DRAFT
ENVIRONMENTAL IMPACT REPORT

NEWARK AREAS 3 AND 4 SPECIFIC PLAN PROJECT

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NEWARK AREAS 3 AND 4 SPECIFIC PLAN PROJECT

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SUMMARY

The proposed project is a Specific Plan for Areas 3 and 4 in (south) western Newark, which is bound generally by Mowry Avenue, Cherry Street, Stevenson Boulevard, and the Mowry Slough. The proposed Areas 3 and 4 Specific Plan allows for development of up to 1,260 housing units of various densities, an up to 600-student elementary school, a golf course, open space areas, as well as retention of existing light industrial and institutional (Ohlone College, City fire station, park, and community activity center) uses.

The following is a table of all project impacts and mitigation measures. The reader is referred to the main body text of this EIR for detailed discussions for the existing setting, impacts, and mitigation measures.

Summary of Impacts and Mitigation Measures

The following table summarizes the significant environmental impacts identified and discussed within the text of the EIR, and identifies the mitigation measures proposed to avoid or reduce those impacts. Per California Environmental Quality Act (CEQA), impacts determined to be less than significant are not included in this summary.

Significant Environmental Impact	Mitigation Measures
TRANSPORTATION	
Impact TRAN-1: The addition of project traffic would cause the intersection of Cherry Street/Mowry Avenue to degrade from a LOS C to an unacceptable LOS D during the AM peak hour. **(Significant Impact)**	**MM TRAN-1.1:** Implementation of the following measures would reduce this impact to a less than significant level: To mitigate the project impact at Cherry Street and Mowry Avenue, the intersection would require an additional left turn lane to the westbound Mowry Avenue approach. This mitigation measure would allow the intersection to operate at LOS C during the AM peak hour. This improvement would require the intersection be re-aligned on the eastbound and westbound approaches and extensive modifications to the existing traffic signal. Depending on the final design, it appears that these mitigation measures could be accommodated within the existing right-of-way. Modification of the intersection would be required concurrent with the development of Areas 3 & 4 at the developer's expense. **(Less Than Significant Impact with Mitigation)**
AIR QUALITY	
Impact AIR-1: Without incorporation of appropriate Transportation Control Measures the project would conflict with the 2005 Bay Area	**MM AIR-1.1:** The Specific Plan shall incorporate the following measures, which would reduce transportation-related

Significant Environmental Impact	Mitigation Measures
Ozone Strategy. **(Significant Impact)**	emissions. The measures listed in below are expected to include implementation of appropriate TCMs. Incorporation of these measures would reduce the impact to a less-than-significant level. • Improve existing or construct new bus pullouts and transit stops at convenient locations along Cherry Street and Stevenson Boulevard. Pullouts shall be designed so that normal traffic flow on arterial roadways would not be impeded when buses are pulled over to serve riders. Bus stops shall include shelters, benches and posting of transit information; • Appropriate bicycle amenities shall be included. This would include bike lane connections throughout the project site. Off-site bicycle lane improvements shall be considered for roadways that would serve the project; • The City and project proponents shall explore and implement feasible means to bring transit or shuttle service to Area 4; • Provide pedestrian sidewalks or paths throughout the project site with convenient access to bus stops along adjacent arterials; • Consider providing pedestrian signs and signalization to make a pedestrian friendly environment. Include convenient pedestrian crossings at strategic areas with count-down signals at intersections that would enhance pedestrian use; • Review landscape plans to ensure that they provide new trees that would shade buildings and walkways in summer to reduce the cooling loads on buildings; • Develop and implement building practices for the project that that are based on energy efficient standards that exceed State building code. **(Less Than Significant Impact with Mitigation)**
Impact AIR-2: Operational air pollutant emissions associated with buildout of the proposed Specific Plan would generate ozone	**MM AIR-2.1:** While mitigation measures listed above (MM AIR-1.1) are expected to reduce emissions from buildout of the

Significant Environmental Impact	Mitigation Measures
precursors ROG, NOx, and PM_{10} that exceed both the current and the proposed updated BAAQMD significance thresholds; therefore, implementation of the Specific Plan would result in a significant impact to regional air quality. **(Significant Impact)**	Specific Plan, the ROG emissions, which are mostly produced by consumer products,[1] would remain well above the significance threshold. Emissions of NOx would also remain significant. Emissions for PM_{10} would be reduced to less than significant levels. Based upon the ROG and NOx emissions, this impact would be significant and unavoidable. **(Significant Unavoidable Impact)**
Impact AIR-3: Based upon the proposed BAAQMD significance thresholds for construction activity, temporary daily emissions of PM_{10} and $PM_{2.5}$ from truck hauling, along with emissions from on-site equipment used to move fill material would have emissions below the BAAQMD daily thresholds. Construction activity ROG emissions would be above the significance thresholds for three of the eight-year estimated construction period and emissions of NOx would be significant for seven of the eight year construction period. Because NOx and ROG emissions are above the proposed BAAQMD significance threshold of 54 pounds per day, the effect of these emissions to the air basin would be significant. **(Significant Impact)**	**MM AIR-3.1:** The project proponent and the City cannot control emissions from independent trucks used to haul fill material, therefore, there are no mitigation measures to reduce this impact, and it would remain significant and unavoidable. It should be noted that use of fill from the planned Warm Springs BART extension or other nearby construction projects may reduce emissions associated with these local projects, because the proposed project could provide a more convenient location for transporting fill. This would reduce those planned truck trips. **(Significant Unavoidable Impact)**
Impact AIR-4: Without incorporation of construction mitigation measures, development of the Areas 3 and 4 Specific Plan would temporarily expose sensitive receptors to substantial pollutant concentrations. **(Significant Impact)**	**MM AIR-4.1:** Implementation of the following measures listed below would reduce the air quality impacts associated with grading and new construction to a less- than-significant level. • Water all active construction areas at least twice daily and more often during windy periods. Active areas adjacent to residences should be kept damp at all times.

[1] Consumer products are those that the general public all purchase. These products include solvents, paints, cleaners, cosmetic products, landscape products (e.g., fertilizers), automotive products, etc. The California Air Resources Board has authority to regulate these statewide through regulations imposed on manufacturers. These types of emissions increase with the rate of population increase and there are no methods available to mitigate these emissions.

Significant Environmental Impact	Mitigation Measures
	• Cover all hauling trucks or maintain at least two feet of freeboard. • Pave, apply water at least twice daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas. • Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas and sweep streets daily (with water sweepers) if visible soil material is deposited onto the adjacent roads. • Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (i.e., previously-graded areas that are inactive for 10 days or more). • Enclose, cover, water twice daily, or apply (non-toxic) soil binders to exposed stockpiles. • Limit traffic speeds on any unpaved roads to 15 mph. • Replant vegetation in disturbed areas as quickly as possible. • Suspend construction activities that cause visible dust plumes to extend beyond the construction site. **MM AIR-4.2:** Measures to reduce diesel particulate matter and $PM_{2.5}$ from construction shall also be implemented to ensure that short-term health impacts to nearby sensitive receptors are avoided. • All construction related activities within Area 3 shall provide a plan, for approval by the City, demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NOx reduction and 45 percent particulate reduction compared to the most recent CARB fleet average at time of construction. • Prohibit equipment with dirty emissions. The project shall ensure that emissions from all off-road diesel powered equipment used on the project site do not

Significant Environmental Impact	Mitigation Measures
	exceed 40 percent opacity for more than three minutes in any one hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately. This measure means that equipment with continuous dark emissions is in violation of the requirement. • Reduce equipment and vehicle idle times. Diesel equipment standing idle for more than five minutes shall be turned off. This would include trucks waiting to deliver or receive soil, aggregate, or other bulk materials. Rotating drum concrete trucks could keep their engines running continuously as long as they were onsite. • Reduce vehicle emissions. Properly tune and maintain equipment for low emissions. • Separate equipment and trucks from residences. Avoid staging equipment within 200 feet of residences (including newly built and occupied residences). **(Less Than Significant Impact with Mitigation)**
NOISE	
Impact NOI-1: Future residential uses developed in Areas 3 and 4 would be exposed to exterior noise levels greater than 60 dBA Ldn, which exceeds the noise and land use compatibility standards contained in the City of Newark's General Plan. Interior noise levels would be expected to exceed 45 dBA Ldn without the incorporation of noise insulation features into the future development projects' design. **(Significant Impact)**	**MM NOI-1.1:** The following mitigation measures shall be included in future project-specific development plans within Areas 3 and 4 to reduce noise impacts to a less-than-significant level: • Noise barriers shall be constructed to reduce noise levels at private use areas along Cherry Street, Stevenson Boulevard, and the railroad tracks. To be effective, the barriers shall be constructed solidly over the entire surface and at the base. Openings or gaps between barrier materials or the ground decrease the reduction provided by a noise barrier. Suitable material for barrier construction shall have a minimum surface weight of three pounds per square foot (such as one-inch thick wood, masonry block, concrete, or metal). Preliminary barrier designs are shown in on Figure 3.4-2. The final

Significant Environmental Impact	Mitigation Measures
	design of noise barriers shall be completed during project-level review when detailed site plans and grading plans are available. • Project-specific acoustical analyses shall be completed at the time detailed development plans are prepared, so that the design of the residential units and educational buildings will be sufficient to adequately reduce interior noise levels to 45 dBA Ldn or lower. Building sound insulation requirements will include the provision of forced-air mechanical ventilation for all new units with direct line of sight to significant transportation noise sources or railroad lines in the project vicinity. Special building sound insulation treatments may be required. These treatments would include, but are not limited to, sound rated windows and doors, sound rated wall constructions, acoustical caulking, protected ventilation openings, etc. The specific determination of what treatments are necessary would be determined on a unit-by-unit basis. The results of the analysis, including the description of the necessary noise control treatments to achieve acceptable noise levels inside the living units, shall be submitted to the City along with the building plans and will be reviewed and approved by the Community Development Director prior to issuance of a building permit. **(Less Than Significant Impact with Mitigation)**
Impact NOI-2: Without incorporation of construction mitigation measures, development of the Areas 3 and 4 Specific Plan would result in significant temporary noise impacts. **(Significant Impact)**	**MM NOI-2.1:** Future development of the Areas 3 and 4 Specific Plan will include the following construction-noise mitigation measures, to reduce noise impacts from project construction to a less-than-significant level. • Restrict noise-generating activities at the construction site or in areas adjacent to the construction site to the hours of 7:00 a.m. to 6:00 p.m., Monday through Friday, and between 8:00 a.m. to 5:00 p.m. on

Significant Environmental Impact	Mitigation Measures
	Saturdays. Construction shall be prohibited on Sundays and holidays. • Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment. • Unnecessary idling of internal combustion engines should be strictly prohibited. • Locate stationary noise generating equipment such as air compressors or portable power generators as far as possible from sensitive receptors. Construct temporary noise barriers to screen stationary noise generating equipment when located near adjoining sensitive land uses. Temporary noise barriers could reduce construction noise levels by 5 dBA. • Utilize "quiet" air compressors and other stationary noise sources where technology exists. • Route all construction traffic to and from the project site via designated truck routes where possible. Prohibit construction related heavy truck traffic in residential areas where feasible. • Control noise from construction workers' radios to a point where they are not audible at existing residences bordering the project site. • The contractor shall prepare and submit to the City for approval a detailed construction plan identifying the schedule for major noise-generating construction activities. • Designate a "disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include in it the

Significant Environmental Impact	Mitigation Measures
	notice sent to neighbors regarding the construction schedule. **(Less Than Significant Impact with Mitigation)**
BIOLOGICAL RESOURCES	
Impact BIO-1: The project would result in the loss of up to 85.6 acres of wetland/ marsh/aquatic habitat. This would result in a substantial adverse affect on riparian habitat and on federally protected wetlands through the loss of these habitats. **(Significant Impact)**	**MM BIO-1.1:** Temporary disturbance to and permanent loss of all wetland and aquatic habitat in Area 4 will be avoided to the maximum extent feasible. All temporary staging areas and construction access roads, if necessary, will be located away from seasonal wetland and aquatic habitat abutting development areas will be clearly demarcated with Environmentally Sensitive Area fencing to avoid inadvertent disturbance during construction activities. Grading plans will be designed to avoid permanent impacts to wetland and aquatic habitat. Either Mitigation Measure MM BIO-1.2A or MM BIO-1.2B, described below, shall be implemented. **MM BIO-1.2A:** To offset impacts to the wetland and aquatic habitat on the site, the future project proponent(s) will utilize a combination of on-site wetland creation and enhancement, and/or acquisition of existing wetlands located off site. The on-site component of the mitigation shall include creation of wetland and aquatic habitat within upland habitat that is currently disked and graded within Area 4 and will enhance portions of the remaining areas of agricultural field/seasonal wetland habitat within Area 4, as described below. Compensatory mitigation for impacts to these habitats shall consist of two parts: (1) creation of high quality wetland and aquatic habitat within Area 4 within upland habitat at an acreage ratio of 1:1 (habitat created/enhanced: habitat impacted) to prevent any net loss of habitat functions or values, and (2) enhancement of existing seasonal wetland habitat that is currently within agricultural production (mapped as agricultural field/seasonal wetland habitat) at an acreage

Significant Environmental Impact	Mitigation Measures
	ratio of 0.5:1 (such enhancement will include cessation of farming activities, seeding with appropriate seasonal wetland plant seeds, and may include minor earth moving activities). In summary, any impacts to seasonal wetlands, freshwater marsh, brackish marsh, detention basin, and aquatic habitat will be mitigated at a total acreage ratio of 1.5:1 (habitat created and enhanced: habitat impacted). A detailed mitigation plan shall be developed by a qualified biologist under contract to each future developer for individual development projects within the Specific Plan areas which result in direct impacts to wetland habitats. This plan will be submitted to and approved by the City of Newark prior to the initiation of grading within wetlands. The detailed mitigation plan will outline the necessary steps for mitigation; it will include a plan view graphic showing the target mitigation activities, a brief seeding plan (species palette and application techniques) to re-vegetate the areas currently in agricultural production, and a monitoring and reporting plan with success criteria. The plan will include a recommended timeline for mitigation activities and the establishment of seeded native species. The mitigation work will begin in the same construction season as the initiation of grading within wetlands or aquatic habitats, and mitigation site grading will be completed within one year of initiation (or as otherwise determined by resource agency permits). Potential biological impacts associated with grading activities required for the mitigation of the seasonal wetlands have been considered during this current Specific Plan CEQA impact analysis and no additional significant impacts have been identified. All created/enhanced habitats will be protected in perpetuity through a conservation easement, deed restriction, conveyance to a qualified land trust or the Refuge, or through equivalent means.

Significant Environmental Impact	Mitigation Measures
	MM BIO-1.2B: Alternatively, at the discretion of the project developer(s), and as approved by the City of Newark, all or a portion of the mitigation requirements for impacts to seasonal wetland habitats, may be satisfied through the acquisition and permanent preservation of existing wetlands at a ratio 1.5:1 (existing habitat: habitat impacted) at an approved wetland mitigation bank (i.e. off site) or other private lands. These off-site locations shall currently support wetlands of sufficient quantity and quality to satisfy mitigation requirements. The off-site component of the wetland mitigation shall occur on lands located within 10 air miles of the current project site and shall be located along the eastern shore of south San Francisco Bay within the same geographic watershed. **(Less Than Significant Impact with Mitigation)**
Impact BIO-2: Development within Area 4 would result in substantial adverse effects on federally protected wetlands (seasonal wetlands) and associated special status species due to altering the hydrology on the project site. **(Significant Impact)**	**MM BIO-2.1:** Stormwater runoff for the proposed residential development and golf course within Area 4, shall continue to drain, post-project, from multiple discharge points and the velocity of discharge into the wetlands shall be designed to prevent erosion and channelization. This includes avoiding single-point source of water discharges from the proposed development. Rather, simulation of natural flow through a more dispersed discharge of collected runoff shall be designed for movement of water from hardscape within developed features into wetlands surrounded by or adjacent to development such that the existing hydrologic condition is not substantially changed. For every seasonal wetlands to be preserved that fronts the development envelope that is smaller than (1) acre, as shown on the habitat map (Figure 2.4-1), there will be at least one discharge point of stormwater flows and nuisance flows. For wetlands greater than one (1) acre there shall be a minimum of three (3) discharge points separated by no less than

Significant Environmental Impact	Mitigation Measures
	200 feet and situated along the upslope perimeter of the wetlands. For each of the seasonal wetlands to be preserved, stormwater runoff and nuisance flows shall be designed to incorporate grassy swales, retention basins, and energy dissipaters to control discharge velocities in order to prevent erosion at the discharge point within wetlands and to prevent channelization. Channel erosion at each of the outfall discharge points draining into seasonal wetlands shall be monitored annually for the first five (5) years. If any channel erosion is noted, remedial measures shall be taken to incorporate additional suitable water control structures to prevent further erosion. Once these remedial measures are implemented, the five (5) year monitoring phase will be restarted at that location. **MM BIO-2.2:** All grading and culvert sizing and installation shall be designed to ensure adequate drainage without draining wetlands more quickly than currently occurs and to allow water to pond for durations similar to the current existing condition. **MM BIO-2.3:** To prevent any significant decrease in the amount of water entering preserved wetland habitats in Area 4 during the winter months, native grass species shall be used in the proposed golf course. A species list for use on the golf course (including outside of the turf area) shall be developed by a qualified biologist in concert with golf course designers and approved by the City of Newark. **MM BIO-2.4:** The following measures shall be implemented to minimize any perennial ponding within the existing seasonal wetlands. • Nuisance runoff from the proposed residential and golf course uses shall be minimized and controlled to reduce their input into the remaining natural habitat

Significant Environmental Impact	Mitigation Measures
	during the dry season. • Water use shall be limited to the minimum necessary for the golf course and landscaping, including that under private ownership, to decrease summer nuisance flow to negligible amounts and approximate the existing condition. • Drought tolerant plant species shall be planted within landscaped areas, including private lawns, which do not require water during the summer months. Where this is not feasible, proper irrigation using only the amount of water that can be taken up by the plants shall be implemented. • Water shall be applied at dawn to limit evaporation, thereby limiting the amount of water that must be applied and reducing the possibility of over flow from the site as evapotranspiration takes place during the day. • Implement the following University of California Integrated Pest Management Plan recommendations to maximize irrigation efficiency: ▪ Irrigate deeply, but infrequently. ▪ Irrigate early in the morning. At this time water loss from evaporation is minimal, distribution is usually good because of good water pressure and limited wind, and the risk of disease development is reduced. ▪ Avoid runoff by matching water application rates to soil infiltration rates (rate water enters soil) or by pulsing (i.e., applying a portion of the water, waiting for it to be absorbed in the soil, and then applying the next portion). ▪ Use less water in shaded areas than in open sun. ▪ Remove thatch in spring if it is more than 0.5 inch thick. ▪ Do not overfertilize; fertilize moderately according to the individual species and location. **MM BIO-2.5:** Any remaining dry-season nuisance flows shall be retained within the

Significant Environmental Impact	Mitigation Measures
	development footprint by grading the site to drain internally, particularly within the golf course area, or by constructing berms or swales to confine these flows to the site to infiltrate or evaporate rather than flowing overland to salt marsh habitat. **(Less Than Significant Impact with Mitigation)**
Impact BIO-3: The project would result in significant impacts to federally protected wetlands including salt marsh habitat and associated special status species due to an increase in freshwater flows as a result of the project. **(Significant Impact)**	**MM BIO-3.1:** Implementation of mitigation measures MM BIO-2.1 through 2.5 described above will reduce the Specific Plan's impacts associated with the discharge of freshwater runoff into salt marsh habitats to a less than significant level. **(Less Than Significant Impact with Mitigation)**
Impact BIO-4: The project would result in the loss of burrowing owl habitat, a California species of special concern, and disturbance to existing owls on-site. This is a significant impact. **(Significant Impact)**	*Area 3:* Any development activities within Area 3, Sub-Area A will require implementation of mitigation measures MM BIO-4.1 through MM BIO-4.3 to ensure against the possibility of take of individual owls, as applicable. *Area 4:* Any development activities within Area 4 will require implementation of mitigation measure MM BIO-4.1 through MM BIO-4.6 below to ensure against the possibility of take of individual owls. **MM BIO-4.1:** Pre-construction surveys for burrowing owls shall be completed in areas planned for fill placement and construction areas in conformance with CDFG protocols. Because owls are known to occupy the site, these surveys shall be completed no more than 15 days prior to the start of importing fill and construction to minimize the probability of immigration of owls between the time surveys are completed and the initiation of grading. If burrowing owls are detected on or within 250 ft of the site, Mitigation Measures MM BIO-4.2 and MM BIO-4.3, described below, shall be implemented. **MM BIO-4.2:** For burrowing owls located during the non-breeding season (generally 1

Significant Environmental Impact	Mitigation Measures
	September to 31 January), a 150-ft buffer zone will be maintained around the occupied burrow(s) if practicable. If such a buffer is not practicable, then a buffer adequate to avoid injury or mortality of owls will be maintained, or the birds will be evicted as described for Mitigation Measure MM BIO-4.3 below. During the breeding season (generally 1 February to 31 August), a 250-ft buffer, within which no new activity will be permissible, will be maintained between project activities and occupied burrows. Owls on site after 1 February will be assumed to be nesting unless direct observations indicate otherwise. This protected buffer area will remain in effect until 31 August, or based upon monitoring evidence, until the young owls are foraging independently or the nest is no longer active. **MM BIO-4.3:** If construction will directly impact occupied burrows, eviction of owls may occur outside the nesting season to prevent injury or mortality of individual owls. No burrowing owls shall be evicted from burrows during the nesting season (1 February through 31 August) unless evidence indicates that nesting is not actively occurring (e.g., because the owls have not yet begun nesting early in the season, or because young have already fledged late in the season). Relocation of owls during the non-breeding season will be completed by a qualified biologist using one-way doors, which should be installed in all burrows within the impact area and left in place for at least two nights. These one-way doors will then be removed and the burrows backfilled immediately prior to the initiation of grading. **MM BIO-4.4:** To reduce impacts of the Specific Plan on the local (South Bay) burrowing owl population in Area 4, habitat shall be preserved and managed for burrowing owls on and/or off-site if and when development occurs in Area 4. California burrowing owl mitigation guidelines recommend that 6.5 acres of foraging habitat

Significant Environmental Impact	Mitigation Measures
	be preserved and managed per occupied burrowing owl burrow (whether by a pair or singly) in mitigation sites. Based upon the existing quality of burrowing owl habitat on the site and the impact to baseline conditions, future developers of Area 4 shall provide 26 acres of mitigation habitat. This habitat will be preserved and managed specifically for use by burrowing owls. Development on Area 4 is likely to occur in phases, and provision of burrowing owl habitat mitigation will likewise be phased according to the extent of habitat impacts. Habitat mitigation will be provided for any residential or recreational development on Area 4. Residential or recreational development affecting less than 100 acres will require mitigation for two pairs of owls, or 13 acres of habitat mitigation on-site and/or off-site. Residential or recreational development equaling or exceeding 100 acres, mitigation for two additional pairs of owls will be required, for a total of 26 acres of habitat mitigation. A combination of on-site and off-site mitigation is acceptable. However, on-site mitigation shall contribute toward the habitat mitigation requirement only if at least 6.5 acres of contiguous burrowing owl habitat is preserved and managed on-site. Either Mitigation Measure MM BIO-4.5A or MM BIO-4.5B, described below, shall be implemented. **MM BIO-4.5A:** **I**f on-site (within Area 4) habitat is to be preserved, a mitigation and monitoring plan detailing the areas to be preserved for owls; the methods for managing on-site habitat for owls and their prey; methods for enhancing burrow availability within the mitigation site (potentially including the provision of artificial burrows, although long-term management for ground squirrels will be important as well); measures to minimize adverse effects of development on owls on-site; and a monitoring program and adaptive management program shall be prepared by a qualified biologist and

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	submitted to the City of Newark and the CDFG for review and approval. At least 50 percent of the mitigation area must consist of upland habitat suitable for use by burrowing mammals, and no wetlands supporting tall vegetation shall be included within the mitigation site. The mitigation area must be contiguous with habitat that is permanently preserved as open space to avoid having the site surrounded by development in the future. The mitigation area will be protected in perpetuity through a conservation easement, deed restriction, conveyance to a qualified land trust or the Refuge, or through equivalent means. **MM BIO-4.5B:** If the project proponent elects to mitigate off-site, such mitigation may take the form of habitat preservation and management (in which case all the monitoring and habitat requirements in the preceding paragraphs would apply) or the purchase of credits in an off-site mitigation bank. Because the nearest burrowing owl mitigation banks are located outside of the South Bay, this mitigation may occur outside the region. Unless at least 13 acres of burrowing owl habitat mitigation occurs on-site, some on-site enhancements shall also be made to reduce impacts of the project on the local (South Bay) burrowing owl population. Such enhancements shall include the provision of artificial burrow complexes at the edge of the golf course or recreation area or on the outboard side of levees on the site and management of at least portions of levee side slopes around these burrow complexes to provide suitable conditions for burrowing owls and ground squirrels (e.g., periodic mowing to maintain short vegetation). If less than 13 acres of on-site habitat mitigation is provided, then: • Residential or recreational development affecting less than 100 acres shall require the provision of two artificial burrow

Significant Environmental Impact	Mitigation Measures
	complexes. • Residential or recreational development equaling or exceeding 100 acres, shall require two additional burrow complexes be provided (for a total of four). These burrow complexes and the vegetation around them, shall be maintained regularly to maintain suitable on-site conditions for nesting and roosting owls. Given the extent of natural habitat with short vegetation, and the continued presence of seasonal wetlands on much of Area 4, providing and maintaining burrows for use by owls is expected to maintain some burrowing owl presence on the site even if most or all of the owl habitat mitigation occurs off-site. **MM BIO-4.6:** As described in greater detail under Mitigation Measure MM BIO-9.2 below, signage shall be placed in appropriate locations on the golf course or recreation area to prohibit golfers/visitors from entering areas where the artificial burrow complexes will be located. If development occurs on Area 4, signage will be placed along the ACFC&WCD Line D levees and the Mowry Slough levee to instruct recreational users of these levees against leaving the levee tops to protect sensitive species such as the burrowing owl. **(Less Than Significant Impact with Mitigation)**
Impact BIO-5: Loss of eggs or young peregrine falcons, a species protected by the Migratory Bird Treaty Act (MBTA) and threatened under the California Endangered Species Act (CESA) would result in a significant impact. **(Significant Impact)**	**MM BIO-5.1:** Construction, including any tower modifications and/or replacement, shall occur during the non-breeding season (1 September to 31 January), to the maximum extent possible. **MM BIO-5.2:** If construction must commence between 1 February and 31 August, then pre-construction surveys for nesting peregrine falcons shall be completed by a qualified ornithologist to ensure that no nests will be disturbed during project implementation. This survey shall be

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	completed no more than 14 days prior to the initiation of demolition/construction activities during the early part of the breeding season (February through April) and no more than 30 days prior to the initiation of these activities during the late part of the breeding season (May through August). During this survey, the ornithologist will inspect all power-line towers within 300 feet of impact areas for nests. If no peregrine falcon nests are detected within the Specific Plan area during this survey, further measures are not necessary. The survey results shall be provided to the Community Development Director for review and approval prior to the start of grading and construction. **MM BIO-5.3:** If an active nest is found within 300 feet of any construction activity, a 300-foot buffer, within which no new development-related activity will be permissible, will be maintained between development activities and the occupied nest. This protected area will remain in effect until the young falcons have fledged or the nest is no longer active. **(Less Than Significant Impact with Mitigation)**
Impact BIO-6: The project could result in significant impacts to nesting colonies of tricolored blackbirds, a California species of special concern. **(Significant Impact)**	**MM BIO-6.1:** Construction shall commence during the non-breeding season (approximately 1 April through 31 July for this species), to the maximum extent possible. **MM BIO-6.2:** If construction must commence between 1 April and 31 July, then pre-construction surveys for nesting tricolored blackbirds will be completed by a qualified ornithologist to ensure that no nests will be disturbed during Specific Plan implementation. This survey shall be completed no more than 14 days prior to the initiation of demolition/construction activities. During this survey, the ornithologist will inspect all potential breeding habitat within 400 feet of impact areas for nests. If no tricolored blackbird colonies are detected within the Specific Plan

Significant Environmental Impact	Mitigation Measures
	area during this survey, further measures are not necessary. **MM BIO-6.3:** If an active colony is found within 400 ft of any construction activity, a 400-ft buffer, within which no new development-related activity will be permissible, will be maintained between development activities and any occupied nests. This protected area shall remain in effect until the young have fledged or the colony is no longer active. **(Less Than Significant Impact with Mitigation)**
Impact BIO-7: The project could result in significant impacts to nesting colonies of pallid bats, a California species of special concern, and Yuma myotis bats, a rare species in the South Bay. **(Significant Impact)**	**MM BIO-7.1:** Survey for roosting bats shall be completed prior to the removal of any building or tree with potential for day-roosting by bats, or prior to the initiation of any construction activities within 250 ft of such potential roost sites. The survey shall be completed by a qualified bat biologist (i.e., a biologist holding a CDFG collection permit and a Memorandum of Understanding with CDFG allowing the biologist to handle and collect bats). If suitable roost sites are found but a visual survey is not adequate to determine presence or absence of bats (which would be particularly likely in the case of potential roost trees), acoustical equipment will be used to determine occupancy. This survey shall be completed prior to the beginning of the breeding season (i.e., prior to 1 March) in the year in which construction or demolition in a given area is scheduled to occur so that adequate measures can be implemented, if necessary, to evict the bats during the non-breeding season. The survey results shall be provided to the Community Development Director for review and approval prior to the start any construction related activities. **MM BIO-7.2:** Because the surveys in Mitigation Measure MM BIO-7.1 will be completed prior to the breeding season, several months may pass between that survey and the initiation of construction or

Significant Environmental Impact	Mitigation Measures
	demolition in a given area. Therefore, a second pre-demolition/pre-construction survey for roosting bats, following the methods described above, shall be completed within 15 days prior to the commencement of these activities in a given area to determine whether bats have occupied a roost in or near the development impact areas. This survey will be facilitated considerably by information (e.g., on potential roost trees) gathered during the previous survey. If bats are found to be roosting, additional mitigation as follows must be implemented. **MM BIO-7.3:** If a maternity roost of any bat species is found, the bat biologist shall determine the extent of a construction-free buffer around the active roost that will be maintained. This buffer would be maintained from 1 March until the young are flying, typically after 31 August. **MM BIO-7.4:** If a roost of any kind is found in an area (e.g., a building or tree) that will not be disturbed by construction, or that can be avoided, the roost structure will not be impacted. **MM BIO-7.5:** If a day roost is found in a building, or in a tree that is to be completely removed or replaced, individual bats will be safely evicted under the direction of a qualified bat biologist. Eviction of bats will occur at dusk, so that bats will have less potential for predation compared to daytime roost abandonment. Eviction will occur between 1 September and 31 March, outside the maternity season, but will not occur during long periods of inclement or cold weather (as determined by the bat biologist) when prey are not available or bats are in torpor. If a day roost is found within a building, eviction will occur by opening the roosting area to allow air flow through the cavity. Demolition may then follow no sooner than the following day (i.e., there must be no less than one night between initial disturbance for air flow and the demolition).

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	This action should allow bats to leave during dark hours, thus increasing their chance of finding new roosts with a minimum of potential predation during daylight. If feasible, one-way doors will also be used to evict bats from tree roosts. If use of a one-way door is not feasible, or the exact location of the roost entrance in a tree is not known, the trees with roosts that need to be removed will first be disturbed by removal of some of the trees' limbs not containing the bats. Such disturbance will occur at dusk to allow bats to escape during the dark hours. These trees would then be removed the following day. All of these activities will be performed under the supervision of the bat biologist. **MM BIO-7.6:** If a day roost for pallid bats or Yuma myotis will be impacted, an alternative bat roost structure will be provided. The design and placement of this structure will be determined by a qualified bat biologist based on the location of the original roost and which species is located. This bat structure will be erected at least one month (and preferably a year or more) prior to removal of the original roost structure. This structure will be checked during the breeding season for up the three years following completion of the development, or until it is found to be occupied by bats, to provide information for future development projects regarding the effectiveness of such structures in minimizing impacts to bats. **(Less Than Significant Impact with Mitigation)**
Impact BIO-8: Project development would result in significant impacts due to the loss of federally and state listed endangered salt marsh harvest mouse and California species of special concern salt marsh wandering shrew individuals and habitat. **(Significant Impact)**	With the exception of trapping that previously occurred in the vicinity of the former Pintail Duck Club, it is unknown if any trapping that has been completed to determine the presence or absence of salt marsh harvest mice or salt marsh wandering shrews in specific portions of the Specific Plan area. If the future project proponent(s) wish to refine the determination regarding the location of suitable habitat for these species, it can (with approval from the USFWS and CDFG) have a trapping survey

Significant Environmental Impact	Mitigation Measures
	completed to determine where these species are and are not located. In the absence of such surveys, presence should be assumed in the pickleweed-dominated locations. Incorporation of the following measures will reduce salt marsh harvest mouse and salt marsh wandering shrew individual and habitat impacts to a less than significant level: **MM BIO-8.1:** Temporary disturbance to and permanent loss of salt marsh harvest mouse and salt marsh wandering shrew habitat shall be avoided to the maximum extent practicable. Although avoidance of wetland impacts was previously described, further attempts to avoid impacts to pickleweed-dominated habitats shall be made. Prior to the issuance of building permits, all temporary staging areas and construction access roads shall be located away from suitable habitat for these species and limits of all wetlands that are to be avoided will be clearly demarcated by a qualified biologist with Environmentally Sensitive Area fencing to avoid inadvertent disturbance of any habitat outside of the designated construction areas during construction activities. **MM BIO-8.2:** Prior to issuance of grading permits and under the supervision of a qualified biological monitor, who is permitted by the USFWS to move salt marsh harvest mice out of the construction area, all salt marsh harvest mouse/wandering shrew habitat within the construction area shall be removed by hand (e.g., including weed-whacker) within a given area of harvest mouse/wandering shrew habitat. Vegetation requiring hand removal will be limited to pickleweed and other associated plants, such as saltgrass or bulrush, within pickleweed-dominated areas considered to be potential habitat for these mammals as depicted on Figure 3.5-2. After at least 24 hours have elapsed since the removal of this pickleweed-dominated vegetation from harvest mouse/wandering shrew habitat areas, a

Significant Environmental Impact	Mitigation Measures
	barrier to exclude salt marsh harvest mice and salt marsh wandering shrews from impact areas will be installed at the perimeter of all project construction areas that are located within 50 feet of potential salt marsh harvest mouse and salt marsh wandering shrew habitat. This barrier, which will be constructed under the guidance of a qualified biologist, shall consist of a 3-foot tall, tight cloth or smooth plastic silt fence toed into the soil at least three inches deep and supported with stakes. **MM BIO-8.3:** Mitigation Measure MM BIO-8.2 will minimize the probability of salt marsh harvest mice and salt marsh wandering shrews entering the site but in addition, any individuals already in the impact areas shall be salvaged and translocated to the exterior of the construction exclusion area. Although detecting every individual on a site is not feasible due to these species' secretive habits, a qualified mammalogist should be on-site during removal of pickleweed-dominated vegetation, construction of the barrier fence, and initial clearing and grubbing within 10 feet of the barrier fence. The mammalogist would look for individual salt marsh harvest mice and salt marsh wandering shrews that may be within the Specific Plan area. Any individuals detected would be captured and translocated to a safe location within the closest suitable, pickleweed-dominated habitat. The mammalogist must possess all required USFWS and CDFG permits authorizing such capture and translocation. Trapping and removal of salt marsh harvest mice has been required by the USFWS and CDFG in areas with a high likelihood that the species is located. The direct impact areas for the current Specific Plan contain narrow and/or small patches of habitat that likely support sparse salt marsh harvest mouse and wandering shrew populations, if the species are present at all, and thus we are not proposing to require trapping and relocation.

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	MM BIO-8.4: Salt marsh harvest mouse and salt marsh wandering shrew habitat that is permanently lost due to fill, shading, or isolation due to the golf course access road will be mitigated at a 3:1 ratio by the creation or restoration of pickleweed-dominated salt marsh on Area 4. Habitat for these species that is indirectly impacted due to proximity to residential and golf course development (i.e., habitat that is not directly filled but that is located within 100 feet of direct impact areas) will be mitigated at a 2:1 ratio by on-site habitat restoration. This lower ratio is appropriate because habitat within 100 feet of developed areas will retain some habitat quality for mice and shrews. This habitat restoration can occur in the same locations as habitat creation, restoration, or enhancement performed for impacts to wetlands as long as suitable conditions for these two mammal species are targeted. A habitat mitigation and monitoring plan will be prepared that outlines the necessary steps for restoration; it will include a plan view graphic showing the target restoration activities, a brief seeding plan (species palette and application techniques) to re-vegetate the areas currently in agricultural production, and a monitoring and reporting plan with success criteria. The plan will include a recommended timeline for restoration activities and the establishment of suitable habitat. The mitigation and monitoring plan will be approved by the City of Newark, the USFWS, and the CDFG prior to issuance of grading and building permits. The restoration work will begin in the same construction season as the initiation of grading within suitable salt marsh harvest mouse/salt marsh wandering shrew habitat, and restoration site grading will be completed within one year of initiation (or as otherwise determined by resource agency permits). All created mitigation habitats will be protected in perpetuity and will be placed into a land trust or under a conservation easement, or fee title

Significant Environmental Impact	Mitigation Measures
	will be transferred to the Refuge or a third-party non-profit entity that has been approved by the City and appropriate permitting agencies. **(Less Than Significant Impact with Mitigation)**
Impact BIO-9: Proposed recreational activities would impact sensitive habitats that are known to support special status species and large numbers of foraging and roosting waterbirds. The Specific Plan would result in significant impacts due to recreational activities on the site. **(Significant Impact)**	**MM BIO-9.1:** As the design of the golf course progresses disturbance by golfers of adjacent sensitive habitats and species. For example, high-use areas such as tees and greens shall be set back from the edge of the golf course, and broad rough/out-of-bounds areas shall occur along the interface between the golf course and sensitive habitats. **MM BIO-9.2:** On the golf course, areas that are "out of bounds" (which will include the artificial burrowing owl burrow complexes and all natural areas that are not directly filled during golf course construction) shall be clearly marked as such, explaining the importance of preserving the ecological integrity of the adjacent natural areas. Signs will be erected along the ACFC&WCD levees and along Mowry Slough describing the ecological value of adjacent wetland areas and instructing users to stay on the ACFC&WCD levee tops, stay out of sensitive habitats, and keep dogs on leashes. **(Less Than Significant Impact with Mitigation)**
Impact BIO-10: The proposed project would indirectly impact large numbers of foraging and roosting waterbirds, including species protected by the Migratory Bird Treaty Act (MBTA) in the wetland portions of the site. This is a significant impact. **(Significant Impact)**	**MM BIO-10.1:** Indirect impacts of residential and golf course development on birds using the undeveloped wetlands on the site shall be mitigated by the creation or enhancement of waterbird habitat on the site at a 0.5:1 ratio for a total of 9 acres of mitigation. Mitigation wetlands for these indirect impacts shall be located at least 300 feet from any development, to the maximum extent possible. The mitigation areas shall provide perennial or near-perennial water with a variety of depths ranging from very shallow water or exposed mud to water up to several feet deep to support the bird species currently using the former Pintail Duck Club.

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	This mitigation can occur within the same wetland areas created as mitigation for permanent loss of wetlands as long as it is located at least 300 feet from any residential or golf course development. A mitigation plan shall be developed that outlines the proposed wetland creation/enhancement for indirect impacts to waterbird use of wetlands on the site. It will include a plan showing the target mitigation activities and a monitoring and reporting plan with success criteria. The plan shall include a recommended timeline for mitigation activities. This plan will be submitted to and approved by staff of the City of Newark prior to the initiation of any fine grading or construction on the site. The mitigation work will begin in the same construction season as the initiation of grading or construction, and mitigation site grading will be completed within one year of initiation. All created/enhanced habitats shall be protected in perpetuity and will be placed into a land trust or under a conservation easement, or fee title will be transferred to the Refuge or a third-party non-profit entity that has been approved by the City and appropriate permitting agencies. **(Less Than Significant Impact with Mitigation)**
Impact BIO-11: Implementation of the project would result in significant impacts to sensitive habitats and special status species due to the potential spread of non-native, invasive plant species on the site. **(Significant Impact)**	**MM BIO-11.1:** To reduce the potential establishment or spread of non-native, invasive weed populations as a result of development activities, the following measures will be implemented by a qualified biologist prior to issuance of grading permits and during construction: • Remove concentrations of invasive species to limit the spread of seed to new areas within areas subject to grading activities that could have a severe ecological impact on surrounding habitat (i.e., fennel, pampas grass, perennial pepperweed, or small flower tamarisk). • Maintain staging areas free of these weeds (fennel, pampas grass, perennial

Significant Environmental Impact	Mitigation Measures
	pepperweed, or small flower tamarisk) and their seeds for the duration of their use during project construction. • If straw is used for road stabilization and erosion control, it must be certified weed-free. **MM BIO-11.2:** The future development projects shall develop and implement an Invasive Species Management Plan to reduce the presence and spread of non-native, invasive plant species on the site prior to importing any fill material required to elevate building sites and prior to grading any areas on the Specific Plan site. This management plan will outline methods to remove the existing populations of non-native, invasive weed species from the accessible portion of the site to prevent the spread of their seed during and after construction and to prevent the invasion of graded area by invasive species. This will also prevent a decline in the function and values of natural habitat remaining on the site due to the proliferation of invasive species and the increased seed bank that would be there if invasive species spread to more extensive areas on the site (e.g., embankments of the fill). This management plan will contain details regarding the removal and treatment of these species (herbicide application, manual removal, mowing, etc), success criteria, and a seeding plan to encourage native species to grow within disturbed habitat. Because the Specific Plan site falls within the CDFG designated Alameda/Contra Costa County Weed Management Area, this Invasive Species Management Plan will be approved the CDFG and the City of Newark prior to issuance of a grading permit for implementation of the Specific Plan. **(Less Than Significant with Mitigation)**
Impact BIO-12: The proposed Specific Plan would result in significant impacts to biological resources associated with water quality impacts during construction. **(Significant Impact)**	**MM BIO-12.1:** Prior to the issuance of grading permits, future development projects will incorporate Best Management Practices (BMPs) for water quality to minimize impacts in the surrounding wetland

Significant Environmental Impact	Mitigation Measures
	environment, sloughs and channels, and the San Francisco Bay during construction. These BMPs will include numerous practices that will be outlined within the Stormwater Pollution Prevention Plan (SWPPP), but will include measures such as: • No equipment shall be operated in live flow in any of the sloughs or channels or ditches on or adjacent to the site. • No debris, soil, silt, sand, bark, slash, sawdust, cement, concrete, washings, petroleum products or other organic or earthen material shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into aquatic or wetland habitat. • Standard erosion control and slope stabilization measures will be required for work performed in any area where erosion could lead to sedimentation of a waterbody. For example, silt fencing will be installed just outside the limits of grading and construction in any areas where such activities will occur upslope from, and within 50 feet of, any wetland, aquatic, or marsh habitat. This fencing shall be inspected and maintained regularly throughout the duration of construction. • Machinery shall be refueled at least 60 feet from any aquatic habitat, and a spill prevention and response plan shall be developed and approved by the City of Newark. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur. **MM BIO-12.2:** Soil stockpiling, equipment staging, construction access roads, and other intensively soil-disturbing activities shall not occur immediately adjacent to any wetlands that are to be avoided. The limits of the construction area shall be clearly demarcated with Environmentally Sensitive Area fencing by a qualified biologist to avoid inadvertent disturbance outside the fence during construction activities.

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	MM BIO-12.3: Dust suppression (e.g., using watering trucks) shall be implemented during all grading, construction, and soil stockpiling activities that have the potential to mobilize dust to keep dust from being transported to vegetated wetlands nearby. If soil stockpiles are to remain on the site for long periods of time prior to the start of grading, they shall be hydroseeded so that vegetation will suppress dust and inhibit erosion. **MM BIO-12.4:** All mitigation measures for containing contamination from the auto wrecking yard removal will be followed (see *Hazardous Materials* and *Water Quality* sections of this EIR). **(Less Than Significant Impact with Mitigation)**
Impact BIO-13: The proposed Specific Plan would result in significant impacts to biological resources associated with long- term water quality impacts. **(Significant Impact)**	**MM BIO-13.1:** All development projects within the Specific Plan shall comply with the National Pollution Discharge Elimination System (NPDES) permit requirements, the Alameda County Clean Water Program standards, the City of Newark's ordinances, policies, and processes, and other applicable local, state, and federal requirements. All development projects within the Specific Plan shall prepare a SWMP that includes post-construction water quality BMPs that control pollutant levels as required under Section C.3 of the NPDES Municipal Stormwater Permit issued by the RWQCB. Neighborhood- and/or lot-level BMPs to promote “green” treatment of storm runoff shall be emphasized, consistent with Regional Board guidance for NPDES Phase 2 permit compliance. The purpose of these measures will be to ensure that water leaving the site and entering seasonal wetland and marsh habitats, including ACFC&WCD Line D and Mowry Slough, will be of the same quality (or better) than currently enters these habitats from the site. These measures include the design and construction of features to remove particulates and contaminants from runoff. Such features may include mechanical

Significant Environmental Impact	Mitigation Measures
	treatment; the use of grassy swales to capture contaminants from the golf course, landscaping or residences as water infiltrates/percolates to the surrounding wetland habitat; the use of "planter boxes" within private development to treat individual residential runoff; the use of surface materials (where practicable) to allow for infiltration on private property (including permeable driveway material); and the retention of water on the site, when possible (in addition, see *MM HYD-1.1 through 1.4* in this EIR). **(Less Than Significant Impact with Mitigation)**
Impact BIO-14: The proposed Specific Plan could result in the loss of City of Newark ordinance-size trees. This is a significant impact. **(Significant Impact)**	**MM BIO-14.1:** Implementation of the Specific Plan shall incorporate preservation of existing trees with emphasis on ordinance-size or larger native species and in good or better condition, to the maximum extent practicable, to the satisfaction of the City's Community Development Director. **MM BIO-14.2:** In locations where preservation of existing trees is not feasible due to site constraints, trees to be removed by the project shall be replaced at a 3:1 ratio unless the City's Community Development Director determines that a higher ratio is required. Trees greater than 18 inches in diameter shall not be removed unless a Tree Removal Permit, or equivalent, has first been approved for the removal of such trees. **MM BIO-14.3:** The species and exact number of trees to be planted on the site during the construction phase shall be determined in consultation with the City Arborist and to the satisfaction of the Community Development Director. **MM BIO-14.4:** In the event the developed portion of the development site does not have sufficient area to accommodate the required tree mitigation, one or more of the following measures shall be implemented at the development permit stage: • An alternative site(s) shall be identified

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	for additional tree planting. Alternative sites may include local parks or schools, or installation of trees on adjacent properties for screening purposes, to the satisfaction of the City's Community Development Director. • The size of a 15-gallon replacement tree can be increased to 24-inch box and count as two replacement trees. **(Less than Significant Impact with Mitigation)**
Impact BIO-15: The health of the trees to be preserved could be significantly impacted in the short-term by construction activities and in the long-term due to the proposed Specific Plan development. **(Significant Impact)**	**MM BIO-15.1:** Prior to the issuance of any approval or development permit, a Tree Preservation Plan shall be prepared by a certified arborist to the satisfaction of the City's Community Development Director for all areas with trees. Information in the Tree Preservation Plan shall include an inventory of all trees on the subject development sites as to size, species, and eligibility for ordinance size status. **(Less Than Significant Impact with Mitigation)**
CULTURAL RESOURCES	
Impact CUL-1: Implementation of the proposed Areas 3 and 4 Specific Plan may impact paleontological deposits through excavation of previously undisturbed alluvial sediments. **(Significant Impact)**	**MM CUL-1.1:** The following measures shall be completed during all development activities that include excavation or disturbance of existing ground surfaces, installation of utility lines, or other subsurface trenching. If paleontological resources are discovered during project activities, all work within 25 feet of the discovery would be redirected and a qualified paleontologist contacted to assess the finds, consult with agencies as appropriate, and make recommendations regarding the treatment of the discovery. Project personnel would not move or collect any paleontological resources. If adverse effects to paleontological resources cannot be avoided, they would be assessed to determine their significance. If the resources are not significant, avoidance is not necessary. If the paleontological resources are significant, they would need to be avoided, or adverse effects

Significant Environmental Impact	Mitigation Measures
	must be mitigated. Treatment would be consistent with SVP guidelines and may include preparation and recovery of fossil materials so that they can be housed in an appropriate museum or university collection. Upon completion of the assessment, the paleontologist would prepare a report documenting the methods and results and provide recommendations for the treatment of the paleontological resources discovered. This report would be submitted to the Director of the City Community Development Department. Recovery of fossil remains and associated specimen data and corresponding geologic and geographic site data would reduce impacts to a less than significant level. **(Less Than Significant Impact with Mitigation)**
Impact CUL-2: Implementation of the proposed Areas 3 and 4 Specific Plan will impact unique archaeological resources and disturb human remains, including those interred outside of formal cemeteries through compression of soils and excavation of existing soils. **(Significant Impact)**	**MM CUL-2.1:** The following mitigation measures shall be completed prior to issuance of a grading permit and prior to any earth moving activities in those areas of the Specific Plan already identified as potentially containing archaeological resources based upon the research and survey work completed by *Holman & Associates*. • A limited program of hand excavation shall be undertaken by a professional archaeologist certified by the Register of Professional Archaeologists (RPA) at the locations of the three burials and two cultural features to provide the following information: ▪ Verify the presence of midden soils. Hand excavation will verify this, and will provide the researchers with the information needed to determine the aerial extent of the deposits. **MM CUL-2.2:** Prior to any future development in areas identified as potentially containing archeological resources based upon the research and survey work completed by *Holman & Associates* or areas for which any additional information has been gathered through hand excavations under MM CUL-2.1, plans shall be designed to avoid

Significant Environmental Impact	Mitigation Measures
	impacting known cultural resources.[2] Development plans shall be reviewed and approved by a professional archaeologist certified by the RPA and the City of Newark to ensure the known resources have been adequately avoided. Final mitigation recommendations shall depend on the amount and nature of earthmoving activities which will occur inside those areas which are mapped as intact archaeological deposits after completion of the hand excavation program described above. For example, mitigation of impacts to archaeological deposits found inside the proposed golf course area may possibly be achieved simply by redesigning the course in proximity to the borders of the archaeological deposit, as determined by the professional archaeologist's hand excavation and subsequent mechanical subsurface presence/absence testing program. **MM CUL-2.3:** All grading and/or construction activities shall, to the extent feasible, avoid all areas identified as potentially containing archeological resources based upon the research and survey work completed by *Holman & Associates* or areas for which any additional information has been gathered through hand excavations under MM CUL-2.1. However, to the extent that these areas cannot be avoid, then mitigation for burial resources shall be achieved through either preservation in place pursuant to CEQA Guidelines Section 15126.4(B)(3)(a) or a program of data recovery pursuant to CEQA Guidelines Section 15126.4(B)(3)(c) combining limited hand excavation to retrieve significant archaeological data and material and to remove the known human remains to protect them from additional damage. This program shall be designed by a professional archaeologist and reviewed and approved by the City of Newark. Depending on the findings of the proposed evaluative hand

[2] It should be noted that "capping" or covering the known archaeological resources would not mitigate the impacts to cultural resources because all grading activities, placement of fill, and compaction of the soil would crush and destroy the known cultural resource deposits.

Significant Environmental Impact	Mitigation Measures
	excavation, a data retrieval program may also be done by carefully stripping those areas where additional cultural materials are expected utilizing heavy equipment under the direction of an professional archaeologist. Soils would be removed to the depth of the archaeological deposit in selected areas (a percentage of the anticipated deposit). In the event, that archaeological materials and in particular, human burials, are encountered extending out of the areas designated for stripping, additional data retrieval work shall be required. **MM CUL-2.4:** The following measures shall be completed during all development activities that include excavation or disturbance of existing ground surfaces, installation of utility lines, or other subsurface trenching: • A professional archaeological monitor certified by the RPA shall monitor with authority to direct and halt earthmoving activities as deemed necessary by the monitor, if and when cultural materials area encountered. In accordance with CEQA Guidelines Section 15064.5(f), if any previously unknown historic or prehistoric resources are discovered during grading, trenching, or other on-site excavation, earthwork within 100 feet of these resources shall be stopped until the professional archaeologist has an opportunity to evaluate the significance of the find and suggest appropriate mitigation as determined necessary to protect the resource. In the event that Native American human remains or funerary objects are discovered, the provisions of the California Health and Safety Code shall be followed. Section 7050.5(b) of the California Health and Safety Code states: ▪ In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site

Significant Environmental Impact	Mitigation Measures
	or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of Section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code. Based upon the current known extent of unique cultural materials on the site, it is unlikely that total avoidance of impacts is possible with implementation of the proposed Specific Plan. While incorporation of the above measures will partially reduce the cultural resources impact, the overall implementation of the Specific Plan will destroy archaeological deposits through placement of fill and soil compression and, therefore, result in a significant unavoidable impact. (**Significant Unavoidable Impact)**
GEOLOGY AND SOILS	
Impact GEO-1: The development of Areas 3 and 4 could result in adverse impacts associated with settlement during strong seismic ground shaking due to potentially liquefiable soils. **(Significant Impact)**	**MM GEO-1.1:** Prior to issuance of grading permits, further study will be required to characterize the lateral extent and magnitude of potential liquefaction-induced settlement for design of new structures and improvements within Areas 3 and 4. The results of the investigation shall be submitted to the Director of Public Works for review and approval. Structures will need to be supported on rigid foundations designed to tolerate the anticipated total and differential

Significant Environmental Impact	Mitigation Measures
	settlements. Alternatively, deep foundations may be required to support structures on firm soil below potentially liquefiable layers. Ground improvement techniques could also be used to mitigate liquefaction-induced differential settlement. **(Less Than Significant With Mitigation)**
Impact GEO-2: Any construction improvements near the ACFC&WCD drainage channels could result in adverse seismically-induced lateral spreading impacts associated with future development of the proposed Specific Plan. **(Significant Impact)**	**MM GEO-2.1:** Prior to issuance of building permits, design-level geotechnical investigations for specific site improvements such as residential developments, bridges, or school development shall be completed and submitted to the Director of Public Works for review and approval, once detailed site development plans are available. Geotechnical observation and testing services shall be completed during earthwork and foundation construction. **(Less Than Significant With Mitigation)**
Impact GEO-3: The development of Area 4 could result in adverse impacts associated with settlement due to placement of fill and building loads. **(Significant Impact)**	**MM GEO-3.1:** Settlement due to fill and building loads can be mitigated by supporting lightly loaded structures on rigid foundations designed to resist differential settlement. As an alternative, buildings could be supported on deep foundations. Design ground improvement techniques, such as surcharging, rammed aggregate piers, or soil/cement mixing, to mitigate settlement. If surcharging is considered, this would include installing vertical wick drains and surcharging building areas with additional imported fill to allow the settlement to occur at an increased rate. The settlement mitigation approach shall be reviewed and approved by the Director of Public Works, prior to issuance of grading and building permits and the process for implementation of the settlement mitigation will be included on all construction bid documents. **(Less Than Significant With Mitigation)**
Impact GEO-4: Differential settlement could occur between the abutments of the proposed Stevenson Boulevard Overpass, due to compressible Area 4 soils.	**MM GEO-4.1:** A site specific investigation shall be prepared for the proposed Stevenson Boulevard Bridge to determine the potential for differential settlement and the detailed approach to mitigate such settlement. The investigation and proposed measures shall be reviewed and approved by the Director of

Significant Environmental Impact	Mitigation Measures
	Public Works prior to issuance of grading and building permits. Bridge foundations shall be designed to account for potential differential settlement, as well as the approached slabs and asphalt pavement sections constructed on the embankments. **(Less Than Significant With Mitigation)**
Impact GEO-5: Possible undocumented fill within Areas 3 and 4 could result in adverse impacts to future development associated with the proposed Specific Plan. **(Significant Impact)**	**MM GEO-5.1:** Further evaluation of undocumented fills shall be evaluated and located. The undocumented fills would likely need to be over-excavated and recompacted or removed and replaced with engineered fill material prior to site development. The Director of Public Works shall review and approve the specified approach for all undocumented fill area prior to issuance of grading permits. **(Less Than Significant With Mitigation)**
Impact GEO-6: The development of Areas 3 and 4 could result in adverse impacts associated with expansive soils. **(Significant Impact)**	**MM GEO-6.1:** Slabs-on-grade shall have sufficient reinforcement and shall be supported on a layer of non-expansive fill; footings shall extend below the zone of seasonal moisture fluctuation. Moisture changes shall be limited in the expansive surficial soils by using positive drainage away from buildings and improvements, as well as limiting landscaping watering. The Director of Public Works shall review and approve the design-specific geotechnical investigation prior to issuance of building permits. **(Less Than Significant With Mitigation)**
Impact GEO-7: The shallow groundwater located throughout Areas 3 and 4 could result in adverse impacts associated with grading and installing underground utilities. **(Significant Impact)**	**MM GEO-7.1:** Design underground improvements for potential hydrostatic uplift pressures. The Director of Public Works shall review and approve all underground improvements prior to issuance of building permits. **(Less Than Significant With Mitigation)**
Impact GEO-8: The soils and shallow groundwater conditions within Areas 3 and 4 could result in adverse impacts associated with corrosive soils. **(Significant Impact)**	**MM GEO-8.1:** Soil corrosion testing shall be performed in Areas 3 and 4 during future phases of investigation to ensure fill soils and native soils are not corrosive. This testing results shall be reviewed and approved by the Director of Public Works prior to issuance of building permits. It will be necessary to

Significant Environmental Impact	Mitigation Measures
	consult with a corrosion engineer to determine appropriate mitigation measures for site improvements. Special requirements for corrosion protection could be considered to protect metal pipelines, such as cathodic protection or specially coated pipes. In addition, if near-surface soils contain moderate to high levels of soluble sulfates, then buried concrete structures in contact with these soils may require special concrete mix design, such as using Type II cement and a higher compressive strength or Type V cement, to mitigate impacts from sulfate attack. **(Less Than Significant With Mitigation)**
HYDROLOGY AND WATER QUALITY	
Impact HYD-1: The proposed project could provide substantial sources of polluted runoff and degrade water quality downstream of the Specific Plan site. **(Significant Impact)**	**MM HYD-1.1:** All development projects within the Specific Plan shall comply with the National Pollution Discharge Elimination System (NPDES) permit requirements, the Alameda County Clean Water Program standards, the City of Newark's ordinances, policies, and processes, and other applicable local, state, and federal requirements. **MM HYD-1.2:** All development projects within the Specific Plan shall prepare a SWMP that includes post-construction water quality BMPs that control pollutant levels as required under Section C.3 of the NPDES Municipal Stormwater Permit issued by the RWQCB. Neighborhood- and/or lot-level BMPs to promote “green” treatment of storm runoff shall be emphasized, consistent with Regional Board guidance for NPDES Phase 2 permit compliance. These types of BMPs include infiltration basins and trenches, rain gardens, grassy swales, media filters, and biofiltration features. Since the site has mostly D soils of low permeability and a high water table, BMPs that enhance water quality but do not rely on infiltration are most appropriate for this site. Other source control measures, site design elements, and post-

Significant Environmental Impact	Mitigation Measures
	construction treatment measures may include the following: • Disconnected downspouts that are directed into landscape areas; • Minimization of impervious surfaces and increased use of permeable pavement(s); • Location of all storm drain inlets to be stenciled with, "No Dumping! Flows to Bay" to discourage illegal dumping; • Location and design of trash enclosures (all shall be covered) and materials handling areas; • Use effective, site-specific erosion and sediment control methods during post-construction periods. **MM HYD-1.3:** BMPs shall be designed in accordance with engineering criteria in the California Stormwater BMP Handbook for New and Redevelopment (California Storm Water Quality Association, 2003, California Storm Water Best Management Practice Handbook – New Development and Redevelopment) or other accepted guidance and designs shall be reviewed and approved by the City prior to issuance of grading or building permits for the roadway or driveways. **MM HYD-1.4:** All development projects within the Specific Plan shall implement storm water management program measures, such as street sweeping and litter control, outreach regarding appropriate fertilizer and pesticide use practices, and managed disposal of hazardous wastes. The project proponent shall prepare a clearly defined operations and maintenance plan for <u>post-construction</u> water quality and quality control measures. The design and maintenance documents shall include measures to limit vector concerns, especially with respect to control of mosquitoes. The project proponent shall identify the responsible parties and provide adequate funding to operate and maintain stormwater improvements (through a HOA, Geological Hazard Abatement District, CSD, CFD or similar organization). If lot-level

Significant Environmental Impact	Mitigation Measures
	BMPs are accepted by the City as a suitable control measure, the project proponent shall establish a mechanism for enforcement to assure that BMP functioning is being maintained as designed. The project proponent shall also establish financial assurances, as deemed appropriate by the Department of Resource Management, enabling the City to maintain the stormwater improvements should the HOA or other entity disband or cease to perform its maintenance responsibilities. **(Less than Significant Impact with Mitigation)**
Impact HYD-2: Construction activities could contaminate runoff from the Specific Plan site. **(Significant Impact)**	**MM HYD-2.1:** All development projects within the Specific Plan shall file a Notice of Intent (NOI) with the State of California Water Resource Quality Control Board (SWRCB) and prepare a Storm Water Pollution Prevention Plan (SWPPP) prior to commencement of construction. **MM HYD-2.2:** The SWPPP shall include an erosion control plan that prescribes measures such as phasing of grading, limiting areas of disturbance, designation of restricted-entry zones, diversion of runoff away from disturbed areas, protective measures for sensitive areas, outlet protection, and provision for revegetation or mulching. The plan would also prescribe treatment measures to trap sediment once it has been mobilized, at a scale and density appropriate to the size and slope of the catchment. These measures typically include inlet protection, straw bale barriers, straw mulching, straw wattles, silt fencing, check dams, terracing, and siltation or sediment ponds. **MM HYD-2.3:** The Specific Plan developer(s) shall implement Best Management Practices (BMPs) for reducing the volume of runoff and pollution in runoff to the maximum extent practicable during demolitions, site excavation, grading, and construction. All measures shall be included in the project's SWPPP and printed on all

Significant Environmental Impact	Mitigation Measures
	construction documents, contracts, and project plans. • Restrict grading to the dry season or meet City requirements for grading during the rainy season. • Use effective, site-specific erosion and sediment control methods during the construction periods. Provide temporary cover of all disturbed surfaces to help control erosion during construction. Provide permanent cover as soon as is practical to stabilize the disturbed surfaces after construction has been completed. • Cover soil, equipment, and supplies that could contribute non-visible pollution prior to rainfall events or perform monitoring of runoff. Cover stockpiles with secure plastic sheeting or tarp. • Implement regular maintenance activities such as sweeping driveways between the construction area and public streets. Clean sediments from streets, driveways, and paved areas on-site using dry sweeping methods. Designate a concrete truck washdown area. • Dispose of all wastes properly and keep site clear of trash and litter. Clean up leaks, drips, and other spills immediately so that they do not contact stormwater. • Place fiber rolls or silt fences around the perimeter of the site. Protect existing storm and sewer inlets in the project area from sedimentation with filter fabric and sand or gravel bags. **MM HYD-2.4:** BMPs shall be implemented in accordance with criteria in the California Stormwater BMP Handbook for Construction (California Storm Water Quality Association, 2003, California Storm Water Best Management Practice Handbook – Construction) or other accepted guidance and shall be reviewed and approved by the County prior to issuance of grading or building permits. **MM HYD-2.5:** The Specific Plan

Significant Environmental Impact	Mitigation Measures
	developer(s) shall identify the SWPPP Manager who will be the responsible party during the construction phase to ensure proper implementation, maintenance, and performance of the BMPs. **(Less than Significant Impact with Mitigation)**
HAZARDS AND HAZARDOUS MATERIALS	
Impact HAZ-1: Implementation of the proposed Area 3 residential component of the Specific Plan may create a significant hazard to the public or the environment from existing hazardous materials contamination by exposing future occupants or users of the site to contamination in excess of soil cleanup goals developed for the site. **(Significant Impact)**	**MM HAZ-1.1:** Implementation of the following measures will reduce impacts to a less than significant level: • A Remediation Plan shall be developed and approved by the City and DTSC prior to issuance of grading permits for the residential development. There are several options available for the mitigation of residual organochlorine pesticides, including 1) capping the impacted soil with 'clean' material: 2) using compounds, such as Gene Expression Factor, to biologically degrade the pesticides; 3) consolidating and capping the impacted soil beneath privately owned areas: and 4) capping the impacted soil with the proposed development so that there would be no significant exposure pathways to future residents. Selection of the most appropriate mitigation method shall be completed with the oversight of the City and an appropriately identified regulatory agency, in this case, DTSC. The oversight agency shall be responsible for overseeing and directing all site investigation and cleanup activities in a manner that ensures that the standards and requirements of the State of California are fully addressed. **(Less Than Significant Impact with Mitigation)**
Impact HAZ-2: Without remediation, development of the Area 3 school site would construct a school on a property that is subject to hazards from hazardous materials contamination from presence of pesticides in the shallow soil layers. **(Significant Impact)**	**MM HAZ-2.1:** Prior to any approval of the potential school site by the Newark Unified School District, the District shall coordinate with DTSC and all available data pertaining to the proposed school site shall be provided to them, so that an appropriate plan for further

Significant Environmental Impact	Mitigation Measures
	site evaluation and/or remediation can be developed. The DTSC's School Property Evaluation and Cleanup Division is responsible for assessing, investigating, and cleaning-up proposed school sites. School sites that will receive State funding for acquisition or construction are required to go through an environmental review and cleanup process under DTSC's oversight. A future elementary school developed on the proposed Area 3 school site would be a public school within the Newark Unified School District and, therefore, would be subject to DTSC review and approval. Investigation and remediation of the pesticide impacted soil will be required prior to elementary school development. Options for remediation of pesticide impacted soils would be similar to those described above for MM HAZ-1.1. **(Less Than Significant With Mitigation)**
Impact HAZ-3: The proposed residential use of Specific Plan Area 4, may create a significant hazard to the public or the environmental from existing hazardous materials contamination by exposing future users to contamination related to the former duck club, agricultural activities, and undocumented fill on the site, and the adjacent landfill. **(Significant Impact)**	**MM HAZ-3.1:** Implementation of the following measures will reduce Area 4 hazardous material contamination impacts to residential uses to a less than significant level: • All additional testing and remediation described below shall be completed under oversight by the City and an appropriate regulatory agency, DTSC, prior to issuance of grading permits for the residential development. The oversight agency shall be responsible for overseeing and directing all site investigation and cleanup activities in a manner that ensures that the standards and requirements of the State of California are fully addressed. ▪ The area of the former duck club and associated ponds shall be evaluated for lead from lead shot. The results shall be provided to the City of Newark and the regulatory oversight to determine the appropriate remediation, if necessary. This investigation is only necessary in the event on-site mitigation (such as habitat restoration) will occur in this Sub-Area E. ▪ Former fill soil quality of the duck

Significant Environmental Impact	Mitigation Measures
	club ponds shall be evaluated prior to issuance of grading permits for the residential development in Area 4. The results shall be provided to the City of Newark and the appropriate regulatory oversight to determine the appropriate remediation, if necessary. This investigation is only necessary in the event on-site mitigation (such as habitat restoration) will occur in this Sub-Area E. ▪ All pesticide impacted soil shall be remediated to ensure all levels are below residential screening levels; ▪ Additional soil samples shall be collected near existing and known former farm structures to test for residual levels of pesticides. The results shall be provided to the City of Newark and the regulatory oversight to determine the appropriate remediation, if necessary. ▪ Soil quality adjacent to on-site wells shall also be analyzed for spilled chemicals including pesticides. The results shall be provided to the City and the appropriate regulatory oversight to determine the appropriate remediation, if necessary. If no longer needed, the water supply wells shall be appropriately abandoned in accordance with local standards prior to issuance of a grading permit. ▪ Prior to any ground disturbance and issuance of grading permits at the unnamed parcel located to the west of the southern terminus of Stevenson Boulevard, shall be further evaluated to assess the current environmental conditions of this area. This evaluation shall be provided to the City for review and to determine the appropriate remediation, if warranted. ▪ All imported soil to raise the elevation on the site shall document the source and quality of the soil. This documentation shall be provided and approved by the City of Newark, prior

Significant Environmental Impact	Mitigation Measures
	to issuance of a grading permit. The DTSC's October 2001 Clean Fill Advisory provides guidance on evaluating imported fill. ▪ The property owner shall periodically review the monitoring data from the TCRDF shall be to assess whether there are any significant changes to the Area 4 conditions. The monitoring results shall be annually provided to the City of Newark. The Perry/Arrillaga property shall be evaluated for soil vapor for contaminants that may have migrated from TCRDF unless monitoring data from the landfill shows that further evaluation is unnecessary. **(Less Than Significant Impact with Mitigation)**
Impact HAZ-4: Implementation of the proposed Area 4 golf course uses may create a significant hazard to the public or the environment from existing hazardous materials contamination result in exposure of construction workers or future uses to hazardous material impacts. **(Significant Impact)**	**MM HAZ-4.1:** Implementation of the following measures will reduce impacts to the golf course to a less than significant level: • Soil and ground water quality investigations shall be completed at the auto wrecking operation properties prior to issuance of any demolition permits. If impacted soil or groundwater is detected that exceeds commercial screening levels, these parcels shall be remediated under oversight by the City and an appropriate regulatory agency, in this case likely DTSC. The oversight agency shall be responsible for overseeing and directing all site investigation and cleanup activities in a manner that ensures that the standards and requirements of the State of California are fully addressed. • Any future golf course development activities at the 10-acre Mowry Avenue property shall be coordinated with the City and the appropriate regulatory agency, DTSC. Additionally, prior to issuance of grading permits, methane monitoring shall be completed at this property and results shall be provide to the City and the regulatory agency. If impacted methane levels exceeds

Significant Environmental Impact	Mitigation Measures
	commercial screening levels, these parcels shall be remediated under oversight by the City and in this case, likely DTSC. • The depth and quality of the former fill areas [Pick-N-Pull Parcel 1, Ace Auto Wrecker's property, and 115-acre Rogers property (filled ponds)] shall be investigated prior to issuance of grading permits. This investigation shall be provided to the City for review and approval. Options for remediating impacted fill include capping, relocation, over-excavation and off-site disposal, and/or completing a risk assessment to evaluate whether this material is a risk to human health or the environment under the future golf course redevelopment plan. • Prior to any demolition of the existing buildings (Pick-N-Pull, Ace Auto Wrecker's), an asbestos survey is required by local authorities and/or National Emissions Standards for Hazardous Air Pollutants (NESHAP) guidelines. NESHAP guidelines require the removal of potentially friable Asbestos-Containing Building Material (ACBMs) prior to building demolition or renovation that may disturb the ACBM. The results of the survey shall be submitted to the City for review and approval, prior to issuance of demolition permits. **(Less Than Significant Impact with Mitigation)**
Impact HAZ-5: The operation and maintenance of the golf course, if improperly designed and/or managed, could create a significant hazard to the public or the environment as a result of the routine transport, use or disposal of hazardous materials, or through reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the environment. **(Significant Impact)**	**MM HAZ-5.1:** With implementation of the following measures, the proposed golf course operation would not create a significant hazard to the public or the environment through reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the environment: • As required through an operational permit issued by the City, a golf course operations plan will be developed prior to opening of the golf course. This plan shall be reviewed and approved by the City prior to issuance of building permits. The plan will include the following

Significant Environmental Impact	Mitigation Measures
	elements: ▪ Proper storage, handling, and disposal of chemicals; ▪ Limited use of chemicals; ▪ Strict adherence to manufacturer's recommendations and procedures involving chemical applications; ▪ Application of chemicals only by State-licensed personnel; and ▪ Use of only short-lived pesticides and herbicides • The golf course superintendent shall maintain a log of all herbicide and pesticide purchases and application. • The proposed gasoline storage tanks will be installed and maintained per City, State, and Federal requirements • The proposed golf cart barn and electric golf cart battery charging facilities shall be designed, constructed, and managed to prevent build up of hydrogen gas and the potential for explosion. The design of the golf cart barn shall be reviewed and approved by the City Fire Department. • Batteries shall be stored in a safe manner, pursuant to current California Building Code and Fire Code requirements. **(Less Than Significant Impact with Mitigation)**
AESTHETIC AND VISUAL RESOURCES	
Impact VIS-1: The proposed residential and golf course development and Stevenson Boulevard railroad overpass would substantially degrade the visual character on Area 4. **(Significant Impact)**	There are no mitigation measures to reduce this impact. **(Significant Unavoidable Impact)**
ENERGY	
Impact ENR–1: Construction could result in a wasteful and inefficient consumption of energy associated with fuel usage and therefore, would result in a significant energy impact. **(Significant Impact)**	**MM ENR-1.1:** The project shall utilize local and regional building material in order to reduce energy consumption associated with transporting materials over long distances. This shall be enforced by specifying on construction bid documents that 20 to 50 percent of building materials be manufactured within 500 miles of the project site. **MM ENR-1.2:** Local construction sites

Significant Environmental Impact	Mitigation Measures
	shall be utilized for the source of fill material necessary for the development of Area 4. The Community Development Director shall approve all fill source sites to ensure travel distances are local distances. In addition, designated travel routes from the fill source site to the project site shall be determined by the construction manager and approved by the Community Development Director to ensure the haul-truck utilize most fuel-efficient travel path. **MM ENR-1.3:** Reduce equipment and vehicle idle times. Enforce current state law idling restrictions from diesel-fueled trucks by conspicuously posting signs that prohibit excess idling. Construction superintendants shall inform truck drivers to turn engines off when idling times have exceeded or are expected to exceed the idling restrictions (currently five minutes). This would include trucks waiting to deliver or receive soil, aggregate, or other bulk materials. Rotating drum concrete trucks could keep their engines running continuously as long as they were onsite. **MM ENR-1.4:** Reduce vehicle emissions. Properly tune and maintain equipment for low emissions. **(Less Than Significant with Mitigation)**
CUMULATIVE IMPACTS	
CUMULATIVE TRANSPORTATION	
Impact C-TRAN-1: Cherry Street and Central Avenue – Under cumulative without project conditions, the intersection would operate at LOS C during the PM peak hour. The addition of project traffic would cause the intersection to degrade to LOS D during the PM peak hour. **(Significant Impact)**	**MM C-TRAN-1:** Cherry Street and Central Avenue mitigation: Add a left turn lane to the northbound approach on Cherry Street. This mitigation measure would allow the intersection to operate at LOS C during the PM peak hour under both project alternatives. It would also require a detailed evaluation of signal phasing, clearance of opposing northbound and southbound left turns, and a review of intersection alignment. To construct this improvement would require signal, striping, curb, and gutter modifications. Depending on the final design, these mitigation measures could be

Significant Environmental Impact	Mitigation Measures
	accommodated within the existing right-of-way. Because this impact would occur under cumulative conditions, but not under project conditions, this impact could be mitigated by a "fair share" monetary contribution from the project toward these improvements. **(Less Than Significant Impact with Mitigation)**
Impact C-TRAN-2: Cherry Street and Mowry Avenue – Under cumulative without project conditions, the intersection would operate at LOS C during the AM and PM peak hours. The addition of project traffic would cause the intersection to degrade to LOS D during the AM and PM peak hours. **(Significant Impact)**	**MM C-TRAN-2:** Cherry Street and Mowry Avenue mitigation: Add a left turn lane on the westbound approach. This is the same mitigation proposed under project conditions. Depending on the final design, these mitigation measures could be accommodated within the existing right-of-way. This mitigation measure would allow the intersection to operate at LOS C during the AM and PM peak hours under both cumulative project alternatives. **(Less Than Significant Impact with Mitigation)**
CUMULATIVE AIR QUALITY	
Impact C-AIR-3: According to BAAQMD thresholds, the proposed project, in combination with the cumulative projects, would result in a significant regional air quality impact. **(Significant Cumulative Impact)**	There are no measures to reduce this impact to a less than significant level. **(Significant Cumulative Impact)**
CUMULATIVE NOISE	
Impact C-NOI-4: Implementation of the proposed Specific Plan would measurably contribute to significant cumulative traffic noise increases. **(Significant Cumulative Impact)**	**MM C-NOI-4: A** combination of mitigation measures would help reduce impacts to affected property owners along Cherry Street between Stevenson Boulevard and Mowry Avenue and along Stevenson Boulevard between Cherry Street and Cedar Boulevard from project-generated cumulative traffic noise. These noise reduction measures include the following: • New or larger noise barriers could reduce noise levels by 5 dBA Ldn. Final design of such barriers, including an assessment of their feasibility and reasonableness, should be completed during project level review. Single-family residential receivers east of Cherry Street and north of Stevenson Boulevard could be provided

Significant Environmental Impact	Mitigation Measures
	with new or larger noise barriers to provide the additional necessary noise attenuation in private outdoor use areas. Typically, increasing the height of an existing barrier results in about one (1) dBA of attenuation per one (1) foot of additional barrier height. The design of such would require additional analysis. • Sound insulation treatments to the impacted buildings, such as sound-rated windows and doors, could reduce noise levels in interior spaces. Affected residential receivers along affected roadways could be provided with sound insulation treatments if further study finds that interior noises with the affected residential units would exceed 45 dBA Ldn assuming plus project traffic conditions. • In addition, alternative noise reduction techniques shall be considered in coordination with the City of Newark. Such techniques could include: installation of traffic calming measures to slow traffic; coordination of routing and other traffic control measures; repaving the affected roadways with "quiet" pavement types such as Open-Grade Asphalt Concrete. The replacement of dense grade asphalt (standard type) with open-grade or rubberized asphalt can reduce traffic noise levels along residential-type streets by 2 to 3 dBA. A possible noise reduction of 2 dBA would be expected using conservative engineering assumptions. Opportunities to lower noise levels through pavement surface treatments can only be identified after an assessment of the current roadway surface with respect to noise. • Final design of such barriers and/or treatments, including an assessment of their feasibility and reasonableness, shall be completed during project level review. Each of these mitigation measures involves other non-acoustical considerations. Other engineering issues may dictate continued use

Significant Environmental Impact	Mitigation Measures
	of dense grade asphalt. Therefore, it may not be reasonable or feasible to reduce project-generated cumulative traffic noise at all affected receivers. If the City of Newark determines that the mitigation is feasible, then with implementation of the mitigation measures, the impact would be less than significant. However, if the City of Newark determines that the mitigation is not feasible, the impact would be considered significant and unavoidable.[3] Due to the uncertainty regarding the feasibility of this mitigation, the impact would be considered significant and unavoidable. **(Significant Unavoidable Cumulative Impact)**
CUMULATIVE VISUAL AND AESTHETIC RESOURCES	
Impact C-VIS-5: The cumulative projects would result in cumulatively significant visual and aesthetic impacts, and the proposed Specific Plan project would make a cumulatively considerable contribution towards this cumulative impact. **(Significant Unavoidable Cumulative Impact)**	There is no feasible mitigation to reduce this impact to a less than significant level. **(Significant Unavoidable Cumulative Impact)**

[3] If the City of Newark determines that the mitigation is not feasible, they should provide clear and detailed documentation in the record.

AVOIDANCE MEASURES
Visual and Aesthetic Resources
AM VIS-1.1: The following avoidance measures shall further reduce light and glare impacts of the Specific Plan. All of these avoidance measures shall be incorporated into the City of Newark's development regulations and design review procedures to reduce potential light and glare impacts to non-significant levels. Design review procedures shall include the following: • Use of low pressure sodium lights where security needs permit; • Restricting height of exterior lighting fixtures to minimize light spill; • Directing exterior lighting on-site to minimize spill-over; • Shielding for exterior lights; • Minimizing use of highly reflective exterior building materials; • Restricting hours of non-security exterior lighting for commercial, industrial, and institutional uses.
Energy Resources
AM ENR-1.1: All residential subdivisions and new commercial buildings within the Specific Plan shall incorporate as many green practices as appropriate and feasible in buildings and structures constructed subject to approval of the City of Newark. **AM ENR-2.2:** All public landscaping areas within the Specific Plan shall follow the City of Newark's Bay Friendly Landscape Guide. Future homeowners associations or similar entity shall be encouraged to incorporate as many bay friendly landscape practices as appropriate and feasible.
Global Climate Change
AM C-GCC-1: All residential subdivisions and new commercial buildings within the Specific Plan shall incorporate as many green practices as appropriate and feasible in buildings and structures constructed subject to approval of the City of Newark. **AM C-GCC-2:** All public landscaping areas within the Specific Plan shall follow the City of Newark's Bay Friendly Landscape Guide. Future homeowners associations or similar entity shall be encouraged to incorporate as many bay friendly landscape practices as appropriate and feasible.

Significant Unavoidable Impacts

If the project is implemented, the following significant unavoidable environmental impacts will occur:

- Significant air quality impact
- Significant cultural resources impact
- Significant visual impact
- Significant cumulative air quality impact
- Significant cumulative noise impact
- Significant cumulative visual impact

Summary of Alternatives

Section 5.0 Alternatives to the Project evaluates the environmental impacts of three alternatives to the proposed project, one of which is the No Project Alterative. These alternatives are summarized below.

No Project Alternative (Continuation of Existing Conditions)

The No Project (Continuation of Existing Conditions) Alternative consists of a continuation of the existing farming and discing the 78-acre property in Area 3 and approximately 520 acres of Area 4. As long as the property owner(s) continue with this operation, the existing conditions could continue.

Approximately 30 acres within Area 4 is utilized by two auto dismantler businesses. According to an conditional use permit with the City of Newark, these businesses must cease to operate within Area 4 no later than 2014.

The continued operation of existing uses on the project site would not result in any significant impacts, as defined by CEQA.[4] Impacts from the continued operation of the site would be those that occur from the conditions reflected throughout this EIR in the sections entitled "Existing Setting". The No Project Alternative (assuming the continued use of the existing agricultural uses) would avoid the significant environmental impacts of the project. The No Project would not result in the enhancement of Area 4 wetland areas that is proposed as mitigation for project impacts.

This No Project (Existing Conditions) Alternative would not result in any significant impacts, as defined by CEQA. This Alternative would not implement the City's General Plan and, therefore, would not meet any of the project objectives.

No Project Alternative (Implementation of Existing General Plan)

The existing City of Newark General Plan land use diagram designates the 78-acres within Area 3 as *Special Industrial.* Special Industrial uses including a high-tech business park plan that was approved by the City in 1989 for this 78-acre area. Under the No Project (existing General Plan)

[4] Section 15126.6 (e) (3) (B) of the CEQA Guidelines state the following, "If the project is other than a land use or regulatory plan, for example a development project on identifiable property, the "no project" alternative is the circumstance under which the project does not proceed. Here the discussion would compare the environmental effects of the property remaining in its existing state against environmental effects which would occur if the project is approved."

Alternative, the 78-acre property in Area 3 would be developed with an approximate 1.175 million square foot industrial/office business park.

According to the General Plan, Area 4 is designated *Low Density Residential* and planned for high-quality low-density residential use with up to 2,700 units, a 18-hole golf course, and open space, with a requirement for preparation of a Specific Plan to guide development on Area 4, due to the complex conditions in this area including access, ownership, and environmental constraints. The proposed Specific Plan implements the General Plan vision for Area 4; therefore, the proposed project and this No Project Alternative are the same for Area 4.

Implementation of this alternative would not avoid any impacts compared to the proposed project because it assumes a greater intensity of development in Areas 3 and 4. Overall the impacts associated with the entire development of Areas 3 and 4 would similar or greater compared to the proposed project.

The traffic impacts of this alternative would be the same as what was assumed in the transportation impact analysis as the 2015 No Project scenario under the Congestion Management Analysis (refer to Appendix B of this document. With the 1.175 million industrial office park the proposed project would result in less overall development compared to what is currently allowed by the existing General Plan. The CMA model determined the impact of the project for the 2015 and 2030 horizon years, the net project volumes of the residential and employment uses were added to the forecasted 2015 and 2030 peak-hour traffic volumes and compared the existing General Plan and the proposed project. Because the existing General Plan buildout would result in greater overall land use density in Areas 3 and 4 than the proposed project, and several of the roadway segments that are projected to operate at LOS F under the existing General Plan. Under the proposed project these roadway segments would experience traffic decreases under the proposed Specific Plan, thereby improving traffic conditions, thus the traffic impacts under the existing General Plan would be greater than the proposed project.

The No Project (Implementation of the Existing General Plan) Alternative would result in similar or greater impacts compared to the proposed project. This Alternative only partially meets the objectives and does not meet objective to develop single family and multi-family housing and to provide land for a school on Area 3 instead of industrial office use.

<u>No Development in Area 4 and Higher Density in Area 3 Alternative</u>

Given the biological, hydrologic, and other environmental issues involved with developing Area 4, an alternative to the proposed Specific Plan would be no development in Area 4 and to intensify the housing development on Area 3, while retaining the land for a school. Without developing any of Area 4, this alternative would not have sufficient acreage to include the golf course. The No Development in Area 4 and Higher Density in Area 3 Alternative consists of the same number of residential units as the proposed Specific Plan project, but all the residential units would be located within Area 3. The elementary school would be the same size (up to 600-student capacity) as the proposed project. In order to accommodate up to 1,260 units, Area 3 would have a density of 18 units per acre. This would likely consist of two- and three-story residential structures. Area 4 would remain in its current existing condition, as long as the property owner(s) continue with the current agricultural operation.

All impacts associated with development in Area 4 would be eliminated with this alternative. This alternative would result in substantially less biological impacts compared to the proposed project. The visual impacts associated with Area 4 would not occur under this alternative. Significant unavoidable impacts associated with air quality emissions and cultural resources would still occur under this alternative. Overall the other impacts would be slightly less or similar to the proposed project. While this alternative is feasible from a land use and planning standpoint, and would avoid all impacts from development within Area 4, it would not meet the General Plan goals and project objectives of providing high quality housing with a mix of executive house types and a golf course within Area 4. This alternative would also result in densities in Area 3 that are not consistent with the communities vision and which would create great aesthetic impacts due to building height and massing.

Reduce Housing Alternative

For the Reduced Housing Alternative, the development within Area 3 would be the same as the proposed project. Approximately 400 single-family units and 189 multi-family units were assumed to be constructed in Area 3 under this alternative. There would be a 120-acre golf course in Area 4 but no residential development within Area 4. The Stevenson Bridge overcrossing would be the same as the proposed project in order to provide access to the golf course. The layout of the 120-acre golf course would be designed to minimize wetland fill to the maximum extent possible.

This alternative would reduce biological and cultural impacts in Area 4, but not to a less than significant level and cultural resources impact would still remain significant in Area 3. Impacts associated with importing fill to Area 4 will be avoided. This alternative is feasible from a land use and planning standpoint, but would not meet the General Plan objective to provide high quality, executive (low density) housing within Area 4.

No Golf Course Alternative

The No Golf Course Alternative would be the same as the proposed project, in terms of residential and school uses, except the Area 4 golf course component would be replaced with a passive recreation area and habitat restoration. The recreation area could include public trails and wildlife viewing platforms/areas, while the wildlife restoration areas would be protected for restoration by the appropriate public agencies.

This alternative would generate slightly fewer daily trips on the roadway network without the golf course, but would still result in similar traffic impacts as the proposed project because the golf course is not a large traffic generator compared to the residential uses. Air quality, noise, and energy would be similar to the proposed project because the number of residential units would be same, so traffic-related noise and air quality impacts would be the same, and the residential uses are also the greatest energy user. The impacts associated with importing fill will be the same as the proposed project because there would be the same amount of residential in Areas 3 and 4 under this alternative. The impacts to cultural resources from the placement of fill would also be the same under this alternative as under the proposed project.

Some biological habitat impacts would be avoided under this No Golf Course Alternative, but there would still be significant biological resources related to the residential development and temporary impacts associated with habitat restoration and trail construction. There ultimately would be some beneficial biological impacts associated with preservation and habitat restoration under this

alternative. It should be noted that the proposed project also proposed the enhancement of wetland habitat on Area 4 through mitigation measures.
The impacts associated with cultural resources, geology, hazardous materials, water quality, and visual resources would be the similar to the proposed project because residential development is the main source of impacts within Areas 3 and 4.

This alternative would meet the project objectives of providing additional residential within the City of Newark. The alternative would not meet the project objective of providing a golf course, but would meet the objectives of providing open space.

While this alternative is feasible from a land use and planning standpoint, and would slightly reduce some impacts compared to the proposed project (although it would increase other impacts), it would not meet the General Plan goals and project objectives of providing a golf course within Area 4. According to the General Plan if a golf course is found unfeasible then another recreation use that is acceptable to the City shall be provided as a condition of development.

Location (Area 2) Alternative

CEQA Guidelines encourage consideration of an alternative site when significant effects of the project might be avoided or substantially lessened. Only locations that would avoid or substantially lessen any of the significant effects of the project and meet most of the project objectives need be considered for inclusion in an EIR.

Area 2 Alternative

Within the City of Newark, the other area with an similar amount of infill area would be Area 2. Area 2 is located south of Thornton Avenue and west of Willow Street and encompasses 232 acres. Exiting uses include some vacant and open space lands as well as heavy industrial operations (e.g., FMC chemical plant and a 375,000 square foot warehouse/research and development complex), a railroad line, salt production facilities, the Hetch Hetchy water line, and the Newark pump station of the Union Sanitary District. Current zoning for the Area 2 plan was updated in 1999 with the adoption of the Newark Area Two Specific Plan, which anticipated the construction of a community college surrounded by multi-level office and R&D buildings. However, after adoption of that Plan, the Ohlone Community College located elsewhere and the market for office space in South Alameda County diminished. The City is currently evaluating a new plan for Area 2 that would provide a new transit-oriented center in Newark that will provide new housing to support the Dumbarton Transit Center.

The Location Alternative would result in the same amount of traffic on local roadways and thus it is assumed it would result in similar traffic impacts. There is a planned Transit Center located within this site which would provide a transit benefit for future housing. Air quality, noise, and energy would be similar to the proposed project because the development buildout is assumed to be the same.

There would also be impacts associated with importing fill because portions of Area 2 are within the 100-year flood zone. There are known cultural resources sites located adjacent to Area 2, therefore, it is possible that cultural resources could be impacted during development or impacted during placement of fill. As a result the impacts to cultural resources would be considered the same under this alternative as under the proposed project.

Area 2 contains a mix of high, medium, and low quality habitat including wetland habitat throughout the developable area of the site. Based upon the similar habitat impacts and possible filling of wetlands, the impacts to biological resources are assumed to be similar to the proposed project.

It is assumed that the same amount of open space to be preserved in the 1999 Area 2 Specific Plan would be preserved in the Location Alternative. Based upon this assumption, the location alternative would result in a reduced visual impact compared to the proposed project.

Based upon the past usage of the site it is likely there may be hazardous contamination that would require soil and ground water mitigation which is similar to what is required on the proposed project site.

While this alternative is feasible from a land use and planning standpoint, and would reduce visual impacts compared to the proposed project, it would not meet the General Plan goals and project objectives for providing a golf course.

Environmental Superior Alternative

The CEQA Guidelines state that an EIR shall identify an environmentally superior alternative. Based on the above discussions, the environmentally superior alternative is the No Project Alternative, because all of the project's significant environmental impacts would be avoided if no new construction occurred under this Alternative. CEQA Guidelines Section 15126.6(e)(2), however, states that "if the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives."

The No Development in Area 4 and Higher Density in Area 3 Alternative and the Reduced Housing Alternative would be the environmentally superior alternatives. The No Development in Area 4 and High Density in Area 3 Alternative would avoid impacts to wetland, marsh, and aquatic habitat, because no development would occur in Area 4. The Reduced Housing Alternative would result in less impacts to wetland, marsh, and aquatic habitat compared to the proposed project but not to a less than significant level. Both alternatives would avoid land use impacts and would not result in impacts in Area 4 associated with import of soil compared to the proposed project. These Alternatives would not meet all of the project objectives because the No Development in Area 4 and Higher Density in Area 3 Alternative will not provide any development in Area 4 which is one of the main objectives of the project. The Reduced Housing Alternative does not include housing in Area 4 which is also one of the main project objectives.

Areas of Controversy Known the Lead Agency

Throughout the process, community input was generally constructive and helped to develop and refine alternatives. Many comments received addressed environmental issues that have been addressed in detail in this environmental impact report. It should be noted that some of the meeting attendees disagreed with the existing General Plan vision and opposed any development in Area 4.

