3.14 Master Response Alternatives

3.14.1 Introduction

Overview

Several commenters question the range of alternatives examined in the Draft EIR, or suggest additional alternatives that should be examined. Commenters also request that the use of water conservation programs be implemented as an alternative to the proposed Project.

Summary of Issues Raised by Commenters

- The purpose and needs analysis is not adequate.
- The project objectives are not adequately described and fail to focus on conservation efforts.
- The alternatives do not reflect that SMWD is carrying-out the Project.
- The range of alternatives is not adequate.
- Offsite alternatives, such as in the Ward Valley and in the Joshua Tree groundwater basin, were not considered.
- Conservation alternatives were not analyzed.
- An average natural recharge rate alternative was not analyzed.
- An agricultural alternative was not analyzed.
- The phased approach is the environmentally superior alternative.
- The feasibility of the Project and alternatives.

This master response is organized by the following subtopics:

3.14.2 Project Objectives and Fundamental Purpose

Commenters have raised the concern that the "purpose and needs" analysis in the EIR is not adequate. A "purpose and needs" analysis is a requirement under the National Environmental Policy Act (NEPA) not the California Environmental Quality Act (CEQA). Accordingly, a "purpose and needs" analysis pursuant to NEPA guidance is not required as no NEPA review is required for this Project. See **Master Response 3.13** Right-of-Way and NEPA.

Commenters also state that the Project purpose and objectives are not adequately described or fail to focus on conservation efforts. Under CEQA, the Project Description must include a statement of objectives. The objectives should include the underlying purpose of the Project and be written clearly to guide the selection of alternatives to be analyzed in the EIR.[1] The Project is a conservation project. The fundamental purpose of the Project is *to save substantial quantities of groundwater that are presently wasted and lost to evaporation by natural processes*. See **Master Responses 3.15** Terminology and **3.7** Water Rights. Currently, there are approximately 3.2 million acre feet (MAF) of groundwater in storage between the Project's proposed wellfield and the Bristol and Cadiz Dry Lakes. In the absence of the Project, this existing groundwater water will naturally migrate underground to the Dry Lakes' saline sinks and evaporate. The Project proposes to recover groundwater moving into the Fenner Gap to prevent its eventual migration to the Dry Lakes. By strategically managing the groundwater levels, the Project would conserve up to 2.5 MAF of fresh groundwater for beneficial use that would otherwise be lost. The Project achieves these conservation benefits while avoiding or mitigating all significant environmental impacts to a less than significant level, with the exception of short term construction impacts to Air Quality (NO_X) and secondary effects of growth in Project Participant service areas.

The Project Objectives include the following:

- Maximize beneficial use of groundwater in the Bristol, Cadiz, and Fenner Valleys by conserving and using water that would otherwise be lost to the brine zone and evaporation;
- Improve water supply reliability for Southern California water providers by developing a long term source of water that is not significantly affected by drought;
- Reduce dependence on imported water by utilizing a source of water that is not dependent upon surface water resources from the Colorado River or the Sacramento-San Joaquin Delta;
- Enhance dry-year water supply reliability within the service areas of Santa Margarita Water District (SMWD) and other Southern California water provider Project Participants;
- Enhance water supply opportunities and delivery flexibility for SMWD and other participating water providers through the provision of carry-over storage and, for Phase 2, imported water storage;
- Support operational water needs of the Arizona and California Railroad Company (ARZC) in the Project area;
- Create additional water storage capacity in Southern California to enhance water supply reliability; and

[1] Title 14 Cal. Code Regs. §15124(b).

- Locate, design, and operate the Project in a manner that minimizes significant environmental effects and provides for long-term sustainable operations.

As required by CEQA, these objectives are clearly described and were used to determine a reasonable range of alternatives. The objectives describe SMWD's and other Project Participants' need to improve water supply reliability in Southern California and to reduce dependence on supplies from the Colorado River and the Sacramento/San Joaquin Delta (Delta) by conserving and recovering a water supply that would otherwise be lost to evaporation. SMWD as well as other Project Participants seek to attain these objectives consistent with the objective of minimizing significant environmental effects and providing for sustainable operations.

