

Chapter 6

Aesthetics and Visual Resources

Introduction

Chapter Overview

This chapter discusses the Project's potential impacts to aesthetics and visual resources, including not only scenic resources and visual character and quality, but also the potential to contribute to fugitive glare and nighttime light spill. It contains the following information.

- An overview of chapter preparation, including sources of baseline information and an explanation of the methods used to analyze impacts
- A description of existing conditions relative to aesthetics and visual resources (visual quality and viewer response) in the Project area
- An overview of laws, ordinances, policies, and planning documents that regulate and protect aesthetic resources in the Project area
- Analysis of potential impacts on aesthetics and visual resources under the proposed Project, the 2 action alternatives, and the No Project/No Action Alternative, including approaches to avoid or reduce (mitigate) potentially significant adverse impacts

The Project focuses on upgrading and providing access to existing sewer infrastructure, with minimal above-ground installations limited to creation of a new, environmentally friendly access route and rehabilitation of existing manholes. The new access that would be created in the Escondido Creek/San Elijo Lagoon corridor would be sited and designed for visual correspondence with the surrounding environment; topographic modification would be minimized, and the access would be revegetated using native species consistent with the surrounding habitat. Long-term visual impacts on aesthetic values would thus be less than significant overall. The Project would not install new sources of permanent nighttime lighting, and would not entail nighttime construction activity requiring illumination. During construction, the presence of equipment could increase localized generation of glare, but this would be a short-term, localized condition and is evaluated as less than significant. The presence of construction equipment and activity in the Creek/Lagoon corridor, and in particular, the need for localized vegetation removal and grading, would result in temporary and fairly short-term degradation of visual quality, but would incorporate measures, identified in this chapter, to buffer the impact on sensitive viewer populations (including recreationists and residents). This would reduce construction-period impacts to a level considered less than significant. Following revegetation, some viewers may experience the appearance of the new access as presenting a significant adverse change during the period when the new plantings are becoming established. Although the impact would be geographically limited, it is nonetheless considered significant. The regulatory permits needed to authorize the project will require the City to maintain revegetated areas and monitor their progress, with corrective action such as weed control and additional plantings stipulated in the event problems are identified. This program will be subject to regulatory agency oversight to ensure proper execution. However, no additional mitigation is available to hasten revegetation establishment. For this reason, visual impacts during the revegetation establishment period are also considered unavoidable.

How this Chapter Was Prepared

Information used in preparing this chapter was derived from multiple sources, including numerous site reconnaissance visits between 2011 and 2014; available maps, photographs, and aerial imagery; information from the City General Plan (City of Encinitas 1989); and the current conceptual Project plans.

The evaluation of existing visual quality and the analysis of impacts on visual resources are particularly challenging because aesthetics are highly subjective and involve a personal and sometimes emotional component. This chapter relied on a slightly modified version of the Federal Highway Administration (FHWA) approach to visual impact assessment (Federal Highway Administration 1981). Originally developed for use in analyzing visual outcomes associated with major transportation projects, the FHWA methodology is now widely applied for many different kinds of undertakings at all scales. This is partly because the methodology offers a standardized means to describe the character and quality of existing views—a systematic and objective approach to a complex and potentially subjective assessment. It also takes into account the people who see the view, recognizing that different viewer groups may have different levels of sensitivity to changes in an existing viewshed; residential viewers, for instance, are expected to be particularly concerned about visual quality in their surroundings.

Under the FHWA methodology, the “importance” (severity, significance) of a visual change depends on both the inherent visual quality of the view, on who the viewers are, and how sensitive they are to changes in the view. Overall viewer exposure—the number and location of viewers affected by visual changes and the duration of their views—may also be a factor in evaluating aesthetic impacts.

Assessment of Existing Conditions

Existing aesthetic conditions (“what are the views like?”) within the Project area were evaluated in accordance with the FHWA methodology, which gauges **visual character and quality** in terms of three characteristics: *vividness*, *intactness*, and *unity*. *Vividness* describes the “memorability” of a view based on the distinctive and striking visual pattern of its contrasting elements. *Intactness* assesses the visual order of a view’s natural and built components, and the extent to which the view is free of encroachment. *Unity* describes the degree to which the different elements visible within a view combine to form a compatible visual pattern, with compositional harmony. All 3 of these concepts apply equally to natural landscapes and developed areas.

Viewer groups (“who sees the views?”) were identified based on existing land uses surrounding the Project alignment.

Impact Analysis Methods

Consistent with FHWA (1981) guidance, the analysis of visual resources impacts presented in this chapter essentially asks two questions:

- “How, and to what extent, would the proposed undertaking change the way the Project area looks?”
- “Would those changes be positive or negative?”

Analysis first identified the Project’s potential to modify views of the Project area, encompassing both the short-term visual changes associated with Project construction and the longer-term changes resulting from introduction of new elements. The nature and extent of Project-related visual changes was captured in terms of pre- and post-Project vividness, intactness, and unity of Project area views.

Evaluating whether Project-related visual changes would be positive or negative depended on an assessment of the anticipated viewer experience. How viewers experience changes in their visual environment (“viewer response” in the FHWA lexicon) depends on the duration and nature of their exposure combined with their

level of sensitivity. Viewer sensitivity is influenced by the context of viewing (when and how views are seen): recreational viewers, for instance, are often highly sensitive to visual character and quality, particularly if they are engaged in activities where aesthetics are integral to the quality of the recreational experience, such as camping, hiking, bird watching, nature viewing, etc. Residential viewers are also typically considered highly sensitive to their visual surroundings, since their views are prolonged and daily, and because aesthetics may also relate indirectly to economics through the nexus with property value. Commuters who are focused on reaching the workplace may be less sensitive to aesthetics since their views are generally more fleeting.

Because they must focus on traffic conditions, external views are peripheral to their immediate driving activity. In the context of the Project area, however, all viewers were considered at least moderately sensitive since the Creek/Lagoon is an important visual resource that is widely valued in the community.

In addition, consistent with prevailing CEQA practice, this chapter considered the Project's potential to affect officially designated scenic resources, independent of viewer response.

The Project would result in a significant impact under CEQA if it would lead to any of the following:

- Permanent damage to designated scenic resources
- Degradation of visual character and quality (visual vividness, intactness, and/or unity); substantial adverse changes in the appearance of the Project alignment, including but not limited to any of the following outcomes
 - Introduction of features that detract from or contrast with the existing visual character and/or quality of the area
 - Removal of or substantial adverse change in one or more features that contribute to the valued visual character or image of the area
 - Substantial obstruction, interruption, or detraction from a valued focal and/or panoramic vista from a public road or recreational area
- Introduction of new sources of substantial, visually intrusive glare
- Introduction of new sources of nighttime light with the potential to contribute to "light spill"

Any of these outcomes would also represent an adverse effect under NEPA.

Existing Conditions

The Project alignment is located within and along Escondido Creek and San Elijo Lagoon, on the City's southern edge, and largely within the community of Olivenhain. This rural and semi-rural community is generally characterized by large residential lots, many incorporating equestrian facilities, along with open space, set against a backdrop of rolling hills and canyons (City of Encinitas 2005).

Several City-designated scenic resources are present in the Project area, as follows (City of Encinitas 1989).

- Escondido Creek and San Elijo Lagoon – scenic view corridor
- I-5 at San Elijo Lagoon crossing – scenic highway
- Manchester Avenue, from west side of I-5 to Encinitas Boulevard – scenic highway

- Rancho Santa Fe Road – scenic highway
- Lone Jack Road – scenic highway

There are no designated or proposed state or federal scenic resources (National Parks, National Scenic Byways, State Scenic Highways) in the Project vicinity.

The Project alignment can be divided into three visually distinct segments ranging from open views across the Lagoon in the southwest portion of the alignment (west of Manchester Avenue's intersection with El Camino Real) to residential estate and riparian views along the Creek corridor in the central and northeast portions (between El Camino Real and El Camino del Norte, and northeast of El Camino del Norte, respectively).

Southwest Portion of Project Alignment

Visual Setting

This portion of the Project alignment is primarily located within and adjacent to Manchester Boulevard, a heavily travelled, 4-lane roadway on the north side of the San Elijo Lagoon (Figure 6-1). Shrubbery bordering the south side of the road blocks some views of the roadway from the lagoon. The lagoon itself consists of marsh habitat, grassland, scrub, and other low-lying vegetation, allowing for wide visibility in all directions, including from:

- Lagoon trails accessed from the Dike/Levee, Santa Carina, and Santa Inez trailheads
- I-5 and the adjacent rail corridor
- Mira Costa College (3333 Manchester Avenue)
- Saints Constantine and Helen Greek Orthodox Church (3459 Manchester Avenue), Temple Solel (3575 Manchester Avenue), and Belmont Village Senior Living (3535 Manchester Avenue)
- Hillside residences in Encinitas to the north and Solana Beach to the south

Visual Parameters

As seen from the west, south, and north, San Elijo Lagoon offers expansive long-range views of marshlands backed by mesa bluffs and gently rolling hills. From some perspectives, built elements are visible, including the I-5 overpass, Manchester Avenue, and developed uses along the north side of this important roadway. Looking to the south from Manchester Avenue, however, views are dominated by the Lagoon, and these views offer relatively high vividness, intactness, and unity, combining to create high overall visual quality.

Several viewer groups are likely to have an interest in this portion of the Project corridor. Trail users, birdwatchers, and other recreationists in the Lagoon are expected to be highly sensitive to visual changes, bringing expectations of a natural landscape with minimal visual intrusions. Residential viewers on hillsides to the north and south of the Project corridor, who experience the Lagoon as part of their long-range views, are also expected to be sensitive to visual changes. The other primary viewer groups likely to be aware of changes in the appearance of this portion of the Project corridor would include motorists on Manchester Avenue and I-5, as well as faculty, staff, and students at Mira Costa College, and workers at other locations along this segment of Manchester Avenue. Because this area is generally considered scenic and is valued as an aesthetic resource, all of these viewer groups are also expected to be at least moderately sensitive to visual changes.



Figure 6-1a: View across the San Elijo Lagoon from Manchester Avenue, facing south



Figure 6-1b: Manchester Avenue with the Lagoon on the right, facing northeast



Figure 6-1c: Manchester Avenue manhole, facing south



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Figure 6-1
Views of and from the
Southwest Portion of
Alignment

Central Portion of Alignment

Visual Setting

The central portion of the Project alignment is generally located along the northern edge of the Escondido Creek corridor in areas of scrub and riparian vegetation (Figure 6-2). This portion of the alignment includes the San Elijo Lagoon Conservancy's 33-acre Ford Wildlife Preserve. Large residential lots with mature vegetation primarily abut the corridor; other adjacent uses include:

- Schools: Encinitas Country Day School (3616 Manchester Avenue) and the Rhoades School (141 South Rancho Santa Fe Road)
- Commercial uses: Rancho Santa Fe Plaza shopping center (160–162 South Rancho Santa Fe Road) and Gangretto's Farm and Garden Supply (189 South Rancho Santa Fe Road)
- Light industrial uses: BJ's Equipment Rentals (203 South Rancho Santa Fe Road)

Due to vegetation and hilly topography, views in the central segment of the alignment are more short- to medium-range, in contrast to the long-range views in the southwest portion. However, the riparian vegetation in the Creek corridor provides natural scenic views, and in many areas, is complemented by the surrounding semi-rural character of the surrounding Olivenhain community.

Visual Parameters

With the Creek corridor's various adjacent residential, commercial, educational, and light industrial land uses, visual intactness and unity vary based on viewer direction and location, and range from moderate to relatively high. Similarly, because views are primarily short- to medium-range views, vividness is fairly localized, and can likewise range from moderate to relatively high. Views in the less developed portions of the Creek/Lagoon corridor in this vicinity are considered to have high vividness, intactness, and unity. Where commercial uses abut the riparian corridor, overall intactness and unity are compromised from many vantage points. Visual quality in this portion of the Project corridor thus ranges from relatively high in less developed areas to moderate in more developed areas. Where commercial development is immediately adjacent to the Creek, the green' and generally natural" backdrop of the Creek corridor offers particular value in softening the appearance of the developed uses.

Viewers in this area include residents; recreationists; faculty, students, staff, and parents at the 2 schools; drivers on Manchester Avenue and South Rancho Santa Fe Road; and employees and shoppers at nearby commercial uses. Residential viewers experience long-term, direct views of the riparian corridor from their adjoining backyards, and are expected to have high sensitivity. Public views of the Creek corridor in this portion of the alignment are primarily limited to Manchester Avenue at the Ford Wildlife Preserve and a few other brief segments, and the South Rancho Santa Fe Road bridge crossing. Public viewers—including motorists, bicyclists, pedestrians, and equestrians—would likely have fairly high sensitivity, given the overall rural character and mature landscaping of the area.

Northeast Portion of Alignment

Visual Setting

The northeast portion of the Project alignment continues along the northern side of the Escondido Creek riparian corridor (Figure 6-3). Here, the creek corridor narrows, and in many places, dense riparian vegetation, characterized by an overstory of tall, mature willows (*Salix* spp.) extends to or near the border with residential lots. The riparian corridor is frequently complemented by pasturage and mature landscape vegetation within the adjacent Olivenhain community.

This area is primarily residential, with few commercial uses. The segment of Lone Jack Road involved in the proposed in-roadway realignment has large residential estates on its west side, and is bounded by the riparian corridor and Little Oaks Equestrian Park on its east.

As with the central portion of the alignment, views in the northeast portion of the Project corridor are largely short- to medium-range due to topography and dense vegetation.

Visual Parameters

With mostly residential estates adjacent to the creek corridor proportionally fewer non-residential uses interspersed, the visual intactness and unity of views in the northeast portion of the Project corridor are generally higher than in the central portion. Vividness is again locally variable, ranging from moderate to relatively high.

Viewers in this area principally include principally residents, drivers—primarily at the El Camino del Norte crossing—and recreationists accessing and using the Little Oaks Equestrian Park. Residents—with prolonged and direct views of Creek vegetation—and equestrian park users are expected to have a high degree of visual sensitivity. Drivers may be less sensitive overall but are nonetheless expected to value the general high visual quality typical of roadways in this area.

Regulatory Setting

Direct regulation of aesthetic values and visual resources occurs at the local level, primarily through the general plan process and local ordinances. Additional, indirect protection is provided at the federal level through the National Park System, National Scenic Byways Program (Federal Highway Administration 2014), and some of the programs under the National Landscape Conservation System (Bureau of Land Management 2014), all of which recognize the protection of scenic character in their mission statements. In California, visual resources along designated highways are explicitly protected under the California Scenic Highway Program (California Department of Transportation 2012).

Lands within the City are subject to City ordinances and General Plan policies, and lands in the unincorporated County are subject to County ordinances and policies. The following sections describe City and County policies and ordinances that apply to the project corridor.

City of Encinitas Policies and Regulations

The City's General Plan sets forth goals to maximize visual access to coastal and inland views, with an emphasis on consistency with Coastal Act policies for preserving significant viewsheds in coastal areas (Resource Management Goal 4) (City of Encinitas 1995). The General Plan designates scenic highways and visual corridors where viewsheds should be preserved (Resource Management Policy 4.7–4.8), including several in the Project area, as identified in *Existing Conditions* above. Development within scenic view corridors and along scenic highways is subject to road design and development design criteria. These criteria provide for a roadway's type and physical characteristics to be compatible with the corridor's natural character; for existing views and vistas from roadways to be maintained; and for development in a viewshed to be similar in terms of scale, materials, color, and location to the surrounding topography, existing vegetation, and colors. The General Plan also designates vista points for people to enjoy the coastal and inland view (Resource Management Policy 4.1–4.4) (City of Encinitas 1989); however, none of these are situated to overlook the proposed Project area.



Figure 6-2a: South Rancho Santa Fe Road bridge crossing Escondido Creek corridor, facing southeast



Figure 6-2b: Grassy field backed by riparian vegetation on southwest side of South Rancho Santa Fe Road, facing south



Figure 6-2c: Rancho Santa Fe Road, facing northwest



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**Figure 6-2
Views of and from the
Central Portion of the
Alignment**



Figure 6-3a: El Camino del Norte bridge crossing Escondido Creek corridor, facing east



Figure 6-3b: Private dirt road off south side of El Camino del Norte, facing south



Figure 6-3c: Lone Jack Road and adjacent Little Oaks Equestrian Park, facing north



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Figure 6-3
Views of and from
Northeast Portion of
Alignment

The City also has Design Review Guidelines to guide development toward design that is consistent with the character of each community, including architecture, landscaping, and site planning considerations. Projects that are exempt from the City’s Design Review Permit include underground construction, landscaping that does not significantly alter the existing landscaping, and grading where the proposed elevation is not more than 4 feet higher or 8 feet lower than the existing grade (Municipal Code, Section 23.08.030B and City of Encinitas 2013). Guidelines relevant primarily to the Project—and particularly the proposed new access route—include the following:

- Slopes adjacent to native areas should retain a “natural appearance” with smooth, flowing contours of varied gradients (2:1 to 5:1 are preferred)
- Drought-tolerant and native plant materials are encouraged
- Graded slopes must be promptly revegetated, and varied species and irregular plant spacing should be used to achieve a natural appearance on disturbed or graded slopes
- Landscaping should be designed to effectively enhance existing views or to provide new view corridor opportunities

County of San Diego Policies and Regulations

San Diego County values natural open spaces, scenic vistas, and scenic highway corridors for their aesthetic qualities. Per the County’s General Plan (Policies COS-11.1 and COS-11.3), new development located within visually sensitive areas is required to minimize visual impacts and to preserve special visual features through site planning, design, and by minimizing disturbance to topography (County of San Diego 2011). Specific scenic resources that the County is concerned with include scenic highways/corridors, significant scenic vistas, and natural features such as prominent ridgelines and reservoirs.

San Diego County also has numerous Design Review Boards with jurisdiction over specific Scenic Areas within the County. None of these are located in the vicinity of the Project area.

However, projects that fall within the County’s jurisdiction and would be located adjacent to important recreation, historic, or scenic resources must comply with the County’s Scenic Area regulations (San Diego County Zoning Ordinance, Section 5200 et. seq.). Requirements include providing a site plan that meets numerous criteria, with the goal of ensuring that the maximum feasible precautions have been incorporated so the proposed development does not interfere with or degrade the scenic attractiveness of the site or adjacent sites. Criteria relevant to the Project—and again, particularly the proposed new access—are summarized as follows:

- Development must be compatible with the topography, vegetation, and color palette of the natural environment and with the scenic, historic, and recreational resources present in the area
- If structures are proposed, they must be designed for a compatible “fit” with the topography of the site and surrounding area, and must be placed such they do not detract from the visual setting or obstruct significant views
- Removal of native vegetation must be minimized. If revegetation is needed, the planting palette must be compatible with existing vegetation
- Roads and graded areas should be screened by appropriate vegetation
- Modification of natural site topography should be minimized, and must avoid both detrimental visual and adverse effects on the existing natural drainage system

- Where topography must be altered, the modified (graded/recontoured) area must be screened such that it is not visible from adjacent scenic, historic, or recreational resources, using landscaping and plantings that harmonize with the surrounding natural landscape

There are no County Scenic Highways with views of the Project area (County of San Diego 2011).

Impacts and Mitigation Measures

Impact	Significance	Mitigation	Significance with Mitigation
<u>Proposed Project</u>			
Impact AES1 – Potential for Permanent Damage to Designated Scenic Resources	No impact Limited local benefit	<i>None required</i>	No impact Limited local benefit
Impact AES2A – Potential for Degradation of Visual Character and Quality from Construction	Construction: Significant Revegetation establishment: Significant	AES2A.1: Provide Visual Screening for Construction Staging and Maintain Orderly Construction Areas	Construction: Less than significant Revegetation establishment: Significant and unavoidable
Impact AES2B – Potential for Degradation of Visual Character and Quality from Operations	No impact	<i>None required</i>	No impact
Impact AES3 – Potential to Introduce New Sources of Substantial, Visually Intrusive Glare	Less than significant	<i>None required</i>	Less than significant
Impact AES4 – Potential to Introduce New Sources of Nighttime Light with the Potential to Contribute to “Light Spill”	No impact	<i>None required</i>	No impact
<u>Alternative 1 – Combination Access, Alternate Configuration</u>			
Impact AES1 – Potential for Permanent Damage to Designated Scenic Resources	No impact Limited local benefit	<i>None required</i>	No impact Limited local benefit
Impact AES2A – Potential for Degradation of Visual Character and Quality from Construction	Construction: Significant Revegetation establishment: Significant	AES2A.1: Provide Visual Screening for Construction Staging and Maintain Orderly Construction Areas	Construction: Less than significant Revegetation establishment: Significant and unavoidable
Impact AES2B – Potential for Degradation of Visual Character and Quality from Operations	No impact	<i>None required</i>	No impact
Impact AES3 – Potential to Introduce New Sources of Substantial, Visually Intrusive Glare	Less than significant	<i>None required</i>	Less than significant
Impact AES4 – Potential to Introduce New Sources of Nighttime Light with the Potential to Contribute to “Light Spill”	No impact	<i>None required</i>	No impact

Impact	Significance	Mitigation	Significance with Mitigation
<i>Alternative 2 – Conventional Continuous Access, Plantable/Pervious Surface Treatments</i>			
Impact AES1 – Potential for Permanent Damage to Designated Scenic Resources	Significant	<i>None available</i>	Significant and unavoidable
Impact AES2A – Potential for Degradation of Visual Character and Quality from Construction	Construction: Significant Revegetation establishment: Significant	AES2A.1: Provide Visual Screening for Construction Staging and Maintain Orderly Construction Areas	Construction: Less than significant Revegetation establishment: Significant and unavoidable
Impact AES2B – Potential for Degradation of Visual Character and Quality from Operations	No impact	<i>None required</i>	No impact
Impact AES3 – Potential to Introduce New Sources of Substantial, Visually Intrusive Glare	Less than significant	<i>None required</i>	Less than significant
Impact AES4 – Potential to Introduce New Sources of Nighttime Light with the Potential to Contribute to “Light Spill”	No impact	<i>None required</i>	No impact
<i>No Project/No Action Alternative</i>			
Impact AES1 – Potential for Permanent Damage to Designated Scenic Resources	No impact	<i>None required</i>	No impact
Impact AES2A – Potential for Degradation of Visual Character and Quality from Construction	No impact	<i>None required</i>	No impact
Impact AES2B – Potential for Degradation of Visual Character and Quality from Operations	No impact	<i>None required</i>	No impact
Impact AES3 – Potential to Introduce New Sources of Substantial, Visually Intrusive Glare	No impact	<i>None required</i>	No impact
Impact AES4 – Potential to Introduce New Sources of Nighttime Light with the Potential to Contribute to “Light Spill”	No impact	<i>None required</i>	No impact

Proposed Project

Less than Significant Impacts

Impact AES1– Potential for Permanent Damage to Designated Scenic Resources

As discussed in the introduction to *Existing Conditions* above, there are no state- or federally designated scenic resources in the Project vicinity. However, the City has designated Escondido Creek and San Elijo Lagoon as a scenic view corridor, and also considers the following roadways scenic highways: I-5 at the San Elijo Lagoon crossing, Manchester Avenue from west of I-5 to Encinitas Boulevard, Rancho Santa Fe Road, and Lone Jack Road.

The Project would focus primarily on rehabilitating and providing improved access to existing sanitary sewer infrastructure. Besides the new access, it would thus involve minimal aboveground installations, limited to the new at-grade manholes along the realigned Lone Jack segment. It would also remove an existing above-grade siphon structure and several above-grade manholes within the Lagoon.

The City's design criteria for projects in designated scenic areas are generally geared for traditional "land development" projects creating residential, commercial, industrial, and other typical developed uses. As such, they are not specifically relevant to utility undertakings, particularly those that entail minimal aboveground installations. The criteria do, however, provide roadway design guidance that is broadly relevant to the proposed new access (although it would not be a road per se), emphasizing the need for roadway design to be compatible with the natural character of the visual corridor. Additional development design criteria relevant to the Project include stipulations that existing views and vistas from roadways must be maintained, and that development in a viewshed must be similar in terms of scale, materials, color, and location to the surrounding environment.

The Project has been specifically developed for consistency with its surroundings. The width of the new access would be the minimum needed to provide safe access by the City's Vac-Con and similar equipment that may be used in the future (total width of 16 feet), and topographic modification would also be minimized, with the finished grade restored to match the existing grade except in the very limited locations where Level 5 improvements are needed. Additionally, only "green," plantable surface treatments would be used. Following construction, the entire extent of the new access would be revegetated using a range of appropriate native species based on vegetation in the surrounding area (see Figures 6-4, 6-6, and 6-8 for existing views from several locations, and Figures 6-5, 6-7, and 6-9 for post-Project visual simulations). Once the revegetation becomes established, the surface of the new access would blend with adjacent areas of natural growth and would be quite inconspicuous from the vantage point of most viewers (again, see Figures 6-5, 6-7, and 6-9 for post-Project views). Moreover, the access route would have only limited visibility from outside the immediate limits of the Creek/Lagoon corridor. **The new access is therefore considered to present no potential for significant damage to designated scenic resources.**

Similarly, the addition of new at-grade manholes to serve the realigned sewer within Lone Jack Road would be entirely consistent with typical visual features anticipated within a residential roadway. **The realignment is also considered to present no potential for significant damage to scenic resources.**

Overall, there would be **no impact under CEQA or NEPA related to significant damage to designated scenic resources.** Moreover, by removing an existing above-grade siphon and several above-grade manholes from the Lagoon, the Project would provide a **limited, local benefit to designated scenic resources.**

Impact AES2B – Potential for Degradation of Visual Character and Quality from Operations

The Project would enable the City to reinstate a full program of inspections, cleaning, and maintenance along the OTS between El Camino del Norte and Manchester Avenue, including portions of this alignment that are currently inaccessible. The large Vac-Con cleaning truck and support vehicles—and associated human activity—would occur slightly more often within the Creek/Lagoon corridor.

As described in *Existing Conditions*, the Creek and Lagoon offer generally high-quality views emphasizing natural scenic values, and even where developed uses immediately abut the Creek/Lagoon corridor, natural scenic features are important in softening and greening the appearance, and improving the overall visual quality, of adjacent developed uses. Viewers, who include residents and recreationists along with others, are expected to place a high value on views of the Creek/Lagoon corridor, which is considered a sensitive resource for aesthetic purposes.



Existing view of grassy field on southeast side of Rancho Santa Fe Plaza, on the west/northwest side of the Escondido Creek corridor. The corridor's riparian vegetation is seen on the left side of this figure.



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Figure 6-4
Existing View Facing South from
South Rancho Santa Fe Road



Figure 6-5a: Simulation of alignment with project access immediately following construction. New access toward Manholes 3786 and 1278 would follow the field along edge of southern willow scrub riparian habitat. Rendering shows recently installed revegetation consisting of hydroseed and plug plantings.



Figure 6-5b: Simulation of access with revegetation plantings at maturity. In this location, revegetation would use native grass species as pictured; access would match the surrounding habitat in terms of overall appearance and texture. Selected plants in this location would include deerweed (*Acmispon glaber*), saltgrass (*Distichlis spicata*), golden yarrow (*Eriophyllum confertiflorum*), purple needlegrass (*Nassella pulchra*), and three week fescue (*Vulpia microstachys*).



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Figure 6-5
Visual Simulation of Project Access
Facing South from
South Rancho Santa Fe Road



Existing view from the northbound lanes of Manchester Avenue, opposite MiraCosta College. Disturbed coastal sage scrub, ruderal, and southern willow scrub habitat are presently visible at this location.



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Figure 6-6
Existing View Facing North from
Manchester Avenue



Figure 6-7a: Simulation of alignment with project access immediately following construction. Recently installed juvenile plug plants are depicted within the new access, which ends at Manhole 1315 to protect sensitive coastal salt marsh and coastal brackish marsh habitat just to the south.



Figure 6-7b: Simulation of access with revegetation plantings at maturity. To provide continuity with surrounding brush habitat, revegetation in this location, as depicted, would involve species including alkali heath (*Frankenia salina*), saltgrass (*Distichlis spicata*), spreading alkaliweed (*Cressa truxillensis*), and spearscale (*Atriplex prostrata*).



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Figure 6-7
Visual Simulation of Project Access
Facing North from
Manchester Avenue



Existing view from southbound Manchester Avenue, with MiraCosta College to the east (right). The San Elijo Lagoon is in the background on the left side of this figure.



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Figure 6-8
Existing View Facing South From
Manchester Avenue



Simulation of new access gate. From the southbound lanes of Manchester Avenue, the access below the roadway berm, as depicted facing north in Figure 6-7, would not be visible.



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Figure 6-9
Visual Simulation of Project Access
Facing South from
Manchester Avenue

The presence of large equipment and human activity within the corridor has the potential to degrade visual character and quality. However, operations/maintenance visits to any given location are infrequent, with a typical maximum of several times per year, and work is highly localized, involving a very small number of vehicles and staffers at any given time. They are also short in duration, typically lasting no more than a few hours. Given the infrequent occurrence and the limited timeframe and extent of the added inspections, cleaning, and maintenance required for the Project, visual character and quality would not be degraded. There would be no impact under CEQA or NEPA related to degradation of visual character as a result of expanded operations within the Creek and Lagoon.

Impact AES3 – Potential to Introduce New Sources of Substantial, Visually Intrusive Glare

The Creek and Lagoon are largely natural landscapes, but do support some localized built infrastructure such as electric transmission lines that have the potential to create glare. Glare is also generated by hardscaped, painted glass, and metal surfaces, as well as by vehicles in the adjacent developed areas.

Over the short term, Project construction would add equipment and vehicles whose windows and metal and painted surfaces would have the potential to generate reflection and glare. Additionally, for nighttime driver safety, construction barriers and signage with reflective surfaces may be used around work sites on Manchester Avenue and Lone Jack Road; if in-roadway trenches require temporary closure, drivable metal trench plates would likely be used. All of these would have the potential to increase local glare generation. However, construction would be very localized and would involve only a small number of vehicles/equipment at a time due to the constrained working area within the Creek/Lagoon. Construction activities would also typically last no more than a few days in a given location, and glare within the Creek/Lagoon would be shielded from many viewers by vegetation and topography. **Construction-period impacts related to the potential for increased glare generation are thus considered less than significant under both CEQA and NEPA.**

Over the longer term, the Project would have little potential to increase glare generation. The new access would have a “green” surface vegetated with native species and thus would have very similar visual properties to surrounding natural growth. Manhole rehabilitation would not materially alter the potential for glare, and the new manhole installations within Lone Jack Road are expected to be visually similar to existing manholes and the surrounding roadway surface. Intermittent presence of the Vac-Con and other City vehicles in areas not previously accessible for inspection, cleaning, and maintenance could represent a new source of glare, depending on weather conditions, but any increase would be very localized and short-term. **Long-term impacts related to the potential for increased glare generation are therefore also considered less than significant under both CEQA and NEPA.**

Impact AES4– Potential to Introduce New Sources of Nighttime Light with the Potential to Contribute to “Light Spill”

Project construction activities would take place during daytime hours, with operation of construction equipment further restricted by City noise regulations to the hours of 10 AM to 5 PM. Construction sites would not be lit at night. There would therefore be **no construction-period impact under either CEQA or NEPA related to new sources of nighttime light.**

The Project would not install any facilities requiring lighting of any type, and the added operational and maintenance work enabled by the new access (like the current program of inspections, cleaning, and maintenance) would occur entirely during daytime hours. With no introduction of nighttime light during either construction or operations, there would also be **no long-term impact under either CEQA or NEPA related to new sources of nighttime light.**

Significant Impacts and Mitigation Approaches

Impact AES2A – Potential for Degradation of Visual Character and Quality from Construction

As described above and in more detail in the *Existing Conditions* section of this chapter, the Creek and Lagoon are considered sensitive resources for aesthetic purposes. The Creek/Lagoon corridor offers generally high-quality views emphasizing natural scenic values, and where developed uses immediately abut the Creek and Lagoon, natural scenic features are important in softening and greening the appearance and improving the overall visual quality of adjacent developed areas. Viewers include residents and recreationists who are expected to be particularly sensitive to visual change within the Creek and Lagoon, but all viewers are expected to place a high value on views of the Creek/Lagoon scenic corridor.

