Initial Site Assessment

City of Arcata

Old Arcata Road Improvements Project

Revision 0

GHD | 718 Third Street Eureka, California

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Executive Summary

GHD was retained by the City of Arcata (City) to complete an Initial Site Assessment (ISA) of a 1.15 mile section the Old Arcata Road between the intersections of Jacoby Creek Road (South) and Buttermilk Lane (North) in Arcata, California. The purpose of the ISA was to identify environmental hazards as pertains to the Old Arcata Road Improvements Project (Project). The section of Old Arcata Road to be improved by the Project is herein defined as the Project alignment. Regional location and features and sites of interest for the Project alignment are provided as Figures 1 and 2. GHD Map Identification (ID) Numbers, areas of environmental interest, and features observed during the Project alignment reconnaissance are presented on Figure 2.

This ISA is generally consistent with Chapter 10 of Caltrans Standard Environmental Reference (SER) and portions of the most recent ASTM International (ASTM) E1527 13 *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* 1527-13 (the Standard) but does not satisfy all appropriate inquiries (AAI) in conformance with the standards and practices set forth in 40 CFR Part 312 and is not considered to be a Phase I ESA as defined in the Standard. As per SER terms and conditions, this study (ISA) deviates from the above referenced ASTM Standard and does not meet the definitions of an ESA Phase I.

The Project is intended to provide roadway rehabilitation along with bicycle and pedestrian improvements and focuses on providing a safe and continuous non-motorized route through the community of Bayside, between the Buttermilk Road Roundabout and Jacoby Creek Road. In addition, the Project will improve safety for non-motorized and motorized users, increase the use of active modes of transportation, and rehabilitate the failed roadway pavement. The Project will have additional benefits including enhanced and heightened driver awareness of the community, and filling the gap for non-motorized travel between the Jacoby Creek School and Jacoby Creek Road.

The existing Old Arcata Road roadway is two lanes (one lane in each direction) with narrow to non-existent shoulders. There are Class 2 bicycle lanes in some locations that are also being used by pedestrians. There is an existing 4 to 5 foot wide concrete pedestrian path between Bayside Road and Hyland Street. There are essentially no pedestrian facilities between Hyland Street and Jacoby Creek road. On-street parking is allowed in isolated areas (parallel and diagonal). The existing pavement is in poor conditions with an average pavement condition index (PCI) of 61.6, but with low of around 37. Project construction may involve drainage modifications and infrastructure construction requiring excavation and soil removal.

Specific Old Arcata Road improvements include the rehabilitation of roadway pavement, Class 2 bicycle lanes, Class 3 bicycle routes, improved pedestrian paths, sidewalks, curb ramps, crosswalks, street lights, retaining walls, storm drainage piping and inlets, modifications to existing water and sewer services, and a roundabout at the Jacoby Creek Road intersection. The Project has been developed over several years through a collaborative community involvement process. The Project would improve sidewalk and bicycle facilities where none currently exist, upgrade existing sidewalks to meet Americans with Disabilities Act compliance, and provide new bicycle routes and lanes as key features for creating community connectivity. The Project will have additional benefits including improved safety, heightened driver awareness while traveling through

the community, and filling the gap for non-motorized travel between the Jacoby Creek and Sunny Brae neighborhoods. Construction is anticipated to occur between April and October. Construction staging areas would be identified during the design phase of work and is expected to occur within paved or graveled areas or designated, previously disturbed areas. Spoils or construction materials may be permitted to be stored onsite within previously designated staging areas only.

The purpose of this ISA is to identify areas of potentially impacted soil and/or groundwater along the Project alignment that may require special handling and disposal during construction or could potentially pose a health exposure risk to construction workers.

This ISA identified six properties based upon EDR report review as presented in Table A (below) where potentially impacted soil and/or groundwater may be encountered. The Erickson's Garage property is adjoining the project segment to the northeast and not within the proposed Project alignment. However, due to the proximity to the proposed Project alignment, it is identified as a Site of Interest. The Steve Morris Logging & Contracting property is adjoining the Project segment to the west and not within the proposed Project though is identified as a Site of Interest. The Cal-Kirk Landscaping & Erosion Control property is located within the proposed Project alignment and was identified as a Site of Interest.

The (Former) Roger's Garage property is located within the proposed Project alignment and was identified as a Site of Interest. Based on research completed during this ISA, it is unlikely that petroleum hydrocarbon soil and groundwater impacts associated with the Roger's Garage property would affect construction within the proposed Project alignment. The Smith, Normans/La Donna's Rest Home property is located within the proposed Project alignment property was identified as a Site of Interest.

Old Arcata Road (Project) Corridor was identified as a Site of Interest due to potential Aerially Deposited Lead (ADL) based upon historic and current use as a critical roadway between Arcata and Eureka. Based upon the research completed during this ISA, it is unlikely that petroleum hydrocarbon soil and groundwater impacts associated with the Project Corridor would affect project construction, but aerially deposited lead is a concern.

