. This should be incorporated into the planning and future operations of ASR in Roseville. Metered pump blending of surface treated water with extracted ASR water in an approximate ratio of 3 to 1 would achieve a 25% sparing of the former and, simultaneously, mitigate much of the unregulated but still undesirable lower quantities of the latter (higher particulates, TDS, and many soluble metal ions). Moreover, when MCL is lowered in the future, it could prevent having to remove a trace chemical at the ASR extraction wellhead. Cr could turn out to fit such a case. If the total soluble Cr standard were to drop from 50 ppb to even 2.5 ppb, e.g., a 3 to 1 blending of treated surface water with ASR extraction water containing the average 5.5 ppb total soluble Cr in the aquifer ground water still would satisfy the new standard without a need for any costly Cr removal technology.

5

Letter 4 Response	Jeanne Clark, President, Sun City Roseville Association January 20, 2012

4-1 Comment noted.

4-2 The commenter is supportive of ASR in general, but feels an outcome producing water quality somewhere between the proposed ASR Project and the City's current treated surface water supply would be more acceptable. Comment noted.

4-3 The commenter expresses concern about calcium content in ASR water, and possible effects on customers augmenting calcium with medication. Potential health effects from groundwater use during ASR operations is addressed under Impact 4.2-3 beginning on DEIR page 4-26. The DEIR notes that while calcium levels detected at the Diamond Creek Well Phase II Pilot Test were slightly higher than that measured in Roseville's treated surface water, because local groundwater supplies meet state and federal Primary drinking water standards, the potential for adverse health effects was found to be less than significant. Nevertheless, similar to sodium, consultation with a personal physician is recommended for anyone with special dietary needs and ongoing calcium concerns.

4-4 This comment expresses concern regarding adequacy of testing for chromium and chromium 6. See response to Topical Issue 7.

4-5 This comment suggests a project alternative that would supply ASR groundwater to industrial zones before residential zones. Chapter 3 of this Final EIR includes Alternative 7: Supply ASR Water to Industrial Zones Before Introducing ASR Water to Residential Zones. As discussed in Chapter 3, infrastructure constraints, and industrial user water quality requirements render this alternative infeasible. A comparison of the environmental impacts, infrastructure constraints, and feasibility of this alternative in relation to the proposed project is provided in Final EIR Chapter 3, and Topical Response 6. As discussed in these sections, even if the infrastructure constraints could be overcome, the required costs to provide two separate water supply and delivery systems would be prohibitive. Further, this alternative would not reduce any significant impacts of the proposed project. See also Topical Response 6.

4-6 This comment suggests that the DEIR insufficiently addresses concerns about of taste, smell, and aesthetics of groundwater. As discussed under Impact 4.2-2 on DEIR page 4-23, ASR extracted water is expected to comply with all state and federal Primary drinking water standards and consequently potential water quality impacts resulting from ASR operations were found to be less than significant. The DEIR recognizes that groundwater is typically harder than surface water because as water moves through soil and rocks it dissolves small

amounts of the naturally occurring minerals such as calcium and magnesium and carries them into the groundwater aquifer. The DEIR also recognizes that while hard water can be aesthetically unpleasing it does not pose a health risk or violate any enforceable state or federal standard. It should be noted that groundwater from the North American Subbasin is the primary potable supply source for approximately 60% of the population in the greater Sacramento region. Furthermore, as discussed on DEIR page 4-24, although local groundwater is harder than treated surface water, on average native groundwater falls between the "Recommended" and "Upper" Consumer Acceptance Contaminant Level Ranges for drinking water Secondary standards as shown in DEIR Table 4-2.

4-7 The commenter suggests the following:

(a) City incorporates into its website a visual display of water quality that depicts when ASR water use is planned;
(b) When it is in use;
(c) Its hours of use;
(d) A map showing the service area in which such water is being used;
(e) The wells being used;
(f) The amount of ASR water introduced into the system by the wellhead; and
(g) The reason for ASR use.

In addition the commenter suggests the City develop an ongoing outreach program for ASR including: an archived record of this information, accessible to customers that displays real-time water quality characteristics, information about water filtration systems for homes, and a program to respond to customer inquiries.

At this time staff anticipates ASR operational outreach will be combined with the existing Citywide drought notification process. During this process City water customers are advised of pending surface water supply cut backs and the need to implement water conservation practices. As part of ASR operations, the City's standard drought outreach program will be expanded to include notification of potential ASR operations including information on the above to the degree feasible based on information available at that time. The City will also investigate the potential for posting ASR related operational information and information on filtration systems on the City's website.

4-8 The City is not aware of any similar rebate program offered by any water purveyor in the Sacramento Region, including purveyors that rely on groundwater as their primary source of supply for daily use. Local groundwater meets all state and federal primary drinking water standards. Consequently staff questions the fiscal responsibility of offering a filtration rebate program, especially considering the frequency that ASR groundwater would be used. The

commenter's recommendation that the City offer a rebate program for home water filtration systems is acknowledged and forwarded to City Council for consideration. Additionally, the City is willing to consider the installation of water softeners on a case by case basis.

4-9 This comment raises the issue of fairness, and urges that every effort be made to minimize differences between ASR water and surface water. DEIR Alternative 4: Onsite Groundwater Treatment as ASR Wells, was developed in part to improve the aesthetic qualities of ASR groundwater by incorporating treatment prior to customer delivery (see DEIR section 4.6.4 beginning on page 6-21). This could be accomplished by incorporating onsite reverse osmosis treatment at each well site. As discussed in the DEIR, this alternative would generate additional space needs with related land use impacts and substantial infrastructure and operational costs exceeding $37,000,000. As a result this alternative was considered infeasible in the DEIR.

4-10 This comment expresses the Association's opinion that usage of ASR water normally should occur only in critically dry years and only when conservation is not sufficient to make up cut backs in surface supply. The proposed use of ASR water for peak shaving is explained in DEIR Section 2.2.4 Operational Parameters on page 2-19. Proposed peak shaving operational parameters are further amplified and clarified in Topical Response 2.

4-11 This comment states that the DEIR should have included an alternative for above ground water tanks near the well sites to accomplish blending. A comparison of the environmental impacts and feasibility of such an alternative in relation to the proposed project is provided above in Final EIR Chapter 3 Revisions to the Draft EIR. As discussed in Topical Response 6, this alternative would not reduce any significant impacts of the proposed project but would result in potentially significant visual and land use impacts. It would also be inconsistent with the project objective to maximize use of existing infrastructure to achieve the project objectives. This alternative is estimated to cost an additional $15,000,000 per well site/tank. As a result this alternative was considered infeasible.

4-12 As proposed, the ASR project would be implemented consistent with existing City General Plan policy. The comment suggests that future development should incur use of ASR water prior to existing residents. City policy has been to include groundwater wells in all new Specific Plan areas. Per General Plan policy, these wells are used to provide groundwater for back-up water supply. Infrastructure constraints would preclude the City from implementing the concept of routing ASR water to only the newest development. Nevertheless, the proposed policy for future growth areas to incur use of ASR water prior to its introduction in already developed residential areas is forwarded to the City Council for consideration.

4-13 This comment suggests the City notify residents in advance of well drilling, and

accommodate residents with hotel rooms, etc. where there is objectionable noise. Mitigation Measure 4.3-4: Provide Notice of Well Drilling Activities and Work With Neighbors has been added to the final EIR. See below and Final EIR Chapter 3, Revisions to the Draft EIR.