Project construction would introduce equipment, vehicles, and personnel into the Creek and Lagoon. Construction of the new access would require vegetation removal within the footprint of the access route, followed by limited grading/excavation to create a surface for placement of the appropriate treatment (Levels 1 through 5, as discussed in Chapter 2), fill, and revegetation. Thus, during the construction period, the active work area would appear disturbed; once the work is completed and construction equipment demobilizes, there would be a recovery period while revegetation establishes. Different viewer groups would likely experience these temporary construction- and recovery-related changes in slightly different ways, depending on vantage points as well as viewer group characteristics.

- **Recreationists in Lagoon** – From the Lagoon, work in Manchester Avenue to the north would be screened by roadside shrubbery, with work further upstream also at least partially screened by vegetation. Work within Manchester Avenue would be less obtrusive since it would be occurring within an existing developed roadway corridor. The sensitivity of recreationists, who seek to explore or appreciate an ecological area, is generally considered high, however, and even though the visibility of work within the Lagoon would be limited, many recreators are nonetheless expected to experience the temporary visual changes as significant and adverse.
- **Area residents** – The visibility of construction work from residences adjacent and in close proximity to the Escondido Creek and San Elijo Lagoon Corridor would vary, with thick vegetation providing a full visual screen in some areas, and lack thereof allowing clear lines of sight from residences in others. Additionally, some hillside/blufftop residents to the north and south of the Lagoon may have locations that afford greater views of the entirety of the scenic corridor. Sensitivity of stationary residential viewers is typically high, and viewing duration is prolonged by comparison with other viewer groups. With construction activities generally only lasting a few days in any given location, the impacts to their views would be temporary and short-term, but could nonetheless be experienced as significant and adverse by some viewers. Recovery period impacts would be more prolonged and are also expected to be experienced as significant and adverse by at least some viewers.
- **Motorists, roadway users** – For the most part, construction work within the Lagoon and Creek corridor would only be visible for brief durations to motorists and other users of adjacent roadways, with intervening residences and vegetation precluding long, uninterrupted views. Views would be less occluded in the downstream portion of the alignment where the Lagoon offers flat topography and tall riparian growth is largely absent. Visual expectations of passing motorists and other roadway users are expected to be relatively high, particularly in view of the scenic highway and viewshed designations that apply in the Project area. Some viewers in this group may also experience the visual impacts of construction and the vegetation establishment period as significant and adverse.
- **Workers and shoppers in commercial areas near alignment** – Workers and shoppers, although they are also considered likely to be sensitive to visual change, would have even less exposure to the short-duration disruption associated with construction than typical motorists, since they would largely be engaged in and focused on commercial activity and focused toward interior spaces rather

than the surrounding viewshed. For the most part, these viewers are not expected to experience the visual changes associated with limited short-duration construction as significantly adverse, although recovery period impacts, which would be more prolonged, may be experienced as significant and adverse by some viewers.

- **Students, faculty, and staff at schools adjacent to Project corridor** – Of the schools and facilities described in the *Existing Conditions* section of this chapter, the campuses of Mira Costa College, Encinitas Country Day School, and the Rhoades School have the greatest potential for direct views of Project construction activities, and the sensitivity of these viewers, who are stationary—and thus, like residents, often experience prolonged viewing durations over multiple days—is typically high. Despite the limited duration of work in any given location, at least some members of the school communities are therefore expected to experience the visual impacts as significant and adverse. More prolonged recovery period impacts may also be experienced as significant and adverse by at least some viewers.

With multiple viewer groups expected to experience construction-related visual disruption as meaningfully adverse, the Project is considered to have the potential for **significant construction-period and recovery period impacts under both CEQA and NEPA related to degradation of visual character as a result of construction activity within the Creek and Lagoon**. To address this impact, Mitigation Measure AES2A.1 will be implemented; with this measure in place, residual impacts, if any, would be less than significant under both CEQA and NEPA.

Mitigation Measure AES2A.1: Provide Visual Screening for Construction Staging and Maintain Orderly Construction Areas

The Project construction documents will include provisions requiring “good construction site housekeeping” so visual disruption is kept to a minimum and the appearance of the active work site is as orderly as possible. The contractor will also be required to provide visual screening for the selected construction staging area(s), consisting of 8-foot-high chain link fence, covered with a fabric or other nonreflective material of a neutral color.

Once the access improvements are completed, the access will be revegetated with appropriate native species, with the species mix reflecting the composition of surrounding habitat as described in Chapter 2. Although vegetation is expected to establish fairly rapidly, revegetated areas will require some time to develop a mature appearance, and during the establishment period following revegetation, some viewers may experience the appearance of the new access a significant adverse change. **Although this impact would be geographically limited, it is nonetheless considered significant under both CEQA and NEPA.**

The terms of the regulatory permits needed to authorize the project will require the City to maintain the new plantings until they meet regulatory success criteria, and to track the progress of the plantings through regular monitoring until success criteria are met to the satisfaction of the regulatory agencies. Corrective action such as weed control and additional plantings will be required in the event problems are identified. The maintenance and monitoring program will be subject to regulatory agency oversight to ensure proper execution. This provides control to ensure the recovery of aesthetic as well as biological values over the longer term, typically in the range of 2–5 years. However, no additional mitigation is available to hasten revegetation establishment. **For this reason, visual impacts during the revegetation establishment period are also considered unavoidable.**

Action Alternatives

Under both Alternative 1 (Combination Access, Alternate Configuration) and Alternative 2 (Conventional Continuous Access, Plantable/Pervious Surface Treatments), the construction process would be essentially the same as that described for the proposed Project, and the overall nature and extent of the new facilities would be the very similar. In particular, under both of the action alternatives, the new access, which is the most visually sensitive project component because of its location entirely within the Escondido Creek/San Elijo Lagoon scenic corridor, would adhere to the same design principles of

- minimizing width and footprint
- matching finished grade to existing grade such that topographic alteration is avoided
- revegetating with native species consistent with surrounding vegetation

Consequently, like the proposed Project and for the same reasons

- Alternatives 1 and 2 would have **no impact under CEQA or NEPA related to introduction of new nighttime light sources.**
- There would be some potential under both action alternatives for **some introduction of new sources of visually intrusive glare during construction and for minor adverse impacts on visual quality during ongoing operations** but, as with the proposed Project, these are considered less than significant under CEQA and NEPA.
- Both action alternatives would also have the potential for **significant impacts related to visual disturbance and degradation of visual character and quality during construction and the recovery period following construction** when the revegetation areas are becoming established. Construction-period impacts would be mitigated to a level considered less than significant under both CEQA and NEPA by Mitigation Measure AES2A.1 (*Provide Visual Screening for Construction Staging and Maintain Orderly Construction Areas*), described above. Visual impacts during the recovery period would be controlled by regular vegetation maintenance and regulatory oversight, but may still be experienced as significant and adverse by some viewers. **This represents a significant impact under both CEQA and NEPA, and with no additional mitigation available to further reduce the impact, is also considered unavoidable.**

Like the proposed Project, **Alternative 1 also presents no potential for permanent damage to designated scenic resources and would have no impact under either CEQA or NEPA in this regard.**

Alternative 2, however, has a much greater potential to result in meaningfully adverse long-term changes in the appearance of the Creek/Lagoon corridor. The continuous axial access configuration under Alternative 2 would not involve spur access routes along the length of the alignment, and would thus be less visible from nearby roadways than the proposed Project. At the same time, however, construction along either the Alternative 2A or 2B route would likely require more extensive removal of mature riparian vegetation, which would be replaced with a low-growing planting palette suitable for long-term drivability with minimal vegetation maintenance. In areas where riparian growth is most dense and well developed, this approach would substantially modify the appearance of the Creek corridor; the appearance of a clear-cut right-of-way down the middle of the creek corridor would significantly reduce the unity and intactness of views, particularly for hillside viewers and other primarily private residences who have a view of the entire watershed. **This is considered a significant adverse impact under both CEQA and NEPA, and since this impact cannot be materially reduced while meeting project objectives via the Alternative 2A/2B alignments, it is also considered unavoidable.**

No Project/No Action Alternative

Under the No Project/No Action Alternative, there would be no modifications to the existing OTS infrastructure: no realignment, no manhole rehabilitation, no removal of the siphon and superfluous manholes, and in particular no new access route. As such, there would be no short-term impact under CEQA or NEPA on any aspect of visual resources in the Project area.

Over the longer term, it would eventually become imperative to address the needs of aging OTS infrastructure, and the future project or projects would presumably have the potential for some level of aesthetic impact. Specifics are considered speculative at the present time since the details of these projects cannot be predicted, but because of the visual sensitivity of the Creek and Lagoon, even very small changes could be experienced as substantial and adverse.

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Chapter 7

Transportation and Traffic

Introduction

Chapter Overview

This chapter discusses the Project's potential impacts on area transportation and traffic, including local roadway traffic, evacuation routes, and multimodal transportation. The Project would have no potential to impact airports or air travel; these topics are not discussed further.

This chapter contains the following information:

- Overview of chapter preparation, including sources of baseline information and an explanation of the methods used to analyze impacts
- Description of existing conditions relative to traffic and transportation (roadway and intersection function; transit, bicycle, and pedestrian facilities; and emergency access and evacuation routes) in the Project area
- Overview of ordinances, plans, and policies relevant to transportation and traffic in Encinitas and the surrounding North County area
- Analysis of potential impacts on transportation and traffic under the proposed Project, the 2 action alternatives, and the No Project/No Action Alternatives, including approaches to avoid or reduce (mitigate) potentially significant adverse impacts

The Project would not modify area roadways and would generate extremely limited volumes of traffic both during and following construction. In addition, it would incorporate substantial provisions (described in *Measures for Traffic Control and Safety* under *Environmental Commitments* in Chapter 2) to regulate construction truck traffic and in-roadway work such that significant impacts on vehicle traffic, as well as bus transit, pedestrians, and bicyclists, are avoided.

Background – Traffic Basics

The standard method for evaluating roadways and intersection function is the level of service (LOS) metric. LOS is a qualitative measure that reflects the relative ease of traffic flow, including speed of travel, the density of traffic on the roadway, drivers' freedom to maneuver, and delays experienced (Transportation Research Board 2010). At intersections (signalized and unsignalized), LOS evaluation is based on delay times, with A indicating minimal and F indicating maximum additional travel time beyond the optimal. LOS definitions are provided below in Table 7-1.

The volume-to capacity ratio (V/C ratio) is the relationship between the actual volume of a traffic a roadway carries and the volume it was designed to carry). This measure offers a more quantitative approach to evaluating roadway function: as the V/C ratio increases, LOS decreases. Roadway design capacity commonly reflects the V/C ratio corresponding to LOS E (Transportation Research Board 2010).

Table 7-1: LOS Definitions

LOS	Driver Perception of Quality of Service	Description
A	Satisfactory	Free-flow condition, with little or no effect from presence of other vehicles
B	Satisfactory	Relatively free-flow condition, with noticeable presence of other vehicles
C	Satisfactory	Increased traffic density, with other vehicles affecting the ability to maneuver
D	Borderline unsatisfactory	Traffic congestion, with other vehicles noticeably affecting the ability to maneuver
E	Unsatisfactory	At or near capacity, with minimum vehicle spacing and high potential for disruptions
F	Unsatisfactory	Breakdown of traffic flow; stoppages, with highly unstable traffic flow

Source: County of San Diego 2009, Transportation Research Board 2010

Roadways are generally grouped into classes based on distance, access, speed, and the character of traffic service that they are designed to provide. The number of lanes associated with a class can vary and often depends on jurisdiction. The primary classifications are described below in Table 7-2.

Table 7-2: Roadway Classifications

Roadway Class	Description
Arterial	Serves through traffic, offering highest roadway capacity, with higher speeds over longer uninterrupted distances. Roadway access is typically controlled to some degree
Collector	Collects traffic from local roads and connects to arterials. Offers medium roadway capacity, with lower speeds over shorter distances. Not typically access-controlled
Local	Primarily provides access to adjacent properties. Serves smaller volumes of traffic traveling at lower speeds, with little or no through traffic

Source: Federal Highway Administration 2012

How this Chapter Was Prepared

Assessment of Existing Conditions

Information on current traffic patterns and roadway and intersection function was derived from the following sources.

- The transportation and mobility section of the *Current Conditions Report* prepared for the City's in-progress General Plan update (City of Encinitas 2010)
- The Mobility Element of the County General Plan (County of San Diego 2011) and related technical information (County of San Diego 2009)
- The San Diego Association of Governments (SANDAG) Regional Transportation Plan (San Diego Regional Association of Governments 2011)
- California Department of Transportation data on highway traffic volumes (California Department of Transportation 2012)

- SANDAG data on roadway traffic volumes in the Project area (San Diego Association of Governments 2010)
- San Diego Metropolitan Transit System (SDMTS) (2014) information on bus routes in the City
- The City's Trails Master Plan (City of Encinitas 2003) and Bikeway Master Plan (City of Encinitas 2005)
- Trails maps published by the Encinitas Trails Coalition (2009)
- North County Transit District (NCTD) and TransNet information on the Coastal Rail Trail (North County Transit District 2014, TransNet 2013)

Assessment of existing conditions included the immediate Project vicinity within the City as well as transportation corridors accessing the Project area from other regions, such as I-5. This evaluation included identification of locations already operating below the applicable LOS standard. The assessment also considered other forms of existing transportation, including bus routes, as well as bicycle, pedestrian, and equestrian use of local roadways.

Impact Analysis Methods

The impact analysis considered how the Project's introduction of construction and operational traffic and activities onto regional and local roadways would change existing conditions. First, existing conditions (e.g., circulation, access, transit, and other modes of transportation) were assessed as described in the preceding section. Then in order to determine the degree to which the Project would affect these conditions, vehicle types and trips associated with Project construction and operation were quantified, likely travel routes determined, and other in-roadway components measured. Analysis emphasized applicable City standards since principal roadways accessing the Project alignment are within City limits where they approach the Project vicinity.

The Project would result in a significant impact under CEQA if it would lead to any of the following.

- Conflict with local circulation elements, congestion management system policies, or other applicable traffic and transportation ordinances
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities
- An increase in traffic on local roadways that is substantial in relation to the existing V/C ratio
- Exacerbation of an already unacceptable LOS
- Inadequate emergency response or evacuation routes
- Decreased performance or safety of public transit, bicycle, or pedestrian facilities

Any of these outcomes would also represent an adverse effect under NEPA.

Existing Conditions

Roadways

The Project alignment is located in a suburban/semi-rural setting along the south edge of the City of Encinitas.

Regional access to Encinitas is provided by I-5, which runs from the Mexican border to the Canadian border, through California, Oregon, and Washington. In San Diego County, I-5 is an important link connecting the coastal communities in San Diego County, and is a 4-lane northbound/southbound freeway in Encinitas. Peak hour traffic on I-5 in the Project vicinity is 16,000 southbound vehicles and 14,100 northbound vehicles (California Department of Transportation 2012).

Within the City, access to the Project alignment is from the north and west; truck routes to reach the general Project area from I-5 include Manchester Avenue, North El Camino Real, and Encinitas Boulevard (City of Encinitas 2010). These and other important Encinitas roadways in the Project vicinity are described in more detail below in Table 7-3 and shown in Figure 7-1. There are no truck routes to reach the Project area from the south through unincorporated Rancho Santa Fe; roadways accessing the Project area from Rancho Santa Fe are all classified as light collectors (defined by the County as accommodating low to medium traffic volumes) that connect from Rancho Santa Fe include El Camino del Norte, La Granada, La Noria, and Linea del Cielo (County of San Diego 2011). In addition to the roads listed in the table, Lone Jack Road has an average weekday traffic volume of 6,200–7,000 vehicle trips (SANDAG 2010).

Table 7-3: Important Roadways in Project Area

Roadway	Type	Location	Capacity	Average Daily Vehicle Trips	Level of Service
El Camino Real	Arterial	Santa Fe Drive to Manchester Avenue	45,400	26,500	A–C
Manchester Avenue	Arterial	Interstate 5 to El Camino Real	45,400	31,600	A–C
Encinitas Boulevard	Arterial	El Camino Real to Rancho Santa Fe Road/Manchester Avenue	35,200	36,200	F
Manchester Avenue	Collector	El Camino Real and Encinitas Boulevard	14,000	8,300	A–C
Rancho Santa Fe	Collector	Manchester Avenue to eastern city limit	20,000	22,700	F
El Camino del Norte	Collector	Rancho Santa Fe Road to Eastern City Limit	14,000	7,300	A–C

Source: County of San Diego 2009

Intersections

Intersections in the Project vicinity with available traffic data are described below in Table 7-4; see Figure 7-1 for their locations. As shown in the table, intersections with a LOS currently below acceptable levels include Rancho Santa Fe Road and Lone Jack Road operating at an AM peak hour LOS F and PM peak hour LOS E, and Rancho Santa Fe and El Camino del Norte operating at an AM peak hour LOS E (City of Encinitas 2010).

Table 7-4: Intersections

Intersection	Type	AM Peak Hour LOS	PM Peak Hour LOS
El Camino Real and Manchester Avenue	Signalized	A	A
Rancho Santa Fe Road and Olivenhain Road	Signalized	A	B



Intersection	Type	AM Peak Hour LOS	PM Peak Hour LOS
Encinitas Boulevard and Willowspring Drive	Signalized	A	A
Rancho Santa Fe and Lone Jack Road	Stop-controlled	F	E
Rancho Santa Fe Road and El Camino del Norte	Stop-controlled	E	D
I-5 Southbound Ramps and Manchester Avenue	Stop-controlled	C	C

Source: City of Encinitas 2010

Alternate Modes of Transportation

NCTD provides bus and rail service in the Encinitas area, with bus route 304 offering limited service along Encinitas Boulevard (from its intersection with El Camino Real) and Rancho Santa Fe Road (between Encinitas Boulevard and Leucadia Boulevard). This service runs twice daily in each direction, in the 7 AM and 2 PM hours. To the north, Route 404 also travels from west to northeast, along Leucadia Boulevard and Rancho Santa Fe. Other NCTD services—bus route 101 (along Coast Highway 101), bus route 309 (El Camino Real), and COASTER (commuter rail)—generally run north-south, and are not in the immediate vicinity of the Project area (San Diego Metropolitan Transit System 2014; City of Encinitas 2010) (see Figure 7-2).

The City’s Bikeway Master Plan Update identifies cycling routes, lanes and paths (City of Encinitas 2005). It designates Manchester Avenue from I-5 to El Camino Real (where the southwest portion of the alignment is located in the roadway) as an existing Class II bikeway, depicted in Figure 7-2. This classification indicates a bike lane designated on the roadway with pavement markings and signage. The Plan also recommends Manchester Avenue between El Camino Real and Encinitas Boulevard, as well as Rancho Santa Fe Road between Encinitas Boulevard and El Camino del Norte as Class II bikeways. Meanwhile, the Encinitas portion of the proposed Class I Coastal Rail Trail (a 40-mile north-south bike path connecting Carlsbad and San Diego) would be located adjacent to the coastal railroad tracks to the west of I-5 (North County Transit District 2014; TransNet 2013).

The City’s Trails Master Plan (City of Encinitas 2003) provides a detailed plan for an interlinking trail system for hiking, biking, and pedestrian recreation. In the immediate Project vicinity, proposed and/or completed trails are primarily soft-surface, and include:

- South side of Manchester Boulevard from I-5 to El Camino Real
- North side of Manchester Boulevard from El Camino Real to Rancho Santa Fe Road
- East side of Rancho Santa Fe Road from Encinitas Boulevard to El Camino del Norte
- South and north sides of El Camino del Norte from Rancho Santa Fe Road to Escondido Creek bridge
- Cole Ranch Road between Calle Santa Cruz and 5th Street
- Portions of 5th Street, 7th Street, and other segments north of South Rancho Santa Fe Road and east of Rancho Santa Fe Road
- Both sides of Lone Jack Road from Rancho Santa Fe Road to Little Oaks Equestrian Park

Completed and partially completed trails are depicted in Figure 7-2.

Furthermore, Encinitas, and particularly the Olivenhain community, features equestrian estates and stables. Equestrian usage takes place in the Little Oaks Equestrian Park (on Lone Jack Road), Natural Trails (off

Manchester Avenue), some scrub areas of the Creek corridor itself (for example, east of Brookside Lane), and along some residential streets in the vicinity (Encinitas Trails Coalition 2009).

Evacuation Plans

The City's Fire Department is responsible for emergency response within the City (City of Encinitas 2011), and has developed emergency procedures, including evacuation plans for fire and tsunami. For wildfires, designated evacuation routes (depending on the direction of fire approach) in the northeastern portion of the alignment generally direct travel to the south along Rancho Santa Fe Road and Lone Jack Road; to the west into Carlsbad (west along Dove Hollow Road and northwest along Rancho Santa Fe Road); and to the east into Rancho Santa Fe along El Camino del Norte (City of Encinitas 2014a). For tsunamis, routes point north and south along Coast Highway 101 at the mouth of the San Elijo Lagoon (City of Encinitas 2014b). Wildfire and tsunami evacuation routes are depicted in Figure 7-3.

Regulatory Setting

Traffic flow is primarily regulated at the local level through the general plan process and city or county ordinances. However, important guidance and standards are provided by federal and state regulations such as federal and state congestion management regulations.

Federal Regulations – Congestion Management

The Federal Highway Administration and Federal Transit Administration have designated all urbanized areas with populations greater than 200,000 as Transportation Management Areas (TMAs) subject to special planning and programming requirements. The San Diego region is one of 22 TMAs in California (Federal Register 2012). Each TMA is required to address congestion management through a process that includes analysis of multimodal (cars, bicycles, buses, pedestrians, etc.) strategies (23 CFR 450.320); SANDAG is the TMA for the San Diego Region, and is discussed below in *Local Regulations and Plans*.

State Regulations

Circulation Elements for the General Plan Process (California Government Code 65300)

California Government Code 65300 requires local governments to prepare circulation elements as part of their general plans. The circulation element is required to show the location of existing and proposed major thoroughfares, transportation routes, and major public utilities and facilities (airports, ports, etc.). In addition, the state requires circulation elements to be multimodal, covering automobile, mass transit, and any other modes of transportation that are relevant in the local community.

Congestion Management (Proposition 111)

California Proposition 111, passed by voters in 1991, established a requirement for urbanized areas to prepare a Congestion Management Program (CMP) to monitor the transportation system, address congestion, and integrate transportation planning with land use planning. SANDAG was responsible for preparing the CMP for the San Diego region until 2009, when the region elected to be exempt from the State CMP. Since this decision, SANDAG has been abiding by the federal congestion management process discussed above under *Federal Regulations – Congestion Management* (San Diego Association of Governments 2014).



Construction to Occur on Lone Jack Road Segment

Construction to Occur on Manchester Avenue Segment

Legend

- Project Alignment
- Class II Bicycle Paths
- - - North County Transit District Bus 304 Route

Recreational Trails

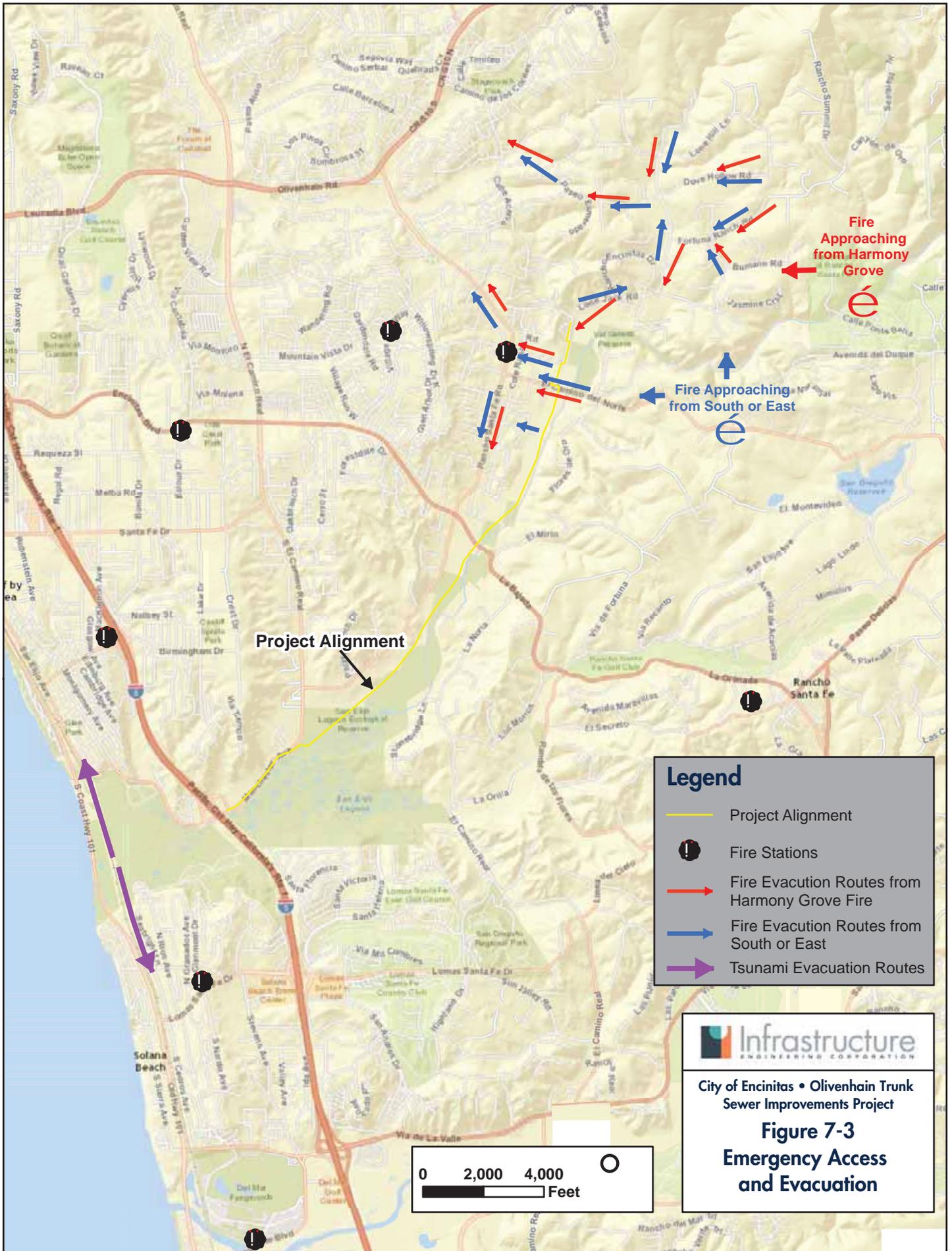
- Completed Trails
- Partially Completed Trails

Infrastructure
ENGINEERING CORPORATION

City of Encinitas • Olivenhain Trunk Sewer Improvements Project

Figure 7-2
Multi-Modal Transportation





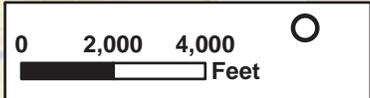
Legend

- Project Alignment
- ! Fire Stations
- Fire Evacuation Routes from Harmony Grove Fire
- Fire Evacuation Routes from South or East
- Tsunami Evacuation Routes

Infrastructure
ENGINEERING CORPORATION

City of Encinitas • Olivenhain Trunk Sewer Improvements Project

Figure 7-3
Emergency Access and Evacuation



Local Regulations and Plans

County of San Diego Policies and Regulations

The County of San Diego aims to maintain or exceed LOS D for all roadways in the County. Projects that would involve construction within a County right-of-way are required to obtain a County traffic control permit and implement a County-approved traffic control plan. The purpose of the traffic control plan is to protect worker and public safety while providing for efficient traffic movement through the construction zone. Projects such as various types of land development undertakings, which would add traffic to County roadways are generally required to provide road improvements necessary to achieve a LOS of D (General Plan Policy M-2.1) (County of San Diego 2011).

SANDAG meets the TMA designation requirement in the 2050 Regional Transportation Plan by monitoring the regional transportation system, analyzing multimodal options, and analyzing impacts of land use on the transportation system. The Regional Transportation Plan includes a Congestion Management Plan (CMP) and contains long-term goals, policy objectives, and metrics to monitor performance in support of forward planning. The Plan identifies high-priority roadway and transit projects in the County; in Encinitas, the only identified priority concerns double-tracking the coastal rail corridor located for more frequent COASTER train service (San Diego Association of Governments 2011).

City of Encinitas Policies and Regulations

Similar to most cities, Encinitas utilizes the LOS system to define the minimum acceptable roadway operating conditions. The City aims to maintain a LOS level of C for all local roadways in the City and prohibits development that would result in a LOS E or F at any intersection, unless no alternatives exist (General Plan Land Use Policies 1.2 and 1.3) (City of Encinitas 2013).

City of Encinitas policies include preparation of Traffic Control Plans for work proposed within streets that have a speed limit of over 25 miles per hour (mph) (Engineering Design Manual Section 2.208) (City of Encinitas 2009); the Traffic Control Plan should follow the guidelines of the most recent Manual of Uniform Traffic Control Devices, which is the 2009 edition with revisions in 2012 (Federal Highway Administration 2014). The City also uses Haul Route Permits to ensure acceptable routes for transport of soils or materials within the City, along with approved origin and destination locations (Section 2.209) (City of Encinitas 2009). Other City traffic and transportation policies (i.e., Encroachment Permits for work within public rights-of-ways, Sections 2.201 and 2.203) generally pertain to improvements associated with land development projects, rather than the short-term impact associated with the proposed public works project.

Impacts and Mitigation Measures

Impact	Significance	Mitigation	Significance with Mitigation
<u>Proposed Project</u>			
TRAFFIC1 – Potential to Conflict with Local Circulation Elements, Congestion Management System Policies, or Other Applicable Traffic and Transportation Ordinances	No impact	<i>None required</i>	No impact
TRAFFIC2 – Potential to Conflict with Adopted Policies, Plans, or Programs Regarding Public Transit, Bicycle, or Pedestrian Facilities	No impact	<i>None required</i>	No impact

Impact	Significance	Mitigation	Significance with Mitigation
TRAFFIC3 – Potential to Cause an Increase in Traffic on Local Roadways Substantial in Relation to the Existing V/C Ratio	No impact	<i>None required</i>	No impact
TRAFFIC4 – Potential to Exacerbate an Already Unacceptable LOS	Less than significant	<i>None required</i>	Less than significant
TRAFFIC5 – Potential to Lead to Inadequate Emergency Response or Evacuation Routes	Less than significant	<i>None required</i>	Less than significant
TRAFFIC6 – Potential to Decrease Performance or Safety of Public Transit, Bicycle, or Pedestrian Facilities	Less than significant	<i>None required</i>	Less than significant

Alternative 1 – Combination Access, Alternate Configuration

TRAFFIC1 – Potential to Conflict with Local Circulation Elements, Congestion Management System Policies, or Other Applicable Traffic and Transportation Ordinances	No impact	<i>None required</i>	No impact
TRAFFIC2 – Potential to Conflict with Adopted Policies, Plans, or Programs Regarding Public Transit, Bicycle, or Pedestrian Facilities	No impact	<i>None required</i>	No impact
TRAFFIC3 – Potential to Cause an Increase in Traffic on Local Roadways Substantial in Relation to the Existing V/C Ratio	No impact	<i>None required</i>	No impact
TRAFFIC4 – Potential to Exacerbate an Already Unacceptable LOS	Less than significant	<i>None required</i>	Less than significant
TRAFFIC5 – Potential to Lead to Inadequate Emergency Response or Evacuation Routes	Less than significant	<i>None required</i>	Less than significant
TRAFFIC6 – Potential to Decrease Performance or Safety of Public Transit, Bicycle, or Pedestrian Facilities	Less than significant	<i>None required</i>	Less than significant

Alternative 2 – Conventional Continuous Access, Plantable/Pervious Surface Treatments

TRAFFIC1 – Potential to Conflict with Local Circulation Elements, Congestion Management System Policies, or Other Applicable Traffic and Transportation Ordinances	No impact	<i>None required</i>	No impact
TRAFFIC2 – Potential to Cause an Increase in Traffic on Local Roadways Substantial in Relation to the Existing V/C Ratio	No impact	<i>None required</i>	No impact

Impact	Significance	Mitigation	Significance with Mitigation
TRAFFIC3 – Potential to Exacerbate an Already Unacceptable LOS	No impact	<i>None required</i>	No impact
TRAFFIC4 – Potential to Lead to Inadequate Emergency Response or Evacuation Routes	Less than significant	<i>None required</i>	Less than significant
TRAFFIC5 – Potential to Conflict with Adopted Policies, Plans, or Programs Regarding Public Transit, Bicycle, or Pedestrian Facilities	Less than significant	<i>None required</i>	Less than significant
TRAFFIC6 – Potential to Decrease Performance or Safety of Public Transit, Bicycle, or Pedestrian Facilities	Less than significant	<i>None required</i>	Less than significant
<u>No Project/No Action Alternative</u>			
TRAFFIC1 – Potential to Conflict with Local Circulation Elements, Congestion Management System Policies, or Other Applicable Traffic and Transportation Ordinances	No impact	<i>None required</i>	No impact
TRAFFIC2 – Potential to Cause an Increase in Traffic on Local Roadways Substantial in Relation to the Existing V/C Ratio	No impact	<i>None required</i>	No impact
TRAFFIC3 – Potential to Exacerbate an Already Unacceptable LOS	No impact	<i>None required</i>	No impact
TRAFFIC4 – Potential to Lead to Inadequate Emergency Response or Evacuation Routes	No impact	<i>None required</i>	No impact
TRAFFIC5 – Potential to Conflict with Adopted Policies, Plans, or Programs Regarding Public Transit, Bicycle, or Pedestrian Facilities	No impact	<i>None required</i>	No impact
TRAFFIC6 – Potential to Decrease Performance or Safety of Public Transit, Bicycle, or Pedestrian Facilities	No impact	<i>None required</i>	No impact

Proposed Project

Less than Significant Impacts

Impact TRAFFIC1 – Potential to Conflict with Local Circulation Elements, Congestion Management System Policies, or Other Applicable Traffic and Transportation Ordinances

As discussed in Chapter 1 (see Table 1-4), the Project would not modify land use planning, directly construct or indirectly foster the construction of housing or otherwise increase or relocate populations. Rather, it would enable the City to better serve current and future development in conformance with the approved Land Use Element of the City’s General Plan (City of Encinitas 1989). It would not induce residential, commercial, or other growth that would generate new traffic on City roadways. Furthermore, the Project would neither alter public roadway configurations, nor create or remove parking.