Commenters have suggested that, if SMWD is the agency carrying out the Project, a Project Objective that focuses on conserving and recovering a water supply that would otherwise be lost to evaporation from Bristol, Cadiz and Fenner Valleys is not appropriate and, instead, the Project objectives should only focus on identifying methods of supplying water to SMWD. Thus, the commenters continue, the range of alternatives is improperly constrained due to a focus on alternatives that meet the objective of conserving water from the Bristol, Cadiz and Fenner Valleys. No provision of CEQA restricts a lead agency and/or project's sponsor's choice of Project Objectives. Project objectives only must include the underlying purpose of the Project and be written clearly to guide the selection of alternatives to be analyzed in the EIR. (CEQA Guideline section 15124(b).) Here, SMWD has chosen to pursue consideration of a public-private partnership with Cadiz under which SMWD would carry-out the Project through its shareholder-based management of FVMWC and its control and management of a Joint Powers Authority. The Project evaluated in the EIR, as reflected in the Project Objectives, is the one that SMWD seeks to carry-out, namely improving SMWD's water supply by drawing groundwater in the Bristol, Cadiz, and Fenner Valleys that would otherwise be lost to the brine zone and evaporate. In order to make SMWD's goals viable, the Project objectives also include the provision of water to other participants in southern California, as well as the Arizona and California Railroad Company. Accordingly, the Project Objectives fully reflect the goals and needs of SMWD, the public agency that will carry-out the Project.

SMWD currently relies on the Metropolitan Water District of Southern California (Metropolitan) for the vast majority of its water supply. Metropolitan in turn relies primarily on the Colorado River and the Delta. As set forth in the Draft EIR Vol. 1, Chapter 6 Growth-Inducement and Secondary Effects of Growth, these historical supplies have been affected by drought, increased use of the Colorado River by other states, and impacts resulting from federal Endangered Species Act permitting issues. Maximizing the beneficial use of a reliable water supply that originates in Southern California is a key Project objective, particularly where it can offset the need for imported water from the Colorado River or the Delta. Consistent with Project objectives, the Project would enhance water supply reliability for SMWD and other Project Participants and do so in a environmentally sensitive manner.

3.14.3 Reasonable Range of Alternatives

Commenters state that the range of alternatives analyzed in the Draft EIR is not adequate and that these alternatives do not lessen Project impacts.

CEQA Standards

According to CEQA Guidelines Section 15126.6(a), an EIR must "describe a range of reasonable alternatives to the project, or to the location of 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, and evaluate the comparative merits of the alternatives… An EIR is not required to consider alternatives which are infeasible." "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors. Among the factors that may be taken into account when addressing the feasibility of alternatives (as described in CEQA §15126.6(f)) are site suitability, economic viability, availability of infrastructure, general plan consistency, regulatory limitations, jurisdictional boundaries, and whether the proponent could reasonably acquire, control, or otherwise have access to the alternative site.

The issue of feasibility arises at two different junctures: (1) in the initial analysis in deciding which alternatives to include in the EIR and (2) during the lead agency's later consideration of whether to approve the project. For the first phase—inclusion in the EIR—the standard is whether the alternative is *potentially* feasible (see CEQA Guidelines, §15126.6, subd. (a)). Essentially, the lead agency identifies potentially feasible alternatives that might be suitable for discussion and culls them to assemble a range to be considered for detailed evaluation in the Draft EIR.

By contrast, at the second phase—the final decision on project approval—the lead agency's decision-making body evaluates whether the alternatives are actually feasible (see CEQA Guidelines, § 15091, subd. (a)(3)). At that juncture, the decision makers may reject as infeasible alternatives that were identified in the EIR as potentially feasible.

"There is no ironclad rule governing the nature or scope of the alternatives to be discussed [in an EIR] other than the rule of reason" (see CEQA Guidelines § 15126.6(a)). "CEQA establishes no categorical legal imperative as to the scope of alternatives to be analyzed in an EIR. Each case must be evaluated on its facts, which in turn must be reviewed in light of the statutory purpose…."[2] Under the rule of reason, an EIR need discuss "only those alternatives necessary to permit a reasoned choice" (see CEQA Guidelines § 15126.6(f)). Further, an EIR need not present alternatives that are incompatible with fundamental project objectives.