1.0 INTRODUCTION

1.1 INTRODUCTION OVERVIEW

This Environmental Impact Report (EIR) has been prepared in accordance with the requirements of the California Environmental Quality Act (CEQA). The purpose of the EIR is to provide objective information regarding the environmental consequences of the proposed project to the decision makers who will be reviewing and considering the proposed project.

The following guidelines are included in CEQA to clarify the role of an EIR:

> **Section 15121(a). Informational Document.** An EIR is an informational document, which will inform public agency decision makers, and the public of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. The public agency shall consider the information in the EIR, along with other information which may be provided to the agency.
>
> **Section 15146. Degree of Specificity.** The degree of specificity required in an EIR will correspond to the degree of specificity involved in the underlying activity which is described in the EIR.
> (a) An EIR on a construction project will necessarily be more detailed in the specific effects of a project than will an EIR on the adoption of a local general plan or comprehensive zoning ordinance because the effects of the construction can be predicted with greater accuracy.
> (b) An EIR on a project such as the adoption or amendment of a comprehensive zoning ordinance or local general plan should focus on the secondary effects that can be expected to follow from the adoption or amendment, but the EIR need not be as detailed as an EIR on the specific construction project that might follow.
>
> **Section 15151. Standards for Adequacy of an EIR.** An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently considers environmental consequences. An evaluation of the environmental effects of the proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection, but for adequacy, completeness, and a good-faith effort at full disclosure.

In accordance with **Section 15082** of the CEQA Guidelines, a Notice of Preparation (NOP) was circulated to the public and responsible agencies for input regarding the analysis in this EIR. The proposed project is of statewide, regional, and/or areawide significance per **Section 15206** of the CEQA Guidelines and therefore, the NOP was submitted to the State Clearinghouse and neighboring jurisdictions. The Draft EIR (and Notice of Completion form) shall be submitted in printed form and in electronic form to the State Clearinghouse and the Draft EIR shall also be submitted to the Association of Bay Area Governments (ABAG). This EIR addresses those issues which were raised by the public and responsible agencies in response to the NOP. The NOP and the public responses to the NOP are in Appendix J of this EIR.

1.2 USES OF THE EIR

The information contained in this EIR will be used by the City of Newark (the CEQA Lead Agency) as it considers whether or not to approve the proposed Specific Plan project. If the project is approved, the EIR would be used by the City and possibly other agencies in conjunction with various approvals and permits. These actions include, but may not be limited to, the following approvals by the agencies indicated:

City of Newark

- Specific Plan
- Specific Plan Map amendment
- Zoning changes
- General Plan Amendment
- Planned Unit Development permit
- Conditional Use permit
- Development Agreement
- Tentative Map

Newark Unified School District

- Acceptance of land for school

Alameda County Flood Control and Water Conservation District (ACFC&WCD)

- Acceptance of maintenance/access easements along levees and/or permit to move tide gate(s)

California Public Utilities Commission (CPUC)

- Stevenson Blvd./RR overcrossing and Mowry Avenue EVA improvements

Pacific Gas and Electric Corporation (PG&E)

- approval to move high-voltage lines and/or towers

Regional Water Quality Control Board (RWQCB)

- National Pollutant Discharge Elimination System (NPDES) Permit

Union Sanitary District

- Annexation of Area 4 within Service Area

San Francisco Bay Conservation and Development Commission (BCDC)

- Jurisdiction Permit

Tentative maps will be evaluated to determine if the proposed action is consistent with the Specific Plan and, therefore, exempt from further CEQA review pursuant to Government Code section 65457 and/or limited in scope to effects on the environmental that are peculiar to the parcel and were not addressed in this EIR in accordance with Public Resources Code 21083.3 or whether any additional environmental review is necessary According to the CEQA Guidelines (Section 15162) additional environmental review may be necessary if:

1) Substantial changes are proposed in the project which will require major revisions of this EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
2) Subsequent changes have occurred with regard to the circumstances under which the project is undertaken which involve new significant effects or a substantial increase in the severity of previously identified significant effects; or

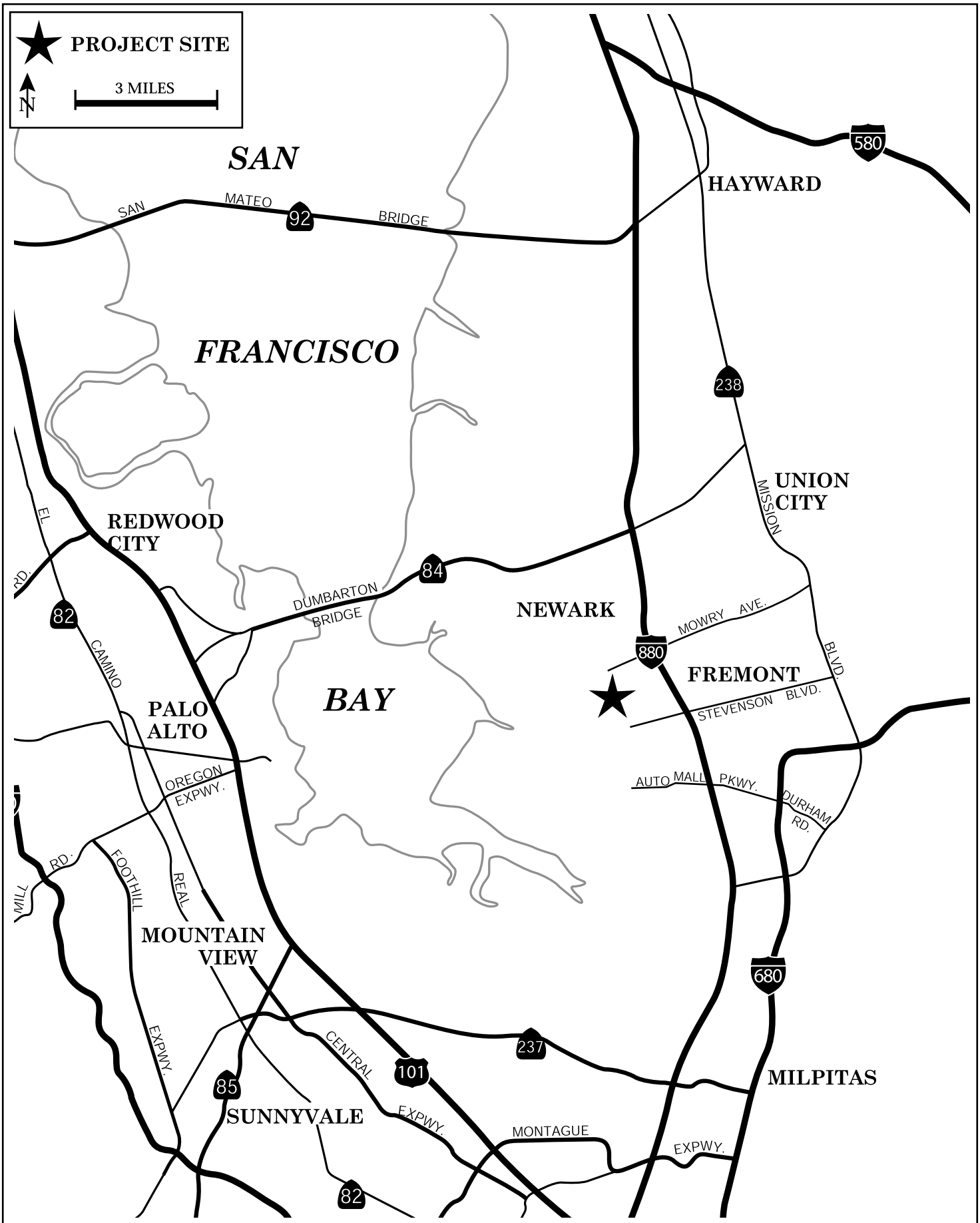
3) New information of substantial importance becomes available which was not known and could not have been known with the exercise of reasonable diligence at the time the EIR was certified shows any of the following:
   a) the project will have one or more significant effects not discussed in this EIR;
   b) significant effects previously examined will be substantially more severe than shown in the EIR;
   c) mitigation measures or alternatives found not to be feasible are in fact feasible and would substantially reduce one ore more significant effects, but the project proponent declines to adopt the mitigation or alternative; or
   d) mitigation measures or alternatives which are considerably different from those analyzed in this EIR would substantially reduce one ore more significant effects, but the project proponent declines to adopt the mitigation or alternative.

1.3 PROJECT LOCATION

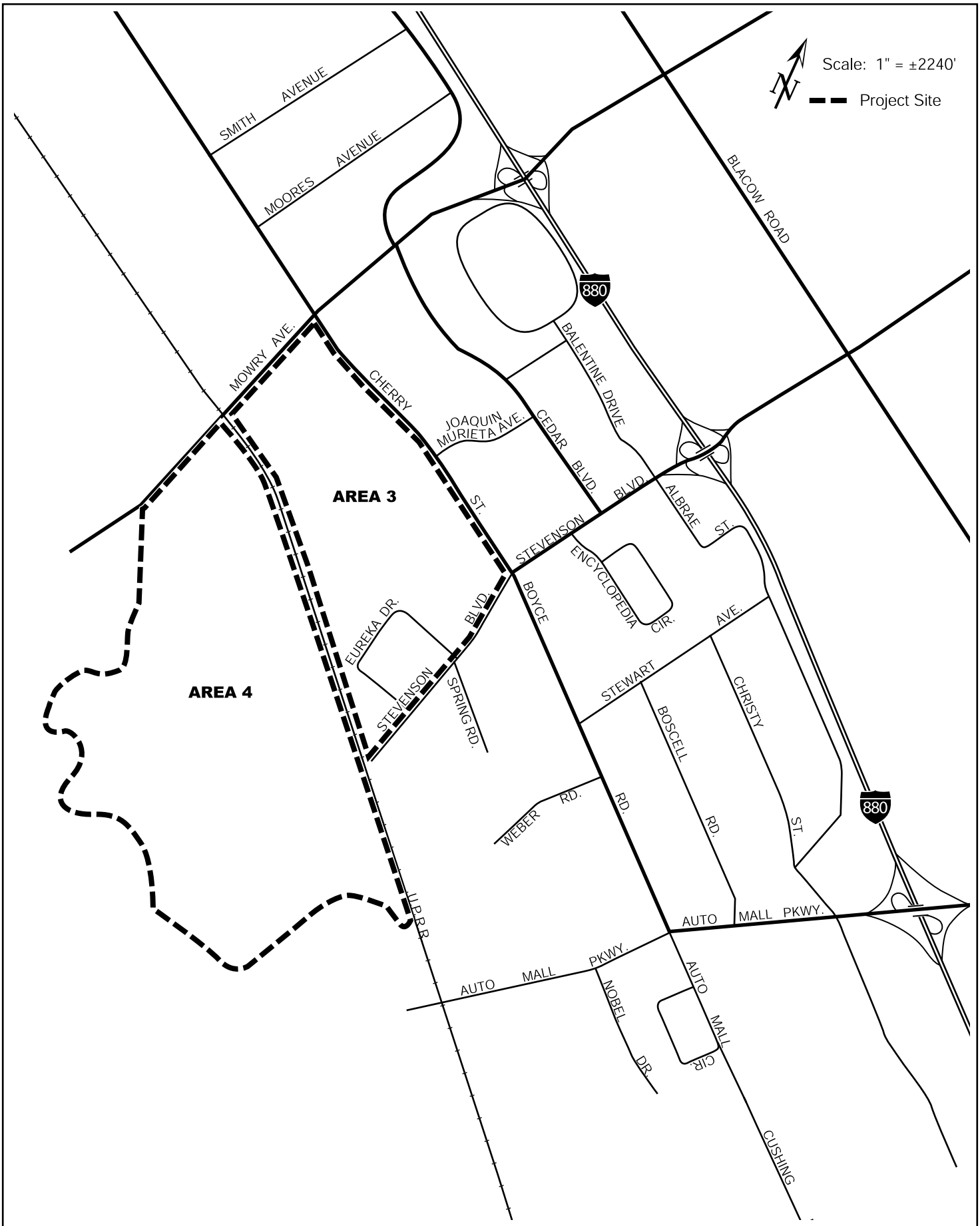
The approximately 850-acre site is located in southwest Newark. For the purposes of this EIR, north is considered toward Mowry Avenue. The Specific Plan area is surrounded by Mowry Avenue to the north, Cherry Street to the east, Stevenson Boulevard to the south, and salt flats and Mowry Slough to the west (refer to Figures 1.2-1, 1.2-2, and 1.2-3).

1.4 REFERENCE AVAILABILITY

This EIR and referenced Appendices are available for public review at the City of Newark, Community Development Department located at 37101 Newark Boulevard during normal business hours and the Newark Library, a branch of the Alameda County Library located at 6300 Civic Terrace Avenue.



REGIONAL MAP FIGURE 1.2-1



VICINITY MAP

FIGURE 1.2-2

AERIAL PHOTOGRAPH WITH LAND USES FIGURE 1.2-3

2.0 DESCRIPTION OF THE PROPOSED PROJECT

2.1 PROJECT OVERVIEW

The proposed project is a Specific Plan for Areas 3 and 4 in (south) western Newark, which is bound generally by Mowry Avenue, Cherry Street, Stevenson Boulevard, and the Mowry Slough. The proposed Areas 3 and 4 Specific Plan allows for development of up to 1,260 housing units of various densities, an up to 600-student elementary school, a golf course, open space areas, as well as retention of existing light industrial and institutional (Ohlone College, City fire station, park, and community activity center) uses.

2.2 HISTORIC OVERVIEW AND BACKGROUND

To guide future development, the City initiated a comprehensive revision to its General Plan in the mid-1980's. Following an extensive public process involving numerous workshops and input from five citizen committees, the City Council adopted the General Plan Update in 1992. The General Plan identified and established land use designations for several Planning Areas, including Areas 3 and 4 in the southwest quadrant of the City. Area 3, a large portion of which has been developed, is bounded by Cherry Street, Stevenson Boulevard, the Union Pacific railroad tracks, and Mowry Avenue. It is designated primarily for Research and Development (R&D) High Tech development, but also includes the City's George M. Silliman Recreation Complex, the Ohlone College Newark Campus, and the vacant former Agilent Technologies site. Area 4 is one of the last undeveloped areas in the City and it is largely agricultural in use with the exception of auto dismantlers at the end of Mowry Avenue and a residence at the end of Stevenson Boulevard near the railroad crossing. It consists of 560 acres surrounded by Mowry Avenue, Union Pacific railroad tracks, Stevenson Boulevard, City of Newark/City of Fremont city limits, and Mowry Slough.

According to the General Plan, Area 4 is planned for high-quality low-density residential use, an 18-hole golf course, and open space. The General Plan also requires that the City prepare a Specific Plan for Area 4 before any such development may occur due to the complex conditions in this area including access, ownership, and environmental constraints.

In 1999, the community rejected a ballot measure to change the General Plan land use designation for Area 4 to conservation, open space, and agricultural uses. The measure was rejected by a 61.3 percent to 38.6 percent vote. As a result, the General Plan designations for Area 4 noted above remain the City's vision for the development of Area 4.

2.2.1 Specific Plan Process for Areas 3 and 4

Complex ownership issues have, to date, precluded the development of Areas 3 and 4 as envisioned by the City's General Plan. Recently, however, New Technology Park Associates (NTPA), a limited partnership, acquired title to or options to purchase substantial amounts of property in Areas 3 and 4. NTPA then proposed the development of Area 4 consistent with the General Plan, including a golf course, housing, and open space. It has also proposed that the City redesignate and rezone the 78-acres owned by NTPA in Area 3 from R&D High Tech Business Park (*Special Industrial*) to residential use. Based on these proposals, the City agreed in a Memorandum of Understanding approved by the City Council on June 22, 2006, to prepare a Specific Plan for Areas 3 and 4; and to consider General Plan redesignation.

The City's Specific Plan process commenced in late 2006, and has consisted of two phases. Phase one involved preparation of a conceptual plan and a feasibility analysis which evaluated development constraints. Phase two used the results of this constraints analysis as the basis for developing the proposed Specific Plan and this Environmental Impact Report (EIR).

Throughout the Specific Plan process, the City has held a series of public meetings to obtain community input. The first community meeting for the project was held in November 2006. The meeting was attended by approximately 50 people. The overall intent of the Specific Plan was discussed and community members raised issues primarily related to traffic impacts and impacts to the Bay and surrounding habitat. An Open House, attended by approximately 50 people including City staff and consultants, was held in April 2007 to explain the project planning progress. The City then distributed a Notice of Preparation for the EIR in May 2007, and held an EIR Scoping Meeting on May 30, 2007. The constraints analysis was completed in Fall 2007. In November 2007, a community workshop updated the community on the United States Army Corps of Engineers verified wetlands delineation for the site and results of the site's biological habitat survey. In addition, land plan options were provided to the community for their comment and review. Approximately 85 community members attended the meeting and gave detailed comments related to the proposed concept plans by drawing their comments and suggestions on maps. The planners and technical consultants then utilized the community input to revise the land use concept plan alternatives. The City convened a joint Community Meeting and Planning Commission Workshop on February 6, 2008 that was attended by approximately 80 people who again gave comments on the more detailed land use plan alternatives. On February 26, 2008, the City of Newark Planning Commission, by a vote of 6-0, reviewed two alternative Concept Plans, selected a preferred alternative, and recommended that the City Council approve the preferred alternative as the basis upon which a Specific Plan would be developed. On March 13, 2008 the City Council accepted and approved the Planning Commission recommendation on the preferred land use concept. This approved land use concept included two alternatives for Area 3 and one alternative for Area 4. Area 3 alternatives includes two locations for the school; one near the Silliman Center and one within the proposed residential area. The selected alternative for Area 4 allowed for a large contiguous open space area that provides opportunities for restoration and conservation, as well as sited residential away from major roadways and railroads. The City convened an additional community meeting on October 16, 2008, which was attended by approximately 50 people, to further review land use concepts that would be developed in the Specific Plan. On June 22, 2009 another community meeting, attended by approximately 40 people, was held on to update the community that the buildout would likely occur over a 25 year period with the golf course development 8 to 10 years out. The extended timeline was based upon the City determining that the golf course would be funded by housing impact fees and the current economic conditions. The City then finalized the Specific Plan, and this EIR, based upon the preferred land use concept, which will be considered by the Planning Commission and City Council in 2010.

2.3 DESCRIPTION OF EXISTING OPERATIONS/CONDITIONS

The current uses within Areas 3 and 4 include light industrial, auto dismantlers, agricultural land, and institutional (Ohlone Community College Newark Center for Health Sciences and Technology, the City of Newark fire station, and the George M. Silliman Recreation Complex.) The project site is known as General Plan Study Areas 3 and 4. Area 3 is surrounded by Mowry Avenue, Cherry Street, Stevenson Boulevard, and the Union Pacific railroad tracks. Currently, Area 3 has a General Plan designation of *Public-Institutional*, *Public Parks-Open Space*, and *Special Industrial*. The zoning in Area 3 includes *Industrial Technology Park (MT)* and *High Technology Park (MT-1)* with *Open*

Space/Parks (O-P). Area 4 is generally west of Area 3 and extends from the Union Pacific Railroad tracks to Mowry Slough. Area 4 has a General Plan land use designation of *Low-Density Residential* (4.2-8.5 units per acre). Planned uses include low-density housing, a golf course and open space. The General Plan calls for a Specific Plan to be prepared as a more detailed guide to development of the area. The zoning in Area 4 includes predominantly *Agricultural (A)* with a small area of *General Industrial (MG)* adjacent to the terminus of Stevenson Blvd.

2.4 PROJECT DESCRIPTION

For the purposes of this EIR, Cherry Street is assumed to be a generally north-south trending roadway. Areas 3 and 4 are bounded on the north by Mowry Avenue, on the east by Cherry Street, on the south by Stevenson Boulevard, and on the west by the salt flats and Mowry Slough.

The proposed Areas 3 and 4 Specific Plan will include a golf course, up to 1,260 housing units of various densities, an up to 600 student elementary school, undeveloped areas, as well as retention of existing light industrial, institutional (Ohlone College), and City fire station, park, and community center uses.

The proposed land use plan for the proposed Areas 3 and 4 Specific Plan is shown on Figure 2.4-1.

2.4.1 Area 3

Area 3 of the Specific Plan consists of approximately 296 acres and is bounded by Mowry Avenue, Cherry Street, Stevenson Boulevard, and the Union Pacific railroad tracks. Area 3 includes both developed properties and undeveloped (vacant) land. As discussed previously, the existing developed land uses on Area 3 include the City's George M. Silliman Recreation Complex, City of Newark Fire Station No. 3, Ohlone College Campus, and light industrial/commercial buildings. The proposed new land uses for Area 3 are described below.

Residential land uses are proposed west of Cherry Street and north of Stevenson Boulevard (Land Use Plan Sub-Area A). The Specific Plan proposes a range of residential densities, including various sizes of single family detached lot and multi-family attached residential units. Up to 189 multi-family units are proposed which are anticipated to be below market rate (BMR) housing units.[5] These BMR units could also be constructed off-site if a more appropriate site was located, however, at this time there are no off-site locations identified.

An up to 600-student capacity elementary school site is also proposed within the 78-acre planned residential area along Cherry Street. The school will have vehicle access off of Cherry Street.

Park uses will also be located within the 78-acre area.

2.4.1.1 *Area 3 - Vehicle and Pedestrian Access*

Two vehicle entrances are planned to access the residential area and school, one off of Cherry Street (where a curb cut currently exists), and one off of Stevenson Blvd, approximately midway between Cherry Street and the existing industrial uses (also where an existing curb cut exists). By using these

[5] A Below-Market-Rate (BMR) housing unit is a unit that is priced to be affordable to households that are moderate income or below.

LEGEND

0' 400' 800'

- NC — NO CHANGE IN EXISTING GENERAL PLAN OR ZONING
- R — RESIDENTIAL
- R/G — RESIDENTIAL AND/OR GOLF COURSE
- G — GOLF COURSE OR RECREATIONAL
- TWO LANE ACCESS ROAD
- NEW TWO LANE BRIDGE
- NEW PED BRIDGE
- ACCESS POINT
- EVA/TRAIL
- ROTARY

PROPOSED LAND USE PLAN FIGURE 2.4-1

two entrances to Area 3, the existing 50-foot wide landscaped frontage along Cherry Street and the 30-foot wide landscaped frontage along Stevenson Blvd will remain intact.

The driveway located on Cherry Street includes installation of a new signal and will have two outbound lanes with a minimum eastbound left-turn storage of 100 feet (4 vehicles). The installation of a new signal at the Cherry Street access to Area 3 will also provide a crosswalk at the intersection.

A paved trail is planned adjacent to the Alameda County Flood Control and Water Conservation District (ACFC&WCD) property on the south side of the flood control channel. This trail will also connect to a proposed pedestrian bridge that will cross over the ACFC&WCD channel. This bridge will provide a connection to the Ohlone Community College and the George M. Silliman Recreation Complex.

2.4.1.2 *Area 3 – General Plan Amendment and Rezoning*

The existing City of Newark General Plan land use diagram shows the proposed Area 3 residential and school area designated *Special Industrial*. Special Industrial uses including a high-tech business park plan was approved by the City in 1989 for this 78-acre area. The existing zoning designation on the 78-acre property in Area 3 is *High Technology Park (MT-1)*.

The Specific Plan for the 78-acre area proposes to allow development of single-family residential, multi-family residential, and elementary school, as shown on the Land Use Plan, Figure 2.4-1. At the time of the approval of the Specific Plan, the existing General Plan designation in Sub-Area A would be amended to *Medium Density Residential*. Sub-Area A would also be rezoned to *Residential District R-6000 (*single-family detached) with a Planned Unit Development permit and conditional use permit. These permits will allow for greater flexibility for requirements such as lot size and setbacks. Tentative Maps consistent with the Specific Plan would be submitted to the City for approval at a later date.

The other portions of Area 3 (Sub-Area F), currently developed with the Silliman Center, fire station, Ohlone College, and industrial uses, would retain their existing General Plan designations of *Public-Institutional*, *Public Parks-Open Space*, and *Special Industrial*.

2.4.2 <u>Area 4</u>

Area 4 of the Specific Plan consists of 560 acres and is surrounded by Mowry Avenue, the Union Pacific railroad tracks, the City of Newark/City of Fremont city limits (generally Stevenson Boulevard), and Mowry Slough.

Planning for the development in Area 4 has been undertaken with the intent of avoiding and minimizing impacts to wetlands to the maximum extent practicable.

The Specific Plan land use plan for Area 4 includes up to 316 acres of potential development (refer to Figure 2.4-1). Development within the land use plan may include a golf course, single-family detached houses, and neighborhood parks. The Specific Plan divides the development envelope into three subareas. Sub-Area D located north of the ACFC&WCD drainage canal could only have golf course or other recreational uses, or open space, but no residential development. The central area (Sub-Area "C") could be developed with golf course or other recreational uses, and/or residential uses. The southern area (Sub-Area B) could be developed with residential uses, but no golf course.

The Specific Plan does not identify the exact location and configuration of residential lots, golf course, or other recreational uses, as that will be determined through subsequent entitlement processes and analyses. Consequently, the exact amount and location of wetlands which will be avoided/impacted by development, and the configuration of the remaining agricultural areas will be determined at the time of subdivision map approval. As mentioned above, residential, golf course or neighborhood park use development will only occur within the Specific Plan development areas, as shown in Figure 2.4-1, up to a maximum of 1,260 residential units.

Sub-Area E outside the development envelope could be utilized for wetland preservation, wetland creation/enhancement or remain unchanged (continue agricultural operation). Portions of Sub-Areas B, C, and D could also have areas that are not developed with residential or golf course uses that could be utilized for wetland preservation, wetland creation/enhancement or remain unchanged (continue agricultural operation).

Depending on future detailed development plans, implementation of the Specific Plan may result in filling (impacting) wetlands within the central residential/golf course plan area (Sub-Area C) and southern residential plan area (Sub-Area B). The quantity of filled wetlands could range from zero acres to approximately 86 acres. This EIR will evaluate the full range of potentially impacted/filled wetlands.

2.4.2.1 *Area 4 - Vehicular and Pedestrian Access*

The Specific Plan includes a public street extension of Stevenson Boulevard with a structural overpass over the Union Pacific railroad tracks to provide vehicular and pedestrian access to the Area 4 development. Details of the proposed Stevenson Boulevard overpass are described below in Section 2.4.4. On the north side of Area 4, an Emergency Vehicle Access (EVA) and pedestrian/bike trail from Mowry Avenue into Area 4 will be provided adjacent to the railroad tracks. Both the Stevenson Boulevard extension and the EVA will also provide pedestrian access connecting Area 4 and Area 3.

2.4.2.2 *Area 4 - Proposed General Plan Amendment and Rezoning*

Area 4 is designated by the City of Newark General Plan as *Low Density Residential*, with a requirement for preparation of a Specific Plan to guide development on Area 4, due to the complex conditions in this area including access, ownership, and environmental constraints. The existing zoning designations for Area 4 are predominantly *Agricultural (A)* with a small area of *General Industrial (MG)* adjacent to the termination of Stevenson Blvd. At the time of the Specific Plan approval, the existing General Plan designation in Sub-Areas B and C would be amended to *Medium Density Residential*. Sub-Areas B and C would also be rezoned to *Residential District R-6000 (*single-family detached) with a Planned Unit Development permit and conditional use permit. These permits will allow for greater flexibility for requirements such as lot size and setbacks and for the golf course in Sub-Area C. Tentative Maps consistent with the Specific Plan would be submitted to the City for approval at a later date.

Sub-Areas D and E would retain the existing General Plan designation of *Low Density Residential* and zoning designation of *Agricultural (A)*. A conditional use permit will also be issued to allow the construction of a golf course or another recreational use in Sub-Area D.

2.4.3 Golf Course

The Areas 3 and 4 Specific Plan proposes an 18-hole golf course in Area 4. The golf course would be located generally west of the Union Pacific railroad tracks and south of Mowry Avenue and could extend along the west side of the railroad tracks both north and south of the Alameda County Flood Control and Water Conservation District (ACFC&WCD) channel (refer to Figure 2.4-1). Access across the channel could be provided by the EVA roadway, which could also serve as a cart path bridge for the golf course.

Upon entry into the golf course area, there would be up to a 200-space parking lot, clubhouse, and driving range. The project proposes a 10,000 to 20,000 square foot golf course clubhouse, which will provide capacity for 150 to 220 people. The clubhouse restaurant and banquet facilities will provide seating for 100 to 144 persons, for golf tournament banquets and other events such as parties and wedding receptions.

The golf course would be open for play to the public seven days per week from sunrise to sundown. The golf course is expected to employ approximately 42 full-time equivalent employees.[6]

The golf course could include a driving range, which would be oriented so that golf balls will be hit away from entry roads and wetland areas. Poles and nets would also surround the driving range to limit errant balls.

A golf course maintenance area would be provided, which would include supplies, mowers and other equipment for maintaining the golf course. The maintenance building will require hazardous materials permits for oil and fuel storage and possibly chemical storage. The future operators or building contractors will prepare for and apply for those permits.

The maintenance areas could include onsite diesel and gasoline tanks. The diesel tank is expected to be 1,000 to 1,500 gallon capacity and the gas tank is expected to be 500 gallon capacity. Both tanks would be above ground in double lined tanks with sufficient bollards, break away nozzles, and proper signage. The diesel and gasoline will be used for the mowers, hand tools, maintenance carts, etc.

To the extent possible, the clubhouse and maintenance building will use recycled materials, alternative heating & energy sources, recycled water etc.

The golf course will maintain a fleet of 40 to 60 electric-powered golf carts that will be recharged on site with individual small trickle chargers. There are two options for golf cart storage, an independent outbuilding near the clubhouse, or underneath the clubhouse.

The proposed lighting for the golf course would include entrance lighting, lighting in the parking lot, lighting in and around the clubhouse area, and, if necessary, driving range lighting. The driving range could be lit for evening driving range practice. The lighting would consist of above ground lights at the tees and ground lighting out on the driving range itself. The project does not include tall poles with lights for illumination of the driving range.

[6] Full-time equivalent is used for comparative purposes between part-time and full-time employees.

2.4.3.1 *Golf Course Operations*

The golf course will include a computerized irrigation system connected to an on-site weather station that would limit watering to the exact needs of the course. The irrigation systems will be managed with a central computer and wireless devices capable of individual head control and pump station monitoring and operation. High-tech weather stations will monitor all site conditions and shut down the pump station in a rain event. The sprinkler head designs ensure a very even distribution of water, reducing runoff and station run times. The proposed golf course includes unmaintained native grasses in the outer roughs that require very little water and infrequent mowing. The sprinkler head location and precision will allow the golf course operator to define a hard edge for irrigated and non-irrigated areas.

The golf course will apply fertilizer to the maintained areas including the fairways, greens, and tees. Fertilizer is measured in pounds of nitrogen per 1,000 square feet and soil tests dictate the demand. Fairways typically require about two to three pounds fertilizer (nitrogen) annually. Greens and tees require approximately one pound per month during the growing season, so six to eight pounds annually. The tees will have a thinner profile of sand but will need a lot of re-growth for divot repair. For comparison, turf athletic fields typically use up to 10 pounds of fertilizer annually.

The proposed golf course will adopt the Audubon International Program for golf courses. The Audubon Cooperative Sanctuary Program for Golf Courses is an award winning education and certification program that helps golf courses protect the environment while preserving the natural heritage of the game of golf. The program will be involved from the design phase through the development and into the operations to ensure that the managers apply sustainable resource management practices in the long-term stewardship of the property. The proposed golf course design will follow Audubon International's very specific mandates for environmental responsibility throughout the development of the project. Based on a site specific report provided by Audubon International, a plan will be developed for the proposed golf course. By implementing and documenting environmental management practices, the golf course would be eligible for designation as a Certified Audubon Cooperative Sanctuary. A overview of their program's goals is as follows:

- *Environmental Planning*
  Each club generates a written plan outlining their goals and proposed projects. It provides a useful tool for clubs to monitor their progress in meeting their goals.
- *Wildlife and Habitat Management*
  Management of non-play areas is crucial to providing habitat for wildlife on the golf course. Emphasis is given toward maintaining the best possible habitat for the course considering its location, size, layout, and type of property.
- *Outreach and Education*
  Gain the support of golfers for an environmental program. Focus is placed upon generating public awareness through education. Recognition of tasks well done continually reinforces the worth of the program.
- *Chemical Use Reduction and Safety*
  A comprehensive and responsible program to control pests will ensure a healthy environment for both people and wildlife. Managing turf areas with environmental sensitivity requires educating workers and members about plant management, pesticide application, and use of fertilizers.
- *Water Conservation*
  Consumption of previous water resources remains an issue at most golf courses. Attention is

directed toward irrigation systems, recapturing, and reuse of water sources, maintenance practices, and turf grass selection.

- *Water Quality Management*
  Strategies are devised to monitor water quality, protect wetlands, reduce erosion, filter runoff, and, if warranted, improve conditions.

2.4.4 Areas 3 and 4 Street Standards and Improvements

2.4.4.1 *Stevenson Boulevard*

The Stevenson Boulevard bridge railroad overcrossing will be a two-lane roadway (12-foot wide lanes), with a six-foot median separating the two lanes of travel, and eight-foot wide bike lanes on both sides of the roadway. A five-foot wide sidewalk will be located on the north side of the bridge along with railing/fencing on both sides. The highest point of the bridge will be approximately 45.6 feet above the top of the UPRR tracks. This is measured to the top of the barrier-mounted safety railings. The bridge will provide a minimum of 24-feet clearance from the top of the rail tracks to the bottom of the bridge girder per Union Pacific guidelines. The bridge's piles will be driven outside the railroad right-of-way and not in conflict with the Union Sanitary District force main. Installation of these piles will require careful coordination with Union Pacific Corporation, PG&E, and Union Sanitary District during pile driving operations.

The bridge is designed to have a completely horizontal span set approximately 90 degrees perpendicular to the railroad right-of-way. The bridge will be a pre-stressed, precast concrete span with earthen approach ramps on both ends. The approach ramps will be graded to conform to the existing elevations on both sides with maximum side slopes of two to one (2:1) vertical to horizontal. If necessary, retaining walls may be used in portions of the embankments to meet grade requirements or other constraints depending on the final design.

The extension of Stevenson Boulevard into Area 4 up to its westerly termination is proposed as a two-lane arterial street. An 88-foot wide right-of-way is needed. A 14-foot wide landscape median with 12-foot wide travel lanes and 8-foot bike lanes will be provided along with continuation of a sidewalk and landscaping on each side of the street. The sidewalks on the south side will start at the base of the bridge into Area 4. The expanded bike lane width will provide sufficient area for disabled vehicles. Possible roundabout installations and deviations from standard street widths for bulb-outs and other traffic calming measures are subject to review by the City of Newark.

2.4.4.2 *Cherry Street*

The public street access to the proposed residential and school uses in Area 3 located off of Cherry Street includes installation of a new signal and will have two outbound lanes with a minimum eastbound left-turn storage of 100 feet (4 vehicles). The installation of a new signal at the Cherry Street access to Area 3 will also include a crosswalk at the intersection.

2.4.4.3 *Internal Areas 3 and 4 Streets*

All new local residential streets shall meet City of Newark standards for right-of-way (56 feet) and roadway (36 feet) widths. Collector streets in Area 3 will require widths of up to 64 feet for right-of-way and 44 feet for the roadway, subject to a complete analysis of site circulation requirements for the elementary school. Cul-de-sacs shall be provided with a minimum 45-foot curb line radius.

The Specific Plan also includes American Disability Act (ADA)-compliant sidewalks, wheelchair ramps, and street lighting along the project frontages and interior streets.

2.4.5 PG&E Towers and Lines

High voltage overhead transmission lines cross Area 4 on large towers within dedicated Pacific Gas and Electric (PG&E) easements. The maximum width of the easement area totals 255 feet with the closest towers set back from each easement edge 50 feet (western edge) and 90 feet (eastern edge). Two sets of lines are located within the easement, the "Dumbarton Newark 115 kilovolt (kV) Tower Line" and the "Newark/Tesla Ravenswood 230 kV Tower Line". The Dumbarton line is a single-circuit transmission line and the Newark/Tesla line is a double-circuit transmission line.

There is a 50-foot minimum clearance required between the top of the Stevenson Boulevard overcrossing deck and the power lines. Because the railroad overcrossing requires a minimum clearance height of 24 feet above the railroad tracks, the 50-foot minimum clearance will not be maintained with the proposed overcrossing. As a result, two PG&E towers require modification to raise the height of the transmission lines in the vicinity of the overcrossing (refer to Figure 2.4-2).

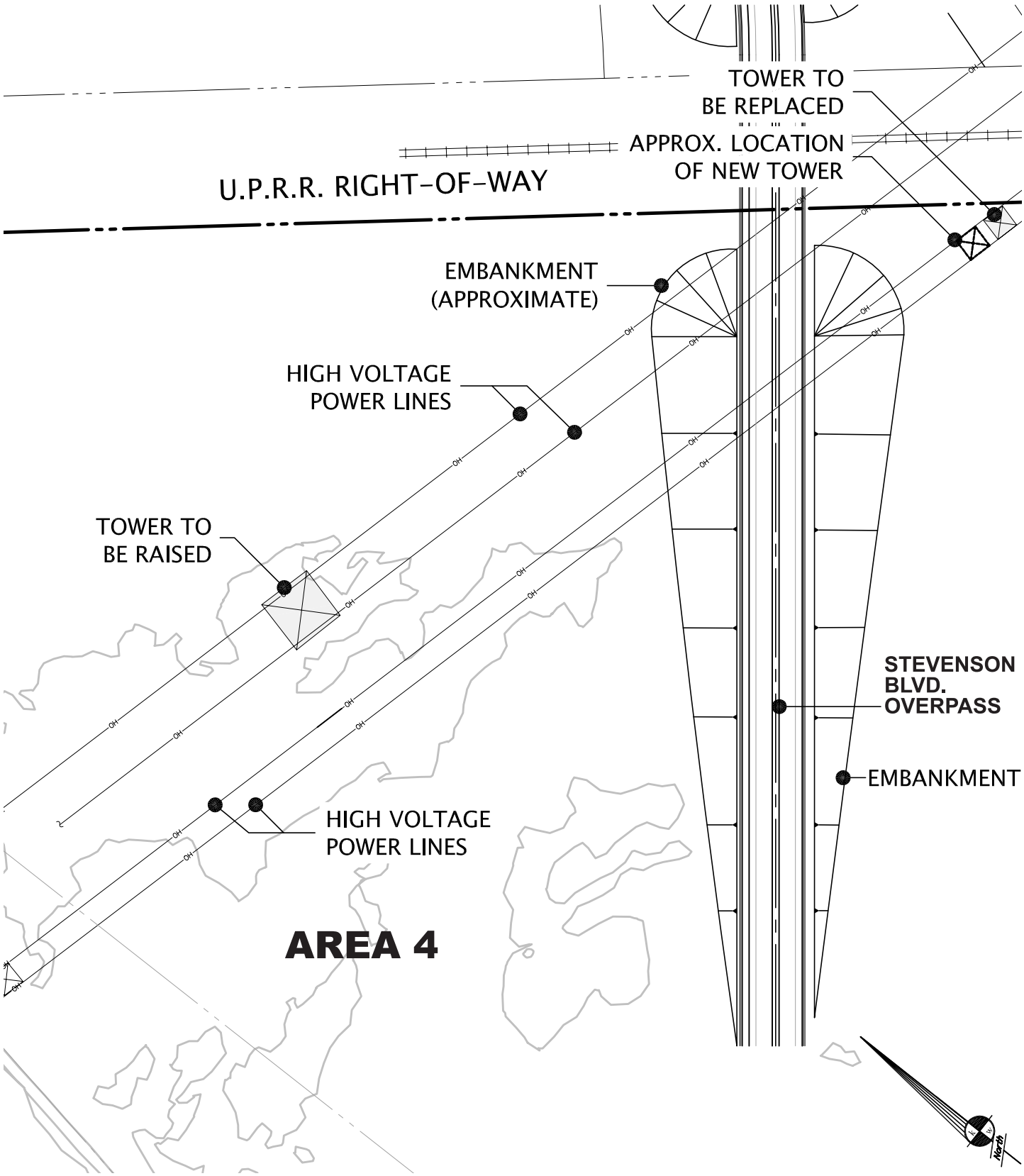
The 230 kV tower (Number 0/5) is 175 feet in height and will require a 20-foot height extension to raise the height of the transmission line to a sufficient height. The tower is proposed to be raised with a top cage extension which uses a helicopter for installation and, therefore, does not affect the ground at the base of the tower. In the event a vertical cage or waist cage is used, it would require crane access around the tower.

The 115 kV tower (Number 6/46) must to be moved out of the way of the Stevenson Boulevard railroad overpass, as well as needing to be taller to raise the height of the transmission line. The existing tower, 90 feet in height, will be replaced with a new tubular steel tower that is approximately 135 feet in height. The new tubular tower will be installed approximately 25 feet northwest of and in line with the existing tower location. The installation of the new tubular steel tower will require crane access to the proposed location.

Standard 21 kV distribution overhead lines are adjacent to the railroad track in Area 4. These overhead lines will be undergrounded as a part of the future development in Area 4.

2.4.6 Emergency Vehicle Access and Multi-Use Trail

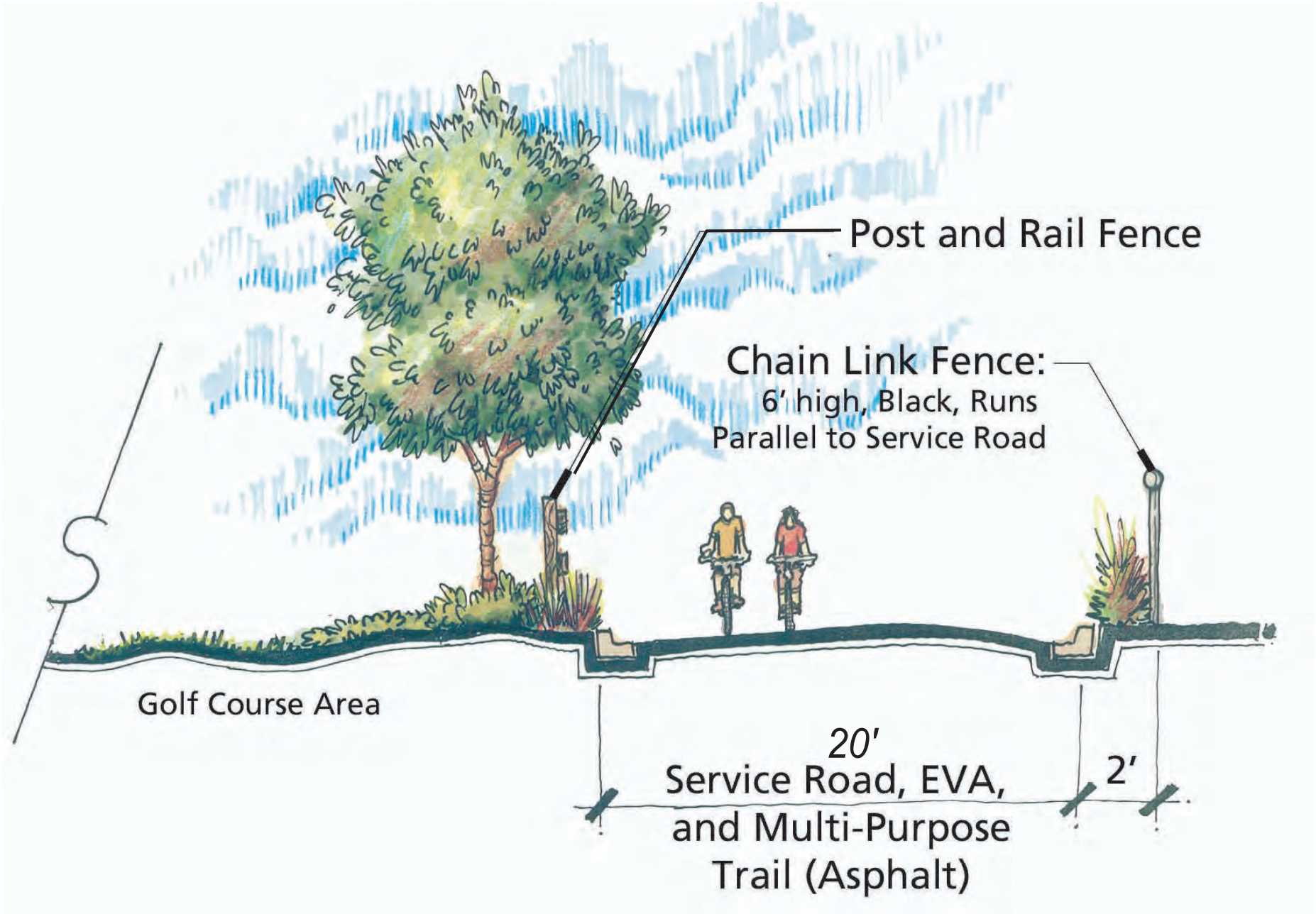
A combined emergency vehicle access (EVA) and pedestrian/bicycle trail is proposed across Area 4, with northerly EVA access to the site planned at Mowry Avenue just west of the railroad tracks. The access roadway will be locked and gated to allow only emergency vehicles; however, the gate will allow passage of pedestrians and bicycles. The EVA roadway/multi-use trail will be 20 feet wide. Along the east side of the trail, a six-foot chain-link fence will separate the trail from the railroad right-of way, and along the west side of the trail, a post and rail fence is proposed to separate the trail from the golf course (refer to Figure 2.4-3). This trail will connect to the trail proposed south of the ACFC&WCD channel on the proposed Area 3 residential property.



Source: Kier & Wright Inc.

STEVENSON BOULEVARD RAILROAD OVERCROSSING
AND PG&E TOWER MODIFICATIONS

FIGURE 2.4-2



EMERGENCY VEHICLE ACCESS ROADWAY AND PROPOSED TRAIL CROSS-SECTION FIGURE 2.4-3

2.4.7 Pedestrian Circulation

As mentioned above, in Area 3 a trail is planned adjacent and on the south side of the flood control channel. A new pedestrian bridge will provide a connection over the flood control channel between Ohlone College and the Silliman Recreation Complex. The existing sidewalks and mature landscaping that borders the Cherry Street, Mowry Avenue, and Stevenson Boulevard frontages of Area 3 will be retained with the project (refer to Figure 2.4-4).

On Stevenson Boulevard the existing sidewalks will connect to a new sidewalk on the proposed overcrossing. A sidewalk will be provided on the north side of the railroad overcrossing.

New pathways/sidewalks within Area 4 will connect with the existing pedestrian facilities to provide a complete pathway connection for Areas 3 and 4.

Although not proposed as part of this Specific Plan, the City of Newark and the City of Fremont are beginning the planning process for a Bay Trail along the segment of Mowry Slough adjacent to Area 4.

2.4.8 Grading and Imported Fill

Area 4 and portions of Area 3 will require fill to be imported onto the residential areas to raise them out of the designated 100-year floodplains.[7] The fill for Areas 3 and 4 is assumed to come from soil excavated from local major construction projects. The conceptual grading plan for Areas 3 and 4 is shown on Figure 2.4-5 and described below.

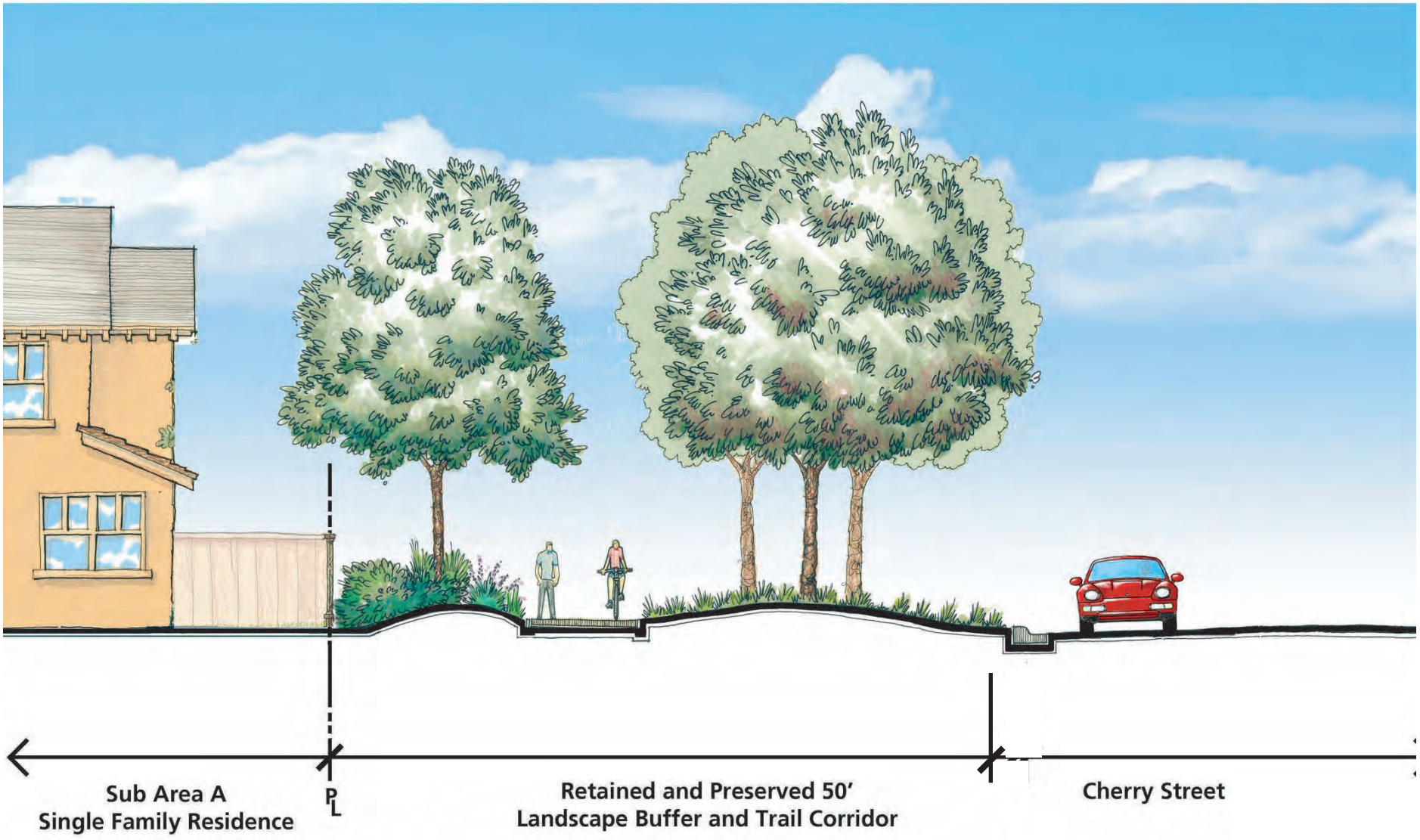
2.4.8.1 *Area 3*

The existing elevations on the 78-acre site in Area 3 (proposed elementary school and residential sites) range from approximately nine (9) to 20 feet above mean sea level.[8]

The Specific Plan proposes guidelines to grade the site so that the development areas will continue to drain toward the existing release locations on the property. The residential pads will be elevated in accordance with City code requirements which stipulate that all residential pads must be above a minimum elevation of 11.25 feet and all finish floor elevations must be a minimum of 6-inches above the pads. The existing dual 42-inch storm drain outfall into the ACFC&WCD channel at the northwest corner of the development will be used to discharge stormwater from Area 3. Area 3 grading may require up to approximately 56,000 cubic yards of fill. Proposed elevations will range from approximately 11 to 19 feet above mean sea level. The maximum cut depth will be approximately two feet and the maximum fill depth will be approximately 3.5 feet.

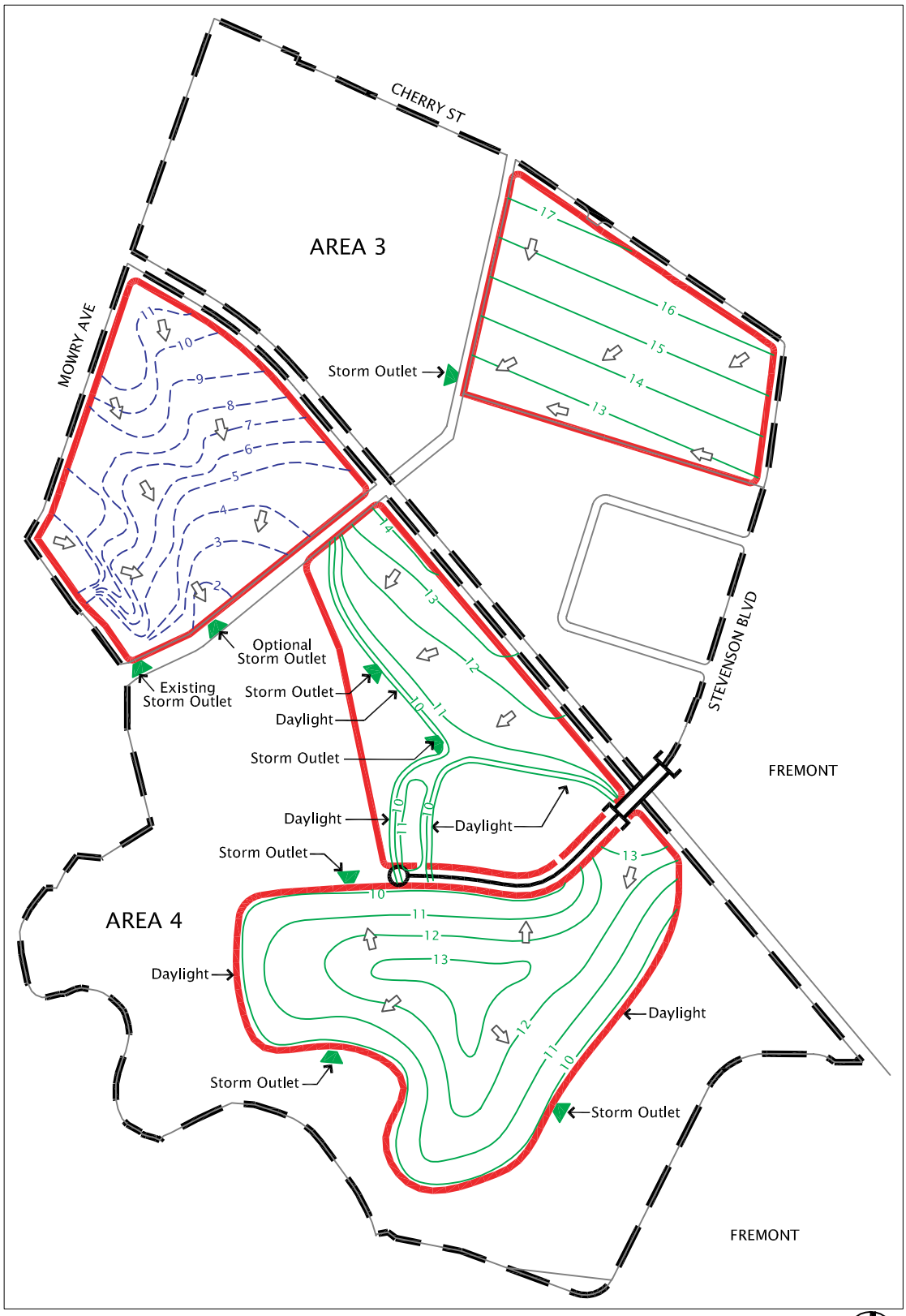
[7] City code requires the lowest top of curb elevation to be 10 feet above sea level. All residential pads must be above a minimum elevation of 11.25 feet and all finish floor elevations must be a minimum of 6-inches above the pads.

[8] "Mean sea level" means, for purposes of the National Flood Insurance Program, the National Geodetic Vertical Datum (NGVD) of 1929 or other datum, to which base flood elevations shown on a community's Flood Insurance Rate Map are referenced.



CHERRY STREET CROSS-SECTION

FIGURE 2.4-4



LEGEND:

- STORM OUTLET
- DIRECTION OF FLOW
- 4 EXISTING GROUND ELEVATIONS
- 4 FUTURE MINIMUM GROUND ELEVATIONS

NOTE: FUTURE MINIMUM ELEVATIONS SHOWN ARE BASED ON THE DEVELOPMENT OF THE RESIDENTIAL CONCEPTS WHERE ALLOWED WITHIN THIS SPECIFIC PLAN.

CONCEPTUAL GRADING PLAN

FIGURE 2.4-5

2.4.8.2 *Area 4*

The existing elevations for the Area 4 development area range from approximately zero to 16 feet above mean sea level. Depending on how much of Sub-Area C is developed with residential uses, Area 4 will require between 1.1 and 2.1 million cubic yards of fill. Proposed elevations for all residential development will range from approximately 10 to 14.5 feet above mean sea level. The maximum cut depth will be approximately one foot and the maximum fill depth will range from 14 to 15.5 feet. The proposed golf course elevations will remain between one and 16 feet above mean sea level. As mentioned above, it is assumed that the fill source would come from soil excavated from local major construction projects; however that does not limit the possibility that the some fill could be moved from higher elevated areas within the development envelope to lower elevation areas that require fill.

2.4.9 <u>Drainage Plan</u>

2.4.9.1 *Area 3*

The proposed development in Area 3 will be drained via new underground storm drain lines to the existing outfall to the ACFC&WCD channel, located at the northwest corner of the 78-acre property. This outfall was permitted with two 42-inch connections sized for the original industrial zoning designation. Due to the nature of proposed development containing significant open space and pervious areas, the anticipated stormwater runoff volume of Area 3 will be less than the previously anticipated industrial development's stormwater runoff. Therefore, the existing outfall would be more than adequate to serve the entire area's drainage needs. Should the volume of runoff for Area 3 be determined to be greater than the capacity of the existing outfall, various methods of water detention can be implemented to reduce the runoff to the pre-development outfall capacity. Dependent on the development layout for Area 3, storm drain pumps may be used to discharge the water to the outfall connection.

2.4.9.2 *Area 4*

All residential development within Area 4 will drain via new underground storm drain lines to various points along the perimeter of development envelope where outfalls will be constructed. The runoff will then discharge via natural drainage courses to the existing drainage pump and out to Mowry Slough. The golf course will also be designed to drain via underground mains to various points along the course including possible on-site water features. Residential development in Area 4 will be elevated between 10 to 14.5 feet above mean sea level, creating significant grade differential for gravity systems. Most of the golf course (area north of the ACFC&WCD channel) is already elevated above sea level; therefore, it is not anticipated that Area 4 will need a storm drain pump.

Both Area 3 and Area 4 storm drain system will be designed to be compliant with local and state stormwater treatment guidelines prior to discharge to a public system or wetland; therefore, no adverse impact would be created by polluted runoff into a public stormwater system. Refer to *Section 3.8 Hydrology, Drainage, and Water Quality* for a detailed discussion of the proposed stormwater quality control plan.

2.4.10 Infrastructure

2.4.10.1 *Water Service*

Water service in the City of Newark is provided by the Alameda County Water District (ACWD). The ACWD has jurisdiction of all water service laterals from their mains to the individual water meters. The City of Newark has jurisdiction over all water piping from the meter to all fixtures connected to water lines.

Area 3 potable water needs will be met via service from existing mains in the adjacent public streets, Cherry Street and Stevenson Boulevard. An existing 14-inch main in Cherry Street and continuing on Stevenson Boulevard would serve for connections to a new public water distribution system within public streets proposed in Area 3. This proposed water distribution system would be sized according to the ultimate build-out needs of the proposed Specific Plan development but can be estimated to be a standard 8-inch distribution service, which would be able to serve residential and fire service needs.

Area 4 residential potable water needs will be met via service from an existing 14-inch main in Cherry Street and Stevenson Boulevard. This would serve as a connection point to a new public water distribution system within the residential public streets proposed in Area 4. This proposed distribution system would be sized according to the ultimate build-out needs of the proposed Specific Plan, but can be estimated to be a standard 8-inch distribution service, which would be able to serve residential and fire service needs. Potable water needs for the golf course would be met via a connection to the new distribution network within the new public streets and/or via a connection to Mowry Avenue's existing water main. Depending on the ultimate design of the residential and golf course within Area 4, a loop system with connections to both Stevenson Boulevard and Mowry Avenue may be feasible.

Reclaimed water is not available at this time, but the Specific Plan includes provisions (installation of purple piping onsite) for use of reclaimed water on landscaping and the golf course when it becomes available. Prior to the availability of reclaimed water, the golf course would be irrigated with an existing on-site well.

The ACWD has prepared and the Board has approved a Water Supply Assessment that indicates sufficient supplies exist to meet the District's projected demands as well as the Areas 3 and 4 Specific Plan's demands under normal year conditions. During critically dry or multiple dry years, the ACWD service area may be facing water supply shortages. Because the Areas 3 and 4 Specific Plan's demands are already factored into the 2006-2010 Urban Water Management Plan (UWMP), the development of the Specific Plan will not result in increased shortages beyond those which are already factored into ACWD's planning under current and foreseeable conditions.

Due to future uncertainties related to climate change and reliability of ACWD's State Water Project allocations, the ACWD is faced with the potential for long-term reduction in supply.[9] The current Areas 3 and 4 Specific Plan's timeline has a buildout period of approximately eight years, which could conceivably be extended given the current housing and economic downturn. This only increases the exposure to uncertainties in water supply. For the reasons described above, the ACWD's final determination of the water supply sufficiency is based on the inclusion of water

[9] Refer to Appendix I for a detailed discussion of these uncertainties associated with water supplies.

efficiency measures in the Areas 3 and 4 Specific Plan. These measures are shown below and are included in the Areas 3 and 4 Specific Plan.

Water Conservation Standards

All residential and non-residential development with Areas 3 and 4 Specific Plan will be developed with the latest technology in water efficient plumbing fixtures and irrigation systems, including but not limited to the following:[10]

For Residential Development within Areas 3 and 4:

- High efficiency (1.3 gallons per flush or less) and dual flush toilets,
- High efficiency clothes washers with a water factor of six (6) or less,
- High efficiency dish washers,
- Water efficient bathroom and kitchen fixtures

For Commercial Development within Areas 3 and 4:

- High efficiency (1.3 gallons per flush or less) and dual flush toilets,
- High efficiency urinals (1/2 gallon per flush or less),
- High efficiency clothes washers with a water factor of six (6) or less,
- High efficiency dish washers, where feasible, sensor driven c-line, or rack conveyor machines that recycle final rinse water,
- Low flow pre-rinse spray nozzles,
- Air-cooled ice machines,
- Water efficient bathroom and kitchen fixtures (e.g. faucets with auto shut-off mechanisms)

For Golf Course and Landscape Development within Areas 3 and 4:

- Water efficient irrigation systems include weather-based irrigation-controllers, drip irrigation systems for non-turf areas and the installation of drought-tolerant landscaping in-lieu of irrigated turf, wherever possible.
- All decorative fountains shall recycle water. The latest water efficient technologies for commercial cart washing and cooling shall be used.
- Install a separate, non-potable distribution system (i.e. “purple pipe”) for the golf course and other non-residential landscape needs. This distribution system will, at a minimum, include a non-potable water transmission main extending through the site with at least two points of connection to Cherry Street (for connection with a future recycled water main) at the northern and southern limits of Area 3 frontage with Cherry Street. The on-site system will also include non-potable distribution mains extending to areas where recycled water could be used.

Water Efficient Landscape Ordinance

- The State of California Department of Water Resources is expected to formally amend Chapter 2.7 Model Water Efficient Landscape Ordinance, Sections 490 through 495 in Division 2, Title 23 of the California Code of Regulations. All local agencies will be required to adopt a similar ordinance by January 2010 to meet new water conservation standards related to landscape improvements. All landscape improvements in Areas 3 and 4 will be subject to these requirements.

[10] Many, if not most, of these technologies will be legal requirements under the pending Plumbing Code revisions expected in 2010.

2.4.10.2 *Sewer Service*

Wastewater service in the Specific Plan area is provided by the Union Sanitary District (USD). The USD has indicated that the Alvarado Treatment Plant has sufficient capacity to serve the Specific Plan proposed development.[11] The USD also indicated that the existing Cherry Street pump station was not designed to handle the increased discharge from the existing light industrial zoning designation of Area 3; therefore, the Specific Plan's discharge will be conveyed south to the existing 24-inch sewer main within Boyce Road, prior to being pumped from the Boyce Road Pump Station. In a meeting between the Specific Plan civil engineer and USD staff on November 17, 2008,[12] it was confirmed that no improvements or contributions to existing or future planned capital projects or pump stations were necessary for the proposed Areas 3 and 4 Specific Plan development.

Upon development of Area 3, new sewer mains will be constructed within the interior public residential streets with connection points into Cherry Street and Stevenson Boulevard. Both of these systems subsequently discharge to the Boyce Avenue Pump Station via a 21-inch to 24-inch gravity main within Boyce Road. USD has indicated that these sewer mains have sufficient capacity for development of both Area 3 and Area 4. Sanitary sewer pumps may be required in Area 3 to discharge the sewage to the public street connection.

Upon development of Area 4, a new pump station will be constructed and maintained within Area 4 to discharge wastewater generated by the residential and golf course developments. This station will pump water to a new sewer main within Stevenson Boulevard north to Cherry Street, prior to connection to the Boyce Road 24-inch sewer main. This pump station will be operated and maintained by an established maintenance district or homeowners association for any development within Area 4. The system will provide redundant dual pump facilities including backup generators, as required by USD for public use installations, and will be designed to function independently in case of overload or mechanical failure. The future design and layout of the Area 4 developments will determine the most feasible location for a pump facility depending on various factors including land space necessary, clearance from other public utilities, and easements.

The new sewer main within Stevenson Boulevard will either be constructed beneath the Union Pacific Railroad right-of-way or within the new bridge approaches and structural span. Further analysis will be done to study the most technically and economically feasible solution depending on various factors including, but not limited to, construction costs, Union Pacific permits and approvals, and design requirements.. Should the system be constructed beneath the railroad tracks it will need to be installed under careful design and supervision to ensure no adverse impact on the existing twin 33-inch force mains adjacent to the railroad right-of-way. This existing concrete mains are in delicate condition, with regard to its overall condition, pipe materials, and risk of damage. The Specific Plan developer will coordinate and monitor any construction around and over these force mains. Construction beneath the existing force main is not recommended from an engineering standpoint due to risks associated with differential settlement, maintenance issues of a siphon-system and other construction impact risks. In conclusion, both Areas 3 and 4 have various feasible solutions for wastewater discharge. Further design and analysis along with the continuous involvement of Union Sanitary District will determine the most appropriate solution given the future project-specific development plans.

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[11] Union Sanitary District, *Notice of Preparation of an EIR and Notice of Public Scoping Meeting – Newark Areas 3 & 4 Specific Plan Letter*, May 30, 2007.

[12] John Noori, Project Manager, Kier & Wright, Inc. and Al Bunyi, Union Sanitary District, meeting November 17, 2008.

2.5 PROJECT OBJECTIVES

The primary objective of the Areas 3 and 4 Specific Plan is to provide low density residential, a golf course, and/or recreational facilities, and land for a school for the current and future residents of Newark. Specific project objectives include the following:

- Through a General Plan amendment allow residential uses;
- Provide up to 1,260 units of low density residential uses (4.2 – 8.5 units per acre) in Areas 3 and 4;
- Provide high quality residential uses including a mix of executive housing types;
- Provide up to 189 below market rate housing units that are within the 1,260 total residential units;
- Provide land for an up to 600-student elementary school in Area 3 to serve both the Specific Plan development and neighboring residential
- Provide vehicle access to Area 4 via a railroad overcrossing at Stevenson Boulevard;
- Provide and contribute toward community recreational facilities;
- Provide land for a golf course available to the public.
- If a golf course is found unfeasible, then another recreation use that is acceptable to the City shall be provided as a condition of development.

3.0 ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION

IMPACT AND MITIGATION DISCUSSION ORGANIZATION

In the following sections, each impact is numbered using an alpha-numerical system that identifies the environmental issue. For example, **Impact HAZ – 1** denotes the first significant impact in the hazards and hazardous materials section. Mitigation measures are also numbered to correspond to the impacts they address. For example, **MM NOI – 2.3** refers to the third mitigation measure for the second significant impact in the noise section.

3.1 LAND USE

3.1.1 <u>On-Site Land Uses</u>

3.1.1.1 *Area 3*

Area 3 of the Specific Plan consists of approximately 300 acres and is bounded by Mowry Avenue, Cherry Street, Stevenson Boulevard, and the Union Pacific railroad tracks. Much of Area 3 is already developed with uses that will remain under the proposed Areas 3 and 4 Specific Plan. The Newark Fire Department Station No. 3 and firefighter-training tower is located at the southwest corner of Mowry Avenue and Cherry Street. Adjacent to the fire station on Mowry Avenue is the George M. Silliman Recreation Complex, a 30-acre complex that includes an indoor swim center, athletic play fields, and a large community recreation facility (refer to Photo 1). South of the fire station on Cherry Street is a vacant office/light industrial building and the newly developed Ohlone Community College, Newark Center for Health Sciences and Technology, which includes a 135,000 square foot two-story building, landscaping, surface parking lots, and a wetland preservation area on an 81-acre property. The remainder of the Area 3 Cherry Street frontage and a portion of the Stevenson Boulevard frontage comprises 78 acres of vacant land that is frequently dry farmed (refer to Photo 3). West of the undeveloped land on Stevenson Boulevard is a modern industrial office park including 13 two-story buildings and surface parking lots. The vacant land and the industrial office park is separated from the Ohlone College Newark campus by a Alameda County Water District flood control channel. The Union Pacific Railroad right-of-way, with two parallel tracks, extends in a generally north-south direction and forms the western boundary of Area 3.

3.1.1.2 *Area 4*

Area 4 of the Specific Plan consists of approximately 560 acres and is bounded by Mowry Avenue, the Union Pacific railroad tracks, the City of Newark/City of Fremont city limits, and Mowry Slough. The current land uses within Area 4 include several auto dismantlers along the west end of Mowry Avenue, agricultural land, wetlands, and a single-family house and barn at the west end of Stevenson Boulevard (refer to Photos 5 and 6).

High voltage overhead transmission lines cross Area 4 on large towers within dedicated Pacific Gas and Electric (PG&E) easements. The maximum width of the easement area totals 255 feet with the closest towers set back from each easement edge 50 feet (western edge) and 90 feet (eastern edge). Two sets of lines exist, the “Dumbarton Newark 115 kilovolt (kV) Tower Line” and the

"Newark/Tesla Ravenswood 230 kV Tower Line". The Dumbarton line is a single-circuit transmission line and the Newark/Tesla line is a double-circuit transmission line.

Standard 21 kV distribution overhead lines are adjacent to the railroad track in Area 4.

The southern and western portions of Area 4 were included in the approved 1990 Refuge Boundary Expansion area of Don Edwards San Francisco Bay National Wildlife Refuge, indicating that these lands were potentially to be included in the Refuge.

3.1.2 Surrounding Land Uses

Land uses surrounding the Areas 3 and 4 Specific Plan include salt ponds and industrial uses to the north, residential uses and Newark Memorial High School to the east, industrial uses and undeveloped land to the south, and undeveloped wetlands to the west.

The Tri-Cities Recycling and Disposal Facility (TCRDF) is located on the west side of the UPRR railroad tracks, south of Area 4. An ACFC&WCD channel separates Area 4 from the TCRDF. Since June 2007, the TCRDF has been closed to the public. The TCRDF is expected to reach capacity and no longer accept landfill waste from the Fremont Transfer Station in mid-2009. While the concrete recycling facility and corporation yard will continue to operate post-closure of the landfill, no additional waste deposits will occur on the top and sides of the landfill. Post-closure, the entire landfill will be capped. The post-closure use of the 115-acre landfill area is private, non-irrigated open space with no public access.[13]

Located west and south of Area 4 is the Don Edwards San Francisco Bay National Wildlife Refuge. Founded in 1974, the Refuge consists of over 30,000 acres of open bay, salt pond, salt marsh, mudflat, upland and vernal pool habitats located in the south San Francisco Bay area, from Redwood City to Fremont. Most of the wetlands are salt ponds managed by Cargill Salt. The Don Edwards San Francisco Bay National Wildlife Refuge is part of a complex of six other wildlife refuges in the San Francisco Bay Area administered by the U.S. Fish and Wildlife Service. The refuge provides critical habitat for endangered species, habitat for shorebirds and waterfowl along the Pacific Flyway, and opportunities for public use of the baylands. The southern and western portions of Area 4 were included in the approved 1990 Refuge Boundary Expansion area of Don Edwards San Francisco Bay National Wildlife Refuge, indicating that these lands were potentially to be included in the Refuge.

3.1.2.1 *San Francisco Bay Trail*

The Bay Trail is a planned regional hiking and bicycling trail around the perimeter of the San Francisco and San Pablo Bays.[14] The *Bay Trail Plan*, adopted by ABAG in July 1989, includes a proposed alignment, a set of policies to guide the future development of routes, and strategies for implementation and financing. Of the 500 miles planned, approximately 290 miles of the trail have been constructed to date.

[13] City of Fremont, *Tri-Cities Recycling and Disposal Facility (TCRDF) Landfill Closure and Land Use Plan Final Environmental Impact Report*, August 2007.
[14] ABAG. 1989. *The Bay Trail Planning for a Recreational Ring Around San Francisco Bay*. San Francisco Bay Trail Project. Reprinted March 2001.

The current Bay Trail through the City of Newark is aligned along Cherry Street and the identified "proposed" alignment is along the Union Pacific Railroad tracks.[15] The Cities of Newark and Fremont have applied for a San Francisco Bay Trail grant for community planning efforts in the two cities to plan for a realignment of the Bay Trail as a part of the Newark Area 2 and 4 planning efforts, Fremont's landfill closure, and other developments. The cities are seeking to assess alternative alignments, consider connection points, and coordinate with property owners.

3.1.3 Regulatory Overview

In conformance with Section 15125(d) of the CEQA Guidelines, the following section discusses the consistency of the project with the relevant plans and policies. Additional subject specific plans and policies are discussed in the respective sections.

3.1.3.1 *Newark General Plan*

The Newark General Plan is a general statement of the goals, policies, and programs that will guide future growth and change within the City. Although, the plan is long range, it also includes provisions necessary to guide decisions that will be needed in both the short and mid-term.

The General Plan includes conditions in six general plan study areas with the most significant potential for change. Of these six study areas, the subject site evaluated in this EIR is considered Area 3 and Area 4 in the General Plan.

Currently, Area 3 has a General Plan designation of *Public-Institutional*, *Public Parks-Open Space*, and *Special Industrial*. Area 4 has a General Plan land use designation of *Low-Density Residential* (4.2-8.5 units per acre). Planned uses include low-density housing, a golf course and open space. The General Plan calls for a Specific Plan to be prepared as a detailed guide to development of the area.

Land Use Goals and Policies

G***OAL 1.***	Maintain a desirable quality of life in the community through preservation of a small town, neighborhood atmosphere and the promotion of balanced land use.
Policy a. Program 3:	Develop additional executive housing so that a range of housing types will be available and so that residents will have the opportunity to find "move-up" housing within the City.
GOAL 2.	Promote high quality development that established the City's character as distinctive from that of the other cities in the Bay Area.
Policy a. Program 3:	Utilize the City's median and street tree policies to assure high quality improvements in the streetscape with particular emphasis at the city gateways.
Policy a. Program 4:	Landscape along major arterials and at the major entrances.

[15] ABAG. San Francisco Bay Trail Plan. Bay Trail Map. http://baytrail.abag.ca.gov/map.html, July 1999.

Policy b. Program 5: Assure that new multi-family projects have adequate landscaping, off-street parking, recreational facilities, and provisions for management and maintenance.

Policy d. Program 10: Utilize the City's development regulations and design review procedures to reduce potential light and glare impacts to non-significant levels. Design review procedures should include the following:

- Use of low pressure sodium lights where security needs permit;
- Restricting height of exterior lighting fixtures to minimize light spill;
- Directing exterior lighting on-site to minimize spill-over;
- Shielding for exterior lights;
- Minimizing use of highly reflective exterior building materials;
- Restricting hours of non-security exterior lighting for commercial, industrial, and institutional uses.

Transportation Goals and Policies

GOAL 1. Provide for a quality environment with smooth, convenient, and safe vehicular travel throughout Newark.

Policy c. Program 5: To the extent that can reasonably be accomplished in conformity with the other objectives of this plan, require that LOS "C" be maintained on the existing street system. This program is established with the understanding that in some instances the City may determine that a condition approaching LOS "D" will be acceptable if appropriate mitigation measures are identified and/or other objectives of this plan can be achieved (e.g., development of needed community serving recreational facilities in conjunction with new residential development west of the railroad track between Mowry Avenue and Stevenson Boulevard, i.e., Area 4).

Policy e. Program 9: Install railroad grade separations where necessary to facilitate emergency vehicle response.

Policy f. Program 10: Install interconnected signal systems on major arterials where practical and beneficial, including Stevenson Boulevard, Cherry Street, Thornton Avenue, Cedar Boulevard, Mowry Avenue, and Newark Boulevard

Policy d: Assure safe and convenient pedestrian access to and through new private developments.

Policy d. Program 7: Work with private developers through the development review process to assure adequate pedestrian access.

Housing Goals and Policies

GOAL 1. Provide housing opportunities for households with a wide range of incomes and special housing needs.

Policy a: Continue to provide for affordable housing through flexible application of subdivision and zoning standards.

Policy a. Program 2. Require new parks to be provided to serve new development.

Policy d: Seek development of housing designed for and affordable to Newark's elderly residents.

Open Space and Conservation Goals and Policies

GOAL 1.	Encourage the conservation and preservation of unique open space and conservation resources that help to define the quality and character of the City.
Policy a. Program 2:	Require new parks to be provided to serve new development.
Policy a. Program 5:	Preserve and enhance open space qualities of the major Gateways, Pathways, and Nodes, as defined in this general plan. Establish special design guidelines, including pedestrian facilities as appropriate, and project review processes for any development, landscaping, signage, etc., in these areas that preserve the feeling of openness and, as possible, enhance the identity of Newark as a special place in the region.
Policy b. Program 10:	Evaluate every land development proposal for potential contributions to the Newark open space system. Identified unique open space, vegetation, animal habitat, or natural resource areas should be protected where possible and appropriate.
Policy b. Program 11:	Avoid development of any lands identified as having natural hazards where potential risk cannot be reduced to acceptable levels through mitigation measures (e.g., flood hazard areas, lands with severe potential for earthquake shaking, liquefaction, etc.).
GOAL 2.	Acknowledge the San Francisco Bay National Wildlife Refuge acquisition, and its value as a community resource.
Policy a:	Support actions to preserve and maintain the lands of the San Francisco Bay National Wildlife Refuge (SFBNWR).
GOAL 4.	Maximize Newark's opportunities for energy-efficiency.
Policy a.	Encourage development and use of alternative energy sources such as solar energy.
Policy c.	Consider greater energy-efficiency opportunities in building design and land development practices.
GOAL 5.	Conserve and Enhance the City's Water Resources and protect development from the impacts of identified flood hazards.
Policy b. Program 2:	Support water conservation practices in all existing developments through use of devices such as water restrictors, low water volume fixtures, etc.

Community Services and Facilities Goals and Policies

GOAL 3.	Obtain the assistance of other public agencies and private organizations in providing community facilities and services.
Policy c:	Encourage the Newark Unified School District to consider community needs in planning for new school sites.

Policy c. Program 2: Work with the school district to seek out, and to designate, if possible, sites adequate for a combination school and neighborhood park, when new schools are needed.

Environmental Safety Goals and Policies

GOAL 1. Provide a quality environment in which it is safe for people to live, work, shop, and play.

Policy a. Program 1: Require that new residential development, including all new dwellings, streets and other surface improvements, be constructed above the 100-year flood zone elevation.

Policy a. Program 2: Require that new industrial, commercial, and other non-residential buildings be flood-proofed, or constructed on pads elevated above the 100-year flood zone.

Policy a. Program 3: Prohibit development in any area where it is determined that the potential risk from natural hazards cannot be mitigated to acceptable levels.

Policy a. Program 4: Monitor information about the "greenhouse effect" and the possible resulting rising sea level and, when determined necessary, take or support actions to protect the Newark community from potential adverse impacts of such phenomenon.

Policy b. Program 7: Work with the railroad to upgrade equipment and facilities and improve maintenance of existing railroad grade crossings so that these crossings are as safe as possible.

3.1.3.2 *Zoning District*

The existing zoning designations in Area 3 are primarily *Industrial Technology Park (MT)* and *High-technology Park (MT-1)* with *Open Space/Park (O-P)* in the Northwest portion. The existing zoning designation for Area 4 are predominantly *Agricultural (A)* with a small area of *General Industrial (MG)* adjacent to the termination of Stevenson Blvd.

3.1.4 <u>Land Use Impacts</u>

3.1.4.1 *Thresholds of Significance*

For the purposes of this EIR, based upon Appendix G of the CEQA Guidelines, a land use impact is considered significant if the project will:

- physically divide an established community; or
- conflict with any applicable habitat conservation plan or natural community conservation plan; or
- conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; or
- convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resource Agency, to non-agricultural use; or

- conflict with existing zoning for agricultural use, or a Williamson Act contract

3.1.4.2 *Conflicts with Established Communities and Conservation Plans*

There are no habitat conservation plans or natural community conservation plans applicable to the proposed Specific Plan. The proposed Specific Plan is at the edge of the developable area within the City of Newark. There are no established communities that would divided by development within Areas 3 and 4.

The proposed Specific Plan would not physically divide an established community; nor would it conflict with any applicable habitat conservation plan or natural community conservation plan. **(No Impact)**

3.1.4.3 *Consistency with Plans and Policies*

City of Newark General Plan

Neither consistency nor lack of consistency with a policy of the General Plan would, in and of itself, result in a direct or reasonably foreseeable indirect adverse physical effect on the environment. The City Council, in deciding whether to approve the proposed Specific Plan, and other necessary discretionary actions, must decide whether, on balance, the project is consistent with the General Plan. The follow discussion generally describes the overall consistency with the General Plan goals and policies. Table 3.1-1 lists each applicable goal and policy and the respective consistency with the proposed Specific Plan.

The proposed Specific Plan would be consistent with the General Plan goals and policies related to development in the project area. The Specific Plan proposes to provide high quality residential including a mix of executive housing types as recommended in the General Plan. The existing General Plan designation in Sub-Areas A-C would be amended to *Medium Density Residential*. The other portions of Areas 3 and 4 (Sub-Areas D - F) would retain their existing General Plan designations of *Low Density Residential*, *Public-Institutional*, *Public Parks-Open Space*, and *Special Industrial*.

The Specific Plan proposes to preserve and retain the existing landscape pathways that surround Area 3. All new internal streets and the extension of Stevenson Boulevard will utilize the City's median and street tree policies throughout Areas 3 and 4 that will include adding the median and meandering sidewalks to the Stevenson extension.

A grade separation structure is planned at the Stevenson Boulevard railroad crossing as the primary route for vehicle access to Area 4. In addition, an emergency vehicle access (EVA) roadway is planned at Mowry Avenue just south of the railroad tracks at the proposed golf course area. The access roadway will be locked and gated to allow only emergency vehicles; however, the gate will allow passage of pedestrians and bicycles. The EVA roadway/multi-use trail will have a six-foot chain-link fence on the north side of the roadway adjacent to the railroad right-of way and south side of the EVA will have a post and rail fence that will separate the EVA roadway from the golf course.

As discussed in the project description, two high-voltage power line towers in Area 4 require modification to raise the elevation of the transmissions lines in the vicinity of the new Stevenson

Boulevard bridge crossing. One tower requires an 20-foot height extension and one tower requires removal and replacement with a taller tower 25 feet northwest of and in line with the existing tower

Table 3.1-1:
Consistency with Newark General Plan Goals and Policies

Goals and Policies	Consistency
Land Use Goals and Policies	
G*OAL 1.* *Policy a. Program 3*	The Specific Plan proposes to provide high quality residential including a mix of executive housing types. The Specific Plan is consistent with this policy.
GOAL 2. *Policy a. Program 3*	The Specific Plan proposes to preserve and retain the existing landscape pathways that surround Area 3. All new internal streets and the extension of Stevenson Boulevard will utilize the City's median and street tree policies throughout Areas 3 and 4 that will include adding the median and meandering sidewalks to the Stevenson extension. The Specific Plan is consistent with this policy.
Policy a. Program 4	All existing landscaping along Mowry Avenue, Cherry Street, and Stevenson Boulevard will be preserved as part of the project. New landscaping is also proposed along the Stevenson extension into Area 4. the Specific Plan includes landscape guidelines to ensure complies with this policy. The Specific Plan is consistent with this policy.
Policy b. Program 5	Multi-family housing including the BMR housing is proposed adjacent to new park uses and will be designed to ensure compliance with this policy.
Policy d. Program 10	The City's light and glare regulations have been incorporated in the Specific Plan to avoid any lighting and glare impacts. The Specific Plan is consistent with this policy.
Transportation Goals and Policies	
GOAL 1. *Policy c. Program 5*	A Transportation Impact Analysis was prepared in accordance with City requirements for the Specific Plan project. This analysis determined that the Cherry Street and Mowry Avenue intersection would degrade from LOS C to LOS D during the AM peak hour under project conditions. Mitigation measures have been proposed that would allow the intersection to operate at LOS C during the AM peak hour. The Specific Plan is consistent with this policy.
Policy e. Program 9	A grade separation structure is planned at the Stevenson Boulevard railroad crossing as the primary route for emergency vehicle access to Area 4. In addition, an emergency vehicle access (EVA) is planned at Mowry Avenue just south of the railroad tracks at the proposed golf course. The access roadway will be locked and gated to allow only emergency vehicles; however, the gate will allow passage of pedestrians and bicycles. The EVA roadway/multi-use trail will have a six-foot chain-link fence on the north side of the roadway adjacent to the railroad right-of way and south side of the EVA will have a post and rail fence that will separate the EVA roadway from the golf course. The Specific Plan is consistent with this policy.
Policy f. Program 10	Traffic signal interconnect infrastructure will be installed on the Cherry Street frontage concurrent with development. Activation of the interconnect system will be evaluated by the City. The Specific Plan is consistent with this policy.

Policy d. Program 7	New pathways/sidewalks within Area 4 will connect with the existing pedestrian facilities to provide a complete loop connecting Areas 3 and 4. The Specific Plan is consistent with this policy.
Housing Goals and Policies	
GOAL 1. Policy a	The Specific Plan includes BMR housing units within Area 3. The Specific Plan is consistent with this policy.
Policy a. Program 2	The Specific Plan proposes to preserve and retain the existing landscaped pathways that surround Area 3. New pathways/sidewalks within Area 4 will connect with the existing pedestrian facilities to provide a complete loop connecting Areas 3 and 4. The Specific Plan is consistent with this policy.
Policy d	The Specific Plan includes BMR housing units which could be utilized by Newark's elderly residents. The Specific Plan is consistent with this policy.
Open Space and Conservation Goals and Policies	
GOAL 1. *Policy a. Program 2*	The Specific Plan proposes park and recreational facilities including a golf course and preserved open spaces within Area 4. The City of Newark has an adopted Parkland Dedication Ordinance, which requires that new residential development either dedicate sufficient space to serve new residents, or pay fees calculated to offset the increased costs of providing new park facilities for new development. Development within the Specific Plan would meet the requirements for parkland dedication ordinance on-site. The Specific Plan is consistent with this policy.
Policy a. Program 5	The Specific Plan proposes to preserve and retain the existing Major Pathways that surround Area 3. New pathways/sidewalks within Area 4 will connect with the existing pedestrian facilities to provide a complete loop connecting Areas 3 and 4. The Specific Plan is consistent with this policy.
Policy b. Program 10	As part of the Specific Plan, a minimum 236.2 acres of Area 4 will remain open space including enhancement of special status species habitat within this area.
Policy b. Program 11	All development within the Specific Plan will comply with the City of Newark Municipal Code 15.40.051, Standards of Construction, which requires new construction and substantial improvement of any structure shall have the lowest floor, including basement, elevated to or above the base flood elevation. Residential structures shall be elevated to or above the base flood elevation or to a minimum of six inches above the building pad which shall be at a minimum elevation of 11.25 feet on the National Geodetic Vertical Datum (NGVD), whichever affords the greater degree of flood damage protection. For the Specific Plan site, this means that building pads of residential structures must be at 11.25 feet above mean sea level with the finished floor a minimum of six inches above the building pad (i.e. at 11.75 feet above mean sea level).
GOAL 2. Policy a	The Specific Plan will not conflict with the preservation of the SFBNWR lands. The City of Newark will work with public entities in possible future acquisition of undeveloped portions of Area 4. The Specific Plan is consistent with this policy.
GOAL 4. Policy a.	As described in the project description the Specific Plan project has incorporated Water Conservation Standards into future project design and all residential subdivisions and new commercial buildings within the Specific Plan shall incorporate as many green practices as appropriate and feasible in buildings and structures constructed subject to approval of the City of

	Newark. All public landscaping areas within the Specific Plan shall follow the City of Newark's Bay Friendly Landscape Guide and future homeowners associations or similar entity shall be encouraged to incorporate as many bay friendly landscape practices as appropriate and feasible. These specific features will be consistent with this goal.
Policy c.	The Specific Plan will utilize local and regional building material in order to reduce energy consumption associated with transporting materials over long distances, as well as reduce equipment and vehicle idle times during construction. These specific features will be consistent with this goal.
GOAL 5. *Policy b. Program 2*	The Specific Plan has included water conservation and efficiency measures as requested by the ACWD to conserve water resources. The Specific Plan is consistent with this policy.
Community Services and Facilities Goals and Policies	
GOAL 3. *Policy c Program 2*	An eight-acre site has been provided for the Newark Unified School District to develop a new elementary school site. A three-acre park is planned adjacent to the school location. The Specific Plan is consistent with this policy.
Environmental Safety Goals and Policies	
GOAL 1. *Policy a. Program 1*	All residential development within the Specific Plan will comply with the City of Newark Municipal Code 15.40.051, Standards of Construction, which requires new construction and substantial improvement of any structure shall have the lowest floor, including basement, elevated to or above the base flood elevation. Residential structures shall be elevated to or above the base flood elevation or to a minimum of six inches above the building pad which shall be at a minimum elevation of 11.25 feet on the National Geodetic Vertical Datum (NGVD), whichever affords the greater degree of flood damage protection. For the Specific Plan site, this means that building pads of residential structures must be at 11.25 feet above mean sea level with the finished floor a minimum of six inches above the building pad (i.e. at 11.75 feet above mean sea level).
Policy a. Program 2	All commercial buildings associated with the proposed golf course will also meet the City of Newark Municipal Code requirements and will be elevated above base flood elevations where required. The Specific Plan is consistent with this policy.
Policy a. Program 3	All natural hazards associated with development on the project site have been mitigated to less than significant levels. The Specific Plan is consistent with this policy.
Policy a. Program 4	The Specific Plan project impacts associated with sea level rise and global climate change are discussed in detail in *Section 4.4* of this document.
Policy b. Program 7	A grade separation structure is planned at the Stevenson Boulevard railroad crossing as the primary route for emergency vehicle access to Area 4. In addition, an emergency vehicle access (EVA) is planned at Mowry Avenue just south of the railroad tracks at the proposed golf course. The access roadway will be locked and gated to allow only emergency vehicles; however, the gate will allow passage of pedestrians and bicycles. The EVA roadway/multi-use trail will have a six-foot chain-link fence on the north side of the roadway adjacent to the railroad right-of way and south side of the EVA will have a post and rail fence that will separate the EVA roadway from the golf course.

location. These modifications would not conflict General Plan goals and policies nor would it result in any land use conflicts.

All development within the Specific Plan will comply with the City of Newark Municipal Code 15.40.051, Standards of Construction, which requires new construction and substantial improvement of any structure shall have the lowest floor, including basement, elevated to or above the base flood elevation. Residential structures shall be elevated to or above the base flood elevation or to a minimum of six inches above the building pad which shall be at a minimum elevation of 11.25 feet on the National Geodetic Vertical Datum (NGVD), whichever affords the greater degree of flood damage protection. For the Specific Plan site, this means that building pads of residential structures must be at 11.25 feet above mean sea level with the finished floor a minimum of six inches above the building pad (i.e. at 11.75 feet above mean sea level).

Finally, as described in the project description, the Specific Plan project has incorporated Water Conservation Standards into future project design and all residential subdivisions and new commercial buildings within the Specific Plan shall incorporate as many green practices as appropriate and feasible in buildings and structures constructed. All public landscaping areas within the Specific Plan shall follow the City of Newark's Bay Friendly Landscape Guide and future homeowners associations or similar entity shall be encouraged to incorporate as many bay friendly landscape practices as appropriate and feasible.