The Project would develop 3.9 miles of access to reach manholes within the Escondido Creek corridor. These limited-use access routes would only be used for ongoing maintenance and cleaning (2 times per year for sewer cleaning, plus occasional inspections and road maintenance) and would not serve as travel routes for other vehicles.

Due to the lack of bearing on circulation and congestion, and the restricted use planned for the Project access route, there would be no potential for long-term conflict with traffic and transportation elements, policies, and ordinances and thus **no impact under this item under either CEQA or NEPA.**

Impact TRAFFIC2 – Potential to Conflict with Adopted Policies, Plans, or Programs Regarding Public Transit, Bicycle, or Pedestrian Facilities

The following discussion focuses on long-term impacts related to conflicts with plans and policies governing alternative transportation modes. For potential temporary construction-period impacts to transit, bicycle, and pedestrian facilities, refer to impact TRAFFIC6 below.

The proposed Project would not modify, create, or remove public roadway, parking, or transit facilities. The Project would not install facilities with the potential to hinder access to bus stops, nor would it in any way alter local or regional access to the Encinitas train station (located west of I-5, and just south of Encinitas Boulevard). Furthermore, the Project would not directly or indirectly induce growth, with the potential to increase traffic generation or overload/outpace existing transit planning. There would therefore be **no impact related to conflict with public transit policies, plans, or programs.**

The Project would develop 3.9 miles of restricted-use access enabling operations and maintenance vehicles to reach manholes within the Escondido Creek corridor. These access routes would not require the long-term use or modification of any routes designated in the City's Bikeway Master Plan. The Encinitas portion of the proposed Class I Coastal Rail Trail is located west of I-5 along the coastal railroad tracks and removed from the Project alignment. There would thus be **no impact related to conflict with policies, plans, or programs relative to bicycle transportation.**

The City's Trails Master Plan (City of Encinitas 2003) designated several potential trail segments in the vicinity of the Project for proposed future trail development. Since the adoption of the Trails Master Plan, only Trail 96, which connects Lone Jack Road with El Camino del Norte, has since been implemented and is in use as a trail. The Lone Jack realignment would overlap with this segment but would not install aboveground facilities and thus would neither impede nor detract from trail use or connectivity. There would be **no impact related to conflict with policies, plans, or programs relative to trails.** With **no impact relative to any aspect of this item**, no mitigation is required.

Impact TRAFFIC3 – Potential to Cause an Increase in Traffic on Local Roadways that is Substantial in Relation to the Existing V/C Ratio

Project construction would generate small volumes of traffic, itemized in Table 7-5 on the next page. Once the new access road is in use, the expanded inspection, cleaning, and maintenance activities it would enable would also very slight increase vehicle trips on area roadways, also itemized in Table 7-5.

Table 7-5: Construction and Operations Traffic

Project Element	Timeframe	Traffic Generation
<u>Construction-Related Traffic</u>		
Access construction	250 working days	<ul style="list-style-type: none"> • 7 daily worker commute round-trips • 1 semi-truck trip for materials delivery every 300 linear feet of alignment (approximately 1 round-trip truck trip every 4 days on average) • 6 total semi-truck trips for heavy equipment mobilization and demobilization (concentrated at the beginning and at the end of the construction phase, respectively)
Manhole rehabilitation	235 working days	<ul style="list-style-type: none"> • 4 daily worker commute trips • 1 mid-sized truck trip per manhole (approximately 1 round-trip truck trip every 4 days) • 6 total truck trips for mobilization/demobilization
Siphon and manhole removal	10 working days	<ul style="list-style-type: none"> • 7 daily worker commute round-trips • 8 total semi-truck trips for materials delivery and mobilization/demobilization
Lone Jack realignment	90 working days	<ul style="list-style-type: none"> • 7 daily worker commute round-trips • 15 materials delivery semi-truck trips (approximately 1 round-trip every 6 days) • 6 round-trip semi-truck trips for mobilization/demobilization
<u>Operational Traffic</u>		
Ongoing maintenance and cleaning	2 times per year	<ul style="list-style-type: none"> • Increased presence of Vac-Con on area roadways due to ability to access entire Project reach of OTS, resulting in expanded program of inspections, cleaning, and maintenance • Additional trips involving 1 crew truck

Until selection of the construction Contractor, the origination and precise routing of construction vehicles would not be known. However, construction vehicles would likely access the Project area from I-5 to the west. Truck routes from I-5 include Manchester Avenue, North El Camino Real, and Encinitas Boulevard. Once in the vicinity of the alignment, collector roads include Manchester Avenue (east of El Camino Real), Rancho Santa Fe Road, and El Camino del Norte. Additionally, the Lone Jack Road realignment would involve added traffic on Lone Jack Road, El Camino Del Norte, and Rancho Santa Fe Road. As provided in Table 7-3 under *Existing Conditions*, these roadways have capacities ranging from 14,000 vehicles per day (El Camino del Norte and Manchester Avenue, east of El Camino Real) to more than 45,000 vehicles per day (El Camino Real and Manchester Avenue, west of El Camino Real) (County of San Diego 2009). The capacity for Lone Jack Road is not available; however, this road carries 6,200–7,000 vehicles on an average weekday (San Diego Association of Governments 2010).

On any given day, construction activities would typically add 4–7 daily worker commute round trips, with various types of equipment and materials deliveries approximately every 4 days, and a very small number of additional truck trips for mobilization and demobilization at the beginning and end of each construction phase. This very small number of daily trips would constitute only about 0.001% of the capacity of local arterial roadways and would also be small in relation to what local roadways can carry. Thus, although construction would add vehicles to area roadways, **added volumes would not be substantial in relation to**

roadway capacity or V/C ratio, and there would be no construction-period impact under this item under either CEQA or NEPA. No mitigation is required.

Operations would increase the presence of the City's Vac-Con and supporting crew truck on City roadways, but the addition of 1 or 2 vehicles several times each year would be vanishingly small in comparison to roadway capacity and V/C ratio. There would be no long-term impact under this item under either CEQA or NEPA. No mitigation is required.

Impact TRAFFIC4 – Potential to Exacerbate an Already Unacceptable LOS

Designated Encinitas truck routes from I-5 include Manchester Avenue and El Camino del Norte, which currently operate at an acceptable LOS, and Encinitas Boulevard which operates at LOS F. Two-lane collector roads in the immediate Project vicinity include Manchester Avenue east of South El Camino Real (currently operating at LOS A–C), Rancho Santa Fe Road (LOS F), and Lone Jack Road (no LOS status available). All signalized intersections in the Project area operate at an acceptable LOS; however, the stop-controlled Rancho Santa Fe and Lone Jack Road intersection and Rancho Santa Fe Road and El Camino del Norte intersection are both currently operating below the target LOS.

As discussed above under Impact TRAFFIC3 and itemized in Table 7-5, Project construction would add semi-trucks and other vehicles to area roadways. Although the overall number of vehicles would be very small, the maneuvering of semi-trucks and other oversize vehicles has the potential to create further delays in locations that already have an unacceptable LOS. Furthermore, several of these locations are in the northeastern portion of the alignment, which features 2-lane, often narrow residential roads.

The Project would also require short-term lane closures both in northbound Lone Jack Road (for realignment of the Lone Jack segment of the OTS) and in eastbound Manchester Avenue (for rehabilitation of 7 in-road manholes). Manchester Avenue manhole rehabilitation is expected to take approximately 4–5 days per manhole, while the Lone Jack realignment would take place over approximately 90 working days. An eastbound lane closure on Manchester Avenue has the potential to back traffic up to the I-5 off ramp and degrade the LOS at that intersection from C to unacceptable levels. The closure in this area could also interfere with access to and from facilities including Mira Costa College, Saints Constantine and Helen Greek Orthodox Church, Belmont Village Senior Living, and Temple Solel. Likewise, construction in Lone Jack Road could back traffic up to the already impaired intersection with Rancho Santa Fe Road, as well as interfere with access to private driveways and the Little Oaks Equestrian Park.

To address these concerns, the Contractor would be required to prepare and implement a site-specific Traffic Control Plan, as discussed in *Measures for Traffic Control and Safety* under *Environmental Commitments* in Chapter 2. The Plan will contain provisions to minimize delays and interference from construction vehicles, including measures to prohibit construction traffic from using intersections that currently operate below acceptable levels during peak traffic hours, when the potential for impacts would be greatest. The Traffic Control Plan will also contain measures to provide for continued safe passage around lane closures and ensure good coordination with property owners and uninterrupted access to private and facility driveways. With these commitments in place, the potential to exacerbate an already unacceptable LOS would be reduced to a level considered less than significant under both CEQA and NEPA.

Impact TRAFFIC5 – Potential to Result in Inadequate Emergency Response or Evacuation Routes

As discussed in the *Existing Conditions* section of this Chapter, the City's Fire Department has developed fire and tsunami evacuation plans. Designated wildfire evacuation routes in the northeastern portion of the alignment generally direct travel to the south along Rancho Santa Fe Road and Lone Jack Road; to the west into Carlsbad (west along Dove Hollow Road and northwest along Rancho Santa Fe Road); and to the east

into Rancho Santa Fe along El Camino del Norte. For tsunamis, routes point north and south along Coast Highway 101 at the mouth of the San Elijo Lagoon.

Project construction would intermittently introduce large vehicles onto area roadways and would also involve short-term lane closures on 2-lane Lone Jack Road and 4-lane Manchester Avenue. The presence of large vehicles and the need for lane closures would have the potential to impede emergency access to the Project area, and could interfere with the implementation of emergency evacuation plans in the event of an emergency during construction. In particular, work in the northeastern portion of the alignment would take place along and in the vicinity of the collector roads that would be used for emergency evacuation of the small and narrow roads in the Olivenhain community. Furthermore, the City of Encinitas' Fire Station 6 is located just north of the intersection of Rancho Santa Fe Road and El Camino del Norte, in proximity to the proposed Lone Jack Road lane closure. The Project would not have direct interference with tsunami evacuation routes on Coast Highway 101 (to the west of I-5); however, a backup at Manchester Avenue and I-5 could hinder travel from the area.

To address these concerns, the site-specific Traffic Control Plan discussed above and in Chapter 2 (see *Measures for Traffic Control and Safety* under *Environmental Commitments*), would provide specific measures, coordinated with the Encinitas Fire Department, to ensure that construction does not interfere with emergency response or evacuation routes. Among other items, the Plan would include provisions for maintaining traffic flow, preventing blockage of intersections and driveways, and notification of affected residences and facilities, thereby minimizing interference with emergency access and evacuation. With the Traffic Control Plan in place, potential construction-period impacts with regard to inadequate emergency response and interference with emergency evacuation routes would be less than significant under both CEQA and NEPA. No mitigation is required.

Operational traffic generation would be extremely minor, as detailed in Table 7-5 above, and for all in-roadway work, the City would continue to implement standard measures enabling priority passage by emergency vehicles. Thus, long-term impacts with regard to inadequate emergency response and interference with emergency evacuation routes would be less than significant under both CEQA and NEPA. No mitigation is required.

Impact TRAFFIC6 – Potential to Decrease Performance or Safety of Public Transit, Bicycle, or Pedestrian Facilities

As discussed under *Alternate Modes of Transportation in Existing Conditions* above, transit, bicycle, and pedestrian transportation all use roadways in the vicinity of the proposed Project. NCTD Bus Route 304 offers limited service along Encinitas Boulevard (east from its intersection with El Camino Real) and Rancho Santa Fe Road (between Encinitas Boulevard and Leucadia Boulevard). It runs 2 times per day in each direction in the 7 AM and 2 PM hours. Bicyclists are likely to use Manchester Avenue, a designated Class II bikeway from El Camino Real to Encinitas Boulevard. Bicyclists (along with pedestrians and recreational hikers, and possibly also equestrians) are also likely to utilize many of the trails identified in the City's Trails Master Plan. Several trails are located along roads near Project access points in the Central and Northeastern portions of the alignment (in the area to the north of South Rancho Santa Fe Road, east of Rancho Santa Fe Road, and south of El Camino del Norte). Furthermore, the trail on the south side of Manchester Boulevard from I-5 to El Camino Real, along with the trails on both sides of Lone Jack Road, would be immediately adjacent to construction lane closures for Manchester Avenue manhole rehabilitation and Lone Jack Road realignment.

Construction traffic on Encinitas Boulevard and Rancho Santa Fe Road would have the potential to interfere with bus timing and operations; stalled and improperly parked construction vehicles could block bus stops. Furthermore, passage, queuing, or parking of construction vehicles, particularly on narrow 2-lane roads, could impair safety of pedestrians, bicyclists, or equestrians. Improperly stored equipment and parked or

stalled construction vehicles could also form a hindrance or barrier to passage. In addition, the Manchester Avenue and Lone Jack Road construction lane closures could prohibit access to trails along the affected stretches of roadway for the duration of closure.

To address and avoid these concerns, the Traffic Control Plan (see *Measures for Traffic Control and Safety* under *Environmental Commitments* in Chapter 2) will contain provisions to notify and coordinate with the NCTD for work in vicinity to bus routes, such that work does not interfere with bus operations or impede access to bus stops. The Traffic Control Plan will also contain measures to address bicycle and pedestrian safety issues, such as the use of safety barriers, flaggers/crossing guards, signage, detours, and restrictions on locations of equipment. With the Traffic Control Plan in place, **construction-period impacts for this item would be reduced to a level that is less than significant under both CEQA and NEPA.** No mitigation is required.

Significant Impacts and Mitigation Approaches

With the Traffic Control Plan in place, significant impacts on traffic flow, intersection function, or alternative transportation are not anticipated under the proposed Project. No mitigation is required.

Action Alternatives

Short-term construction period impacts under the 2 action alternatives, Alternative 1 (Combination Access, Alternate Configuration) and Alternative 2 (Conventional Continuous Access, Plantable/Pervious Surface Treatments), would be very similar to those discussed above for the proposed Project. Although the details of the open space segments of the new access would differ from the proposed Project, both action alternatives would include the same in-roadway components, and the construction process and trip generation for both open space and in-roadway portions of the Project would be the same. Both action alternatives would incorporate the same Traffic Control Plan stipulations as the proposed Project. Over the longer term, both of the action alternatives would reinstate the same program of sanitary sewer inspections, cleaning, and maintenance analyzed above for the proposed Project. Thus, like the proposed Project, the 2 action alternatives would have **no construction-period or long-term impact under CEQA or NEPA related to conflict with local traffic/circulation plans, policies, or ordinances; conflict with policies, plans, or programs relative to alternate modes of transportation; or traffic increases that are substantial in the context of roadway capacity or V/C ratios.** Under both action alternatives, as under the proposed Project, **construction-period and long-term impacts would be less than significant under CEQA and NEPA with regard to potential exacerbation of already unacceptable LOS, potential for inadequate emergency response or impedance of emergency evacuation routes, and potential to decrease the performance or safety of alternate modes of transportation.**

No Project/No Action Alternative

Under the No Project/No Action Alternative, there would be no access construction, no manhole rehabilitation, and no realignment of the segment of the OTS above El Camino del Norte. There would thus be **no impact under either CEQA or NEPA related to construction-generated traffic.**

With no new access route, the City's program of inspections, cleaning, and maintenance along the OTS would continue at the current level. There would thus be **no long-term/post-construction impact under either CEQA or NEPA related to traffic associated with expanded operational activities.**

With no rehabilitation of the aging manholes along the Project reach of the OTS, these facilities would continue to deteriorate; it would eventually become necessary to rehabilitate the manholes under a separate future project or projects, likely entailing at least some future work within roadways and some level of

construction-related traffic. Based on recent condition inspections, additional manhole rehabilitation is expected to become a critical need within the foreseeable future. The timing, extent, and specific nature of activities, and thus, the associated traffic generation, is speculative and cannot be meaningfully analyzed at this time; however, any such future project would be a discretionary undertaking subject to separate environmental review at the time it is proposed.

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Chapter 8

Noise and Vibration

Introduction

Chapter Overview

This chapter examines the potential for changes in the noise and vibration environment for residences and other noise-sensitive land uses in proximity to the proposed Project.

This chapter contains the following information:

- Background information on noise and vibration – how they are measured and perceived, and how they create physical and quality-of-life impacts
- An overview of chapter preparation, including sources of baseline information and an explanation of the methods used to analyze impacts
- A description of existing conditions relative to noise and vibration (e.g., typical noise levels by land use) in the Project area
- Analysis of potential noise and vibration impacts under the proposed Project, the 2 action alternatives, and the No Project/No Action Alternatives, including approaches to avoid or reduce (mitigate) potentially significant adverse impacts

Discussion includes the Project's potential to generate noise in excess of local jurisdictional standards, adverse noise effects on sensitive land uses, and excessive groundborne vibration. Analysis in this chapter focuses on human receptors; the potential for noise effects on wildlife, including special-status species, is addressed in Chapter 4 (*Biological Resources and Jurisdictional Habitat*).

The proposed Project focuses on providing access, rehabilitating aging manholes, and realigning a portion of an existing sanitary sewer line, and would not create a new source of permanent noise. However, Project construction would generate localized and comparatively short-term increases in noise and vibration, resulting from the use of heavy equipment such as bulldozers and excavators as well as the trucks used to deliver materials to the construction area.

To address the potential for noise disturbance during construction, the Project is incorporating commitments that would keep it in strict compliance with City ordinances limiting construction noise generation, and construction would proceed quickly, so effects in any given area would only be experienced for a short period. With the Project's environmental commitments in place, construction noise impacts are not found to be significant under either CEQA or NEPA.

Once the Project is complete, it would enable expanded maintenance activities, extending the area that can be accessed by the City's large Vac-Con truck for routine twice-yearly visits. This would slightly increase overall noise generation in the Project vicinity. However, these activities would be very limited and very short-term, and moreover are essential to maintain sanitary sewer service and protect sensitive habitat; the intermittent and very localized increase in noise is also found to be less than significant under both CEQA and NEPA.

Background

Noise Basics

Noise is sound that is loud, unpleasant, unexpected, or otherwise undesirable. Sound, in turn, is a disturbance created by a vibrating object and transmitted as pressure waves through air or water to the human ear or another receiver.

The basic measure of sound level or intensity (“how loud is it?”) is the decibel (dB), a logarithmic unit derived from the amplitude of the actual sound pressure waves. For most people, a 3-dB increase in noise level will be just perceptible, a 5-dB increase will be clearly noticeable, and a 10-dB increase will seem to double the noise level. The perception of sound also depends on whether the new sound is similar to existing sounds in an area: most listeners cannot detect differences of 1 – 2 dB between noises of a similar nature, but some people can hear differences of 2 or 3 dB, especially in a generally quiet area, and most listeners can perceive a 5-dB difference. Noise is usually more perceptible when the new, intruding sound is different from the sounds that make up the background or ambient sound level—for example a car alarm on a residential street. In this situation, many listeners can perceive increases as small as 1 dB.

Sound levels are often described in terms of the A-weighted decibel (dBA), which is “weighted” or adjusted to emphasize the mid-range and filter very low and very high frequencies, reflecting the varying sensitivity of the human ear to different frequencies of sound. The dBA scale is the most widely used for environmental noise assessments because it provides a more accurate reflection of the listener’s experience of the new sound or noise potentially introduced by a proposed project.

Several types of measurements—all using the dBA unit—are useful in characterizing ambient sound levels.

- **$L_{eq}(h)$ or hourly equivalent sound level** represents cumulative sound exposure over a period of 1 hour, expressed in dBA
- **L_{dn} or day-night sound level** represents cumulative sound exposure over a period of 24 hours, expressed in dBA. A penalty of 10 dB is added to the A-weighted sound levels occurring at night (between 10 PM and 7 AM)
- **L_{eq} or equivalent sound level** represents the steady-state sound level containing the same acoustic (vibrational) energy as the actual sound levels recorded during a monitoring period. This can be helpful in understanding total noise exposure since sound levels can vary substantially over a short period of time, and peak noise levels thus may tell only a part of the story. L_{eq} is the unit typically used to describe construction noise because the individual L_{eq} associated with the use of each piece of equipment can easily be combined to represent the total noise level from all pieces of equipment used during a particular period (Federal Transit Administration 2006)
- **L_{xx} or percentile exceeded sound level** is the sound level exceeded during a specified percentage of a monitoring period. For example, L_{90} is the sound level exceeded 90% of the time and L_{10} is the sound level that is exceeded only 10% of the time. L_{xx} is useful in defining permissible noise levels (in a noise ordinance, for instance)

Table 8-1 on the next page summarizes typical sound levels associated with common noise sources.

Table 8-1: Typical A-Weighted Sound Levels

Sound Level at 50 Feet	Sound Source	Perception
45 dBA	Typical quiet home interior—conversation or background radio	Quiet
60 dBA	Air conditioning unit (outdoor)	
70 dBA	Lawn mower	Intrusive
80 dBA	Heavy diesel truck traveling at 50 mph	Annoying
85 dBA	Concrete mixer	Possible hearing damage with sustained unprotected exposure
90 dBA	Train horn	
95 dBA	Rock drill	
100 dBA	Jack hammer	Very loud

Source: Federal Transit Administration 2006

Vibration Basics

Groundborne vibration is energy traveling as waves that propagate through the ground. It can be generated by a variety of sources, including traffic and heavy construction equipment. If groundborne vibration is severe, it can result in perceptible movement of floors and walls, rattling windows, and rumbling sounds, and higher levels of groundborne vibration have the potential to result in damage, particularly in fragile buildings. Vibration can also be felt or heard, and can become annoying at levels well below those that have the potential to cause damage to structures.

Vibration is typically measured in terms of the following parameters.

- **Peak Particle Velocity (PPV)** is the maximum velocity at which particles in the vibrating ground are moving, indicative of the severity of the vibration. This is the parameter typically used to assess the potential for damage to structures as a result of groundborne vibration (Federal Transit Administration 2006)
- **Vibration Level (L_v)** describes the time-averaged amplitude of vibratory ground motion. This parameter is sometimes quantified in units of vibration decibels or VdB. L_v is useful in evaluating the potential for human annoyance due to groundborne vibration (Federal Transit Administration 2006)

Table 8-2 presents PPV thresholds for structural damage due to groundborne vibration, along with the approximately corresponding L_v .

Table 8-2: Thresholds for Groundborne Vibration Damage

Building Type	Damage Threshold (PPV)	Approximate L_v
Reinforced concrete, steel or timber (no plaster)	0.5 in/sec	102 VdB
Engineered concrete and masonry (no plaster)	0.3 in/sec	98 VdB
Non-engineered timber and masonry	0.2 in/sec	94 VdB
Buildings extremely susceptible to vibration damage	0.12 in/sec	90 VdB

Source: Federal Transit Administration 2006

Table 8-3 summarizes human response to groundborne vibration. Note that although the approximate threshold for human perception is 65 VdB, human response is usually not substantially negative until a level of about 70 VdB. Additionally, people engaged in physical activity typically have a higher vibration tolerance than someone sitting, at rest, or sleeping.

Table 8-3: Human Response to Groundborne Vibration

L_v at 50 Feet	Example of Source	Typical Response
50 VdB	Typical background vibration in developed area	Vibration not generally perceptible by humans
65 VdB	Bus or truck passing in street	Approximate threshold for human perception of vibration
70 VdB	Bus or truck over bump	Typical level at which frequent vibration events become annoying in a residential environment
80 VdB	Commuter rail, rapid transit	Typical level at which infrequent vibration events become annoying in a residential environment

Source: Federal Transit Administration 2006

How this Chapter Was Prepared

Assessment of Existing Conditions

Noise and vibration levels associated with land uses and roadway types surrounding the Project alignment were identified based on guidelines of the Federal Railroad Administration (FRA) (2014) and Federal Transit Administration (FTA) (2006). These standard sources provide “look-up” tables correlating various types of land uses and roadways with typical noise and vibration levels, based on study of numerous cases.

Impact Analysis Methods

The Project’s potential to generate noise and groundborne vibration was assessed quantitatively, using the standard methods promulgated by the FTA (2006). Analysis considered both construction and operational phases. This involved

- Identifying the types of vehicles and equipment that would be used for Project construction
- Determining the typical noise and vibration levels associated with their use
- Calculating sound and vibration levels at the work site, and at increasing distances from the site

The Project would result in a significant impact under CEQA if it would lead to any of the following

- Noise levels exceeding limits established in applicable City of Encinitas noise standards
- Substantial increase in ambient sound levels, resulting in disturbance to noise-sensitive land uses, including residences and quiet recreational areas
- Exposure of persons or structures to excessive groundborne vibration levels

Any of these outcomes would also represent a significant impact under NEPA.

Existing Conditions

The Project alignment is located almost entirely within the San Elijo Lagoon/Escondido Creek corridor, with additional activities required in Lone Jack Road above El Camino del Norte, and in Manchester Avenue near Mira Costa College. Land uses in the vicinity of the Project alignment are generally suburban to semi-rural, including residential uses (primarily single-family), along with open space/conservation lands, parks, schools, commercial development, assisted living, and cultural and faith community facilities.

Typical noise levels in suburban areas are on the order of 50 – 55 dBA L_{dn} (Federal Railroad Administration 2014). In commercial areas, such as the development along arterial Rancho Santa Fe Road near the Project alignment, typical ambient noise levels are generally about 60 dBA L_{dn} (Federal Railroad Administration 2014). In the corridors immediately along principal roadways, noise levels rise higher; typical hourly sound levels (at 50 feet) are 65 dBA L_{eq} for a 4-lane urban arterial road (e.g., Manchester Avenue west of El Camino Real) and 60 dBA L_{eq} for a 2-lane suburban arterial road (e.g., Manchester Avenue east of El Camino Real, Rancho Santa Fe Road, and El Camino del Norte) (Federal Transit Administration 2006).

Regulatory Setting

Noise is regulated at the federal, state, and local levels. While federal and state laws set forth general provisions for noise exposure, local jurisdictions are primarily responsible for day-to-day regulation of noise sources and noise-generating activities, including the establishment and enforcement of noise limitations. Regulations for acceptable noise levels are often dependent on the adjacent land uses and the time of day.

Federal and State Regulations

The federal Noise Control Act of 1972 (42 USC 4901 et seq.) was enacted to promote an environment for all Americans free from noise that jeopardizes their health and welfare. The Act authorizes the United States government to establish noise emission standards for products distributed in commerce. The Act also establishes noise emission standards for certain construction equipment (40 CFR 204 et seq.).

California followed with its Noise Control Act of 1973 (California Health and Safety Code, Division 28), coordinating federal, state, and local regulation of noise. The Noise Control Act also established the state Office of Noise Control and assigned it the responsibility to set standards for noise exposure.

State law (California Health and Safety Code 65300) further requires that local governments include a noise element as part of their General Plan. The noise element must include technical data that quantifies noise levels and maps noise contours for the locale. The noise element is to be used in guiding land use decisions to mitigate the potential impacts of sources of excessive noise on sensitive receptors such as residences, schools, and sensitive wildlife habitat. In addition, Section 27150 of the California Motor Vehicle Code has requirements for adequate muffling to prevent excessive or unusual noise.

Local Regulations and Plans

City of Encinitas

The City is concerned with regulating noise to protect public health and welfare.

City ordinance limits construction noise; the operation of construction equipment may not be operated such that it causes noise levels in excess of 75 dB for more than 8 hours during any 24-hour period, measured at or within any property used for residential purposes (City of Encinitas 2013) (Municipal Code,

Section 9.32.410[A]). In addition, construction equipment may only be operated between the hours of 10 AM and 5 PM Monday through Saturday, and construction traffic is limited to designated routes within the City (City of Encinitas 1989 and 2013) (General Plan, Noise Policy 1.4; Municipal Code, Section 9.32.410[B]); as further discussed in Chapter 7 (*Transportation and Traffic*), truck routes to reach the general Project area from I-5 include Manchester Avenue, North El Camino Real, and Encinitas Boulevard (City of Encinitas 2010).

City policies also address long-term noise generation. Noise mitigation measures may be required for projects that would generate substantial traffic noise in residential areas (defined as an increase of 5 dB where the resulting L_{dn} is 55 dB, or an increase of 3 dB resulting in L_{dn} of 60 dB or more). The City also has provisions to enforce proper maintenance of motor vehicle mufflers (General Plan, Noise Policy 1.3) (City of Encinitas 1989). For non-transportation projects, ongoing noise impacts are evaluated by the City on a case-by-case basis (General Plan, Noise Policy 1.1) (City of Encinitas 1989).

To reduce the potential for noise-generating land uses to disturb their neighbors, additional quantitative limits on operational noise are established in the City’s Zoning Ordinance (Section 30.40.010[A]), as shown in Table 8-4. Based on the standards in Table 8-4, it is unlawful to create or allow noise that exceeds the following.

- The noise standard for a cumulative period of more than 30 minutes in any hour
- The noise standard plus 5 dB for a cumulative period of more than 15 minutes in any hour
- The noise standard plus 15 dB for a cumulative period of more than 1 minute in any hour
- The noise standard plus 20 dB for any period of time

For noise levels that fluctuate (such as live music), or are repetitive and intermittent (such as hammering), the peak decibel reading is considered to represent the noise level for the entire cumulative period of the noise.

Table 8-4: City of Encinitas Operational Noise Limits

Zoning of Adjacent Parcel	1-Hour Average Sound Level	
	7 AM – 10 PM	10 PM – 7 AM
Rural residential (RR, RR-1, RR-2), lower-density single-family residential (R-3, R-5, R-8)	50 dB	45 dB
Higher-density residential (R-11, RS-11, R-15, R-20, R-25, MHP)	55 dB	50 dB
Professional and commercial (OP, LLC LC, GC, L-VSC, VSC)	60 dB	55 dB
Light industrial, business park (L-I, BP)	60 dB	55 dB
Ecological resources, open space, parklands (ER/OS/PK)	Permissible noise levels are governed by the limits applicable to the receiving parcel	

The City uses a similar regulatory approach for operational vibration levels to reduce the potential for vibration-generating land uses to disturb neighboring uses. See Table 8-5 on the next page. Section 30.40.010[B] of the City’s Zoning Ordinance prohibits operations from generating vibration that is perceptible at the boundary of the parcel where the vibration-generating use is located, and establishes the following not-to-exceed quantitative limits on operational vibrations. Note that separate limits apply for impact activities that generate impulsive¹ vibration and steady-state activities that generate ongoing vibration.

¹ Impulsive noise refers to high-intensity short-duration noise characterized by abrupt onset and rapid decay. Impulsive noise is typically generated by impact equipment (Federal Highway Administration 2011).