TABLE A: Sites of Interest and Hazard Ranks

Site	Hazard Rank	GHD Map ID
Erickson's Garage	2	1
Steve Morris Logging & Contracting	2	2
Cal-Kirk Landscaping & Erosion Control	2	3
Former Roger's Garage	2	4
Smith, Normans/La Donna's Rest Home	2	5
Old Arcata Road Corridor	3	6

Map ID- GHD assigned site identification number

Sites where impacted soil and groundwater may affect construction activities were given Hazard Ranks and are identified on Figure 2 and Table 1 (attached). Hazard rank definitions are included in Section 1.2.1 of this ISA. Potential impacts to construction are described in Section 8. Conclusions from the ISA are presented in Section 9. Pre-construction soil borings and preparation of a

Construction Soil and Groundwater Management Plan (SGMP) to proactively manage potentially lead impacted soil and groundwater are recommended in order to characterize soil and groundwater within the Project.

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1. Introduction

1.1 Project Description

GHD has prepared this Initial Site Assessment (ISA) for the City of Arcata (City) in association with the Old Arcata Road Improvements Project (Project). The Project is intended to provide roadway rehabilitation combined with bicycle and pedestrian improvements. The Project will provide a safe and continuous non-motorized (bicycle and pedestrian) route along Old Arcata Road through the community of Bayside, between the Buttermilk Lane Roundabout and Jacoby Creek Road. The purpose of the Project is to improve traffic flow, improve safety, and reduce the potential conflicts between bicyclists, pedestrians, and vehicles within a portion of Old Arcata Road, while improving mobility options for the community.

The Old Arcata Road existing roadway has two opposing lanes with narrow to non-existent shoulders. There are Class 2 bicycle lanes in some locations that are also utilized by pedestrians. There is an existing 4-foot wide concrete pedestrian path between Bayside Road and Hyland Street. There are essentially no pedestrian facilities between Hyland Street and Jacoby Creek Road. On-Street parking is allowed in isolated areas (parallel and diagonal). The existing pavement is in poor condition with an average pavement donation index (PCI) of 61.6, but with a low of 37. The Project would link critical activity centers within the community, including schools, markets, business and residential areas while improving overall safety.

The purpose of the project is to improve safety for non-motorized and motorized travelers along Old Arcata Road and increase the use of active modes of transportation. The Project will have additional benefits including enhanced safety for pedestrians, heightened driver awareness while traveling through the community, and filling the gap for non-motorized travel between the Bayside, Jacoby Creek and Sunny Brae neighborhoods. Construction is anticipated to occur between April and October. Construction staging areas would be identified during the design phase of work and is expected to occur within paved or graveled areas or designated, previously disturbed areas. At California Department of Transportation (Caltrans) direction, contractor staging locations of spoils or construction materials may be permitted to be stored on site within designated staging areas only. Alternative staging locations provided by the contractor may be acceptable, granted appropriate clearance requirements are met.

Regional location and features and Sites of Interest for the Project alignment are provided as Figures 1 and 2. GHD Map Identification (ID) Numbers, Sites of Interest, and features observed during the Project alignment reconnaissance are presented on Figure 2.

Site reconnaissance of the Project alignment was completed on September 28, 2018. Site reconnaissance photographs are included in Appendix A. In the interest of clarity, GHD assigned map identification numbers (Map ID-X) to the Sites of Interest within the Project alignment. GHD Map ID numbers start in the northernmost portion of the Project alignment. GHD Map Identification (ID) Numbers, Sites of Interest, and features observed during the Project alignment reconnaissance are presented on Figure 2.

The purpose of this ISA was to identify areas of potentially impacted soil and/or groundwater along the Project alignment that may require special handling and disposal during construction or could pose a health exposure risk to construction workers. This ISA identified five properties where potentially impacted soil and/or groundwater may be encountered. These sites were given a Hazard Rank ranging from one to four and are identified in Table A (embedded within document), Table 1 (attached), and Figure 2. Hazard rank definitions are included in Section 1.2.1 of this report.

1.2 Initial Site Assessment Methodology

This ISA was completed in general conformance with the American Society of Testing and Materials (ASTM) *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* 1527-13 and the California Department of Transportation (Caltrans), *Initial Site Assessment* (Standard Environmental Reference, Volume 1, Chapter 10). This ISA does not satisfy all appropriate inquiries (AAI) in conformance with the standards and practices set forth in 40 CFR Part 312 and is not considered to be a Phase I ESA as defined in the Standard. Interviews were not conducted with current or past property owners, tenants, or occupants of the properties located within the Project alignment and constitutes a deviation from the ASTM and Caltrans standards. As per SER terms and conditions, this study (ISA) deviates from the above referenced ASTM Standard and does not meet the definitions of an ESA Phase I.

The ISA included reviewing government records for properties within one-eighth (1/8) of a mile (660 feet) of the Project alignment boundaries that may have potential for environmental concern during construction. The basis for the records review was a government database search conducted by Environmental Data Resources Inc. (EDR). The EDR report and EDR study area maps are included in Appendix B.

The EDR report identified sites that government regulatory agencies have reported as having environmental concerns, such as releases of contaminants to the soil and/or groundwater, underground storage tanks (USTs) or use of hazardous materials. GHD further researched listed sites that have the potential to affect the Project by reviewing available records on the State Water Resources Control Board (SWRCB) GeoTracker database.

During the course of this ISA, GHD conducted a field reconnaissance within the Project alignment where access was granted to determine if potential sites of concern existed which were not listed in the EDR report. The Project alignment reconnaissance was also performed to verify the locations of listed sites. Aerial photographs from 1941 to 2016 were provided by EDR and reviewed during the completion of this ISA. EDR aerial photographs are included in Appendix C. Historical Sanborn Maps were not available for the Project alignment. A copy of the certificate of Sanborn unmapped property is included in Appendix D. Historical topographic maps from 1933 to 2012 were provided by EDR and reviewed during the completion of this ISA. EDR historical topographic maps are included in Appendix E.