These above specific features will be consistent with the General Plan goals and policies. **(Less than Significant Impact)**

Zoning District

The existing zoning designation on the 78-acre property (Sub-Area A) in Area 3 is *High Technology Park (MT-1)*. The existing zoning designations for Area 4 are predominantly *Agricultural (A)* with a small area of *General Industrial (MG)* adjacent to the termination of Stevenson Blvd. If the City Council approves the Specific Plan, it would rezone Sub-Areas A - C to *Residential (R)*. A conditional use permit must be obtained to allow the construction of a golf course or another recreational use within Sub-Areas C or D. At the time final design is completed, Tentative Maps would be submitted to the City for approval. Sub-Areas D, E, and F would retain their existing zoning designations. These above specific features will be consistent with the Zoning Code. **(Less than Significant Impact)**

San Francisco Bay Trail

The Bay Trail is a planned regional hiking and bicycling trail around the perimeter of the San Francisco and San Pablo Bays.[16] The *Bay Trail Plan*, adopted by ABAG in July 1989, includes a proposed alignment, a set of policies to guide the future development of routes, and strategies for implementation and financing. Of the 500 miles planned, approximately 290 miles of the trail have been constructed to date.

[16] ABAG. 1989. *The Bay Trail Planning for a Recreational Ring Around San Francisco Bay*. San Francisco Bay Trail Project. Reprinted March 2001.

The current Bay Trail through the City of Newark is aligned along Cherry Street and the identified "proposed" alignment is along the Union Pacific Railroad tracks.[17] The Cities of Newark and Fremont have applied for a San Francisco Bay Trail grant for community planning efforts in the two cities to plan for a realignment of the Bay Trail as a part of the Newark Area 2 and 4 planning efforts, Fremont's landfill closure, and other developments. The cities are seeking to assess alternative alignments, consider connection points, and coordinate with property owners.

The future Specific Plan developer(s) of Area 4 will be required to provide an easement for the Bay Trail to run along the top of the levees that form the western edge of the project, if that ultimately is the preferred alignment. The Specific Plan is consistent with the Bay Trail and does not conflict with efforts to complete the Bay Trail. **(Less than Significant Impact)**

3.1.4.4 *Loss of Agricultural Potential*

While portions of Areas 3 and 4 are currently used for agriculture, the site is not designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resource Agency.[18] Nor is any portion of the project site currently under Williamson Act contract.[19] The Specific Plan area is not designated by the City General Plan for agricultural use. It is possible that future undeveloped wetland areas could continue to be farmed, as part of the Specific Plan development. Implementation of the proposed Areas 3 and 4 Specific Plan would not result in adverse impacts to important agricultural resources. **(Less than Significant Impact)**

3.1.5 Conclusion

The proposed Specific Plan would not physically divide an established community; nor would it conflict with any applicable habitat conservation plan or natural community conservation plan. **(No Impact)**

Implementation of the proposed Specific Plan would not conflict with an applicable land use plan (i.e., City's General Plan, Zoning Ordinance) that was adopted for the purpose of avoiding or mitigating an environmental effect. **(Less than Significant Impact)**

Implementation of proposed Specific Plan would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, nor is any portion of the project site currently under Williamson Act contract. **(Less than Significant Impact)**

[17] ABAG. San Francisco Bay Trail Plan. Bay Trail Map. http://baytrail.abag.ca.gov/map.html, July 1999.
[18] California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, *Alameda County Important Farmlands Map 2006*, March 2007.
[19] City of Newark Resolution 4258, adopted in 1983, passed a Notice of Nonrenewal for the parcels previously under Williamson Act contract.

3.2 TRANSPORTATION

The following discussion is based on a transportation impact analysis prepared by *Hexagon Transportation Consultants* in January 2009. A copy of this analysis is in Appendix B of this EIR.

3.2.1 Overview and Regulatory Setting

3.2.1.1 *Overview*

In Newark and the surrounding area, the description of traffic congestion is based on the "level of service" (LOS) concept developed by the National Academy of Sciences and described in the *Highway Capacity Manual*. Level of Service is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays.

Signalized Intersections

The signalized study intersections are located both in the City of Newark and the City of Fremont and, therefore, are subject to their respective City's LOS standards. Thus the City of Newark LOS standards were used for the City of Newark intersections and the City of Fremont LOS standards were used to evaluate the City of Fremont intersections. The intersections along Stevenson Boulevard are shared between the City of Newark and Fremont. Because this study has been prepared under the direction of Newark, the LOS C standard (City of Newark standard) was assumed to apply.

The level of service methodology used for this study is TRAFFIX, which evaluates signalized intersection operations on the basis of average control delay time for all vehicles at the intersection. Average control delay includes the time for initial deceleration delay, queue move-up time, stopped delay, and final acceleration. The average delay for a signalized intersection is calculated using the TRAFFIX analysis software and is correlated to an LOS designation as shown in Table 3.2-1. The City of Newark's *General Plan Level of Service Policy c* states that the minimum overall performance of major City intersections should be LOS "C" or better, recognizing that LOS "D" may be acceptable under certain circumstances. Intersections in Fremont have a LOS standard of D.

Table 3.2-1: Signalized Intersection Level of Service Definitions		
Level of Service	**Description of Operations**	**Average Control Delay*** (seconds/vehicle)
A	Insignificant Delays: No approach phase is fully utilized and no vehicle waits longer than one red indication.	≤ 10
B	Minimal Delays: An occasional approach phase is fully utilized. Drivers begin to feel restricted.	> 10 to 20
C	Acceptable Delays: Major approach phase may become fully utilized. Most drivers feel somewhat restricted.	> 20 to 35
D	Tolerable Delays: Drivers may wait through no more than one red indication. Queues may develop but dissipate rapidly, without excessive delays.	> 35 to 55
E	Significant Delays: Volumes approaching capacity. Vehicles may wait through several signal cycles and long vehicle queues from upstream.	> 55 to 80
F	Excessive Delays: Represents conditions at capacity, with extremely long delays. Queues may block upstream intersections.	> 80
Source: Highway Capacity Manual, Transportation Research Board, 2000.		

3.2.1.2 *Regulatory Overview*

City of Newark General Plan

Goals and Policies

Various policies in the City of Newark's General Plan have been adopted for the purpose of avoiding or mitigating transportation impacts resulting from planned development within the City. All future development addressed by this EIR for the Areas 3 and 4 Specific Plan site will be subject to the transportation policies listed in Chapter 4.4, "Transportation Goals, Policies, and Programs" of the City's General Plan Update 2007, including the following:

GOAL 1. Provide for a quality environment with smooth, convenient, and safe vehicular travel throughout Newark.

Policy a. Complete the City's arterial street system.
Policy b. Maintain and where necessary enhance the system of collector streets to ensure complete linking of arterials with the local street system.
Policy c. Strive for LOS "C" or better at all major intersections within Newark, recognizing that in some cases Level of Service "D" may be acceptable with appropriate mitigation measures.
Policy d. Assure that adequate right-of-way is reserved for future roadway widening projects.
Policy e. Improve the street system as necessary to facilitate fast emergency vehicle response.
Policy f. Coordinate traffic signals on major streets.
Policy g. Establish and maintain street standards that meet current best traffic engineering practice.
Policy h. Establish a capital improvements program that provides for needed roadway projects.

Policy i. Assure adequate off-street parking is provided for all new and expanded developments in order to maximize the efficiency of the City Street system.

Policy k. Require new development to implement Transportation Systems Management (TSM) programs, and/or to pay for traffic improvements through traffic impact fees or assessment district financing.

GOAL 2. Promote the development and use of alternative modes of transportation

Policy a. Work with other agencies and private industry to provide an improved public transportation system serving Newark and its residents.

Policy b. Utilize existing railroad rights-of-way for new transit routes.

Policy c. Support car and van pools.

Policy d. Assure safe and convenient pedestrian access to and through new private and public developments.

Policy e. Complete construction of the City-wide Bike Route Plan

GOAL 3. Support regional transportation Planning for Southern Alameda County

Policy a. Work with other agencies to evaluate and plan the timing and location for a Route 61 freeway or expressway through the western part of Newark.

Policy b. Utilize existing north/south railroad rights-of-way to create additional north/south routes to supplement I-880

Policy c. Support Measures B freeway capacity improvements.

Policy d. Work with the State and the City of Fremont to maintain LOS "C" at all intersections on the border of Newark, particularly Newark Boulevard/ Dumbarton Freeway, Thornton Avenue/Dumbarton Freeway, Stevenson Boulevard/Interstate 880, Mowry Avenue/Interstate 880 and Thornton Avenue/Interstate 880, to accommodate build-out of lands in Fremont and Newark in the vicinity of the intersections.

Alameda County Congestion Management Agency

The Alameda County Congestion Management Agency (CMA) coordinates transportation planning, funding, and other activities in a Congestion Management Program (CMP). The relevant State legislation requires that all urbanized counties in California prepare a CMP in order to obtain each county's share of increased gas tax revenues. The CMP legislation requires that each CMP contain five mandatory elements: 1) a system definition and traffic level of service (LOS) standard element; 2) a transit service and standards element; 3) a transportation demand management and trip reduction element; 4) a land use impact analysis element; and 5) a capital improvement element. CMPs are updated every two years, and Alameda County's CMP was last updated in 2007. The CMP provides short-term response to congestion, yet reflects the goals and policies of the long-range *Alameda Countywide Transportation Plan*.[20] Projects competing for state funds must be included in the CMP and be consistent with the Countywide Transportation Plan. The CMA has prepared a Site Design Guidelines Checklist to help projects incorporate Travel Demand Management measures and ensure conformity with CMP requirements.

[20] Alameda County Congestion Management Agency, "About Us," http://www.accma.ca.gov/pages/AboutIntro.aspx, 2008.

Alameda Countywide Bicycle Plan

The most recent *Alameda Countywide Bicycle Plan* was adopted by the Alameda County CMA and the Alameda County Transportation Improvement Authority (ACTIA) in October 2006. This plan updated the 2001 Countywide Bicycle Plan, which described existing bicycling conditions in Alameda County, identified proposed improvements to the network, and established design guidelines best practices. The 2006 Plan focused on identifying facilities that have been completed since the 2001 Plan was adopted, revising maps and appendices to add new projects and modified alignments, and developing a list of high priority projects.

A Class 1 trail (bike path) is planned adjacent to the railroad tracks that divide Areas 3 and 4. An off-street, multi-use pathway runs along the west side of Cherry Street. Class 2 trails (bike lanes) are also provided on Cherry Street, Mowry Avenue, and Stevenson Boulevard between Cherry Street and the railroad tracks. A Class 2 bike lane now exists on westbound Stevenson Boulevard between I-880 and Cherry. No other existing or proposed trails are shown in the Specific Plan area on Map 4 of the 2006 Countywide Bicycle Plan. [21]

3.2.2 Existing Setting

The transportation system includes the roadway network, bicycle and pedestrian facilities, and transit system. For the purposes of this discussion, Cherry Street and I-880 are characterized as north-south facilities; Mowry Avenue is north of the site; Stevenson Boulevard is south of the site; and Cherry Street is east of the site. The surrounding roadway network is shown on Figure 3.2-1.

3.2.2.1 *Existing Roadway Network*

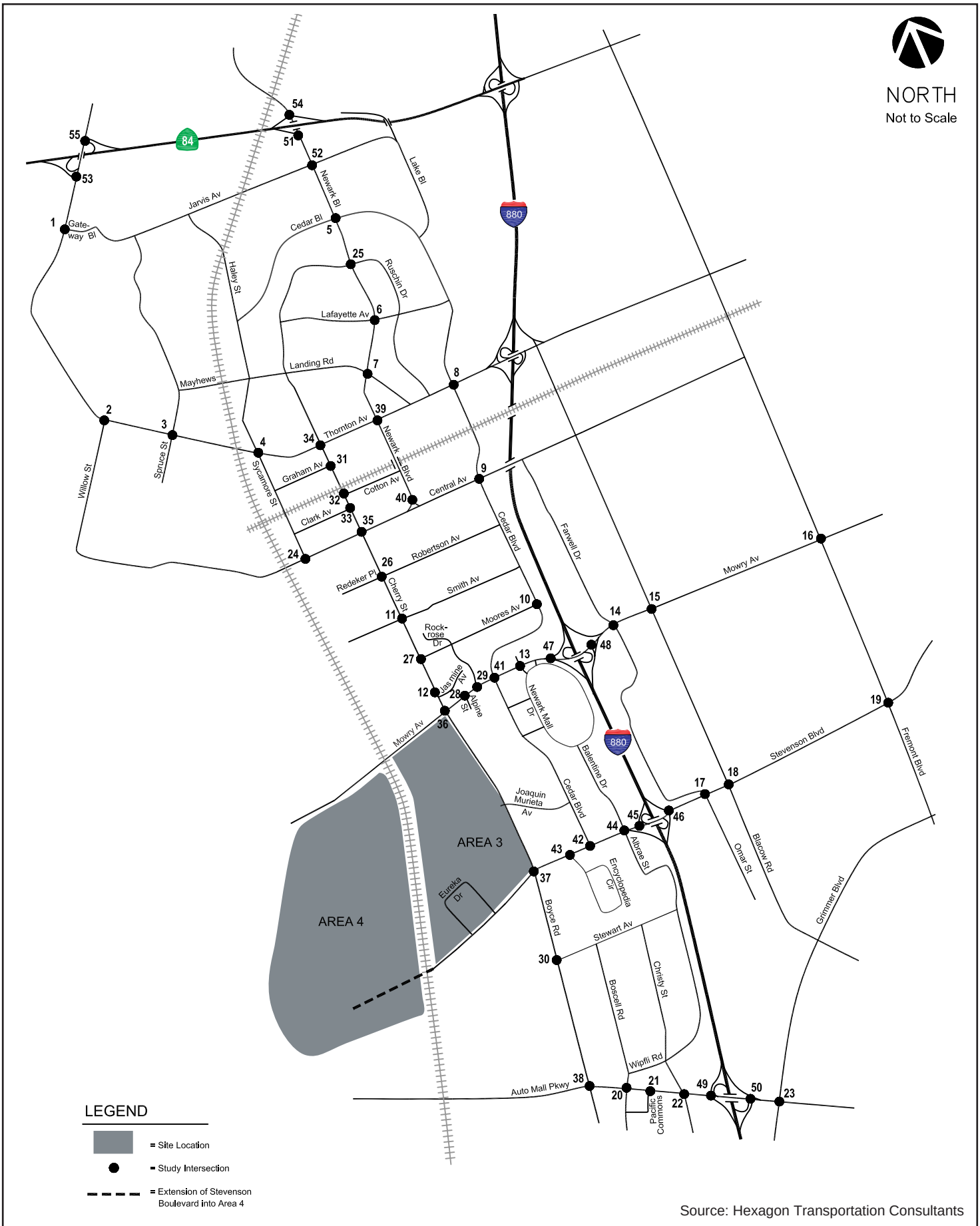
Regional access to the project study area is provided by Interstate (I-880) and State Route 84 (SR 84). These facilities are described below.

Interstate-880 is an eight lane north/south freeway, with three-mixed flow lanes and one HOV in each direction. I-880 provides regional access from East Bay cities to San Jose, where it becomes SR 17. The closest access to I-880 from the proposed project would be via the interchanges of I-880/Stevenson Boulevard and I-880/Mowry Avenue.

State Route 84 is a six-lane east/west freeway, with five-mixed flow lanes and one westbound HOV lane in the vicinity of the project site. SR 84 extends from Highway 1 in the west through the Tri-Valley in the east. The closest access to SR 84 from the proposed project is via the interchanges at Thornton Avenue/Paseo Padre Parkway and Newark Boulevard/Ardenwood Boulevard.

Major roadways within the project area include Stevenson Boulevard, Mowry Avenue, Cherry Street, Boyce Road, Auto Mall Parkway, Central Avenue, Cedar Boulevard, Thornton Avenue, and Newark Boulevard. These roads are described below.

[21] Alameda County Congestion Management Agency, *Countywide Bicycle Plan*, Map 4, 2006. http://www.accma.ca.gov/pdf/bicycle_plan/FinalBicyclePlan/Map4.pdf



Source: Hexagon Transportation Consultants

ROADWAY NETWORK AND STUDY INTERSECTIONS FIGURE 3.2-1

Stevenson Boulevard is an east/west roadway located immediately south of the project site. Between I-880 and Cedar Boulevard, Stevenson Boulevard has six travel lanes with raised medians and turn lanes at major intersections. At Cedar Boulevard, the roadway narrows to four travel lanes and this configuration extends through Cherry Street/Boyce Road. Stevenson Boulevard provides access to commercial and light-industrial areas and also extends east over I-880 into Fremont. Stevenson Boulevard provides direct access to the project site.

Mowry Avenue is an east/west roadway located immediately north of the project site. Between I-880 and Cedar Boulevard, Mowry Avenue has six travel lanes with raised medians and turn lanes at major intersections. At Cedar Boulevard, the roadway narrows to four travel lanes to Cherry Street. West of Cherry Street, the roadway has two westbound travel lanes and one eastbound travel lane with a two-way left-turn lane. At the Union Pacific railroad tracks the roadway has an at-grade crossing and narrows to two travel lanes. Mowry Avenue provides access to commercial-retail, residential, and light-industrial areas and also extends east over I-880 into Fremont.

Cherry Street is generally a four-lane north-south roadway located immediately east of the project site. Between Thornton Avenue and Mowry Avenue, Cherry Street has a two-way left-turn lane and provides access to commercial, residential, and industrial areas. South of Mowry Avenue, Cherry Street has raised concrete medians and provides access to light-industrial and residential areas. South of Stevenson Boulevard, Cherry Street becomes Boyce Road. Cherry Street provides direct access to the project site.

Boyce Road is a four-lane north-south roadway that extends south from Stevenson Boulevard to Auto Mall Parkway. Boyce Road has raised concrete medians and provides access to light-industrial and commercial areas. South of Auto Mall Parkway, Boyce Road becomes Cushing Parkway.

Auto Mall Parkway is an east/west roadway located south of the project site. Between I-880 and Boyce Road, Auto Mall Parkway has six travel lanes with raised medians and turn lanes at major intersections. West of Boyce Road and east of Grimmer Boulevard, there are two lanes in each direction.

Central Avenue is primarily a four-lane east-west roadway that extends from Willow Street to Fremont Boulevard. Central Avenue is located north of the project site and provides access to light-industrial and retail areas.

Cedar Boulevard is a north/south, four-lane roadway that is located east of the project site. This roadway serves commercial/retail, industrial, and residential areas.

Thornton Avenue is primarily a four-lane east-west roadway that extends from SR 84 to Paseo Padre Parkway. Thornton Avenue is located north of the project site and provides access to residential and commercial-retail areas.

Newark Boulevard is a four-lane north-south roadway that extends from Central Avenue to SR 84 where it becomes Ardenwood Boulevard. Thornton Avenue is located north of the project site and provides access to residential and commercial-retail areas.

3.2.2.2 *Existing Bicycle and Pedestrian Facilities*

According to the Alameda Countywide Bicycle Plan, the closest bike facilities to the project site are located on Cherry Street-Boyce Road and Stevenson Boulevard. Figure 3.2-2 shows the existing bicycle facilities in the study area.

Pedestrian facilities in the project area consist primarily of sidewalks along the streets near the project site. Sidewalks and crosswalks are found along virtually all previously-described local roadways in the study area and along the local collectors near the site.

San Francisco Bay Trail

The Bay Trail is a planned regional hiking and bicycling trail around the perimeter of the San Francisco and San Pablo Bays.[22] The current Bay Trail through the City of Newark is aligned along Cherry Street and the identified "proposed" alignment is along the Union Pacific Railroad tracks.[23] The Cities of Newark and Fremont have applied for a San Francisco Bay Trail grant for community planning efforts in the two cities to plan for a realignment of the Bay Trail as a part of the Newark Area 2 and 4 planning efforts, Fremont's landfill closure, and other developments. The cities are seeking to assess alternative alignments, consider connection points, and coordinate with property owners.

3.2.2.3 *Existing Transit Service*

Existing transit service to the study area is provided by AC Transit. The study area is served by nine bus routes. These existing services are described below and shown on Figure 3.2-2.

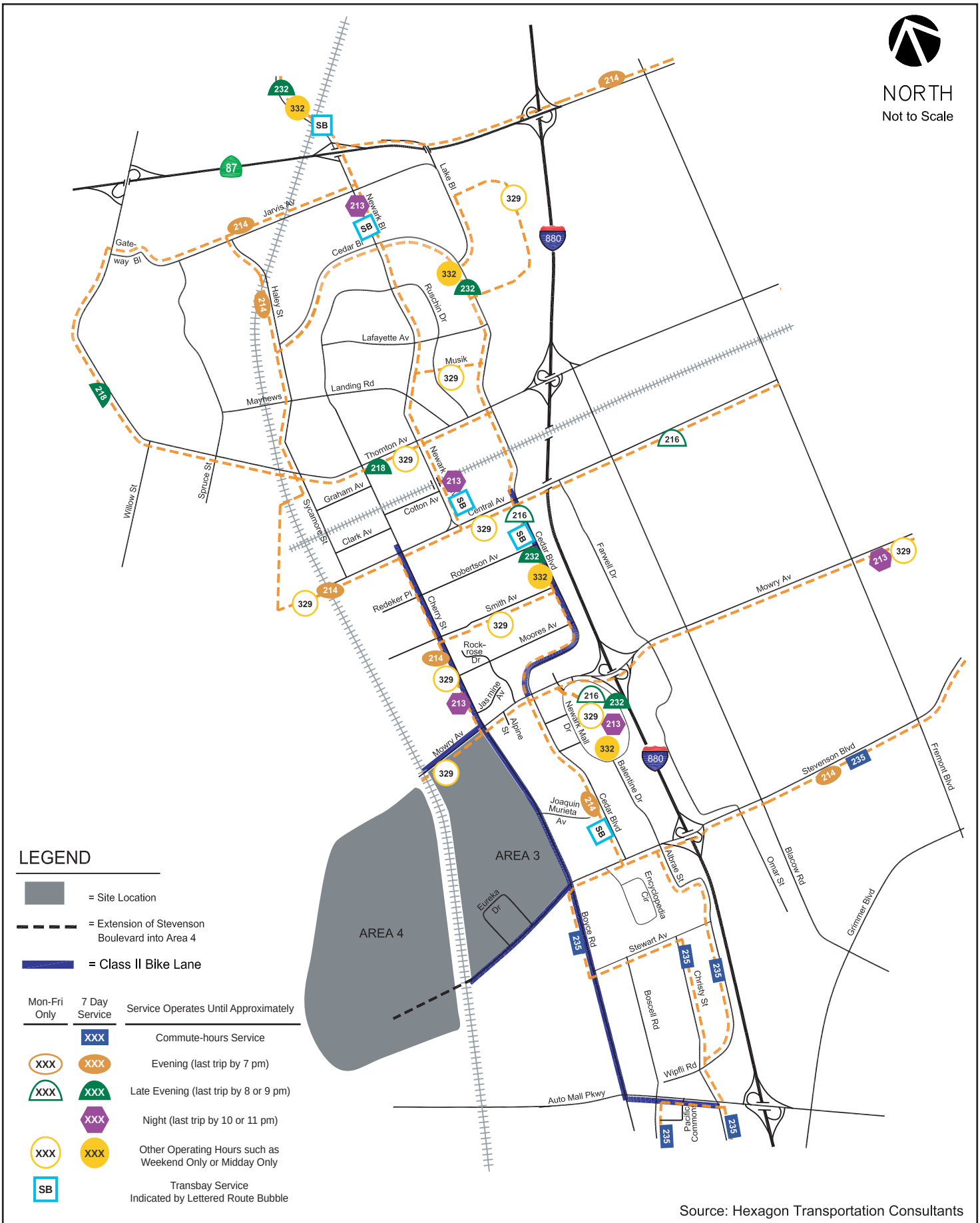
Stevenson Boulevard Route 213: Route 213 operates Monday through Friday between 5:40 am and 11:05 pm and weekends between 6:55 am and 7:55 pm. Route 213 travels between Fremont BART and Lido Faire, and runs along Newark Boulevard, Cherry Street, and Mowry Avenue. Headways are every 30 minutes.

Stevenson Boulevard Route 214: Route 214 operates Monday through Friday between 5:00 am and 7:30 pm and weekends between 7:30 am and 8:30 pm. Route 214 travels between Fremont BART and Union City BART, and runs along Stevenson Boulevard, Cherry Street, and Decoto Road. Headways are every 30 minutes on weekdays and 60 minutes on the weekend.

Stevenson Boulevard Route 216: Route 216 operates Monday through Friday between 5:30 am and 10:30 pm. Route 216 travels between Union City BART, Fremont BART, and New Park Mall, and runs along Niles Boulevard, Peralta Boulevard, Central Avenue, and Cedar Boulevard. Headways are every 60 minutes.

Albrae Street Route 232: Route 232 operates Monday through Friday between 5:30 am and 8:40 pm. Route 232 travels between Union City BART and New Park Mall, and runs along Paseo Padre Parkway and Cedar Boulevard. Headways are every 30 minutes.

[22] ABAG. 1989. *The Bay Trail Planning for a Recreational Ring Around San Francisco Bay*. San Francisco Bay Trail Project. Reprinted March 2001.
[23] ABAG. San Francisco Bay Trail Plan. Bay Trail Map. http://baytrail.abag.ca.gov/map.html, July 1999.



Source: Hexagon Transportation Consultants

EXISTING TRANSIT AND BICYCLE FACILITIES

FIGURE 3.2-2

Albrae Street Route 235: Route 235 operates primarily during peak commute hours between 7:00 to 9:30 am, and 4:05 to 6:30 pm, Monday through Friday. Route 235 travels between Fremont BART and Pacific Commons, and runs along Stevenson Boulevard. Headways are approximately every 60 minutes.

Albrae Street Route 329: Route 329 operates Monday through Friday primarily during off-peak hours between 9:00 and 3:40 pm. Route 329 travels between Lido Faire and Chapel Way/Laurel Street. Headways are every 60 minutes.

Albrae Street Route 332: Route 332 operates weekends between 7:00 am and 8:00 pm. Route 332 travels between New Park Mall, Union City BART, and Fremont BART. Headways are every 60 minutes.

Albrae Street Route 333: Route 333 operates Monday through Friday during off-peak hours between 7:00 pm and 12:45 am. Route 333 travels between Union City BART and New Park Mall. Headways are every 60 minutes.

Newark Transbay Service SB: The Newark Transbay Express SB route operates only during the peak commute hours between 5:15 to 9:00 am (westbound only), and 4:00 to 9:15 pm (eastbound only), Monday through Friday. In the study area, the SB Transbay Express route originates in the Stevenson/Cedar area and travels north on Cedar Boulevard toward northern Fremont and on to San Francisco. Headways are every 20-30 minutes in the study area.

3.2.2.4 *Existing Traffic Operations*

This transportation study includes an analysis of 43 signalized intersections, 12 unsignalized intersections, and 16 directional roadway segments in the vicinity of the project site. Peak-hour signal warrants were examined for the unsignalized intersections.

Traffic conditions at the intersections were analyzed for the weekday AM and PM peak hours of traffic. The AM peak hour of traffic is generally between 7:00 and 9:00 AM, and the PM peak hour is typically between 4:00 and 6:00 PM. It is during these periods that the most congested traffic conditions occur on an average weekday.

Study Intersections and Freeway Segments

Transportation impacts related to the proposed Areas 3 and 4 Specific Plan were evaluated following the standards and methodologies set forth by the City of Newark, the City of Fremont, and the Alameda County Congestion Management Agency (CMA). Depending on the location and jurisdiction of the intersection, the applicable agency's standards and thresholds were used to evaluated project traffic impacts. The traffic study includes an analysis of AM and PM peak hour traffic conditions for 43 signalized intersections and 12 unsignalized intersections. The traffic analysis includes an evaluation of peak-hour signal warrants for the unsignalized intersections. The study intersections are identified below and are shown on Figure 3.2-1.

<u>Newark Study Intersections</u>

- Thornton Avenue and Gateway Boulevard (Signalized)
- Thornton Avenue and Willow St (Signalized)

- Thornton Avenue and Spruce St (Signalized)
- Thornton Avenue and Sycamore St (Signalized)
- Newark Boulevard and Cedar Boulevard (Signalized)
- Newark Boulevard and Lafayette Avenue (Signalized)
- Newark Boulevard and Mayhews Landing Rd (Signalized)
- Newark Boulevard and SR 84 Eastbound Ramps (Signalized)
- Newark Boulevard and Jarvis Avenue (Signalized)
- Newark Boulevard and Brittany Avenue/Ruschin Dr (Unsignalized)
- Newark Boulevard and Thornton Avenue (Signalized)
- Newark Boulevard and Central Avenue (Signalized)
- Cedar Boulevard and Thornton Avenue (Signalized)
- Cedar Boulevard and Central Avenue (Signalized)
- Cedar Boulevard and Moores Avenue (Signalized)
- Cedar Boulevard and Mowry Avenue (Signalized)
- Cedar Boulevard and Stevenson Boulevard (Signalized)
- Cherry Street and Smith Avenue (Signalized)
- Cherry Street and Signal (just north of Jasmine Avenue) (Signalized)
- Cherry Street and Clark Avenue (Signalized)
- Mowry Avenue and Alpenrose Court (Signalized)
- Mowry Avenue and Alpine Street (Unsignalized)
- Mowry Avenue and Rockrose Drive (Unsignalized)
- Sycamore Street and Central Avenue (Unsignalized)
- Cherry Street and Redeker Place/Robertson Avenue (Unsignalized)
- Cherry Street and Moores Avenue (Unsignalized)
- Cherry Street and Cotton Avenue (Unsignalized)
- Cherry Street and Graham Avenue (Unsignalized)
- Cherry Street and Thornton Avenue (Signalized)
- Cherry Street and Central Avenue (Signalized)
- Cherry Street and Mowry Avenue (Signalized)
- Cherry Street/Boyce Road and Stevenson Boulevard (Signalized)
- Thornton Avenue and SR 84 Eastbound Ramps (Unsignalized)
- Encyclopedia Circle and Stevenson Boulevard (Unsignalized)
- Albrae Street/Balentine Drive and Stevenson Boulevard (Signalized)
- I-880 Southbound Ramps and Stevenson Boulevard (Signalized)
- I-880 Southbound Ramps and Mowry Avenue (Signalized)

<u>Fremont Study Intersections</u>

- Mowry Avenue and Farwell Drive (Signalized)
- Mowry Avenue and Blacow Road (Signalized)
- Mowry Avenue and Fremont Boulevard (Signalized)
- Stevenson Boulevard and Farwell Drive/Omar Street (Signalized)
- Stevenson Boulevard and Blacow Road (Signalized)
- Stevenson Boulevard and Fremont Boulevard (Signalized)
- Auto Mall Parkway and Boscell Road (Signalized)
- Auto Mall Parkway and Pacific Commons Drive (Signalized)

- Auto Mall Parkway and Christy Street (Signalized)
- Auto Mall Parkway and South Grimmer Boulevard (Signalized)
- Ardenwood Boulevard and SR 84 Westbound Ramps (Signalized)
- Boyce Road and Stewart Avenue (Unsignalized)
- Boyce Road and Auto Mall Parkway (Signalized)
- Paseo Padre Parkway and SR 84 Westbound Ramps (Unsignalized)
- I-880 Northbound Ramps and Stevenson Boulevard (Signalized)
- I-880 Northbound Ramps and Mowry Avenue (Signalized)
- I-880 Southbound Ramps and Auto Mall Parkway (Signalized)
- I-880 Southbound Ramps and Auto Mall Parkway (Signalized)

Far-term impacts of the proposed Specific Plan were evaluated in conformance with Alameda County CMP standards. Impacts were evaluated for individual roadway segments using the Alameda County CMP Travel Demand Forecast (TDF) model. The far-term analysis analyzed the following roadway segments:

- Stevenson Boulevard, between I-880 to Blacow Road (Eastbound & Westbound)
- Mowry Avenue, between I-880 to Blacow Road (Eastbound & Westbound)
- Thornton Avenue, between Fremont Boulevard and I-880 (Eastbound & Westbound)
- Thornton Avenue, between I-880 and SR 84 (Eastbound & Westbound)
- Newark Boulevard, between SR 84 and Thornton Avenue (Northbound & Southbound)
- I-880, between Mission Boulevard and Stevenson Boulevard (Northbound & Southbound)
- I-880, between Stevenson Boulevard and SR 84 (Northbound & Southbound)
- SR 84, between Thornton Avenue and I-880 (Eastbound & Westbound)

Traffic Scenarios Analyzed

Traffic conditions at the intersections were analyzed for the weekday AM and PM peak hours of traffic. Peak hour traffic is defined as the total number of cars passing over a roadway segment during the busiest hour of the morning or afternoon. In Newark, the peak hours typically occur between 7:00-9:00 AM and 4:00 to 6:00 PM. It is during these periods that the most congested traffic conditions occur on an average weekday. Traffic conditions were evaluated for the following scenarios.

Existing Conditions: Existing conditions were represented by existing peak hour traffic volumes on the existing roadway network. Existing traffic volumes were obtained from new traffic counts or recent traffic impact studies.[24]

Background Conditions: Background conditions were represented by future background traffic volumes on the near-term future roadway network. Background traffic volumes were estimated by adding to existing peak-hour volumes the projected volumes from *approved* but not yet completed developments. The latter component was supplied by the Cities of

[24] The traffic counts that comprise the basis of the traffic analysis were taken in 2006-2007, when vehicle traffic was heavier than under current 2009 conditions. No major development has occurred in Newark since the traffic counts were taken, so the analysis is still considered valid and a conservative estimate of traffic impacts of the project.

Newark and Fremont. The background traffic data are included in Appendix B.

Project Conditions: Project conditions were represented by future traffic volumes, with the project, on the near-term future roadway network. Future traffic volumes with the project were estimated by adding to background traffic volumes the additional traffic generated by the project. Project conditions were evaluated relative to background conditions in order to determine potential project impacts.

Cumulative Conditions: Cumulative conditions were represented by adding to project traffic volumes the additional traffic generated by all other foreseeable projects in the general study area that have been proposed but have not yet been approved. The pending project list was supplied by the Cities of Newark and Fremont.

Long-Term Project Conditions: For projects that generate more than 100 peak-hour vehicle trips, a CMA traffic analysis is required using the Countywide Transportation Demand Model. The CMA analysis looks at impacts to the CMA roadway network for the years 2015 and 2030.

Existing Conditions

Existing Intersection Levels of Service

The results of the intersection LOS analysis under existing conditions are summarized in Table 3.2-2. The results show that, measured against the applicable City of Newark or Fremont standards, all of the signalized study intersections currently operate at acceptable levels of service during both the AM and PM peak hours. The level of service calculation sheets are included in Appendix B.

Table 3.2-2:
Existing Conditions Intersection Levels of Service

Study Intersection	Peak Hour	Existing	
		Average Delay	LOS
Cherry St and Thornton Ave	AM	24.8	C
	PM	25.4	C
Cherry St and Central Ave	AM	23.8	C
	PM	21.9	C
Cherry St and Mowry Ave	AM	26.4	C
	PM	26.6	C
Cherry St/Boyce Rd and Stevenson Blvd	AM	25.8	C
	PM	21.8	C
Newark Blvd and Thornton Ave	AM	20.1	C
	PM	21.0	C
Newark Blvd and Central Ave	AM	10.9	B
	PM	11.6	B

Table 3.2-2:
Existing Conditions Intersection Levels of Service

Study Intersection	Peak Hour	Existing	
		Average Delay	LOS
Cedar Blvd and Mowry Ave	AM	24.9	C
	PM	26.6	C
Cedar Blvd and Stevenson Blvd	AM	20.4	C
	PM	21.4	C
Albrae St/Balentine Dr and Stevenson Blvd	AM	20.3	C
	PM	24.3	C
I-880 SB off-ramp and Stevenson Blvd	AM	10.4	B
	PM	11.5	B
I-880 SB off-ramp and Mowry Ave	AM	10.8	B
	PM	12.1	B
Cherry St and Street N of Jasmine Ave	AM	6.8	A
	PM	5.6	A
Cedar Blvd and Moores Avenue	AM	4.9	A
	PM	9.3	A
Newark Blvd and 84E	AM	10.7	B
	PM	33.5	C
Sycamore St and Thornton Ave	AM	29.1	C
	PM	26.7	C
Spruce St and Thornton Ave	AM	22.8	C
	PM	16.6	B
Thornton Ave and Gateway Blvd	AM	9.9	A
	PM	9.9	A
Newark Blvd and Jarvis Ave	AM	27.0	C
	PM	30.6	C
Newark Blvd and Cedar Blvd	AM	21.9	C
	PM	22.3	C
Newark Blvd and Lafayette Ave	AM	20.5	C
	PM	12.7	B
Newark Blvd and Mayhews Landing Rd	AM	12.8	B
	PM	12.2	B
Cedar Blvd and Central Ave	AM	20.9	C
	PM	20.3	C
Cedar Blvd and Thornton Ave	AM	33.0	C
	PM	32.9	C
Willow St and Thornton Ave	AM	15.7	B
	PM	16.7	B
Cherry St and Clark Ave	AM	17.9	B
	PM	15.1	B
Alpenrose St and Mowry Ave	AM	17.2	B
	PM	21.2	C
Cherry St and Smith Ave	AM	16.3	B
	PM	10.6	B

Table 3.2-2:
Existing Conditions Intersection Levels of Service

Study Intersection	Peak Hour	Existing	
		Average Delay	LOS
Boyce Rd and Automall Pkwy	AM	27.2	C
	PM	29.7	C
I-880 NB off-ramp and Stevenson Blvd	AM	9.4	A
	PM	8.6	A
I-880 NB off-ramp and Mowry Ave	AM	10.0	A
	PM	13.9	B
I-880 SB off-ramp and Auto Mall Pkwy	AM	14.6	B
	PM	14.4	B
I-880 NB off-ramp and Auto Mall Pkwy	AM	6.5	A
	PM	5.7	A
Boscell Rd and Auto Mall Pkwy	AM	17.9	B
	PM	21.7	C
Pacific Commons and Auto Mall Pkwy	AM	9.9	A
	PM	20.2	C
Blacow Rd and Mowry Ave	AM	28.6	C
	PM	29.5	C
Blacow Rd and Stevenson Blvd	AM	30.9	C
	PM	29.7	C
Grimmer Blvd and Auto Mall Pkwy	AM	33.9	C
	PM	39.9	D
Fremont Blvd and Stevenson Blvd	AM	34.6	C
	PM	34.4	C
Ardenwood Blvd and 84 W	AM	30.3	C
	PM	21.7	C
Fremont Blvd and Mowry Ave	AM	31.7	C
	PM	34.0	C
Farwell Dr and Mowry Ave	AM	22.4	C
	PM	21.9	C
Christy St and Auto Mall Pkwy	AM	17.5	B
	PM	30.3	C
Farwell Dr/Omar St and Stevenson Blvd	AM	17.4	B
	PM	13.3	B

Observed Existing Traffic Conditions

Traffic conditions in the field were observed in order to identify existing operational deficiencies and to confirm the accuracy of calculated levels of service. The purpose of this effort was: 1) to identify any existing traffic problems that may not be directly related to intersection level of service; and 2) to identify any locations where the level of service calculation does not accurately reflect level of service in the field.

Overall the study intersections operated adequate during both the AM and PM peak hours of traffic, and the level of service analysis appears to accurately reflect actual existing traffic conditions. However, field observations revealed that some operational problems do occur.

Cedar Boulevard and Thornton Avenue – During the PM peak hour, vehicles making a westbound left turn from Thornton Avenue occasionally do not clear the intersection during a signal cycle, due to the cycle length and volume of vehicles. Vehicles that do not clear the intersection must wait until another full signal cycle to complete the turn.
Mowry Avenue and Blacow Road – During the PM peak hour, vehicles making a southbound left turn from Blacow Road occasionally do not clear the intersection during a signal cycle, due to the cycle length and volume of vehicles. Vehicles that do not clear the intersection must wait until another full signal cycle to complete the turn.

Mowry Avenue and Fremont Boulevard – During the PM peak hour, vehicles making a northbound left turn from Fremont Boulevard occasionally do not clear the intersection during a signal cycle, due to the cycle length and volume of vehicles. Vehicles that do not clear the intersection must wait until another full signal cycle to complete the turn.

Stevenson Boulevard and Blacow Road – During the AM peak hour, vehicles experience long queues on westbound Stevenson Boulevard. Queues extend to the Stevenson Boulevard/Sundale Drive intersection and require two signal cycles for some vehicles to clear the intersection. Vehicles making a northbound left from Blacow Road also experienced delays due to the queues on westbound Stevenson Boulevard.

Auto Mall Parkway and Pacific Commons – During the PM peak hour, vehicles making a westbound left turn from Auto Mall Parkway occasionally do not clear the intersection during a signal cycle, due to the cycle length and volume of vehicles. Vehicles that do not clear the intersection must wait until another full signal cycle to complete the turn.

Auto Mall Parkway and Christy Street – During the PM peak hour, vehicles making a southbound left turn from Christy Street occasionally do not clear the intersection during a signal cycle, due to the cycle length and volume of vehicles. Vehicles that do not clear the intersection must wait until another full signal cycle to complete the turn.

Background Conditions

The following discussion describes background traffic conditions. Background conditions are defined as conditions just prior to completion of the proposed project. Traffic volumes for background conditions comprise volumes from existing traffic counts plus traffic generated by other approved but not yet constructed developments in the vicinity of the project site.

Background Roadway Network

The transportation network under background conditions would be the same as the existing transportation network.

Background Traffic Volumes

Background traffic volumes were estimated by adding to existing peak hour volumes the projected volumes from approved but not yet completed developments in the project study area. The added traffic from approved but not yet completed developments was estimated based on information provided by the Cities of Newark and Fremont for approved projects within their jurisdictions. Background conditions include traffic from full occupancy of the Ohlone College Campus on Cherry Street, which is part of the existing development within Area 3. Background peak hour traffic volumes and a list of approved projects is included in Appendix B.

Background Intersection Levels of Service

The results of the intersection level of service analysis under background conditions are summarized in Table 3.2-3. The results show that, measured against Cities of Newark and Fremont standards, all of the study intersections would operate at acceptable levels. The level of service calculation sheets are included in Appendix B.

3.2.3 Transportation Impacts

As noted previously, this traffic analysis includes intersections located in the City of Newark and Fremont. Depending on the location and jurisdiction of the intersection, the applicable agency's standards and thresholds were used to evaluated project traffic impacts.

3.2.3.1 *Thresholds of Significance*

City of Newark Signalized Intersections

For the purposes of this EIR, a project would result in a significant adverse impact on traffic conditions at a signalized intersection in the City of Newark if for either peak hour:

- The level of service at the intersection degrades from an acceptable LOS C or better under background conditions to an unacceptable LOS D, E, or F under project conditions; or
- The level of service at the intersection is an unacceptable LOS under background conditions and the addition of project trips causes the average delay at the intersection to increase by four (4) or more seconds

A significant impact by the City of Newark standards is said to be satisfactorily mitigated when measures are implemented that would restore intersection level of service to no project conditions or better.

City of Fremont Signalized Intersections

For the purposes of this EIR, a project would result in a significant adverse impact on traffic conditions at a signalized intersection in the City of Fremont if for either peak hour:

- The level of service at the intersection degrades from an acceptable LOS D or better under background conditions to an unacceptable LOS E or F under project conditions; or

- The level of service at the intersection is an unacceptable LOS under background conditions and the addition of project trips causes the average delay at the intersection to increase by four (4) or more seconds.

A significant impact by the City of Fremont standards is said to be satisfactorily mitigated when measures are implemented that would restore intersection level of service to no project conditions or better.

Unsignalized Intersections

Level of service for the unsignalized intersections was determined using TRAFFIX based on the 2000 Highway Capacity Manual (HCM) methodology. For the purpose of this study, the level of service reported is based on the average delay at the unsignalized intersections. The correlation between average delay and level of service is shown in Table 3.2-3.

The Cities of Newark and Fremont do not have formal criteria to apply to unsignalized intersections. This is common for many jurisdictions because signalized intersections typically limit the overall capacity of a roadway. The analysis of unsignalized intersections is typically evaluated by considering overall level of service, movement delay, availability of alternate routes, intersection spacing, and an analysis of traffic signal warrants.

Other Near-Term Traffic

For the purpose of this EIR, a near-term traffic impact from the proposed project is considered significant if the project would:

- Impede the development or function of planned pedestrian or bicycle facilities;
- Conflict with adopted plans or policies supporting alternative transportation; or
- Create an operational safety hazard.

Other Transportation Issues

For the purpose of this EIR, a significant transportation impact will occur if the project would:

- Conflict will adopted policies, plans or programs supporting alternative transportation (e.g., bus turnouts, bicycle rack).

3.2.3.2 *Near-Term Traffic Impacts*

Transportation Network Under Near-Term Project Conditions

It is assumed in this analysis that the transportation network under project conditions, including roadways and intersection lane configurations, would be the same as that described under background conditions.

At the time of this traffic analysis preparation, the City of Fremont is processing plans for installation of a traffic signal mid-block at the existing median opening for the “Globe” development on Stevenson Boulevard. This new traffic signal would be located between Cedar Boulevard and

Balentine Drive/Albrae Street. The project also will interconnect the Stevenson Boulevard signals between Albrae Street/Balentine Drive and Cherry Street/Boyce Road.

Project Trip Estimates

The magnitude of traffic produced by a new development and the locations where that traffic would appear are estimated using a three-step process: 1) trip generation; 2) trip distribution; and 3) trip assignment. In determining project trip generation, the magnitude of traffic entering and exiting the site is estimated for the AM and PM peak hours. As part of the project trip distribution, an estimate is made of the directions to and from which the project trips would travel. In the project trip assignment, the project trips are assigned to specific streets and intersections. These procedures are described below.

Trip Generation

The amount of traffic added to the roadway system by a particular development is estimated by multiplying the applicable trip generation rates by the size of the development. The standard trip generation rates are published in the Institute of Transportation Engineers (ITE) manual entitled *Trip Generation*, Seventh Edition, 2003. The project trip generation estimates are in Table 3.2-3. The proposed Areas 3 and 4 Specific Plan project would generate 14,970 daily vehicle trips, with 1,429 project trips occurring during the AM peak hour and 1,676 project trips occurring during the PM peak hour.

Trip Distribution and Assignment

The trip distribution pattern and assignments for the proposed project were estimated based on existing travel patterns on the surrounding roadway system, the locations of complimentary uses, and recent travel demand forecast model runs using the latest version of the Alameda County Congestion Management Agency (CMA) model. It should be noted that from a transportation planning perspective, the close proximity of the project site to the adjacent business park make it a good location for residential development. Developing residential uses near employment uses results in shorter commute trips, which over the long term, helps to reduce traffic congestion regionally. The peak-hour trips generated by the proposed development were assigned to the roadway system in accordance with the trip distribution pattern discussed above. The trip assignments are shown graphically in Appendix B.

Project Traffic Volumes

Projected peak hour traffic volumes from the project were estimated by adding the project trips to the background conditions traffic volumes. Project conditions were evaluated relative to background conditions in order to determine potential near-term project impacts. The project condition volumes at the study intersections are illustrated and the intersection level of service calculation sheets are included in Appendix B.

Table 3.2-3:
Trip Generation Estimates

Land Use	Units	Daily Rate[1]	Daily Trips	AM Peak Hour				PM Peak Hour			
				Rate	In	Out	Total	Rate	In	Out	Total
Single Family – Area 3	760 units	9.57	7,273	0.75	143	427	570	1.01	484	284	768
Single Family – Area 4	500 units	9.57	4,785	0.75	94	281	375	1.01	318	187	505
Golf Course	140 acres	5.04	706	0.21	22	8	30	0.30	14	28	42
Elementary School	600 students	1.29	774	0.42	139	113	252	0.28	76	92	168
Office[2]	130 ksf	11.01	1,431	1.55	178	24	202	1.49	32	162	194
		Total	14,970		575	854	1,429		924	753	1,676

Notes
1: The Area 3 residential is proposed to include 189 du of senior affordable multi-family housing. This land use would generate fewer trips; however, in order to provide a conservative analysis, no reduction in trip generation was made.
2: The office component was included as part of the project to provide a more conservative analysis, however this office use is an existing use and not part of the project.

Project Signalized Intersection Levels of Service

The results of the intersection level of service analysis under project conditions are summarized in Table 3.2-4. The results show that, measured against the City of Newark and Fremont standards, the project would result in a significant impact at one intersection. The addition of project traffic would cause the intersection of Cherry Street/Mowry Avenue to degrade from a LOS C to an unacceptable LOS D during the AM peak hour.

All other study intersections would continue to operate at acceptable levels of service under project conditions, as shown in Table 3.2-4. **(Less than Significant Impact)**

Impact TRAN–1: The addition of project traffic would cause the intersection of Cherry Street/Mowry Avenue to degrade from a LOS C to an unacceptable LOS D during the AM peak hour. **(Significant Impact)**

MM TRAN– 1.1: Implementation of the following measures would reduce this impact to a less than significant level:

To mitigate the project impact at Cherry Street and Mowry Avenue, the intersection would require an additional left turn lane to the westbound Mowry Avenue approach. This mitigation measure would allow the intersection to operate at LOS C during the AM peak hour. This improvement would require the intersection be re-aligned on the eastbound and westbound approaches and extensive modifications to the existing traffic signal. Depending on the final design, it appears that these mitigation measures could be accommodated within the existing right-of-way. Modification of the intersection would be required concurrent with the

development of Areas 3 & 4 at the developer's expense. **(Less Than Significant Impact with Mitigation)**

Table 3.2-4:
Intersection Levels of Service

Study Intersection	Peak Hour	Conditions						
		Existing		Background		Project		
		Ave. Delay	LOS	Ave. Delay	LOS	Ave. Delay	LOS	Incr. In Delay
Newark Signalized Intersections:								
Cherry St and Thornton Ave	AM	24.8	C	25.2	C	25.8	C	0.6
	PM	25.4	C	26.4	C	27.6	C	1.2
Cherry St and Central Ave	AM	23.8	C	25.1	C	27.0	C	1.9
	PM	21.9	C	22.5	C	23.7	C	1.2
Cherry St and Mowry Ave	AM	26.4	C	28.5	C	**39.2**	**D**	**10.7**
	PM	26.6	C	28.0	C	30.2	C	2.2
Cherry St/Boyce Rd and Stevenson Blvd	AM	25.8	C	26.0	C	28.9	C	2.9
	PM	21.8	C	23.3	C	27.7	C	4.4
Newark Blvd and Thornton Ave	AM	20.1	C	20.2	C	20.3	C	0.1
	PM	21.0	C	21.0	C	21.1	C	0.1
Newark Blvd and Central Ave	AM	10.9	B	10.7	B	11.1	B	0.4
	PM	11.6	B	12.0	B	11.8	B	-0.2
Cedar Blvd and Mowry Ave	AM	24.9	C	24.6	C	24.7	C	0.1
	PM	26.6	C	27.1	C	27.3	C	0.2
Cedar Blvd and Stevenson Blvd	AM	20.4	C	20.1	C	20.2	C	0.1
	PM	21.4	C	21.9	C	21.8	C	-0.1
Albrae St/Balentine Dr and Stevenson Blvd	AM	20.3	C	18.1	B	18.1	B	0.0
	PM	24.3	C	27.6	C	29.8	C	2.2
I-880 SB off-ramp and Stevenson Blvd	AM	10.4	B	10.4	B	10.3	B	-0.1
	PM	11.5	B	11.7	B	12.3	B	0.6
I-880 SB off-ramp and Mowry Ave	AM	10.8	B	10.8	B	10.7	B	-0.1
	PM	12.1	B	12.2	B	12.2	B	0.0
Cherry St and Street N of Jasmine Ave	AM	6.8	A	7.1	A	8.2	A	1.1
	PM	5.6	A	5.7	A	6.5	A	0.8
Cedar Blvd and Moores Avenue	AM	4.9	A	4.9	A	9.2	A	4.3
	PM	9.3	A	9.0	A	8.9	A	-0.1
Newark Blvd and 84E	AM	10.7	B	10.7	B	10.8	B	0.1
	PM	33.5	C	33.5	C	35.0	C	1.5
Sycamore St and Thornton Ave	AM	29.1	C	29.1	C	28.8	C	-0.3
	PM	26.7	C	26.7	C	26.4	C	-0.3
Spruce St and Thornton Ave	AM	22.8	C	22.8	C	22.6	C	-0.2
	PM	16.6	B	16.6	B	16.1	B	-0.5
Thornton Ave and Gateway Blvd	AM	9.9	A	9.9	A	9.8	A	-0.1
	PM	9.9	A	9.9	A	9.9	A	0.0
Newark Blvd and Jarvis Ave	AM	27.0	C	27.0	C	27.1	C	0.1
	PM	30.6	C	30.6	C	30.8	C	0.2
Newark Blvd and Cedar Blvd	AM	21.9	C	21.9	C	21.9	C	0.0
	PM	22.3	C	22.3	C	22.3	C	0.0
Newark Blvd and Lafayette Ave	AM	20.5	C	20.5	C	20.7	C	0.2
	PM	12.7	B	12.7	B	12.5	B	-0.2

Table 3.2-4:
Intersection Levels of Service

Study Intersection	Peak Hour	Conditions						
		Existing		Background		Project		
		Ave. Delay	LOS	Ave. Delay	LOS	Ave. Delay	LOS	Incr. In Delay
Newark Blvd and Mayhews Landing Rd	AM	12.8	B	12.8	B	13.1	B	0.3
	PM	12.2	B	12.2	B	12.1	B	-0.1
Cedar Blvd and Central Ave	AM	20.9	C	21.0	C	21.3	C	0.3
	PM	20.3	C	20.6	C	21.1	C	0.5
Cedar Blvd and Thornton Ave	AM	33.0	C	33.0	C	33.1	C	0.1
	PM	32.9	C	32.9	C	33.9	C	1.0
Willow St and Thornton Ave	AM	15.7	B	15.7	B	15.6	B	-0.1
	PM	16.7	B	16.7	B	16.4	B	-0.3
Cherry St and Clark Ave	AM	17.9	B	17.9	B	17.8	B	-0.1
	PM	15.1	B	14.7	B	14.1	B	-0.6
Alpenrose St and Mowry Ave	AM	17.2	B	15.9	B	16.1	B	0.2
	PM	21.2	C	22.5	C	23.6	C	1.1
Cherry St and Smith Ave	AM	16.3	B	16.0	B	15.7	B	-0.3
	PM	10.6	B	10.2	B	9.5	A	-0.7
Fremont Signalized Intersections:								
Boyce Rd and Auto Mall Pkwy	AM	27.2	C	25.9	C	25.5	C	-0.4
	PM	29.7	C	28.5	C	28.0	C	-0.5
I-880 NB off-ramp and Stevenson Blvd	AM	9.4	A	9.4	A	9.3	A	-0.1
	PM	8.6	A	8.9	A	10.0	A	1.1
I-880 NB off-ramp and Mowry Ave	AM	10.0	A	9.9	A	9.9	A	0.0
	PM	13.9	B	14.0	B	14.1	B	0.1
I-880 SB off-ramp and Auto Mall Pkwy	AM	14.6	B	14.9	B	15.0	B	0.1
	PM	14.4	B	14.7	B	14.8	B	0.1
I-880 NB off-ramp and Auto Mall Pkwy	AM	6.5	A	7.2	A	7.1	A	-0.1
	PM	5.7	A	7.7	A	7.6	A	-0.1
Boscell Rd and Auto Mall Pkwy	AM	17.9	B	18.2	B	17.7	B	-0.5
	PM	21.7	C	22.9	C	22.4	C	-0.5
Pacific Commons and Auto Mall Pkwy	AM	9.9	A	15.0	B	14.7	B	-0.3
	PM	20.2	C	31.8	C	31.7	C	-0.1
Blacow Rd and Mowry Ave	AM	28.6	C	28.5	C	28.5	C	0.0
	PM	29.5	C	29.6	C	29.5	C	-0.1
Blacow Rd and Stevenson Blvd	AM	30.9	C	30.8	C	30.8	C	0.0
	PM	29.7	C	29.3	C	30.2	C	0.9
Grimmer Blvd and Auto Mall Pkwy	AM	33.9	C	33.9	C	34.0	C	0.1
	PM	39.9	D	41.5	D	42.4	D	0.9
Fremont Blvd and Stevenson Blvd	AM	34.6	C	34.7	C	35.0	D	0.3
	PM	34.4	C	34.7	C	34.8	C	0.1
Ardenwood Blvd and 84 W	AM	30.3	C	30.3	C	30.6	C	0.3
	PM	21.7	C	21.7	C	22.2	C	0.5
Fremont Blvd and Mowry Ave	AM	31.7	C	31.7	C	31.7	C	0.0
	PM	34.0	C	34.0	C	34.1	C	0.1

Table 3.2-4:
Intersection Levels of Service

Study Intersection	Peak Hour	Conditions						
		Existing		Background		Project		
		Ave. Delay	LOS	Ave. Delay	LOS	Ave. Delay	LOS	Incr. In Delay
Farwell Dr and Mowry Ave	AM	22.4	C	22.0	C	22.0	C	0.0
	PM	21.9	C	21.8	C	21.6	C	-0.2
Christy St and Automall Pkwy	AM	17.5	B	17.4	B	17.2	B	-0.2
	PM	30.3	C	32.3	C	32.5	C	0.2
Farwell Dr/Omar St and Stevenson Blvd	AM	17.4	B	17.4	B	17.3	B	-0.1
	PM	13.3	B	13.0	B	13.2	B	0.2

Notes:
Bold and shaded text indicates a significant project impact.

Project Unsignalized Intersection Levels of Service

Unlike signalized intersections, which typically represent constraint points for the roadway network, unsignalized intersections rarely limit the potential capacity of a roadway. The determination of appropriate improvements to unsignalized intersections typically includes a qualitative and quantitative analysis of movement delay, movement traffic volumes, intersection safety, and availability of alternate routes. For this reason, improvements to unsignalized intersections are frequently determined on the basis of professional judgment. As part of the Areas 3 and 4 Specific Plan traffic analysis, operations at the following unsignalized intersections were evaluated:

Newark Unsignalized Intersections

- Cherry Street and Moores Avenue
- Alpine Street and Mowry Avenue
- Rockrose Drive and Mowry Avenue
- Thornton Avenue and SR 84 Eastbound Ramps (traffic signal is under construction)
- Newark Boulevard and Brittany Avenue/Ruschin Drive
- Sycamore Street and Central Avenue
- Cherry Street and Graham Avenue
- Encyclopedia Circle and Stevenson Boulevard
- Cherry Street and Cotton Avenue
- Cherry Street and Redeker Place/Robertson Avenue

Fremont Unsignalized Intersections

- Boyce Road and Stewart Avenue
- Paseo Padre Parkway and SR 84 Westbound Ramps (traffic signal is under construction)

The levels of service for the unsignalized study intersections under Existing, Background, and Project conditions were calculated and the delay and LOS for each intersection was reported as an overall average of all intersection movements. The intersection LOS calculation sheets are shown in Appendix B. Based on this analysis, all of the unsignalized intersections would operate at an acceptable LOS B or better under project conditions. **(Less than Significant Impact)**

An assessment was also made of the need for signalization of the intersections. This assessment was made on the basis of the Peak-hour Volume Signal Warrant, Warrant #3 (described in the California Manual on Uniform Traffic Control Devices, 2006). This method makes no evaluation of intersection level of service, but simply provides an indication of whether peak-hour traffic volumes would be sufficient to justify installation of a traffic signal. The analysis showed that the peak hour volume warrant would be satisfied at the following locations:

- *Thornton Avenue and SR 84 Eastbound Ramps*. The warrant would be satisfied during the AM and PM peak hours under existing, background, and project conditions. Traffic signal installations are underway at the SR 84 ramp intersections with Thornton Avenue and Paseo Padre Parkway.

- *Encyclopedia Circle and Stevenson Boulevard*. The warrant would be satisfied during the PM peak hour under background and project conditions.

- *Boyce Road and Stewart Drive*. The warrant would be satisfied during the PM peak hour under existing, background, and project conditions.

Based upon review of the intersection operation, the unsignalized study intersections of Boyce Road/Stewart Drive and Encyclopedia Circle/Stevenson Boulevard are considered to operate acceptably with or without the proposed project. Although the unsignalized study intersections would meet peak hour signal warrant checks, the average overall delays at all intersection movements would be acceptable and very few vehicles experience long delays (less than 20 peak hour left turns). For these reasons, the Specific Plan project is not considered to impact these unsignalized intersections.

At the Thornton Avenue/SR 84 intersection, a traffic signal warrant check would be satisfied under all conditions. As previously stated, a project to install a traffic signal at the Thornton Avenue/SR 84 EB intersection is under construction. With signalization, the intersection would operate at LOS C or better under project conditions.

3.2.3.3 *Congestion Management Program (CMP) Analysis*

The Alameda County Congestion Management Programs (CMP) includes a Land Use Analysis component to determine the impacts of land use decisions made by local jurisdictions on the regional transportation system. The intent of this program is to:

- better tie together local land use and regional transportation facilities decisions;
- better assess the impacts of developments in one community on another community;
- promote information sharing between local governments when decisions made by one jurisdiction will have an impact on another.

Local jurisdictions have responsibilities regarding the analysis of transportation impacts of land use decisions. Among those is an analysis of project impacts on the Metropolitan Transportation System (MTS) for the 2015 and 2030 horizon years. For projects that generate more than 100 peak-hour vehicle trips, a CMP traffic analysis is required using the Countywide Transportation Demand Model.

According to the CMA's Technical and Policy Guidelines, the proposed Areas 3 and 4 Specific Plan project is categorized as a Tier I (a) project, which is a large-scale project requiring a General Plan Amendment (GPA). The proposed Areas 3 and 4 Specific Plan requires an amendment to the City of Newark General Plan land use designations for the site. For Tier I (a) projects, travel forecasts need to be developed with and without the project for the 2015 and 2030 forecast years and the impact of the project on the MTS roadway system needs to be evaluated.

CMA Modeling of the Project

The CMA long-term traffic impact analysis is calculated using Alameda County travel demand model trip generation rates for households and employment. The analysis compares the trip generation of the potential build out of the existing General Plan land use designations and full occupancy of the proposed General Plan amendment land use designations. The travel demand model was run and a select traffic zone analysis performed for both the industrial and residential land uses to determine where the project trips are coming from and going to and on which roads the project traffic is likely to travel.

The proposed General Plan Amendment would convert land previously designated for industrial uses to residential land uses. The existing General Plan land use designations on the undeveloped portions of Areas 3 and 4 allow for up to 1.175 million square feet of industrial park use, up to 2,700 dwelling units, an 18-hole golf course, and open space. The proposed Specific Plan would allow up to 1,260 dwelling units, a 600 student elementary school, an 18-hole golf course, and open space. Thus, the proposed Specific Plan project results in less overall development on Areas 3 and 4 than is allowed under the existing General Plan land use designations.

Based on the existing General Plan designation and considering the assumed growth in the CMA's Alameda County travel forecast model, Newark Areas 3 & 4, under no project conditions, were assumed to contain 800 dwelling units and 2,318 jobs under year 2015 conditions, and 1,260 dwelling units and 2,920 jobs under year 2030 conditions. With the proposed Specific Plan, Areas 3 and 4 would contain 1,260 dwelling units and 1,838 jobs under year 2015 conditions, and 1,260 dwelling units and 1,940 jobs under year 2030. Compared to the no project (existing General Plan) conditions, the proposed project would result in 37 more trips during the AM peak hour and 113 more trips during the PM peak hour under year 2015 conditions. Under year 2030 conditions, the proposed project would result in 327 fewer trips during the AM peak hour and 344 fewer trips during the PM peak hour. Although the proposed project would result in less overall traffic from the site in 2030, the directionality of residential trips is opposite the directionality of employment trips. Outbound residential trips peak in the morning, while outbound employment trips peak in the early evening. Thus, despite the fact that the overall volume of traffic from the project vicinity would be less than under the current General Plan, some street segments will experience increases as a result of the proposed Specific Plan.

CMA Year 2015 and Year 2030 Impacts

The Alameda County travel demand model trip assignment indicates that most of the project trips would travel on the major facilities such as I-880, Stevenson Boulevard, Cherry Street, and Mowry Avenue. In order to determine the impact of the project for the 2015 and 2030 horizon years, the net project volumes of the residential and employment uses were added to the forecasted 2015 and 2030 peak-hour traffic volumes. The resulting traffic volumes and levels of service on the affected regional roadway segments with and without the proposed project are shown in Tables 3.2-5, 3.2-6, 3.2-7, and 3.2-8 on the following pages.

The results of the traffic model show that in 2015 and 2030, the regional roadway segments in the vicinity of the project would operate at congested traffic conditions in the peak-directions. In particular, portions of I-880 are projected to operate at LOS F under years 2015 and 2030 during both peak hours. Although the proposed Specific Plan would add some traffic to these roadways, on no study segment would the proposed Specific Plan add more than 32 peak hour trips (or about one car every 2 minutes). This small addition, when added incrementally to the trips of other projects, is not cumulatively considerable. In addition, because the proposed Specific Plan would result in less overall land use density in Areas 3 and 4 than allowed under the existing General Plan, several of the roadway segments projected to operate at LOS F under the existing General Plan would experience traffic decreases under the proposed Specific Plan, thereby improving traffic conditions. For these reasons, it was concluded that the impact of the proposed project would have a less than significant impact on the CMA roadway network. **(Less than Significant Impact)**

3.2.3.4 *Pedestrian and Bicycle Impacts*

The Specific Plan includes American Disability Act (ADA)-compliant sidewalks, wheelchair ramps, and street lighting along the project frontages and interior streets.

Pedestrian traffic would be primarily generated by residents walking to and from local schools, parks, transit stops, and nearby retail centers. It is reasonable to assume that pedestrian trips will comprise no more than three percent of the travel mode share outside the project area during the peak commute periods. This would equate to approximately 43 new pedestrian trips during the AM peak hour and 50 new pedestrian trips during the PM peak hour. The volume of pedestrian trips generated by the project would not exceed the carrying capacity of the existing sidewalks on streets surrounding the site. The installation for the new signal at the Cherry Street access to Area 3 will also provide a crosswalk at the intersection.

It is estimated that bicycle trips will also comprise no more than three percent of the travel mode share outside the project area during the peak commute periods. This would equate to approximately 43 new bicycle trips during the AM peak hour and approximately 50 new bicycle trips during the PM peak hour. The project area is served by existing bike lanes provided on Cherry Street-Boyce Road and Stevenson Boulevard. The project includes a new vehicular bridge on an extension of Stevenson Road over the existing railroad tracks into Area 4, which would include bike lanes. Although the streets within the project would not contain bike lanes, the traffic volumes and vehicle speeds would be sufficiently low that shared use of the roadway between bikes and motor vehicles would be feasible.

Table 3.2-5:
2015 AM Peak Hour Roadway Segment LOS

					Existing				2015 No Project				2015 With Project				2015 Change		
Segment	Endpoint 1	Endpoint 2	Direction	Roadway Classification[1]	Speed	Volume	Density	**LOS**	Speed	Volume	Density	**LOS**	Speed	Volume	Density	**LOS**	Speed	Volume	Density
Stevenson Blvd	I-880	Blacow Rd	EB	III	30	494	N.A.	**B**	30	714	N.A.	**B**	30	729	N.A.	**B**	0	15	N.A.
Stevenson Blvd	I-880	Blacow Rd	WB	III	25	1637	N.A.	**B**	20	1714	N.A.	**C**	20	1706	N.A.	**C**	0	-8	N.A.
Mowry Ave	I-880	Blacow Rd	EB	II	35	602	N.A.	**A**	35	585	N.A.	**A**	35	588	N.A.	**A**	0	3	N.A.
Mowry Ave	I-880	Blacow Rd	WB	II	35	1658	N.A.	**A**	35	2431	N.A.	**A**	35	2411	N.A.	**A**	0	-20	N.A.
																		0	
Thornton Avenue, East of I-880	Fremont Blvd	I-880	EB	III	30	487	N.A.	**B**	31	331	N.A.	**A**	31	335	N.A.	**A**	0	4	N.A.
Thornton Avenue, West of I-880	I-880	SR 84	EB	II	35	491	N.A.	**A**	35	582	N.A.	**A**	35	580	N.A.	**A**	0	-2	N.A.
Thornton Avenue, East of I-880	Fremont Blvd	I-880	WB	III	31	724	N.A.	**A**	31	1144	N.A.	**A**	31	1142	N.A.	**A**	0	-2	N.A.
Thornton Avenue, West of I-880	I-880	SR 84	WB	II	35	530	N.A.	**A**	35	528	N.A.	**A**	35	528	N.A.	**B**	0	0	N.A.
Newark Blvd	SR 84	Thornton Ave	NB	II	40	784	N.A.	**A**	40	827	N.A.	**A**	40	829	N.A.	**A**	0	2	N.A.
Newark Blvd	SR 84	Thornton Ave	SB	II	40	1117	N.A.	**A**	39	1765	N.A.	**A**	39	1758	N.A.	**A**	0	-7	N.A.
I-880	Mission Blvd	Stevenson Blvd	NB	Freeway	N.A.	3917	16	**B**	N.A.	3844	18	**B**	N.A.	3834	18	**B**	N.A.	-10	0.0
I-880	Stevenson Blvd	SR 84	NB	Freeway	N.A.	5021	21	**C**	N.A.	4779	20	**C**	N.A.	4799	20	**C**	N.A.	20	0.0
I-880	Mission Blvd	Stevenson Blvd	SB	Freeway	N.A.	6469	39	**F**	N.A.	7163	90	**F**	N.A.	7193	91	**F**	N.A.	30	1.0
I-880	Stevenson Blvd	SR 84	SB	Freeway	N.A.	5677	53	**F**	N.A.	6261	78	**F**	N.A.	6251	78	**F**	N.A.	-10	0.0
SR 84 (Dumbarton Bridge)	Thornton Ave	I-880	EB	Freeway	N.A.	1521	8	**A**	N.A.	1686	9	**A**	N.A.	1684	9	**A**	N.A.	-2	0.0
SR 84 (Dumbarton Bridge)	Thornton Ave	I-880	WB	Freeway	N.A.	3894	24	**D**	N.A.	3774	27	**D**	N.A.	3773	27	**D**	N.A.	-1	0.0

Footnotes:
/1/ The roadway classification is based on guidance provided in the Highway Capacity Manual 2000.
/2/ Arterials LOS is based on guidance provided in Exhibit 15-2 Urban Street LOS By Class, Highway Capacity Manual, 2000.
Freeway Segments LOS is based on guidance provided in Exhibit 23-2 LOS Criteria For Basisc Freeway Segments, Highway Capacity Manual, 2000.
/3/ The roadway segments included in this analysis are based on the Comments on the Notice of Preparation from the CMA to City of Newark (June 8, 2007).

Table 3.2-6:
2015 PM Peak Hour Roadway Segment LOS

					Existing				2015 No Project				2015 With Project				2015 Change		
Segment	Endpoint 1	Endpoint 2	Direction	Roadway Classification[1]	Speed	Volume	Density	LOS	Speed	Volume	Density	LOS	Speed	Volume	Density	LOS	Speed	Volume	Density
Stevenson Blvd	I-880	Blacow Rd	EB	III	30	1552	N.A.	**B**	30	1757	N.A.	**B**	30	1750	N.A.	**B**	0	-7	N.A.
Stevenson Blvd	I-880	Blacow Rd	WB	III	30	907	N.A.	**B**	18	1058	N.A.	**D**	18	1071	N.A.	**D**	0	13	N.A.
Mowry Ave	I-880	Blacow Rd	EB	II	35	2221	N.A.	**A**	35	2778	N.A.	**A**	35	2778	N.A.	**A**	0	0	N.A.
Mowry Ave	I-880	Blacow Rd	WB	II	35	744	N.A.	**A**	22	836	N.A.	**C**	22	824	N.A.	**C**	0	-12	N.A.
																		0	
Thornton Avenue, East of I-880	Fremont Blvd	I-880	EB	III	30	1048	N.A.	**A**	25	1212	N.A.	**B**	25	1210	N.A.	**B**	0	-2	N.A.
Thornton Avenue, West of I-880	I-880	SR 84	EB	II	35	533	N.A.	**A**	35	763	N.A.	**A**	35	761	N.A.	**A**	0	-2	N.A.
Thornton Avenue, East of I-880	Fremont Blvd	I-880	WB	III	30	387	N.A.	**B**	30	504	N.A.	**B**	30	505	N.A.	**B**	0	1	N.A.
Thornton Avenue, West of I-880	I-880	SR 84	WB	II	35	630	N.A.	**A**	32	728	N.A.	**B**	32	726	N.A.	**B**	0	-2	N.A.
Newark Blvd	SR 84	Thornton Ave	NB	II	40	1417	N.A.	**A**	37	1767	N.A.	**A**	37	1761	N.A.	**A**	0	-6	N.A.
Newark Blvd	SR 84	Thornton Ave	SB	II	40	1336	N.A.	**A**	40	1548	N.A.	**A**	40	1556	N.A.	**A**	0	8	N.A.
I-880	Mission Blvd	Stevenson Blvd	NB	Freeway	N.A.	6641	73	**F**	N.A.	7529	120	**F**	N.A.	7555	120	**F**	N.A.	26	0.0
I-880	Stevenson Blvd	SR 84	NB	Freeway	N.A.	6818	38	**E**	N.A.	7347	48	**F**	N.A.	7346	48	**F**	N.A.	-1	0.0
I-880	Mission Blvd	Stevenson Blvd	SB	Freeway	N.A.	4196	20	**C**	N.A.	4172	20	**C**	N.A.	4164	20	**C**	N.A.	-8	0.0
I-880	Stevenson Blvd	SR 84	SB	Freeway	N.A.	4424	28	**D**	N.A.	4972	35	**E**	N.A.	5004	36	**E**	N.A.	32	1.0
SR 84 (Dumbarton Bridge)	Thornton Ave	I-880	EB	Freeway	N.A.	4806	32	**D**	N.A.	5303	28	**D**	N.A.	5307	28	**D**	N.A.	4	0.0
SR 84 (Dumbarton Bridge)	Thornton Ave	I-880	WB	Freeway	N.A.	1725	9	**A**	N.A.	1992	16	**B**	N.A.	1992	16	**B**	N.A.	0	0.0

Footnotes:
/1/ The roadway classification is based on guidance provided in the Highway Capacity Manual 2000.
/2/ Arterials LOS is based on guidance provided in Exhibit 15-2 Urban Street LOS By Class, Highway Capacity Manual, 2000.
Freeway Segments LOS is based on guidance provided in Exhibit 23-2 LOS Criteria For Basisc Freeway Segments, Highway Capacity Manual, 2000.
/3/ The roadway segments included in this analysis are based on the Comments on the Notice of Preparation from the CMA to City of Newark (June 8, 2007).

Table 3.2-7:
2030 AM Peak Hour Roadway Segment LOS

					2030 No Project				2030 With Project				2030 Change		
Segment	Endpoint 1	Endpoint 2	Direction	Roadway Classification[1]	Speed	Volume	Density	**LOS**	Speed	Volume	Density	**LOS**	Speed	Volume	Density
Stevenson Blvd	I-880	Blacow Rd	EB	III	30	806	N.A.	**B**	30	800	N.A.	**B**	0	-6	N.A.
Stevenson Blvd	I-880	Blacow Rd	WB	III	9	1967	N.A.	**F**	9	1945	N.A.	**F**	0	-22	N.A.
Mowry Ave	I-880	Blacow Rd	EB	II	35	1088	N.A.	**A**	35	1085	N.A.	**A**	0	-3	N.A.
Mowry Ave	I-880	Blacow Rd	WB	II	17	3065	N.A.	**E**	17	3021	N.A.	**E**	0	-44	N.A.
														0	
Thornton Avenue, East of I-880	Fremont Blvd	I-880	EB	III	31	710	N.A.	**A**	31	709	N.A.	**A**	0	-1	N.A.
Thornton Avenue, West of I-880	I-880	SR 84	EB	II	34	910	N.A.	**B**	34	906	N.A.	**B**	0	-4	N.A.
Thornton Avenue, East of I-880	Fremont Blvd	I-880	WB	III	25	1508	N.A.	**B**	25	1501	N.A.	**B**	0	-7	N.A.
Thornton Avenue, West of I-880	I-880	SR 84	WB	II	36	912	N.A.	**A**	36	908	N.A.	**B**	0	-4	N.A.
Newark Blvd	SR 84	Thornton Ave	NB	II	40	822	N.A.	**A**	40	818	N.A.	**A**	0	-4	N.A.
Newark Blvd	SR 84	Thornton Ave	SB	II	25	2105	N.A.	**C**	25	2089	N.A.	**C**	0	-16	N.A.
I-880	Mission Blvd	Stevenson Blvd	NB	Freeway	N.A.	4555	23	**C**	N.A.	4531	22	**C**	N.A.	-24	-1.0
I-880	Stevenson Blvd	SR 84	NB	Freeway	N.A.	4365	17	**B**	N.A.	4361	17	**B**	N.A.	-4	0.0
I-880	Mission Blvd	Stevenson Blvd	SB	Freeway	N.A.	10129	657	**F**	N.A.	10126	657	**F**	N.A.	-3	0.0
I-880	Stevenson Blvd	SR 84	SB	Freeway	N.A.	8027	304	**F**	N.A.	8001	303	**F**	N.A.	-26	-1.0
SR 84 (Dumbarton Bridge)	Thornton Ave	I-880	EB	Freeway	N.A.	2621	14	**B**	N.A.	2617	14	**B**	N.A.	-4	0.0
SR 84 (Dumbarton Bridge)	Thornton Ave	I-880	WB	Freeway	N.A.	5375	132	**F**	N.A.	5372	132	**F**	N.A.	-3	0.0

Footnotes:
/1/ The roadway classification is based on guidance provided in the Highway Capacity Manual 2000.
/2/ Arterials LOS is based on guidance provided in Exhibit 15-2 Urban Street LOS By Class, Highway Capacity Manual, 2000.
Freeway Segments LOS is based on guidance provided in Exhibit 23-2 LOS Criteria For Basisc Freeway Segments, Highway Capacity Manual, 2000.
/3/ The roadway segments included in this analysis are based on the Comments on the Notice of Preparation from the CMA to City of Newark (June 8, 2007).

Table 3.2-8:
2030 PM Peak Hour Roadway Segment LOS

					2030 No Project				2030 With Project				2030 Change		
Segment	Endpoint 1	Endpoint 2	Direction	Roadway Classification[1]	Speed	Volume	Density	**LOS**	Speed	Volume	Density	**LOS**	Speed	Volume	Density
Stevenson Blvd	I-880	Blacow Rd	EB	III	2	2265	N.A.	**F**	2	2238	N.A.	**F**	0	-27	N.A.
Stevenson Blvd	I-880	Blacow Rd	WB	III	30	959	N.A.	**B**	30	939	N.A.	**B**	0	-20	N.A.
Mowry Ave	I-880	Blacow Rd	EB	II	3	3274	N.A.	**F**	3	3264	N.A.	**F**	0	-10	N.A.
Mowry Ave	I-880	Blacow Rd	WB	II	35	1004	N.A.	**A**	35	970	N.A.	**A**	0	-34	N.A.
														0	
Thornton Avenue, East of I-880	Fremont Blvd	I-880	EB	III	18	1516	N.A.	**D**	18	1509	N.A.	**D**	0	-7	N.A.
Thornton Avenue, West of I-880	I-880	SR 84	EB	II	34	885	N.A.	**B**	34	877	N.A.	**B**	0	-8	N.A.
Thornton Avenue, East of I-880	Fremont Blvd	I-880	WB	III	31	533	N.A.	**A**	31	531	N.A.	**A**	0	-2	N.A.
Thornton Avenue, West of I-880	I-880	SR 84	WB	II	36	793	N.A.	**A**	36	790	N.A.	**B**	0	-3	N.A.
Newark Blvd	SR 84	Thornton Ave	NB	II	39	1828	N.A.	**A**	39	1809	N.A.	**A**	0	-19	N.A.
Newark Blvd	SR 84	Thornton Ave	SB	II	39	1671	N.A.	**A**	39	1668	N.A.	**A**	0	-3	N.A.
I-880	Mission Blvd	Stevenson Blvd	NB	Freeway	N.A.	10038	652	**F**	N.A.	10033	651	**F**	N.A.	-5	-1.0
I-880	Stevenson Blvd	SR 84	NB	Freeway	N.A.	9260	134	**F**	N.A.	9239	134	**F**	N.A.	-21	0.0
I-880	Mission Blvd	Stevenson Blvd	SB	Freeway	N.A.	4885	26	**C**	N.A.	4858	26	**C**	N.A.	-27	0.0
I-880	Stevenson Blvd	SR 84	SB	Freeway	N.A.	5270	43	**E**	N.A.	5261	42	**E**	N.A.	-9	-1.0
SR 84 (Dumbarton Bridge)	Thornton Ave	I-880	EB	Freeway	N.A.	7242	165	**F**	N.A.	7239	165	**F**	N.A.	-3	0.0
SR 84 (Dumbarton Bridge)	Thornton Ave	I-880	WB	Freeway	N.A.	2659	14	**B**	N.A.	2657	14	**B**	N.A.	-2	0.0

Footnotes:
/1/ The roadway classification is based on guidance provided in the Highway Capacity Manual 2000.
/2/ Arterials LOS is based on guidance provided in Exhibit 15-2 Urban Street LOS By Class, Highway Capacity Manual, 2000.
Freeway Segments LOS is based on guidance provided in Exhibit 23-2 LOS Criteria For Basisc Freeway Segments, Highway Capacity Manual, 2000.
/3/ The roadway segments included in this analysis are based on the Comments on the Notice of Preparation from the CMA to City of Newark (June 8, 2007).

San Francisco Bay Trail

The Bay Trail is a planned regional hiking and bicycling trail around the perimeter of the San Francisco and San Pablo Bays.[25] The current Bay Trail through the City of Newark is aligned along Cherry Street and the identified "proposed" alignment is along the Union Pacific Railroad tracks.[26] The Cities of Newark and Fremont have applied for a San Francisco Bay Trail grant for community planning efforts in the two cities to plan for a realignment of the Bay Trail as a part of the Newark Area 2 and 4 planning efforts, Fremont's landfill closure, and other developments. The cities are seeking to assess alternative alignments, consider connection points, and coordinate with property owners. The Specific Plan developer of Area 4 will be required to provide an easement for the Bay Trail to run along the top of the levees that form the western edge of the project, if that is the preferred alignment.

The proposed project would not result in significant impacts related to pedestrian or bicycle facilities; nor would it impede the development or function of planned pedestrian or bicycle facilities. **(Less than Significant Impact)**

3.2.3.5 *Transit Impacts*

Existing AC Transit bus routes travel along Mowry Avenue, Cherry/Boyce Street and Stevenson Boulevard, in the vicinity or adjacent to the project street frontages. It is reasonable to assume that transit trips will comprise no more than four percent of the travel mode share to the site during the peak commute periods. This would equate to approximately 57 new transit riders during the AM peak hour and approximately 67 new transit riders during the PM peak hour. Within the vicinity of the project there are three bus lines. Assuming the existing service would remain unchanged, with three bus lines providing service with 30 to 60-minute headways, the number of transit riders during the peak commute period (PM peak hour) would equate to about 12 riders. These new riders could easily be accommodated by the current available ridership capacity of the existing transit facilities in the project study area. Therefore, the project is not expected to increase transit demand such that improvements to the existing bus service would be necessary.

Once project development is underway, AC Transit may consider reevaluating bus service in the study area and make changes accordingly. Changes could include altering the existing bus routes, adding bus routes and stops, and changing headways to encourage more project-generated transit ridership.

The proposed Specific Plan project would not adversely impact transit service; nor would it conflict with adopted plans or policies supporting alternative transportation. **(Less than Significant Impact)**

3.2.3.6 *Site Access and Circulation*

Site access and on-site circulation were evaluated using commonly accepted transportation planning principals. This review was based on the Specific Plan concepts dated June 2008.

[25] ABAG. 1989. *The Bay Trail Planning for a Recreational Ring Around San Francisco Bay*. San Francisco Bay Trail Project. Reprinted March 2001.
[26] ABAG. San Francisco Bay Trail Plan. Bay Trail Map. http://baytrail.abag.ca.gov/map.html, July 1999.

Site Access

Access to the proposed Area 3 project site would be provided via one new residential roadway located off of Cherry Street and one new residential roadway located off of Stevenson Boulevard. Access to the proposed Area 4 project site would be provided via an extension of Stevenson Boulevard into the project site. The Stevenson extension also requires the modification of two high-voltage power line towers in Area 4 to raise the elevation of the transmissions lines over the new bridge. One tower requires an 20-foot height extension and one tower requires removal and replacement with a taller tower 25 feet northwest of and in line with the existing tower location. The tower modifications are sized appropriately to provide adequate clearance for all vehicles traveling over the new bridge and would not result in any traffic safety impacts.

Along the Area 3 project frontage, Cherry Street consists of two northbound lanes, two southbound lanes, one northbound left turn pocket, and bike lanes. Measured from the centerlines of roadways, the new residential access roadway would be located approximately 1,700 feet north of Stevenson Boulevard. Based on the Cherry Street access intersection's poor levels of service, signal warrant results, its proximity to the neighborhood to the east, and distance from existing signalized intersections, a traffic signal is recommended as the most effective traffic control device. With signalization, the intersection would operate at LOS B or better under project conditions. Based on the anticipated traffic volumes, the driveway located off of Cherry Street should have two outbound lanes with a minimum eastbound left-turn storage of 100 feet (4 vehicles) and crosswalks to facilitate pedestrian access. As described in the project description, this improvement is included the Specific Plan.

Along the Area 3 project frontage to the south, Stevenson Boulevard consists of two eastbound lanes, two westbound lanes, left turn pockets, and bike lanes. Measured from the centerlines of roadways, the new Area 3 residential street located on Stevenson Boulevard would be located approximately 560 feet west of Cherry Street/Boyce Road. Access to the Stevenson Boulevard Area 3 entry driveway will operate with acceptable delay because of the relatively low existing traffic volumes and the signal to the east, which will provide adequate gaps for traffic at the subject driveway. Based on the anticipated traffic volumes, the driveway located off of Stevenson Boulevard should have two outbound lanes and a minimum southbound left-turn storage of 100 feet (4 vehicles).

Site Circulation

The onsite circulation was reviewed in accordance with generally accepted traffic engineering standards. Generally, the proposed Specific Plan would provide adequate connectivity throughout the project site. Prior to final Specific Plan design, a detailed traffic engineering review will be completed. Any future designed cul-de-sacs should be designed in conformance with the standards set forth by the City of Newark (minimum 45-foot curb radius) to ensure adequate design specifications for fire truck access and garbage collection.

Future designed roundabouts should be analyzed for the categories SU-30, WB-40, and B-40 to ensure adequate design for small and large buses, moving trucks, garbage trucks, and fire trucks. Final design of roundabouts should be reviewed by the City traffic engineer for safe operation, signing, and striping.

The Specific Plan includes the following measures. Future development plans will involve subsequent entitlement processes and analyses which will require incorporation of the following measures into the final circulation plans.

- The public street system shall meet all City of Newark standards for right-of-way and roadway widths. If bulb-outs are considered at intersections, a detailed analysis using truck turning templates shall be completed.

- Street intersections shall be free and clear of any obstructions to optimize sight distance, thereby ensuring that exiting vehicles can see pedestrians on the sidewalk and other vehicles traveling on Cherry Street and Stevenson Boulevard. Landscaping and parking shall not conflict with a driver's ability to locate a gap in traffic. Adequate corner sight distance (sight distance triangles) shall be provided at all intersections and site driveways in accordance with City of Newark standards.

- The proposed layout for the school in Area 3 will be subject to separate review for site access and circulation, to ensure the loading areas are adequately designed and the school access is properly integrated into the neighborhood roadways.

- Based on the traffic volumes entering and exiting Area 4, a left turn pocket, that would accommodate u-turns, will be provided as a part of the Specific Plan, where the new main roadway intersects with the first east/west residential roadway. This is due to the fact that a number of vehicles may attempt this movement to access the southern portion of the project site because it is quicker than circulating through the various neighborhood streets.

Incorporation of the above measures into the circulation plans will ensure less than significant impacts to site access and circulation. **(Less than Significant Impact)**

3.2.4 Conclusion

All study intersections would continue to operate at acceptable levels of service under project conditions measured against the City of Newark and Fremont standards except one intersection described below. **(Less than Significant Impact)**

The addition of project traffic would cause the intersection of Cherry Street/Mowry Avenue to degrade from a LOS C to an unacceptable LOS D during the AM peak hour. As mitigation, the project will add a left turn lane to the westbound Mowry Avenue approach, re-aligned the eastbound and westbound approaches, and modify the existing traffic signal (MM TRAN-1.1). **(Less than Significant Impact with Mitigation)**

All of the unsignalized intersections would operate at an acceptable LOS B or better under project conditions. **(Less than Significant Impact)**

The proposed Specific Plan would have a less than significant impact on the CMA roadway network because the proposed Plan would result in less overall land use density in Areas 3 and 4 than allowed under the existing General Plan. **(Less than Significant Impact)**

The proposed Specific Plan project would not result in significant impacts related to pedestrian or bicycle facilities; nor would it impede the development or function of planned pedestrian or bicycle facilities. **(Less than Significant Impact)**

The proposed Specific Plan project would not adversely impact transit service; nor would it conflict with adopted plans or policies supporting alternative transportation. **(Less than Significant Impact)**

Future development plans will incorporate required Specific Plan circulation and operational measures into the circulation plans that will ensure less than significant impacts to site access and circulation. **(Less than Significant Impact)**

3.3 AIR QUALITY

The following section is based upon air quality studies prepared by *Illingworth & Rodkin, Inc.* in February 2009 and November 2009. This report is located in Appendix C of this document.

3.3.1 Regulatory Overview

The federal Clean Air Act governs air quality in the United States. In addition to being subject to federal requirements, air quality in California is also governed by more stringent regulations under the California Clean Air Act. At the federal level, the United States Environmental Protection Agency (USEPA) administers the federal Clean Air Act (CAA). The California Clean Air Act is administered by the California Air Resources Board (CARB) at the state level and by the Air Quality Management Districts at the regional and local levels. The Bay Area Air Quality Management District (BAAQMD) regulates air quality at the regional level, which includes the nine-county Bay Area.

3.3.1.1 *United States Environmental Protection Agency*

The United States Environmental Protection Agency (U.S. EPA) is responsible for enforcing the Federal CAA. The U.S. EPA is also responsible for establishing the National Ambient Air Quality Standards (NAAQS). NAAQS are required under the 1977 Clean Air Act and subsequent amendments. The U.S. EPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain types of locomotives. The agency has jurisdiction over emission sources outside state waters (e.g., beyond the outer continental shelf) and establishes various emission standards, including those for vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission standards established by CARB.

3.3.1.2 *California Air Resources Board*

In California, California Air Resources Board (CARB), part of the California Environmental Protection Agency, is responsible for meeting the state requirements of the Federal Clean Air Act, administering the California Clean Air Act, and establishing the California Ambient Air Quality Standards (CAAQS). The California Clean Air Act requires all air districts in the State to endeavor to achieve and maintain CAAQS. CARB regulates mobile air pollution sources, such as motor vehicles. The agency is responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. CARB has established passenger vehicle fuel specifications and oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities at the regional and county level. CARB also conducts or supports research into the effects of air pollution on the public and develops innovative approaches to reducing air pollutant emissions.

3.3.1.3 *Bay Area Air Quality Management District*

The Bay Area Air Quality Management District (BAAQMD) is primarily responsible for assuring that the National and State ambient air quality standards are attained and maintained in the Bay Area. BAAQMD is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and

meteorological conditions, awarding grants to reduce motor vehicle emissions, conducting public education campaigns, as well as many other activities. BAAQMD has jurisdiction over much of the nine-county Bay Area counties, including Alameda County, in which Newark is located.

The adopted *BAAQMD CEQA Guidelines* (1999) provides procedures for evaluating possible air quality impacts for proposed project and plans consistent with CEQA requirements. BAAQMD recently released proposed ***CEQA Draft Air Quality Guidelines*** (November 2009), which are an update to its current CEQA Guidelines and include updated thresholds for criteria air pollutants and toxic air contaminants (TACs). The proposed *Air Quality Guidelines* (if adopted) would supersede BAAQMD's current BAAQMD CEQA Guidelines (1999). The public comment period for the Thresholds Report and Draft Guidelines ended on November 23, 2009. It is anticipated that the BAAQMD Board of Directors will consider adoption of the BAAQMD CEQA Guidelines Update and Thresholds in December 2009. According to BAAQMD, projects who have released their NOP prior to the adoption of the 2009 draft guidelines should analyze their air quality impacts according to the *BAAQMD CEQA Guidelines* (1999).[27] Since it is likely that adoption of the updated guidelines will occur prior to certification of the subject EIR, we have included both the current (1999) thresholds and the proposed updated thresholds in the following discussion of air quality impacts.

