
MITIGATION MONITORING AND REPORTING PROGRAM

This Draft Mitigation Monitoring and Reporting Program (MMRP) has been formulated based upon the findings of the Environmental Impact Report (EIR) prepared for the Deer Valley Estates Project (project) submitted by Blue Mountain Communities (the project sponsor) for which the City of Antioch (City) is the CEQA Lead Agency for environmental review. The MMRP, which is provided in Table A, lists mitigation measures recommended in the EIR for the proposed project and identifies mitigation monitoring requirements. The Final MMRP must be adopted when the City makes a final decision on the project.

This MMRP has been prepared to comply with the requirements of State law (Public Resources Code Section 21081.6). State law requires the adoption of an MMRP when mitigation measures are required to avoid significant impacts. The MMRP is intended to ensure compliance during implementation of the project.

The MMRP is organized in a matrix format:

- The first column identifies the mitigation measure that would be implemented for each project impact.
- The second column refers to the party or agency responsible for implementing the mitigation measure.
- The third column refers to the action that prompts implementation and/or implementation timing.
- The fourth column refers to the agency responsible for oversight or ensuring that the mitigation measure is implemented.
- The fifth column refers to the action that prompts the commencement of monitoring.
- The sixth column refers to when the monitoring will occur to ensure that the mitigation action is completed.
- The seventh and final column is where the lead agency contact initials and dates are provided as verification of mitigation measure implementation.



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Table A: Mitigation Monitoring and Reporting Program

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency	Verified Implementation
3.1 AESTHETICS						
Mitigation Measure AES-1: Outdoor lighting shall be designed to minimize glare and spillover to surrounding properties. The proposed project shall incorporate non-mirrored glass to minimize daylight glare.	Project Applicant	Prior to issuance of a building permit	City of Antioch Community Development Department	Lighting designs review and approval	Before the start of construction	Initials: _____ Date: _____
3.3 AIR QUALITY						
<p>Mitigation Measure AIR-1: In order to meet the Bay Area Air Quality Management District (BAAQMD) fugitive dust threshold, the following BAAQMD Basic Construction Mitigation Measures shall be implemented:</p> <ul style="list-style-type: none"> • All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. • All haul trucks transporting soil, sand, or other loose material off-site shall be covered. • All visible mud or dirt tracked-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. • All vehicle speeds on unpaved roads shall be limited to 15 mph. • All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. • Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. • Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. 	Construction Manager	During grading and construction activities	City of Antioch Public Works Department	Construction schedule, equipment, and site to be reviewed and inspected for compliance with BAAQMD Basic Construction Mitigation Measures	Before the start of construction and continually during construction	Initials: _____ Date: _____

Table A: Mitigation Monitoring and Reporting Program

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency	Verified Implementation
<p>Mitigation Measure AIR-1 (continued):</p> <ul style="list-style-type: none"> All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. A publicly visible sign shall be posted with the telephone number and person to contact at the City of Antioch regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations. 						
<p>Mitigation Measure AIR-2: During construction of the proposed project, the project contractor shall ensure all off-road diesel-powered construction equipment of 50 horsepower or more used for the project construction at a minimum meets the California Air Resources Board (CARB) Tier 2 emissions standards or equivalent equipped with Level 3 diesel particulate filters equipped with Level 3 diesel particulate filters.</p>	Construction Manager	During grading and construction activities	City of Antioch Public Works Department	Review and inspection of equipment	Before the start of construction and continually during construction	Initials: _____ Date: _____

