3.13 Utilities/Service Systems

This section examines whether implementation of the General Plan will result in the need for additional water supplies, wastewater capacity, construction of new water or wastewater treatment facilities, additional energy supplies, or additional landfill capacity. The issue of energy is also included in this section of the Draft EIR. Through the Initial Study process, the issue of exceeding wastewater treatment requirements was found to be a less-than-significant impact and complying with solid waste regulations resulted in no impact. The issue of stormdrain facilities is addressed in Section 3.10, Hydrology.

ENVIRONMENTAL SETTING

Water

The project area is served by two water districts: Trabuco Canyon Water District (TCWD) and Santa Margarita Water District (SMWD). Figure 22 shows the boundaries of the Districts. As can be seen from Figure 22, TCWD serves the eastern part of Rancho Santa Margarita (Robinson Ranch, Trabuco Highlands, Dove Canyon, Rancho Cielo, Walden Communities) and the Northeast Future Planned Community area. The remaining portions of the incorporated City are served by SMWD. The following information was provided in the Districts’ Urban Water Management Plans and personal correspondence with the Districts.

Trabuco Canyon Water District

Trabuco Canyon Water District (TCWD) is located in the southeastern portion of Orange County at the foothills of the Santa Ana Mountains and encompasses approximately 9,100 acres. The terrain within the District is generally steep hills and canyons throughout the central area of the District. The east and west sides consist of more gentle terrain made up primarily of rolling hills. Elevations within the District range from approximately 900 feet above mean sea level in the lower Aliso Creek area and the southern area of Dove Canyon, to nearly 2,400 feet in the northeasterly portion of the District near the Cleveland National Forest.

TCWD delivers potable water through its pressurized water system consisting of approximately 56 miles of pipelines and 9 primary pressure zones. The District's sources of supply are the Baker Aqueduct that provides untreated water to the District’s Dimension Water Treatment Plant, local groundwater and the Antonio Water Delivery System, which is supplied from the Allen-McColloch Pipeline. The District’s system is interconnected with adjacent agencies including Santa Margarita Water District, Irvine Ranch Water District, Santiago County Water District and El Toro Water District to provide reliability.
Figure 22
Water District Service Areas

Legend

Santa Margarita Water District
Trabuco Canyon Water District
Unincorporated Area
City Boundary
Sphere of Influence Boundary
Future Planned Community Boundary

Sources: Orange County Land Base, 2001; Cotton/Bridges/Associates, 2001.

Rancho Santa Margarita General Plan
Sources: Orange County Land Base, 2001; Cotton/Bridges/Associates, 2001.

Legend

1. Trail Rest Area
2. Sycamore Canyon Drive
3. Swim & Racquet Complex/ Golf Clubhouse
4. Walden Park
5. Centrai Park (TH)
6. Heritage Drive Trailhead
7. Rmc Arnold Park
8. Country Hollow Lane Park
9. Trabuco Mesa Park
10. Lago Santa Margarita
11. Cielo Vista Park
12. Monte Vista Park
13. Central Park (RSM)
14. Vista Verde Park
15. Tijeras Park
16. Canada Vista Park
17. Mesa Linda Park
18. Arroyo Vista Park
19. San Bento Park
20. Estrella Vista Park
21. Solano Park
22. Altisima Park

Note: O'Neill Regional Park is a 1,206-acre park located along the western side of the City.

Figure 23
Park Sites
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Water Supply

Trabuco Canyon Water District has a variety of water sources, including ground water, imported (two sources), local surface and recycled. The local surface water is a small amount of urban runoff/return flow co-mingled with storm runoff captured in Dove Lake that the District has recently started pumping back to its reclaimed water seasonal storage reservoir for distribution to irrigation users. This practice helps improve the water quality in Dove Lake by turning the water over in the lake and also provides an additional source of water to the District. Table 12 shows existing and projected water supply by source.

Table 12
TCWD Current and Projected Water Supplies (Acre-Feet/Year)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Santiago Aqueduct Commission</td>
<td>2,901</td>
<td>2,800</td>
<td>2,922</td>
<td>3,058</td>
<td>3,184</td>
</tr>
<tr>
<td>Santa Margarita Water District (AMP)</td>
<td>209</td>
<td>41</td>
<td>600</td>
<td>800</td>
<td>1,000</td>
</tr>
<tr>
<td>Irvine Ranch Water District</td>
<td>222</td>
<td>22</td>
<td>222</td>
<td>222</td>
<td>222</td>
</tr>
<tr>
<td>Supplier produced groundwater</td>
<td>339</td>
<td>69</td>
<td>690</td>
<td>690</td>
<td>690</td>
</tr>
<tr>
<td>Supplier produced surface diversions</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Transfers Out to SMWD</td>
<td>(54)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Exchanges In from SMWD &amp; IRWD</td>
<td>25</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Recycled Water</td>
<td>983</td>
<td>1,080</td>
<td>1,178</td>
<td>1,262</td>
<td>1,346</td>
</tr>
<tr>
<td>Total</td>
<td>4,625</td>
<td>5,202</td>
<td>5,612</td>
<td>6,032</td>
<td>6,442</td>
</tr>
</tbody>
</table>

AMP = Allen McCulloch Pipeline, SMWD = Santa Margarita Water District, IRWD = Irvine Ranch Water District

Groundwater - Over the past four years the District has obtained an average of almost 650 AFY from three wells. The Lang and Rose Wells pump water from a maximum depth of about 40-feet adjacent to Trabuco Creek near the intersection of Rose Canyon Road and Trabuco Canyon Road. The District has utilized these two wells for the past 30 years and usage varies depending on weather conditions. Over the years, water quality from these wells has been excellent. However, the State Department of Health Services recently ruled that these wells were "under the influence of surface water" primarily due to their close proximity to Trabuco Creek. After conducting economic and engineering analyses, the District concluded that it was advantageous to maintain this source of supply and is pursuing construction of a water treatment plant at this site with a maximum capacity of 3 cubic feet per second. These ground water sources are highly desirable in terms of water quality, cost, utilization of local energy resources, and also contribute to the District and southern California being less dependent on imported water supplies on an overall basis. However, because they are subject to interruption during drought conditions that occur occasionally in the region, TCWD cannot count on them as reliable supply sources during peak summer demand periods and must plan to have other adequate sources toward meeting its ultimate demand requirement.