Table 8-5: City of Encinitas Operational Vibration Limits

Zoning of Adjacent Parcel	Vibration Limit	
	Impact	Steady-State
Residential	0.006 in/sec	0.003 in/sec
Commercial	0.010 in/sec	0.005 in/sec
Light Industrial	0.040 in/sec	0.020 in/sec
Public/Semi-Public	0.010 in/sec	0.005 in/sec

County of San Diego

The County Noise Ordinance (San Diego County Code of Regulatory Ordinances, Title 3, Division 6, Chapter 4, Section 36.40) prohibits disturbing, excessive, and offensive noise, and stipulates sound level limits in order to secure and promote public health, comfort, safety, peace, and quiet. Under the Noise Ordinance, it is generally unlawful to cause or allow the creation of any noise that exceeds the applicable limits at any point on or beyond the boundaries of the property on which the sound is produced. However, the Noise Ordinance does allow the County to grant variances for temporary noise sources, subject to terms and conditions intended to achieve compliance with the overall aims of the Ordinance.

The County has separate noise standards applicable to construction and operation. For construction within County jurisdiction, equipment may not exceed an average sound level of 75 dB for an 8-hour period between 7 AM and 7 PM, measured at the receiver’s property line. Additionally, for work other than emergency and public roadway projects, in areas zoned for residential, village, or civic uses, impulsive noises may not exceed 82 dBA for 15 minutes per hour.

Operational noise limits are also based on zoning, as shown in Table 8-6. These noise levels apply to any location on a property that is receiving the noise (County of San Diego 2009).

Table 8-6: County of San Diego Non-Construction (Operational) Noise Limits

Zoning Designation	1-Hour Average Sound Level Limits (dBA)	
	7 AM – 10 PM	10 PM – 7 AM
RR (rural residential)	50 dBA	45 dBA
A70 (limited agriculture)		
S80 (open space)		
RV (variable family residential) with General Plan designations of less than 10.9 dwelling units per acre		
RV (variable family residential) with General Plan designations of 10.9 or more dwelling units per acre	55 dBA	50 dBA

Source: County of San Diego 2009

Impacts and Mitigation Measures

Impact	Significance	Mitigation	Significance with Mitigation
<u>Proposed Project</u>			
NOISE1 – Potential for Noise Levels to Exceed Applicable Noise Standards during Project Construction	No Impact	<i>None required</i>	No impact
NOISE2 – Potential to Create a Substantial Increase in Ambient Sound Levels, Resulting in Disturbance to Noise Sensitive Land Uses during Project Construction	Less than Significant	<i>None required</i>	Less than significant
NOISE3 – Potential for Noise Levels to Exceed Applicable Noise Standards during Project Operation	Less than significant	<i>None required</i>	Less than significant
NOISE4 – Potential to Create a Substantial Increase in Ambient Sound Levels, Resulting in Disturbance to Noise Sensitive Land Uses during Project Operation	Less than significant	<i>None required</i>	Less than significant
NOISE5 – Potential for Exposure of Persons or Structures to Excessive Groundborne Vibration during Construction	Less than significant	<i>None required</i>	Less than significant
NOISE6 – Potential for Exposure of Persons or Structures to Excessive Groundborne Vibration during Operations	Less than significant	<i>None required</i>	Less than significant
<u>Alternative 1 – Combination Access, Alternate Configuration</u>			
NOISE1 – Potential for Noise Levels to Exceed Applicable Noise Standards during Project Construction	No Impact	<i>None required</i>	No impact
NOISE2 – Potential to Create a Substantial Increase in Ambient Sound Levels, Resulting in Disturbance to Noise Sensitive Land Uses during Project Construction	Less than Significant	<i>None required</i>	Less than significant
NOISE3 – Potential for Noise Levels to Exceed Applicable Noise Standards during Project Operation	Less than significant	<i>None required</i>	Less than significant
NOISE4 – Potential to Create a Substantial Increase in Ambient Sound Levels, Resulting in Disturbance to Noise Sensitive Land Uses during Project Operation	Less than significant	<i>None required</i>	Less than significant
NOISE5 – Potential for Exposure of Persons or Structures to Excessive Groundborne Vibration	Less than significant	<i>None required</i>	Less than significant

Impact	Significance	Mitigation	Significance with Mitigation
NOISE6 – Potential for Exposure of Persons or Structures to Excessive Groundborne Vibration during Operations	Less than significant	<i>None required</i>	Less than significant
<u>Alternative 2 – Conventional Continuous Access, Plantable/Pervious Surface Treatments</u>			
NOISE1 – Potential for Noise Levels to Exceed Applicable Noise Standards during Project Construction	No Impact	<i>None required</i>	No impact
NOISE2 – Potential to Create a Substantial Increase in Ambient Sound Levels, Resulting in Disturbance to Noise Sensitive Land Uses during Project Construction	Less than Significant	<i>None required</i>	Less than significant
NOISE3 – Potential for Noise Levels to Exceed Applicable Noise Standards during Project Operation	Less than significant	<i>None required</i>	Less than significant
NOISE4 – Potential to Create a Substantial Increase in Ambient Sound Levels, Resulting in Disturbance to Noise Sensitive Land Uses during Project Operation	Less than significant	<i>None required</i>	Less than significant
NOISE5 – Potential for Exposure of Persons or Structures to Excessive Groundborne Vibration	Less than significant	<i>None required</i>	Less than significant
NOISE6 – Potential for Exposure of Persons or Structures to Excessive Groundborne Vibration during Operations	Less than significant	<i>None required</i>	Less than significant
<u>No Project/No Action Alternative</u>			
NOISE1 – Potential for Noise Levels to Exceed Applicable Noise Standards during Project Construction	No Impact	<i>None required</i>	No impact
NOISE2 – Potential to Create a Substantial Increase in Ambient Sound Levels, Resulting in Disturbance to Noise Sensitive Land Uses during Project Construction	No Impact	<i>None required</i>	No impact
NOISE3 – Potential for Noise Levels to Exceed Applicable Noise Standards during Project Operation	No Impact	<i>None required</i>	No impact
NOISE4 – Potential to Create a Substantial Increase in Ambient Sound Levels, Resulting in Disturbance to Noise Sensitive Land Uses during Project Operation	No Impact	<i>None required</i>	No Impact
NOISE5 – Potential for Exposure of Persons or Structures to Excessive Groundborne Vibration during Construction	No Impact	<i>None required</i>	No impact

Impact	Significance	Mitigation	Significance with Mitigation
NOISE6 – Potential for Exposure of Persons or Structures to Excessive Groundborne Vibration during Operations	Less than significant	<i>None required</i>	Less than significant

Proposed Project

Less than Significant Impacts

Impact NOISE1 – Potential for Noise Levels to Exceed Applicable Noise Standards during Project Construction

City ordinance limits the operation of noisy construction equipment to the hours between 10 AM and 5 PM Monday through Saturday and further stipulates that construction noise may not exceed the level of 75 dB for more than 8 hours during any 24-hour period, measured within the limits of any residential property. As discussed in Chapter 2 (see *Noise and Disturbance Control* under *Environmental Commitments*), Project construction would occur Monday through Friday only, and contractors would be required to observe the 10 AM – 5 PM permissible work window. The timing and duration of noise generation would thus be reduced by City ordinance; construction noise levels are discussed further in the paragraphs below.

Because dB and dBA are logarithmic units, the noise resulting from operation of more than one piece of construction equipment is not equal to the arithmetic sum of the individual noise levels generated by each piece of equipment—rather, adding each additional piece of equipment to a construction site creates only an incremental increase in noise levels. As a result, the standard methods for analysis of construction noise impacts (e.g., Federal Transit Administration 2006) generally consider the noise generated by the two loudest pieces of equipment proposed for use; this provides a good approximation of the overall construction noise level. This is particularly appropriate for the proposed Project, where the working area would be restricted and only 1 or 2 pieces of heavy equipment would be able to operate simultaneously in the same area.

For this Project, the loudest pieces of equipment in ongoing use at the work site are expected to be the crane, excavator, and loader (see *Project Construction* in Chapter 2), which generate noise on the order of 88 dBA (crane) and 85 dBA (excavator or loader) at the standard reference distance of 50 feet. The wetout and delivery trucks would be slightly louder at about 88 dBA, but would only visit the work site for short periods. Assuming simultaneous operation of a crane and an excavator or loader, the combined noise level at 50 feet from the work site (the standard reference distance for noise measurement) would be approximately 90 dBA. Simultaneous operation of a crane and a heavy delivery or wetout truck would generate noise on the order of 91 dBA at 50 feet from the work site.

Noise levels in close proximity to the active work site are therefore likely to exceed 75 dBA by a substantial margin for portions of the day. However, as identified above, contractors would be explicitly required to limit the use of heavy equipment to the 10 AM – 5 PM window for compliance with the City’s construction noise limits. As identified in *Noise and Disturbance Control* under *Environmental Commitments* in Chapter 2, the Project has adopted City construction noise limits for all portions of the alignment (including those in the unincorporated County) because the City limits are more restrictive; adhering to these limitations will also keep the Project in compliance with County construction noise standards. **There would thus be no impact under either CEQA or NEPA related to exceedance of an applicable noise standard.** No mitigation is required.

Impact NOISE2 – Potential to Create a Substantial Increase in Ambient Sound Levels, Resulting in Disturbance to Noise Sensitive Land Uses during Project Construction

Sensitive land uses surrounding the project area include suburban and rural residences, schools, and the lagoon/creek corridor itself. As discussed in *Existing Conditions* above, there are typically fairly quiet land uses, with ambient noise levels ranging from 50 – 55 dBA L_{dn} in residential areas and 60 – 64 dBA L_{dn} along major roadways.

In the immediate vicinity of the work site, construction noise levels could be upward of 90 dBA, as discussed in Impact NOISE1 above. This would represent a substantial and potentially disturbing increase. Noise attenuates with distance, however, as summarized in Table 8-7.

Table 8-7: Decrease in Construction Noise with Distance

Equipment Source	Noise at 50 Feet from Source (dBA L _{eq})	Distance from Work Area (Feet)	Noise at Increasing Distances (dBA L _{eq})
Crane	88	50	88
		100	82
		150	78
		200	76
		250	74
		300	72
		350	71
		400	70
		450	69
		500	68
Excavator or loader	85	50	85
		100	79
		150	75
		200	73
		250	71
		300	69
		350	68
		400	67
		450	66
		500	65
Combined noise level with crane and heavy truck in simultaneous operation	90	50	90
		100	84
		150	80
		200	78
		250	76
		300	74
		350	73
		400	72
		450	71
		500	70

Note that Table 8-7 assumes continuous operation at full power of the two loudest pieces of equipment expected to be in sustained use. The values shown in Table 8-7 also do not account for the added attenuation provided by topography and vegetation intervening between source and receiver. Table 8-7 is therefore considered to represent a conservative assessment, but there would clearly be potential for noise disturbance at properties within 100– 200 feet of the alignment, and possibly farther away as well.

That said, construction would be temporary and short-term in any given location. Moreover, some of the portions of the alignment where construction would occur in closest proximity to homes (i.e., spurs accessing the main trunk alignment from the northwest) are locations where less extensive work would be needed (primarily Levels 0 – 2, with Level 3 along Triple C Ranch Road); noise exposures in these locations would be reduced by comparison with the worst case. In addition, as discussed in Chapter 2 (see *Noise and Disturbance Control* under *Environmental Commitments*), the City will require the Contractor to implement a number of measures to reduce noise impacts on sensitive land uses. The required measures—which will be included in the Project construction documents to provide for contractually binding implementation—include the following.

- Limiting construction to weekdays
- Restricting the use of heavy equipment to the hours between 10 AM and 5 PM and prohibiting the operation of equipment at any worksite for more than 8 hours within any 24-hour period
- Required the Contractor to ensure that construction equipment is equipped with manufacturer’s standard noise control devices or mufflers, or with equally effective replacement devices
- Prohibiting the use of Jake brakes
- Situating stationary noise-generating equipment to minimize disturbance
- Providing advance notification to properties within 300 feet of the Project alignment
- Designating Contractor staff who are responsible for making sure reasonable measures are implemented in the event disturbance is reported by the community

The use of measures such as temporary noise barriers or noise walls is not expected to offer a practicable means of further reducing disturbance. This is partly because the duration of heavy construction activity at any given location would be quite short; installation and removal of sound barriers would substantially prolong the work at each location, extending the duration of disturbance. Noise barriers are of limited utility for linear projects where construction progresses along an elongated alignment. In addition, because of the need to minimize impacts on sensitive habitat resources, the Project is being designed with a minimal footprint—the permissible work area will be limited to the finished footprint of the new access route, as described in Chapter 2. Temporary noise barriers would need to be installed outside this footprint and would thus increase the overall footprint of habitat disturbance and loss.

With the commitments described above in place, noise disturbance would be reduced/avoided to the extent feasible. The residual impact, if any, is considered **less than significant under both CEQA and NEPA**, since construction would be temporary and comparatively short-term. No mitigation is required.

Impact NOISE3 – Potential for Noise Levels to Exceed Applicable Noise Standards during Project Operation

Completion of the new access would enable the City to expand the existing program of inspections, cleaning, and maintenance to encompass the entirety of the OTS downstream of El Camino del Norte. Although noise levels associated with existing activities would not change, the area covered would increase somewhat, such

that additional parcels would be exposed to the noise generated by the Vac-Con, hand equipment, and crew trucks.

The primary noise source associated with use of the new access is expected to be the large Vac-Con truck used for cleaning. Recent measurements taken by City staff indicate that the City’s current Vac-Con generates a peak noise level of 78 dB at the operator’s station and 73 dB at 50 feet, when operating at full power. The City’s current Vac-Con truck is a 2007 Model #V390LHA, purchased in 2009 and expected to be in service through about 2016; potential future replacements would have similar capabilities and operating characteristics, including noise levels.

The project alignment is within an area zoned ER/OS/PK (ecological resources/open space/parklands) (Figure 2-2); the applicable noise standards are therefore those that apply to neighboring parcels, which are primarily under various types of single-family residential zoning, with smaller areas zoned P/SP (public/semi-public uses) and for commercial use. Permissible noise levels based on the City’s zoning code are shown in Table 8-8; note that only the daytime limits are given since all work would occur during standard working hours.

Table 8-8: Maximum Permissible Operational Noise Levels

Zoning of Adjacent Parcel	Permissible Noise Level Per City Zoning Code				
	Maximum Allowable 1-Hour Average Sound Level	30-Minute Maximum	15-Minute Maximum	1-Minute Maximum	Maximum, Any Duration
Rural residential (RR, RR-1, RR-2), lower-density single-family residential (R-3, R-5, R-8)	50 dB	50 dB	55 dB	65 dB	70 dB
Higher-density residential (R-11, RS-11, R-15, R-20, R-25, MHP)	55 dB	55 dB	60 dB	70 dB	75 dB
Professional and commercial (OP, LLC LC, GC, L-VSC, VSC)	60 dB	60 dB	65 dB	75 dB	80 dB
Light industrial, business park (L-I, BP)	60 dB	60 dB	65 dB	75 dB	80 dB
Ecological resource, open space, parklands (ER/OS/PK)	Permissible noise levels are governed by the limits applicable to the receiving parcel				

Based on the peak noise levels measured for Vac-Con operations and the standards summarized in Table 8-8, it is clear that the Vac-Con would have the potential to exceed applicable standards. However, the usage—and the associated violation of standards—would be periodic and very short-term, lasting only an hour or two approximately twice per year in any given location. Moreover, the exceedance would be associated with cleaning that is essential to maintain proper function of an important trunk sewer, providing for the public health and welfare while also protecting water quality in valuable habitat along Escondido Creek and San Elijo Lagoon. Consequently, although short-term temporary exceedances are anticipated, they are not considered to represent a significant adverse impact under either CEQA or NEPA. No mitigation is required.

Impact NOISE4 – Potential to Create a Substantial Increase in Ambient Sound Levels, Resulting in Disturbance to Noise Sensitive Land Uses during Project Operation

The Project would not install facilities with the potential to generate noise; once construction is completed, the only source of ongoing noise generation associated with the Project would be the City’s regular program of inspections, cleaning, and maintenance, including visual inspection of manhole condition, closed circuit television video inspection, and sewer line cleaning, described in more detail under *Project Operation* in

Chapter 2. In addition, occasional maintenance of the access route would involve a small crew in a pick-up truck, potentially using hand tools to trim vegetation within the access way.

The Project would slightly increase overall noise generation since it would enable full reinstatement of the City’s operational/maintenance activities along the entirety of the Project reach of the OTS. However, all activities would be temporary and very short-term, with an onsite duration of about 2 hours or less, would typically occur only twice per year at each manhole, and would involve a very small crew (2 – 3 staffers) and 1 or 2 vehicles.

The operational/maintenance activity with the greatest potential to generate noise would be the use of the City’s large Vac-Con to clean the sewer line. The City’s current Vac-Con truck is a 2007 Model #V390LHA, purchased in 2009 and expected to be in service through about 2016; potential future replacements would have similar capabilities and operating characteristics, including noise levels.

As identified in Impact NOISE-3 above, the City’s current Vac-Con generates a peak noise level of 78 dB at the operator’s station and 73 dB at 50 feet, when operating at full power. Given the quiet environment along most of the Project alignment, this has the potential to create a substantial and potentially disturbing increase in noise levels in the immediate vicinity of active cleaning operations. However, as Table 8-9 shows, noise levels would decrease with increasing distance from the truck.

Table 8-9: Decrease in Operational Noise with Distance

Equipment Source	Peak Noise Level 50 Feet from Source (dB)	Distance from Work Area (Feet)	Peak Noise Level at Increasing Distances (dB)
2007 Vac-Con Model V390LHA	73	50	88
		100	82
		150	78
		200	76
		250	74
		300	72
		350	71
		400	70
		450	69
		500	68

Moreover, cleaning operations would be occasional, temporary, and short-term; associated noise increases are accordingly considered less than significant under CEQA. Because the cleaning is essential to maintain a critical sewer facility in full, reliable service, providing essential services while also better protecting sensitive habitat in the Creek and Lagoon, short-term intermittent noise increases associated with expanded cleaning operations are also considered less than significant under NEPA.

Impact NOISE5 – Potential for Exposure of Persons or Structures to Excessive Groundborne Vibration during Construction

The Project area is in the vicinity of land uses considered vibration-sensitive, including numerous residential properties, and some parts of the Project construction process would involve operation of heavy equipment, which has the potential to generate groundborne vibration. Individual pieces of heavy tracked equipment such as bulldozers can create vibration levels on the order of 87 VdB (measured at the standard reference distance of 25 feet), corresponding to a PPV of 0.089 inches/second (Federal Transit Administration 2006).

The passage of loaded trucks can generate a vibration level of 86 VdB at 25 feet, corresponding to a PPV of 0.076 inches/second (Federal Transit Administration 2006). Thus, immediately adjacent to the work area, vibration levels would likely exceed the level of annoyance, at least intermittently. However, vibration decreases with increasing distance from the source, as shown in Table 8-10 for the two examples given above—bulldozer operation, and heavy truck traffic.

Table 8-10: Decrease in Groundborne Construction Vibration with Distance

Equipment Source	Vibration at 25 Feet from Source		Distance from Work Area (Feet)	Vibration at Increasing Distances	
	PPV (in/sec)	L _v (VdB)		PPV (in/sec)	L _v (VdB)
Bulldozer	0.0890	87	50	0.0315	78
			100	0.0111	69
			150	0.0061	64
			200	0.0039	60
			250	0.0028	57
			300	0.0021	55
			350	0.0017	53
			400	0.0014	51
			450	0.0012	49
			500	0.0010	48
Loaded trucks on roadway	0.0760	86	50	0.0269	77
			100	0.0095	68
			150	0.0052	63
			200	0.0034	59
			250	0.0024	56
			300	0.0018	54
			350	0.0015	53
			400	0.0012	51
			450	0.0010	49
			500	0.0008	48

Most of the residences and other sensitive receptors in the Project vicinity are more than 50 – 100 feet from the Project alignment, and the majority are substantially farther away, at distances of several hundred feet or more. As Table 8-10 summarizes, at locations more than about 100 feet from the alignment, vibration levels are expected to be below the threshold where frequent or ongoing vibration becomes annoying, and at locations more than about 150 – 200 feet from the alignment, groundborne vibration generated by construction would be imperceptible. **Groundborne vibration impacts at locations more than about 100 feet from the alignment would thus be less than significant under both CEQA and NEPA.**

At properties closer to the alignment (for example, where work is proposed along Lone Jack Road, and where improvements to some of the proposed access spurs would pass adjacent to homes) vibration levels could intermittently rise to a potentially annoying level (see Table 8-10). However, the Project components in closer proximity to residences are mostly access segments needing lower levels of improvement (Levels 0 – 2, along with Level 3 at Triple C Ranch Road). These improvement levels would involve some construction activities generating vibration, but to a lesser extent than associated with higher levels of improvement.

Moreover, at all locations along the alignment vibration-generating activities would be intermittent throughout the work day, and work would take place quickly, generally only lasting for a few days in a given location. Project construction would also be limited to regular daytime hours, and the use of City-designated truck routes that direct construction deliveries away from residential streets (see *Measures for Traffic Control and Safety* under *Environmental Commitments* in Chapter 2) would further reduce vibration impacts on residences in closer proximity to the alignment. Groundborne vibration impacts on properties closer to the alignment are therefore also considered less than significant under both CEQA and NEPA.

Impact NOISE6 – Potential for Exposure of Persons or Structures to Excessive Groundborne Vibration during Operations

The Project would not install facilities with the potential to generate vibration; once construction is completed, the only potential source of vibration associated with the Project would be the slight expansion in the City's regular program of sewer line inspections, cleaning, and maintenance, along with occasional maintenance of the access route, which is projected to involve a small crew in a pick-up truck, using hand tools to trim vegetation within the access way.

Most of the equipment used for sewer line inspections, cleaning, and maintenance has little or no potential to generate groundborne vibration. Passage of the Vac-Con would generate vibration similar to a heavy truck, and vibration may also be generated by the engine during cleaning operations. However, travel speeds would be restricted due to the nature of the access, substantially limiting vibration generation during access and egress; moving at the low speeds typical for access to the Creek/Lagoon corridor, the Vac-Con is not anticipated to generate vibration that would cause disturbance. Data on vibration during Vac-Con operations are not available from the manufacturer but the City has never received vibration complaints related to the existing sewer cleaning operations, and City crews who operate the Vac-Con routinely report that operational vibration is not conspicuous. Moreover, cleaning activities would be temporary and very short-term (onsite duration of about 2 hours or less, with the Vac-Con operating during only a portion of this time), and would typically occur only twice per year at each manhole. In view of these factors, the potential for operational impacts related to violation of City performance standards or exposure of persons or structures to excessive groundborne vibration is considered less than significant under both CEQA and NEPA.

Significant Impacts and Mitigation Approaches

No significant adverse impacts with regard to noise or vibration have been identified for the proposed Project.

Action Alternatives

Less than Significant Impacts

Impact NOISE1 – Potential for Noise Levels to Exceed Applicable Noise Standards during Project Construction

City ordinance limits the operation of noisy construction equipment to the hours between 10 AM and 5 PM Monday through Saturday and further stipulates that construction noise may not exceed the level of 75 dB for more than 8 hours during any 24-hour period, measured within the limits of any residential property. As discussed in Chapter 2, both of the action alternatives would incorporate the same environmental commitments as the proposed Project, including the commitment to limit construction activity to weekdays between 10 AM and 5 PM. The timing and duration of noise generation would thus be reduced by City ordinance; construction noise levels are discussed further in the paragraphs below.

Although the location and details of construction would differ under the two action alternatives, and particularly under Alternative 2, the overall construction process would be essentially the same as that for the proposed Project, and noise generation would also be essentially the same. Thus, under both action

alternatives, as under the proposed Project, noise levels in close proximity to the active work site are likely to exceed the City's 75-dBA limit by a substantial margin for portions of the day. However, under either Alternative 1 or Alternative 2, contractors would be explicitly required to limit the use of heavy equipment to the 10 AM – 5 PM weekday window for compliance with the City's construction noise limits.

The action alternatives, like the proposed Project, would adopt City construction noise limits for all portions of the alignment (including those in the unincorporated County) because the City limits are more restrictive; adhering to these limitations will also keep the action alternatives in compliance with County construction noise standards.

Under either action alternative, therefore, there would be no impact under either CEQA or NEPA related to exceedance of an applicable noise standard. No mitigation is required.

Impact NOISE2 – Potential to Create a Substantial Increase in Ambient Sound Levels, Resulting in Disturbance to Noise Sensitive Land Uses during Project Construction

As the previous impact item identifies, although the location and details of construction would differ under the two action alternatives, particularly Alternative 2, the overall construction process would be essentially the same as that for the proposed Project, and noise generation would also be the same. As described for the proposed Project, the loudest pieces of equipment in ongoing use at the work site under either action alternative are expected to be the crane, excavator, and loader, which generate noise on the order of 88 dBA (crane) and 85 dBA (excavator or loader) at the standard reference distance of 50 feet. The wetout and delivery trucks would be slightly louder at about 88 dBA, but would only visit the work site for short periods.

Assuming simultaneous operation of a crane and an excavator or loader, the combined noise level at 50 feet from the work site would be approximately 90 dBA. Simultaneous operation of a crane and a heavy delivery or wetout truck would generate noise on the order of 91 dBA at 50 feet from the work site. However, as summarized in Table 8-7, noise attenuates with distance, and most of the sensitive receptors in the vicinity of the alignment are more than 50 – 100 feet away, with the majority substantially farther away.

As discussed in the impact analysis for the proposed Project, Table 8-7 is conservative in that it assumes continuous full-power operation of the two loudest pieces of equipment expected to be in sustained use and does not account for added attenuation due to topography and vegetation intervening between source and receiver, but there would clearly be potential for noise disturbance at properties within 100 – 200 feet of the active work site, and possibly farther away as well. Potential for disturbance in the neighboring community might be slightly less under Alternative 2, since more of the work would occur along the City's existing OTS easement, farther from most sensitive receptors.

Under both action alternatives, however, construction in any given location would be temporary and short-term, and (as with the proposed Project), some of the portions of the alignment where construction would occur in closest proximity to homes (i.e., spurs accessing the main trunk alignment from the northwest) are locations where less extensive work would be needed; noise exposure in these locations would be reduced by comparison with the worst case. Moreover, as above, both action alternatives would incorporate the same environmental commitments as the proposed Project, requiring the Contractor to implement a number of measures to reduce noise impacts on sensitive land uses. In addition to limiting work hours consistent with City ordinance, these measures will include providing a Construction Hotline mandated to address community concerns as construction proceeds. With these commitments in place, and since construction would be a temporary process, **impacts under either of the action alternatives would be less than significant under both CEQA and NEPA**, for the same reasons discussed for the proposed Project. No mitigation is required.

Impact NOISE3 – Potential for Noise Levels to Exceed Applicable Noise Standards during Project Operation

Like the proposed Project, the action alternatives would install no facilities with the potential to generate noise. Once construction is completed, the only source of ongoing noise generation associated with Alternatives 1 and 2 would be the City’s regular program of inspections, cleaning, and maintenance, with the potential for occasional maintenance of the access route; Alternatives 1 and 2, like the proposed Project, would slightly increase the area affected by operations- and maintenance-related noise. As identified above for the proposed Project, the primary source of operational noise under Alternatives 1 and 2 would be the large Vac-Con required for cleaning, and usage patterns would be very similar under the proposed Project and all 3 action alternatives.

As discussed above, recent measurements by City staff indicate that the Vac-Con generates a peak noise level of 78 dB at the operator’s station and 73 dB at 50 feet when operating at full power; any future replacements are expected to have similar operating characteristics and generate similar levels of noise. As Table 8-8 lays out, noise levels of 73 – 78 dB are in exceedance of the allowable noise limits based on surrounding parcel zoning. However, use of the Vac-Con—and the associated violation of standards—would be periodic and very short-term, lasting only an hour or two approximately twice per year in any given location. Moreover, the exceedance would be associated with cleaning that is essential to maintain proper function of an important trunk sewer, providing for the public health and welfare while also protecting water quality in valuable habitat along Escondido Creek and San Elijo Lagoon. **Consequently, although short-term temporary exceedances are anticipated, they are not considered to represent a significant adverse impact under either CEQA or NEPA.** No mitigation is required.

Impact NOISE4 – Potential to Create a Substantial Increase in Ambient Sound Levels, Resulting in Disturbance to Noise Sensitive Land Uses during Project Operation

Like the proposed Project, the action alternatives would install no facilities with the potential to generate noise. Once construction is completed, the only source of ongoing noise generation associated with Alternatives 1 and 2 would be the City’s regular program of inspections, cleaning, and maintenance, with the potential for occasional maintenance of the access route; Alternatives 1 and 2, like the proposed Project, would slightly increase overall noise generation by enabling full reinstatement of the City’s operational/maintenance activities along the entirety of the OTS below El Camino del Norte.

Noise levels would be the same as those discussed for the proposed Project and summarized in Table 8-9; although noise generated by Vac-Con use would be on the order of 73 dBA at the standard reference distance of 50 feet, and thus potentially disturbing, noise would attenuate with distance. Moreover, cleaning operations would be occasional, temporary, and short-term; **associated noise increases are accordingly considered less than significant under CEQA.** Because the cleaning is essential to maintain a critical sewer facility in full, reliable service, providing essential services while also better protecting sensitive habitat in the Creek and Lagoon, **short-term intermittent noise increases associated with expanded cleaning operations are also considered less than significant under NEPA.**

Impact NOISE5 – Potential for Exposure of Persons or Structures to Excessive Groundborne Vibration during Construction

As discussed in several preceding impact items, although the location and details of construction would differ under the two action alternatives, particularly Alternative 2, the overall construction process would be essentially the same as that for the proposed Project. The potential for construction to generate groundborne vibration would also be the same (see Table 8-10), and for both action alternatives, groundborne vibration levels at locations more than 100 feet from construction activities would be expected to be below the threshold where frequent or ongoing vibration becomes annoying; impacts at this distance

from the alignment would therefore be less than significant under both CEQA and NEPA for both action alternatives.

At properties closer to the alignment (for example, along Lone Jack Road, and where improvements to some of the proposed access spurs would pass adjacent to homes) vibration levels could intermittently rise to a potentially annoying level (see Table 8-10). However, the access segments in closer proximity to residences are mostly access segments needing lower levels of improvement (Levels 0 – 2, along with Level 3 at Triple C Ranch Road). These improvement levels would involve some construction activities generating vibration, but to a lesser extent than associated with higher levels of improvement. Moreover, as described for the proposed Project, at all locations along the alignment vibration-generating activities would be intermittent throughout the work day, and work would take place quickly, generally only lasting for a few days in a given location. Project construction would also be limited to regular daytime hours, and the use of City-designated truck routes that direct construction deliveries away from residential streets would further reduce vibration impacts on residences in closer proximity to the alignment. **Groundborne vibration impacts on properties closer to the alignment are therefore also considered less than significant under both CEQA and NEPA for both action alternatives.**

Impact NOISE6 – Potential for Violation of Vibration Standards or Exposure of Persons or Structures to Excessive Groundborne Vibration during Operations

Like the proposed Project, the action alternatives include no facilities with the potential to generate vibration; once construction is completed, the only potential source of new or increased vibration would be the slight expansion in the City's regular program of sewer line inspections, cleaning, and maintenance, along with occasional maintenance of the access route. As discussed for the proposed Project, the only equipment with the potential to create general groundborne vibration is the Vac-Con.

As discussed for the proposed Project, passage of the Vac-Con would generate vibration similar to a heavy truck, and vibration may also be generated by the engine during cleaning operations. However, travel speeds would be restricted due to the nature of the access, substantially limiting vibration generation during access and egress; moving at the low speeds typical for access to the Creek/Lagoon corridor, the Vac-Con is not anticipated to generate vibration that would cause disturbance. Data on vibration during Vac-Con operations are not available from the manufacturer but the City has never received vibration complaints related to the existing sewer cleaning operations, and City crews who operate the Vac-Con routinely report that operational vibration is not conspicuous. Moreover, cleaning activities would be temporary and very short-term (onsite duration of about 2 hours or less, with the Vac-Con operating during only a portion of this time), and would typically occur only twice per year at each manhole. In view of these factors, **the potential for operational impacts related to violation of City performance standards or exposure of persons or structures to excessive groundborne vibration is considered less than significant under both CEQA and NEPA for both action alternatives.**

Significant Impacts and Mitigation Approaches

No significant adverse impacts with regard to noise or vibration have been identified for either of the Action Alternatives.