Table A: Mitigation Monitoring and Reporting Program

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3.4 BIOLOGICAL RESOURCES						
<p>Mitigation Measure BIO-1a: Prior to issuance of grading or construction permits for the proposed project, a qualified biologist shall conduct protocol level surveys to determine the presence or absence of vernal pool fairy shrimp, vernal pool tadpole shrimp, California red-legged frog, and California tiger salamander on the project site. These surveys shall be conducted in consultation with the appropriate regulatory agencies to determine under what conditions surveys could occur. Some protocol level surveys may take up to two years to conduct. If these species are determined to be absent from the site, no further mitigation would be required. If suitable conditions do not exist for protocol level surveys prior to grading or construction activities, these species must be assumed present on the project site.</p>	Project Applicant/ Project Biologist	Prior to issuance of a grading or construction permit	City of Antioch Community Development Department	Protocol level surveys for vernal pool fairy shrimp, vernal pool tadpole shrimp, California red-legged frog, and California tiger salamander completed	Before the start of construction and continually during construction	Initials: _____ Date: _____
<p>Mitigation Measure BIO-1b: If vernal pool fairy shrimp, vernal pool tadpole shrimp, California red-legged frog or California tiger salamander are identified on the project site, or are assumed present due to the absence of protocol level surveys, and avoidance is not feasible, the project applicant shall mitigate for the loss of habitat. Authorized take permits may be required by the U.S. Fish and Wildlife Service (USFWS) for incidental take of individuals that may be present.</p> <p>The project applicant shall purchase credits at an approved off-site mitigation bank or other lands approved by the applicable resources agencies and the City of Antioch (e.g., in fee-title or through conservation easement). Mitigation would be required at a replacement to loss ratio of 2:1 and a creation to loss ratio of 1:1 (a total mitigation ratio of 3:1) for vernal pool fairy shrimp and/or vernal pool tadpole</p>	Project Applicant/ Project Biologist	Prior to issuance of a grading or construction permit and in the event that vernal pool fairy shrimp, vernal pool tadpole shrimp, California red-legged frog or California tiger salamander are identified on the project site, or are assumed present due to the absence of protocol level surveys	City of Antioch Community Development Department and U.S. Fish and Wildlife Service	Mitigation for loss of habitat and acquisition of take permits from USFWS as necessary	Before the start of construction and continually during construction	Initials: _____ Date: _____

Table A: Mitigation Monitoring and Reporting Program

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency	Verified Implementation
<p>Mitigation Measure BIO-1b (continued):</p> <p>shrimp (these are standard mitigation ratios used by the USFWS for impacts to these species). The Elsie Gridley Multi-Species Conservation Bank includes Antioch within its service area and offers preservation and creation habitat. Loss of California red-legged frog or California tiger salamander habitat should be mitigated at a 1:1 mitigation to loss ratio (38 acres) at a suitable site that is known to support a breeding population. Because the project site supports low value California tiger salamander habitat, the preservation of high quality, known breeding habitat would duly compensate for the loss of low-quality habitat, especially if the site acquired is either in fee-title or via a conservation easement that preserves and enhances breeding and estivation habitat or preserves and enhances suitable estivation habitat adjacent to a known, protected breeding site.</p> <p>Enhancement shall include a controlled grazing regime, limited public access, fencing, or other appropriate measures to be implemented by the bank using funds from the sale of credits—An authorized bank may offer California tiger salamander habitat and burrowing owl credits on the same acres if authorized. These 38 acres may also accommodate the potential loss of burrowing owl and Swainson’s hawk habitat.</p>						

Table A: Mitigation Monitoring and Reporting Program

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency	Verified Implementation
<p>Mitigation Measure BIO-2a: Protocol level burrowing owl surveys shall be conducted during the height of the breeding season (April 15 to July 15) to determine the number of both individuals and breeding pairs present on the site. Preconstruction surveys shall also be conducted for burrowing owls prior to site preparation, grading, and construction. All surveys shall conform to the survey protocol established by the California Burrowing Owl Consortium. Preconstruction surveys shall be conducted no more than 30 days prior to the initiation of construction activities and at 30-day intervals if construction activities have not been initiated in an area.</p>	<p>Project Applicant/ Project Biologist</p>	<p>Protocol level surveys shall occur during the height of the breeding period (April 15 to July 15)</p> <p>Preconstruction surveys shall occur no more than 30 days prior to initiation of construction activities in any given area</p>	<p>City of Antioch Community Development Department</p>	<p>Protocol level and preconstruction surveys for burrowing owl completed</p>	<p>Before the start of construction and continually during construction</p>	<p>Initials: _____ Date: _____</p>
<p>Mitigation Measure BIO-2b: For grading and construction activities occurring during the non-breeding season (September 1 through January 31), burrowing owls may be evicted from the entire construction area using passive relocation techniques. One-way doors shall be installed in all suitable burrows (approximately 4 inches in diameter), left in place for a minimum of 48 hours, and monitored daily to evaluate the exclusion of owls from burrows and to maintain the one-way doors in good repair. Burrows shall then be excavated, using hand tools. Sections of flexible plastic pipe shall also be inserted into burrows during excavation to maintain an escape route for any animals inside the burrow. Once excavation is completed and no owls remain on-site, burrows shall be refilled to prevent reoccupation, or the entire site shall be managed until construction activities begin.</p>	<p>Project Applicant/ Project Biologist</p>	<p>During the non-breeding season (September 1 through January 31)</p>	<p>City of Antioch Community Development Department</p>	<p>Following burrowing owl surveys, burrowing owl exclusion and monitoring between September 1 and January 31</p>	<p>Continually September 1 through January 31</p>	<p>Initials: _____ Date: _____</p>