Imported Water - The water wholesaler in the area is the Municipal Water District of Orange County (MWDOC), which in turn is a member of the Metropolitan Water District of Southern California (MWD). The District has capacity in two separate imported water
supply facilities, which deliver water to different ends of the District in substantially equal quantities. The first source is untreated imported water from the V. P. Baker Aqueduct. The Baker Aqueduct is owned and operated by the Santiago Aqueduct Commission (SAC), a joint powers agency formed in 1961. Water for the Baker Aqueduct originates from either MWD or from Irvine Lake. The District has a total contractual capacity of just short of 6 cubic feet per second (cfs) in the Baker Aqueduct, which matches the capacity of the District's Dimension Water Treatment Plant and El Toro Road transmission facilities supplying water to the west side of the District and ultimately to the Harris Or de Reservoirs from where it can be distributed to the entire District service area. This capacity equates to a source of 4,340 acre-feet on an annual basis. The second source of imported water is the Allen McCulloch Pipeline (AMP). Water from the AMP is conveyed to the District by Santa Margarita Water District (SMWD) through the South County Pump Station and South County Pipeline/Antonio Delivery System, respectively. The District has 6 cfs of capacity in this system and the treated water enters the District at the Plano Trabuco Road interconnection with SMWD on the eastern side of the District. Using 6 cfs as the capacity of this source, 4,340 AFY is available to the District.

Recycled Water - The District constructed the Robinson Ranch Water Reclamation Plant in 1983 to provide wastewater treatment for the initial developments on the east side of the District. As wastewater flows increased at the plant, additional irrigation users have been converted to recycled water with the District currently providing 700,000 gpd or 784 AFY of recycled water to a golf course, landscaped areas and a commercial nursery in the eastern portion of the District. The District supplements this irrigation system with urban surface water runoff captured in Dove Lake. This volume fluctuates significantly with the weather but has averaged just less than 80 acre-feet over the past four years, bringing the total average supply available to 864 AFY.

Water Use

TCWD serves an estimated population of 10,900 within its service boundaries and projects the population is projected to exceed 17,300 at build out in the service area, which is anticipated to occur in approximately 2030. Existing and projected population to the year 2020 is shown on Table 13. These projections include the Northeast Future Planned Community area, which was the Plano Trabuco subarea of the Foothill/Trabuco Specific Plan for the County of Orange in 1991. In this Specific Plan, the Northeast Future Planned Community area was projected to have no more than 612 dwelling units. This is the same number of units assumed in the General Plan Land Use Element (please refer to Section 1.0, Project Description).
Table 13
Population Projections for the Trabuco Canyon Water District

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10,901</td>
<td>11,640</td>
<td>12,504</td>
<td>14,252</td>
<td>16,000</td>
</tr>
</tbody>
</table>


Table 14 shows the past, current and projected water use by customer type. Unaccounted for water, or system losses are shown on Table 15. System losses are generated from subtracting the water supplied from that used and include potable as well as recycled water use. This does not take into account reservoir levels and the District's recycled seasonal storage reservoir level could significantly effect this calculation. Therefore, the District uses a more conservative 5% allowance for system losses for future projections, even though the District has a program to monitor and minimize these losses.

Table 14
TCWD Past, Current and Projected Water End-Use
(Acre-Feet/Year)

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Single family residential</td>
<td>2,118</td>
<td>2,156</td>
<td>2,324</td>
<td>2,790</td>
<td>3,125</td>
<td>3,375</td>
<td>3,620</td>
</tr>
<tr>
<td>Multi-family residential</td>
<td>36</td>
<td>36</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Commercial</td>
<td>0</td>
<td>58</td>
<td>235</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>Industrial</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Institutional and governmental</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Landscape</td>
<td>1,017</td>
<td>1,270</td>
<td>1,578</td>
<td>1,670</td>
<td>1,875</td>
<td>2,025</td>
<td>2,170</td>
</tr>
<tr>
<td>Sales to other agencies</td>
<td>0</td>
<td>0</td>
<td>54</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Agriculture</td>
<td>21</td>
<td>21</td>
<td>266</td>
<td>150</td>
<td>20</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3,192</td>
<td>3,541</td>
<td>4,487</td>
<td>4,940</td>
<td>5,350</td>
<td>5,730</td>
<td>6,120</td>
</tr>
</tbody>
</table>


Table 15
TCWD Additional Water Uses (Acre-Feet/Year)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>144</td>
<td>148</td>
<td>138</td>
<td>262</td>
<td>282</td>
<td>30</td>
<td>322</td>
</tr>
</tbody>
</table>


**Residential Sector** – In TCWD, single-family residential customers average 2.85 persons per household and multi-family residential customers average 2.63 per household. Total per capita water use for residential and residential related landscaping (includes all homeowner irrigation but excludes Dove Canyon golf course) averages 281 gallons per capita per day.
3.13 Utilities/Service Systems

*Commercial Sector* — The District has only a minimal amount of commercial and institutional uses. No significant growth in this sector is planned.

*Landscape/Recreational Sector* — This sector consists of homeowner association-landscaped slopes, parks and greenbelts, a golf course, and a regional parks. The majority of the significant irrigation users in the eastern portion of the District are supplied with recycled water. Water audits have been conducted on the major landscaping accounts and the District has worked with these customers to help them in efforts to conserve water.