3.3.1.4 *National and State Ambient Air Quality Standards*

The ambient air quality in a given area depends on the quantities of pollutants emitted within the area, transport of pollutants to and from surrounding areas, local and regional meteorological conditions, as well as the surrounding topography of the air basin. Air quality is described by the concentration of various pollutants in the atmosphere. Units of concentration are generally expressed in parts per million (ppm) or micrograms per cubic meter (µg/m3). The significance of a pollutant concentration is determined by comparing the concentration to an appropriate ambient air quality standard. The standards represent the allowable pollutant concentrations designed to ensure that the public health and welfare are protected, while including a reasonable margin of safety to protect the more sensitive individuals in the population.

As required by the federal Clean Air Act, National Ambient Air Quality Standards (NAAQS) have been established for six major air pollutants: carbon monoxide (CO), nitrogen oxides (NOx), ozone (O3), respirable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), sulfur oxides, and lead. Pursuant to the California Clean Air Act, the State of California has also established ambient air quality standards. The California Ambient Air Quality Standards (CAAQS) are generally more stringent than the corresponding federal standards and incorporate additional standards for pollutants such as sulfates, hydrogen sulfide, vinyl chloride and visibility reducing particles. Both state and federal standards are summarized in Table 3.3-1. The "primary" standards have been established to protect the public health. The "secondary" standards are intended to protect the nation's welfare and account for adverse air pollutant effects on soil, water, visibility, materials, vegetation and other aspects of the general welfare. Because CAAQS are more stringent than NAAQS, CAAQS are used as the comparative standard in this analysis.

[27] Hilken, Henry. BAAQMD Division Director for Planning, Rules, and Research. Santa Rosa public workshop. 9 September 2009.

Table 3.3-1:
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards[a]	
			Primary[b,c]	Secondary[b,d]
Ozone	8-hour	0.07 ppm	0.08 ppm	---
	1-hour	0.09 ppm	---[e]	Same as primary
Carbon monoxide	8-hour	9.0 ppm	9 ppm	---
	1-hour	20 ppm	35 ppm	---
Nitrogen dioxide	Annual	0.03 ppm	0.053 ppm	Same as primary
	1-hour	0.18 ppm	0.030 ppm	---
Sulfur dioxide	Annual	---	0.03 ppm	---
	24-hour	0.04 ppm	0.14 ppm	---
	3-hour	---	---	0.5 ppm
	1-hour	0.25 ppm	---	---
PM_{10}	Annual	20 $\mu g/m^3$	---[f]	Same as primary
	24-hour	50 $\mu g/m^3$	150 $\mu g/m^3$	Same as primary
$PM_{2.5}$	Annual	12 $\mu g/m^3$	15 $\mu g/m^3$	---
	24-hour	---	35 $\mu g/m^3$	---
Lead	Calendar quarter	---	1.5 $\mu g/m^3$	Same as primary
	30-day average	1.5 $\mu g/m^3$	---	---

Notes:
[a] Standards, other than for ozone and those based on annual averages, are not to be exceeded more than once a year. The ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one.
[b] Concentrations are expressed first in units in which they were promulgated.
[c] Primary standards: the levels of air quality necessary, with an adequate margin of safety to protect public health. Each state must attain the primary standards no later than three years after that state's implementation plan is approved by the EPA.
[d] Secondary standards: the levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
[e] The national 1-hour ozone standards was revoked by USEPA on June 15, 2005.
[f] The annual PM_{10} standard was revoked by USEPA on September 21, 2006 and a new $PM_{2.5}$ 24-hour standard was established.

The BAAQMD and other agencies prepare clean air plans in response to the State and federal Clean Air Acts. The City of Newark also includes General Plan policies that encourage development that reduces air quality impacts. In addition, the BAAQMD has developed CEQA Guidelines to assist local agencies in evaluating and mitigating air quality impacts.

3.3.1.5 *Regional Clean Air Plans*

2001 Ozone Attainment Plan

The Bay Area 2001 Ozone Attainment Plan was prepared by the BAAQMD, the Metropolitan Transportation Commission (MTC), and the Association of Bay Area Governments (ABAG). This plan is a proposed revision to the Bay Area's part of the State Implementation Plan, or SIP to achieve the NAAQS for the 1-hour ozone standard. The plan was prepared in response to U.S. EPA's partial approval and partial disapproval of the Bay Area's 1999 Ozone Attainment Plan. Although U.S. EPA

revoked the 1-hour NAAQS, commitments made in that plan along with emissions budgets remain valid until the region develops an attainment demonstration/maintenance plan for the 8-hour NAAQS for ozone. The U.S. EPA has already determined that the region met the 1997 8-hour ozone standard. However, the region will be required to submit a maintenance plan and demonstration of attainment with a request for redesignation to U.S. EPA in when the 8-hour ozone NAAQS is met. BAAQMD will likely not act on this submittal for a few years. In addition, the U.S. EPA's new, slightly more stringent, 8-hour standard was recently established. The U.S. EPA will be making new attainment designations based on that standard in about 3 years and eventually revoking the older standard. A Carbon Monoxide Maintenance Plan was approved in 1998 by EPA, which demonstrated how NAAQS for carbon monoxide standard would be maintained.

Bay Area 2005 Ozone Strategy

The current local air quality plan is called the Bay Area 2005 Ozone Strategy. This plan, adopted in January 2006, is the latest update to the original Bay Area 1991 Clean Air Plan, or CAP, that was prepared by the BAAQMD, MTC and ABAG to address the California Clean Air Act. Updates are developed approximately every three years. The plans are meant to demonstrate progress toward meeting the more stringent 1-hour ozone CAAQS. The Bay Area 2005 Ozone Strategy includes a comprehensive strategy to reduce emissions from stationary, area, and mobile sources. The plan objective is to indicate how the region would make progress toward attaining the stricter state air quality standards, as mandated by the California Clean Air Act. The plan is designed to achieve a region-wide reduction of ozone precursor pollutants through the expeditious implementation of all feasible measures. The plan proposes expanded implementation of transportation control measures (TCMs) and programs such as Spare the Air. Spare the Air is a public outreach program designed to educate the public about air pollution in the Bay Area and promote individual behavior changes that improve air quality. Some of these measures or programs rely on local governments for implementation. An update to the plan is currently being developed and should be available by 2009.

PM_{10} and $PM_{2.5}$ Plans

The clean air planning efforts for ozone will also reduce PM_{10} and $PM_{2.5}$, since a substantial amount of this air pollutant comes from combustion emissions such as vehicle exhaust. In addition, BAAQMD adopts and enforces rules to reduce particulate matter emissions and develops public outreach programs to educate the public to reduce PM_{10} and $PM_{2.5}$ emissions (e.g., Spare the Night Program). SB 656 requires further action by CARB and air districts to reduce public exposure to PM_{10} and $PM_{2.5}$. Efforts identified by BAAQMD in response to SB656 are primarily targeting reductions in wood smoke emissions and adoption of new rules to further reduce NOx and particulate matter from internal combustion engines and reduce particulate matter from commercial charbroiling activities. Currently, BAAQMD is proposing a rule addressing residential wood burning. The rule would restrict operation of any indoor or outdoor fireplace, fire pit, wood or pellet stove, masonry heater or fireplace insert on specific days during the winter when air quality conditions are forecasted to exceed the NAAQS for $PM_{2.5}$. The proposed rule would also limit excess visible emissions from wood burning devices and require clean burning technology for wood burning devices sold (or resold) or installed in the Bay Area. NOx emissions contribute to ammonium nitrate formation that resides in the atmosphere as particulate matter, so a reduction in NOx emissions would reduce wintertime $PM_{2.5}$ levels. The Bay Area experiences the highest PM_{10} and $PM_{2.5}$ in winter when wood smoke and ammonium nitrate contributions to particulate matter are highest.

3.3.2 Climate and Topography

Newark is located in the southern portion of the San Francisco Bay Area Air Basin. The entire basin includes the counties of San Francisco, Santa Clara, San Mateo, Marin, Napa, Contra Costa, and Alameda, along with the southeast portion of Sonoma County and the southwest portion of Solano County. The local air quality regulatory agency responsible for this basin is the Bay Area Air Quality Management District (BAAQMD).

The climate of Newark is characterized by warm dry summers and cool moist winters. The proximity of the San Francisco Bay and Pacific Ocean has a moderating influence on the climate. Newark is located in the climate sub region of the Bay Area known as Southwestern Alameda County.

The major large-scale weather feature controlling the area's climate is a large high pressure system located in the eastern Pacific Ocean, known as the Pacific High. The strength and position of the Pacific High varies seasonally. It is strongest during summer and located off the west coast of the United States. As winter approaches, the Pacific High becomes weaker and shifts south, allowing weather systems associated with the polar jet stream to affect the region. Precipitation is generally lowest along the Bay with much higher amounts occurring along south and west facing slopes. Newark, which lies adjacent to the Bay, receives about 20 inches of precipitation. About 90 percent of this rainfall occurs from November through April. High-pressure systems are also common in winter and can produce cool stagnant conditions. Fog and haze are common during winter when high-pressure systems influence the weather.

The proximity of the Pacific High and relatively lower pressure inland produces a prevailing westerly sea breeze along the central and northern California coast for most of the year. As this wind is channeled through the Golden Gate and other topographical gaps, it branches off to the northeast and southeast, following the general orientation of the San Francisco Bay system. Newark is mostly flat, with the southern extent of the Bay to the west and mountains to the east. Marine air penetrates from the Bay; however, it is moderated by bayside conditions as it reaches Newark. The prevailing wind is primarily from the northwest, especially during spring and summer. In winter, winds become variable with more of a southeasterly orientation. Nocturnal winds and land breezes during the colder months of the year prevail with variable drainage out of the mountainous areas. Wind speeds are highest during the spring and early summer and lightest in fall. Winter storms bring relatively short episodes of strong southerly winds.

During the fall and winter months, the Pacific High can combine with high pressure over the interior regions of the western United States (known as the Great Basin High) to produce extended periods of light winds and low-level temperature inversions. Fair weather and very warm temperatures are common to the Bay Area with this weather pattern. This condition frequently produces poor atmospheric mixing that results in degraded regional air quality. Ozone standards traditionally are exceeded when this condition occurs during the warmer months of the year.

3.3.3 Existing Air Quality Conditions

Air quality in the region is controlled by the rate of pollutant emissions and meteorological conditions. Meteorological conditions such as wind speed, atmospheric stability, and mixing height may all affect the atmosphere’s ability to mix and disperse pollutants. Long-term variations in air quality typically result from changes in air pollutant emissions, while frequent, short-term variations

result from changes in atmospheric conditions. The San Francisco Bay Area is considered to be one of the cleanest metropolitan areas in the country with respect to air quality. BAAQMD monitors air quality conditions at more than 30 locations throughout the Bay Area. The closest monitoring station to Area 3 and Area 4 is located in the City of Fremont. Summarized air pollutant data for this station is shown in Table 3.3-2. This table shows the highest air pollutant concentrations measured at the station.

Table 3.3-2:
Highest Measured Air Pollutant Concentrations

Pollutant	Average Time	Measured Air Pollutant Levels				
		2003	2004	2005	2006	2007
Fremont Monitoring Station						
Ozone (O_3)	1-Hour	**0.12** ppm	0.09 ppm	**0.11** ppm	0.10 ppm	0.080 ppm
	8-Hour	**0.09 ppm**	0.07 ppm	0.08 ppm	0.07 ppm	0.07 ppm
Carbon Monoxide (CO)	8-Hour	1.9 ppm	1.7 ppm	2.0 ppm	1.8 ppm	1.6 ppm
Nitrogen Dioxide (NO_2)	1-Hour	0.08 ppm	0.06 ppm	0.07 ppm	0.06 ppm	0.06 ppm
	Annual	0.017 ppm	0.015 ppm	0.015 ppm	0.015 ppm	0.014 ppm
Respirable Particulate Matter (PM_{10})	24-Hour	37 ug/m^3	49 ug/m^3	**54 ug/m^3**	**57 ug/m^3**	**61 ug/m^3**
	Annual	18 ug/m^3	19 ug/m^3	18 ug/m^3	20 ug/m^3	20 ug/m^3
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	34 ug/m^3	40 ug/m^3	33 ug/m^3	**44 ug/m^3**	**51 ug/m^3**
	Annual	9 ug/m^3	9 ug/m^3	9 ug/m^3	**10 ug/m^3**	9 ug/m^3
Bay Area (Basin Summary)						
Ozone (O_3)	1-Hour	**0.12** ppm	**0.11** ppm	**0.12** ppm	**0.12** ppm	**0.12** ppm
	8-Hour	**0.10** ppm	**0.08** ppm	**0.09** ppm	**0.11 ppm**	**0.09 ppm**
Carbon Monoxide (CO)	8-Hour	4.0 ppm	3.4 ppm	3.1 ppm	2.9 ppm	2.7 ppm
Nitrogen Dioxide (NO_2)	1-Hour	0.09 ppm	0.07 ppm	0.07 ppm	0.11 ppm	0.07 ppm
	Annual	0.021ppm	0.019ppm	0.019ppm	0.018ppm	0.017ppm
Respirable Particulate Matter (PM_{10})	1-Hour	**60** ug/m^3	**65** ug/m^3	**81** ug/m^3	**73** ug/m^3	**78** ug/m^3
	Annual	**25** ug/m^3	**26** ug/m^3	**24** ug/m^3	**23** ug/m^3	**26** ug/m^3
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	56 ug/m^3	52 ug/m^3	55 ug/m^3	**75** ug/m^3	**58** ug/m^3
	Annual	12 ug/m^3	12 ug/m^3	12 ug/m^3	11 ug/m^3	11 ug/m^3

3.3.3.1 *Criteria Air Pollutants and Effect*

Air quality studies generally focus on five pollutants that are most commonly measured and regulated: carbon monoxide (CO), ground level ozone, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and suspended particulate matter, i.e., PM_{10} and $PM_{2.5}$. In Alameda County, ozone and particulate matter are the pollutants of greatest concern since measured air pollutant levels exceed these concentrations at times. A summary of the annual number of days exceeding ambient air quality standards is shown in Table 3.3-3.

Table 3.3-3:
Annual Number of Days Exceeding Ambient Air Quality Standards

Pollutant	Standard	Monitoring Station	Days Exceeding Standard				
			2003	2004	2005	2006	2007
Ozone (O_3.)	NAAQS 1-hr	Fremont BAY AREA	0 1	0 0	X X	X X	X X
	NAAQS 8-hr	Fremont BAY AREA	1 7	0 0	0 1	0 12	0 1
	CAAQS 1-hr	Fremont BAY AREA	4 19	0 7	1 9	4 18	0 4
	CAAQS 8-hr	Fremont BAY AREA	-- --	-- --	1 9	3 22	0 9
Fine Particulate Matter (PM_{10})	NAAQS 24-hr	Fremont BAY AREA	0 0	0 0	0 0	0 0	0 0
	CAAQS 24-hr	Fremont BAY AREA	0 6	0 7	1 6	2 15	1 4
Fine Particulate Matter ($PM_{2.5}$)	NAAQS 24-hr*	Fremont BAY AREA	0 0	0 1	0 0	2 10	2 14
All Other (CO, NO_2, Lead, SO_2)	All Other	Fremont BAY AREA	0 0	0 0	0 0	0 0	0 0

Carbon Monoxide

Highest carbon monoxide concentrations measured at the Fremont air monitoring station have been well below the national and state ambient standards. Since the primary source of carbon monoxide in is automobiles, highest concentrations would be found near congested roadways that carry large volumes of traffic. Carbon monoxide emitted from a vehicle is highest near the origin of a trip and considerably lower when vehicles are operating in a hot-stabilized mode (usually five to ten minutes into a trip). However, this is different for vehicles of different ages, where older cars require a longer time to reach a hot-stabilized running mode. A vehicle sitting idle for over an hour is normally considered to return to a cold start mode. Vehicles near the origin of a trip are considered to be in Cold-Start mode. Vehicle operation on freeways is usually in a hot-stabilized mode so the individual emission rates are much lower than those encountered on arterial roadways leading to the freeway.

Ozone

While ozone serves a beneficial purpose in the upper atmosphere (stratosphere) by reducing ultraviolet radiation potentially harmful to humans, when it reaches elevated concentrations in the lower atmosphere it can be harmful to the human respiratory system and to sensitive species of plants. Ozone concentrations build to peak levels during periods of light winds, bright sunshine, and high temperatures. Short-term ozone exposure can reduce lung function in children, make persons susceptible to respiratory infection, and produce symptoms that cause people to seek medical treatment for respiratory distress. Long-term exposure can impair lung defense mechanisms and lead

to emphysema and chronic bronchitis. Sensitivity to ozone varies among individuals, but about 20 percent of the population is sensitive to ozone, with exercising children being particularly vulnerable. Ozone is formed in the atmosphere by a complex series of photochemical reactions that involve "ozone precursors" that are two families of pollutants: oxides of nitrogen (NOx) and reactive organic gases (ROG). NOx and ROG are emitted from a variety of stationary and mobile sources. While NO2, an oxide of nitrogen, is another criteria pollutant itself, ROGs are not in that category, but are included in this discussion as ozone precursors. U.S. EPA recently established a new more stringent standard of 0.75 ppm for 8-hour exposures, based on a review of the latest new scientific evidence.

Over the last five years, NAAQS for 8-hour ozone was exceeded once in 2003 at the nearby Fremont monitoring station (refer to Table 3.3-3). The Bay Area, as a whole, exceeded the 8-hour ozone NAAQS on 0 to 12 days annually and the 8-hour CAAQS on 9 to 22 days (statistics kept since 2005). In Fremont, the 1-hour State standard for ozone was exceeded on 0 to 4 days annually while that same standard was exceeded on 4 to 19 days annually in the Bay Area as a whole. Most exceedances of ozone standard in the Bay Area occur in downwind portions of the basin, such as Livermore, Concord, and Gilroy.

Nitrogen Dioxide

Nitrogen Dioxide (NO2), a reddish-brown gas, irritates the lungs. It can cause breathing difficulties at high concentrations. Similar to ozone, NO2 is not directly emitted, but is formed through a reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO2 are collectively referred to as nitrogen oxides (NOx) and are major contributors to ozone formation. NO2 also contributes to the formation of PM_{10} (see discussion of PM_{10} below). Monitored levels in the Bay Area are well below ambient air quality standards.

Sulfur Oxides

Sulfur oxides, primarily SO2, are a product of high-sulfur fuel combustion. The main sources of SO2 are coal and oil used in power stations, in industries, and for domestic heating. SO2 is an irritant gas that attacks the throat and lungs. It can cause acute respiratory symptoms and diminished ventilator function in children. SO2 concentrations have been reduced to levels well below the state and national standards, but further reductions in emissions are needed to attain compliance with standards for PM_{10}, of which SO2 is a contributor.

PM_{10} and $PM_{2.5}$

Measured exceedances of the PM_{10} standards occurred on four separate sampling days over the last five years. Statistics on the new NAAQS for $PM_{2.5}$ have only been kept since 2006. Two exceedances have occurred each year since in Fremont. Monitoring data indicate that the new standard would have been exceeded also in 2004. PM_{10} and $PM_{2.5}$ are only measured once every sixth day at Fremont (most monitoring stations measure particulates every sixth day according to a national schedule). It is estimated that there were 24 days over the past five years that the State PM_{10} standard was exceeded. Most stations in the Bay Area reported exceedances of the State standard on the same fall/winter days as reported in Fremont. This indicates a regional air quality problem. The primary sources of these pollutants are wood smoke and local traffic. Meteorological conditions that are common during this time of the year result in calm winds and strong surface-based inversions that trap pollutants near the surface. The buildup of these pollutants is greatest during the evenings

and early morning periods. The high levels of PM_{10} result in not only health effects, but also reduced visibility.

Particulate matter pollution consists of very small particles suspended in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter also forms when industry and gaseous pollutant undergo chemical reactions in the atmosphere. Respirable particulate matter (PM_{10}) and fine particulate matter ($PM_{2.5}$) represent fractions of particulate matter. PM10 refers to particulate matter less than 10 microns in diameter and $PM_{2.5}$ refers to particulate matter that is 2.5 microns or less in diameter. Major sources of $PM_{2.5}$ results primarily from diesel fuel combustion (from motor vehicles, power generation, industrial facilities), residential fireplaces, and wood stoves. PM_{10} include all $PM_{2.5}$ sources as well as emissions from dust generated by construction, landfills, and agriculture; wildfires and brush/waste burning, industrial sources, windblown dust from open lands, and atmospheric chemical and photochemical reactions. PM_{10} and $PM_{2.5}$ pose a greater health risk than larger-size particles because these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract, increasing the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Whereas larger particles tend to collect in the upper portion of the respiratory system, $PM_{2.5}$ are so miniscule and can penetrate deeper into the lungs and damage lung tissues. Suspended particulates also damage and discolor surfaces on which they settle, as well as produce haze and reduce regional visibility. The U.S. EPA recently adopted a new more stringent standard of 35 µg/m3 for 24-hour exposures based on a review of the latest new scientific evidence. At the same time, U.S. EPA revoked the annual PM_{10} standard due to a lack of scientific evidence correlating long-term exposures of ambient PM_{10} with adverse health effects. Monitoring data collected at Fremont and the rest of the Bay Area indicate that the new $PM_{2.5}$ standard is exceeded.

Toxic Air Contaminants (TAC)

Besides the "criteria" air pollutants, there is another group of substances found in ambient air referred to as Hazardous Air Pollutants (HAPs) under the Federal Clean Air Act and Toxic Air Contaminants (TACs) under the California Clean Air Act. These contaminants tend to be localized and are found in relatively low concentrations in ambient air. However, they can result in adverse chronic health effects if exposure to low concentrations occurs for long periods. They are regulated at the local, state, and federal level.

HAPs are the air contaminants identified by U.S. EPA as known or suspected to cause cancer, serious illness, birth defects, or death. Many of these contaminants originate from human activities, such as fuel combustion and solvent use. Mobile source air toxics (MSATs) are a subset of the 188 identified HAPS. Of the 21 HAPs identified by EPA as MSATs, priority lists of six HAPs were identified that include: diesel exhaust, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene. While vehicle miles traveled in the United States is expected to increase by 64 percent over the period 2000 to 2020, emissions of MSATs are anticipated to decrease substantially as a result of efforts to control mobile source emissions (by 57 percent to 67 percent depending on the contaminant) .

California developed a program under the Tanner Toxics Act (AB 1807) to identify, characterize, and control toxic air contaminants (TACs). Subsequently, AB 2728 incorporated all 188 HAPs into the AB 1807 process. TACs include all HAPs plus other containments identified by CARB. These are a broad class of compounds known to cause morbidity or mortality (cancer risk). TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel

combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter near a freeway). Chronic exposure to TACs can result in adverse health effects. Like criteria air pollutants, TACs are regulated at the regional, state, and federal level.

Particulate matter from diesel exhaust is the predominant TAC in urban air and was estimated to represent about two-thirds of the cancer risk from TACs (based on the statewide average in 2000). According to CARB, diesel exhaust is a complex mixture of gases, vapors and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by CARB, and are listed as carcinogens either under State Proposition 65 or under the Federal Hazardous Air Pollutants programs.

CARB reports that recent air pollution studies have shown an association that diesel exhaust and other cancer-causing toxic air contaminants emitted from vehicles are responsible for much of the overall cancer risk from TACs in California. Diesel particulate matter (DPM) emitted by diesel-fueled engines was found to comprise much of that risk. DPM can be distributed over large regions, thus leading to widespread public exposure. The particles emitted by diesel engines are coated with chemicals, many of which have been identified by EPA as HAPs, and by CARB as TACs. Diesel engines emit particulate matter at a rate about 20 times greater than comparable gasoline engines. The vast majority of diesel exhaust particles (over 90 percent) consist of $PM_{2.5}$, which are particles that can be inhaled deep into the lung. Like other particles of this size, a portion will eventually become trapped within the lung possibly leading to adverse health effects. While the gaseous portion of diesel exhaust also contains TACs, CARB's 1998 action was specific to DPM, which accounts for much of the cancer-causing potential from diesel exhaust. California has adopted a comprehensive diesel risk reduction program to reduce DPM emissions 85 percent by 2020. The U.S. EPA and CARB adopted low sulfur diesel fuel standards in 2006 that reduce diesel particulate matter substantially.

Smoke from residential wood combustion can also be a source of TACs. Wood smoke is typically emitted during wintertime when dispersion conditions are poor. Localized high TAC concentrations can result when cold stagnant air traps smoke near the ground and, with no wind; the pollution can persist for many hours, especially in sheltered valleys during winter. Wood smoke also contains a significant amount of PM_{10} and $PM_{2.5}$. Wood smoke is an irritant and is implicated in worsening asthma and other chronic lung problems.

The Specific Plan area is located near industrial sources of air pollution. A review of currently available emissions inventories from CARB and BAAQMD indicate that the Certain Teed Corporation at 6400 Stevenson Blvd in Fremont is a source of criteria air pollutants. This facility, which manufacturers building products (e.g., gypsum) is located about 500 feet from the closest portion of Area 3 and about three-quarters of a mile or further from Area 4. A review of aerial photos indicates that most stationary sources associated with this facility are about a one-quarter of a mile away or further from the Area 3. The facility does include active truck areas that are about 700 to 1,000 feet from Area 3.

3.3.3.2 *Attainment Status*

Areas that do not violate ambient air quality standards are considered to have attained the standard. Violations of ambient air quality standards are based on air pollutant monitoring data and are judged

for each air pollutant. The Bay Area as a whole does not meet State or federal ambient air quality standards for ground level ozone and State standards for PM_{10} and $PM_{2.5}$.

Under the Federal CAA, the U.S. EPA has classified the region as marginally nonattainment for the 1997 8-hour ozone standard. EPA required the region to attain the standard by 2007. As previously mentioned, U.S. EPA has determined that the Bay Area has met this standard, but a formal redesignation request and maintenance plan would have to be submitted before redesignation could be made. In May 2008, U.S. EPA lowered the 8-hour ozone standard from 0.08 to 0.075 ppm. Final designations based upon the new 0.075 ppm standard will be made by March 2010. The Bay Area has met the CO standards for over a decade and is classified attainment maintenance by the U.S. EPA. The U.S. EPA grades the region unclassified for all other air pollutants, which include PM_{10} and $PM_{2.5}$. Recently, the U.S. EPA has proposed designating the region as nonattainment for the new 2006 $PM_{2.5}$ as recent monitoring data indicate levels slightly above the standard.

At the State level, the region is considered serious non-attainment for ground level ozone and non-attainment for PM_{10}. The region is required to adopt plans on a triennial basis that show progress towards meeting the State ozone standard. The area is considered attainment or unclassified for all other pollutants.

Recent $PM_{2.5}$ monitoring data for the region suggest that the new national $PM_{2.5}$ standards for 24-hour exposures are exceeded. U.S. EPA is expected to make rulings on area attainment designations by December 2009, based on a recent 3-year set of monitoring data. Most nonattainment areas would have until 2015 to attain the standards with some extensions to 2020 possible.

3.3.3.3 *Odor*

Area 4 is located near the east shore of San Francisco Bay. This area contains numerous square miles of tidal wetlands that result in occasional odors. In addition, Cargill operates salt evaporation ponds to the north-northwest of the Specific Plan area. Naturally decaying organic material, such as algae, produces odors. These odors could be strongest in spring and summer when there is an abundance of algae and winds may blow this decaying material on to dikes. Very low tides during these times could also result in odors from exposing decaying matter to the prevailing winds.

3.3.3.4 *Sensitive Receptors*

Some groups of people are more affected by air pollution than others. CARB has identified the following who are most likely to be affected by air pollution: children under 14, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, and parks. The sensitive receptors closet to Area 3 include residential areas across Cherry Street, and recreational areas associated with the Silliman Recreation Complex.

3.3.4 Air Quality Impacts

3.3.4.1 *Thresholds of Significance*

For the purposes of this EIR, based upon the current (1999) BAAQMD CEQA Guidelines, an air quality impact is considered significant if the project will:

- Conflict with or obstruct implementation of the applicable air quality plan; or
- Result in a cumulatively considerable net increase of any criteria pollutant or a precursor to that pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors). This is judged by comparing direct and indirect project emissions to BAAQMD significance thresholds of 80 pounds per day for ROG, NOx, or PM10; or
- Result in a substantial contribution to an existing or project violation of an ambient air quality standard would result if the project would cause an exceedance of the California Ambient Air Quality Standard for carbon monoxide of 9.0 parts per million over an 8-hour averaging period; or
- Expose sensitive receptors or the general public to substantial pollutant concentrations. This is evaluated by assessing the health risk in terms of cancer risk or hazards posed by the placement of new sources of air pollutant emissions near existing sensitive receptors or placement of new sensitive receptors near existing sources; or
- Create or expose a substantial number of people to objectionable odors.

According to BAAQMD's proposed *Air Quality Guidelines* (2009), a project that generates more than 54 pounds per day of ROG, NO_x, or $PM_{2.5}$; or 82 pounds per day of PM_{10} would be considered to have a significant impact on regional air quality.

3.3.4.2 *Long-Term Air Quality Impacts*

Consistency with Clean Air Planning Efforts

Consistency with Population and Vehicle Miles Traveled

A key element in air quality planning is to make reasonably accurate projections of future human activities, particularly vehicle activities that are related to air pollutant emissions. BAAQMD uses population projections made by the Association of Bay Area Governments and vehicle use trends made by the Metropolitan Transportation Commission to formulate future air pollutant emission inventories. These projections are based on estimates from cities and counties. In order to provide the best plan to reduce air pollution in the Bay Area, accurate projections from local governments are necessary. When General Plans are not consistent with these projections, they cumulatively reduce the effectiveness of air quality planning in the region. Regional clean air planning efforts address both the federal and State ozone standards using the most recent population and vehicle travel projections.

The most current Clean Air Plan (CAP), the 2005 Bay Area Ozone Strategy, was adopted by BAAQMD in 2006. This plan is based on population projections through 2020 compiled by the association of Bay Area Governments (ABAG). The General Plan assumed 2,700 residential units

for Area 4. The General Plan assumed special industrial (high-tech Business Park) for Area 3 area. The proposed Areas 3 and 4 Specific Plan is assuming no more than 1,260 units. Therefore, this proposed Specific Plan would not add to the population over what is currently allowed in the General Plan. As a result, the proposed project would not increase population at a rate greater than anticipated for preparation of the latest Clean Air Plan and therefore, would not conflict with the population projections of the applicable air plan. **(Less than Significant Impact)**

Consistency with Transportation Control Measures

Determining consistency with the Clean Air Plan also involves assessing whether Transportation Control Measures (TCMs) contained in the 2005 Bay Area Ozone Strategy are implemented. The 2005 Ozone Strategy (i.e., BAAQMD's most recent Clean Air Plan) includes 20 transportation control measures, of which seven require participation at the local level. The latest set of adopted TCMs, which identify local governments as implementing agencies, are listed by BAAQMD CEQA Guidelines. TCMs that would apply to projects are designed to reduce motor vehicle travel by encouraging use of other transportation modes. For projects, these would include amenities that would encourage transit, bicycle, and pedestrian modes of transportation.

The project cannot individually implement the listed TCMs that require local action; however, the City's General Plan policies should include all those measures that are consistent with the City's responsibility. There are measures that the project could implement to make TCMs more effective. While the proposed Specific Plan does show some details of how TCMs would be incorporated into the design of projects (e.g., bicycle and pedestrian connections throughout the site), additional TCMs features should be included for a project of this size. Without these features, the Specific Plan may not appropriately implement TCMs and the resulting impact would be significant.

Impact AIR-1: Without incorporation of appropriate Transportation Control Measures the project would conflict with the 2005 Bay Area Ozone Strategy. **(Significant Impact)**

MM AIR-1.1: The Specific Plan shall incorporate the following measures, which would reduce transportation-related emissions. The measures listed in below are expected to include implementation of appropriate TCMs. Incorporation of these measures would reduce the impact to a less-than-significant level.

- Improve existing or construct new bus pullouts and transit stops at convenient locations along Cherry Street and Stevenson Boulevard. Pullouts shall be designed so that normal traffic flow on arterial roadways would not be impeded when buses are pulled over to serve riders. Bus stops shall include shelters, benches and posting of transit information;

- Appropriate bicycle amenities shall be included. This would include bike lane connections throughout the project site. Off-site bicycle lane improvements shall be considered for roadways that would serve the project;

- The City and project proponents shall explore and implement feasible means to bring transit or shuttle service to Area 4;

- Provide pedestrian sidewalks or paths throughout the project site with convenient access to bus stops along adjacent arterials;

- Consider providing pedestrian signs and signalization to make a pedestrian friendly environment. Include convenient pedestrian crossings at strategic areas with count-down signals at intersections that would enhance pedestrian use;

- Review landscape plans to ensure that they provide new trees that would shade buildings and walkways in summer to reduce the cooling loads on buildings;

- Develop and implement building practices for the project that that are based on energy efficient standards that exceed State building code. **(Less Than Significant Impact with Mitigation)**

Regional Air Quality Impacts

The Bay Area is considered a non-attainment area for ground-level ozone under both the federal Clean Air Act and the California Clean Air Act. The area is also considered non-attainment for respirable particulates or particulate matter with a diameter of less than 10 micrometers (PM_{10}), and particulate matter with a diameter of less than 2.5 micrometers ($PM_{2.5}$) under the California Clean Air Act. As part of an effort to attain and maintain ambient air quality standards for ozone and PM_{10}, BAAQMD has established thresholds of significance for air pollutants. These thresholds are for ozone precursor pollutants (reactive organic gases and nitrogen oxides) and PM_{10}. According to BAAQMD, the significance thresholds for direct and indirect project emissions are 80 pounds per day for ROG, NOx, or PM10.

As described above, the BAAQMD's draft CEQA Guidelines propose revising the threshold of significance for annual operation and operational emissions from ROG from 80 pounds per day to 54 pounds per day, NOx from 80 to 54 pounds per day, and PM_{10} from 80 to 82 pounds per day. These thresholds are included in a separate section below since it is likely these thresholds may be adopted prior to any discretionary action is made on this EIR.

Operational Emissions

Build out of the Areas 3 and 4 Specific Plan would add new traffic trips, which would lead to increased emissions of air pollutants. Emissions of air pollutants associated with the project were predicted using the URBEMIS2007 model (Version 9.2.4), and recommended for use by BAAQMD. This model predicts daily emissions associated with land use developments from motor vehicle activity and area emissions.

The URBEMIS2007 model combines predicted daily traffic activity, associated with the different land use types, with emission factors from the State's mobile emission factor model (i.e., EMFAC2007). *Hexagon Transportation Consultants* provided trip generation rates in the traffic report for the project that were used in the model. The air quality analysis was completed in the same manner as the traffic report.

Area 3 of the Specific Plan is served by transit and includes some bicycle lanes. Retail uses are located about 0.3 to 0.5 miles from Area 3. These uses are situated along the major roadways serving the Specific Plan area. Areas 3 and 4 was assumed to include a mix of uses. The URBEMIS2007 modeling assumed trip reductions based on these factors, so the project emissions are already somewhat mitigated (by about 6 to 8% over unmitigated emissions). For instance, nine AC Transit bus routes serve the area with headways of 30 to 60 minutes. Area 3 is less than one-quarter mile from these bus routes; however, Area 4 is located more than 0.5 miles away and would not be well served by existing transit. The URBEMIS2007 model includes default trip reductions based on the project type and setting. These adjustments were made to reflect the project conditions.

Buildout of both Area 3 and Area 4 were anticipated to occur in 2018 at the earliest, with Area 3 completed by 2015. The year of analysis is important to consider when modeling vehicle emissions, because the vehicle emission rates for ROG and NOx are currently decreasing with each year and are predicted to decrease substantially between 2010 and 2020. For instance, NOx emission rates will decrease by 56 percent during that period because of improvements in vehicle emissions and retirement of older, more polluting, vehicles from the roadways.

PM_{10} emissions are comprised of running exhaust, tire and brake wear, and the entrainment of dust into the atmosphere from vehicles traveling on paved roadways. The contribution of tire and brake wear is small compared to the other particulate matter emission processes. Gasoline powered engines have small rates of particulate matter emissions compared with diesel-powered trucks. Since much of the project traffic fleet is made up of light-duty gasoline-powered vehicles, a large portion of the PM_{10} emissions is from entrainment of roadway dust from vehicle travel. The URBEMIS2007 default silt loading values were changed to reflect values that CARB uses for calculating paved roadway dust emissions for average vehicle traveling on arterial and collector roadways.
The model also predicts area source emissions associated with the proposed projects, which are minor for NOx and PM_{10} compared to emissions associated with traffic. These emissions are associated with natural gas consumption (primarily space and water heating), use of landscape equipment, consumer products, architectural coatings, and wood burning. ROG emissions associated with consumer product uses from new residences can be substantial (some examples of these products include: solvents, paints, cleaners, cosmetic products, landscape products (e.g., fertilizers), automotive products, etc.). Model default values for area sources are used, since more refined data are not available. Newark is not listed by the BAAQMD as a city that has adopted a wood smoke ordinance, so these emissions were included. PM_{10} emissions include about 15 percent wood burning fireplaces or wood stoves, recognizing that a majority would likely be natural gas-fired. Worst day PM_{10} emissions were calculated for a winter day that includes mobile sources and wood smoke and a summer day that primarily includes vehicle travel.

Daily emissions predicted with full build out of the project scenarios are reported in Table 3.3-4 and compared against BAAQMD threshold of 80 pounds per day. Development of the Specific Plan area would increase emissions of ROG, NOx, and PM_{10}. As shown in Table 3.3-4, the combination of new travel and new consumer product use by residences associated with the project would result in emissions of ROG and PM_{10} that exceed current BAAQMD significance thresholds.

The URBEMIS2007 model does not predict emissions from stationary equipment, other than general natural gas usage (i.e., area sources). Stationary equipment that could emit air pollution has not been identified for the plan area. Residential or mixed-use projects do not usually include these sources. If stationary sources are included in the plan, they may require permits from BAAQMD. Such sources could include combustion emissions from large boilers used for heating and cooling or

standby emergency generators (rated 50 horsepower or greater). These sources would normally result in minor emissions, compared to those from traffic generation reported above. Sources of air pollutant emissions complying with all applicable BAAQMD regulations generally will not be considered to have a significant air quality impact. Stationary sources that are exempt from BAAQMD permit requirements due to low emission thresholds would not be considered to have a significant air quality impact.

The ROG and PM_{10} direct and indirect emissions for the proposed Specific Plan are predicted to be above the current (1999) significance thresholds (80 pounds per day) established by the BAAQMD for ozone precursors pollutants and PM_{10}. This impact would be considered significant.

Table 3.3-4:
Daily Project Emissions for Buildout of Areas 3 and 4 Specific Plan in Pounds Per Day

Scenario	Modeled Daily Emissions in Pounds Per Day (lbs/day)			
	Reactive Organic Gases (ROG)	**Nitrogen Oxides (NOx)**	**Respirable Particulates (PM_{10})**	**Fine Particulates ($PM_{2.5}$)**
Area 3 - 2015	105	56	69 winter 56 summer	27 winter 12 summer
Area 3 - 2018	97	45	69 winter 56 summer	27 winter 12 summer
Area 4 - 2018	59	27	47 winter 34 summer	19 winter 7 summer
Total Area 3 + Area 4				
Areas 3 and 4 2018	156	72	116 winter 90 summer	46 winter 19 summer
1999 BAAQMD Significance Thresholds	80	80	80	--
Proposed 2009 BAAQMD Significance Thresholds	54	54	82	54

Assuming complete build out of Area 3 by 2015, ROG emissions would be significant and other emissions would be less than significant under both the existing and the proposed 2009 thresholds. In 2018, build out of Areas 3 and 4 would result in significant emissions for ROG, NOx, and PM10 with the proposed thresholds. That is, daily NOx emissions that were not identified as significant under the current guidelines would be considered significant under the proposed guidelines. Emissions of ROG and PM10 would remain significant. The mitigation measures described below were developed to reduce ROG and PM10 emissions, mostly from vehicle travel. The same measures would reduce NOx emissions, but not to a less than significant level. There are no other reasonable and feasible mitigation measures that would further reduce project NOx emissions.

Impact AIR-2: Operational air pollutant emissions associated with buildout of the proposed Specific Plan would generate ozone precursors ROG, NOx, and PM_{10} that exceed both the current and the proposed updated BAAQMD significance

thresholds; therefore, implementation of the Specific Plan would result in a significant impact to regional air quality. **(Significant Impact)**

MM AIR-2.1: While mitigation measures listed above (MM AIR-1.1) are expected to reduce emissions from buildout of the Specific Plan, the ROG emissions, which are mostly produced by consumer products,[28] would remain well above the significance threshold. NOx emissions would also remain significant with mitigation. Emissions for PM10 would be reduced to less than significant levels. Operational ROG and NOx emissions would be a significant and unavoidable impact. **(Significant Unavoidable Impact)**

[28] Consumer products are those that the general public all purchase. These products include solvents, paints, cleaners, cosmetic products, landscape products (e.g., fertilizers), automotive products, etc. The California Air Resources Board has authority to regulate these statewide through regulations imposed on manufacturers. These types of emissions increase with the rate of population increase and there are no methods available to mitigate these emissions.

Local Air Quality Impacts

Carbon monoxide emissions from traffic generated by the project would be the greatest pollutant concern at the local level. Congested intersections with a large volume of traffic have the greatest potential to cause high-localized concentrations of carbon monoxide. At local intersections, vehicles tend to travel at a slower rate than freeways or highways and have higher emissions, because they tend to be closer to the origin of their trip (i.e., cold start emissions). Measured carbon monoxide levels have been at healthy levels (i.e., below State and federal standards) in the Bay Area since the early 1990s. As a result, the region has been designated as attainment for the standard. Highest measured 8-hour carbon monoxide levels over the last three years are 2.0 ppm at the closest monitoring station.

The contribution of project-generated traffic to these levels was predicted following the screening guidance recommended by the BAAQMD. This contribution was added to the background levels described above. A review of intersection traffic volumes and level of service was completed to identify intersections with the potential for highest carbon monoxide levels that would be affected by the project. These are intersections with large traffic volumes that would have a degraded level of service (LOS D, E, or F) and result in further delay caused by the project (i.e., at least 10 percent increase). The intersection of Cherry Street and Central Avenue, as well as Cherry Street and Mowry Avenue were considered the worst intersections (in terms of elevated carbon monoxide levels from traffic) that may be affected by project-generated traffic. Future carbon monoxide levels were predicted near these intersections for existing conditions and future conditions, with the project in place, using traffic projections provided by *Hexagon Transportation Consultants*. Emission factors used were calculated using the EMFAC2007 model, developed by the California Air Resources Board, with default assumptions for the San Francisco Bay Area during the winter, including a temperature of 40 degrees Fahrenheit. Results are reported in Table 3.3-5.

Table 3.3-5:
Predicted Roadside 8-Hour Carbon Monoxide Concentrations (reported in ppm)

Intersection	Existing (2008)	Background (2015)	Project (2015)	Cumulative No Project (2030)	Cumulative (2030)
Cherry St and Central Ave	3.9	3.0	3.2	2.7	2.8
Cherry St and Mowry Ave	4.3	3.2	3.4	2.8	2.9

The highest 8-hour concentration with the project in place (in about 2015 to 2020 at the earliest) is predicted to be 3.4 ppm over an 8-hour averaging period. This concentration would occur along Cherry Street near Mowry Avenue. Lower concentrations would occur at other intersections affected by project traffic. The results of this screening analysis indicate that project levels would be below the California ambient air quality standard (used to judge the significance of the impact) of 9.0 ppm; therefore, the impact is considered less-than-significant. **(Less than Significant Impact)**

Local Air Pollution Sources

The project would not be a permanent source of air pollution that would expose the public to substantial pollutant concentrations. However, the Specific Plan area is located near industrial sources of air pollution.

Air pollution sources within one-quarter mile of new housing or a school were considered to have a potential impact. As noted previously, review of currently available emissions inventories from CARB and BAAQMD indicate that the Certain Teed Corporation at 6400 Stevenson Blvd in Fremont is a source of criteria air pollutants. This facility, which manufacturers building products (e.g., gypsum) is located about 500 feet from the closest portion of Area 3 and about three-quarters of a mile or further from Area 4. A review of aerial photos indicates that most stationary sources associated with this facility are about a one-quarter of a mile away or further from the Area 3, and active truck areas are about 700 to 1,000 feet from Area 3.

CARB has recommended that lead agencies avoid locating new residences near truck distribution areas that accommodate more than 100 trucks per day. A separation distance of 1,000 feet was recommended based on health risk analysis that CARB completed in 2000 for a large distribution facility that had transport refrigeration units operating. The Certain Teed facility would not have refrigeration units operating and would be smaller than the facilities that CARB analyzed. In addition, the Area 3 would not be developed and occupied until around 2015 or later. As a result, emissions from trucks at this facility would be lower. Since 2000, U.S. EPA has enacted strict diesel particulate matter emission standards and the State law now prohibits excessive idling of diesel trucks. As a result, emissions would be much lower than those analyzed by CARB. In addition, prevailing winds in the area are mostly from the northwest, which would put Area 3 upwind of this facility most of the time. As a result, the Certain Teed facility is not expected to result in substantial air pollutant levels at any of the Specific Plan areas.

The BAAQMD was contacted regarding sources of hazardous air pollutant or TAC emissions near the location where a school could be included on the project site. The BAAQMD did not identify any such facilities within one-quarter mile. There are no air pollutant sources listed in CARB's Air Quality and Land Use Handbook that would affect the site. The search radius was expanded to one-half mile where four facilities that are sources of these emissions were identified. However, BAAQMD reported that none of these facilities had emissions over the toxic trigger levels. As a result, the location of the site where a school may be sited would not be exposed to substantial air pollution from existing sources. The BAAQMD analysis is provided as Appendix C.

The proposed 2009 Air Quality Guidelines include new specific methods for evaluating local community risk and hazard impacts from locating new sensitive receptors near sources of toxic air contaminants and particulate matter. BAAQMD did not identify significant sources or air pollution within one-quarter mile of the project site and there are no air pollutant sources listed in CARB's Air Quality and Land Use Handbook that would affect the site. As a result, nearby sources would not result in incremental lifetime cancer risks greater than 10 in one million, a non-cancer risk hazard index greater than 1.0, or an annual PM2.5 concentration greater than 0.3 µg/m3. This conclusion was reached, because significant sources (e.g., freeway) are not located near the project. In addition, all sources within 1,000 feet would not result in cumulative impacts above a lifetime cancer risk of 100 in one million, or a non-cancer risk hazard index greater than 1.0, or an annual PM2.5 concentration greater than 0.8 $\mu g/m^3$.

There are no other facilities within one-quarter mile of the Specific Plan area that were identified as air pollutant emissions sources or would generate a large number of diesel truck trips. Therefore, sensitive receptors would not be exposed to substantial pollutant concentrations from existing air pollutant sources. For these reasons, the impact from local pollution sources would be less than significant. **(Less than Significant Impact)**

3.3.4.3 *Global Climate Change*

Global climate change refers to changes in the Earth's weather including temperature, precipitation, and wind patterns. Global temperatures are affected by naturally occurring and anthropogenic-generated (generated by mankind) atmospheric gases, such as carbon dioxide, methane, and nitrous oxide.[29] These gases allow sunlight into the Earth's atmosphere, but prevent heat from radiating back out into outer space and escaping from the earth's atmosphere, thus altering the Earth's energy balance. This phenomenon is known as the "greenhouse effect". Human activities have exerted a growing influence on some of the key factors that govern climate by changing the composition of the atmosphere and by modifying vegetation.

On a global scale, the potential climate change effect of the proposed Specific Plan is relatively small. An elementary school, 1,260 single-family units, and a golf course by itself would not result in a significant global climate change impact. Implementation of the Specific Plan would contribute to cumulative global climate change impacts. This project's contribution to the cumulative impact is further evaluated in *Section 4.4 Cumulative Global Climate Change Impacts* of this document. **(Less than Significant Impact)**

3.3.4.4 Construction (*Short-Term) Air Quality Impacts*

Construction Emissions Related to Imported Fill Material

The BAAQMD CEQA Guidelines apply daily and annual emissions thresholds to operational impacts, but not normally to construction impacts. According to the Guidelines, construction equipment is included in the regional emissions inventory, so since they are temporary, quantification of those emissions are not necessary. Under the current guidelines, construction activities are discussed and appropriate mitigation, mostly in the form of feasible PM10 control measures, are identified for the project. This project would, however, include the import of a substantial amount of fill material, which is not typical of construction projects. The proposed (2009) guidelines establish daily quantified emission thresholds for ROG, NOx, PM10 exhaust and PM2.5 exhaust that apply to construction activities.

Prior to project construction, up to about 2.1 million cubic yards of soil may be imported to the project site by truck. Most of this soil would be imported to Area 4. There are no detailed plans for the timing, but preliminary estimates are that it would require one to two years of continuous import of soil. This assessment assumes that 100 truckloads of material would be imported per day. Nearby construction projects are anticipated to be the source of fill material for this project. For the purpose of this analysis, the BART extension project to Warm Springs which involves tunneling under Lake Elizabeth is assumed to be the source of the anticipated fill material. Soil exported from BART

[29] IPCC, 2007: Summary for Policymakers. In: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. Available at: http://www.ipcc.ch/.

construction to the project site would travel a four-mile one-way trip; however, an average 10-mile one-way trip was used for this analysis to be conservative. Each truckload would include two trips: a trip to import the material to the site and a return trip to the source location.

The BAAQMD-recommended URBEMIS2007 model was used to model construction exhaust emissions associated with the project. Full build out of the proposed project was assumed to begin in 2011 and last for about 5 to 8 years. Construction would probably last longer, but a more aggressive schedule was assumed for this analysis to avoid under prediction of emissions. All grading activities were assumed to occur in the first two years. The emissions include truck travel associated with fill import. An emission rate for a Heavy Duty Diesel Truck was used, assuming a speed of 25 miles per hour. The long duration periods for construction tasks were also selected, which tend to overstate the daily emissions. Emissions from this modeling are shown in Table 3.3-6.

Table 3.3-6:
Project Construction Emissions for Build Out of Areas 3 and 4 Specific Plan
URBEMIS2007 Modeling in Pounds per day (lbs/day)

Scenario	Modeled Daily Emissions in Pounds Per Day (lbs/day)			
	Reactive Organic Gases (ROG)	**Nitrogen Oxides (NOx)**	**Exhaust Respirable Particulates (PM_{10})**	**Exhaust Fine Particulates ($PM_{2.5}$)**
Construction 2012	24	222	10	10
Construction 2012	22	206	10	8
Construction 2013	32	254	12	12
Construction 2014	34	136	8	8
Construction 2015	22	70	4	4
Construction 2016	86	64	4	4
Construction 2017	84	58	4	4
Construction 2018	84	52	4	2
Proposed BAAQMD Significance Thresholds	54	54	82	54

Based upon the proposed BAAQMD significance thresholds for construction activity, temporary daily emissions of PM_{10} and $PM_{2.5}$ from truck hauling, along with emissions from on-site equipment used to move fill material would have emissions below the BAAQMD daily thresholds. Construction activity ROG emissions would be above the significance thresholds for three of the eight-year estimated construction period and emissions of NOx would be significant for seven of the eight year construction period. Because NOx and ROG emissions are above the proposed BAAQMD significance threshold of 54 pounds per day, the effect of these emissions to the air basin would be significant.

Impact AIR-3: The proposed project temporary daily emissions for NOx and ROG would exceed the proposed BAAQMD significance threshold of 54 pounds per day; therefore, construction of the Specific Plan would result in a significant impact to regional air quality. **(Significant Impact)**

MM AIR-3.1: The project proponent and the City cannot control emissions from independent trucks used to haul fill material. Additionally, due to the large size and extended duration of construction, there are no mitigation measures to reduce this impact, and it would remain significant and unavoidable. **(Significant Unavoidable Impact)**

It should be noted that use of fill from the planned Warm Springs BART extension or other nearby construction projects may reduce emissions associated with these local projects, because the proposed project could provide a more convenient location for transporting fill. This would reduce those planned truck trips.

Construction

Construction Dust

Dust would be generated during grading and construction activities related to all aspects of development including residential, roadway, utilities, PG&E tower modifications, golf course, and school construction. Most of the dust would result during grading activities. The amount of dust generated would be highly variable and is dependent on the size of the area disturbed, amount of activity, soil conditions, and meteorological conditions. Typical winds during late spring through summer are from the northwest. The project would also require import of a substantial amount of fill material, as discussed above. Truck travel and the deposit of fill material would also generate dust. Nearby land uses around Area 3 are mostly light industrial with residences located along the northern side of the site. Area 4 is surrounded by mostly undeveloped or agricultural land uses. Nearby active land uses could be adversely affected by dust generated during construction activities. As the Specific Plan is implemented, new residences constructed as part of the project could also be exposed to dust generated by construction activities.

The import of fill material, grading and construction activities would be temporary, although, these activities would have the potential to cause both nuisance and health air quality impacts. PM_{10} is the pollutant of greatest concern associated with dust. If uncontrolled, PM_{10} levels downwind of actively disturbed areas could possibly exceed State standards. In addition, dust fall on adjacent properties could be a nuisance. Construction dust emissions can also contribute to regional PM_{10} emissions. If uncontrolled, dust generated by grading and construction activities represents a significant impact.

Construction Equipment Exhaust

Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known Toxic Air Contaminant. Diesel exhaust poses both a health and nuisance impact to nearby receptors. Use of older or poorly maintained construction equipment that emits more pollutants or staging of construction equipment near residences could result in high concentrations of PM_{10} and $PM_{2.5}$ that could result in nuisance and health impacts. As a result, these emissions are considered

significant because they would expose sensitive receptors to substantial pollutant concentrations during project construction.

Impact AIR-4: Without incorporation of construction mitigation measures, development of the Areas 3 and 4 Specific Plan would temporarily expose sensitive receptors to substantial pollutant concentrations. **(Significant Impact)**

MM AIR-4.1: Implementation of the following measures listed below would reduce the air quality impacts associated with grading and new construction to a less- than-significant level.

- Water all active construction areas at least twice daily and more often during windy periods. Active areas adjacent to residences should be kept damp at all times.
- Cover all hauling trucks or maintain at least two feet of freeboard.
- Pave, apply water at least twice daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas.
- Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas and sweep streets daily (with water sweepers) if visible soil material is deposited onto the adjacent roads.
- Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (i.e., previously-graded areas that are inactive for 10 days or more).
- Enclose, cover, water twice daily, or apply (non-toxic) soil binders to exposed stockpiles.
- Limit traffic speeds on any unpaved roads to 15 mph.
- Replant vegetation in disturbed areas as quickly as possible.
- Suspend construction activities that cause visible dust plumes to extend beyond the construction site.

MM AIR-4.2: Measures to reduce diesel particulate matter and $PM_{2.5}$ from construction shall also be implemented to ensure that short-term health impacts to nearby sensitive receptors are avoided.

- All construction related activities within Area 3 shall provide a plan, for approval by the City, demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NOx reduction and 45 percent particulate reduction compared to the most recent CARB fleet average at time of construction.

- Prohibit equipment with dirty emissions. The project shall ensure that emissions from all off-road diesel powered equipment used on the project site do not exceed 40 percent opacity for more than three minutes in any one hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately. This measure means that equipment with continuous dark emissions is in violation of the requirement.

- Reduce equipment and vehicle idle times. Diesel equipment standing idle for more than five minutes shall be turned off. This would include trucks waiting to deliver or receive soil, aggregate, or other bulk materials. Rotating drum concrete trucks could keep their engines running continuously as long as they were onsite.

- Reduce vehicle emissions. Properly tune and maintain equipment for low emissions.

- Separate equipment and trucks from residences. Avoid staging equipment within 200 feet of residences (including newly built and occupied residences). **(Less Than Significant Impact with Mitigation)**

3.3.4.5 *Odor*

During construction, the various diesel powered vehicles and equipment in use onsite would create localized odors. These odors would be temporary and not likely to be noticeable for extended periods of time much beyond the project's site boundaries. The potential for diesel odor impacts is therefore less than significant. The proposed Specific Plan uses are not expected to produce any offensive odors that would result in frequent odor complaints; therefore this would be a less-than-significant impact. **(Less than Significant Impact)**

The Specific Plan would develop new residences in an area that may have noticeable odors. The Specific Plan area, especially Area 4, is located near the east shore of San Francisco Bay. This area contains numerous square miles of tidal wetlands that result in occasional odors. In addition, Cargill operates salt evaporation ponds to the north-northwest of the Specific Plan area. Both the wetlands and the salt evaporation ponds have the potential to cause odors that may affect residences. Naturally decaying organic material, such as algae, produces odors. These odors could be strongest in spring and summer when there is an abundance of algae and winds may blow this decaying material on to dikes. Very low tides during these times could also result in odors from exposing decaying matter to the prevailing winds. However, these types of odors are not likely to result in odor complaints because they will be considered as part of the natural environment by the occupants. As a result, natural odors that are produced by the bay wetlands would have a less-than-significant impact. **(Less than Significant Impact)**

3.3.5 <u>Conclusion</u>

The proposed project would not increase population at a rate greater than anticipated for preparation of the latest Clean Air Plan. **(Less than Significant Impact)**

Without incorporation of appropriate Transportation Control Measures the Specific Plan would conflict with the 2005 Bay Area Ozone Strategy. The Specific Plan will incorporate all appropriate TCMs (MM AIR-1.1). **(Less than Significant Impact with Mitigation)**

The proposed Specific Plan will result in increase in regional pollutants (ROG, NOx, and PM_{10}) that are in excess of BAAQMD significance thresholds. Mitigation measures (MM AIR-1.1) would reduce emissions for PM_{10} to less than significant levels, but ROG emissions which are mostly produced by consumer products, and NOx emissions would remain well above the significance threshold. **(Significant Unavoidable Impact)**

The proposed Specific Plan development will not result in significant localized air quality impact because the project levels would be below the California ambient air quality threshold of 9.0 ppm therefore, the impact is considered less-than-significant. **(Less than Significant Impact)**

There are no facilities within one-quarter miles of the Specific Plan area that were identified or expected to result in substantial air pollutant levels at any of the Specific Plan project areas due to toxic air contaminants and particulate matter. For these reasons, the community risk impact from local pollution sources would be less than significant. **(Less than Significant Impact)**

Temporary daily emissions of NOx and ROG from truck hauling along with emissions from on-site equipment used to move fill material would have emissions above the BAAQMD daily thresholds. Because they are above the BAAQMD threshold of significance, the effect of these emissions to the air basin would be significant. There is no feasible mitigation to reduce this impact to a less than significant level. **(Significant Unavoidable Impact)**

Development of the Specific Plan will result in significant short-term (i.e., construction-related) air quality impacts. These impacts will be avoided/mitigated by implementing mitigations measures MM AIR-4.1 and MM AIR-4.2. **(Less Than Significant Impact with Mitigation)**

Implementation of the proposed Specific Plan uses are not expected to produce any offensive odors; nor would the natural odors produced by the bay wetlands or salt evaporation ponds which are considered as part of the natural environment by the occupants expose a substantial number of people to objectionable odors. **(Less than Significant Impact)**

3.4 NOISE

The following section is based upon an environmental noise assessment prepared by *Illingworth & Rodkin, Inc.* in January 2009. This report is located in Appendix D of this document.

3.4.1 Environmental Noise Setting

3.4.1.1 *Fundamentals of Environmental Acoustics*

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. The objectionable nature of sound could be caused by its pitch or its loudness. Pitch is the height or depth of a tone or sound, depending on the relative rapidity (frequency) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. Loudness is intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In addition to the concepts of pitch and loudness, there are several noise measurement scales which are used to describe noise in a particular location. A decibel (dB) is a unit of measurement which indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10 decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities.

There are several methods of characterizing sound. The most common in California is the A-weighted sound level or dBA.[30] This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This energy-equivalent sound/noise descriptor is called Leq.[31] The most common averaging period is hourly, but Leq can describe any series of noise events of arbitrary duration.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus one (1) dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance the receptor is from the noise source. Close to the noise source, the models are accurate to within about plus or minus one to two (1 - 2) dBA.

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[30] *A-Weighted Sound Level, dBA* - The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.

[31] *Equivalent Noise Level, Leq* - The average A-weighted noise level during the measurement period. The hourly Leq used for this report is denoted as dBA Leq.

Since the sensitivity to noise increases during the evening and at night -- because excessive noise interferes with the ability to sleep -- 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The Community Noise Equivalent Level, CNEL, is a measure of the cumulative noise exposure in a community, with a five (5) dB penalty added to evening (7:00 pm - 10:00 pm) and a 10 dB addition to nocturnal (10:00 pm - 7:00 am) noise levels. The Day/Night Average Sound Level, Ldn, is essentially the same as CNEL, with the exception that the evening time period is dropped and all occurrences during this three-hour period are grouped into the daytime period.

3.4.1.2 *Fundamentals of Groundborne Vibration*

Railroad operations are potential sources of substantial ground vibration depending on distance, the type and the speed of trains, and the type of railroad track. A persons response to ground vibration has been correlated best with the velocity of the ground. The velocity of the ground is expressed on the decibel scale. The reference velocity is 1×10^{-6} in./sec. RMS, which equals zero (0) VdB, and one (1) in./sec. equals 120 VdB. Although not a universally accepted notation, the abbreviation "VdB" is used in this document for vibration decibels to reduce the potential for confusion with sound decibels.

Typical background vibration levels in residential areas are usually 50 VdB or lower, well below the threshold of perception for most humans. Perceptible vibration levels inside residences are attributed to the operation of heating and air conditioning systems, door slams and foot traffic. Construction activities, train operations, and street traffic are some of the most common external sources of vibration that can be perceptible inside residences.

One of the problems with developing suitable criteria for groundborne vibration is the limited research into human response to vibration and more importantly human annoyance inside buildings. However, experience with rapid transit systems over the last few decades has developed rational vibration limits that can be used to evaluate human annoyance to groundborne vibration. These criteria are primarily based on experience with passenger train operations, such as rapid transit and commuter rail systems. The main difference between passenger and freight operations is the time duration of individual events; a passenger train lasts few seconds whereas a long freight train may last several minutes, depending on speed and length. Although these criteria are based on shorter duration events reflected by passenger trains, they are also used in this assessment to evaluate the potential of vibration annoyance on the site due to large freight trains.

3.4.1.3 *Regulatory Overview*

The State of California and the City of Newark establish guidelines, regulations, and policies designed to limit noise exposure at noise sensitive land uses. Appendix G of the State CEQA Guidelines, the State of California Building Code, and the City of Newark General Plan identify the following:

State CEQA Guidelines

The California Environmental Quality Act (CEQA) contains guidelines to evaluate the significance of effects of environmental noise attributable to a proposed project. CEQA recommends the following thresholds in determining whether the proposed project would result in a significant impact: a) exposure of persons to or generation of noise levels in excess of standards established in

the local general plan or noise ordinance, or applicable standards of other agencies; b) exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels; c) a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; d) a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project; e) for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport, would the project expose people residing or working in the project area to excessive noise levels; f) for a project located within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.

City of Newark General Plan

The Noise Element of the City of Newark General Plan identifies noise and land use compatibility standards for various land uses. These standards are intended to provide compatible land uses throughout the community as related to environmental noise. Residential land uses are considered "normally acceptable" in exterior noise environment of 60 dBA Ldn or less. Interior noise levels attributable to exterior noise sources shall be maintained at or below 45 dBA Ldn.

Regulatory Criteria – Vibration

The City of Newark has not identified quantifiable vibration limits that can be used to evaluate the compatibility of land uses with the respect to groundborne vibration. Although there are no local standards that control allowable vibration levels in new residential development, the U.S. Department of Transportation has developed vibration impact assessment criteria for evaluating vibration impacts associated with transit projects.[32] This criteria is commonly used throughout California for CEQA evaluations. The Federal Transit Administration (FTA) has proposed vibration impact criteria, based on maximum overall levels for a single event. The impact criteria for groundborne vibration are shown in Table 3.4-1. Note that there are criteria for frequent events (more than 70 events of the same source per day), occasional events (30 to 70 vibration events of the same source per day), and infrequent events (less than 30 vibration events of the same source per day).

[32]U.S. Department of Transportation, Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006, FTA-VA-90-1003-06.

Table 3.4-1: Groundborne Vibration Impact Criteria			
Land Use Category	**Groundborne Vibration Impact Levels (VdB re 1 µinch/sec, RMS)**		
	Frequent Events[1]	**Occasional Events[2]**	**Infrequent Events[3]**
Category 1 Buildings where vibration would interfere with interior operations.	65 VdB[4]	65 VdB[4]	65 VdB[4]
Category 2 Residences and buildings where people normally sleep.	72 VdB	75 VdB	80 VdB
Category 3 Institutional land uses with primarily daytime use.	75 VdB	78 VdB	83 VdB

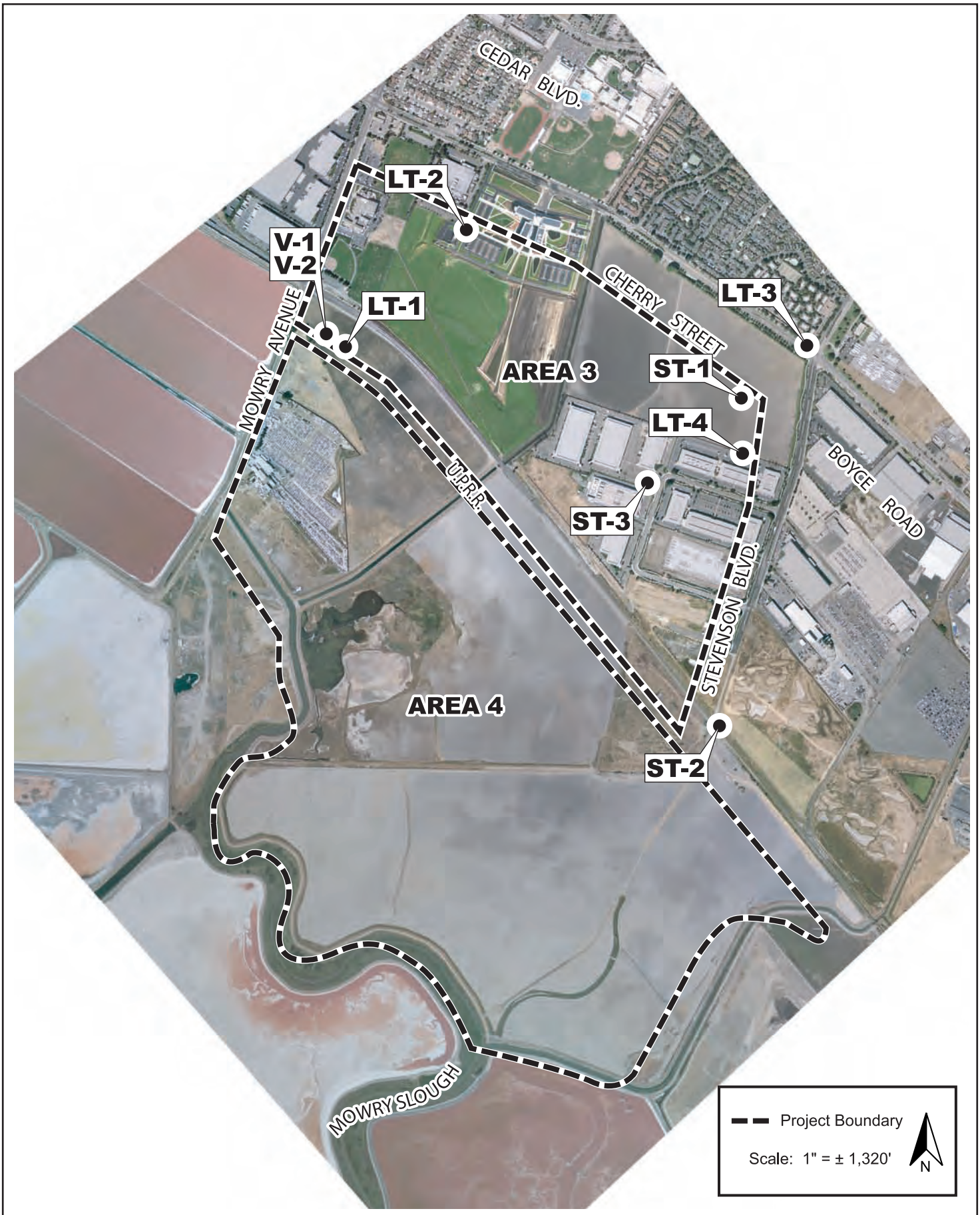
Notes:
1. "Frequent Events" is defined as more than 70 vibration events of the same source per day. Most rapid transit projects fall into this category.
2. "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day. Most commuter trunk lines have this many operations.
3. "Infrequent Events" is defined as fewer than 30 vibration events of the same kind per day. This category includes most commuter rail branch lines.
4. This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration sensitive manufacturing or research should always require detailed evaluation to define the acceptable vibration levels. Ensuring low vibration levels in a building requires special design of HVAC systems and stiffened floors.

Source: U.S. Department of Transportation, Federal Transit Administration, Transit Noise, and Vibration Impact Assessment, May 2006, FTA-VA-90-1003-06.

3.4.1.4 *Existing Noise Environment*

Railroad trains and vehicular traffic along the local roadway network are the predominant noise sources affecting the noise environment of Areas 3 and 4. Ambient noise measurements were made over a 30-hour period at two locations from September 6, 2006 to September 7, 2006. Noise measurements were made at three additional locations between September 24, 2008 and September 25, 2008. The existing noise levels take into account varying topography, existing structures, and other related features, in order to extrapolated the existing ambient noise levels. Figure 3.4-1 shows the approximate noise monitoring locations.

Noise measurement location LT-1 was approximately 100 feet from the UPRR at the edge of the Silliman Center turf playing field in Area 3. This location was selected to quantify noise levels generated by railroad trains. Hourly average noise levels typically ranged from 47 dBA Leq to 72 dBA Leq during the noise monitoring survey. The large variation in hourly average noise levels was dependent on whether or not trains passed during the hour. Maximum noise levels generated by railroad train warning whistles were routinely 90 to 100 dBA L_{max} at this location with four excursions above 100 dBA L_{max}. A review of the noise data gathered at this location indicates that



NOISE MEASUREMENT LOCATIONS FIGURE 3.4-1

approximately 30 trains passed the site in a 24-hour period. The day-night average noise level at location LT-1 was 70 dBA Ldn.

Noise measurement location LT-2 was located at the Area 3 landscape strip on Cherry Street, approximately 55 feet from the center of Cherry Street east of the Ohlone College Campus. This measurement was made to quantify noise levels generated by vehicular traffic along Cherry Street. Hourly average noise levels typically ranged from 63 dBA Leq to 74 dBA Leq during the day and from 55 dBA Leq to 71 dBA Leq at night. The day-night average noise level at location LT-2 was 73 dBA Ldn.

Noise measurement location LT-3 quantified traffic noise levels at a distance of 80 feet from the center of Stevenson Boulevard at Parada Street east of Area 3. Hourly average noise levels typically ranged from 66 dBA Leq to 72 dBA Leq during the day and from 59 dBA Leq to 70 dBA Leq at night. The day-night average noise level at location LT-3 was 73 dBA Ldn.

Noise measurement location LT-4 was made approximately 80 feet from the center of Stevenson Boulevard just north of the landscaping strip on the 78-acre vacant property in Area 3 to quantify noise levels generated by vehicular traffic along Stevenson Boulevard. Hourly average noise levels typically ranged from 56 dBA Leq to 65 dBA Leq during the day and from 51 dBA Leq to 63 dBA Leq at night. The day-night average noise level at location LT-4 was 65 dBA Ldn.

Short-term noise measurements were made at three additional positions in and around the project area. Short-term noise measurement location ST-1 was approximately 90 feet from the center of Cherry Street on the 78-acre vacant property in Area 3 just outside the landscaping strip, near Stevenson Boulevard. The average-equivalent noise level from 12:10 p.m. to 12:20 p.m. on September 6, 2006 was 66 dBA Leq. A comparison of the data measured at ST-1 and the data gathered at LT-2 during the 12:00 p.m. hour indicates that the day-night average noise level at ST-1 is approximately 68 dBA Ldn. Short-term noise measurement location ST-2 was south of Stevenson Boulevard and Area 3 approximately 430 feet west from the Quickcrete Concrete Batch Plant. The average-equivalent noise level measured on September 6, 2006 was 58 dBA Leq. The day-night average noise level resulting from the operation of concrete batch plant at Quickcrete is estimated to be less than 60 dBA Ldn at Areas 3 and 4. Short-term noise measurement location ST-3 was at the property line between light industrial/commercial buildings along Stevenson Boulevard and the 78-acre vacant property in Area 3. The average-equivalent noise level measured on September 24, 2008 was 50 dBA Ldn. The day-night average noise level resulting from office operations is estimated to be 50 dBA Ldn.

3.4.2 Noise Impacts

3.4.2.1 *Thresholds of Significance*

For the purposes of this EIR, based upon Appendix G of the CEQA Guidelines, a noise impact is considered significant if the project will:

- exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies; or
- for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport, would the project expose people residing or working in the project area to excessive noise levels; or

- for a project located within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels; or
- exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels; or
- a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or
- a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

3.4.2.2 *Noise Impacts to the Project*

Future Exterior Noise Environment for Area 3

The noise environment at the proposed Area 3 residential area currently exceeds the City's normally acceptable noise standard for exterior noise levels at residential and educational uses (60 dBA Ldn) as a result of traffic along the local roadway network. Future noise levels at a distance of 100 feet from the center of Cherry Street (nearest residential units) would be approximately 71 dBA Ldn. Future noise levels at a distance of 100 feet from the center of Stevenson Boulevard, west of Cherry Street/Boyce Road, are also projected to reach 71 dBA Ldn.

A review of the land use plan indicates that private rear yard areas could be located immediately adjacent to Cherry Street and Stevenson Boulevard. Noise levels in residential outdoor use areas that are affected by transportation noise are required to be maintained at or below 60 dBA Ldn to be considered "normally acceptable". The overall day-night average noise level in the outdoor use areas of residential uses along Cherry Street and Stevenson Boulevard would be approximately 71 dBA Ldn and would exceed the City's "normally acceptable" exterior noise standards. This is a significant impact.

Noise barriers could be constructed to reduce noise levels in the rear yards of homes adjacent to Cherry Street and Stevenson Boulevard. Preliminary calculations indicate that sound barriers effectively 11 feet high (relative to residential pad elevations) would be required along Cherry Street and Stevenson Boulevard to reduce noise levels in the rear yards to "normally acceptable" levels (at or below 60 dBA Ldn). Existing landscaped berms that are to remain when development occurs will help to attenuate noise and reduce the need for excessively tall soundwalls. The effective height of the noise barrier will be a combination of the berming and the soundwalls.

Table 3.4-2:
Future Exterior Ldn Noise Levels (dBA) With Noise Barriers

Noise Source	No Barrier	6 ft.	7 ft.	8 ft.	9 ft.	10 ft.	11 ft.
Cherry Street & Stevenson Blvd	71	65	64	63	62	61	60

Stationary noise sources in the project vicinity such as Quickcrete and Newark Memorial High School's football stadium were not found to generate noise levels greater than 60 dBA Ldn and would not be considered noise sources that would be incompatible with proposed residential development. Quickcrete is located over 800 feet from Area 3 and approximately 1,400 feet from Area 4. Noise levels at the nearest proposed uses would be approximately 53 dBA Leq at Area 3. Quickcrete does not work at night or evening hours but they do start some prepping and non-noise

generating operations as early as 3 am. Newark Memorial High School's football stadium is located about 1,300 feet from Area 3. Football games would be expected to generate noise levels of approximately 52 to 54 dBA Leq. Ldn noise levels on days where football games would occur could reach 55 dBA Ldn.

Noise levels from operations at Quickcrete and the football stadium could be audible at residential receivers proposed at the nearest portions of Areas 3 and 4, but would not exceed 60 dBA Ldn.

The location of outdoor use areas at the proposed elementary school that would benefit from a lowered noise level are not known at this time. A combination of noise barriers, setbacks, and site planning are methods for reducing exterior noise levels in noise sensitive outdoor use areas. Preliminary calculations indicate that noise sensitive outdoor use areas would have to be located approximately 540 feet from Cherry Street in order to achieve an exterior noise level of 60 dBA Ldn.

While this EIR evaluates the overall suitability of this site for an elementary school use, the specific design of the school has not yet been prepared and would be subject to individual environmental review and approval. Future development of the school would be subject to specific school site and construction requirements set by the State and would be reviewed and approved by Division of the State Architect.

Interior Noise Environment for Area 3

Future noise levels at the project site would require that residential and educational buildings be designed to control interior noise levels to 45 dBA Ldn or less. Standard construction provides approximately 15 dBA of exterior to interior noise reduction assuming the windows are partially open for ventilation. Standard construction with the windows closed provides approximately 20 to 25 dBA of noise reduction in interior spaces. Where exterior day-night average noise levels are 65 dBA Ldn or less, interior noise levels can typically be maintained below City standards (45 dBA Ldn) with the incorporation of forced air mechanical ventilation systems in residential and educational buildings. These systems allow the occupant the option of controlling noise by maintaining the windows shut. Where noise levels exceed 65 dBA Ldn, forced-air mechanical ventilation systems and sound-rated building elements are normally required.

To achieve the necessary noise reduction to meet the requirements of the City of Newark's interior noise standard, some form of forced air mechanical ventilation, satisfactory to the local building official, would be required at units with direct line-of-sight to Cherry Street or Stevenson Boulevard. Given the anticipated exterior noise level at first-row residential units and educational building(s) proposed along Cherry Street and Stevenson Boulevard, it may also be necessary to provide sound-rated windows and doors at second story exposures to maintain interior noise levels at or below 45 dBA Ldn. Interior noise levels would vary depending on the design of the building (relative window area to wall area) and construction materials and methods. Although the City interior noise standard is not applicable to public schools, 45 dBA Ldn is a recommended interior noise level goal for educational facilities.

At the time detailed development plans are prepared, an acoustical analysis will be completed to identify the noise insulation features that have been included in the design of the project to maintain interior noise levels at acceptable levels. Preliminary calculations indicate that the incorporation of a suitable form of mechanical ventilation system and moderate performance sound-rated windows

(STC 28-30) would be sufficient to achieve the interior noise level standard at units with the highest projected exterior noise exposure.

Future Exterior Noise Environment for Area 4

The noise environment at portions of Area 4 currently exceed the City's normally acceptable noise standard for exterior noise levels at residential uses (60 dBA Ldn) as a result of railroad noise along the UPRR. The existing and future topography and proposed improvements are taken into account when extrapolating existing and future noise levels. Existing noise levels at a distance of 100 feet from the center of the UPRR (nearest residential units) are approximately 70 dBA Ldn. This measurement location was near an at-grade crossing near the intersection of Mowry Avenue where trains were blowing their warning whistles. As part of the project, a bridge would be constructed over the UPRR at Stevenson Boulevard. This would allow trains to pass noise sensitive receptors in Area 4 without having to sound their warning whistles. Future noise levels at a distance of 100 feet from the center of the UPRR (nearest residential units) would be approximately 67 dBA Ldn.

A review of the land use plan indicates that it is possible for private rear yards to be located immediately adjacent to the UPRR right-of-way. The overall day-night average noise level in the outdoor use areas of residential uses along the UPRR would be approximately 67 dBA Ldn and would exceed the City's "normally acceptable" exterior noise standards.

Noise barriers could be constructed to reduce noise levels in the yards of homes adjacent to the UPRR. Preliminary barrier calculations indicate that a soundwall eight (8) feet high would be required at the residential property line to reduce noise levels in the rear yards to "normally acceptable" levels (at or below 60 dBA Ldn). Table 3.4-3 summarizes the future exterior noise levels of homes adjacent to the UPRR assuming various barrier heights.

Table 3.4-3:
Future Exterior Ldn Noise Levels (dBA) With Noise Barriers

Noise Source	No Barrier	6 ft.	7 ft.	8 ft.
UPRR	71	65	64	60

Stationary noise sources in the Area 4 vicinity primarily include the Tri-Cities Recycling and Disposal Facility (TCRDF), located south of the project site. The Specific Plan Area 4 residential alternatives propose residential units within approximately 1,800 to 2,300 feet of the TCRDF. The TCRDF is expected to reach capacity and no longer accept landfill waste from the Fremont Transfer Station by mid-2009. While the concrete recycling facility and corporation yard will continue to operate post-closure of the landfill, no additional waste deposits will occur on the top and sides of the landfill. Post-closure, the entire landfill will be capped with a multiple layer cover system. Therefore, waste hauling trucks will no longer be a noise source on the top and sides of the landfill. Noise sources from the TCRDF were not found to generate noise levels greater than 60 dBA Ldn and, in the future, would not be considered a noise source that would be incompatible with the proposed residential development.

Interior Noise Environment for Area 4

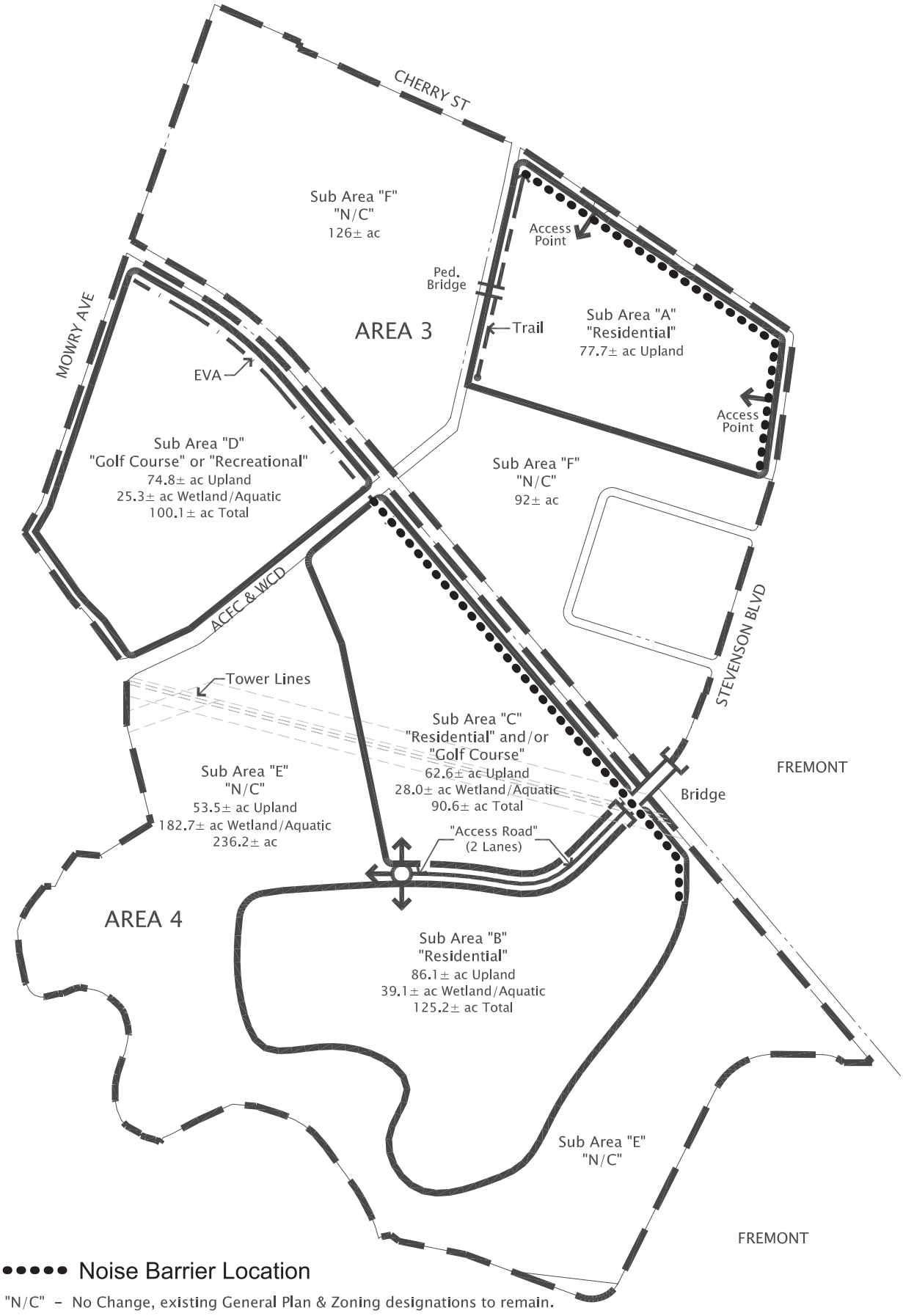
Future noise levels in Area 4 would require that residential units be designed to control interior noise levels to 45 dBA Ldn or less. To achieve the necessary noise reduction to meet the requirements of the City of Newark's interior noise standard, some form of forced air mechanical ventilation, would be required at units directly adjacent to the railroad. Given the anticipated exterior noise level at first-row residential units proposed along the railroad, it may also be necessary to provide sound-rated windows and doors at potential second story exposures to maintain interior noise levels at or below 45 dBA Ldn. Preliminary calculations indicate that the incorporation of a suitable form of mechanical ventilation system and moderate performance sound-rated windows (STC 28-30) would be sufficient to achieve the interior noise level standard at units with the highest projected exterior noise exposure.

Impact NOI-1: Future residential uses developed in Areas 3 and 4 would be exposed to exterior noise levels greater than 60 dBA Ldn, which exceeds the noise and land use compatibility standards contained in the City of Newark's General Plan. Interior noise levels would be expected to exceed 45 dBA Ldn without the incorporation of noise insulation features into the future development projects' design. **(Significant Impact)**

MM NOI-1.1: The following mitigation measures shall be included in future project-specific development plans within Areas 3 and 4 to reduce noise impacts to a less-than-significant level:

- Noise barriers shall be constructed to reduce noise levels at private use areas along Cherry Street, Stevenson Boulevard, and the railroad tracks. To be effective, the barriers shall be constructed solidly over the entire surface and at the base. Openings or gaps between barrier materials or the ground decrease the reduction provided by a noise barrier. Suitable material for barrier construction shall have a minimum surface weight of three pounds per square foot (such as one-inch thick wood, masonry block, concrete, or metal). Preliminary barrier designs are shown in on Figure 3.4-2. The final design of noise barriers shall be completed during project-level review when detailed site plans and grading plans are available.

- Project-specific acoustical analyses shall be completed at the time detailed development plans are prepared, so that the design of the residential units and educational buildings will be sufficient to adequately reduce interior noise levels to 45 dBA Ldn or lower. Building sound insulation requirements will include the provision of forced-air mechanical ventilation for all new units with direct line of sight to significant transportation noise sources or railroad lines in the project vicinity. Special building sound insulation treatments may be required. These treatments would include, but are not limited to, sound rated windows and doors, sound rated wall constructions, acoustical caulking, protected ventilation openings, etc. The specific determination of what treatments are necessary would be determined on a unit-by-unit basis. The results of the analysis, including the description of the necessary



PRELIMINARY NOISE BARRIER DESIGN FOR AREAS 3 & 4 FIGURE 3.4-2

noise control treatments to achieve acceptable noise levels inside the living units, shall be submitted to the City along with the building plans and will be reviewed and approved by the Community Development Director prior to issuance of a building permit. **(Less Than Significant Impact with Mitigation)**

Noise and Land Use Compatibility (Aircraft)

The Areas 3 and 4 Specific Plan site is not located within two miles of an airport or within an airport land use plan area and would not be exposed to excessive noise from aircraft. The exterior noise environment at the project site resulting from intermittent aircraft noise would be considered compatible with proposed sensitive uses. **(Less than Significant Impact)**

Groundborne Vibration

Railroad trains are a source of groundborne vibration when receivers are located close to the tracks. The U.S. Department of Transportation, Federal Transit Administration, (FTA) has developed vibration impact assessment criteria for evaluating vibration impacts associated with rapid transit projects. The criterion for groundborne vibration impacts is 75 VdB for occasional events (30 to 70 vibration events of the same source per day)[33]. Based on the measured vibration data, the nearest residential units would not be exposed vibration levels greater than 75 VdB. Vibration levels will not exceed the FTA guidelines at the nearest residential units to the railroad; therefore, train passbys are not expected to result in a significant vibration impact to future Areas 3 and 4 residential uses. **(Less than Significant Impact)**

3.4.2.3 *Noise Impacts from the Project*

Noise-Generating Uses

Area 3 of the Specific Plan includes the development of an elementary school and neighborhood park adjacent to proposed residential land uses. The school would generate noise when students arrive and depart, as well as when outdoor activity areas are used. The proposed neighborhood park could contain one or more of the following amenities: tot lot/playground, open turf area, picnic tables with barbeques, pathways, etc. It is not anticipated, given the activities outlined above, that noise from the elementary school and passive park would cause any adverse noise impacts upon future noise sensitive receptors in the area. Noise-generating uses within the Areas 3 and 4 Specific Plan are not anticipated to generate noise levels in excess of 60 dBA Ldn. **(Less than Significant Impact)**

Project-Generated Traffic Noise

Project generated traffic noise level increases were calculated by comparing existing plus project traffic volumes to existing traffic volumes. A total of 55 intersections surrounding Areas 3 and 4 were analyzed. Typically, traffic volumes must double in order to result in a perceptible (3 decibel) noise level increase. A review of the Specific Plan traffic study indicates that the implementation of the Areas 3 and 4 Specific Plan will generate a slight increase in vehicular traffic on the local roadway network. The addition of project traffic would increase noise levels by 2 dBA Ldn or less.

[33] Approximately 30 trains passed the site during the 24-hour noise monitoring period.

A traffic noise increases of less than 3 dBA Ldn is not typically perceptible and is not considered to result in a significant noise impact. **(Less than Significant Impact)**

Construction Noise

Construction activities generate considerable amounts of noise. Construction-related noise levels are normally highest during the demolition phase and during the construction of project infrastructure. These phases of construction require heavy equipment that normally generates the highest noise levels over extended periods of time. Typical hourly average construction generated noise levels are about 81 dBA to 88 dBA Leq measured at a distance of 50 feet from the center of the site during busy construction periods (e.g., earth moving equipment, impact tools, etc.) Construction-related noise levels are normally less during building erection, finishing, and landscaping phases. There would be variations in construction noise levels on a day-to-day basis depending on the actual activities occurring at the site. Construction generated noise levels drop off at a rate of about six (6) dBA per doubling of distance between the source and receptor. The nearest existing residential noise receivers are about 190 feet from the project site, on the opposite side of Cherry Street. Hourly average noise levels would range from 69 to 76 dBA Leq during the busiest construction periods along the perimeter of the site. Shielding by barriers or buildings would provide an additional five (5) to 10 decibels of attenuation at distant receptors.

Noise impacts resulting from construction depend on the noise generated by various pieces of construction equipment, the timing and duration of noise generating activities, and the distance between construction noise sources and noise sensitive receptors. Construction noise impacts primarily arise when construction activities occur during noise-sensitive times of the day (early morning, evening, or nighttime hours), construction occurs in areas immediately adjoining noise sensitive land uses, or when construction durations last over extended periods of time. When noise from construction activities exceeds 60 dBA Leq and exceeds the ambient noise environment by at least five (5) dBA Leq at nearby noise-sensitive uses for a period greater than one year, the impact would be considered significant.

Development of the Areas 3 and 4 Specific Plan would be phased, with grading and construction of project infrastructure completed first. Residential units and the elementary school at Area 3 would then be constructed. Area 3 development would occur prior to Area 4. Development of Area 4 including the Stevenson Boulevard overcrossing and PG&E tower modifications would proceed prior to development of the golf course and residential in Area 4. It is unknown at this time which Area 4 development, the golf course or residential units, would be constructed first. As construction moves away from noise-sensitive receptors or indoors, noise levels generated by construction will be lower. Noise generated by grading, infrastructure improvements and the construction of units nearest Cherry Street would not be expected to exceed ambient noise levels at receivers to the east by more than (5) dBA Leq for a period greater than one year.

Impact NOI-2: Without incorporation of construction mitigation measures, development of the Areas 3 and 4 Specific Plan would result in significant temporary noise impacts. **(Significant Impact)**

MM NOI-2.1: Future development of the Areas 3 and 4 Specific Plan will include the following construction-noise mitigation measures, to reduce noise impacts from project construction to a less-than-significant level.

- Restrict noise-generating activities at the construction site or in areas adjacent to the construction site to the hours of 7:00 a.m. to 6:00 p.m., Monday through Friday, and between 8:00 a.m. to 5:00 p.m. on Saturdays. Construction shall be prohibited on Sundays and holidays.

- Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.

- Unnecessary idling of internal combustion engines should be strictly prohibited.

- Locate stationary noise generating equipment such as air compressors or portable power generators as far as possible from sensitive receptors. Construct temporary noise barriers to screen stationary noise generating equipment when located near adjoining sensitive land uses. Temporary noise barriers could reduce construction noise levels by 5 dBA.