Table A: Mitigation Monitoring and Reporting Program

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency	Verified Implementation
<p>Mitigation Measure BIO-2c: For grading and construction activities occurring during the breeding season (February 1 through August 31), a 75-meter (250-foot) radius circular buffer shall be erected around each active burrow and a qualified biologist shall monitor construction activities to ensure effectiveness of the buffer area for breeding activities. Construction-related activity (e.g., site grading, staking, surveying) shall not occur within the exclusion zone until the burrows are confirmed to be unoccupied and/or juveniles from the nest are foraging independently and capable of independent survival. Only biologists familiar with burrowing owl behavior shall be permitted to determine whether juveniles are capable of independent survival. Once the burrows are unoccupied or the young are capable of independent survival, passive relocation techniques (as described above in Mitigation Measure BIO-2a) shall be implemented to evict the owls from the burrows. Burrows shall be excavated, using hand tools, and re-filled to prevent reoccupation prior to allowing construction within the exclusion zone. Sections of flexible plastic pipe shall also be inserted into burrows during excavation to maintain an escape route for any animals inside the burrow. Due to the density of the burrowing owl population on the project site, it is possible that construction activities may not be able to avoid active burrows; in this case, construction activities shall not be permitted during the breeding season.</p>	<p>Project Applicant/ Project Biologist/ Construction Manager</p>	<p>During the breeding season (February 1 through August 31)</p>	<p>City of Antioch Community Development Department</p>	<p>Following burrowing owl surveys, burrowing owl protection and monitoring between September 1 and January 31</p>	<p>Continually between February 1 through August 31</p>	<p>Initials: _____ Date: _____</p>

Table A: Mitigation Monitoring and Reporting Program

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency	Verified Implementation
<p>Mitigation Measure BIO-2d: The project applicant shall comply with all take avoidance measures contained in the Staff Report on Burrowing Owl Mitigation. Compensatory mitigation for loss of burrowing owl habitat shall be consistent with CDFW mitigation guidance for burrowing owls. Prior to issuance of grading or construction permits, the project applicant shall be required to purchase and protect in perpetuity compensatory mitigation lands at a minimum of a 1:1 mitigation ratio (or a minimum mitigation ratio of 3:1 if active burrows or winter roosts are identified on-site and take cannot be avoided). Mitigation lands shall be within 210 meters of an active breeding colony at minimum and shall have an active breeding colony if burrowing owls are be evicted from the project site. Mitigation lands shall be protected in perpetuity under a conservation easement and be managed in perpetuity through an endowment with an appointed land manager. Mitigation for burrowing owls may take place on California tiger salamander, kit fox, or Swainson’s hawk (grassland) habitat provided it is suitable for this species.</p>	Project Applicant/ Project Biologist	City of Antioch Community Development Department	Prior to issuance of a grading or construction permit	Habitat mitigation triggered by removal of burrowing owls at the project site	Before the start of construction and continually during construction	Initials: _____ Date: _____
<p>Mitigation Measure BIO-3a: Pre-construction surveys for kit fox dens shall be conducted by a qualified biologist no less than 14 days or more than 30 days prior to any grading or construction activities on the project site. If an active den is detected within (or immediately adjacent to) the construction area, the USFWS shall be immediately contacted to determine the best course of action. If no kit fox activity is detected, a written report shall be submitted to the USFWS within 5 days of survey completion.</p>	Project Applicant/ Project Biologist	No less than 14 days or more than 30 days prior to grading or construction activities	City of Antioch Community Development Department and U.S. Fish and Wildlife Service	Completion of pre-construction surveys and submittal of written report to USFWS	Before the start of construction	Initials: _____ Date: _____