*Water Reliability*

Table 16 compares current and projected water supply and demand. This table indicates that through expansion of the Robinson Ranch Wastewater Reclamation Plan (please refer to the wastewater discussion of this section) as well as expansion of the non-domestic irrigation distribution system, the District will have adequate supplies of water during any weather condition, assuming that Municipal Water District of Orange County (MWDOC)/Metropolitan Water District of Southern California (MWD) regional water sources do not run short.

In February 2002, MWD prepared the Report on Metropolitan’s Water Supplies, which is consistent with the Agency’s 2000 Urban Water Management Plan. This 2002 report was prepared to “Demonstrate MWD’s ability to meet projected demands over the next 20 years and to provide additional resource reserves as a ‘margin-of-safety’ that mitigates against uncertainties in demand projections and risks in implementing supply programs”\(^\text{1}\). In order to secure reliable supplies, MWD has a comprehensive plan that includes: available supplies at least 10 years in advance of need, securing reliability beyond 20 years and using supplemental demand projections that are 7 to 11 percent higher than the projections presented in the member agencies’ urban water management plans to provide a “margin of safety”. The report findings include the following based on MWD’s existing supply capabilities:

- Meet 100 percent of its member agencies’ projected supplemental demands (consumptive and replenishment needs) over the next 20 years in average and wet years.
- Meet 100 percent of its member agencies’ projected supplemental demands (consumptive and replenishment needs) over the next 15 years in multiple dry years. This existing capability also provides a 7 to 12 percent reserve supply. This reserve capacity and the purchase of spot market transfers would mitigate unexpected changes in demand or supply conditions over the next 20 years.
- Meet 100 percent of its member agencies’ projected supplemental demands over the next 10 years in single dry years. This existing capability also provides a 7 to 24 percent reserve supply during the next 10 years. This reserve capacity and the

purchase of spot market transfers would mitigate unexpected changes in demand or supply conditions over the next 20 years.

### Table 16
**TCWD Projected Supply and Demand Comparison (Acre-Feet/Year)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply Totals</td>
<td>4,625</td>
<td>5,202</td>
<td>5,612</td>
<td>6,032</td>
<td>6,442</td>
</tr>
<tr>
<td>Demand Totals</td>
<td>4,625</td>
<td>5,202</td>
<td>5,612</td>
<td>6,032</td>
<td>6,442</td>
</tr>
<tr>
<td>Difference</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>


As can be seen from Table 16, the District will be able to meet projected demand through the year 2020. However, since a portion of the District’s water supply (the groundwater wells) may become unreliable during drought conditions, the District looked at a worse-case scenario of supply versus demand assuming three dry years in a row. This scenario is shown in Table 17. If this unlikely supply limitation occurred, the District would require conservation in the amount of approximately 13% in Year 2 and 14% in Year 3. These conservation efforts would be easily achievable given past District conservation efforts.

### Table 17
**TCWD Supply Reliability and Demand Comparison (Acre-Feet/Year)**

<table>
<thead>
<tr>
<th>Water Supply Sources</th>
<th>Average/Normal Water Year</th>
<th>Single Dry Water Year</th>
<th>Multiple Dry Water Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply Totals</td>
<td>4,625</td>
<td>5,072</td>
<td>5,072</td>
</tr>
<tr>
<td>Demand Totals</td>
<td>4,625</td>
<td>5,072</td>
<td>5,072</td>
</tr>
<tr>
<td>Difference</td>
<td>0</td>
<td>0</td>
<td>(580)</td>
</tr>
</tbody>
</table>

Assumptions: Worst-case scenario assumes a 7% increase over the average demand projections. Limitation on imported water supplies: none for the first dry year, a limit of 90% of the previous year’s (Year 1) supply adjusted for growth in Year 2, and a limit of 80% of the Year 1 supply adjusted for growth for the third dry year.

Imported water available to TCWD during periods of drought will be subject to MWDOC’s and MWD’s regional water supply plans. In addition, the District has a three-stage plan in place to meet up to a 50% reduction in water supply. The District has achieved this reduction level before, in 1991/92 when adjusted for growth and compared to 1989/90 usage (pre-drought).

Along with water conservation measures, the TCWD UWMP addresses the feasibility of developing and expanding additional water supplies. This helps to offset future potential water shortages and become less reliant on imported water. These supplemental water sources include:
Ground Water – The District has embarked on the design and construction of a water treatment plant for the Rose and Lang wells to continue to provide a high-quality source of potable water.

Recycled Water – The District has been adding customers to its non-domestic irrigation system to expand the use of recycled water since the construction of the Robinson Ranch Wastewater Reclamation Plan.

Urban Runoff – The District is currently investigating a pump-back system that could be developed in conjunction with the Audubon Society downstream of the Dove Canyon development. This system would return flows in Bell and Dove Canyons, enhancing water quality downstream as well as provide an additional source of irrigation water supply to the District.

Interconnections with other Agencies – The District has begun discussions with Santa Margarita Water District regarding the potential to develop some joint recycled water projects along the boundary between the two Districts, which may involve the utilization of SMWD’s Portola Reservoir for additional seasonal storage. This additional storage could enable the District to convert more landscape customers to recycled water.

Santa Margarita Water District

The District is located in the southeastern corner of Orange County. It is situated easterly of the San Diego Freeway and extends northerly from a line parallel to Capistrano Beach to a similar line extending from the Marine Corps Air Station, El Toro. The District is bounded on the north and east by Cleveland National Forest and on the south by the San Diego County line and Marine Corps Base, Camp Pendleton.

