

## 6.0 COMPARISON OF ALTERNATIVES

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### INTRODUCTION

This chapter provides a summary comparison of the RP's Proposed Remedy (base remedy) with the Expedited Implementation Option and a comparison of the RP's Proposed Remedy with the three alternatives. Under the *CEQA Guidelines*, the identification and analysis of alternatives is a fundamental part of the environmental review process. As discussed in Section 3.1, *Development of Alternatives to the RP's Proposed Remedy*, of this EIR, the Regional Board considered a range of alternatives based on information from the pilot tests conducted at the site, information contained in the Feasibility Study Report (FS), and independent review of the FS and Human Health Risk Assessment by the State Office of Environmental Health Hazard Assessment (OEHHA) and the University of California Los Angeles (UCLA) Expert Panel, respectively. Selected Alternatives include (1) Alternative 1: No Project Alternative, (2) Alternative 2: Excavation Beneath Landscape and Hardscape to 10 Feet Alternative and (3) No Excavation Beneath Hardscape – 5 Feet With Targeted 10 Feet Alternative. These alternatives are described in Chapter 3 of this EIR.

In addition to providing a summary comparison of alternatives, this chapter contains an environmentally superior comparison of the alternatives with the RP's Proposed Remedy. *CEQA Guidelines* Section 15126.6(e)(2) states that "If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." The environmentally superior alternative is typically the alternative that meets the overall project goals and objectives and can avoid or substantially lessen one or more of the significant effects of a project when compared to other project alternatives, including the No Project Alternative.

### 1. OBJECTIVES OF THE PROPOSED PROJECT

Section 15124(b) of the *CEQA Guidelines* states that the Project Description shall contain "a statement of the objectives sought by the proposed project." The underlying purpose of the proposed RAP is to remediate the site consistent with the Regional Board's CAO R4-2011-0046 dated March 11, 2011, as amended, and applicable laws and policies. In accordance with the provisions of the CAO and as required by Section 15124(b) of the *CEQA Guidelines*, the following are the objectives for the proposed RAP:

1. Implement a RAP that complies with the CAO and meets the media-specific (i.e. soil, soil vapor, and groundwater) Remedial Action Objectives (RAOs) developed for the site. (See Table 6-2 for a list of the RAOs for the site.)
2. Maintain the residential land use of the site and avoid permanently displacing residents from their homes or physically dividing the established Carousel Tract community.
3. Minimize short-term disruption to residents.
4. Allow residents the long-term ability to safely and efficiently make improvements requiring excavation or penetration into shallow site soils (i.e., landscaping, hardscape, gardening, etc.) on their properties.
5. Limit or minimize environmental impacts associated with the cleanup activities.

## 2. SUMMARY COMPARISON

**Table 6-1**, *Summary of Comparison of Impacts Associated with the Option and the Alternatives Relative to Impacts of the Project*, provides a comparative summary of the environmental impacts anticipated under each Alternative to the environmental impacts associated with the project. Pursuant to Section 15126.6(c) of the CEQA Guidelines, the analysis below addresses the ability of the Alternatives to “avoid or substantially lessen one or more of the significant effects” of the project.

As shown in Table 6-1, most environmental impacts from the RP’s Proposed Remedy would be less than significant, as determined in the analyses in Chapter 5, Environmental Impact Analysis, of this EIR. However, impacts generated by the Expedited Implementation Option, and the three Alternatives (the No Project Alternative, Excavate Beneath Landscape and Hardscape to 10 Feet Alternative, and No Excavation Beneath Hardscape – 5 Feet With Targeted 10 Feet Alternative) have the potential to be incrementally greater, less, or the same as under the base remedy with respect to a particular threshold. The comparative differences between the Expedited Implementation Option and the three alternatives are indicated as in Table 6-1. Potentially significant environmental effects for the RP’s Proposed Remedy and the three alternatives are discussed below. In addition, a discussion regarding the ability of the alternatives to meet the project objectives is provided. Table 6-2, *Summary Comparison of the Project’s and Alternatives’ Ability to Meet Project Objectives*, summarizes the comparison.

### RP’s Proposed Remedy – Expedited Implementation Option

The RP’s Proposed Remedy includes an Expedited Implementation Option that is described in Chapter 3 and evaluated throughout Chapter 5 of this EIR. The Expedited Implementation Option would result in more activity at the site as two clusters would be remediated simultaneously. While not an alternative to the project, a comparison of impacts of the Option relative to the project is provided below and in Table 6-1.

As with the base remedy, the Expedited Implementation Option would meet all the project objectives listed above.

#### Air Quality

The Expedited Implementation Option would involve approximately twice the daily activity of the RP’s Proposed Remedy and, therefore, would generate approximately twice the remediation-related emissions associated with the base remedy during peak periods. Although incrementally greater than under the base remedy, peak emissions would not exceed threshold levels and would be less than significant. Although the Expedited Implementation Option would increase daily emissions, the duration of remediation activities would approximately 4 years compared to approximately 6 years under the RP’s Proposed Remedy.

#### Geology and Soils

The total amount of excavated soils would be the same as under the RP’s Proposed Remedy; however, excavation activity occurring concurrently would increase peak activity and soils and grading management. As such, the peak potential exposure of soils to geology-related erosion forces, would be greater. As described in Section 5.2, Geology and Soils, of this EIR, approved grading plans and erosion control would be the same as under the RP’s Proposed Remedy and impacts would be less than significant. However, impacts would be incrementally greater under the Expedited Implementation Option because of higher peak activity.

Impacts associated with seismic forces, ground stability, and expansive soils would be the same as under the base remedy and less than significant.

### **Greenhouse Gas Emissions**

The Expedited Implementation Option would take approximately 4 years and would require the same types of heavy-duty equipment as the RP's Proposed Remedy. While the Expedited Implementation Option would result in increased daily activities at the site, the total amount of activity (fuel and energy use) that would generate GHG emissions would remain the same as the RP's Proposed Remedy. Therefore, the Expedited Implementation Option would result in the same total short-term GHG-emitting fuel and energy use as discussed for the RP's Proposed Remedy. Impacts related to greenhouse gas emissions would be less than significant.