Table A: Mitigation Monitoring and Reporting Program

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency	Verified Implementation
Mitigation Measure BIO-3b: If active dens are identified within (or immediately adjacent to) the construction area, the project applicant shall follow the USFWS’s Standardized Recommendations for Protection of the Kit Fox Prior to or During Ground Disturbance throughout the construction period.	Project Applicant/ Project Biologist/ Construction Manager	During the construction period	City of Antioch Community Development Department and U.S. Fish and Wildlife Service	Identification of active dens within or immediately adjacent to construction area	Before the start of construction and continually during construction	Initials: _____ Date: _____
Mitigation Measure BIO-3c: If active dens are identified within (or immediately adjacent to) the construction area, the project applicant shall mitigate for the loss of San Joaquin Kit Fox habitat at a mitigation to loss ratio of 3:1 (114 acres). The project applicant shall obtain Incidental Take Permits (ITPs) from CDFW and the USFW and shall provide evidence of compliance with the permits to the City prior to project implementation. Issuance of a CESA Permit is subject to CEQA documentation; therefore, the CEQA document should specify impacts, mitigation measures, and fully describe a mitigation, monitoring and reporting program. These 114 acres may also accommodate the potential loss of estivation habitat for California tiger salamander, and grassland habitats for and burrowing owl, California tiger salamander, and Swainson’s hawk habitat, as applicable. An equivalent number of credits at a mitigation bank approved for grassland species may be substituted for purchase of land provided the purchase is approved by the City, CDFW, and USFWS.	Project Applicant/ Project Biologist	Prior to the issuance of a grading or construction permit	City of Antioch Community Development Department	Identification of active dens within or immediately adjacent to construction area	Before the start of construction and continually during construction	Initials: _____ Date: _____

Table A: Mitigation Monitoring and Reporting Program

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency	Verified Implementation
<p>Mitigation Measure BIO-4: If mitigation lands are purchased through conservation easements or in fee-title, the project applicant shall implement the Resource Management Plan prepared for the proposed project. The plan shall include a monitoring protocol for the listed species, performance criteria to document success of the mitigation, and identification of the funding mechanism for plan implementation.</p>	Project Applicant/ Project Biologist	Prior to the issuance of a grading or construction permit	City of Antioch Community Development Department	Implementation of Resource Management Plan	Before the start of construction	Initials: _____ Date: _____
<p>Mitigation Measure BIO-5a: The proposed project shall avoid any construction activities that result in vegetation removal, including grading and other ground-disturbing activities, during the bird nesting season (February 1 through August 31). If construction activities are scheduled during the nesting season, the project applicant shall retain a qualified biologist to conduct a pre-construction survey of all suitable nesting habitat (i.e., field, trees) within 250 feet of the project site (where accessible). The pre-construction survey shall be conducted no more than 5 days prior to the start of work. If the survey indicates the presence of nesting birds, protective buffer zones should be established around the nests as follows: for raptor nests, the size of the buffer zone should be a 250-foot radius centered on the nest; for other birds, the size of the buffer zone should be a 50- to 100-foot radius centered on the nest. In some cases, these buffers may be increased or decreased depending on the bird species and the level of disturbance that will occur near the nest.</p> <p>If there is a pause in construction activities of 7 days or more during the nesting season, an additional nesting bird survey shall be conducted to ensure that there are no new nests that require buffering.</p>	Project Applicant/ Project Biologist	Prior to the issuance of a grading permit	City of Antioch Community Development Department	Construction schedule review and approval, completion of pre-construction survey	Before the start of construction and continually during construction	Initials: _____ Date: _____

Table A: Mitigation Monitoring and Reporting Program

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency	Verified Implementation
<p>Mitigation Measure BIO-5b: Prior to the initiation of construction activities, the project applicant should have a qualified biologist conduct surveys for Swainson’s hawk in accordance with the Swainson’s Hawk Technical Advisory Committee’s (TAC) Recommended Timing and Methodology for Swainson’s Hawk Nesting Surveys in California’s Central Valley (2000). If an active nest is identified, a 0.25-mile protective buffer shall be maintained around the nest until the young fledge. If the 0.25-mile buffer must be reduced the project applicant shall obtain a California Endangered Species Act (CESA) ITP prior to ground disturbance.</p> <p>If Swainson’s hawk activity (foraging, not just nests) is identified on or within 0.25 mile of the project site, the project applicant shall mitigate for the permanent loss of foraging habitat at a minimum of a 1:1 mitigation ratio (mitigation:loss). Mitigation lands should be protected in perpetuity under a conservation easement and be managed in perpetuity through an endowment with an appointed land manager. A comprehensive plan should be prepared to specify how the mitigation land will be managed, funded, and monitored. The easement should be held by a governmental entity, special district, non-profit organization, for-profit entity, person, or another entity to hold title to and manage the property. Mitigation for Swainson’s hawk may take place on California tiger salamander, burrowing owl, or kit fox habitat provided it is suitable for this species.</p>	<p>Project Applicant/ Project Biologist</p>	<p>Prior to the issuance of a grading permit</p>	<p>City of Antioch Community Development Department</p>	<p>Construction schedule review and approval, completion of pre-construction survey</p> <p>Habitat mitigation triggered by identification of Swainson’s hawk activity at the project site</p>	<p>Before the start of construction and continually during construction</p>	<p>Initials: _____ Date: _____</p>

