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Regional Groups Serving Riverside and San Bernardino Counties: Los Serranos, Tahquitz, San Bernardino Mountains, Mojave, Moreno Valley, Big Bear

California Energy Commission

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Re: Sentinel project – Revised water supply plan

Dear Mr. Pfanner:

Thank you for the opportunity to comment. I would like to elaborate on a subject I just touched on last fall at the Desert Hot Springs hearing. Until the project chose a course of action regarding water use and water supply, it was not clear how serious an issue the potential impacts to the mesquite fault dunes ecosystem would be. At this time the applicant has submitted a revised water supply plan (water plan) and elected to go with wet cooling using onsite groundwater wells for water supply. So it is now clear that the impacts to the water supply for the nearby mesquite fault dunes are potentially significant.

Portions of the water plan are commendable, such as the funding for conservation measures to offset the water used by the power plant. It is important that these measures pencil out as additional measures over and above what Desert Water Agency is obligated to conserve and/or could accomplish without the project. This analysis needs to be done.

We see that the project proposes to fund acquisition of enough water from the California Aqueduct (to be traded for Colorado River Aqueduct water) to be delivered to the percolation ponds in an attempt to replenish the Mission Creek Groundwater Basin (MSGB). Unfortunately, there is no assurance that there will be enough water available to accomplish this. The Governor has declared a drought, and statewide the forecast is for a 30% shortage. So it is not a matter of money to buy water, but of there being enough water available to purchase. Mission Springs Water District (MSWD) has also identified this shortage in its recent draft Water System Master Plan.

So, one problem with both the MSWD Plan and the Sentinel project is that both rely on replenishing the MSGB with water from elsewhere in California. This is a problem because one cannot assume that there will be adequate surplus water available in the future to accomplish the proposed replenishment. This question needs to be addressed.

The other, and perhaps more serious problem concerning Sierra Club is that the Sentinel project intends to pump significant amounts of groundwater from the Mission Creek Groundwater basin (MSGB) in close proximity to the Banning branch of the San Andreas fault line. Water from the MSGB upwelling against the impermeable rock along the fault line supports the mesquite which grow along the fault. The mesquite, in turn, block the blow sand which traverses the valley, thereby creating the fault dune ecosystem. The dune ecosystem supports unique habitat for a host of sensitive and endangered species, as well as being a unique habitat in its own right. Please see USFWS white paper, attached.

This fault dune system is proposed to be protected in the Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP), incorporated herein by reference. Unfortunately, the Sentinel project is situated in proximity to the Banning fault and therefore to the fault dune ecosystem. Any massive pumping at the project site, as is proposed under the Revised Water Supply Plan, will not only lower the MSGB in general, it will have great potential to create a cone of depression in the water table. This would have potentially devastating effects on the nearby fault dune ecosystems, Indian Avenue and Willow Hole Preserves, in particular.

Please also see Sierra Club comments on the MSWD Comprehensive Water System Master Plan Project, attached. The DEIR for the Master Plan (herein incorporated by reference) clearly indicates that implementation of the Master Plan will significantly impact the mesquite hummocks along the Banning Fault on an Project specific and cumulative basis. (DEIR, page 4-99; page 4-110.) According to the DEIR, this impact can be discussed more concretely than other impacts in the DEIR. (Page 4-98.) According to the DEIR, the Psomas model forecasts that groundwater levels would drop below the depths needed for mesquite hummocks to remain healthy, and that the level will be so low it will severely stress or kill mesquite in all areas of the hummocks by 2016, without adequate mitigation. (Pages 4-98 to 4-99.) However, the prediction of die-off in 2016 is based on recharge of 15,000 acre feet per year. If no recharge occurs, or if recharge occurs sporadically, the mesquite may die sooner. Implementation of the Water Master Plan will kill the mesquite, which will result in significant impacts to species dependent on the dune habitat, such as southwestern willow flycatcher, least bell's vireo, Coachella Valley round-tailed ground squirrel, Coachella giant sand treader cricket and the Coachella Valley fringe-toed lizard. (Page 4-99.). However, artificial watering of the mesquite dunes underground, could also mitigate this impact. (DEIR, page 4-98.)

Additionally, it should be noted that the MSWD Water Master Plan does not include the Sentinel project in its calculations, so the downdraft would be greatly exacerbated were the Sentinel to proceed as proposed. Like the MSWD Water Plan, the Sentinel's revised water supply plan fails to provide adequate mitigation for impact to mesquite hummocks along Banning Fault, and the species dependent on the habitat. This would be a significant adverse impact of the project, and the project has a duty under CEQA to avoid and/or minimize and mitigate impacts to the maximum extent feasible.

Thanks you for the opportunity to comment. We hope the project review will address the above concerns.

Very truly yours,

Joan Taylor, Conservation Chair
Tahquitz Group – Sierra Club

Enclosure

Relationships Between Groundwater and Mesquite Biotic Communities in the Mission Creek Groundwater Subbasin, Riverside County, California

SUMMARY

Groundwater-dependent ecosystems of the Coachella Valley and the desert southwest have been and continue to be adversely affected by increases in distance to groundwater caused by well pumping. As groundwater levels decrease these ecosystems become degraded or are eliminated. Biotic communities such as mesquite woodlands are dependent on shallow water tables (Jarrell and Virginia 1990), and reductions in water availability can reduce the extent of these vegetation communities or cause compositional shifts from more mesic to more xeric species (Rood and Mahoney 1990, Stromberg and Patten 1990, Stromberg *et al.* 1993). For example, mesquite forests historically covered more land area than any other riparian community type in the southwestern U.S., but they have been reduced to remnant status largely because of water developments (Stromberg 1993). Groundwater levels in important portions of the Coachella Valley, such as along the Banning Fault, need to be maintained or restored to conserve essential ecosystems and co-adapted species of the valley.

It is estimated that mesquite hummocks occupied 3,363 hectares (8,309 acres) of the Coachella Valley floor in 1939, but were reduced to 352 hectares (870 acres) by 1998, a decline of almost 90 percent (Coachella Mountains Conservancy 2003). Evidence (e.g., MSWD 2000, MSWD 2004, CVAG 2003, CVWD 2004) indicates that mesquite hummocks occurred along the Banning Fault where groundwater naturally (historically, i.e., the 1950's) was within 10 to 15 meters (33 to 49 feet) of the ground surface. However, in nearby areas along the fault where groundwater naturally/historically occurred at distances greater than 15 meters (49 feet), mesquite hummocks did not occur. Based on the analysis provided below, mesquite hummocks in the Coachella Valley are expected to be present in the future in moderate-function ecological condition where groundwater remains within 15 meters (49 feet) of the ground surface, and high-function condition when groundwater is maintained within 10 meters (33 feet) of ground surface. Additional groundwater overdraft pumping in the Mission Creek Groundwater Subbasin (MCGS or Subbasin) would cause further reductions in the groundwater table under the mesquite hummocks along the Banning Fault. This is expected to cause a significant portion of these mesquite hummocks and their associated dune-dependent communities to be degraded or lost. Reduced groundwater pumping and/or groundwater replenishment with imported water are necessary to arrest and reverse decreasing groundwater levels and to avoid the resultant detrimental ecological conditions in the Subbasin.

INTRODUCTION

Rapid population growth in semiarid regions of the western United States is increasing the demand for water for human uses (Scott 2000). Therefore, humans living in dryland

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areas increasingly rely on regional aquifers as a source of fresh water due to the limited availability of surface water sources. In the Coachella Valley, as elsewhere, groundwater is mined from valley aquifers to meet this demand, which results in decreasing groundwater levels. Groundwater-dependent ecosystems, such as fan palm oasis and mesquite hummocks, are vulnerable to these decreases because they are supported by near-surface groundwater (Scott 2000).

In arid regions such as the Coachella Valley, the extreme spatial and temporal variations in moisture available to plants play a critical role in determining the patterns of dominant plant species distribution and ecosystem function (Snyder *et al.* 1997). Human alterations of groundwater-dependent ecosystems in the western U.S. through groundwater pumping have produced dramatic changes in stand structure and species composition of these ecosystems (Stromberg and Patten 1990). Streams in arid climates subject to withdrawal of groundwater inputs (stream diversion), show declining vigor of riparian vegetation as alluvial groundwater level decreases and stream flow are reduced (Stromberg *et al.* 1996). Thus, the human use of this water results in the replacement of groundwater-dependent ecosystems of high biological productivity with less productive xeric biotic communities. The loss of these biological "hotspots" eliminates co-adapted plants and wildlife.

COACHELLA VALLEY

The Coachella Valley is underlain by several large subsurface aquifers, known as subbasins, with boundaries that are generally defined by tectonic faults which restrict the lateral movement of water (City of Palm Desert 2003). The Upper Coachella Valley exemplifies the kind of rapid population growth many regions in the Southwest have been experiencing (Minichiello 2004). In 2000, the population of the Upper Valley numbered just under 159,000 permanent residents, plus around another 100,000 seasonal (winter) residents (Minichiello 2004). Only considering the permanent residents, in the last six years the Upper Valley has been experiencing an annual growth rate of approximately 2.6 percent (Minichiello 2004).

In response to population growth in a portion of the Upper Valley, the Mission Springs Water District (MSWD or District) withdrew 1,400 acre-feet from the MSGS in 1978, 4,834 acre-feet in 1988, and 7,096 acre-feet in 1998 (MSWD 2000). The groundwater level in the Subbasin (near the Banning Fault) has dropped from 232 meters (760 feet) above sea level in 1955 to 218 meters (715 feet) above sea level in 1998, a groundwater level drop of 14 meters (46 feet) over a period of 43 years (MSWD 2000). The water level in the subbasin is projected to drop to 212 meters (695 feet) above sea level by 2005, a total drop of 20 meters (66 feet) over a 50-year period (MSWD 2000). The water level drop is expected by the MSWD to accelerate in the future, as demands are increasing (MSWD 2000). The MSWD predicts a groundwater withdrawal by the District of 10,297 acre-feet of water from the MSGS in 2005 (MSWD 2000).