> *Mitigation Measure 4.3-4: Prior to well drilling the City will provide notice to all residents subject to noise impacts. The notice will include information about the need for 24-hour construction during a portion of the drilling phase, and the related noise, as well as information to contact the City with any concerns. The City will work with individual residents on an as-needed basis in the event that the drilling construction noise causes extenuating circumstances.*

4-14 Commenter requests that the DEIR comment period be extended by 60 days, and the DEIR be revised to reflect concerns raised in the letter. The draft EIR was made available for public review for 47 days exceeding the required 45 day public review period stipulated in the State CEQA Guidelines. As discussed in Chapter 3 Revisions to the Draft EIR, the draft EIR has been revised as appropriate to address concerns raised in this letter

4-15 This comment expresses concern regarding chromium in levels found in local groundwater and the potential for increased regulation of allowable chromium levels in drinking water. The comment suggests implementing above ground blending of ASR extracted water with surface water as a means of mitigating potential future chromium regulatory concerns while also addressing negative aesthetic qualities of groundwater (i.e., higher particulates, total dissolved solids and soluble metal ions).

See Topical Response 7 for a detailed response regard chromium and Topical Response 6 for detailed response regarding above ground blending alternatives. As discussed in these responses, the proposed ASR Program would meet all state and federal primary and secondary drinking water Maximum Contaminant Levels governing chromium. Because of the low level of Cr6 currently in the groundwater basin, the City does not anticipate violation of any future chromium MCL. In any event should chromium levels in ASR extracted groundwater exceed any future MCL, the source well would be removed from service and would not be returned to service until the well meets all MCLs (most likely through advanced wellhead treatment).

5

M. G. Taylor, III
7120 Firefly Green Lane
Roseville, CA 95747

Martin Kaufmann
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Carol Garcia, Councilmember
City Council
City of Roseville
311 Vernon St.
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City of Roseville
James Viele, Chairman
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311 Vernon Street
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Terri Shirhall
Administrative Analyst
Environmental Utilities Department
2005 Hilltop Circle
Roseville, CA 95747

January 22, 2012

THE DEIR FOR THE AQUIFER STORAGE AND RECOVERY PROJECT IS INADEQUATE. THE DEIR FAILES TO CONSIDER POTENTIALLY FEASIBLE PROJECT ALTERNATIVES

During the period spent preparing this letter we had numerous contacts with the staff of the Public Utility Department (PUD). We appreciate the time PUD staff spent helping us understand the City's water system and ASR alternatives. 5-1

We are dissatisfied with the alternatives evaluated in the Draft Environmental Impact Report (DEIR) and the proposed mitigation measures. As residents of Sun City Roseville (SCR) we are *seriously* concerned with how the proposed ASR project may affect us and our neighbors in west Roseville. 5-1

1. The City should approve some type of ASR Project. The DEIR clearly demonstrates the need for action to assure that the City has a reliable water supply during years when water delivery from the American River is curtailed. 5-2

2. The DEIR circumvents the purpose of CEQA. CEQA Guidelines provide that an EIR should serve not only to protect the environment but also to demonstrate to the public that it is being protected. (Section 15003(c)). 5-3

2.1 The DEIR was released in manner to minimize public review and input. The DEIR was released shortly before the Christmas/New Year holidays. The time for commenting on the DEIR ends on January 24, 2012. The limited notice of the availability of the DEIR, the timing of the DEIR release and the short comment period severely limited the opportunity to study and respond to the DEIR. 5-4

2.2 The proposed ASR project will materially degrade the quality of water delivered to SCR residents during dry years (even though *currently* applicable drinking water standards will be met). SCR residents experienced taste and odor problems during testing of the ASR project. The DEIR does not state what quality of water the ASR project will deliver to homeowners'. Test results show that, after several months in the ground, injected water begins to take on the chemical and mineral characteristics of the material deposited in the aquifer and ASR water may be used only once ever five to seven years. Thus, ASR injections into groundwater may not provide homeowners' with better quality water than that which is present in the aquifer. *Some means of controlling the quality of water delivered to homeowners' should be an integral part of any ASR project.* 5-5 5-6

2.3 The DEIR fails to consider potentially feasible project alternatives that could reduce the quantity of degraded water delivered to homeowners or that would improve the quality of groundwater delivered to homeowners. An EIR must consider a range of potentially feasible alternatives that will foster informed decision-making and public participation (Guidelines section 15126.) The DEIR considered only the most cost prohibitive alternatives to the preferred ASR alternative, for example: (A) piping all ASR water back to the water treatment plant, and (B) the creation of an extraordinarily large reservoir. Less costly alternatives should be considered and thoroughly analyzed. Such alternatives should include the following: 5-7

a. Locating ASR wells where poorer quality ASR water can be delivered to areas zoned for industrial use.

b. Filtration to remove particulate matter and plumbing to blend ASR water with water from the water treatment plant to improve water quality.

All Roseville residents will benefit from the proposed ASR project but not all residents will receive poorer quality ASR water. All City water users should be assessed for the cost of providing good water quality to all users in exchange for a reliable supply of water during dry years. The cost (poor water quality) of providing a reliable water supply during dry years should not be placed on only some water users. *Some means of controlling water quality should be an integral part of any ASR project.* 5-8

3. The DEIR should expressly provide that ASR water will be used only as a last resort. *During years when the delivery of water from the American River is curtailed, ASR water should be used only after the 20 percent mandatory City water conservation moratorium has been imposed on all water users.* 5-9

4. Homeowners residing near the drilling of ASR wells should be provided with alternate housing (motels). ASR well drilling will occur 24/7 for weeks at a time. Drilling noise cannot be fully mitigated. *Noise mitigation should include alternate housing for homeowners where interior noise levels exceed established City standards.* 5-10

Thank you for your consideration.

Respectfully,

M. G. Taylor, III

Martin Kaufmann

Cc: Derrick Whitehead
Environmental Utilities Director
Environmental Utilities Department
2005 Hilltop Circle
Roseville, CA 95747

Cathy Lee, Senior Engineer
Environmental Utilities Department
2005 Hilltop Circle
Roseville, CA 95747

4

Letter 5 Response	M.G. Taylor III, Martin Kauffman January 22, 2012
5-1	The commenter is dissatisfied with the DEIR Alternatives analysis and has serious concerns with how the proposed ASR project may affect west Roseville residents. This comment is noted and forwarded to the City Council for consideration. The EIR alternatives were developed based on comments received during the NOP comment period with a focus on reducing the identified significant effects of the proposed project. During the draft EIR comment period three additional alternatives and/or variations to draft EIR alternatives were identified. These alternatives are presented above in Topical Response 6 and in Final EIR Chapter 3, Revisions to the Draft EIR. These alternatives focus on addressing the "fairness" issue related to the aesthetic qualities of ASR water and what areas of the City receive this water under the ASR program. As discussed above in these sections, existing infrastructure, topography, and hydrogeologic conditions render these alternatives infeasible when compared to the proposed project and the identified project purpose, objectives, and costs.
5-2	Comment noted.
5-3	The commenter states that CEQA Guidelines Section §15003(b) provides that an EIR should serve not only to protect the environment but also to demonstrate to the public that it is being protected. This comment is acknowledged. In addition to examining environmental resources, DEIR Sections 4.2.2 and 4.3.3 also evaluate potential adverse impacts to the public (i.e., drinking water quality and noise impacts). The analysis assesses potential adverse effects to the public by applying adopted thresholds developed by local, state and federal agencies for the protection of public health. When potential public health impacts exceed adopted thresholds impacts are considered significant and mitigation is recommended to reduce the impact to less than significant.
5-4	The comment suggests that the timing of releasing the DEIR shortly before the Christmas/New Year holidays limited the opportunity to study and respond to the DEIR. Availability of the DEIR was noticed in accordance with CEQA §15087 (Public Review of Draft EIR). This included a public notice posted in the Roseville Press Tribune, announcements on the City's internet page and direct mailing of the DEIR Notice if Availability to Sun City Roseville, the Roseville Coalition of Neighborhood Associations (RCONA) and all interested parties that requested written notification. The DEIR public review period extended from December 9, 2011 through January 24, 2012 (47 days), which is in compliance with CEQA §15105 (Public Review Period for a Draft EIR, etc.) requirement for a minimum 45 day review period. To assist the public with

review of the DEIR the following meetings were also held:

- January 10, 2012, presentation to the Sun City Governmental Affairs Committee
- January 12, 2012, public workshop
- January 24, 2012, presentation to the Roseville Public Utilities Commission

Each of these meetings was open to the public and provided opportunity for questions and comment on the DEIR. In addition, as part of public outreach staff also offered to meet with any individual or group requesting a meeting. This included a (January 17, 2012) follow up meeting with the author's of this comment letter. Staff feels ample opportunity was provided for DEIR review and comment. The request for extension of the comment period is forwarded to City Council for consideration.