- Utilize "quiet" air compressors and other stationary noise sources where technology exists.

- Route all construction traffic to and from the project site via designated truck routes where possible. Prohibit construction related heavy truck traffic in residential areas where feasible.

- Control noise from construction workers' radios to a point where they are not audible at existing residences bordering the project site.

- The contractor shall prepare and submit to the City for approval a detailed construction plan identifying the schedule for major noise-generating construction activities.

- Designate a "disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include in it the notice sent to neighbors regarding the construction schedule. **(Less Than Significant Impact with Mitigation)**

3.4.3 Conclusion

Future residential uses developed in Areas 3 and 4 would be exposed to exterior noise levels greater than 60 dBA Ldn, which exceeds the noise and land use compatibility standards contained in the City of Newark's General Plan. Interior noise levels would be expected to exceed 45 dBA Ldn without the incorporation of noise insulation features into the future development projects' design.

Mitigation measures (MM NOI-1.1) are included in the project that would reduce this impact to a less than significant level. **(Less than Significant Impact with Mitigation)**

The Areas 3 and 4 Specific Plan site is not located within two miles of an airport or within an airport land use plan area and would not be exposed to excessive noise from aircraft. The exterior noise environment at the project site resulting from intermittent aircraft noise would be considered compatible with proposed sensitive uses. **(Less than Significant Impact)**

Vibration levels will not exceed the FTA guidelines at the nearest residential units to the railroad; therefore, train passbys are not expected to result in a significant vibration impact to future Areas 3 and 4 residential uses. **(Less than Significant Impact)**

Noise-generating uses within the Areas 3 and 4 Specific Plan are not anticipated to generate noise levels in excess of 60 dBA Ldn. **(Less than Significant Impact)**

The addition of project traffic would increase noise levels by 2 dBA Ldn or less. A traffic noise increases of less than 3 dBA Ldn is not considered to result in a significant noise impact. **(Less than Significant Impact)**

Construction-related noise would result in a temporary increase in noise levels in the project vicinity. Mitigation measures (MM NOI-2.1) are included in the project to mitigate this impact to less than significant levels. **(Less Than Significant With Mitigation)**

3.5 BIOLOGICAL RESOURCES

The analysis contained in this section is based on a site-specific biological report prepared for the proposed project by *H.T. Harvey & Associates* (Appendix E of this EIR). While the biological report contains information regarding the entire Areas 3 and 4 Specific Plan site, the majority of the survey effort in Area 4 was focused on the portion that would be developed as part of the proposed project.

To evaluate the biological resources of the project site, a variety of methodologies were used: 1) literature and database reviews were completed to determine the documented or potential presence of special-status plant and wildlife species; 2) reconnaissance surveys of the project site were completed by plant/wetland/wildlife ecologists to characterize existing biological conditions, look for indications of the presence of special status species, and assess the suitability of habitat for these species; 3) special-status plant and animal species surveys[34] were completed on the project site; and 4) a jurisdictional wetland delineation was prepared for the site. It should be noted that *H.T. Harvey & Associates* biologists have completed multiple wildlife, rare plant, and wetland surveys on the site since the mid-1980s.

3.5.1 Introduction and Regulatory Overview

As it relates to land use decisions, "biological resources" generally include plant and animal species and the habitats that support such species. Due to the importance of California's native ecological systems from a biological, heritage, and economic standpoint, impacts on such resources - especially those that are rare or those with high ecological values - are considered an adverse environmental impact under CEQA.

Individual plant and animal species listed as rare, threatened or endangered under state and federal Endangered Species Acts, and the natural communities or habitats that support them, are of particular concern. Other sensitive, natural communities (such as wetlands, riparian woodlands, and oak woodland) that are critical to wildlife or ecosystem function are also key biological resources.

The avoidance and mitigation of significant impacts to biological resources under CEQA is consistent with, and supplementary, to various federal, state, and local laws/regulations that are designed to protect such resources. These regulations often mandate that project sponsors obtain permits prior to the commencement of development activities, with measures to avoid and/or mitigate impacts required as permit conditions. Table 3.5-1 summarizes many of these laws and regulations; for more details see Appendix E.

[34] "Special-status" species include those that are listed as threatened or endangered under the federal and/or California Endangered Species Acts. It also includes those identified by the California Department of Fish & Game (CDFG) as a California Species of Special Concern, as well as plants identified by the California Native Plant Society as rare, threatened, or endangered. The California Native Plant Society is a non-profit organization that maintains lists and a database of rare and endangered plant species in California. Plants in the California Native Plant Society's "Inventory of Rare and Endangered Plants of California" are considered "Special Plants" by the California Department of Fish and Game Natural Diversity Database Program (CNDDB).

Table 3.5-1:
Regulation of Biological Resources

Law/Regulation	Objective(s)	Responsible Agencies
Federal Endangered Species Act	Prohibit the harassment and unauthorized take of such species and their habitat and, ultimately, to restore their numbers to where they are no longer threatened or endangered.	U.S. Fish & Wildlife Service (USFWS), NOAA's National Marine Fisheries Service (NMFS)
California Endangered Species Act		California Department of Fish & Game (CDFG)
Federal Migratory Bird Treaty Act	Protect migratory birds, including their nests & eggs.	USFWS
California Fish & Game Code Section 3503.5	Protect birds of prey, including their nests & eggs.	CDFG
Federal Clean Water Act	Avoid/mitigate impacts to wetlands and other "waters of the United States or State" including streams, lakes, or bays.	U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, Regional Water Quality Control Board
Porter Cologne Act		
California Fish & Game Code Sections 1600-1616	Avoid/mitigate impacts to rivers, streams, or lakes.	CDFG
McAteer-Petris Act & San Francisco Bay Plan	Avoid impacts to areas within 100 feet of the San Francisco Bay shoreline.	San Francisco Bay Conservation and Development Commission (BCDC)
City of Newark Tree Ordinance	Avoid direct & indirect impacts to trees (diameter ≥ 6 inches measured at breast height).	City of Newark

NOAA = National Oceanic & Atmospheric Administration

Various policies in the City's General Plan have been adopted for the purpose of avoiding or mitigating biological resource impacts resulting from planned development within the City. All future development addressed by this EIR will be subject to the biological resources policies listed in the City's General Plan, including the following:

Land Use Goals and Policies

GOAL 2, Policy d. Support preservation of the lands of the San Francisco Bay National Wildlife Refuge, and protection of San Francisco Bay and bay lands.

Program 7. Support the activities of Federal, State, and regional agencies to preserve the existing lands of the San Francisco Bay National Wildlife Refuge.

Program 8. Encourage potentially affected property owners to enter into early negotiations with appropriate agencies to resolve debates over wetlands areas and claims as to whether or not their lands should be included in areas of federal jurisdiction.

Program 9. Evaluate new development to ensure that it will not adversely affect water quality.

Open Space and Conservation Goals and Policies

GOAL 1: Encourage the conservation and preservation of unique open space and conservation resources that help to define the quality and character of the City.

Policy a. Protect and where possible enhance the *public* open space resources available within or near Newark.

Program 7: Consider all reasonable options for protection or acquisition of sites with unique open space resources.

Policy b. Encourage *private property owners* to preserve unique open space areas and natural features on their lands.

*Program 10***:** Evaluate every land development proposal for potential contributions to the Newark open space system. Identified unique open space, vegetation, animal habitat or natural resource areas should be protected where possible and appropriate.

GOAL 2 Acknowledge the San Francisco Bay National Wildlife Refuge acquisition, and its value as a community resource.

Policy a. Support actions to preserve and maintain the lands of the San Francisco Bay National Wildlife Refuge (SFBNWR).

GOAL 6 Conserve and maintain the City's tree resources.

Policy a: Maintain, and where appropriate, enhance programs for preserving existing trees.

3.5.2 Existing Biological Resources

The Specific Plan site is located in southwestern Newark. The southernmost boundary of Area 4 is located adjacent to the San Francisco Bay. Area 3 is comprised of approximately 296 acres including a fire station, Ohlone College campus, a City of Newark Recreation Center, campus industrial uses, and agricultural fields. A vernal pool tadpole shrimp mitigation site (for the "Pacific Commons" development) is located southeast of Area 3. The approximately 552-acre Area 4 is mostly undeveloped, consisting primarily of cultivated fields. A large wetland complex is located in the west-central portion of Area 4. Other uses include auto wrecking yards, a private residence, and associated farm outbuildings, and past uses include two duck clubs. The Cargill salt pond evaporators are located northwest of Area 4. Wetland hydrology in Area 4 is influenced by high groundwater tables and muted tidal fluctuations as well as stormwater runoff.

It should be noted that although the development of Area 4 is anticipated in the City of Newark's General Plan, this area has also been identified for its ecological value by regional planning efforts. The southern and western portions of Area 4 were included in the approved 1990 Refuge Boundary Expansion area of Don Edwards San Francisco Bay National Wildlife Refuge (SFBNWR), indicating that these lands were potentially to be included in the Refuge. The Specific Plan will not conflict

with the preservation of the SFBNWR lands. The City of Newark will work with public entities in possible future acquisition of undeveloped portions of Area 4. The Specific Plan is consistent with the Refuge approved acquisition boundary. The value of Area 4 in providing upland transition zones adjacent to tidal wetlands has also been identified by the Baylands Ecosystem Habitat Goals Report (1999), a report of habitat recommendations prepared by the San Francisco Bay Area Wetland Ecosystem Goals Project, a consortium of nine state and federal agencies, including the San Francisco Estuary Institute. As discussed

3.5.2.1 *Biological Habitats*

The Specific Plan site contains a variety of biological habitats, as shown in Table 3.5-2, and on Figure 3.5-1. The following is a summary of habitat types found in Areas 3 and 4. In Area 3, only the northeastern corner (area proposed for development) was included in the biological analysis for the project. For detailed information, please see Appendix E of this EIR.

Table 3.5-2:
Biological Habitats in the Specific Plan Area

Habitat	Acres	Percent of Total
All Agricultural Habitats	**471.5**	**53%**
▪ Upland Agricultural	269.3	30%
▪ Agricultural Field/Seasonal Wetland (Saline to Brackish)	186.8	21%
▪ Agricultural Field/Seasonal Wetland (Brackish to Fresh)	15.4	2%
Ruderal, Herbaceous Field	**134**	**15%**
Developed	**195**	**22%**
Aquatic	**38.2**	**4%**
All Marsh Wetlands	**42.7**	**5%**
▪ Diked Salt Marsh	29.1	3%
▪ Muted Tidal Salt Marsh	6.6	<1%
▪ Freshwater Marsh	4.4	<1%
▪ Brackish Marsh	2.6	<1%
Seasonal Wetland	**4.2**	**<1%**
Wrecking Yard Detention Basins	**1.2**	**<1%**
Coastal Scrub	**2.2**	**<1%**
Total	**889**	**100%**

HABITATS

FIGURE 3.5-1

Upland Agriculture

Approximately 270 acres of the 889-acre site is comprised of upland areas currently in agricultural production, as shown in Figure 3.5-1. These upland agricultural areas are disced and ripped annually for planting.[35] Various hydrophytes such as birdsfoot trefoil, rabbitsfoot grass, and Italian ryegrass occur only occasionally in this habitat, while planted oats, wheat, and barley, and weedy upland mustard and radish species grow well. In some areas, particularly in the southern portions of Area 4, upland habitats are scalded by salt accumulation.

The frequent, ongoing nature of disturbance of the upland agricultural habitats on the site limits the development of wildlife habitat and the ability of wildlife to nest and burrow. Few birds nest in these areas. Raptors such as the red-tailed hawk, American kestrel, northern harrier, and barn owl forage over agricultural habitats, particularly when they contain vegetation. Rodents such as western harvest mouse and California vole, and black-tailed hares, desert cottontails, and California ground squirrels, all occur in this habitat. However, the frequency of disturbance limits the abundance of burrowing mammals and the stability of ground squirrel colonies. As a result, burrowing owls have not been observed nesting or roosting in the agricultural fields themselves, instead using adjacent, less frequently disturbed areas. Reptile species include garter and gopher snakes, and western fence lizards.

Agricultural Field/Seasonal Wetland (Saline to Brackish and Brackish to Fresh)

Wetlands within agricultural fields of Area 4 have edaphic (characteristics are influenced more by soils than climate) and hydrologic characteristics spanning a range from fresh to brackish to saline. The amount of salts held by the soils in these areas means that the majority of agricultural wetlands throughout Area 4, or approximately 187 acres, are at least somewhat brackish to fully saline. Two large areas and one small area southwest of the railroad tracks, totaling approximately 15.4 acres, receive enough freshwater influence from precipitation and seeps to be classified as mildly brackish to fresh.

The majority of the areas in southern Area 4 were historically tidal wetlands, until the construction of pumps and levees which allowed dryland farming and the construction of duck clubs. Dominant vegetation in agricultural field/seasonal wetland areas includes rabbitsfoot grass, Mediterranean beard-grass, Italian wild-rye, Mediterranean barley, annual bluegrass, and curved sickle grass. Hydrophytic and/or salt-tolerant forbs are also frequent, and, in the more saline wetlands, slenderleaf ice plant and sticky sand-spurrey are present. Pickleweed occurs in the most saline areas, while cattails occur in areas supporting freshwater seeps.

The seasonal wetlands in the southern portion of Area 4 provide suitable foraging and roosting habitat for small numbers of waterbirds, and several such species have been observed by *H. T. Harvey & Associates* ecologists during field work on the site. Waterbirds observed using the seasonal wetlands on the site include American coots, shorebirds such as the American avocet, black-necked stilt, greater yellowlegs, least sandpiper, long-billed dowitcher, and Wilson's snipe, and waterfowl such as the Canada goose, green-winged teal, mallard, and gadwall. Gulls such as the California gull and herring gull that forage at the adjacent Tri-Cities Landfill occasionally roost or

[35] Most of the land within Areas 3 and 4 has been subject to long-term, dryland farming for 20 years, and in some areas outside of the historic duck club complexes south of the agricultural road, for as much as 100 years. When the duck clubs were closed in the 1970s and 1980s, dryland farming began across the most of Area 4 (outside of the former Pintail Duck Club area which remains perennially wet) and Area 3.

bathe in the seasonal wetlands in Area 4. Although moist-soil conditions likely provide suitable foraging habitat for all these waterbirds, the vast majority of observations of these species have been in seasonal wetlands that support open water; such wetlands represent a minority of the areas mapped on Figure 3.5-1 as seasonal wetlands.

Grain crops planted in the seasonal wetlands provide cover and foraging habitat for savannah sparrows and western meadowlarks after the upland fields have been harvested, although they are typically mown before these species can successfully nest. During the dry season, wildlife use of the seasonal wetlands on the site is similar to that in the upland agricultural fields on the site.

Ruderal, Herbaceous Field

Approximately 134 acres within the Specific Plan area is best classified as ruderal, herbaceous fields. This habitat is characterized by an abundance of non-native annual grasses that established naturally, rather than being purposefully seeded as in the agricultural areas. This habitat occurs adjacent to developed areas, along roadsides, and in fields that have been disced or previously cleared for construction, such as the large areas north of the Southern Pacific railroad tracks in Area 3 (Figure 3.5-1). Ruderal species observed on the site are common to abundant throughout the region and include black mustard, wild radish, stinkweed, tarweed, wild lettuce, sow thistle, Cornish mallow, cheeseweed, milk thistle, Italian ryegrass, wild oats, and various bromes, including ripgut brome. Additional species such as bristly ox-tongue, spearscale, and perennial pepperweed occur in wetter areas in this habitat, though these species were generally uncommon in upland ruderal habitats.

Ruderal habitats on the site support a number of wildlife species that are relatively common and abundant throughout the South Bay region. Gopher snakes and western fence lizards are the most commonly encountered reptiles in ruderal habitats on the site. Few birds nest in such habitats due to the sparse nature of vegetation in these areas, but small numbers of Bryant's savannah sparrows, western meadowlarks, mourning doves, California towhees, red-winged blackbirds, and lesser goldfinches nest in these areas. Several pairs of burrowing owls have also been recorded breeding in ruderal habitats on the site, both along the sides of levees and in vacant lots. A number of other bird species, such as the red-tailed hawk, American kestrel, northern harrier, house finch, American goldfinch, white-crowned sparrow, golden-crowned sparrow, and European starling, forage in ruderal habitats on the site. Mammals observed or expected to use ruderal habitats on the site include house mice, Norway rats, California voles, deer mice, desert cottontails, California ground squirrels, black-tailed hares, and feral cats.

Developed

Approximately 194 acres of the 889-acre Areas 3 and 4 site is currently developed. The developed areas on Area 4 include the Southern Pacific railroad tracks and associated crossings, the auto-wrecking yard along Mowry Avenue, a metal barn used to house tractors and equipment, one residence south of the railroad tracks near Stevenson Boulevard, and a barn/shed near the existing residence in Area 4. In Area 3, developed areas include the Silliman Recreation Center and baseball fields, a fire station, the Ohlone College buildings, and commercial development in the campus industrial park area (Figure 3.5-1). Roads and areas within these developed areas are typically paved, while the railroad track bed is formed from compacted rock, and vegetation is minimal. Ruderal herbs that are locally common, such as wild oat, ripgut brome, cheeseweed, black mustard, and prickly lettuce, occur sporadically within developed areas. Turf grasses and planted landscape species are in the fields surrounding the college and recreation complex.

Some wildlife species, especially introduced species such as the European starling, house sparrow, rock pigeon, house mouse, black rat, and Norway rat are typical of developed habitats, even those disturbed to the degree of those at this site. Native bird species such as mourning doves, northern mockingbirds, American crows, house finches, lesser goldfinches, bushtits, California towhees, and Brewer's blackbirds also forage and breed in landscaped and ornamental vegetation in developed areas on the site. Native mammals occurring in developed portions of the site are primarily common, widespread species such as Botta's pocket gopher, California ground squirrel, and raccoon. Several species of bats, including the Mexican free-tailed bat, western red bat, Yuma bat, and others, have the potential to roost in Area 4, at a residence just south of the intersection of Stevenson Boulevard and the Southern Pacific railroad in Area 4; two agricultural structures (barn or equipment holding sheds) in the eastern portion west of the residence; industrial buildings within the auto wrecking yard in the northwestern part of Area 4; and blue gum eucalyptus trees near the auto wrecking yard along Mowry Avenue.

Aquatic

Aquatic habitat occupies approximately 37 acres within the Specific Plan boundaries, mostly occurring within Area 4 (Figure 3.5-1). The majority of aquatic habitat on the site occurs as open water that is either bordered by diked or muted tidal marsh or agricultural wetlands. Fragmented aquatic habitat on the site occurs within various agricultural ditches, in slough channels bordered by levees, and in a mitigation wetland in the southeastern corner of Area 3. Ephemeral water bodies also occur during the winter in the many man-made and topographic depressions on the site, especially those in the vicinity of the previous duck clubs. It is expected that most of these water bodies are mixosaline (fresher than ocean water) to eusaline (as salty as ocean water) in terms of their water chemistry.

The largest contiguous aquatic habitat on the site occurs in the west-central portion of Area 4 in what is part of the former duck club area, although other aquatic habitat is present. Plant species observed within the variety of aquatic habitats on the site included cattails, alkali bulrush, pickleweed, and brass buttons.

The former Pintail Duck Club supports large numbers of waterfowl and shorebirds year-round. Breeding birds here include mallards, gadwall, American coots, Canada geese, black-necked stilts, and American avocets. Numbers of these species are augmented in winter and during migration by numerous other waterfowl species, including northern pintails, northern shovelers, ruddy ducks, green-winged teal, and cinnamon teal. Great blue herons, great egrets, black-crowned night-heron, and snowy egrets forage in these areas as well. Stilts, avocets, greater yellowlegs, lesser yellowlegs, western sandpipers, and long-billed dowitchers were also observed foraging in the aquatic habitats along the northwest side of ACFC&WCD Line D near Mowry Slough. The mitigation wetland in the southeastern corner of Area 3 typically supports moderate numbers of shorebirds and waterfowl as well, and small numbers of mallards and gadwall forage and brood young in the ditch along the southwestern edge of Area 4 and in ACFC&WCD Line D. Gulls occasionally roost in the aquatic habitat in the extreme southeastern corner of Area 4, but this area is so highly saline that it receives little wildlife use.

Pacific treefrogs and western toads are the only amphibians likely to occur in the area. These species may breed in freshwater habitats, such as the mitigation wetland in the southeastern corner of Area 3, but are expected to make little use of brackish and saline aquatic habitats. Garter snakes forage in these freshwater areas as well.

Diked Salt Marsh

Diked salt marsh habitat occurs on approximately 29 acres in Area 4. The largest area of diked salt marsh surrounds the aquatic habitats in the former Pintail Duck Club. Narrow bands of this habitat type also occur along levees, drainage channels, and ditches (Figure 3.5-1). This habitat is similar to, but less diverse than, highly productive salt marsh habitat. Diked salt marshes on the site are dominated by herbaceous salt-tolerant hydrophytes forming moderate to dense cover from 1.5 to six feet tall. This habitat type also contains aquatic habitat that is seasonal in some areas and perennial in others.
The largest diked marsh area is near the former Pintail Duck Club. It does not appear that this area was ever subject to farming for any length of time, and because it is not subject to tidal influence, has been subject to stagnation and elevated concentration of salts. These factors have promoted the establishment of pickleweed over other species, thereby reducing diversity. In addition to the abundant pickleweed dominating these areas, saltgrass, swampgrass, slender-leaved iceplant, and brass buttons are common in some areas. Small areas of this diked marsh appear to be somewhat freshwater-influenced, and include species such as common reed, alkali bulrush, and cattails. In areas subject to less stagnation, coast gumweed occurs in isolated patches. Some ruderal species, such as prickly ox-tongue, prickly lettuce, and black mustard, are also present.

This diked salt marsh provides high-quality habitat for the federally endangered salt marsh harvest mouse. The pickleweed with grasses and other upland plants provides escape cover and food for the salt marsh harvest mouse. Other mammals also expected in this habitat include the California vole, western harvest mouse, house mouse, and possibly the salt marsh wandering shrew and long-tailed weasel. Birds that nest within this habitat include the mallard, gadwall, American coot, song sparrow, San Francisco common yellowthroat, Bryant's savannah sparrow, western meadowlark, and red-winged blackbird, and possibly the northern harrier.

Muted Tidal Salt Marsh

Muted tidal marshes occupy approximately 6.6 acres within the project area, and are restricted to areas northwest of the ACFC&WCD Line D (Figure 3.5-1). The muted tidal marsh on the site is primarily supported by incident rainfall and surface runoff, and subject to some tidal influence through an approximately 12-inch diameter culvert. The muted tidal salt marsh is similar to but less saline than the diked salt marsh. Species composition is similar, with pickleweed, sticky sand spurrey, brass buttons, and alkali heath common throughout. However, tall emergent graminoids are mostly absent from these areas and the overall vegetation height rarely exceeds one to two feet. Additionally, this area has been disced within the past three years, disturbing the pickleweed cover. In some of these areas, Russian thistle has colonized areas previously dominated by pickleweed.

The muted tidal salt marsh areas on the site provide habitat for many of the same wildlife species that use the diked salt marsh and many of the wildlife species here are those occurring in adjacent aquatic and ruderal habitats. Bryant's savannah sparrow, salt marsh harvest mouse, and possibly the salt marsh wandering shrew utilized this habitat. Vegetation height and density is lower in most of this habitat type than in some of the diked salt marsh, limiting cover for larger species.

Freshwater Marsh

This habitat occurs on approximately four acres mostly associated with the mitigation wetland in Area 3 located south of the campus industrial park (Figure 3.5-1). This habitat is typically dominated

by perennial, emergent monocots up to 15 feet in height, and occurs within various ditches and depressions on the site. This habitat sometimes forms completely closed canopies. This type of marsh is usually permanently inundated, although it may seasonally dry for short periods of time. Cattails dominate the areas of freshwater marsh almost exclusively, but other ruderal wetland species such as bristly ox-tongue, poison hemlock, and perennial pepperweed also occur along the border between freshwater marsh and ruderal habitats, where adjacent levees aid water impoundment.

Freshwater marsh emergent vegetation on the site supports breeding passerines such as San Francisco common yellowthroats, marsh wrens, song sparrows, and red-winged blackbirds. American coots also nest within the freshwater marsh around the mitigation wetland in the southeastern corner of Area 3. Pacific treefrogs and western toads occur in this habitat type as well.

Brackish Marsh

Brackish marsh occurs on approximately three acres in the central portion of the site. This habitat is dominated by perennial, emergent herbaceous monocots up to six feet tall, and offers dense cover. Within the Specific Plan boundaries, this habitat is restricted to a low depressional area surrounded by saline to brackish agricultural field/seasonal wetland (Figure 3.5-1). The ditch that occurs north of the agricultural road is also mapped as brackish marsh. It is dominated by pickleweed, common reed, cattails, and alkali bulrush. These habitat areas are influenced by seep and are thus permanently inundated. It is important to note that, depending on the amount of water in the numerous agricultural ditches on the site, these areas may also contain brackish marsh habitat, muted tidal salt marsh habitat, or aquatic habitat.

Due to the limited extent of brackish marsh habitat on the site, it does not support a distinctive wildlife community. Common wildlife species using the brackish marsh on the site represent a mix of species using salt and freshwater marshes, including the San Francisco common yellowthroat, song sparrow, red-winged blackbird, western harvest mouse, and salt marsh harvest mouse.

Seasonal Wetland

Approximately four acres of seasonal wetlands occur on the site (Figure 3.5-1). These areas are distinguished from seasonal wetlands within agricultural fields in that they are not regularly disced, planted, or harvested. Seasonal wetlands occur south of the Southern Pacific railroad tracks in Area 4 and near the developed areas along the southern border of Area 3. During the August 2006 and July 2007 survey periods, these areas contained thick algal matting, sediment deposits, and hydrophytic vegetation. In addition, the wetlands occur within clearly defined depressions, and exhibit active seasonal hydrology driven by freshwater runoff. Seasonal wetlands on the site are characterized by the presence of annual hydrophytes such as loosestrife hyssop, bristly ox-tongue, Mediterranean barley, sourclover, Italian ryegrass, Bermuda grass, and rabbitsfoot grass. Seasonal wetland habitats located west of the intersection of Stevenson Boulevard and the Southern Pacific railroad tracks variably contain pickleweed, saltgrass, Italian ryegrass, and rabbitsfoot grass. Seasonal wetland habitats near disturbed areas along the railroad track, particularly near the existing residence on the site, are dominated by thickets of perennial pepperweed.

Most of the non-cultivated seasonal wetlands on the site are so small that the species using them are primarily those associated with adjacent habitats. Pickleweed within the seasonal wetlands can provide suitable habitat for the salt marsh harvest mouse. Red-winged blackbirds nest within these

seasonal wetlands, and western toads and Pacific treefrogs may breed in those depressions that pond water well into the spring.

Wrecking Yard Detention Basins

Two detention basins located on the southeastern edge of the auto wrecking yards support seasonal inundation and plants typical of freshwater marsh habitat. The vegetation, which is located on the edges of the basins, is similar to that of the aquatic and freshwater marsh habitats. However, disturbance and contamination of runoff from the wrecking yards has degraded the habitat. These basins were not claimed by the USACE as jurisdictional wetlands. Wildlife is also similar to that of the freshwater marsh habitat. However, water quality in the basins is expected to be poor and the abundance of wetland-associated species is limited.

Coastal Scrub

This habitat, which occupies approximately two acres of the Specific Plan area, is typically dominated by dense shrubs up to six feet tall with scattered grassy openings. This habitat is found only adjacent to and south of the Southern Pacific railroad tracks in the central portion of Area 4 (Figure 3.5-1). This area contains large amounts of imported soil fill material and is apparently the site of an active, "homemade" paintball course. The dominant species is coyote brush, but various ruderal species, including wild oats, cheeseweed, and black mustard, among others, also occur in the grassy openings between shrubs. The area is also invaded by the exotic lollipop tree, which replaces the typical native associates found in Franciscan coastal scrub such as California buckwheat. The non-native species composition, along with visible evidence of recent disturbance and dumping of trash, combine to form a highly degraded habitat.

Although a number of wildlife species are often found in coastal scrub habitats, the relatively small size and disturbed nature of this habitat type on the site limit its wildlife habitat value. Example resident avian species include the bushtit, California towhee, and northern mockingbird. During migration, yellow-rumped, orange-crowned, and yellow warblers forage in this habitat. Common yellowthroats and white-crowned, golden-crowned, and Lincoln's sparrows winter in coastal scrub on the site. Other wildlife species associated with coastal scrub on Area 4 include black-tailed hares, desert cottontails, brush rabbits, house mice, deer mice, striped skunks, western fence lizards, and gopher snakes.

3.5.2.2 *Existing Wildlife Corridors*

Wildlife movement between suitable habitat areas can occur via landscape linkages, referred to as wildlife movement corridors. Natural characteristics, such as topography and changes in vegetation, and human activities, such as urbanization and road development, however, can affect the ability of wildlife species to move through these corridors. Loss of habitat connectivity has been implicated in the reduction of species diversity and as a contributing factor to species extinctions

The Specific Plan area is surrounded by development to the north and east and salt production ponds to the northwest and west. Salt ponds and urban development prevent any substantial movement of terrestrial wildlife such as mammals, reptiles, and amphibians to or from the northwest (i.e., in the direction of the Refuge headquarters and Coyote Hills Regional Park). Likewise, extensive urban development to the north and east prevent movement of these species between the site and the undeveloped hills nearly five (5) miles to the east. The only connectivity to open, upland wildlife

habitat (including the Pacific Commons Preserve, Tri-Cities Landfill, and the Warm Springs unit of the Refuge) occurs to the southeast. However, the upland habitat areas southeast of the site are limited in size and isolated from extensive open space habitat (e.g., east of Interstate 880) by urban development.

The most important avian habitats on the site are the perennial wetlands in the former Pintail Duck Club, with seasonal wetlands having secondary importance to waterbirds based on observations to date. Although Area 4 supports important aquatic habitats, particularly in the former Pintail Duck Club, these habitats have little connectivity to off-site aquatic habitats (from the perspective of aquatic species movements) since water southeast of ACFC&WCD Line D has to be pumped into Mowry Slough and water northwest of Line D enters Mowry Slough through a one-way culvert. The ACFC&WCD channels that flow into Mowry Slough, and Mowry Slough itself, represent the primary aquatic movement pathways on and in the vicinity of the site.

3.5.2.3 Special Status Plants and Animals

Based on a review of background literature,[36] the potential for special status plant and animal species to occur within and surrounding Areas 3 and 4 was evaluated. Areas adjacent to the site were also reviewed to determine the potential for the proposed project to indirectly impact special status species. Surveys completed for this impact assessment included all of Areas 3 and 4, though most of survey effort in Area 3 was focused on the portion that would be developed as part of this project. Table 3.5-3 includes species that are present, or have a moderate to high potential of being present within the Specific Plan area. Appendix E describes in detail all plant and animal species included in the analysis of species of special concern. The approximate locations of special status species within and adjacent to the Specific Plan area are shown on Figures 5a and 5b of Appendix E.

Special Status Plant Species

As previously described, the site is predominantly in active agricultural use or is dominated by ruderal, invasive plan species. Databases (CNDDB and USFWS) were queried and reconnaissance-level surveys were completed on the site for habitats capable of supporting special status plant species. Eight plant species were determined to potentially occur on the site, either because suitable habitat is present or they are known to occur in the vicinity of the site. These species include Contra Costa goldfields, alkali milk-vetch, brittlescale, Condon's tarplant, Hoover's button-celery, prostrate vernal pool navarretia, Delta-wooly-marbles, and San Joaquin spearscale. These species are described in further detail in Appendix E and Table 3.5-3.

Special Status Animal Species

Surveys completed for this impact assessment included all of Areas 3 and 4, though most of survey effort in Area 3 was focused on the portion that would be developed as part of this project. Specifically, surveys were completed to: 1) assess existing biotic habitats, 2) assess the site for its potential to support special-status species and their habitats, and 3) identify potential jurisdictional habitats, including jurisdictional Waters of the U.S., riparian habitat, and ordinance trees.
H. T. Harvey & Associates' biologists have been completing wildlife, rare plant, and wetland surveys on the project site since the mid-1980s. These include reconnaissance-level surveys to determine biological constraints and opportunities and to map habitat types present within the site, surveys

[36] See Appendix E for a complete list of literature resources used in this evaluation.

completed to delineate wetland habitat present on the site, and focused rare plant surveys and wildlife surveys. Other types of surveys have included rare plant surveys, focused wildlife surveys including vernal pool tadpole shrimp, California tiger salamander, burrowing owl, and salt marsh harvest mouse. These surveys are described in detail in the Biotic Surveys Section of Appendix E.

The legal status and potential for occurrence of special status wildlife species known to occur or potentially occurring in the general vicinity of the Specific Plan area are shown in Table 3.5-3. Species for which potential breeding habitat is on-site, include the vernal pool tadpole shrimp, California tiger salamander, northern harrier, white-tailed kite, peregrine falcon, burrowing owl, loggerhead shrike, Alameda song sparrow, Bryant's savannah sparrow, San Francisco common yellowthroat, tricolored blackbird, pallid bat, salt marsh wandering shrew, and salt marsh harvest mouse. Some species absent from the site could potentially occur in Mowry Slough downstream of the site. These species, including green sturgeon, fall-run Chinook salmon, Central Coast steelhead, longfin smelt, California clapper rail, California black rail, and Pacific harbor seal, could be impacted indirectly by the proposed project, through project impacts to water quality. These species are address in sections: *Short-term Impacts to Water Quality during Construction* and *Long-Term Water Quality Impacts.* Mitigation measures included in the project to reduce construction and long-term water quality impacts (MM BIO-12.1 through MM BIO-12.4) will ensure that the project does not result in impacts to these downstream species.

3.5.2.4 *Jurisdictional Waters of the U.S./Waters of the State*

As previously shown in Table 3.5-1, areas meeting the regulatory definition of "Waters of the U.S." (Jurisdictional Wetlands) are subject to the jurisdiction of the United States Army Corps of Engineers (USACE). The placement of fill into such waters must be in compliance with permit requirements of the USACE.

A jurisdiction determination from the USACE was received from the USACE in October 2007, and includes approximately 242 acres of wetlands and 34.21 acres of "other waters" for a total of 277 acres. These areas include all aquatic, diked salt marsh, seasonal wetlands, muted tidal saltmarsh, freshwater marsh, brackish marsh, and tidal salt marsh on the site. A permit from the USACE will be required for any filling of Waters of the U.S.

The California Regional Water Quality Control Board (RWQCB) is responsible for protecting surface, ground, and coastal waters within its boundaries, pursuant to the Porter-Cologne Water Quality Control Act of the California Water Code. All USACE jurisdictional waters are also Waters of the State, and no additional areas are considered as such.

Table 3.5-3:
Federal or State Protected Plant and Animal Species & CNPS Listed Plant Species and Their Potential Occurrence on Newark Specific Plan Areas 3 and 4

NAME	*STATUS	HABITAT	POTENTIAL FOR OCCURRENCE ON THE SITE
Federal or State Endangered, Threatened, or Candidate Species			
Contra Costa Goldfields (*Lasthenia conjugens*)	FE; CNPS List 1B.1	Mesic (moderate moisture regime) valley and foothill grasslands and vernal pools.	Potentially suitable habitat in Area 4. The species was not observed during protocol or reconnaissance-level surveys. The species is likely absent from the site and surveys confirm it is absent from the impact areas; further surveys are not warranted for purposes of impact assessment. Determined to be absent.
Vernal Pool Tadpole Shrimp (*Lepidurus packardi*)	FE	Vernal pools and swales containing clear to highly turbid water.	Potentially suitable habitat is present in a few seasonal wetlands and pools on Area 4. Known to occur on the Warm Springs Unit of the SFBNWR, and introduced into created vernal pools at Pacific Commons Preserve immediately adjacent to the site, east of the Stevenson Boulevard, crossing of the Southern Pacific railroad tracks. Wet-season surveys in 2006-2007 and 2007-2008 and dry-season surveys in 2008, conducted according to the USFWS protocol, did not detect any evidence of tadpole shrimp. Determined to be absent.
Green Sturgeon – Southern DPS (*Acipenser medirostris*)	FT; CSSC	Known to occur in nearshore oceanic waters, bays, and estuaries.	Apparently occurs in the South Bay very rarely as a nonbreeding visitor. May occur in lower Mowry Slough downstream from site. Unlikely to occur on or immediately adjacent to the site due to lack of spawning habitat upstream, the shallow/narrow nature of channels, and low water quality.
Longfin Smelt (*Spirinchus thaleichthys*)	FPE, SCE	Spawning occurs in fresh or slightly brackish water.	Unlikely to occur on or immediately adjacent to the site due to lack of spawning habitat upstream, the shallow/narrow nature of channels, and low water quality. Not known to occur in Mowry Slough, though occurrence downstream from the site cannot be ruled out.
Steelhead – Central California Coast DPS (*Oncorhynchus mykiss*)	FT	Cool streams with suitable spawning habitat and conditions allowing migration.	Not known to occur on the site or in adjacent Mowry Slough and no spawning habitat is present on or upstream from the site along ACFC&WCD Line B or ACFC&WCD Line D. Determined to be absent from the site, but may occur in lower Mowry Slough well downstream from the site.
California Tiger Salamander (*Ambystoma californiense*)	FT, CSSC	Vernal or temporary pools in annual grasslands or open woodlands.	Potentially suitable habitat is present in a few seasonal wetland pools in southeastern corner of Area 3 and in Area 4, but most seasonal pools are too saline. Known breeding population located approximately one mile southeast in the Warm Springs Unit of the SFBNWR (CNDDB 2008) is within the maximum known dispersal distance from the site, but to date no salamanders have been found on the adjacent Pacific Commons Preserve in highly suitable habitat. Protocol-level larval surveys conducted in suitable habitat on Areas 3 and 4 in 2006-2007 and 2007-2008 did not detect any California tiger salamanders. The possibility of dispersal of a salamander to the site cannot be eliminated, but there is no evidence of current occurrence on-site.
California Red-legged Frog (*Rana aurora draytonii*)	FT, SP, CSSC	Streams, freshwater pools, and ponds with emergent or overhanging vegetation.	Marginal habitat in Specific Plan area. Determined to be absent due to the lack of a hydrological connection to known populations, the distance to the nearest record (more than 4 mi to the north and southeast), and the long history of ground disturbance from farming on the site.

Table 3.5-3:
Federal or State Protected Plant and Animal Species & CNPS Listed Plant Species and Their Potential Occurrence on Newark Specific Plan Areas 3 and 4

NAME	*STATUS	HABITAT	POTENTIAL FOR OCCURRENCE ON THE SITE
California Brown Pelican (*Pelecanus occidentalis californicus*)	FE, SE, SP	Nests on islands without mammalian predators. Roosts in river mouths with sand bars, jetties, and breakwater along San Francisco Bay. Feeds on fish.	No suitable habitat on-site, not observed on-site. Determined to be absent.
American Peregrine Falcon (*Falco peregrinus anatum*)	SE, SP	Forages in many habitats; requires cliffs for nesting.	Occasionally forages on the site, but does not currently nest in the project vicinity; however potential nest sites for future use by this species may occur on power-line towers on or adjacent to the site.
California Black Rail (*Laterallus jamaicensis coturniculus*)	ST	Breeds in fresh, brackish, and tidal salt marsh.	Non-breeding individuals may winter in small numbers in tidal marsh along Mowry Slough or diked marsh within the project area, but the species is not currently known to breed in the South Bay. Not observed on-site
California Clapper Rail (*Rallus longirostris obsoletus*)	FE, SE, SP	Salt marsh habitat dominated by common pickleweed and cordgrass.	Marginal habitat within Mowry Slough adjacent to Area 4. There are no records within the project vicinity, and intensive winter surveys along Mowry Slough by the USFWS have not detected the species within 2.4 miles downstream from the site. Not observed on-site, and not expected to occur on or adjacent to the site.
Western Snowy Plover (*Charadrius alexandrinus nivosus*)	FT, CSSC (nesting)	Sandy beaches on marine and estuarine shores.	Marginal foraging habitat is on flats in the diked salt marsh, around the aquatic habitat within the diked salt marsh, and in seasonally moist areas within the more saline agricultural fields in the southern portion of Area 4. However, due to the limited and marginal nature of this foraging habitat, as well as the abundance of much higher-quality habitat in salt ponds in the South Bay, snowy plovers are expected to occur on-site rarely, if at all, and they are not expected to nest on the site. Not observed on-site.
California Least Tern (*Sterna antillarum browni*)	FE, SE	Nests along the coast on bare or sparsely vegetated, flat substrates.	Potentially a rare forager in Area 4 where small fish occur, (e.g., ACFC&WCD Line D or aquatic habitat, or off-site within Mowry Slough or ACFC&WCD Lines B or D). However, occurrence unlikely due to the availability of higher-quality foraging habitat closer to the bay and lack of records from similar habitats in the South Bay. No nesting habitat on-site. Not observed on-site.
Willow Flycatcher (*Empidonax traillii*)	FE (*extimus*), SE (nesting)	Breeds locally in riparian habitats in Central Valley and mountains.	While willow flycatchers of other subspecies may forage in Areas 3 and 4 occasionally during migration, no individuals of the listed subspecies are expected to occur in either Area 3 or 4. Determined to be absent.
Bank Swallow (*Riparia riparia*)	FT (nesting)	Colonial nester on vertical banks or cliffs with fine-textured soils near water.	May occur on-site as a rare forager during migration, but not regularly or for long duration. No suitable nesting habitat on or near site. Not observed on-site.

Table 3.5-3:
Federal or State Protected Plant and Animal Species & CNPS Listed Plant Species and Their Potential Occurrence on Newark Specific Plan Areas 3 and 4

NAME	*STATUS	HABITAT	POTENTIAL FOR OCCURRENCE ON THE SITE
Salt Marsh Harvest Mouse (*Reithrodontomys raviventris*)	FE, SE	Salt marsh habitat dominated by common pickleweed.	Known to occur in pickleweed stands in diked salt marsh in the vicinity of the former Pintail Duck Club on Area 4 (CNDDB 2008). Likely located in other locations in Area 4 supporting pickleweed, such as muted tidal salt marsh, brackish marsh, and along channels and ditches.
California Species of Special Concern			
Fall-run Chinook Salmon – Central Valley ESU (*Oncorhynchus tshawytscha*)	CSSC	Cool rivers and large streams that reach the ocean and that have shallow, partly shaded pools, riffles, and runs.	Not known to occur on the site or in adjacent Mowry Slough and no spawning habitat is upstream from site along ACFC&WCD Line B or ACFC&WCD Line D. Determined to be absent from the site, but may occur in lower Mowry Slough well downstream from the site.
American White Pelican (*Pelecanus erythrorhnchos*)	CSSC (nesting)	Forages on fish found in freshwater lakes and rivers, nests on islands in lakes.	Could potentially roost or forage in Area 4, and possibly along Mowry Slough. However, due to the abundance of higher-quality foraging habitat in other areas in the South Bay, there is a low probability of occurrence on-site. Not observed on-site.
Northern Harrier (*Circus cyaneus*)	CSSC	Nests in marshes and moist fields, forages over open areas.	Wetland vegetation in Area 4, particularly in the diked salt marsh, provides suitable nesting habitat, and one or two pairs could potentially nest in the project area or in adjacent areas along Mowry Slough, but likely to occur primarily as a forager during winter and migration.
Black Tern (*Chlidonias niger*)	CSSC (nesting)	Nests in freshwater marshes, forages over marshes, ponds, lakes, and moist meadows.	Potential visitor to wetlands in Area 4 (former Pintail Duck Club) in fall. Does not nest on-site. Not observed on-site.
Burrowing Owl *(Athene cunicularia)*	CSSC	Flat open grasslands and ruderal habitats having suitable burrows.	Several pairs known to nest in ruderal habitat, primarily along levees and along the railroad tracks, in Areas 3 and 4. Expected to forage in a variety of habitats on-site.
Vaux's Swift (*Chaetura vauxi*)	CSSC (nesting)	Nests in north coast or montane forests.	Occasional migrant. No suitable nesting habitat on-site.
Loggerhead Shrike (*Lanius ludovicianus*)	CSSC (nesting)	Nests in tall shrubs and dense trees, forages in grasslands, marshes, and ruderal habitats.	Suitable nesting and foraging habitat for several pairs is present in Areas 3 and 4 (though areas of potential development in Area 3 provide limited, low-quality habitat). Observed in Area 4.
Yellow Warbler (*Dendroica petechia*)	CSSC (nesting)	Nests in riparian woodland.	No suitable nesting habitat on-site. Forages on-site during migration.
San Francisco Common Yellowthroat (*Geothlypis trichas sinuosa*)	CSSC	Nests in tall, emergent, herbaceous wetlands.	Nests in dense vegetation in wetlands in Area 4, and possibly in the stormwater wetland in the southeastern corner of Area 3.
Yellow-breasted Chat (*Icteria virens*)	CSSC (nesting)	Nests in riparian habitat, primarily that dominated by willows with a dense shrub understory.	No suitable habitat present. Determined to be absent.

Table 3.5-3:
Federal or State Protected Plant and Animal Species & CNPS Listed Plant Species and Their Potential Occurrence on Newark Specific Plan Areas 3 and 4

NAME	*STATUS	HABITAT	POTENTIAL FOR OCCURRENCE ON THE SITE
Grasshopper Sparrow (*Ammodramus savannarum*)	CSSC (nesting)	Nests in moderately open grasslands with scattered shrubs.	May occasionally occur on the site in small numbers during migration, but no nesting habitat present. Not observed on-site.
Alameda Song Sparrow (*Melospiza melodia pusillula*)	CSSC	Nests in salt marsh, primarily in marsh gumplant and cordgrass along channels.	This subspecies likely nests along the adjacent reach of Mowry Slough and may nest in the diked salt marsh habitat in Area 4; however, the racial identity of breeding song sparrows on the site is unknown, and those breeding in brackish and freshwater marshes may be more likely to be *M. m. goldii* or intergrades between the two races.
Bryant's Savannah Sparrow (*Passerculus sandwichensis alaudinus*)	CSSC	Nests in pickleweed dominant salt marsh and adjacent ruderal habitat.	Nests and forages in the diked and muted salt marsh in Area 4. May attempt nesting in agricultural fields in Area 4, but such attempts are typically unsuccessful because mowing occurs before young fledge.
Tricolored Blackbird (*Agelaius tricolor*)	CSSC (nesting)	Nests near freshwater in dense emergent vegetation.	Dense cattails and bulrushes in the diked salt marsh in Area 4, and possibly the southeastern corner of Area 3, provide potential nesting habitat, although the species has not been recorded nesting on or near the site. Observed foraging on the site.
Salt Marsh Wandering Shrew (*Sorex vagrans halicoetes*)	CSSC	Medium high marsh 6-8 ft above sea level with abundant driftwood and common pickleweed.	Recorded within 2 miles northwest of the site, and pickleweed-dominated habitats in Area 4 provide potential habitat. May be in diked and muted salt marsh in Area 4. Not recorded on site.
Pallid Bat (*Antrozous pallidus*)	CSSC	Forages over many habitats, requires caves for roosting.	Marginal breeding habitat exists in structures on and adjacent to site. No sign observed during reconnaissance-level survey, and there is a low probability of occurrence. Not observed on-site.
Townsend's Big-eared Bat (*Corynorhinus townsendii*)	CSSC	Roosts in caves and mine tunnels in a variety of habitats.	No records from the site or vicinity, and no suitable roosting habitat in the vicinity. Determined to be absent.
Western Red Bat (*Lasiurus blossevillii*)	CSSC	Roosts in forest or woodlands, especially in or near riparian habitat.	Does not breed in the site vicinity. May occur in low numbers as an occasional forager during migration and in winter, possibly roosting in eucalyptus trees in Area 4.
American Badger (*Taxidea taxus*)	CSSC	Burrows in grasslands.	No suitable habitat on the site and site is isolated from areas of known occurrence by urbanization. Determined to be absent.
State Protected Plant Species or CNPS Listed Species			
Alkali Milk-vetch (*Astragalus tener* var. *tener*)	CNPS 1B.1	Alkaline playas, valley and foothill grassland underlain by adobe clay, and vernal pool habitats.	Potentially suitable habitat on site. The species was not observed during protocol or reconnaissance-level surveys. The species is likely absent from the site and surveys confirm it is absent from the impact areas; further surveys are not warranted for purposes of impact assessment.
Brittlescale (*Atriplex depressa*)	CNPS 1B.2	Alkaline, clay soils in chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pool habitats.	Potentially suitable habitat on site. The species was not observed during protocol or reconnaissance-level surveys. The species is likely absent from the site and surveys confirm it is absent from the impact areas; further surveys are not warranted for purposes of impact assessment.

Table 3.5-3:
Federal or State Protected Plant and Animal Species & CNPS Listed Plant Species and Their Potential Occurrence on Newark Specific Plan Areas 3 and 4

NAME	*STATUS	HABITAT	POTENTIAL FOR OCCURRENCE ON THE SITE
Congdon's Tarplant (*Centromadia parryi* ssp. *congdonii*)	CNPS 1B.2	Valley and foothill grassland, particularly those with alkaline substrates, and in sumps or disturbed areas where water collects.	Potentially suitable habitat on site. The species was not observed during protocol or reconnaissance-level surveys. The species is likely absent from the site and surveys confirm it is absent from the impact areas; further surveys are not warranted for purposes of impact assessment.
Hoover's Button-celery (*Eryngium aristulatum* var. *hooveri*)	CNPS 1B.1	Vernal pools.	Potentially suitable habitat in a degraded state on site. The species was not observed during protocol or reconnaissance-level surveys. The species is likely absent from the site and surveys confirm it is absent from the impact areas; further surveys are not warranted for purposes of impact assessment.
ProstrateVernal Pool Navarretia (*Navarretia prostrata*)	CNPS 1B.1	Mesic coastal scrub, meadows and seeps, vernal pools, and alkaline valley and foothill grassland habitats.	Potentially suitable habitat on site. The species was not observed during protocol or reconnaissance-level surveys. The species is likely absent from the site and surveys confirm it is absent from the impact areas; further surveys are not warranted for purposes of impact assessment.
Delta Woolly-marbles (*Psilocarphus brevissimus* var. *multiflorus*)	CNPS 4.1	Vernal pools and flats.	Potentially suitable habitat on site. The species was not observed during protocol or reconnaissance-level surveys. The species is likely absent from the site and surveys confirm it is absent from the impact areas; further surveys are not warranted for purposes of impact assessment.
San Joaquin Spearscale (*Atriplex joaquiniana*)	CNPS 1B.2	Alkaline soils in chenopod scrublands, meadows and seeps, playas, and valley and foothill grasslands.	Potentially suitable habitat on site. The species was not observed during protocol or reconnaissance-level surveys. The species is likely absent from the site and surveys confirm it is absent from the impact areas; further surveys are not warranted for purposes of impact assessment.
Golden Eagle (*Aquila chrysaetos*)	SP	Breeds on cliffs or in large trees or electrical towers, forages in open areas.	Occasional forager in Area 4, primarily during the non-breeding season. No nesting records within the Project area.
White-tailed Kite (*Elanus caeruleus*)	SP	Nests in tall shrubs and trees, forages in grasslands, marshes, and ruderal habitats.	Suitable nesting and foraging habitat present in Areas 3 and 4 (though areas of potential development in Area 3 provide limited, low-quality habitat). Observed in Area 4.
Other Species of Regional Significance			
Pacific Harbor Seal *(Phoca vitulina richardsi)*	None/ FMMPA	Only permanent SF Bay marine mammal. Forage in nearshore marine habitats.	Pupping site in Mowry Slough, approximately four miles downstream of site. Not expected to swim upstream as far as project site.
Yuma Myotis (Myotis yumanensis)	None	Forages over open baylands habitat.	Relatively rare in South Bay. Suitable roosting habitat in existing buildings on Area 4. Surveys are warranted due to the scarcity of roots in proximity to high-quality bayland foraging habitat.

SPECIAL STATUS SPECIES CODE DESIGNATIONS:

FE = Federally listed Endangered
FT = Federally listed Threatened
FPE= Federally proposed Endangered
SE = State listed Endangered
ST = State listed Threatened
SCE = State Candidate Endangered
CSSC = California Species of Special Concern
SP = State Protected Species

CNPS List 1B = Plants rare, threatened, or endangered in California and elsewhere
CNPS List 4 = Plants of limited distribution-a watch list
.1= seriously endangered in California
.2 = fairly endangered in California

FMMPA = Federal Marine Mammal Protection Act

3.5.2.5 *California Department of Fish and Game*

The California Department of Fish and Game (CDFG) typically does not claim jurisdiction over fully tidal habitat, including Mowry Slough. Therefore, it is likely that no areas within the site fall under CDFG jurisdiction.

Provisions of California Endangered Species Act (CESA) protect state-listed threatened and endangered species. CDFG regulates activities that may result in "take" of individuals (i.e., "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill"). Habitat degradation or modification is not expressly included in the definition of "take" under the California Fish and Game Code. Additionally, the California Fish and Game Code contains lists of vertebrate species designated as "fully protected" (California Fish and Game Code §§ 3511 [birds], 4700 [mammals], 5050 [reptiles and amphibians], 5515 [fish]). Such species may not be taken or possessed.

The CDFG maintains three lists of "species of special concern" that serve as "watch lists." Species on these lists either are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Thus, their populations should be monitored. They may receive special attention during environmental review, but do not have statutory protection under CESA although many of these species are protected under other state and federal laws. California Species of Concern receive no legal protection as a result of their designation as Species of Special Concern, and the use of the term does not necessarily mean that the species will eventually be proposed for listing as a threatened or endangered species. However, most, if not all, of these species are currently protected by state and federal laws.

3.5.2.6 *United States Fish and Wildlife Service*

Federal Endangered Species Act (FESA) provisions protect federally listed threatened and endangered species and their habitats from unlawful take. Under the FESA, "take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any of the specifically enumerated conduct." The USFWS regulations define harm to mean "an act which actually kills or injures wildlife." Such an act "may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering" (50 CFR §17.3). Activities that may result in "take" of individuals are regulated by the USFWS. The USFWS produced an updated list of candidate species December 6, 2007 (50 CFR Part 17). Candidate species are not afforded any legal protection under FESA; however, candidate species typically receive special attention from federal and state agencies during the environmental review process.

3.5.2.7 *San Francisco Bay Conservation and Development Commission*

State legislation, the *McAteer-Petris Act*, was passed in 1965 to establish and govern the San Francisco Bay Conservation and Development Commission (BCDC). The BCDC is dedicated to the protection and enhancement of San Francisco Bay. The *San Francisco Bay Plan*, completed by the BCDC in 1969, regulates development in and around the Bay, and includes a range of policies on public access, water quality, fill, and project design. The Bay Plan also designates shoreline areas that should be reserved for water-related purposes like ports, industry, public recreation, airports, and wildlife refuges. As the federally-designated state coastal management agency for the San Francisco Bay segment of the California coastal zone, the BCDC can use the authority of the federal Coastal

Zone Management Act to ensure that federal projects and activities are consistent with the policies of the Bay Plan and state law.

"Section 66605 of the McAteer-Petris Act states that fill in San Francisco Bay should only be authorized when: (1) the public benefits from the fill clearly exceed the public detriment from the loss of water area; (2) no upland alternative location is available for the project purpose; (3) the fill is the minimum amount necessary to achieve the purpose of the fill; (4) the fill will minimize harmful effects to the Bay; and (5) that the fill should be constructed in accordance with sound safety standards. If the proposed project would involve fill in the Bay, the project proponent will need to show that fill associated with the project meets all of the above listed criteria."

BCDC's jurisdiction generally extends to all areas of San Francisco Bay that are subject to tidal action, including sloughs and marshlands, to a 100-foot shoreline band surrounding the Bay, to salt ponds and managed wetlands as defined in the Act, and to certain designated waterways.

The BCDC will likely claim jurisdiction over Mowry Slough. If so, all land within 100 feet of the slough would be included as part of the BCDC Shoreline Band and the future Specific Plan developer(s) would be required to obtain a permit from the BCDC. A permit through BCDC is included as a possible use of this EIR.

3.5.2.8 *City of Newark Tree Ordinance*

The City of Newark's Tree Ordinance requires a permit for the removal or relocation of any tree with a trunk diameter of six inches or greater measured at four feet above ground level. A formal tree survey was not completed for the site; however, several ordinance size trees are located within both Areas 3 and 4 that may require removal.

3.5.3 <u>Biological Resources Impacts</u>

3.5.3.1 *Thresholds of Significance*

For the purposes of this EIR, based upon Appendix G of the CEQA Guidelines, a biological resources impact is considered significant if the project will:

- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFG or USFWS; or
- have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means; or
- substantially reduce the number or restrict the range of any special status species; or
- have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS; or
- interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites; or
- conflict with any local ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community

Conservation Plan, or other approved local, regional, or state habitat conservation plan.

It should be noted that regulatory policies and special status plant and wildlife species lists may change over the course of project implementation. Impacts and mitigation measures discussed herein are based on current regulatory policy and could be modified in the future based on changes to species lists and/or regulatory policies regarding biological resources.

3.5.3.2 *Impacts and Mitigation Measures for Biological Habitats*

The limits of grading occur within the areas delimited as "residential" or "golf course" shown in Figure 2.4-1. It is possible that only a portion of the potential development areas in Area 4 will actually be developed, and as noted previously any actual development will require further entitlement processing and environmental review. For the purposes of this analysis of the Specific Plan, however, it was assumed that the entire development areas in Area 4 (Sub-Areas B, C, and D) would be developed and impacted. It was also assumed that no grading, fill, vegetation removal, or other such direct impacts will occur outside the potential development envelope shown with one exception: the Stevenson Boulevard flyover will result in impacts to a small area in the southeastern corner of Area 3, between the stormwater wetlands and the eastern edge of the existing Stevenson Boulevard right-of-way.

Impacts to biological habitats are described below in terms of both direct and indirect impacts that may occur to sensitive biological habitats. Direct impacts to biological habitats occur as a result of converting natural resources to developed properties. Habitat loss and degradation of existing habitat are direct impacts. Direct impacts may also be temporary impacts if they disturb a habitat that is subsequently restored after construction. An indirect impact is a physical change in the environment which is not immediately related to, but is caused by the project. For example, if development results in reducing the sizes of remaining habitats, the values and functions of that habitat would be reduced and indirect impacts would occur.

The mitigation ratios for impacts to sensitive habitats are based on those required or commonly required under applicable policies, laws, and regulations. Implementation of the following mitigation measures will reduce impacts to a less than significant level. For very detailed descriptions of the impacts, please refer to Appendix E.

As previously described, the policies in the City of Newark's General Plan have been adopted for the purpose of avoiding or mitigating environmental effects resulting from planned development within the City. Future project-specific development under the proposed Specific Plan shall be subject to these General Plan policies, as well as the following mitigation and avoidance measures to mitigate environmental impacts. Mitigation measures are not required or proposed for those impacts determined to be less than significant.

Impacts to Upland Agriculture, Ruderal Herbaceous Field, Developed, and Coastal Scrub Habitat

Implementation of the proposed project would result in impacts to upland agriculture, ruderal herbaceous field, developed, and coastal scrub habitat. These habitat types are not considered to be sensitive or regulated. Few native plants are generally found in these non-sensitive habitats, and the lack of contiguity between these habitats diminishes their value to native plants and rare wildlife species. These habitats are regionally abundant and the associated plant and wildlife species

represent a very small proportion of regional populations. In addition, although the upland habitats provide a buffer or transition area upslope from wetlands and marshes, those on-site do not provide high quality transitional habitat because of regular disturbance by agricultural activities.

In Area 3 up to 71.9 acres of upland agricultural areas and 5.7 acres of developed habitats would be lost through grading and construction in Area 3.

In Area 4 up to 154.6 acres of upland agricultural areas, 43 acres of ruderal herbaceous field, 2.2 acres of coastal scrub habitat, and 23.7 acres of developed habitats could be lost through grading and construction in Area 4.

Implementation of the Specific Plan would result in the loss of upland agriculture, ruderal herbaceous field, developed, and coastal scrub habitats. These habitats are not considered to be sensitive biological habitats for the reasons described above. Therefore, impacts would be less than significant. **(Less than Significant Impact)**

Impacts to Seasonal Wetlands, Freshwater Marsh, Brackish Marsh, Detention Basin, and Aquatic Habitat

H. T. Harvey & Associates' biologists surveyed the Specific Plan site for wetland habitats and completed a formal wetland delineation that has been verified by the USACE (File # 2006-400075S). The extent and distribution of the various aquatic and wetlands habitat types are shown on Figure 3.5-1. Most of the seasonal wetlands, aquatic habitats, and muted tidal salt marsh that would be directly filled by the implementation of the Specific Plan were determined to be of poor or marginal quality, primarily due to intensive and ongoing agricultural disturbance and the resulting effects on plant communities and wildlife use.

Seasonal wetlands, even in agricultural areas, have been increasingly lost to development in the South Bay. Open, moist field habitat that was historically used as alternate foraging habitat for shorebirds during high tides (when favored intertidal foraging habitat was inundated) has also declined. Although salt ponds currently serve as surrogates for these seasonal wetlands from the perspective of high-tide use by shorebirds, planned restoration of at least some salt ponds in the South Bay by the South Bay Salt Ponds Restoration Project (which does not include the Newark salt ponds closest to the site) may reduce the extent of such salt ponds in the area.

Construction within Sub-Area D may also result in the fill of 1.2 acres of non-jurisdictional stormwater detention basins in the auto wrecking yards in Area 4. These areas, which were not claimed as jurisdictional by the USACE due to their artificial source of hydrology, provide very limited habitat quality due to disturbance and contamination from runoff from the auto wrecking yards, but do provide some wetland functions and values.

In addition to wetland, marsh, and aquatic habitats that will be filled directly, indirect impacts to wetlands in several areas would result in the functional loss of these habitats. Although these wetland/aquatic habitats would not be filled by the implementation of the Specific Plan, they would be impacted by disturbance associated with golfing activities. In addition, a small amount of brackish marsh habitat would be functionally lost due to shading from the bridge for the golf course access road. Given the declines in regional availability of seasonal wetland habitat around the South Bay, the loss of wetland, marsh, and aquatic habitats in Area 4 as a result of the Specific Plan would be significant.

No seasonal wetland, aquatic, freshwater marsh, brackish marsh, or detention basin habitat occurs within the 78-acre project footprint of Area 3. Therefore, proposed development in Area 3 will result in no impacts to these habitat types.

Assuming impacts to the entire potential development envelope depicted in Figure 2.4-1, up to 78 acres of seasonal wetland, 5.5 acres of aquatic, 0.9 acres of brackish marsh, and 1.2 acres of detention basin habitat could be directly lost through grading, fill, and development in Area 4. The loss of this habitat would result in a substantial adverse affect on riparian habitat and on federally protected wetlands through direct removal and filling. This is a significant impact.

Impact BIO-1: The project would result in the loss of up to 85.6 acres of wetland/ marsh/aquatic habitat. This would result in a substantial adverse affect on riparian habitat and on federally protected wetlands through the loss of these habitats. **(Significant Impact)**

Incorporation of the following measures will reduce wetland/ marsh/aquatic habitat impacts to a less than significant level:

MM BIO-1.1: Temporary disturbance to and permanent loss of all wetland and aquatic habitat in Area 4 will be avoided to the maximum extent feasible. All temporary staging areas and construction access roads, if necessary, will be located away from seasonal wetland and aquatic habitat abutting development areas will be clearly demarcated with Environmentally Sensitive Area fencing to avoid inadvertent disturbance during construction activities. Grading plans will be designed to avoid permanent impacts to wetland and aquatic habitat. Either Mitigation Measure MM BIO-1.2A or MM BIO-1.2B, described below, shall be implemented.

MM BIO-1.2A: To offset impacts to the wetland and aquatic habitat on the site, the future project proponent(s) will utilize a combination of on-site wetland creation and enhancement, and/or acquisition of existing wetlands located off site. The on-site component of the mitigation shall include creation of wetland and aquatic habitat within upland habitat that is currently disked and graded within Area 4 and will enhance portions of the remaining areas of agricultural field/seasonal wetland habitat within Area 4, as described below.

Compensatory mitigation for impacts to these habitats shall consist of two parts: (1) creation of high quality wetland and aquatic habitat within Area 4 within upland habitat at an acreage ratio of 1:1 (habitat created/enhanced: habitat impacted) to prevent any net loss of habitat functions or values, and (2) enhancement of existing seasonal wetland habitat that is currently within agricultural production (mapped as agricultural field/seasonal wetland habitat) at an acreage ratio of 0.5:1 (such enhancement will include cessation of farming activities, seeding with appropriate seasonal wetland plant seeds, and may include minor earth moving activities). In summary, any impacts to seasonal wetlands, freshwater marsh, brackish marsh, detention basin, and aquatic habitat will be mitigated at a total acreage ratio of 1.5:1 (habitat created and enhanced: habitat impacted).

A detailed mitigation plan shall be developed by a qualified biologist under contract to each future developer for individual development projects within the Specific Plan areas which result in direct impacts to wetland habitats. This plan will be submitted to and approved by the City of Newark prior to the initiation of grading within wetlands.

The detailed mitigation plan will outline the necessary steps for mitigation; it will include a plan view graphic showing the target mitigation activities, a brief seeding plan (species palette and application techniques) to re-vegetate the areas currently in agricultural production, and a monitoring and reporting plan with success criteria. The plan will include a recommended timeline for mitigation activities and the establishment of seeded native species. The mitigation work will begin in the same construction season as the initiation of grading within wetlands or aquatic habitats, and mitigation site grading will be completed within one year of initiation (or as otherwise determined by resource agency permits). Potential biological impacts associated with grading activities required for the mitigation of the seasonal wetlands have been considered during this current Specific Plan CEQA impact analysis and no additional significant impacts have been identified. All created/enhanced habitats will be protected in perpetuity through a conservation easement, deed restriction, conveyance to a qualified land trust or the Refuge, or through equivalent means.

MM BIO-1.2B: Alternatively, at the discretion of the project developer(s), and as approved by the City of Newark, all or a portion of the mitigation requirements for impacts to seasonal wetland habitats, may be satisfied through the acquisition and permanent preservation of existing wetlands at a ratio 1.5:1 (existing habitat: habitat impacted) at an approved wetland mitigation bank (i.e. off site) or other private lands. These off-site locations shall currently support wetlands of sufficient quantity and quality to satisfy mitigation requirements. The off-site component of the wetland mitigation shall occur on lands located within 10 air miles of the current project site and shall be located along the eastern shore of south San Francisco Bay within the same geographic watershed. **(Less Than Significant Impact with Mitigation)**

Impacts of Alteration of Site Hydrology on Avoided Wetlands and Associated Species

The proposed Specific Plan would result in hydrologic alterations within Area 4 that could affect the wetland and marsh habitats on the site. The addition of impervious surfaces through the construction of buildings and roadways and the compaction of soil would result in significant changes in the amount, location, quality, and velocity of stormwater runoff flowing into existing wetland habitats. Stormwater discharged into natural habitats at concentrated levels would increase the likelihood of soil erosion and channelization, and impacts related to water quality. If stormwater runoff is diverted to storm drains, the water level of seasonal wetlands would be reduced and changes in the preserved natural habitats would be substantial. In addition, the construction of the golf course would intercept precipitation, likely decreasing the amount of water entering natural habitats.

Residential development proposed in Area 3 may affect the amount, location, velocity, and timing of water entering the ACFC&WCD Line D. However, it is unlikely that these hydrologic input changes would affect wetland habitat downstream of Area 3.

Residential and/or golf course development proposed in Area 4 may affect the amount, location, velocity, and timing of water entering natural habitats adjacent to the project's developed areas, potentially resulting in the reduction of the extent of existing seasonal wetland habitat.

Depending on the location of development, seasonal wetland habitat may no longer be actively farmed, particularly areas of seasonal wetland and brackish marsh adjacent to the area that may be developed into a golf course, or "islands" of seasonal wetland habitat that will be preserved within development. The increased quantity and velocity of water entering these seasonal wetland islands may cause these seasonal wetlands to pond for longer duration, changing the dominant vegetation and perhaps creating areas of open water. Conversely, if runoff is diverted around these wetlands, they could be hydrologically "starved". In addition, as these features fill and spill into upland habitat adjacent to these wetlands, erosion or channelization may occur if outfalls and transition culverts are not correctly placed, converting upland or seasonal wetland habitat into aquatic habitat.

These effects could impact special-status species such as the salt marsh harvest mouse, salt marsh wandering shrew, Alameda song sparrow, Bryant's savannah sparrow, and San Francisco common yellowthroat. Changes in hydrology that result in a degradation of habitat for these special-status species would be considered a significant impact.

Impact BIO-2: Development within Area 4 would result in substantial adverse effects on federally protected wetlands (seasonal wetlands) and associated special status species due to altering the hydrology on the project site.

Incorporation of the following measures will reduce seasonal wetland and associated special status species impacts due to altering the hydrology on the project site to a less than significant level:

MM BIO-2.1: Stormwater runoff for the proposed residential development and golf course within Area 4, shall continue to drain, post-project, from multiple discharge points and the velocity of discharge into the wetlands shall be designed to prevent erosion and channelization. This includes avoiding single-point source of water discharges from the proposed development. Rather, simulation of natural flow through a more dispersed discharge of collected runoff shall be designed for movement of water from hardscape within developed features into wetlands surrounded by or adjacent to development such that the existing hydrologic condition is not substantially changed.

For every seasonal wetlands to be preserved that fronts the development envelope that is smaller than (1) acre, as shown on the habitat map (Figure 2.4-1), there will be at least one discharge point of stormwater flows and nuisance flows. For wetlands greater than one (1) acre there shall be a minimum of three (3) discharge points separated by no less than 200 feet and situated along the upslope perimeter of the wetlands.

For each of the seasonal wetlands to be preserved, stormwater runoff and nuisance flows shall be designed to incorporate grassy swales, retention

basins, and energy dissipaters to control discharge velocities in order to prevent erosion at the discharge point within wetlands and to prevent channelization. Channel erosion at each of the outfall discharge points draining into seasonal wetlands shall be monitored annually for the first five (5) years. If any channel erosion is noted, remedial measures shall be taken to incorporate additional suitable water control structures to prevent further erosion. Once these remedial measures are implemented, the five (5) year monitoring phase will be restarted at that location.

MM BIO-2.2: All grading and culvert sizing and installation shall be designed to ensure adequate drainage without draining wetlands more quickly than currently occurs and to allow water to pond for durations similar to the current existing condition.

MM BIO-2.3: To prevent any significant decrease in the amount of water entering preserved wetland habitats in Area 4 during the winter months, native grass species shall be used in the proposed golf course. A species list for use on the golf course (including outside of the turf area) shall be developed by a qualified biologist in concert with golf course designers and approved by the City of Newark.

MM BIO-2.4: The following measures shall be implemented to minimize any perennial ponding within the existing seasonal wetlands.

- Nuisance runoff from the proposed residential and golf course uses shall be minimized and controlled to reduce their input into the remaining natural habitat during the dry season.
- Water use shall be limited to the minimum necessary for the golf course and landscaping, including that under private ownership, to decrease summer nuisance flow to negligible amounts and approximate the existing condition.
- Drought tolerant plant species shall be planted within landscaped areas, including private lawns, which do not require water during the summer months. Where this is not feasible, proper irrigation using only the amount of water that can be taken up by the plants shall be implemented.
- Water shall be applied at dawn to limit evaporation, thereby limiting the amount of water that must be applied and reducing the possibility of over flow from the site as evapotranspiration takes place during the day.
- Implement the following University of California Integrated Pest Management Plan recommendations to maximize irrigation efficiency:
  - Irrigate deeply, but infrequently.
  - Irrigate early in the morning. At this time water loss from evaporation is minimal, distribution is usually good because of good water pressure and limited wind, and the risk of disease development is reduced.
  - Avoid runoff by matching water application rates to soil infiltration rates (rate water enters soil) or by pulsing (i.e., applying a portion of the water, waiting for it to be absorbed in the soil, and then applying the next portion).
  - Use less water in shaded areas than in open sun.

- Remove thatch in spring if it is more than 0.5 inch thick.
- Do not overfertilize; fertilize moderately according to the individual species and location.

MM BIO-2.5: Any remaining dry-season nuisance flows shall be retained within the development footprint by grading the site to drain internally, particularly within the golf course area, or by constructing berms or swales to confine these flows to the site to infiltrate or evaporate rather than flowing overland to salt marsh habitat. **(Less Than Significant Impact with Mitigation)**

Impacts of Freshwater Inputs on Salt Marsh Habitat and Associated Species

The proposed Specific Plan would result in increased inputs of freshwater from development areas to the surrounding, existing salt marsh habitats on-site. Salt marsh habitats, including diked and tidal, provide habitat for special status species. Increased stormwater runoff could potentially contribute to the conversion of salt marsh habitat to brackish or freshwater habitat, affecting special status species, including the California clapper rails, California black rails, salt marsh harvest mice, harbor seals, several special-status fish, and others. Special status plant species could also be affected. Project-induced changes in salinity that result in degradation of habitat for special status species is a significant impact.

Changes in the salinity of stormwater discharges from the site to Mowry Slough will have negligible impacts during major storms or as a result of summer nuisance flows due to the existing large output of fresh water through the ACFC&WCD channels to Mowry Slough. As a result, this project is not expected to result in conversion of salt marsh habitat in Mowry Slough through increased freshwater output.

The extent of new hardscape associated with the proposed Area 3 residential development (which could result in increased runoff), plus the amount of landscaped area (which could serve as the source of nuisance flows from irrigation) or park areas, is approximately 78 acres. Any increased runoff from Area 3 resulting from the proposed residential development will drain into ACFC&WCD Line D and eventually into Mowry Slough. This increased runoff has the potential to contribute additional fresh water to the slough. However, as discussed above, freshwater inputs to Mowry Slough are expected to have a negligible effect on habitats and species along the slough.

The proposed development will result in increased inputs of fresh water to the surrounding, existing salt marsh habitat, particularly to diked salt marsh habitat in the west-central portion of Area 4, muted tidal salt marsh habitat located near the existing auto wrecking yard, and, potentially, tidal salt marsh habitat located within Mowry Slough. The extent of new hardscape associated with the proposed residential development and the amount of landscaped areas and golf course is unknown, due to uncertainty regarding both the extent of future development and the relative extent of hardscape versus landscaping in the future development plan for Area 4. However, based on the potential development envelope shown in Figure 2.4-1, up to 310 acres in Area 4 could serve as the source of fresh water. As discussed above, freshwater inputs to Mowry Slough from development in Area 4 are expected to have a negligible effect on habitats and species along the slough, but effects on salt marsh habitats in remaining natural areas in Area 4 could be substantial. This increase in freshwater flows would result in a substantial adverse effect on federally protected salt marsh habitat and could restrict the range of special status species within Area 4.

Impact BIO-3: The project would result in significant impacts to federally protected wetlands including salt marsh habitat and associated special status species due to an increase in freshwater flows as a result of the project. **(Significant Impact)**

MM BIO-3.1: Implementation of mitigation measures MM BIO-2.1 through 2.5 described above will reduce the Specific Plan's impacts associated with the discharge of freshwater runoff into salt marsh habitats to a less than significant level. **(Less Than Significant Impact with Mitigation)**

Impacts to Certain Potentially Breeding Special Status Wildlife Species and Their Habitats

Several special status wildlife species could potentially breed on or adjacent to the site, including the northern harrier, white-tailed kite, loggerhead shrike, Alameda song sparrow, Bryant's savannah sparrow, and San Francisco common yellowthroat. These birds may nest in trees or shrubs in or around areas where development may occur. Some foraging and nesting habitat for these species may be lost due to development; however, the number of pairs of these species that would be disturbed or displaced due to project activities represents a small fraction of the regional population.

Up to one or two pairs of white-tailed kites and two or three pairs of loggerhead shrikes may nest in trees or shrubs in areas where development will occur. In the long term, trees and shrubs located in or around areas of proposed development may provide suitable nest sites for these species. The project will also convert agricultural, ruderal, and seasonal wetland habitats where these species forage into developed and landscaped areas that are less suitable for foraging. Also, individuals of these species are likely to be disturbed by construction, human activities, domestic animals, and other stressors related to the project. As a result, it is assumed that up to one or two pairs of kites and two or three pairs of shrikes may be lost as a result of this project.

Northern harriers may nest on the ground in the diked salt marsh on the project site and along Mowry Slough. These areas will not be directly impacted by project development, and thus no nesting habitat will be lost. The project will convert agricultural, ruderal, and seasonal wetland habitats where harriers forage into developed and landscaped areas that are less suitable for foraging. Also, individuals of these species, both on-site and in Mowry Slough, are likely to be disturbed by construction, human activities, domestic animals, and other stressors related to the project. As a result, the project could cause the loss of one or two pairs of harriers from the site.

The Alameda song sparrow, Bryant's savannah sparrow, and San Francisco common yellowthroat nest primarily in marsh habitat that will be subject to minimal direct impacts by the proposed project. Some nesting habitat for these species may be lost in seasonal wetlands, coastal scrub, and ruderal habitats, and possibly in the auto wrecking yard detention basins (if these species breed there at all), but because these habitats are not favored by nesting pairs of these species, very little breeding habitat for these species will be lost. Some foraging habitat for these species will be lost due to conversion to developed land uses, and individuals of these species in preserved marshes on-site and in Mowry Slough are likely to be disturbed by construction, human activities, domestic animals, and other stressors related to the project. However, because the vast majority of suitable breeding habitat for these species has been avoided by the project, the proposed development is expected to result in declines in local populations of only a few pairs of each species.

A few nests of these species could be lost during the clearing and construction phases of the project. Although adults are mobile enough to avoid direct injury or mortality, eggs or young could be lost due to direct habitat impacts or indirect disturbance that causes nest abandonment. After construction has been completed, nests in preserved habitat adjacent to the proposed golf course or residential development could be disturbed to the extent that the nest is abandoned or unsuccessful. Maintenance activities around the golf course and residential areas, or golfers and residents who enter natural areas, may unintentionally disturb or destroy nests. Although the project does not include the establishment or improvement of any formal trails along Mowry Slough, the number of people and domestic animals expected to access the levee along Mowry Slough will be greater following project development, subjecting pairs of these species nesting along Mowry Slough to more disturbance.

The project will result in the loss of up to 71.9 acres of upland agricultural habitat in Area 3 for these special-status animal species. Residential development in Area 3 could also result in indirect impacts to these potentially breeding special-status species through increased human use of levees adjacent to habitat of these species in Area 4. Domestic pets, cats in particular, may stray from the residential areas in Area 3 and may depredate these potentially breeding special-status species or their nests. Non-native mammals such as house mice and black and Norway rats, as well as urban-adapted natives such as raccoons, are likely to increase in the project vicinity (including on Area 3) following development. These species may compete with or prey on some of these special-status species. Development in Area 4 will result in the loss of up to 285.4 acres of habitat for these special-status animal species, including 43 acres of ruderal herbaceous habitat, 154.6 acres of upland agricultural habitat, 2.2 acres of coastal scrub, 5.5 acres of aquatic habitat, 78 acres of seasonal wetlands, 0.9 acres of brackish marsh, and 1.2 acres of wrecking yard detention basins. Domestic pets, cats in particular, may stray from the project's residential areas and may depredate these potentially breeding special-status species or their nests. Non-native mammals are likely to increase on the project site following development. These species may compete with or prey on some of these special-status species. As discussed below under *Impacts to Sensitive Habitats and Species from Recreational Disturbance*, golfers and visitors may go beyond established recreational areas and access the ACFC&WCD and Mowry Slough levees which may disturb, crush, or degrade habitat for these species. Planting of trees within the golf course or residential areas will provide additional perches and nesting sites for raptors that may prey on these special-status species.

If on-site mitigation for impacts to wetlands, waterbird foraging habitat, and special-status species habitat is provided per measures to mitigate other project impacts, such mitigation will increase the extent and quality of nesting and/or foraging habitat for these special-status species, restoring the project's adverse effects to some extent.

As described above, the number of pairs of these species that would be disturbed or displaced due to project activities represents a small fraction of the regional populations of these species and potential project impacts would jeopardize the viability of local populations. As a result, the project's impacts do not meet the CEQA standard of having a substantial adverse effect on these species' populations. Although the loss of active nests for the bird species would be in violation of federal and state laws, impacts to these species and their habitat would not be considered a significant impact under CEQA. **(Less than Significant Impact)**

Impacts to Certain Non-Breeding Special Status Wildlife Species and Their Habitats

Several special status wildlife species may occur on the site as occasional visitors, migrants, or transients, but do not breed on the site. These include the American white pelican, golden eagle, black tern, California least tern, Vaux's swift, bank swallow, California yellow warbler, grasshopper sparrow, and Townsend's big-eared bat. American white pelicans and California least terns may, on rare occasions, forage for fish in aquatic habitats within the former Pintail Duck Club, although neither species has been observed on the site.

Project construction would not result in injury or mortality of any individuals of these species, which are mobile enough to avoid construction activities. The loss of habitat due to the project would not have any effect on the breeding success of any of these species because they do not breed on or near the site. For these reasons, the project would not result in significant impacts to these species. For an accounting of the number of acres impacted under the Specific Plan, see Appendix E.

The Specific Plan would not result in significant impacts to non-breeding special status wildlife species on the site. **(Less than Significant Impact)**

Impacts to Special Status Plant Species

Protocol-level surveys for special status plant species were completed on the project site. None were found, although there is a potential for these species to be present in some of the wettest, inaccessible parts of the on-site marshes and wetlands. Those areas would not be filled as a result of the project, but could potentially be impacted indirectly as described above in *Impacts of Alteration of Site Hydrology on Avoided Wetlands and Associated Species* and *Impacts of Freshwater Inputs on Salt Marsh Habitat and Associated Species*. The potential for impacts to those special status plants is described under those two headings, above, and in detail in Appendix E of this EIR.

Impacts to Burrowing Owls

The burrowing owl is a California species of special concern and is known to occur within Area 4. Because burrowing owl numbers in a given area can fluctuate from year to year, this impact assessment follows the recommendation of the California Burrowing Owl Consortium (1993) in considering burrowing owl numbers and locations over the past three years (since 2006) in this impact assessment rather than only considering existing (2008-2009) conditions.

Observations in 2006 suggest that up to four pairs were using Area 4 for nesting that year. Two sets of burrows were occupied along the Southern Pacific railroad tracks on the northeastern border of Area 4 (northwest of ACFC&WCD Line D), one was located along the Mowry Slough levee midway along the western border of Area 4, and one was located along the levee on the southeastern side of ACFC&WCD Line D. Burrowing owls were observed at some of these locations in Area 4 during wetland delineation surveys in 2007, and a pair was occupying a burrow on 7 August 2008 along the Southern Pacific railroad tracks northwest of ACFC&WCD Line D. Suitable nesting and roosting habitat is somewhat limited by the intensive agricultural disturbance and existing development on much of the site. However, if owls are using burrows on or immediately adjacent to the site, construction activities could result in the mortality or injury of individual owls in burrows, or cause the abandonment of active nests. Due to the small size of the burrowing owl population and habitat areas in the region, such loss of individuals or reproductive effort or habitat would be a significant

impact. In addition, owls left on the site after construction could be subject to disturbance by golfers, domestic animals, and people walking along levees which are outside current established recreation areas.

Surveys completed since 2006 have not detected owls within Sub-Area A of Area 3 where the development is proposed, nor along the adjacent portions of ACFC&WCD Line D. As a result, development within Sub-Area A is not expected to result in direct impacts to nests or roosts of this species. Due to intensive cultivation of the agricultural fields in the proposed development area in Area 3, this area does not support California ground squirrel burrows and thus does not provide suitable owl nesting or roosting habitat. Burrowing owls may forage in this area on occasion, but prey availability is likely low due to intensive cultivation. As a result, the proposed residential development in Area 3 will result in the loss of only marginal-quality foraging habitat for owls that may be nesting or roosting outside the development area.

Impact BIO-4: The project would result in the loss of burrowing owl habitat, a California species of special concern, and disturbance to existing owls on-site. This is a significant impact. **(Significant Impact)**

Incorporation of the following measures will reduce impacts of the loss of burrowing owl habitat and disturbance to existing on-site owls to a less than significant level:

Area 3:
Any development activities within Area 3, Sub-Area A will require implementation of mitigation measures MM BIO-4.1 through MM BIO-4.3 to ensure against the possibility of take of individual owls, as applicable.

Area 4:
Any development activities within Area 4 will require implementation of mitigation measure MM BIO-4.1 through MM BIO-4.6 below to ensure against the possibility of take of individual owls.

MM BIO-4.1: Pre-construction surveys for burrowing owls shall be completed in areas planned for fill placement and construction areas in conformance with CDFG protocols. Because owls are known to occupy the site, these surveys shall be completed no more than 15 days prior to the start of importing fill and construction to minimize the probability of immigration of owls between the time surveys are completed and the initiation of grading. If burrowing owls are detected on or within 250 ft of the site, Mitigation Measures MM BIO-4.2 and MM BIO-4.3, described below, shall be implemented.

MM BIO-4.2: For burrowing owls located during the non-breeding season (generally 1 September to 31 January), a 150-ft buffer zone will be maintained around the occupied burrow(s) if practicable. If such a buffer is not practicable, then a buffer adequate to avoid injury or mortality of owls will be maintained, or the birds will be evicted as described for Mitigation Measure MM BIO-4.3 below. During the breeding season (generally 1 February to 31 August), a 250-ft buffer, within which no new activity will be permissible, will be maintained between project activities and occupied burrows. Owls on site after 1 February will be assumed to be nesting unless direct observations indicate otherwise. This protected buffer area will remain in effect until 31

August, or based upon monitoring evidence, until the young owls are foraging independently or the nest is no longer active.

MM BIO-4.3: If construction will directly impact occupied burrows, eviction of owls may occur outside the nesting season to prevent injury or mortality of individual owls. No burrowing owls shall be evicted from burrows during the nesting season (1 February through 31 August) unless evidence indicates that nesting is not actively occurring (e.g., because the owls have not yet begun nesting early in the season, or because young have already fledged late in the season). Relocation of owls during the non-breeding season will be completed by a qualified biologist using one-way doors, which should be installed in all burrows within the impact area and left in place for at least two nights. These one-way doors will then be removed and the burrows backfilled immediately prior to the initiation of grading.

MM BIO-4.4: To reduce impacts of the Specific Plan on the local (South Bay) burrowing owl population in Area 4, habitat shall be preserved and managed for burrowing owls on and/or off-site if and when development occurs in Area 4. California burrowing owl mitigation guidelines recommend that 6.5 acres of foraging habitat be preserved and managed per occupied burrowing owl burrow (whether by a pair or singly) in mitigation sites. Based upon the existing quality of burrowing owl habitat on the site and the impact to baseline conditions, future developers of Area 4 shall provide 26 acres of mitigation habitat. This habitat will be preserved and managed specifically for use by burrowing owls.

Development on Area 4 is likely to occur in phases, and provision of burrowing owl habitat mitigation will likewise be phased according to the extent of habitat impacts. Habitat mitigation will be provided for any residential or recreational development on Area 4. Residential or recreational development affecting less than 100 acres will require mitigation for two pairs of owls, or 13 acres of habitat mitigation on-site and/or off-site. Residential or recreational development equaling or exceeding 100 acres, mitigation for two additional pairs of owls will be required, for a total of 26 acres of habitat mitigation. A combination of on-site and off-site mitigation is acceptable. However, on-site mitigation shall contribute toward the habitat mitigation requirement only if at least 6.5 acres of contiguous burrowing owl habitat is preserved and managed on-site. Either Mitigation Measure MM BIO-4.5A or MM BIO-4.5B, described below, shall be implemented.

MM BIO-4.5A: If on-site (within Area 4) habitat is to be preserved, a mitigation and monitoring plan detailing the areas to be preserved for owls; the methods for managing on-site habitat for owls and their prey; methods for enhancing burrow availability within the mitigation site (potentially including the provision of artificial burrows, although long-term management for ground squirrels will be important as well); measures to minimize adverse effects of development on owls on-site; and a monitoring program and adaptive management program shall be prepared by a qualified biologist and submitted to the City of Newark and the CDFG for review and approval. At least 50

percent of the mitigation area must consist of upland habitat suitable for use by burrowing mammals, and no wetlands supporting tall vegetation shall be included within the mitigation site. The mitigation area must be contiguous with habitat that is permanently preserved as open space to avoid having the site surrounded by development in the future. The mitigation area will be protected in perpetuity through a conservation easement, deed restriction, conveyance to a qualified land trust or the Refuge, or through equivalent means.

MM BIO-4.5B: If the project proponent elects to mitigate off-site, such mitigation may take the form of habitat preservation and management (in which case all the monitoring and habitat requirements in the preceding paragraphs would apply) or the purchase of credits in an off-site mitigation bank. Because the nearest burrowing owl mitigation banks are located outside of the South Bay, this mitigation may occur outside the region.

Unless at least 13 acres of burrowing owl habitat mitigation occurs on-site, some on-site enhancements shall also be made to reduce impacts of the project on the local (South Bay) burrowing owl population. Such enhancements shall include the provision of artificial burrow complexes at the edge of the golf course recreation area or on the outboard side of levees on the site and management of at least portions of levee side slopes around these burrow complexes to provide suitable conditions for burrowing owls and ground squirrels (e.g., periodic mowing to maintain short vegetation). If less than 13 acres of on-site habitat mitigation is provided, then:

- Residential or recreational development affecting less than 100 acres shall require the provision of two artificial burrow complexes.

- Residential or recreational development equaling or exceeding 100 acres, shall require two additional burrow complexes be provided (for a total of four). These burrow complexes and the vegetation around them, shall be maintained regularly to maintain suitable on-site conditions for nesting and roosting owls. Given the extent of natural habitat with short vegetation, and the continued presence of seasonal wetlands on much of Area 4, providing and maintaining burrows for use by owls is expected to maintain some burrowing owl presence on the site even if most or all of the owl habitat mitigation occurs off-site.

MM BIO-4.6: As described in greater detail under Mitigation Measure MM BIO-9.2 below, signage shall be placed in appropriate locations on the golf course or recreation area to prohibit golfers/visitors from entering areas where the artificial burrow complexes will be located. If development occurs on Area 4, signage will be placed along the ACFC&WCD Line D levees and the Mowry Slough levee to instruct visitors of these levees against leaving the levee tops to protect sensitive species such as the burrowing owl. **(Less Than Significant Impact with Mitigation)**

Impacts to California Tiger Salamander

There are no records of the California tiger salamander occurring on the site and larval surveys on the site were negative. A portion of Area 4 is within the maximum known dispersal distance of the nearest breeding area, but the likelihood of dispersal or number of dispersants over such a distance is low. The railroad tracks and heavily cultivated nature of the site would likely inhibit dispersal between known breeding sites and the project site. For these reasons, and given that there is no history of use of the site or immediately adjacent areas by California tiger salamanders, impacts of the proposed project would be less than significant.

The Specific Plan would not result in significant impacts to California tiger salamanders or their habitat. **(Less than Significant Impact)**

Impacts to Nesting Peregrine Falcons

Peregrine falcons are likely to forage on the site and are expected to utilize the site after the project is constructed. Due to the abundance of foraging habitat in the South Bay and the overall avoidance of the aquatic and marsh habitats in Area 4, the project would not have a significant impact on foraging habitat. There is a potential that falcons could nest on towers in the central portion of Area 4 (refer to Figure 3.5-2). The project includes the modification (raised in height) of one tower and replacement of another tower. The loss of a nest site would not result in a significant impact given the abundance of suitable nest sites on other towers in the South Bay. However, loss of eggs or young due to project-related nest abandonment would represent a substantial impact to this species' regional populations given its existing low populations in the South Bay, and such an impact would be significant.

No electrical transmission towers or other potential nest substrates are in Area 3, and thus the project will not result in any impacts to nesting peregrine falcons in Area 3.

Impact BIO-5: Loss of eggs or young peregrine falcons, a species protected by the Migratory Bird Treaty Act (MBTA) and threatened under the California Endangered Species Act (CESA) would result in a significant impact. **(Significant Impact)**

Incorporation of the following measures will reduce peregrine falcons impacts to a less than significant level:

MM BIO-5.1: Construction, including any tower modifications and/or replacement, shall occur during the non-breeding season (1 September to 31 January), to the maximum extent possible.

MM BIO-5.2: If construction must commence between 1 February and 31 August, then pre-construction surveys for nesting peregrine falcons shall be completed by a qualified ornithologist to ensure that no nests will be disturbed during project implementation. This survey shall be completed no more than 14 days prior

HABITAT FOR SELECTED SPECIAL-STATUS SPECIES FIGURE 3.5-2

to the initiation of demolition/construction activities during the early part of the breeding season (February through April) and no more than 30 days prior to the initiation of these activities during the late part of the breeding season (May through August). During this survey, the ornithologist will inspect all power-line towers within 300 feet of impact areas for nests. If no peregrine falcon nests are detected within the Specific Plan area during this survey, further measures are not necessary. The survey results shall be provided to the Community Development Director for review and approval prior to the start of grading and construction.

