3.0 CHANGES TO DRAFT EIR

IN THIS SECTION:

Changes to Draft EIR text that are identified below are shown in underlined type for new text and ~~strikeout~~ type for deleted text.

3.1 CHANGES TO "SUMMARY OF IMPACTS" (DEIR CHAPTER 2.0)

Page 2-10 Revise the recommended revision to General Plan action CC3.3.8 as shown in the SUMMARY OF IMPACTS (Chapter 2.0) of this document.

3.2 CHANGES TO "PROJECT DESCRIPTION " (DEIR CHAPTER 3.0)

Page 3-13 On Table 3-3, revise the reference under "Other Pending Development" from Table 3-3 to Table 3-4.

3.3 CHANGES TO "AESTHETICS" (DEIR CHAPTER 4.3)

Page 4.5-10 Correct subsection header to read: 4.3~~2~~.2 RELEVANT PROJECT ELEMENTS.

Page 4.5-11 Correct subsection header to read: 4.3~~2~~.2 IMPACTS AND MITIGATION MEASURES.

Page 4.3-13 Revise the last sentence of the second paragraph as follows:

The Golf Club Drive site is not highly visible from surrounding areas and is not a substantial part of any scenic public views. Figure 4.3-1 identifies panoramic views from Pogonip, which generally consist of views of Monterey Bay and distant Monterey Peninsula hilltops with panoramic views of the City of Santa Cruz in the foreground. The Golf Club Drive area is largely screened from view by existing tree cover. Portions of future buildings may be visible, as is other development in the area, but would not obstruct distant bay and mountain views.

Page 4.5-17 Revise the first sentence of the last paragraph as follows:

In areas where new mixed-use, infill or intensified development may be proposed in the future, new buildings may result in substantial degradation of the visual character of the surrounding area if new buildings are overly massive, substantially taller or out of scale with adjacent areas. This is especially a concern for residential areas next to mixed-use areas. This would also be a concern in areas planned for intensified development, such as the Golf Club Drive area and Swenson sites. As indicated in the Impact 4.3-1 discussion, neither site is prominent within scenic views. Views of the Golf Club Drive area are largely screened from view along Pogonip trails due to intervening tree cover and topographical changes. There are limited vantage points where the future development may be partially visible, depending on overall structural height and massing. However, the urban landscape (i.e., the Harvey West area and other parts of the City) also are visible as part of scenic views of the bay and distant mountains.

3.4 CHANGES TO "WATER SUPPLY" (DEIR CHAPTER 4.5)

Page 4.5-2 Revise the last two sentences of the first full paragraph as follows:

The City adopted its *2005 Urban Water Management Plan* (UWMP) in February 2006 and adopted an updated 2010 UWMP on December 13, 2011 as further discussed below in the "Water Supply Planning & Adopted Plans" subsection. ~~In accordance with state law, the City is currently updating the UWMP, for planned adoption in Fall 2011.~~

Page 4.5-4 Revise and expand the first two full sentences as follows:

The City currently serves nearly 21,600 ~~21,000~~ residential accounts, approximately 2,200 commercial, industrial, institutional and municipal accounts, and 450 ~~500~~ irrigation accounts (City of Santa Cruz Water Department, December 2011 ~~EKI, March 2011~~). In addition to domestic demand, the City supplies approximately 21 ~~18~~ million gallons of water per year for agricultural uses along the North Coast outside of City limits. The single-family residential class is the City's largest customer category in terms

of both the number of accounts and total amount of water consumed; the overall proportion of residential water use that goes to outdoor purposes is about 25% (Ibid.). The University of California currently represents about 6% of system demand.

Page 4.5-6 Revise the third sentence of the last paragraph as follows:

Total annual extraction from the Purisima aquifer by ~~all pumpers~~ the City and Soquel Creek and Central Water Districts has ranged between 1,092 and 1,210 MGY between 2006 and 2010 (City of Santa Cruz Water Department, December 2011). ~~is estimated at nearly 2,000 million gallons per year (MGY) of which~~ The City produced approximately 119 to 179 MGY during this time with 164 MGY produced in 2008; City production is approximately 13-14% of this total ~~167 MGY (8% of total~~) (City of Santa Cruz Water Department, December 2011~~February 2006~~).

Page 4.5-8 Revise last paragraph and footnote as follows:

The 2005 UWMP reported that on average, about 79% of the City's annual water supply needs are met by surface diversions from the coastal streams (32%) and San Lorenzo River (47%), while approximately 17% is supplied by Loch Lomond Reservoir and 4% of the supply is derived from the Live Oak Well system (City of Santa Cruz, February 2006) as summarized in Table 4.5-1. The updated and adopted 2010 UWMP reported similar use over the last five years with 30% production from North Coast sources, 54% from San Lorenzo River supplies, 12% from Loch Lomond, and 4% from the Live Oak wells. ~~With~~ Loch Lomond production is limited by the City's water rights to a maximum of 1,042[1] MGY.~~, existing water supply availability totals approximately 4,300 MGY (City of Santa Cruz Water Department, February 2006). However,~~ The City recognized that the uncertain nature of groundwater conditions in the western portion of the basin is a serious issue and has limited future maximum extraction during all water years to 210 MGY ~~645 ac-ft/yr~~, or approximately 1 MGD (700 GPM) (City of Santa Cruz Water Department, December 2010).

Water production has fluctuated over the past ten years; annual production has ranged from a high of nearly ~~approximately~~ 4,5~~4~~00 MGY in 2000 ~~(City of Santa Cruz Water Department, February 2006)~~ to a low of approximately 3,200 MGY in 2009 (City of Santa Cruz Water Department, ~~May~~ December 2011).~~ as discussed further in the following subsection.~~ Average water production between 1985 and 2010 was approximately 3,900 MGY, while average water production between 2006 and 2010 averaged approximately 3,500 MGY as summarized in Table 4.5-1 (City of Santa Cruz Water Department, December 2011).

[1] Of this amount, 104 MGY or 10%, is technically available to the San Lorenzo Valley Water District. Although the District has not taken water in recent years, the City has reopened discussions with SLVWD about its entitlement and the City expects that the SLVWD eventually intends to exercise its right to that supply. ~~but it has taken no action in recent years and has no current plan to exercise its entitlement.~~

Page 4.5-9 Revise Table 4.5-1 and the first full paragraph as follows:

TABLE 4.5-1
Existing City Water Supplies – Gross Production

Source	Million Gallons Per Year (MGY) [1]	Million Gallons Per Year (MGY) [2]	Million Gallons Per Year (MGY) [3]
Groundwater	187	167	155
Surface Diversions:			
▪ North Coast Sources	1,077	1,089	1,065
▪ San Lorenzo River	2,008	2,019	1,889
▪ Loch Lomond Reservoir	1,042	721	419
TOTAL	**4,314**	**3,928**	**3,528**

[1] Reported in 2005 UWMP, February 2006
[2] Average between 1985 and 2010 as reported in the 2010 UWMP, December 2011
[3 Average between 2005 and 2010 as reported in the 2010 UWMP, December 2011
Numbers are rounded.

The City's ~~adopted~~ 2005 UWMP indicate~~d~~s that ~~current~~ water supplies would ~~will~~ remain relatively unchanged with a total net production capacity of approximately 4,300 MGY through the year 2030 assuming normal water conditions and no change to current operations or water rights. However, as further described below, existing water supplies may be reduced in the future as a result of other permit requirements and water rights issues, and the City is currently pursuing water conservation measures to reduce demand and construction of a desalination plant as a supplemental water source during drought conditions. The updated and adopted 2010 UWMP estimates future water supplies in the year 2030 as 4,160 MGY, depending on the outcome of negotiations between the City and regulatory agencies regarding releases for fish habitat. The estimates were developed using the City's water supply operations model and incorporates the best available information about future operations beginning in 2015 under a yet to be approved Habitat Conservation Plan (HCP).

Page 4.5-10 Revise the first two paragraphs as follows:

Water demand forecasts developed for the City in 1997 (Maddaus Water Management, March 1998) were utilized in the preparation of the City's *Integrated Water Plan* and *2005 Urban Water Management Plan*. The forecasts estimated that water demand would increase to approximately 4,900 MGY by 2005 and up to approximately 5,300 MGY in the year 2030 (City of Santa Cruz Water Department, February 2006) based on population and employment trend information and forecasts provided by AMBAG at the time the forecasts were developed. The former 2005 UWMP ~~Current City plans~~ estimated that water demand under normal conditions will exceed

water system capacity at some time between 2015 and 2020 (City of Santa Cruz Water Department, February 2006). However, actual total water use has been substantially lower than was predicted in these former demand forecasts. Based on the treated water production shown on Table 4.5-2, average annual water demand was approximately 3,900 MGY from 2000 through 2004, compared to approximately 4,900 MGY predicted for the year 2005. Water demand has further decreased since 2005 to an average demand of slightly less 3,5~~6~~00 MGY between the years 2005 and 2008, with a low of approximately 3,200 MGY in 2009.

Based on actual use, the City's adopted ~~2005~~ *2010 Urban Water Management Plan* (UWMP) ~~indicates that it is more plausible that water use within the entire service area would likely increase at a rate of between approximately 0.4% and 0.8% per year through 2020 (City of Santa Cruz Water Department, February 2006). Based on these percentages, the UWMP~~ estimates a water demand of between 4,046 and 4,537 MGY in the year 2030 within the entire water service area, compared to the former projected demand of 4,365 MGY in the year 2020 as identified in the 2005 UWMP. This is based on two scenarios; the higher demand reflects water use between 1999 and 2004, while the lower demand reflects more recent water use trends experienced in 2007-08. The 2010 UWMP indicates that the lower demand scenario is more reasonable given recent trends and state mandates for water conservation (City of Santa Cruz, December 2011). Both estimates include buildout projections for the draft *General Plan 2030*. ~~These scenarios were not carried beyond the year 2020 in the UWMP.~~

Page 4.5-10 Revise last paragraph ("Water Supply Limitations" subsection) as follows:

The primary water reliability issue currently facing the City of Santa Cruz is the lack of adequate water supply during droughts due to the wide range in the yield of surface water sources from year to year and limited storage capacity. ~~The City's water supply system is able to meet 100% of the existing water demand in about 7 out of every 10 years and at least approximately 90% of existing demand in about 9 out 10 years. A significant shortage occurs on average about 1 out of every 10 years (City of Santa Cruz Water Department, February 2006).~~ Updated modeling conducted for the 2010 UWMP found that the worst-year peak season shortage could range between 23 and 37% and between 42 and 51% with additional flow releases for fish habitat as further discussed below. ~~During normal hydrologic years, the City's water supply totals approximately 4,300 MGY.~~ Historically, one dry or critically dry year has not created a water shortage due to sufficient storage in Loch Lomond Reservoir. Based on past experience, however, a shortage is likely to occur when the central coast region experiences two or more dry or critically dry years in a row (City of Santa Cruz Water Department, December 2011). The total water supply estimated to be available to the City in single dry years (i.e., 1994) is ~~3,800~~ 3,900 MG (Ibid.). ~~or approximately 12% less than is available in normal years (Ibid.).~~ However, during an extreme two-year drought similar to the 1976-77 event, the

estimated water supply available to the City in the second year of that event is 2,800 ~~2,700~~ MG with a resulting deficit of approximately 1,200 MG (Ibid.). The peak season is between April and October since this is the period that would be most affected by a supply shortage due to peak water demand.

Page 4.5-12 Revise and expand the first full paragraph and expand discussion as follows:

A Draft Conservation Strategy was submitted to the NMFS in August 2011. The primary focus of the strategy is to avoid or minimize existing and potential effects of the City's activities to the maximum extent practicable as required by the Federal Endangered Species Act. A major element of the strategy is identification of minimum in-stream flows at City diversions to minimize the effect of diversions on habitat conditions for steelhead and coho salmon. Three alternatives, or tiers, of instream flow targets are specified which represent increasing levels of habitat protection. These targets vary by location, hydrologic year type and month. The three tiers represent increasing levels of habitat protection. The strategy guarantees minimum flows that ensure no further degradation of habitat (known as Tier 1). The strategy attempts to provide further protection of habitat by offering Tier 2 minimum flows under most hydrologic conditions, reverting to Tier 1 in dry years. Tier 3 flows represent a flow scenario that is 80% of the optimum condition for salmonid species present in the streams from which the City draws water (City of Santa Cruz Water Department, December 2011). ~~With increasing water demand, the City will be able to provide Tier 2 flows less frequently.~~ As the City moves toward augmenting its supply to include additional sources such as some mix of desalination, reclamation, conservation, or additional storage, over the course of the HCP further instream reservations will be possible (City of Santa Cruz, August 2011). ~~Addition of new supply (2.5 mgd desalination, reclamation) would allow Tier 2 flows to be provided in 70% of years. Tier 3 flows would provide approximately 80% habitat value and could be provided in as much as 21% of years well into the future with the addition of 2.5 mgd of desalination.~~

The City's water supply operations model was recently updated and the effect of HCP options on water supply reliability were factored into the model for each of the proposed three tiers with an estimate of future water supplies. The estimates were developed using the City's water supply operations model and represent net production averaged over a 73-year hydrologic period with water demand similar to 2007-2008 ("Scenario 2" in the 2010 UWMP). The model incorporates the best available information about future operations beginning in 2015 under a yet to be approved Habitat Conservation Plan (HCP) with "Tier 2" stream flows factored into the model consistent with the City's proposed conservation strategy of the HCP for fish flows (City of Santa Cruz Water Department, December 2011). The model was also updated to calculate the amount of new water supply capacity needed to limit peak season shortages to 15% as the curtailment goal set forth in the adopted IWP.