SMWD, which includes approximately 62,674 acres in southeastern Orange County, is responsible for inter-agency coordination and long range planning to meet future water supply needs for its service area. The SMWD is divided into eight basic Improvement Districts that were formed to meet the needs of specific portions of the District based upon such factors as land use, topography, land ownership boundaries and the timing and characteristics of water supply and wastewater treatment needs. Rancho Santa Margarita is located within Improvement District #4, which is the second largest Improvement District with 15,139 acres.
**Water Supply**

Water is supplied to Orange County from both local and imported sources. Since the SMWD does not overlie the Santa Ana River Groundwater Basin, its supply relies predominantly on imported water from the State Water Project, the Colorado River Aqueduct or water transfers. In addition, the Water Supply Permit authorizes SMWD to purchase up to 2,000 acre-feet of treated domestic water from the Trabuco Canyon Water District. The District also has two domestic water wells with a contracted maximum annual yield of up to 150 acre-feet per year. Since the SMWD is dependent on imported water supplies from MWD, and is at the end of a long distribution system, alternative sources of water and increased system reliability are a primary focus of the District’s strategic planning. Table 18 shows existing and projected water supplies (through 2020) for the SMWD.

**Table 18**

**SMWD Current and Projected Water Supplies in Acre-Feet**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchased from MWDOC/MWD</td>
<td>27,893</td>
<td>20,638</td>
<td>19,657</td>
<td>19,998</td>
<td>18,901</td>
</tr>
<tr>
<td>SMWD Produced Groundwater*</td>
<td>540</td>
<td>1,750</td>
<td>2,000</td>
<td>2,400</td>
<td>2,800</td>
</tr>
<tr>
<td>ETWD Produced Groundwater*</td>
<td>0</td>
<td>1,000</td>
<td>2,000</td>
<td>2,000</td>
<td>2,000</td>
</tr>
<tr>
<td>SMWD Produced Recycled Water</td>
<td>1,960</td>
<td>4,759</td>
<td>6,439</td>
<td>8,118</td>
<td>9,797</td>
</tr>
<tr>
<td>Water Transfers (Recycled Water)</td>
<td>1,983</td>
<td>2,000</td>
<td>2,000</td>
<td>2,000</td>
<td>2,000</td>
</tr>
<tr>
<td>Water Transfers (Domestic)</td>
<td>1,000</td>
<td>10,000**</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>33,376</td>
<td>40,147</td>
<td>42,096</td>
<td>44,316</td>
<td>45,498</td>
</tr>
</tbody>
</table>


*SMWD may obtain not less than 2,000 acre-feet per year according to R06 purchasing agreement.

** SMWD is proactively pursuing water transfers; if these transfers are unable to be implemented, the amount will be added back into the amount purchased from MWDOC/MWD.

Treated water is received into the District’s system through one of six turn-outs; OC-82, SC-1, SC-2, SC-3, SC-5, or the Aufdenkemp Connection and the East Orange County Feeder #2. Water deliveries are coordinated with the MWD (OC-82, SC-1 through SC-5) and the Laguna Beach County Water District (Aufdenkemp Connection). Due to local geography all water delivered into the District’s system must be pumped from the source to at least an elevation of 850 feet above sea level. System storage consists of 25 reservoirs with a combined capacity of just over 196 million gallons.

The SMWD has actively pursued additional water supply reliability through water transfers. At present the policies of the Metropolitan Water District of Southern California make the future of such transfers as a reliable and cost-effective means of supplementing the District’s supply uncertain. The District will continue to pursue water transfers as an alternative water supply. If water transfers are not economically or politically practical, then the volume of water anticipated from water transfers will be purchased from MWDOC/MWD.

*Domestic Water Purchases* – Table 19 shows the volume of domestic water in acre-feet purchased annually from MWDOC from 1995 to 2000. The District did not require an
increase in water purchases in 1998. A combination of weather conditions and declines in construction activity contributed to reduced water usage throughout the District.

Table 19
SMWD Historic Domestic Water Purchases

<table>
<thead>
<tr>
<th>Year</th>
<th>Volume in Acre-Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>18,665</td>
</tr>
<tr>
<td>1996</td>
<td>20,444</td>
</tr>
<tr>
<td>1997</td>
<td>23,471</td>
</tr>
<tr>
<td>1998</td>
<td>20,095</td>
</tr>
<tr>
<td>1999</td>
<td>23,352</td>
</tr>
<tr>
<td>2000</td>
<td>27,893</td>
</tr>
</tbody>
</table>


Water Use

Since service to the first customers began in 1972, the District has experienced steady growth in the number of customers and continues to grow at a rapidly increasing pace. The population in the Year 2000 was approximately 102,560, centralized in the northwestern sector of the District. Table 20 shows population estimates within the SMWD service area until 2020.

Table 20
Population Projections for the Santa Margarita Water District

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>102,560</td>
<td>127,645</td>
<td>140,320</td>
<td>154,570</td>
<td>162,500</td>
</tr>
</tbody>
</table>

Source: Santa Margarita Water District 2000 Urban Water Management Plan

Total service connections for the District at the end of 2000 were approximately 44,207. Of these, 41,024 were residential, 1,990 irrigation, 1,143 commercial, and 50 classified as "other", including construction meters. The District's strategic planning indicates a continuing reduction in per capita water use for the period 2000 through 2020. Projections indicate that per capita water consumption will decrease by a total of 14 percent by year 2020. This reduction will be primarily in the areas of landscape irrigation.

The District relies on water reclamation to supplement the purchase of domestic water for irrigation use. In the Year 2000, recycled water accounted for nearly 12 percent of the total water demand. SMWD's strategic plan calls for water reclamation to increase through the year 2020 and is planned to account for nearly 26 percent of the total water needs.
3.13 Utilities/Service Systems

Water Reliability

Table 21 compares current and projected water supply and demand for the SMWD. This table indicates that the District has adequate water supplies to meet demand requirements through the year 2020, taking into account the reliability of imported water from MWD.