The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making" (see CEQA Guidelines § 15126.6(f)). Section 15126.6(d) of the CEQA Guidelines provides further guidance on the extent of alternatives analysis required: "The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. …If an alternative

2 *Citizens of Goleta Valley v Board of Supervisors* (1990) 52 Cal.3d. 553, 566.

would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed."

The EIR must briefly describe the rationale for selection and rejection of alternatives and the information the lead agency relied on when making the selection. It also should identify any alternatives considered, but rejected as infeasible by the lead agency during the scoping process and briefly explain the reasons for the exclusion. Section 15126.6(e)(1) of the CEQA Guidelines also requires that the No Project Alternative be addressed in this analysis. The purpose of evaluating the No Project Alternative is to allow decision-makers to compare the potential consequences of the proposed project with the consequences that would occur without implementation of the proposed project.

Project Alternatives

In the Draft EIR Vol. 1, Chapter 7 Analysis of Alternatives, the range of alternatives selected for analysis were based on the alternative's potential feasibility, ability to meet most of the basic the Project objectives and ability to *reduce or avoid* significant effects of the Project. The only unavoidable Project impacts were determined to be the short term construction air impact (NO_X) and potential secondary effects of growth in the Project participants' service areas. Accordingly, to offer a reasoned choice, alternatives were chosen to reduce or avoid these two significant impacts by reducing the Project footprint or reducing effects that would be fully mitigated under the proposed Project. The alternatives analyzed at the project level in the Draft EIR Vol. 1, Chapter 7 include the following two No Project Alternatives and six Project alternatives:

No Project

- No Project Alternative – Existing Agriculture Operations
- No Project Alternative – Expanded Agriculture Operations

Project Facilities

- Alternative Pipeline Route. West of Danby Pipeline
- Existing Natural Gas Pipeline Alternative Route
- Wellfield Location

Project Operations

- Project with Agriculture
- Phased Project Alternative
- Reduced Project Alternative

No Project Alternative – Existing Agriculture Operations. This Alternative assumes no construction of any new facilities and no change to existing agricultural operations within the Cadiz Inc. property. This would not meet the fundamental purpose of the Project or most of the

basic Project objectives but would eliminate all the Project's significant effects and therefore is the Environmentally Superior Alternative.

No Project Alternative – Expanded Agriculture Operations. This Alternative assumes that agricultural operations on the Cadiz Inc. property would increase as allowed under existing San Bernardino County (County) approvals and zoning. The increased operations would result in greater impacts than the proposed project concerning biological resources, cultural resources, noise, and traffic, but fewer impacts in other areas, and would not meet any of the Project objectives.

Alternative Pipeline Route. West of Danby Pipeline. This Alternative includes a variation of the pipeline alignment from the wellfield to the Colorado River Aqueduct (CRA). The alignment is similar to the pipeline alignment evaluated in the 2001 Draft EIR/EIS by lead agencies Metropolitan and BLM, which was chosen as that project's preferred route. This pipeline route is shorter than the route proposed by the Project and therefore would result in similar but somewhat reduced construction air impacts and impacts to aesthetics. But the Alternative would result in greater impacts in other areas such as biological and cultural resources as it would run on undisturbed land, thus having greater impacts to previously undisturbed habitat and wildlife. This Alternative would meet most of the Project objectives but would not support the water needs of the ARZC Railroad and would also not avoid impacts to NO_X and would not lessen or avoid secondary growth impacts. The Draft EIR concludes that this Alternative is potentially feasible, but does not meet all Project objectives, would not avoid significant and unavoidable impacts (NO_X or secondary growth impacts) of the proposed Project, and would result potentially in greater impacts to some resources as compared to the proposed Project.