1.2.1 Hazard Ranking

A number of potentially impacted sites were identified in the EDR Report and are listed in Table A. Visual observations were made of the Project alignment for gasoline service stations or other potentially impacted sites that were not listed in the EDR Report. Gasoline service stations are

considered potentially impacted in this report whether or not they are associated with known leaking USTs since gasoline stations are typically associated with petroleum hydrocarbons, benzene, toluene, ethylbenzene, and total xylenes (BTEX), and methyl tert-butyl ether (MTBE) releases to the environment. Evidence of former or current gas stations not listed in the EDR report was not observed during the Project alignment reconnaissance on September 28, 2018.

Based on the data available, each of the sites that could potentially impact the Project has been assigned a Hazard Rank which is defined as follows:

Hazard Rank 1: A site that will likely affect Project construction. Contamination of soil and/or groundwater is confirmed to be within the Project alignment.

Hazard Rank 2: A site with the potential to affect the Project, either because of the presence of contamination that may likely migrate into the Project area or because the extent of contamination is unknown.

Hazard Rank 3: A site that is not known to be contaminated, but due to current or historical use could possibly have contamination that could affect Project construction.

Hazard Rank 4: A site that has little or no potential to affect the Project.

2. General Characteristics of the Project Alignment and Vicinity

A regional location map is presented as Figure 1. Figure 2 show Sites of Interest and features observed within the Project alignment. General published Project geology and general groundwater characteristics at the Project Study Area (PSA) are discussed in this section. The Old Arcata Road PSA extends 1.2 miles from the intersection of Buttermilk Lane (northern extent), south to the intersection with Bayside Road (southern extent).

According to the 2010 Geologic Map of California (Jennings and Bryant), the Project alignment is mapped as Generalized Rock Types (Q) which consist of marine and non-marine (continental) sedimentary rocks. Geology includes alluvium, lake, playa, and terrace deposits, including marine deposits. Regional geology is likely influenced by seismic activity as a result of the relatively close proximity of the Mendocino Triple Junction to the Project. A spur of the Little Salmon Fault is located approximately six miles south of the Project as mapped in the Fault Activity Map for California (Jennings and Bryant, 2012). The Fickle Hill Fault, a segment of the Mad River Fault Zone is mapped as a recent (Holocene era), low angle thrust fault in which displacement occurred within approximately the last 11,700 years. Review of historical aerial photographs indicates that the majority of the Project was formerly alluvial deposits extending towards Humboldt Bay, to the west.

2.1 Groundwater Elevation and Flow Direction

Based on review of information available on the SWRCB Geotracker database, a shallow, unconfined water-bearing unit would be encountered as shallow as two feet below ground surface (bgs) and extends to a depth of approximately ten feet bgs or greater. Groundwater in the Project

alignment vicinity has been reported to flow towards Humboldt Bay and the Pacific Ocean (Figure 1) and is influenced by the variable local topography, tidal fluxes, drainage channels, and sloughs. It is anticipated that groundwater will be encountered at very shallow depths during execution of the Project, particularly in spring and early summer.

3. Site Reconnaissance

The Project alignment site reconnaissance was completed on September 28, 2018 by walking the Project alignment, photo documenting, and recording observations. Map identification numbers presented on Figure 2 are referred to herein. Site reconnaissance photographs are included as Appendix A. The Project consists of the right-of-way (ROW) adjoining to Old Arcata Road in Arcata, California and extends from the intersection of Buttermilk Lane and Bayside Road (northern Project alignment) to the intersection of Old Arcata Road and Jacoby Creek Road (southern Project alignment).

Old Arcata Road is a two-lane road that bisects the community of Bayside, California. Samoa Boulevard turns into Old Arcata Road south of Buttermilk Lane intersection. Properties adjoining Old Arcata Road are primarily residential, educational (elementary school) and small commercial business. Adjoining Gannon Slough wildlife area, ponds, were observed during the Project alignment reconnaissance. No other lagoons or areas of stressed vegetation were observed during the Project alignment reconnaissance. Windblown trash was observed along the Project alignment. Several abandoned automobiles were observed adjoining the Project alignment 100 meters north of Jacoby Creek Road and Old Arcata Road intersection (southern segment).

4. Historical Aerial Photographs

Historical aerial photographs were reviewed as part of this ISA for the Project alignment and surrounding areas for the years 1941, 1954, 1956, 1972, 1983, 1993, 2005, 2009, 2012, and 2016 (Appendix C). The photographs are at a scale of one-inch equals 875 feet.

1941: The Project alignment is dominantly undeveloped agriculture and forest lands adjoining Humboldt Bay and Arcata California. Buttermilk Lane, northern boundary of the Project alignment, has been developed. The surrounding residential area of Sunny Brae has not been developed. Sparse residential development on either side of Old Arcata Road is visible.

1954: This photograph depicts north of Buttermilk Lane has been developed and is visible in its present-day configuration. Golf Course Road and Hyland Street are developed and increased residential development, as compared to the 1941 aerial photo, throughout the Project alignment and surrounding vicinity is visible.

1956: This photograph is similar to the previous photograph, with the exception of increased residential development of properties north of Buttermilk Lane and Jacoby Creek School (center of Project alignment) along Old Arcata Road corridor. Features within Project alignment appear to have increased development including roads and buildings.