Table A: Mitigation Monitoring and Reporting Program

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency	Verified Implementation
<p>Mitigation Measure BIO-6: The project applicant shall obtain the appropriate federal and State ITPs authorizing incidental take of State and federal listed species that may be killed or injured during project development. The applicant shall provide proof to the City of Antioch Community Development Department of compliance with the terms and conditions of any required permits or ITPs prior to issuance of the grading permit. All work onsite shall be in compliance with the terms and conditions of the federal and State permits.</p>	Project Applicant/ Project Biologist	Prior to the issuance of a grading permit	City of Antioch Community Development Department	Acquisition of take permits from CDFW and USFWS as necessary	Before the start of construction and continually during construction	Initials: _____ Date: _____
3.5 CULTURAL RESOURCES						
<p>Mitigation Measure CULT-1: If deposits of prehistoric or historic archeological materials are encountered during project activities, all work within 25 feet of the discovery shall be redirected and a qualified archeologist shall be contacted to assess the deposit finds and make recommendations.</p> <p>While deposits of prehistoric or historic archeological materials should be avoided by project activities, if the deposits cannot be avoided, they shall be evaluated for their California Register eligibility. If the deposits are not eligible for the California Register, avoidance is not necessary. If the deposits are eligible for the California Register, they shall be avoided. If avoidance is not feasible, project impacts shall be mitigated in accordance with the recommendations of the evaluating archaeologist and CEQA Guidelines Section 15126.4 (b)(3)(C), which requires implementation of a data recovery plan and avoidance of human remains. Upon completion of the archaeologist's assessment, the archaeologist shall prepare a report documenting the methods and results and provide recommendations for the treatment of the discovered archaeological materials. The report shall be submitted to the project applicant, the City of Antioch, and the Northwest Information Center (NWIC).</p>	Project Applicant/ Construction Manager/ Qualified Archaeologist	During all ground-disturbing activities and after resources are identified	City of Antioch Community Development Department	Initiated in the event that a find is made during construction	During regularly scheduled site inspections that would be initiated in the event that a find is made during construction	Initials: _____ Date: _____

Table A: Mitigation Monitoring and Reporting Program

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency	Verified Implementation
<p>Mitigation Measure CULT-2: If human remains are encountered, work within 25 feet of the discovery shall be redirected and the Contra Costa County Coroner notified immediately. At the same time, an archaeologist shall be contacted to assess the situation and consult with the appropriate agencies. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.</p>	Project Applicant/ Construction Manager/ Qualified Archaeologist	During all ground-disturbing activities and after resources are identified	City of Antioch Community Development Department	Initiated in the event that a find is made during construction	During regularly scheduled site inspections initiated after a find is made during construction	Initials: _____ Date: _____
3.7 GEOLOGY AND SOILS						
<p>Mitigation Measure GEO-1: Project design and construction shall be in conformance with, or exceed, current best standards for earthquake resistant construction in accordance with the California Building Code (Seismic Zone 4), applicable local codes, and in accordance with the generally accepted standards of geotechnical practice for seismic design in Northern California. In addition, project design shall follow the recommendations of a site-specific design level geotechnical investigation report to be prepared by a Certified Engineering Geologist or Geotechnical Engineer. The City Engineer shall approve all final design and engineering plans.</p>	Project Applicant/ Project Geotechnical Engineer	Prior to final development plan approval	City of Antioch Community Development Department	Review of geotechnical investigation report, final design and engineering plan review and approval	Before the start of construction	Initials: _____ Date: _____

