

## 3.0 PROJECT DESCRIPTION

---

This Environmental Impact Report analyzes the potential environmental effects of the following:

1. The proposed project, which consists of a sewer pipeline capacity improvement project serving areas within the existing OCSD service area within the County of Orange; and
2. The Expanded Service Area Option, which consists of capacity improvement project for an upsized sewer pipeline proposed to serve the existing OCSD service area in addition to portions of unincorporated County of Los Angeles and the City of Chino Hills.

### **PROJECT LOCATION**

The proposed pipeline project would be located in the northeastern portion of the County of Orange, which is in the eastern portion of the City of Brea and the western portion of the Carbon Canyon Specific Plan area (refer to Exhibit 3.0-1, *Regional Location*, and Exhibit 3.0-2, *Local Vicinity*). The northern extent of the proposed pipeline would begin within Carbon Canyon Regional Park, approximately 425 feet south of Carbon Canyon Road (State Route 142) and about 0.5 miles east of the Carbon Canyon Road/South Valencia Avenue intersection. The pipeline alignment would generally travel from the northeast to the southwest. From its starting point within Carbon Canyon Regional Park (near the existing OCSD pump station), the pipeline alignment would then travel southwest towards the Carbon Canyon Dam through the regional park, turn west and travel through the Aera Energy property (this reach would be micro-tunneled through a small ridge to minimize grading), and then curve to the south through property currently used for interim agriculture (refer to 3.0-3, *Proposed Sewer Alignment and Photograph Location Map*). The southern extent of the project would terminate within the Rose Drive right-of-way, approximately 0.75 miles south of Carbon Canyon Road.

### **ENVIRONMENTAL SETTING**

Carbon Canyon Regional Park is a 124-acre park located in the City of Brea, County of Orange, California. The park includes picnic areas, restrooms, barbecues, a four-acre fishing lake, equestrian trails, hiking trails, paved bike trails, lighted tennis courts, multi-use fields, volleyball courts, and play equipment. The County of Orange Harbors, Beaches and Parks Department operates the park on land owned by U.S. Army Corps of Engineers (ACOE). The Carbon Canyon Dam (also owned by the ACOE) is an earthen dam that is used for flood control purposes, and public access is restricted to certain parts of the dam. The project-affected portion of the Aera Energy parcel is primarily open space, with oil drilling and interim agricultural uses. Vegetation types along the proposed pipeline alignment consist primarily of ornamental plants, annual grassland, irrigated row and field crops, and a small amount of riparian habitat, chaparral, and coastal sage scrub (refer to Exhibit 3.0-6a, *Site Photographs* and Exhibit 3.0-6b, *Site Photographs*).

Note that the proposed alignment was developed to minimize impacts on the heavily vegetated area to the immediate east, while still achieving the desired facility objectives. Elevations in the project area range from approximately 525 feet above mean sea level (msl) to approximately 420 feet above msl at the project's southern terminus.

**Exhibit 3.0-1 Regional Location**

**Exhibit 3.0-2 Local Vicinity**

**Exhibit 3.0-3 Proposed Sewer Alignment and Photograph Location Map**

## **SURROUNDING LAND USES**

The surrounding land uses are: Carbon Canyon Regional Park, Carbon Canyon Dam, and a flood control basin to the east; agricultural and residential uses to the south, open space, oil manufacturing, and interim agricultural uses to the west; and Carbon Canyon Road and residential uses to the north.

## **LAND USE AND PLANNING**

The proposed project would traverse lands that are included in the *County of Orange General Plan*, *City of Brea General Plan*, and the *Carbon Canyon Specific Plan*. The project segment that would run through the Carbon Canyon Regional Park would exist on land designated as open space within the *Carbon Canyon Specific Plan*. The project segment that would run through the northern portion of the Carbon Canyon Dam area would exist on land designated as suburban residential in the *County of Orange General Plan*. The segment that would run from the north portion of the Carbon Canyon Dam area to the Rose Drive right-of-way would exist on land designated as single-family residential in the *City of Brea General Plan*.