Table 21
SMWD Projected Supply and Demand Comparison (Acre-Feet/Year)

<table>
<thead>
<tr>
<th></th>
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<tr>
<td>Demand</td>
<td>33,376</td>
<td>40,147</td>
<td>42,096</td>
<td>44,516</td>
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</table>

Source: Santa Margarita Water District 2000 Urban Water Management Plan

As a member agency of MWDOC, the frequency and magnitude of supply deficiencies for SMWD is dependent upon the ability of MWDOC and MWD to deliver water. Both MWDOC and MWD address supply deficiencies in their Urban Plans, and have established priorities for deliveries during periods of reduced availability.

Current Backup Water Supplies - In order to handle localized emergencies within the District's distribution system, the District has constructed several operational storage reservoirs and emergency interconnections with adjacent water districts. It is current District policy to provide, as a minimum, one day of maximum-day demand storage plus fire flow in each pressure zone. Emergency interconnections are added to the system whenever possible. Emergency storage is particularly critical to the Santa Margarita Water District since the District relies entirely on imported water and is situated at the end of a long water importation system that could be disrupted by an earthquake or other natural disaster. In addition, the regional water importation system could be disrupted due to problems with supply sources, pumping facilities, or transmission mains. MWD encourages its constituents to have the capability of sustaining themselves for at least 7 days independently of Metropolitan's system. MWDOC recommends that 10 days of mean annual demand be provided for emergency storage.

At present the District has approximately 196 million gallons of operational and emergency storage. Emergency interconnections with neighboring agencies can produce about 24 cubic feet per second, independent of the District’s connections with the MWD.

Future Storage Requirements – Continued development of the SMWD service area necessitates the need for additional seasonal and emergency supplies of domestic water. The net additional storage required at ultimate development, (all improvement districts) is estimated to be approximately 4,241 acre-feet of domestic water. This will provide approximately 30 days of storage during peak month demands. The District is currently participating in a regional study that, in part, considers the potential for a large reservoir in South County. Alternative sites considered for this major storage facility include sites centrally located both within and outside of the District.
Conservation Measures – SMWD has several conservation measures to help water resources be put to the maximum beneficial use. These conservation measures include:

♦ public information programs providing information on water quality, water costs, conservation and water-wise landscaping;
♦ a system management program that includes water audits and routine maintenance of the distribution system; and
♦ a tiered-rate pricing structure that recovers the fixed cost for providing services and provides an economic incentive to reduce the usage of water and/or curb the excessive use of water.

Wastewater

Wastewater collection and treatment systems for the project area are provided by the TCWD and SMWD. The wastewater service areas are the same as the water service boundaries, shown in Figure 22.

Trabuco Canyon Water District

TCWD operates separate collection systems in the western and eastern portions of its service area. The eastern portion, including the part of the project area covered by the District, discharges to the Robinson Ranch Wastewater Reclamation Plant where the effluent is treated to Title 22 standards, stored in the open reservoir adjacent to the plant and then distributed to irrigation customers in the Dove Canyon and Robinson Ranch/Trabuco Highlands areas. In the western portion of the District, TCWD operates a collection system for its customers in Portola Hills, Cook’s Corner and the Topanga Canyon area for ultimate discharge to the Chiquita Sewage System owned and operated by SMWD.

The District’s Master Plan calls for the continued discharge of effluent to the SMWD Chiquita Sewer System in the western portion of the District and expansion of the existing Robinson Ranch Wastewater Reclamation Plant (RRWRP) in logical increments to serve the remaining proposed development in the eastern and central portions. As the reclamation plant is expanded, additional seasonal storage facilities will be needed along with an expanded non-domestic irrigation distribution system to match the plant capacities. In this manner, the District will ultimately be reclaiming all sewage generated in the central and eastern portion. The flow at RRWTP in the year 2000 was averaging 700,000 gallons per day (gpd) but is rated for 850,000 gpd by the Regional Water Quality Control Board. The TCWD Master Plan calls for a projected ultimate flow of approximately 1.3 million gallons per day at build-out (year 2030).

Use of Recycled Water – Conversion of areas from domestic water irrigation to recycled water irrigation has met with favorable reaction in the District service area, due primarily to the lower rates and increased reliability during periods of drought. For future development areas within the District, including the Northeast Future Planned
Community, recycled water can be used on parks, greenbelts, slopes and fire fuel modification zones if the non-domestic irrigation system is expanded. Construction of these systems, along with expansion of the RRWTP and additional seasonal storage capacity is anticipated to be a requirement of new developments in the central and eastern portions of the District. TCWD currently provides secondary-level treatment to comply with Title 22 requirements and is planning on providing this same level of treatment on future expansions.

Santa Margarita Water District

SMWD operates three sewage treatment plants within its service area. Rancho Santa Margarita is served by the Chiquita Wastewater Reclamation System, located in Chiquita Canyon off Ortega Highway, a few miles east of San Juan Capistrano. The current (year 2002) capacity of the plant is 6 million gallons per day (mgd), while the actual wastewater flows average 4.5 mgd. This reclamation plant is a phased project, which could ultimately reach a capacity of 15 mgd. Two phases are planned for the near future: an additional 3 mgd of wastewater capacity and the installation of a new facility that will allow SMWD to recycle wastewater into irrigation water. This recycling phase is anticipated to be completed by 2004 and will have an estimated capacity of 5 mgd. The District is working to begin providing recycled irrigation water in the Rancho Trabuco area.