Table A: Mitigation Monitoring and Reporting Program

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency	Verified Implementation
<p>Mitigation Measure GEO-2: The applicant shall ensure that the requirements for worker health and safety as specified by the California Division of Occupational Safety and Health (DOSH) (which acts to protect workers from safety hazards through its California OSHA (Cal/OSHA)) are implemented. In particular, due to the caving proclivity of the soil types of the project site, shoring requirements for workers dealing with work in excavations, as specified in the California Code of Regulations, Title 8, Section 1540 et. al., Excavations, shall be observed. This article applies to all open excavations made in the earth's surface (including trenches).</p>	Project Applicant/ Construction Manager	Prior to issuance of a grading permit and during the construction period	City of Antioch Community Development Department	Worker safety plan review and approval	Before the start of construction	Initials: _____ Date: _____
<p>Mitigation Measure GEO-3: The applicant shall incorporate all recommendations of a final site-specific design-level geotechnical investigation as prepared by a licensed Geotechnical Engineer and approved by the City of Antioch into all development plans submitted for the project, including recommendations for grading, placement of fill materials, pretreatment of expansive soils, and avoidance of settlement and/or differential settlement of infrastructure and buildings.</p>	Project Applicant/ Project Geotechnical Engineer	Prior to final development plan approval	City of Antioch Community Development Department	Incorporation of recommendations of geotechnical investigations		Initials: _____ Date: _____

Table A: Mitigation Monitoring and Reporting Program

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency	Verified Implementation
<p>Mitigation Measure GEO-4: If paleontological resources are encountered during site preparation or grading activities, all work within 25 feet of the discovery shall be redirected until a qualified paleontologist has assessed the discoveries and made recommendations. If the paleontological resources are found to be significant, adverse effects to such resources shall be avoided by project activities. If project activities cannot avoid the resources, the adverse effects shall be mitigated. Mitigation shall include data recovery and analysis, preparation of a final report, and the formal transmission or delivery of any fossil material recovered to a paleontological repository, such as the University of California Museum of Paleontology (UCMP). Upon completion of project activities, a final report documenting methods and findings of the mitigation shall be prepared and submitted to the project applicant, the City of Antioch, and a suitable paleontological repository.</p>	Project Applicant/ Construction Manager/ Qualified Paleontologist	During all ground-disturbing activities and after resources are identified	City of Antioch Community Development Department	Initiated in the event that a find is made during construction	During regularly scheduled site inspections initiated after a find is made during construction	Initials: _____ Date: _____
3.9 HAZARDS AND HAZARDOUS MATERIALS						
<p>Mitigation Measure HAZ-1: Prior to the issuance of grading or construction permits for the project site, a qualified environmental professional shall conduct an environmental investigation at the project site in accordance with California Department of Toxic Substances Control (DTSC) Interim Guidance for Sampling Former Agricultural Fields (Interim Guidance). As specified in the Interim Guidance, any detected organic compounds or metals above naturally-occurring concentrations must be evaluated in a risk assessment, and additional remedial action such as soils removal may be required, depending on the results of the environmental investigation and risk assessment. The investigation report and certification that required further actions have been completed shall be submitted to the City of Antioch for review and approval.</p>	Project Applicant/ Qualified Environmental Professional	Prior to issuance of grading or construction permits	City of Antioch Community Development Department	Environmental investigation and certification review and approval	Before the start of construction	Initials: _____ Date: _____

Table A: Mitigation Monitoring and Reporting Program

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency	Verified Implementation
<p>Mitigation Measure HAZ-2: Prior to the issuance of grading or construction permits for the project site, a Construction Risk Management Plan (CRMP) should be prepared to address potential hazardous material issues during construction of the project. The CRMP should include any available data from sampling conducted for the project, including the sampling specified in Mitigation Measure HAZ-1. The CRMP shall include provisions to protect construction workers and the nearby public from health risks from pipeline hazards and potential historic releases associated with oil and natural gas production in the project vicinity.</p> <p>The CRMP shall incorporate Best Practices defined by the Common Ground Alliance to protect construction worker safety and prevent accidental releases from oil and natural gas pipelines. The CRMP shall also require site inspections during initial grading activities at the site; provide procedures to be undertaken in the event that previously unreported petroleum contamination or subsurface hazards are discovered during construction; incorporate construction safety measures for excavation and other construction activities; establish detailed procedures for the safe storage, stockpiling, use, and disposal of hazardous materials at the project site; provide emergency response procedures; and designate personnel responsible for implementation of the CRMP. The CRMP shall be submitted to the City of Antioch for review and approval.</p>	<p>Project Applicant/ Qualified Environmental Professional</p>	<p>Prior to issuance of grading or construction permit</p>	<p>City of Antioch Community Development Department</p>	<p>Construction Risk Management Plan review and approval</p>	<p>Before the start of construction</p>	<p>Initials: _____ Date: _____</p>