Existing Natural Gas Pipeline Alternative Route. This Alternative involves use of an existing, unused natural gas pipeline that runs past the Cadiz Inc. property to Barstow (and on to Wheeler Ridge). This pipeline has capacity for approximately 30,000 AFY of water. The pipeline extends approximately 100 miles between the Project site and Barstow. The pipeline would require rehabilitation and upgrades including construction of up to 2 pump stations between the Cadiz Inc. property, and Barstow, installation of air valves at approximately half mile intervals along the pipeline route, and the eventual conversion of the natural gas pipeline for conveyance of water. However, because the pipeline is already constructed and the pump stations would impact only approximately four (4) acres, impacts in nearly all resource areas would be similar to or less than those for the proposed Project, with the exception of biological resources. This alternative would eliminate NO_X emissions from the Project's pipeline construction. However, NO_X emissions from the wellfield and pump station construction would remain significant. This alternative would not eliminate potential effects of secondary growth since even reduced water supplies could still be used to support growth.

This Alternative would meet most of the Project objectives but to a much lesser degree than the proposed Project and would not provide sufficient pipeline capacity to maximize beneficial use of the aquifer. Also, because the water would be conveyed to Barstow, it would require new agreements with Mojave Water Agency to accept the water in lieu of State Water Project (SWP) water. If the agencies could not reach agreement, the pipeline would need to be converted all the

way to Wheeler Ridge near the City of Bakersfield and additional pump stations constructed. This alternative would also limit conservation benefits due to the lower pumping rate. In order to significantly halt the flow of the existing fresh groundwater to the Dry Lakes, pumping needs to exceed the natural recharge rate. The Project's modeled recharge rate is 32,000 AFY. Based on the predicted recharge rate, pumping 30,000 AFY would not create the hydraulic control necessary to prevent fresh groundwater currently stored south and west of the Project wellfield from migrating to the Dry Lakes and evaporating. The Draft EIR concludes that this Alternative is potentially feasible, but does not meet all Project objectives (i.e., it would not maximize beneficial use of the aquifer, would not meet ARZC Railroad water needs, and would not create potential storage capacity), would not avoid the significant and unavoidable impacts of the proposed Project, and would result potentially in greater impacts to some resources than would the proposed Project.

Wellfield Location. This Alternative involves a wellfield option located north of the proposed wellfield to evaluate the potential to reduce drawdown. Moving the wellfield location north would reduce brine migration but would not maximize water conservation and beneficial use because the Project's ability to reduce the flow of fresh groundwater to the Dry Lakes would be less effective the farther away the wellfield is located from the Dry Lakes. A northern wellfield would not be able to pump underground flow from Orange Blossom Wash and would not be able to access water that has already come through the Fenner Gap and is migrating toward the brine sink and evaporating. This alternative would meet most of the basic Project objectives but, as noted, would not maximize conservation and beneficial use. It would also result in impacts to desert tortoise critical habitat located north of the existing wellfield. The Draft EIR concludes that this Alternative is potentially feasible, but would not avoid significant and unavoidable impacts of the proposed Project and potentially would result in greater impacts to some resources than would the proposed Project.

Project with Agriculture. This alternative assumes that the existing or slightly expanded agricultural operations within the Cadiz Inc. property would continue to operate in conjunction with the proposed Project. This alternative would meet most of the basic Project objectives and would allow agriculture to continue in the Cadiz Valley. The alternative would maintain agricultural uses, but would increase impacts to air quality, greenhouse gas emissions and other resources. Also, this alternative would require the pumping of an additional 5,000 AFY to maintain the agricultural operations. As a result, potential air quality impacts, including NO_X, would be greater. With respect to facilities, this alternative would use the same facilities as the proposed Project but would also require new agricultural pipelines to expand the agricultural operations. The Draft EIR concludes that this Alternative is potentially feasible and would meet all Project objectives, but would not avoid significant and unavoidable impacts of the proposed Project, and would result in potentially greater impacts to some resources than would the proposed Project.