Results of the model update indicate without any consideration of environmental water needs, the system reliability has improved considerably related to conditions identified in the IWP, mainly due to lower water demand (City of Santa Cruz Water Department, December 2011). The results further indicate that with no increased flow releases for habitat and at the water demand level experienced in 2007-08, the amount of new water supply capacity needed over the next 20 years is less than the 2.5 mgd desalination plant that was proposed in the IWP. However, with proposed Tier 2 flows, a 2.25 mgd plant would be required under existing conditions and a 2.75 mgd plant would be needed by 2030, assuming the 2007-08 level of water demand is maintained. If higher demand levels occur, a desalination plant capacity of 3.25 to 4.25 mgd could be required (Ibid.). Modeling of Tier 3 flows indicates that even assuming desalination capacities needed with Tier 2 flows, the City would experience water shortages much more often (statistically every other year) and would require much greater levels of total new water supply capacity (i.e., 7.50-9.75 mgd plant capacity) to maintain target levels of reliability (Ibid.).

Tier 3 flows represent a flow scenario that is 80% of the optimum condition for the salmonid species present in the streams from which the City withdraws water. However, the 2010 UWMP indicates that without the addition of a new water supply, the City would be incapable of virtually ever meeting Tier 3 flows, even in wet years. In dry years, and consecutive dry years, without additional supply, providing such flow would leave the City with only about 25% average water supply. For that reason, the 2010 UWMP does not consider the operation of the water system under a Tier 3 flow scenario unless and until new supply is developed (City of Santa Cruz Water Department, December 2011). However, the 2010 UWMP also acknowledges that should regulatory agencies mandate the City to release more water than is represented under Tier 2 flows, water shortages could be greater than projected in the Plan.

Page 4.5-15 Revise and expand the last paragraph as follows:

The City has acknowledged that climate change may impact City water supplies that are largely dependent on surface water flows. To the extent that rain events are more intense but less frequent, the base flow in streams and rivers from which the City diverts could change. Predictions regarding the extent of climate change on water resources are dependent on many variables. In 2011, "The Vulnerability Study" was prepared for the City, which provides an assessment of potential effects of climate change in the City, including changes in precipitation and water availability. Over the next 40 years, the highest identified risks to the City are: 1) water shortages due to a combination of increasing temperatures and changes in precipitation patterns; and 2) rise in water table on buildings and infrastructure beneath the downtown portion of the City (City of Santa Cruz Water Department, December 2011). Based on this study, the City has developed goals,

objectives and a range of potential actions to respond to these risks. Of over 30 identified action items, those relating to the Water Department's water supply include: diversification of the water portfolio, protection of watersheds, conservation and curtailment of water use, and preparing for climate-change related short-term water shortages (Ibid.). Models are being developed to assist water utilities in looking at climate change variables in their water planning efforts,[2] but the timing and quantification of potential climate changes effects are too speculative to try to predict with any certainty at this time. However, the City is working with other County water agencies to look at the models that are being developed and will consider new information as it becomes available.

Page 4.5-20 Expand discussion in the first paragraph of the "Recycled Water" subsection as follows:

The City of Santa Cruz owns and operates a regional wastewater treatment facility providing service to the cities of Santa Cruz and Capitola and parts of unincorporated Santa Cruz County. Recycled water is defined as wastewater treated to a specified quality in order to be used for a specified purpose. Currently, recycled water is not approved or permitted for discharge directly into a potable water distribution system. The quality of wastewater produced at the City's treatment plant ~~currently would be best classified as "Undisinfected Secondary", and~~ is potentially suitable for only very limited agricultural applications and for flushing sanitary sewers according to the standards in Title 22 (City of Santa Cruz Water Department, December 2011). No such agricultural uses for water of this quality are known to occur in the City service area. The only allowed use would be for sewer system flushing, which totals less than 1 MGY (Ibid). ~~The City's treated wastewater is potentially suitable for some agricultural applications and for limited public access irrigation.~~ However, the level of treatment is not sufficient for general irrigation or unrestricted use on playgrounds, parks, schoolyards, etc. Additional treatment above that currently provided would be needed to meet the state public health and safety requirements. In addition to the treatment upgrades, a distribution system, including pumps, meters, storage facilities, and separate piping, would be required to convey the recycled water to customers (City of Santa Cruz Water Department, February 2006).

Page 4.5-21 Add the following after the second paragraph:

The use of recycled wastewater for groundwater recharge was also considered in which advance treated recycled water is injected into a groundwater basin for future extraction, followed by treatment and potable use. This concept was reviewed for its feasibility for both the City and Soquel Creek Water District but was found not to be a practical approach for either agency due to numerous geological, financial, regulatory and operational

[2] See Water Utility Climate Alliance. January 2010. "Decision Support Planning Methods: Incorporating Climate Change Uncertainties into Water Planning."

constraints (City of Santa Cruz Water Department, December 2011). The reasons include geological conditions that are not conducive to large, high capacity injection wells and the requirement that recycled water be blended with up to 50% of another water source puts additional demand on already limited resources (Ibid.).

Page 4.5-21 Move the third full paragraph to the end of the "Recycled Water" subsection and edit as follows:

Recycled water for landscape irrigation remains a potentially viable alternative that could be pursued in the future. However, currently it is not the City's preferred water supply strategy for the reasons outlined above. The 2010 ~~2005~~ UWMP indicates that the steps and actions to encourage and optimize recycled water will be defined in the future if and when recycling is selected and pursued to diversify the City's water supply portfolio (City of Santa Cruz Water Department, December 2011 ~~February 2006~~).

Page 4.5-22 Add the following to the end of the first full paragraph:

The City has been exploring a long-term recycled water and potable water exchange that involves Pasatiempo Golf Club and the Scotts Valley Water in which potable water would be provided by the City to the Water District during the winter non-peak period when the City has some excess surface water available, in exchange for the District providing recycled water for irrigating the Pasatiempo golf course, one of the City's largest customers. Approximately 40 MGY of recycled water would be provided for irrigation of the golf course (City of Santa Cruz Water Department, December 2011). This arrangement would benefit the City by effectively shifting some of the peak summer demand to the winter season when the City is not drawing from surface storage and would benefit the District by lessening groundwater extraction (Ibid.).

Page 4.5-22 Revise the second full paragraph as follows:

Improvements to Existing Facilities. Improvements to maximize use of existing water sources and storage were identified in 2000 that were estimated to collectively ~~could~~ provide approximately 600 MGY during a two-year drought. The upgrades ~~could~~ included additional treatment for turbidity on the North Coast supply; capacity upgrades of the North Coast pipeline; treatment and/or facility upgrades for turbidity at the Tait Street intake; capacity upgrades at the Coast pump station; and/or upgrading the hydraulic capacity of the Felton/Loch Lomond supply system. At that time, the upgrades were identified to ~~would~~ provide additional supply during drought and non-drought years and ~~would~~ to also improve operational reliability and flexibility, but shortfalls during multiple dry year scenarios would continue to occur (Carollo Engineers, November 2000). The upgrades were further modeled during preparation of the IWP to assess their effectiveness. None were found to have a significant impact on the size of drought curtailments (Gary Fiske & Associates, 2003), and the alternative was not further evaluated in the IWP. Since 2000, the upgrades either have been completed such as SLR pump station improvements; are in progress (i.e., the North Coast water pipeline

upgrade); or were found to result in only small water yields compared to the expense involved, e.g. pre-treating turbid coast and river water. Any water savings achieved as a result of the upgrades implemented since this 2000 recommendation have been factored into the City's water system model, and the former estimate of 600 MGY as a potential separate alternative is no longer accurate.

Page 4.5-23 to 4.5-25 Revise the "Urban Water Management Plan (UWMP)" subsection as follows:

***URBAN WATER MANAGEMENT PLAN* (UWMP)**

In 2006, the City adopted the *2005 Urban Water Management Plan* (UWMP) that was prepared in accordance with state law requirements. The plan evaluates and describes water resource supplies and projected needs over a twenty-year planning horizon, and addresses a number of related subjects, including water conservation, water service reliability, water recycling, opportunities, water transfers, and contingency plans for drought events.

As previously indicated, pursuant to state law, the City of Santa Cruz Water Department must prepare and adopt an urban water management plan and update it every five years. Thus, the City's water resource supplies and projected needs over a 20-year planning horizon will be assessed and updated every five years, which will enable the City to review water demand trends and review its water supply management and options. The City's ~~existing~~ 2005 UWMP ~~is being~~ was updated at the time the General Plan 2030 Draft EIR was completed and circulated for public review. Subsequently the UWMP was released in October 2010 and adopted by the City Council on December 13, 2011. ~~and a draft is expected to be completed during the fall of 2011.~~ The updated plan follows the same basic structure and organization as the 2005 plan, while updating each section with more recent information. The updated and adopted 2010 UWMP reported similar use over the last five years with 30% production from North Coast sources, 54% from San Lorenzo River supplies, 12% from Loch Lomond, and 4% from the Live Oak wells. Key factors that changed since the 2005 UWMP as prepared and adopted are noted in the 2010 plan as follows:

- **Effects of Water Shortage** – The City declared a water shortage and enacted water restrictions in 2009, which was the first time since the early 1990s that water resources were stressed by three years of below normal rainfall.

- **Reduced Surface Water Diversions Due to Endangered Species Regulation** – It is now is certain that the City faces losing a portion of its long-established surface water resources due to federal and state regulations to protect endangered species. Interim flow releases began in 2007 and increased in 2008.

- **Decreased Groundwater Availability** – There is a growing acknowledgement that sustainable production capability of the groundwater basin from which the City and other users draw is substantially less than previously assumed.

- **Aging Infrastructure** – Key components of the City water system, including Bay Street Reservoir and North Coast system, have reached the end of their useful life and are now in the process of reconstruction, adding pressure on limited financial resources.

- **Changing Demand** – Water use in the City's service area has decreased substantially due to a number of contributing factors, such as changes in pricing, ongoing water conservation efforts, temporary water restrictions, unseasonable weather conditions, and housing and economic conditions.

The water demand projections in the 2010 UWMP include two growth scenarios within the City water service area that ~~will~~ reflect the proposed *General Plan 2030* buildout. ~~As part of the UWMP update, the City Water Department will continue to review conservation and other strategies.~~ Both scenarios discount the most recent downturn in water use beginning in 2009 as a temporary condition caused primarily by water restrictions, which is not considered indicative of normal use. Scenario 1 is based on water demand levels experienced from 1999 through 2004. Scenario 2, which is lower, is based on average water use during the 2007-08 period just prior to water restrictions. The projected water demand for the City's entire water service area is estimated to be 4,537 MGY under Scenario 1 and 4,046 MGY under Scenario 2. Given state mandates for water conservation, the 2010 UWMP concludes that Scenario 2 reflects the most reasonable scenario for water management planning purposes.

The 2010 UWMP provides a description of the City's adopted "integrated water planning" approach identified in the IWP that includes conservation, 15% curtailment during a drought and development of a supplemental water supply, which was identified as desalination. ~~water conservation programs as the IWP calls for continued implementation of a broad set of conservation programs.~~ The IWP calls for supplying 85% of normal demand in critical drought years (e.g., the 1976-77 event), and for a corresponding reduction in peak season water use of up to 15%. This cutback would be achieved through temporary watering restrictions or rationing that target landscape irrigation and other outdoor uses. The 2010 UWMP also indicates that recycling remains a viable option for landscape irrigation, but is not currently the City's preferred water supply strategy.