Table A: Mitigation Monitoring and Reporting Program

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3.10 HYDROLOGY AND WATER QUALITY						
<p>Mitigation Measure HYD-1a: The project proponent shall prepare a SWPPP designed to reduce potential impacts to surface water quality through the project construction period. The SWPPP must be maintained on-site and made available to City inspectors and/or RWQCB staff upon request. The SWPPP shall include specific and detailed BMPs designed to mitigate construction-related pollutants. At minimum, BMPs shall include practices to minimize the contact of construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives) with stormwater.</p> <p>The SWPPP shall specify properly designed centralized storage areas that keep these materials out of the rain. An important component of the stormwater quality protection effort is the knowledge of the site supervisors and workers. To educate on-site personnel and maintain awareness of the importance of stormwater quality protection, site supervisors shall conduct regular tailgate meetings to discuss pollution prevention. The frequency of the meetings and required personnel attendance list shall be specified in the SWPPP. The SWPPP shall specify a monitoring program to be implemented by the construction site supervisor, which must include both dry and wet weather inspections. RWQCB and /or City personnel, who may make unannounced site inspections, are empowered to levy considerable fines if it is determined that the SWPPP has not been properly prepared and implemented. BMPs designed to reduce erosion of exposed soil may include, but are not limited to: soil stabilization controls, watering for dust control, perimeter silt fences, placement of hay bales, and sediment basins.</p>	Project Applicant/ Construction Manager	Prior to approval of the grading plan	City of Antioch Community Development Department	SWPPP review and approval	Before start of construction	Initials: _____ Date: _____

Table A: Mitigation Monitoring and Reporting Program

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency	Verified Implementation
<p>Mitigation Measure HYD-1a: (continued):</p> <p>The potential for erosion is generally increased if grading is performed during the rainy season as disturbed soil can be exposed to rainfall and storm runoff. If grading must be conducted during the rainy season, the primary BMPs selected shall focus on erosion control; that is, keeping sediment on the site. End-of-pipe sediment control measures (e.g., basins and traps) shall be used only as secondary measures. Entry and egress from the construction site shall be carefully controlled to minimize off-site tracking of sediment. Vehicle and equipment wash-down facilities shall be designed to be accessible and functional during both dry and wet conditions. The City of Antioch Community Development Department shall review and approve the SWPPP prior to approval of the grading plan.</p>						
<p>Mitigation Measure HYD-1b: The project applicant shall design Best Management Practices into the project to reduce potential impacts to surface water quality associated with operation of the project. These features shall be included in the final development drawings. Specifically, the final design shall include measures designed to mitigate potential water quality degradation of runoff from all portions of the completed development, and to detain and treat 75 percent of the runoff from a major storm event. The design team for the development project shall review and incorporate as many concepts as practicable from Start at the Source, Design Guidance Manual for Stormwater Quality Protection.</p>	Project Applicant/ Project Engineer	Prior to final development plan approval	City of Antioch Community Development Department	BMPs incorporated into final development drawings, reviewed and approved	Before start of construction	Initials: _____ Date: _____

Table A: Mitigation Monitoring and Reporting Program

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency	Verified Implementation
<p>Mitigation Measure HYD-2: The City of Antioch Community Development Department shall review and approve the design-level stormwater control plan prior to approval of the grading plan. If it is determined by the City that the stormwater control plan for the proposed project does not include adequate measures to treat runoff to the maximum extent practicable in compliance with the County NPDES permit, then the applicant shall work closely with the City to revise the stormwater control plan so the Maximum Extent Practical (MEP) requirement is achieved.</p>	Project Applicant/ Project Engineer	Prior to approval of the final grading plan	City of Antioch Community Development Department	Design-level stormwater control plan review and approval	Before start of construction	Initials: _____ Date: _____
<p>Mitigation Measure HYD-3: As a condition of approval of the final grading and drainage plans for the project, the project applicant shall demonstrate through detailed hydraulic analysis that implementation of the proposed drainage plans will not create potential hydromodification impacts downstream by implementing the following:</p> <ul style="list-style-type: none"> • The project applicant’s licensed professional engineer shall work cooperatively with the City of Antioch and the RWQCB to incorporate BMPs into the final drainage plan that will result in a post-project runoff curve (i.e., storm water flow/duration graphs) that closely resembles the pre-project curve; • Include drainage components that are designed in compliance with City of Antioch standards. The grading and drainage plans shall be reviewed for compliance with these requirements by the City of Antioch; and • The project applicant shall establish a self-perpetuating drainage system maintenance program (to be managed by a homeowner association or similar entity) that includes annual inspections of detention basins, sedimentation basins, drainage ditches, swales, and drainage inlets. Any accumulation of sediment or other debris shall be promptly removed and necessary maintenance to insure continued efficient operation shall be performed. 	Project Applicant/ Project Hydrologist	Prior to approval of the final grading and drainage plans	City of Antioch Community Development Department	Hydraulic analysis, grading and drainage plans review and approval	Before start of construction	Initials: _____ Date: _____