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PROPOSED PROJECT

The proposed project includes the installation and operation of a 7,571 liter (2,000 gallon) per minute groundwater production well approximately 300 meters (1,000 feet deep), two 7.6 million liter (2.0 million) gallon water storage reservoirs, a booster pump station, and distribution pipelines to deliver supplied water from the proposed reservoirs to customers in MSWD's "900 and 1,700-foot service zones"; this project is otherwise known to MSWD as the 900 Zone Project (MSWD 2004). Two 4,500 liter (1,200 gallon) per minute pumps are proposed to be installed and operated initially, with potential installation and operation of a third pump. The proposed production well, booster station, and reservoirs would be located on a 2-hectare (5-acre) parcel west of Little Morongo Road in Section 11, T3S, R4E, approximately 0.8 kilometer (0.5 mile) south of the City of Desert Hot Springs in Riverside County. The proposed water transmission lines would be constructed within existing easements or rights of way in areas ostensibly devoid of native vegetation.

Associated with expectations of growth and development in its service area, the MSWD Master Plan (MSWS 2000) identified a 16,357 liter (4,321 gallon) per minute shortfall of water service by the year 2005, compared to existing water service capacity for the MSWD. This 900 Zone Project is proposed to partially accommodate these water supply demand expectations. The proposed well and pumps would extract groundwater from the MCGS.

The proposed project would increase extraction in the Subbasin by 2,429 acre-feet per year (MSWD 2004). The proposed project would result in an initial annual lowering of the groundwater table of approximately 0.09 meter (0.3 feet) per year along portions of the Banning Fault; this lowering would accelerate in future decades (MSWD 2004). The estimated groundwater level drop (considering all extractors) from natural levels due to overdraft in the Subbasin since 1955 is currently about 18 meters (60 feet), and is projected to drop to 24 meters (80 feet) by 2010, and to 91 meters (300 feet) by 2050 (MSWD 2000). At the current rate of extraction (assuming no acceleration in pumping rates attributed to the proposed project and other extractors) of 14,700 acre-feet per year without the project, the MCGS aquifer would likely be depleted within 90 years. If past trends continue [when the groundwater extraction proposed is combined with the existing and planned pumping of the MSWD, Coachella Valley Water District (CVWD), Desert Water Agency (DWA), and private extractors], by 2050 the MCGS would have less than a third of original capacity (aquifer volume) (MSWD 2000). No safe yield of groundwater extraction has been established for the Subbasin (MSWD 2004). The proposed project would increase the current overall extractions by about 18 percent (MSWD 2004). The MSWD commits to pursue obtaining imported Colorado River water from the Desert Water Agency for recharge of the MCGS at a ratio of 1.2:1 (imported water to project extracted water) if legally and technically feasible (MSWD 2004). Because MSWD does not have entitlement or contract to imported water for the MCGS, the delivery of this water is not assured; as such, this commitment may not mitigate project impacts. The proposed project's contribution to continued overdraft of the MCGS would be "unavoidable because adequate mitigation is not available" (MSWD 2004).

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ANALYSIS

Mesquite Natural History

Individual Mesquite Plants

Mesquite is a shrub to medium-sized tree that was once widespread in the deserts of California (Bainbridge and Virginia 2002). Most mesquite plants are phreatophytes (plant with their roots in the water table) (Phillips and Comus 1999). The mesquite hummocks of the Coachella Valley are composed of phreatophytic honey mesquite (*Prosopis glandulosa*) individuals in relatively close proximity to each other. Mesquite is deciduous in winter and during severe drought stress (Bainbridge and Virginia 2002, Sosebee and Wan 1989). Whether single- or multi-stemmed, mesquite trees produce branches that typically form a canopy with a diameter twice the height of the plant (Wilson *et al.* 2001).

Mesquite can be long-lived in favorable sites (Phillips and Comus 1999), in honey mesquite, longevities of more than 100 years have been documented (Bowers *et al.* 1995). Transpiration and photosynthetic rates are higher on wetter sites (Sosebee and Wan 1989). The bulk of the root systems of most trees in the western U.S.–including mesquite–are confined to the upper meter of soil (Phillips and Comus 1999), yet mesquite can develop relatively deep roots. Sosebee and Wan (1989) indicate that the deep taproot of honey mesquite plays a significant role in water uptake only during extended droughts, not for normal transpiration functioning of the plant. In the Mojave and Sonoran deserts, rainfall is generally insufficient to provide adequate surface soil moisture for honey mesquite to survive (Sosebee and Wan 1989, MSWD 2004). Under these conditions, honey mesquite is a phreatophyte occupying areas where adult plants have access to permanent underground water (Sosobee and Wan 1989).

Mesquite tree size and shape are correlated with subsurface water characteristics (Wilson *et al.* 2001.). Large adult trees develop and survive when mesquite roots are able to reach stable groundwater supplies. Taproots of adult mesquite can generally reach 12 to 13 meters (39 to 43 feet) when subsurface water is available (MSWD 2004, Fisher *et al.* 1959). Maximum mesquite growth has been measured on deep soils with groundwater within 10 meters (33 feet) of the surface (Sharifi *et al.* 1982, Bainbridge and Virginia 2002). Stromberg *et al.* (1993) compared velvet mesquite (*P. velutina*) aboveground characteristics to available water and found that the height of stands in riparian areas was inversely related to depth to the water table; trees were under 8 meters (26 feet) tall where the groundwater depth was greater than 15 meters (49 feet), but grew to over 12 meters (39 feet) tall where the depth to groundwater was less than 15 meters. Nilsen *et al.* (1983) found honey mesquite in the Sonoran Desert of southern California (15 kilometers/9 miles west of the southern end of the Salton Sea) acquired its water from a groundwater source 4 to 6 meters (13 to 20 feet) deep. At Casa Grande National Monument in Arizona, groundwater supporting a mesquite bosque was naturally (before groundwater pumping began) 4 to 5 meters (13 to 16 feet) below the ground surface (Nabhan 2001, Nabhan and Holdsworth 1998). Stromberg *et al.* (1993) indicated that

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"structurally rich" velvet mesquite stands required groundwater depths of about 6 meters (20 feet) or less.

Mesquite Communities

Mesquite woodlands were once extensive in the Coachella and Imperial valleys and along the Colorado River (Bainbridge and Virginia 2002). Extensive losses in distribution of mesquite hummocks are noted for the Coachella Valley from 1939 to 1998 (CVAG 2003). Mesquite forests are one of the aridland riparian ecosystems that are threatened by groundwater pumping and other types of water development (Stromberg *et al.* 1993). Urban development often taps shallow groundwater associated with groundwater basins, which can cause a gradual decline in associated riparian forests (Stromberg *et al.* 1992).

The mesquite hummocks biotic community is composed of large clumps of low growing honey mesquite shrubs that form hummocks over sand dunes or occur on level terrain (CVAG 2003). Mesquite hummocks are associated with high soil moisture or springs, often associated with fault areas (CVAG 2003). Mesquite hummocks are widely scattered in the Coachella Valley, often in isolated patches associated with higher groundwater levels (CVAG 2003). These hummocks occur in the Coachella Valley in the vicinity of Willow Hole and on the Coachella Valley Preserve, along the southern base of the Indio Hills associated with the San Andreas Fault. Mesquite hummocks were formerly widespread from La Quinta south to the Salton Sea but are now restricted in this area to undeveloped lots amid urban or agricultural lands (CVAG 2003). Water table decreases are associated with reduced occurrence of these hummocks on undeveloped sites (CVAG 2003). Remaining mesquite hummocks are highly fragmented and often senescent, likely due to lack of water resources (CVAG 2003). Sensitive and listed species directly associated with mesquite hummocks are the Coachella Valley round-tailed ground squirrel, Palm Springs pocket mouse, Le Conte's thrasher, Crissal thrasher, Coachella Valley grasshopper, and Coachella Valley milk-vetch (CVAG 2003).

Threats to the mesquite hummock community include depletion of the groundwater and fragmentation (CVAG 2003). Depletion of groundwater reduces or effectively eliminates water available to individual adult mesquite plants, even with the long taproots that adult mesquite typically develop. Lack of available water in various mesquite hummock areas in the Coachella Valley is evident by decadent and declining mesquite (CVAG 2003).

Available evidence, including estimated historic groundwater levels (extrapolated from MSWD 2004 and MSWD 2000) and the data cited herein, indicate that mesquite hummocks along the Banning Fault occur where groundwater naturally (historically) was within 10 to 15 meters (33 to 49 feet) of the ground surface. Scrutiny of 1953 and 2001 aerial photos of the Banning Fault indicate that mesquite hummocks that were/are naturally farther from the groundwater table showed substantially similar leaf cover density (leaf area index) in 1953 to hummocks that were naturally very close to ground water, but these same groups of hummocks showed substantially different leaf cover density in 2001, with the hummocks farther from groundwater showing less leaf cover density. "Biological integrity" (Karr 1991) of mesquite hummocks in the Coachella Valley is likely maintained in moderate-function ecological condition where groundwater

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remains within 15 meters (49 feet), and high-function condition when groundwater is maintained within 10 meters (33 feet).