## **BACKGROUND AND HISTORY**

The OCS D owns and operates the existing Carbon Canyon pipeline and pump station located within the park. The pump station was originally built in 1974 and subsequently modified in 1984. These facilities were originally developed to serve residential land uses within the Carbon Canyon area, and currently serve the residential communities of Olinda Village, Olinda Heights, and Hollydale Mobile Estates (Refer to Exhibit 3.0-4, *Existing Conditions*).

Recent residential development and proposed residential projects have created a need for additional sewer facilities. The proposed project would provide sewer service to satisfy existing and projected additional demand, based on approved general plan land use designations for areas within the City of Brea and unincorporated Orange County. Upon completion, the proposed project is proposed to provide capacity for service to:

- Existing Olinda Village (currently served by existing pipeline);
- Existing Olinda Heights (currently served by existing pipeline);
- Existing Hollydale Mobile Estates (currently served by existing pipeline);
- Existing Olinda Alpha Landfill;
- Proposed Canyon Crest project;
- Future development in the Carbon Canyon area;
- Future development in unincorporated Orange County areas;
- Portions of the existing Chino Hills State Park;
- Proposed Brea Central project;
- Future development on property owned by Aera Energy, along the proposed pipeline alignment;
- Future development on property owned by Aera Energy (Aera Master Planned Community), located along the Orange County/Los Angeles County line within unincorporated Orange County;
- Proposed Tonner Hills project; and
- Existing Carbon Canyon Park and Dam.

**Exhibit 3.0-4 Existing Conditions**

Currently, there are two cast-iron force mains (4 inches and 6 inches in diameter) connected to the OCSD pump station. Both cast iron force mains travel through the park and connect to an existing OCSD manhole at the top of Carbon Canyon Dam. Running parallel to the two OCSD force mains is a 6 inch gravity wastewater line owned by Breitburn Energy Company that increases to 12 inches through the dam and then reduces back to six inches and diverges from the OCSD alignment north of the Rose Drive/Vesuvius Drive intersection. Current peak flow from the existing pipeline's tributary area is approximately 0.48 million gallons per day (MGD)<sup>1</sup>. Existing capacity for the pipeline/pump station facilities is limited by the operational characteristics of the pump station, which can convey a maximum of approximately 0.54 MGD of sewage. Existing flows often require the operation of an emergency back-up pump (adding an additional 0.54 MGD of emergency capacity) to accommodate flows beyond 0.54 MGD. Implementation of the proposed project would eliminate the need for a pump station, and enable the use of gravity flow for conveyance and expand capacity.

OCSD has previously examined several alternative pipeline alignments, such as (1) acquisition of an existing 12 inch oil pipeline running through Carbon Canyon Dam; (2) an alignment within an existing access road west of the proposed alignment; and (3) multiple variations of the portion of pipeline proposed to be micro-tunneled.\*

### **GENERAL PROJECT CHARACTERISTICS**

The recommended alignment takes into consideration functionality, construction constraints, future developments, hydraulics, and cost. Total length of the pipeline is 5,145 feet (refer to Exhibit 3.0-3).

The pipeline would head south from the existing pump station, through the Breitburn oil well site, following the alignment of the existing Texaco sewer line. After approximately 1,400 feet, the pipeline would head west under the existing ridge. This portion of the pipeline would be constructed using micro-tunneling (trenchless technology), for a distance of approximately 1,200 feet.

The trenchless portion of the pipeline will terminate on the Aera Energy property. The pipeline would then be trenched through an existing Christmas tree farm. However, Aera Energy has plans to develop the Christmas tree farm into single-family housing, currently known as the Brea Central Development. Therefore, the pipeline is aligned such that it would be constructed beneath a future roadway (based on the most current Brea Central Development plans).

The final 300 feet of the pipeline is proposed to follow an existing access road before connecting into the Carbon Canyon Interceptor, located approximately 15 feet north of the intersection of Rose Drive and Vesuvius Drive. The purpose of constructing the final 300 feet through the existing access road is to avoid construction in Rose Drive, which would otherwise require extensive traffic control, street repair, and potential conflicts with the Metropolitan Water District (MWD) 96 inch Lower Feeder.

---

<sup>1</sup> Psomas, *Carbon Canyon Dam Lift Station and Force Main – Olinda Heights*, August 7, 1997.