### **Hazardous Materials**

The Expedited Implementation Option would result in a greater level of activity on the site at one time but would not increase the total level of activities site-wide. By working on multiple clusters simultaneously, the Expedited Implementation Option would reduce the duration of remediation activities to approximately 4 years compared to approximately 6 years under the RP's Proposed Remedy. Although incrementally greater than under the Proposed Remedy, acute (maximum hour) and chronic (annual) non-cancer health risks would not exceed threshold levels and would be less than significant. The incremental increase in lifetime cancer risk would be similar to the RP's Proposed Remedy because the exposure to TACs, which is directly proportional to the amount of excavation and hauling, would be the same as under the RP's Proposed Remedy. Similar to the Proposed Remedy, cancer health risks would be less than significant. In addition, the risk of accidental release through the routine transport, use, or disposal of hazardous materials and through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment would be the same as the RP's Proposed Remedy because the total amount of demolished materials and excavated soils and total number of transport truck trips would be the same as under the RP's Proposed Remedy. Similar to the Proposed Remedy, accidental release impacts would be less than significant.

### **Hydrology and Water Quality**

The Expedited Implementation Option would result in a greater level of activity on the site at one time but would not change the activity at an individual property or increase the level of activities site-wide. With accelerated excavation activities, the potential for greater exposure to erosion forces, such as rainfall, at one time of residual soils or replacement soils exists. As with the RP's Proposed Remedy, the Expedited Implementation Option would comply with PDFs and BMPs related to protection of surface and groundwater during excavation and soil replacement and, although incrementally greater than under the base remedy, the Expedited Implementation Option would have a less than significant impact regarding remediation effects on water quality. Because remediation would occur over a shorter time period than under the base remedy, it would improve COC conditions in a shorter time frame. The Expedited Implementation Option have the same effect as the RP's Proposed Remedy regarding the rate or change the direction of movement of existing As with the RP's Proposed Remedy, impacts regarding groundwater quality would be less than significant.

## Noise and Vibration

The Expedited Implementation Option would result in a greater level of activity on the site on a given day but would not change the level of activity at an individual property. Therefore, noise levels and vibration associated with demolition of hardscape and excavation would be similar within close proximity of the excavation site as under the base remedy. As under the base remedy, noise and vibration impacts would be potentially significant. Mitigation measures involving the relocation of impacted residents would reduce noise levels to a less than significant level. However, because such relocation would be voluntary, the mitigation is not assured. Therefore, as with the base remedy, noise and vibration impacts would be conservatively considered to be potentially significant and unavoidable.

## Traffic and Circulation

Expedited Implementation Option excavation activities would be accelerated and implementation would occur by the end of 2019, approximately two years less than under the basic remedy. The Expedited Implementation Option would generate 790 total daily trips (compared to 478 under the basic project) and 94 trips during each A.M. and P.M. peak hour (compared to 61 under the basic project). Total daily PCE truck trips would be 604 (compared to 478 under the basic project) and A.M. and P.M. peak hour truck trips would be 57 (compared to 38 under the basic project). Although trip generation and peak hour traffic would be incrementally greater than under the base remedy, the Expedited Implementation Option would result in less than significant impacts at the 14 study intersections.

## Utilities and Service Systems (Solid Waste)

The Expedited Implementation Option would increase daily demolition and excavation at twice the daily activity rate as the base remedy (586 CY per day compared to 293 CY per day under the base remedy). Project peak solid waste daily exports under the base remedy would be 293 CY of excavated soils, 60 CY of green waste, and 56 CY of inert construction materials. Under the Expedited Implementation Option, daily solid waste exports would be 586 CY of excavated soil, 120 CY of green waste, and 112 CY of inert construction materials. However, total excavated soil, inert construction debris, and green waste would be the same as under the base remedy and would not exceed the daily capacities of treatment or disposal facilities. As under the base remedy, treated excavated soils and green waste would not be deposited in landfills, nor would they impact landfill capacities. Inert concrete and asphalt waste would be processed at the Copp facility and would not exceed the capacity of the facility. The volume of other inert construction debris items (such as fencing) would be minor compared to the County's capacity to receive these inert materials. Inert debris can be managed at the Azusa Land Reclamation Landfill or an IDEFO. Because the facilities would have the daily and long-term capacity to receive the Expedited Implementation Option's construction debris disposal demand, as with the base remedy, solid waste impacts would be less than significant.

## Alternative 1: No Project Alternative

Under Alternative 1, No Project Alternative, the existing conditions would remain and the RAP would not be implemented at the site. No excavation would occur and no SVE wells and SVE system or sub-slab mitigation would be installed. However, monitoring of the site would continue. All existing site features, such as residences, landscaping, hardscape, fences, patios, and ancillary structures would remain. No relocation of residents would occur. In other words, the residential subdivision would remain as it currently exists today without remediation of site impacts. A comparison of the No Project Alternative's impacts to the base

remedy is presented below. Although the No Project Alternative would avoid the RAP's less than significant effects, this Alternative would not meet the statutory requirements of the RAP or the project objectives listed above.

### **Air Quality**

The No Project Alternative would not involve any excavation of soils or change to existing conditions that would result in new sources of emissions or emissions controls at the site. The No Project Alternative would avoid the excavation-related impacts associated with the use of heavy equipment needed for the implementation of the RAP. Therefore, the No Project Alternative would avoid the less than significant emissions that would occur under the RP's Proposed Remedy.

### **Geology and Soils**

The No Project Alternative would not involve any excavation of soils or changes to existing ground conditions that would require grading permits or geotechnical analysis of activities at the site and would, thus, avoid any potential excavation-related impacts associated with peak potential exposure of soils to geology-related erosion forces, such as seismic events, which were determined to be less than significant under the RP's Proposed Remedy with the implementation of project design features. This Alternative would have no impact relative to seismic forces, ground stability, and expansive soils compared to a less than significant impact under the base remedy.

### **Greenhouse Gas Emissions**

The No Project Alternative would not involve any excavation of soils or changes to existing conditions that would result in new sources of GHG emissions at the site. The No Project Alternative would avoid any potential GHG excavation-related impacts, which were determined to be less than significant under the RAP with the implementation of PDFs.

### **Hazardous Materials**

The No Project Alternative would not result in the release of TACs from remediation activities, and therefore would not create a significant hazard to the public or environment through the routine transport, use or disposal of hazardous materials during excavation and hauling, because these activities would not occur. However the No Project Alternative would not fulfill the requirements of the CAO. The No Project Alternative would avoid the RP's Proposed Remedy's less than significant impacts related to short-term exposure of TACs from remediation of the site and would avoid the less than significant risk of upset related to the transport of impacted material from the site. However, the No Project Alternative would fail to reduce the long-term risk of exposure to residents and on-site utility workers and long term risks would remain the same as existing conditions. Therefore, overall impacts under the No Project Alternative with respect to hazardous materials would be less than under the RP's Proposed Remedy.