5-5 This comment states the ASR Program will degrade water quality delivered to Sun City Roseville (SCR) customers during dry years and that SCR residents experienced taste and odor problems during the Phase II test.

The DEIR recognizes that ASR extracted water, while meeting applicable state and federal Primary drinking water standards, may have lower aesthetic qualities (referred to as Secondary standards) when compared to the City's treated surface water supplies. It should be noted that Secondary standards used to assess certain aesthetic water qualities are not enforceable standards. As explained in the DEIR under Impact 4.2-2 (beginning on DEIR page 4-23), groundwater is typically "harder" than surface water because as water moves through soil and rocks, it dissolves small amounts of the naturally occurring minerals such as calcium and magnesium and carries them into the groundwater aquifer. Therefore during ASR operations, injected treated surface water can take on less desirable groundwater characteristics over time prior to extraction and delivery during ASR operations. While hard water does not pose a health risk, as the commenter points out it can be aesthetically unpleasing due to the mineral buildup or spotting on plumbing fixtures, shower doors, dishes, and glasses. It can also have undesirable odor and taste, although these attributes are considered subjective. While ASR water may be of a lower aesthetic quality as judged by some, it would meet all applicable Department of Public Health Primary drinking water standards.

5-6 The comment states that the DEIR does not identify the quality of the ASR water that would be delivered under the ASR program and concludes that some means of controlling the quality of ASR water delivered to homeowners should be an integral part of the ASR project.

The analysis contained under DEIR Impact 4.2-2 does identify as best as possible the quality of water that would be delivered under the ASR program. As discussed in the DEIR, groundwater is typically harder than surface water because of naturally occurring minerals found in the aquifer. The DEIR discloses that while local groundwater is considered "hard" and therefore can be aesthetically unpleasing, it meets all applicable Maximum Contaminant Levels (MCLs) for state and federal Primary drinking water standards and therefore does not pose a health risk it. Nevertheless, while local groundwater supplies meet Primary MCL standards, as shown in DEIR Table 4-2, there have been occasions when groundwater samples were found to exceed the "aesthetic" or Secondary MCLs for Consumer Acceptance. As explained in the DEIR, these Secondary Standards are not enforceable standards but rather are considered "guidelines" for predicting consumer acceptance.

Because treated surface water would be injected into the local aquifer for storage it's reasonable to expect that ASR extracted water will take on some degree of these less desirable characteristics. The DEIR discloses that groundwater extracted from City wells has been found to occasionally exceed Secondary standards for TDS and consequently it follows that water customers may perceive a decrease in the aesthetic qualities of ASR extracted water compared to treated surface water. The DEIR indicates the degree to which this change is noticeable will vary by individual, and depend on ASR Program operational factors including storage duration within the aquifer, rate of groundwater movement, and amount and rates of injection and extraction. In general, the longer the aquifer storage time the more pronounced difference in aesthetic qualities can be expected.

Several alternatives to control the quality of ASR extracted water prior to delivery to homeowners have been considered and evaluated in the final EIR. Also refer to Topical Response 6. However these alternatives were determined to be infeasible based on cost and the inability to meet project objectives.

5-7 The commenter states that the DEIR alternatives would not be feasible. The extent of feasibility is a discretionary determination that can only be made by the decision making body of the Lead Agency. The commenter suggests additional alternatives intended to reduce the amount of ASR water delivered to customers, or pre-treat the ASR water prior to delivering to customers. The City has provided a CEQA-level Alternatives analysis of the suggested alternatives (see

Chapter 3, Revisions to the DEIR, and Topical Response 6).

5-8 The commenter states that the costs of the ASR program ("poor water quality") would not be applied unilaterally to customers. Section 4.2.2 of the DEIR evaluates potential water quality impacts, and concludes that ASR water would meet all state and federal primary water quality standards. Additionally, DEIR Alternatives (Chapter 6.0) fully and adequately evaluate the options to route ASR water for treatment, and/or to deliver water to customers outside of the service areas of ASR well sites. Additionally, Topical Response 6 in this FEIR compares alternatives suggested by the commenter with the proposed project. The commenter's suggestion that a means of controlling water quality should be an integral part of the ASR project is forwarded to the City Council for consideration.

5-9 The commenter states that the DEIR should expressly provide that ASR water will be used only as a last resort. The extent to which ASR water is used is a matter of City policy. The DEIR evaluates potential environmental impacts of ASR (indirect and direct physical changes to the environment), and assumes the program will be operated consistent with the City's General Plan policy. According to City policy, water conservation measures would be implemented prior to use of ASR water during surface water cutbacks resulting from a drier or driest year.

5-10 The commenter states that noise mitigation should include provision of alternate housing (hotel stay) for residents exposed to the noise of well-drilling. Mitigation Measure 4.3-4: Provide Notice of Well Drilling Activities and Work With Neighbors has been added to the final EIR. This measure requires the City work with neighbors effected by well drilling noise and to offer alternatives to persons undergoing extenuating circumstances (See Chapter 3, Revisions to the DEIR).

6

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY EDMUND G. BROWN JR., GOVERNOR

CENTRAL VALLEY FLOOD PROTECTION BOARD
3310 El Camino Ave., Rm. 151
SACRAMENTO, CA 95821
(916) 574-0609 FAX: (916) 574-0682
PERMITS: (916) 574-2380 FAX: (916) 574-0682

December 28, 2011

Ms. Terri Shirhall
City of Roseville
2005 Hilltop Circle
Roseville, California 95747

Subject: [redacted] 2009072018 Notice of Completion of a Draft EIR

Dear Ms. Shirhall:

Staff for the Central Valley Flood Protection Board has reviewed the subject document and provides the following comments:

The proposed project is located within the jurisdiction of the Central Valley Flood Protection Board. The Board is required to enforce standards for the construction, maintenance, and protection of adopted flood control plans that will protect public lands from floods. The jurisdiction of the Board includes the Central Valley, including all tributaries and distributaries of the Sacramento River and the San Joaquin River, and designated floodways (Title 23 California Code of Regulations (CCR), Section 2). 6-1

A Board permit is required prior to starting the work within the Board's jurisdiction for the following:

- The placement, construction, reconstruction, removal, or abandonment of any landscaping, culvert, bridge, conduit, fence, projection, fill, embankment, building, structure, obstruction, encroachment, excavation, the planting, or removal of vegetation, and any repair or maintenance that involves cutting into the levee (CCR Section 6);
- Existing structures that predate permitting or where it is necessary to establish the conditions normally imposed by permitting. The circumstances include those where responsibility for the encroachment has not been clearly established or ownership and use have been revised (CCR Section 6); 6-2
- Vegetation plantings that will require the submission of detailed design drawings; identification of vegetation type; plant and tree names (i.e. common name and scientific name); total number of each type of plant and tree; planting spacing and irrigation method that will be utilized within the project area; a complete vegetative management plan for maintenance to prevent the interference with flood control, levee maintenance, inspection and flood fight procedures (Title 23, California Code of Regulations CCR Section 131).

In accordance with CEQA Guidelines Section 15130 "Discussion of Cumulative Impacts. (a) An EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable, as defined in section 15065(a)(3). Where a lead agency is examining a project with an incremental effect that is not "cumulatively considerable," the lead agency need not consider that effect significant, but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable."

Vegetation requirements in accordance with Title 23, Section 131(c) states, "Vegetation must not interfere with the integrity of the adopted plan of flood control, or interfere with maintenance, inspection, and flood fight procedures."