Table A: Mitigation Monitoring and Reporting Program

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency	Verified Implementation
Mitigation Measure HYD-4: The project applicant’s licensed professional engineer shall analyze the potential for the project to contribute to downstream flooding impacts. The final drainage plan shall include a design that, when implemented, would not increase peak flows or exacerbate downstream flooding. Properly implemented hydrograph modification mitigation (required under Mitigation Measure HYD-3) will also mitigate the potential for impacting downstream flooding impacts.	Project Applicant/ Project Hydrologist	Prior to approval of the final drainage plan	City of Antioch Community Development Department	Final drainage plan review and approval	Before start of construction	Initials: _____ Date: _____
Mitigation Measure HYD-5: As required by Ordinance 90-74, the applicant shall contribute to the construction and maintenance of regional drainage infrastructure by paying applicable fees associated with the amount of new impervious cover proposed by the project.	Project Applicant	Prior to issuance of a grading permit	City of Antioch Community Development Department	Payment prior to grading permit application	Before start of construction	Initials: _____ Date: _____
3.13 NOISE						
Mitigation Measure Noise-1a: The project contractor ensure that all construction related activities are restricted to the hours of 7:00 a.m. to 6:00 p.m. on weekdays, within 300 feet of occupied dwelling spaces between 8:00 a.m. and 5:00 p.m. on weekends, and between 9:00 a.m. and 5:00 p.m. on weekends and holidays, irrespective of the distance from the occupied dwelling.	Project Applicant/ Construction Manager	During the construction period	City of Antioch Community Development Department	Schedule review and approval	During construction	Initials: _____ Date: _____
Mitigation Measure NOI-1b: During all project site excavation and on-site grading, the construction contractor shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers’ standards.	Project Applicant/ Construction Manager	During excavation and grading activities	City of Antioch Community Development Department	Equipment review and approval	Before start of construction and regularly during construction	Initials: _____ Date: _____
Mitigation Measure NOI-1c: The construction contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site.	Project Applicant/ Construction Manager	During grading and construction activities	City of Antioch Community Development Department	Stationary equipment site review and approval	Before start of construction and regularly during construction	Initials: _____ Date: _____

Table A: Mitigation Monitoring and Reporting Program

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency	Verified Implementation
Mitigation Measure NOI-1d: The construction contractor shall locate equipment staging in areas that will create the greatest possible distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.	Project Applicant/ Construction Manager	During grading and construction activities	City of Antioch Community Development Department	Staging area review and approval	Before start of construction and regularly during construction	Initials: _____ Date: _____
Mitigation Measure NOI-1e: The construction contractor shall use temporary noise attenuation fences at least 6 feet in height to protect all sensitive receptors along the project site's northern property line that are not currently protected by a sound wall of at least 6 feet in height. Noise attenuation fencing shall consist of a solid, continuous fence (with no horizontal or vertical gaps) at least 6 feet in height and of equivalent mass as that of solid wood fencing boards (e.g., made of plywood of at least ¾ inch thickness).	Project Applicant/ Construction Manager	Prior to and during grading and construction activities	City of Antioch Community Development Department	Noise attenuation fencing plan review and approval	Before start of construction	Initials: _____ Date: _____
Mitigation Measure Noise-2a: A sound wall a minimum of 6 feet in height (measured above the finished roadway elevation) shall be constructed along the project property line bordering Deer Valley Road. The sound wall must be constructed without gaps (including at the bottom) and must be at least 1 inch thick and have equivalent mass to that of solid wood fencing boards.	Project Applicant/ Project Engineer	Prior to issuance of an occupancy permit	City of Antioch Community Development Department	Sound wall plans review and approval	Before start of construction	Initials: _____ Date: _____
Mitigation Measure Noise-2b: A sound wall a minimum of 6 feet in height (measured above the finished roadway elevation) shall also be constructed along the project property line bordering Wellness Way. The sound wall must be constructed without gaps (including at the bottom) and must be at least 1 inch thick and have equivalent mass to that of solid wood fencing boards.	Project Applicant/ Project Engineer	Prior to issuance of an occupancy permit	City of Antioch Community Development Department	Sound wall plans review and approval	Before start of construction	Initials: _____ Date: _____

Source: LSA (2021).