### **Hydrology and Water Quality**

The No Project Alternative would not involve any excavation and, therefore, would avoid any potential direct contact between contaminated materials and on- or off-site surface water that would occur as a result of excavation. However, this Alternative would not provide for SVE/bioventing, which is intended to promote degradation of residual hydrocarbon concentrations in soils, or for excavation of COC-containing soils.

Therefore the benefit of bioventing in concert with SVE to increase oxygen levels in subsurface soils and promote microbial activity and degradation of longer-chain petroleum hydrocarbons would not occur. Because COC-containing soils would not be removed or vented, the potential for runoff (surface water) to enter and flow out of these materials would continue as under existing conditions. As such, surface water would potentially violate regulatory standards, as defined in the applicable NPDES stormwater permit for the receiving water body. Impacts with respect to surface water quality would be potentially significant and greater than the less than significant water quality impacts under the RP's Proposed Remedy.

### **Noise and Vibration**

The No Project Alternative would not involve any remediation or operation activities at the site and would, therefore, avoid any potential remediation noise and vibration impacts. Therefore, the No Project Alternative would avoid the potentially significant and unavoidable noise and vibration impacts that would occur under the RP's Proposed Remedy.

### **Traffic and Circulation**

The No Project Alternative would not involve any excavation or construction activities and, thus, would not result in generation of additional vehicle trips relative to existing conditions. The No Project Alternative would not affect the function of the local and regional traffic network. Because no remediation or construction traffic would be generated this Alternative would have less impact than the less than significant impacts that would occur under the RP's Proposed Remedy.

### **Utilities and Service Systems (Solid Waste)**

The No Project Alternative would not involve any removal of hardscape, excavation of soils or change to existing ground conditions that would require disposal of materials at any facilities. Therefore, the No Project Alternative would avoid the less than significant impacts that would occur under the RP's Proposed Remedy.

### **Relationship of the Alternative to Project Objectives**

Table 6-2, *Summary Comparison of the Project and Alternatives Ability to Meet Project Objectives*, summarizes the relationship of the No Project Alternative to the objectives of the RP's Proposed Remedy. As shown in Table 6-2, the No Project Alternative would not implement the RAP or meet long-term objectives of the RP's Proposed Remedy, including Objective 1 to implement a RAP that complies with the CAO and meets the media-specific RAOs developed for the site and Objective 4 to allow residents the long-term ability to safely and efficiently make improvements requiring excavation or penetration into site soils (i.e., landscaping, hardscape, gardening etc.) on their properties. The No Project Alternative would maintain the residential land use of the site and would avoid permanently displacing residents from their homes or physically dividing the established Carousel Tract community (Objective 2); however, because the No Project Alternative would not provide for remediation, this Alternative would not meet the long term objectives. However, because no excavation associated with remediation would occur, the No Project Alternative would minimize short-term disruption to residents (Objective 3) and would limit or minimize environmental impacts associated with the cleanup activities. However, because it would not result in remediation, the No Project Alternative is considered to not meet the primary objective of the RP's Proposed Remedy.

## **Alternative 2: Excavation Beneath Landscape and Hardscape to 10 Feet Alternative**

Alternative 2 would include the same remedial technologies as the project, but would excavate soils to a depth of 10 feet below ground surface (bgs) at 224 residential properties (compared to 5 feet with targeted excavation to 10 feet bgs at 219 residential properties under the RP's Proposed Remedy). Alternative 2 would require on average, excavation of 1,222 CY of soil per property (compared to 611 to 867 CY per property under the RP's Proposed Remedy). Approximately 274,700 CY of impacted soils would be excavated from the residential properties and approximately 43,900 CY of impacted soils would be excavated from other areas on the site. Alternative 2 would result in the hauling of approximately 318,600 CY of impacted soil (compared to approximately 186,090 CY under the RP's Proposed Alternative). Alternative 2 would occur over an approximately 7.8-year timeframe, compared to approximately 6-year timeframe under the RP's Proposed Remedy. As with the RP's Proposed Remedy, Alternative 2 would meet all the project objectives listed above.

### **Air Quality**

Alternative 2 would involve the same daily demolition and excavation volumes, truck trips, and worker commutes as anticipated under the RP's Proposed Remedy (base remedy). Therefore, peak emissions would be the same as under the base remedy. As with the RP's Proposed Remedy, air quality impacts would be less than significant.

### **Geology and Soils**

Alternative 2 would increase the number of properties being remediated from 219 (under the RP's Proposed Remedy) to 224 and the total excavated soil (318,600 CY compared to 186,090 CY under the RP's Proposed Remedy). Excavations to 10 feet bgs would require incrementally more shoring of cut areas, setbacks from structures, and other supports compared to shallower excavations under the RP's Proposed Remedy. As with the RP's Proposed Remedy, geologic hazards from seismic forces, landslides, settlement, or slippage would be less than significant. Although daily impacts would be the same as under the RP's Proposed Remedy, the greater duration of activity (approximately 7.8 years compared to approximately 6 years under the RP's Proposed Remedy), potential for exposure of soils to geology-related erosion forces would be greater. Although erosion control and implementation of approved grading plans would be the same as under the RP's Proposed Remedy and impacts would be less than significant, impacts would be incrementally greater under Alternative 2 because of the longer remediation timeframe. Impacts associated with seismic forces, ground stability, and expansive soils would be the same as under the base remedy and less than significant.

### **Greenhouse Gas Emissions**

Alternative 2 would take approximately 7.8 years and would require the same types of heavy-duty equipment as the RP's Proposed Remedy. Alternative 2 has the potential to create short-term GHG impacts through the use of heavy-duty construction equipment and through vehicle trips generated from haul trucks, vendor trucks, and remediation workers and visitors traveling to and from the site. Daily activity levels under this Alternative would be the same as the project. Remedial activities would occur for a greater number of days overall to account for the additional excavated material and would be greater than under the RP's Proposed Remedy. Although Alternative 2 would not exceed threshold standards pertinent to GHG and would have a less than significant impact related to GHG emissions, would require the use of additional transportation fuels to transport the increased amounts of excavation and backfill materials to and from the

site as compared to the RP's Proposed Remedy. From a transportation energy perspective, this Alternative would be less efficient than the RP's Proposed Remedy due to the need to transport materials that do not warrant excavation as per the SSCGs.