The accumulation and establishment of woody vegetation that is not managed has a negative impact on channel capacity and increases the potential for levee over-topping and flooding. When a channel develops vegetation that then becomes habitat for wildlife, maintenance to initial baseline conditions becomes more difficult, as the removal of vegetative growth is subject to federal and state agency requirements for on-site mitigation within the floodway. 6-2

Hydraulic impacts – Hydraulic impacts due to encroachments could impede flows, reroute flood flows, and/or increase sediment accumulation. The Draft EIR should include mitigation measures for channel and levee improvements and maintenance to prevent and/or reduce hydraulic impacts. Off-site mitigation outside of the State Plan of Flood Control should be used when mitigating for vegetation removed within the project location.

The permit application and Title 23 CCR can be found on the Central Valley Flood Protection Board's website at http://www.cvfpb.ca.gov/. Contact your local, federal and state agencies, as other permits may apply.

Should you have any further questions, please contact me by phone at (916) 574-0651, or via email at jherota@water.ca.gov .

Sincerely,

James Herota
Staff Environmental Scientist
Floodway Projects Improvement Branch

cc: Governor's Office of Planning and Research
State Clearinghouse
1400 Tenth Street, Room 121
Sacramento, California 95814

Letter 6 Response	Central Valley Flood Protection Board December 28, 2011
6-1	Comment noted.
6-2	The commenter lists a range of actions required to comply with California Code of Regulations pertaining to flood protection. The City of Roseville is committed to working with the Central Valley Flood Protection Board to ensure that actions associated with the project such as grading, landscaping, or vegetation removal would necessarily be in compliance with state law.

7

DEPARTMENT OF TRANSPORTATION
DISTRICT 3
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MARYSVILLE, CA 95901-0911
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Flex your power!
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January 20, 2012

032011PLA0041
03-PLA-80
City of Roseville Aquifer Storage and Recovery Program
Draft Supplemental Environmental Impact Report
SCH # 2009072018

Terri Shirhall
City of Roseville Environmental Utilities Department
2005 Hilltop Circle
Roseville, CA 95747

Dear Ms. Shirhall:

Thank you for the opportunity to review and comment on the Draft Supplemental Environmental Impact Report (DEIR) for the City of Roseville Aquifer Storage and Recovery Program. This project is a Capital Improvement Program project proposed by the City of Roseville at various locations within the City to improve water supply reliability, maintain groundwater as a sustainable resource, improve operational flexibility, and meet regional conjunctive use program goals. Our comments are as follows:

- This Aquifer Storage and Recovery project will not have a significant traffic impact to the State Highway when it is completed. As identified by the DEIR, the trip generation is approximately one round trip per well daily, which would not constitute a significant increase in vehicle trips. However, there could be some traffic impacts during construction.
- The traffic impact is dependent on the construction of the wells. If the City plans to construct all 16 wells at once, there will be traffic impacts and a Traffic Management Plan (TMP) should be prepared by the project sponsor to minimize impacts. If the city chooses to spread the construction of the wells to a few at a time, then there will be no traffic impact and a TMP is not needed.

7-1

For more information on the contents of a Traffic Management Plan visit http://northregion.dot.ca.gov/Traffic/traffic_management_planning.php or contact Sergio Aceves at (530) 741-5728 or email sergio_aceves@dot.ca.gov.

Please provide our office with copies of any further action(s) related to this project. If you have any questions regarding these comments, please contact the Placer County Intergovernmental Review Coordinator, Dianira Soto, by email at dianira_soto@dot.ca.gov or by phone at (530) 740-4905.

Sincerely,

Richard Helman

RICHARD HELMAN, Chief
Office of Transportation Planning—North

"Caltrans improves mobility across California"

Letter 7 Response	California Department of Transportation January 20, 2012
7-1	The commenter notes that a potential traffic impact could occur in the event all proposed ASR wells were constructed simultaneously. Chapter 2.0, Project Description, of the DEIR includes information about the timing of well construction, and whether or not they have already been drilled. The proposed timing of well construction ensures that construction would not occur at one time, and therefore would not result in cumulative traffic impacts.

8

MIWOK MAIDU

United Auburn Indian Community
of the Auburn Rancheria

David Keyser, Chairman | Kimberly DuBach, Vice Chair | Gene Whitehouse, Secretary | Brenda Conway, Treasurer | Calvin Moman, Council Member

January 11, 2012

Cathy Lee
Environmental Utilities Department
311 Vernon Street
Roseville, California 95678

Subject: Aquifer Storage and Recovery (ASR) Project Draft Environmental Impact Report (DEIR)

Dear Ms. Lee,

Thank you for initiating formal consultations with the United Auburn Indian Community (UAIC) of the Auburn Rancheria. The UAIC would like to consult on the proposed Aquifer Storage and Recovery (ASR) Project Draft Environmental Impact Report (DEIR). The UAIC is comprised of Miwok and Nisenan (Southern Maidu) people whose tribal lands are within Placer County and ancestral territory spans into Eldorado, Nevada, Sacramento, Sutter, and Yuba counties. The UAIC is concerned about development within its aboriginal territory that has potential to impact the lifeways, cultural sites, and landscapes that may be of sacred or ceremonial significance. We appreciate the opportunity to comment on this and other projects in your jurisdiction.

We would like to make a few general points for consideration in developing the scope and content of the ASR Project DEIR:

- The UAIC recommends that projects within the ASR Project DEIR jurisdiction be designed to incorporate known cultural sites into open space or other protected areas;
- The UAIC is interested in holding conservation easements for culturally significant prehistoric sites;
- The UAIC would like the opportunity to provide Tribal representatives to monitor projects if excavation and data recovery are required for prehistoric cultural sites, or in cases where ground disturbance is proposed at or near sensitive cultural resources;
- The UAIC is interested in receiving cultural materials from prehistoric sites where excavation and data recovery has been performed;
- The UAIC would like to receive copies of environmental notices and documents for projects within the jurisdiction of the ASR Project DEIR;

8-1

Tribal Office 10720 Indian Hill Road Auburn, CA 95603 (530) 883-2390 FAX (530) 883-2380

MIWOK
MAIDU

United Auburn Indian Community
of the Auburn Rancheria

David Keyser	Kimberly DuBach	Gene Whitehouse	Brenda Conway	Calvin Moman
Chairman	Vice Chair	Secretary	Treasurer	Council Member

- The UAIC would like to receive all confidential cultural and archaeological reports within the jurisdiction of the ASR Project DEIR. 8-1

Thank you in advance for taking these matters into consideration, and for involving the UAIC in the planning process as early as possible. We look forward to meeting with you in the near future, and to reviewing the FEIR upon its completion. Please contact Marcos Guerrero, Tribal Historic Preservation Officer, at (530) 883-2364 or email at mguerrero@auburnrancheria.com, if you have any questions or to schedule a meeting.

Sincerely,

Gregory S. Baker
Tribal Administrator

CC: Marcos Guerrero, THPO

Letter 8 Response	United Auburn Indian Community January 11, 2012
8-1	The commenter provides recommended actions, and requests involvement of Tribal representatives where appropriate, to prevent adverse effects to historic resources. The Initial Study prepared for the Notice of Preparation analyzes potential impacts relating to cultural resources. The Initial Study references the City's Construction Standards, which would apply to construction of the proposed project, and include procedures to be applied should archeological resources be present, or discovered.

[i] Placer County Community Health Department. Communicable Disease Control Division. (530) 889-7141. March 1, 2012.

CHAPTER 3.0
REVISIONS TO THE DRAFT EIR

The following revisions are incorporated in the Final EIR to correct typographical errors, make changes in response to public comments on the Draft EIR, or to provide updated or corrected text as a result of new information that became available. Specific deletions are indicated by ~~strikeout text~~, and additions to the Draft EIR are shown in underline. These corrections and revisions are provided on the following pages in the same order as presented in the Draft EIR.