Solid Waste

The City contracts with Waste Management, a private waste hauler, to collect and dispose of the City’s solid waste. The City’s solid waste is disposed of at the County of Orange Integrated Waste Management Department (IWMD), which operates all landfills in Orange County. These facilities consist of three Class III sanitary landfills, Olinda Alpha (Brea), Frank R. Bowerman (Irvine), and Prima Deshecha (San Juan Capistrano). The City’s solid waste is disposed of at the Prima Deshecha landfill located near Ortega Highway. The landfill is a permitted Class III landfill accepting only non-hazardous municipal solid waste for disposal and no hazardous or liquid waste. Memoranda of Understanding between the County and San Juan Capistrano were developed to provide host fees to offset environmental impacts to the City due to importation and to cap the amount of trash the landfill can accept. The estimated remaining capacity at the Prima Deshecha landfill is approximately 87.9 cubic yards of remaining air space. The landfill is expected to close in the year 2067.

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2 Personal Communication, Dan Feron, Chief Engineer, Santa Margarita Water District, April 3, 2002; Santa Margarita Water District website: www.smwd.com.
3 Personal Communication, Dan Feron, Chief Engineer, Santa Margarita Water District, April 3, 2002; Santa Margarita Water District website: www.smwd.com.
4 Personal Communication, Christine Knapp, Orange County Integrated Waste Management Department, June 5, 2002.
5 The RELOOC (Regional Landfill Options for Orange County) of the Orange County Integrated Waste Management District states that the Prima Deshecha landfill is expected to close in the year 2040. However, based on personal communication with Christine Knapp, Orange County Integrated Management
3.13 Utilities/Service Systems

The California Integrated Waste Management Act (Assembly Bill 939) changed the focus of solid waste management from landfill to diversion strategies such as source reduction, recycling and composting. The City of Rancho Santa Margarita is responsible for meeting the Assembly Bill 939 (AB 939) mandate of 50 percent disposal reduction and for preparing AB 939 solid waste planning documents. These documents include the Source Reduction and Recycling Element (SRRE), the Household Hazardous Waste Element (HHWE), and the Non-Disposal Facility Element (NDFE).

Energy

The Southern California Edison Company (SCE) provides electricity to the area. The existing electricity infrastructure within Rancho Santa Margarita consists of underground distribution lines. The company does not identify any electricity supply or infrastructure problems existing in the planning area. Currently, SCE does not have specific infrastructure expansion or improvement plans in the area.

Natural gas is provided by the Southern California Gas Company (SCGC), a Sempra Energy company. The local system consists of distribution lines. SCGC does not identify any gas supply or overall infrastructure problems currently existing in the planning area. The company does not have specific infrastructure expansion or improvement plans in the area.

THRESHOLDS USED TO DETERMINE LEVEL OF IMPACT

Implementation of the General Plan will result in a significant impact if it (1) requires or results in the construction of new water, wastewater, or energy facilities or expansion of existing facilities, the construction of which could cause significant environmental effects, (2) results in the need of new or expanded water entitlements, (3) results in the need for new wastewater capacity to serve the project’s demands in addition to existing commitment, (4) be served by a landfill with insufficient permitted capacity to accommodate the project’s solid waste disposal needs, or (5) result in the use of substantial amounts of fuel and/or energy.

Department, the most recent (December 2001) memorandum states that the landfill is expected to close in the year 2067.

ENVIRONMENTAL IMPACT

Water

Implementation of the General Plan will result in an increase of development in the project area. New development will include residential, commercial, and office space, as well as institutional and public facilities. This increase in development and population will increase demand for water services.

The General Plan contains the following goals and policies in the Land Use and Conservation/Open Space Elements to ensure that an adequate and deliverable water supply is available to meet the community’s needs:

Land Use Element

Goal 5: Collaborate with local and regional water suppliers to ensure that an adequate water supply is available and that delivery and treatment capacity is adequate to meet the community’s needs.

Policy 5.1: Actively coordinate with Santa Margarita Water District and Trabuco Canyon Water District, as well as regional water suppliers and distributors, to ensure that high quality water is available and deliverable for the community.

Policy 5.2: In cooperation with the Santa Margarita Water District and Trabuco Canyon Water District, review development proposals to ensure that adequate water supplies, treatment, and distribution capacity are available to meet the needs of the proposed development without negatively impacting the existing community.

Policy 5.3: Work cooperatively with local and regional water suppliers to ensure adequate water reserves exist in case of natural disaster.

Policy 5.4: Participate in and support regional programs that target the improvement and conservation of the region’s groundwater and surface water supply.

Policy 5.5: Actively promote water conservation by City residents and businesses.

Policy 5.6: Promote the use of reclaimed water for irrigation of parks, golf courses, and landscaped areas in the community.
Conservation/Open Space Element

Goal 3: Promote an adequate supply of water through the conservation of water resources.

Policy 3.1: Coordinate water supply programs with responsible local, regional, state and federal agencies.

Policy 3.2: Encourage the production, distribution, and use of recycled water.

Policy 3.3: Participate in and implement local and regional programs that promote water conservation.

Policy 3.4: Promote water conservation in residential and non-residential uses.

Trabuco Canyon Water District

Development pursuant to the General Plan will result in additional residential and public facility uses (the school and park in the Northeast Future Planned Community) within the TCWD boundaries. To meet the increased demand for water from these uses, new pipelines will need to be installed or extended and existing pipelines will need to be upsized. Based on a generation factor of 450 gallons per day (gpd) per estimated dwelling unit (edu), implementation of the General Plan in the Northeast Future Planned Community Area will generate a water demand of 275,400 gpd\(^8\). The 2000 Urban Water Management Plan included water demand projections from development in the Northeast Future Planned Community area. Therefore, implementation of the TCWD 2000 Urban Water Management Plan will avoid the impact associated with the provision of domestic water service. The specific environmental impact of expanding existing facilities, if warranted, cannot be determined at this program-level analysis.

Santa Margarita Water District

Future development pursuant to the General Plan will result in up to 75 housing units and 293,000 square feet of commercial uses within the SMWD boundaries. This development was assumed during the development of the Planned Communities and included in the future demand assessment for the SMWD 2000 Urban Water Management Plan.\(^9\) Implementation of the SMWD 2000 Urban Water Management Plan will avoid the impact associated with the provision of domestic water service. The specific environmental impact of expanding existing facilities, if warranted, cannot be determined at this program-level analysis.