Effects of Groundwater Decreases on Mesquite

Ecological changes resulting from hydrologic alterations (e.g., reduced biomass, alien species invasion, and ecotonal shifts) have been studied in groundwater-dependent plant communities (Allen-Diaz 1991, Stromberg *et al.* 1996, Castelli *et al.* 2000) and for individual plant species (Shafroth *et al.* 2000, Horton and Clark 2001), but long-term effects on vegetation dynamics have not been documented (Elmore *et al.* 2003). The effects for increases in distance to groundwater for the biotic community of mesquite hummocks range from loss of recruitment or temporary drought stress, to changes in plant cover or floristic composition, to dominant plant die-off and community type-conversion. Plant die-off/community type-conversion is the threshold at which community resilience is exceeded such that the community is wholly altered (Scheffer *et al.* 2001). Decreasing groundwater levels primarily affects mesquite communities through a reduction of (1) the shallow water table necessary for mesquite recruitment, and (2) the long-term maintenance of established adult woody vegetation (Stromberg 1992).

Effects of Groundwater Decreases on Mesquite Adult Individuals

Mesquite are tolerant of adverse conditions (Bainbridge and Virginia 2002) yet relatively moderate groundwater decreases will substantially stress or kill adult mesquite individuals (Stromberg *et al.* 1992). The greatest influence of severe water stress conditions on individual plants in the short-term (such as during a drought) is reduced photosynthesis and reduced or stopped carbohydrate translocation (Sosebee and Wan 1989). Most large floodplain mesquites die if the water table drops below 13 meters (43 feet) (Phillips and Comus 1999). Studies on the effects of groundwater decreases on velvet mesquite found that a reduction in groundwater levels greater than 15 meters (49 feet) below the soil surface resulted in substantial water stress and death of the plant (Stromberg *et al.* 1992). Stromberg *et al.* (1993) indicated that when the water table occurred below 6 meters (20 feet), continual and quantifiable reduction in tree stature resulted. None of these citations indicate an effective ability of mesquite individuals to adapt to groundwater artificially lowered to more than 15 meters (49 feet) of the ground surface.

Effects of Groundwater Decreases on Mesquite Communities

Numerous examples are known of the effects of general groundwater decreases on mesquite-dominated ecosystems. In combination with water diversion, groundwater pumping has affected nearly all river valleys in Arizona's portion of the Sonoran Desert (Nabhan and Holdsworth 1998); as a result, large expanses of riparian forest and mesquite woodlands have died as groundwater levels decreased (Nabhan and Holdsworth 1998). While other biotic communities are also affected by water table decreases, the full relationship between their vegetation changes and lowering groundwater levels is still largely unexplored (Bahre 1991). Nevertheless, it is clear that groundwater pumping immediately outside protected areas can devastate the vegetation within them (Nabhan and Klett 1994), and ultimately effect faunas (Nabhan and Holdsworth 1998).

In the area around Casa Grande, Arizona, groundwater levels have dropped up to 150 meters (492 feet) since 1920 (ADWR 1994a). In the 1940s this agriculture-induced drawdown became the principal cause of the death of the once extensive mesquite bosque at Casa Grande National Monument (Judd 1971). At the Monument the first well was dug in 1902, and water was only 4 to 5 meters (13 to 16 feet) below the mesquite woodland (Nabhan 2001, Nabhan and Holdsworth 1998). Although mesquite adults at the site survived a period (1900 to 1930) when the water table decreased by about 11 meters (36 feet), all the mesquite trees died during a period (1930 to 1950) when the water table dropped about 1 meter (3 feet) per year to a depth of 33 meters (108 feet) (Judd 1971, Stromberg 1993). A heavy infestation of mistletoe developed immediately prior to death (Judd 1971). Although the mistletoe may have hastened plant death, the infestation was probably a response to stressed condition of the plants rather than the sole cause of plant death (Stromberg 1993). Other co-occurring stresses that can occur during times of water stress include reduction of nitrogen fixing activity (Stromberg 1993). Similarly, the creation of the Costa de Hermosillo Irrigation District in Mexico, and the resultant use of groundwater, was noted as the direct cause of the loss of the extensive mesquite bosques in the delta of the Rio Sonora (Nabhan and Holdsworth 1998).

The Surprise Spring Basin is the main source of water for the Twentynine Palms U.S. Marine Corps Base in San Bernardino County, California (Londquist and Martin 1991). The groundwater system includes numerous faults in the area, many of which act as barriers to groundwater movement. Prior to 1953, groundwater was discharged from the basin by transpiration of mesquite, discharge of Surprise Spring, and as outflow across Surprise Spring Fault (Londquist and Martin 1991). Soon after groundwater pumping began in 1953, the spring stopped flowing, and by 1985 almost all of the mesquite had died (Londquist and Martin 1991). From 1953 through 1985, approximately 66,500 acre-feet of groundwater was pumped from the basin, causing groundwater decreases as great as 30 meters (98 feet) near Surprise Spring (Londquist and Martin 1991).

Extensive areas of mesquite communities throughout the southwestern U.S. have been eliminated by lowering of water tables (Phillips and Comus 1999). The citations noted above indicate that mesquite communities do not effectively adapt to groundwater levels artificially lowered to more than 15 meters (49 feet) of the ground surface. Groundwater levels close to natural/historic levels are essential to maintaining existing/remnant mesquite communities. Relatively moderate groundwater decreases will degrade mesquite individual and community productivity, likely degrading ecosystem values for sensitive species such as the Coachella Valley round-tailed ground squirrel. No available evidence indicate that adult mesquite functionally adapt to substantial decreases in groundwater, and most evidence points to severe degradation or elimination in the long-term when groundwater drops deeper than 15 meters (49 feet) from the ground surface. An increase in the distance to groundwater will degrade or eliminate mesquite community functions for concomitant portions of the community already at or near the edge of distance-to-groundwater limitations. Even if a lowering of groundwater tables, compared to natural conditions, does not eliminate a mesquite community outright (type-conversion), it will likely cause a degradation in function (in both the short- and long-term) and generally cause a contraction of a mesquite community in extent (in the long-term). Most analyses of groundwater decreases on vegetation communities fail to consider these long-term implications, but instead focus on the presumed adaptability/survivability of existing adult plants.

Effects of Groundwater Decreases on Mesquite Recruitment

As noted above, natural groundwater levels relatively close to the surface are essential to mesquite recruitment. Mesquite hummocks and bosques typically occur in areas where mesquite roots can reach groundwater during the establishment period (wet period) relied upon for survival by younger plants. When the natural dry period of the climate cycle occurs before younger plants have tapped into consistently moist soils, seedlings typically do not survive (Sosebee and Wan 1989). Recruitment appears to occur as flushes or spurts after atypically wet years (Sosebee and Wan 1989). Relatively minor increases in distance to groundwater will preclude future recruitment of replacement mesquite individuals, even when some of the larger adult mesquite individuals in a community would continue to utilize the lowered water table. Recruitment of new individuals into a population needs to equal mortality to maintain a community in the long-term.

The seedling stage is the most vulnerable period in the life cycle of honey mesquite (Sosebee and Wan 1989). Survival of seedlings depends on the ability of the roots to grow into wet soil; this is critical since the surface soil usually dries very rapidly (Sosebee and Wan 1989). Seedlings are very susceptible to water stress because of the lack of development of anatomical and morphological features that conserve water (Sosebee and Wan 1989). Germination of seeds and seedling establishment depends on several factors, one which is adequate soil moisture (Sosebee and Wan 1989).

Most individual adult mesquite near the patch edge or ecotone of a mesquite community are naturally (or currently) at the functional limit of areas ecologically supportive of mesquite. These are edge areas where conditions for survival (or effective competition) are already marginal for at least one important life history stage (such as seedlings) of the dominant plants of the community. Maintaining groundwater levels close to natural or historic levels is necessary to sustain the extent of a mesquite community in the long-term.

Although exceptional mesquite individuals are notable for extremely deep roots of up to 50 meters (160 feet) (Phillips 1963, Phillips and Comus 1999), and despite the often supposed adaptability of individual adult mesquite plants based on extended deep roots, a linear relationship exists between increases in distances to groundwater and the short- and long-term degradation of ecological functions of mesquite communities. Maximum mesquite growth has been measured on deep soils with groundwater within 10 meters of the surface (33 feet) (Sharifi *et al.* 1982, Bainbridge and Virginia 2002). Substantial differences in height and size of adult mesquite trees have been related to depths to the water table, with significant tree size reductions when the distance to groundwater was naturally greater than 15 meters (49 feet) (Stromberg *et al.* 1993). Of the mesquite trees growing in floodplain communities, one study noted that most of the large mesquites died when the water table was artificially dropped to below 13 meters (43 feet) of the ground surface (Phillips and Comus 1999). Studies on the effects of groundwater decreases on velvet mesquite found that an artificial reduction in groundwater levels to greater than 15 meters (49 feet) below the soil surface resulted in substantial water stress and death of the plant (Stromberg *et al.* 1992). Even if adult mesquite have the ability to grow deep roots, groundwater reductions to below 15 meters (49 feet) of the soil surface limit or eliminate the productivity of individual mesquite plants and preclude recruitment of seedlings, resulting in long-term degradation of the ecosystem functions of the mesquite community.

Therefore, maintenance of self-sustaining mesquite communities in the Coachella Valley will require maintenance of relatively natural groundwater levels. Restoration of self-sustaining mesquite communities in the Coachella Valley where they have declined due to groundwater decreases will require re-establishment of natural groundwater levels.