No Project/No Action

Under the No Project/No Action Alternative, there would be no access construction, no manhole rehabilitation, and no realignment of the segment of the OTS above El Camino del Norte. There would thus be **no impact under either CEQA or NEPA related to construction noise or vibration.** With no new access route, the City's program of inspections, cleaning, and maintenance along the OTS would continue at the

current level. There would thus be no post-construction/operational impact under either CEQA or NEPA related to increases in operational noise.

Over the longer term, it would eventually become imperative to address the needs of aging OTS infrastructure, and the future project or projects would presumably involve construction activities with the potential to generate both noise and vibration, although the specifics are considered speculative at the present time since the details of these projects cannot be predicted.

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Chapter 9

Air Quality and Greenhouse Gas Emissions

Introduction

Chapter Overview

This chapter contains the following information:

- Overview of chapter preparation, including sources of baseline information and an explanation of the methods used to analyze impacts
- Description of existing air quality conditions in the Project vicinity and San Diego Air Basin as a whole, including the current state of compliance with state and federal air quality standards
- Analysis of potential impacts on air quality as a result of Project construction, as well as the potential air quality impacts of the expanded program of inspection, cleaning, and maintenance that would be enabled by the Project

Analysis in this chapter focuses on Project-specific impacts; the Project's potential to contribute to cumulative regional impacts on air quality is addressed in Chapter 15.

Project construction would involve heavy equipment use, haulage, and ground disturbance and thus would generate pollutants, including dust and exhaust, as well as greenhouse gases. Over the longer term, the Project would slightly expand the scope of City sanitary sewer operations and maintenance by enabling the City to reinstate a full program of inspections, cleaning, and maintenance on the OTS below El Camino del Norte. The Project would thus result in a slight increase in the generation of operational emissions. However, even with very conservative (worst-case) assumptions in place, modeling indicates that construction and operational emissions would be substantially below the applicable thresholds, and all potential impacts related to air quality and greenhouse gas emissions are accordingly evaluated as less than significant under both CEQA and NEPA.

How this Chapter Was Prepared

Assessment of Existing Conditions

Information on existing air quality conditions in the Project area and greater San Diego Air Basin is summarized from the air quality technical report prepared for the Project (ZMassociates 2014) (presented in full in Appendix F). As Appendix F discusses in more detail, local and regional air quality data were obtained from the San Diego County Air Pollution Control District's (APCD's) ambient air quality database, which compiles information on local pollutant levels collected via the APCD's network of air quality monitoring stations.

Impact Analysis Methods

Pollutant and greenhouse gas emissions associated with Project construction were modeled using industry standard software, including CalEEMod, based on the construction assumptions laid out in Chapter 2 and itemized in additional detail in Appendix F. Operational emissions underwent a similar modeling process, focusing on the Project's potential to expand vehicle use by enabling the City to reinstate a full program of inspections, cleaning, and maintenance along the full length of the OTS below El Camino del Norte.

The Project would result in a significant impact under CEQA if it would lead to any of the following.

- Conflict with, or obstruction of, an applicable air quality plan
- Violation of any air quality standard, or a substantial contribution to such a violation, now or in the future
- Cumulatively considerable increase in levels of any criteria pollutant for which the San Diego Air Basin is currently in non-attainment of applicable state or federal standards
- Exposure of sensitive receptors to substantial pollutant concentrations
- Creation of objectionable odors affecting a substantial number of people
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases
- Generation of cumulatively considerable levels of greenhouse gas emissions

Any of these outcomes would also represent an adverse effect under NEPA.

Because the Project would be located in the San Diego Air Basin, and the City of Encinitas has not yet adopted quantitative significance thresholds for criteria pollutant emissions for projects within the City, identification of significant impacts relative to air pollution was guided by thresholds of the San Diego County Air Pollution Control District (APCD). For the pollutants regulated under state and federal law, the APCD does not explicitly provide numerical thresholds for construction emissions, nor for ongoing (operational) emissions generated by mobile sources such as vehicles and heavy equipment. However, it does allow the use of the adopted APCD significance thresholds for operational missions from stationary sources such as power generation and factory facilities as a screening tool to identify whether construction and mobile-source emissions *may* be significant, and detailed analysis is therefore warranted. For this project, the APCD’s *screening thresholds* were conservatively adopted as *thresholds of significance*: that is, emissions above these levels were automatically considered significant, without further analysis. The thresholds are presented in Table 9-1.

Table 9-1: Adopted Thresholds for Significance for Regulated (Criteria) Pollutant Emissions

Pollutant	Emissions Threshold		
	Pounds/Hour	Pounds/Day	Tons/Year
<u>Construction</u>			
Carbon Monoxide (CO)	—	550	—
Oxides of Nitrogen (NO _x)	—	250	—
Oxides of Sulfur (SO _x)	—	250	—
Particulate Matter, Fine (PM2.5)	—	55	—
Particulate Matter, Respirable (PM10)	—	100	—
Volatile Organic Compounds (VOC)	—	75	—
<u>Operation</u>			
Respirable Particulate Matter (PM10)	—	100	15
Fine Particulate Matter (PM2.5)	—	55	10
Oxides of Nitrogen (NO _x)	25	250	40
Sulfur Oxides (SO _x)	25	250	40

Pollutant	Emissions Threshold		
	Pounds/Hour	Pounds/Day	Tons/Year
Carbon Monoxide (CO)	100	550	100
Lead and Lead Compounds	—	3.2	0.6
Volatile Organic Compounds (VOC)	—	75*	13.7

Source: ZMassociates 2014 (Appendix F of this Draft EIR/EA)

With respect to greenhouse gases, the City has adopted the **900 metric tons/year of greenhouse gas and precursor emissions** threshold recommended by the California Air Pollution Control Officers Association (CAPCOA) as the level at which operational impacts are potentially significant and warrant quantitative analysis. This threshold is identified in CAPCOA’s 2008 white paper *CEQA & Climate Change – Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act* (CAPCOA 2008) as one of several possible tools for interim screening of operational GHG emissions. It is roughly equivalent to the emissions associated with occupancy/operation of 50 single family residential units or 30,000 square feet of office uses, and was developed with the aim “capturing” and mitigating emissions from the majority of future development, while emphasizing the role and responsibility of larger developments, and preventing an undue mitigation burden from falling on small projects that generate a comparatively restricted percentage of cumulative statewide greenhouse gas emissions (CAPCOA 2008).

Additional guidance is provided by the APCD’s “Bright Line Threshold” of **2,500 metric/tons year**, which represents the level at which the APCD considers a project’s greenhouse gas emissions significant.

Background

Air Pollution and Criteria Pollutants

Air pollution is the occurrence of harmful or undesirable gaseous substances and/or particulate matter in the atmosphere. The federal and state governments have identified pollutants that are of particular concern because of their potential to result in adverse impacts on human health and/or the environment, and have established air quality standards reflecting acceptable concentrations for each of these substances, which are accordingly referred to as the *criteria pollutants*.

The criteria pollutants are carbon monoxide, lead, nitrogen dioxide, ozone/ozone precursors, particulate matter, and sulfur dioxide. Each pollutant is described briefly below, and federal, California and federal ambient air quality standards are discussed in more detail in the section titled *Regulatory Context* below.

- **Carbon monoxide (CO)** is a colorless and odorless gas that forms as a byproduct of combustion. Common sources of CO include gasoline and diesel internal combustion engines in vehicles, construction equipment, aircraft, ships, and trains, as well as refineries, power plants, and industrial processing plants. In suburban/urban areas such as the City, most CO is generated via automobile tailpipe emissions, and ambient CO concentrations typically relate to traffic patterns on area roadways. CO represents a health concern because of its potential to impede oxygenation in the blood, reducing oxygen transport to vital organs.
- In past decades, combustion of leaded gasoline was a primary source of **airborne lead (Pb)**; levels of lead in the air have decreased substantially since the phase-out of leaded fuels in the late 1970s. Currently, the lead sources of greatest concern include manufacturing operations, battery recycling, and lead ore smelting. Health effects associated with prolonged lead exposure can include gastrointestinal disturbances, anemia, kidney disease, and in severe cases, neuromuscular and neurological dysfunction. Lead exposure during infancy and childhood is of particular concern.

- **Nitrogen dioxide (NO₂)** is formed by a chemical reaction between nitric oxide (NO) and atmospheric oxygen. The principal sources of NO emissions are vehicular tailpipe emissions and power plants. In addition to contributing to ozone, NO₂ is of concern as an *ozone precursor* (a reactive gas that contributes to ozone formation) and also because of its potential for adverse effects on the human respiratory system.
- Like NO₂, **ozone (O₃)** is a secondary pollutant formed through chemical reactions in the atmosphere. The *ozone precursors* that contribute to ozone formation include reactive organic gases (ROG) and oxides of nitrogen (NO_x) (including NO_x, discussed above), whose main sources tailpipe emissions, evaporation of petroleum products, and combustion at industrial facilities. Ozone can be harmful to public health, particularly at elevated concentrations; results of short-term exposure can include changes in breathing patterns, reduction of breathing capacity, increased susceptibility to infections, and inflammation of the lung tissue.
- As the name suggests, **particulate matter** consists of very fine particles of a variety of substances, including carbon, soil, metals, organic matter, nitrates, and other substances. Particulate matter becomes a health concern, and is thus regulated at the federal and state levels, when it is small enough to be inhaled, corresponding to a diameter of 10 microns or less. Primary sources of **respirable particulate matter (PM10)** include dust stirred up by roadway traffic; dust from construction, landfills, and agricultural operations; wood-burning stoves and fireplaces; industry; and wildfires and brush/waste burning. Particles with a diameter less than **2.5 microns (fine particulate matter, or PM2.5)** are small enough to be drawn deep into the lungs when inhaled, and represent an added health concern. The primary sources of PM2.5 are associated with combustion, including motor vehicle tailpipe emissions, industry, power generation and residential fireplaces and wood stoves.
- **Sulfur dioxide (SO₂)** is usually produced by the combustion of fuels containing sulfur; the largest source of SO₂ emissions is fossil fuel combustion at power plants and industrial facilities. Health effects of SO₂ exposure can include breathing problems associated with constriction of the airways. SO₂ can also yellow plant leaves and damage materials such as concrete and metals.

Table 9-2 presents current federal and California ambient air quality standards for the 6 criteria pollutants. Standards reflect total exposure averaged over a set measurement period; because health effects vary depending on length of exposure, different standards apply for different periods (averaging times). More information on state and federal regulations protecting air quality is provided in *Regulatory Context* below.

Table 9-2: State and Federal Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	Federal Standards	California Standards
Carbon monoxide (CO)	1 hour	35 ppm	20 ppm
	8 hours (except Lake Tahoe)	9 ppm	9.0 ppm
Lead (Pb)	30 days	NA	1.5 µg/m ³
	Rolling 3-month average	0.15 µg/m ³	NA
Nitrogen dioxide (NO ₂)	1 hour	100 ppb	0.18 ppm
	Annual arithmetic mean	0.053 ppm	0.030 ppm

Pollutant	Averaging Time	Federal Standards	California Standards
Respirable particulate matter (PM10)	24 hours	150 µg/m ³	50 µg/m ³
	Annual arithmetic mean	NA	20 µg/m ³
Fine particulate matter (PM2.5)	24 hours	35 µg/m ³	NA
	Annual arithmetic mean	12 µg/m ³	12 µg/m ³
Sulfur dioxide (SO ₂)	1 hour	75 ppb	0.25 ppm
	3 hours	NA	NA
	24 hours	0.14 ppm (for certain areas)	0.04 ppm
	Annual arithmetic mean	0.030 ppm (for certain areas)	NA

Source: California Air Resources Board 2013; see additional discussion in Appendix F of this Draft EIR/EA

Notes:

- ppm = parts per million
- µg/m³ = micrograms per cubic meter
- California standards for ozone, carbon monoxide, sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM10, PM2.5) are not to be exceeded. All other state standards are not to be equaled or exceeded.
- National standards other than ozone, particulate matter, and those based on annual arithmetic mean are not to be exceeded more than once per year. The ozone standard is considered to be attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is less than or equal to the standard. The 24-hour PM₁₀ standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. The 24-hour PM2.5 standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

Greenhouse Gases

Temperatures on the Earth’s surface are regulated naturally by the “greenhouse effect” in which water vapor and other naturally occurring gases trap solar heat and maintain temperatures warm enough to support life. Over about the past 250 years, a growing body of evidence suggests that human activity has substantially increased concentrations of the so-called greenhouse gases (GHGs)—carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O)—and added new ones to the mix, including hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). The scientific community is now largely in agreement that anthropogenic increases in atmospheric GHG levels are an important contributor to changes in global climate documented over the past century, and particularly over the past 30 – 50 years. If GHG emissions continue at the current rate, global temperatures are now projected to rise by an average of 3 – 7° F by the year 2100 with additional increases in subsequent decades (Environmental Protection Agency 2009).

Regulations and standards aimed at reducing GHG emissions are discussed in *Regulatory Context* below.

Existing Conditions

Climate and Meteorology

Coastal northwestern San Diego County enjoys a mild, Mediterranean-type climate; summer highs in the City are typically in the 70s – 80s F, with winter highs in the 50s. Average annual precipitation is just over 10 inches; January is usually the wettest month, while the summer months produce hardly any rain.

Additionally, like many coastal communities in southern California, the City experiences thick morning fog, particularly in the months of May and June. This usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds.

Air Quality

The City is located in the San Diego Air Basin (SDAB), which comprises the entire San Diego County region, covering an area of more than 4,200 square miles from the coastline to the mountain ranges that bound the County to the east. The SDAB experiences frequent temperature inversions that trap pollutants near the ground. Daytime winds, predominately from the west, aggravate the condition by driving air pollutants inland, toward the mountains, which prohibit further dispersal. As pollutants become more concentrated in the atmosphere, photochemical reactions occur that produce O₃, contributing to the formation of smog. During the fall and winter, air quality problems are created due to CO and oxides of nitrogen (NO_x) emissions. CO concentrations are generally higher in the morning and late evening. In the morning, CO levels are elevated due to cold temperatures and the large number of motor vehicles traveling. Higher CO levels during the late evenings are a result of stagnant atmospheric conditions trapping CO in the area. Since CO is produced almost entirely from automobiles, the highest CO concentrations in the basin are associated with heavy traffic. NO₂ levels are also generally higher during fall and winter days. Under certain conditions, atmospheric oscillation results in the offshore transport of air from the Los Angeles region to San Diego County. This often produces high O₃ concentrations, as measured at air pollutant monitoring stations within the Northern San Diego County. The transport of air pollutants from Los Angeles to San Diego has also occurred within the stable layer of the elevated subsidence inversion, where high levels of O₃ are transported (ZMassociates 2014).

Nonetheless, air quality in the SDAB, and particularly in the coastal portions of the basin, is generally good, as summarized in Table 9-3, which presents recent air quality measurements at the 3 air quality monitoring stations closest to the Project area. Note that all parameters are not monitored at all stations, so some values are indicated as NA (Not Available).

Table 9-3: 2013 Air Quality Measurements at Regional Monitoring Stations

Pollutant	Measurement	Monitoring Station		
		Del Mar	Kearny Villa Road	San Diego Beardsley
Carbon monoxide (CO)	8-hour maximum	NA	NA	2.1
	1-hour maximum	NA	NA	3.0
	Annual average	NA	NA	0.5
	Days above standard	NA	NA	0
Nitrogen dioxide (NO ₂)	1-hour maximum	NA	0.067	0.006
	Annual average	NA	0.011	0.040
	Days above standard	NA	0	NA
Ozone (O ₃)	8-hour maximum	0.069	0.070	0.093
	Annual average	0.035	0.032	0.114
	Days above standard	0	0	NA

Pollutant	Measurement	Monitoring Station		
		Del Mar	Kearny Villa Road	San Diego Beardsley
Respirable particulate matter (PM10)	24-hour maximum	NA	65.0 µg/m ³	90.0 µg/m ³
	Annual average	NA	24.9 µg/m ³	24.9 µg/m ³
	Days above standard	NA	0	0
Fine particulate matter (PM2.5)	24-hour maximum	NA	22.0 µg/m ³	39.3 µg/m ³
	Annual average	NA	8.3 µg/m ³	12.2 µg/m ³
	Days above standard	NA	0	1

Source: ZMassociates 2014 (Appendix F of this Draft EIR/EA)

Table 9-4 summarizes the SDAB’s current status with regard to federal and state air quality ambient air quality standards. Although there has been steady progress in reducing San Diego County O₃ levels in recent years, the SDAB remains in non-attainment of state and federal standards for this pollutant, and is also in nonattainment for state particulate matter standards (SDAPCD 2010, ZMassociates 2014). In addition, a portion of the western SDAB is a CO maintenance area, although the immediate Project area is in attainment for both federal and state CO standards (ZMassociates 2014).

Table 9-4: 2013 San Diego Air Basin Attainment Status for Criteria Pollutants

Pollutant	Compliance Status	
	National Ambient Air Quality Standard	California Ambient Air Quality Standards
Carbon monoxide (CO)	Attainment	Attainment
Nitrogen dioxide (NO ₂)	Attainment	Attainment
Ozone (O ₃)	1-hour: Attainment	Nonattainment
	8-hour: Nonattainment	
Respirable particulate matter (PM10)	Unclassified	Nonattainment
Fine particulate matter (PM2.5)	Attainment	Nonattainment
Sulfur dioxide (SO ₂)	Attainment	

Source: ZMassociates 2014 (Appendix F of this Draft EIR/EA)

Sensitive Receptors in Project Vicinity

Sensitive receptors refers to members of a community who may be more susceptible than the population at large to adverse health effects of air contaminant exposure, or to land uses or facilities where populations sensitive to air quality are expected to be present, particularly in groups. The APCD generally considers sensitive receptors to include day care centers, schools serving grades kindergarten through 12, nursing homes, retirement homes, health clinics, and hospitals (San Diego County Air Pollution Control District 2006). Since parks and recreational facilities often support people exercising, who are expected to have elevated respiration rates, these uses are also considered sensitive for air quality, as are residential areas where people are expected to spend protracted periods with the potential for sustained exposure to ambient pollutants.

Sensitive receptor facilities within 1.25 miles of the Project are listed in Table 9-5. The 1.25-mile radius reflects the distance used by the APCD in assessing impacts on sensitive receptors (San Diego County Air

Pollution Control District 2006). Since pollutants disperse with distance from the source, impacts on sensitive receptors are not considered to represent a disproportionate concern beyond that radius.

Table 9-5: Sensitive Air Quality Receptors in Project Vicinity

Facility	Type	Address
A Children’s Garden	Preschool	2241 Whisper Wind Drive, Encinitas
Belmont Village Senior Living	Senior housing	3535 Manchester Avenue, Encinitas
Creative Expressions	Preschool	734 Edelweiss Lane, Encinitas
Encinitas Country Day School	Preschool through high school	3616 Manchester Avenue and 2155 Encinitas Boulevard, Encinitas
Little Oaks Equestrian Park	Community park	2879 Lone Jack Road, Encinitas
Natural Trails Park	Trails park	Manchester Avenue and Trabert Ranch Road, Encinitas
Olivenhain Country Preschool	Preschool	448 Rancho Santa Fe Road, Encinitas
Rhoades School	Kindergarten through 8 th grade	141 South Rancho Santa Fe Road, Encinitas

Regulatory Setting

Air quality is regulated at the federal, state, and regional levels. The federal EPA has oversight authority and is responsible for setting nationwide air quality standards, while the front-line responsibility for maintaining air quality (i.e., meeting applicable air quality standards) is delegated to the states. The state agency responsible for air quality in California is the California Air Resources Board (CARB), an arm of the California Environmental Protection Agency (Cal-EPA). CARB retains primary responsibility for the regulation of mobile emission sources within the state but has elected to delegate substantial implementation authority to 35 regional air districts, including the San Diego County APCD, to enforce standards and regulate stationary (non-vehicular) sources at the regional and local level.

Recent years have seen increasing concern about GHGs, and this awareness is beginning to be reflected in policies at both the federal and state levels. The federal government, through the EPA, sets GHG emission standards for motor vehicles and large stationary source emitters such as power plants and industrial facilities. The State, through Assembly Bill 32 and CARB, created regulations affecting GHG emissions in numerous industries from landfills to motor vehicles to port operations and established a cap-and-trade program for major sources of GHG emissions.

Federal Regulations

Clean Air Act

The federal Clean Air Act (CAA) was originally passed in 1970 and has been amended twice in subsequent years, most recently and most importantly in 1990. It establishes the framework for modern air quality protection; under the CAA, the federal EPA has oversight authority and is responsible for setting nationwide air quality standards.

Pursuant to the CAA, federal air quality standards (National Ambient Air Quality Standards or NAAQS) are now in place for 6 “criteria pollutants” representing substances that are emitted from numerous or diverse sources and have the potential to endanger the public health or welfare: ozone, carbon monoxide, lead,

nitrogen dioxide, particulate matter, and sulfur dioxide.¹ For each pollutant, the federal primary standards reflect the thresholds required to protect human health; additional secondary standards provide further protection for the public welfare. In effect, the national standards operate as a basic, minimum level of protection afforded on a nationwide basis. Each state retains the option to establish its own standards, and state standards may be more stringent than the federal standards (as California's are) but the federal standards must be met.

NAAQS for the 6 criteria pollutants are based on statistical calculations over 1- to 3-year periods, depending on the pollutant. The CAA requires EPA to reassess NAAQS at least every 5 years to determine whether adopted standards are adequate to protect public health based on current scientific evidence. For areas that fail to meet one or more of the NAAQS ("nonattainment areas") and areas that are in danger of nonattainment ("maintenance areas"), the states are required to develop a State Implementation Plan (SIP) identifying the approach to control emissions of the pollutants for which regulatory standards. The SIP is subject to review and approval by EPA, and if it fails to demonstrate how NAAQS will be met, EPA has the authority to prepare a federal implementation plan.

Among the CAA's other key provisions are the conformity rules, intended to ensure that federal projects (including not just those implemented by federal agencies but also those that receive federal funding or permits) do not interfere with pollution control strategies in place at the state level to meet NAAQS. The Transportation Conformity Rule (40 CFR 51[T]) applies to federal highway and transit projects; all other federal projects are subject to the General Conformity Rule (40 CFR 51[W]).

For all federal projects proposed in nonattainment areas, and some in maintenance areas, the General Conformity Rule requires a screening assessment to identify whether a proposed project would result in emissions over a specified threshold. For projects whose emissions would be below the level identified as *de minimis*, no further action is required. For projects with emissions above the *de minimis* threshold, the project must demonstrate how it would conform to the applicable SIP.

Regulation of Greenhouse Gases

The federal EPA has long been reluctant to regulate GHG emissions, under the premise that GHGs do not qualify as pollutants per se and thus do not fall under the authority of the CAA. In 2007, however, the United States Supreme Court found in a landmark ruling (*Massachusetts v. Environmental Protection Agency*, 549 US 497) that GHGs do meet the CAA's broad definition of *pollutant* and that the EPA therefore has the authority to regulate vehicle tailpipe emissions of GHGs if they "cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare" (Environmental Protection Agency 2011).

One of EPA's first actions in response to the ruling was to issue an Advance Notice of Proposed Rulemaking (ANPR) that addressed the critical issue of "whether and how greenhouse gases could be effectively controlled under the Clean Air Act" (Environmental Protection Agency 2011). Released for public review and comment in mid-2008, the ANPR included information and discussion on the following topics.

- Scientific data that supports the endangerment analysis (and thus is relevant to EPA's ultimate jurisdiction over GHGs)
- Various key provisions and programs established by the CAA, and the pros and cons of regulating GHGs under those provisions

¹ For more information on each of the criteria pollutants, see *Background* section above.

- How a decision to regulate GHG emissions under one section of the CAA might lead to regulation under other sections; a principal question in this arena related to the potential need to regulate GHGs under the sections of the CAA that establish permit programs for stationary (non-vehicular) pollutant sources
- Issues that should be considered if Congress develops climate change legislation at some point in the future, along with the potential for overlap between any future climate legislation and the existing provisions of the CAA

In late 2009, EPA ratified two key findings that established its authority and responsibility to regulate GHGs under the CAA:

- (1) Current and projected atmospheric concentrations of 6 key GHGs (CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆) threaten the public health and welfare (the Endangerment Finding); and
- (2) Combined emissions of these 6 GHGs from new motor vehicles and new motor vehicle engines contribute to pollution that threatens public health and welfare (the Cause or Contribute Finding)

EPA then collaborated with the National Highway Traffic Safety Administration to finalize national emission standards for light-duty motor vehicles (issued in May 2010), followed by standards for heavy-duty vehicles (in August 2011). In addition, in May 2010, EPA issued a rule establishing GHG emission thresholds that define when permits under the CAA's *New Source Review Prevention of Significant Deterioration (PSD)* and *Title V Operating Permit* programs are required for large stationary source GHG emitters such as power plants, refineries, industrial facilities, and some large commercial facilities.

State Regulations

California Clean Air Act

The California Clean Air Act of 1998 establishes specific agency responsibilities to foster attainment of the California Ambient Air Quality Standards (CAAQS). It identifies the 35 local air districts as the state's lead air quality planning agencies and assigns them the authority to regulate indirect and area-wide sources of air pollution (broadly defined in Section 110 of the federal CAA as facility[ies], building[s], structure[s], installation[s], real propert[ies], road[s], or highways" that attract mobile pollution sources (i.e., vehicles and equipment of various types) and to implement transportation control measures (TCMs) addressing mobile-source pollutant emissions.

CAAQS are generally more restrictive than NAAQS, and describe adverse conditions; that is, pollution levels must be below these standards before a basin can attain the standard. CAAQS for O₃, CO, SO₂ (1-hour and 24-hour), NO₂, PM₁₀, and PM_{2.5} and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded.

Under the California CAA, air pollution control districts in areas that are in nonattainment of CAAQS for O₃, CO, SO₂, or NO₂ are required to prepare a Regional Air Quality Strategy (RAQS), an air quality attainment plan that defines an approach to achieve a 5% annual reduction in district-wide emissions of the nonattainment pollutant[s] and any precursors. Locally prepared attainment plans are not required for areas that fail to meet CAAQS for inhalable particulate matter (PM₁₀ and PM_{2.5}).

California Climate Change Regulations

Governor's Executive Order (EO) S-3-05, issued on June 1, 2005, recognized California's particular vulnerability to the effects of climate change and established a timeline and quantitative targets for the reduction of GHG emissions:

- reduction to 2000 levels by 2010
- reduction to 1990 levels by 2020
- reduction to 80% below 1990 levels by 2050

EO S-3-05 also laid the groundwork for a coordinated statewide effort toward GHG emissions reduction, by charging CalEPA with oversight of efforts made under the authority of several other state departments, including the Business, Transportation and Housing Agency; Department of Food and Agriculture; Resources Agency; Air Resources Board; Energy Commission; and Public Utilities Commission. Beginning in 2006, CalEPA is also required to report to the Governor and State Legislature on a biannual basis regarding the progress made toward meeting the GHG emission targets established by EO S-3-05, and the impacts of global warming on California's water supply, public health, agriculture, and coastal and forestry resources, along with plans to mitigate, adapt to, and combat these impacts.

Assembly Bill (AB) 32, signed into law in 2006, formalized the 2020 emissions reduction goal mandated by Executive Order S-3-05 and established a process framework toward achievement of that goal. As critical early steps in the process, CARB was required to quantify the actual 2020 emissions target by identifying the 1990 statewide GHG emissions level; and adopt a regulation requiring mandatory reporting by the state's largest industrial GHG emitters, providing a basis to determine and monitor emissions levels. Both of these requirements were met in late 2007, with the adopted 2020 emissions level set at 427 million metric tons of CO₂ equivalent GHG. CARB was also directed to identify and adopt regulations establishing discrete early actions that could feasibly be enforced on or before January 1, 2010. Among other provisions, this resulted in new regulations governing landfill operations; motor vehicle fuels, refrigerants, and tire pressures; and port operations; and requiring the reduction of high-global warming potential (high-GWP) gases in certain consumer products. Looking toward the longer-term future, AB 32 simultaneously directed CARB to develop a scoping plan to achieve the maximum technologically feasible and cost-effective level of GHG emissions reductions from various types of sources by 2020. The scoping plan was approved in December 2008, and identifies several categories of actions including regulation and market mechanisms:

- **Adopt a regulation requiring the mandatory reporting of greenhouse gas emissions.** In December 2007, the Board adopted a regulation requiring the largest industrial sources to report and verify their greenhouse gas emissions. The reporting regulation serves as a solid foundation to determine greenhouse gas emissions and track future changes in emission levels.
- **Identify and adopt regulations for discrete early actions that could be enforceable on or before January 1, 2010.** The Board identified nine discrete early action measures including regulations affecting landfills, motor vehicle fuels, refrigerants in cars, tire pressure, port operations, and other sources in 2007 that included ship electrification at ports and reduction of high GWP gases in consumer products. (Note: Additional regulatory implementation for the remaining measures is ongoing.)
- **Adopt a regulation that establishes a system of market-based declining annual aggregate emission limits for sources or categories of sources that emit greenhouse gas emissions, applicable from January 1, 2012, to December 31, 2020.** In 2011, the Board adopted the cap-and-trade regulation. The cap-and-trade program covers major sources of GHG emissions in the State such as refineries,

power plants, industrial facilities, and transportation fuels. The cap-and-trade program includes an enforceable emissions cap that will decline over time. The State will distribute allowances, which are tradable permits, equal to the emissions allowed under the cap. Sources under the cap will need to surrender allowances and offsets equal to their emissions at the end of each compliance period.

Regional and Local Oversight

San Diego County Air Pollution Control District

In San Diego County, the APCD is the agency responsible for enforcing federal and state air quality laws. It prepares the San Diego County portion of the SIP and the San Diego RAQS, and issues implementing rules and regulations. The RAQS relies on information from CARB and SANDAG, including information regarding projected growth in San Diego County and within individual cities, to project future emissions, and then to determine the strategies necessary for the reduction of emissions through regulatory controls. Since the San Diego Air Basin is in nonattainment for ozone, APCD continues to prepare RAQS for ozone, which was last updated and adopted in 2009.

APCD also reviews and issues permits for a wide variety of stationary sources that emit pollutants, ranging from backup generators to major industrial and power generating facilities. As part of its permitting process for stationary sources, APCD has established thresholds to identify the level at which criteria pollutant emissions are considered to have a significant impact on air quality. These thresholds also provide a useful tool for screening emissions from mobile sources, including construction equipment. Project-specific thresholds are presented in Table 9-1 above; cumulative thresholds are discussed further in Chapter 15 (*Cumulative Impacts*).

The following APCD rules and regulations are also applicable to the type of construction involved in the Proposed Project (ZMassociates 2014):

- **Rule 51 (Nuisance)** prohibits the discharge by any source of air contaminants or other materials in a quantity that would cause injury, detriment, nuisance, or annoyance to people and/or the public, or would result in damage to any business or property
- **Rule 55 (Fugitive Dust)** regulates fugitive dust emissions from commercial construction or demolition activities, open storage piles, and inactive disturbed areas, as well as track-out and carry-out onto paved roads beyond a project site
- **Rule 67.0 (Architectural Coatings)** requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories

Climate Action Plans

Local jurisdictions throughout California (including the City) prepared climate action plans that outline GHG reduction goals and provide approaches for consistency with AB 32 and EO S-3-05. Because technologies and regulations are evolving rapidly, climate action plans are typically envisioned as living documents that will be adapted and updated as implementation progresses.

The City's Climate Action Plan (CAP) (City of Encinitas 2011) is intended to address statewide mandates while meeting the City's specific needs and connecting with the City's long-range plans. As such, it emphasizes improving transportation modes and systems, incorporating energy efficiency standards, increasing the City's renewable energy supply, and devising adaptation measures to meet the challenges posed by changing global climate. The Plan also emphasizes straightforward, enforceable solutions that are genuinely sustainable in

that they support overall economic vitality, equal opportunity, and environmental quality, while meeting the following additional goals identified by plan stakeholders.