\(^8\) Personal Communication, Brian Bertsch, Trabuco Canyon Water District, April 19, 2002.

Wastewater

Implementation of the General Plan will result in an increase of development in the project area. New development will include residential, commercial, and office space, as well as institutional and public facilities. This increase in development and population will increase demand for sewer services.

The General Plan Land Use Element contains the following goal and policies to provide and maintain adequate levels of wastewater treatment:

**Goal 6:** Collaborate with local sewer treatment providers to provide and maintain adequate levels of sewage treatment.

**Policy 6.1:** Actively coordinate with Santa Margarita Water District and Trabuco Canyon Water District to ensure that sewer service and facilities are provided and maintained to meet the community’s need for sewer collection and treatment.

**Policy 6.2:** In cooperation with the Santa Margarita Water District and Trabuco Canyon Water District, review development proposals to ensure that adequate sewer collection and treatment facilities are available to meet the needs of development without negatively impacting the existing community.

**Trabuco Canyon Water District**

Development pursuant to the General Plan will result in additional residential and public facility uses (the school and park in the Northeast Future Planned Community) within the TCWD boundaries. The flow at Robinson Ranch Wastewater Treatment Plant (RRWTP) in the year 2000 was averaging 700,000 gallons per day (gpd) but is rated for 850,000 gpd by the Regional Water Quality Control Board. The TCWD Master Plan calls for a projected ultimate flow of approximately 1.3 million gallons per day at build-out (year 2030). Development of the Northeast Future Planned Community (as the Plano Trabuco subarea of the Foothill/Trabuco Specific Plan) was included in the project ultimate flow. Using a generation factor of 270 gallons per day (gpd) per estimated dwelling unit (edu), the project will generate a wastewater demand of 165,240 gpd within the TCWD boundaries.\(^\text{10}\)

At the time of the Northeast Future Planned Community development, a Subarea Master Plan would be required to determine the extent of expanding the RRWTP. Expansion of the plant is dictated by development and would be assessed at the time of the Northeast

\(^{10}\) Personal Communication, Bruce Boner, General Manager, Trabuco Canyon Water District, April 11, 2002.

\(^{11}\) Personal Communication, Brian Bertsch, Trabuco Canyon Water District, April 19, 2002.
Specific Plan process. The specific environmental impact of expanding the RRWTP, if warranted, cannot be determined at this program-level analysis.  

*Santa Margarita Water District*

The development pursuant to the General Plan within the SMWD boundaries will be served by the Chiquita Wastewater Reclamation System. As described in the Environmental Setting section, this reclamation plant is a phased project, which could ultimately reach a capacity of 15 mgd. Since the vacant parcels in the City were included as part of the Planned Communities, the wastewater from this development was also addressed in the SMWD 2000 Urban Water Management Plan.

**Solid Waste**

Implementation of the General Plan will result in an increase of development in the project area and an increase in solid waste generation. The waste generated by this development will be disposed of at the Prima Deshecha landfill. As described in the Environmental Setting section, this landfill is expected to close in the Year 2067. Table 1 in Section 1.0, Project Description, estimates a population increase in the project area of 1,993 persons by the Year 2020. Using generation factors from the California Integrated Waste Management Board, development within the City will generate an estimated 89 tons/year, while the Northeast Future Planned Community will generate an estimated 728 tons/year.

The General Plan Land Use Element includes a goal and policies to minimize the project’s impact on the County landfill.

**Goal 7:** Collaborate effectively with local providers of solid waste collection and disposal to provide a sufficient level of solid waste disposal.

**Policy 7.1:** Cooperate with solid waste collection and disposal service providers to ensure City residents are provided adequate solid waste collection and disposal services.

**Policy 7.2:** Participate in local and regional programs that encourage the per capita reduction of solid waste in Rancho Santa Margarita in order to meet State mandates for waste reduction.

With implementation of this goal and policies, an otherwise potentially significant impact can be reduced or avoided.

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12 Personal Communication, Bruce Boner, General Manager, Trabuco Canyon Water District, April 11, 2002.
Energy

Implementation of the General Plan will result in an increase of development in the project area. Within the incorporated areas, 75 housing units and 364,000 square feet of commercial uses will be developed. In the Northeast Planned Community, which is currently unincorporated, 612 housing units will be developed, as well as 348,000 square feet of non-residential uses. This increase in development and population will increase demand for energy. The anticipated demand for fuel and energy by future development in the project area is shown in Tables 22 and 23. The Southern California Edison Company (SCE) estimates that new demand for electricity as a result of new development will peak at approximately 3.5 megawatt hours (MW/hr) in 20 years.\textsuperscript{13} SCE expects that it will be able to meet the electrical energy needs of the new development with the incorporation of infrastructure upgrades.\textsuperscript{14} The Southern California Gas Company estimates that the additional demand for new residential development will peak at approximately 22,500 cubic feet per hour (ft\textsuperscript{3}/hour) in the year 2020.\textsuperscript{15} The company was not able to estimate the increase in demand as a result of commercial development because the specific commercial uses have not been established. However, the Southern California Gas Company expects to be able to supply the additional power necessary to support new residential and commercial development.\textsuperscript{16}

To meet the increase in demand, new distribution infrastructure for electricity and natural gas may be required. The specific environmental impact of constructing or expanding electrical and natural gas facilities in the project area cannot be determined at this programmatic level of analysis. However, the General Plan Land Use Element and Conservation/Open Space Element contains the following goal and policies to promote the conservation of energy in order to sustain existing and future economic and population growth.