### **Hazardous Materials**

Alternative 2 would result in a greater increase in short-term TAC emissions and potential for accidental release compared to the RP's Proposed Remedy because of the longer period required for remediation and increase in materials to be excavated and hauled. This Alternative would incorporate the same PDFs as the RP's Proposed Remedy, which would reduce short-term emissions from heavy equipment, trucks, fugitive dust and volatiles. However, Alternative 2 would result in an increase in short-term exposure which would increase lifetime cancer risks for sensitive receptors. Because of the greater volume of excavated soils and duration of excavation and hauling, short-term impacts related to health risk would be greater than under the RP's Proposed Remedy. Given the increase in duration and activities, health risks resulting from Alternative 2 would be proportionally larger than those predicted under the RP's Proposed Remedy, and impacts would be potentially significant requiring the implementation of mitigation measures. MM HAZ-1, MM HAZ-2 and MM HAZ-3, as described in Section 5.4, *Hazardous Materials*, of this EIR would reduce health risks resulting from Alternative 2 to less than significant levels.

As with the RP's Proposed Remedy, Alternative 2 would result in restoration of affected properties and infrastructure, including yards, landscaping, and streets. Following implementation of the RAP, negligible long-term emissions would result from the SVE/bioventing system, sub-slab vapor mitigation system, and from periodic monitoring and maintenance activities, as under the RP's Proposed Remedy. Therefore, Alternative 2 would result in less than significant impacts with regard to hazards to the public or environment and hazards impacts would be less (benefits would be greater) than under the RP's Proposed Remedy.

### **Hydrology and Water Quality**

Alternative 2 would result in the same level of daily activity on the site as the RP's Proposed Remedy. As with the RP's Proposed Remedy, Alternative 2 would comply with PDFs and BMPs related to protection of surface and groundwater during excavation. Thus, daily water quality impacts with respect to the effects of remediation soils would be the same as under the RP's Proposed Remedy and less than significant. However, remediation would occur over a longer time period than under the RP's Proposed Remedy and, as such, potential exposure of soils to surface water during remediation would be incrementally greater. With regard to COCs that could enter groundwater, Alternative 2 would remove incrementally more COC-containing soil than under the RP's Proposed Remedy. However, because COC's would be removed, as with RP's Proposed Remedy, effects with respect to the direction of movement of existing COCs or expansion of the area affected by COCs would be less than significant.

### **Noise and Vibration**

Alternative 2 would result in the same daily activity as under the RP's Proposed Remedy and, as with the RP's Proposed Remedy, would intermittently exceed the significance threshold of 65 dBA,  $L_{eq}$  at noise-sensitive receptor locations. Therefore, noise and vibration levels associated with demolition of hardscape and excavation would be similar within close proximity of the excavation site as under the base remedy. As under the base remedy, noise and vibration impacts would be potentially significant. Mitigation measures

involving the relocation of impacted residents would reduce noise and vibration levels to a less than significant level. However, because such relocation would be voluntary, the mitigation is not assured. Therefore, as with the base remedy, noise and vibration impacts under Alternative 2 would be conservatively considered to be potentially significant and unavoidable.

### **Traffic and Circulation**

Alternative 2 would result in the same daily peak hour activity and traffic as under the RP's Proposed Remedy. Therefore, traffic impacts, which would be less than significant, would be the same as under the RP's Proposed Alternative.

### **Utilities and Service Systems (Solid Waste)**

Alternative 2 would have the same daily demolition and excavation rates as under the RP's Proposed Remedy. However, total excavated soils would be greater (a total of 318,600 CY compared to 186,090 CY under the RP's Proposed Alternative). Total green waste and inert construction debris would be the same as under the RP's Proposed Remedy. As with the base remedy, excavated soil would be treated (cleaned) at the Soil Safe facility in Adelanto, California or similar facility. The anticipated demand (293 CY per day) would not exceed the Adelanto facility's treatment capacity of 1,096 CY per day. As under the base remedy, treated excavated soils and green waste would not be deposited in landfills, nor would they impact landfill capacities. Inert concrete and asphalt waste would be processed at the Copp facility and would not exceed the capacity of the facility. The volume of other inert construction debris items (such as fencing) would be minor compared to the County's capacity to receive these inert materials. Inert debris can be managed at the Azusa Land Reclamation Landfill or an IDEFO. As with the RP's Proposed Remedy, impacts relative to solid waste would be less than significant. However, because output would be greater, impacts to solid waste facilities would be incrementally greater.

### **Relationship of the Alternative to Project Objectives**

Table 6-2, *Summary Comparison of the Project and Alternatives Ability to Meet Project Objectives*, summarizes the relationship of Alternative 2 to the objectives of the RP's Proposed Remedy. As shown in Table 6-2, Alternative 2 would meet long-term objectives of the RP's Proposed Remedy, including Objective 1 to implement a RAP that complies with the CAO and meets the media-specific RAOs developed for the site; Objective 2 to maintain the residential land use of the site and avoid permanently displacing residents from their homes or physically dividing the established Carousel Tract community; and Objective 4 to allow residents the long-term ability to safely and efficiently make improvements requiring excavation or penetration into shallow site soils on their properties. Alternative 2 would result in greater short-term TAC emissions associated with excavation and haul trips, resulting in TAC emissions and potential accidental release, than under the RP's Proposed Alternative. Because of greater short-term excavation activity, hauling, and duration of these activities than under the RP's Proposed Remedy, Alternative 2 would not meet Objective 3 to minimize short-term disruption to residents or Objective 5 to limit or minimize environmental impacts associated with the cleanup activities to the same extent as the RP's Proposed Remedy. However, Alternative 2 would better meet Objective 1 to implement a RAP that complies with the CAO and meets media specific RAOs and Objective 4 to allow residents the long-term ability to safely and efficiently make improvements requiring excavation or penetration into shallow site soils to a greater extent than under the RP's Proposed Remedy.

## **Alternative 3: No Excavation Beneath Hardscape – 5 Feet With Targeted 10 Feet**

### **Alternative**

Alternative 3 would include the same remedial technologies as the RP's Proposed Remedy, but would avoid excavating below hardscape features, such as sidewalks. Approximately 92,150 CY of impacted soil (compared to approximately 186,090 CY under the RP's Proposed Remedy) would be excavated. Alternative 3 would occur over an approximately 4-year timeframe, compared to approximately 6-year timeframe under the RP's Proposed Remedy. As with the RP's Proposed Remedy, Alternative 3 would meet all the project objectives listed above.