Chapter 3.0, Summary of Impacts and Mitigation Measures, Table 3-1, beginning on page 2-5 of the Draft EIR is revised on the following pages:

TABLE 3-1: SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact Statement	Mitigation Measure	Significance Before Mitigation	Significance After Mitigation
4.1 Hydrology and Water Quality			
4.2-1: POTENTIAL CHANGES TO GROUNDWATER QUALITY – Injection Water	No mitigation is required.	LTS	LTS
4.2-2:POTENTIAL CHANGES TO DRINKING WATER QUALITY – Extracted Water .	No mitigation is required.	LTS	LTS
4.2-3: POTENTIAL HEALTH EFFECTS FROM GROUNDWATER USE Effects to Taste, Odor and Aesthetics ~~(Secondary Drinking Water Standards)~~	ASR water would meet all primary potable water quality standards for public water systems. While customers may notice a decrease in aesthetic, or secondary standards, these would be considered adverse but less than significant impact as the secondary standards are not enforceable, but rather are guidelines for predicting consumer acceptance. Therefore, the potential for decreased secondary standards would be considered adverse, but would not trigger a CEQA threshold that would be categorized as a significant impact.	LTS	LTS

Impact Statement	Mitigation Measure	Significance	
		Before Mitigation	After Mitigation
Noise			
4.3-1:Short Term Drilling Noise Levels at Nearest Residences. Implementation of the proposed project would result in well drilling noise in the vicinity of the Woodcreek West, Del Webb and Hewlett Packard well sites. The predicted noise levels at the adjacent residences range between 75 dB and 78 dB Leq. Therefore, the noise levels would exceed the nighttime noise level standard of 45 dB Leq by approximately 30 dB. Although well drilling activities are temporary (expected to occur for no more than one to two weeks) the noise levels would be substantial and would be a cause for annoyance. This is considered to be a potentially significant impact.	**4.32-1:** Use of sound attenuation measures during well drilling operations. One such method to reduce noise levels is to erect a temporary sound barrier on the sides facing the residences. An example would be barriers such as noise blanket panels mounted to steel framing. Noise blanket panels can be mounted horizontally or vertically and attached to vertical steel I-beam supports. Such barriers can reduce overall noise levels by approximately 17 dB. ~~**4.2-2***: Under §9.24.140 of the City of Roseville Noise Ordinance, the City Council can, by resolution, adopt a temporary noise level standard of 50 dB Leq during the drilling operations. This noise level is adequate to allow a reasonable interior environment for sleeping in urban areas. Based on typical construction, the exterior to interior noise level reduction is expected to be 25 dB, with closed windows and doors. With implementation of MM4.2-1 the interior noise levels are expected to be approximately 43 dB to 46 dB Leq.~~ **4.3-4:** Mitigation Measure 4.3-4: Prior to well drilling the City will provide notice to all residents subject to noise impacts. The notice will include information about the need for 24-hour construction during a portion of the drilling phase, and the related noise, as well as information to contact the City with any concerns. The City will work with individual residents on an as-needed basis in the event that the drilling construction noise causes extenuating circumstances.	PS	SU

Impact Statement	Mitigation Measure	Significance	
		Before Mitigation	After Mitigation
4.3-2: Temporary Construction-Generated Noise Levels at Nearest Residences. The City's Noise Ordinance would be enforced and would restrict top-side construction activities between 7 a.m.-7 p.m. Monday through Friday and 8 a.m. – 8 p.m. Saturday and Sunday, hours that are exempt from applicable noise standards. ~~Implementation of the proposed project would result in short-term construction activities associated with individual development projects in the Plan area. These construction activities could potentially expose sensitive receptors to noise levels in excess of the applicable noise standards and/or result in a noticeable increase in ambient noise levels. Therefore, this impact is considered potentially significant.~~	No mitigation is required~~. **4.2-3:** Short-Term Construction-Generated Noise Levels:~~ ~~Although impacts related to short-term construction-generated noise were considered to be less than significant with implementation of the project, the following mitigationis is provided to ensure impacts remain at a less-than-significant level.~~ ~~Construction contractors shall implement the following measures during construction activities:~~ ~~• Construction equipment shall be properly maintained per manufacturers' specifications and fitted with the best available noise suppression devices (i.e., mufflers, silencers, wraps, etc). Shroud or shield all impact tools, and muffle or shield all intake and exhaust ports on power equipment.~~ ~~• Construction operations and related activities associated with the proposed project shall comply with the operational hours outlined in the City of Roseville Municipal Code Noise Ordinance; construction operations shall be limited to between the hours of 7 a.m. and 7 p.m. Monday through Friday and between 8 a.m. and 8 p.m. Saturday and Sunday.~~ ~~• Construction equipment should not be idled for extended periods of time in the vicinity of noise-sensitive receptors.~~ ~~• Locate fixed and/or stationary equipment as far as possible from noise sensitive receptors (e.g., generators, compressors, rock crushers, cement mixers). Shroud or shield all impact tools, and muffle or shield all intake and exhaust ports on powered construction equipment.~~ ~~• Where feasible, temporary barriers shall be placed as close to the noise source or as close to the receptor as possible and break the line of sight between the source and receptor where modeled levels exceed applicable standards. Acoustical barriers shall be constructed material having a minimum surface weight of 2 pounds per square foot or greater, and a demonstrated Sound Transmission Class (STC) rating of 25 or greater as defined by American Society for Testing and Materials (ASTM) Test Method E90. Placement, orientation, size, and density of acoustical barriers shall be specified by a qualified acoustical consultant~~.	LTS	LTS

Impact Statement	Mitigation Measure	Significance	
		Before Mitigation	After Mitigation
4.3-3: Well Pump (Operational) Noise Levels. ~~Implementation of the proposed project would result in increases in stationary source noise associated with the proposed residential and commercial land uses. These stationary noise sources could potentially exceed the City's noise standards (hourly and maximum) and result in a noticeable increase in ambient noise levels.~~ Without attenuation, well pump operational noise levels would exceed the City's nighttime noise level standard of 45 dB leq at residences located nearest to the Woodcreek West, Del Webb, Hewlett Packard and Hayden Parkway well sites, which is considered a potentially significant impact.	**4.2-34:** Reduce noise levels associated with the well pump by providing a full or partial enclosure. The enclosure can take the form of a block house or surrounding barrier designed to accommodate a pump motor 5-feet in height, and elevated off the ground by 18 inches. A full enclosure with a roof would sufficiently reduce noise levels, however, ventilation openings should be located on the side of the building opposite the nearest residences. If a traditional barrier is constructed around the well site, it would need to be a minimum of 8-feet in height. A variety of suitable sound attenuation options would be available. In order to ensure that sound levels are adequately mitigated, a qualified acoustical expert shall be consulted regarding placement, orientation, size, and density of acoustical barriers.	PS	LTS
4.3-4: Ground-Borne Noise and Vibration Levels at Sensitive Receptors. Implementation of the proposed project could result in exposing sensitive noise-receptors to ground-borne noise and vibration levels during well drilling. These ground-borne noise and vibration levels could result in annoyance or architectural/structural damage. Based on the extent of ground-borne vibration during drilling of previous wells, the distance of adjacent development, and the absence of historic architectural resources. ~~Therefore,~~ this impact is considered ~~potentially~~ less than-significant.	No mitigation is required~~. Based on the extent of ground-borne vibration during drilling of previous wells, the distance of adjacent development, and the absence of historic architectural resources, this impact would be less than significant.~~	~~P~~LTS	LTS

Impact Statement	Mitigation Measure	Significance	
		Before Mitigation	After Mitigation
4.3 Impacts Previously Identified as Less than Significant in the NOP/Initial Study (Appendix A)			
– Aesthetics – Agricultural Resources – Air Quality – Greenhouse Gas Emissions and Global Climate Change – Biological Resources – Cultural Resources – Geology, Soils and Seismicity – Hazards and Hazardous Materials – Land Use Planning – Mineral Resources – Public Services – Traffic and Circulation – Transportation and Circulation – Utilities and Service Systems			
5.0 CEQA Considerations			
5.2.3 Potentially Growth Inducing Impacts		PS	PS

4.3 Noise

The following mitigation measure is inserted into Section 4.3.4, Mitigation Measures, on Page 4-49 of the Draft EIR:

4.3-4: Mitigation Measure 4.3-4: Prior to well drilling the City will provide notice to all residents subject to noise impacts. The notice will include information about the need for 24-hour construction during a portion of the drilling phase, and the related noise, as well as information to contact the City with any concerns. The City will work with individual residents on an as-needed basis in the event that the drilling construction noise causes extenuating circumstances.