Conservation programs include water survey programs, plumbing retrofits, water audits and leak detection and repair, large landscape conservation programs and incentives, high-efficiency clothes washer rebate program, and other public information programs. The 2010 UWMP indicates that a long-

term water savings of approximately 251 MGY ~~nearly 300 MGY could~~ has been achieved over the last ten years. Furthermore, there has been a larger reduction in water use from water conservation programs than there has been an increase in water use by new connections over the last ten years with a net decrease of almost 80 MGY over the past 10 years (Ibid.). ~~A savings of approximately 153 MGY had been achieved by 2005 (City of Santa Cruz Water Department, February 2006). The plumbing fixture retrofit and rebate program have produced the most water savings of any program, totaling about 136 MGY (Goddard, City of Santa Cruz Water Department, personal communication, August 2011.). As a result, conservation programs continue to offset new water demand from development and growth in new accounts, and then some, for the time being (Ibid.). It is estimated that approximately 250 MGY have been saved to date through conservation in part due to rate and price changes and restrictions in recent year (Goddard, personal communication, June 2011).~~

~~The IWP calls for supplying 85% of normal demand in critical drought years (e.g., the 1976-77 event), and for a corresponding reduction in peak season water use of up to 15%. This cutback would be achieved through temporary watering restrictions or rationing that target landscape irrigation and other outdoor uses.~~

The 2010 UWMP includes a "Water Shortage Contingency Plan" (Chapter 8) that was updated and adopted in March 2009. This plan was developed to fulfill two fundamental purposes:

- To establish the procedures and actions necessary to achieve the up-to-15% cutback in system-wide demand established in the City's Integrated Water Plan, and
- To describe how the City would respond if faced with much larger shortages in water supply ranging as high as 50%.

The updated Water Shortage Contingency Plan uses a staged approach that classifies a shortage event into one of five levels spanning a water shortage range from 5-50%. The overall concept is that water shortages of different magnitudes require different measures to overcome the deficiency. Because there is so little the City can do in the short run to increase the supply of water, the focus of this plan is primarily on measures that reduce demand. Each stage includes a set of demand reduction measures that become progressively more stringent as the shortage condition escalates. Normally, only one of these five stages would be put into effect early in the year at the recommendation of the Water Director and remain in force for the entire dry season (City of Santa Cruz Water Department, March 2009). These stages are outlined below:

Stage	Magnitude of Water Shortage	Title
1	0-5%	Water Shortage Alert
2	5-15%	Water Shortage Warning
3	15-25%	Water Shortage Emergency
4	25-35%	Severe Water Shortage Emergency
5	35-50%	Critical Water Shortage Emergency

Stages 1 and 2 represent a level of curtailment that is envisioned as being necessary to balance water supply and demand from time to time under the City's Integrated Water Plan. Shortages of 15% or less, while inconvenient, do not directly threaten public safety or pose undue economic impact. Stages 3-5 are characterized as emergency water shortages since they result in more widespread hardships being felt throughout the community, may threaten public health and welfare, and cause more economic harm. Customer demand reduction goals were established for major water demand groups based on the following priorities: 1) health/safety, i.e., all domestic and sanitary uses, 2) business and industrial uses and, 3) irrigation and other outdoor uses) (City of Santa Cruz Water Department, March 2009).

~~The 2005 UWMP indicates that in addition to pursuing desalination, the City remains open to exploring other water supply alternatives that would not be feasible to develop in the short-term, but may be useful to consider over a 20-year or longer time frame. The UWMP identifies the possible longer term options as:~~

- ~~Recycled water~~
- ~~Groundwater recharge~~
- ~~Reservoir expansion~~
- ~~Aquifer storage and recovery~~
- ~~Off-stream storage.~~

Page 4.5-31 Revise impact analysis on pages 4.5-31 to 4.5-31 to reflect findings in the adopted 2010 UWMP as follows:

NORMAL YEAR SUPPLY AND DEMAND WITH PROJECT

Based upon the updated water demand projections in the WSA and the updated and adopted 2010 UWMP, the City's water supply for a normal hydrologic year is sufficient to meet the existing water demand and the incremental water demand associated with development accommodated by the proposed General Plan through the General Plan planning horizon to the ~~about~~ the year 2030. ~~2020.~~ Under normal years, the City's water supplies are estimated to provide approximately 4,160 ~~4,300~~ MGY of water, taking into account currently proposed flow releases for fisheries (City of Santa Cruz Water Department, December 2011). Beginning in 2015, production from the coastal sources is seen to decline, reflecting greater environmental in stream bypass flows. This reduction is partly compensated for in normal water years

by increased diversion from the San Lorenzo River and partly by greater withdrawals from Loch Lomond Reservoir (Ibid.).

Existing estimated water demand within the entire service area with the addition of the proposed project water demand would total approximately 4,244 MGY under the "Estimate 1" water demand scenario in the WSA and 3,773 MGY under the "Estimate 2" scenario in the year 2030 (EKI, March 2011). Water supplies would be adequate to serve buildout accommodated by the proposed General Plan without any other increased water demand in the City's service area under the lower water demand scenario as contemplated in the 2010 UWMP.

With other growth and development, water demand within the City's entire service area in 2030 is estimated as 4,537 MGY under "Estimate 1" and 4,046 MGY under "Estimate 2". This matches the scenarios and service area demand included within the 2010 UWMP. As previously indicated, the 2010 UWMP uses the lower demand scenario for planning purposes given the ongoing trend in lower water use and conservation goals. Under this scenario and in normal water years, there is a slight surplus of supply and the City is able to fully meet projected water demand within the service area through 2030, even accounting for habitat needs (City of Santa Cruz Water Department, December 2011). ~~With other growth and development in the service area taken into account, the City's normal water supply may not be sufficient after the year 2020 under the Estimate 1 growth scenario, which is based on average water use between 1999 and 2004.~~

If water demand returns to levels experienced in the early 2000s, water demand in the service area could total 4,537 MGY in the year 2030 in which case there could be shortages sometime after the year 2015. However, for water planning purposes, the adopted 2010 UWMP assumes the lower demand will occur over the next 20 years, as discussed above. ~~there would be sufficient water supplies until the year 2030 under the Estimate 2 growth scenario in which average water use would continue along the same trend as experienced in the last few years (Ibid.). This does not take into account potential reductions in water supply that could reduce the City's estimated normal year capacity of approximately 4,300 MGY due to potential changes in North Coast or San Lorenzo River diversions resulting from federal and state agency decisions.~~

The estimated total future water service area demand may be slightly reduced by approximately 136 MGY due to decisions pending before the Santa Cruz LAFCO regarding provision of water and sewer service to UCSC.[3]

[3] In December 2011 (after the close of the public review period for this DEIR), LAFCO tentatively approved an amendment of the City's Sphere of Influence and provision of extraterritorial water and sewer service to a portion of the North Campus area of UCSC with a condition that future development of UCSC not result in a net increase in water demand. Subsequently a water conservation strategy was developed by the City of Santa Cruz in February 2012. In essence, the program requires that the water demand from future UCSC development be offset (on- or off-campus) so that there is no net increase in water demand. Thus, the

If so, the 2030 water service area demand would be reduced to a total demand of between 3,910 and 4,401 MGY. Other growth in the City's water service area is addressed in the "Cumulative Impacts" subsection of the CEQA CONSIDERATIONS (Chapter 5.0) section of this EIR.

DRY YEAR SUPPLY AND DEMAND WITH PROJECT

The WSA concludes that the City does not have sufficient water to meet current or future projected water demand during dry years, irrespective of future development and growth accommodated by the proposed General Plan. As previously indicated, during a single dry year, the City currently has is approximately 3,900 ~~3,800~~ MGY available and approximately 2,800 ~~2,700~~ MGY available during the second year of a drought (City of Santa Cruz, December 2011 ~~February 2006~~). Based on the 2010 UWMP, an annual average water supply deficit of 3~~5~~% ~~may exist between the City's water supply~~ during a single dry year could occur in the year 2030 and could occur sometime after the year 2015. ~~and the existing water demand. If development associated with the proposed *General Plan 2030* and elsewhere within the City's water service area is also considered, then an annual average deficit of 12% between 2010 and 2020, and up to 16% by 2030, may be experienced during a single dry year.~~ As indicated above, ~~although~~ LAFCO has not made its final determination regarding provision of water and sewer services to UCSC, and its next scheduled meeting to consider the matter is scheduled in June 2012. If approved, the total water demand in the service area could decrease due to "water neutral" conservation strategies implemented in association with future UCSC growth.

Annual average deficits are greater for multiple-dry year periods. The annual average deficit between the City's water supply during a second dry year and existing demand is estimated to be 9 to 20% ~~23% to 32%~~. This deficit increases to 30 to 38% ~~33% to 40%~~ by 2030 in a multiple-dry year with water demand in the entire service area as estimated in the 2010 UWMP. ~~if planned development also is taken into account.~~ It is important to note that these deficits are annual average values that do not address peak season cutbacks, which can be significantly greater than the annual average deficits due to seasonal variations in demand and supply, and limitations on the City's water storage facilities (EKI, March 2011). The 2010 UWMP estimates a peak seasonal demand deficit of 43% in 2030 with a multiple-year under the low demand scenario. ~~These estimates also do not take into account potential reductions in water supply that could reduce the City's estimated normal year capacity of approximately 4,300 MGY (e.g., potential changes in North Coast or San Lorenzo River diversions resulting from federal and state wildlife agency decisions discussed above).~~

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overall water service area demand in the year 2030 could be reduced by 136 MGY, the estimated UCSC water demand to the year 2030. LAFCO has not yet taken final action regarding the provision of water and sewer services to UCSC , and its next meeting to consider the matter is scheduled for June 2012. The outcome of this meeting and decision is unknown at this time.

CONCLUSION – SUPPLY AVAILABILITY

Water supplies are sufficient to serve the proposed project in a normal year with existing water demand until ~~approximately 2020, or until~~ 2030 if reduced water demand trends throughout the service area continue as projected in the 2010 UWMP. If reduced demand trends do not continue, water supplies in a normal year may be insufficient after the year 2015 ~~2020~~ with other new development and growth in the City's water service area, which is further addressed in the "Cumulative Impacts" subsection (5.4) of the CEQA CONSIDERATIONS (Chapter 5.0) section of this EIR.

Water supply during a single dry year is barely sufficient to meet system demand in the near term (based on the lower demand scenario), and is not sufficient to meet projected demand from 2020 to 2030. Water supplies are not sufficient under existing and future conditions in a single dry year under the higher demand scenario. Implementation of a water conservation strategy for UCSC, if approved by LAFCO, could decrease total water service area demand.

Water supplies in multiple dry years are not sufficient to meet demand under or existing or future conditions under either demand scenario. Due to existing insufficient water supplies during dry years, additional demand from the proposed project would be considered significant. Furthermore, supplies in normal years may become inadequate between 2020 and 2030 if lower water demand trends do not continue in the future, and, thus, additional demand from the proposed project would be considered significant.

Page 4.5-32 Revise last paragraph as follows:

The HCP is being developed to prevent impacts to endangered fish, which are generally the greatest on the North Coast streams during the dry season and during dry water years, as well as wet season salmonid migration and spawning (City of Santa Cruz Water Department, April 2011). The proposed strategy consists of provision of specified instream flows during different periods and with and without water supply augmentation and other mitigation strategies. The proposed strategy consists of three tiers. The water supply implications of providing Tier 1 flows are minimal as these flows would maintain existing habitat levels by maintaining current status quo for operations to ensure no further degradation in habitat and can currently be met in most years (88% of years) with the City's current water supply system ~~and without exacerbating the magnitude of dry weather shortages (currently about 35% shortage under 1977 drought hydrology)~~ (Ibid). Worst-year peak season shortages would increase from 12% to 23% in 2030 (City of Santa Cruz Water Department, December 2011). The situation gets worse over time as water demands grow with the frequency of dry weather shortages increasing and the magnitude of drought year shortages growing more severe. Tier 2 flows would provide better than existing habitat in North Coast streams and San Lorenzo Lagoon (with priority to Laguna Creek and San Lorenzo Lagoon due to their relatively greater habitat value for anadromous

salmonids). With Tier 2 releases, worst-year peak shortages would increase to 42%, and with Tier 3 releases, shortages would increase to 48%, assuming a desalination plant is in operation (Ibid.). ~~While this magnitude of instream flows is possible in most years in the near term during wet and average water years, it results in a Critical Water Shortage Emergency (33 – 43% peak-season shortage) in dry years, which are 10% of years. By 2030, the Critical Water Shortage Emergency grows (42 – 50% peak-season shortage) and can occur in 28% of years without the development of 2.5 mgd of additional dry weather water supply (Ibid.).~~

Page 4.5-33 Revise the first two paragraphs as follows:

The utilization of any one water source varies monthly and throughout the year and also during wet, normal and dry years. Thus, the City cannot confidently predict at this time, the actual amount of potential water supply reduction that may occur due to the HCP effort, which is an ongoing process that has not been completed. However, the City acknowledges the uncertainty of the future water supply capacity. The estimated demand and supplies presented in this EIR are based on estimates and updates of current adopted plans and existing known supply limits. ~~The UWMP is being updated and is likely to be adopted in Fall 2011, and will present any new information that may be available regarding water supply availability.~~

As previously mentioned, the City is pursuing construction of a desalination plant to provide a reliable supplemental water supply in dry years~~, which is necessary even without the proposed project.~~ This is part of the City's overall water supply strategy that also includes conservation and curtailment during droughts as set forth in the City's adopted *Integrated Water Plan* and *Urban Water Management Plan*. This water supply strategy is further described below. Based on modeling developed as part of the recently adopted 2010 UWMP, current City projections indicate that a 2.25-2.75 mgd desalination facility would be required with Tier 2 releases, and a 7.5-8.0 mgd facility would be needed with Tier 3 flow releases (City of Santa Cruz Water Department, December 2011).