Mesquite and Aeolian Sand

Mesquite hummocks are highly important to sand accumulation and dune formation/maintenance in high energy wind fields. Within the Coachella Valley, sand dunes accrete in and downwind of mesquite stands (MSWD 2004). These sand dune biotic communities provide core ecological values and/or dispersal linkages for listed and sensitive species, including the flat-tailed horned lizard, Coachella Valley fringe-toed lizard, Le Conte's thrasher, Coachella Valley round-tailed ground squirrel, Palm Springs pocket mouse, Coachella Valley milk-vetch, Coachella Valley giant sand-treader cricket, and Coachella Valley Jerusalem cricket (CVAG 2003). The Coachella Valley was once dominated by nearly 260 square kilometers (100 square miles) of sand dunes; today less than 5 percent of that ecosystem may remain in viable condition (CNLM 2004). Restoration of undeveloped remnant dune areas to viable condition would require re-establishment of natural physical processes (fluvial and/or aeolian) that provide sand source and transport functions that supply the continual sand essential to this dynamic ecosystem.

Mesquite thickets form bosque or hummock communities in many dune systems, creating unique ecological communities within the dunes (Dorweiler 1997) and maintaining the dunes themselves by capturing sand. The shrubs accumulate aeolian sand entrained by the wind from upwind source areas by interrupting the force of the wind, depositing blowing sand around its base (Harris 2003). The mesquite plants cause a partial obstruction to airflow, reducing the wind velocity, causing some of the entrained sand to fall from suspension and gradually accumulate on the downwind side of the shrub. The sand is deposited around the base of the shrubs forming and maintaining hummocks, and supporting local downwind sand dunes. The mesquite hummocks in the northern Coachella Valley are key to maintaining the local sand dune ecosystems that form and are maintained around and downwind of the community.

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CVWD Groundwater Management Plan, Water Table Levels, and the Biotic Communities of the Coachella Valley

Several natural communities that support the species proposed to be covered under the draft CVAG MSHCP are strongly affected by groundwater levels: mesquite hummocks, Sonoran cottonwood-willow riparian forest, southern arroyo willow riparian forest, southern sycamore-alder riparian woodland, mesquite bosque, and freshwater marsh. Of these, freshwater marsh is probably most strongly affected by agricultural drainage, wastewater effluent, and urban runoff; those ecosystems used by bird species adjacent to the head of the Salton Sea are more affected by its water levels than groundwater; and the Sonoran cottonwood-willow riparian forest, southern arroyo willow riparian forest, southern sycamore-alder riparian woodland, and mesquite bosque appear to be mostly out of the area of active groundwater management. Therefore, the natural community type most affected by groundwater withdrawals in the draft CVAG MSHCP plan area is mesquite hummock (Noss *et al.* 2001). The CVWD Water Management Plan calls for a "preferred Alternative 4", which differentially affects the Upper Valley from the Lower Valley (division line at approximately perpendicular to the Valley at La Quinta). The distinction between the two areas is that the Upper Valley is mainly a tourism-based economy with water used for urban environments, domestic and resort usage, and golf courses, whereas the Lower Valley is heavily dominated by agriculture. Alternative 4 calls for elimination of groundwater overdraft throughout the basin by importing and recharging water from the Colorado River, eliminating the decrease in groundwater levels in the Upper Valley, increasing groundwater levels in the Lower Valley, and promoting water conservation (Noss *et al.* 2001). All the alternatives are compared using a groundwater flow model that excludes the Desert Hot Springs (MCGS) area, which is one of the key areas with respect to the draft MSHCP (Noss *et al.* 2001).

Mesquite hummocks are found in two distinct places with regards to groundwater: on or near active faults, such as the San Andreas, and scattered among sand dunes on the valley floor. Mesquite hummocks near active faults are not directly addressed by the CVWD Water Management Plan, and are likely the most threatened of the two types owing to planned and proposed groundwater pumping for the rapidly enlarging cities of Desert Hot Springs, Cathedral City, and Indio (Noss *et al.* 2001). Alternative 4 calls for eliminating the decrease in groundwater in the Upper Valley outside the Subbasin; the flow model and planning process apparently did not cover the Subbasin that supports the mesquite hummocks along the Banning Fault (Noss *et al.* 2001).

Alternative 4 claims to positively affect the remaining mesquite hummocks scattered around the floor of the Lower Coachella Valley. Although groundwater overdraft has been extensive, restoration of groundwater levels (as stated in the preferred alternative) could save these unique biotic communities and possibly aid many of the target species in the MSHCP.

Mesquite Hummocks and Groundwater Monitoring

Further quantification of relationships between mesquite trends and water availability is important from several perspectives. As a management tool, models and monitoring that relate vegetation structure/patterns (such as leaf area index/vegetation volume, seed production, and recruitment) and species associations to water table depth could be used to predict effects of groundwater pumping on groundwater-associated ecosystems and define minimum depths for maintenance of these ecosystems with a high degree of ecological integrity (Karr 1991, Stromberg *et al.* 1993). From a basic ecological perspective, such information is important because it lends insight into the range of variability inherent in groundwater-associated species, and the extent to which their size, productivity, viability, and recruitment can be limited by water (Stromberg *et al.* 1993). Empirical models using both hydrologic data and vegetation structure/patterns have important implications for groundwater-associated ecosystems (Stromberg *et al.* 1993).

The models developed by Stromberg *et al.* (1993) indicate that "structurally rich" velvet mesquite stands require groundwater depths of about 6 meters (20 feet) or less, and that when the water table decreases below this depth, continual and quantifiable decline in tree stature will occur. Similar relationships to groundwater could be developed with parameters such as leaf area index and vegetation volume (Stromberg *et al.* 1993). Because some of these structural parameters also are used to measure the function of avian habitats (Mills *et al.* 1991), the effects of water table decreases on the density of breeding birds could be estimated by extension (Stromberg *et al.* 1993). These or other similar parameters could be utilized to estimate by extension effects of groundwater decreases on other wildlife species as well.

Mission Springs Water District

The MSWD has a service area of 350 square kilometers (135 square miles), including approximately 9,000 services (MSWD 2004). The MSWS updated its master plan from 1980 with the 2000 Water Master Plan (MSWD 2004). The 2000 Water Master Plan forecasts that the MSWD system would experience a water supply shortfall of about 16,357 liters (4,321 gallons) per minute in the year 2005. Nearly all domestic water supplied by MSWD is extracted from the MCGS via deep wells. The MCGS is experiencing overdraft due to the volume of groundwater being extracted by various water producers, including MSWD (MSWD 2004).

The MSWD furnishes water to the communities of Desert Hot Springs, North Palm Springs, West Garnet, Painted Hills, Mission Lakes County Club, Desert Crest Country Club, Dillon Mobile Home Park, a small portion of Palm Springs near Interstate-10 and Indian Road, and other areas.

Mission Creek Groundwater Subbasin

Historic and current data indicate that groundwater overdraft of the Subbasin has resulted in a 17 meter (56 feet) or greater decrease in groundwater elevations (MSWD 2004, MSWD 2000), ostensibly from 1935-1936 levels. The 1935-1936 levels are considered to be steady-state, pre-development conditions (DWR 2003). Currently modeled groundwater levels in the MCGS range from depths of over 60 meters (197 feet) in the northwest portion of the subbasin, to at the ground surface along the Banning Fault in southeast portion of the subbasin near the Desert Dunes Golf Course easterly of Palm Drive (Seven Palms Oasis) and at Willow Hole (MSWD 2004).

The Subbasin is in the northwestern part of a large structural trough that includes the Sea of Cortez (DWR 2003). The west-trending Banning and northwest-trending Mission Creek faults are the major groundwater controls in the subbasin (DWR 2003). Both act as barriers to groundwater movement as these faults have folded sedimentary deposits, displaced water bearing deposits, and caused once permeable sediments to become impermeable (DWR 1964).

Groundwater levels have been decreasing since the early 1950's due to groundwater extractions (DWR 1964, Slade 1981). Groundwater data indicate that since 1952, water levels have decreased at a rate of 0.15 to 0.46 meters (0.5 to 1.5 feet) per year (CVWD 2000). In 1971 the U.S. Geological Survey determined water levels within the subbasin and found a semi-flat gradient to exist making groundwater movement slow with general movement to the southwest (DWR 2003). Current water levels vary in domestic wells from 42 to 220 meters (138 to 722 feet) below ground surface with an average depth to water being 113 meters (371 feet) (MSWD 2000).

Groundwater extractions for the year 2000 within the subbasin were 8,923 acre-feet by the MSWD (MSWD 2000) and 3,176 acre-feet by the CVWD (Levy 2002). Estimated average seasonal tributary runoff (inputs) to the subbasin is 6,000 acre-feet per year (DWR 1964). Groundwater management: The MSWD, CVWD, and DWA have wells within the subbasin (DWR 2003). The subbasin is not adjudicated, but is managed due to the overdraft conditions (DWR 2003). Management concerns to slow or stop overdraft include the recent construction of groundwater recharge spreading grounds in the northwestern portion of the subbasin (DWR 2003). The recharge water source would come from the Colorado River Aqueduct, if water is available (DWR 2003).

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WORDEN WILLIAMS APC
Representing Public Agencies, Private Entities, and Individuals

April 16, 2008

Via Facsimile & U.S. Mail

Brent Gray, Director of Operations
Mission Springs Water District
66575 Second Street
Desert Hot Springs, California 92240

Re: EIR for the Comprehensive Water System Master Plan Project for the Mission Springs Water District

Dear Mr. Gray:

This office represents the Sierra Club and Center for Biological Diversity with regard to certain projects within the Desert Hot Springs area. We have reviewed the Draft Environmental Impact Report ("DEIR") for the above Project, and offer the following comments:

1. <u>The Title And Executive Summary Are Misleading</u>.