MM BIO-5.3: If an active nest is found within 300 feet of any construction activity, a 300-foot buffer, within which no new development-related activity will be permissible, will be maintained between development activities and the occupied nest. This protected area will remain in effect until the young falcons have fledged or the nest is no longer active. **(Less Than Significant Impact with Mitigation)**

Impacts to Tricolored Blackbird Colonies

There is a possibility that tricolored blackbirds could breed on the site in the dense cattails and tules along the eastern edge of the diked salt marsh and the mitigation wetland in Area 4 and near the stormwater wetland in the southeastern corner, (refer to Figure 3.5-2). If construction activities are initiated near a blackbird colony, the colony, including active nests, eggs, and young, could be abandoned. This would be a significant impact.

Impact BIO-6: The project could result in significant impacts to nesting colonies of tricolored blackbirds, a California species of special concern. **(Significant Impact)**

Incorporation of the following measures will reduce tricolored blackbird impacts to a less than significant level:

MM BIO-6.1: Construction shall commence during the non-breeding season (approximately 1 April through 31 July for this species), to the maximum extent possible.

MM BIO-6.2: If construction must commence between 1 April and 31 July, then pre-construction surveys for nesting tricolored blackbirds will be completed by a qualified ornithologist to ensure that no nests will be disturbed during Specific Plan implementation. This survey shall be completed no more than 14 days prior to the initiation of demolition/construction activities. During this survey, the ornithologist will inspect all potential breeding habitat within 400 feet of impact areas for nests. If no tricolored blackbird colonies are detected within the Specific Plan area during this survey, further measures are not necessary.

MM BIO-6.3: If an active colony is found within 400 ft of any construction activity, a 400-ft buffer, within which no new development-related activity will be permissible, will be maintained between development activities and any occupied nests.

This protected area shall remain in effect until the young have fledged or the colony is no longer active. **(Less Than Significant Impact with Mitigation)**

Impacts to Roosting Bats

Several species of bats, including the pallid and Yuma myotis bats have the potential to roost in existing structures and eucalyptus trees within Area 4 (refer to Figure 3.5-2). If bats are day roosting in trees or buildings within the project area, the removal of these structures would result in injury or mortality of individual bats. Construction activities in proximity to active roosts may cause roost abandonment. If this abandonment occurs during daylight hours, bats would be subject to high predation risk, and mortality of young in the roost. The loss of individual bats or a maternity roost site would be a significant impact.

There are no structures or trees on or within proximity to the proposed development in Area 3 that are suitable for supporting day roosts of bats.

Impact BIO-7: The project could result in significant impacts to nesting colonies of pallid bats, a California species of special concern, and Yuma myotis bats, a rare species in the South Bay. **(Significant Impact)**

Incorporation of the following measures will reduce pallid and Yuma myotis bat impacts to a less than significant level:

MM BIO-7.1: Survey for roosting bats shall be completed prior to the removal of any building or tree with potential for day-roosting by bats, or prior to the initiation of any construction activities within 250 ft of such potential roost sites. The survey shall be completed by a qualified bat biologist (i.e., a biologist holding a CDFG collection permit and a Memorandum of Understanding with CDFG allowing the biologist to handle and collect bats). If suitable roost sites are found but a visual survey is not adequate to determine presence or absence of bats (which would be particularly likely in the case of potential roost trees), acoustical equipment will be used to determine occupancy. This survey shall be completed prior to the beginning of the breeding season (i.e., prior to 1 March) in the year in which construction or demolition in a given area is scheduled to occur so that adequate measures can be implemented, if necessary, to evict the bats during the non-breeding season. The survey results shall be provided to the Community Development Director for review and approval prior to the start any construction related activities.

MM BIO-7.2: Because the surveys in Mitigation Measure MM BIO-7.1 will be completed prior to the breeding season, several months may pass between that survey and the initiation of construction or demolition in a given area. Therefore, a second pre-demolition/pre-construction survey for roosting bats, following the methods described above, shall be completed within 15 days prior to the commencement of these activities in a given area to determine whether bats have occupied a roost in or near the development impact areas. This survey will be facilitated considerably by information (e.g., on potential roost trees)

gathered during the previous survey. If bats are found to be roosting, additional mitigation as follows must be implemented.

MM BIO-7.3: If a maternity roost of any bat species is located, the bat biologist shall determine the extent of a construction-free buffer around the active roost that will be maintained. This buffer would be maintained from 1 March until the young are flying, typically after 31 August.

MM BIO-7.4: If a roost of any kind is found in an area (e.g., a building or tree) that will not be disturbed by construction, or that can be avoided, the roost structure will not be impacted.

MM BIO-7.5: If a day roost is found in a building, or in a tree that is to be completely removed or replaced, individual bats will be safely evicted under the direction of a qualified bat biologist. Eviction of bats will occur at dusk, so that bats will have less potential for predation compared to daytime roost abandonment. Eviction will occur between 1 September and 31 March, outside the maternity season, but will not occur during long periods of inclement or cold weather (as determined by the bat biologist) when prey are not available or bats are in torpor. If a day roost is found within a building, eviction will occur by opening the roosting area to allow air flow through the cavity. Demolition may then follow no sooner than the following day (i.e., there must be no less than one night between initial disturbance for air flow and the demolition). This action should allow bats to leave during dark hours, thus increasing their chance of finding new roosts with a minimum of potential predation during daylight. If feasible, one-way doors will also be used to evict bats from tree roosts. If use of a one-way door is not feasible, or the exact location of the roost entrance in a tree is not known, the trees with roosts that need to be removed will first be disturbed by removal of some of the trees' limbs not containing the bats. Such disturbance will occur at dusk to allow bats to escape during the dark hours. These trees would then be removed the following day. All of these activities will be performed under the supervision of the bat biologist.

MM BIO-7.6: If a day roost for pallid bats or Yuma myotis will be impacted, an alternative bat roost structure will be provided. The design and placement of this structure will be determined by a qualified bat biologist based on the location of the original roost and which species is located. This bat structure will be erected at least one month (and preferably a year or more) prior to removal of the original roost structure. This structure will be checked during the breeding season for up the three years following completion of the development, or until it is found to be occupied by bats, to provide information for future development projects regarding the effectiveness of such structures in minimizing impacts to bats. **(Less Than Significant Impact with Mitigation)**

Impacts to Salt Marsh Harvest Mouse and Wandering Shrew

No habitat for the federally endangered salt marsh harvest mouse or the salt marsh wandering shrew, a California species of special concern, is present in Area 3, and thus proposed development in Area 3 will not result in direct impacts to these species. Residential development in Area 3 could, however, result in indirect impacts to these species through increased human use of levees adjacent to habitat of these species in Area 4 (as discussed in *Impacts to Sensitive Habitats and Species from Recreational Disturbance*). Domestic pets, cats in particular, may stray from the residential areas in Area 3 and may depredate salt marsh harvest mice or salt marsh wandering shrews. Non-native mammals such as house mice and black and Norway rats, as well as urban-adapted natives such as raccoons, are likely to increase in the project vicinity (including on Area 3) following development. These species may compete with or prey on salt marsh harvest mice or salt marsh wandering shrews.

The federally endangered salt marsh harvest mouse is known to occur in the diked salt marsh habitat in the former Pintail Duck Club in Area 4. Tidal salt marsh along Mowry Slough adjacent to the site and the muted tidal salt marsh in the northwestern part of Area 4 also provide suitable habitat for this species, and salt marsh harvest mice may also occur in the agricultural field/seasonal brackish marsh adjacent to the diked salt marsh habitat, especially where pickleweed is present (refer to Figure 3.5-2). The salt marsh wandering shrew is not known to occur on the site; however, because the shrew's typical habitat is similar to that of the salt marsh harvest mouse, the shrew may occur there too. The majority of suitable habitat for the mouse and shrew on the site would not be directly impacted by the project. However, fill, grading, vegetation removal, and/or shading could result in the direct loss of up to 7.65 acres of salt marsh harvest mouse/salt marsh wandering shrew habitat within the potential development envelope in Area 4. The direct loss of habitat from project construction is a significant impact.

Impacts to salt marsh harvest mice and shrews would also occur as a result of the functional loss of habitat due to interruption of wetland connectivity, water quality degradation, disturbance associated with adjacent development, and increased predation by domestic species would result in significant impacts to the mouse and shrew.

Impact BIO-8: Project development would result in significant impacts due to the loss of federally and state listed endangered salt marsh harvest mouse and California species of special concern salt marsh wandering shrew individuals and habitat. **(Significant Impact)**

With the exception of trapping that previously occurred in the vicinity of the former Pintail Duck Club, it is unknown if any trapping that has been completed to determine the presence or absence of salt marsh harvest mice or salt marsh wandering shrews in specific portions of the Specific Plan area. If the future project proponent(s) wish to refine the determination regarding the location of suitable habitat for these species, it can (with approval from the USFWS and CDFG) have a trapping survey completed to determine where these species are and are not present. In the absence of such surveys, presence should be assumed in the pickleweed-dominated locations.

Incorporation of the following measures will reduce salt marsh harvest mouse and salt marsh wandering shrew individual and habitat impacts to a less than significant level:

MM BIO-8.1: Temporary disturbance to and permanent loss of salt marsh harvest mouse and salt marsh wandering shrew habitat shall be avoided to the maximum extent practicable. Although avoidance of wetland impacts was previously described, further attempts to avoid impacts to pickleweed-dominated habitats shall be made. Prior to the issuance of building permits, all temporary staging areas and construction access roads shall be located away from suitable habitat for these species and limits of all wetlands that are to be avoided will be clearly demarcated by a qualified biologist with Environmentally Sensitive Area fencing to avoid inadvertent disturbance of any habitat outside of the designated construction areas during construction activities.

MM BIO-8.2: Prior to issuance of grading permits and under the supervision of a qualified biological monitor, who is permitted by the USFWS to move salt marsh harvest mice out of the construction area, all salt marsh harvest mouse/wandering shrew habitat within the construction area shall be removed by hand (e.g., including weed-whacker) within a given area of harvest mouse/wandering shrew habitat. Vegetation requiring hand removal will be limited to pickleweed and other associated plants, such as saltgrass or bulrush, within pickleweed-dominated areas considered to be potential habitat for these mammals as depicted on Figure 3.5-2. After at least 24 hours have elapsed since the removal of this pickleweed-dominated vegetation from harvest mouse/wandering shrew habitat areas, a barrier to exclude salt marsh harvest mice and salt marsh wandering shrews from impact areas will be installed at the perimeter of all project construction areas that are located within 50 feet of potential salt marsh harvest mouse and salt marsh wandering shrew habitat. This barrier, which will be constructed under the guidance of a qualified biologist, shall consist of a 3-foot tall, tight cloth or smooth plastic silt fence toed into the soil at least three inches deep and supported with stakes.

MM BIO-8.3: Mitigation Measure MM BIO-8.2 will minimize the probability of salt marsh harvest mice and salt marsh wandering shrews entering the site but in addition, any individuals already in the impact areas shall be salvaged and translocated to the exterior of the construction exclusion area. Although detecting every individual on a site is not feasible due to these species' secretive habits, a qualified mammalogist should be on-site during removal of pickleweed-dominated vegetation, construction of the barrier fence, and initial clearing and grubbing within 10 feet of the barrier fence. The mammalogist would look for individual salt marsh harvest mice and salt marsh wandering shrews that may be within the Specific Plan area. Any individuals detected would be captured and translocated to a safe location within the closest suitable, pickleweed-dominated habitat. The mammalogist must possess all required USFWS and CDFG permits authorizing such capture and translocation.

Trapping and removal of salt marsh harvest mice has been required by the USFWS and CDFG in areas with a high likelihood that the species is present. The direct impact areas for the current Specific Plan contain narrow and/or small patches of habitat that likely support sparse salt marsh harvest mouse and wandering shrew populations, if the species are present at all, and thus we are not proposing to require trapping and relocation.

MM BIO-8.4: Salt marsh harvest mouse and salt marsh wandering shrew habitat that is permanently lost due to fill, shading, or isolation due to the golf course access road will be mitigated at a 3:1 ratio by the creation or restoration of pickleweed-dominated salt marsh on Area 4. Habitat for these species that is indirectly impacted due to proximity to residential and golf course development (i.e., habitat that is not directly filled but that is located within 100 feet of direct impact areas) will be mitigated at a 2:1 ratio by on-site habitat restoration. This lower ratio is appropriate because habitat within 100 feet of developed areas will retain some habitat quality for mice and shrews. This habitat restoration can occur in the same locations as habitat creation, restoration, or enhancement performed for impacts to wetlands as long as suitable conditions for these two mammal species are targeted.

A habitat mitigation and monitoring plan will be prepared that outlines the necessary steps for restoration; it will include a plan view graphic showing the target restoration activities, a brief seeding plan (species palette and application techniques) to re-vegetate the areas currently in agricultural production, and a monitoring and reporting plan with success criteria. The plan will include a recommended timeline for restoration activities and the establishment of suitable habitat. The mitigation and monitoring plan will be approved by the City of Newark, the USFWS, and the CDFG prior to issuance of grading and building permits. The restoration work will begin in the same construction season as the initiation of grading within suitable salt marsh harvest mouse/salt marsh wandering shrew habitat, and restoration site grading will be completed within one year of initiation (or as otherwise determined by resource agency permits). All created mitigation habitats will be protected in perpetuity and will be placed into a land trust or under a conservation easement, or fee title will be transferred to the Refuge or a third-party non-profit entity that has been approved by the City and appropriate permitting agencies. **(Less Than Significant Impact with Mitigation)**

Impacts to Sensitive Habitats and Species from Recreational Disturbance

The proposed project would result in an increase in two types of public use in the project area; golfing on the new golf course, and recreational use of the levees along the ACFC&WCD channels and Mowry Slough. Trails are planned as part of the Specific Plan along the ACFC&WCD channels in Area 3 and the planned developed portion of Area 4. The Specific Plan project does not propose trails along the Mowry Slough levees; however, by introducing residential and golf course uses into Area 3 and 4, it is likely that public activity will increase in the Mowry Slough area.

These activities could result in the degradation of wetland, marsh, and aquatic habitats, loss of and disturbance to special status plant and animal species, disturbance of nesting, foraging, and roosting

birds, shorebirds, waterfowl, and other species. In addition, levee users may bring dogs to these areas that may harass or prey on sensitive bird and mammal species.

Impact BIO-9: Proposed recreational activities would impact sensitive habitats that are known to support special status species and large numbers of foraging and roosting waterbirds. The Specific Plan would result in significant impacts due to recreational activities on the site. **(Significant Impact)**

Incorporation of the following measures will reduce special status species and sensitive habitat impacts to a less than significant level:

MM BIO-9.1: As the design of the golf course progresses disturbance by golfers of adjacent sensitive habitats and species shall be minimized. For example, high-use areas such as tees and greens shall be set back from the edge of the golf course, and broad rough/out-of-bounds areas shall occur along the interface between the golf course and sensitive habitats.

MM BIO-9.2: On the golf course, areas that are "out of bounds" (which will include the artificial burrowing owl burrow complexes and all natural areas that are not directly filled during golf course construction) shall be clearly marked as such, explaining the importance of preserving the ecological integrity of the adjacent natural areas. Signs will be erected along the ACFC&WCD levees and along Mowry Slough describing the ecological value of adjacent wetland areas and instructing users to stay on the ACFC&WCD levee tops, stay out of sensitive habitats, and keep dogs on leashes. **(Less Than Significant Impact with Mitigation)**

Indirect Impacts on Waterbird Use of Wetlands

No wetlands or other habitats expected to be used by large numbers of waterbirds are immediately adjacent to Area 3. Very small numbers of ducks forage in ACFC&WCD Line D on the west side of the proposed development area in Area 3, but this development will have a minimal effect on waterbird use of Specific Plan site as a whole.

While the majority of wetlands, marshes, and aquatic habitat on the site would not be directly filled by the proposed development in Area 4, indirect impacts could occur. The magnitude of the indirect effect of development on the wildlife habitat value of wetlands that are not filled by the project depends on the existing use of these wetlands and the decline in numbers of individuals that will use the wetlands following development (the latter being a function of proximity to development).

Observations from 2006 to April 2009 have not documented large numbers of waterbirds using the seasonal wetlands in Area 4, and surveys completed specifically to assess waterbird use of wetlands in Area 4 since November 2008 have documented very little use of these wetlands by waterbirds.[37] As a result, it was determined that the loss of use of these seasonal wetlands by waterbirds will not result in a significant impact.

[37] Gulls and Canada geese in the South Bay are considered nuisance species due to the gulls' adverse effects on sensitive species (e.g., predation and encroachment on nesting habitat) and the fact that many Canada geese in the region are descendants of introduced birds. These species will not be included in the analysis of waterbird use, either of the reference site or the indirect impact areas.

However, the perennial wetlands within the former Pintail Duck Club were documented to consistently support much higher numbers of waterbirds. Specifically, waterbirds were concentrated within an area of approximately 18 acres providing a mosaic of open water, exposed mud, and emergent vegetation. In a number of areas in the South Bay, large numbers of waterbirds feed, loaf (e.g., during high tides), preen, and even nest in close proximity to high levels of human activity. Examples of such areas include water treatment ponds on Radio Road in Redwood City, the Palo Alto Baylands, Coast Casey Forebay in Mountain View, Shoreline Lake in Mountain View, and the Sunnyvale Water Pollution Control Plant ponds. In these areas, waterbirds have habituated to some extent to pedestrians, joggers, cyclists, dog-walkers, and other human activities. As a result, the development of Newark Specific Plan Area 4 is not expected to result in complete abandonment of the former Pintail Duck Club wetlands by waterbirds. Nevertheless, noise, movement of people, domestic animals, and vehicles within the developed area, and encroachment of people and domestic animals from the developed areas into the natural areas in and around the former Pintail Duck Club's wetlands are expected to reduce the habitat value of this area to some extent, thus reducing the number of waterbirds using this area.

Because of the importance of such high-quality wetlands to breeding, wintering, and migratory waterbirds in the South Bay, the impacts to waterbirds using the perennial wetlands on the former Pintail Duck Club are considered to be significant without implementation of the measure described below. The following mitigation measure will be implemented to reduce indirect effects of the project on wildlife use of perennial wetlands in the former Pintail Duck Club to a less than significant level.

Impact BIO-10: The proposed project would indirectly impact waterbirds, including species protected by the Migratory Bird Treaty Act (MBTA) in the wetland portions of the former Pintail Duck Club of the site. This is a significant impact. **(Significant Impact)**

Incorporation of the following measures will reduce foraging and roosting waterbird impacts to a less than significant level:

MM BIO-10.1: Indirect impacts of residential and golf course development on birds using the undeveloped wetlands on the site shall be mitigated by the creation or enhancement of waterbird habitat on the site at a 0.5:1 ratio for a total of 9 acres of mitigation. Mitigation wetlands for these indirect impacts shall be located at least 300 feet from any development, to the maximum extent possible. The mitigation areas shall provide perennial or near-perennial water with a variety of depths ranging from very shallow water or exposed mud to water up to several feet deep to support the bird species currently using the former Pintail Duck Club. This mitigation can occur within the same wetland areas created as mitigation for permanent loss of wetlands as long as it is located at least 300 feet from any residential or golf course development.

A mitigation plan shall be developed that outlines the proposed wetland creation/enhancement for indirect impacts to waterbird use of wetlands on the site. It will include a plan showing the target mitigation activities and a monitoring and reporting plan with success criteria. The plan shall include a recommended timeline for mitigation activities. This plan will be submitted

to and approved by staff of the City of Newark prior to the initiation of any fine grading or construction on the site. The mitigation work will begin in the same construction season as the initiation of grading or construction, and mitigation site grading will be completed within one year of initiation. All created/enhanced habitats shall be protected in perpetuity and will be placed into a land trust or under a conservation easement, or fee title will be transferred to the Refuge or a third-party non-profit entity that has been approved by the City and appropriate permitting agencies. **(Less Than Significant Impact with Mitigation)**

Impacts from the Spread of Non-native, Invasive Plant Species

There are small populations of non-native invasive plant species throughout the project site, as identified in Table 5 of Appendix E. Ground disturbance associated with the project would create new areas suitable for recruitment of these non-native species. Expansion of these invasive plant populations would also increase the seed bank of the site allowing spread to unimpacted natural habitats on the site. Invasion by these non-native species would degrade the functions and values of preserved natural habitat for native plant and wildlife species, resulting in a significant impact.

Impact BIO-11: Implementation of the project would result in significant impacts to sensitive habitats and special status species due to the potential spread of non-native, invasive plant species on the site. **(Significant Impact)**

Incorporation of the following measures will reduce native plant and wildlife species impacts to a less than significant level:

MM BIO-11.1: To reduce the potential establishment or spread of non-native, invasive weed populations as a result of development activities, the following measures will be implemented by a qualified biologist prior to issuance of grading permits and during construction:

- Remove concentrations of invasive species to limit the spread of seed to new areas within areas subject to grading activities that could have a severe ecological impact on surrounding habitat (i.e., fennel, pampas grass, perennial pepperweed, or small flower tamarisk).
- Maintain staging areas free of these weeds (fennel, pampas grass, perennial pepperweed, or small flower tamarisk) and their seeds for the duration of their use during project construction.
- If straw is used for road stabilization and erosion control, it must be certified weed-free.

MM BIO-11.2: The future development projects shall develop and implement an Invasive Species Management Plan to reduce the presence and spread of non-native, invasive plant species on the site prior to importing any fill material required to elevate building sites and prior to grading any areas on the Specific Plan site. This management plan will outline methods to remove the existing populations of non-native, invasive weed species from the accessible portion of the site to prevent the spread of their seed during and after construction and to prevent the invasion of graded area by invasive species. This will also prevent a decline in the function and values of natural habitat remaining on

the site due to the proliferation of invasive species and the increased seed bank that would be present if invasive species spread to more extensive areas on the site (e.g., embankments of the fill). This management plan will contain details regarding the removal and treatment of these species (herbicide application, manual removal, mowing, etc), success criteria, and a seeding plan to encourage native species to grow within disturbed habitat. Because the Specific Plan site falls within the CDFG designated Alameda/Contra Costa County Weed Management Area, this Invasive Species Management Plan will be approved the CDFG and the City of Newark prior to issuance of a grading permit for implementation of the Specific Plan. **(Less Than Significant with Mitigation)**

Impacts to Wildlife Movement

The Specific Plan is surrounded by development to the north and east and salt production ponds to the northwest and west. Salt ponds and urban development prevent any substantive movement of terrestrial wildlife such as mammals, reptiles, and amphibians to or from the northwest (i.e., in the direction of the Refuge headquarters and Coyote Hills Regional Park). Likewise, extensive urban development to the north and east prevent movement of these species between the site and the undeveloped hills nearly five miles to the east. The only connectivity to open, upland wildlife habitat (including the Pacific Commons Preserve, Tri-Cities Landfill, and the Warm Springs unit of the Refuge) occurs to the southeast. However, the upland habitat areas southeast of the site are limited in size and isolated from extensive open space habitat (e.g., east of Interstate 880) by urban development. As a result, any movement by mammals, reptiles, and amphibians through Areas 3 and 4 would facilitate exchange of individuals or genes only very locally, along the immediate edge of the Bay in the Fremont-Newark area, and would have no regionally important implications for interchange of individuals or genes among populations.

The Specific Plan may reduce the ability of wildlife to move between portions of Area 4 that are not developed and areas to the southeast, but extensive areas along the western and southern sides of Area 4 would not be developed as part of this Specific Plan, and wildlife would still be able to move through these areas.

The most important avian habitats on the project site are the perennial wetlands in the former Pintail Duck Club, with seasonal wetlands receiving relatively little use by waterbirds based on *H.T. Harvey & Associates* observations to date. The loss of some seasonal wetlands due to filling and reduction in the use of some seasonal wetlands that would be surrounded or nearly surrounded by residential development would result in the loss of some potential waterbird habitat, although the Specific Plan is not expected to have a substantial effect on avian movements, either regionally or at larger (e.g., flyway-level) scales.

While Area 4 supports important aquatic habitats, particularly in the former Pintail Duck Club, these habitats have little connectivity to off-site aquatic habitats (from the perspective of aquatic species movements) since water southeast of ACFC&WCD Line D has to be pumped into Mowry Slough and water northwest of Line D enters Mowry Slough through a one-way culvert. The ACFC&WCD channels that flow into Mowry Slough, and Mowry Slough itself represent the primary aquatic movement pathways on and in the vicinity of the Specific Plan. The Specific Plan will not disrupt these pathways, and thus will have little (if any) effect on movement by aquatic species.

Within the Specific Plan, wildlife use of the remaining, undeveloped area of Area 3 is very limited because this area is surrounded by development on three sides and is occupied by intensively cultivated fields providing little cover and no water. As a result, development in the northeastern corner of Area 3 will have little effect on wildlife movement.

Because Area 4 is relatively isolated and surrounded by land uses that limit wildlife movement, development of Area 4 would not have a significant impact on the movement of wildlife regionally. Within the immediate project area, the footprint of the project will limit the movement of animals within the site, but wildlife will still be able to move through undeveloped areas and, to some extent, through the golf course.

The project may reduce the ease with which wildlife can move between portions of Area 4 that are not developed and areas to the southeast, but extensive areas along the western and southern sides of Area 4 will not be developed as part of this project, and wildlife would still be able to move through these areas. As a result, development of Area 4 will not result in a substantial reduction in regional, biologically important wildlife movements.

Implementation of the Specific Plan would not result in significant impacts associated with wildlife movement and/or wildlife corridors across the site. **(Less than Significant Impact)**

Short-term Impacts to Water Quality during Construction

The proposed Specific Plan would result in temporary impacts to water quality, especially in aquatic habitats, during construction. These impacts could occur due to soil disturbance and erosion, stockpiling of materials, generation of construction bi-products, and contamination as a result of construction equipment fuel leaks. Degradation of water quality on and downstream of the site would adversely affect foraging conditions and health of a variety of wildlife species, including harbor seals and fish (including Green Sturgeon, Longfin Smelt, and Steelhead) within Mowry Slough; aquatic invertebrates that support foraging and breeding waterbirds in the sloughs, channels or wetland habitats; and terrestrial wildlife species including rare salt marsh associated species as well as common species that use wetland habitat for drinking water, foraging, and refugia. Impacts to wildlife that will be affected by degradation of water quality related to construction would be a significant impact (in addition, see *Long-term Water Quality Impacts* below).

In Area 3, up to 77.6 acres could be graded during project implementation, potentially resulting in mobilization of dust and introduction of silt and contaminants into the aquatic habitat of ACFC&WCD Line D.

In Area 4, up to 310.3 acres of the project site could be graded during project implementation. This grading could potentially result in mobilization of dust and introduction of silt and contaminants into aquatic habitats. There is also the potential to add to construction-period water quality degradation during removal and clean-up of the auto wrecking yards in the northwest portion of Area 4.

Impact BIO-12: The proposed Specific Plan would result in significant impacts to biological resources associated with water quality impacts during construction. **(Significant Impact)**

Incorporation of the following measures will reduce biological resources impacts associated with water quality to a less than significant level:

MM BIO-12.1: Prior to the issuance of grading permits, future development projects will incorporate Best Management Practices (BMPs) for water quality to minimize impacts in the surrounding wetland environment, sloughs and channels, and the San Francisco Bay during construction. These BMPs will include numerous practices that will be outlined within the Stormwater Pollution Prevention Plan (SWPPP), but will include measures such as:

- No equipment shall be operated in live flow in any of the sloughs or channels or ditches on or adjacent to the site.
- No debris, soil, silt, sand, bark, slash, sawdust, cement, concrete, washings, petroleum products or other organic or earthen material shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into aquatic or wetland habitat.
- Standard erosion control and slope stabilization measures will be required for work performed in any area where erosion could lead to sedimentation of a waterbody. For example, silt fencing will be installed just outside the limits of grading and construction in any areas where such activities will occur upslope from, and within 50 feet of, any wetland, aquatic, or marsh habitat. This fencing shall be inspected and maintained regularly throughout the duration of construction.
- Machinery shall be refueled at least 60 feet from any aquatic habitat, and a spill prevention and response plan shall be developed and approved by the City of Newark. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

MM BIO-12.2: Soil stockpiling, equipment staging, construction access roads, and other intensively soil-disturbing activities shall not occur immediately adjacent to any wetlands that are to be avoided. The limits of the construction area shall be clearly demarcated with Environmentally Sensitive Area fencing by a qualified biologist to avoid inadvertent disturbance outside the fence during construction activities.

MM BIO-12.3: Dust suppression (e.g., using watering trucks) shall be implemented during all grading, construction, and soil stockpiling activities that have the potential to mobilize dust to keep dust from being transported to vegetated wetlands nearby. If soil stockpiles are to remain on the site for long periods of time prior to the start of grading, they shall be hydroseeded so that vegetation will suppress dust and inhibit erosion.

MM BIO-12.4: All mitigation measures for containing contamination from the auto wrecking yard removal will be followed (see *Hazardous Materials* and *Water Quality* sections of this EIR). **(Less Than Significant Impact with Mitigation)**

Long-Term Water Quality Impacts

The proposed Specific Plan may result in the degradation of water quality due to stormwater runoff from development into existing/protected wetlands and the San Francisco Bay. Water quality could be affected by an increase in the volume of stormwater runoff which increases erosion potential, the

use of fertilizers and pesticides within the development and golf course, and vehicular traffic debris/chemicals generated on parking lots and roadways.

Unlike the construction-related impacts to water quality discussed above, these impacts have the potential to be long-term and on-going. The degradation of water quality could adversely affect the quality of habitat for, and possibly the health of, both common and special-status species that will continue to use natural areas on and adjacent to the site. In addition, siltation within these habitats may change the existing vegetation community present and/or eliminate any previously undisturbed habitat that could provide suitable habitat for special-status plant species in the future. The project is unlikely to contribute substantially to long-term degradation of water quality in Mowry Slough and ACFCWCD Line D since contributions from the project would be minimal relative to contributions from the rest of these channels' large watersheds. However, due to the number of sensitive wildlife species using Mowry Slough and its marshes downstream from the site, any adverse effect on water quality could be substantial. Degradation of water quality in the long-term due to project development would be a significant impact.

Stormwater runoff from proposed residential development in Area 3 may contain landscape chemicals, roadway contaminants, and sediments, which would degrade water quality in ACFC&WCD Line D and Mowry Slough.

As in Area 3, stormwater runoff from residential development in Area 4 may contain landscape chemicals, roadway contaminants, and sediments. Runoff from the golf course could also contain fertilizers and other landscaping chemicals. These contaminants could degrade water quality in ACFC&WCD Line D, Mowry Slough, or on-site aquatic and wetland habitats.

Impact BIO-13: The proposed Specific Plan would result in significant impacts to biological resources associated with long- term water quality impacts. **(Significant Impact)**

Incorporation of the following measures will reduce biological resources associated with long- term water quality impacts to a less than significant level:

MM BIO-13.1: All development projects within the Specific Plan shall comply with the National Pollution Discharge Elimination System (NPDES) permit requirements, the Alameda County Clean Water Program standards, the City of Newark's ordinances, policies, and processes, and other applicable local, state, and federal requirements.

All development projects within the Specific Plan shall prepare a SWMP that includes post-construction water quality BMPs that control pollutant levels as required under Section C.3 of the NPDES Municipal Stormwater Permit issued by the RWQCB. Neighborhood- and/or lot-level BMPs to promote "green" treatment of storm runoff shall be emphasized, consistent with Regional Board guidance for NPDES Phase 2 permit compliance. The purpose of these measures will be to ensure that water leaving the site and entering seasonal wetland and marsh habitats, including ACFC&WCD Line D and Mowry Slough, will be of the same quality (or better) than currently enters these habitats from the site. These measures include the design and construction of features to remove particulates and contaminants from runoff.

Such features may include mechanical treatment; the use of grassy swales to capture contaminants from the golf course, landscaping or residences as water infiltrates/percolates to the surrounding wetland habitat; the use of "planter boxes" within private development to treat individual residential runoff; the use of surface materials (where practicable) to allow for infiltration on private property (including permeable driveway material); and the retention of water on the site, when possible (in addition, see *MM HYD-1.1 through 1.4* in this EIR). **(Less Than Significant Impact with Mitigation)**

3.5.3.5 *Impacts to Trees*

The implementation of the Specific Plan would result in the loss of some ordinance-size trees. Future project developer(s) would be required to apply to the City of Newark's requirement for tree removal permits prior to development. Any proposal to remove trees for a development project would be evaluated, taking into consideration the number, age, size, condition, and species of the trees. The loss of a large number of these trees would be a significant impact. Possibilities for tree preservation and suitability of transplanting appropriate trees will be considered at the time of development and shall be based upon tree sizes, health, structure, locations, and species. Although many trees currently appear to be suitable for transplantation, due to the large numbers of native and non-native trees anticipated to be removed as part of the Specific Plan, the loss of trees is a significant impact.

Impact BIO-14: The proposed Specific Plan could result in the loss of City of Newark ordinance-size trees. This is a significant impact. **(Significant Impact)**

Incorporation of the following measures will reduce ordinance-sized tree impacts to a less than significant level:

MM BIO-14.1: Implementation of the Specific Plan shall incorporate preservation of existing trees with emphasis on ordinance-size or larger native species and in good or better condition, to the maximum extent practicable, to the satisfaction of the City's Community Development Director.

MM BIO-14.2: In locations where preservation of existing trees is not feasible due to site constraints, trees to be removed by the project shall be replaced at a 3:1 ratio unless the City's Community Development Director determines that a higher ratio is required. Trees greater than 18 inches in diameter shall not be removed unless a Tree Removal Permit, or equivalent, has first been approved for the removal of such trees.

MM BIO-14.3: The species and exact number of trees to be planted on the site during the construction phase shall be determined in consultation with the City Arborist and to the satisfaction of the Community Development Director.

MM BIO-14.4: In the event the developed portion of the development site does not have sufficient area to accommodate the required tree mitigation, one or more of the following measures shall be implemented at the development permit stage:

- An alternative site(s) shall be identified for additional tree planting. Alternative sites may include local parks or schools, or installation of trees on adjacent properties for screening purposes, to the satisfaction of the City's Community Development Director.

- The size of a 15-gallon replacement tree can be increased to 24-inch box and count as two replacement trees. **(Less than Significant Impact with Mitigation)**

Implementation of the Specific Plan could result in construction in the vicinity of existing trees to be preserved. Construction activities could damage these trees. In addition, the potential for preserved trees to continue to grow and thrive could be affected by the new more intense development. This intense development could adversely affect the long-term survival of trees to remain by restricting sunlight and root growth, and/or altering groundwater conditions.

Impact BIO-15: The health of the trees to be preserved could be significantly impacted in the short-term by construction activities and in the long-term due to the proposed Specific Plan development. **(Significant Impact)**

Incorporation of the following measures will reduce tree impacts to a less than significant level:

MM BIO-15.1: Prior to the issuance of any approval or development permit, a Tree Preservation Plan shall be prepared by a certified arborist to the satisfaction of the City's Community Development Director for all areas with trees. Information in the Tree Preservation Plan shall include an inventory of all trees on the subject development sites as to size, species, and eligibility for ordinance size status. **(Less Than Significant Impact with Mitigation)**

Soil Stockpiling

Implementation of the proposed development will require a substantial amount of soil to raise the elevation on the project site. Area 3 may require up to approximately 56,000 cubic yards of fill. Area 4 will require between 1.1 and 2.1 million cubic yards of fill. As mentioned previously, it is assumed that the fill source would come from soil excavated from local major construction projects. Due the large amount of soil required, stockpiling may precede grading and construction by some undetermined period of time. Stockpiling would only occur in non-jurisdictional areas within Area 4; there are no such habitats in Area 3.

Stockpiling will not result in any new impacts than addressed above and no new mitigation measures than those identified above will be necessary for stockpiling activities. The following discussion simply clarifies which mitigation measures listed above would apply to soil stockpiling activities as well.

Permanent Loss of Seasonal Wetland, Aquatic, Freshwater Marsh, Brackish Marsh, and Detention Basin Habitat. Within Area 4, placement of soil within wetland or aquatic habitat during stockpiling activities would result in a loss of these habitats (no such habitats are in Area 3). Stockpiling will occur only in non-jurisdictional areas, in accordance with Mitigation Measure BIO-1.1. As long as this measure is followed, MM-BIO-1.2 would not be required.

Impacts of Alteration of Site Hydrology on Avoided Wetlands and Associated Species. In Area 4, if soil is stockpiled over large enough areas that drainage is changed substantially, or if drainage from a large area is directed into a single "point source" as a result of soil stockpiling, then adverse effects to wetlands and wetland species could occur (no wetlands are present in Area 3). To mitigate this impact to a less than significant level, the following measures will be implemented during stockpiling activities: MM-BIO-2.1 and MM-BIO-2.2. Mitigation measures BIO-2.3 to BIO-2.5 are not required for soil stockpiling activities.

Potential Impacts to Burrowing Owls. In either Area 3 or Area 4, individual burrowing owls could be injured or killed if occupied burrows are buried by soil or run over by hauling or earth-moving equipment during soil stockpiling activities. Stockpiling activities during the breeding season could also result in the abandonment of nests containing eggs or young if these activities occur too close to nests. To mitigate this impact to a less than significant level, the following mitigation measures will be implemented during stockpiling activities: MM-BIO-4.1, MM-BIO-4.2, MM-BIO-4.3 (to apply only if an occupied owl burrow cannot be avoided by stockpiling activities), MM-BIO-4.4, and MM-BIO-4.5A/B (to apply during stockpiling activities only if relocation of any owls is necessary).

MM-BIO-4.6 will not be required for soil stockpiling activities.

*Potential Impacts to Nesting Peregrine Falcons***.** In Area 4, if soil stockpiling occurs during the peregrine falcon breeding season (1 February through 31 August) in close proximity to an active falcon nest, stockpiling-related disturbance could potentially cause the abandonment of eggs or young (no potential peregrine falcon nest sites are present in Area 3). To mitigate this impact to a less than significant level, the following measures will be implemented during stockpiling activities: MM-BIO-5.1, MM-BIO-5.2, and MM-BIO-5.3.

Potential Impacts to Tricolored Blackbird Colonies. In Area 4, if soil stockpiling occurs during the tricolored blackbird breeding season (1 April through 31 July) in close proximity to an active breeding colony, stockpiling-related disturbance could potentially cause the abandonment of nests containing eggs and young (no soil stockpiling activities are anticipated in the southeastern part of Area 3, the only part of this planning area where there is any potential for tricolored blackbirds to breed). To mitigate this impact to a less than significant level, the following measures will be implemented during stockpiling activities: MM-BIO-6.1, MM-BIO-6.2, and MM-BIO-6.3.

Potential Impacts to Roosting Bats. It is assumed that no trees or buildings (in which bats could potentially roost) would need to be removed for soil stockpiling activities. In Area 4, however, stockpiling activities in proximity to active roosts may cause roost abandonment, and disturbance of a maternity roost to the point of abandonment could result in the mortality of young in that roost (no potential day-roost sites are present in Area 3). To mitigate this impact to a less than significant level, the following measures will be implemented during stockpiling activities:

MM-BIO-7.2 (to apply to stockpiling activities within 250 ft of any building or tree with potential for day-roosting by bats) and MM-BIO-7.3

MM-BIO-7.1 and MM-BIO-7.4 to MM-BIO-7.6 are not required for soil stockpiling activities.

Impacts to the Salt Marsh Harvest Mouse and Salt Marsh Wandering Shrew. Within Area 4, placement of soil within pickleweed-dominated habitats of the salt marsh harvest mouse and salt marsh wandering shrew during stockpiling activities would result in a loss of these habitats and

possibly impacts to individuals of these species (no such habitats are present in Area 3). Stockpiling will not, however, occur within any pickleweed-dominated habitats, in accordance with MM-BIO-8.1. As long as this measure is followed, MM-BIO-8.2 to MM-BIO-8.4 would not be required for stockpiling.

3.5.4 Conclusions

Implementation of the Specific Plan would result in the loss of upland agriculture, ruderal herbaceous field, developed, and coastal scrub habitats. These habitats are not considered to be sensitive biological habitats. **(Less than Significant Impact)**

The project would result in the loss of up to 85.6 acres of wetland/ marsh/aquatic habitat. The loss of these habitats would result in a substantial adverse affect on riparian habitat and on federally protected wetlands. Incorporation of mitigation measures (MM BIO-1.2 and MM BIO-1.2) will reduce wetland/ marsh/aquatic habitat impacts to a less than significant level. **(Less than Significant Impact with Mitigation)**

Development within Area 4 would result in significant impacts to seasonal wetlands and associated special status species due to altering the hydrology on the project site. Incorporation of mitigation measures (MM BIO-2.1 to MM BIO-2.5) will reduce seasonal wetland and associated special status species impacts to a less than significant level. **(Less than Significant Impact with Mitigation)**

The project would result in significant impacts to federally protected wetlands including salt marsh habitat and associated special status species due to an increase in freshwater flows as a result of the project. Incorporation of mitigation measures [MM BIO-3.1 (MM BIO-2.1 to MM BIO-2.5)] will reduce salt marsh habitat and associated special status species impacts to a less than significant level. **(Less than Significant Impact with Mitigation)**

The project would result in impacts to certain breeding special status species due to loss of habitat however; the loss of habitat due to the project would not have any effect on the breeding success of any of these species because they do not breed on or near the site. In addition, the number of species that would be disturbed or displaced represents only small fraction of the regional population. This impact is less than significant. **(Less than Significant Impact)**

The project would result in the loss of burrowing owl habitat, a California species of special concern, and disturbance to existing owls on-site. Incorporation of mitigation measures (MM BIO-4.1 to MM BIO-4.6) will reduce burrowing owl impacts to a less than significant level. **(Less than Significant Impact with Mitigation)**

The project would not result in significant impacts to California tiger salamanders (CTS) or their habitat due to lack of CTS use of the site or immediately adjacent areas and actively cultivated nature of the site. **(Less than Significant Impact)**

Loss of eggs or young peregrine falcons, a species protected by the Migratory Bird Treaty Act (MBTA) and threatened under the California Endangered Species Act (CESA) would result in a significant impact. Incorporation of mitigation measures (MM BIO-5.1 to MM BIO-5.3) will reduce peregrine falcon impacts to a less than significant level. **(Less than Significant Impact with Mitigation)**

The project could result in significant impacts to nesting colonies of tricolored blackbirds, a California species of special concern. Incorporation of mitigation measures (MM BIO-6.1 to MM BIO-6.3) will reduce tricolored blackbird impacts to a less than significant level. **(Less than Significant Impact with Mitigation)**

The project could result in significant impacts to nesting colonies of pallid bats, a California species of special concern, and Yuma myotis bats, a rare species in the South Bay. Incorporation of mitigation measures (MM BIO-7.1 to MM BIO-7.6) will reduce pallid and Yuma myotis bat impacts to a less than significant level. **(Less than Significant Impact with Mitigation)**

Project development would result in significant impacts due to the loss of federally and state listed endangered salt marsh harvest mouse and California species of special concern salt marsh wandering shrew individuals and habitat. Incorporation of mitigation measures (MM BIO-8.1 to MM BIO-8.4) will reduce salt marsh harvest mouse and salt marsh wandering shrew individual and habitat impacts to a less than significant level. **(Less than Significant Impact with Mitigation)**

Proposed recreational activities would impact sensitive habitats that are known to support special status species and large numbers of foraging and roosting waterbirds. The Specific Plan would result in significant impacts due to recreational activities on the site. Incorporation of mitigation measures (MM BIO-9.1 and MM BIO-9.2) will reduce special status species and sensitive habitat impacts to a less than significant level. **(Less than Significant Impact with Mitigation)**

The proposed project would indirectly impact large numbers of foraging and roosting waterbirds, including species protected by the Migratory Bird Treaty Act (MBTA) in the wetland portions of the site. Incorporation of mitigation measures (MM BIO-10.1 and MM BIO-10.2) will reduce waterbird impacts to a less than significant level. **(Less than Significant Impact with Mitigation)**

Implementation of the project would result in significant impacts to sensitive habitats and special status species due to the potential spread of non-native, invasive plant species on the site. Incorporation of mitigation measures (MM BIO-11.1 and MM BIO-11.2) will reduce native plant and wildlife species impacts to a less than significant level. **(Less than Significant Impact with Mitigation)**

Implementation of the Specific Plan would not result in significant impacts associated with wildlife movement across the site because extensive areas along the western and southern sides of Area 4 will not be developed as part of this project and will continue to allow wildlife to move through these areas. **(Less than Significant Impact)**

The proposed Specific Plan would result in significant impacts to biological resources associated with water quality impacts during construction. Incorporation of mitigation measures (MM BIO-12.1 to MM BIO-12.4) will reduce biological resource impacts to a less than significant level. **(Less than Significant Impact with Mitigation)**

The proposed Specific Plan would result in significant impacts to biological resources associated with long- term water quality impacts. Incorporation of mitigation measure (MM BIO-13.1) will reduce long- term water quality impacts to a less than significant level. **(Less than Significant Impact with Mitigation)**

The proposed Specific Plan could result in the loss of City of Newark ordinance-size trees. Incorporation of mitigation measure (MM BIO-14.1 to MM BIO-14.4) will reduce ordinance-size tree impacts to a less than significant level. **(Less than Significant Impact with Mitigation)**

The health of the trees to be preserved could be significantly impacted in the short-term by construction activities and in the long-term due to the proposed Specific Plan development. Incorporation of mitigation measure (MM BIO-15.1) will reduce tree impacts to a less than significant level. **(Less than Significant Impact with Mitigation)**

3.6 CULTURAL RESOURCES

The following discussion is based primarily upon an archaeological investigation titled, "Summary of Findings of Mechanical Subsurface Presence/Absence for Historic and Prehistoric Cultural Resources inside Areas 3 and 4 Development" prepared by *Holman & Associates* in November 2008. This archaeological investigation is being kept in administrative confidence since the archeological investigation discloses location of specific archaeological sites that could be vandalized or destroyed if their locations were made known.[38]

3.6.1 Regulatory Overview

Public Resources Code 21083.05 and the CEQA Guidelines provide detailed direction on the evaluation of and requirements for avoiding or mitigating significant impacts to historical and archaeological resources. CEQA Guidelines Section 15064.5(b)(4) states that a lead agency shall identify mitigation measures and ensure that the adopted measures are fully enforceable through permit conditions, agreements, or other measures. In addition, Guidelines Section 15126.4(b)(3) states that public agencies should, whenever feasible, seek to avoid damaging effects on any historical resources of an archaeological nature. Preservation in place is the preferred manner of avoiding impacts to archaeological sites, although data recovery through excavation is acceptable if preservation is not feasible. If data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provisions for adequately recovering the scientifically consequential information from and about the historic resource, needs to be prepared and approved by the City prior to any excavation being undertaken.

Paleontological resources are non-renewable scientific resources and are protected by several federal and state statutes, most notably the 1906 Federal Antiquities Act (which applies to federal properties only) and subsequent federal legislation and policies, and by the California Environmental Quality Act (CEQA Section 15064.5). Public Resources Code (PRC) Sections 5097.5/5097.9 would apply only if the project required land owned by the state. There are no Alameda County or City of Newark regulations that would apply to paleontological resources, but it is notable that the County is host to the University of California Museum of Paleontology at Berkeley (UCMP), the state's premier repository for paleontological specimens in central and northern California.

Professional standards for the assessment and mitigation of environmental impacts on paleontological resources have been established by the Society of Vertebrate Paleontology (SVP, 1995). The SVP describes the likelihood that a particular geologic unit or a particular area supports significant paleontological resources as its sensitivity for paleontological resources. Sensitivity is evaluated as high, low, or undetermined, and SVP's recommended treatment to ensure adequate and appropriate protection of the resources depends on the identified level of sensitivity.

3.6.2 Cultural Setting

3.6.2.1 *Paleontological Overview*

Paleontological resources (fossils) are the remains or traces of prehistoric animals and plants. Ancient marine sediments may contain invertebrate fossils such as snails, clam and oyster shells, sponges and protozoa; and vertebrate fossils such as fish and sea lion bones. Fossil vertebrate land

[38] This report is available for viewing at the City of Newark Community Development Department on a "need to know basis" or by qualified persons approved by the City of Newark.

animals may include bones of reptiles, birds, and mammals. Paleontological resources also include plant imprints, petrified wood, and animal tracks.

Areas 3 and 4 are located within a gentle southwest-sloping alluvial plane and the area is mapped as being underlain by either Holocene (present to 10,000 years ago) or late Pleistocene alluvial fan and/or Bay Mud deposits, most of which have been deposited by the nearby Alameda Creek. According to mapping of the California Geological Survey (2003), the majority of Area 3 is mapped as Holocene alluvial fan deposits (Qhff), with a small area in the southwest corner of Area 3 mapped as Late Pleistocene to Holocene alluvial fan levee deposits (Ql). Area 4 is mapped as primarily Holocene San Francisco Bay Mud (Qhbm), with a small area at the north end of Area 4 mapped as Holocene alluvial fan deposits (Qhff). The levees of Area 4 are mapped as Artificial levee fill (alf).

The latest Pleistocene to Holocene alluvial fan levee deposits are considered likely to contain vertebrate fossils, because California's Pleistocene alluvium commonly contains vertebrate materials. Fossil remains of plant and land animals have been found at a number of sites in younger alluvial deposits in Alameda County both north and west of the project. Because of its potential to contain vertebrate fossils, the small Ql unit on Area 3 is considered to have high sensitivity for paleontological resources.

Many paleontologists consider Holocene biologic remains too young to qualify as fossils in the strict sense. Using this definition, the Holocene units of the project area are too young to contain fossils; for example, bay mud has been known to contain Holocene aged molluscan fossils, but such fossils are not considered significant. Consequently, the paleontological sensitivity of these units is considered low for the majority of Areas 3 and 4.

3.6.2.2 *Archaeological Overview*

The proposed Areas 3 and 4 Specific Plan is located in an area of high archaeological sensitivity. The project vicinity would have provided a favorable environment during the prehistoric period with riparian, bay, and inland resources available to the aboriginal population. Numerous small and large size sites, including major villages occupied during the past 5,000 years, are within several miles of the project site. There are also prehistoric sites recorded on and adjacent to the Specific Plan area.

Native American Consultation

As part of the cultural resources assessment completed for the project, a Sacred Lands File check at the Native American Heritage Commission (NAHC) was completed in accordance with Senate Bill SB 18. SB 18 is the state law that requires cities and counties to contact and consult with California Native American Tribes before adopting or amending a General Plan, or when designating land as Open Space, for the purpose of protecting Native American Cultural Places. The California Native American Heritage Commission retains a Sacred Lands File as well as maintaining a list of Native American tribe representatives for consultation.

In April 2008, a request was made of the NAHC to check their Sacred Lands File for cultural resources inside the project area. In a letter dated May 2008, the NAHC replied that there was no record of cultural sites, and forwarded a list of local Native American consultants to contact. In June 2008, letters were sent to each individual on the list requesting information about the project area. A total of two responses were received and they expressed concern that the project may contain

unrecorded resources. One of the NAHC Native American consultants was retained to monitor the backhoe trenching which began in September 2008, as described below.

Areas 3 and 4 Archaeological Resources

Due to the high archaeological sensitivity of the project area, in September and October of 2008 a program of mechanical subsurface presence/absence testing was completed to search for buried prehistoric and historic archaeological resources inside the Sub-Areas A, B, and C. Earlier archaeological survey work, archival research, and limited excavation done on a nearby property strongly suggested that the Specific Plan area had the potential to contain buried prehistoric cultural resource deposits. Presence/absence trenching activities were limited to the proposed improvement areas. During the course of trenching unique archaeological resources, including Native American human burials were found. In addition to the human remains the following cultural features were encountered: shell feature consisting of native shell (clam, mussel and fresh water snail/Cerithidea), crab clay, shell midden with a complete pestle, multiple chert flakes, concentration of rocks a surrounded by extremely diffuse shell, fire cracked rock, and charcoal

Unique archaeological resources are defined [PRC 21083.2(g)] as an archaeological artifact, object, or site that meets any of the following criteria: 1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information; 2) Has a special and particular quality such as being the oldest of its type or the best available example of its type; 3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Human remains were encountered on September 25th, 2008 while trenching in Area 4. The NAHC was contacted by the professional archaeologist reporting the discovery. All remains were covered and left in place as recommended by the Native American monitor. All trenching operations were completed in the presence of the designated Native American monitor utilizing a 36-inch toothed bucket mounted on an excavator. Most of the trenches were cut to depths of less than four feet due to the presence of a very high water table. The lengths, depths, and soil descriptions are included in the logs. In those cases where cultural materials and/or human remains were encountered, trenching was immediately stopped and then moved well away from the initial discovery to prevent additional damage from the excavator.

Follow-up calls to the NAHC by the professional archaeologist certified by the Register of Professional Archaeologists (RPA) resulted in the assignment of the Most Likely Descendant (MLD) duties to the Native American monitor by the NAHC during the first week of October. Upon assumption of the MLD duties, the Native American monitor turned over monitoring responsibilities to a different Native American monitor for the remainder of the field testing done in October. To date all human remains found during backhoe testing have been covered and left in place in their original locations.

3.6.2.4 *Historic Overview*

The Areas 3 and 4 Specific Plan is located in the present day area of Washington Township, which includes the towns of Fremont, Union City, and Newark. This area was traversed by several Spanish exploring parties between the discovery of San Francisco Bay by the Spanish in 1769 and the establishment of Mission San Jose in 1797. When Mexico broke away from Spanish control in 1822, the area was under the control of Mexican governors. After becoming governor of Alta California in

1836, Juan Bautista Alvarado began dividing up the lands of Mission San Jose to friends and associates. On March 23, 1844, a large land grant was made to Augustine Alviso and his brother-in-law, Thomas Pacheco. This grant, the Rancho Potrero de Los Cerritos grant, included the entire City of Newark including Areas 3 and 4, and what is now the Alvarado District of Union City, Centerville and Irvington Districts of Fremont. After California became part of the United States in 1848, American settlers began arriving in great numbers.

Among the first to settle in the Newark area was Origin Mowry, who in 1850 establish Mowry's Landing, for a time known as Mowry's Creek. Landings such as Mowry's, as well as Mayhew's Landing to the north, provided the main source of commerce to the area. The completion of the railroad encouraged additional development in Newark. The first farm crops in the general area, along with livestock from more inland ranches, were shipped via the South Pacific Coast Railroad.

By 1880, Newark had a population of 200 and had reached its peak as a railroad town. In 1887, the Southern Pacific took over the operations of the South Pacific Coast Railroad. In 1909, construction of the first Bay bridge crossing was completed, connecting freight trains from Newark to Redwood City and, ultimately, all the way from Niles to San Francisco.

Focused archival research completed for the Specific Plan produced information regarding historic settlements, in particular the historic location of Mowry Landing. The former landing site is not a part of the current Areas 3 and 4 Specific Plan and will not be affected by the proposed development plans.

There are no designed historic resources or structures eligible for either the California or National Register of Historic Resources located on or adjacent to the Specific Plan site.

3.6.3 Cultural Resources Impacts

3.6.3.1 *Thresholds of Significance*

For the purposes of this EIR, based upon Appendix G of the CEQA Guidelines, a cultural resources impact is considered significant if the project will:

- directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- cause a substantial adverse change in the significance of an archaeological resources as defined in CEQA Guidelines Section 15064.5; or
- disturb any human remains, including those interred outside of formal cemeteries; or
- cause of substantial adverse change in the significance of a historic resource as defined in CEQA Guidelines Section 15064.5.

3.6.3.2 *Paleontological Resource Impacts*

There is a potential for the latest Pleistocene to Holocene alluvial fan deposits in the southeast corner of Area 3 to contain plant and/or vertebrate fossils. As noted previously, the Holocene age alluvial deposits and bay mud that cover the bulk of Area 3 and all of Area 4 are considered too young and, therefore, have low paleontological sensitivity.

The southeast corner of Area 3 has been previously disturbed through prior agricultural activities. Excavation that affects sediments that have been previously disturbed would have low paleontological sensitivity; however potential impacts could result with excavation into previously undisturbed sediments.

Impact CUL-1: Implementation of the proposed Areas 3 and 4 Specific Plan may impact paleontological deposits through excavation of previously undisturbed alluvial sediments. **(Significant Impact)**

MM CUL-1.1: The following measures shall be completed during all development activities that include excavation or disturbance of existing ground surfaces, installation of utility lines, or other subsurface trenching.

If paleontological resources are discovered during project activities, all work within 25 feet of the discovery would be redirected and a qualified paleontologist contacted to assess the finds, consult with agencies as appropriate, and make recommendations regarding the treatment of the discovery. Project personnel would not move or collect any paleontological resources. If adverse effects to paleontological resources cannot be avoided, they would be assessed to determine their significance. If the resources are not significant, avoidance is not necessary. If the paleontological resources are significant, they would need to be avoided, or adverse effects must be mitigated. Treatment would be consistent with SVP guidelines and may include preparation and recovery of fossil materials so that they can be housed in an appropriate museum or university collection.

Upon completion of the assessment, the paleontologist would prepare a report documenting the methods and results and provide recommendations for the treatment of the paleontological resources discovered. This report would be submitted to the Director of the City Community Development Department. Recovery of fossil remains and associated specimen data and corresponding geologic and geographic site data would reduce impacts to a less than significant level. **(Less Than Significant Impact with Mitigation)**

3.6.3.3 *Archaeological Resources Impacts*

The mechanical subsurface presence/absence testing completed on the project site yielded abundant evidence of Native American use of the area including cultural resource deposits and Native American human remains were encountered where development is anticipated.[39]

According to the CEQA Guidelines Section 15064.5, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historic Resources (Public Resources Code Section 5024.1 Title 14 CCR, Section 4852) including the following:

[39] Specific locations and details are not provided in this discussion, as unrestricted access to this information could cause damage to these resources.

Criterion 1 (Events/Patterns of History): Resources that are associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.

Criterion 2 (Person/People): Resources that are associated with the lives of persons important to local, California, or national history.

Criterion 3 (Architecture): Resources that embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of a master, or possess high artistic values.

Criterion 4 (Information Potential): Resources or sites that have yielded or have the potential to yield information important to the prehistory or history of the local area, California or the nation.

The human remains and cultural artifacts found on the site do not appear to be eligible for listing in the California Register under Criteria 1-3.

It does appear that the cultural deposits found on the site, are eligible for listing in the California Register under Criterion 4 for the reasons described below. Human remains and associated grave goods are the single most significant source of information in the typical Native American archaeological site. The burials contain dietary information and evidence of trauma and other diseases, and the associated grave goods contain information about economic trade patterns, level of food gathering technology, and abundant information about social ranking in the form of status items (adornments of stone, bone, or shellfish) associated with the burials themselves. Therefore, for the reasons discussed above the human remains and cultural deposits appear to be eligible for listing in the California Register under Criterion 4.

The next step in determining historic significance is the concept of site integrity. Integrity is defined as: "the authenticity of an historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance."[40]

The significance of an archaeological site can be degraded if it can be demonstrated that the site has been historically disturbed, thus reducing the value of the general archaeological contents. Lack of site integrity is not grounds for an archaeological site to be found ineligible for inclusion on either the California Register or National Register. Human burials, in particular when it can be demonstrated that the bones remain articulated, are proof that the archaeological site retains its integrity. The cultural resources on the project site appear to be intact and retain high degrees of integrity. This enhances their eligibility for both the state and National registers.

Based upon the discovery of human remains and cultural artifacts found through survey work on the Specific Plan site, it appears that there are large intact archaeological deposits containing human burials eligible for the state and national registers which will be impacted by the project.

While there is always the possibility that the burials and cultural features are isolated and not associated with a larger habitation site, the professional opinion of the project archaeologist is that it is highly unlikely in this case, due to the presence of shellfish remains at all locations; and other

[40] California Code of Regulations Title 14, Chapter 11.5.

indicators such as faunal bone, stone artifacts, and the human burials argue against this. It is assumed that additional testing work recommended in this report will aid in defining the aerial extent of these cultural deposits, confirming that they were Native American habitation sites similar to the materials and information gained in the other nearby sites.

Further aerial definition of the site was not attempted because the backhoe work completed for this report was finished just before the season's rains started, which have since made it impossible to move mechanical equipment around the site. The water table, already shallow, also has probably risen due to winter rains, a condition which would make it hard to impossible to completed credible backhoe testing. Lastly, the observations of the backhoe trenching operations have unfortunately not yielded sufficient data to allow for a completely distinct aerial characterization of cultural deposit (midden) by mechanical equipment.

Additional hand excavation is necessary to 1) better understand the composition of the cultural deposits, and 2) to provide the information necessary to evaluate the eligibility of the deposits for inclusion on the California Register of Historic Resources (CRHR) and the National Register of Historic Places (NRHP). Recommendations for evaluation and mitigation of impacts to these resource areas which may be caused by future development area discussed below.

In conclusion, the research done to date suggests that Areas 3 and 4 contain as many as three areas which may contain unique archaeological resources, as evidenced by the burials in what appear to be midden matrixes, and two additional cultural features similar to those already excavated nearby the project area. Based upon a recent review of planned development envelope, all of the cultural resources will be affected by the project in some manner, either directly by soils removal, or by a combination of grading, compaction and fill import needed to raise the residential areas above flood levels. All of the burials and the cultural features are shallow enough that they will be damaged by whatever form of earthmoving and/or site compaction is used to prepare the areas for housing or the proposed golf course.

Both Areas 3 and 4 will require a substantial amount of fill and compaction of soil and disturbance of existing soils during grading, utility trenching including any modifications of PG&E towers, which will significantly impact known buried cultural resources. This is a significant impact.

Impact CUL-2: Implementation of the proposed Areas 3 and 4 Specific Plan will impact unique archaeological resources and disturb human remains, including those interred outside of formal cemeteries through compression of soils and excavation of existing soils. **(Significant Impact)**

MM CUL-2.1: The following mitigation measures shall be completed prior to issuance of a grading permit and prior to any earth moving activities in those areas of the Specific Plan already identified as potentially containing archaeological resources based upon the research and survey work completed by *Holman & Associates*.

- A limited program of hand excavation shall be undertaken by a professional archaeologist certified by the Register of Professional Archaeologists (RPA) at the locations of the three burials and two cultural features to provide the following information:

- Verify the presence of midden soils. Hand excavation will verify this, and will provide the researchers with the information needed to determine the aerial extent of the deposits.

MM CUL-2.2: Prior to any future development in areas identified as potentially containing archeological resources based upon the research and survey work completed by *Holman & Associates* or areas for which any additional information has been gathered through hand excavations under MM CUL-2.1, plans shall be designed to avoid impacting known cultural resources.[41] Development plans shall be reviewed and approved by a professional archaeologist certified by the RPA and the City of Newark to ensure the known resources have been adequately avoided. Final mitigation recommendations shall depend on the amount and nature of earthmoving activities which will occur inside those areas which are mapped as intact archaeological deposits after completion of the hand excavation program described above. For example, mitigation of impacts to archaeological deposits found inside the proposed golf course area may possibly be achieved simply by redesigning the course in proximity to the borders of the archaeological deposit, as determined by the professional archaeologist's hand excavation and subsequent mechanical subsurface presence/absence testing program.

MM CUL-2.3: All grading and/or construction activities shall, to the extent feasible, avoid all areas identified as potentially containing archeological resources based upon the research and survey work completed by *Holman & Associates* or areas for which any additional information has been gathered through hand excavations under MM CUL-2.1. However, to the extent that these areas cannot be avoid, then mitigation for burial resources shall be achieved through either preservation in place pursuant to CEQA Guidelines Section 15126.4(B)(3)(a) or a program of data recovery pursuant to CEQA Guidelines Section 15126.4(B)(3)(c) combining limited hand excavation to retrieve significant archaeological data and material and to remove the known human remains to protect them from additional damage. This program shall be designed by a professional archaeologist and reviewed and approved by the City of Newark. Depending on the findings of the proposed evaluative hand excavation, a data retrieval program may also be done by carefully stripping those areas where additional cultural materials are expected utilizing heavy equipment under the direction of an professional archaeologist. Soils would be removed to the depth of the archaeological deposit in selected areas (a percentage of the anticipated deposit). In the event, that archaeological materials and in particular, human burials, are encountered extending out of the areas designated for stripping, additional data retrieval work shall be required.

MM CUL-2.4: The following measures shall be completed during all development activities that include excavation or disturbance of existing ground surfaces, installation of utility lines, or other subsurface trenching:

[41] It should be noted that "capping" or covering the known archaeological resources would not mitigate the impacts to cultural resources because all grading activities, placement of fill, and compaction of the soil would crush and destroy the known cultural resource deposits.

- A professional archaeological monitor certified by the RPA shall monitor with authority to direct and halt earthmoving activities as deemed necessary by the monitor, if and when cultural materials area encountered. In accordance with CEQA Guidelines Section 15064.5(f), if any previously unknown historic or prehistoric resources are discovered during grading, trenching, or other on-site excavation, earthwork within 100 feet of these resources shall be stopped until the professional archaeologist has an opportunity to evaluate the significance of the find and suggest appropriate mitigation as determined necessary to protect the resource. In the event that Native American human remains or funerary objects are discovered, the provisions of the California Health and Safety Code shall be followed. Section 7050.5(b) of the California Health and Safety Code states:

    - In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of Section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code.

Based upon the current known extent of unique cultural materials on the site, it is unlikely that total avoidance of impacts is possible with implementation of the proposed Specific Plan. While incorporation of the above measures will partially reduce the cultural resources impact, the overall implementation of the Specific Plan will destroy archaeological deposits through placement of fill and soil compression and, therefore, result in a significant unavoidable impact. (**Significant Unavoidable Impact)**

3.6.3.4 *Historic Resources Impacts*

As described in Section 3.6.2.4, the archival research located information regarding historic settlements, in particular the historic location of Mowry Landing. The former landing site is not a part of the current Areas 3 and 4 Specific Plan and will not be affected by the proposed development plans. There are no designed historic resources or structures eligible for either the California or National Register of Historic Resources located on or adjacent to the Specific Plan site. The demolition of buildings on the project would not constitute an impact on historic resources. **(No Impact)**

3.6.4 Conclusion

Implementation of the proposed Specific Plan would not result in significant impacts to historic cultural resources since there are no historic resources within or adjacent to the project site that would be impacted by development. **(No Impact)**

Paleontological resources may be within the project site. If on site, the proposed development could adversely impact such cultural resources. Implementation of the measures described above will mitigate this impact to a less-than-significant level. **(Less Than Significant Impact with Mitigation)**

Implementation of the proposed Specific Plan will significantly impact archeological resources and disturb human remains, including those interred outside of formal cemeteries. While incorporation of the above measures will partially reduce the cultural resources impact, the overall implementation of the Specific Plan will destroy archaeological deposits through placement of fill and soil compression and, therefore, result in a significant unavoidable impact. (**Significant Unavoidable Impact)**

3.7 GEOLOGY AND SOILS

The following discussion is based upon a Geotechnical Feasibility Evaluation prepared by *Cornerstone Earth Group* in June 2008. This report is provided in Appendix F of this document.

3.7.1 Regulatory Overview

All development proposed by the Areas 3 and 4 Specific Plan would be subject to the following state laws and regulations intended to reduce impacts from geologic hazards.

3.7.1.1 *State Alquist-Priolo Earthquake Fault Zoning Act*

California's Alquist-Priolo Earthquake Fault Zoning Act (P.R.C. Sec. 2621 et seq.), originally enacted in 1972 as the Alquist-Priolo Special Studies Zones Act, is intended to reduce the risk to life and property from surface fault rupture during earthquakes. The Alquist-Priolo Act prohibits the location of most types of structures intended for human occupancy across the traces of active faults and strictly regulates construction in the corridors along active faults (Earthquake Fault Zones). It also defines criteria for identifying active faults, giving legal weight to terms such as active, and establishes a process for reviewing building proposals in and adjacent to Earthquake Fault Zones. Under the Alquist-Priolo Act, faults are zoned and construction along or across them is strictly regulated if they are "sufficiently active" and "well-defined." A fault is considered sufficiently active if one or more of its segments or strands shows evidence of surface displacement during Holocene time (defined for purposes of the Alquist-Priolo Act as referring to approximately the last 11,000 years). A fault is considered well defined if its trace can be clearly identified by a trained geologist at the ground surface or in the shallow subsurface, using standard professional techniques, criteria, and judgment.

3.7.1.2 *Seismic Hazards Mapping Act*

Like the Alquist-Priolo Act, the Seismic Hazards Mapping Act (SHMA) of 1990 (Public Resources Code, Chapter 7.8, Section 2690-2699.6) is intended to reduce damage resulting from earthquakes. The SHMA directs the Department of Conservation, California Geological Survey to identify and map areas prone to earthquake hazards of liquefaction, earthquake-induced landslides and amplified ground shaking. The purpose of the SHMA is to reduce the threat to public safety and to minimize the loss of life and property by identifying and mitigating these seismic hazards. The SHMA was passed by the legislature following the 1989 Loma Prieta earthquake.

Staff geologists in the Seismic Hazard Mapping Program gather existing geological, geophysical and geotechnical data from numerous sources to compile the Seismic Hazard Zone Maps. They integrate and interpret these data regionally in order to evaluate the severity of the seismic hazards and designate Zones of Required Investigation for areas prone to liquefaction and earthquake–induced landslides. Under the Seismic Hazards Mapping Act, permit review is the primary mechanism for local regulation of development. Cities and counties are required to use the Seismic Hazard Zone Maps in their land use planning and building permit processes. The SHMA requires site-specific geotechnical investigations be conducted identifying the seismic hazard and formulating mitigation measures prior to permitting most developments designed for human occupancy within the Zones of Required Investigation.

3.7.1.3 *California Building Standards Code*

The State of California's minimum standards for structural design and construction are given in the California Building Standards Code (CBSC) (24 CCR). The CBSC is based on the UBC (International Code Council 1997), which is used widely throughout United States (generally adopted on a state-by-state or district-by-district basis) and has been modified for California conditions with numerous, more detailed, or more stringent regulations. CBSC requires that "classification of the soil at each building site shall be determined when required by the building official" and that "the classification shall be based on observation and any necessary test of the materials disclosed by borings or excavations." In addition, the CBSC states that "the soil classification and design-bearing capacity shall be shown on the (building) plans, unless the foundation conforms to specified requirements." The CBSC provides standards for various aspects of construction, including but not limited to excavation, grading, and earthwork construction; fills and embankments; expansive soils; foundation investigations; and liquefaction potential and soil strength loss. In accordance with California law, certain aspects of the action would be required to comply with all provisions of the CBSC.

The City of Newark Building Division of Public Works regulates construction activities on all properties in the community, including enforcement of grading and seismic safety regulations. The City enforces the most recent seismic safety standards for construction contained in the CBSC. The UBC regulates that design, construction, control of excavation, grading, and earthwork. In accordance with the General Plan, the City adopts the periodic revisions of the CBSC as required by the State. All grading and building plans for the Specific Plan project will be completed in accordance with the latest CBSC edition.

3.7.1.4 *City of Newark General Plan*

Various policies in the City's General Plan have been adopted for the purpose of avoiding or mitigating geologic impacts resulting from planned development within the City. All future development addressed by this EIR will be subject to the biological resources policies listed in the City's General Plan, including the following:

Open Space and Conservation Goals and Policies

GOAL 1. Policy b. Encourage private property owners to preserve unique open space areas and natural features on their lands.

Program 11. Avoid development of any lands identified as having natural hazards where potential risk cannot be reduced to acceptable levels through mitigation measures (e.g., flood hazards areas, lands with severe potential for earthquake shaking, liquefaction, etc.).

Environmental Safety Goals and Policies

GOAL 1. Policy a. Establish and enforce development regulations and building code requirements to protect residents and workers from flooding, liquefaction, earthquake, fire, and other hazards.

Program 3. Prohibit development in any area where it is determined that the potential risk from natural hazards cannot be mitigated to acceptable levels.

3.7.2 Existing Setting

San Francisco Bay is a northwesterly trending structural depression that lies along the boundary of the Pacific and North America tectonic plates. The Bay is within the Coast Ranges geomorphic province of California, which is characterized by a series of nearly parallel mountain ranges. Active faults, including the San Andreas, Hayward, and Calaveras Faults, roughly parallel the western and eastern limits of the Bay. The Bay began forming during the Pleistocene Epoch, approximately two million years ago, the San Francisco-Marin block began to tilt eastward along the Hayward Fault. The eastern side of the block became a depression and filled with sediment and water.

The Franciscan Formation is west of the Hayward Fault, and is exposed in the hills along the Peninsula. East of the Hayward Fault, a thick sequence of Tertiary age sandstones and shales of the Great Valley Sequence overlies the Franciscan Formation. Along the eastern shoreline of the Bay, layers of Quaternary-age alluvial sediments mantle the Franciscan Formation. Since Cretaceous time, the Bay Area has undergone numerous episodes of faulting and folding. As such, rock units exposed along fault zones are typically sheared and highly weathered.

3.7.2.1 *Areas 3 and 4 Topography*

Specific Plan Areas 3 and 4 lie just east of the former tidal marshes of the San Francisco Bay. Based on historic topographic maps, the marshes west of the railroad tracks were subject to tidal influences until Mowry Slough and nearby areas were diked in the early 1900's to create salt ponds west of the slough. Prior to creating the dikes, numerous narrow, shallow, tidally influenced channels meandered through Area 4.

Site grades on Area 3 generally range from elevation 15 to 18 feet. The site is relatively flat and appears to slope gently towards the southwest.

Site grades on Area 4 generally range from approximately elevation 0 to 10 feet. The site is relatively flat and appears to slope gently towards the southwest. Mowry slough borders the southwest side of Area 4. The slough is flanked by man-made levees. The levees appear to be roughly five to eight feet high, with side slopes ranging from 1:1 to 2:1 (horizontal:vertical). Alameda County Flood Control and Water Conservation District (ACFC&WCD) flood control channels also bisect the northwest and border the southeast portions of Area 4. A shallow remnant slough extends onto the southern portion of the site that is tidally influenced.

3.7.2.2 *Areas 3 and 4 Geology*

Soils

Areas 3 and 4 are located within a gentle southwest-sloping alluvial plane. The area is underlain by Holocene or late Pleistocene alluvial fan and Bay Mud deposits, most of which were deposited by the nearby Alameda Creek. Bay Mud deposits are generally located in the flat-lying region that borders the San Francisco Bay and associated sloughs. Holocene alluvial fan deposits in the project area generally consist of interbedded clays, silts, sands and gravels of varying thickness and composition.

Area 3

Based on a review of available geologic maps and collected subsurface soil data Area 3 is generally underlain by native alluvial fan deposits consisting of interbedded clay, silt, and sand with varying amounts of gravel. Cone Penetration Tests (CPT-5, CPT-6, and CPT-7) completed in this area encountered medium stiff to stiff silty/sandy clay and sandy/clayey silt to depths ranging from 24 to 34 feet. The upper clay and silt is underlain by interbedded loose to dense sand, silty sand, and clayey sand to the maximum depth explored at 50 feet.

Area 4

The subsurface data collected by *Cornerstone Earth Group* in Area 4 included seven CPTs (CPT-1 through CPT-4 and CPT-8 through CPT-10) and two exploratory borings (EB-5 and EB-6). Based on a review of available geologic maps and collected subsurface soil data , the proposed Area 4 residential area is generally underlain by native alluvial fan deposits consisting of interbedded silty clay, clayey and sandy silt, and localized sand layers. The upper three to four feet of the upper clay is desiccated due to previous drying; therefore, it is generally medium stiff to stiff and is considered relatively incompressible. Below the desiccated zone, the borings and Cone Penetration Tests completed in Area 4 encountered soft to medium stiff, moderately compressible silty clay to depths of 18 to 22 feet. The near-surface clayey soils within Area 4 exhibit moderate to high plasticity and shrink/swell potential when subject to wetting and drying cycles. In addition, near-surface clay soils are anticipated to be poorly drained.

The upper silty clay is generally underlain by interbedded medium stiff to stiff silty clay and clayey silt to the maximum depth explored at 46.5 feet, except in Boring EB-1, where interbedded loose to dense silty sand and sandy gravel was encountered between a depth of approximately 20 to 42 feet. The above discussed borings were drilled in Area 4 to determine the potential extent of soft, compressible Bay Mud and the characteristics of potentially liquefiable soils within the proposed residential area. Based on review of the borings and laboratory data, the subsurface conditions were relatively consistent with those encountered in the cone penetration tests; however, the upper alluvial soil was found to be over-consolidated and only moderately compressible when compared to typical young Bay Mud deposits. The moisture content of the upper alluvial clay ranged from approximately 20 to 40 percent at depths ranging from four to 25 feet. The dry density of these clays generally ranged from 88 to 115 pounds per cubic foot. Further discussion of the compressibility of the upper silty clay layer is explained below in this section. It should be noted that localized deposits of highly compressible Bay Mud may be present on the western portion of Area 4 and gradually increase in thickness towards the west-southwest.

Mowry Slough Levees

In the early 1900's, levees were constructed bordering Mowry Slough and nearby areas to create salt ponds. Prior to levee construction, marshes on the western portion of the Area 4 were subject to tidal influences, and numerous narrow, shallow channels were on-site. The levees were not likely constructed to modern compaction standards.

Seismicity

The San Francisco Bay Area is one of the most seismically active regions in the United States. An earthquake of moderate to high magnitude generated within the San Francisco Bay region could cause considerable ground shaking at the project site. According to the U.S. Geological Survey's Working Group on California Earthquake probabilities, there is a 62 percent chance of at least one magnitude 6.7 earthquake occurring in the Bay Area region between 2003 and 2032. The degree of shaking at the site is dependent on the magnitude of the event, the distance to its zone of rupture and local geologic conditions.

The three major fault lines in the region are the San Andreas Fault, the Calaveras Fault, and the Hayward Fault, all of which run north/south. The San Andreas Fault is approximately 14.5 miles west of Area 3 and 4, the Calaveras Fault is approximately 8 miles east of Area 3 and 4, and the Hayward Fault is approximately 4.3 miles east of Area 3 and 4. The site is not within a State-designated Alquist-Priolo Earthquake Fault Zone and there are no known fault traces that cross the site. Therefore, fault rupture is not a significant geologic hazard at the site.

Liquefaction

Liquefaction is a phenomenon in which a soil located below the groundwater surface loses a substantial amount of strength due to strong earthquake ground shaking. Recently deposited (geologically young) and relatively loose natural soils and uncompacted or poorly compacted fills are potentially susceptible to liquefaction. Dense natural soils and well-compacted fills have low susceptibility to liquefaction, while clayey soils and bedrock generally are not subject to liquefaction.

Consequences of liquefaction include vertical settlement, lateral displacement, loss of load bearing capacity for foundations, increased lateral loading on structures, and floatation of lightweight structures embedded in soil that liquefies.

Areas 3 and 4 are located within a State-designated Liquefaction Hazard Zone. Preliminary liquefaction analyses indicate that there is a high potential for liquefaction of localized sand and low plasticity silt and clay layers during a significant seismic event in both Areas 3 and 4. Although the potential for liquefied sands to vent to the ground surface through cracks in the surficial soils is relatively low, the analysis indicates that liquefaction-induced settlement on the order of one-half to four inches could occur in localized areas, resulting in differential settlement up to two inches over a horizontal distance of 50 feet. The potential for liquefaction appears to be more wide-spread in Area 3, where the sand layers are more uniform and consistent, and more isolated in Area 4, where the sands are associated with isolated former drainage channels.

Lateral Spreading

Lateral spreading is horizontal/lateral ground movement of relatively flat-lying soil deposits towards a free face such as an excavation, channel, or open body of water. Lateral spreading is typically associated with liquefaction of one or more subsurface layers near the bottom of the exposed slope.

An ACFC&WCD drainage channel bisects the northern portion of Areas 3 and 4. The channel is approximately five to eight feet deep, and shallow layers of potentially liquefiable soils may be adjacent to the channel as shallow as five to ten feet. If localized shallow layers of potentially liquefiable soils are near the channel, the potential for localized lateral spreading towards the ACFC&WCD channel is considered moderate to high.

Area 4 is bounded by Mowry Slough to the southwest. Although the bottom of the slough is less than 10 feet deep, there may be a potential for lateral spreading to occur if shallow, liquefiable soils are encountered in the vicinity.

Compressible Soils

Based on exploratory borings in Area 4, the proposed development area is underlain by up to 20 feet of soft to medium stiff moderately compressible silty clay known as Bay Mud. Preliminary settlement analyses were completed to estimate future long-term settlement due to fill placement. Preliminary estimates indicate that long-term consolidation settlement will occur on the order of one inch for each foot of new fill within the development portion of Area 4. The rate of settlement is estimated to be approximately two to three years for 50 percent consolidation, and 10 to 15 years for 90 percent consolidation.

Area 3 is not subject to the compressible Bay Mud soils, since it is at a higher elevation and is underlain by older, stiffer, alluvial deposits.

3.7.2.2 *Areas 3 and 4 Groundwater*

Fluctuations in groundwater levels occur due to many factors, including underground drainage patterns and regional and seasonal fluctuations. In the Area 3 vicinity, seasonal and/or historical high groundwater levels are expected to be five to 10 feet below the ground surface. In Area 4, historic high groundwater is anticipated to be less than five feet below existing site grades.

3.7.3 Geology and Soils Impacts

3.7.3.1 *Thresholds of Significance*

For the purposes of this EIR, based upon Appendix G of the CEQA Guidelines, a geologic impact is considered significant if the project will:

- Expose people or structures to substantial adverse effects including the risk of loss, injury or death involving:
  - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State geologist for the area or based on other substantial evidence of a known fault,
  - Strong seismic ground shaking,
  - Seismic-related ground failure, including liquefaction, or

  - Landslides.
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse; or
- Be located on expansive soil, creating substantial risks to life or property.
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

3.7.3.2 *Impact and Mitigation Discussion*

The primary geotechnical concerns that will impact development of Area 3 are significantly different than those of Area 4 due to their relative proximity to former tidal marshes and influences from the San Francisco Bay. Area 3 is at a higher elevation and underlain by older, stiffer alluvial deposits. Area 4 is at a lower elevation and underlain by younger, softer alluvial soils. Prior to the early 1900's, Area 4 was also subject to tidal influences and was drained by numerous shallow, meandering sloughs. As a result, the primary geotechnical concerns for Areas 3 and 4 differ in some respects, as discussed in the following sections.

All mitigation measures are based upon the feasibility-level geotechnical analysis. Design-level geotechnical investigations will be completed and the recommendations followed in the design and construction of future detailed site development planning for specific site improvements associated with the Areas 3 and 4 Specific Plan. All geotechnical investigations will be reviewed and approved from the City of Newark.

Seismic Impacts

The project site is located within the seismically active San Francisco Bay Area and Areas 3 and 4 will be subject to strong seismic ground shaking during the lifetime of the project. Future residents, students of the project site, as well as employees and patrons of the commercial and educational uses, would be exposed to hazards associated with severe ground shaking during a major earthquake on one of the region's active faults. The hazard is not unique to the site because it applies to all locations throughout the greater Bay Area. The project will be designed and constructed in accordance with the current California Building Code guidelines to avoid or minimize potential damage from seismic shaking on the site. Potential seismic impacts would be reduced to a less than significant level by the use of standard engineering techniques mandated by the California Building Code.

As described above in Section 3.7.2.2, the site is not within a State-designated Alquist-Priolo Earthquake Fault Zone and no fault traces are known to cross the site; therefore, fault rupture hazard is not a significant geologic impact. **(Less than Significant Impact)**

Liquefaction-Induced Settlement

The silt and clay soils on the Specific Plan site will be subject to strong seismic ground shaking and is located within a State-designated Liquefaction Hazard Zone. Preliminary liquefaction analyses indicate that there is a high potential for liquefaction of localized sand and silt layers during a significant seismic event in both Areas 3 and 4. The analyses also indicate that liquefaction-induced settlement on the order of one and one-half inches to four inches could occur in localized areas, resulting in differential settlement of up to two inches. The potential for liquefaction appears to be

more wide-spread in Area 3, where the sand layers are more uniform and consistent, and more isolated in Area 4 where the sands are more likely associated with isolated former drainage channels. The existing non-liquefiable cap of clay covering the site is considered sufficient to prevent ground rupture.

Impact GEO-1: The development of Areas 3 and 4 could result in adverse impacts associated with settlement during strong seismic ground shaking due to potentially liquefiable soils. **(Significant Impact)**

MM GEO-1.1: Prior to issuance of grading permits, further study will be required to characterize the lateral extent and magnitude of potential liquefaction-induced settlement for design of new structures and improvements within Areas 3 and 4. The results of the investigation shall be submitted to the Director of Public Works for review and approval. Structures will need to be supported on rigid foundations designed to tolerate the anticipated total and differential settlements. Alternatively, deep foundations may be required to support structures on firm soil below potentially liquefiable layers. Ground improvement techniques could also be used to mitigate liquefaction-induced differential settlement. **(Less Than Significant With Mitigation)**

Seismically-Induced Lateral Spreading Adjacent to Existing Channels

Due to the liquefiable conditions of the on-site soils, localized lateral spreading could occur adjacent to the existing ACFC&WCD flood control channels or Mowry Slough. Area 3 improvements are at risk from potential seismically-induced lateral spreading of the channel banks. Further study to define lateral spreading risk will be required for any Specific Plan development within 200 feet of the channel.

In Area 4 there may be golf course improvements including cart paths and EVA construction adjacent and crossing over the channel bank. These proposed Area 4 improvements are at risk from potential seismically-induced lateral spreading of the channel banks.

Since no development is proposed adjacent to Mowry Slough, there is no risk to Area 4 improvements in the vicinity of Mowry Slough if seismically-induced lateral spreading were to occur.

Impact GEO-2: Any construction improvements near the ACFC&WCD drainage channels could result in adverse seismically-induced lateral spreading impacts associated with future development of the proposed Specific Plan. **(Significant Impact)**

MM GEO-2.1: Prior to issuance of building permits, design-level geotechnical investigations for specific site improvements such as residential developments, bridges, or school development shall be completed and submitted to the Director of Public Works for review and approval, once detailed site development plans are available. Geotechnical observation and testing services shall be completed during earthwork and foundation construction. **(Less Than Significant With Mitigation)**

Settlement Due to Compressible Soils – Area 4 Only

As discussed previously, Area 4 lies at the margin of young, relatively compressible alluvial deposits, and the proposed Area 4 residential development area is underlain by up to approximately 20 feet of soft to medium stiff, moderately compressible silty clay. Preliminary settlement estimates indicate that long-term consolidation settlement on the order of one inch will occur for each foot of new fill placed within the development portion of Area 4. As an example, if six (6) feet of new engineered fill were placed within the proposed Area 4 development area, approximately 4.5 to seven inches of settlement would be anticipated for a period of 50 years after construction was completed. Preliminary grading plans indicate that up to approximately 10 to 14 feet of fill will be placed on the development portions of Area 4, which is anticipated to settle up to approximately one foot (12 inches) over the 50 year post-construction period.

Long-term settlement will likely control the grading methodology and the design of foundations for the portions of Area 4 underlain by moderately compressible alluvial soil. Due to the high clay content within the alluvial soils, the rate of settlement is estimated to be roughly two to three years to achieve 50 percent consolidation, and 10 to 15 years to achieve 90 percent of the consolidation settlement. It should be noted that these values apply only to the central portion of Area 4 where exploration has been performed. Portions of Area 4 to the west of this central area may settle more due to possible increases in the compressibility of the underlying alluvial deposits.

Settlement estimates should be considered during planning of surface drainage and gravity-flow utilities, to reduce the potential for grade reversal and joint separation or leakage. Any underground utility pipes entering buildings should be designed to accommodate the expected differential settlement between the buildings and the adjacent ground.

Abrupt fill thickness transitions, such as landscaping berms or different building pad elevations, will cause differential settlement across the transition areas. This could impact retaining walls or fences, and walkways by causing abrupt settlement, sags, or cracks. Building loads will cause additional long-term settlement, the magnitude of which will be influenced by the actual load and type of foundation. For one to two-story wood frame residential construction, post-construction settlement of one to two inches is typical near the center of each building.

Imported soil placed to raise site grades in Area 4 will cause the ground surface to settle significantly over a period of 30 to 50 years. The total settlement will need to be accounted for in the design of finished surface grades for roadways, utilities including PG&E tower modifications, and building pads. Therefore, the total quantity of imported fill will be greater than anticipated to account for long-term ground subsidence and to maintain site elevations above flood levels. The current estimated fill for Area 4 totals 2.1 million cubic yards. This estimate cannot account for long-term settlement because the timing of import is undetermined at this time. The exact amount of fill will be dependent on the rate of import and the amount of fill brought in over a period of time because the settlement could be accelerated and more or less dirt could be needed. Final design development plans for Area 4 will be used to determine the exact amount of fill necessary to account for long-term settlement.

Impact GEO-3: The development of Area 4 could result in adverse impacts associated with settlement due to placement of fill and building loads. **(Significant Impact)**

MM GEO-3.1: Settlement due to fill and building loads can be mitigated by supporting lightly loaded structures on rigid foundations designed to resist differential

settlement. As an alternative, buildings could be supported on deep foundations. Design ground improvement techniques, such as surcharging, rammed aggregate piers, or soil/cement mixing, to mitigate settlement. If surcharging is considered, this would include installing vertical wick drains and surcharging building areas with additional imported fill to allow the settlement to occur at an increased rate. The settlement mitigation approach shall be reviewed and approved by the Director of Public Works, prior to issuance of grading and building permits and the process for implementation of the settlement mitigation will be included on all construction bid documents. **(Less Than Significant With Mitigation)**

Stevenson Boulevard Overpass Embankment Settlement

The proposed Stevenson Boulevard bridge will connect Areas 3 and 4 at the end of Stevenson Boulevard. An existing fill embankment was placed on the east side of the railroad tracks that will reportedly be used for the east bridge abutment. The west abutment embankment has not yet been constructed. Due to the underlying moderately compressible soils in Area 4, and possibly beneath the existing east embankment, differential settlement will likely occur between the two abutments.

Impact GEO-4: Differential settlement could occur between the abutments of the proposed Stevenson Boulevard Overpass, due to compressible Area 4 soils.

MM GEO-4.1: A site specific investigation shall be prepared for the proposed Stevenson Boulevard Bridge to determine the potential for differential settlement and the detailed approach to mitigate such settlement. The investigation and proposed measures shall be reviewed and approved by the Director of Public Works prior to issuance of grading and building permits. Bridge foundations shall be designed to account for potential differential settlement, as well as the approached slabs and asphalt pavement sections constructed on the embankments. **(Less Than Significant With Mitigation)**

Settlement from Undocumented Fills

Undocumented fills may be encountered within previously developed areas, such as the auto dismantler site on Area 4. Undocumented fill may also be on Area 3. Poorly compacted fills could contribute to long-term settlement of new improvements or foundations that are constructed above them. The lateral extent and depth of potential undocumented fills are not known at this time.

Impact GEO-5: Possible undocumented fill within Areas 3 and 4 could result in adverse impacts to future development associated with the proposed Specific Plan. **(Significant Impact)**

MM GEO-5.1: Further evaluation of undocumented fills shall be evaluated and located. The undocumented fills would likely need to be over-excavated and recompacted or removed and replaced with engineered fill material prior to site development. The Director of Public Works shall review and approve the specified approach for all undocumented fill area prior to issuance of grading permits. **(Less Than Significant With Mitigation)**

Mowry Slough Levees

The existing levees bordering Mowry Slough were constructed in the early 1900's and were not likely constructed to modern compaction standards. The elevation of the levees are eight (8) to 12 feet above mean sea level. In addition, the long-term stability of the levees has never been evaluated. Based upon the grading plans, the project proposes placement of 10 to 14 feet of fill on the residential area of Area 4, to raise planned improvements above flood elevation. Area 4 development will not depend upon the levees to provide flood control. Since the Area 4 development will not rely on the levees for flood control and protection, no further evaluation of the levees is necessary for implementation of development in Area 4. **(Less than Significant Impact)**

If these levees were to be relied upon for flood protection, additional studies would need to be completed to characterize the levee materials, analyze the existing static and seismic stability, and determine possible stabilization alternatives if mitigation is required. As noted above, the Specific Plan does not rely up the levees for flood protection.

Refer to *Section 3.8 Hydrology, Flooding, and Water Quality* for a discussion of the current flooding conditions within the Specific Plan site.