1972: This photograph is similar to the previous photograph, with the exception that significant deforestation (logging) occurred southeast of Project Alignment. Development associated north of Buttermilk Lane adjoining the Project alignment is consistently visible. Jacoby Creek Road (southeast of Project alignment) shows evidence of increased development. Features within Project alignment appear to have minor increased development, specifically along southern section of Project alignment. Evidence of construction of Erickson's Garage adjoining northern segment and Roger's Garage is visible within middle segment Project alignment.

1983: This photograph is similar to the previous photograph with the exception that additional development is visible south of Buttermilk Lane and east of Project alignment located adjoining middle segment (Jacoby Creek) of alignment. General features within this Project segment appear unchanged with the exception visible apparent materials (such as derelict automobiles, etc.) located at Roger's Garage.

1993: This photograph is similar to the previous photograph. Features within this Project segment appear unchanged, with the exception of increased development south of Buttermilk Land and increase in number of derelict automobiles stored at Roger's Garage.

2005: This photograph is similar to the previous photograph. Features within this Project segment appear unchanged with the exception of increased development along Golf Course Road (east of Project alignment), development west of Buttermilk Lane (Willows Apartments and decrease/removal of derelict automobiles stored at Roger's Garage.

2009: This photograph is similar to the previous photograph. Features within this Project segment appear unchanged.

2012: This photograph is similar to the previous photograph. Features within this Project segment appear unchanged with the exception of ponds associated with Gannon Slough show visible water.

2016: This aerial photograph appears similar to the previous photograph. Features within this Project segment appear unchanged from the 2012 aerial photograph.

5. Sanborn Maps

Sanborn Fire Insurance maps assist in the identification of historical land uses and commonly illustrate the existence and location of aboveground and underground storage tanks, structures, improvements, and facility operations. No Sanborn maps were reported to be available for the Project alignment in the EDR Sanborn Library, LLC collection. A copy of the Certified Sanborn Map report is presented in Appendix D.

6. Historical Topographic Maps

Historical topographic maps were reviewed as part of this ISA for the Project alignment and surrounding areas for the years 1933, 1942, 1947, 1951, 1959, 1972, and 2012 (Appendix E). The topographic maps are set to scales of 1:24,000, 1:48,000, and 1:62,500.

1933: The Project alignment is shown as a spur of the landscape adjoining Bayside. Properties surrounding the Project alignment have limited development in southern section. Jacoby Creek Road and Bayside Railroad are depicted southeast of Project alignment. Redwood Highway (Interstate Highway 101) and Northwestern Pacific Railway are depicted west of Project alignment.

1942: This topographic map is similar to the previous map, with the exception of increased residential development north, east, and south of the Project alignment. Additionally, Grotzman Creek and Jacoby Creek are more defined. Features within this Project segment appear unchanged.

1947: This topographic map is similar to the previous 1942 map. Features within this Project segment appear unchanged from the previous map.

1951: The topographic map is similar to the previous 1947 map, with the exception of increased residential development along and north of Project alignment. Sunny Brae is shown and increased residential development of the properties surrounding the Project alignment is visible. The residential neighborhoods of Sunny Brae and Bayside, located east-northeast and south of the Project alignment are labelled.

1959: This topographic map is similar to the previous 1951 map with the exception of enhanced format at 7.5 minute map and denoting connecting roads between City of Arcata and Sunny Brae. Features within this Project segment appear unchanged from the previous map.

1972: This topographic map is similar to the previous map. General features within this Project segment appear unchanged. Increased residential development of the properties surrounding Jacoby Creek alignment is shown.

2012: Individual features of properties are not identified on this topographic map.

7. Sites of Interest

The high-ranking Sites of Interest were searched/reviewed using the SWRCB Geotracker database for depth to groundwater, identification of the extent of soil and groundwater impacts and a summary of regulatory history. The “EDR ID number” associated with each Site of Interest corresponds to the EDR Maps (presented in Appendix B) and is independent of the GHD Map ID. Some EDR ID numbers have multiple sites associated with them due to the Project alignment being located near each other. Some sites also have multiple EDR ID numbers, due to their being listed in the various databases searched. Several sites identified by EDR are incorrectly plotted on the EDR Map, and are actually outside the Project area surrounding the Project alignment. The EDR report

identified numerous additional sites along the Project alignment which are not discussed in this report because these sites were ranked too low to be of concern (Rank 4). Sites of Interest are shown on Figure 2 and Table 1 (attached). The detailed description of each rank is described in Section 1.2.1 of this ISA.

7.1 Hazard Rank 1

A Site of Interest assigned a hazard rank 1 will likely affect Project construction. Contamination of soil and/or groundwater is confirmed to be located within the Project alignment. Sites assigned a hazard rank 1 were not identified within the Project alignment.

7.2 Hazard Rank 2

A Site of Interest assigned a hazard rank 2 has the potential to affect the Project, either because of the presence of contamination that may likely migrate into the Project area or because the extent of contamination is unknown. Properties located in or near the Project alignment that are assigned a hazard rank of 2 are further discussed in the following subsection.

7.2.1 Erickson's Garage (Map ID-1)

The former Erickson's Garage (Erickson's Garage) is located at 800 Bayside Road, Arcata, California and is further identified as Humboldt County Division of Environmental Health (HCDEH) Local Oversight Program (LOP) Case Number 12288. This property is located northeast and adjoining the Project alignment on the southeast side of Buttermilk Lane and is not linked hydrologically to the Project alignment.