Both the Title and the Executive Summary indicate that the DEIR is a program Environmental Impact Report ("EIR"). (See Title Sheet and DEIR, page 1-1.) Neither disclose that the DEIR is actually project specific for some facilities, including the Vista and Terrace Reservoirs and the 1400 zone well, booster pump and pipeline projects. (DEIR, pages 3-42 to 3-43.) These facilities are considered "priorities" and the environmental effects of constructing and operating these facilities are being evaluated in the DEIR on a site-specific basis. Once the DEIR is certified, Mission Springs Water District ("MSWD") will begin construction of these facilities. (DEIR, page 3-43.) This information was not disclosed in either the Title, or the Executive Summary, and the public may have been misled by the description of the document as programmatic only. The Title and Executive Summary should be revised and the document should be recirculated.

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2. The Project Description Is Confusing.

The Project description is confusing to the average reader. For example, on page 3-21, recharge activities on a 60-acre facility are discussed, but on page 3-23, a 190-acre recharge facility is discussed. A reader may be confused into thinking there are two potential recharge programs, when in fact, there is only one.

It is also confusing for the average reader to determine if recharge is or is not considered within the analysis. For each calculation, one wonders if it is with, or without recharge. This is especially true because the DEIR claims on page 3-24 that recharge is not a program proposed by the Water Master Plan ("WMP"). Nevertheless, the Psomas 2007 analysis, which forms the basis for the analysis within the DEIR, relies on 15,000 acre feet of recharge each year. (DEIR, pages 3-22; 4-54 and Psomas 2007 pages 5-6.) The DEIR should be revised to state more clearly what the recharge program is, and that all of the conclusions in the DEIR assume 15,000 acre feet per year of recharge. Finally, because the feasibility of recharge is uncertain, the DEIR must include an assessment of impacts with and without annual recharge.

3. The DEIR Is Missing Important Information.

According to the Project description, the 2005 WMP identified a series of water system improvements which should be implemented to meet future water demands in the service area based on regional and local growth projections, through the year 2025. (DEIR, page 1-2.) These improvements include the installation of new wells, booster pump stations, reservoirs, pipelines, etc. However, the Northwest Area Technical Memorandum prepared by URS in 2007 provides recommendations for adjustments to the current District and WMP's primary pressure zones and identifies system improvements that are forecast to be needed through buildout of the MSWD Service Area around the year 2050. The Northwest Technical Memorandum is to be an Addendum to the WMP. (DEIR, page 1-1.)

Neither the WMP nor the Northwest Technical Memorandum are provided as appendices to the DEIR. The specific conclusions of the Technical Memorandum are not summarized. This missing information leaves the reader wondering what and why certain improvements are proposed, and why certain improvements are a sudden priority. For example, the DEIR at page 3-35 indicates that there is no deficiency in the 1240 zone storage capacity, and yet the Terrace Reservoir is proposed as a priority for the 1240 zone. The 1400 zone has no supply problem, but a new well is proposed. (DEIR, pages 3-36 and 3-43.) Why are certain capital improvement plan improvements proposed for development at this time? Not all improvements scheduled to come on line in 2010 are proposed at this time. (DIER, pages 3-38 to 3-42.) The DEIR should be recirculated with the WMP and the Technical

Memorandum as appendices, so that the public can refer to them while reviewing the DEIR and understand the reason for the various improvements.

4. The Use Of A Program EIR Without Project Specific Analysis Is Inappropriate In This Case.

The California Environmental Quality Act ("CEQA") permits the use of Program EIRs for a series of actions that can be characterized as one large project, in order to provide a more exhaustive consideration of effects and alternatives, and to ensure consideration of cumulative impacts that might be slighted in a case by case basis. (CEQA Guideline § 15168.) A Program EIR can allow an agency to consider broad policy alternatives and programmatic mitigation measures. (Id.) Often the degree of specificity for each action in a Program EIR is less because the effects cannot be predicted with accuracy. (CEQA Guideline § 15146.) However, where project specific information is available, it must be included in the EIR. In this instance, Project specific information has been excluded from the DEIR. The DEIR does not analyze the site specific impacts of the various facilities proposed by the WMP, claiming that their location is uncertain. (DEIR, page 1-2.) However, the specific facilities are known with some level of certainty. Only the date in which they will be constructed is uncertain. (DEIR, page 3-37) For example, see page 3-36 which indicates that a 20 year improvement plan has been made, and Figures 3-2 to 3-6 which show the proposed facilities and their locations in 5 year increments. The DEIR should have provided more site specific analysis. Given that the DEIR is not conducting site specific analysis at this time, the DEIR should clearly address what level of analysis will be done in the future. Currently the DEIR does not commit to site specific analysis in the future for each and every proposed facility. (DEIR, page 3-43.) A Program EIR cannot be used as a shield to avoid site specific analysis, and in this case the it is unclear whether site specific analysis will be done at a later date.

5. The DEIR Fails To Propose Or Commit To Adequate Mitigation For Impacts To Mesquite Dunes.

The DEIR clearly indicates that implementation of the WMP will significantly impact the mesquite hummocks along the Banning Fault on an Project specific and cumulative basis. (DEIR, page 4-99; page 4-110.) According to the DEIR, this impact can be discussed more concretely than other impacts in the DEIR. (DEIR, page 4-98.) According to the DEIR, the Psomas model forecasts that, groundwater levels would drop below the depths needed for mesquite hummocks to remain healthy, and that the level will be so low it will severely stress or kill mesquite in all areas of the hummocks by 2016, without adequate mitigation. (DEIR, pages 4-98 to 4-99.) The loss of mesquite hummocks will result in significant impacts to species dependent on the dune habitat, such as southwestern willow flycatcher, least bell's vireo, Coachella Valley round-tailed ground squirrel, Coachella giant sand treader cricket and the Coachella Valley fringe-toed lizard. (DRI, Page 4-99.). The prediction of die-off in 2016 is based on recharge of 15,000 acre feet per year. If no recharge occurs, or if recharge occurs sporadically, the mesquite may die sooner. The amount of recharge necessary to reduce this impact is estimated to be 9,000 acre feet per year. However, artificial watering of the mesquite dunes, either at the surface or underground, could also mitigate this impact. (DEIR, page 4-98.)

The DEIR fails to provide adequate mitigation for impacts to mesquite hummocks along Banning Fault, and the species dependent on the habitat, as no commitment is made to provide 9,000 acre feet per year of recharge, or, in the alternative, no commitment is made to provide watering at the mesquite dunes. This is a fundamental flaw of the DEIR. CEQA provides a mandatory duty to mitigate the impacts of a project, if feasible. (*Public Resources Code* §§ 21000; 21002; 21002.1; CEQA Guideline § 15020; *Citizens for Quality Growth v. City of Mount Shasta* (1988) 198 Cal.App.3d 433; 243 Cal.Rptr. 727.) Even if the impact cannot be reduced to below significance, it must be minimized. (*Id.*) An agency cannot discharge its duties under CEQA. (*City of Marina v. Board of Trustees of California State University* (2006) 39 Cal.4th 341; 46 Cal.Rptr.3d. 355) None of the mitigation measures on pages 4-104 to 4-109 will avoid, minimize or rectify the impact to mesquite dunes from the WMP, as required under CEQA.[1]

The DEIR goes into great detail to explain what the Multiple Species Habitat Conservation Plan ("MSHCP") is proposing with regard to mesquite. (DEIR page 4-98.) However, as disclosed within the DEIR, MSWD has not decided whether it will become a Participating Entity within the MSHCP. (DEIR, page 4-87.) The mitigation measures from the MSHCP are not binding on the MSWD unless it specifically adopts them, and the DEIR does not indicate that they have been adopted. (DEIR, page 104.) The DEIR indicates that the Water Management Plan identifies impacts that can reduce the effects of basin overdraft, but fails to state what these mitigation measures are, and whether they are feasible. (DEIR, page 4-104.) The DEIR fails to identify or make a commitment to any specific mitigation measures that the MSWD will undertake to mitigate the implementation of the WMP, but indicates that the implementable measures are not enough to reduce the impacts to water

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[1] The CEQA Guidelines define mitigation in Section 15370 as follows:

> *"Mitigation" includes:*
> *(a) Avoiding the impact altogether by not taking a certain action or parts of an action.*
> *(b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.*
> *(c) Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.*
> *(d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.*
> (e) Compensating for the impact by replacing or providing substitute resources or environments.

dependent habitats to a less than significance. As indicated above, the MSWD has a duty under CEQA to minimize the impact to the maximum extent feasible.

The MSHCP depends on the mesquite dune habitat as a critical element in providing for the endangered and threatened species mentioned above. If the WMP will result in the destruction of the mesquite dunes, the entire MSHCP may be at jeopardy. The DEIR has failed to address this impact, stating only that the lowering of the groundwater table "would conflict with the goals of the MSHCP if it results in impacts to water dependent habitats." (DEIR, page 4-104.)

The DEIR needs to be revised to identify all feasible mitigation measures to reduce the impact to mesquite dune habitat.

Finally, the DEIR must recognize that the potential impacts resulting from destruction of mesquite will result in harm to endangered species in violation of the State and Federal Endangered Species Acts, particularly if MSWD does not elect to participate in the MHSCP.

6. <u>The DEIR Fails To Adequately Address Global Climate Change Issues</u>.