Expansive Soils

Moderately to highly expansive surficial soils are located throughout Areas 3 and 4. Moderately expansive near-surface soils are on Area 3 and moderately to highly expansive near-surface soils are on Area 4. Expansive soils can undergo significant volume change with changes in moisture content. Expansive soils shrink and harden when dried and expand and soften when wetted. Shrink-swell behavior of soils can damage planned structures, slab-on-grade foundations, and infrastructure improvements.

Impact GEO-6: The development of Areas 3 and 4 could result in adverse impacts associated with expansive soils. **(Significant Impact)**

MM GEO-6.1: Slabs-on-grade shall have sufficient reinforcement and shall be supported on a layer of non-expansive fill; footings shall extend below the zone of seasonal moisture fluctuation. Moisture changes shall be limited in the expansive surficial soils by using positive drainage away from buildings and improvements, as well as limiting landscaping watering. The Director of Public Works shall review and approve the design-specific geotechnical investigation prior to issuance of building permits. **(Less Than Significant With Mitigation)**

Other Geologic Hazards

The Areas 3 and 4 Specific Plan site is flat and would not be subject to landslides. The Specific Plan, therefore, would not expose people or structures to substantial adverse effects involving landslides. **(Less than Significant Impact)**

Groundwater

Shallow groundwater is located throughout Areas 3 and 4. Shallow groundwater would not support the use of septic tanks or alternative wastewater disposal systems; however, sanitary sewer service is available and would be extended to serve the site, as described in Section 3.12 Water Supply and Utilities and Service Systems. The Areas 3 and 4 Specific Plan, therefore, would not be exposed to adverse effects related to having soils incapable of adequately supporting the use of septic tanks. **(Less than Significant Impact)**

Shallow groundwater could impact grading and underground improvements. Shallow groundwater conditions causes hydrostatic uplift pressure on below grade foundations. These impacts may include potentially wet and unstable foundation subgrade, difficulty achieving compaction, and difficulty installing underground utilities.

Impact GEO-7: The shallow groundwater located throughout Areas 3 and 4 could result in adverse impacts associated with grading and installing underground utilities. **(Significant Impact)**

MM GEO-7.1: Design underground improvements for potential hydrostatic uplift pressures. The Director of Public Works shall review and approve all underground improvements prior to issuance of building permits. **(Less Than Significant With Mitigation)**

Soil Corrosion Potential

Due to near-surface clayey soils and shallow groundwater conditions within Areas 3 and 4, the corrosion potential for buried metallic structures, such as metal pipes, will likely be corrosive to severely corrosive. In addition, Bay Mud soils typically contains moderate to high levels of soluble sulfates, which is potentially corrosive to concrete. Future infrastructure and building development associated with the Specific Plan could be adversely affected by the presence of corrosive soils.

Impact GEO-8: The soils and shallow groundwater conditions within Areas 3 and 4 could result in adverse impacts associated with corrosive soils. **(Significant Impact)**

MM GEO-8.1: Soil corrosion testing shall be performed in Areas 3 and 4 during future phases of investigation to ensure fill soils and native soils are not corrosive. This testing results shall be reviewed and approved by the Director of Public Works prior to issuance of building permits. It will be necessary to consult with a corrosion engineer to determine appropriate mitigation measures for site improvements. Special requirements for corrosion protection could be considered to protect metal pipelines, such as cathodic protection or specially coated pipes. In addition, if near-surface soils contain moderate to high levels of soluble sulfates, then buried concrete structures in contact with these soils may require special concrete mix design, such as using Type II cement and a higher compressive strength or Type V cement, to mitigate impacts from sulfate attack. **(Less Than Significant With Mitigation)**

3.7.4 Conclusion

Development on project site will be subjected to strong ground shaking during a large earthquake on one of the region's active faults. This impact is not unique to this site, but applies to the entire region. Potential seismic impacts would be reduced by the use of standard engineering techniques, as mandated by the current California Building Code. **(Less than Significant Impact)**

Liquefaction-induced settlement impacts will be reduced through further characterization of the lateral extent and magnitude of the settlement in order to design building foundations accordingly (MM GEO-1.1). **(Less Than Significant Impact with Mitigation)**

Lateral spreading impacts near the ACFC&WCD drainage channels will be avoided by implementing design-level geotechnical recommendations for all improvements near drainage channels (MM GEO-2.1). **(Less Than Significant With Mitigation)**

Settlement impacts in Area 4 due to fill and building loads will be avoid by creation of rigid foundations designed to resist differential settlement (MM GEO-3.1). **(Less Than Significant With Mitigation)**

Potential impacts to the Stevenson Boulevard Overpass from differential settlement will be avoided by designing bridge foundations, approached slabs, and asphalt pavement sections on the embankments to account for differential settlement (MM GEO-4.1)**. (Less Than Significant With Mitigation)**

Impacts associated with possible undocumented fill within Areas 3 and 4 will be avoided by over-excavation and recompaction or removal and replacement with engineered fill material prior to site development (MM GEO-5.1). **(Less Than Significant With Mitigation)**

The long-term stability Mowry levees do not pose a significant constraint to development in Area 4 because the development will not rely on the levees for flood control and protection. **(Less than Significant Impact)**

Expansive soils that exist within Areas 3 and 4 will be avoided through the use of standard engineering design practices (MM GEO-6.1). **(Less Than Significant With Mitigation)**

The Areas 3 and 4 Specific Plan site is flat and would not be subject to landslides. The Specific Plan, therefore, would not expose people or structures to substantial adverse effects involving landslides. **(Less than Significant Impact)**

Shallow groundwater would not support the use of septic tanks or alternative wastewater disposal systems; however, sanitary sewer service is available and would be extended to serve the site, as described in Section 3.12 Water Supply and Utilities and Service Systems. The Areas 3 and 4 Specific Plan, therefore, would not be exposed to adverse effects related to having soils incapable of adequately supporting the use of septic tanks. **(Less than Significant Impact)**

Shallow groundwater impacts to foundation subgrade and compaction and installation of underground utilities will be avoided by designing underground improvements for potential hydrostatic uplift pressures (MM GEO-7.1)**. (Less Than Significant With Mitigation)**

Corrosive soil impacts within Areas 3 and 4 will be avoided through soil corrosion testing and possible inclusion of corrosion protection measures for future infrastructure and building development (MM GEO-8.1). **(Less Than Significant With Mitigation)**

3.8 HYDROLOGY, FLOODING, AND WATER QUALITY

This section is based upon a Hydrology and Water Quality Impact Analysis prepared by *Schaaf and Wheeler* in November 2008. This report is located in Appendix G of this document.

3.8.1 Regulatory Overview

The federal Clean Water Act (1972) and California's Porter-Cologne Water Quality Control Act of 1969 are the primary laws related to water quality. The Clean Water Act governs discharges to the waters of the U.S., which includes oceans, bays, rivers, streams, lakes, ponds, and wetlands. The Porter-Cologne Act established the State Water Resources Control Board (SWRCB).

As described below, regulations set forth by the U.S. Environmental Protection Agency (EPA) and the SWRCB have been developed to fulfill the requirements of this legislation. These regulations are implemented at the regional level by water quality control boards. For the City of Newark, the water board is the San Francisco Bay Regional Water Quality Control Board (RWQCB). Regional Boards are responsible for developing and enforcing water quality objectives and implementation plans, known as Basin Plans. The most recent edition of the San Francisco region's Basin Plan was adopted in 1995 and last updated in 2007.

3.8.1.1 *Clean Water Act Requirements*

Section 303 of the Clean Water Act requires the state to develop a list of water bodies that do not meet water quality standards, establish priority rankings for waters on the list, and develop actionable targets, known as Total Maximum Daily Loads (TMDLs), to guide the application of state water quality standards. The San Francisco Bay is listed as 303(d) impaired waters, due to impairment by exotic species and contaminants found in urban runoff, including chlordane, DDT, diazinon, dieldrin, dioxins, furans, mercury, PCBs, selenium, and nickel.

Under Section 401 requirements, projects proposing to complete any activity that may result in a discharge of a pollutant to state waters must also obtain a Water Quality Certification (or waiver) from the RWQCB. According to Section 404, a U.S. Army Corps of Engineers permit is required if a project discharges dredged or fill material into such waters before proceeding with a proposed activity. Because the Areas 3 and 4 Specific Plan contains jurisdictional wetlands (refer to *Section 3.5 Biological Resources*), construction of the proposed project would require Section 401 certification and a Section 404 permit from the U.S. Army Corps of Engineers if waters of the US are filled.

National Pollutant Discharge Elimination System

Sections 401 and 402 establish the National Pollutant Discharge Elimination System (NPDES) permit program, which controls sources that discharge pollutants into waters of the United States. The State Water Resources Control Board also has adopted a Nonpoint Source Management Program Plan in an effort to control nonpoint source pollution in California.[42] The Nonpoint Source

[42] Historically, efforts to prevent water pollution have focused on "point" sources, meaning the source of the discharge was from a single location (e.g., a sewer treatment plant, power plant, factory, etc.). Recent efforts are focusing on pollution caused by "non-point" sources, meaning the discharge comes from multiple locations. The best example of this latter category is urban runoff, the source of which is a myriad of surfaces (e.g., roadways, rooftops, parking lots, etc.) that are found in a typical city.

Management Program Plan and NPDES permits are administered statewide by the Regional Water Quality Control Boards.

The NPDES General Permit for Construction Activities applies for projects that disturb over one acre of soil. The permit requires submittal of a Notice of Intent (NOI) to the RWQCB and development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) to control discharge associated with construction activities.

The RWQCB also has issued a municipal stormwater NPDES permit to the Alameda Countywide Clean Water Program (ACCWP) and 14 Alameda County Cities (including Newark), the Alameda County Flood Control and Water Conservation District (ACFC&WCD), and the Zone 7 Water Agency as co-permittees. ACCWP assists the co-permittees with the implementation of local stormwater pollution prevention programs and the municipal permit. Under the municipal permit, development of Areas 3 and 4 will be subject to numeric sizing criteria for pollutant removal treatment systems. Area 3 is potentially subject to limitations on increases of peak storm water runoff discharge rates (Hydromodification).

3.8.1.2 *National Flood Insurance Program*

The U.S. Congress passed the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 to reduce the need for large, publicly funded flood control structures and disaster relief by restricting development on floodplains. As part of the National Flood Insurance Program (NFIP), the Federal Emergency Management Agency (FEMA) provides subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA publishes Flood Insurance Rate Maps (FIRMs) that identify flood hazard zones. The FIRM for the City of Newark was last revised in February 2000.

3.8.1.3 *City of Newark Municipal Code*

The City of Newark Municipal Code 15.40.051, Standards of Construction, requires that new construction and substantial improvement of any structure shall have the lowest floor, including basement, elevated to or above the base flood elevation. Residential structures shall be elevated to or above the base flood elevation or to a minimum of six inches above the building pad which shall be at a minimum elevation of 11.25 feet on the National Geodetic Vertical Datum (NGVD), whichever affords the greater degree of flood damage protection. For the Specific Plan site, this means that building pads of residential structures must be at 11.25 feet above mean sea level with the finished floor a minimum of six inches above the building pad (i.e. at 11.75 feet above mean sea level). All top of curb grades must be at a minimum height of 10.00 feet

3.8.2 <u>Existing Setting</u>

Mowry Slough runs along the western boundary of Area 4. The slough reaches widths of 400 feet as it meanders almost four miles before it reaches the open water of San Francisco Bay to the west of the Specific Plan site.

3.8.2.1 *Drainage*

As shown in Figure 3.8-1, three ACFC&WCD channels, Lines B, D, and N, run through and around the perimeter of the Areas 3 and 4 Specific Plan site. Line B flows along the west border of the

property before becoming Mowry Slough. Line D flows east-west through the north-central portion of the property and joins with Line B. Line N runs along the south boundary of Area 4 before joining with Mowry Slough. The maintained flood control channels generally consist of well-defined earthen trapezoidal channels confined between adjoining levees. These three channels have a total drainage area of 13.3 square miles, not including a portion of the onsite drainage. Mowry Slough, as well as the lower portions of the other Lines, are tidally influenced.

The flood control channels are lined with levees, which separate the Specific Plan site from the adjacent salt evaporation ponds. The existing drainage pattern on the Specific Plan site, as inferred from site topography, is "dispersed overland flow concentrating to areas of lower elevation". The undeveloped portions of Areas 3 and 4 do not have an existing storm drain system.

Area 3

The Specific Plan includes a 78-acre portion (at Cherry Street and Stevenson Boulevard) of Area 3 that is currently undeveloped; that is, 100 percent of the site is currently covered with pervious surfaces. Runoff from this area naturally flows south, and intercepts a drainage ditch running along the western boundary of the 78-acre property. The stormwater is then released into Line D through a dual 42-inch diameter flapgated outfall, located in the northwestern corner of the property.

Area 4

Area 4 is predominantly undeveloped, but contains an automobile dismantler facility in the northern portion of the site. Runoff from Area 4 naturally flows from northeast to southwest. Area 4 is a hydrologically closed system, because the Union Pacific Railroad (located along the eastern boundary of Area 4) and internal levees (located along the north, west, and south boundaries) impede natural flows from either entering or leaving the area. Drainage is collected in ditches that run along the interior sides of the levees and terminate at an existing pump. The interior drainage pump lifts the water 10 to 12 feet over the top of the levee where it discharges to Mowry Slough.

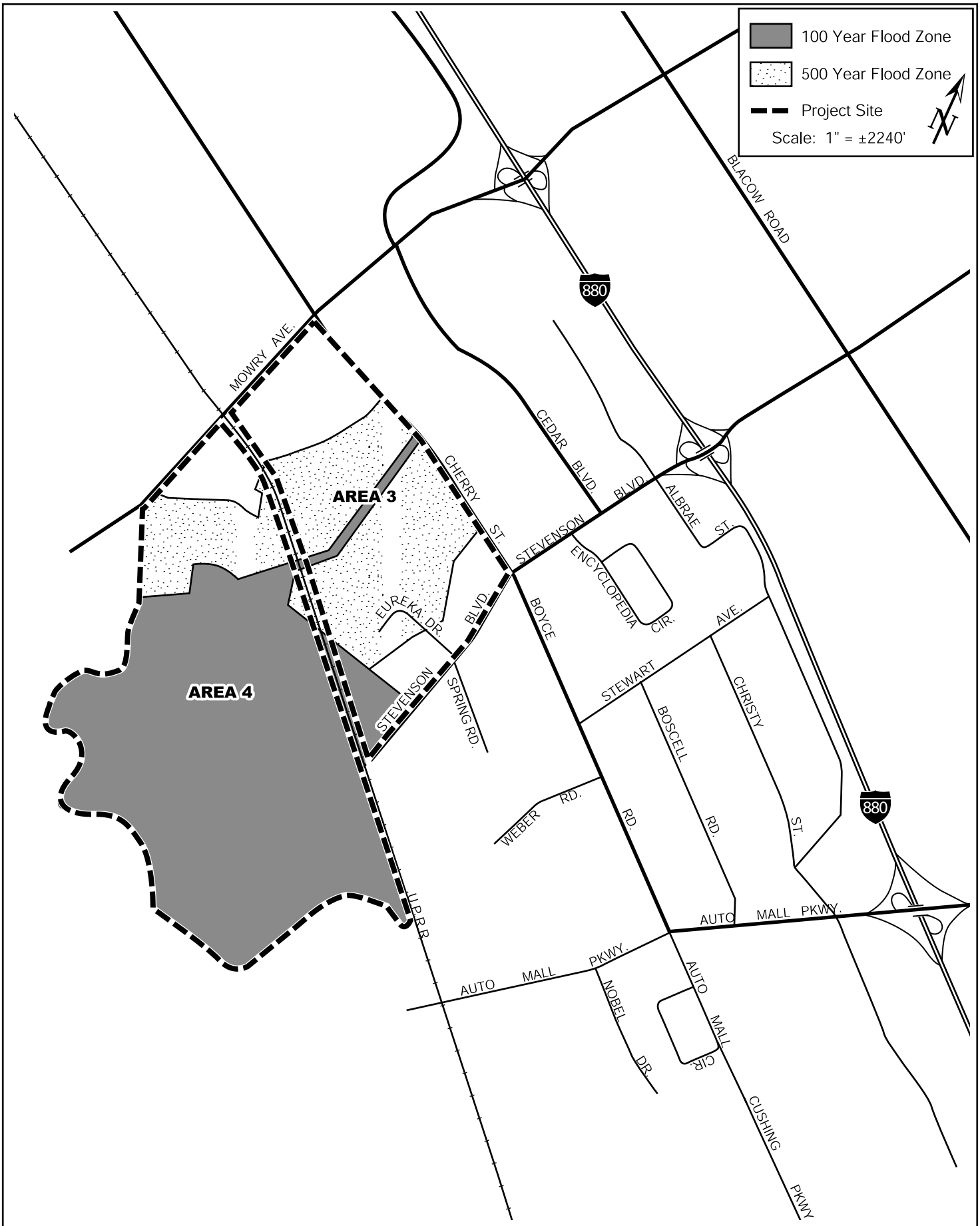
3.8.2.2 *Flooding*

The Areas 3 and 4 Specific Plan site ranges in elevation from approximately zero to 20 feet above mean sea level. During more extreme storm water runoff events, the Specific Plan area is prone to both riverine- and tidally-induced flooding. The Federal Emergency Management Agency (FEMA) has applied hydrologic and hydraulic models to produce a set of maps that identify flood hazards in the area. According to the Flood Insurance Rate Maps (FIRM), much of the project area is located within a 100-year tidal flood zone.[43] The portion of Area 3 proposed for development under the Specific Plan is classified as Zone X, indicating that this area has shallow flooding of less than one foot for the 100-year base flood or is prone to 500-year flooding, refer to Figure 3.8-2. Area 4 is largely classified as Zone AE. In the event of 100-year flooding conditions, water up to an elevation of eight feet NGVD would flood the area.

[43] Federal Emergency Management Agency, Flood Insurance Rate Map, 0600090005F, February 9, 2000.

ALAMEDA COUNTY FLOOD CONTROL AND
WATER CONSERVATION DISTRICT CHANNELS

FIGURE 3.8-1



FLOOD ZONE MAP

FIGURE 3.8-2

With the existing topography and grading, the Specific Plan area is subject to deep inundation should any of the levees surrounding the site fail. Because none of the levees located on or adjacent to the site are FEMA certified, it must be assumed that the levees could fail in a large storm or high tide event.

The proposed school site is on the high end of Area 3, at 15 to 17 feet in elevation, and is already above the minimum 11.25 building pad elevation requirement that applies to Newark as a whole.

Inundation by Dam Failure, Seiche, Tsunami, or Mudflow

According to ABAG, most of Fremont and Newark, including the Specific Plan site, would be inundated if any of the upstream reservoirs (Calaveras, Del Valle, or Turner) fail. Inundation resulting from catastrophic dam failure could damage property and structures within Newark and other nearby cities and pose a severe hazard to public safety. All of these dams are classified as high hazard dams, because their failure would result in a significant loss of life and property damage. The site is located within the dam inundation areas for three dams, all of which fall under the jurisdiction of the California Division of Safety of Dams. The Division inspects each dam on an annual basis to ensure the dam is safe, performing as intended, and is not developing problems. The Federal Energy Regulation Commission (FERC) also inspects those dams with a hydropower component.

The Del Valle Dam is owned by the California Department of Water Resources. It is an earth fill dam built in 1968. The James H. Turner Dam is owned by the San Francisco Public Utilities Commission (SFPUC). It is also an earth fill dam, completed in 1964. Calaveras Dam is a hydraulic fill dam completed in 1925, located within the Alameda Watershed. The existing Calaveras dam is located near active earthquake faults and has been deemed seismically unsafe by the California Division of Safety of Dams. The SFPUC lowered water levels to less than 40 percent of its capacity in the reservoir in response to seismic concerns in 2001.[44] In the next three to five years, the SFPUC will rebuild the dam to restore the reservoir to its historic level of 96,850 acre-feet. The replacement Calaveras Dam would consist of a new earth- and rockfill dam of the same reservoir capacity as the existing dam and built immediately downstream of the existing dam. The SFPUC released the final Program Environmental Impact Report for their Water System Improvement Program (WSIP) on September 30, 2008 and approved the WSIP in May 2009, which includes the Calaveras Dam replacement as one of 75 San Francisco and regional projects to be completed by the end of 2015. The Calaveras Dam Replacement Draft EIR was released on October 6, 2009.

Calaveras Dam is the only dam of the three dams contributing to Newark's inundation hazard area that is documented with a higher than normal risk of failure. The SFPUC has taken short term (reducing the capacity) and long term (rebuilding the dam) steps to mitigate that risk. With these protection measures, the risk of dam failure is extremely low and, therefore, is not considered a significant hazard to Newark residents and visitors.

As noted previously in *Section 3.7 Geology and Soils*, the several levees and long distance of shallow water associated with the adjacent salt ponds between the Bay and the site would minimize waves generated by a seiche. The Association of Bay Area Governments (ABAG) produces tsunami evacuation maps for the Bay Area and no map exists for Alameda County. Therefore, it is assumed that tsunamis would not impact Alameda County or the site. For these reasons, the site is not considered to be subject to significant risk from seiche or tsunami.

[44] San Francisco Public Utilities Commission, Calaveras Dam Replacement Project, http://sfwater.org/Project.cfm/MC_ID/21/MSC_ID/360/MTO_ID/525/PRJ_ID/141

The Specific Plan site is flat and is not located below any steeply sloped areas. The site is not within or near an identified landslide or debris flow hazard area, according to ABAG Hazard Maps. Therefore, the project area is not subject to inundation by mudslides.

3.8.2.3 *Groundwater*

Areas 3 and 4 have relatively low depths to groundwater due to the low elevation and proximity to San Francisco Bay and nearby aquifers. Portions of the southwest area of the Specific Plan site have groundwater surfacing, as indicated by several small ponds near the junction of Alameda Flood Control Lines B and D.

The Specific Plan lies within the Niles Cone Groundwater Basin, which flows generally from the mountains west towards the bay. The groundwater basin encompasses the alluvial fan of Alameda Creek, extending south and west across the East Bay Plain and under San Francisco Bay. There are four aquifers underlying the project area: Newark, Centerville, Fremont, and Deep. The Specific Plan site covers the most downstream portion of the area-wide aquifers where water supply recharge does not take place. The only recharge area within the Specific Plan site is identified as a shallow water bearing zone, which is not used for water supply.

Several groundwater monitoring wells are located within the Specific Plan site. High total dissolved solids (TDS) and chloride concentrations at the Newark wells indicate brackish water due to seawater intrusion. An Aquifer Reclamation Program (ARP) well, which removes saline water from degraded portions of the aquifers, is also located within the Specific Plan area.

3.8.3 <u>Hydrology and Water Quality Impacts</u>

3.8.3.1 *Thresholds of Significance*

For the purposes of this EIR, based upon Appendix G of the CEQA Guidelines, a hydrology and water quality impact is considered significant if the project will:

- Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map; or
- Place structures within a 100-year flood hazard area, such that flood flows would be impeded or redirected; or
- Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam; or be subject to inundation by seiche, tsunami, or mudflow; or
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-or off-site; or
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on-or off-site; or
- Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff or otherwise substantially degrade water quality; or

- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted); or
- Violate any water quality standards; or
- Substantially degrade water quality.

Impacts would be considered significant if the Specific Plan does not meet Regional Water Quality Control Board (RWQCB) water quality objectives; would cause substantial erosion and sedimentation to occur in Mowry Slough, flood control channels, or San Francisco Bay; or would create or exacerbate a flood hazard.

3.8.3.2 *Long-Term Flooding Impacts*

As described above, most of the Specific Plan site is susceptible to flooding. The risk to the 78-acre property in Area 3 is characterized by shallow flooding less than one foot deep for the 100-year base flood. According to the FEMA Flood Insurance Study, tidal flooding from San Francisco Bay could inundate Area 4 up to an elevation of eight feet NGVD. Given the existing topography and that none of the levees surrounding Area 4 are FEMA certified, the existing levees surrounding Area 4 could fail in a large storm or high tide event. Flooding could damage property and structures within the Specific Plan site, and pose a severe hazard to public safety.

The proposed Specific Plan includes fill placement to elevate all residential units, above the 100-year base flood elevation, which takes into account the potential for outboard levee failure. Therefore, people and structures will not be exposed to additional flood risk due to the failure of the outboard levees. Area 3 would be graded so that all building pads will be above the base flood elevation mapped for flood control Line D. The proposed school site is proposed on the high end of Area 3, at 15 to 17 feet in elevation, and is already above the minimum 11.25 building pad elevation requirement that applies to Newark as a whole. Area 4 would be graded so that all building pads would be above an elevation of 11.25 feet. The top of curb would be located at a minimum elevation of 10 feet, elevating public streets above the 100-year base flood elevation. Although the proposed Specific Plan would place housing within a 100-year flood hazard area as mapped on a Flood Insurance Rate Map, implementation of this design measure and compliance with City and FEMA requirements would reduce the impact to a less than significant level. **(Less than Significant Impact)**

The effects of global climate change on potential increases in San Francisco Bay levels and the resulting flood risk to the Specific Plan site are described in *Section 4.0 Cumulative Impacts.*

3.8.3.3 *Off-site Flooding Impacts from Project*

As described above, Area 3 will be graded so that all building pads will be at or above the based flood elevation mapped for Line D. The fill would not affect mapped flood hazards up- or downstream of the project site. In order for the proposed Specific Plan to increase off-site flood elevations, development would have to block the active conveyance of flood flows. Under existing conditions, the conveyance of flood flows in the 78-acre portion of Area 3 are already blocked upstream by a large landscaped berm and neighboring development, and downstream by a solid concrete wall. These blockages largely remove active flow conveyance through the site (which is

characterized by flooding less than a foot deep) outside of the channel itself. Therefore, the proposed placement of fill for residential uses would not significantly change active flow conveyance through this reach of Line D.

Fill placed within Area 4 would not impact flooding in the area or downstream, because the impedance of tidal conveyance through the area would not influence the water surface elevation in San Francisco Bay. For these reasons, the proposed Specific Plan development would not place within a 100-year flood hazard area structures that would substantially impede or redirect flood flows. **(Less than Significant Impact)**

3.8.3.4 *Inundation Impact by Dam Failure, Seiche, Tsunami, or Mudflow*

As described previously, most of Fremont and Newark, including the Specific Plan site, would be inundated if any of the upstream reservoirs (Calaveras, Del Valle, or Turner) fail. Inundation resulting from catastrophic dam failure could damage property and structures within Newark and pose a severe hazard to public safety. The site is located within the dam inundation areas for three dams, all of which fall under the jurisdiction of the California Division of Safety of Dams. The Division inspects each dam on an annual basis to ensure the dam is safe, performing as intended, and is not developing problems.

The Del Valle Dam is owned by the California Department of Water Resources. It is an earth fill dam built in 1968. The James H. Turner Dam is owned by the SFPUC. It is also an earth fill dam, completed in 1964. Calaveras Dam is a hydraulic fill dam completed in 1925, located within the Alameda Watershed. The existing dam is located near active earthquake faults and has been deemed seismically unsafe by the California Division of Safety of Dams. The SFPUC lowered water levels to less than 40 percent of its capacity in the reservoir in response to seismic concerns in 2001. In the next three to five years, the SFPUC will rebuild the dam to restore the reservoir to its historic level of 96,850 acre-feet. The replacement Calaveras Dam would consist of a new earth- and rockfill dam of the same reservoir capacity as the existing dam and built immediately downstream of the existing dam.

Calaveras Dam is the only dam of the three dams contributing to Newark's inundation hazard area that is documented with a higher than normal risk of failure. The SFPUC has taken short term (reducing the capacity) and long term (rebuilding the dam) steps to mitigate that risk. The other two dams to pose a risk of inundation to the project since the project site is within the inundation zone, however, all dams are inspected on a annual basis to ensure the dams are safe and not developing problems. The risk of dam failure is extremely low and, therefore, is not considered a significant hazard to future residents and visitors to the Specific Plan area. **(Less than Significant Impact)**

As noted previously, the several levees and long distance of shallow water associated with the adjacent salt ponds between the Bay and the site would minimize waves generated by a seiche. The Association of Bay Area Governments (ABAG) produces tsunami evacuation maps for the Bay Area and no map exists for Alameda County. Therefore, it is assumed that tsunamis would not impact Alameda County or the site. For these reasons, the Specific Plan area is not considered to be subject to significant risk from seiche or tsunami. **(Less than Significant Impact)**

The Specific Plan site is flat and is not located below any steeply sloped areas. The site is not within or near an identified landslide or debris flow hazard area, according to ABAG Hazard Maps.

Therefore, the project area is not subject to inundation by mudslides. **(Less than Significant Impact)**

3.8.3.5 *Project Alteration of Drainage Patterns Resulting in Increased Flooding*

Area 3

The proposed Specific Plan development of residential uses within Area 3 would increase the area covered by impervious surfaces by approximately 65 percent.[45] As described above and in accordance with FEMA and City of Newark requirements, the residential pads would be elevated above the base flood elevation.[46] To accomplish this, approximately 56,000 cubic yards of fill would be required for Area 3 development.

Due to the potential increase in stormwater discharges from Specific Plan development of Area 3, impacts associated with off-site flooding were evaluated. The modeled storm was a 24-hour accumulated rainfall with a total storm depth of 3.38 inches, based on a 100-year storm with a mean annual precipitation of 14 inches. Time of concentration[47] modeling calculations for the main watershed were used to determine the potential for the altered drainage patterns to result in flooding downstream. For Area 3, the existing time of concentration is a compilation of overland sheet flow through short grass and flow through a typical cross-section of the existing ditch. The resulting total time of concentration is 0.70 hour. Under post-development conditions, the total time of concentration was a typical storm drain plus a roof to gutter time[48], resulting in a proposed total time of concentration of 0.33 hour. Under existing conditions the 100-year storm peak flow in Line D is 938 cubic feet per second (fps). Under post-project conditions, the estimated peak 100-year storm discharge is also 938 cfs. Since the main watershed is long and narrow, and Area 3 is near the outlet of the watershed, the increased impervious surfaces proposed in Area 3 produce a shorter time of concentration. The site discharge is increased, but the shorter time of concentration allows the peak project flow to be discharged to Line D an hour before the peak of main watershed (areas east of Area 3) reaches the outfall. Therefore, the alteration of drainage patterns and increased discharge from Area 3 does not affect the 100-year discharge in Line D. **(Less than Significant Impact)**

Area 4

Development of Area 4 under the proposed Specific Plan includes single family detached houses in the southern portion of Area 4 and a golf course with associated buildings in the northern portion of Area 4.

Given the existing flood hazard in Area 4, the Specific Plan, the residential pads would be elevated above the base flood elevation in accordance with FEMA and City of Newark requirements.[49] All residential pads would be above a minimum elevation of 11.25 feet (above sea level) and all finish

[45] This estimate is based on typical impervious surface coverage for medium density residential development.
[46] City code requires the lowest top of curb elevation to be 10 feet above sea level. All residential pads must be above a minimum elevation of 11.25 feet and all finish floor elevations must be a minimum of 6-inches above the pads.
[47] Time of concentration is the longest time required for a particle to travel from the watershed basin to the watershed outlet.
[48] This is the time it takes for rainfall to collect on roof tops, make its way to an impervious surface, and reach the street gutter.
[49] City code requires the lowest top of curb elevation to be 10 feet above sea level. All residential pads must be above a minimum elevation of 11.25 feet and all finish floor elevations must be a minimum of 6-inches above the pads.

floor elevations would be a minimum of six inches above the pads. The lowest top of curb elevation would be above the minimum elevation of 10 feet. The proposed grading plan for the residential development in Area 4 would require up to 2.1 million cubic yards of fill to meet the flood elevation requirements.

The conceptual drainage plan sets the lowest release points at an elevation of 10 feet, with the surrounding lots and roadways located at varying elevations above that. Drainage from the developed area would be directed to several proposed outfalls, which would discharge stormwater to the surrounding wetlands and open space. Because augmented flows from increased impervious areas are released directly to the Bay and cannot affect Bay tides, residential development in Area 4 would not substantially alter the existing drainage pattern of the site in a manner that would result in flooding in the area or downstream of the area.

The golf course would be graded along the existing terrain to achieve a balance earthwork across this portion of Area 4. The clubhouse and other buildings would also be elevated above the minimum base flood elevations as required by the City of Newark. The development of a golf course in Area 4 would not affect drainage patterns because runoff volumes from golf courses are generally the same as for undeveloped land. Golf course development in Area 4 would not substantially alter the existing drainage pattern of the site in a manner that would result in flooding in the area or downstream of the area. **(Less than Significant Impact)**

3.8.3.6 *Project Alteration of Drainage Patterns Resulting in Increased Erosion*

Area 3

Development under the Specific Plan would alter the existing drainage pattern of the Specific Plan site. Currently, stormwater on Area 3 flows overland through short grass to a ditch and continues into a outfall to Line D. After project construction, the drainage ditch would be removed from the southern boundary of the property. The existing dual 42-inch outfall to Line D would be maintained and continue to discharge stormwater from the property.

Under the proposed drainage plan, runoff would be concentrated on the rooftops and paved surfaces, collected into the proposed storm drain system, and carried to stormwater treatment areas via underground pipes prior to discharge into the flood control channel. The existing amount of overland stormwater flow would be reduced since most of water will be collected in underground pipes. Overall, the potential for on-site erosion from overland flow would be reduced.

The increase in impervious surfaces would, however, result in a corresponding increased runoff rate, because water flows faster over impervious surfaces and through storm drains than over pervious surfaces. This creates the potential for hydromodification, which is defined as downstream change in runoff volume, magnitude, and duration. This could result in impacts to off-site erosion. According to the Hydromodification Management (HM) Susceptibility Map published by the Alameda Countywide Clean Water Program,[50] Line D is shown to be tidally influenced downstream of the Union Pacific railroad tracks. The Area 3 outfall is located 900 feet upstream of the railroad tracks. This leaves 900 feet of Line D channel subject to the HM requirements.

[50] Alameda Countywide Clean Water Program, Hydromodification Management (HM) Susceptibility Map, dated January 26, 2007.

There is no visible channel instability with respect to erosion on the 900 feet segment of Line D; rather, it actually exhibits signs of sediment deposition. According to *Schaaf and Wheeler*, it is extremely unlikely that the increased discharge from the Area 3 outfall would change the 900 feet of earthen channel downstream from a stable channel prone to deposition into an unstable channel prone to additional erosion.

In accordance with HM requirements, a detention basin was sized assuming that the 900 feet of Line D needs erosion protection. The resulting basin is six feet deep (assuming no freeboard) with three to one side slopes and a total basin footprint of 2.1 acres. The detention basin assumes free outflow conditions (no backwater effects) at all times, as this is the assumption set forth in the recommended Bay Area Hydrology Model (BAHM). This is not possible, however, at the Area 3 site, because at six feet deep, the invert of the basin is at approximately six feet NGVD which matches the Line D channel invert. The 10-year water surface elevation at the outfall is nine feet NGVD, so whenever the water surface elevation in the channel is higher than the water surface elevation of the basin, no water could be released. In addition, even when the water surface elevation in the channel is extremely low, the flapgate is large and heavy requiring considerable water pressure to force it open. Since HM detention regulates low flows through a series of orifices, the flows regulated by the basin outlet would be impeded by the flapgate, negating the regulating effects of the outlet structure. Based upon these conditions, the consulting civil engineer, *Schaaf and Wheeler*, determined that HM detention is infeasible for Area 3 and should not be included in the proposed drainage plan design.

While on-site HM detention is considered infeasible, *Schaaf and Wheeler* previously concluded that it is extremely unlikely that the increased discharge from the Area 3 outfall would change the 900 feet of earthen channel downstream from a stable channel prone to deposition into an unstable channel prone to additional erosion. For these reasons, the impact of hydromodification from development of Area 3 on the 900-foot reach of Line D is considered less than significant. Therefore, the proposed project would not substantially alter the existing drainage pattern of the site or area in a manner that would result in substantial erosion or siltation on- or off-site. Additional measures are described in Sections 3.8.3.11 and 3.8.3.12, below, to reduce on-site erosion. **(Less than Significant Impact)**

Area 4

Increased sedimentation due to Area 4 Specific Plan development is not considered to be a problem. All runoff from Area 4 is contained on the inboard side of the levees until it reaches the pump and is discharged into Mowry Slough. Mowry Slough is tidally influenced and is, therefore, exempt from hydromodification requirements. Therefore, the proposed project would not substantially alter the existing drainage pattern of the site or area in a manner that would result in substantial erosion or siltation on- or off-site. **(Less than Significant Impact)**

3.8.3.7 *Impacts to Stormwater Drainage System Capacity*

There is no existing storm drain utility system serving the undeveloped areas of Areas 3 and 4. The Specific Plan includes an adequate system that utilizes the existing dual 42-inch diameter outfalls in Area 3 and the pump outfall in Area 4 (although this pump may be resized and replaced). Implementation of the Specific Plan would not substantially affect the capacity of the existing stormwater drainage outfalls given the quantity of runoff as discussed above. Therefore, the proposed project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems. **(Less than Significant Impact)**

3.8.3.8 *Groundwater Impacts*

Because the Specific Plan site covers the most downstream portion of the aquifer where recharge does not take place, development of the proposed Specific Plan would have little to no effect on the balance of the groundwater basin. The only recharge area within the Specific Plan site is identified as a shallow water bearing zone, which is not used for water supply. Therefore, the Specific Plan would not result in a significant impact on areas of groundwater recharge.

It would be possible for the project to impact groundwater supplies if there is an increase in water demand due to project development that would increase local groundwater pumping or place a significant burden on regional water supplies. In accordance with California Water Code Section 10910 the Alameda County Water District (ACWD) completed a Water Supply Assessment (WSA) to demonstrate the adequacy of water supplies for the Specific Plan area in normal hydrologic conditions and drought conditions. Development of the Specific Plan was included in the most recent demand forecasts within the Urban Water Management Plan (UWMP), upon which the ACWD based its WSA. ACWD estimates a 1,100 acre-feet per year ultimate water demand for the Project. Once a reclaimed water supply is available, demand for potable water will be reduced to about 550 acre-feet per year. Before reclaimed water is available, the golf course will be irrigated using an existing on-site well with an estimated demand of 490 acre-feet per year. This well will draw from ACWD's managed groundwater resources in the Niles Cone without placing a burden on the District's potable water production facilities.[51] In addition, the ACWD's determination of the water supply sufficiency is based on the inclusion of water efficiency measures in the Areas 3 and 4 Specific Plan which have been included in the Specific Plan (refer to *Section 2.4.10.1. Project Description, Water Service*). Therefore, the Specific Plan would not result in a significant impact on groundwater supplies. **(Less than Significant Impact)**

3.8.3.9 *Impacts Related to Water Quality Standards*

The proposed project would be required to comply with water quality standards as administered through the NPDES permit. During project design, a Stormwater Pollution Prevention Plan (SWPPP) and Stormwater Management Plan (SWMP) will be prepared to establish measures that would reduce potential impacts from pollutants and sedimentation in stormwater runoff. Assuming compliance with these required measures, development under the Specific Plan would not violate any RWQCB water quality standards. **(Less than Significant Impact)**

3.8.3.10 *Impacts to Wetland Hydrology*

The wetland hydrology of Area 4 is unique, in that wetlands in some areas are maintained entirely by surface runoff and incident rainfall, while in other wetlands groundwater is the primary driver of wetland hydrology. Groundwater levels and saturation in the lower portions of Area 4, such as the borrow ditch along the southwestern edge, a remnant slough near the pump, and the southeastern corner of the area are affected by the elevation of stored stormwater runoff in the ditch system, which could potentially change after development.

If the wetlands are completely fed by surface runoff, then the volume of water in the wetlands would be primarily determined by the volume of water pumped into Mowry Slough, since Area 4 is a hydrologically closed system. The difference between post-project and pre-project runoff volume

[51] Alameda County Water District, "Water Supply Assessment for Newark Areas 3 & 4 Specific Plan EIR Project," November, 2008.

remaining in the low elevations of Area 4 could be mitigated by altering the pump flow. As described in Appendix G, the maximum increase in pump capacity required to maintain existing levels of inundation within the interior ditch system is less than 5,000 gallons per minute (gpm), which is a relatively nominal increase in pumping capacity. Because surface water runoff volumes would increase with development, the wetlands would not be in danger of water quality degradation or becoming hydrologically "starved". In addition, the Specific Plan will be designed to ensure that wetlands are hydraulically connected to each other to prevent water reduction within any part of the wetlands (refer to *Section 3.5 Biological Resources* MM BIO-2.1 – 2.6). Therefore, the proposed project would not result in a significant impact to wetland hydrology. **(Less than Significant Impact)**

3.8.3.11 *Long-Term Impacts to Stormwater Drainage Runoff Quality*

Under existing conditions, fertilizer and organic compounds are the most likely pollutants of concern since the Specific Plan site have been used for agriculture. Given that agricultural activities would cease following project construction, the project could potentially reduce organic contributions to the surface water, which would be a benefit to water quality. In addition, sedimentation from residential development sites is usually minimal.

Development under the proposed Specific Plan could adversely impact water quality. Pollutants associated with urban development could run off paved surfaces and flow into drainage channels and ultimately San Francisco Bay. Common pollutants include heavy metals from automobile emissions, oil, grease, nutrients, bacteria from pet wastes, and landscape maintenance debris. Untreated runoff generated by the proposed project would potentially result in long-term degradation of water quality, which could affect aquatic and wetland habitats. Without mitigation, the effects on surface water quality could be significant.

Impact HYD-1: The proposed project construction and operation could provide substantial sources of polluted runoff and degrade water quality downstream of the Specific Plan site. **(Significant Impact)**

Potential construction-phase and post-construction pollutant impacts from development can be controlled below the level of significance through preparation and implementation of an erosion control plan, a stormwater pollution prevention plan (SWPPP) and a stormwater management plan (SWMP) consistent with recommended design criteria, in accordance with the NPDES permitting requirements enforced by the Regional Board. The SWPPP prescribes construction-phase BMPs to adequately contain sediment on-site and prevent construction activities from degrading surface runoff, while the SWMP includes post-construction treatment measures and best management practices (BMPs) for the control of pollutants. Both the SWPPP and the SWMP set forth the BMP monitoring and maintenance schedule and identifies the responsible entities during the construction and post-construction phases.

To reduce long-term water quality impacts (Impact HYD-1) to a less than significant level, future development under the proposed Areas 3 and 4 Specific Plan shall implement the following mitigation measures:

MM HYD-1.1: All development projects within the Specific Plan shall comply with the National Pollution Discharge Elimination System (NPDES) permit requirements, the Alameda County Clean Water Program standards, the City

of Newark's ordinances, policies, and processes, and other applicable local, state, and federal requirements.

MM HYD-1.2: All development projects within the Specific Plan shall prepare a SWMP that includes post-construction water quality BMPs that control pollutant levels as required under Section C.3 of the NPDES Municipal Stormwater Permit issued by the RWQCB. Neighborhood- and/or lot-level BMPs to promote "green" treatment of storm runoff shall be emphasized, consistent with Regional Board guidance for NPDES Phase 2 permit compliance. These types of BMPs include infiltration basins and trenches, rain gardens, grassy swales, media filters, and biofiltration features. Since the site has mostly D soils of low permeability and a high water table, BMPs that enhance water quality but do not rely on infiltration are most appropriate for this site. Other source control measures, site design elements, and post-construction treatment measures may include the following:

- Disconnected downspouts that are directed into landscape areas;
- Minimization of impervious surfaces and increased use of permeable pavement(s);
- Location of all storm drain inlets to be stenciled with, "No Dumping! Flows to Bay" to discourage illegal dumping;
- Location and design of trash enclosures (all shall be covered) and materials handling areas;
- Use effective, site-specific erosion and sediment control methods during post-construction periods.

MM HYD-1.3: BMPs shall be designed in accordance with engineering criteria in the California Stormwater BMP Handbook for New and Redevelopment (California Storm Water Quality Association, 2003, California Storm Water Best Management Practice Handbook – New Development and Redevelopment) or other accepted guidance and designs shall be reviewed and approved by the City prior to issuance of grading or building permits for the roadway or driveways.

MM HYD-1.4: All development projects within the Specific Plan shall implement storm water management program measures, such as street sweeping and litter control, outreach regarding appropriate fertilizer and pesticide use practices, and managed disposal of hazardous wastes. The project proponent shall prepare a clearly defined operations and maintenance plan for <u>post-construction</u> water quality and quality control measures. The design and maintenance documents shall include measures to limit vector concerns, especially with respect to control of mosquitoes. The project proponent shall identify the responsible parties and provide adequate funding to operate and maintain stormwater improvements (through a HOA, Geological Hazard Abatement District, CSD, CFD or similar organization). If lot-level BMPs are accepted by the City as a suitable control measure, the project proponent shall establish a mechanism for enforcement to assure that BMP functioning is being maintained as designed. The project proponent shall also establish financial assurances, as deemed appropriate by the Department of Resource

Management, enabling the City to maintain the stormwater improvements should the HOA or other entity disband or cease to perform its maintenance responsibilities. **(Less than Significant Impact with Mitigation)**

3.8.3.12 *Short-Term Hydrology and Water Quality Impacts*

Short-term impacts to water quality could occur during construction of the proposed Specific Plan developments, including demolition, grading, excavation, and PG&E tower modification. In contrast to other potential pollutants, sediment is typically of greatest concern during construction. Although Area 3 and Area 4 are flat, the removal of vegetation can increase the onsite erosion potential, since areas of disturbed soils become susceptible to water and wind erosion and downstream sedimentation. In particular, grading and vegetation removal in proximity to drainage features could result in increased bank erosion, affecting both water quality and slope stability. Sedimentation could further impair water quality if contaminated soils would be disturbed during construction.

In addition to sediment, pollutants that could contribute to the degradation of surface-water quality during project construction include petroleum products (gasoline, diesel, kerosene, oil, and grease), hydrocarbons (from asphalt paving, paints, and solvents), detergents, nutrients (fertilizers), litter, pesticide, and herbicides.

In accordance with NPDES permit requirements, a Stormwater Pollution Prevention Plan (SWPPP) will be prepared prior to construction. The SWPPP will outline Best Management Practices (BMPs) for erosion and sedimentation control, the location of each BMP, and BMP maintenance. If these standard control measures are not implemented during and immediately after construction, construction could substantially degrade water quality downstream of the site.

Impact HYD-2: Construction activities could contaminate runoff from the Specific Plan site. **(Significant Impact)**

To reduce short-term water quality impacts (Impact HYD-2) to a less than significant level, future development projects under the proposed Areas 3 and 4 Specific Plan project shall implement the following mitigation measures:

MM HYD-2.1: All development projects within the Specific Plan shall file a Notice of Intent (NOI) with the State of California Water Resource Quality Control Board (SWRCB) and prepare a Storm Water Pollution Prevention Plan (SWPPP) prior to issuance of grading permits.

MM HYD-2.2: The SWPPP shall include an erosion control plan that prescribes measures such as phasing of grading, limiting areas of disturbance, designation of restricted-entry zones, diversion of runoff away from disturbed areas, protective measures for sensitive areas, outlet protection, and provision for revegetation or mulching. The plan would also prescribe treatment measures to trap sediment once it has been mobilized, at a scale and density appropriate to the size and slope of the catchment. These measures typically include inlet protection, straw bale barriers, straw mulching, straw wattles, silt fencing, check dams, terracing, and siltation or sediment ponds.

MM HYD-2.3: The Specific Plan developer(s) shall implement Best Management Practices (BMPs) for reducing the volume of runoff and pollution in runoff to the maximum extent practicable during demolitions, site excavation, grading, and construction. All measures shall be included in the project's SWPPP and printed on all construction documents, contracts, and project plans.

- Restrict grading to the dry season or meet City requirements for grading during the rainy season.
- Use effective, site-specific erosion and sediment control methods during the construction periods. Provide temporary cover of all disturbed surfaces to help control erosion during construction. Provide permanent cover as soon as is practical to stabilize the disturbed surfaces after construction has been completed.
- Cover soil, equipment, and supplies that could contribute non-visible pollution prior to rainfall events or perform monitoring of runoff. Cover stockpiles with secure plastic sheeting or tarp.
- Implement regular maintenance activities such as sweeping driveways between the construction area and public streets. Clean sediments from streets, driveways, and paved areas on-site using dry sweeping methods. Designate a concrete truck washdown area.
- Dispose of all wastes properly and keep site clear of trash and litter. Clean up leaks, drips, and other spills immediately so that they do not contact stormwater.
- Place fiber rolls or silt fences around the perimeter of the site. Protect existing storm and sewer inlets in the project area from sedimentation with filter fabric and sand or gravel bags.

MM HYD-2.4: BMPs shall be implemented in accordance with criteria in the California Stormwater BMP Handbook for Construction (California Storm Water Quality Association, 2003, California Storm Water Best Management Practice Handbook – Construction) or other accepted guidance and shall be reviewed and approved by the County prior to issuance of grading or building permits.

MM HYD-2.5: The Specific Plan developer(s) shall identify the SWPPP Manager who will be the responsible party during the construction phase to ensure proper implementation, maintenance, and performance of the BMPs. **(Less than Significant Impact with Mitigation)**

3.8.4 Conclusion

The proposed Specific Plan complies with City and FEMA requirements that includes fill placement to elevate all residential units, above the 100-year base flood elevation, therefore, people and structures will not be exposed to 100-year floods or flood risk due to the failure of outboard levees. **(Less than Significant Impact)**

The proposed Specific Plan development would not place housing within a 100-year flood hazard area structures that would substantially impede or redirect flood flows. **(Less than Significant Impact)**

The proposed Specific Plan development would not expose people or structures to a significant risk of loss, injury, or death as a result of the failure of a levee or dam; or be subject to inundation by seiche, tsunami, or mudflow. **(Less than Significant Impact)**

Drainage from the developed area would be directed to several proposed outfalls, which would discharge stormwater to the surrounding wetlands and open space. Because augmented flows from increased impervious areas are released directly to the Bay and cannot affect Bay tides, the proposed development would not substantially alter the existing drainage pattern of the site in a manner that would result in flooding in the area or downstream of the area nor would it affect drainage patterns. **(Less than Significant Impact)**

The proposed Specific Plan development would not substantially alter the existing drainage pattern of the site in a manner that would result in substantial on- or off-site erosion and mitigation measures (MM HYD-1.1 to 1.4 and MM HYD-2.1 to 2.5) would further reduce erosion impacts. **(Less than Significant Impact)**

The proposed project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems **(Less than Significant Impact)**

The Specific Plan site covers the most downstream portion of the aquifer where recharge does not take place; development of the proposed Specific Plan would have little to no effect on the balance of the groundwater basin. Therefore, the Specific Plan would not result in a significant impact on groundwater supplies or areas of groundwater recharge. **(Less than Significant Impact)**

Development under the Specific Plan would comply with required water quality standards and therefore, would not violate any RWQCB water quality standards. **(Less than Significant Impact)**

With increased surface water runoff volumes associated with development, existing wetlands could be threatened by water quality degradation or reduced water supply. However, the Specific Plan has included measures and will be designed to ensure that wetlands are hydraulically connected to each other to prevent reduced amounts of water within any part of the wetlands (refer to *Section 3.5 Biological Resources* MM BIO-2.1 to 2.6). The proposed Specific Plan would not result in a significant impact to wetland hydrology. **(Less than Significant Impact)**

Development in Areas 3 and 4 will result in significant long-term water quality impact in local waterways and wetlands. This is due to the fact that development will increase the volume of stormwater runoff, as well add pollutants to the stormwater. Implementation of the mitigation measures (MM HYD-1.1 to 1.4) will reduce impacts that could degrade water quality to a less than significant level. **(Less than Significant Impact with Mitigation)**

At all locations where development is proposed, construction activities have the potential to degrade water quality. Implementation of mitigation measures (MM HYD-2.1 to 2.5) will reduce degradation of water quality impacts. **(Less than Significant Impact with Mitigation)**

3.9 HAZARDS AND HAZARDOUS MATERIALS

The following discussion is based upon a Review of Conceptual Land Use Plans prepared by *Cornerstone Earth Group* in January 2009, a Screening Level Hazardous Materials Review prepared by *Cornerstone Earth Group* in August 2007, a Phase I Environmental Site Assessment prepared by *Cornerstone Earth Group* in October 2007, a Preliminary Soil, Soil Gas, and Ground Water Quality Evaluation prepared by *Cornerstone Earth Group* in December 2007, and a Phase I Environmental Site Assessment prepared by *Cornerstone Earth Group* in October 2007. These reports are provided in Appendix H of this document.

3.9.1 Regulatory Overview

Hazardous materials encompass a wide range of substances, some of which are naturally-occurring and some of which are man-made. Examples include pesticides, herbicides, petroleum products, metals (e.g., lead, mercury, arsenic), asbestos, and chemical compounds used in manufacturing. Determining if such substances are on or near project sites is important because, by definition, exposure to hazardous materials above regulatory thresholds can result in adverse health effects on humans, as well as harm to plant and wildlife ecology.

Due to the fact that these substances have properties that are toxic to humans and/or the ecosystem, there are multiple regulatory programs in place that are designed to minimize the chance for unintended releases and/or exposures to occur. The regulation of hazardous materials involves all levels of government, including the U.S. Environmental Protection Agency (EPA), the California Department of Toxic Substances Control, the Regional Water Quality Control Board, the Alameda County Flood Control and Water Conservation District, and the Newark Fire Department. These agencies maintain databases and files for the purpose of tracking the manufacture, transport, use, storage, and disposal of these substances. Table 3.9-1 summarizes many of these regulations. For more details on the regulations and the legislation on which they are based, please see Appendix H.

In addition to the above regulatory agencies, various policies in the City's General Plan have been adopted for the purpose of avoiding or mitigating hazardous materials impacts resulting from planned development within the City. All future development addressed by this EIR will be subject to the hazardous materials policies listed in Chapter 9 of the City's General Plan, including the following:

GOAL 4.	Protect Newark residents and workers from potential hazards associated with commercial and industrial activities.
Policy a. Program 1.	Ensure that all new construction meets City, state and federal requirements for the storage and handling of hazardous materials before building permits are issued.
Program 3	Work with state and federal agencies to ensure that all facilities in which hazardous materials are used or handled are regularly inspected, that regulations are enforced, and that there is accountability.
Policy b.	Seek to reduce the risk of accidents in the transportation of hazardous materials

Table 3.9-1:
Regulation of Hazardous Materials

Agency	Responsibilities
U.S. Environmental Protection Agency (EPA)	Oversees Superfund sites; evaluates remediation technologies; develops standards for hazmat disposal & cleanup of contamination; implements Clean Air & Clean Water Acts.
U.S. Department of Transportation (DOT)	Regulates and oversees the transportation of hazardous materials.
U.S. Occupational Safety & Health Administration (OSHA)	Implements federal regulations and develops programs & procedures regarding the handling of hazardous materials for the protection of workers.
CA Department of Toxic Substances Control	Authorized by EPA to implement & enforce various federal hazmat laws & regulations, implements state hazardous materials regulations; oversees remediation of contamination at various sites.
CA Occupational Safety & Health Administration (Cal/OSHA)	Implements state regulations and develops programs & procedures regarding the handling of hazardous materials for the protection of workers.
CA Air Resources Board/ Bay Area Air Quality Management District	Regulates emissions of toxic air contaminants & requires information regarding the risk of such emissions to be available to the public.
CA Water Resources Control Board/Regional Water Quality Control Board	Regulates the discharge of hazardous materials to surface and groundwater; oversees remediation of contamination at various sites.
Alameda County Environmental Health	Oversees the investigation and cleanup of soil and groundwater contamination from chemical releases and spills (e.g., pesticides, solvents, metals, etc.). Implements Local Oversight Program (LOP) for the leaking underground storage tank clean-up.
Alameda County Water District	Assists with the identification of potential groundwater contamination; implements monitoring systems at hazardous materials storage sites; and provides technical oversight for investigations and cleanups at Leaking Underground Fuel Tank (LUFT) and Spills, Leaks, Investigation, and Cleanup (SLIC) sites to assure the protection of the groundwater basin.
City of Newark Fire Department	As a Certified Unified Program Agency (CUPA), the Newark Fire Department is authorized to carry out several hazardous materials regulatory programs administered by the State and City. The State laws and regulations covered by the CUPA include: 1) Underground Tanks; 2) Community Right to Know and Spill Notification; 3) Accidental Release Program (Risk Assessment and Control of Extremely Hazardous Substances); 4) Above Ground Tanks; 5) Hazardous Materials Inventory Reporting; and 6) Hazardous Waste Generator Permits. The City codes covered by the CUPA include: 1) Hazardous Materials Storage Permit Requirements; 2) Uniform Fire Code Hazardous Materials Requirements; and 3) Industrial and Commercial Inspections for the City's Storm Water Program.

3.9.2 Existing Setting

The following discussion is divided into subareas comprising the Specific Plan area, Area 3 and Area 4. Since each of the Specific Plan areas is under multiple ownership, the discussion is further subdivided by ownership, (refer to Figure 3.9-1 for a parcel ownership map).

3.9.2.1 *Area 3*

78-acre Sobrato Property

The 78-acre property at Stevenson Boulevard and Cherry Street is currently vacant but was used for agricultural purposes since at least the 1950s. A dairy farm was on the property in the 1950s and 1960s, and horse stables were in the 1970s along with other several structures. Based on a review of historical aerial photographs, former dairy structures were located south of the 78-acre parcel where the current industrial business park is located. Prior environmental work completed at the property included the excavation of test pits, the collection of soil samples, and the performance of a geophysical survey. The geophysical survey, completed on an approximately two-acre area adjacent to Cherry Street, revealed no evidence of magnetic anomalies that would be indicative of buried features such as underground storage tanks (USTs). In addition, no evidence of debris-containing fill was reported during the excavation of test pits.

Organochlorine pesticides were detected in soil samples collected from depths of six to 12 inches below the ground surface. Eight pesticides were detected; however, only toxaphene (at up to 1,100 ppb) was detected at concentrations above the U.S. Environmental Protection Agency (EPA) Preliminary Remediation Goal (PRG) and California Human Health Screening Levels (CHHSLs)[52] established for residential use, of 440 and 460 ppb, respectively. It was estimated that the volume of soil with toxaphene concentrations exceeding residential screening levels is on the order of 40,000 cubic yards.

3.9.2.2 *Area 4*

280-acre Peery/Arrillaga Property

The 280-acre Peery/Arrillaga property is bounded to the north by a drainage channel and undeveloped land and to the east, south, and west by Mowry Slough and associated ACFC&WCD drainage channels. The property is primarily vacant except for a residence, shed, vacant structure, and a barn. The property was historically used for agricultural purposes and as a duck hunting club. Duck club buildings formerly were located on the northeast portion of the property and included a residence, club house, storage buildings, and aviaries. All remaining structures may contain asbestos and lead-based paints.

A soil quality investigation was previously completed on the site. Four organochlorine pesticides were detected in soil samples, including delta-BHC, DDE, DDD and DDT53 at maximum concentrations of 2.6, 580, 35, and 310 parts per billion (ppb), respectively. The detected pesticide concentrations did not exceed their respective residential PRGs or CHHSLs. Thus, the pesticide

[52] California Human Health Screening Levels (CHHSLs) established for residential uses by the California Environmental Protection Agency.
[53] delta-BHC – benzene hexachloride , DDE - Dichlorodiphenyldichloroethylene,
DDD – Dichlorodiphenyldichloroethane, DDT – dichlorodiphenyltrichloroethane.

Source: Cornerstone Earth Group

PROPERTY OWNER LOCATION MAP

FIGURE 3.9-1

concentrations do not pose a significant threat to human health or the environment for residential or commercial development.

Additionally, farm activities, including farm equipment maintenance and storage, were documented to take place in a barn area on the north central portion of the site. Since pesticide storage locations often were at such areas, it is possible that soil contamination could be encountered near former structures. The southeast boundary of the property is bordered by a drainage channel (which connects to Mowry Slough); across the drainage channel is the Tri-Cities Recycling and Disposal Facility (TCRDF). Based on the information reviewed during this study, a perimeter groundwater monitoring program is in place at the landfill and groundwater near Area 4 has not been significantly impacted. The landfill is located cross- or down-gradient from the site based on the anticipated groundwater flow direction. Since June 2007, the TCRDF has been closed to the public. The TCRDF is expected to reach capacity and no longer accept landfill waste from the Fremont Transfer Station in mid-2009. While the concrete recycling facility and corporation yard will continue to operate post-closure of the landfill, no additional waste deposits will occur on the top and sides of the landfill. Post-closure, the entire landfill will be capped. The post-closure use of the 115-acre landfill area is private, non-irrigated open space with no public access.[54]

Two water supply wells are located on the property, one located near the barn and the other near the residence. Since pesticide mixing was frequently completed near water supply wells, soil quality adjacent to the well could have been impacted from spilled chemicals. A septic tank is also near the residence. The septic system should be properly abandoned in accordance with applicable regulations prior to site development.

Ponds formerly located on the northern portion of the property, near the duck club structures, were filled in between 1946 and 1958; this area is now part of a larger agricultural field. No information regarding the source or quality of the fill was available; therefore the fill quality is unknown. In addition, soil quality in the area of the former duck club and associated ponds likely contain lead from lead shot.

22-Acre Unnamed Parcel

Shown on Figure 3.9-1, the 22-acre unnamed parcel located to the west of the southern terminus of Stevenson Boulevard was inaccessible during this environmental analysis. Based upon a review of historic aerial photographs this parcel was historically used for agricultural purposes. Thus, the soil quality could contain residual pesticide concentrations.

115-Acre Rogers Property, Stevenson Boulevard

The 115-acre Rogers property is currently undeveloped and bounded to the northwest by an Alameda County Flood Control District (ACFC&WCD) drainage channel and undeveloped land, to the northeast by railroad tracks, to the south by undeveloped land and to the southwest by Mowry Slough and undeveloped land. It was historically used for agricultural purposes from at least 1939, except for the southwest portion of the property that consists primarily of wetlands.

Soil sampling and analyses previously completed at the property detected fourteen organochlorine pesticides. Only dieldrin and toxaphene (at up to 66 and 2,600 ppb, respectively) were detected at

[54] City of Fremont, *Tri-Cities Recycling and Disposal Facility (TCRDF) Landfill Closure and Land Use Plan Final Environmental Impact Report*, August 2007.

concentrations exceeding residential screening levels. Additionally, Total DDT was detected in five samples at concentrations equal to or greater than the Total Threshold Limit Concentrations (TTLC, i.e., level above which a solid waste is considered hazardous per Title 22 of the California Code of Regulations).

101-Acre Heath Property, Mowry Avenue

The 101-acre Heath property is a vacant lot bounded to the northwest by Mowry Avenue, undeveloped property and auto dismantler yards, to the northeast by railroad tracks and undeveloped land, to the southeast by undeveloped land, and to the southwest by Mowry Slough. An ACFC&WCD drainage channel bisects the central portion of the site. The property was historically used for agricultural purposes from at least 1939 through the present, except for portions of the southern area of the site that appear to consist of wetlands.

Prior environmental work completed at the property included the collection of soil and groundwater samples. Several organochlorine pesticides were detected in soil; toxaphene (at up to 3,100 ppb) and dieldrin (at 85 ppb) were detected in soil samples at concentrations exceeding residential screening levels. TPHd and TPHmo[55] were detected in surface soil samples (at up to 200 and 920 ppm, respectively); TPH concentrations in one of the eight surface samples exceed the residential ESLs. The metals and lead were representative of background concentrations, but arsenic concentrations exceeding 10 ppm may be representative of agricultural amendments; only one sample contained arsenic above 10 ppm (HS-20 at 18 ppm). TPHg,[56] TPHd and TPHmo were not detected in grab groundwater samples. Benzene and toluene were detected in two of four grab groundwater samples at concentrations of up to 1.5 and 0.9 ppb, respectively. VOC analyses detected acetone in one groundwater sample at 17 ppb. The contaminant concentrations detected in groundwater are not likely to pose a significant threat to human health or the environment.

The soil samples collected for pesticide analyses were obtained from portions of the property described as being non-wetland areas, located to the northwest of the ACFC&WCD drainage channel. Based on a review of aerial photographs, some portions of the property located to the southeast of the drainage channel have previously been used for agricultural purposes. Currently the property is used for agricultural purposes. A water supply well was on the property. Since pesticide mixing frequently was completed near water supply wells, the soil quality adjacent to the well could have been impacted from spilled chemicals.

10-Acre Parcel, Mowry Avenue

The 10-acre Mowry Avenue parcel, located at the southwestern terminus of Mowry Avenue, is currently unoccupied but has historically been used since about 1980 for vehicle dismantling and storage activities. Fill reportedly was placed on the property between the late 1950s and early 1960s. Debris in the fill was encountered on approximately seven acres of the property, which was predominantly non-hazardous including tires, paper, glass, metal, cardboard, aluminum, toys, plastic and wood.

TPHmo and TPHd were detected in soil at concentrations up to 440 and 58 ppm, respectively. Additionally, several metals were reported in soil at concentrations exceeding environmental screening levels (ESLs) established for residential site use. In groundwater, various VOCs and

[55] TPHd-Total Petroleum Hydrocarbons Diesel and TPHmo-Total Petroleum Hydrocarbons motor oil
[56] TPHg - Total Petroleum Hydrocarbons Gasoline

petroleum hydrocarbons were detected. Groundwater contaminants that exceeded respective ESLs (established for protection of estuarine surface water bodies) included TPHmo (at up to 2,000 ppb), TPHd (at up to 810 ppb), and TPH as kerosene (at up to 760 ppb).

The property is listed on the Spills, Leaks, Investigations, and Clean-ups (SLIC) database and is being overseen by the ACWD. Periodic groundwater monitoring is ongoing. Future development activities at this property will require coordination with the ACWD, the California Regional Water Quality Control Board (CRWQCB) and/or the Department of Toxic Substances and Control (DTSC). Additionally, in prior reports, it was noted that the possible presence of methane resulting from on-site debris should be considered and that additional monitoring for methane would be prudent.

Pick-N-Pull Auto Dismantlers

Pick 'N' Pull Auto Dismantlers occupies three parcels located at 7400 and 7550 Mowry Avenue. For ease of discussion, 7400 Mowry Avenue, (undeveloped northern parcel) is referred to as Parcel 1; 7400 Mowry Avenue (auto wrecking yard) is referred to Parcel 2; and 7550 Mowry Avenue (auto wrecking yard southern parcel) is referred to Parcel 3. A residence and several outbuildings were also located on Parcel 2 until the mid-1960s. Since approximately 1966, automobile wrecking yards have occupied Parcels 2 and 3; Parcel 1 appears to have remained as undeveloped or agricultural land. Storm water collection ponds are located on the southeast portion of the property that were constructed between 1996 and 2002. Pick 'N' Pull Auto Dismantlers will be vacating this property in prior to construction but not later than 2014.

The property was used for agricultural purposes (row crops) for several decades. Pesticides (such as DDT) may have been applied to crops in the normal course of farming operations. Organochlorine pesticides were detected in soil on the adjacent property to the north at concentrations exceeding residential screening levels (i.e., residential PRGs and CHHSLs).

Auto dismantler operations at the property involve the use and storage of a variety of automotive related hazardous materials, including oils, gasoline, diesel, lead-acid batteries, catalytic converters, mercury switches, anti-freeze, oil filters, and Freon. General housekeeping of hazardous material storage and handling areas at the Pick-N-Pull facility appeared orderly during the 2007 site visit. Oil staining was, however, observed on the concrete vehicle processing pads, on gravel surrounding pads and on gravel within the customer yard area. As would be expected, the greatest extent of staining was observed near the vehicle processing areas, as well as along the fence lines where sorted parts were stored. Although a large number of stains were observed in the customer yard area, the staining appeared more limited. Additionally, what appeared to be oily water was observed within a sump located at the Core Center loading dock (Parcel 3) and staining was observed on the ground at the sump discharge point.

Prior to 1996, the property was occupied by Able Auto Wreckers (Parcel 2) and Little Al's Auto Wreckers (Parcel 3). Regulatory agency records from the 1980s and early 1990s indicate that discolored soil and soil impacted with waste oil were located at several areas. Evidence of spillage was noted and a fire reportedly occurred in an area where gasoline tanks were stored; flammable liquids were on the ground. Additionally, regulatory agency notes discuss suspicions that contaminated soil was "buried, moved around, or scraped under." Notes from a 1988 inspection report indicate that a concrete pad was pored over an area from which oily soil was scrapped and removed.

The historic information does not include details regarding the specific locations where impacted soil was identified. Based on historic aerial photographs, former vehicle processing operations completed in the same general areas as they are today, as well as near the Core Center. However, current structures that would be expected to help limit potential impacts to soil and ground water quality, such as awning-covered storage areas and work stations, and concrete pads, do not appear to have always been in use at the property. On several of the historic aerial photographs, dark areas that appear to be stained soil are apparent within the wrecking yards. Based on the observed current conditions, as well as information regarding historic auto wrecking operations at the property, soil and groundwater contamination may be present.

Based on field observations, fill soil appears to have been placed on Parcel 1. The fill depth appears to increase from one foot or less near Mowry Avenue to approximately four feet on the eastern portion of the parcel. Portions of the fill were observed to contain debris consisting mainly of wood, metal and concrete. A pattern of lightly shaded objects, possibly mounds of soil, are apparent on a 1946 aerial photograph, thus suggesting that the fill may have been placed during the 1940s and the source is not known.

Grading permits contained in City Building Department records also indicate that fill was placed at 7400 Mowry Avenue. A volume of 620 cubic yards (not to exceed four inches) was allowed by a 1981 permit and 10,000 cubic yards (not to exceed one-foot) was allowed by a 1992 permit. It is likely that this fill consisted of aggregate/gravel used as a surfacing material at the wrecking yards. Placement of this material makes it difficult to accurately assess impacts of the auto wrecking and dismantling operations on the environment.

Three ground water monitoring wells were installed at the property in 1988. Two of these wells were observed in 2007.

Five-acre Ace Auto Wrecking Property

Ace Auto Wrecking, located at 7580 Mowry Avenue, has operated for approximately 40 years. These operations have handled and stored significant quantities of automotive related hazardous materials at the property. A preliminary soil, soil gas, and groundwater quality investigation was completed to evaluate the property.

Petroleum hydrocarbon impacted soil is concentrated at the rear of the main warehouse, in the general area where vehicle dismantling is completed. The depth of the most significant petroleum hydrocarbon impact extends to approximately five feet, although the contamination likely extends to deeper depths as groundwater at an approximate depth of 12 to 15 feet is impacted. In addition, petroleum hydrocarbon impacted soil likely is beneath the warehouse (although likely to a lesser degree due to the concrete floor in the warehouse) and in sporadic pockets across the rear yard where vehicles are stored. The more highly petroleum hydrocarbon impacted soil (soil exceeding commercial screening levels) likely will require over-excavation and off-site disposal. Due to the large number of vehicles, vehicle parts, gravel and pavements covering the property and limiting access, further investigation is necessary to completely understand the extent of contamination. Ace Auto Wreckers will be vacating this property in prior to construction but not later than 2014.

Groundwater, encountered at a depth of approximately 12 to 15 feet, has been impacted by petroleum hydrocarbons but only at concentrations either below or just above maximum contaminant levels (MCLs) and ESLs. These concentrations do not require remediation, but an overseeing regulatory

agency may require further investigation to evaluate the extent of ground water impact; periodic monitoring of the ground water quality may also be required. The adjacent property to the southwest was previously used as a landfill; soil gas potentially could migrate and impact the property. The soil gas sampling and analyses revealed no significant impact.

Fill appears to have been placed on-site from an adjacent property that was used as a landfill and from City street construction projects. Based on the analytical data, the fill (especially the material obtained from the adjacent landfill) likely contains random pockets of contaminants, such as PAHs, polychlorinated biphenyls (PCBs), lead, petroleum hydrocarbons and organic debris.

3.9.2.3 *Off-Site Contamination Sources*

The former Mowry Avenue Landfill is located outside of the Areas 3 and 4 Specific Plan site, but adjacent to the southwest (across a slough from the property). This approximately 34-acre off-site facility was operated by Oakland Scavenger Company and used as a sanitary landfill accepting municipal garbage between 1964 and 1967. Based on information reviewed, low concentrations of gasoline range petroleum hydrocarbons, VOCs, semi-volatile organic compounds (SVOCs) and pesticides are in soil and groundwater at the former landfill site. The landfill is located down-gradient from the project site. Based on the "low" contaminant concentrations and the down-gradient location of the landfill, it does not pose a significant threat to soil or groundwater quality to the Specific Plan area.

3.9.2.4 *Electromagnetic Fields*

Area 4 is traversed by high voltage electric transmission lines, one 115 kV line and one 230 kV line, which are owned and operated by PG&E.

EMFs are imperceptible energy emissions located at the low end of the electromagnetic spectrum, produced by alternating current as it surges in electric wires. As the term "electromagnetic" suggests, EMFs have two components, an electric charge and a magnetic attraction. Electrical fields are a by-product of the electrical current, but can be found even when electricity is not flowing through the conductor. Magnetic fields, on the other hand, are created only by movement of the current through a conductor. A stronger current creates a stronger magnetic field. One of the principal concerns about magnetic fields, as opposed to electrical fields, is that the magnetic fields are almost impossible to shield. The overall strength of EMFs dissipates quickly with increases in distance from the source.

The following discussion summarizes available information about potential hazards from EMFs. While EMFs occur naturally and are in everything from visible light to cell phones, radio waves to X-rays, attention has focused on whether long term exposure to extremely low frequency (ELF) EMFs is hazardous. Studies have been conducted to prove or disprove the relationship between EMF exposure and numerous forms of cancer, birth defects, mental disorders, and other adverse health conditions, but no direct link has been established.

In recent years, several commissions and expert panels have concluded that there is no convincing evidence that high-voltage power lines are a health hazard or a cause of cancer.[57] Federal and state agencies have reviewed past studies to determine whether exposure triggers adverse health effects and have found no basis for setting health standards to date (Pacific Gas & Electric Co. 1999). The

[57] Campion, E.W., M.D., Power Lines, Cancer, and Fear, New England Journal of Medicine, July 3, 1997.

Environmental Protection Agency, however, concluded that EMFs are a "possible, but not proven, cause of cancer in people." At this time, it is impossible to say whether EMFs pose any health risk and if so, at what level of exposure risk develops.[58]

No health-based standards for long-term human exposure to EMF currently exist, because it is not possible to identify field strengths at which health effects are unlikely to occur. In addition, there is an absence of a scientific model of the mechanism by which EMF exposure affects humans (i.e., what aspect of fields is important in determining risks from exposure such as the average peak field strength, peak current induced in the body, or time spent in the field). It is known, however, that increased distance from transmission lines results in lower strengths of magnetic fields.

There are no federal, State, or local standards or regulations addressing residential exposure to EMFs. The City of Newark has no required setbacks from sources of EMFs.

Until 2003, the California Department of Education (CDE) regulated school proximity to electric transmission lines by simple distance setbacks according to the voltage class of the transmission line.[59] Prior to 2003, the standards for EMF setbacks from transmission line easements ranged from a 100 foot setback for 50-133 kV lines, a 150 feet for 220-230 kV lines, and a 350 foot setback for 500-550 kV lines. In 2003, the California Department of Education drafted a new policy to allow variances from these mandatory setbacks to make better use of vacant school properties on which new schools may be built, or where modernization of older schools is needed.

3.9.3 Hazardous Materials Impacts

For the purposes of this EIR, based upon Appendix G of the CEQA Guidelines, a hazardous materials impact is considered significant if the project will:

- create a significant hazard to the public or the environment from existing hazardous materials contamination by exposing future occupants or users of the site to contamination in excess of soil and ground water cleanup goals developed for the site; or
- construct a school on a property that is subject to hazards from hazardous materials contamination, emissions or accidental release; or
- create a significant hazard to the public or the environment as a result of the routine transport, use or disposal of hazardous materials; or
- create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment; or
- emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school; or
- (for a project located within an airport land use plan) result in a safety hazard for people residing or working in the project area; or
- (for a project within the vicinity of a private airstrip) result in a safety hazard for people residing or working in the project area.

The last two criteria are not applicable to the proposed project, because there is no airport located within the near vicinity and the project is not located within an airport land use plan.

[58] University of California, Berkeley, *Wellness Newsletter*, Volume 7, Issue 6. March 1991.
[59] (Sections 14001-14037 of Subchapter 1, Chapter 13, Division 1 of Title 5 of the California Code of Regulations govern how close schools can be placed to high voltage transmission lines).

3.9.3.1 *Area 3 Hazardous Materials Impacts*

Proposed Residential Uses

Area 3 includes the 78-acre Sobrato property. Residential uses and an elementary school are the new uses planned for the 78-acre property. Impacts associated with construction of an elementary school on the site are discussed in the following section. This property was formerly was used for agricultural purposes since at least the 1950s. Prior investigations completed at this parcel located organochlorine pesticides in shallow soil samples. Toxaphene was detected at concentrations exceeding the EPA Preliminary Remediation Goal (PRG) and the Department of Toxic Substances Control's (DTSC) California Human Health Screening Level (CHHSL) for residential use. The volume of soil with toxaphene concentrations exceeding residential screening levels is on the order of 40,000 cubic yards. The proposed residential use of Specific Plan Area 3, therefore, may create a significant hazard to the public or the environmental from existing hazardous materials contamination by exposing future occupants or users of the site to contamination in excess of soil cleanup goals developed for the site.

Impact HAZ-1: Implementation of the proposed Area 3 residential component of the Specific Plan may create a significant hazard to the public or the environment from existing hazardous materials contamination by exposing future occupants or users of the site to contamination in excess of soil cleanup goals developed for the site. **(Significant Impact)**

MM HAZ-1.1: Implementation of the following measures will reduce impacts to a less than significant level:

- A Remediation Plan shall be developed and approved by the City and DTSC prior to issuance of grading permits for the residential development. There are several options available for the mitigation of residual organochlorine pesticides, including 1) capping the impacted soil with 'clean' material: 2) using compounds, such as Gene Expression Factor, to biologically degrade the pesticides; 3) consolidating and capping the impacted soil beneath privately owned areas: and 4) capping the impacted soil with the proposed development so that there would be no significant exposure pathways to future residents. Selection of the most appropriate mitigation method shall be completed with the oversight of the City and an appropriately identified regulatory agency, in this case, DTSC. The oversight agency shall be responsible for overseeing and directing all site investigation and cleanup activities in a manner that ensures that the standards and requirements of the State of California are fully addressed. **(Less Than Significant Impact with Mitigation)**

Residential Operations

The proposed Area 3 residential uses would not store, use, or transport hazardous or acutely hazardous materials. Individual home owners may store and use small quantities of cleaning products, pesticides and herbicides, but they would they would not result in significant hazards to the public or the environment. Area 3 residential use would not create a significant hazard to the public or the environment as the result of the routine transport, use or disposal of hazardous materials. The

proposed Specific Plan Area 3 residential uses would not emit hazardous materials or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. **(Less than Significant Impact)**

Proposed Elementary School

The proposed Areas 3 and 4 Specific Plan includes an elementary school site within Area 3, along Cherry Street. This area was formerly in agricultural use, including a dairy farm. As noted above, the proposed elementary school location contains organochlorine pesticides in shallow soil samples. Toxaphene was detected at concentrations above the EPA Preliminary Remediation Goal (PRG) and the Department of Toxic Substances Control's (DTSC) California Human Health Screening Level (CHHSL) for residential use. The pesticide level in shallow Area 3 soils would also exceed appropriate levels for school use. Without remediation, development of the Area 3 school site would construct a school on a property that is subject to hazards from hazardous materials contamination.

In terms of school siting criteria, the level of soil contamination on the school site would not render the property unsuitable for school use, after remediation. The DTSC's School Property Evaluation and Cleanup Division is responsible for assessing, investigating, and cleaning-up proposed school sites. The Division's goal is to ensure that proposed school properties are 'free' of contamination or that they have been 'cleaned' to a level that protects the students and staff who will occupy the new school. School sites that will receive State funding for acquisition or construction are required to go through an environmental review and cleanup process under DTSC's oversight. A future elementary school developed on the proposed Area 3 school site would be a public school within the Newark Unified School District and, therefore, would be subject to DTSC review and approval. Investigation and remediation of the pesticide impacted soil will be required prior to elementary school development.

Impact HAZ-2: Without remediation, development of the Area 3 school site would construct a school on a property that is subject to hazards from hazardous materials contamination from presence of pesticides in the shallow soil layers. **(Significant Impact)**

MM HAZ-2.1: Prior to any approval of the potential school site by the Newark Unified School District, the District shall coordinate with DTSC and all available data pertaining to the proposed school site shall be provided to them, so that an appropriate plan for further site evaluation and/or remediation can be developed. The DTSC's School Property Evaluation and Cleanup Division is responsible for assessing, investigating, and cleaning-up proposed school sites. School sites that will receive State funding for acquisition or construction are required to go through an environmental review and cleanup process under DTSC's oversight. A future elementary school developed on the proposed Area 3 school site would be a public school within the Newark Unified School District and, therefore, would be subject to DTSC review and approval. Investigation and remediation of the pesticide impacted soil will be required prior to elementary school development. Options for remediation of pesticide impacted soils would be similar to those described above for MM HAZ-1.1. **(Less Than Significant With Mitigation)**

Other Issues Related to School Siting Criteria

Based upon the historic records search completed for the Phase I site assessment, the school property is not the site of former hazardous waste or solid waste disposal facility. The location is not a "Cortese List" hazardous substance release site identified by the Department of Toxic Substances Control (DTSC). Nor is the site the location of one or more buried or above ground pipelines which carry hazardous substances, acutely hazardous materials, or hazardous wastes. The school site is not proposed within 500 feet of the closest traffic lane of a freeway or similar busy traffic corridor. According to Bay Area Air Quality Management District (BAAQMD) records, there are no facilities within one-quarter mile of the school site that are anticipated to emit hazardous emissions or handle hazardous or acutely hazardous material, substances, or waste. Lastly, the school site is located approximately 4,300 feet from the 230 kV power line that crosses Area 4; therefore, the power line would not affect the suitability of the site for an elementary school. Based upon the above discussion, the proposed Specific Plan would not allow for the construction of a school on a property that is subject to hazards from emissions of accidental release. **(Less than Significant Impact)**

Additional information related to electromagnetic fields (EMF) is provided below.

3.9.3.2 *Area 4 Hazardous Materials Impacts*

Proposed Residential Uses

Single-family residential uses are planned on portions of the 115-acre Rogers Parcel, the 280-acre Perry/Arrillaga Parcel, and an unnamed parcel located to the west of the southern terminus of Stevenson Boulevard. PG&E tower modifications are also proposed within the unnamed parcel. Two high-voltage power line towers in Area 4 require modification to raise the elevation of the transmissions lines in the vicinity of the new Stevenson Boulevard bridge crossing. One tower requires an 20-foot height extension and one tower requires removal and replacement with a taller tower 25 feet northwest of and in line with the existing tower location.

Soil sampling and analyses previously completed on the 115-acre Rogers Parcel detected dieldrin and toxaphene at concentrations exceeding residential screening levels. Additionally, total DDT was detected in five samples at concentrations equal to or greater than the Total Threshold Limit Concentrations (TTLC. i.e., level above which a solid waste is considered hazardous per Title 22 of the California Code of Regulations).

The 280-acre Perry/Arrillaga Parcel was historically used for agricultural purposes and as a duck hunting club. Soil quality in the area of the former duck club and associated ponds may contain lead from lead shot. Additionally, undocumented fill is located near the former duck club structures. Pesticide contamination may be near former farm activities, including the barn area and two water supply wells on the north central portion of the property. Lastly, the Tri-Cities Recycling and Disposal Facility (TCRDF, located across the southeast boundary drainage channel (cross- or down-gradient from Area 4) is a potential source of groundwater and/or soil vapor contamination.

The unnamed parcel located to the west of the southern terminus of Stevenson Boulevard was inaccessible during this environmental analysis. Based upon a review of historic aerial photographs this parcel was historically used for agricultural purposes. Thus, the soil quality could contain residual pesticide concentrations.

Impact HAZ-3: The proposed development of Specific Plan Area 4 including the tower modifications may create a significant hazard to the public or the environment

from existing hazardous materials contamination by exposing future users to contamination related to the former duck club, agricultural activities, and undocumented fill on the site, and the adjacent landfill. **(Significant Impact)**

MM HAZ-3.1: Implementation of the following measures will reduce Area 4 hazardous material contamination impacts to residential uses to a less than significant level:

- All additional testing and remediation described below shall be completed under oversight by the City and an appropriate regulatory agency, DTSC, prior to issuance of grading permits for the residential development. The oversight agency shall be responsible for overseeing and directing all site investigation and cleanup activities in a manner that ensures that the standards and requirements of the State of California are fully addressed.

  - The area of the former duck club and associated ponds shall be evaluated for lead from lead shot. The results shall be provided to the City of Newark and the regulatory oversight to determine the appropriate remediation, if necessary. This investigation is only necessary in the event on-site mitigation (such as habitat restoration) will occur in this Sub-Area E.

  - Former fill soil quality of the duck club ponds shall be evaluated prior to issuance of grading permits for the residential development in Area 4. The results shall be provided to the City of Newark and the appropriate regulatory oversight to determine the appropriate remediation, if necessary. This investigation is only necessary in the event on-site mitigation (such as habitat restoration) will occur in this Sub-Area E.

  - All pesticide impacted soil shall be remediated to ensure all levels are below residential screening levels;

  - Additional soil samples shall be collected near existing and known former farm structures to test for residual levels of pesticides. The results shall be provided to the City of Newark and the regulatory oversight to determine the appropriate remediation, if necessary.

  - Soil quality adjacent to on-site wells shall also be analyzed for spilled chemicals including pesticides. The results shall be provided to the City and the appropriate regulatory oversight to determine the appropriate remediation, if necessary. If no longer needed, the water supply wells shall be appropriately abandoned in accordance with local standards prior to issuance of a grading permit.

  - Prior to any ground disturbance and issuance of grading permits at the unnamed parcel located to the west of the southern terminus of Stevenson Boulevard, shall be further evaluated to assess the current environmental conditions of this area. This evaluation shall be

provided to the City for review and to determine the appropriate remediation, if warranted.

- All imported soil to raise the elevation on the site shall document the source and quality of the soil. This documentation shall be provided and approved by the City of Newark, prior to issuance of a grading permit. The DTSC's October 2001 Clean Fill Advisory provides guidance on evaluating imported fill.

- The property owner shall periodically review the monitoring data from the TCRDF shall be to assess whether there are any significant changes to the Area 4 conditions. The monitoring results shall be annually provided to the City of Newark. The Perry/Arrillaga property shall be evaluated for soil vapor for contaminants that may have migrated from TCRDF unless monitoring data from the landfill shows that further evaluation is unnecessary. **(Less Than Significant Impact with Mitigation)**

Residential Operations

The proposed Area 4 residential uses would not store, use, or transport hazardous or acutely hazardous materials. Individual home owners may store and use small quantities of cleaning products, pesticides and herbicides, but they would they would not result in significant hazards to the public or the environment. Area 4 residential uses would not create a significant hazard to the public or the environment as the result of the routine transport, use or disposal of hazardous materials. The proposed Specific Plan Area 4 residential uses would not emit hazardous materials or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. **(Less than Significant Impact)**

Proposed Golf Course

The Areas 3 and 4 Specific Plan proposes a golf course on the portion of the site generally bounded by Mowry Avenue, the Union Pacific Railroad tracks, the ACFC&WCD channel, and the north end of Mowry slough. Much of this area is currently or was formerly used as auto dismantlers, including portions of the 101-acre Heath property, the 115-acre Rogers property, the Pick-N-Pull properties, the Ace Auto Wrecker's property, the 10-acre Mowry Avenue property, and the 10-acre Mowry Avenue property.

The parcels with auto dismantler operations involve the use and storage of a variety of automotive related hazardous materials. Past operating practices of the parcels may have impacted the soil and groundwater of the property. Undocumented fill soil also exists on the properties, which could be a source of contamination.

The former Mowry Avenue landfill is located southwest of the proposed golf course site (across a slough). Low concentrations of gasoline range petroleum hydrocarbons, volatile organic compounds, semi-volatile organic compounds, and organochlorine pesticides are in soil and groundwater at the former landfill. Based on the reported ‘low’ contaminant concentrations and the down-gradient location of the landfill, it does not appear to pose a significant risk to golf course development. This

area (closest to the former landfill) will not contain any structures, thus this eliminates the risk for indoor air intrusion of contaminants.

Soil and groundwater contamination with petroleum related chemicals, agricultural chemicals, and soil gas from former landfill uses could result in significant impacts to construction workers at the site. Additional testing and environmental regulatory agency oversight is recommended to design and implement a testing and remediation program.

Impact HAZ-4: Implementation of the proposed Area 4 golf course uses may create a significant hazard to the public or the environment from existing hazardous materials contamination result in exposure of construction workers or future uses to hazardous material impacts. **(Significant Impact)**

MM HAZ-4.1: Implementation of the following measures will reduce impacts to the golf course to a less than significant level:

- Soil and ground water quality investigations shall be completed at the auto wrecking operation properties prior to issuance of any demolition permits. If impacted soil or groundwater is detected that exceeds commercial screening levels, these parcels shall be remediated under oversight by the City and an appropriate regulatory agency, in this case likely DTSC. The oversight agency shall be responsible for overseeing and directing all site investigation and cleanup activities in a manner that ensures that the standards and requirements of the State of California are fully addressed.

- Any future golf course development activities at the 10-acre Mowry Avenue property shall be coordinated with the City and the appropriate regulatory agency, DTSC. Additionally, prior to issuance of grading permits, methane monitoring shall be completed at this property and results shall be provide to the City and the regulatory agency. If impacted methane levels exceeds commercial screening levels, these parcels shall be remediated under oversight by the City and in this case, likely DTSC.

- The depth and quality of the former fill areas [Pick-N-Pull Parcel 1, Ace Auto Wrecker's property, and 115-acre Rogers property (filled ponds)] shall be investigated prior to issuance of grading permits. This investigation shall be provided to the City for review and approval. Options for remediating impacted fill include capping, relocation, over-excavation and off-site disposal, and/or completing a risk assessment to evaluate whether this material is a risk to human health or the environment under the future golf course redevelopment plan.

- Prior to any demolition of the existing buildings (Pick-N-Pull, Ace Auto Wrecker's), an asbestos survey is required by local authorities and/or National Emissions Standards for Hazardous Air Pollutants (NESHAP) guidelines. NESHAP guidelines require the removal of potentially friable Asbestos-Containing Building Material (ACBMs) prior to building demolition or renovation that may disturb the ACBM. The results of the

survey shall be submitted to the City for review and approval, prior to issuance of demolition permits. **(Less Than Significant Impact with Mitigation)**

Golf Course Operation

The proposed golf course will apply fertilizer to the maintained areas including the fairways, greens, and tees, and, less frequently, herbicides and pesticides. The application of agricultural chemicals will be avoided near wetland and other sensitive areas, as described in the *Section 2.4.4.*

Development of the golf course would include construction of maintenance and storage facilities for the golf course. Operation of the maintenance facility will involve the use, handling, and storage of hazardous materials. Improper storage of these materials could potentially result in soil and groundwater contamination, as well as potential accidental release of hazardous chemicals. Most of the pesticides in use today will not result in soil or groundwater contamination, if applied according to the manufacturer's specifications. Accidental leakage or spills of pesticides in chemical storage areas could result in potential soil contamination, however.

There may be a diesel and gasoline tank installed within the maintenance area to fuel maintenance vehicles. The diesel tanks are usually 1,000-1,500 gallon capacity and the gas tanks are 500 gallon capacity. Both tanks will be above ground in double lined tanks with sufficient bollards, break away nozzles, and proper signage. The diesel and gasoline will be used for the mowers, hand tools, maintenance carts, etc. The maintenance building will require hazardous materials permits from the City of Newark Fire Department for oil and fuel storage and possibly chemical storage. The future operators or building contractors will prepare for and apply for those permits.

The golf course will maintain a fleet of 40 to 60 electric-powered golf carts that will be recharged on site. They re-charge on site with individual small trickle chargers. There are currently two options for golf cart storage; an independent outbuilding near the clubhouse, or underneath the clubhouse. Charging of electric golf cart batteries could result in hazardous material impacts related to venting and battery storage. When batteries are recharged, hydrogen gas is released. If this gas is not properly vented, there is a potential for explosion. Potential concerns for battery storage include the need for seismic anchoring of any batteries on shelves and the appropriate siting of battery storage.