Based on information contained in the SWRCB Geotracker database and the HCDEH files, soil quality was impacted by a release of petroleum hydrocarbons from an undetermined source at the property. Constituents of concern (COCs) for this site include; petroleum hydrocarbons, lead and leaking UST (LUST) metals. HCDEH correspondence dated May 9, 1999 states that the case is closed and no remedial action is required.

The Erickson's Garage site is located northeast of, and not included within, the Project alignment. Based on the information available on the SWRCB Geotracker database and contained within the HCDEH file, soil impacts do not extend beyond the property boundaries and groundwater flow direction is to the west, towards Humboldt Bay and downgradient of the Project alignment. It is unlikely that impacts from this property will affect soil and groundwater quality in the vicinity of the Project alignment.

7.2.2 Steve Morris Logging & Contracting (Map ID-2)

The Steve Morris Logging & Contracting property (Steve Morris Logging) is located at 963 Bayside Road, Arcata, California and is further identified in SWRCB Geotracker database file review has having a 1,640 gallon Above Ground Storage Tank (AST) on the property. This property is located west of the Project alignment on the west side of Old Arcata Road.

Based on information contained in the SWRCB Geotracker database, soil quality and groundwater was not impacted by petroleum hydrocarbons though a risk exists as the property contains an

active AST. The Steve Morris Logging site is located west of, and not included within, the Project alignment. Based on the information available on the SWRCB Geotracker database and contained within the HCDEH file, soil impacts do not extend the property boundary and groundwater flow direction is to the west, towards Humboldt Bay and downgradient of the Project alignment. It is unlikely that impacts from this property will affect soil and groundwater quality in the vicinity of the Project alignment.

7.2.3 Cal-Kirk Landscaping & Erosion Control (Map ID-3)

The Cal-Kirk Landscaping & Erosion Control property (Cal-Kirk Landscaping) is located at 1127 Old Arcata Road Arcata, California and is further identified Humboldt County Division of Environmental Health (HCDEH) Local Oversight Program (LOP) Case Number: 12082. The North Coast Regional Water Quality Control Board (RWQCB) Case Number: 1THU082. Historic use details previous UST's reported to contain diesel and leaded motor vehicle gasoline. This property is located west of the Project alignment on the west side of Old Arcata Road (Map-ID-3).

Based on information contained in the SWRCB Geotracker database and the HCDEH files, soil quality was not impacted by a release of petroleum hydrocarbons from the property. As noted in HCDEH files, two UST's were removed from the property in 1990 and the site officially closed. Constituents of concern (COCs) for this site include; petroleum hydrocarbons and leaking hazardous waste previously stored onsite.

The Cal-Kirk Landscaping site is located west of, and not included within, the Project alignment. Based on the information available on the SWRCB Geotracker database and contained within the HCDEH file, soil impacts do not extend beyond the property boundaries and groundwater flow direction is to the west, towards Humboldt Bay and downgradient of the Project alignment. It is unlikely that impacts from this property will affect soil and groundwater quality in the vicinity of the Project alignment.

7.2.4 Roger's Garage & KD Investments (Map ID-4)

The Former Roger's Garage, junkyard and KD Investments property (Roger's Garage) is located at 1622 Old Arcata Road, Arcata, California and is further identified as Humboldt County Division of Environmental Health (HCDEH) Local Oversight Program (LOP) Case Number: 12735. The North Coast Regional Water Quality Control Board (RWQCB) Case Number: 1NHU804. This property is located northeast of the Project alignment on the east side of Old Arcata Road.

Project construction at this parcel may include excavation as pertains to storm drain modifications, shoulder widening, infrastructure replacement and new sidewalks. Based on current Project design, excavation impacts are unlikely to impact native soil and will be limited to removal of existing structural sections and fill only.

Based on information contained in the SWRCB Geotracker database and the HCDEH files, soil quality was impacted by a release of petroleum hydrocarbons, and heavy metals due to site historical use at the property. Constituents of concern (COCs) for this property include; petroleum hydrocarbons, copper, lead, zinc, cadmium metals. GeoTracker cleanup status, notes case is open and assessment and interim remedial action ongoing as of 6/22/2017.

The Roger's Garage site is located northeast of, and not included within, the Project alignment. Based on the information available on the SWRCB Geotracker database and contained within the HCDEH file, soil impacts do not extend beyond the property boundaries and groundwater flow direction is to the west, towards Humboldt Bay and downgradient of the Project alignment. It is anticipated that impacts from this property may affect soil or groundwater quality in the vicinity of the Project alignment. Previous HCDEH studies document petroleum groundwater impacts at 3.5 bgs and remediated.

As current design reach a maximum depth of 3.5 feet bgs within the Project alignment, and previous studies document site contaminated soil excavation and disposal during previous investigations. Site plume impacts from AST's or UST's and motor oil storage impacting the project are presumed previously remediated at locations in previous investigations.

A Historical records review of previous borings was reviewed to mitigate future duplicate boring efforts. A discussion of soil waste criteria is further defined Section 8.1. If soil sampling at excavation locations is found to be impacted by ADL, preparation of a Construction Soil Groundwater Monitoring Plan (SGMP) is recommended prior to construction. The intent of the Construction SGMP would be to proactively plan and manage potentially impacted soil in Project areas along Old Arcata Road.