### **Air Quality**

Alternative 3 would involve the same daily demolition and excavation volumes, truck trips, and worker commutes as anticipated under the RP's Proposed Remedy (base remedy). Therefore, peak emissions would be the same as under the base remedy. As with the RP's Proposed Remedy, air quality impacts would be less than significant.

### **Geology and Soils**

As with the RP's Proposed Remedy, geologic hazards from landslides, settlement, or slippage would be less than significant. Daily excavation activities would be the same as under the RP's Proposed Remedy; however, the shorter duration of activity (approximately 4 years compared to approximately 6 years under the RP's Proposed Remedy), potential for exposure of soils to erosion forces, such as siltation or slumping would be less. As with the RP's Proposed Remedy, geologic hazards from seismic forces, landslides, settlement, or slippage would be less than significant. Although daily impacts would be the same as under the RP's Proposed Remedy, the shorter duration of activity would incrementally reduce the potential for exposure of soils to geology-related erosion forces. Impacts associated with seismic forces, ground stability, and expansive soils would be the same as under the base remedy and less than significant.

### **Greenhouse Gas Emissions**

Alternative 3 would take approximately 4 years and would require the same types of heavy-duty equipment as the RP's Proposed Remedy. Alternative 3 has the potential to create short-term GHG impacts through the use of heavy-duty construction equipment and through vehicle trips generated from haul trucks, vendor trucks, and remediation workers and visitors traveling to and from the site. Daily activity levels under this Alternative would be the same as the project. Remedial activities would occur for fewer days overall because of less excavated material and would be less than under the RP's Proposed Remedy. Alternative 3 would not exceed threshold standards pertinent to GHG and would have a less than significant impact related to GHG emissions. However, because it would require the use of less transportation fuel to transport the increased amounts of excavation and backfill materials to and from the site, this Alternative would be more efficient than the RP's Proposed Remedy from a transportation energy perspective.

### **Hazardous Materials**

Alternative 3 would result in less short-term TAC emissions and potential for accidental release compared to the RP's Proposed Remedy because of the shorter period required for remediation and reduced volume of material excavated and hauled. This Alternative would incorporate the same PDFs as the RP's Proposed

Remedy, which would reduce short-term emissions from heavy equipment, trucks, fugitive dust and volatiles. Alternative 3 would result in a reduction in short-term exposure which would reduce lifetime cancer risks for sensitive receptors. Because of the reduced volume of excavated soils and duration of excavation and hauling, short-term impacts related to health risk would be less than under the RP's Proposed Remedy and would be less than significant.

As with the RP's Proposed Remedy, Alternative 3 would result in restoration of affected properties and infrastructure, including yards, landscaping, and streets. Following implementation of the RAP, negligible long-term emissions would result from the SVE/bioventing system, sub-slab vapor mitigation system, and from periodic monitoring and maintenance activities, as under the RP's Proposed Remedy. Therefore, although Alternative 3 would result in less than significant impacts with regard to hazards to the public or environment, impacts would be greater (benefits would be less) than under the RP's Proposed Remedy.

### **Hydrology and Water Quality**

Alternative 3 would result in the same level of daily activity on the site as the RP's Proposed Remedy. As with the RP's Proposed Remedy, Alternative 3 would comply with PDFs and BMPs related to protection of surface and groundwater during excavation. Thus, water quality impacts with respect to the effects of remediation soils would be the same as under the RP's Proposed Remedy and less than significant. However, remediation would occur over a shorter time period than under the RP's Proposed Remedy and, as such, potential exposure of soils to surface water during remediation would be incrementally less. With regard to COCs that could enter groundwater, because COC's would be removed, as with RP's Proposed Remedy, effects with respect to the direction of movement of existing COCs or expansion of the area affected by COCs would be less than significant.

### **Noise and Vibration**

Alternative 3 would involve excavation activity similar to the RP's Proposed Remedy and, as with the RP's Proposed Remedy, would intermittently exceed the significance threshold of 65 dBA,  $L_{eq}$  at noise-sensitive receptor locations. Alternative 3 has the potential to increase noise levels compared to the existing environment through the use of heavy-duty construction equipment and through vehicle trips generated from haul trucks, vendor trucks, remediation workers, and visitors traveling to and from the site. However, because concrete saws, jack hammers, other equipment to remove hardscape and concrete mixer trucks would not be utilized during the residential property excavation phase, remediation activity noise levels would be reduced by approximately 10 dBA during the residential remediation phase compared to the RP's Proposed Remedy. Remedial activities would also occur for a fewer number of days overall to account for less excavated material. Similar to the RP's Proposed Remedy, peak noise impacts under Alternative 3 are predicted to result during the street trenching phase. Noise resulting from this phase would intermittently exceed the significance threshold of 65 dBA,  $L_{eq}$  at noise-sensitive receptor locations. Mitigation measures involving the relocation of impacted residents would reduce noise and vibration levels to a less than significant level. However, because such relocation would be voluntary, the mitigation is not assured. Therefore, as with the base remedy, noise and vibration impacts under Alternative 3 would be conservatively considered to be potentially significant and unavoidable.

Residents immediately adjacent to a property with active remedial activity would experience vibration velocities in excess of the human annoyance threshold from the mini excavator. As with the RP's Proposed Remedy, impacts associated with vibration would be lessened, but would still remain significant under this

Alternative. Unless relocation were accepted as a mitigation option by affected residents, vibration impacts would not be reduced to below a level of significance.

### **Traffic and Circulation**

Alternative 3 would result in the same daily peak hour activity and traffic as under the RP's Proposed Remedy. Therefore, traffic impacts, which would be less than significant, would be the same as under the RP's Proposed Remedy.

### **Utilities and Service Systems (Solid Waste)**

Alternative 3 would have similar daily demolition and excavation rates to those of the base remedy. However, total excavated soils would be less (a total of 92,150 CY compared to 186,090 CY under the base remedy). Also, because hardscape, such as sidewalks, driveways, and patios, would not be demolished, total inert construction debris would be considerably reduced. Total green waste would be the same as under the base remedy. As under the base remedy, treated excavated soil and green waste would not be deposited in landfills, nor would they impact landfill capacities. The volume of inert construction debris, such as fencing, would be minor compared to the County's capacity to receive these inert materials. Inert debris can be managed at the Azusa Land Reclamation Landfill or an IDEFO. The minimal quantity of inert debris would not affect the County's capacity. Impacts with regard to solid waste would be less than the under the RP's Proposed Remedy and would be less than significant.