The DEIR briefly addressed whether the Project will affect global climate change, and claims that it is impossible to make a definitive determination on the significance of the Project's greenhouse gas emissions on page 4-146. The DEIR then proceeds to do the impossible, and concludes that the impact is not significant on an individual basis, but avoids a conclusion on a cumulative basis. (DEIR, page 4-156 and pages 4-158-159.) Given the stated uncertainty about the significance of the Project's incremental contribution, the DEIR should have concluded that the impacts are, at minimum, cumulatively significant, and imposed mitigation measures to reduce the impact. The DEIR claims that except for the use of more energy efficient equipment, the mitigation measures proposed by the Attorney General are not feasible. (DEIR, page 4-158.) The DEIR claims that mitigation in the form of planting trees is not feasible because the project is in the desert. (Id.) This conclusory statement is not supported by substantial evidence. Given the global nature of the impacts, carbon sequestration that includes the planting of trees need not occur within the desert in order to help mitigate the impact of the project.

In addition, the DEIR failed to address whether global climate change will impact the WMP. Although the science of climate change is still developing, some impacts can be predicted. For example, the snowpack in the Sierra's is disappearing, which will affect the amount of water available through the State Water Project. (See attached from **<u>http://www.climatechoices.org/impacts_water</u>**.) The Intergovernmental Panel on Climate Change projected with "high confidence" that water supplies stored in mountain snowpacks such as the Sierra Nevada will decline around the world, reducing water availability in regions supplied by meltwater.[2] Most montane ice fields are predicted to disappear during this century, further exacerbating water shortages in many areas of the world.[3] The IPCC specifically identified the American West as vulnerable, warning, "Projected warming in the western mountains by the mid-21st century is very likely to cause large decreases in snowpack, earlier snow melt, more winter rain events, increased peak winter flows and flooding, and reduced summer flows."[4] These changes would shift available water supplies from summer - when they are most needed by people, agriculture, and ecosystems - to earlier in the year.[5] The IPCC also warned that the results would include "a projected increase in the chance of summer drying in the mid-latitudes," which includes the American West, "with associated increased risk of drought."[6] All in all, the IPCC concluded that in North America, including the fast-growing western United States, "[r]educed water supplies coupled with increases in demand are likely to exacerbate competition for over-allocated water resources."[7]

The U.S. National Assessment water sector report also summarizes similar concerns:

> "More than 20 years of research and more than 1,000 peer-reviewed scientific papers have firmly established that a greenhouse warming will alter the supply and demand for water, the quality of water, and the health and functioning of aquatic ecosystems."[8]

In California the Legislature has recognized that greenhouse gas emissions and global warming pose a serious threats to natural resources and the environment of California from the potential adverse reduction in the quality and supply of water to the state from the Sierra snowpack.[9] A dry climate caused by global warming would impose large costs and challenges on California severely affecting the economies of some rural and agricultural

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[2] IPCC 2007, "Summary for Policy Makers," N. Adger et al, in Impacts, Adaptation and Vulnerability.

[3] Epstein, P.R. and E. Mills (eds.). 2005. "Climate change futures health, ecological, and economic dimensions." The Center for Health and the Global Environment, Harvard Medical School. Cambridge, Massachusetts, USA.

[4] IPCC 2007, "Technical Summary," M. Parry et al, in Impacts, Adaptation and Vulnerability, 62.

[5] The Rocky Mountain Climate Organization, NRDC 2008, "Hotter and Drier: The West's Changed Water Supply" S. Saunders et al.

[6] IPCC 2007, "Global Climate Projections," G. Meehl et al, in The Physical Science Basis.

[7] IPCC 2007, "Technical Summary," M. Parry et al, in Impacts, Adaptation and Vulnerability.

[8] Gleick, Peter H., 2000. Water: The Potential Consequences of Climate Variability and Change for the Water Resources of the United States. Report of the Water Sector Assessment Team of the National Assessment of the Potential Consequences of Climate Variability and Change, U.S. Global Change Research Program, Pacific Institute for Studies in Development, Environment, and Security.

[9] Health and Safety Code § 38501(a).

regions of California.[10] There is strong evidence that wildfires, precipitation patterns, and snowmelt are already being influenced by anthropogenic climate change.[11] The recognized environmental impacts in the local and regional vicinity of the Project must be accounted for in the EIR.

The impacts of climate change that must be addressed in water resources planning are varied and far reaching. The most significant impacts of global warming on water management are rising temperatures, increasing proportions of annual precipitation in the form of rainfall, disrupted streamflow timing, altered snowpack conditions, increased evaporation and transpiration, greater risk of fires, and sea level rise.[12] Climate change and variability will affect the timing, amounts, and form of precipitation, in turn, affecting all elements of water systems from watershed catchment areas to reservoirs, conveyance systems, and wastewater treatment plants.[13] These systems are already stressed today due to a multitude of factors including limitations on supply from the Sacramento San Joaquin Delta.[14] Overdraft and contamination of groundwater sources have reduced the availability of groundwater supplies in many areas.[15] Saltwater intrusion in coastal aquifers is a problem in many areas. [16] Climate change has the potential to exacerbate these situations, requiring increased attention from water managers and municipal planners. These factors must be accounted for in the EIR for this Project because the Project relies upon water resources that will be in greater scarcity in the future.

The combined threats of Climate Change and population growth pose serious threats to the water supply of the Sierra Nevada.[17] Evidence of warming trends is already being seen in winter temperatures in the Sierra Nevada, which rose by almost 2 degrees Celsius (4 degrees Fahrenheit) during the second half of the 20th century.[18] Trends toward earlier snowmelt and runoff to the San Francisco Bay-Delta over the same period have also been

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[10] California Climate Change Center 2006, "Climate Warming and Water Supply Management in California", J. Medellin et al. University of California, Davis

[11] Westerling, et al. "Warming and Earlier Spring Increases Western U.S. Forest Wildfire Activity." Sciencexpress, July 6, 2006, p.1, 10.1126, Science, 1128824.

[12] NRDC 2007, "In Hot Water: Water Management Strategies to Weather the Effects of Global Warming" Nelson et. al.

[13] Miller, Kathleen and David Yates, 2005. "Climate Change and Water Resources: A Primer for Municipal Water Providers." AWWA Research Foundation and the University Corporation for Atmospheric Research.

[14] Los Angeles Lawyer 2008, "Delta Blues", Bruce Tepper.

[15] NRDC 2007, "In Hot Water: Water Management Strategies to Weather the Effects of Global Warming" Nelson et. al.

[16] NRDC 2007, "In Hot Water: Water Management Strategies to Weather the Effects of Global Warming" Nelson et. al.

[17] Sierra Nevada Alliance 2003, "Troubled Water of the Sierra", K. Timmer.

[18] NRDC 2007, "In Hot Water: Water Management Strategies to Weather the Effects of Global Warming" Nelson et. al.

detected.[19] Future changes in snowpack are a great concern because snow levels have been predicted to retreat 500 feet in elevation in California for every rise of one degree Celsius.[20] Under a low emissions scenario Sierra snowpack is reduced 30-70%.[21] Under a higher emissions scenario snowpack would decline 74-90%, with impacts on runoff and streamflow that, combined with projected declines in winter precipitation, could fundamentally disrupt California's water rights system.[22]

A significant body of analysis suggests that total streamflows in the future will be reduced in comparison with historical levels.[23] Analysis by the California Climate Change Center in 2006 found that climate change could lead to significant reductions in total reservoir inflows and total Delta inflows.[24] Approximately two-thirds of model runs revealed likely reductions in total inflows for major northern California reservoirs, with maximum projected reductions of approximately 12 percent.[25]

Sea level rise also creates potentially severe impacts on water supply.[26] For example, for the San Francisco Bay and the Sacramento-San Joaquin River Delta, global warming impacts will compromise ecosystem health, water supply, and water quality.[27]

Scientists indicate that climate change will also exacerbate the problem of flooding by increasing the frequency and magnitude of large storms, which in turn will cause an increase in the size and frequency of flood events.[28] The increasing cost of flood damages and potential loss of life will put more pressure on water managers to provide greater flood

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[19] Dettinger, Michael D. and Dan R. Cayan, 1994. "Large-scale Atmospheric Forcing of Recent Trends Toward Early Snowmelt Runoff in California." Journal of Climate, 8:606-23.

[20] Roos, Maurice, 2005. "Accounting for Climate Change" in California Water Plan Update 2005, Vol. 4, Reference Guide, Public Review Draft, California Department of Water Resources, p.5.

[21] Hayhoe, K et al,. 2004. "Emissions pathways, climate change, and impacts on California." *PNAS* 101 no. 34:12422-12427.

[22] Hayhoe, K. et al 2004. Emissions pathways, climate change, and impacts on California. *PNAS* 101 no. 34:12422-12427.

[23] NRDC 2007, "In Hot Water: Water Management Strategies to Weather the Effects of Global Warming" Nelson et. al.

[24] California Climate Change Center 2006, "Estimated Impacts of Climate Warming on California Water Availability Under Twelve Future Climate Scenarios" Tingju Zhu et al, University of California, Davis http://www.climatechange.ca.gov/research/impacts/pdfs/CEC-500-2006-040.pdf

[25] California Climate Change Center 2006, "Estimated Impacts of Climate Warming on California Water Availability Under Twelve Future Climate Scenarios" Tingju Zhu et al, University of California, Davis http://www.climatechange.ca.gov/research/impacts/pdfs/CEC-500-2006-040.pdf

[26] NRDC 2007, "In Hot Water: Water Management Strategies to Weather the Effects of Global Warming" Nelson et al.

[27] NRDC 2007, "In Hot Water: Water Management Strategies to Weather the Effects of Global Warming" Nelson et. al.

[28] NRDC 2007, "In Hot Water: Water Management Strategies to Weather the Effects of Global Warming" Nelson et. al.

protection.[29] At the same time, changing climate conditions (decreased snowpack, earlier runoff, larger peak events, etc.) will make predicting and maximizing water supply more difficult.[30] These changes in hazard risk and water supply availability must be considered during environmental review.