\* Micro-tunneling uses a remotely controlled boring machine combined with pipe jacking to directly install product pipelines underground without having to dig a trench. All such alternatives were found to be less feasible than the proposed project due to engineering and cost constraints and/or property ownership issues. (RBF Consulting, *Preliminary Design Report*, November 15, 2004 (in Appendix E))

## EXPANDED SERVICE AREA OPTION

As part of the project, OCSD is considering upsizing the pipe, which would allow it to serve portions of unincorporated Los Angeles County and the City of Chino Hills in San Bernardino County that are in the Carbon Canyon sewer tributary (refer to Exhibit 3.0-5, *Proposed Project and Expanded Service Area Option*). These areas would consist of:

- A proposed 2,614-acre portion of the Aera Master Planned Community (located within unincorporated Los Angeles County). This project would consist of a maximum of 3,600 dwelling units and include an 18-hole golf course, parks, commercial development, and open space;
- A 981-acre portion of the Firestone Boy Scout Camp (located within unincorporated Los Angeles County); and
- The 80-acre Sleepy Hollow Estates development (located within the City of Chino Hills in San Bernardino County).

This option would increase the tributary area of the project by a total of approximately 3,675 acres. The proposed additional service areas are located immediately north of the existing OCSD service area boundary (Refer to Exhibit 3.0-5).

The Expanded Service Area Option would have a total tributary area of approximately 12,266 acres. Based on OCSD wastewater generation factors for the land uses identified in the *County of Los Angeles General Plan*, *City of Brea General Plan*, and *City of Chino Hills General Plan*, peak wet weather flow for the proposed project would require an increase in the pipe size from 27 inches to a minimum of 30 inches. A pipe size of up to 36 inches may be required to accommodate flows because the slope of the pipeline may not be steep enough with a pipe size of 30 inches. However, the increased pipe size would not increase capacity beyond what has been analyzed in this document (refer to Table 3.0-1, *Projected Wastewater Service Demand*). The 30-inch pipeline would have an operational capacity of approximately 18.16 MGD (12,467 gpm). Refer to Table 3.0-1, for additional information.

To provide service to the Expanded Service Area, separate sewer service agreements would be required. The OCSD presently provides service for areas immediately adjacent to, but outside of, its boundaries under separate sewer service agreements. In the past, the OCSD has entered into agreements with Los Angeles County Sanitation District Nos. 18 and 19, the Sandlewood Sewer Maintenance District, the community of Sunset Beach, the Seal Beach Naval Weapons Station, and the Santa Ana Watershed Project Authority.





**Exhibit 3.0-5, Proposed Project and Expanded Service Area Option**

In 1985, the OCSD adopted a resolution fixing the OCSD's service area as the then existing boundaries and/or spheres of influence. This policy was adopted in part because of concerns by the City of Fountain Valley that continued annexations or execution of sewer service agreements would require undue expansion of Reclamation Plant No. 1 in Fountain Valley. In 1999, this policy was revisited and the OCSD adopted a resolution regarding futures areas to be served.

The OCSD resolution was based on 12,500 acres of development that was projected to generate less than 2 MGD of wastewater when fully developed. The proposed Aera Master Planned Community development is included in this acreage. This resolution required that:

1. Water from the territory would naturally drain into Orange County.
2. The OCSD's member agency affected by the proposed development must be consulted, and its input considered, prior to a service agreement being presented to the OCSD's Board of Directors.
3. A local government agency must execute a service agreement providing for local sewer service, and for payment of the OCSD's equivalent annexation fees, connection fees, and annual property taxes, service fees, and administrative charges.
4. The local land use, sewer, or water authority agrees to require connections to the OCSD or other sewage treatment systems and discourage the use of on-site disposal systems (i.e. septic tanks).