- focus on Encinitas while maintaining regional considerations and alliances
- conserve water, reduce waste, and improve recycling
- promote education and awareness
- promote green business and local products
- plan for adaptation
- provide a transportation balance
- implement (bio)carbon capture
- create a well-balanced program that can exceed anticipated reductions
- uphold the “5 C’s”; capture, conserve, create, change, and cost efficiency
- provide scientifically grounded solutions that are realistic and high quality and will produce actual results
- offer funding and financial incentives
- create solutions that are balanced and fair, are embraced by the community, and are backed by political will

Impacts and Mitigation Measures

Impact	Significance	Mitigation	Significance with Mitigation
<i>Proposed Project</i>			
AIR1 – Potential to Conflict with or Obstruct an Applicable Air Quality Plan	No impact	<i>None required</i>	No impact
AIR2 – Potential to Violate an Air Quality Standard, or Substantially Contribute to Such a Violation, Now or in the Future	Construction period: No impact Long-term: Less than significant	<i>None required</i> <i>None required</i>	Construction period: No impact Long-term: Less than significant
AIR3 – Potential to Result in a Cumulatively Considerable Increase in Levels of any Criteria Pollutant for which the San Diego Air Basin is Currently in Non-Attainment	Less than cumulatively considerable; see Chapter 15, <i>Cumulative Impacts</i>	<i>None required</i> ; see Chapter 15, <i>Cumulative Impacts</i>	Less than cumulatively considerable; see Chapter 15, <i>Cumulative Impacts</i>
AIR4 – Potential to Expose Sensitive Receptors to Substantial Pollutant Concentrations	Less than significant	<i>None required</i>	Less than significant
AIR5 – Potential to Create Objectionable Odors Affecting a Substantial Number of People	Construction period: Less than significant Long-term: Benefit	<i>None required</i>	Construction period: Less than significant Long-term: Benefit

Impact	Significance	Mitigation	Significance with Mitigation
AIR6 – Potential to Conflict with an Applicable Plan, Policy, or Regulation Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases	No impact	<i>None required</i>	No impact
AIR7 – Potential to Generate Cumulatively Considerable Levels of Greenhouse Gas Emissions	Less than cumulatively considerable	<i>None required</i>	Less than cumulatively considerable
<u>Alternative 1 – Combination Access, Alternate Configuration</u>			
AIR 1 – Potential to Conflict with, or Obstruct, an Applicable Air Quality Plan	No impact	<i>None required</i>	No impact
AIR2 – Potential to Violate an Air Quality Standard, or Substantially Contribute to such a Violation, Now or in the Future	Construction period: No impact Long-term: Less than significant	<i>None required</i> <i>None required</i>	Construction period: No impact Long-term: Less than significant
AIR3 – Potential to Result in a Cumulatively Considerable Increase in Levels of any Criteria Pollutant for which the San Diego Air Basin is Currently in Non-Attainment	Less than cumulatively considerable	<i>None required</i>	Less than cumulatively considerable
AIR4 – Potential to Expose Sensitive Receptors to Substantial Pollutant Concentrations	Less than significant	<i>None required</i>	Less than significant
AIR5 – Potential to Create Objectionable Odors Affecting a Substantial Number of People	Construction period: Less than significant Long-term: Benefit	<i>None required</i>	Construction period: Less than significant Long-term: Benefit
AIR6 – Potential to Conflict with an Applicable Plan, Policy, or Regulation Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases	No impact	<i>None required</i>	No impact
AIR7 – Potential to Generate Cumulatively Considerable Levels of Greenhouse Gas Emissions	Less than cumulatively considerable	<i>None required</i>	Less than cumulatively considerable

Alternative 2 – Conventional Continuous Access, Plantable/Pervious Surface Treatments

AIR 1 – Potential to Conflict with, or Obstruct, an Applicable Air Quality Plan	No impact	<i>None required</i>	No impact
AIR2 – Potential to Violate an Air Quality Standard, or Substantially Contribute to such a Violation, Now or in the Future	Construction period: No impact Long-term: Less than significant	<i>None required</i> <i>None required</i>	Construction period: No impact Long-term: Less than significant
AIR3 – Potential to Result in a Cumulatively Considerable Increase in Levels of any Criteria Pollutant for which the San Diego Air Basin is Currently in Non-Attainment	Less than cumulatively considerable	<i>None required</i>	Less than cumulatively considerable

Impact	Significance	Mitigation	Significance with Mitigation
AIR4 – Potential to Expose Sensitive Receptors to Substantial Pollutant Concentrations	Less than significant	<i>None required</i>	Less than significant
AIR5 – Potential to Create Objectionable Odors Affecting a Substantial Number of People	Construction period: Less than significant Long-term: Benefit	<i>None required</i>	Construction period: Less than significant Long-term: Benefit
AIR6 – Potential to Conflict with an Applicable Plan, Policy, or Regulation Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases	No impact	<i>None required</i>	No impact
AIR7 – Potential to Generate Cumulatively Considerable Levels of Greenhouse Gas Emissions	Less than cumulatively considerable	<i>None required</i>	Less than cumulatively considerable
<i>No Project/No Action Alternative</i>			
AIR 1 – Potential to Conflict with, or Obstruct, an Applicable Air Quality Plan	No impact	<i>None required</i>	No impact
AIR2 – Potential to Violate an Air Quality Standard, or Substantially Contribute to such a Violation, Now or in the Future	No impact	<i>None required</i>	No impact
AIR3 – Potential to Result in a Cumulatively Considerable Increase in Levels of any Criteria Pollutant for which the San Diego Air Basin is Currently in Non-Attainment	No impact	<i>None required</i>	No impact
AIR4 – Potential to Expose Sensitive Receptors to Substantial Pollutant Concentrations	No impact	<i>None required</i>	No impact
AIR5 – Potential to Create Objectionable Odors Affecting a Substantial Number of People	No impact	<i>None required</i>	No impact
AIR6 – Potential to Conflict with an Applicable Plan, Policy, or Regulation Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases	No impact	<i>None required</i>	No impact
AIR7 – Potential to Generate Cumulatively Considerable Levels of Greenhouse Gas Emissions	No impact	<i>None required</i>	No impact

Proposed Project

Less than Significant Impacts

Impact AIR1 – Potential to Conflict with or Obstruct an Applicable Air Quality Plan

Several air quality plans are in force in the Project area, including the most recent revision of the San Diego RAQS (San Diego County Air Pollution Control District 2009), which addresses attainment of state air quality standards; as well as the plans that comprise the San Diego County/SDAB portion of the SIP, which together address attainment of federal standards.

Both RAQS and County-level SIP plans were drafted in consideration of local jurisdiction land use planning and SANDAG growth projections, including projections for motor vehicle use, industrial growth, and other factors contributing to criteria pollutant and GHG emissions. As a result, projects consistent with the growth anticipated by current adopted City and County land use plans are inherently consistent with the RAQS and the SIP, as regards both new and infill development and projects to provide utilities and other services supporting such development. Since the Project is proposed to support existing land use planning, and would not induce or foster growth beyond the extent delineated in existing land use plans (see Table 1-4), it is also within the emissions “envelope” accounted for in the RAQS and the SIP plans, and is therefore considered consistent with them. There would be **no impact under either CEQA or NEPA related to a conflict with the RAQS or the plans that comprise the San Diego County/SDAB portion of the SIP.** No mitigation is required.

Impact AIR2 – Potential to Violate an Air Quality Standard, or Substantially Contribute to such a Violation, Now or in the Future

Federal and state air quality standards for the 6 criteria pollutants are discussed above in *Background – Air Pollution*. Although ozone levels, as well as emissions of ozone precursors such as NO₂, have declined dramatically in response to proactive air quality management since about 1990, the SDAB remains in non-attainment of state and federal standards for ozone/ozone precursors. The SDAB is also in non-attainment of the state standards for particulate matter (PM_{2.5} and PM₁₀).

The following sections discuss the potential for Project construction and operation, respectively, to lead to violation or nonattainment of applicable standards or to contribute to existing nonattainment conditions.

Construction

Project construction would generate criteria pollutants as tailpipe emissions from diesel and gasoline internal combustion-powered vehicles and equipment, and in the form of fugitive dust from the active construction site and the small number of vehicle trips that would be added to area roadways by worker commute trips and haulage.

Construction-related criteria pollutant emissions were estimated using the industry-standard modeling tools, as discussed in Appendix F. Modeling considered the following principal emissions sources.

- On-road mobile source (tailpipe) emissions from employee commutes and construction haul traffic
- Off-road mobile source (tailpipe) emissions from construction equipment
- Fugitive dust emissions based on type (weight) of vehicle and mileage for on-road travel
- Fugitive dust emissions based on acres per day disturbed during each phase, accounting for grading and excavation for access routes, Lone Jack realignment, and manhole removal/rehabilitation (ZMassociates 2014)

Modeling was based on conservative (high-end) estimates for mileage and equipment use but assumed compliance with APCD Rule 55 (Dust Control) via the *Measures for Air Quality Protection* discussed under *Environmental Commitments* in Chapter 2. These include provisions to reduce dust from active construction, unpaved areas, and stockpiles; control track-out at public street access points; and reduce fugitive dust from haulage of soil and fill material and disturbed areas. They also provide the use of low-VOC materials and stipulate the use of Tier 3 engines or diesel particulate filters on diesel-powered equipment. The modeling process and outcomes are discussed in more detail in Appendix F; results are summarized in Table 9-6.

Table 9-6: Estimated Emissions – Project Construction

Pollutant	Emissions (Pounds/Day)	APCD Screening Threshold (Pounds/Day)	Threshold Exceeded?
Carbon monoxide (CO)	52.3	550	No
Nitrogen oxides (NO _x)	96.3	250	No
Fine particulate matter (PM2.5)	10.8	55	No
Respirable particulate matter (PM10)	46.8	100	No
Sulfur oxides (SO _x)	0.18	250	No
Volatile organic compounds (VOC)	11.7	75	No

Source: ZMassociates 2014 (Appendix F of this Draft EIR/EA)

As shown in Table 9-6, anticipated construction emissions are substantially—in some cases several orders of magnitude—below the thresholds at which the APCD considers that detailed analysis of emissions is warranted. These screening or trigger thresholds are established in consideration of the APCD’s stewardship role in maintaining compliance with applicable state and federal limits on criteria pollutant levels; emissions below the threshold are not considered to pose a threat of nonattainment. **Project construction would therefore have no impact under either CEQA or NEPA related to violation of an applicable emission standard.**

Operations

The Project would slightly expand the scope of City sanitary sewer operations and maintenance by enabling the City to reinstate a full program of inspections, cleaning, and maintenance on the OTS below El Camino del Norte. The Project would thus result in a slight increase in the generation of operational emissions, primarily related to the use of City crew and maintenance vehicles to access the OTS alignment, as well as operation of the large 2-engine Vac-Con in areas it cannot currently reach.

The post-Project increase in emissions associated with operation and maintenance of the OTS was modelled using the industry standard CalEEMod software package. Fairly conservative assumptions were used in estimating the frequency of operational activities: 1 day per week for routine inspections and quarterly for video inspections, Vac-Con cleanout, and other maintenance and repairs. Travel mileages were also estimated quite conservatively, assuming origination 50 miles from the Project alignment. The modeling process and outcomes are discussed in more detail in Appendix F; results are summarized in Table 9-7.

Table 9-7: Estimated Increase in Emissions – Post-Project Operations and Maintenance

Criteria Pollutant	OTS Operational Emissions (Pounds/Day)		Net Increase		APCD Screening Threshold		Threshold Exceeded?
	Current	With-Project	Pounds/Hour*	Pounds/Day	Pounds/Hour	Pounds/Day	
Carbon monoxide (CO)	0.06	0.70	0.08	0.64	100	550	No
Nitrogen oxides (NO _x)	0.15	3.25	0.39	3.10	25	250	No
Fine particulate matter (PM2.5)	0.01	0.12	0.014	0.11	—	55	No
Respirable particulate matter (PM10)	0.02	0.19	0.02	0.17	—	100	No

Criteria Pollutant	OTS Operational Emissions (Pounds/Day)		Net Increase		APCD Screening Threshold		Threshold Exceeded?
	Current	With-Project	Pounds/Hour*	Pounds/Day	Pounds/Hour	Pounds/Day	
Sulfur oxides (SO _x)	0.00	0.01	1.001	0.01	25	250	No
Volatile organic compounds (VOC) / reactive organic gases (ROG)	0.10	0.14	0.005	0.04	—	75	No

Source: ZMassociates 2014 (Appendix F of this Draft EIR/EA)

* Assumes 8-hour workday

As shown in Table 9-7, the anticipated increase in operations- and maintenance-related emissions following Project completions is substantially—in almost all cases several orders of magnitude—below the applicable APCD screening thresholds. As discussed above for construction-period impacts, the screening thresholds were specifically developed to identify the level at which proposed undertakings represent a threat to the attainment of federal and state air quality standards. With emissions well below the thresholds, Project operation would not independently result in violation of an applicable emission standard. In addition, because Project-specific operational emissions would be so limited, and so small in relation to the level of emissions considered significant by the APCD, the Project is not considered to have the potential to contribute significantly to future violations of applicable standards. Long-term impacts related to the potential for violation of criteria pollutant standards are therefore considered less than significant under both CEQA and NEPA. No mitigation is required.

Impact AIR3 – Potential to Result in a Cumulatively Considerable Increase in Levels of any Criteria Pollutant for which the San Diego Air Basin Is Currently in Non-Attainment

This topic is addressed in detail in Chapter 15 (*Cumulative Impacts*).

Impact AIR4 – Potential to Expose Sensitive Receptors to Substantial Pollutant Concentrations

As discussed above under *Existing Conditions – Sensitive Receptors*, the Project alignment is located in proximity to a number of air quality sensitive receptors, including numerous residences, 3 preschools, a private school covering pre-school through grade 12 and another with kindergarten through grade 8, a senior living facility, and 2 parks. As discussed above in Impact AIR2, modeling shows that the Project would not result in substantial emissions of criteria pollutants. Additional modeling was conducted to assess the potential for impacts related to emissions of toxic air contaminants (TACs), focusing on diesel particulate matter (DPM), which is the primary TAC concern associated with use of heavy construction equipment. In addition to the potential to cause short-term headache, dizziness, and eye, nose, and throat irritation, DPM is a potential carcinogen and can also have long-term noncarcinogenic health impacts including increased risk of cardiovascular and respiratory disease.

TAC exposure levels are a function of the level of TACs emitted at the source, the distance from source to receptor, and the duration of exposure. TAC exposure modeling used the nearby Belmont Senior Living facility, located about 900 feet from the alignment, as a proxy for assessment of maximum exposure levels, since this is the closest facility that supports a large group of full-time residents.

Modeling made the conservative assumption that TACs would be generated at the work site near the Belmont facility throughout the entirety of the 250-day construction period.

Modeling process and outcomes, including an assessment of DPM-related health risks, are discussed in more detail in Appendix F. Table 9-8 summarizes the results of DPM exposure level modeling; note that the annual average DPM exposure level is substantially less than the hourly maximum exposure, consistent with EPA modeling guidance. Table 9-8 also compares modeled DPM exposure levels to the County APCD’s screening thresholds for cancer and other chronic health hazard risks.

Table 9-8: DPM Exposure Risks

Modeled DPM Exposure	Risk Type	Risk to Maximally Exposed Individual	County Significance Threshold	Threshold Exceeded?
<u>Modeled DPM exposure levels:</u> 1-hour maximum: 0.1996 µg/m ³ Annual average: 0.01996 µg/m ³	Cancer risk	0.4541 in 1 million	1 in 1 million	No
	Other chronic health hazard risk (chronic health hazard index)	0.00040	1.0	No

Source: ZMassociates 2014 (Appendix F of this Draft EIR/EA)

As Table 9-8 summarizes, both the potential cancer risk and the chronic health hazard risk associated with a conservative evaluation DPM exposure level from Project construction are very low, substantially below the level at which a significant health risk is considered to exist even at the facility used as a proxy for the Maximally Exposed Individual. Risks associated with Project operation, which would entail infrequent, short-duration, intermittent exposure to much lower levels of DPM, would be correspondingly lower. **The potential for short- and long-term impacts associated with DPM exposure is therefore evaluated as less than significant under both CEQA and NEPA.** No mitigation is required.

Impact AIR5 – Potential to Create Objectionable Odors Affecting a Substantial Number of People

Odors are a form of air pollution that can present significant problems both at the source and in the surrounding community. Although offensive odors seldom cause physical harm, they can be annoying and in extreme cases can present a substantial quality of life concern. The following paragraphs evaluate the potential for odor-related impacts associated with Project construction and operation.

Construction

Project construction would generate or use a number of substances that are commonly considered odorous, including diesel exhaust, various paving media, and paints, epoxies, and coating media. However, the duration of construction work in any given location is expected to be no more than a week total, and in most cases no more than 1 to 3 days; potentially odor-generating activities would make up only a portion of that total duration. Exposure to objectionable odors would therefore be of very short-term, temporary duration. **Construction-period impacts related to the potential generation of objectionable odors are therefore considered less than significant under CEQA and NEPA.**

Operations

Ongoing inspection and cleaning activities enabled by the Project would use a very limited number of crew vehicles and/or the Vac-Con truck, and would be intermittent and short-term throughout the course of the year. Potential odor impacts, if any, associated with this activity are considered less than significant. Maintenance could intermittently require the use of odorous substances such as epoxies and paints, but would also be very short-term and infrequent; any associated odor impacts would therefore also be less than significant.

In addition, the Project would remove the existing siphon, eliminating a potential source of odors. It would also remove several existing manholes and rehabilitate the remaining currently degraded manholes, reducing the potential for odors associated with the sanitary sewer system itself.

In view of these considerations, the Project's long-term potential to result in adverse odor impacts associated with operations and maintenance activities is considered less than significant under both CEQA and NEPA. The Project would also result in long-term benefits related to odor reduction. No mitigation is required.

Impact AIR6 – Potential to Conflict with an Applicable Plan, Policy, or Regulation Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases

As a City undertaking, the Project falls under the City's adopted CAP (City of Encinitas 2011). Like most CAPs, the City's adopted Plan identifies the wastewater sector as an important source of GHG emissions. However, wastewater-related GHG emissions are typically driven primarily by treatment, not by collection and conveyance or by capital projects construction, and the Project in particular would entail no new facilities requiring power consumption and would only slightly increase GHG-generating operations and maintenance activities. Moreover, the Project is proposed solely to support existing adopted land use planning; it would not foster or enable population growth or relocation (see Table 1-4) and thus would have no indirect potential to result in growth that would increase GHG emissions in not only the wastewater sector, but also with respect to the residential, transportation, commercial/industrial, and solid waste sectors. The Project is therefore considered fully consistent with the City's adopted CAP; there would be no impact under either CEQA or NEPA related to conflict with any applicable GHG-reduction plan, policy, or regulation. No mitigation is required.

Impact AIR7 – Potential to Generate Cumulatively Considerable Levels of Greenhouse Gas Emissions

This topic is addressed in detail in Chapter 15 (*Cumulative Impacts*).

Significant Impacts and Mitigation Approaches

No significant adverse impacts have been identified for the proposed Project with regard to criteria pollutant emissions, TAC exposure, or GHG emissions.

Action Alternatives

For the most part, air quality impacts would be very similar under the two action alternatives—Alternative 1 (Combination Access, Alternate Configuration) and Alternative 2 (Conventional Continuous Access, Plantable/Pervious Surface Treatments)—to those discussed above for the proposed Project.

Although the location and footprint of the new access would differ somewhat from the proposed Project, the construction process would be essentially the same, and both action alternatives would incorporate the same environmental commitments for dust control and reduction of VOC and TAC emissions.

Modeling and outcomes for the action alternatives are discussed in more detail in Appendix F. Because of the slight differences in footprint (i.e., acreage subject to vegetation removal and grading), and criteria pollutant emissions would vary slightly among alternatives. Under all action alternatives, however, emission levels would be substantially below the applicable thresholds, as identified above for the proposed Project.

Consequently, impact findings would also be the same, for all of the following impacts, and for the same reasons discussed for the proposed Project.

- Impact AIR1 – Potential to Conflict with or Obstruct an Applicable Air Quality Plan: **no impact under CEQA or NEPA**
- Impact AIR2 – Potential to Violate an Air Quality Standard, or Substantially Contribute to such a Violation, Now or in the Future: **no impact under CEQA and NEPA for construction; less than significant under CEQA and NEPA over the long term**
- Impact AIR4 – Potential to Expose Sensitive Receptors to Substantial Pollutant Concentrations: **less than significant under CEQA and NEPA for both construction period and long term**
- Impact AIR5 – Potential to Create Objectionable Odors Affecting a Substantial Number of People: **less than significant under CEQA and NEPA for both construction, with potential for long-term odor reduction benefit due to removal of siphon and several manholes**
- Impact AIR6 – Potential to Conflict with an Applicable Plan, Policy, or Regulation Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases: **no impact under CEQA and NEPA for both construction period and long term**

Because emission levels would be very similar, potential contributions to cumulative impacts on air quality and GHG levels under the action alternatives would not differ materially from those under the proposed Project, which are discussed in detail in Chapter 15 (*Cumulative Impacts*).

No Project/No Action Alternative

Under the No Project/No Action Alternative, there would be no access construction, no siphon or manhole removal, no manhole rehabilitation, and no realignment of the segment of the OTS above El Camino del Norte. **There would thus be no impact under either CEQA or NEPA related to construction-generated criteria pollutants, GHGs, TACs, or odor emissions.**

With no new access route, the City's program of inspections, cleaning, and maintenance along the OTS would continue at the current level. There would thus be **no long-term/post-construction impact under either CEQA or NEPA related to operational generation of criteria pollutants, GHGs, TACs, or odor emissions**, and with the existing siphon and all manholes remaining in place and unrehabilitated, the **No Action/No Project Alternative would offer no benefit with regard to odor reduction.**

Over the longer term, the aging manholes along the project reach of the OTS would continue to deteriorate, and it would eventually become necessary to rehabilitate them under a separate future project or projects. Based on recent condition inspections, this is expected to become a critical need within the foreseeable future, and such activities would presumably entail construction with at least some potential to generate criteria pollutants, GHGs, and possibly also odors. The nature and severity of the impacts would depend critically on the timing, extent, and specific nature of future work; however, because these details remain speculative at this time, outcomes cannot be analyzed in detail in this document. Any such future project would be a discretionary undertaking subject to CEQA/NEPA review and regulatory permitting at the time it is proposed.

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Chapter 10

Hazards and Hazardous Materials

Introduction

Chapter Overview

This chapter analyzes the Project's potential impacts related to hazardous materials, wildland fire risks, and emergency response and evacuations.

This chapter contains the following information:

- An overview of chapter preparation, including sources of baseline information and an explanation of the methods used to analyze impacts
- A description of existing conditions relative to hazards and hazardous materials (listed hazardous contamination sites, potential sources of contamination, and fire hazard severity) in the Project area
- An overview of laws, regulations, plans, and policies relevant to the use and disposal of hazardous materials and to the other hazards discussed in this chapter
- Analysis of potential impacts on sensitive receptors (such as schools), workers, the public, and the environment under the proposed Project, the 2 action alternatives, and the No Project/No Action Alternatives, including approaches to avoid or reduce (mitigate) potentially significant adverse impacts

Although Project construction would use materials that qualify as hazardous, all such materials would be handled in strict accordance with applicable regulations and label restrictions, and contractors would also be required to adhere to additional safety precautions detailed in Chapter 2; significant impacts associated with hazardous materials use are not anticipated. Project construction would have some potential to increase wildland fire risks, and the Project will incorporate measures, identified in this chapter, to reduce impacts to a less-than-significant level. These measures will remain in effect for operations and maintenance activities in and adjacent to native vegetation along the Project alignment, so long-term impacts related to wildland fire hazards would also be less than significant.

Background – Hazardous Materials Basics

The California Health and Safety Code Section 25501 defines hazardous material as any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. Some common substances that qualify as hazardous materials under California law include motor vehicle fuels, oils and other lubricants, paints, pesticides, and compressed gases.

How this Chapter Was Prepared

Assessment of Existing Conditions

Assessment of existing hazardous waste conditions in the project vicinity began with a search of the State Water Resources Control Board's (SWRCB's) Geotracker database (California State Water Resources Control Board 2014) and Department of Toxic Substances Control's (DTSC's) EnviroStor database (Department of

Toxic Substances Control 2014) to identify known contaminated sites that appear on a variety of federal and state hazardous materials lists. To identify potential soil and groundwater contamination in the Project area (representing conditions that could be encountered during Project construction) the EnviroStor and Geotracker databases were searched for the area extending 1 mile in all directions from the Project alignment. The 1-mile search radius is consistent with the most conservative search area used in the American Society for Testing and Materials' (ASTM's) current protocols for Phase I Environmental Site Assessments (American Society for Testing and Materials 2013).

Wildfire hazards were assessed using the California Department of Forestry and Fire Prevention's (Cal Fire's) maps of fire hazard severity zones (California Department of Forestry and Fire Prevention 2012).

Emergency response plans for fire, tsunamis, and other natural and human-made hazards are locally implemented at the city and county levels; information on emergency plans, evacuation routes, and other emergency response procedures was provided by the Disaster Preparedness Division of the City of Encinitas Fire Department (City of Encinitas 2011) and County of San Diego Office of Emergency Preparedness (County of San Diego 2014).

Impact Analysis Methods

Analysis of impacts related to hazards and hazardous materials was qualitative and included consideration of the following aspects of Project construction and operation.

- Construction-related hazardous materials use on a daily and Project phase basis
- Operational hazardous materials use
- Transport routes for delivery of construction materials and supplies to the project alignment; potential for hazardous materials upsets during transport
- Use of roadways that coincide with emergency access or evacuation routes; potential to impact emergency response plans
- Factors that could contribute to increased wildfire risk

Several hazards- and hazardous materials-related issues potentially of concern for undertakings in north San Diego County are not applicable to the Project and therefore are not discussed in detail in this chapter, as follows.

- Because the Project would not increase or relocate populations, it has no potential to increase exposure to coastal tsunami hazards or to mudflow hazards, nor would it increase exposure to potential seiche hazards associated with San Elijo Lagoon
- The Project would not construct critical facilities (e.g., schools or hospitals), or other facilities where numerous people gather, in an area subject to dam failure inundation hazard
- The Project would not construct hilltop facilities or installations and thus has no potential to interfere with emergency response aircraft
- The Project would not involve activities subject to the Risk Management Plan requirement under the California Accidental Release Program (CalARP)
- The Project alignment is not located in proximity to any of several types of sites considered potentially problematic by the County: it is not within 1,000 feet of any former defense installation;

within 1,000 feet of any open, abandoned or closed landfill; or within 250 feet of any parcel known to contain burn ash from historic burning of trash

- The Project would not involve the demolition of structures containing regulated materials such as asbestos-containing building materials or lead-based paints

Additionally, as discussed in the *Environmental Commitments* section of Chapter 2, Project design would be guided by the state's current *Best Management Practices for Mosquito Control in California* (California Department of Public Health 2012) to avoid increasing the potential for ponded or stagnant conditions that could support mosquito breeding.

Finally, because the Project would not increase or relocate populations, it would not increase exposure to wildland fire hazards and because of the type and location of facilities involved, it also would not result in inconsistency with any adopted fire codes or with an adopted fire protection plan or relevant emergency response objectives. Analysis of wildland fire hazards therefore focused on the Project's potential to increase fire hazards and frequency of occurrence.

The significance criteria used in analyzing impacts related to hazards and hazardous materials reflect the issues identified as most pertinent to the project. The Project would result in a significant impact under CEQA if it would lead to any of the following.

- Location on or within 0.25 mile of a site that is included on a list of hazardous materials sites compiled pursuant to California Government Code Section 65962.5
- Creation of a hazard to workers, the public, or the environment through the routine transport, use, disposal, or accidental release of hazardous materials
- Creation of a hazard related to transport, use, or disposal of hazardous materials within 0.25 mile of a school
- Creation of health or environmental hazard related to discovery of undocumented hazardous materials contamination
- Interference with an adopted emergency response, evacuation, and/or hazardous materials response plan
- Increased risk of wildland fires and associated hazards

Any of these outcomes would also represent an adverse effect under NEPA.

Existing Conditions

Hazardous Materials

The SWRCB's Geotracker database identifies 2 sites with a history of known contamination within 1 mile of the project alignment (State Water Resources Control Board 2014): one involving gasoline contamination from the Cardiff Union 76 station on Manchester Avenue (3,000 feet downstream of the southern end of the Project) and a second, also involving gasoline contamination, located at a private Rancho Santa Fe residence (2,000 feet to the southeast of the project). Both of these sites currently show a *Closed* status, meaning that former contamination has been remediated consistent with applicable regulatory standards, and the sites are no longer considered to pose a hazard. The Department of Toxic Substances Control's (DTSC's) EnviroStor

database does not identify any additional sites within the search radius (Department of Toxic Substances Control 2014).

Wildland Fire Hazards

The California Department of Forestry and Fire Prevention has mapped fire hazard severity zones throughout the state, based on vegetation, topography, weather, and other factors (California Department of Forestry and Fire Protection 2012). The northeastern portion of project alignment, north of El Camino del Norte, is located in a very high fire hazard severity zone. The southwesternmost portion of the alignment is adjacent to a high hazard zone (California Department of Forestry and Fire Protection 2009).

Emergency Response and Evacuation

The Disaster Preparedness Division of the City’s Fire Department is responsible for managing emergency response and recovery activities in the event of fire, flood, earthquake, tsunami, and other natural and anthropogenic disasters.

The City of Encinitas operates six fire stations, of which Stations 2, 4, 5, and 6 are the closest to the Project alignment (City of Encinitas 2013 and 2014a). These stations are listed below in Table 10-1 (in order of proximity to the Project) and depicted in Figure 7-3. The neighboring jurisdictions of Rancho Santa Fe, Solana Beach, and Elfin Forest/Harmony Grove also provide fire protection in the region.

Table 10-1: Fire Stations in Project Vicinity

Facility	Address
Encinitas Fire Station 6	770 Rancho Santa Fe Road, Encinitas
Encinitas Fire Station 4	2011 Village Park Way, Encinitas
Encinitas Fire Station 2	618 Birmingham Drive, Cardiff-by-the-Sea
Encinitas Fire Station 5	540 Balour Drive, Encinitas
Rancho Santa Fe Fire Protection District Station	16936 El Fuego, Rancho Santa Fe
Solana Beach Fire Department	500 Lomas Santa Fe Drive, Solana Beach
Elfin Forest/Harmony Grove Fire Department	20223 Elfin Forest Road, Escondido

For fires, the City has designated evacuation routes in its Olivenhain community which (depending on the fire direction) generally direct travel to the south along Rancho Santa Fe Road and Lone Jack Road; to the west into Carlsbad (west along Dove Hollow Road and northwest along Rancho Santa Fe Road); or to the east into Rancho Santa Fe along El Camino del Norte (City of Encinitas 2014b). Plans also call for evacuated horses to be transported to and sheltered at the Del Mar Fairgrounds or Del Mar Horsepark (Del Mar Fairgrounds 2013), located off I-5 just over 2 miles south of Encinitas.

In Encinitas, the tsunami hazard zone is generally located on the immediate coast, but extends inland at the San Elijo Lagoon to the west side of I-5 (County of San Diego 2014). At the lagoon, the evacuation routes point north and south along Coast Highway 101, which runs along the coast at the mouth of the lagoon (City of Encinitas 2014c).

Sensitive Receptors

Sensitive receptors are generally considered facilities that house or attract children, seniors, and those with illnesses. For the purposes of this analysis, schools, hospitals, and parks are considered sensitive receptors.

Six schools are located within 0.25 mile of the proposed Project alignment or along transport routes, including several preschools, as listed below in Table 10-2. There are no hospitals in the immediate vicinity, with the nearest (Scripps Memorial Hospital, Encinitas) approximately 2.5 miles north of the southwest end of the alignment. The only community park facility in the area is the Little Oaks Equestrian Park, with picnic facilities along Lone Jack Road.

Table 10-2: Schools in Project Vicinity

Name	Type	Address
Mira Costa College – San Elijo Campus	Community College	3333 Manchester Avenue, Encinitas
Encinitas Country Day School	Preschool through high school	3616 Manchester Avenue and 2155 Encinitas Boulevard, Encinitas
Rhoades School	Kindergarten through 8 th grade	141 South Rancho Santa Fe Road, Encinitas
Olivenhain Country Preschool	Preschool	448 Rancho Santa Fe Road, Encinitas
Creative Expressions	Preschool	734 Edelweiss Lane, Encinitas
A Children’s Garden	Preschool	2241 Whisper Wind Drive, Encinitas

Regulatory Setting

Numerous federal and state laws regulate the identification, transport, use, recycling, treatment, storage, and disposal of hazardous materials, as well as the remediation of contaminated sites. This chapter addresses regulations pertaining to the use and transport of hazardous materials including but not limited to the types of substances likely to be used in Project construction.