Page 4.5-37 Add the following before the last paragraph:

As previously indicated, the City is exploring the concept of a regional water exchange involving the Scotts Valley Water District and the Pasatiempo Golf Course in which 30-50 MGY of recycled water from the Water District would be used to irrigate the golf course during the summer instead of potable water from the City's system. The same volume of potable water would then be provided to the District during the winter when the City has available excess supply. The exchange would not lessen the amount of water produced by the City, but would shift demands from peak season to non-peak times of the year and lessen summer reservoir withdrawals (City of Santa Cruz Water Department, December 2011).

In the last year there has been renewed interest in potential water transfers and exchanges. Specifically, the County of Santa Cruz has been exploring various sources and methods for increasing groundwater storage in the Scotts Valley area and also the Soquel area. The County has been addressing conjunctive water use, which involves utilization of multiple water sources, usually both surface and groundwater sources, in a way that maximizes water storage and availability under different climatic conditions. This can involve transfers among water agencies of winter streamflow, summer groundwater, recycled water, and water from desalination (County of Santa Cruz Health Services Agency, May 2011). According to a County status report on the subject, efforts have been undertaken to identify the best approaches for conjunctive use and increased groundwater storage in the Lower San Lorenzo Watershed and Scotts Valley. The operational approach being considered by the County involves diverting excess winter flows from the San Lorenzo River, treating it at the City's Graham Hill Water Treatment Plant, and delivering it to Scotts Valley and Soquel for direct use. Intertie pipelines would need to be constructed or enlarged. The plan would primarily benefit the neighboring water districts and does not represent a substitute for or alternative to desalination as a supplemental supply for the City. It may be possible, though not certain, that sometime in the future if and when the basin is restored, the Soquel Creek Water District might be able to send some amount of water back to the City in drought conditions (City of Santa Cruz Water Department, December 2011).

The County status report also notes that other conjunctive uses being evaluated include the project being considered by Scotts Valley Water District and the City of Santa Cruz described above and the regional seawater desalination project being evaluated by the City of Santa Cruz and Soquel Creek Water District (County of Santa Cruz Health Services Agency, May 2011). As indicated in the County's status report (as well as in the City's 2010 UWMP), the proposed water transfer schemes for Scotts Valley and Soquel do not provide any immediate water to the City of Santa Cruz (Ibid.).

Page 4.5-37 Revise and expand the last paragraph as follows:

The City's 2010 ~~2005~~ UWMP indicates that the 2.5 mgd desalination plant being pursued by the City and Soquel Creek Water District would function as a backup water supply in times of drought for the City and as a supplemental water source for the District in non-drought times to restore groundwater levels and prevent seawater intrusion (City of Santa Cruz Water Department, December 2011). The City will continue to rely on its existing water sources into the foreseeable future unless there is a loss of surface water due to implementation of endangered species laws (beyond that reduction already factored into the City's model and 2010 UWMP), in which case the desalination plant may also be operated for the City during non-drought periods (Ibid.). ~~, in addition to pursuing desalination, the City remains open to exploring other water supply alternatives that would not be feasible to develop in the short-term, but may be useful to consider over a 20-year~~

~~timeframe, such as water recycling, groundwater recharge, reservoir expansion, aquifer storage and recovery and off-stream storage. These potential alternatives have not yet been fully studied and consideration of such sources would occur at some point further in the long-term, if the desalination project is not ultimately approved~~.

Page 4.5-41 Revise the first sentence of the last full paragraph as follows:

The City's *2010 Urban Water Management Plan* indicates that there is a potential for saltwater intrusion to jeopardize the ~~safe~~ future production of groundwater from the Purisima aquifer due to coastal groundwater levels being below protective elevations. Even though pumping by the City constitutes a small proportion of the total extraction from the Purisima Formation, because the Ctiy's wells are located closest to the shoreline, they would be among the first impacted by seawater intrusion (City of Santa Cruz Water Department, December 2011). ~~but also notes that at this time, under normal operations, there appears to be no imminent threat of seawater intrusion, and~~ At this time the California Department of Water Resources has not identified the groundwater basin as overdrafted or projected to be overdrafted if present management practices continue (Ibid.).

Page 4.5-42 Revise changes to the recommended revision to General Plan action CC3.3.8 as follows to be consistent with the recently adopted 2010 UWMP:

CC3.3.8 Provide adequate pumping, treatment, and distribution facilities for the reliable production of groundwater, consistent with pumping rates/volumes identified in the City's Urban Water Management Plan. ~~of 1 mgd~~ all ~~in normal years and 2 mgd during droughts~~.

3.5 CHANGES TO "PUBLIC SERVICES & UTILITIES"

(DEIR CHAPTER 4.6)

Page 4.6-2 Revise the last sentence of the third full paragraph as follows:

The City serves the Paradise Park subdivision ~~through an annexation to the service area that was approved by the Local Agency Formation Commission (LAFCO) of Santa Cruz County~~. The City of Santa Cruz has entered into an automatic aid agreement with the County Fire Department, which is operated by CA FIRE, to provide first response into Paradise Park because the City fire department has significantly faster response times into Paradise Park than the County/CAL FIRE companies.

Page 4.6-9 Revise Table 4.6-1 as shown on the next page, which shows updated park acreages per the City's GIS staff review.

TABLE 4.6-1: City Parks and Open Space Lands

TYPE	FACILITY	SIZE (in acres)	REVISED SIZE (in acres)
Neighborhood Parks			
	▪ Beach Flats Park – 122 Raymond St.	~~0.3~~	0.22
	▪ Bethany Curve Greenbelt – Delaware to West Cliff	~~2.6~~	3.40
	▪ Central Park – 301 Dakota St.	~~0.2~~	0.16
	▪ Derby Park – 509 Woodland Way	~~3.8~~	3.65
	▪ Frederick Street Park – 168 Frederick Street	~~4~~	3.97
	▪ Garfield Park – 624 Almar Ave.	~~1.8~~	1.78
	▪ Grant Park – 150 Grant St.	~~2.4~~	2.36
	▪ John Franks Park – Marnell St.	~~0.3~~	0.48
	▪ Laurel Park – 301 Center St.	~~1~~	1.77
	▪ Lighthouse Neighborhood Park – Lighthouse Ave.	~~1.7~~	0.35
	▪ Mission Plaza – 103 Emmet St.	~~1~~	0.94
	▪ Moore Creek Overlook – Cypress St.	~~0.12~~	0.12
	▪ Lower Ocean Street Park – 258-262 San Lorenzo Blvd.	~~0.5~~	0.50
	▪ Ocean View Park – 102 Ocean View Ave.	~~2.5~~	3.06
	▪ Poets Park – 200 Raymond St.	~~0.13~~	0.03
	▪ Rincon Park – 601 Chestnut St.	~~0.1~~	0.06
	▪ Round Tree Park – 205 Nobel	~~0.13~~	0.28
	▪ Star of the Sea – Frederick St. & Darwin St.	~~2.1~~	2.10
	▪ Trescony – Trescony St.	~~2~~	2.00
	▪ Tyrell Park – Santa Cruz Museum	~~1.5~~	1.30
	▪ University Terrace – Meder Street	~~8.5~~	8.69
	~~▪ West Cliff~~	~~14.5~~	
	▪ Westlake Park – Bradley Dr. @ Spring St.	~~6~~	6.03
	▪ School Playing Fields [1]	~~44.6~~	44.66
	TOTAL ACRES (rounded)	~~102~~	88
Community Parks [2]			
	▪ Depot Park	~~8.5~~	9.89
	▪ Harvey West Park	~~55~~	44.77
	▪ DeLaveaga Park – Lower	~~35~~	50.00
	▪ DeLaveaga Golf Course	~~250~~	250.00
	▪ San Lorenzo Park – 137 Dakota St.	~~13~~	11.12
	▪ Ken Wormhoudt Skate Park at Mike Fox Park	~~4~~	1.25
	▪ West Cliff	~~14.5~~	14.64
	TOTAL ACRES (rounded)	~~366~~	382
Greenbelts & Open Space Lands with Recreational Uses			
	▪ Arana Gulch – Agnes St.	~~68.9~~	65.85
	▪ DeLaveaga Park – Upper (minus Golf Course)	~~275~~	199.9
	▪ Jessie Street Marsh	~~2.29~~	2.3
	▪ Moore Creek Preserve	~~246~~	250.0
	▪ Neary Lagoon – 100 California St.	~~44~~	44.0

CONTINUED ON NEXT PAGE

TABLE 4.6-1: City Parks and Open Space Lands

TYPE	FACILITY	SIZE (in acres)	REVISED SIZE (in acres)
	▪ Pogonip – 333 Golf Club Drive	640	640.0
	TOTAL ACRES (rounded)	~~1,276~~	1202
City-Owned Beaches			
	▪ Main Street Beach	~~26.4~~	17.6
	▪ Cowell Beach	~~4.9~~	5.0
	▪ Wharf	~~8.2~~	8.0
	▪ Mitchell's Cove	~~0.4~~	0.4
	▪ Its Beach (west portions)	~~N/A~~	1.5
	TOTAL ACRES (rounded)	~~40~~	32.5

[1] School sites are given credit for ¾ of their field acreage at: Santa Cruz & Harbor High Schools; Branciforte and Mission Hill Middle Schools; Bay View, DeLaveaga, Loma Prieta, Gault, Branciforte & Westlake Elementary Schools; Pacific Collegiate School; Holy Cross
[2] Loch Lomond Park (100 Loch Lomond Way, Felton) provides recreational opportunities outside City limits.

Page 4.6-7 Revise the second two sentences of the second full paragraph as follows:

There are 23 existing neighborhood parks, as summarized on Table 4.6-1and shown on Figure 4.6-2, which total approximately 43 ~~57~~ acres. There are approximately 45 acres of school playing fields, for a total of nearly 88 ~~approximately 102~~ acres of neighborhood parks within the City.

Page 4.6-8 Revise the first sentence as follows:

There are six existing community parks, as well as West Cliff Drive, totaling approximately 382 ~~366~~ acres within the City as summarized below and on Table 4.6-1, and shown on Figure 4.6-2.

Page 4.6-10 Revise the second through fourth sentences of the first paragraph as follows:

Given an estimated current population of 58,982 (California Department of Finance, May 2010), a total of 118 acres of neighborhood parkland would be required to meet this level of service. Presently the City has approximately 88 ~~102~~ acres of neighborhood parkland (including school play grounds). Thus, the City would require 30 ~~16~~ additional acres of neighborhood parkland to meet the current desired level of neighborhood parks.

Page 4.6-10 Revise the last sentence of the second paragraph as follows:

The City presently has approximately 381 ~~366~~ acres of community parklands, which exceeds the City's desired ratio.

Page 4.6-12 Changes references to City-owned open space and greenbelt acres in the first and fourth paragraphs from approximately 1,500 to 1,200 acres currently owned and managed.

Page 4.6-21 Revise citation on Table 4.6-2 to read:

SOURCE: Santa Cruz City Schools, April, 2011

Page 4.6-27 Add the following new subsection before the "Electrical & Natural Gas Utilities" subsection:

Regional Plans

The Santa Cruz County Countywide Integrated Waste Management Plan" was adopted in 1996. The purpose is to aggregate all the elements of the countywide solid waste management planning process. It incorporated the mandatory Source Reduction and Recycling Elements (SRRE's) adopted by each city and the county. Periodic reviews and revisions are required on this countywide plan. The last review was in 2009, which basically found that no significant changes to the Countywide Integrated Waste Management Plan were needed. The next review is due 2014. The Plan includes goals and objectives to manage solid waste generated in Santa Cruz County and to implement diversion goals, objectives, policies and programs of the SRREs. As indicated above, the City has met and exceeded its mandated solid waste reduction goals. Proposed policies and actions in the draft *General Plan 2030* continue to support reduction in solid waste, promotion and support of recycling and landfill management and planning, consistent with the goals in the Integrated Waste Management Plan.

Page 4.6-38 Revise the second sentence of the first full paragraph as follows:

Under existing conditions and with future growth, a total of 46 ~~32~~ additional neighborhood park acres would be required to meet the City's service standard.[7]

3.6 CHANGES TO "BIOLOGICAL RESOURCES" (DEIR CHAPTER 4.8)

Page 4.8-12 Change second subheader to read:

ANNUAL GRASSLAND / COASTAL PRARIE & ANNUAL GRASSLAND

Pages 4.8-16 to 4.8-21 Revise Tables 4.8-2 and 4.8-3 to update special species status as shown on the revised tables at the end of this section.