Water quality, in addition to water quantity and timing, will also be impacted. Changes in precipitation, flow, and temperature associated with climate change will likely exacerbate water quality problems.[31] Changes in precipitation affect water quantity, flow rates, and flow timing.[32] Shifting weather patterns are also jeopardizing water quality and quantity in many countries, where groundwater systems are overdrawn.[33] Decreased flows can exacerbate the effect of temperature increases, raise the concentration of pollutants, increase residence time of pollutants, and heighten salinity levels in arid regions.[34]

Given the reduction in water available through the Colorado River Aqueduct, it seems likely that there may be no water available for recharge from either the Colorado River or the State Water Project. In fact, the Board of the MSWD testified recently at the Sentinel Energy Project Hearing on October 5, 2007 that a 30% reduction in water is expected. (See attached excerpt of transcript.) A 2007 National Research Council report on Colorado River basin hydrology concluded, over the next 10-40 years, there is a tendency in the results of climate models to forecast slightly decreased annual precipitation in the Southwestern United States by less than ten percent below current values, with relatively

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[29] NRDC 2007, "In Hot Water: Water Management Strategies to Weather the Effects of Global Warming" Nelson et. al.

[30] NRDC 2007, "In Hot Water: Water Management Strategies to Weather the Effects of Global Warming" Nelson et. al.

[31] NRDC 2007, "In Hot Water: Water Management Strategies to Weather the Effects of Global Warming" Nelson et. al.

[32] The following examples are cited in: Gleick, Peter H. et al., 2000. Water: "The Potential Consequences of Climate Variability and Change for the Water Resources of the United States." The report of the Water Sector Assessment Team of the National Assessment of the Potential Consequences of Climate Variability and Change," U.S. Global Change Research Program, Pacific Institute for Studies in Development, Environment, and Security.

[33] Epstein, P.R. and E. Mills (eds.). 2005. "Climate change futures health, ecological, and economic dimensions." The Center for Health and the Global Environment, Harvard Medical School. Cambridge, Massachusets, USA.

[34] Schindler, D.W., 1997. "Widespread Effects of Climatic Warming on Freshwater Ecosystems in North America." Hydrological Processes, Vol. 11, No. 8, pp.1043-1067. Mulholland et al., 1997. "Effects of Climate Change on Freshwater Ecosystems of the South-eastern United States and the Gulf Coast of Mexico." Hydrological Processes, Vol. 11, pp.949-970.

little change in annual precipitation amounts forecast for the headwaters regions of the Colorado River.[35]

A seminal study by Gleick and Nash of the Colorado River basin demonstrated the crucial role evapotranspiration plays in water availability. The authors concluded that if temperature rose by 4 degree Celsius, precipitation would need to jump by nearly 20 percent to maintain historical runoff levels.[36] In 2007, the National Research Council reached similar conclusions in a review of the science regarding hydrologic variability in the Colorado River basin. The investigation included analyses of historical hydrology and likely future variability, as a result of climate change. The report projects that future reductions in total Colorado River streamflow are likely:

> "This body of research collectively points to a future in which warmer conditions across the Colorado River region are likely to contribute to reductions in snowpack, an earlier peak in spring snowmelt, higher rates of evapotranspiration, reduced late spring and summer flows and a reduction in annual runoff and streamflow."[37]

The DEIR has failed to address this issue. Currently the analysis in the DEIR is highly dependent on recharge. Psomas assumes at least 15,000 of groundwater recharge per year and found that the amount of future storage capacity was very dependent on the amount of recharge. (Psomas 2007, page 6-1 to 6-2.) No recharge at all would drastically alter the assumptions, and yet the DEIR failed to include a no-recharge scenario, and to analyze the impacts from such a scenario. CEQA's informational purposes are not satisfied by an EIR that simply assumes a solution to the problem of supplying water to a proposed project without presenting sufficient facts to evaluate the pros and cons of supplying the amount of water the project will need. (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 430-431.) How much drawdown would occur,

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[35] Committee on the Scientific Bases of Colorado River Basin Water Management, February 2007. Colorado River Basin Water Management: Evaluating and Adjusting to Hydroclimatic Variability. National Research Council, p.63.

[36] Miller, Kathleen and David Yates, 2005. Climate Change and Water Resources: A Primer for Municipal Water Providers. AWWA Research Foundation and the University Corporation for Atmospheric Research, American Water Works Association, pp.40-41, based on Nash, L. L. and P. H.Gleick,1993. The Colorado River Basin and Climatic Change: The Sensitivity of Streamflow and Water Supply to Variations in Temperature and Precipitation.
Report, U.S. Environmental Protection Agency, Office of Policy, Planning and Evaluation, Climate Change Division, EPA 230-R-93-009.Oakland,CA: Pacific Institute for Studies in Development, Environment, and Security See also Nash, L.L. and P.H.Gleick, 1991. "The Sensitivity of Streamflow in the Colorado Basin to Climatic Changes." Journal of Hydrology, 125:221-241.

[37] Committee on the Scientific Bases of Colorado River Basin Water Management, February 2007. Colorado River Basin Water Management: Evaluating and Adjusting to Hydroclimatic Variability. National Research Council, p.67.

and how low would the water table go? How much energy will be expended to drill deeper, and bring the water to the surface? How will this affect sensitive species? This is precisely the kind of analysis that should be done in a Program EIR.

Conclusion

The Water System Master Plan Project represents another step down the path leading to the depletion of regional water supplies and loss of fragile ecosystems dependent upon underground aquifers for survival. The continuing harm to mesquite hummocks is dramatic, and without appropriate mitigation measures and alternatives, the end result is likely to be the complete loss of mesquite hummocks and plant and animal species dependent upon the unique and fragile desert ecosystem. The DEIR must recognize this potential impact and include all appropriate analysis, mitigation measures and alternatives to properly mitigate and avoid impacts to mesquite hummocks to the extent feasible. Simply concluding that mesquite hummocks will be lost is not enough. Further, the DEIR must be revised to adequately describe the Project being considered and adequately assess all of its environmental effects, including its contribution to climate change.

The DEIR should be revised and recirculated for public review. Mitigation measures should be included to reduce impacts to mesquite dunes.

Thank you for the opportunity to comment on the DEIR for this Project. Please place this office on the mailing list to receive a copy of the Final EIR and any public notices regarding the Project.

Very truly yours,

WORDEN WILLIAMS, APC

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DWB:lg

Enclosures

California . Northeast

Climate Choices

GLOBAL WARMING IMPACTS

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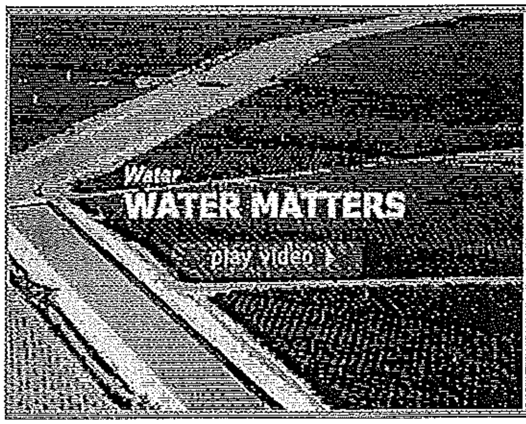


Water managers, hydrologists, and civil engineers warn that global warming could lead to serious water shortages in California. Hear what they have to say in the video, Water Matters.

Video credits

IMPACTS > Water

Water shortages—already a problem for California—will likely get much worse if global warming continues unchecked, with consequences for city-dwellers, agriculture, and taxpayers. The chief reason is that much of the state's water supply during the dry spring and summer months comes from snowpack in the Sierra Nevada mountains, which could virtually disappear by the end of the century due to global warming. Meanwhile, demand for water is expected to increase—both because of the hotter climate and population growth.

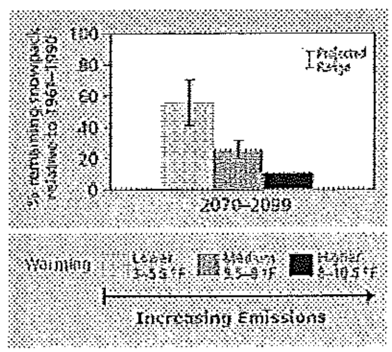
GLOBAL WARMING PROJECTIONS

To learn more about the effects of global warming on California under different emissions scenarios, see the ***Impacts Overview.***

Shrinking Snowpack

By the end of the century, if global warming emissions continue unabated, statewide annual average temperatures are expected to rise into the higher warming range (8 to 10.5°F). This temperature rise will lead to more precipitation falling as rain instead of snow, and the snow that does fall will melt earlier, thus decreasing the spring snowpack in the Sierra Nevada by as much as 90 percent. This would pose extreme challenges to water managers, hamper hydropower generation, and nearly eliminate skiing and other snow-related recreational activities. However, if global warming emissions are significantly curbed and temperature increases are kept in the lower warming range, the losses in snowpack are expected to be only half as great.

DECREASE IN SIERRA NEVADA SNOWPACK, 2070-2099



*projected range highlights the dual role of precipitation and temperature.
Chart data source: Cayan et al. 2006.