Page 4-46 is revised as follows:

(Third paragraph)This method of sound attenuation will be applied to the project as Mitigation Measure 4.3~~2~~-1.

(Fourth paragraph) With implementation of MM4.3~~2~~-1, the interior noise levels are expected to be approximately 43 dB to 46 dB $L_{eq.}$

Page 4-48 is revised as follows:

The long term operation of the wells and pump stations will comply with the City of Roseville Noise Ordinance because pump stations will incorporate sound attenuation features ~~be soundproofed~~, using a variety of methods, to meet the City's exterior noise level standards. This impact would be mitigated to less than significant.

The following three project alternatives and related information and analysis is added to Draft EIR Chapter 6, Section 6.4 Alternatives Considered in this EIR:

Alternative 5: Pump ASR Extracted Groundwater to the East Side of Town to Blend with Treated Surface Water and Deliver Equally throughout the City. Estimated Cost $35-45 Million

This alternative would address the comment suggesting that ASR water be distributed more equitably throughout the City. Distribution of ASR water to the eastern half of the City would require construction of a pump station, and pipelines extending from ASR well sites east to Sierra College. The cost range would be 40 to 60 million dollars. Constraints and environmental impacts that would potentially result from construction of pipelines and a pump station are described below.

Land Use
The extent of potential land use impacts would depend on the location of the well site, pump station, and pipelines. Potential land use impacts could include the need to acquire and rezone property, and/or relocate existing land uses. Pipelines would primarily be located in roadways, however space constraints could be an issue due to existing pipelines/other infrastructure in roadways. These improvements would therefore have greater potential for land use impacts compared to the proposed project.

Transportation
Construction of pipeline distribution infrastructure, which would occur primarily within roadways, would increase temporary disruptions to traffic circulation compared to the proposed project.

Air Quality and Climate Change
Due to the pump station and pipeline system, construction emissions would be greater than the project. Additionally, operation of the pump station would generate carbon emissions due to energy demands.
Noise: Temporary construction

Cultural and Biological:
This alternative would entail considerably more construction than the proposed project, and therefore increased potential for impacts to cultural and biological resources. Potential impacts would depend on the alignment of the infrastructure.

Utilities
Compared to the proposed project, which relies on existing infrastructure, this alternative would require increased infrastructure, operational, and rehabilitation costs of for the pump station and pipelines, that would have limited use over time.

Water Quality
This alternative would address the comment suggesting that ASR water be distributed equally throughout the City.

Discussion of Consistency with City Policy and Project Objectives
Similar to the proposed project , implementation of this alternative would meet the project objective of ensuring additional water supply reliability, and meeting regional conjunctive use goals for groundwater protection. The alternative would not meet the project objective to maximized use of existing City infrastructure.

Conclusion
This alternative would address the issue of distributing ASR water to a broader geographic area, rather than almost exclusively to the western half of the City. Comments received included concerns about secondary drinking water standards for taste, odor, and aesthetics, associated with the proposed project, and equitable distribution of the service area that would receive the ASR water. This alternative does not mitigate the potentially significant effect of noise during

well drilling. The pump station and pipelines would add substantial cost and would not be consistent with the project objective to use existing infrastructure.

Alternative 6: Construct Storage Tanks at Well Sites to Facilitate Blending ($77 million)

This alternative would address the commenter's desire to achieve a 50/50 blend of surface water and groundwater by using storage tanks to store and blend water. This responds to concerns about secondary drinking water standards for taste, odor, and aesthetics, associated with the proposed project. To effectively store and blend water would require a 2 million gallon tank and pump station at each well site, at a cost of approximately $7 million per site, at total of $77 million. Constraints and environmental impacts that would potentially result from construction of storage tanks are described below.

Aesthetics
Given the 2 million gallon tank size and pump stations needed for this alternative, there would be potential aesthetic benefits associated with these alternatives (See Figure 1). Well sites vary in terms of surrounding land uses, so the potential for aesthetic impacts would on a project-specific basis.

Land Use
Well sites are located on sites dedicated specifically for wells (e.g., typical well structures are approximately 1,300 sq. ft.) The footprint for a 2 million gallon storage tank and pump station would require approximately one acre. Well sites vary in terms of surrounding land uses. Due to the land area needed for this alternative, compared to the proposed project, adding storage tanks would present potential land use conflicts.

Transportation
Construction of storage tanks and pump stations would increase the duration of construction compared to the proposed project, and consequently the potential for extended construction-related traffic.

Air Quality and Climate Change
Construction of a storage tanks and pump stations would increase the duration of construction compared to the proposed project, and consequently the potential for construction-related air quality impacts. Additionally, due to the need to pump water to and from the storage tanks, this alternative would require higher energy use, and consequent pollutant emissions, compared to the proposed project.

Cultural and Biological Resources
To accommodate storage tanks, this alternative would require considerably larger land area compared to the proposed project. Most well sites are located in or adjacent to open space preserve areas, which are protected by conservation easements that restrict development

activities, with the intent to maintain the natural biological values in perpetuity. Modifying the easement restrictions would require approval by federal agencies, which, in staff's opinion, is unlikely. The alternative would be to acquire nearby entitled lands at significantly higher costs. Similarly, the increased land area would also increase the potential for impacts to cultural resources.

Utilities
This alternative would require maintenance, monitoring, and general oversight of the storage tanks, pump stations, and ratio of surface water to groundwater. Therefore, the demand for utility services would be greater compared to the proposed project.

Water Quality
This alternative responds to concerns about secondary drinking water standards for taste, odor, and aesthetics, associated with the proposed project, by "blending" surface water and groundwater. See discussion No. 3, Water Quality and Blending, below.

Discussion of Consistency with City Policy and Project Objectives
Similar to the proposed project, implementation of this alternative would meet the project objective of ensuring additional water supply reliability, and meeting regional conjunctive use goals for groundwater protection. The alternative would not meet the project objective to maximized use of existing City infrastructure.

Conclusion
This alternative would address the issue of blending at well sites to ensure that the aesthetic quality of ASR water is comparable to surface water. Comments received included concerns about secondary drinking water standards for taste, odor, and aesthetics, associated with the proposed project. This alternative does not mitigate the potentially significant effect of noise during well drilling. The additional storage tank(s), pump station(s) and pipelines would add substantial cost and would not be consistent with the project objective to use existing infrastructure.

Alternative 7: Supply ASR Water to Industrial Zones before Introducing ASR Water to Residential Zones (Operationally Infeasible)

This alternative would address the commenters' desire to preferentially supply well water to industrial customers before distributing to residential customers. The comment suggests drilling additional wells in industrial areas and/or constructing pipelines from nearby wells to preferentially supply ASR water to industrial customers before supplying to residential customers. This alternative would require isolating the North Industrial Area (bounded on the

east by Industrial Blvd. and Highway 65, on the west by Woodcreek Oaks Blvd., on the south by the Woodcreek Golf Course and Industrial Blvd., and on the north by the City's northern boundary). Conceptually, this would allow delivery of ASR water to this area prior to delivery to residential areas. This would also entail constructing wells if new suitable well sites are available, or constructing pipelines from existing and planned wells to deliver water to the industrial zone.

As defined, this alternative would require isolating the industrial zone water supply infrastructure. This is not a realistic design approach for water system distribution. Ideally, distributions systems are designed as a looped system with multiple redundancies to ensure transmission reliability and operational flexibility.