7.2.5 Smith, Norma/La Donna's Rest Home (Map ID-5)

The Smith, Norma/La Donna's Rest Home (Norma/La Donna's Rest Home) is located at 1972 Old Arcata Road in Arcata, California. SWRCB further identified hazardous materials previously stored onsite. During the ISA, the property was identified as containing a single 1,000 gallon UST, classified as a farm motor vehicle fuel tank, containing diesel fuel. This property is located south of the Project alignment on the west side of Old Arcata Road.

Based on information contained in the SWRCB Geotracker database and the HCDEH files, soil quality was not impacted by a release of petroleum hydrocarbons. UST constituents of concern (COCs) for this property include; petroleum hydrocarbons and leaking UST (LUST) metals.

The Norma/La Donna's Rest Home property is located west of, and not included within, the Project alignment. Based on the information available on the SWRCB Geotracker database and contained within the HCDEH file, soil impacts do not extend beyond the property boundaries and groundwater flow direction is to the west, towards Humboldt Bay and downgradient of the Project alignment. It is unlikely that impacts from this property will affect soil and groundwater quality in the vicinity of the Project alignment.

7.3 Hazard Rank 3

A Site of Interest assigned a hazard rank of 3 is not known to be contaminated, but due to current or historical use, has the potential for soil and groundwater contamination that could affect Project construction. Old Arcata Road was a hazard rank of 3. However, Old Arcata Road is not identified in the EDR database review or on the SWRCB Geotracker database. Old Arcata Road was assigned a hazard rank of 3 due to its historical use as a highway and current use as a highly trafficked roadway.

7.3.1 Old Arcata Road Corridor (Map ID-6)

The Project alignment is located along Old Arcata Road which currently and historically has been used for vehicular traffic since its development in the late 1930s/early 1940s. Due to historical use of Old Arcata Road as a highway when leaded gas was present, ADL may have impacted soils in the immediate vicinity of the roadway. As Old Arcata Road defines the project boundary, there is the potential for ADL.

As per correspondence with City of Arcata, paint striping within the Project alignment was most recently applied in 2016. As per GHD request, the City of Arcata has provided thermoplastic striping Safety Data Sheet (SDS) including product specific hazardous materials information on file. Thermoplastic striping SDS's do not list additional hazardous materials likely to be encountered associated with striping removal during project construction.

Additionally, wood treated with chemical perseverates to mitigate decay for guardrail supports or sign post infrastructure along roadways is the standard practice for road wood infrastructure. As current project design includes guardrails and signage to be impacts during construction, there is potential to create Treated Wood Waste (TWW). If TWW is created during Project construction and demolition, appropriate Department of Toxic Substances Control (DTSC) management and disposal will be required.

Naturally occurring asbestos (NOA) refers to fibrous minerals that are found in rocks or soil which can be released into the air by either human activities or weathering processes. In California, ultramafic rock, including serpentine rock, is found in the Sierra foothills, the Klamath Mountains, and the coastal ranges. Based on a review of an ultramafic rock survey conducted by the California Department of Conservation (CDC), the Project is located within an area unlikely to contain natural occurrences of asbestos (CDC, 2000). However, the presence of ultramafic rocks or NOA in soils beneath the Project cannot be verified without a geological survey by a licensed geologist including laboratory analysis. NOA is an environmental issue appropriate for analysis and review under the California Environmental Quality Act (CEQA) to determine measures to avoid, control, or otherwise mitigate the impacts of NOA.

8. Potential Construction Impacts

This ISA identified evidence that soil and groundwater impacts from historical activities documented petroleum hydrocarbon (Erickson's Garage, Steve Morris Logging, Roger's Garage, Norma/La Donna's Rest Home) releases (plumes) may have the potential to be present at five locations (see Figure 2) within, or adjoining to, the Project alignment, as follows: (Hazard Rank definitions are discussed in Section 1.2.1).

TABLE B: Potential Construction Impacts

Site	Hazard Rank	GHD Map ID
Erickson's Garage	2	1
Steve Morris Logging & Contracting	2	2
Cal-Kirk Landscaping & Erosion Control	2	3
Former Roger's Garage	2	4
Smith, Normans/La Donna's Rest Home	2	5
Old Arcata Road Corridor	3	6

Map ID- GHD assigned site identification number

The Erickson's Garage property is adjoining the Project to the northeast and not within the proposed Project alignment. However, due to the proximity of the Erickson's Garage property to the proposed Project alignment, it is identified as a Site of Interest. Based on research completed during this ISA, it is unlikely that the petroleum hydrocarbon soil and groundwater impacts associated with the Erickson's Garage would affect construction within the proposed Project alignment.

The Steve Morris Logging & Contracting property is adjoining the Project to the west and not within the proposed Project alignment. However, due to the proximity of the Steve Morris Logging & Contracting property to the proposed Project alignment, it is identified as a Site of Interest. Based on research completed during this ISA, it is unlikely that the petroleum hydrocarbon soil and groundwater impacts associated with the Steve Morris Logging & Contracting would affect construction within the proposed Project alignment.

The Cal-Kirk Landscaping & Erosion Control property is adjoining the Project to the west and not within the proposed Project alignment. However, due to the proximity of the Cal-Kirk Landscaping & Erosion Control property to the proposed Project alignment, it is identified as a Site of Interest. Based on research completed during this ISA, and review of Geotracker LUST case number 1THU082 closure summary. The previously existing two UST's were removed and the site closed in 1990, though location of UST's was not identified. It is unlikely any previous generated waste and petroleum hydrocarbon soil and groundwater impacts associated with the Cal-Kirk Landscaping & Erosion Control would affect construction within the proposed Project alignment.