Phased Project Alternative. This alternative assumes that the conveyance pipeline would be constructed as proposed for the Project, but that the wellfield would be installed in a phased manner, over five (5) to ten (10) years rather than approximately eighteen (18) months and expanding the wellfield as monitoring data confirms that the drawdown effects are within

expected levels. This alternative would meet most of the basic Project objectives but would increase construction impacts to air quality by extending the construction period beyond 5 years. The phased approach would allow for the additional monitoring of third party wells, saline levels and subsidence while the Project pumping increases to full capacity, but would not avoid or lessen the Project's significant effects to secondary growth or NO_X emissions from construction. Rather, this stepped approach could increase short-term NO_X emissions by prolonging the effects over the 5 to10 years of construction. Because this alternative uses the same facilities as the proposed Project (but in a phased approach), no other approvals or facilities would be required. The Draft EIR concludes that this Alternative is potentially feasible and would meet all Project objectives, but would not avoid significant and unavoidable impacts of the proposed Project and potentially would result in greater impacts to some resources than would the proposed Project.

Reduced Project Alternative. Under the Reduced Project Alternative, the duration of the Project operations would be shortened to 25 years and the total volume of water extracted over the term of the Project would be reduced by at least 25 percent. Because this alternative uses the same facilities as the proposed Project, no other approvals or facilities would be required. To maintain some of the benefits of conserving water that would otherwise flow to the Dry Lakes and evaporate, the Reduced Project Alternative would pump up to 75,000 AFY of groundwater for a period of 25 years for delivery to Project Participants. This alternative would meet most of the basic objectives of the Project and would have similar or less environmental effects, including a reduction in impacts related to NO_X emissions and secondary growth; however, NO_X emissions and secondary growth impacts under the Reduced Project Alternative would remain significant and unavoidable.

As compared to the proposed Project, this alternative would conserve less water for beneficial use by pumping only 25 years of recharge flowing through the Fenner Gap and limiting long-term supply contracts to 25 years. The 25-year pumping period would reduce operational and management flexibility for carry-over storage as groundwater would need to be pumped over a much shorter period. To maintain operational and management flexibility, pumping may need to occur at rates greater than 75,000 AFY. The Draft EIR concludes that this Alternative is potentially feasible, would, to a lesser degree, meet all Project objectives, and would lessen, but not avoid, significant and unavoidable impacts of the proposed Project. The Draft EIR finds the Reduced Project Alternative to be the Environmentally Superior Alternative, but the Alternative is not preferred over the proposed Project due to the reduced operational and management flexibility and potential depth of drawdown.

3.14.4 Alternatives Rejected from Detailed Analysis

As noted above, the EIR should identify any alternatives considered, but rejected as infeasible by the lead agency during the scoping process and briefly explain the reasons for the exclusion. The lead agency decides whether to include an alternative in the EIR based on whether the alternative is *potentially* feasible. The following alternatives were considered but rejected from detailed analysis:

- Western Alternative
- Combination Alternative

- Eastern/Canal Alternative
- Water Conservation Alternative
- Other Supply Sources Alternative

Of these rejected alternatives, commenters state that the Water Conservation and Other Supply Sources should have been examined in detail in the EIR.

Water Conservation Alternative

The Water Conservation Alternative would eliminate or substantially lessen the water demands of the customers of Project Participants, eliminating the need for the new water source. However, as stated in the Draft EIR Vol. 1, Chapter 7 Alternatives Analysis, pp. 7-6 to 7-10, water conservation efforts are already being carried out by each of the participating water providers. Since 1991, increased emphasis has been placed on water conservation as imports from both the SWP and CRA have seen declines from historic deliveries. The Urban Water Management Planning Act includes provisions requiring long-term plans to include conservation measures. In addition, under The Water Conservation of Act of 2009, Senate Bill SBx7-7 2009, urban retail water suppliers must target reductions in per capita water use of twenty percent by 2020.[3] And in 2010, the California Department of Water Resources (DWR) published its plan to reduce per capita water use in the state by 20 percent by the year 2020.