Page 4.8-26 Add the following new paragraph after the second paragraph:

All of the streams from which the City diverts water currently support steelhead trout, and the San Lorenzo River may potentially support coho salmon (City of Santa Cruz Water Department, December 2011). Both of these fish species are listed under state and federal Endangered Species Acts (ESA) as either "threatened" or "endangered". Numerous studies undertaken in support of the HCP have evaluated how much water flow is needed in streams, and during what times of the year, to protect the fisheries habitat during all freshwater life phases (migration, spawning, and rearing) over a range of hydrologic year types. These studies show that there is potential 'take', or harm to endangered fish, occurring due to the City's existing operations, and that more water must remain in the streams to protect the fisheries, primarily on the North Coast streams during the dry season (Ibid.). Additional in-stream flows are also indicated to support anadromous salmonid migration and spawning on North Coast streams during the wet season (Ibid.). Moreover, given renewed focus on the San Lorenzo River for coho salmon recovery, the HCP must also address diversions on the San Lorenzo River and on Newell Creek as well.

Page 4.8-26 Replace the last sentence of the third paragraph as follows:

Based on modeling developed as part of the recently adopted 2010 UWMP, current City projections indicate that a 2.25-2.75 mgd desalination facility would be required with Tier 2 releases, and a 7.5-8.0 mgd facility would be needed with Tier 3 flow releases (City of Santa Cruz Water Department, December 2011). ~~Addition of new supply (2.5 mgd desalination, reclamation) would allow Tier 2 flows to be provided in 70% of years. Tier 3 flows would provide approximately 80% habitat value and could be provided in as much as 21% of years well into the future with the addition of 2.5 mgd of desalination.~~

Page 4.8-26 Revise the last sentence of the fourth paragraph:

The process ~~could take more than two years.~~ is expected to take several more years to complete. While the outcome remains uncertain, it is clear that implementation of endangered species regulation at the state and federal levels will result in less water being available from the City's flowing sources in future years compared to the past. This, in turn, will place greater reliance on water stored in Loch Lomond Reservoir to meet the community's annual water needs and exacerbate the aforementioned problem of water shortage (City of Santa Cruz Water Department, December 2011).

3.7 CHANGES TO "GEOLOGY & SOILS" (DEIR CHAPTER 4.10)

Page 4.10-2 Correct the first sentence under the "California Building Code" subsection as follows:

Title 24 of the California Code of Regulations, formerly known as the Uniform Building Code and now known as the California Building Code (CBC), sets forth minimum requirements for building design and construction in public buildings and a large percentage of private buildings.

3.8 CHANGES TO "AIR QUALITY" (DEIR CHAPTER 4.11)

Page 4.11-1 Change federal Clean Air Act acronym to FCAA in the "Federal Regulations" subsection.

Page 4.11-2 Revise the last sentence of the first paragraph under the "Regional Regulations" subsection as follows:

The North Central Coast Basin is comprised of Santa Cruz, Monterey and San Benito Counties.

Page 4.11-5 Replace Table 4.11-1 with updated ambient air quality standards as shown in Appendix B of this FEIR document.

Page 4.11-9 Delete the third footnote in Table 4.11-2 as EPA designations for $PM_{2.5}$ have been finalized and are effective.

Page 4.11-17 Revise the last sentence of the "Conclusion" subsection as follows:

Furthermore, the *General Plan 2030* includes several policies and actions that, when implemented, would reduce vehicle trips ~~miles traveled~~ and thus, air pollutant emissions from vehicle trips, which is consistent with the goals of the MBUAPCD's AQMP.

Page 4.11-18 Add the following to Table 4.11-3 under "Reduce Auto/Vehicle Trips & Emissions":

- Mitigate safety, noise, air quality impacts from roadways on adjacent land uses through setbacks, landscaping, and other measures: M3.3.4.

Page 4.11-20 to 4.11-21 Revise the last paragraph as follows:

The EMFAC 2007 program was used to generate emissions factors for Santa Cruz for vehicular emissions. The methodology involved developing estimates of Vehicle Miles Travelled (VMT) within city limits and multiplying by an

annual average emission factor derived from the EMFAC-2007 program. For area sources, the baseline emissions were developed from CARB county-wide emissions inventories. The additional area source emissions by 2030 were estimated using the URBEMIS-2007 program. The results are shown in Table 4.11-4. Ozone precursors (ROG and NO_x) would be reduced, with ROG emissions almost unchanged and NO_X showing a substantial reduction. CO also shows a substantial reduction by 2030 despite anticipated increases in VMT due to reductions in per-mile emission rates for the 2030 vehicle fleet. (See summary in revised Appendix E for further details.) This decrease would have the effect of offsetting indirect emissions generated as a result of development accommodated by the proposed *General Plan 2030*. Thus, the project would not result in emission levels that would potentially contribute to air quality violations for ozone precursors.

Page 4.11-21 Revise Table 4.11-4 as follows:

TABLE 4.11-4
Citywide Existing & Future Criteria Pollutant Emissions, Pounds Per Day

Year	Daily Average Emissions in Pounds/Day			
	ROG	CO	NO_x	PM_{10}
2008				
Vehicles	328.6	6,854.1	1,194.6	40.0
Area Sources	1,540.0	6,810.0	330.0	990.0
TOTAL	1,868.6	13,664.1	1,527.6	1,030.0
2030	~~82.8~~	~~1,997.6~~	~~332.93~~	~~45.8~~
Vehicles	67.6	1,194.6	319.7	44.0
Area Sources	1,804.7	7,074.1	380.1	1,024.4
TOTAL	1,872.3	8,268.7	699.8	1,068.4
Change	+3.7 ~~245.8~~	- 5,395.4 ~~4,856.5~~	-827.8 ~~861.7~~	+38.4 ~~5.8~~

Source: Donald Ballanti, August 2011; revised February 2012

Page 4.11-21 Revise the paragraph after Table 4.11-14 as follows:

Future emissions, however, would result in a slight net increase in PM_{10} emissions. Vehicular emissions for this pollutant are not expected to decrease in the future as fast other criteria pollutants. This is because it has two components: exhaust and tire wear. While exhaust emissions will decrease over time, tire wear does not. Even so, the anticipated increase is less about 38 pounds per day, an amount that would not measurably change air quality and is below the Air District's daily threshold. Thus, it would represent a less-than-significant air quality impact (Ballanti, February 2012). ~~with a potential to contribute to future air quality violations. However, Furthermore,~~ The MBUAPCD's CEQA Guidelines include significance criteria for development projects so that daily thresholds are not exceeded. Future review and compliance with these standards (as discussed further below) would ensure that thresholds for PM_{10} are not exceeded.

Page 4.11-23 Revise the second two sentences of the "Conclusion" subsection as follows:

Future emissions of ozone precursor pollutants are projected to decrease or remain nearly unchanged, and thus, project-level emissions would not contribute to existing or potential future violations of ozone precursors or CO air quality standards. While, PM_{10} emissions would slightly increase, it would not measurably change air quality, and compliance with MBUAPCD significance criteria at a project level would ensure that project emissions do not exceed daily standards.

3.9 CHANGES TO "GLOBAL CLIMATE CHANGE"

(DEIR CHAPTER 4.12)

Page 4.12-25 Revise Table 4.12-3 and the first second paragraph as follows:

TABLE 4.12-3
***General Plan 2030* Growth GHG Emissions (in CO_2e Equivalent Metric Tons/Year)**

Source	2008	2030 [Based on New Travel in City Limits]
Transportation	34,455.86 ~~39,805.84~~	24,417.30 ~~28,208.41~~
Area Sources	910.69 ~~2,918.54~~	910.69 ~~2,918.54~~
Electricity	14,722.23 ~~14,861.48~~	9,098.34 ~~9,148.39~~
Natural Gas	6,656.74 ~~6,809.85~~	6,024.35 ~~6,162.91~~
Water & Wastewater Treatment	640.58 ~~679.88~~	600.02 ~~636.05~~
Solid Waste	6,285.00 ~~6,045.40~~	6,281.74 ~~6,061.82~~
Total	63,671.10 ~~71,120.98~~	47,332.44 ~~53,172.12~~

Source: Donald Ballanti, April 2011

Table 4.12-4 shows existing (2008) emissions and provides estimated community emissions in 2030 that were developed by City staff for this EIR, using AMBAG's recent 2011 emissions inventory for the City as updated by the City. The City's projection includes AMBAG's projections, but does not account for existing landfill operations, only future operations, and thus, are slightly lower than AMBAG's. These projections are based on historic growth patterns, and identify an increase of approximately 70,821 MT CO_2e between 2008~~5~~ and 2030. The estimated *General Plan 2030* GHG emissions would result in a total City emissions of approximately 398,654 ~~404,493~~ MT CO_2e over 2008 levels (351,321 in 2005 + 47,332.44 ~~53,172~~ = 398,653.44 ~~404,493~~), which is ~~close to, but~~ less than, the 408,928~~3~~ MT CO_2e forecast for 2030 for the residential, commercial/industrial and transportation sections. In this respect, the growth accommodated by the proposed General Plan would not result in a substantial increase in GHG emissions over what has been estimated.

Page 4.12-26 Revise the first and third sentences of the second paragraph as follows:

Based on the emissions data in Table 4.12-4, in 2008, the City had a 3.78 ~~3.82~~ MT CO_2e per capita GHG emission rate (residents and employees[9]). Thus, the City's per capita emissions are already below the overall rate of 6.6 MT CO_2e per year per capita that is based on the state's reduction goals. With addition of the indirect General Plan emissions, the annual per capita would be about 3.64 ~~3.72~~ MT CO_2e per year per capita, slightly less than the existing per capita rate and still less than the overall projected state rate as embodied in the GHG significance threshold for General Plans. Thus, under this approach, emissions resulting from the proposed general plan would not be considered substantial.

Page 4.12-26 Add the following new text after the second paragraph:

Implementation of the General Plan would not directly result in increased new development. However, future development supported and/or accommodated by the proposed General Plan would result in construction-related emissions that would result in generation of GHG emissions from construction equipment, traffic, materials and/or energy use. Construction activities would generally include demolition, excavation, grading, vehicle trips (including workers, deliveries and hauling), and vehicle travel on paved and unpaved surfaces. The amount of GHG emissions will be dependent on the type of project, location, construction duration, and equipment and materials used. Furthermore, future site-specific discretionary projects to be developed consistent with the General Plan would undergo their own project-level environmental review. To the extent that state-implemented programs and actions to reduce vehicle, fuel, and energy related emissions are likely to be enacted and implemented, temporary construction-related emissions also may be lessened in the future.

Page 4.12-26 Revise footnote 9 as follows due to error in reported population:

[9]In 2008, the City had 58,982 ~~58,125~~ residents (per California Department of Finance records) and approximately 33,896 ~~33,925~~ employees (per AMBAG estimates, June 2008) for a total service population of 92,878 ~~050~~. Buildout under the draft General Plan could result in 8,040 new residents and 8,665 new employees for an increase of 16,705 and total service population of 109,583 ~~108,755~~.

3.10 CHANGES TO "CEQA CONSIDERATIONS"

(DEIR CHAPTER 5.0)

Page 5-2 Revise the first two sentences of the last paragraph as follows:

Water Supply. As discussed in the WATER SUPPLY (Chapter 4.5) section of this EIR, City water supplies are currently insufficient to meet existing demand during dry years and could potentially become insufficient after the year

2015 ~~2020~~ in normal years with development and growth accommodated by the proposed General Plan and other demands in the City's water service area if reduced water demand trends throughout the service area as projected in the 2010 UWMP do not continue. (Estimated water demand associated with buildout accommodated by the proposed General Plan 2030 would not exceed existing supplies in a normal year if reduced water demand trends throughout the service area as projected in the 2010 UWMP do continue. ~~but supplies could become insufficient during the General Plan timeframe with consideration of all demand within the water service area.~~)

Page 5-3 Revise the beginning of the last paragraph as follows:

Water Supply. Cumulative development and growth in the City's water service area would result in a significant cumulative water impact, as it results in additional demand in a system that does not currently have adequate water supplies to meet existing or future demands during drought conditions or potentially during normal years at some time after the year 2015 ~~2020~~. The City's supplies are sufficient to meet cumulative water demands in a normal year through to the year 2030 if overall water use remains at 2007-2008 levels. However, if water demand is consistent with historic water use between 1999 and 2004, the City's total demand will be approximately 377 ~~223~~ MGY greater than the available normal year supply of 4,160 ~~4,314~~ MGY in 2030 (City of Santa Cruz Water Department, December 2011 ~~EKI, March 2011~~). Thus, cumulative development and growth would result in a significant cumulative impact during dry years and potentially also during normal years.

Page 5-15 Correct the first two sentences of the second full paragraph as follows:

Wastewater generated by the proposed project is estimated as approximately 0.55 mgd. Cumulative wastewater flows for UCSC are estimated as between 0.2 and 0.45 mgd for the year 2020 ~~2010~~ (City of Santa Cruz, July 2010). This estimate represents an average per capita wastewater generation of 45-100 gpd, based on an increased student enrollment level of 4,500 students.