The primary agency that regulates hazardous materials at the federal level is the United States Environmental Protection Agency (Resource Conservation and Recovery Act, Comprehensive Environmental Response, Compensation, Liability Act). Oversight at the state level is provided by the California Environmental Protection Agency (Certified Unified Program Agencies) and California Department of Toxic Substances Control (Cortese list of hazardous materials sites). Regulations for hazardous materials at the local level are included in the County of San Diego’s and City of Encinitas’ General Plans, as well as the County’s Hazardous Waste Management Plan.

Federal Regulations

Federal Insecticide, Fungicide, and Rodenticide Act

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (7 USC 136 *et seq.*) was first passed in 1947. It was substantively rewritten in 1972 when it was amended by the Federal Environmental Pesticide Control Act, and has been amended numerous times since then.

FIFRA mandates EPA to regulate the use and sale of pesticides to preserve the environment and protect human health. Under FIFRA, pesticides may not be used unless they have been registered with EPA, which entails an extensive review and evaluation process. Manufacturers must submit applications to EPA for all new pesticides proposed for use in the in the United States. In order to receive registration for a pesticide, extensive environmental, health, and safety data usually must be provided. Each pesticide is then only registered for specific crops/sites on which it may be applied.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) (42 USC Sec. 6901 et seq.), enacted in 1976, is the primary federal law that governs the disposal of solid and hazardous waste. RCRA gives EPA the authority to regulate the generation, transportation, treatment, storage, and disposal of hazardous waste, as well as inspect active hazardous waste facilities, underground storage tanks, and recycled used oil facilities. It also provides standards for the design, construction, and operation of underground storage tanks, and includes regulations for the management of non-hazardous waste.

The Federal Hazardous and Solid Waste Amendments (HSWA) amended RCRA in 1984 to increase the EPA's enforcement authority and create more stringent hazardous waste management standards (U.S. Environmental Protection Agency 2013). Important provisions of HSWA include a comprehensive underground storage tank program (U.S. Environmental Protection Agency 2014). HSWA also phased out land disposal of hazardous wastes (unless the waste has been treated to qualify as nonhazardous or can be shown not to migrate), and established regulations governing disposal of liquid hazardous wastes through underground injection wells.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 USC Sec. 9601 et seq.), commonly known as the "Superfund Act", is a federal law enacted in 1980 to provide for cleanup of sites contaminated with hazardous substances. The Superfund Act establishes requirements concerning abandoned hazardous waste sites and allows EPA to assign liability for cleanup/remediation to the parties responsible for releases of hazardous waste. It also establishes a fund to provide for cleanup when no responsible party is identified. In addition, the Superfund Act created the Agency for Toxic Substances and Disease Registry (ATSDR), a federal agency under the Department of Health and Human Services, to carry out the public health aspects of the Superfund and other hazardous waste laws (Agency for Toxic Substances and Disease Registry 2014). In 1986, CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA), which includes a Community Right-to-Know program.

Pursuant to the Superfund Act, EPA publishes a National Priorities List (the NPL, often called the "Superfund List") that identifies known or threatened releases of hazardous substances and prioritizes them for remediation under the Superfund program. CERCLA authorizes short-term removal for releases requiring a quick response but allows longer-term remediation for NPL-listed releases that are not considered immediately life-threatening.

State Regulations and Policies

The California Code of Regulations (CCR) sets forth fundamental regulations on the Environmental Health Standards for the Management of Hazardous Waste in Title 22 (Social Security), Division 4.5. These regulations are similar to RCRA at the federal level, but are more comprehensive and specific. In particular, Title 22 regulates generators of hazardous wastes. It also covers activities and wastes not covered by RCRA, such as specific materials that have mercury. Title 22 provides standards for the identification, transport (including packaging and labelling procedures), use, recycling, treatment, storage, and disposal of hazardous waste and for the operation and closure of hazardous waste facilities.

Hazardous Materials Release Response Plans and Inventory Act

The Hazardous Materials Release Response Plans and Inventory Act, also known as the Business Plan Act, was established in 1986 to prevent or reduce adverse public health and environmental outcomes related to hazardous materials releases. The Business Plan Act also satisfies state community right-to-know requirements.

Under the Business Plan Act, *hazardous materials* are defined as materials that pose a significant hazard to human health and safety or to the environment if released (California Health and Safety Code 25501). The Business Plan Act requires businesses that use hazardous materials in substantial quantities to inventory their hazardous materials, provide a site map for emergency responder use, develop an emergency plan, and train their employees relative to hazardous materials issues. All of this information is submitted to the local Certified Unified Program Agency (CUPA), specific local government agencies certified by the California Environmental Protection Agency (CalEPA), who are responsible for verifying its accuracy and providing it to agencies with responsibility for public safety.

The Hazardous Materials Division of the San Diego County Environmental Health Department is the CUPA responsible for inspecting businesses that handle or store hazardous materials in cities and unincorporated areas of San Diego County.

Cortese List of Hazardous Waste and Substances Sites

California Government Code Section 65962.5 requires DTSC to compile a list of various types of sites known or potentially contaminated with hazardous materials. This is commonly referred to as the *Cortese list* in honor of former legislator Dominic Cortese, who authored the relevant legislation. The Cortese list includes the following types of sites:

- Hazardous waste facilities subject to corrective action under Section 25187.5 of the California Health and Safety Code
- Sites listed under Health and Safety Code Section 25356 and lands designated as “hazardous waste property” or “border zone property” under Health and Safety Code Section 25220
- Localities where hazardous waste has been disposed on public lands
- Sites included in the Abandoned Site Assessment Program

Because it is fairly comprehensive, the Cortese list is a useful and frequently consulted source of information on a wide variety of contaminated sites, including but not limited to leaking underground storage tanks, solid waste disposal sites that are in violation of applicable hazardous substances limits, and sites subject to active Cease and Desist Orders and Cleanup and Abatement Orders from the SWRCB.

The Cortese list includes identification of hazardous waste facilities where DTSC has taken or contracted for corrective action because immediate corrective action was necessary to avoid an imminent or substantial endangerment (California Environmental Protection Agency 2011, Department of Toxic Substances Control 2007).

Emergency Services Act

California Government Code Sections 8550 – 8668 require the State to develop an emergency response plan for oil spills, toxic disasters, urban heavy rescue operations, and other disasters. This plan is administered by the California Office of Emergency Services and coordinates emergency services by federal, state, and local agencies. Agencies involved include EPA, California Highway Patrol, RWQCBs (including the San Diego RWQCB), air quality management districts (including the San Diego County Air Pollution Control District), and county disaster response offices. Rapid response to hazardous materials and waste incidents is an integral part of this plan.

Local Regulations and Plans

County of San Diego Policies and Regulations

The San Diego County General Plan recognizes that the use of hazardous products common to construction activities is usually not significant enough to pose a substantial risk to human health and safety or the environment and, therefore, does not meet the County's definition of *hazardous materials*. The County General Plan largely considers hazardous materials in association with commercial, industrial, and agricultural operations. Although it focuses on hazardous materials in terms of land uses, it does not discuss their transport or use (County of San Diego 2011a). As such, the San Diego County Department of Environmental Health does not regulate the use of materials for construction projects that use small quantities of hazardous materials that do not exceed thresholds established by the California Accidental Release Prevention Program.

Pursuant to State Assembly Bill 2498 in 1986, the County prepared a comprehensive Hazardous Waste Materials Program for the region in 1989 – 1990. The Program's goals are to effectively manage hazardous wastes, including regional hazardous waste reduction, further volume reduction, recycling and safe reuse, and safe treatment and storage. It is implemented through the various jurisdictions and agencies within the County.

City of Encinitas Policies and Regulations

Policies in the City's General Plan serve to reduce the risk of harm to public health and safety and the environment from hazardous materials. For instance, the City has hazardous materials and wastes identification and notification requirements for all users, producers, and transporters (Public Safety Policy 3.1), and restricts transport to specific truck routes identified in the General Plan (Public Safety Policy 3.2) (City of Encinitas 1995). Truck routes in the Project area include Manchester Avenue, North El Camino Real, and Encinitas Boulevard (City of Encinitas 2010); there are no designated truck routes to reach the Project from Rancho Santa Fe to the south (County of San Diego 2011b). In addition, in accordance with Section 30240 of the California Coastal Act, the General Plan commits the City to protect environmentally sensitive habitat areas from disruption, and to make sure that development in areas adjacent to sensitive habitat is designed to prevent impacts and contribute to the habitat's continuity (Resource Management Goal 8) (City of Encinitas 1995).

In the event of a natural or anthropogenic emergency, the Disaster Preparedness Division of the City's Fire Department has developed emergency procedures, activities, and disaster operation plans and is also responsible for managing emergency response and recovery activities. In the event of an emergency, the City's Emergency Operations Center would be activated, and would provide centralized management of the City's emergency response personnel, resources, facilities, and mutual aid assistance (City of Encinitas 2011).

The City is also a participant in the County's comprehensive Hazardous Waste Management Plan, discussed above. The Plan requires the City to enact zoning regulations to support proper siting of facilities that store or treat hazardous wastes, and to identify land uses that may produce hazardous wastes. In addition, the City cooperates with the County to inventory and properly regulate land uses involving hazardous wastes and materials (City of Encinitas 1995).

Impacts and Mitigation Measures

Impact	Significance	Mitigation	Significance with Mitigation
<u>Proposed Project</u>			
Impact HAZ1 – Potential for Location on or within 0.25 Mile of a Site that is Included on a List of Hazardous Materials Sites Compiled Pursuant to California Government Code Section 65962.5	No impact	<i>None required</i>	No impact
Impact HAZ2 – Potential to Create Hazard to Workers, the Public, or the Environment through the Routine Transport, Use, Disposal, or Accidental Release of Hazardous Materials	Construction period: Less than significant Long-term: Benefit	<i>None required</i>	Construction period: Less than significant Long-term: Benefit
Impact HAZ3 – Potential to Create Hazard Related to the Transport, Use, or Disposal of Hazardous Materials within 0.25 Mile of a School	Construction period: Less than significant Operation: No impact	<i>None required</i>	Construction period: Less than significant Operation: No impact
Impact HAZ4 – Potential to Create Health or Environmental Hazard Related to Discovery of Undocumented Hazardous Materials	Construction period: less than significant Operation: No impact	<i>None required</i>	Construction period: less than significant Operation: No impact
Impact HAZ5 – Potential to Interfere with an Adopted Emergency Response, Evacuation, and/or Hazardous Materials Response Plan	Construction period: Less than significant Operation: No impact	<i>None required</i>	Construction period: Less than significant Operation: No impact
Impact HAZ6 – Increased Risk of Wildland Fires and Associated Hazards	Significant	HAZ6.1: Require Implementation of Wildland Fire Risk Reduction Measures	Less than significant
<u>Alternative 1 – Combination Access, Alternate Configuration</u>			
Impact HAZ1 – Potential for Location on or within 0.25 Mile of a Site that is Included on a List of Hazardous Materials Sites Compiled Pursuant to California Government Code Section 65962.5	No impact	<i>None required</i>	No impact
Impact HAZ2 – Potential to Create Hazard to Workers, the Public, or the Environment through the Routine Transport, Use, Disposal, or Accidental Release of Hazardous Materials	Construction period: Less than significant Long-term: Benefit	<i>None required</i>	Construction period: Less than significant Long-term: Benefit
Impact HAZ3 – Potential to Create Hazard Related to the Transport, Use, or Disposal of Hazardous Materials within 0.25 Mile of a School	Construction period: Less than significant Operation: No impact	<i>None required</i>	Construction period: Less than significant Operation: No impact

Impact	Significance	Mitigation	Significance with Mitigation
Impact HAZ4 – Potential to Create Health or Environmental Hazard Related to Discovery of Undocumented Hazardous Materials	Construction period: Less than significant Operation: No impact	<i>None required</i>	Construction period: Less than significant Operation: No impact
Impact HAZ5 – Potential to Interfere with an Adopted Emergency Response, Evacuation, and/or Hazardous Materials Response Plan	Construction period: Less than significant Operation: No impact	<i>None required</i>	Construction period: Less than significant Operation: No impact
Impact HAZ6 – Increased Risk of Wildland Fires and Associated Hazards	Significant	HAZ6.1: Require Implementation of Wildland Fire Risk Reduction Measures	Less than significant

Alternative 2 – Conventional Continuous Access, Plantable/Pervious Surface Treatments

Impact HAZ1 – Potential for Location on or within 0.25 Mile of a Site that is Included on a List of Hazardous Materials Sites Compiled Pursuant to California Government Code Section 65962.5	No impact	<i>None required</i>	No impact
Impact HAZ2 – Potential to Create Hazard to Workers, the Public, or the Environment through the Routine Transport, Use, Disposal, or Accidental Release of Hazardous Materials	Construction period: Less than significant Long-term: Benefit	<i>None required</i>	Construction period: Less than significant Long-term: Benefit
Impact HAZ3 – Potential to Create Hazard Related to the Transport, Use, or Disposal of Hazardous Materials within 0.25 Mile of a School	Construction period: Less than significant Operation: No impact	<i>None required</i>	Construction period: Less than significant Operation: No impact
Impact HAZ4 – Potential to Create Health or Environmental Hazard Related to Discovery of Undocumented Hazardous Materials	Construction period: Less than significant Operation: No impact	<i>None required</i>	Construction period: Less than significant Operation: No impact
Impact HAZ5 – Potential to Interfere with an Adopted Emergency Response, Evacuation, and/or Hazardous Materials Response Plan	Construction Period: Less than significant Operation: No impact	<i>None required</i>	Construction Period: Less than significant Operation: No impact
Impact HAZ6 – Increased Risk of Wildland Fires and Associated Hazards	Significant	HAZ6.1: Require Implementation of Wildland Fire Risk Reduction Measures	Less than significant

No Project/No Action Alternative

Impact HAZ1 – Potential for Location on or within 0.25 Mile of a Site that is Included on a List of Hazardous Materials Sites Compiled Pursuant to California Government Code Section 65962.5	No impact	<i>None required</i>	No impact
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Impact	Significance	Mitigation	Significance with Mitigation
Impact HAZ2 – Potential to Encounter Undocumented Hazardous Materials Contamination	No impact	<i>None required</i>	No impact
Impact HAZ3 – Potential to Create Hazard Related to the Transport, Use, or Disposal of Hazardous Materials within 0.25 Mile of a School	No impact	<i>None required</i>	No impact
Impact HAZ4 – Potential to Create Hazard to Workers, the Public, or the Environment through the Routine Transport, Use, Disposal, or Accidental Release of Hazardous Materials	No impact	<i>None required</i>	No impact
Impact HAZ5 – Potential to Interfere with an Adopted Emergency Response, Evacuation, and/or Hazardous Materials Response Plan	No impact	<i>None required</i>	No impact
Impact HAZ6 – Increased Risk of Wildland Fires and Associated Hazards	No impact	<i>None required</i>	No impact

Proposed Project

Less than Significant Impacts

Impact HAZ1 – Potential for Location on or within 0.25 Mile of a Site that is Included on a List of Hazardous Materials Sites Compiled Pursuant to California Government Code Section 65962.5

No portion of the Project alignment is within a site currently or formerly included on the Cortese List or other regulatory database for hazardous materials contamination. The closest listed sites—both of which are in Closed status, reflecting remediation completed consistent with applicable regulatory standards—are located approximately 2,000 feet (0.38 mile) southeast of the alignment and (3,000 feet) 0.57 mile downstream of the alignment. There would be no impact under either CEQA or NEPA related to locating a Project on or within 0.25 mile of a site listed for hazardous materials contamination. No mitigation is required.

Impact HAZ2 – Potential to Create Hazard to Workers, the Public, or the Environment through the Routine Transport, Use, Disposal, or Accidental Release of Hazardous Materials

Construction of the proposed Project would introduce vehicles and equipment that use fuels and lubricants to residential roadways and the Escondido Creek/San Elijo Lagoon corridor, and would also require the use of various substances that qualify as hazardous for manhole rehabilitation and for repaving within existing roadways. No fueling or servicing would be permitted within or immediately adjacent to sensitive habitat (see *Measures to Protect Creek and Lagoon Water Quality* under *Environmental Commitments* in Chapter 2), and all hazardous substances used in construction would be handled in strict accordance with applicable federal, state, and local regulations and label restrictions (see *Measures for Hazardous Materials Safety* under *Environmental Commitments* in Chapter 2). In addition, as discussed in Chapter 2 (*Proposed Project and Alternatives*), the construction Contractor would be required to prepare and implement a Stormwater Pollution Prevention Plan, which would include spill prevention and response measures. With all of these commitments in place, there could still be some potential for accidental spills or releases of substances that qualify as hazardous materials, hazardous materials, but risks to workers, the general public, and the environment would be minimized consistent with the current standard of care and are evaluated as **less than significant** under both CEQA and NEPA. No mitigation is required.

Once construction is completed and the new access is in use, there would be no further need for use of substances that qualify as hazardous, with the exception of the fuels and lubricants required for the City's Vac-Con and support vehicles. As discussed in the preceding impact, no fueling or servicing would occur in the field; these activities would continue to be restricted to the City's Corporation Yard. Consequently, use of the new access would not substantively increase the potential for hazardous materials exposure along existing City roadways. By enabling vehicle access into portions of the Creek/Lagoon corridor that are currently not accessible to City maintenance crews, the Project would have the potential to increase the risk of upsets and releases slightly, but the increase in risk level would be very small and is considered **less than significant under both CEQA and NEPA**. Moreover, by rehabilitating at-risk manholes and enabling maintenance of currently inaccessible portions of the OTS, the Project would reduce long-term risk of sewer system failures and SSOs and corollary risks to public and environmental health. This is considered to represent a **substantial long-term benefit to public health and welfare and to the health of the environment**. No mitigation is required.

Impact HAZ3 – Potential to Create Hazards Related to the Transport, Use, or Disposal of Hazardous Materials within 0.25 Mile of a School

Project construction would involve transport, use, and disposal of small amounts of materials that qualify as hazardous, including fuels, lubricants, and (for the portions of the Project within existing roadways) paving and striping media, as detailed above under Impact HAZ2. A total of 6 schools, ranging from preschool to community college level, are located within 0.25 mile of the Project alignment and/or likely haul routes; Project construction would thus entail transport and use of hazardous materials in proximity to more than one school. However, all hazardous materials used in Project construction will be transported, stored, handled, and used in strict accordance with all applicable federal, state, and local regulations and any label restrictions. Moreover, the types of substances that would be used are typical for small-scale construction projects, and many are substances found on and near school campuses during routine operations and maintenance. Potential impacts related to transport and use of hazardous materials in proximity to school facilities are thus considered **less than significant under both CEQA and NEPA**. No mitigation is required.

Once construction is completed and the new access is in use, there would be no further need for use of materials that qualify as hazardous, with the exception of the fuels and lubricants required for the City's Vac-Con and support vehicles. No fueling or servicing would occur in the field, however; these activities would continue to be restricted to the City's Corporation Yard. Consequently, use of the new access would not substantively increase the potential for hazardous materials exposure beyond the current potential associated with routine traffic in the vicinity of local schools. **There would be no impact under either CEQA or NEPA during the operational period**. No mitigation is required.

Impact HAZ4 – Potential to Create a Health or Environmental Hazard Related to Discovery of Undocumented Hazardous Materials Contamination

Regulatory databases indicate no known sites with unremediated hazardous materials contamination within 1 mile of the Project alignment. However, the Project area has a long history of agricultural and developed use, and, like any area with a similar history, may have some potential for previously undocumented contamination. Although it is unlikely in the highly mobile substrate of the active Creek/Lagoon corridor, there may be some potential for grading, excavation, and other ground-disturbing activities during construction to encounter contaminated soil and/or groundwater. To address this possibility and provide appropriate protection for workers, the public, and the environment, the Project will incorporate measures requiring the Contractor to suspend work immediately in the event known or suspected hazardous substances are encountered (see *Measures for Hazardous Materials Safety under Environmental Commitments* in Chapter 2). The find will then be evaluated by qualified personnel (staff meeting the Environmental Professional qualifications in ASTM E1527-13) retained by the City, and, if warranted, the City will conduct further evaluations and/or remediation consistent with all applicable local, state, and federal

codes and regulations. Construction in areas of known and potential contamination will not resume until remediation is complete. With this commitment in place, the potential for adverse effects on human health and the environment as a result of exposure to undocumented hazardous materials contamination would be reduced consistent with applicable regulations. **Construction-period impacts would be less than significant under both CEQA and NEPA.** No mitigation is required.

Once the new access is in place and other Project improvements have been completed, there would be no need for ground disturbance. All operations and maintenance activity using the new access would be restricted entirely within the improved access footprint, and there would be no increase in potential to encounter undocumented hazardous substances. **There would be no impact under either CEQA or NEPA during the operational period.** No mitigation is required.

Impact HAZ5 – Potential to Interfere with an Adopted Emergency Response, Evacuation, and/or Hazardous Materials Response Plan

The City's Fire Department has developed emergency procedures, activities, and disaster plans, including designated evacuation routes. For wildfires, the City's designated evacuation routes in the vicinity of the northeastern portion of the Project alignment generally direct travel to the south along Rancho Santa Fe Road and Lone Jack Road; to the west into Carlsbad (west along Dove Hollow Road and northwest along Rancho Santa Fe Road); and to the east into Rancho Santa Fe along El Camino del Norte. For tsunamis, designated evacuation routes point north and south along Coast Highway 101 at the mouth of the San Elijo Lagoon.

The proposed Project would introduce large construction vehicles onto area roadways, totaling over 150 round trips (not including worker commute vehicles) during the course of construction, as itemized in Chapter 2. Project construction would also require lane closures on Lone Jack Road, a 2-lane residential street (90 days) and Manchester Avenue, a 4-lane arterial (approximately 4 – 5 days per manhole for a total of 7 manholes). The presence of these added vehicles, and the need for temporary lane closures would have some potential to impede emergency response access to the Project area, and could potentially interfere with access to evacuation routes. In particular, work in the northeastern portion of the alignment would take place along and in the vicinity of the collector roads that would be used for emergency evacuation of the small and narrow roads in the Olivenhain community. Furthermore, the City's Fire Station 6 is located just north of the intersection of Rancho Santa Fe Road and El Camino del Norte, in proximity to the proposed Lone Jack Road lane closure. The Project would not have direct interference with tsunami evacuation routes on Coast Highway 101 (to the west of I-5); however, a backup at Manchester Avenue and I-5 could hinder travel from the area. At worst, impacts on emergency response and/or emergency evacuation could be significant under both CEQA and NEPA.

To address this issue, the construction contractor will be required to prepare and implement a Traffic Control Plan (see *Measures for Traffic Control and Safety* under *Environmental Commitments* in Chapter 2). Among other items, the Plan would include provisions for maintaining safe and efficient traffic flow during construction, including requirements to maintain at least 1 lane open at all times and to provide flaggers as needed; to prevent blockage of intersections and driveways; and to notify affected residences and facilities, thereby minimizing interference with emergency access and evacuation. The City will continue to implement standard measures enabling priority passage by emergency vehicles, and the Contractor will also be required to coordinate with the City Fire Department and Police Department regarding emergency response and evacuation needs. With this commitment in place, the potential for interference with emergency response and emergency evacuation would be reduced to a level considered **less than significant under both CEQA and NEPA.**

Over the longer term, the expanded program of inspections, cleaning, and maintenance would not substantially modify traffic flow or function and would not materially increase the presence of vehicles on City roadways. There would thus be **no long-term impact under either CEQA or NEPA related to potential for interference with emergency response or emergency evacuations.** No mitigation is required.

Significant Impact and Mitigation Approaches

Impact HAZ6 – Increased Risk of Wildland Fires and Associated Hazards

The Project area as a whole is located in a fire hazard zone, with the northeastern portion of the alignment, north of El Camino del Norte, located in a very high fire hazard severity zone. The southwesternmost portion of the alignment is also adjacent to a high hazard zone (California Department of Forestry and Fire Protection 2009). In addition, the majority of alignment (particularly from Manchester Avenue inland to El Camino del Norte, as well as most of the alignment beyond to the northeast) does not currently experience vehicular traffic related to OTS operations and maintenance.

The proposed Project would introduce construction traffic and activities within scrub and riparian habitat, as well as in roadways with adjacent brush, along with the use of gasoline-powered tools and other equipment. The use of these vehicles, gasoline-powered tools, and other equipment in vegetated areas represents a potential source of ignition, and therefore could increase wildland fire hazards. The increased risk would be greater during construction, when more equipment would be present, and the overall activity level would be greater. Similar risks could pertain once the new access is in use, but the increase in risk would be substantially less since the activity level would be infrequent and much lower overall. Moreover, the standard 16-foot width for the proposed access would allow for adequate space for passage of the Vac-Con and other maintenance vehicles, lessening the fire risk posed by internal combustion engines and other equipment in close proximity to brush and flammable vegetation. Nonetheless, impacts have the potential to be significant during both construction and operational phases.

To address the Project's potential to increase wildland fire risks, the following mitigation measure will be implemented. **With this measure in place, impacts would be reduced to a level considered less than significant under CEQA and NEPA.**

Mitigation Measure HAZ6.1: Require Implementation of Wildland Fire Risk Reduction Measures

All contractors retained for the Project will be required to implement the following procedures. These requirements will also apply to operation and maintenance activities within and adjacent to areas of native vegetation.

- Smoking will not be permitting on work sites.
- Vehicles and equipment (including portable equipment) with internal combustion engines will be equipped with properly functioning spark arrestors.
- Fire suppression equipment will be provided in a clearly designated and accessible location at all construction work sites, and will be included in the equipment routinely carried by City maintenance vehicles. During construction, fire suppression equipment will be readily accessible and will be located within 25 feet of any use of internal combustion-powered portable equipment. During operations/maintenance activities, fire suppression equipment will be carried in a readily accessible location on maintenance vehicles.
- Construction personnel and City maintenance staff will receive training on all fire suppression equipment prior to the commencement of work.

- At no time will flammable materials be stored within 10 feet of equipment that could produce a spark, fire, or flame.

Action Alternatives

Although some of the alignment details would differ under the action alternatives, both Alternative 1 and Alternative 2 would be located in very close proximity to the alignment identified for the proposed Project. The closest listed sites—both of which are in Closed status, reflecting remediation completed consistent with applicable regulatory standards—are located approximately 2,000 feet (0.38 mile) southeast of the alignment and (3,000 feet) 0.57 mile downstream of the alignment. There would thus be **no impact related to location on or within 0.25 mile of a site listed for hazardous materials contamination under either Alternative 1 or Alternative 2.**

The construction process would also be essentially the same under the action alternatives as that described for the proposed Project, and would have essentially the same (very limited) potential for impacts related to hazards and hazardous materials. As a result, **construction-period impacts related to routine transport/use/disposal of hazardous materials, use of hazardous materials within 0.25 mile of a school, potential discovery of undocumented hazardous materials contamination, and potential to interfere with an adopted emergency response, evacuation, or hazardous materials response plan would all be less than significant under both CEQA and NEPA for Alternative 1 and Alternative 2.**

Both action alternatives would enable the same expanded program of inspections, cleaning, and maintenance along the project reach of the OTS. Operational impacts related to hazards and hazardous materials would therefore be the same as those described for the proposed Project: there would be **no long-term impact under either CEQA or NEPA related to routine transport/use/disposal of hazardous materials, use of hazardous materials within 0.25 mile of a school, potential discovery of undocumented hazardous materials contamination, or potential to interfere with an adopted emergency response, evacuation, or hazardous materials response plan for Alternative 1 and Alternative 2.**

Both action alternatives would have the same potential as the proposed Project to increase risks associated with wildland fires (significant under both CEQA and NEPA), for the same reasons identified for the proposed Project. For both Alternative 1 and Alternative 2, **implementation of Mitigation Measure HAZ6.1 (*Require Implementation of Wildland Fire Risk Reduction Measures*), described in detail above, would reduce impacts to a level considered less than significant under both CEQA and NEPA.**

No Project/No Action Alternative

Under the No Project/No Action Alternative, there would be no access construction, no manhole rehabilitation, and no realignment of the segment of the OTS above El Camino del Norte. There would thus be **no construction-related impact under either CEQA or NEPA with regard to work on or within 0.25 mile of a site listed for hazardous materials contamination; use, transport, or handling of hazardous materials; discovery of undocumented hazardous materials contamination; interference with adopted emergency response or evacuation plans; or increased wildland fire risks.**

With no new access route, the City's program of inspections, cleaning, and maintenance along the OTS would continue at the current level. There would thus be **no post-construction/operational impact under either CEQA or NEPA with regard to work on a site listed for hazardous materials contamination; use, transport, or handling of hazardous materials; discovery of undocumented hazardous materials contamination; interference with adopted emergency response or evacuation plans; or increased wildland fire risks.** Over the longer term, however, as infrastructure continues to degrade, it would eventually become

necessary to rehabilitate the aging manholes and possibly other components of the OTS under a separate future project or projects. The future project or projects would presumably involve construction activities with the potential to use substances that qualify as hazardous materials (including but not limited to equipment fuels and lubricants), although the specifics are considered speculative at the present time since the details of these projects cannot be predicted.

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Chapter 11

Utilities and Service Systems

Introduction

Chapter Overview

This chapter discusses the Project's potential impacts on utilities and service systems, including not only sanitary sewer but also electrical, recycled water, and potable water/water supply.

This chapter contains the following information:

- An overview of chapter preparation, including sources of baseline information and an explanation of the methods used to analyze impacts
- A description of existing conditions relative to utilities and service systems (potable water supply, sanitary sewer, recycled water, electricity, and solid waste disposal) in the Project area
- An overview of ordinances, policies, and plans relevant to utilities in the City and surrounding North County area
- Analysis of potential impacts on utilities and services under the proposed Project, the 2 action alternatives, and the No Project/No Action Alternatives, including approaches to avoid or reduce (mitigate) potentially significant adverse impacts

Project construction would have very little potential to impact utilities. During construction, water use would be limited, electrical demand would be essentially nil, solid waste generation would also be very limited, and the Project would incorporate standard precautions to avoid physical conflicts and damage to existing utilities infrastructure. There would be no construction-period impact related to adverse physical effects on existing utilities infrastructure, exceedance of applicable wastewater treatment capacity or requirements, need for augmented water supply or new water entitlements, increased demand for electrical power, violation of solid waste regulations, or exceedance of landfill capacity.

Project outcomes would include rehabilitation of existing degraded manholes, relocation of a portion of the OTS into the public roadway for easier access, and provision of access to the remainder of the OTS below El Camino del Norte, enabling the City to fully reinstate its program of sanitary sewer inspections, cleaning, and maintenance. Both the physical improvements and the ability to improve ongoing cleaning and maintenance represent a substantial benefit to the City's sanitary sewer utility.

How this Chapter Was Prepared

Assessment of Existing Conditions

Information on existing utilities service and infrastructure in the City was derived from the following sources:

- Websites of the San Dieguito Water District (www.encinitasca.gov/index.aspx?page=52), Olivenhain Municipal Water District (www.olivenhain.com), and Santa Fe Irrigation District (www.sfidwater.org/index.aspx)
- The City's current Sewer Master Plan (City of Encinitas 2011a)

- The home page for the City’s Wastewater Collection Division (www.ci.encinitas.ca.us/index.aspx?page=191) and the websites of the San Elijo Joint Powers Authority (www.sejpa.org) and Encina Wastewater Authority (www.encinajpa.com)
- The City’s current Capital Improvement Program (City of Encinitas 2011b)
- The website of the San Diego Gas & Electric Company (www.sdge.com)
- The home page for the City’s Trash and Recycling Program and the CalRecycle (former California Integrated Waste Management Board) website (www.encinitasca.gov/index.aspx?page=327 and www.calrecycle.ca.gov, respectively)

Impact Analysis Methods

As discussed in Chapters 1 and 2 of this Draft EIR/EA, the Project focuses exclusively on rehabilitating and providing ongoing maintenance access to a critical wastewater facility, and is intended to support existing City and County land use planning. It does not include a housing component, nor would it modify infrastructure in a way that conduces to residential development other than that envisioned in current adopted land use planning documents. As a result, the Project would not increase or relocate populations in the City or County; it therefore would have very limited potential to impact utilities. With this in mind, impacts on utilities and service systems were analyzed qualitatively, in consideration of the following factors.