SMWD's service area has a population of 155,000 and a service area of 97 square miles. Population growth within its service area is estimated to increase by 40 percent through 2035. Draft EIR Vol. 1, Chapter 6 Growth Inducement Potential and Secondary Effects of Growth, Table 6-1 p. 6-13. In correlation with population increase, water demand is expected to grow at a rate of 36 percent over the same period due to conservation efforts (see Draft EIR Vol. 1, Chapter 7 Alternatives Analysis, p. 7-8). SMWD's water supplies in 2010 consisted of approximately 82 percent imported water from the Metropolitan Water District of Southern California (Metropolitan) and 18 percent from recycled water. Under current conservation plans, recycled water supply is anticipated to double by 2035 (see Draft EIR Vol. 1, Chapter 6 Growth Inducement Potential and Secondary Effects of Growth, p. 6-17). However, even with aggressive water recycling, SMWD will still be highly reliant on imported supplies and has a need to supplement those supplies. SMWD's Board of Directors adopted the Comprehensive Water Conservation Program Ordinance No. 09-07-02 on July 10, 2009 that encourages reduced water consumption within the district through conservation, prevention of waste and efficient use of water. In addition, SMWD has dedicated resources to implement 13 of 14 Best Management Practices (BMPs) identified in the California Urban Water Conservation Council's Memorandum of Understanding, including all of the "Foundational BMPs." The bulk of resources are dedicated to high-efficiency appliance replacements and rebate programs, water accounting and metering, incentivizing programs and educational programs. Given this, SMWD is aggressively pursuing conservation measures within its service area and will continue to do so with or without the Project. Each of the other water providers is undertaking similar conservation efforts. See Draft EIR Vol. 1, Chapter 7 Alternatives Analysis, pp. 7-8 to 7-10.

[3] Water Code 10608.16 et seq.

These water conservation efforts are being undertaken in connection with a broad array of strategies to ensure that water supplies are adequate and reliable. The Project presents an opportunity to use a Southern California water supply source that is currently being lost each year to evaporation. A Water Conservation Alternative would not save substantial quantities of fresh groundwater from evaporation for beneficial use, would not reduce dependence on imported water supplies from the SWP or CRA, would not support the operational needs of the ARZC, and would not create any new storage capacity. Accordingly, the Water Conservation Alternative would not meet most of the basic Project objectives and therefore it was properly rejected from more detailed review as infeasible.

Other Supply Sources Alternative

Desalination

Under the Other Supply Sources Alternative, Project Participants would rely on other water sources, such as water from desalination plants and recycled water, rather than Project groundwater, to meet Project objectives. None of the Project Participants have service areas on the coast of California with direct access to seawater. See Draft EIR Vol. 1, Executive Summary, Figures ES-4 and ES-4. While direct access to seawater is not currently available, the Project Participants who are water districts could enter into agreements to purchase water from others who have built or are in the process of developing desalination plants. For example, SMWD is a member the San Juan Basin Authority which operates a desalter plant and has signed a Letter of Interest for 5,000 AFY from the proposed Huntington Beach Seawater Desalination Project (see Draft EIR Vol. 1, Table 7-1, p. 7-11). Jurupa Community Services District participates in the Chino I and Chino II desalters, which are the main desalination opportunities in the vicinity of the JCSD. Chino II desalter is proposed to expand its facilities in 2014. Suburban Water Systems is also pursuing potential agreements on desalination plants that are to be constructed by others. Therefore, desalination is an option that Southern California water districts can and do pursue, including some of the Project Participants. While desalination is a potential supplement to agencies' supplies through other third party agreements, it is not a viable alternative to the proposed project since pursuing desalination does not reduce the need to diversify water supplies through other means, such as engaging in the proposed Project. SMWD and other Project Participants may pursue desalinization opportunities available to them in addition to engaging in the proposed Project. Most of the Project Participants include the proposed Project, recycled water, and desalination as co-equal water supply diversification opportunities.

Also, desalination would not maximize the beneficial use of groundwater that is currently being wasted, support operational needs of the ARZC, or create any new storage opportunities. Accordingly, although desalination is a viable source of new water supplies in addition to the Cadiz Project, it is not a potentially feasible alternative to the Project, and was correctly rejected.

Offsite Alternatives

Commenters also suggest that offsite alternatives in the Ward Valley and in the Joshua Tree Basin be considered in the alternatives analysis. As such, analysis of the potential feasibility of this suggested alternative is presented here.