Although the Alternative is not practicable from an engineering perspective, constraints and environmental impacts that would otherwise potentially result are described below.

Aesthetics

Municipal wells are generally unobtrusive, as typical well structures are approximately 1,300 square feet. Water pipelines are located underground, typically within roadway right-of-way. The potential for aesthetic impacts would be evaluated on a project-specific basis, and would be generally similar to the proposed project. The potential for significant aesthetic impacts is unlikely.

Land Use

Currently, no well sites are located in the North Industrial Area. The closest wells are the Hewlett Packard (not yet constructed and Woodcreek North wells. Due to the nature and minimal size of well sites, similar to the proposed project, the potential for land use conflicts is unlikely.

Transportation

The potential for extended duration of construction compared to the proposed project would depend on the presence of well sites, and the required infrastructure to deliver water to the industrial area. There could be temporary traffic delays should it be necessary to construct pipelines in the roadway. Consequently, these factors would determine the potential for extended construction-related traffic compared to the proposed project.

Air Quality and Climate Change

The potential for extended duration of construction compared to the proposed project would depend on the presence of appropriate locations for well sites, and the required infrastructure to deliver water. Additionally, due to the potential need to pump water to the industrial area, this alternative could require higher energy use, and consequent pollutant emissions, compared to the proposed project.

Cultural and Biological Resources

No well sites are currently operational in areas zoned for industrial land uses. The potential for cultural and biological resource impacts would depend on the presence of appropriate locations for well sites, and the required infrastructure to deliver water. Similar to the proposed project, appropriate mitigation measures would be applied to minimize or prevent impacts to cultural and biological resources.

Utilities

This Alternative would essentially retrofit and operation of two separate water supply and delivery systems. As stated above, this is not a realistic design approach for water system distribution. Water distribution systems are designed as a looped system with multiple redundancies to ensure transmission reliability and operational flexibility. Isolating the Industrial Area would substantially reduce reliable water delivery to areas west of the North Industrial Zone.

Water Quality

City understands concerns of residents regarding aesthetic qualities of ASR water. Industrial users require high quality water for industrial processes. Industrial users provide economic contributions to the City that enable the City to provide high quality services (for example, police and fire). Given the short periods of time ASR water would be delivered to residents, continuing to maintain those high quality services outweighs temporary inconveniences to residential customers.

Discussion of Consistency with City Policy and Project Objectives

Similar to the proposed project, implementation of this alternative would meet the project objective of ensuring additional water supply reliability, and meeting regional conjunctive use goals for groundwater protection. The alternative would not meet the project objective to maximize use of existing City infrastructure.

Conclusion

As discussed above, isolating a service area is not a desirable design for water system reliability and operational efficiencies. Isolating a service area would increase project costs and long-term system maintenance.

This alternative is rejected due system constraints, and high costs associated with providing a relatively minor benefit of delaying ASR delivery to residential customers.

CHAPTER 4.0
REPORT PREPARATION

1.1 Lead Agency

City of Roseville, Environmental Utilities Department

- Cathy Lee, Senior Engineer
- Terri Shirhall, Administrative Analyst II

City Manager's Office and Development

- Mark Morse, Environmental Coordinator

1.2 Subconsultants

Aquaveo, LLC
Heatwave Data
j.c. brennan & associates, inc. (Noise Consultants)

5.0 APPENDICES

Appendix A: Minutes of the January 24th PUC Minutes and Attachment (Frequently Asked Questions Hexavalent Chromium [Chromium-6] in Drinking Water

CITY OF ROSEVILLE CALIFORNIA

APPROVED: February 28, 2012

MINUTES
Public Utilities Commission
January 24, 2012
7:00 p.m.

Council Chambers
311 Vernon Street
Roseville, CA 95678

1. Roll Call

PUC Commissioners Present:	Gretchen Hildebrand Bruce Houdesheldt Joe McCaslin Tom O'Meara Bruce Scheidt Jim Viele
PUC Commissioners Absent:	Tom Barrington
	Chair Viele excused the absence of Commissioner Barrington.
	Chair Viele excused Commissioner Scheidt's absence at the November 22, 2011 meeting
Staff Present:	Derrick Whitehead, Environmental Utilities Director Cathy Lee, Environmental Utilities Senior Engineer Terri Shirhall, Environmental Utilities Administrative Analyst Mark Morse, Environmental Coordinator Ed Kriz, Water Utility Manager Kelye McKinney, Environmental Utilities Engineering Manager Jim Mulligan, Environmental Utilities Principal Engineer Michelle Bertolino, Electric Utility Director Mike Wardell, Power Supply Manager Shannon McCann, Electric Analyst Dave Brown, Assistant Electric Utility Director, Distribution Mike Bloom, Assistant Electric Utility Director, Planning & Services Joseph Mandell, Deputy City Attorney

2. Pledge of Allegiance

3. Minutes of November 22, 2011

The minutes of November 22, 2011 were approved as amended.

4. Oral Comments/Public Comment

None.

5. New Business

a. Environmental Utilities Monthly Update

Report by Environmental Utilities Director Derrick Whitehead summarizing monthly status of Environmental Utilities issues, for information

b. Aquifer Storage and Recovery Draft Environmental Impact Report (DEIR)
Public Hearing to accept public comments on the DEIR. Presentation by Environmental Utilities Director Derrick Whitehead on the Aquifer Storage and Recovery Draft EIR, for recommendation.

Derrick Whitehead presented the staff report and responded to questions.

Chair Viele opened the public hearing and invited comments from the audience.

Buck Taylor, 7120 Firefly Green Lane

Mr. Taylor asked if water injected into the well would be used during critically dry years and following a 20% conservation level.

Derrick Whitehead confirmed that ASR would be used in critically dry years and would also be used to fill any shortfall in water supply (during a drought or emergency) after 20% conservation levels have been met.

Mr. Taylor asked if ASR water would be used to meet peak demands and also after a 20% conservation level.

Derrick Whitehead explained that when using wells for peaking, surface water injected into the aquifer and is stored for a significantly shorter duration of time prior to extraction. In essence it is like storing treated surface water in tanks not acquiring the characteristics of groundwater.

Commissioner Discussion:

- Possibility of financial option with other cities for water supply
- Impact on East Roseville versus West Roseville
- Peaking – timing and notification; would probably not be utilized until closer to buildout
- ASR not the primary source of water
- Suggested that Information on Chromium 6 be added to record for Council
- ASR schedule beyond PUC Approval
- Sun City Well
- Treatment of groundwater and ASR injected water

MOTION

Commissioner McCaslin made the motion, which was seconded by Commissioner Scheidt to accept comments received during the 46 day comment period, both oral and written, on the draft environmental impact report for the Aquifer Storage and Recovery Project, and to direct staff to incorporate all comments, with appropriate responses, into a final environmental impact report to be forwarded with Public Utilities Commission recommendation to the City Council for their review and approval.

The motion passed with the following vote:
Ayes: Hildebrand, Houdesheldt, McCaslin, O'Meara, Scheidt, Viele
Noes:
Abstain:

c. Roseville Electric Utility Monthly Update
Report by Electric Utility Director Michelle Bertolino summarizing monthly status of Electric issues, for information.

d. Roseville Electric Utility Deep Well Injection Update
Presentation by Power Plant Manager Russ Nichols on the status of the Deep Well Injection Project, for information.

This item was continued to the next meeting

e. Roseville Electric Utility Integrated Resource Planning
Presentation by Power Supply Manager Mike Wardell and Electric Analyst Shannon McCann on the Integrated Resource Plan, Description Situational Analyses and Recommendations, for information.

6. Reports – Commission/Staff

None.

7. Adjournment

Commissioner Hildebrand moved for adjournment of the January 24, 2012 Public Utilities Commission meeting. Commissioner O'Meara seconded the motion. The motion passed unanimously at 8:35 p.m.