### **Relationship of the Alternative to Project Objectives**

Table 6-2, *Summary Comparison of the Project and Alternatives Ability to Meet Project Objectives*, summarizes the relationship of Alternative 3 to the objectives of the RP's Proposed Remedy. As shown in Table 6-2, because Alternative 3 would require less intensive excavation than under the RP's Proposed Remedy and, therefore, reduce overall remediation impacts, it would meet Objective 3 to minimize short-term disruption to residents; Objective 2 to maintain the residential land use of the site and avoid permanently displacing residents from their homes or physically dividing the established Carousel Tract community; and Objective 5 to limit or minimize environmental impacts associated with the cleanup activities to a greater extent than under the RP's Proposed Remedy. Although it is anticipated that Alternative 3 would meet the objectives of the project, such as Objective 1 to implement a RAP that complies with the CAO and meets the media-specific RAOs developed for the site and Objective 4 to allow residents the long-term ability to safely and efficiently make improvements requiring excavation or penetration into shallow site soils on their properties. Alternative 3 would not meet Objectives 1 and 4 to the same extent as the RP's Proposed Remedy.

## **3. ENVIRONMENTALLY SUPERIOR ALTERNATIVE**

CEQA Guidelines section 15126.6(e)(2) states that "If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." The environmentally superior alternative is typically the alternative that meets the overall project goals and objectives and can avoid or substantially lessen one or more of the significant effects of a project when compared to other project alternatives, including the No Project Alternative. With respect to identifying an Environmentally Superior Alternative among those analyzed in this EIR, the range of feasible alternatives considered includes Alternative 1, the No Project Alternative; Alternative 2, Excavation Beneath

Landscape and Hardscape to 10 Feet Alternative; and Alternative 3, No Excavation Beneath Hardscape – 5 Feet With Targeted 10 Feet Alternative.

Table 6-1, *Summary of Comparison of Impacts Associated with the Option and the Alternatives Relative to Impacts of the Project*, provides a summary comparison of the impacts associated with the Expedited Implementation Option and the impacts of the project as well as with each of the alternatives and the impacts of the project. A comparative summary of the ability of the project and the Alternatives to meet the stated objectives of the project is provided in Table 6-2, *Summary Comparison of the Project's and Alternatives' Ability to Meet the Project Objectives*.

The No Project Alternative is not the environmentally superior alternative because it would not result in the removal of any waste from the site, and therefore, would not achieve the project's underlying purpose, which is to remediate the site consistent with the Regional Board's CAO R4-2011-0046 dated March 11, 2011, as amended. While the No Project Alternative would reduce the short-term environmental impacts when compared to the RP's Proposed Remedy, site remediation would not occur under the No Project Alternative. Thus, existing hazards and health risk effects occurring under existing conditions would continue. No long-term benefits to the environment or the surrounding community would occur under the No Project Alternative.

Alternative 2 is not environmentally superior to the RP's Proposed Remedy with respect to short-term impacts (i.e., hazards, noise and vibration) associated with excavation and hauling since Alternative 2 would require a greater volume of excavation and would require a longer time period for completion than the project. Alternative 2 is not environmentally superior with respect to greenhouse gas emissions, hazards, and noise and vibration. Alternative 2 would result in greater greenhouse gas emissions as well as short-term TAC emissions associated with excavation and haul trips, and would result in greater potential for accidental release (related to hazards), than under the RP's Proposed Remedy. In addition, Alternative 2 would not reduce or mitigate the significant and unavoidable noise and vibration impacts of the proposed project. Alternative 2 would not meet some of the objectives of the project, such as Objective 3 to minimize short-term disruption to residents and Objective 5 to limit or minimize environmental impacts associated with the cleanup activities to the same extent as the RP's Proposed Remedy. With the removal of greater volumes of COCs the SVE/bioventing system would likely be operational for a shorter period of time. Thus, Alternative 2 would meet Objective 1 to implement a RAP that complies with the COA and meets the media-specific RAOs and Objective 4 to allow residents the long-term ability to safely and efficiently make improvements requiring excavation or penetration into shallow site soils on their properties to a greater extent than the RP's Proposed Remedy. Because these objectives apply to long-term environmental effects, Alternative 2 would have a greater long-term beneficial effect and would meet the primary purpose of the RAP to a greater extent than the RP's Proposed Remedy.

Alternative 3 is environmentally superior to the proposed project with respect to impacts associated with excavation because it would result in less noise, vibration and short-term hazards associated with excavation and hauling since Alternative 3 would not result in the removal of hardscape on residential properties. Therefore, Alternative 3 would require less excavation and a shorter time period for completion compared with the project. However, Alternative 3 would not reduce or mitigate all of the impacts of the proposed project and still would result in significant and unavoidable impacts with respect to noise and vibration. Alternative 3 would meet Objective 3 to minimize short-term disruption to residents and Objective 5 to limit or minimize environmental impacts associated with the cleanup activities to a greater extent than the RP's Proposed Remedy. While Alternative 3 would meet Objective 1 to implement a RAP that complies with the

CAO and meets the media-specific RAOs and Objective 4 to allow residents the long-term ability to safely and efficiently make improvements requiring excavation or penetration into shallow site soils on their properties, Alternative 3 would do so to a lesser extent than the RP's Proposed Remedy. Therefore, Alternative 3 would potentially result in a greater risk of long-term exposure than under the RP's Proposed Remedy.

Table 6-1

## Summary of Comparison of Impacts Associated with the Option and the Alternatives Relative to Impacts of the Project

Impact Threshold	RP's Proposed Remedy		Alternative 1  No Project Alternative	Alternative 2  Excavation Beneath Landscape and Hardscape to 10 Feet Alternative	Alternative 3  No Excavation Beneath Hardscape – 5 Feet With Targeted 10 Feet Alternative
	Base Remedy	Expedited Implementation Option			
<b>Air Quality</b>					
Conflict with or obstruct implementation of the applicable air quality plan	Less than Significant	Similar (Less than Significant)	Less (No Impact)	Similar (Less Than Significant)	Similar (Less Than Significant)
Violate any air quality standard or contribute substantially to an existing or projected air quality violation	Less than Significant	Greater (Less than Significant)	Less (No Impact)	Similar (Less Than Significant)	Similar (Less Than Significant)
Cumulatively considerable net increase of any criteria pollutant for which the region is non-attainment	Less than Significant	Greater (Less than Significant)	Less (No Impact)	Similar (Less Than Significant)	Similar (Less Than Significant)
Expose sensitive receptors to substantial pollutant concentrations	Less than Significant	Greater (Less than Significant)	Less (No Impact)	Similar (Less Than Significant)	Similar (Less Than Significant)
Objectionable odors affecting a substantial number of people	Less than Significant	Greater (Less than Significant)	Less (No Impact)	Similar (Less Than Significant)	Similar (Less Than Significant)
Conflict with or obstruct implementation of the applicable policies in the City of Carson General Plan Air Quality Element	Less than Significant	Similar (Less than Significant)	Less (No Impact)	Similar (Less Than Significant)	Similar (Less Than Significant)