The Ward Valley is located south and east of Cadiz Dry Lake. It runs north/south between the Old Woman Mountains (west) and the Turtle Mountains (east). Cadiz Inc. owns some non-contiguous parcels within the valley (Draft EIR Vol. 1, Figure 3-1), however, the land is not sufficient to accommodate all Project facilities and additional rights would need to be acquired. Since Cadiz Inc. has put its capital into the Cadiz Valley, another buyer would need to be located to consider moving the Project to a new location. Under CEQA Guideline section 15126.6(f)(1), a lead agency may consider the ownership of an alternative site to determine whether the alternative is potentially feasible. Even if the land could be acquired, the Ward Valley would not support the basic objectives of the Project due to the unique properties of the Fenner Watershed and the Fenner Gap. The proposed Project is possible due to the size of the Fenner Watershed and the recharge from higher elevations, the constriction point in the aquifer at the Fenner Gap, and the limited overlying land uses that rely on groundwater. Furthermore, Cadiz properties in the Ward Valley are limited and access requires traversing BLM property which would require additional agreements. Accordingly, the Ward Valley does not present a potentially feasible alternative.

The Joshua Tree Groundwater Basin is far south of the Project site and its southern boundary is within Joshua Tree National Park.[4] None of the Project Participants have any ownership within the basin. Further because the basin is already serving substantial uses, it could not provide a new reliable supply of water. Similar to a Ward Valley Alternative, the Joshua Tree Groundwater Basin would not support the basic objectives of the Project due to the unique properties of the Fenner Watershed and the Fenner Gap, including the constriction point in the aquifer at the Fenner Gap and the limited overlying land uses that rely on groundwater. Joshua Tree Groundwater Basin, in contrast, is a fully developed basin serving existing uses. The Joshua Tree basin does not present the conservation benefits unique to the Project and would not meet most of the basic objectives of the Project concerning maximizing beneficial uses of the Fenner, Bristol, and Cadiz Valleys. Accordingly, the Joshua Tree Groundwater Basin is not a potentially feasible alternative to the proposed Project.

3.14.5 Average Natural Recharge Rate Alternative

Commenters state that the EIR should have analyzed an alternative that assumes pumping at or below the average natural recharge rate, which they assert is somewhere between approximately 2,000 and 16,000 AFY. The Existing Natural Gas Pipeline Alternative Route does analyze pumping at a rate lower than the predicted average natural recharge rate (i.e., 30,000 AFY versus the average natural recharge rate of 32,000 AFY) but not as low as requested by the commenters (see 3.14.3, above).

Impacts associated with groundwater extraction identified in Section 4.9.3 of the Draft EIR include drawdown, saline water migration, and subsidence potential. Each of these impacts would be less than significant with mitigation under the proposed Project. Limiting pumping to the natural recharge rate would result in shallower drawdown and less potential for subsidence and

[4] Department of Water Resources, *California's Groundwater Bulletin 118, Joshua Tree Groundwater Basin*, http://www.water.ca.gov/pubs/groundwater/bulletin_118/basindescriptions/7-62.pdf, accessed May 2012.

saline migration. However, no impacts would be avoided, nor would any significant impacts be mitigated to less than significant under a limited pumping scenario. Drawdown in and of itself is not an adverse impact. Less drawdown would not make a substantial difference to overlying land uses within the area, of effect or alter the conclusions of the Draft EIR, since mitigation measures would ensure that the impact is mitigated regardless of the amount of groundwater level decline. Further, very few overlying users exist within the area of effect. Similarly for subsidence and saline migration, a reduced effect would not make a substantive difference to the few overlying users that may experience the effect nor would the conclusions of the Draft EIR be altered; the mitigation measures identified in the Draft EIR would be equally effective under a limited pumping scenario.

Pumping scenarios at 2,000, 16,000, or 32,000 AFY would not meet the fundamental purpose of the Project, which is to save substantial quantities of groundwater currently being lost to evaporation and to maximize the beneficial use of the groundwater. Pumping at the average natural recharge rate would not prevent fresh groundwater water south of the wellfield from continuing to flow underground to the Dry Lakes and evaporating. Pumping beyond the recharge rate is necessary to recover fresh groundwater before it is lost to evaporation. The strategic drawdown is necessary to create a groundwater trough that would ensure that the groundwater flowing from the Fenner Valley would be drawn to the wellfield and away from the Dry Lakes. Pumping 50,000 AFY would be an efficient pumping volume to reverse the groundwater flow south of the Fenner Gap, thus creating an effective hydraulic control mechanism that maximizes the saving of fresh groundwater. Pumping at or below the average natural recharge rate would not maximize conservation because fresh groundwater currently existing south and west of the Project wellfield would continue to move towards the saline sinks of the Dry Lakes and evaporate.