Costly Challenges

As global warming continues, decreasing snowmelt and spring stream flows, coupled with increasing demand for water resulting from a growing population and a hotter climate, will likely lead to more water shortages. By the end of the century, if temperature increase reaches the medium warming range (5.5 to 8°F) and precipitation decreases, spring streamflow could decline up to 30 percent. Agricultural areas are expected to be hard hit, with southern California farmers able to access about 25 percent less water than they need. As a result of increasing temperature and population, residential

RESOURCES & LINKS

ucsusa.org*: Global Warming and California's Water Supply fact sheet. (PDF)*

energy.ca.gov*: "Climate Change Impacts on Water for Agriculture in California: A Case Study in the Sacramento Valley," California Climate Change Center, 2006. (PDF)*

energy.ca.gov*: "Climate warming and* ratepayers and agricultural water customers are also expected to pay more than $600 million more per year for water toward the end of the century than they otherwise would have paid due to normal cost increases.

water supply management in california," California Climate Change Center, 2006. (PDF)

energy.ca.gov: *"Predictions of Climate Change Impacts on California Water Resources CALSIM II: A technical note" California Climate Change Center, 2006. (PDF)*

Sources

Cayan, D.,A. Luers, M. Hanemann, G. Franco, and B. Croes. 2006. *Climate change scenarios for California: An overview.* Sacramento, CA: California Climate Change Center. Online at www.energy.ca.gov/2005publications /CEC-500-2005-186/CEC-500-2005-186-SF.pdf.

Hayhoe, K., D. Cayan, C.B. Field, P.C. Frumhoff, E.P. Maurer, S.C. Moser, S.H. Schneider, K.N. Cahill, E.E. Cleland, L.L. Dale, R. Drapek, W.M. Hanemann, L.S. Kalkstein, J. Lenihan, C.K. Lunch, R.P. Neilson, S.C. Sheridan, and J.H. Verville. 2004. Emissions pathways, climate change, and impacts on California. *Proceedings of the National Academy of Sciences* 101:12422-12427.

Medellin, J., J. Harou, M. Olivares, J. Lund, R. Howitt, S. Tanaka, M. Jenkins, and T. Zhu, 2006. *Climate warming and water supply management in California.* Draft report. Sacramento, CA: California Climate Change Center. Online at www.energy.ca.gov/2005publications /CEC-500-2005-195/CEC-500-2005-195-SD.pdf.

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INFORMATIONAL HEARING AND SITE VISIT

BEFORE THE

CALIFORNIA ENERGY RESOURCES CONSERVATION

AND DEVELOPMENT COMMISSION

In the Matter of:	)	
	)	
Application for Certification for the CPV Sentinel Energy Project by CPV Sentinel, LLC	)))	Docket No. 07-AFC-3
	)	

CARL MAY CENTER

11711 WEST DRIVE

DESERT HOT SPRINGS, CALIFORNIA

FRIDAY, OCTOBER 5, 2007

1:45 p.m.

Reported by:
Troy Ray
Contract No. 170-07-001

PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

Hernandez.

Folks, I want to just point out that I received a couple of letters, one from Senator Battin and one from Assemblyman Ashley. And what happens when we receive letters is we scan them; we put them in pdf form and we put them up on our website.

So if you go to our website, everything that we receive should be up there and available for the public to see. And if you want to know how to do that, you can speak with Mike Monasmith, our Public Adviser.

Arden Wallum, you wanted to address the Committee, please.

And also, if there are any other public officials who wanted to make comment to the Committee who did not fill out a blue card, just please stand up and sort of form a line, if you wish to speak. Mr. Wallum.

MR. WALLUM: Welcome to Desert Hot Springs. And when I told your staff that they'd be blown away by our wonderful community, I didn't really literally mean it, but like Scott said, we refer to it as therapeutic breezes. The weather here really is very nice. And we wanted to welcome you to our wonderful community.

Before I begin I wanted to introduce my Board. Most of them are here today. Randy Duncan, the Vice President, is here with us. Nancy Wright, Director Wright. Dorothy Glass, Director Glass is here. And Director Furbee, John Furbee, is here. They might get up and add to what I say. Usually that's how our meetings go. If they think that I left something out, they are very free to get up and add to what I have to say.

You know, we recognize the need for power and are very supportive of that need and that requirement. And, in fact, we're probably one of your major customers. We literally spend millions of dollars every year on energy to put that water in the pipe.

And I thought what would be appropriate today, because in visiting with the staff, like you said, this is an introductory meeting. I didn't want to get into the details. Because I can assure you we can talk about water for days.

And, in fact, we had a meeting on Wednesday where we barely touched the surface of these issues, and we were there for nearly four hours.

In my visit this morning, I was also visiting with some of the citizens over at the Sidewinder, and you know, there are some misunderstandings out there. And so I thought what would be important for me to do today is to explain Mission Springs Water District's role of all of these agencies in this process.

We are purveyors. We bring the water to you and we take it from you. And, in fact, this process involves both of those. I won't get too deeply into what goes on once we take it from you, but from an engineering standpoint, and that's what I am, we find that one of the more interesting processes in our plant.

But we basically push water down pipes. Our charter is the Water Code, a big thick book. We're a county water district. And you got to remember that. And the people in this community must remember that. We are not the watermasters in this particular Valley right now. This Valley is not adjudicated. We should be. We know more about the water than anybody. We care about it; our interest is always in the best interests of most of the people in this community.

We're the ones that have to buy it. And

I hate like hell to raise rates. Maybe my ratepayers don't think that, but I can tell you something, we live in fear of raising rates. And we want to keep them as low as we possibly can.

We are the closest form of government to the people. Everybody can walk into my meetings; they can walk into high-level Board Members, like yourself, and Commissioners like yourself, and visit with us.

But we have an interest in this community; we love it, and we want to protect what is ours.

We are, like I said, a county water district. We are the purveyors. There are three land use agencies within our district. We have the City of Desert Hot Springs; we have the City of Palm Springs; and we have the county.

Typically these are the agencies that are the ones that do the permitting. In this particular case, a unique case, we have a power plant. So, the California Energy Commission, the CEC are the ones that will be doing the permitting or certification. They're the ones that will be the lead agency.

The issue here is the wise use of water.

And when these other communities, like Desert Hot Springs or Palm Springs, come in; they say we're doing an EIR, and through a CEQA process, they are required by law to ask the purveyor, which would be us, to do the water supply assessment.

Now, you're going to do something similar to that. And I might also say -- you know, I'm going to say it again because I've got it at the end of my presentation, my conversations with the CEC Staff have been impressive as hell. They are capable of understanding the issues; they're a quick study. And I want to compliment them for the work that I think they've done to date; and I think they've identified the correct issues.

For instance, when a development comes in. I'm going to draw a relationship that's similar to a development, because that's what this is. A developer comes in, says we want to use water. This particular usage of water, like referred to earlier -- and incidentally, we refer to this 550 acrefeet versus the 1100 acrefeet. You know, we have to plan for 1100 acrefeet. In fact, we should plan for more than that.

When you get ready to turn that faucet

on during those hot days, that's the peak demand. And so when we have to build pumps and tanks and transmission lines and collection systems and interceptors and treatment systems, we have to do it for that max day. We don't get to average it out. We have to be ready to provide it.

And the same thing goes with the power plant. We need to look at what their max day consumption is. When they confine that usage to a 60-day period each year, that period corresponds quite closely with our peak demands.

And I'm going to bring another issue into that. But to add confusion to this water war, or water world, you have Desert Water Agency, which is basically our state contractor.

They and CVWD us a, we call it a pump tax; they don't like to refer to it as that. But basically we pay a fee on all the water that we pump. And that fee will be over $1 million next year. And rise every year probably thereafter.

In addition to that, like you've heard today, we expect a 30 percent reduction in the amount of water that we actually do get. So we are worried about the balance of water in this issue.

The methodology is what confuses people. And that is because they do not charge for what they deliver, but they charge on where everybody pumps. So when somebody new comes in, like the power plant, they pay a fee based on what they're pumping. That does not mean additional water is coming into the Valley.

In fact, what you heard today and what you'll hear from the Governor, what you will hear from Steve Robins and Dave Lukid is that we can expect a 30 percent reduction in the amount of water that's coming into this area.

Now, I've heard a number of different stories about power and how the need for power during these hot days is so important. I might remind you, everyone, that the need for water during those very hot days is the same. I go from 3 million gallons a day to 15 million gallons a day. It'll correspond identically to the need that they will have.

Now, I don't care. If we can work out a way to do it, that's fine. They're a customer; we're a purveyor; we're not the watermasters. And this process, this process that you're going through will determine whether that is the wise use of water; whether they are doing what they can to conserve water.

And I am impressed with your staff, and I'm impressed with this process. So with that said, I hope that you will look at all of the information as it is brought forward. And like I said, we don't object to power. We realize there's a need for power. We're a big customer, but we also look at what that need for water will be in the future.

With that said, I don't know if you have any questions. I wanted to ask my Board if they have anything.

DIRECTOR GLASS: I only have one statement to make. I --

HEARING OFFICER CELLI: Please come to the microphone and identify yourself.

DIRECTOR GLASS: My name is Dorothy Glass. I'm a Director on the Mission Springs Water Board.

(Pause for microphone system.)

DIRECTOR GLASS: Oh, sorry about that. I hear over and over again that they will use reclaimed water. I think that really is a misconception.

Our water that is percolated at our sewer treatment plant goes down Valley. We do not reuse that water. We do not recapture it. We have no way of banking it. And the wells they would put at the proposed power plant would be upstream from our sewer treatment plant. There is no way they can utilize that water.

They can pay us for it, which they propose, but it will not be using reclaimed water. It is five miles from there to their plant. And they see no way that they could utilize that water.

So I just wanted to clear up that misconception. And I thank you for letting me speak.

HEARING OFFICER CELLI: Thank you, Ms. Glass. Please. I wanted to, while I have this moment, I want to make something -- reiterate something. And that is that this Committee is a separate body from the California Energy Commission Staff. And so the staff is represented over here by Mr. Pfanner.

And generally you want to speak to the staff or the Public Adviser's Office, as members of the public, when you want to communicate. As I