The Roger's Garage and KD Investments property is adjoining the Project to the east and not within the proposed Project alignment. However, due to the proximity of the Roger's Garage and KD Investments property to the proposed Project alignment, it was identified as a Site of Interest. Based on research completed during this ISA, petroleum hydrocarbon soil and groundwater impacts associated with the Roger's Garage and KD Investments are unlikely to affect construction within the proposed Project alignment and presumed previously remediated.

The Smith, Norma/La Donna's Rest Home property is adjoining the Project to the south and not within the proposed Project alignment. However, due to the proximity of the Smith, Norma/La

Donna's Rest Home completed during this ISA, it is unlikely that the petroleum hydrocarbon soil and groundwater impacts associated with the Smith, Norma/La Donna's Rest Home property would affect construction within the proposed Project alignment.

The Bayside/Old Arcata Road intersection is within proposed Project alignment. The existing intersection guardrails and sign post may include treated wood components potentially impacted during construction. Treated wood within alignment has been identified as possible TWW. The California Department of Toxic Substances (DTSC) regulations require TWW be handled as a regulated solid waste. Testing and sampling of TWW is not required.

8.1 Soil Impacts

Project construction requires excavating and filling. Soil potentially impacted with ADL may be encountered within the Project alignment that are within or adjoining to Old Arcata Road. Soil lead characterization may be recommended at specific areas where soil will be disturbed by grading and excavation activities.

Once the areas of Project ground disturbance are confirmed, GHD recommends preparation of a work plan which identifies the location, depth and number of borings necessary for pre-characterization sampling to assess of ADL and COC impacts. In order to assess soil impacts, it is recommended that surficial samples be collected to the proposed depth of excavation in the areas along the Project alignment where ground disturbing activities are proposed.

The Department of Toxic Substances Control (DTSC) and Caltrans have determined soil reuse thresholds for soil containing elevated concentrations of ADL. The Caltrans Soil Management Agreement for Aerially Deposited Lead-Contaminated Soils contains ADL-contaminated soil requirements issued by DTSC to reuse and cover requirements for ADL. The Agreement requires all ADL-contaminated soils with a lead concentration above unrestricted use threshold to be properly managed.

Waste impacted by ADL is defined by the DTSC as hazardous if Total Threshold Limit Concentration (TTLC) analysis reports the presence of lead in a concentration greater than 1,000 milligrams per kilogram (mg/kg) (note: mg/kg is equivalent to ppm). If TTLC analysis results in lead concentrations greater than 50 mg/kg and below 1,000 mg/kg, additional testing will be required to determine hazardous waste requirements. Waste containing lead concentrations less than 50 mg/kg via TTLC is classified as a non-hazardous waste.

If soil is found to contain lead in excess of 50 mg/kg, then the soil should be reanalyzed via Solubility Threshold Limit Concentration (STLC) and/or Toxicity Characteristic Leaching Procedure (TCLP) methodology. If the STLC/TCLP analytical results show that the soil contains lead in a concentration less than 5 mg/l, then the soil will be classified as nonhazardous. If the STLC/TCLP results report the presence of lead in concentration greater than 5 milligrams per liter (mg/l), then the soil will be classified as hazardous. If the soil is classified as hazardous, then groundwater in direct contact with this soil should also be sampled for lead, as described in Section 8.2.

If sampled soil is found to be impacted by ADL, preparation of a Construction Soil Groundwater Monitoring Plan (SGMP) is recommended prior to any construction activities. The intent of the

Construction SGMP would be to proactively plan and manage potentially ADL-impacted soil in Project areas along Old Arcata Road.

8.2 Groundwater Impacts

Groundwater is expected to be encountered during construction activities and excavation dewatering. The extent of groundwater encountered will depend on the time of year the construction takes place and whether directional drilling or open trenching techniques are used. Groundwater characterization is recommended for pre-construction characterization if laboratory analysis of pre-construction soil borings indicate elevated concentrations of ADL, as per DTSC Statewide agreement.

In order to address potential ADL impacts to groundwater, pre-construction characterization for lead in groundwater is recommended dependent on the results of soil sampling described in Section 8.1. If soil characterized as hazardous for lead is in close proximity to groundwater, it should be presumed that groundwater may be potentially impacted by lead.

Groundwater pumped from excavations may be impacted by ADL in areas of the Project alignment along Old Arcata Road. Field screening during construction activities is recommended to identify potential impacts in areas of the Project alignment within or adjacent to hazard rank 2 sites.

If groundwater characterization finds the water to be impacted by lead, preparation of a Construction SGMP including scope for potential dewatering during excavation prior to implementation of construction activities is recommended to proactively manage potentially ADL or petroleum impacted groundwater in areas of the Project alignment along Old Arcata Road. Once the areas of potential dewatering are confirmed, GHD recommends appropriate dewatering activities be conducted if encountered during excavation. These waters will require characterization to determine disposal and/or discharge requirements. GHD recommends preparation of a work plan to identify location and number of borings necessary for pre-characterization and depth for sample collection. If impacted groundwater is encountered, analytical services would be necessary to quantify the potential impacts. Impacted groundwater may require special handling and treatment prior to disposal.