Jim Viele
Chair

Karen Sainsbury
Recording Secretary

Frequently Asked Questions (FAQs): Hexavalent Chromium (Chromium-6) In Drinking Water

July 27, 2011

The following questions and answers are intended to address issues and concerns surrounding Public Health Goals, Maximum Contaminant Levels, and detections of hexavalent chromium in drinking water, and steps CDPH and its regulatory partners are undertaking to ensure public health protection.

Background:

California is required by law to adopt drinking water standards that are no less stringent than U.S. EPA's federal standards. In addition, in the absence of a federal standard, California may establish its own drinking water standards. A drinking water standard, called a maximum contaminant level (MCL), establishes a limit on the concentration of a contaminant in drinking water. MCLs are typically set at concentrations of 'parts per million' (ppm) or 'parts per billion' (ppb).

Currently, there is no federal or state MCL specific to the hexavalent form of chromium. Hexavalent chromium is regulated in drinking water through the establishment of a total chromium MCL (hexavalent chromium is one of the forms of chromium making up total chromium). In California, the total chromium MCL is 50 ppb, while the federal MCL is 100 ppb. At the time total chromium MCLs were established, ingested hexavalent chromium associated with consumption of drinking water was not considered to pose a cancer risk, as is now the case.

CDPH is required by California law to set an MCL for hexavalent chromium and to set the MCL as close to the public health goal (PHG) as possible, taking into account technical feasibility (e.g., detectability and treatment) and costs. So, although CDPH has been gathering data associated with hexavalent chromium occurrence, treatment, and costs, adoption of an MCL requires the state Office of Environmental Health Hazard Assessment (OEHHA) to establish a PHG. With OEHHA's 0.02-ppb PHG finalized on July 27, 2011, CDPH will move forward with the process of adopting an MCL for hexavalent chromium.

More information about hexavalent chromium is available on the CDPH website at: http://www.cdph.ca.gov/certlic/drinkingwater/Pages/chromium6.aspx.

Question: What is hexavalent chromium and why is there a public health concern?

Answer: Chromium is a heavy metal that occurs throughout the environment. The trivalent form is a required nutrient and has very low toxicity. The hexavalent form, also commonly known as "chromium 6," is more toxic and has been known to cause cancer when inhaled. In recent scientific studies in laboratory animals, hexavalent chromium has also been linked to cancer when ingested.

Question: Where does hexavalent chromium come from?

Answer: Much of the low level hexavalent chromium found in drinking water is naturally occurring, reflecting its presence in geological formations throughout the state. However, there are areas of contamination in California from historic industrial use such as the manufacturing of textile dyes, wood preservation, leather tanning, and anti-corrosion coatings, where hexavalent chromium contaminated waste has migrated into the underlying groundwater.

Question: How is hexavalent chromium currently regulated in drinking water?

Answer: Currently, hexavalent chromium in drinking water is regulated under the "total chromium" state MCL of 50 ppb, which is more restrictive than the 100 ppb federal MCL. The total chromium MCL was established in 1977 to address the noncancer toxic effects of hexavalent chromium, and also includes the less-toxic trivalent form.

Question: What is a public health goal (PHG)?

Answer: A PHG is a level of a contaminant in drinking that does not pose a significant health risk. A PHG reflects the risk from long-term exposure to a contaminant and should not be used to estimate risks from short-term or acute exposure. PHGs are not regulatory requirements, but instead represent non-mandatory goals. PHGs are developed by the OEHHA for use by CDPH in establishing MCLs.

Question: What is a State maximum contaminant level (MCL)?

Answer: State MCLs are health protective drinking water standards to be met by public water systems. MCLs take into account not only health risks from exposure to a chemical, but also factors such as detectability and treatability, as well as costs of treatment to reduce a chemical's presence in drinking water. Health & Safety Code §116365(a) requires CDPH to establish a contaminant's MCL at a level as close to its PHG as is technically and economically feasible, placing primary emphasis on the protection of public health.

Question: Are there examples of hexavalent chromium contamination in the state's groundwater?

Answer: Yes. In the late 1980s, US EPA found hexavalent chromium in groundwater at contaminated Superfund sites in the San Fernando Valley. An overview of activities associated with its cleanup, which is important to protect drinking water supplies, is available at http://www.epa.gov/region9/superfund/chromium/index.html. In the 1990s, the town of Hinkley in San Bernardino County had findings of hexavalent chromium in groundwater resulting from environmental releases of the chemical in the 1950s and 1960s from a nearby PG&E facility. More information about hexavalent chromium and Hinkley is available at http://www.swrcb.ca.gov/rwqcb6/water_issues/projects/pge/index.shtml.

In addition, after drinking water sources at several locations were sampled and found to contain hexavalent chromium, CDPH required regulated water systems to test their sources for the presence of hexavalent chromium in anticipation of developing a drinking water standard specific for this form of chromium. The sampling results showed that hexavalent chromium occurs at very low levels throughout the state, likely due to its presence in geological formations.

More information about the sampling results including levels reported by specific water systems is available on the CDPH website at: http://www.cdph.ca.gov/certlic/drinkingwater/Pages/Chromium6sampling.aspx.

Question: Is California working on a standard to specifically address hexavalent chromium in drinking water?

Answer: Yes. In 2001, CDPH asked the California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (OEHHA) to develop a PHG for hexavalent chromium. A draft PHG was first released in August 2009 and again in 2010, and has gone through a series of revisions based on new research, comments received by the public, and expert scientific peer reviews. In July 2011, OEHHA adopted a final PHG for hexavalent chromium of 0.02 ppb. As a result of OEHHA's adoption of the hexavalent chromium PHG, CDPH has initiated its MCL setting and regulation process in order to have an enforceable standard. It will take approximately 18-24 months to develop an MCL and initiate the formal rulemaking process. Since CDPH is subject to the Administrative Procedures Act requirements and timelines for rulemaking, it may take an additional 12-24 months to complete the formal rulemaking for an MCL. Therefore, the total time may range from 3 to 4 years for MCL development and rulemaking.

Question: Why will the MCL for hexavalent chromium be more health protective than the current "total chromium" MCL?

Answer: Currently, hexavalent chromium in drinking water is regulated under the State's total chromium MCL of 50 ppb which includes both trivalent and hexavalent chromium. The less soluble trivalent form is a required nutrient with very low toxicity, while the more soluble hexavalent form may pose a risk of cancer when ingested. The new MCL will be based on providing public health protection specific to the more toxic hexavalent form of chromium.

Question: If my drinking water has hexavalent chromium above the PHG, is there a risk to my health?

Answer: A drinking water sample with a detection of hexavalent chromium above the PHG of 0.02 ppb does not necessarily represent a public health concern. The PHG is set at a health protective level that may result in no more than one case of cancer per million people who drink 2 liters of water with hexavalent chromium at the PHG every day for 70 years. The PHG represents the level of hexavalent chromium at which no adverse health effects would be anticipated over an entire lifetime of exposure. So, a PHG is not a boundary line between a "safe" and "dangerous" level of a chemical, and drinking water is frequently demonstrated as safe to drink even if it contains chemicals at levels exceeding their PHGs. OEHHA provides additional information on potential health risks and its PHG on its website at:
http://www.oehha.ca.gov/water/phg/pdf/HexChromfacts082009.pdf.

Question: Based on the January 2011 guidance from USEPA on enhanced hexavalent chromium monitoring, are water systems required to participate, and what analytical resources are available for those that wish to conduct monitoring?

Answer: The January 2011 USEPA recommendations are solely guidance at this point. There is no legal requirement for water systems to conduct sampling. However, voluntary enhanced monitoring by water systems can provide useful information for assessing further occurrence of hexavalent chromium in drinking water, as well as for the technical and economic feasibility assessment performed during the MCL review process. For those water systems that wish to participate, CDPH has issued updated guidance and information on its website at:
http://www.cdph.ca.gov/certlic/drinkingwater/Pages/Chromium6.aspx.