Page 5-15 Add the following new paragraph after the second full paragraph as follows:

It should be noted that the lower rate for UCSC was based on gross water use, less landscaping; 30-40% of UCSC water use is estimated as being used for landscaping (City of Santa Cruz, July 2010). The higher rate was based on studies conducted by the University as part of its Long Range Development Plan. The rates were also based on a student increase of 4,500 students by the year 2020. However, the estimated water demand between 2020 and 2030 was provided by the City Water Department based on review of water use at the University between 1987 and 2008. This estimated water demand is considered to be an accurate, yet conservative estimate, based on historical water use at UCSC. This would result in a lower average wastewater generation of approximately 0.02 mgd between 2020 and 2030. When

added to previous UCSC estimates to the year 2020, cumulative wastewater generation from UCSC would be between approximately 0.22 and 0.47 mgd. Thus, the wastewater generation estimate in the DEIR is conservatively high.

Page 5-30 Add the new text to the end of the last paragraph.

(These estimates were also used in the City's recently updated and adopted 2010 Urban Water Management Plan.) Although LAFCO has not made its final determination, and will not do so until at least June 2012, it is also possible that the estimated total future water service area demand will be slightly reduced by approximately 136 MGY due to conditions proposed by the Santa Cruz LAFCO regarding provision of water and sewer service to UCSC as discussed in the WATER SUPPLY (Chapter 4.5) section of the EIR. If so, the 2030 water service area demand would be reduced to between 3,910 and 4,401 MGY.

Page 5-31 Revise the first two paragraphs as follows:

Cumulative Impacts. Based on cumulative water demand projections, the City's water supply for a normal hydrologic year is sufficient to meet cumulative demand through about the year ~~2020~~ 2030 based on the continued water demand trends projected in the 2010 UWMP. Under this scenario and in normal water years, there is a slight surplus of supply and the City is able to fully meet projected water demand within the service area through 2030, even accounting for habitat needs (City of Santa Cruz Water Department, December 2011). If projected water demand trends do not continue, after 2015 ~~2020~~, the City's normal year water supply may not be sufficient to meet the water demand projected for the development envisioned in the *General Plan 2030* and other development expected to occur within the City's water service area. If water demand is consistent with the EWD Estimate 1 (that reflects historic water use between 1999 and 2004), the City's total demand will be approximately 491 ~~223~~ MGY greater than the available normal year supply of 4,314 MGY in 2030 (EKI, March 2011). ~~This unmet demand would represent an average annual deficit of approximately 5%.~~ However, if water demand is consistent with EWD Estimate 2 (that reflects lower overall water use in 2007 and 2008), the City will have sufficient normal year supply to meet the projected demand in 2030.

The City does not have sufficient water to meet current or future projected water demand during single or multiple dry years. This finding is consistent with the 2005 UWMP and 2010 UWMP findings and the conclusions presented in the 2003 Integrated Water Plan ("IWP"), which states that the City's water system is inadequate to meet current demand under drought conditions (EKI, March 2011). An annual average deficit of 3~~5~~% may exist ~~between the City's water supply~~ during a single dry year in the year 2030 (City of Santa Cruz Water Department, December 2011). ~~and the existing water demand (EKI, March 2011). With cumulative water demand, an annual~~

~~average deficit of 12% between 2010 and 2020, and up to 16% by 2030 may be experienced during a single dry year (Ibid.).~~

Annual average deficits are greater for multiple-dry year periods. The annual average deficit between the City's water supply during a second dry year and existing demand is estimated to be 9 to 20% ~~23% to 32%~~. This deficit increases to 30 to 38% ~~33% to 40%~~ by 2030 in a multiple-dry year with water demand in the entire service area as estimated in the 2010 UWMP. ~~if planned development also is taken into account.~~ It is important to note that these deficits are annual average values that do not address peak season cutbacks, which can be significantly greater than the annual average deficits due to seasonal variations in demand and supply, and limitations on the City's water storage facilities (EKI, March 2011). The 2010 UWMP estimates a peak seasonal demand deficit of 43% in 2030 with a multiple-year under the low demand scenario.

Page 5-33 Revise the second two paragraphs as follows:

Three alternatives were recommended for further review: desalination, wastewater reclamation, and maximizing use of existing sources and storage in Loch Lomond Reservoir. Recycled wastewater was determined potentially feasible for irrigation, including agricultural irrigation, but would produce limited yields (approximately 230 MGY) that were considered too small to meet the City's drought year needs and at a high cost. Improvements to maximize use of existing water sources and storage were identified, that collectively ~~could~~ were estimated to provide approximately 600 MGY during a two-year drought. The upgrades ~~would~~ were intended to provide additional supply during drought and non-drought years and ~~would~~ to also improve operational reliability and flexibility, but shortfalls during multiple-dry-year scenarios would continue to occur (Carollo Engineers, November 2000). However, as indicated in the WATER SUPPLY (Chapter 4.5) section, the upgrades were further modeled during preparation of the IWP to assess their effectiveness. None were found to have a significant impact on the size of drought curtailments (Gary Fiske & Associates, 2003), and the alternative was not further evaluated in the IWP. Since 2000, the upgrades either have been completed, are in progress (i.e., the North Coast water pipeline upgrade), or were found to yield too small an amount of water for the expense involved. Any savings achieved since 2000 have been factored into the City's water system model, and the former estimate of 600 MGY as a potential separate savings is no longer accurate.

Thus, seawater desalination was the only practicable solution available to the City to meet drought and future demands. The WATER SUPPLY (Chapter 4.1) section of this EIR also discusses other supplemental water supplies that have been evaluated over the past 20+ years and found to be not viable at the present time. These include several groundwater pumping options, conjunctive use with Soquel Creek Water District, and reservoir storage at the Olympia Quarry in the San Lorenzo Valley. The City's 2010 UWMP indicates that

actions to encourage and optimize recycled water will be defined in the future if and when recycling is selected and pursued to diversity the City's water supply. ~~in addition to pursuing desalination, the City remains open to exploring other water supply alternatives that would not be feasible to develop in the short-term, but may be useful to consider over a 20-year timeframe, such as water recycling, groundwater recharge, reservoir expansion, aquifer storage and recovery and off-stream storage.~~

Page 5-33 Change reference to 2020 to 2015 in the Conclusion subsection.

Page 5-34 Revise first full sentence as follows:

However, if water demand is consistent with historic water use between 1999 and 2004, the City's total demand will be approximately 377 ~~223~~ MGY greater than the available normal year supply of 4,160 ~~4,314~~ MGY in 2030 (City of Santa Cruz Water Department, December 2011 ~~EKI, March 2011~~).

Page 5-41 Revise the estimated employees for the No Project Alternative in the third paragraph from ~~7,565~~ to 7,700.

Page 5-42 Revise Table 5-3 as shown on the next page:

Page 5-3 Revise the fourth and fifth sentence of the second paragraph as follows:

With a current estimated normal year supply of approximately 4,160 ~~4,300~~ MGY, the No Project Alternative would continue to create a demand that could potentially exceed normal year supplies if future demand proceeds at historic rates. The demand would also exceed currently available dry year supplies of 3,900 ~~3,800~~ MGY under a single-dry year and 2,800 ~~2,700~~ MGY under a multiple dry year condition.

Page 5-46 Revise last two sentences of last paragraph as follows:

Under AMBAG forecasts, the City would experience an increase of approximately 8,080 new employees between 1990 and 2030, which is ~~slightly~~ lower than~~, but similar to,~~ the estimate of an 8,665 ~~8,175~~ employee increase under the proposed *General Plan 2030*. This reduction represents a reduction of approximately 585 ~~95~~ employees. ~~which~~ Assuming the reduction in employees would be split equally between commercial and office uses, the reduction in employees would generally correspond to a reduction of approximately 146,000 ~~50,000~~ square feet in commercial use and ~~or~~ approximately 88,200 ~~30,000~~ square feet of office space.

TABLE 5-3
Comparison of Alternatives

	PROPOSED PROJECT GP 2030 Buildout	ALTERENATIVE 1 NO PROJECT Existing GP	ALTERNATIVE 2 AMBAG Growth	ALTERNATIVE 3 Reduced Density
Dwelling Units	3,350	1,816	2,413	2,750
Total Non-Residential Square Footage	3,145,000 SF	2,870,000 SF	2,911,000 ~~3,000,000~~ SF	3,125,000 SF
Commercial	1,090,000 SF & 310 Hotel Rooms	1,050,000 SF & 310 Hotel Rooms	944,000 SF ~~Reduced by 50,000 SF from Proposed GP 2030~~ ~~OR~~	970,000SF
Office	1,275,000 SF	940,000 SF	1,187,000 SF ~~Reduced by 30,000 SF from Proposed GP 2030~~	1,275,000 SF
Industrial	780,000 SF	880,000 SF	Same as Proposed Project	880,000 SF
POPULATION INCREASE [From 2009]	8,040	4,360	5,790	6,600
EMPLOYEE INCREASE [From 2009]	8,665	7,700 ~~7,565~~	8,082 ~~[2010-2030]~~	8,645
TRAFFIC	21 intersections impacted; all can be improved to acceptable LOS except for 8 intersections.	20 intersections impacted; 5 improved over project levels. All Can be improved to acceptable LOS except for 5 intersections.	Impacts estimated to be between the No Project and Project levels.	Same as or similar impacts to Proposed Project
WATER DEMAND	239 MGY	174 MGY	193 ~~200-203~~ MGY	210 MGY
SCHOOLS Elementary Students	915	495	660	750

Page 5-47 To 5-48

Revise last paragraph as follows:

Water demand also would decrease to approximately 193 ~~200-203~~ million gallons per year (MGY) under this alternative. This represents a reduction in demand of approximately 46 ~~35-39~~ MGY compared to the proposed project. ~~depending on whether non-residential use reductions occur within the commercial or office sector.~~ Under this alternative, total water demand within the City's water service area in 2030 would range between approximately 4,000 ~~4,010~~ and 4,490 ~~4,500~~ MGY. With a current estimated normal year supply of approximately 4,160 ~~4,300~~ MGY, this alternative would continue to create a demand that could potentially exceed normal year supplies after the year 2015 ~~2025~~, if future demand proceeds at historic rates. The demand would also exceed currently available dry year supplies of 3,900 ~~3,800~~ MGY under a single-dry year and 2,800 ~~2,700~~ MGY under a

multiple-dry year condition. Thus, while overall water demand would be reduced, the Reduced Growth ~~No Project~~ Alternative would not eliminate the significant unavoidable project and cumulative water demand impacts under existing and future drought and potential future normal year conditions.

Page 5-51 Revise third full paragraph as follows:

Water demand also would decrease to approximately 210 million gallons per year (MGY) under this alternative. This represents a reduction in demand of approximately 29 MGY compared to the proposed project. Under this alternative, total water demand within the City's water service area in 2030 would range between approximately 4,015 and 4,500 MGY. With a current estimated normal year supply of approximately 4,300 MGY, the No Project Alternative would continue to create a demand that could potentially exceed normal year supplies if future demand proceeds at historic rates. The demand would also exceed currently available dry year supplies of 3,900 ~~3,800~~ MGY under a single-dry year and 2,800 ~~2,700~~ under a multiple-dry year condition. Thus, while overall water demand would be reduced, the Reduced Land Use Density/Intensity ~~No Project~~ Alternative would not eliminate the significant unavoidable project and cumulative water demand impacts under existing and future drought and potential future normal year conditions.

Page 5-51 Correct reference in first sentence of fourth paragraph from ~~No Project~~ Alternative to Reduced Land Use Density/Intensity Alternative.

Page 5-56 Revise Table 5-5 entries and legend for the "S" designation to read:

S / LS

3.11 CHANGES to "REFERENCES" (DEIR CHAPTER 6.0)

Page 7-1 Add the following "References" subsection:

City of Santa Cruz Water Department. December 2011. "2010 Urban Water Management Plan."

County of Santa Cruz and the Cities of Capitola, Santa Cruz, Scotts Valley and Watsonville. April 1996. "Santa Cruz County Countywide Integrated Waste Management Plan – Final Draft."

County of Santa Cruz Health Services Agency. May 11, 2011. "Status Report on the Potential for Surface Water Transfers in Northern Santa Cruz County."

Water Utility Climate Alliance. January 2010. "Decision Support Planning Methods: Incorporating Climate Change Uncertainties into Water Planning."

3.12 CHANGES to "EIR FIGURES" (DEIR CHAPTER 7.0)

Page 8-18 Revise legends on Figures 4.8-1 and 4.8-3 as shown at the end of this section to read:

Annual Grassland /~~Potential~~ Coastal Prairie and Annual Grassland

3.13 CHANGES to "APPENDICES"

APPENDIX E: Replace the DEIR technical air memoranda with the revised Appendix E included in Appendix C of this FEIR document

APPENDIX F-1: Replace the DEIR technical biological study with the revised Appendix F-1 included in Appendix D (CD and online version) of this FEIR document.