9. Conclusions

It is assumed that soil disturbance will occur in excavation areas within the Project alignment. ADL impacted soil are potentially anticipated to be encountered within the Project as soil disturbance will occur within or adjacent to Old Arcata Road. If ADL impacted soil is at a depth in close proximity to groundwater or at elevated concentrations, groundwater may be potentially impacted by ADL.

If ADL-impacted soil is present at concentrations of concern, construction workers have the potential to be exposed to hazardous contaminants. Earthmoving activities or driving on dry exposed soil may expose workers to dust containing contaminants will require a lead compliance plan. Impacted soil and groundwater encountered should be sampled and characterized for off-site disposal prior to construction activities. During construction, buried wood waste or debris should be encountered, it shall be separated from soil and characterized for any off-site disposal.

If treated wood is identified to be impacted within project alignment, material will be handled and regulated as TWW regulated solid waste. TWW may be disposed in a State Water Resources Control Board Certified solid waste landfill, versus hazardous waste landfill.

During preconstruction activities, if ADL impacted groundwater is identified, dewatering within or adjoining to Old Arcata Road should also be sampled and laboratory analyzed for lead during construction with potential for treatment prior to disposal. If lead or petroleum impacted soil and groundwater is identified during pre-construction characterization, it is recommended that Project workers have appropriate training when involved in excavation activities and the Project foreman (at minimum) be Hazardous Waste Operations and Emergency Response (HAZWOPER) trained, in accordance with 1910.120). As per 2018 Caltrans Hazardous Waste and Contamination Standard Special Provisions (NSSP's), Section 14-11, if hazardous waste is, or will be generated by the Project, a Health and Safety Plan (HASP), Perimeter Air Monitoring, Soil Excavation/Transportation, and Dust Control Plan(s) may be required.

10. Recommendations

The purpose of this ISA was to identify areas of potentially impacted soil and/or groundwater along the Project alignment that may require special handling and disposal during construction or could pose a health exposure risk to construction workers. This ISA identified evidence that possible soil and groundwater ADL impacts from historical and current activities related to Old Arcata Road may have the potential to be present within or adjoining to the Project alignment. Table 1 and Figure 2 (attached) denote the identified sites associated with contaminants of concern, including lead and ADL.

The results of this ISA can be utilized to minimize potential construction schedule delays and contractor change orders by facilitating the necessary planning and coordinating with regulatory agencies, disposal facilities, and/or responsible parties prior to construction. Pre-characterization of soil and groundwater for potential aerially deposited lead (ADL) impacts is recommended prior to the start of construction activities. If construction activities include dewatering, and if laboratory analysis of pre-construction soil borings indicate elevated total and STLC concentrations of 1,000 ppm and 5 mg/L, respectively, then groundwater is recommended for pre-construction characterization. If lead impacted soil or groundwater is identified during pre-construction characterization, then a Construction Soil and Groundwater Management Plan (SGMP) should be developed to identify protocols that should be utilized to proactively manage potentially impacted soil and groundwater within the Project alignment and reduce exposure to site workers.

Once the areas of ground disturbance (excavation) and potential dewatering are confirmed, GHD recommends preparation of a Preliminary Site Investigation (PSI) work plan which identifies location and number of borings necessary for pre-characterization and depth for sample collection. Historic soil boring information (if available) will be reviewed to further define boring locations and mitigate duplicative borings.

Laboratory analytical results of soil samples collected from the borings shall be utilized to ascertain whether health and safety concerns are present for construction workers and determine the potential for ADL impacted groundwater, and soil and/or groundwater handling and disposal

options. Proposed soil borings and/or grab groundwater sample locations shall be determined following identification of the areas and depths of soil excavation and dewatering activities. If pre-construction TTLC soil characterization sampling indicates that concentrations of lead are elevated above 1,000 ppm, or if STLC analytical results are greater than 5 mg/l, then such data may indicate potential ADL impacts to groundwater. If groundwater impacts are indicated by soil characterization, pre-construction characterization of the potentially-impacted groundwater is recommended. In order to proactively manage potentially impacted soil and groundwater which may be encountered during construction, preparation of a Construction SGMP is recommended if pre-construction characterization indicates ADL impacts to soil and/or groundwater.

If pre-construction characterization indicates ADL impacts above STLC levels to soil and/or groundwater, it is recommended that site workers involved in excavation activities be Hazardous Waste Operations and Emergency Response (HAZWOPER) trained (Occupational Safety and Health Administration [OSHA] 1910.120).

The Project is located in an area unlikely to contain NOA; thus a pre-characterization of NOA and NOA sampling is not recommended.

11. Special Terms and Conditions

Professional judgment was exercised in gathering the information obtained and GHD is committed to the usual care, thoroughness and competence being practiced in the engineering profession at the time this work was performed. No investigative method can completely eliminate the possibility of obtaining partially imprecise or incomplete information. Conclusions were based on the best information available during the period of the investigation and within the scope of services prescribed in our Agreement. Thus, GHD cannot guarantee that the investigation completely defines the potential for any contamination by hazardous or otherwise harmful substances described in this report or, if no such contamination is found, its absolute absence.

This report is not a legal opinion. It does not necessarily comply with requirements defined in any environmental law such as the “due diligence inquiry.” Only legal counsel retained by the City is competent to assess the legal implications of any information or conclusions in this report. This report was prepared for the exclusive use by the City. GHD is not liable for actions arising out of the reliance of any third party on the information contained within this report.

12. References

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