All such conditions would be met should the Expanded Service Area Option be implemented. The projected wastewater service demand is provided in Table 3.0-1:

**TABLE 3.0-1  
 PROJECTED WASTEWATER SERVICE DEMAND**

Development Name	Land Use	Area (acres)	Dwelling Units	Wastewater Generation Factor [1] (gpd/acre)	Average Flow (MGD)	Peak Dry-Weather Flow [2] (MGD)	Peak Wet-Weather Flow [13] (MGD)
<b>Proposed Project (within Orange County)</b>							
Olinda Alpha Landfill [6]	Institutional	562	0	2,715	1.53	3.05	3.36
Olinda Heights [12]	Estate	284	662	727	0.21	0.41	0.45
Olinda Village [4]	Low Density Res.	96	288	1,488	0.14	0.29	0.31
Hollydale Mobile Home Park [9]	Medium Density Res.	53	134	3,451	0.18	0.37	0.40
Canyon Crest [5]	Estate (P)	368	216	727	0.27	0.54	0.59
Carbon Canyon [4]	Estate (P)	1,240	862	727	0.90	1.80	1.98
Unincorporated [3]	Estate (P)	1,470	368	727	1.07	2.14	2.35
Unincorporated [3]	Estate (P)	810	203	727	0.59	1.18	1.30
Chino Hills State Park [3]	Open Space	2,290	0	129	0.30	0.59	0.65
Brea Central [7]	Low Density Res. (P)	43	121 [14]	1,488	0.06	0.13	0.14
Aera Energy Oil Fields [7]	Estate (P)	230	0 [14]	727	0.09	0.19	0.21
Aera Master Planned Community in the County of Orange [11]	Estate (P)	321	900 [14]	727	0.23	0.47	0.51
Tonner Hills [8]	Estate (P)	800	795	727	0.58	1.16	1.28
Carbon Canyon Park and Dam [9]	Open Space	124	0	129	0.02	0.03	0.04
<b>Totals</b>		<b>8,591</b>	<b>4,549</b>		<b>6.17</b>	<b>12.34</b>	<b>13.57</b>
<b>Expanded Service Area Option (includes portions of unincorporated Los Angeles County and City of Chino Hills)</b>							
Proposed Project Totals (see above)		8,591	4,549		6.17	12.34	13.57
Chino Hills - Sleepy Hollow	Estate	80	111	727	0.06	0.12	0.13
Aera Master Planned Community in the County of Los Angeles [10]	Estate (P)	2,614	2,700 [14]	727	1.90	3.80	4.18
Firestone Boyscout Camp [3]	Open Space	981	0	129	0.13	0.25	0.28
<b>Totals</b>		<b>12,266</b>	<b>7,360</b>		<b>8.25</b>	<b>16.51</b>	<b>18.16</b>
P = Proposed; MGD = million gallons per day [1] Per Table 3-6 of <i>OCS D Strategic Plan, 1999</i> (Vol. 3) [2] Assumed peaking factor = 2.0 [3] Per OCS D Geographical Information Systems Map [4] Per <i>Carbon Canyon Specific Plan, 1986, Amendment 2001</i> [5] Per <i>Canyon Crest EIR, 1986</i> [6] Confirmed by Olinda Alpha staff [7] Per Aera information [8] Per Tonner Hills Tentative Tract Map 16642 [9] Confirmed by park staff. [10] Per <i>County of Los Angeles General Plan, 1980</i> [11] Per <i>County of Orange General Plan, 2003</i> [12] Per <i>City of Brea Sewer Master Plan, 2001</i> [13] I/I Factor of 1% per <i>OCS D Strategic Plan, 1999</i> Section 5.4.3.1 [14] Unit counts are not yet determined. Flows are based on acreage generation factors. Unit numbers in the table are estimates only.							

**Exhibit 3.0-6a Site Photographs**

**Exhibit 3.0-6b Site Photographs**

## **PROJECT NEED AND OBJECTIVES**

The need for the project is due to existing and planned development in the region tributary to the Carbon Canyon Pump Station. This pump station is too small to adequately service current and projected future wastewater flows. OCSD frequently operates both pumps at the pump station to equalize the influent flow. The original design of this pump station was to use one pump regularly and the second pump as a stand-by pump for emergencies.

The objective of the project is to install a gravity sewer pipeline so that OCSD can service existing and proposed wastewater flows and abandon the pump station and force mains. By eliminating this pump station, the OCSD would avoid the cost of having to upgrade the station, and also eliminate its ongoing operational and maintenance costs. The project's specific goals and objectives are as follows:

- To increase sewer pipeline capacity to accommodate future wastewater flows from existing and proposed developments in the Carbon Canyon sewer tributary;
- To provide capacity for expansion of the Orange County Sanitation District's service area boundary in the Carbon Canyon sewer tributary;
- To eliminate the need to upgrade the Carbon Canyon Pump Station;
- To eliminate the need to maintain and operate the Pump Station; and
- To allow for the abandonment of the Pump Station.