\textsuperscript{13} Estimated future demand for electricity is based on peak conditions under a build-out scenario. Electricity demand would not be constant at an additional 3.5 MW/hour in 2020. This is the maximum predicted increase used to estimate SCE's ability to supply adequate electricity should demand be at a maximum.


\textsuperscript{15} Estimated future demand for natural gas is the maximum expected demand as a result of new development when the Northeast Future Planned Community and other residential and commercial areas are completely constructed.

\textsuperscript{16} Personal communication, Mark Kitoriano, Engineer, Southern California Gas Company, June 7, 2002.
Table 22
Future Electricity Demand

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<th>Number of Units/Square Feet</th>
<th>Generation Factor</th>
<th>Estimated Demand</th>
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<td>Residential</td>
<td>75 units</td>
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<td>Commercial</td>
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<tr>
<td>Residential</td>
<td>612 units</td>
<td>20 kW/home residential</td>
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<td>Non-Residential Development</td>
<td>348,000 ft²</td>
<td>45 kW/acre commercial</td>
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<td><strong>TOTAL</strong></td>
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<td><strong>2.81 MW/hr</strong></td>
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Table 23
Future Natural Gas Demand

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<th>Generation Factor</th>
<th>Estimated Demand</th>
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<tr>
<td>Residential</td>
<td>70 units</td>
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<tr>
<td>Residential</td>
<td>612 units</td>
<td>36.39 ft³/hour</td>
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<tr>
<td>Non-Residential Development</td>
<td>348,000 ft²</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>22,500 ft³/hour</strong></td>
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</tbody>
</table>

Land Use Element

Goal 2: *Control and direct future land use so that the community is protected and enhanced.*

Policy 2.4: Ensure that new development funds its share of community services and facilities (e.g., parks, schools, trails, utilities) and provides fiscal benefit to the community.

Conservation/Open Space Element

Goal 6: *Encourage energy conservation.*
Policy 6.1: Participate in local, regional and state programs that promote energy conservation and alternative energy sources.

Policy 6.2: Collaborate with energy suppliers and distributors to institute energy conservation programs and inform the public of these programs.

Policy 6.3: Enforce building code requirements and apply standards that promote energy conservation.

Implementation of these goals and policies will reduce or avoid an otherwise potentially significant impact.

MITIGATION MEASURES

Water

The City will implement Implementation Programs LU-10, LU-15, LU-17, LU-18, COS-8, and COS-9 to ensure an adequate provision of water supplies. Implementation Program LU-10 requires the annexation of the Northeast Future Planned Community to include an Urban Services Plan, which demonstrates how adequate public facilities and services can be provided to the area without substantially degrading the level of service currently provided to City residents. Program LU-15 requires: (a) the review of development proposals and amendments within Planned Communities for consistency with water infrastructure requirements, (b) appropriate engineering studies for development projects outside of Planned Communities, and (c) dedication of necessary right-of-way and construction of water infrastructure improvements for all development projects. Implementation Program COS-8 calls for the City to continue to work with the water districts to ensure adequate water supply. Supporting the production of recycled water by water districts and the use of conservation measures (drought-tolerant plants, low-flow toilets) is outlined in Programs LU-17 and COS-9. Implementing a Geographic Information System (GIS) to provide accurate mapping and information regarding infrastructure is the requirement of Program LU-18.

Wastewater

The City will implement Implementation Programs LU-10, LU-18, and LU-19 to ensure an adequate provision of wastewater treatment. Please refer to the water supply mitigation above for a description of Programs LU-10 and LU-18. Implementation Program LU-19 requires: (a) the review of development proposals and amendments within Planned Communities for consistency with sewer infrastructure requirements, (b) appropriate engineering studies for development projects outside of Planned Communities, and (c) dedication of necessary right-of-way and construction of sewer infrastructure improvements for all development projects.
Solid Waste

The City will implement Implementation Programs LU-10, LU-20, and LU-21 to ensure adequate provisions for solid waste disposal. Please refer to the water supply mitigation above for a description of Program LU-10. Implementation Program LU-20 requires the continuation of contracting for solid waste services from a private sector provider and ensuring that community needs for solid waste disposal services are being met. Program LU-21 calls for the City to work with the California Integrated Waste Management Board and the private solid waste service provider to implement waste diversion and public education programs as outlined in AB 939's Source Reduction and Recycling Element.

Energy

The City will implement Implementation Programs LU-10, COS-15, COS-16, COS-17, and COS-18 to ensure an adequate provision of energy supplies and to encourage energy conservation. Please refer to the water supply mitigation above for a description of Program LU-10. Implementation Program COS-15 calls for the City to establish, update and implement building code requirements for energy performance according to Title 24 Energy Regulations. Programs COS-16 through COS-18 encourage energy conservation through the use of conservation measures in public buildings, retrofitting programs, and the establishment of electric vehicle charging areas. To accommodate the new development, SCE will require the developer to underground existing overhead lines bordering the projects and install a duct bank of 4 to 5 inch ducts to satisfy the operational needs of the project. The developer will be required to extend natural gas mains to the existing infrastructure to new development where infrastructure does not already exist.

LEVEL OF IMPACT AFTER MITIGATION

Water

Through the use of Implementation Programs LU-10, LU-15, LU-17, LU-18, COS-8, and COS-9, the potential for adverse effects on water supply and deliverability is reduced to a less-than-significant level.

Wastewater

Implementation Programs LU-10, LU-18, and LU-19 will reduce the potential of adverse effects on the provision of sewer treatment to a less-than-significant level.

Solid Waste

Through the use of Implementation Programs LU-10, LU-20, and LU-21, the potential for substantial impacts on solid waste landfill capacity is reduced to a less-than-significant level.
Energy

Through the use of Implementation Programs LU-10 and COS-15 through COS-18, the potential for substantial impacts on energy resources is reduced to a less-than-significant level.
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