Table 6-1 (Continued)

## Comparison of Alternatives

Impact Threshold	RP's Proposed Remedy		Alternative 1	Alternative 2	Alternative 3
	Base Remedy	Expedited Implementation Option	No Project Alternative	Excavation Beneath Landscape and Hardscape to 10 Feet Alternative	No Excavation Beneath Hardscape – 5 Feet With Targeted 10 Feet Alternative
<b>Geology and Soils</b>					
Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death, involving: (1) Strong seismic ground shaking, or (2) Seismic-related ground failure, including liquefaction	Less than Significant	Similar (Less Than Significant)	Less (No Impact)	Similar (Less Than Significant)	Similar (Less Than Significant)
Geologic unit or soil that is unstable, or that would become unstable	Less than Significant	Similar (Less Than Significant)	Less (No Impact)	Similar (Less Than Significant)	Similar (Less Than Significant)
Soil erosion or loss of topsoil	Less than Significant	Greater (Less than Significant)	Less (No Impact)	Greater (Less than Significant)	Less (Less than Significant)
Expansive soil	Less than Significant	Similar (Less Than Significant)	Less (No Impact)	Similar (Less Than Significant)	Similar (Less Than Significant)
<b>Greenhouse Gas Emissions</b>					
Generate greenhouse gas emissions that would exceed 10,000 MTCO <sub>2</sub> e per year	Less than Significant	Similar (Less Than Significant)	Less (No Impact)	Greater (Less than Significant)	Less (Less than Significant)
Conflict with the greenhouse gas emissions reductions goals and strategies of AB 32	Less than Significant	Similar (Less Than Significant)	Less (No Impact)	Greater (Less than Significant)	Less (Less than Significant)

Table 6-1 (Continued)

Comparison of Alternatives

Impact Threshold	RP's Proposed Remedy		Alternative 1	Alternative 2	Alternative 3
	Base Remedy	Expedited Implementation Option	No Project Alternative	Excavation Beneath Landscape and Hardscape to 10 Feet Alternative	No Excavation Beneath Hardscape – 5 Feet With Targeted 10 Feet Alternative
<b>Hazardous Materials</b>					
Result in an incremental increase in cumulative lifetime potential cancer risk from exposure to project-related TACs and COCs emitted as a direct result of implementation of the RAP in excess of one in one million ( $1 \times 10^{-6}$ ), or in excess of 10 in one million ( $1 \times 10^{-5}$ ) if Best Available Control Technologies (BACT) are implemented	Less than Significant	Similar (Less than Significant)	Less (No Impact)	Greater (Less than Significant with Mitigation Measures)	Less (Less than Significant)
Result in an incremental increase in cumulative lifetime potential cancer risk from exposure to COCs in soil, soil vapor, and indoor air for residences in excess of $1 \times 10^{-6}$ and for on-site construction and utility maintenance workers an incremental increase in cumulative lifetime potential cancer risk outside of the NCP risk range of $1 \times 10^{-6}$ to $1 \times 10^{-4}$	Less than Significant	Similar (Less than Significant)	Greater (Less than Significant)	Less (Less than Significant)	Greater (Less than Significant)

**Table 6-1 (Continued)**

**Comparison of Alternatives**

<b>Impact Threshold</b>	<b>RP's Proposed Remedy</b>		<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>
	<b>Base Remedy</b>	<b>Expedited Implementation Option</b>	<b>No Project Alternative</b>	<b>Excavation Beneath Landscape and Hardscape to 10 Feet Alternative</b>	<b>No Excavation Beneath Hardscape – 5 Feet With Targeted 10 Feet Alternative</b>
Result in a chronic or acute non-cancer hazard index (HI) of greater than 1.0	Less than Significant	Greater (Less than Significant)	Less (Less than Significant)	Greater (Less than Significant)	Less (Less than Significant)
In accordance with the SSCGs, create conditions leading to, or otherwise allowing, building interiors to accumulate and or be exposed to methane concentrations exceeding 5 percent of the Lower Explosive Limit (LEL) for methane	Less than Significant	Similar (Less than Significant)	Greater (Less than Significant)	Less (Less than Significant)	Greater (Less than Significant)
Create a risk of accidental release which exceeds the “acceptable with controls” category through the routine transport, use, or disposal of hazardous materials	Acceptable Level of Risk	Similar (Acceptable Level of Risk)	Less (No Impact)	Greater (Less than Significant)	Less (Less than Significant)
Create a risk of accidental release which exceeds the “acceptable with controls” category through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment	Acceptable Level of Risk	Similar (Acceptable Level of Risk)	Less (No Impact)	Greater (Less than Significant)	Less (Less than Significant)

Table 6-1 (Continued)

## Comparison of Alternatives

Impact Threshold	RP's Proposed Remedy		Alternative 1	Alternative 2	Alternative 3
	Base Remedy	Expedited Implementation Option	No Project Alternative	Excavation Beneath Landscape and Hardscape to 10 Feet Alternative	No Excavation Beneath Hardscape – 5 Feet With Targeted 10 Feet Alternative
Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school	Less than Significant	Similar (Less than Significant)	Less (Less than Significant)	Greater (Less than Significant)	Less (Less than Significant)
<b>Hydrology and Water Quality</b>					
Result in discharges that would create pollution, contamination or nuisance or cause regulatory standards to be violated.	Less than Significant	Greater (Less than Significant)	Less (Potentially Significant)	Similar (Less than Significant)	Less (Less Than Significant)
Affect the rate or change the direction of movement of existing COCs or expand the area affected by COCs	Less than Significant	Similar (Less Than Significant)	Greater (Potentially Significant)	Similar (Less Than Significant)	Similar (Less than Significant)
Increase level of concentrations of COCs in groundwater or violate any federal, state, or local groundwater quality standard, including the water quality objectives in the Basin Plan	Less than Significant	Similar (Less Than Significant)	Greater (Potentially Significant)	Similar (Less Than Significant)	Similar (Less than Significant)