The Expanded Service Area Option would provide sewer capacity to the same tributary areas as the proposed project, as well as areas in unincorporated Los Angeles County and the City of Chino Hills (refer to Exhibit 3.0-5). This option would require an increase in the pipe size from 27 inches to a minimum of 30 inches. A pipe size of up to 36 inches may be required to accommodate flows because the slope of the pipeline may not be steep enough with only a pipe size of 30 inches. However, the increased pipe size would not increase capacity beyond what has been analyzed in this document. The areas served under the Expanded Service Area Option would consist of:

- A proposed 2,614-acre portion of the Aera Master Planned Community (located within unincorporated Los Angeles County);
- A 981-acre portion of the Firestone Boy Scout Camp (located within unincorporated Los Angeles County); and
- The 80-acre Sleepy Hollow Estates development (located within the City of Chino Hills in San Bernardino County).

This option would increase the tributary area of the project by a total of approximately 3,675 acres. The proposed additional service areas are located immediately north of the existing OCSD service area boundary (refer to Exhibit 3.0-5).

## **SEQUENCING OF WORK**

The sequencing of the work must be such that the existing pump station and force mains remain in service until the gravity pipeline is complete and ready to convey flow. In addition, the existing Carbon Canyon Interceptor must remain in service throughout the project. For discussion purposes, the proposed pipeline would have three reaches: Reach 1 begins at the existing pump station and ends at the first microtunnel pit; Reach 2 is the micro-tunneled section of pipe; Reach 3 runs between the second microtunnel pit and the end of the pipeline at the intersection of Rose Drive and Vesuvius Drive. A general sequencing of the construction activities is as follows:

1. Construct Reach 1 – Do not make connection between Reach 1 and the existing gravity pipeline at the pump station.
2. Construct Reach 2 – Do not connect Reach 1 and Reach 2.
3. Perform testing and cleaning procedures on Reach 2.
4. Connect Reach 1 and Reach 2.
5. Construct Reach 3 – Do not make connection between Reach 3 and existing Carbon Canyon Interceptor.
6. Perform testing on Reaches 1 – 3.
7. Make connection between Reach 3 and Carbon Canyon Interceptor.
8. Divert flow around existing manhole at upstream of pump station and make connection between Reach 1 and existing manhole.
9. Divert all flow into new gravity sewer pipeline.
10. Pump out existing wet well, salvage pumps, and valves to OCSD and abandon pump station and force mains.

## **AGREEMENTS, PERMITS, AND APPROVALS REQUIRED**

Carbon Canyon Regional Park is owned by ACOE and operated by the County of Orange Harbors, Beaches and Parks Department. Immediately south of the pump station, within the park boundary, is a small portion of land that is either owned or leased by Breitburn Energy (parcel maps indicate the land is owned by the ACOE; however the ACOE is currently researching the status of the property for verification). Aera Energy owns the property immediately west of the park. OCSD must obtain easements from each respective landowner upon which the pipeline would encroach.

The following permits would be required for this project:

- Orange County Harbors, Beaches, and Parks Department Construction Permit;
- County of Orange Road Encroachment Permit;
- California Division of Occupational Safety and Health Mining and Tunneling Permit;
- ACOE – Right of Entry Permit;
- ACOE – Section 404 Permit;
- Santa Ana Regional Water Quality Control Board – National Pollution Discharge Elimination System (NPDES) Permit;
- Santa Ana Regional Water Quality Control Board – Section 401 Certification;
- California Department of Fish and Game – 1602 Streambed Alteration Agreement; and
- City of Brea Encroachment Permit (perhaps).

Note that this project is exempt from National Environmental Policy Act review due to a statutory exemption for pipeline projects.