The lower pumping rates would also fail to maximize the beneficial use of the aquifer. The lower pumping rate of 2,000 AFY would allow significant waste, would not provide a reliable water supply to any Southern California communities, and also would not materially reduce dependence on imported water from the SWP or CRA. The 16,000 AFY pumping rate could serve SMWD's 15,000 AFY share plus support the water needs of the ARZC.

However, it would not allow for other participants or for that matter the County to obtain Project water. With regard to allotment of Project water, SMWD, the County, Cadiz Inc., and Fenner Valley Mutual Water Company (FVMWC) entered into an Memorandum of Understanding (MOU) in June 2012 to establish the framework for working together to finalize the Groundwater Management, Monitoring, and Mitigation Plan (GMMMP), which is attached in its updated form (Updated GMMMP) in the Final EIR Vol. 7, Appendix B1 Updated GMMMP, and to reserve Project water for potential use in San Bernardino County. The MOU is a first step, and it does not obligate SMWD to proceed with the Project, or to presume that the environmental documentation for the Project will be certified, nor does it require the County to approve the GMMMP. No obligation included in the MOU is binding on SMWD or the County until such time as the District and County complete their respective environmental reviews of the Project and approve the Project and the Updated GMMMP. One potential Project element, reflected in the MOU, would allow the County to consider, as part of its review of the Updated GMMMP, whether to

require FVMWC to reserve 20 percent of Project water for potential use in San Bernardino County and up to 25,000 AF (total) for the Inland Empire Utilities Agency. If this option was selected, there would be insufficient water to satisfy SMWD's allotment and no water available for any other water providers. The 32,000 AFY scenario would improve water supply reliability but would not maximize the beneficial use of the aquifer and would not conserve and recover substantial quantities of fresh groundwater that currently exist south of the planned wellfield.

Under each of the lower pumping scenarios, the basin would not be strategically drawn down to allow for import of freshwater from the Colorado River. This is because at lower pumping rates, imported water would cause mounding in the area of the wellfield that would accelerate the natural gradient towards the Dry Lakes and potentially increase the rate of groundwater lost to evaporation.

Facilities necessary for an average natural recharge rate alternative would be similar to those needed for the proposed Project. Facilities would include: a wellfield (although smaller), 43-mile conveyance facility, pump stations, and a CRA tie-in. NO_X emissions from construction would continue to be significant and unavoidable. In addition, potential secondary effects of growth would remain since growth in the Project Participant service areas is already planned for and must be accommodated by the Project Participants. Accordingly, an alternative assuming a pump rate at or below the average natural recharge rate would not meet most of the basic Project objectives, would not reduce or avoid any significant environmental impacts, and would not be feasible.

3.14.6 Reduced Project Alternative is the Environmentally Superior Alternative

A commenter has suggested that the Phased Project Alternative should be the environmentally superior alternative. The phased approach would allow for further monitoring of third party wells, saline levels, and subsidence as the Project pumping increases to full capacity but would not avoid or lessen the Project's significant, short-term effects from NO_X emissions or potential secondary growth effects.

While the phased approach would offer an additional monitoring opportunity, it would come at the cost of prolonging the construction period and thereby creating long-term NO_X impacts (5 to 10 years) as opposed to short term impacts.

In terms of operations, the Environmentally Superior Alternative is correctly identified as the Reduced Project Alternative because it would only operate for half the life of the proposed Project and would pump a minimum of 25 percent less groundwater; although short-term impacts from NO_X emissions and secondary growth impacts would remain significant and unavoidable. The Draft EIR concludes that this Alternative would not fully meet Project objectives and would not avoid significant and unavoidable impacts of the proposed Project.