- Direct impacts on existing utilities infrastructure
- Demand for utilities and services during construction
- Demand for utilities and services to support ongoing sewer maintenance activities once the new access is in place

The Project would result in a significant impact under CEQA if it were to lead to any of the following.

- Substantial adverse physical effects on existing utilities infrastructure
- Exceedance of, or noncompliance with, applicable wastewater treatment requirements
- Exceedance of available wastewater treatment capacity; a need to construct new water or wastewater treatment facilities or expand existing facilities, with a potential for corollary environmental impacts
- Need to construct new stormwater drainage facilities or to expand existing facilities, with a potential for corollary environmental impacts
- Need for new water supply or entitlements
- Substantially increased demand for electrical power
- Violation of, or inconsistency with, federal, state, or local statutes or regulations related to solid waste
- Exceedance of landfill capacity

Any of these outcomes would also represent an adverse effect under NEPA.

Existing Conditions

Potable Water

Potable water service within the City is provided by the San Dieguito Water District (SDWD) and Olivenhain Municipal Water District (OMWD), depending on location. The SDWD is a City enterprise and the OMWD is an independent special district also providing service to other communities in the area.

The SDWD serves potable water needs in the majority of the City, including Leucadia, Old Encinitas, and part of Cardiff and New Encinitas. The SDWD uses a combination of local runoff supply, which is collected and stored in Lake Hodges and San Dieguito Reservoir, and imported supply purchased from the San Diego County Water Authority, which in turn purchases water from the Metropolitan Water District of Southern California (MWD). MWD supply is imported from two sources: the Colorado River and the Sacramento–San Joaquin Delta. Before delivery to SDWD’s customers, raw water from both Lake Hodges and the Water Authority is treated at the R. E. Badger Filtration Plant, located in Rancho Santa Fe and co-owned with the Santa Fe Irrigation District (SFID). The SDWD also purchases treated water from the Water Authority, which is delivered directly to consumers.

Potable water needs in the remainder of the City, and in neighboring Olivenhain, Carlsbad, and La Costa, are served by the OMWD. The OMWD is a participant in the San Diego County Water Authority (SDCWA), and thus purchases imported MWD supply, both raw and treated, from the Authority. Raw water purchases are treated at OMWD’s David C. McCollom Water Treatment Plant and blended with supply treated at MWD’s Robert A. Skinner Treatment Plant and SDCWA’s Twin Oaks Valley Water Treatment Plant for delivery to customers.

Potable water service in neighboring Ranch Santa Fe and Solana Beach is provided by the SFID, using a combination of local and imported supply. SFID’s local supply comes from Lake Hodges, where SFID shares surface water rights with the SDWD and City of San Diego, and from San Dieguito Reservoir, which is co-owned with the SDWD. SFID also purchases both raw and treated water from the San Diego County Water Authority, which obtains Lake Havasu (Colorado River) and northern California (Sacramento–San Joaquin Delta) supply from the MWD, as identified above.

Water transmission and distribution infrastructure is separately installed, operated, and maintained by each district.

Wastewater

Sanitary sewer and wastewater treatment service within the City is provided by the Encinitas Sanitary Division (ESD), Cardiff Sanitary Division (CSD), and Leucadia Wastewater District (LWWD), depending on location. Similar to potable water service, discussed above, ESD and CSD are arms of the City, and serve the majority of the City’s residents; LWWD is an independent special district that serves the remaining areas outside ESD and CSD boundaries (Leucadia and most of New Encinitas), along with other neighboring communities. Sewage from the City is delivered to one of 2 local facilities for treatment and disposal:

- San Elijo Water Reclamation Facility – This facility is located in Cardiff and operated by the San Elijo Joint Powers Authority, which is a joint powers collaboration between the Cities of Encinitas and Solana Beach
- Encina Water Pollution Control Facility – This facility is located in Carlsbad and is owned and operated by the Encina Wastewater Authority, a separate joint powers authority comprising the City of Encinitas and the LWWD along with the City of Carlsbad; the City of Vista and its wastewater

enterprise, the Buena Sanitation District; and the Vallecitos Water District, serving the San Marcos area

The CSD has the largest service area of the three sanitary sewer providers in the City, comprising approximately 19,600 residents in a 12-square-mile area that includes approximately 84 linear miles of sewer mains accessed by some 600 manholes (City of Encinitas 2011a). The OTS (see Figure 11-1) is the largest of the CSD's 4 trunk sewers. As such, it collects wastewater from numerous smaller tributary sewer lines in the southeast portion of the City and parts of adjacent Rancho Santa Fe and Olivenhain, conveying it to the San Elijo Water Reclamation Facility for treatment.

Recycled Water

Both the San Elijo Water Reclamation Facility and the Encina Wastewater Authority produce recycled water for selective reuse in their service areas.

Tertiary treated recycled water from the San Elijo Water Reclamation Facility is used to irrigate landscaped roadway medians, and is also delivered to the Encinitas Ranch Golf Course as well as a number of local parks and homeowners' associations for landscape irrigation use.

The Encina Wastewater Authority produces recycled water at the Encina Water Pollution Control Facility and also at the separate Carlsbad Water Recycling Facility, located nearby. Recycled water from the Encina Water Pollution Control Facility is used onsite to reduce the demand for potable water in applications such as cogeneration engine cooling, equipment washdown, odor reduction, and landscape irrigation. Recycled water from the Carlsbad Water Recycling facility is conveyed offsite for use by the City of Carlsbad.

Electricity

Electrical service within the City is provided by the San Diego Gas & Electric Company (SDG&E). SDG&E is a regulated public utility with a large service area (some 4,100 square miles and 1.4 million electrical service connections) encompassing San Diego County and southern Orange County. Within this area, SDG&E is responsible for forecasting demand and installing and maintaining infrastructure for power transmission and delivery.

Waste Management and Landfill Services

Solid waste collection services within the City of Encinitas are provided by EDCO Waste and Recycling Services under an exclusive franchise agreement with the City. Waste pickup also includes recyclable materials and greenwaste. Collected materials are sorted at a local transfer station and are then conveyed for disposal at either the Otay Landfill in Chula Vista or the Sycamore Sanitary Landfill in Santee.

The Otay Landfill is a Class III municipal solid waste facility owned by Republic Services and operated as a local subsidiary. It has a total permitted capacity slightly in excess of 61 million cubic yards, and as of March 2012 (the most recent information available) reported a remaining available capacity of about 25 million cubic yards. The current maximum permitted throughput for waste disposal at this facility is 5,830 tons/day.

The Sycamore Sanitary Landfill is an independently owned and operated Class III municipal solid waste facility. It has a total permitted capacity of approximately 72 million cubic yards, with approximately 42 million cubic yards of capacity remaining as of February 2011 (the most recent date for which information is available). The current maximum permitted throughput for waste disposal at this facility is 3,800 tons/day.

Regulatory Setting

State Regulations

The California Integrated Waste Management Act of 1989 (Assembly Bill 939) updated numerous prior regulations and laid important groundwork for the way solid municipal waste is now managed in California.

Among other provisions, the Act updated waste management planning requirements applicable to local jurisdictions, and defined a prioritized approach to reduce the municipal waste stream and decrease the effects of materials consumption and disposal on the environment. In order of priority, local agencies are required to engage in (1) source reduction, (2) recycling and composting, and (3) environmentally friendly transformation¹ or disposal of remaining waste. The Act set two landmark targets to implement this vision:

- By January 1, 1995: diversion of 25% of all solid waste from landfill or transformation facilities
- By January 1, 2000: diversion of 50% of all solid waste by from landfill or transformation facilities

Another important advance instituted under the Act was the establishment of a comprehensive statewide permitting, inspection, enforcement, and maintenance program for solid waste facilities, and creation of the full-time, 6-member California Integrated Waste Management Board with responsibility for its oversight. The Board (now renamed CalRecycle, reflecting the mandate to reduce California's waste stream) is composed of 2 members appointed by the Governor, one who has private sector experience in the solid waste industry and one who has served as an elected or appointed official of a non-profit environmental protection organization promoting recycling and the protection of air and water quality; 2 additional members appointed by the Governor to represent the public; 1 member appointed by the State Senate Committee on Rules to represent the public; and 1 member appointed by the California Speaker of the Assembly to represent the public.

Local Regulations, Plans, and Policies

The City of Encinitas makes it a priority to preserve natural resources such as groundwater, surface water, ocean waters, air quality, and trees and habitat (City of Encinitas 1989). With this in mind, an important goal identified in the City's General Plan is maintenance of a properly functioning sewer system such that the City's wastewater is handled, treated, and disposed responsibly (City of Encinitas 1989) (Resource Management Goal 6).

The City has also recently updated its Sewer Master Plan (City of Encinitas 2011a). The master planning process involved

- evaluating the condition of the City's wastewater collection system
- projecting future system needs and evaluating the adequacy of existing system capacity
- recommending future system improvements, including the improvements that will be needed to keep existing infrastructure functioning properly over the years, as well as the additional infrastructure and facilities that may be needed to accommodate new development

A primary goal of the master planning process is to identify the sewer facilities that need more immediate attention, providing input to enable the City's 5-year Capital Improvement/Work Project Program and Financial Plan to prioritize capital projects—ultimately including not just those that address wastewater, but

¹ *Transformation* refers to alternate means of waste disposal such as incineration.

also projects related to potable water, parks, streets, and other facilities and services in the City’s purview—enabling the City to allocate and spend funding where it is most needed in the community.

Encinitas Construction and Demolition Debris Ordinance

The City’s Construction and Demolition Debris Ordinance (Municipal Code 11.22) was adopted in support of California Integrated Waste Management Act goals relative to reduction of the municipal solid waste stream, discussed in *State Regulations* above. The Ordinance applies to public and private projects within City limits, including City undertakings.

Under the Ordinance, all construction, renovation, and remodeling projects with a total area of 10,000 square feet or more, and all demolition projects regardless of size, are required to divert at least 60% of their construction and demolition debris (C&D debris) from the waste stream, through recycling or reuse. The project’s anticipated weight of C&D debris, the maximum weight that can feasibly be diverted, the vendor(s) or facility(ies) proposed to receive the diverted materials, and the weight remaining to be landfilled must all be documented in a project-specific Waste Management Plan subject to City review. The Waste Management Plan must be approved by the City as a condition for overall project approval.

Impacts and Mitigation Measures

Impact	Significance	Mitigation	Significance with Mitigation
<i>Proposed Project</i>			
UTIL1 – Potential for Substantial Adverse Physical Effects on Existing Utilities Infrastructure	Construction period: No impact Long-term: Benefit	<i>None required</i>	Construction period: No impact Long-term: Benefit
UTIL2 – Potential for Exceedance of Applicable Wastewater Treatment Capacity or Requirements	No impact	<i>None required</i>	No impact
UTIL3 – Potential to Require New or Expanded Stormwater Facilities	No impact	<i>None required</i>	No impact
UTIL4 – Potential to Require Augmented Water Supply or New Water Entitlements	No impact	<i>None required</i>	No impact
UTIL5 – Potential to Result in Substantially Increased Demand for Electrical Power	No impact	<i>None required</i>	No impact
UTIL6 – Potential for Violation of Solid Waste Regulations	No impact	<i>None required</i>	No impact
UTIL7 – Potential to Exceed Landfill Capacity	No impact	<i>None required</i>	No impact
<i>Alternative 1 – Combination Access, Alternate Configuration</i>			
UTIL1 – Potential for Substantial Adverse Physical Effects on Existing Utilities Infrastructure	Construction period: No impact Long-term: Benefit	<i>None required</i>	Construction period: No impact Long-term: Benefit
UTIL2 – Potential for Exceedance of Applicable Wastewater Treatment Capacity or Requirements	No impact	<i>None required</i>	No impact

Impact	Significance	Mitigation	Significance with Mitigation
UTIL3 – Potential to Require New or Expanded Stormwater Facilities	No impact	<i>None required</i>	No impact
UTIL4 – Potential to Require Augmented Water Supply or New Water Entitlements	No impact	<i>None required</i>	No impact
UTIL5 – Potential to Result in Substantially Increased Demand for Electrical Power	No impact	<i>None required</i>	No impact
UTIL6 – Potential for Violation of Solid Waste Regulations	No impact	<i>None required</i>	No impact
UTIL7 – Potential to Exceed Landfill Capacity	No impact	<i>None required</i>	No impact

Alternative 2 – Conventional Continuous Access, Plantable/Pervious Surface Treatments

UTIL1 – Potential for Substantial Adverse Physical Effects on Existing Utilities Infrastructure	Construction period: No impact Long-term: Benefit	<i>None required</i>	Construction period: No impact Long-term: Benefit
UTIL2 – Potential for Exceedance of Applicable Wastewater Treatment Capacity or Requirements	No impact	<i>None required</i>	No impact
UTIL3 – Potential to Require New or Expanded Stormwater Facilities	No impact	<i>None required</i>	No impact
UTIL4 – Potential to Require Augmented Water Supply or New Water Entitlements	No impact	<i>None required</i>	No impact
UTIL5 – Potential to Result in Substantially Increased Demand for Electrical Power	No impact	<i>None required</i>	No impact
UTIL6 – Potential for Violation of Solid Waste Regulations	No impact	<i>None required</i>	No impact
UTIL7 – Potential to Exceed Landfill Capacity	No impact	<i>None required</i>	No impact

No Project/No Action Alternative

UTIL1 – Potential for Substantial Adverse Physical Effects on Existing Utilities Infrastructure	Construction period: No impact Long-term: Significant and unavoidable	<i>None available</i>	Construction period: No impact Long-term: Significant and unavoidable
UTIL2 – Potential for Exceedance of Applicable Wastewater Treatment Capacity or Requirements	No impact	<i>None required</i>	No impact
UTIL3 – Potential to Require New or Expanded Stormwater Facilities	No impact	<i>None required</i>	No impact
UTIL4 – Potential to Require Augmented Water Supply or New Water Entitlements	No impact	<i>None required</i>	No impact

Impact	Significance	Mitigation	Significance with Mitigation
UTIL5 – Potential to Result in Substantially Increased Demand for Electrical Power	No impact	<i>None required</i>	No impact
UTIL6 – Potential for Violation of Solid Waste Regulations	No impact	<i>None required</i>	No impact
UTIL7 – Potential to Exceed Landfill Capacity	No impact	<i>None required</i>	No impact

Proposed Project

Less than Significant Impacts

UTIL1 – Potential for Substantial Adverse Physical Effects on Existing Utilities Infrastructure

The Project would not directly involve utilities other than sanitary sewer, and is taking all customary precautions to avoid inadvertent conflicts with other existing utilities, such as storm drain, potable water supply, and electrical infrastructure. This includes researching the locations of existing utilities infrastructure through engineering record drawings and other City and agency sources, and designing Project features (in particular, the realigned section of the OTS proposed for installation in Lone Jack Road, as well as portions of the proposed new access that would run in close proximity to developed land uses) to avoid other utilities. As Project construction gets under way, it will also include conducting “utility markout” activities to verify the locations of utilities in the field. With these precautions in place, **Project construction is expected to have no impact under either CEQA or NEPA on existing utilities**, other than the planned improvements to specific sanitary sewer infrastructure.

As discussed in Chapter 2, the Project reach of the OTS is currently inaccessible for cleaning and has only limited accessibility for inspections and maintenance. Condition assessments have shown that many of the manholes along the Project reach are substantially degraded, with a significant I&I problem; these would be rehabilitated under the Project. In addition, with the City’s ability to clean the Project reach of the OTS compromised by access challenges, the line is accumulating sediment such that several manholes are now nearing a condition of surcharge; this would be addressed by enabling the City to access and clean the full length of the OTS below El Camino del Norte. Thus, over the longer term, the Project would not only repair existing infrastructure inadequacies, but would also enable the City to reinstate a full program of inspections, cleaning, and maintenance with access to the entire length of the OTS between El Camino del Norte and Manchester Avenue. This represents a **substantial long-term benefit to sanitary sewer infrastructure**.

UTIL2 – Potential for Exceedance of Applicable Wastewater Treatment Capacity or Requirements

As identified above and discussed further in Chapter 1 (see Table 1-4) and Chapter 2, the Project focuses exclusively on rehabilitating and providing ongoing maintenance access to a critical wastewater facility, and is intended to support existing City and County land use planning.

It would not construct or modify housing, modify infrastructure in a way that conduces to residential development other than that envisioned in current adopted land use planning documents, or increase or relocate area populations. It thus would not increase wastewater generation as a result of increased population in the Project area.

Sewer cleaning operations use water that is conveyed downstream in the sewer system as wastewater. Consequently, by expanding the City’s ability to maintain the OTS, the Project would result in a very small increase in long-term wastewater generation associated with twice annual cleaning at an increased number of manholes.

At present, with limited access to the OTS between El Camino del Norte and Manchester Avenue, the City uses a total of about 25,000 gallons of water annually in OTS cleaning activities. Providing full maintenance access to the OTS between El Camino del Norte and Manchester Avenue would increase the accessible length of the OTS from about 18,000 linear feet to about 26,600 linear feet. This represents an increase of approximately 48% in the length accessible for cleaning, and would require a corresponding increase in water usage, translating to about 12,000 gallons per year of additional water used and then conveyed via the OTS for treatment at the San Elijo Water Reclamation Facility. The current rated capacity of the San Elijo Water Reclamation Facility is 5.25 million gallons per day; the projected increase of 12,000 gallons per year (or just under 33 gallons per day) is thus extremely small by comparison to the available treatment capacity. There would be **no impact under either CEQA or NEPA related to exceedance of available wastewater treatment capacity, and no impact under either CEQA or NEPA related to the need to construct or expand treatment facilities.** No mitigation is required.

Since potable water is used in cleaning operations, the small added volume introduced to the treatment stream would actually dilute wastewater concentrations, and, if anything, would decrease rather than increase the potential for exceedance of wastewater treatment standards and requirements. There would thus be **no impact under either CEQA or NEPA related to exceedance of treatment requirements.** No mitigation is required.

UTIL3 – Potential to Require New or Expanded Stormwater Facilities

As described in Chapter 2 and further analyzed in Chapter 3 (*Hydrology and Water Quality*), the Project is being designed to minimize the alteration of existing geomorphology in the Creek and Lagoon corridor, and the new access would be constructed using permeable and plantable surface treatments, avoiding the need for conventional hardscape. The Project therefore would not materially alter the rate or volume of stormwater runoff as a result of topographic modification, nor would it add impermeable surfaces with the potential to generate increased runoff. Since it would not increase storm runoff, the Project would have **no impact under either CEQA or NEPA related to a need for new or expanded stormwater conveyance infrastructure.** No mitigation is required.

UTIL4 – Potential to Require Augmented Water Supply or New Water Entitlements

A small volume of water would likely be required for dust control and other routine purposes during construction. However, this use would be temporary, short-term, and highly localized since it would focus at the immediate active work area. Moreover, long-term water resources planning takes into account intermittent construction activity consistent with adopted land use planning documents. Consequently, potential use of water on the active construction site would be well within the capacity of existing water supply; there would be **no construction-period impact under either CEQA or NEPA related to a need for additional water supply or water entitlements.**

Once the new access is constructed and revegetation plantings are installed, there would likely be a need for minor ongoing water use for irrigation to support rapid and robust establishment, particularly if construction occurs in a dry year. This use would be limited, localized, and seasonal, however, and would not persist beyond the establishment period, which is expected to last between 3 months and 1 year; the goal for native species revegetation in sensitive habitat is always to develop a planting palette that is appropriate to site conditions and does not require ongoing support once established. Typical water use during the establishment period for a project of this type and size would total on the order of 3 acre feet per acre in marshlands and about 1.7 acre feet per acre in upland areas. For comparison, the typical family of 4 in the United States uses about 400 gallons per day or just under 0.5 acre-foot (about 146,000 gallons) per year (U.S. Environmental Protection Agency 2014). Total irrigation usage for the Project over the duration of the establishment period would thus be in the same ballpark as water usage by 3 to 6 typical 4-person households over the period of 1 year. This is also well within the usage envisioned in existing water supply

planning, and expanded sources of supply would not be needed. There would thus be **no impact under either CEQA or NEPA related to a need for additional water supply or water entitlements to support revegetation.**

Ongoing City-wide sewer maintenance is currently estimated to use about 2,000 gallons per day, averaged over the course of a year. This usage would increase slightly once the new access is in use, since the City would be able to expand sewer maintenance and cleaning to a portion of the OTS that has not been accessible. However, the increase would be small (projected at about 33 gallons per day annual average, as discussed in Impact UTIL2 above); water supply planning takes into account this type of ongoing maintenance activity, and the increase in usage would be comparatively minor in the context of the overall water supply budget serving the Encinitas area. Consequently, there would be **no impact under either CEQA or NEPA related to a need for additional water supply or water entitlements to support ongoing sewer system cleaning and maintenance over the longer term.**

UTIL5 – Potential to Result in Substantially Increased Demand for Electrical Power

This discussion focuses on direct consumption of electrical power for Project construction and use and for the expanded sewer maintenance and cleaning that would be enabled by the new access. Indirect consumption of power for fabrication and transport of materials, and other indirect uses of power, are discussed separately in Chapter 14 (*Environmental Sustainability*).

Project construction is not expected to directly consume electricity. The Project alignment is undeveloped and would not have direct access to electrical connections; small power tools that may be used in construction would thus need to be gasoline-powered rather than electric. If night work is required to avoid adverse impacts on traffic flow along the busy Manchester Avenue corridor, lighting would be powered by small, quiet diesel generators. There would be **no impact under either CEQA or NEPA related to a substantially increased need for electrical power during Project construction.**

The Project would not include lighting and would not install facilities of any other type that require electrical power, and sewer system maintenance and cleaning does not use electric equipment. Thus, even though the Project would create a new access route and enable expanded sewer maintenance activities, it would not increase the use of electrical power, and there would also be **no operational impact under either CEQA or NEPA related to a substantially increased need for electrical power.**

UTIL6 – Potential for Violation of Solid Waste Regulations

Project construction would generate small volumes of solid waste (discussed further in the following impact item, *Potential to Exceed Landfill Capacity*), all of which would be handled in strict accordance with applicable regulations, including but not limited to the City's C&D debris ordinance. Use of the new access for expanded maintenance would not generate solid waste. There would be **no short- or long-term impact under either CEQA or NEPA related to violation of solid waste regulations.**

UTIL7 – Potential to Exceed Landfill Capacity

Project construction would generate small volumes of solid waste, potentially including plant debris, excavation spoils, and concrete and steel from the siphon and manholes planned for removal, as well as pavement and aggregate debris where a trench must be opened to install the realigned segment of the OTS within Lone Jack Road. Because of the Project's limited extent, however, the total volume of waste would be very small, well within remaining daily and total capacity of both landfills that receive waste from the Encinitas area. Moreover, because the Project footprint would exceed 10,000 square feet, the Project would be subject to recycling/reuse requirements under the City's C&D debris ordinance; a minimum of 60% of the total waste generated during construction would be diverted from the waste stream and therefore would not require landfill disposal. Use of the new access for expanded maintenance would not generate solid waste.

There would be no short- or long-term impact under either CEQA or NEPA related to exceedance of landfill capacity.

Significant Impacts and Mitigation Approaches

No significant adverse impacts with regard to utilities and service systems have been identified for the proposed Project.

Action Alternatives

Short-term construction period impacts under the two action alternatives—Alternative 1 (Combination Access, Alternate Configuration) and Alternative 2 (Conventional Continuous Access, Plantable/Pervious Surface Treatments) —would be very similar to those discussed above for the proposed Project. Although the location and footprint would differ slightly from the proposed Project, the construction process would be essentially the same, and both action alternatives would include the same partial realignment above El Camino del Norte as well as removal of the existing siphon and the same 2 manholes. Construction water use (limited), electrical demand (essentially nil), and solid waste generation (very limited) therefore would not differ materially from that identified above for the proposed Project. The action alternatives would also incorporate the same precautions to avoid conflicts with other utilities. Thus, like the proposed Project, the two action alternatives would have **no construction-period impact under either CEQA or NEPA related to adverse physical effects on existing utilities infrastructure, exceedance of applicable wastewater treatment capacity or requirements, need for augmented water supply or new water entitlements, increased demand for electrical power, violation of solid waste regulations, or exceedance of landfill capacity.**

Similarly, over the longer term, both of the action alternatives would result in the same rehabilitation of existing degraded manholes, would remove the same superfluous facilities, and would enable the City to fully reinstate the same program of sanitary sewer inspections, cleaning, and maintenance analyzed above for the proposed Project. **Under both CEQA and NEPA, long-term impacts under the action alternatives would thus also be the same as those under the proposed Project, including the long-term benefit to sanitary sewer infrastructure.**

No Project/No Action Alternative

Under the No Project/No Action Alternative, no access would be constructed, there would be no realignment of the OTS above El Camino del Norte, none of the degraded manholes would be rehabilitated (at least in the immediate future), and the siphon and all manholes would remain in place. There would be no construction or demolition and thus no need for construction-related use of water or electrical power, no generation of C&D debris, and no potential for conflict with existing utilities during construction. The No Action Alternative would have **no construction-period impact under either CEQA or NEPA related to adverse physical effects on existing utilities infrastructure exceedance of applicable wastewater treatment capacity or requirements, need for augmented water supply or new water entitlements, increased demand for electrical power, violation of solid waste regulations, or exceedance of landfill capacity.**

Over the longer term, without the new access route, the City would remain unable to implement a full program of maintenance; inspection, cleaning, and maintenance would continue to occur at the current level. There would thus be **no long-term impact under either CEQA or NEPA on utilities or service systems related to utilities demand associated with expanded maintenance activities.** With no rehabilitation of the aging manholes along the project reach of the OTS, these facilities would continue to deteriorate; with cleaning and maintenance continuing on a restricted basis, additional risks to sewer system integrity could also arise, particularly as some manholes are already operating in a near-surge condition. Over time, unrehabilitated manholes may also become structurally unsound and undergo physical failure. Either of these

outcomes would represent a significant adverse impact on sanitary sewer infrastructure. Since this type of impact could not be averted without a separate, discretionary future action, it is also considered unavoidable under the No Project/No Action condition.

With continued deterioration over time, it would eventually become necessary to rehabilitate the manholes under a separate future project or projects. Based on recent condition inspections, this is expected to become a critical need within the foreseeable future, as identified above. The timing, extent, and specific nature of activities is speculative at this time; however, any such future project would be a discretionary undertaking subject to CEQA/NEPA review and regulatory permitting at the time it is proposed.

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Chapter 12

Environmental Justice

Introduction

Chapter Overview

This chapter focuses on the potential for the Project to result in impacts related to environmental justice. Environmental justice analysis addresses whether a proposed undertaking would have disproportionate adverse effects on low-income or minority populations, consistent with federal Executive Order 12898 of 1994 and accompanying guidance.

This chapter contains the following information:

- An overview of chapter preparation, including sources of baseline demographic information and an explanation of the methods used to analyze impacts
- A description of existing demographic conditions in the Project area
- Analysis of potential environmental justice impacts under the proposed Project, the 2 action alternatives, and the No Project/No Action Alternatives

The Project vicinity (areas potentially affected by Project construction and operations) does not meet federal qualifications for low income or “minority-majority” status. Consequently, Project outcomes would not disproportionately affect low income or minority populations, and no environmental justice concerns are identified with regard to the Project.

How this Chapter Was Prepared

Assessment of Existing Conditions

Existing conditions pertaining to environmental justice issues were assessed using census data from the American Community Survey, in consideration of applicable federal guidelines. EPA defines *minority population areas* as areas where more than 50% of the population is minority or minority representation is meaningfully greater than it is in the general population, and *low-income population areas* as areas where more than 50% of the population is below the poverty line (U.S. Environmental Protection Agency 1998). Census data provided the basis to determine whether the Project area meets either of these qualifications.

Impact Analysis Methods

Evaluating the potential for a proposed undertaking to result in disproportionate adverse effects on minority or low-income populations entails two steps:

- Evaluating the demographics of the affected area for the presence of minority and low-income populations
- Comparing impacts on identified disadvantaged populations with those on the population at large

Existing Conditions

The Project alignment is located within census tracts 171.06, 171.10, and 174.04, which are largely within the City of Encinitas and partially within unincorporated San Diego County. As Tables 12-1 and 12-2 show, the minority population in these 3 census tracts ranges from 10% to 18%. The minority population within the City as a whole is 12%, and that in greater San Diego County is 29%.

Table 12-1: Race in Project Area

Population	Census Tract			City of Encinitas	San Diego County
	171.06	171.10	174.04		
Total	4,523	10,530	6,793	59,782	3,100,500
White	4,070	8,631	5,892	52,680	2,217,577
Black or African American	0	457	65	275	156,645
American Indian and Alaska Native	18	0	49	218	21,872
Asian	253	903	361	3,226	342,886
Native Hawaiian and Other Pacific Islander	0	0	92	166	14,541
Some Other Race	35	256	215	1,661	206,280
Two or More Races	147	283	119	1,556	140,699
Hispanic or Latino	192	1,570	1,616	8,851	992,087

Source: U.S. Bureau of the Census 2012

Table 12-2: Minority Population within Project Area

Area	Total Population	Minority Population	% Minority
Census Tract 171.06	4,523	453	10%
Census Tract 171.10	10,530	1,899	18%
Census Tract 174.04	6,793	901	13%
City of Encinitas	59,782	7,102	12%
San Diego County	3,100,500	882,923	29%

Source: U.S. Bureau of the Census 2012

As described above in *Assessment of Existing Conditions* in the section on *How this Chapter Was Prepared*, EPA considers that an area of minority population exists where more than 50% of the population is minority, or where minority representation is meaningfully greater than it is in the general population. With minority populations between 10% and 18%, the 3 census tracts that contain the Project alignment are well below the EPA's 50% threshold.

In addition, at 10% minority, Census Tract 171.06 has a smaller minority population than the City as a whole (12%), and substantially smaller than greater San Diego County (29%). Census Tract 171.06 therefore does not qualify as an area of minority population using either of EPA's criteria. Census Tracts 174.04 (13% minority) and 171.10 (18% minority) are above the Citywide minority population percentage by 1 and 6 percentage points respectively, but both are well below the Countywide percentage (29%). Census Tracts 174.04 and 171.10 are therefore not evaluated as areas where the minority population is meaningfully greater than it is in the population as a whole, and thus are also considered not to qualify as areas of minority population.

As Table 12-3 shows, the proportion of families below the poverty line in census tracts 171.06, 171.10, and 174.04 ranges from 7.6% to 12.4%. This range is substantially below the EPA’s 50% threshold, and is roughly on par with larger regional average of 10% for San Diego County. The Project census tracts are therefore not considered to qualify as areas of low income population.

Table 12-3: Household Income in Project Area

Area	Median Household Income	Average Household Size	Households Below Poverty Level
Census Tract 171.06	\$144,777	2.80	7.60%
Census Tract 171.10	\$94,972	2.99	12.40%
Census Tract 174.04	\$86,875	2.76	9.80%
City of Encinitas	\$90,868	2.59	6.70%
San Diego County	\$63,373	2.82	10.00%

Source: U.S. Bureau of the Census 2012

Regulatory Setting

Environmental justice issues are regulated at the federal level through Executive Order (EO) 12898 of 1994, which requires federal agencies to identify and address disproportionately high and adverse human health and/or environmental effects of their programs, policies, or activities on minority and low income populations. The Presidential Memorandum accompanying EO 12898 identifies NEPA review as the vehicle for implementation of the Order’s requirements. Following up on the Presidential Memorandum, the President’s Council on Environmental Quality (CEQ) provided specific and detailed guidance for treatment of environmental justice issues in NEPA documents (Council on Environmental Quality 1997). The methodology in the CEQA guidance has become the standard for environmental justice analysis: first identify whether minority, low-income, and/or Tribal populations are present in the area affected by a proposed federal action, and if so, assess whether adverse effects would disproportionately affect these populations.

Impacts and Mitigation Approaches

The Project alignment is entirely within Census Tracts 171.06, 171.10, and 161.04. None of these census tracts is considered an area of minority population or an area of low-income population. Consequently, neither the proposed Project nor the alternatives would result in a disproportionate affect (either adverse or beneficial) on minority or low-income populations.

References Used in Preparing this Chapter

- U.S. Bureau of the Census. 2012. American Community Survey. Available: <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>. Accessed: June 2014.
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