TABLE 4.8-2: Special-Status Plant Species Occurring in the City of Santa Cruz, California

Species Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat Type[5]	Flowering Period	Occurrence[6]
Arctostaphylos andersonii Santa Cruz Manzanita	None	None	~~2-2-3~~ List 1B.2	Chaparral; openings in and edges of broadleafed upland forest and north coast coniferous forest	November-April	Kalkar Quarry Pogonip (P) Delaveaga (P) (UCSC)
Chorizanthe robusta var. *robusta* robust spineflower	Endangered	None	~~3-3-3~~ List 1B.1	Coastal dunes, coastal scrub, openings in cismontane woodland, in sandy or gravelly soil	April-September	Pogonip Private Parcel-Market St
Holocarpha macradenia Santa Cruz tarplant	Threatened	Endangered	~~3-3-3~~ List 1B.1	Coastal prairie, valley and foothill grassland, coastal scrub, often in clay or sandy soils	June-October	Arana Gulch Delaveaga Park
Perideridia gairdneri ssp. *gairdneri* Gairdner's yampah	None	None	~~1-2-3~~ List 4.2	Moist sites in coastal prairie, broadleafed upland forest, chaparral, valley and foothill grassland, vernal pools	June-October	Pogonip
Plagiobothrys chorisianus var. chorisianus Choris's popcorn-flower	None	None	~~2-2-3~~ List 1B.2	Moist places in chaparral, coastal prairie, coastal scrub	March-June	Lighthouse Field Arana Gulch
Plagiobothrys chorisianus var. *hickmanii* Hickman's popcorn-flower	None	None	~~1-2-3~~ List 4.2	Moist places in closed-cone coniferous forest, chaparral, coastal scrub, marshes and swamps, vernal pools	April-June	Arana Gulch
Plagiobothrys diffusus San Francisco popcornflower	None	Endangered	~~3-3-3~~ List 1B.1	Coastal prairie; valley and foothill grassland	March-June	Moore Creek Preserve Private Parcel- Meder St Pogonip
Trifolium buckwestiorum Santa Cruz clover	None	None	~~3-3-3~~ List 1B.1	Coastal prairie; margins of broadleafed upland forest, cismontane woodland	April-October	Pogonip

Notes:

[1] Nomenclature follows ~~Hickman (1993),~~ Tibor (2001), Baldwin et. al. (2012), and California Native Plant Society (2012~~2006~~).

[2] U.S. Fish and Wildlife Service (2006a,b,c).

[3] Section 1904, California Fish and Game Code (California Department of Fish and Game 2006a).

[4] Tibor (2001) and California Native Plant Society (2006).
CNPS Lists: List 1B: Rare, Threatened, or Endangered in California and elsewhere. List 4: Plants of limited distribution: a watch list
Threat Code extensions: .1: Seriously endangered in California. .2: Fairly endangered in California.
~~*Top line*: CNPS R-E-D (Rarity-Endangerment-Distribution) code.~~
~~Rarity: 1=Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction is low at this time; 2=Occurrence confined to several populations or to one extended population; 3=Occurrence limited to one or a few highly restricted populations, or present in such small numbers that it is seldom reported.~~
~~Endangerment: 1=Not endangered; 2=Endangered in a portion of its range; 3=Endangered throughout its range.~~
~~Distribution: 1=More or less widespread outside California; 2=Rare outside California; 3=Endemic to California.~~
~~*Bottom Line*: CNPS List. List 1B: Rare, Threatened, or Endangered in California and elsewhere. List 2: Rare, Threatened, or Endangered in California, more common elsewhere. List 3:~~ Plants about which more information is needed. List 4: Plants of limited distribution: a watch list.

[5] Thomas (1960), Munz and Keck (1973), Hickman (1993), Tibor (2001), Morgan et al. (2005), Baldwin et. al. (2012), California Native Plant Society (2012~~2006~~)., and unpublished information.

[6] See Revised Technical Appendix F-1 for citations.

SOURCE: EcoSystems West Consulting Group, February 2012 ~~January 2009~~

TABLE 4.8-3: Special-Status Wildlife Species Occurring in the City of Santa Cruz, California

Common Name *Scientific Name*	Status[1] Federal/State/Other	Habitat Requirements	Location[2, 3]
Invertebrates			
Ohlone tiger beetle *Cicindela ohlone*	E/--/G1S1	Coastal prairie and open grassland with barren areas for burrow construction.	Pogonip Moore Creek Preserve Private Parcels near Moore Creek Preserve and Meder St
Monarch butterfly (wintering sites) *Danaus plexippus*	--/--/G5,S3	Eucalyptus, Monterey Pine, or Monterey Cypress tree groves.	Lighthouse Field Natural Bridges Lower Branciforte Creek
Fish			
Coho Salmon (Central CA ESU) *Oncorhynchus kisutch*	E/E/G4S2?	Spends the first few years of its life in fresh water before migrating to the ocean. Adults will later return to the freshwater location where they were spawned to breed.	San Lorenzo River (H)
Steelhead (Central Coast DPS) *Oncorhynchus mykiss*	T/--/G5S2	Spends the first few years of its life in fresh water before migrating to the ocean. Adults will later return to the freshwater location where they were spawned to breed.	Carbonera Creek Branciforte Creek Arana Gulch San Lorenzo River
Tidewater goby *Eucyclogobius newberryi*	E/SC/G3S1S2~~S3~~	Coastal lagoons and creeks up to 3 miles with protected still water areas.	Moore Creek San Lorenzo River
North American green sturgeon (Southern DPS) *Acipenser medirostris*	FT/CSC/ G3S1S2	Spend the majority of their lives in nearshore oceanic waters, bays, and estuaries. Spawning and early life-history stages (less than 4 years old) occurs in fresh water.	HP, CHP
Amphibians and Reptiles			
California red-legged frog *Rana ~~aurora~~ draytonii*	T/SC/G4T2T3S2S3	Requires the presence of surface water until mid to late summer for reproduction; occupies ephemeral and/or perennial water with standing or slow moving flows; upland habitat includes leaf litter and small mammal burrows; adults are known to travel up to 2 miles overland between aquatic sites.	Moore Creek (B) Antonelli Pond Natural Bridges Marsh
Southwestern pond turtle *Emmys [Clemmys] marmorata pallida*	--/SC/G3G4S3	Found in ponds, marshes, rivers, streams, and irrigation ditches containing aquatic vegetation; usually seen sunning on logs, banks, or rocks. Moves up to 3-4 miles within a creek system, especially during "walk-abouts" before a female lays eggs; nests in burrows in upland areas up to several hundred feet away from aquatic habitat, in woodlands, grasslands, or open forest.	Antonelli Pond Neary Lagoon Moore Creek Natural Bridges Marsh Pogonip-San Lorenzo River
Birds (protected activity/habitat)			
Brown Pelican (communal roosts and rookeries) *Pelecanus occidentalis*	Delisted* /Delisted, FP~~SE~~**, ~~CFP~~/G4T3S1S2	Nest in large colonies mostly on small coastal islands. Preferred nesting sites provide protection from mammal predators, and sufficient elevation to prevent widescale flooding of nests (USFWS Division of Endangered Species 2007). The nests occur on the ground, in bushes, or in the tops of trees.	Cliffs from Lighthouse Point to Younger Lagoon Municipal Wharf San Lorenzo River
Double-crested Cormorant (rookeries) (*Phalacrocorax auritus*)	--/WL~~SC~~/G5S3	Marine and inland aquatic habitats, such as ponds, lakes, rivers, lagoons, estuaries, and open coastline.	San Lorenzo River(H) (Schwan Lagoon)

TABLE 4.8-3: Special-Status Wildlife Species Occurring in the City of Santa Cruz, California

Common Name *Scientific Name*	Status[1] Federal/State/Other	Habitat Requirements	Location[2,3]
Black-crowned Night Heron (rookeries) (*Nycticorax nycticorax*)	--/--/G5S3	Roosts among the dense foliage of trees (that are not always adjacent to water). It will also roost within fresh or brackish emergent wetlands, as well as on piers, and pilings (Grinnell and Miller 1944).	Branciforte Creek (H) Neary Lagoon (P)
Sharp-shinned hawk (nesting) *Accipiter striatus*	--/ WL~~SC~~/G5S3	Nests in deciduous riparian forest associated with dense stands of smaller conifers.	Arana Gulch(P) Meder Canyon(P) Pogonip (P)
Cooper's hawk (nesting) *Accipiter cooperi*	--/ WL~~SC~~/ G5S3	Nests in deciduous riparian forest, live oak, or second growth conifers usually near stream courses with dense canopy cover and open understory.	Moore Creek Pogonip Harvey West Park DeLaveaga
Golden eagle (nesting & wintering) Aquila chrysaetos	--/ WL~~SC~~/ G5S3	Resident in open mountains, foothills, canyons, or plains. Nests in a mass of sticks on cliffs or in trees. Is frequently observed foraging over nearby open fields of UCSC and Moore Creek Preserve lands.	Pogonip Rincon Gorge(unconfirmed)
Ferruginous Hawk (wintering) (*Buteo regalis*)	BCC/ WL~~SC~~/G5S3S4	Grasslands, agricultural areas, sagebrush flats, low foothills, and desert scrub (Garrett and Dunn 1981).	Antonelli Pond
White-tailed kite (nesting) *Elanus leucurus*	--/FP/F5S3	Nests in conifers on the margins of open areas including grasslands and sloughs containing a high abundance of small mammals and lizards.	Pogonip Natural Bridges
Merlin (wintering) *Falco columbarius*	--/ WL~~SC~~/G5S3	Utilizes a wide variety of habitats, from annual grasslands to ponderosa pine and montane hardwood-conifer habitats. Also favors coastlines, lakeshores, and wetlands. Forages along shorelines in winter, to hunt for shorebirds (CDFG 2005).	Arana Gulch Lighthouse Field Meder Canyon Antonelli Pond
Black Oystercatcher (nesting) *Haemotopus bachmani*	BCC/--/G5S2	Rocky shores of marine habitats, and on adjacent islands. Requires cliffs, rock outcrops, offshore rocky islets, jetties and similar features of coastal rocky intertidal habitats for roosting at high tide.	Natural Bridges/De Anza
Long-eared owl (nesting) *Asio otus*	--/SC/G5S3	Utilizes abandoned stick nests of other large birds or squirrel nests in a variety of wooded areas, including orchards and usually near aquatic and open areas for foraging; forages mostly on rodents.	Neary Lagoon (P) Pogonip[3] (P)
Burrowing Owl (burrow and wintering sites) *Athene cunicularia*	--/SC/G4~~5~~S2	Open grassland habitats for foraging and nesting. Suitable habitat has low-growing vegetation interspersed with bare ground; and hillocks, berms, fence posts or other slightly elevated objects available for resting/perching.	Pogonip (P) Moore Creek (P) Private parcels adjacent to Moore Creek (P)
Vaux's swift (nesting) *Chaetura vauxi*	--/SC/G5S3	Nest in hollow trees in forested environments. Nest made of conifer needles are glued together with salvia and attached to inside wall of hallow tree usually near the bottom. Post breeding flocks up to several hundred may roost together in chimney like tree hollows.	Residential neighborhoods near Natural Bridges, Spring Street and
Black Swift (nesting) *Cypseloides niger*	--/SC/G4S2	Breeds along coastal bluffs and mountains.	Mitchell's Cove (H) Lighthouse Point (H)

TABLE 4.8-3: Special-Status Wildlife Species Occurring in the City of Santa Cruz, California