**Table 6-1 (Continued)**

**Comparison of Alternatives**

Impact Threshold	RP's Proposed Remedy		Alternative 1	Alternative 2	Alternative 3
	Base Remedy	Expedited Implementation Option	No Project Alternative	Excavation Beneath Landscape and Hardscape to 10 Feet Alternative	No Excavation Beneath Hardscape – 5 Feet With Targeted 10 Feet Alternative
<b>Noise and Vibration</b>					
Result in exposure of persons to or generation of noise levels in excess of local standards; result in a substantial permanent increase in ambient noise levels in the project vicinity above existing levels; or result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing levels	Significant and Unavoidable	Similar (Significant and Unavoidable)	Less (No Impact)	Similar (Significant and Unavoidable)	Less (Significant and Unavoidable)
Result in exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels	Significant and Unavoidable	Similar (Significant and Unavoidable)	Less (No Impact)	Similar (Significant and Unavoidable)	Less (Significant and Unavoidable)
<b>Traffic and Circulation</b>					
Increase in traffic demand on a CMP facility by 2 percent of capacity (i.e., V/C increase of 0.02), causing LOS F (V/C > 1.00) or if the facility is already at LOS F when the project increases traffic demand on a CMP facility by 2 percent of capacity (i.e., V/C	Less than Significant	Greater (Less than Significant)	Less (No Impact)	Similar (Less Than Significant)	Similar (Less Than Significant)

**Table 6-1 (Continued)**

**Comparison of Alternatives**

Impact Threshold	RP's Proposed Remedy		Alternative 1	Alternative 2	Alternative 3
	Base Remedy	Expedited Implementation Option	No Project Alternative	Excavation Beneath Landscape and Hardscape to 10 Feet Alternative	No Excavation Beneath Hardscape – 5 Feet With Targeted 10 Feet Alternative
increase of 0.02).					
Increase in traffic demand on a CMP facility by 2 percent of capacity (i.e., V/C increase of 0.02), causing LOS F (V/C > 1.00) or if the facility is already at LOS F when the project increases traffic demand on a CMP facility by 2 percent of capacity (i.e., V/C increase of 0.02).	Less than Significant	Greater (Less than Significant)	Less (No Impact)	Similar (Less Than Significant)	Similar (Less Than Significant)
<b>Utilities and Service Systems (Solid Waste)</b>					
Generate solid waste in excess of the permitted capacity of the disposal facilities serving the project	Less than Significant	Greater (Less than Significant)	Less (No Impact)	Similar (Less Than Significant)	Less (Less than Significant)

Source: PCR Services Corporation, 2014

Table 6-2

## Summary Comparison of the Project's and Alternatives' Ability to Meet Project Objectives

Project Objective	Ability to Meet Project Objective			
	RP's Proposed Remedy	Alternative 1 No Project Alternative	Alternative 2 Excavation Beneath Landscape and Hardscape to 10 Feet Alternative	Alternative 3 No Excavation Beneath Hardscape – 5 Feet With Targeted 10 Feet Alternative
1. Implement a RAP that complies with the CAO and meets the media-specific (i.e. soil, soil vapor, and groundwater) Remedial Action Objectives (RAOs) developed for the site. (See RAO #1 through RAO #4 below.)	Meets Objective	Does Not Meet Objective	Meets Objective (Better meets Objective than project)	Meets Objective (To lesser extent than project)
RAO #1. Prevent human exposures to concentrations of COCs in soil, soil vapor, and indoor air such that total (i.e., cumulative) lifetime incremental carcinogenic risks are within the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) risk range of $1 \times 10^{-6}$ to $1 \times 10^{-4}$ and noncancer hazard indices are less than 1 or concentrations are below background, whichever is higher. Potential human exposures include on-site residents and construction and utility maintenance workers. For on-site residents, the lower end of the NCP risk range (i.e., $1 \times 10^{-6}$ ) and a noncancer hazard index less than 1 are used. Prevent direct contact exposure to COCs at concentrations above applicable risk-based SSCGs in soil for on-site residents and construction and utility maintenance workers.	Meets Objective	Does Not Meet Objective	Meets Objective (Better meets Objective than project)	Meets Objective (To lesser extent than project)
RAO #2. Prevent fire/explosion risks in indoor air and/or enclosed spaces (e.g., utility vaults) due to the accumulation of methane generated from the anaerobic biodegradation of petroleum hydrocarbons in soils. Eliminate methane in the subsurface to the extent technologically and economically feasible.	Meets Objective	Does Not Meet Objective	Meets Objective	Meets Objective

Table 6-2 (Continued)

## Summary Comparison of the Project's and Alternatives' Ability to Meet Project Objectives

Project Objective	Ability to Meet Project Objective			
	RP's Proposed Remedy	Alternative 1 No Project Alternative	Alternative 2 Excavation Beneath Landscape and Hardscape to 10 Feet Alternative	Alternative 3 No Excavation Beneath Hardscape – 5 Feet With Targeted 10 Feet Alternative
RAO #3. Remove or treat LNAPL to the extent technologically and economically feasible, and where a significant reduction in current and future threat to groundwater will result.	Meets Objective	Does Not Meet Objective	Meets Objective	Meets Objective
RAO #4. Reduce COCs in groundwater to the extent technologically and economically feasible to achieve, at a minimum, SSCGs and the water quality objectives in the Regional Board Basin Plan to protect the designated beneficial uses, including municipal supply.	Meets Objective	Does Not Meet Objective	Meets Objective (Better meets Objective than project)	Meets Objective (To lesser extent than project)
2. Maintain the residential land use of the site and avoid permanently displacing residents from their homes or physically dividing the established Carousel Tract community.	Meets Objective	Meets Objective	Meets Objective	Meets Objective
3. Minimize short-term disruption to residents.	Meets Objective	Meets Objective	Meets Objective (To lesser extent than project)	Meets Objective (Better meets objective than project)
4. Allow residents the long-term ability to safely and efficiently make improvements requiring excavation or penetration into shallow site soils (i.e., landscaping, hardscape, gardening, etc.) on their properties.	Meets Objective	Does Not Meet Objective	Meets Objective (Better meets objective than project)	Meets Objective (To lesser extent than project)
5. Limit or minimize environmental impacts associated with the cleanup activities.	Meets Objective	Meets Objective	Meets Objective (To lesser extent than project)	Meets Objective (to greater extent than project)

*Source: PCR Services Corporation, 2014*

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