---

## **UTILITY REQUIREMENTS**

There are several agencies with active utility lines located near the proposed pipeline alignment. The design would attempt to avoid any conflict with an existing utility; however, the design of a gravity sewer pipeline requires a positive slope throughout, which limits the vertical design. If conflicts with existing utilities are unavoidable, coordination with the utility agency would take place to relocate the utility.

Most jurisdictional agencies requested signed copies of the pipeline design plans. Prior to construction, agencies would locate and mark their active underground utilities. During construction, an agency representative would be present to ensure protection of its utilities. These agencies include, but are not limited to, the City of Brea, Exxon-Mobil, Southern California Gas Company, Southern California Edison, Verizon Wireless, Aera Energy, and MWD.

MWD's 96-inch Lower Feeder pipeline is located in and adjacent to Rose Drive, in the vicinity of the project. MWD provided a detailed set of guidelines that it requests to be followed for development in the vicinity of its facilities. The proposed alignment does not require a crossing of the MWD Lower Feeder.

## **LANDSCAPE REQUIREMENTS**

In the park, the pipeline alignment lies only in the "natural" areas. The proposed alignment would not alter any landscaped land. If, during construction of the pipeline, any part of the natural landscape is altered, then it would have to be restored to its original nature except for the areas covered by access roads leading to the manholes. If trees are removed during construction, then one new tree would be planted for every tree that is removed.

An exception to these requirements is the Arundo (giant reeds) on the western side of the park. Arundo is an invasive plant that pushes out the native plant species, does not allow nesting of local birds, and requires up to three times as much water as other plants. The County of Orange has received a \$1 million grant for the removal of Arundo. In the areas of construction where the removal of Arundo is required, replacement is unnecessary. The area affected by this is approximately the initial 1,000 feet of pipe that runs south from the existing pump station.

## **STORMWATER HANDLING REQUIREMENTS**

Orange County Sanitation District must comply with the existing California State Water Resources Control Board (SWRCB) General Construction Activity Storm Water Permit No. CAS000002 (general permit), for discharges of storm water associated with construction. This includes the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) and Monitoring Program (MP) by the contractor.

A portion of the project would be located behind the Carbon Canyon Dam, which is used for flood control purposes. The pipeline alignment is located within the 100-year floodplain. The contractor would be required to specifically address this issue in the SWPPP.

## **RECOMMENDED ALIGNMENT**

The recommended alignment is detailed in *General Project Characteristics* (Page 3.0-7), and on Exhibit 3.0-3.

## EVALUATION CRITERIA

The functionality of the final pipeline alignment was evaluated for constructibility, permitting, utility crossings, and coordination with other projects.

### CONSTRUCTIBILITY

For the first 1,600 feet and the final 2,345 feet, construction of the pipeline would be through standard trenching techniques in areas where only natural earth would be disturbed. The middle stretch of 1,200 feet of pipe would be constructed using a micro-tunneling process.

The preferred option to reach Rose Drive through gravity flow is to tunnel through the ridge on the western side of the park. Micro-tunneling is accurate enough to keep the required slope to the point in the Aera Energy property where it is possible to use standard trenching methods. Micro-tunneling is a viable option and is discussed further in the *Preliminary Design Report* in Appendix E.

### PERMITTING

Regulatory and other permits for the project as a whole are discussed in *Agreements, Permits and Approvals Required* (Page 3.0-15). The recommended alignment connects to the OCSD trunk sewer line at the manhole located east of the intersection of Rose Drive and Vesuvius Drive. By doing this, construction will not encroach into the City of Brea right-of-way and thus should not need an Encroachment Permit from the City.

### UTILITY CROSSINGS

By connecting to the OCSD trunk sewer line at the manhole outside of the intersection at the downstream connection, the project avoids some critical utility crossings, specifically the MWD 96 inch Lower Feeder pipeline that runs beneath the intersection of Rose Drive and Vesuvius Drive. Also, by not connecting in the street, the pipeline avoids City of Brea infrastructure that exists in Rose Drive.

### COORDINATION WITH OTHER PROJECTS

Adjacent to Rose Drive would be a future development known as Brea Central. Construction of this development has not begun yet, but a preliminary layout of the lots and streets has been completed. The alignment of the pipeline enters the development through an easement and follows beneath the future residential road and existing access road until it connects into the OCSD system.