Common Name *Scientific Name*	Status[1] Federal/State/Other	Habitat Requirements	Location[2, 3]
Loggerhead shrike *Lanius ludovicianus*	BCC/SC/G4S4~~FWS~~	Grassland and shrub habitats with small reptiles and insects.	Pogonip (P) Moore Creek (P) Private parcels adjacent to Moore Creek (P)
California Horned Lark *Eremophila alpestris actia*	--/ WL~~SC~~/G5T3S3	Open, level or gently-sloping California habitats, including sage scrub, grassland, chaparral, alkali playa, as well as agricultural and residential lands. (Grinnell and Miller 1944). Builds a grass-lined nest in a depression on the ground out in the open.	Pogonip Moore Creek (P) Private parcels adjacent to Moore Creek (P)
Oak Titmouse (nesting) *Baeolophus inornatus*	BCC/--/G5T3?S2~~3~~	Warm, dry oak, pine, or oak-pine woodlands. The breeding pair builds a nest of grass, moss, mud, hair, feathers, and fur (Harrison 1978) in a woodpecker hole, natural cavity, or nest box.	Lighthouse Field Neary Lagoon Garfield Park Westside residential areas lower Branciforte Creek Oceanview Park Jesse Street Marsh area San Lorenzo River (N of Hwy 1) Natural Bridges (unconfirmed)
Yellow warbler *Dendroica petechia brewsteri*	BCC/SC/G5T3?S2	Nests in deciduous riparian woodland with open canopy along streams or other watercourses; forages in dense understory of riparian woodland.	Arana Gulch Neary Lagoon Moore Creek Preserve Antonelli Pond Carbonera Creek Branciforte Creek Westlake Pond San Lorenzo River (H) (P)
Hermit Warbler (nesting) *Dendroica occidentali*	BCC/--/G4G5S3?	Mature stands of conifers (ie., Douglas-fir, redwood, and montane hardwood-conifer habitats), with open to dense canopy for breeding and other activities.	Pogonip
Saltmarsh Common Yellowthroat[38] *Geothlypis trichas sinuosa*	BCC/SC/G5T2S2	Nests in overgrown fields with scrub, on the margins of woodlands, and freshwater and saltwater marshes. Builds well-concealed open-cup nests, typically near the ground in grasses, herbaceous vegetation, cattails, tules, and scrub (including coyote brush) (Gardali and Evens date).	Neary Lagoon San Lorenzo River (Younger Lagoon)
Yellow-breasted chat (nesting) *Icteria virens*	--/ SC/G5S3	Dense riparian vegetation 1-8 ft. above the ground, with a well-developed understory.	San Lorenzo River (H)
Chipping Sparrow (nesting) *Spizella passerina*	--/--/G5S3S4	Open wooded habitats with a sparse or low herbaceous layer and few shrubs. Prefers trees for nesting, resting, singing, and other cover, but will also utilize shrubs and ground herbage. Also known to breed or winter in orchards (Grinnell and Miller 1944, McCaskie et al. 1979, Garrett and Dunn 1981).	Moore Creek Pogonip
Grasshopper Sparrow *Ammodramus savannarum*	--/SC/G5S2	Occurs in dry, dense grasslands, especially in those with a variety of grasses, tall forbs, and scattered shrubs (Grinnell and Miller 1944; McCaskie et al. 1979 and Garrett and Dunn 1981). Builds nests composed of grasses and forbs, located in a slight depression in ground at the base of an overhanging clump of grasses or forbs (Harrison 1978).	Moore Creek Pogonip

TABLE 4.8-3: Special-Status Wildlife Species Occurring in the City of Santa Cruz, California

Common Name *Scientific Name*	Status[1] Federal/State/Other	Habitat Requirements	Location[2, 3]
Tricolored Blackbird (nesting colonies) *Agelaius tricolor*	BCC/SC/G2G3S2	Breeds near fresh water, preferably in emergent wetland with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, tall herbs. Their nests are usually located near fresh water, and tend to be hidden on the ground among low vegetation (Orians 1960).	Neary Lagoon (H) Antonelli Pond (H)
Mammals			
Townsend's western big-eared bat *Corynorhinus [Plecotus] townsendii townsendii*	--/SC/HP, G4S2S3	Roost sites are highly associated w/ caves and mines; buildings must offer "cave-like" features; known to roost in tree hollows and under bridges.	Pogonip Clubhouse undeveloped lands and open spaces (P)
Pallid bat *Antrozous pallida*	--/SC/HP, G5S3	Roost sites are primarily associated with oak, redwood, ponderosa pine, and giant sequoia forests. Will also roost under bridges and in buildings and rock outcrops.	undeveloped lands and open spaces (P)
Western red bat *Lasiurus blossevillii*	--/**/HP, G5S3	Roosts in foliage primarily in riparian and wooded habitats.	Arana Gulch undeveloped lands and open spaces (P)
Fringed myotis *Myotis thysanoides*	--/**/HP, G4G5S4	Roosts sites in California are primarily in buildings or mines; will also roost in large conifer snags and in caves.	undeveloped lands and open spaces (P)
Long-legged myotis *Myotis volans*	--/**/HP	Roosts primarily in large hollow tree snags, or live trees with exfoliating bark; also uses rock crevices, mines, and buildings.	undeveloped lands and open spaces (P)
San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*	--/SC/--	Associated with riparian, oak woodland and redwood forest habitats. Builds stick nests under or in buildings, hollow trees, or in tree canopy.	undeveloped lands and open spaces
American Badger *Taxidea taxus*	--/SC/--	Drier open stages of most shrub, forest, and herbaceous habitats, that are composed of friable soils. American badgers dig burrows in friable soil for cover, frequently reusing old burrows. They are also known to dig a new den each night (especially in summer) (Messick and Hornocker 1981).	undeveloped lands and open spaces (P)
Southern sea otter *Enhydra lutris nereis*	T, MMPA/FP/--	Inhabit nearshore coastal waters, bays, harbors, and estuaries along the central California coast, and are often associated with rocky substrate. Most remain inshore of the outer kelp edge, and foraging activity is generally restricted to water depths of 25 meters or less.	Yacht Harbor
California sea lion *Zalophus californianus*	MMPA /--/--	California sea lions reside in shallow coastal and estuarine waters. They haul out on sandy beaches, marina docks as well as jetties and buoys.	Yacht Harbor, Santa Cruz Wharf
Eastern Pacific harbor seal *Phoca vitulina richardsi*	MMPA /--/--	Occur in nearshore coastal California waters, rivers, bays, harbors and estuaries. Hauls out on rock outcroppings, beaches, mudflats, and docks that have easy access to water.	Yacht Harbor

Notes:

1 **Federal Status (USFWS 2007b, c, d; CDFG 2011~~2006~~)**

E = Endangered: Any species, which is in danger of extinction throughout all, or a significant portion of its range.

T = Threatened: Any species, which is likely to become an endangered species within the foreseeable future throughout all, or a significant portion of its range.

BCC = Considered by Fish and Wildlife Service as a 'Bird of Conservation Concern' with a high priority to study and take action to protect.

State Status (CDFG 2011~~2006~~)

E = Endangered: A native species or subspecies of animal which is in serious danger of becoming extinct throughout all, or a significant portion of its range, due to loss of habitat, change in habitat, over exploitation, predation, competition and/or disease.

T = Threatened: A native species or subspecies that, although no presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts.

TABLE 4.8-3: Special-Status Wildlife Species Occurring in the City of Santa Cruz, California

Common Name *Scientific Name*	Status[1] Federal/State/Other	Habitat Requirements	Location[2, 3]

SC = CDFG Species of Special Concern are taxa given special consideration because they are biologically rare, very restricted in distribution, declining throughout their range, or at a critical stage in their life cycle when residing in California or taxa that are closely associated with a habitat that is declining in California (e.g., wetlands)

WL = CDFG Watch List Birds are a new category created in the 2008 California Bird Species of Special Concern (CDFG et al. 2008). The birds on this watch list are 1) not on the current Special Concern list but were on previous lists; 2) were previously but are not currently state or federally listed; or 3) are on the list of "Fully Protected" species.

FP = Fully Protected: This classification was the State's initial effort in the 1960's to identify and provide additional protection to those animals that were rare or faced possible extinction. Fully Protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

** = Included on preliminary list of revised CDFG Mammal Species of Special Concern (CDFG 1996)

Other

O = Protected by City and/or County ordinances

HP **=** Considered "High Priority" on the Western Bat Working Group's (WBWG) Western Bat Species Regional Priority Matrix (1998)

CNDDB Ranking (CDFG 2011,; NatureServe 2009):

G = Global (worldwide status of a full species): G1 to G5

T = Status of a subspecies throughout its range: T1 to T5

S = State (statewide status of a full species or a subspecies): S1 to S5

where:

1 = Extremely endangered
2 = Endangered
3 = Restricted Range, Rare
4 = Apparently secure
5 = Demonstrably secure: commonly found throughout its historical range
? = Inexact Numeric Rank

2 ( ) = Locations outside of the city limits.
H = Historical Observation
B = Breeding Habitat (except birds—locations correspond to protected activity only—listed by species name)
P = Potential Habitat
HP]- Habitat Present - habitat is, or may be present. The species may be present.
CH] - Critical Habitat - project footprint is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present.

3 See Revised Technical Appendix F-1 for citations.

~~*On November 17, 2009 the brown pelican was removed from the Federal List of Endangered and Threatened Wildlife (USFWS 2009).~~

~~**On February 5, 2009 the Fish and Game Commission adopted the proposed changes to remove the brown pelican from the CESA list of endangered species. The Commission's decision to delist the brown pelican will now be reviewed by the Office of Administrative Law before the bird is officially removed from the state list (California Fish and Game Commission 2009).~~

SOURCE: EcoSystems West Consulting Group, February 2012 ~~January 2009~~

SANTA CRUZ
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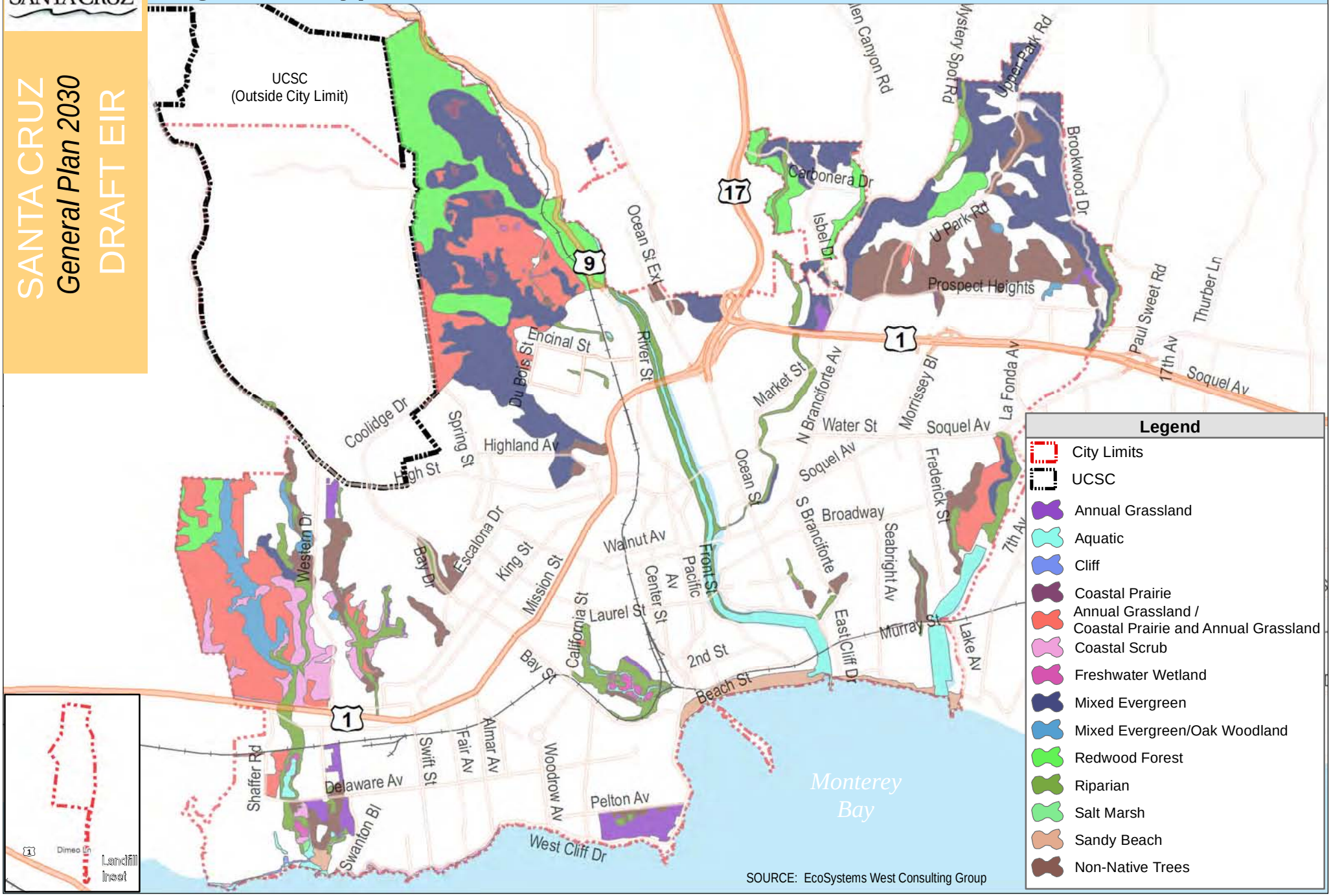
Figure 4.8-1
Vegetation Types

0 0.75 1.5 Miles



Legend

- City Limits
- UCSC
- Annual Grassland
- Aquatic
- Cliff
- Coastal Prairie
- Annual Grassland / Coastal Prairie and Annual Grassland
- Coastal Scrub
- Freshwater Wetland
- Mixed Evergreen
- Mixed Evergreen/Oak Woodland
- Redwood Forest
- Riparian
- Salt Marsh
- Sandy Beach
- Non-Native Trees

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Figure 4.8-3
Sensitive Habitat Areas