Impact HAZ-5: The operation and maintenance of the golf course, if improperly designed and/or managed, could create a significant hazard to the public or the environment as a result of the routine transport, use or disposal of hazardous materials, or through reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the environment. **(Significant Impact)**

MM HAZ-5.1: With implementation of the following measures, the proposed golf course operation would not create a significant hazard to the public or the environment through reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the environment:

- As required through an operational permit issued by the City, a golf course operations plan will be developed prior to opening of the golf course. This plan shall be reviewed and approved by the City prior to

issuance of building permits. The plan will include the following elements:

- Proper storage, handling, and disposal of chemicals;
- Limited use of chemicals;
- Strict adherence to manufacturer's recommendations and procedures involving chemical applications;
- Application of chemicals only by State-licensed personnel; and
- Use of only short-lived pesticides and herbicides

- The golf course superintendent shall maintain a log of all herbicide and pesticide purchases and application.

- The proposed gasoline storage tanks will be installed and maintained per City, State, and Federal requirements

- The proposed golf cart barn and electric golf cart battery charging facilities shall be designed, constructed, and managed to prevent build up of hydrogen gas and the potential for explosion. The design of the golf cart barn shall be reviewed and approved by the City Fire Department.

- Batteries shall be stored in a safe manner, pursuant to California Building Code and Fire Code requirements. **(Less Than Significant Impact with Mitigation)**

The proposed Specific Plan Area 4 golf course would not emit hazardous materials or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. **(Less than Significant Impact)**

Electromagnetic Fields

The proposed Specific Plan (Area 4, Subarea C) would allow development of residential uses in the vicinity of the two existing high voltage electric transmission lines. As described above, there are no studies which definitively prove a link between disease and EMFs; nor are there health based exposure standards for EMF exposure.

There are no federal, State, or local standards or regulations addressing residential exposure to EMFs. The City of Newark has no required setbacks from sources of EMFs. Since there are no health-based or regulatory risk standards for EMFs, identifying an impact of the current or potential effects of EMFs would necessarily be speculative in nature. CEQA Guidelines (Section 15145) state that if, after thorough investigation, a lead agency finds that a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact. Pursuant to this section, the assessment of the effects of EMFs in this EIR is limited to the qualitative discussion above and no significant impacts related to EMFs are identified.

3.9.4 Conclusion

Potential hazards associated with exposure to elevated levels of organochlorine pesticides in the soils on Area 3 proposed residential property will be mitigated/avoided by implementing a remediation plan for the site (MM HAZ-1.1). **(Less Than Significant With Mitigation)**

Potential hazards associated with exposure to elevated levels of organochlorine pesticides in the soils on Area 3 proposed school property will be mitigated/avoided by implementing a remediation plan approved by DTSC for the site (MM HAZ-2.1). **(Less Than Significant With Mitigation)**

Potential hazards associated with exposure residual lead, pesticides, undocumented fill, and contamination from the adjacent landfill in the soils on Area 4 proposed residential property and tower modification area will be mitigated/avoided by implementing mitigation measure MM HAZ-3.1. **(Less Than Significant With Mitigation)**

The project includes measures that will protect workers and the environment from the effects of asbestos-containing building material, pesticides, undocumented fill in the soils on Area 4 proposed golf course property (MM HAZ-4.1). **(Less Than Significant With Mitigation)**

Hazards and hazardous materials associated with the operation and maintenance of the golf course will be avoided through proper design and management and by implementing mitigation measure MM HAZ-5.1. **(Less Than Significant With Mitigation)**

3.10 AESTHETICS AND VISUAL RESOURCES

3.10.1 Regulatory Overview

3.10.1.1 *General Plan Goals, Policies, and Programs*

The following goals, policies, and programs in the City's General Plan have been adopted for the purpose of avoiding or mitigating visual impacts resulting from planned development within the City. All future development addressed by this EIR will be subject to the goals, policies, and programs listed in Chapter 3 and 6 of the City's General Plan, including the following:

Land Use Goals and Policies

GOAL 2. Policy a. Maintain high standards for design and appearance of all new development, with special emphasis for those areas adjacent to the City's entrances and along major arterial streets.

Policy b. Encourage architectural styles for new development that are compatible with, and complement adjacent developments, and that will enhance the overall quality of the development and the area.

GOAL 3. Policy d. Provide for control of excessive exterior lighting.

Program 10. Utilize the City's development regulations and design review procedures to reduce potential light and glare impacts to non-significant levels. Design review procedures should encourage consideration of the following:

- Use of low pressure sodium lights where security needs permit;
- Restricting height of exterior lighting fixtures to minimize light spill;
- Directing exterior lighting on-site to minimize spill-over;
- Shielding for exterior lights;
- Minimizing use of highly reflective exterior lighting for commercial, industrial, and institutional uses.

Open Space and Conservation Goals and Policies

GOAL 1. Policy a. Protect and where possible enhance *public* open space resources available within or near Newark.

Program 5. Preserve and enhance the open space qualities of the major *Gateways*, *Pathways*, and *Nodes*, as defined in the general plan. Establish special design guidelines, including pedestrian facilities as appropriate, and protect review processes for any development, landscaping, signage, etc., in these areas that preserve the feeling of openness and, as possible, enhance the identity of Newark as a special place in the region.

Program 8. Provide for adequate building setbacks from streets and adjoining properties so that each development site has some relief from the feeling of overcrowding and the impacts of the works of man and to provide space for on-site landscaping.

Policy b. Encourage *private property owners* to preserve unique open space areas and natural features on their lands.

GOAL 6.	Conserve and manage the City's tree resources.
Policy a.	Maintain, and where appropriate, enhance programs for preserving existing trees.
Program 1.	Maintain an active tree replacement program that conserves trees and preserves the life of public improvements such as curbs, gutters, and sidewalks.

3.10.1.2 *General Plan Elements of Visual Significance*

The City of Newark has established features of visual significance throughout the City. These include: edges, gateways, pathways, and nodes. The General Plan *Goal 1. Policy a. Program 5* states to preserve and enhance open space qualities of the major Gateways, Pathways, and Nodes. Major pathways are defined as routes through a community that are used most frequently. Nodes are defined as major points of intersection or assembly, usually destinations. In the City of Newark these often include major shopping centers, historical areas, or community gathering areas. Areas 3 and 4 have three major pathways of visual significance – Mowry Avenue, Cherry Street and Stevenson Boulevard. Although not specially listed in the General Plan (likely due to its recent construction), the George M. Silliman Recreation Complex is considered an important node for the City of Newark. Mowry Slough is also an important waterway of visual significance for the City; it is identified on General Plan Figure 6-1 for the Visual Significance features within the City.

According to the General Plan, although the hills to the east are well outside of Newark's planning area, the views of the hills contribute to the openness of the eastern side of the San Francisco Bay area and, therefore, are considered an important visual resource.

The above General Plan features of visual significance are considered to be locally significant scenic resources for the purposes of evaluating visual impacts in this EIR.

3.10.2 <u>Existing Setting</u>

3.10.2.1 *Area 3*

Area 3 of the Specific Plan consists of approximately 300 acres and is bounded by Mowry Avenue, Cherry Street, Stevenson Boulevard, and Union Pacific railroad tracks. Area 3 is characterized by level topography with street trees surrounding a visually modern, urban development. A continuous sidewalk with a mature street trees and turf grass on both sides of the sidewalk exists adjacent to Mowry Avenue, Cherry Street, and Stevenson Boulevard.

A one-story Fire Station and an adjacent firefighter-training tower are located along Mowry Avenue at Cherry Street. West of the fire station is a surface parking lot and a turf playing field that are part of the 30-acre (Newark website says 30 acres) Silliman Recreation Complex. The 68,730-square foot recreation complex is surrounded by surface parking lots, a fenced softball field, and soccer play fields (refer to Photo 1). Three-structure facility consists of one 12,000 square foot (sf) gymnasium, a 25,000 sf activity center. The 32-foot high gymnasium is tilt-up construction, with a hip roof broken up by a series of dormers on all sides. The open roof structure features 10 feet deep steel trusses spanning 105 feet. The activity center is a single-story steel-framed structure, with hip and

gable roofs broken up by a series of dormers. The aquatic center is an open steel trussed building with trusses spanning 120 feet.

A vacant two-story industrial office building is located on Cherry Street south of the fire station. Further south on Cherry Street is the newly developed Ohlone Community College, Newark Center for Health Sciences and Technology which includes a 135,000 square foot two-story building; landscaping, surface parking lots, and a wetland preservation area on the 81-acre property (refer to Photo 2). On the south side of the Ohlone Campus is a drainage channel with service road on each side of the fenced channel (refer to Photo 3). South of the drainage channel is an undeveloped 78-acre property along Cherry Street and Stevenson Boulevard (refer to Photo 4). This property is frequently disced and periodically dry farmed. It is visually flat and contains no trees. A modern industrial office park including 13 two-story buildings and surface parking lots is located west of the 78-acre property, fronting Stevenson Boulevard. Union Pacific railroad tracks run along a raised alignment forming the western boundary of Area 3.

Area 3 is visible from Mowry Avenue, Cherry Street, Stevenson Boulevard, passing railroad cars and from Area 4.

3.10.2.2 *Area 4*

Area 4 of the Specific Plan consists of approximately 552 acres and is bounded by Mowry Avenue, Union Pacific railroad tracks, City of Newark/City of Fremont city limits, and Mowry Slough (Photo 5). Most of Area 4 consists of disced farm land and wetlands and has level topography and no trees, except for the raised earthen levees of the ACFC&WCD drainage channels and the Mowry slough. There is an old wooden house and barn west of the railroad tracks at the terminus of Stevenson Boulevard. A drainage channel running east-west bisects the northern portion of Area 4. North of the drainage channel is higher ground with open, stored areas of automobiles and buildings associated with several automobile dismantler facilities and additional vacant land (refer to Photo 6). The raised earthen levees of Mowry Slough form the western boundary of Area 4.

High voltage overhead transmission lines cross Area 4 on large towers within dedicated Pacific Gas and Electric (PG&E) easements. Two sets of lines are located within the easement, with one set of towers at 175 feet in height and the other set of towers 90 feet in height. There are 10 towers crossing through Area 4, as shown in Photo 5.

Area 4 is visible from passing railroad cars, adjacent uses in Area 3, Mowry Slough, and the west ends of Stevenson Boulevard and Mowry Avenue.

Photo 1 - From Mowry Avenue looking south at the Silliman Recreation Complex.

Photo 2 - From Area 3 drainage channel looking north across Ohlone College property.

PHOTOS 1 AND 2

Photo 3 - From Stevenson Boulevard looking northwest toward 77-acre property in Area 3.

Photo 4 - From Union Pacific railroad looking northeast toward Ohlone College and Silliman Recreation Complex

PHOTOS 3 AND 4

Photo 5 - From Area 3 Railroad Tracks/Industrial Office Park looking west across Area 4 toward San Francisco Bay.

Photo 6 - From Union Pacific railroad looking northwest toward automobile dismantlers.

PHOTOS 5 AND 6

3.10.3 Visual and Aesthetic Resources Impacts

3.10.3.1 *Thresholds of Significance*

For the purposes of this EIR, based upon Appendix G of the CEQA Guidelines, a visual resources impact is considered significant if the project will:

- have a substantial effect on a scenic vista;
- substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway; or
- substantially degrade the existing visual character or quality of the site and its surroundings; or
- create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

3.10.3.2 *Impact Discussion*

Illustrative drawings[60] based upon the proposed land use plan and design guidelines from the Specific Plan are shown on the following pages with a view location map on 3.10-1. The view under existing conditions is also shown with each illustrative drawing for comparison purposes.

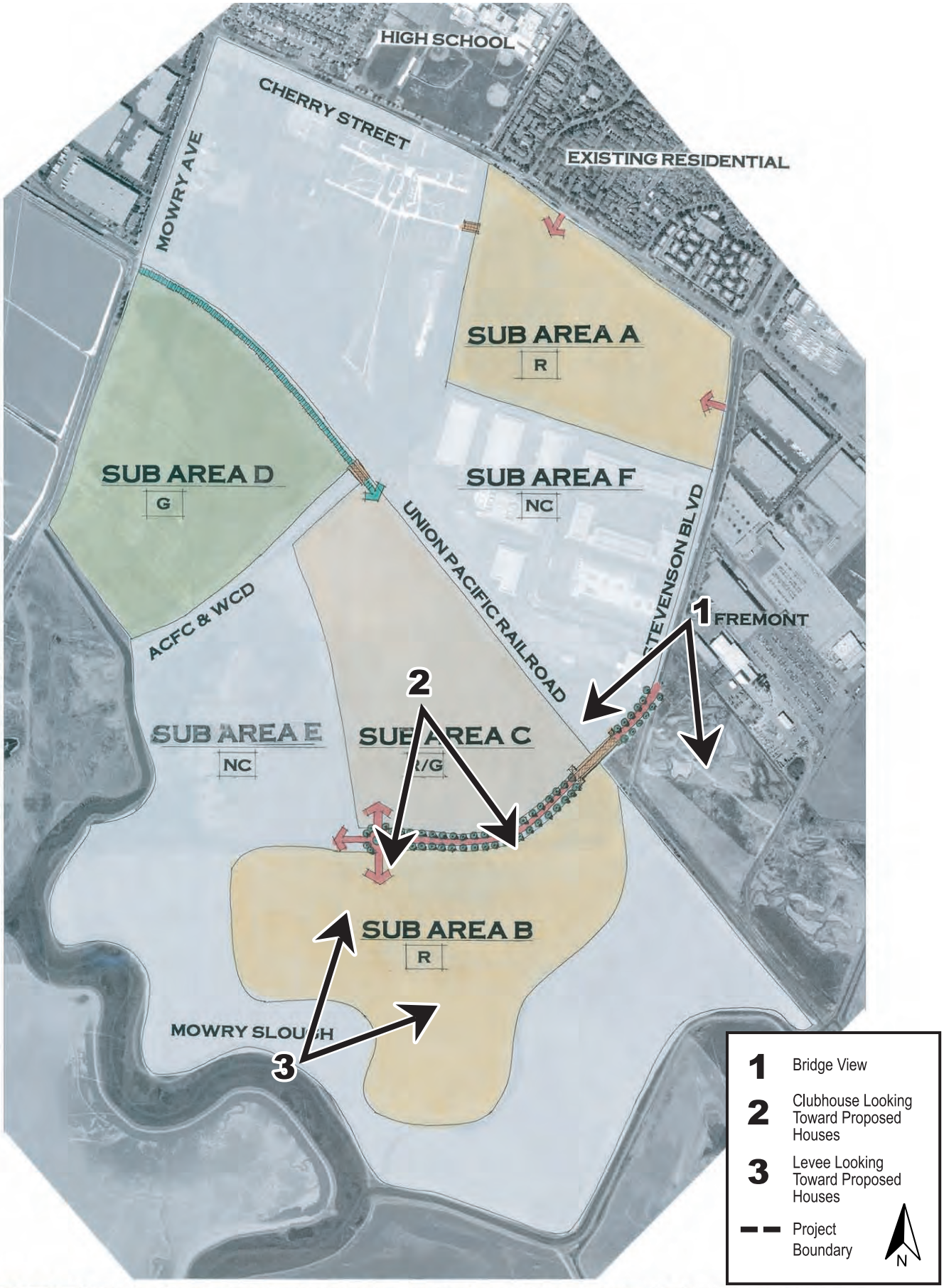
Figure 3.10-2 is an illustration of how the Stevenson Boulevard railroad overpass would appear from the existing west end of Stevenson Boulevard in Area 3. The overpass would rise on earthen embankments 24 feet above the railroad tracks, or approximately 30 feet above the existing ground surface, turning westward into the Area 4 residential neighborhood. The overpass would be a relatively wide, two-lane bridge with a raised median and sidewalks and bike lanes on each side. A five -foot high safety railing, metal fence would edge the sides of the overpass.

Figure 3.10-3 is an illustrative view looking southwest from a trail adjacent to the traffic circle at the entry road. Undisturbed wetland area is shown in the foreground across the middle of the view, with Area 4 residential development showing to the north (ride side of view) and beyond the wetland area to the west. The Santa Cruz Mountains are visible in the background, above the landscaped Area 4 residential neighborhood.

Figure 3.10-4 is an illustrative view looking east from the top of the Mowry Slough levee towards the Area 4 residential development. The undeveloped wetland area is shown across the foreground of the view, with the landscaped residential development raised above the wetlands. Mission Peak and the Diablo Mountain Range extend across the background of the view.

It should be noted that the existing high voltage transmission towers and lines are not shown on the illustrative views, but they will remain with the Areas 3 and 4 Specific Plan development. Two of high-voltage power line towers in Area 4 require modification to raise the elevation of the transmissions lines in the vicinity of the new Stevenson Boulevard bridge crossing. One tower requires an 20-foot height extension and one tower requires removal and replacement with a taller tower 25 feet northwest of and in line with the existing tower location.

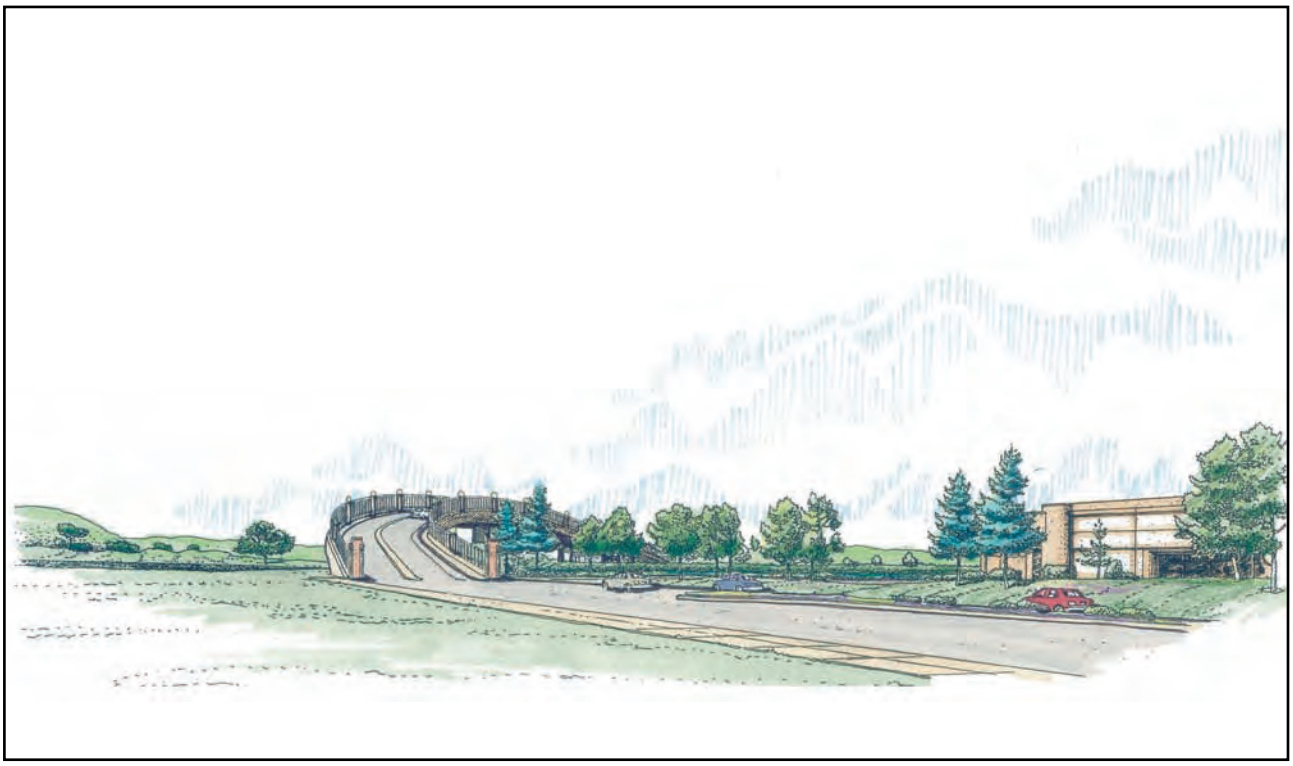
[60] Illustrative drawing were prepared by *The Guzzardo Partnership, Inc*., land planning and design consultants for the Specific Plan.



VIEW LOCATIONS MAP

FIGURE 3.10-1

Existing View

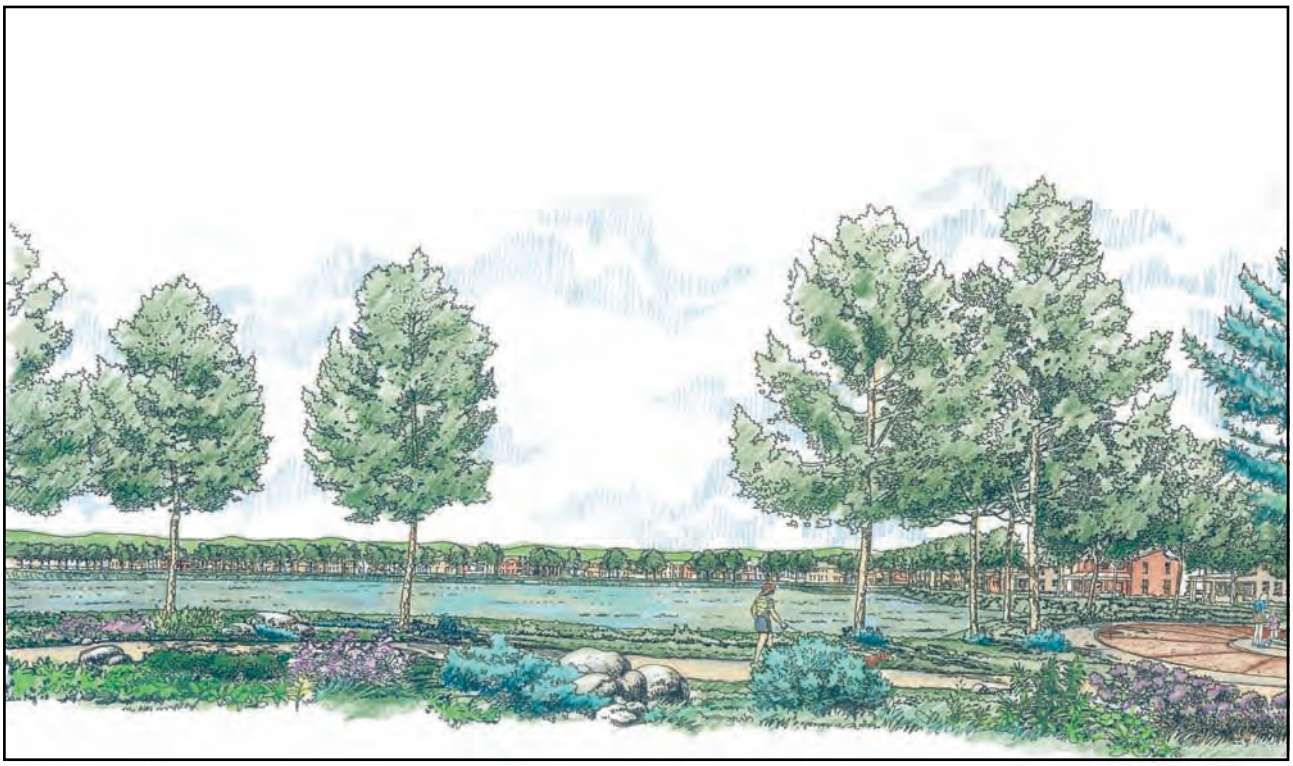


Stevenson Bridge View

VIEW 1

FIGURE 3.10-2

Existing View

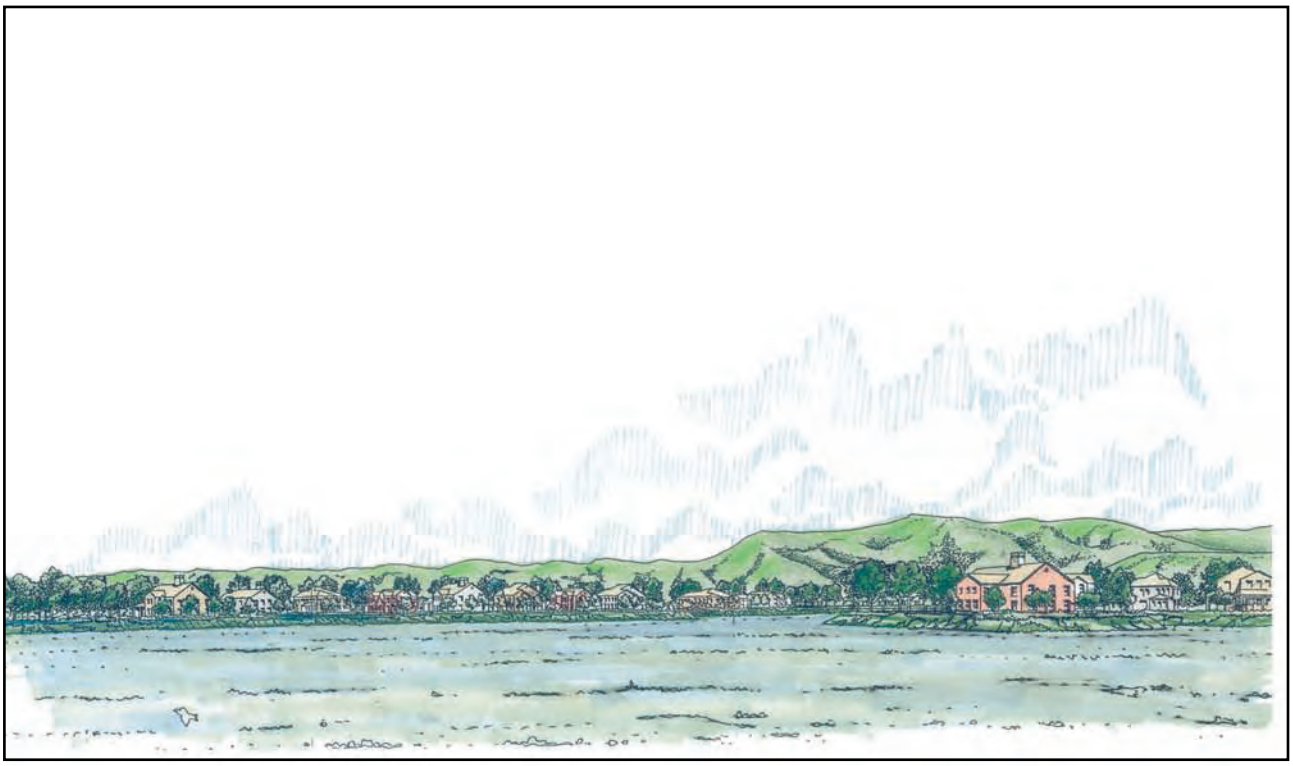


From Proposed Golf Clubhouse Looking Southwest Toward Proposed Area 4 Residential

VIEW 2

FIGURE 3.10-3

Existing View



Mowry Slough Looking East Toward Proposed Area 4 Residential

VIEW 3

FIGURE 3.10-4

Impacts to General Plan Elements of Visual Significance and Scenic Vistas

The General Plan recommends preservation and enhancement of the open space qualities of the major features of visual significance. According to the General Plan, there are features of visual significance within Areas 3 and 4. These include the following: 1) major pathways, consisting of sidewalks and landscaping strips for Mowry Avenue, Cherry Street, and Stevenson Boulevard; 2) Nodes, consisting of the Silliman Recreation Complex; and 3) Waterways, including Mowry Slough.

The Major Pathways within Area 3 will remain intact with implementation of the Specific Plan. The vehicle entrances planned to access the Area 3 residential area and school will utilize two existing curb cuts. By using these two existing curb cuts for entrance to Area 3, the existing 50-foot wide landscaped frontage along Cherry Street and the 30-foot wide landscaped frontage along Stevenson Blvd will remain intact. Improvements planned in Area 4 will extend these existing Major Pathways to create a complete loop connecting Area 3 and Area 4. On Stevenson Boulevard the existing pathway will connect with the new railroad bridge. Sidewalks will be provided on both sides of the bridge. Once the bridge drops into Area 4 an eight-foot wide trail will continue along the main street within the proposed residential area. At the roadway to the golf course the trail will also connect to the EVA roadway/multi-use trail adjacent to the railroad right-of way connecting to the existing pathway on Mowry Avenue. None of the Major Pathways or Nodes within Area 3 will be adversely affected by implementation of the Specific Plan.

In Area 4, no physical modifications are proposed to Mowry Slough. The proposed public parks and trail system in Area 4 will provide more people with viewing access to Mowry Slough (viewing within 500-700 feet of Mowry Slough). Therefore, the Specific Plan will increase the visibility of Mowry Slough, which is considered a significant visual feature for the City of Newark. Views from the Area 4 residential out toward the slough and greater San Francisco Bay, and beyond to the Santa Cruz Mountains, will not be affected by the proposed Specific Plan development. Implementation of the Specific Plan will not result in an adverse visual impact to this visual feature.

Since the project site is privately owned land and there is no public access onto the Mowry Slough levees, there are currently no public views from the site eastward to Mission Peak and the Diablo Mountain Range. The proposed Areas 3 and 4 Specific Plan development will alter future views from the slough eastward, exchanging what are now views of distant industrial development with closer views of the landscaped Area 4 residential uses. Views of Mission Peak and the Diablo Mountain range will remain with development of the Specific Plan. In the event the future Bay Trail alignment were to extend along the Mowry Slough levee edging Area 4, the proposed project would alter the view from the trail eastward, but it would not substantially degrade the views of the distant hills that are the important scenic feature of that view.

Based upon the above discussion, the Specific Plan would not adversely impact any locally significant resources (i.e., General Plan elements of visual significance), nor will the project have a substantial effect on a scenic vista. **(Less than Significant Impact)**

Visual Character and Scenic Resources

The proposed improvements in Area 3 include two-story residential structures and a elementary school on a vacant 78-acre property within an urbanized area. Cherry Street and Stevenson Boulevard are currently lined with street trees along the proposed development area. From Cherry Street, the current view is a 50-foot landscape strip with partially blocked (by street trees) views of

vacant undeveloped fields with more distant views of an existing industrial office park. From Stevenson Boulevard the current view is a 30-foot landscape strip view of vacant fields. The views of the 30- and 50-foot landscape strip would remain the same under proposed conditions, but the vacant land would be replaced with two-story structures with backyard fences. The view from Cherry Street would be similar to the view on the east side of Cherry Street, which include two-story residential structures. The views from the project frontage of Stevenson Boulevard would be similar to existing Stevenson Boulevard views east of Cherry Street. Views of the south side of Stevenson Boulevard include large office, warehouse, and industrial buildings. The existing developed and urban visual character of Area 3 and surrounding areas would not be adversely affected by the proposed visual changes in Area 3. Implementation of the Area 3 portion of the proposed Specific Plan would not significantly degrade the existing visual character or impact any scenic resources of Area 3 or surrounding areas.

As mentioned previously, the project requires two high-voltage power line towers to be modified to ensure necessary clearance over the new Stevenson Boulevard Bridge. One tower, with a height of 175 feet, will require an 20-foot height extension to raise the height of the transmission line to a sufficient height. This tower will be raised with a top cage extension to be install on top of the existing tower. The other tower, a 90-foot tower, will be removed and replaced with a new tubular steel tower that is approximately 135 feet in height. The new tubular tower will be installed approximately 25 feet northwest of and in line with the existing tower location. Views of the tower modifications would be a visible change; however, there are eight other towers crossing the site and additional towers in the project vicinity and this change would not significantly degrade the existing visual character or impact any scenic resources in Area 4 or surrounding areas.

The existing elevation on the Area 4 residential area ranges from approximately zero to nine feet above mean sea level. The Specific Plan proposes placement of 10 to 14.5 feet of fill, to raise building pads above flood elevation, and a two-story housing development. While this increase in existing elevation and the addition of new structures is a relatively substantial change, there are very few views of Area 4 that currently exist. Most of the elevation changes will not be visible from Cherry Street, Stevenson Boulevard, or Mowry Avenue, because existing structures within Area 3 block most views of Area 4. Looking southwest from Stevenson Boulevard, a some proposed houses will be visible in Area 4. The most noticeable visual change to Area 4 will result from the proposed Stevenson Boulevard railroad overpass bridge, (see Figure 3.10-1). The new bridge will be visible from Stevenson Boulevard and the Area 4 portion of Mowry Avenue, but would not be visible from Cherry Street or the Area 3 portion of Mowry Avenue, due to the flat topography and the intervening Area 3 development. The overpass would be visible from more distant vantage points at a higher elevation that the project vicinity. While this new structure will be a visual change, it will not degrade the existing visual quality of the site and its surroundings.

Depending on the final development plans for Area 4, some or all of 316 acres would be developed. Development intensity could range from the low to high hundreds of dwelling units and a golf course. This development would change the visual character of the site from open space to an urbanized environment.

In conclusion, while Area 4 is relatively isolated and is not visible from many surrounding public vantage points, the proposed Specific Plan will substantially alter its existing visual character. The proposed raising of elevation 10 to 14 feet for the residential development, the addition of residences, streets, landscaping, and golf course on what is now flat, open agricultural land, and the proposed two-lane Stevenson Boulevard railroad overpass will all change the existing visual character of Area

4. It is a subjective decision whether the proposed development would adversely degrade the site; however, the extent of the change is sufficient to consider it a significant visual impact.

Impact VIS – 1: The proposed residential and golf course development and Stevenson Boulevard railroad overpass would substantially degrade the visual character on Area 4. **(Significant Impact)**

There are no feasible mitigation measures that would mitigate for the significant change in visual character, which would result from the development of Area 4. **(Significant Unavoidable Impact)**

Light and Glare

Areas 3 and 4 improvements would have outdoor security night lighting along walkways, in parking areas, and in entrance areas, and would also include standard pole lighting within the public street system. In accordance with the City guidelines, lighting fixtures would be directed downward to avoid spillover onto adjacent areas. No night lighting would be directed towards the undisturbed wetland areas.

The elementary school is expected to include outdoor security night lighting along walkways and on buildings, in parking areas, and in entrance areas.

The proposed lighting for the golf course would include entrance lighting, lighting in the parking lot, lighting in and around the clubhouse area, and lighting on the driving range. The driving range would be lit for evening driving range practice. The lighting would consist of above ground lights at the tees and ground lighting out on the driving range itself. The golf course does not include tall poles with lights for illumination of the driving range. There will also be security lighting on the EVA roadway along the golf course. As required with the residential areas, all lighting fixtures will be directed downward to avoid spillover onto adjacent areas in accordance with the City guidelines, including *Policy d. Program 10.*

The proposed Specific Plan would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. **(Less than Significant Impact)**

AM VIS-1.1: The following avoidance measures shall further reduce light and glare impacts of the Specific Plan. All of these avoidance measures shall be incorporated into the City of Newark's development regulations and design review procedures to reduce potential light and glare impacts to non-significant levels. Design review procedures shall include the following:

- Use of low pressure sodium lights where security needs permit;
- Restricting height of exterior lighting fixtures to minimize light spill;
- Directing exterior lighting on-site to minimize spill-over;
- Shielding for exterior lights;
- Minimizing use of highly reflective exterior building materials;
- Restricting hours of non-security exterior lighting for commercial, industrial, and institutional uses.

3.10.4 Conclusion

As discussed above, the Specific Plan would not adversely impact any General Plan elements of visual significance, nor will the project have a substantial effect on a scenic vista. **(Less than Significant Impact)**

Future development compliance with the existing General Plan polices and incorporation of avoidance measure AM VIS-1.1 would avoid significant light and glare impacts. **(Less Than Significant Impact with Mitigation)**

The proposed residential and golf course development and Stevenson Boulevard railroad overpass would substantial degrade the visual character on Area 4. There are no feasible mitigation measures that would mitigate for the significant change in visual character. **(Significant Unavoidable Impact)**

3.11 PUBLIC SERVICES

3.11.1 Existing Setting

3.11.1.1 *Fire Protection*

The Newark Fire Department provides fire protection services to 43,043 residents in a 13-square mile area and responds to an average of 3,100 calls each year. The Department operates out of three stations with three engine companies; one squad/hazmat unit; and 51 full-time personnel, including both suppression and administrative employees. The Department has one combination 75-foot pumper aerial ladder truck, two engines, and one squad vehicle. The Department delivers fire suppression and rescue response, hazard prevention and education, and disaster preparedness with a minimum on-duty staffing of 12 personnel. A firefighter/paramedic is on each of the Department's four response units. The Department participates in Alameda County's Mutual Aid Plan, under which cities assist one another when in need of additional firefighting resources. The Newark Fire Department has a goal of meeting 90 percent of calls within six minutes.

The closest fire station to the project site is Fire Station No. 3, located in Area 3 at 39039 Cherry Street, at the corner of Cherry Street and Mowry Avenue.

3.11.1.2 *Police Protection*

Police protection services are provided to the project site by the Newark Police Department. Officers patrolling the project area are dispatched from police headquarters, located at 37101 Newark Boulevard. The Police Department consists of the following authorized positions: Police Chief (1), Commanders (4), Lieutenants (2), Sergeants (9), Police Officers (44), and 23 Non-sworn civilian positions. There are two Divisions within the Police Department: Field Operations and Support Services. The Department has a number of specialized positions (i.e., Detectives, SWAT, FTO, Canine, and Traffic/Motor Officers). The Department also has a number of community-oriented policing programs in place including SRO (School Resource Officers) and GREAT (Gang Resistance Education and Training). Civilian positions include Animal Control personnel.

3.11.1.3 *Schools*

Areas 3 and 4 are located within the Newark Unified School District (NUSD). The NUSD is comprised of eight elementary schools, two alternative high schools, one junior high, and one comprehensive high school. The closest school to the project site is Newark Memorial High School, east of Cherry Street along Area 3.

3.11.1.4 *Parks and Recreation*

Newark Recreation and Community Services provides approximately 153 acres of park lands, open space, and community facilities for public recreation and community services. Parks and recreation facilities vary in size, use, type of service, and provide for City, regional, and neighborhood uses. The City’s Recreation and Community Services Department is responsible for all operational programs. The City’s Public Works Department is responsible for the construction and maintenance of all City parks and recreational facilities. The City of Newark neighborhood park standards require five to ten acre size parks with one acre per 1,000 people. The service radius should range from one-quarter to one-half mile and each neighborhood park should not serve more than 5,000 people.

The City's standards for community parks require 20 acre minimum size parks with two acres per 1,000 people. The service radius should range from one to two miles and each community park should serve up to 15,000 population.

The George M. Silliman Recreation Complex, a large recreation complex providing a wide range of recreational activities for the community, is located, within Area 3 on Mowry Avenue just west of Cherry Street. This 30- acre complex includes a fenced softball field and soccer play fields, a Family Aquatic Center, and the Community Activity Center containing a large gymnasium, aerobic/dance studio, fitness center, teen activity room, children's activity room, community meeting room, licensed child care room, showers and locker room.

Regional facilities adjacent to the City of Newark include the San Francisco Bay National Wildlife Refuge, the Coyote Hills Regional Park, and Ardenwood Regional Preserve.

3.11.2 Public Services Impacts

3.11.2.1 *Thresholds of Significance*

Unlike public utilities, public services are provided to a community as a whole, usually from a central location or from a defined set of nodes. The resource base for delivery of the service, including physical delivery service mechanisms, is financed on a community-wide basis, usually from a unified or integrated financial system. The service agency can be a city, county, service or other special district. Usually, new development will create an incremental increase in demand for these services; the amount of the demand will vary widely, depending upon both the nature of development (residential vs. industrial, for instance) and the type of service, as well as the specific characteristics of the development.

The impact of a particular project on public services is generally a fiscal impact. By increasing the demand for a service, a project can cause an increase in the cost of providing the service (more personnel hours to patrol an area, additional fire equipment needed to service a tall building, etc). That is a fiscal impact, however, and not an environmental one. CEQA does not require an analysis of fiscal impacts. CEQA analysis is required if the increased demand is of sufficient size to trigger the need for a new facility (such as a new fire station), because the new facility could have a physical impact on the environment.

For the purposes of this EIR, based upon Appendix G of the CEQA Guidelines, a public service impact is considered significant if the project will:

- result in substantial adverse physical impacts associated with the provision of new physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response time or other performance objectives for any of the public service: fire protection, police protection, schools, parks, or other public facilities.

3.11.2.2 *Police and Fire Protection*

Development the proposed Specific Plan would increase calls for both police and fire service. The proposed new development in Area 3 is located eight-tenths of a mile from the closest fire station and Area 4 is located 0.8 to 1.5 miles from the closest fire station, depending on the service call location.

Based upon the short distance and the emergency vehicle access to Area 4, emergency response would still be able to meet the response time goal of six minutes. At this time, it appears the current physical facilities (fire stations) are adequate to serve the proposed development however; due to the existing insufficient number of personnel, the increase in service anticipated from proposed development will further strain the emergency service providers.[61] By increasing the demand for police and fire service, the proposed development can cause an increase in the cost of providing the service (more personnel hours to patrol an area, additional fire equipment, etc). This is a fiscal impact, however, and not an environmental one. CEQA does not require an analysis of fiscal impacts. CEQA analysis is required if the increased demand is of sufficient size to trigger the need for a new facility (such as a new fire station), because the new facility could have a physical impact on the environment. The proposed projects do not require fire stations or other facilities to be constructed because any additional personnel would continue to be dispatched from existing fire stations, the police headquarters, or future substations. Since the project does not require the construction of new public facilities it would not have a significant impact. Therefore, there would be no physical change to the environment as a result in the increased demand for services. The issue of insufficient staff is a very important one to be considered by decision makers in their consideration of the project, but it is a fiscal issue and not a CEQA issue. **(Less than Significant Impact)**

In addition to the new Stevenson Boulevard overcrossing into Area 4, emergency vehicle access (EVA) for police and fire service would be provided via Mowry Avenue. The EVA access to Area 4 will improve the safety of the railroad crossing and the connection to the golf course and residential units is planned just west of the railroad tracks. The access roadway will be locked and gated to allow only emergency vehicles. The design specifications for EVA roadway will be subject to review and approval by the Newark Fire Department when final development plans are completed.

3.11.2.3 *Schools*

The proposed Specific Plan would allow the construction of up to 1,260 residential units. The Newark Unified School District's generation rate is 0.439 for students per dwelling unit divided into rates for specific grades (grades K-6, rate 0.175 = 221 students; grades 7-8, rate 0.056 = 71 students; grades 9-12, rate 0.207 = 261 students). Based upon the District's generation rates, the proposed Areas 3 and 4 Specific Plan would generate 553 new students.[62] Based upon 2007-2008 enrollment and student capacity data from 2004, the two closest elementary schools (Bunker and Milani) have capacity for 124 students; Newark Junior High has capacity for 334 students; and Newark Memorial High is over capacity by 75 students.[63] Based upon conversations with school district staff in November 2009, the school capacity data from 2004 has increased, however, school district staff was unable to confirm the exact changes for each school and the 2004 capacity information was used in this analysis.

The Specific Plan includes the dedication of land for a new elementary school site. This site will allow for a K-6 grade elementary school with a maximum 600 student capacity. The elementary school is planned to be located within Area 3, near the Cherry Street frontage. While this EIR evaluates the overall suitability of this site for an elementary school use, the specific design of the

[61] Brian Caminada, Acting Assistant Fire Chief, City Of Newark Fire Department, Personal Conversation, December 3, 2008.
[62] Cheryl King, Jack Schreder & Associates, Newark Unified School District Memorandum, August 27, 2008
[63] Based upon 2004 school capacities and 2008-09 enrollment, November 24, 2008 email correspondence with Cheryl King, Jack Schreder & Associates and District website enrollment data from 10/9/2009: http://www.nusd.ca.schoolloop.com/

school has not yet been prepared and would be subject to individual environmental review and approval. Future development of the school would be subject to specific school site and construction requirements set by the State and would be reviewed and approved by the Division of the State Architect.
There are a number of methods that can be used to accommodate the increased numbers of students that do not require that new schools be built. These methods include measures such as: 1) the provision of portable or relocatable classrooms, 2) expansion of existing schools, 3) the opening of existing schools previously considered surplus, 4) adjustment of school attendance boundaries, 5) the busing of students to schools with surplus capacity, or 6) the conversion to year-round schools with a four-track schedule.

State law (Government Code Section 65996) specifies an acceptable method of offsetting a project's effect on the adequacy of school facilities as the payment of a school impact fee prior to issuance of a building permit. California Government Code Sections 65995-65998, sets forth provisions for the payment of school impact fees by new development as the exclusive means of "considering and mitigating impacts on school facilities that occur or might occur as a result of any legislative or adjudicative act, or both, by any state or local agency involving, but not limited to, the planning, use, or development of real property." [§65996(a)]. The legislation goes on to say that the payment of school impact fees "are hereby deemed to provide full and complete school facilities mitigation" under CEQA. [§65996(b)]. The school district is responsible for implementing the specific methods for mitigating school impacts under the Government Code. The school impact fees and the school districts' methods of implementing measures specified by Government Code 65996 would partially offset project-related increases in student enrollment.

The dedication of land for an elementary school site and payment of school impact fees by the future development projects implementing the Specific Plan is considered adequate to offset the increase in demand for school facilities and would reduce project impacts to the school system to a less than significant level. **(Less than Significant Impact)**

3.11.2.4 *Parks and Recreation*

The City of Newark has established standards for neighborhood and community parks. These standards are as follows: one acre of neighborhood parks per 1,000 population with a size between five and 10 acres; and two acres of community parks per 1,000 population with a minimum of 20 acres in size. Overall the City standard is to provide 3.5 acres of parkland per 1,000 population. The City of Newark is currently meeting this standard based upon the existing City parks. According to the General Plan a golf course is planned within Area 4 and should be a minimum of 130 acres. The City of Newark has an adopted Parkland Dedication Ordinance, in accordance with the Quimby Act and AB 1600, which requires that new residential development either dedicate sufficient space to serve new residents, or pay fees calculated to offset the increased costs of providing new park facilities for new development.

The proposed Specific Plan includes an approximately three-acre park within Area 3. An elementary school site is also included with Area 3 of the Specific Plan. Although not designed currently, it is anticipated that the school will provide additional public recreation space such as playfields within the eight acre area designated for the school. Area 4 of the Specific Plan includes approximately 2.5 acres of park and trails and approximately 120-acre for a golf course.

Construction of the proposed project would result in an increased demand for existing park and recreational facilities. The estimated Specific Plan population would be 3,427 based upon up to 1,260 new residential units.[64] The Specific Plan will includes a minimum of five acres of public recreational uses, distributed throughout Areas 3 and 4. The proposed public recreational land will meet the City's park standard. Construction of public park uses within the project in conformance with City policies and programs is not expected to result in significant impacts. Should future designs for the public parklands be proposed that are not consistent with the adopted standards and guidelines, subsequent environmental review will be required, consistent with CEQA. **(Less than Significant Impact)**

3.11.4 Conclusion

The project will incrementally increase the demand for public services in the project area. The project would not, however, result in substantial adverse physical impacts associated with a need for new public safety, recreational or educational facilities in order to maintain acceptable levels of service. **(Less than Significant Impact)**

[64] Based upon 2.27 persons per household. ABAG, *Projections 2007 Forecasts for the San Francisco Bay Area to the Year 2035*, December 2006.

3.12 WATER SUPPLY AND UTILITIES AND SERVICE SYSTEMS

Most of the discussion in the water supply subsection is based upon the Water Supply Assessment prepared for the proposed project by the *Alameda County Water District*. The assessment is included in Appendix I of this EIR.

3.12.1 Regulatory Overview

Various policies in the City's General Plan have been adopted for the purpose of avoiding or mitigating utility-related impacts resulting from planned development within the City. All future development address by this EIR will be subject to the utility and service policies listed in Chapter 6 of the City's General Plan, including the following:

GOAL 3.	Encourage the recycling of solid water in order to conserve scarce resources.
Policy b. Program 4.	Require retail centers and multi-family residential developments to provide on-site drop-off areas for recycling and encourage regular pick-up of recycled materials.
GOAL 5.	Conserve and enhance the City's Water Resources and protect development from the impacts of identified flood hazards.
Policy a.	Support efforts to maintain and enhance the system for delivery of high quality water to meet the City's domestic and commercial water needs.
Policy b.	Promote water conservation through development standards, building requirements, landscape design guidelines, and other applicable city policies and programs.

3.12.2 Existing Setting

3.12.2.1 *Water Service*

Water service in the City of Newark is provided by the Alameda County Water District (ACWD). ACWD provides water primarily to urban customers: approximately 70 percent of supplies are used by residential customers, with the balance (approximately 30 percent) utilized by commercial, industrial, institutional and large landscape customers. Total distribution system water use (excluding system losses) was approximately 49,100 acre-feet (AF), or an average of 43.8 million gallons per day (mgd) in fiscal year 2007-08. The ACWD's primary sources of supply come from the California State Water Project (SWP), the San Francisco Regional Water System, and local supplies from the Alameda Creek Watershed and Niles Cone Groundwater Basin (underlying the ACWD service area).

A Local Agency Formation Commission (LAFCO) service area adjustment is not required for the project due to the fact that both Area 3 and Area 4 are entirely within the existing service area boundary for the district. ACWD has jurisdiction of all water service laterals from their mains to the individual water meters. The City of Newark has jurisdiction over all water piping from the meter to all fixtures connected to water lines. There is a 14-inch water main in Cherry Street and an 14-inch water main in Stevenson Boulevard.

3.12.2.2 *Wastewater*

The entire sewage disposal system in the City of Newark is provided and operated by the Union Sanitary District (USD). The Specific Plan area is located with the District's Irvington Sewer Basin. USD has jurisdiction over the installation of all sewer laterals from their mains to within two feet of the building served. There is a 21-inch sanitary sewer main in Cherry Street and an 10-inch sewer main in Stevenson Boulevard. The USD maintains a Cherry Street Pump Station.

Area 3 is within the existing USD service area boundary but USD has indicated that Area 4 will need to be annexed into their jurisdictional boundaries.
The Cherry Street Pump Station is located between Areas 3 and 4 along the Union Pacific railroad tracks. This pumps twin 33-inch concrete force mains adjacent to the railroad right-of-way northwestward. This force main runs the entire length of the railroad tracks within Areas 3 and 4 from Mowry Avenue through Stevenson Boulevard. An existing 8-inch gravity main within Mowry Avenue connects to this force main as well as an existing 10-inch gravity main within Eureka Drive that serves the existing technology park development.

An existing 10-inch gravity main resides within Stevenson Boulevard that connects to a 21-inch gravity main within Cherry Street. This system then connects Boyce Avenue to the Boyce Avenue Pump Station.

3.12.2.3 *Stormwater*

The storm water collection system in the City of Newark is provided by the Alameda County Flood Control and Water Conservation District (ACFC&WCD). ACFC&WCD owns and operates the existing flood channels that run through the City of Newark. Areas 3 and 4 are located within their Flood Control Zone 5. Flood Channel "D" bisects both Areas 3 and 4 running north to south before discharging to the slough.

Area 3 currently has an existing outfall with two 42-inch concrete pipes that discharge to the channel. Area 4 does not have existing constructed outfalls into the channel. Both areas discharge via overland release to the channel in a flood event.

3.12.2.4 *Solid Waste*

Waste Management of Alameda County (WMAC) provides solid waste collection and collection and processing of recyclable materials for the City of Newark. WMAC has an agreement with the City of Newark that began in 2005 and expires in May 2012. Facilities used by the City of Newark include WMAC's Davis Street Transfer Station in San Leandro, the Fremont Recycling and Transfer Station (FRTS) in Fremont, Grover Landscaping Services Composting Facility in unincorporated Stanislaus County, and Waste Management's Altamont Landfill near Livermore. Newark's most current recycling diversion rate is 62%, as approved by the State.

In 2006, 7,895 tons of solid waste, approximately 1.0 pounds per person per day, were collected from single-family and multi-family dwellings in Newark. The residential solid waste from Newark is transferred at FRTS and then disposed of at the Altamont Landfill. WMAC provides weekly organics collection service on the same day as solid waste collection. WMAC collects the following organics: vegetables; fruit; food-soiled paper; meat; bones; and plant debris. Organics are sent to the Grover Landscaping Services Composting Facility. WMAC provides weekly, single-stream

recycling collection on the same day as solid waste collection. WMAC collects the following recyclables: plastics (#1 - 7); glass containers; metal containers; mixed paper; cardboard; aseptic containers; and used motor oil and filters.

WMAC provides commercial and drop box collection service in Newark through an exclusive franchise agreement. Collection is provided up to six days per week for solid waste. Commercial businesses may self-haul materials, but all properties must subscribe to some level of collection service.

WMAC provides solid waste, recycling, and organics collection to Newark schools under the exclusive franchise agreement with the City. These services are provided to the Newark Unified School District at no charge to the City or school district. In 2006, 183.6 tons of materials were diverted by WMAC through this program.

3.12.2.5 *Electricity and Natural Gas*

Pacific Gas & Electric Company (PG&E) supplies both natural gas and electric service to Areas 3 and 4. Existing underground gas and electric distribution lines reside within Mowry Avenue, Cherry Street, and Stevenson Boulevard.

Existing high voltage transmission lines reside on overhead towers in Area 4 within dedicated PG&E easements. Two sets of lines exist, the "Dumbarton Newark 115 kV Tower Line" and the "Newark/Tesla Ravenswood 230 kV Tower Line". The Dumbarton line is a single-circuit transmission line and the Newark/Tesla line is a double-circuit transmission line.

3.12.3 Water Supply and Utilities and Service System Impacts

3.12.3.1 *Thresholds of Significance*

For the purposes of this EIR, based upon Appendix G of the CEQA Guidelines, a water supply and utilities and service system impact is considered significant if the project will:

- require water supplies in excess of available existing entitlements and resources;
- the project would require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- result in a determination by the wastewater treatment provider which serves or may serve the project that the provider does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs;
- Fail to comply with federal, state, and local statutes and regulations related to solid waste.

3.12.3.2 *Water Supply*

The estimated water demand buildout of the proposed Areas 3 and 4 Specific Plan is 1,100 acre-feet per year, as shown in Table 3.12-1. This includes all the proposed uses on the site including the residential, golf course, elementary school, and park uses.

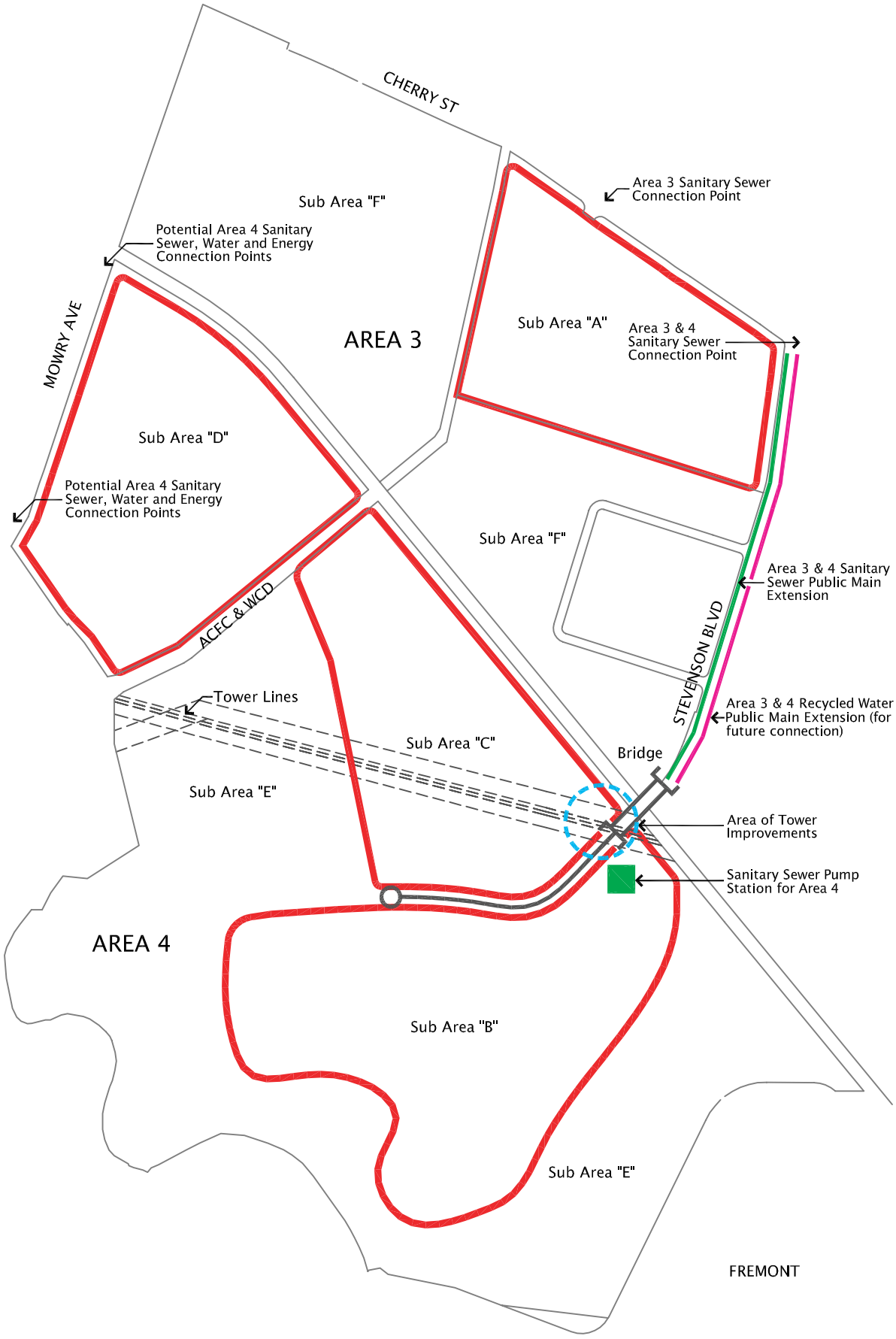
Both Areas 3 and 4 will be outfitted with a reclaimed water (purple-pipe) system for non-potable irrigation service (refer to Figure 3.12-1). At the time when reclaimed water is available near Areas 3 and 4, a connection will be made and the irrigation needs of Areas 3 and 4 could be switched over to reclaimed water service. In the interim, potable water and possibly groundwater from a on-site well located within Area 4 will be used for all golf course irrigation and public park needs. Once a reclaimed supply is available, the demand for potable system water will be reduced to roughly 550 acre-feet per year.

Table 3.12-1:
Water Demand Estimate

Land Use	Number of units		Gallons Per Day / Planning Unit	Demand Estimate (AF/yr)
Single-Family Residential	1,071[1]	Dwelling Units	380	456
Multi-Family Residential	189[2]	Dwelling Units	150	32
School	600	Students	15.7	11
Golf Course	130	Acres	3,371	491
Parks/Open Space	24.8	Acres	849	24
			Subtotal	1,014
			8 % unaccounted for water	88[3]
			Estimated Project Demand (rounded to nearest 100 AF)	**1,100**

[1] This total includes a range of residential densities to account for different development possibilities. For this table, 311 dwelling units were assumed to be 6,000 to 7,000 sq ft lots, 380 dwelling units were assumed to be townhouses, and 380 dwelling units were assumed to be 2,000 to 5,000 sq ft lots. This table differs slightly from the data in the WSA, due to minor changes made by the City of Newark after preparation of the WSA. These changes do not affect the results of the estimated water demand, because the total number of single-family units was reduced.
[2] The total number of multi-family units was also updated by the City of Newark after preparation of the WSA, but these changes did not affect the result of the estimated water demand.
[3] Long-term average 8 % unaccounted for water (UAW) assumed.
Note: The WSA included three-acres of office space within Area 3; this has since been removed from the project description and is an existing use and, therefore, is not included in the table.

Area 3 potable water needs will be met via service from existing mains within the adjacent public streets within Cherry Street and Stevenson Boulevard (refer to Figure 3.13-1). An existing 14-inch main within Cherry Street and continuing on Stevenson Boulevard would serve for connections to a new public water distribution system within the residential public streets proposed in Area 3. This proposed distribution system would be sized according to the ultimate build-out needs of the proposed site development but can be estimated to be a standard 8-inch distribution service, which would be able to serve residential and fire service needs.



CONCEPTUAL UTILITY PLAN

FIGURE 3.12-1

The street network in Area 3 would also be outfitted with a reclaimed water (purple-pipe) system for non-potable irrigation service for park and school ground areas. At the time when reclaimed water is available near the project site, a connection could be made and the irrigation needs of Area 3 could be switched over to reclaimed water service.

Area 4 potable water needs will be met via service from an existing 14-inch main within Cherry Street. This would serve as a connection point to a new public water distribution system within the residential public streets proposed in Area 4. This proposed distribution system would be sized according to the ultimate build-out needs of the proposed site development but can be estimated to be a standard 8-inch distribution service, which would be able to serve residential and fire service needs. The golf course would acquire water service via a connection to the new distribution network within the residential streets and/or via a connection to Mowry Avenue's existing water main. Depending on the ultimate designs of both the residential and golf course sites within Area 4, a loop system with connections to both Stevenson Boulevard and Mowry Avenue could be feasible.

The park areas and golf course sites in Area 4 would also be outfitted with a reclaimed water (purple-pipe) system for non-potable irrigation service. Prior to the availability of reclaimed water, the golf course would be irrigated with an existing on-site well. This well will draw from ACWD's managed groundwater resources in the Niles Cone, however it will not burden ACWD's potable distribution system and production facilities.[65] At the time when reclaimed water is available near the project site, a connection(s) could be made and the irrigation needs of Area 4 could be switched over to reclaimed water service.

Water Supply Assessment

Senate Bill 610 (2001), codified as Water Code Section 10910 et seq., requires that certain water supply information be prepared for projects that are the subject of an EIR. In accordance with State law (SB 610) and CEQA, all projects that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project must provide an analysis of whether there is adequate long-term water supply available to serve the development.

A Water Supply Assessment (WSA) was completed for the proposed project by the Alameda County Water District in November 2008 (refer to Appendix I). The WSA was adopted by the District Board on November 13, 2008. Since November 2008, ACWD has received additional information regarding factors that may affect ACWD's future water supply availability and provide supplemental information to the City of Newark regarding the WSA that is incorporated by reference below.

The purpose of the WSA is to document ACWD's existing and future water supplies for its service area and compare them to the area's future water demands, including the future water demands of the project. This comparison, completed for both normal hydrologic conditions and drought conditions, is the basis for an assessment of water supply sufficiency in accordance with the requirements of California Water Code Section 10910.

Development of this site was included in the most recent Demand Forecast and 2006-2010 Urban Water Management Plan (UWMP). The UWMP provides the basis for this water supply assessment.

[65] Alameda County Water District, "Water Supply Assessment for Newark Areas 3 & 4 Specific Plan EIR Project," November, 2008.

Area 4 had previously been planned as a combination golf course and residential development and ACWD has long planned for this project to form an anchor demand for the development of a non-potable, reclaimed water distribution system ("purple pipe"). The portion of Area 3 included in the project had previously been planned as a high-tech industrial business park. At the time of the UWMP demand forecast (2004), the then-current information for Areas 3 and 4 was utilized to develop a forecast for aggregated, ACWD-wide demand. The currently proposed project for the site has changed very little from the previously planned development, save that Area 3 was intended for a high-tech industrial park but will now be converted to additional housing.

Despite the change in proposed land use, ACWD determined that the project demands are consistent with previously assumed demands for the project areas; therefore, the project does not create new demand beyond what was already forecast in their Urban Water Management Plan. However, because of the change in land use assumptions at the project site, the project will result in a slightly different breakdown in the aggregated demands for the land use categories reported in the UWMP. The next update to the UWMP (scheduled to be completed by 2010) will include a revised breakdown of the forecast demands in each land use category based on changes to the land use assumptions that have occurred in the service area since the current UWMP was adopted.

The water supply and demand comparison analyses provided in the WSA indicates that ACWD has sufficient supplies to meet the ACWD's projected demands as well as the Areas 3 and 4 Specific Plan's demands under normal year conditions. During critically dry or multiple dry years, the ACWD service area may be facing water supply shortages. Because the Areas 3 and 4 Specific Plan's demands are already factored into the 2006-2010 UWMP, the development of the Specific Plan will not result in increased shortages from those which are already factored into ACWD's planning under current and foreseeable conditions.

Dry periods may impact water demands in the ACWD service area in several ways. Because approximately 40 percent of the ACWD's residential demand is for landscape irrigation, dry periods may result in an increase in demands due to less local rainfall available to meet the evapotranspiration requirements of lawns and other landscaping. Demands, however, may also be reduced due to customer efforts to be more water efficient during dry periods. As an example, during the 1987-1992 drought, ACWD customers reduced overall water use by approximately 20 percent. This response to the drought was due both to voluntary efforts as well as mandatory restrictions imposed by ACWD. However, because many customers have retained a "water conservation ethic" since the 1987-92 drought, and because of increased efficiencies of plumbing fixtures and the implementation of on going ACWD-sponsored water conservation programs, the ability to reduce overall water use during future droughts by similar levels may be lessened.

For planning purposes, it is assumed that during drought periods water demands for ACWD's distribution system customers (including the proposed project) do not change from those during normal years. The groundwater system demands may, however, be reduced during dry years as a result of reduced Aquifer Reclamation Program (ARP) pumping and reduced saline groundwater outflows (as groundwater levels are temporarily lowered due to increased reliance on local groundwater reserves during drought conditions). Summaries of projected demands under critical dry year and multiple dry year conditions (based on a five year drought under 2026-2030 demand conditions) are provided in Table 3.12-2 and Table 3.12-3, respectively.

Table 3.12-2:
Estimated Future Water Demands in the ACWD Service Area
- Critical Dry Years (AF/Yr)

Water Use Category	Year				
	2010	**2015**	**2020**	**2025**	**2030**
Distribution System (source: UWMP)					
Single-Family Residential	27,300	28,300	28,600	28,600	28,600
Multi-Family Residential	9,800	10,100	10,500	10,900	11,200
Commercial	6,500	6,600	6,800	6,900	7,000
Industrial	7,700	8,400	8,700	9,000	9,200
Institutional	3,800	3,900	4,700	4,700	4,700
Other	300	300	300	300	300
Sub-Total	**55,400**	**57,600**	**59,600**	**60,400**	**61,000**
Adjustment for plumbing code savings	(700)	(1,100)	(1,500)	(1,700)	(1,900)
Sub-Total Distribution System Demand (without losses)	54,800	56,500	58,100	58,600	59,100
Sub-Total Distribution System Demand (with losses)	59,500	61,400	63,200	63,700	64,300
Adjustments for water conservation savings	(700)	(1,500)	(2,200)	(2,200)	(2,200)
Total Distribution System Demands (source: UWMP)	**58,800**	**59,900**	**61,000**	**61,500**	**62,100**
Groundwater System Demand (source: UWMP)	**10,500**	**10,500**	**10,500**	**10,500**	**10,500**
2008 Patterson Ranch WSA - Demands	**600**	**600**	**600**	**600**	**600**
Total ACWD Forecast Demands	**69,900**	**71,000**	**72,100**	**72,600**	**73,200**

Notes:
1. Total ACWD Forecast Demands reflects sum of UWMP demands and 2008 Patterson Ranch WSA Demands
2. All values rounded to the nearest 100. Total values may not equal sum of individual components due to rounding errors.
3. Landscape Irrigation included within Multi-Family Residential, Commercial, Industrial, and Institutional categories.
4. Adjustment for conservation includes savings due to District-sponsored water-conservation programs.
5. Total Distribution System Demand (with losses) includes estimated system losses of 8%. Distribution system losses are calculated as the difference between total production and total measured consumption and include water for fire suppression, distribution system flushing, distribution system and service line leaks, etc.
6. Groundwater System demands include: (1) private pumping, (2) ARP pumping and (3) saline groundwater outflows.

Table 3.12-3:
Estimated Future Water Demands in the ACWD Service Area
- Multiple Dry Years (AF/Yr)

Water Use Category	Year				
	2026	**2027**	**2028**	**2029**	**2030**
Distribution System (source: UWMP)					
Single-Family Residential	28,600	28,600	28,600	28,600	28,600
Multi-Family Residential	10,960	11,020	11,080	11,140	11,200
Commercial	6,920	6,940	6,960	6,980	7,000
Industrial	9,040	9,080	9,120	9,160	9,200
Institutional	4,700	4,700	4,700	4,700	4,700
Other	300	300	300	300	300
Sub-Total	**60,520**	**60,640**	**60,760**	**60,880**	**61,000**
Adjustment for plumbing code savings	(1,740)	(1,780)	(1,820)	(1,860)	(1,900)
Sub-Total Distribution System Demand (without losses)	58,780	58,860	58,940	59,020	59,100
Sub-Total Distribution System Demand (with losses)	64,000	64,000	64,100	64,200	64,300
Adjustments for water conservation savings	(2,200)	(2,200)	(2,200)	(2,200)	(2,200)
Total Distribution System Demands (source: UWMP)	**61,800**	**61,800**	**61,900**	**62,000**	**62,100**
Groundwater System Demand (source: UWMP)	**10,800**	**9,900**	**5,600**	**5,500**	**6,400**
2008 Patterson Ranch WSA - Demands	**600**	**600**	**600**	**600**	**600**
Total ACWD Forecast Demands	**73,000**	**72,200**	**68,000**	**68,000**	**69,100**

Notes:

1. Total ACWD Forecast Demands reflects sum of UWMP demands and 2008 Patterson Ranch WSA Demands
2. All values rounded to the nearest 100. Total values may not equal sum of individual components due to rounding errors.
3. Landscape Irrigation included within Multi-Family Residential, Commercial, Industrial, and Institutional categories.
4. Adjustment for conservation includes savings due to District-sponsored water-conservation programs.
5. Total Distribution System Demand (with losses) includes estimated system losses of 8%. Distribution system losses are calculated as the difference between total production and total measured consumption and include water for fire suppression, distribution system flushing, distribution system and service line leaks, etc.
6. Groundwater System demands include: (1) private pumping, (2) ARP pumping and (3) saline groundwater outflows.

Due to future uncertainties associated with climate change and reliability of ACWD's State Water Project supplies, the ACWD is faced with the potential for long-term reduction in supplies.[66] The current Areas 3 and 4 Specific Plan's timeline has a buildout period of approximately eight years, which could conceivably be extended given the current housing and economic downturn. This only increases the exposure to uncertainties in water supply. For the reasons described above, the ACWD's final determination of the water supply sufficiency is based on the inclusion of water efficiency measures in the Areas 3 and 4 Specific Plan. As described in the project description and also listed below, the Areas 3 and 4 Specific Plan has included all identified water efficiency measures in the Plan.

Since November 2008, ACWD has received additional information regarding factors that may affect ACWD's future water supply availability. Key changes since the WSA was completed included the biological opinion for Delta smelt, and the biological opinion for Delta salmonids - both of which will likely result in less State Water Project supplies to ACWD than anticipated in the WSA. The California Department of Water Resources is expected to provide ACWD with updated State Water Project reliability estimates by the end of 2009.

In response to the water supply uncertainties facing ACWD, the District has initiated an update to their Integrated Resources Planning Study and Urban Water Management Plan. A key element of these planning updates will be to develop a revised demand forecast for the District service area. It is likely that the updated demand forecast will indicate lesser demands than previously estimated (as a result of increased conservation and public awareness regarding water issues, etc), thereby potentially providing a partial off-set of the reduction in Delta water supplies. At the time this DEIR was printed, the ACWD was close to finishing the revised demand forecast. With updated State Water Project estimates and the revised demand forecast, ACWD will be able to verify the accuracy of the project's WSA.

Because of the potential reduction in future ACWD's water supplies, ACWD may require additional mitigation for the water supply impacts associated with Areas 3 & 4 Specific Plan Project. The requirements for additional mitigation have not yet been determined, and will be dependent on the magnitude of the water supply shortages that ACWD may be facing. Consistent with the provisions in the November 2008 WSA, the implementation of additional mitigation measures may be a condition for providing a water supply verification and/or as a condition of providing water service to individual developments within the Newark Areas 3 & 4 Specific Plan Project.

In addition to the proposed Areas 3 and 4 Specific Plan water conservation measures, the ACWD may require future developers of the Specific Plan project to fund conservation measures to reduce off-site water demand throughout the entire ACWD service area. Through this private funding of off-site conservation, the project could off-set 100% of its water demand, thereby resulting in a net zero increase in water demand.[67] The East Bay Municipal Water District (EBMUD) implemented a off-site mitigation requirement for the Shapell Alamo Creek residential development east of Danville to achieve a 2:1 offset of that project's water demand. Conservation projects funded through the program included installation of point-of-use hot water heaters; submetering of older apartment buildings; toilet flapper replacement in older apartment buildings; site-specific water reuse systems; replacement of water-cooled ice machines with air-cooled machines; replacement of conventional restaurant steamers with connectionless commercial kitchen steamers; residential and commercial

[66] Refer to Appendix I for a detailed discussion of these uncertainties associated with water supplies.
[67] Eric Cartwright, Water Resources Planning Manager, Alameda County Water District, personal communications, November 2009.

customer water audits; rebate programs for single-family customer ET (evapotranspiration) controllers, and gray water reuse systems.[68] The total dollar amount contributed by the residential developer would remain fixed, and it would be up to ACWD to maximize the water savings through its planned programs.

The proposed Areas 3 and 4 Specific Plan incorporates all water efficiency measures currently recommended by the ACWD and the ACWD water supply assessment adopted for the project concludes there are sufficient supplies to meet the long term demands of the project. If the updated State Water Project estimates and ACWD demand forecast determines that there would be future water supply shortages, the ACWD would require the Specific Plan developers to provide funding for off-site conservation measures, sufficient to off-set up to 100% of the project demand. Alternatively, the City could commit to deny entitlements for future individual developments within the Specific Plan project without firm proof of available water supplies; however, the courts have not accepted this as feasible mitigation.[69] With the potential additional mitigation of off-site conservation funding, the Areas 3 and 4 Specific Plan project would not result in a significant water supply impact.

Water Conservation Standards

All residential and non-residential development with Areas 3 and 4 Specific Plan will be developed with the latest technology in water efficient plumbing fixtures and irrigation systems, including but not limited to the following:[70]

For Residential Development within Areas 3 and 4:

- High efficiency (1.3 gallons per flush or less) and dual flush toilets,
- High efficiency clothes washers with a water factor of six (6) or less,
- High efficiency dish washers,
- Water efficient bathroom and kitchen fixtures

[68] Maddaus et al, American Water Works Association Journal, May 2008, 100:5.
[69] *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova*, 40 Cal. 4th 412 (2007)
[70] Many, if not most, of these technologies will be legal requirements under the pending Plumbing Code revisions expected in 2010.

For Commercial Development within Areas 3 and 4:

- High efficiency (1.3 gallons per flush or less) and dual flush toilets,
- High efficiency urinals (1/2 gallon per flush or less),
- High efficiency clothes washers with a water factor of six (6) or less,
- High efficiency dish washers, where feasible, sensor driven c-line, or rack conveyor machines that recycle final rinse water,
- Low flow pre-rinse spray nozzles,
- Air-cooled ice machines,
- Water efficient bathroom and kitchen fixtures (e.g. faucets with auto shut-off mechanisms)

For Golf Course and Landscape Development within Areas 3 and 4:

- Water efficient irrigation systems include weather-based irrigation-controllers, drip irrigation systems for non-turf areas and the installation of drought-tolerant landscaping in-lieu of irrigated turf, wherever possible.
- All decorative fountains shall recycle water. The latest water efficient technologies for commercial car washing and cooling shall be used.
- Install a separate, non-potable distribution system (i.e. "purple pipe") for the golf course and other non-residential landscape needs. This distribution system will, at a minimum, include a non-potable water transmission main extending through the site with at least two points of connection to Cherry Street (for connection with a future recycled water main) at the northern and southern limits of Area 3 frontage with Cherry Street. The on-site system will also include non-potable distribution mains extending to areas where recycled water could be used.

Water Efficient Landscape Ordinance

- The State of California Department of Water Resources is expected to formally amend Chapter 2.7 Model Water Efficient Landscape Ordinance, Sections 490 through 495 in Division 2, Title 23 of the California Code of Regulations. All local agencies will be required to adopt a similar ordinance by January 2010 to meet new water conservation standards related to landscape improvements. All landscape improvements in Areas 3 and 4 will be subject to these requirements.

With inclusion of the above water efficiency measures, the proposed project will not require water supplies in excess of available existing entitlements and resources. **(Less Than Significant Impact)**

3.12.3.3 *Wastewater*

Wastewater Treatment Requirements

Wastewater generators have a permit to discharge their wastewater. Pursuant to the federal Clean Water Act and California's Porter-Cologne Water Quality Control Act, the San Francisco Bay Regional Water Quality Control Board (RWQCB) regulates wastewater discharges to surface waters, such as the San Francisco Bay, through a NPDES program. The RWQCB also requires waste discharge requirements (WDRs) for some discharges in addition to those subject to NPDES permits. Wastewater permits contain specific requirements that limit the pollutants in discharges. As required by the RWQCB, the USD monitors its wastewater to ensure that it meets all requirements. The RWQCB routinely inspects treatment facilities to ensure permit requirements are met.

Wastewater from project would be treated at the USD in accordance with their existing NPDES permit and WDRs. It is not anticipated that the wastewater generated by the project would exceed wastewater treatment requirements of the RWQCB. Assuming compliance with these required policies, development under the Specific Plan would not violate any RWQCB waste discharge or treatment requirements. **(Less than Significant Impact)**

Wastewater Generation

The estimated wastewater generation is outlined below. This is based on the maximum possible development for the project.

Table 3.12-4: Wastewater Generation Rates

Use	Quantity	Use	Rate	Volume
Single-Family Units	1,020 units	248	dwelling unit	253,000 gpd**
Multi-Family Units	180 units	217	dwelling unit	39,000 gpd
School	10 acres	0.034	square foot	15,000 gpd
Golf Clubhouse*	20,000 sf.	0.13	square foot	2,600 gpd
Project Total				**309,600 gpd**

*Based on 20% restaurant use, 80% misc. retail use
** gpd = gallons per day

The USD has indicated that the Alvarado Treatment Plant has sufficient capacity to serve the Specific Plan-proposed development.[71] USD also indicated that the existing Cherry Street pump station was not designed to handle the increased discharge from the existing light industrial zoning designation of Area 3; therefore, the Specific Plan's discharge will be conveyed north to the existing 24-inch sewer main within Boyce Road prior to being pumped from the Boyce Road Pump Station. In a meeting between the Specific Plan civil engineer and USD staff on November 17, 2008,[72] it was confirmed that no improvements or contributions to existing or future planned capital projects or pump stations were necessary for Areas 3 and 4 development.

Upon development of Area 3, new sewer mains will be constructed within the interior public residential streets with connection points into Cherry Street and Stevenson Boulevard. Both of these systems subsequently discharge to the Boyce Avenue Pump Station via a 21-inch to 24-inch gravity main within Boyce Road. USD also indicated that these mains have sufficient capacity for development of both Area 3 and Area 4.

Upon development of Area 4, a new pump station will be constructed and maintained within the Area 4 to discharge wastewater generated by the residential and golf course projects. This station will pump water to a new sewer main within Stevenson Boulevard North to the Cherry Street intersection prior to connection to the Boyce Road 24-inch sewer main. This pump station will be operated and maintained by an established maintenance district or homeowners association for any development within Area 4. The system will provide redundant dual pump facilities including backup generators, as required by USD for public use installations, and will be designed to function independently in case of overload or mechanical failure. The future design and layout of the Area 4 developments will

[71] Union Sanitary District, *Notice of Preparation of an EIR and Notice of Public Scoping Meeting – Newark Areas 3 & 4 Specific Plan Letter*, May 30, 2007.
[72] John Noori, Project Manager, Kier & Wright, Inc. and USD staff, meeting on November 17, 2008.

determine the most feasible location for a pump facility depending on various factors including land space necessary, clearance from other public utilities, easements etc.

The new sewer main within Stevenson Boulevard will either be constructed beneath the Union Pacific Railroad right-of-way or within the new bridge approaches and structural span. Further analysis will be completed to study the most technically and economically feasible solution depending on various factors including, but not limited to, construction costs, Union Pacific permits and approvals, and design requirements. Should the system be constructed beneath the railroad tracks it will need to be installed under careful design and supervision to ensure no adverse impact on the existing 33-inch force main within the right-of-way. This existing main is under delicate circumstances with regard to its overall condition, pipe materials, and risk of damage. The Specific Plan developer will coordinate and monitor any construction around and over this force main. Construction beneath the existing force main is not recommended from an engineering standpoint, due to risks associated with differential settlement, maintenance issues of a siphon-system and other construction impact risks.

In conclusion, both Areas 3 and 4 have various feasible solutions for wastewater discharge. Further design and analysis at the time detailed development plans are completed, along with the continuous involvement of Union Sanitary District, will determine the most appropriate solution given the future development plans.

As described above, the Alvarado Treatment Plant has sufficient capacity to serve the Specific Plan-proposed development. Therefore, the proposed development will not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. **(Less than Significant Impact)**

3.12.3.4 *Stormwater*

The proposed development in Area 3 will be drain by way of new underground storm drain lines to the existing outfall to the ACFC&WCD channel, located at the northwest corner of the 78-acre property. This outfall was permitted with two 42-inch connections that were sized for the original industrial zoning designation. Due to the nature of proposed residential development containing significant open space and pervious areas, the anticipated stormwater volume of Area 3 will be less than the originally proposed industrial development's estimated volume of runoff. Therefore the existing outfall should be more than adequate to serve the entire area's drainage needs. Should the volume of runoff for Area 3 be determined to be greater than the capacity of the existing outfall, various methods of water detention can be implemented to reduce the runoff to the pre-development outfall capacity. Due to the proposed grading concepts it is not anticipated that Area 3 will need a storm drain pump.

All residential development within Area 4 will drain via new underground storm drain lines to various points along the perimeter of development envelope where outfalls will be constructed. The runoff will then discharge via natural drainage courses to the existing drainage pump and out to Mowry Slough. The golf course will also be designed to drain via underground mains to various points along the course including possible on-site water features. The residential project in Area 4 will be elevated between 10 to 14 feet above sea level, creating a significant grade differential for gravity systems. Most of the golf course is already elevated above sea level, therefore, it is not anticipated that Area 4 will need a storm drain pump.

Both Area 3 and Area 4 storm drain systems will be designed to be compliant with local and state stormwater treatment guidelines prior to discharge to a public system or wetland; therefore, no adverse impact would be created by polluted runoff into a public stormwater system or surrounding natural habitat. Refer to *Section 2.4 Project Description* for a detailed discussion of the proposed drainage plan.

Any impacts associated with the construction of the new underground storm drain lines to outfalls within Areas 3 and 4 were analyzed and mitigated in *Section 3.5 Biological Resources.* The proposed project would not require or result in the expansion of existing facilities which could cause significant environmental effects that could not be mitigated to a less than significant level. **(Less than Significant Impact)**

3.12.3.5 *Solid Waste*

The single-family residential uses would generate approximately 428 tons per year of solid waste.[73] The multi-family uses would generate approximately 82 tons per year of solid waste.[74] The elementary school would generate approximately 54 tons per year of solid waste.[75] The golf course would generate approximately 32 tons per year of solid waste.[76] The total projected solid waste generation of the Areas 3 and 4 Specific Plan is 596 tons per year.

WMAC has an agreement with the City of Newark that began in 2005 and expires in May 2012. Currently the waste facilities used by the City of Newark have adequate capacity to serve the Specific Plan area. The City of Newark would extend this current agreement with WMAC to continue to serve the City of Newark.[77] The project would comply with all federal, state, and local statutes and regulations related to solid waste. **(Less than Significant Impact)**

3.12.3.6 *Electricity and Natural Gas*

PG&E supplies electricity and natural gas to the project area. Distribution of electric power is accomplished primarily through overhead systems extending from various electrical transmission lines in the area. Natural gas is distributed through a series of gas distribution lines located within street right of ways. Electric and gas utilities are available in the vicinity of the project area and can be extended onto Areas 3 and 4. All new utilities will be located underground, as required by City policy.

The Stevenson Boulevard overcrossing requires a minimum clearance height above the railroad tracks and there are also minimum clearance requirements between the top of deck of the bridge and the overhead transmission lines. As a result, two high-voltage power line towers require modification to raise the elevation of the transmissions lines in the vicinity of the crossing. Because

[73] California Integrated Waste Management Board. Residential Waste Disposal Rates. 5 January 2004. CIWMB. 7 July 2004. http://www.ciwmb.ca.gov/wastechar/ResDisp.htm; single-family rate of 0.42 tons per year
[74] California Integrated Waste Management Board. Residential Waste Disposal Rates. 5 January 2004. CIWMB. 7 July 2004. http://www.ciwmb.ca.gov/wastechar/ResDisp.htm; 0.46 tons per multi-family residence per year
[75] California Integrated Waste Management Board. Estimated Solid Waste Generation Rates for Institutions. 5 January 2004. CIWMB. 15 July 2004. http://www.ciwmb.ca.gov/wastechar/WasteGenRates/Institution.htm; 0.5 pounds per student per day
[76] California Integrated Waste Management Board. Estimated Solid Waste Generation Rates for Service Establishments. 7 November 2007. CIWMB. http://www.ciwmb.ca.gov/wastechar/WasteGenRates/Service.htm; 0.5 pounds per golfer per day.
[77] Terrence Grindall, Community Development Director, City of Newark, November 2008.

this electric transmission project will involve kV voltage lines above 60 kV it requires coordination of additional departments within PG&E and the California Public Utilities Commission. PG&E will partner with the future developer(s) of Area 4 to determine required federal, state, and local permits for the construction of this project. PG&E will enter into a Actual Cost Contract with the developer(s) to reconstruct and relocate PG&E's facilities at the developers expense. PG&E will manage and construct the project only after said contract has been fully executed and the estimated cost to reconstruct and relocate said facilities has been paid for by the developer in advance as required by the contract.[78] The environmental analysis associated with the PG&E permit process and the modifications of the towers including construction and operation has been analyzed in the respective sections in this EIR.

The 230 kV tower (Number 0/5) is 175 feet in height and will require an 20-foot height extension to raise the height of the transmission line to a sufficient height. The tower is proposed to be raised with a top cage extension which uses a helicopter for installation and, therefore, does not affect the ground at the base of the tower. In the event a vertical cage or waist cage is used, it would require crane access around the tower.

The 115 kV tower (Number 6/46) must to be moved out of the way of the Stevenson Boulevard railroad overpass, as well as needing to be taller to raise the height of the transmission line. The existing tower, 90 feet in height, will be replaced with a new tubular steel tower that is approximately 135 feet in height. The new tubular tower will be installed approximately 25 feet northwest of and in line with the existing tower location. The exiting and proposed location of this tower is within Sub-Area B of Area 4. The installation of the new tubular steel tower will require crane access to the proposed location.

3.12.4 Conclusion

Implementation of the proposed project will result in an increase in the use of water, and the need for wastewater treatment and solid waste disposal. The proposed Areas 3 and 4 Specific Plan includes all identified water efficiency measures to reduce water use and, therefore, there is sufficient water, based on the WSA, to meet the long-term demand of the Specific Plan. If changes in State Water Project supplies cause a reduction in ACWD water supplies, a potential additional mitigation of project-funded off-site conservation will ensure that the Areas 3 and 4 Specific Plan project not result in a significant water supply impact. The project will not result in any utility or service facility exceeding current capacity. **(Less than Significant Impact)**

[78] Al Spatcher, PG&E, telephone and e-mail communications, November 2008 and January 2009.

3.13 ENERGY

This section was prepared pursuant to CEQA Guidelines Section 15126.4(a)(1)(C) and Appendix F (Energy Conservation of the Guidelines), which require that EIRs include a discussion of the potential energy impacts of proposed projects with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy. The information in this section is based largely on data and reports produced by the California Energy Commission and the Energy Information Administration of the U.S. Department of Energy.

3.13.1 Introduction

Energy consumption is analyzed in an EIR because of the environmental impacts associated with its production and usage. Such impacts include the depletion of nonrenewable resources (e.g., oil, natural gas, coal, etc.) and emissions of pollutants during both the production and consumption phases.

Energy usage is typically quantified using the British Thermal Unit (Btu).[79] As points of reference, the approximate amount of energy contained in a gallon of gasoline, a cubic foot of natural gas, and a kilowatt hour (kWh) of electricity are 123,000 Btus, 1,000 Btus, and 3,400 Btus, respectively.

3.13.1.1 *Regulatory Overview*

Energy conservation is embodied in many federal, state, and local statutes and policies. At the federal level, energy standards apply to numerous products (e.g., the EnergyStar program) and transportation (e.g., fuel efficiency standards). At the state level, Title 24 of the *California Administrative Code* sets forth energy standards for buildings, rebates/tax credits are provided for installation of renewable energy systems, and the *Flex Your Power* program promotes conservation in multiple areas.

At the local level, Newark's General Plan contains policies under Goal 4 of the Open Space and Conservation Element to "maximize Newark's opportunities for energy-efficiency."

3.13.2 Energy Resources Setting

Total energy usage in California was 8,360 trillion Btu in the year 2005 (the most recent year for which this specific data is available). Of California's total energy usage in 2005, the breakdown by sector was approximately 18 percent (1,516 trillion Btu) for residential uses, 19 percent (1,551 trillion Btu) for commercial uses, 24 percent (2,001 trillion Btu) for industrial, and 39 percent (3,291 trillion Btu) for transportation.[80] This energy was primarily supplied in the form of coal, natural gas, petroleum, nuclear electric power, and hydroelectric power.

Given the nature of the proposed residential and golf course project, the remainder of this discussion will focus on the three most relevant sources of energy for the projects: electricity, natural gas, and gasoline for vehicle trips.

[79] The British Thermal Unit (Btu) is the amount of energy that is required to raise the temperature of one pound of water by one degree Fahrenheit.
[80] Energy Information Administration, *State Energy Profiles.* http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=CA#

3.13.2.1 *Electricity*

Electricity consumption in California grew from 250,241 gigawatt hours (GWh) in 2001 to 270,927 GWh in 2004.[81] In 2006, electricity was produced from power plants fueled by natural gas (41.5 percent), coal (15.7 percent), hydro (19 percent), nuclear (12.9 percent), geothermal (4.7 percent), and renewables (four percent). Approximately 78 percent of the electricity was generated within California, with the balance imported from other states, Canada, and Mexico.[82]

Electricity usage in California for differing land uses varies substantially by the type of uses in a building, type of construction materials used in a building, and the efficiency of all electricity – consuming devices within a building. The average annual usage of electricity is roughly 6,500 kilowatt-hours (kWh) per dwelling unit for residential uses and roughly 16.7 kWh per square foot for commercial buildings.

Electricity supply in California involves a complex grid of power plants and transmission lines located in the Western United States, Canada, and Mexico. The issue is complicated by market forces that have become prominent since 1998, when a new regulatory environment commonly referred to as "deregulation" took effect in California. Supply is further complicated by the fact that the peak demand for electricity is significantly higher than the off-peak demand. For example, in August 2004, peak electric demand - due in large part to hot weather - reached a record high of 44,497 megawatts, which is almost double the lowest demand period.[83] The California Independent System Operator continued to deal with record electricity usage in the summer of 2006. Three new peak electricity usage records were ser the week of July 17 to July 25, 2006, including a peak demand of 50,538 megawatts.[84]

In 2000-2001, electric demand exceeded supply (or transmission facilities) on various occasions, which required utilities to institute systematic rotating outages to maintain the stability of the grid and to prevent widespread blackouts. Since that time, additional generating capacity has come on-line and upgrades to various transmission lines are occurring.

According to the California Energy Commission's *2007 Integrated Energy Policy Report*, population growth in California is expected to occur at a higher rate in the hotter, drier inland areas as more people move there, which will not only increase the peak demand, but also change the pattern of energy use. For example, inland areas during the summer months will require more air conditioning than coastal areas which will increase peak demand more than overall demand. By 2016, California utilities will need to procure approximately 24,000 Mega Watts (MW) of peak resources to replace expiring contracts and retiring power plants, and to meet peak demand growth. This amount would maintain a 15 to 17 percent reserve margin.[85] Energy efficiency and demand response programs, therefore, will become even more important.[86]

[81] California Energy Commission, *2005 Integrated Energy Policy Report*. Page 47.
[82] California Energy Commission, *2007 Integrated Energy Policy Report*. Pages 24-26.
[83] California Independent System Operator, August 11 2004.
[84] California Independent System Operator, July 26 2006. http://www.caiso.com/183e/183ebd4414ad0.pdf
[85] California Energy Commission, *2005 Integrated Energy Policy Report*. Page 46.
[86] California Energy Commission, *2007 Integrated Energy Policy Report*. Pages 3-4.

3.13.2.2 *Natural Gas*

In 2006, natural gas was used to produce electricity (44 percent), in industrial uses (23 percent), in commercial uses (10 percent), in residential uses (22 percent), and for transportation (less than one percent). Natural gas usage in California for differing land uses varies substantially by the type of uses in a building, type of construction materials used in a building, and the efficiency of all gas-consuming devices within a building. That said, the average annual usage of natural gas is roughly 45,000 cubic feet per residence. The average annual usage of natural gas is roughly 37 cubic feet/square foot for all commercial buildings and roughly 29 cubic feet per square foot for office buildings.

California imports 85 percent of its natural gas supplies from other states and Canada. California's natural gas supplies are increasingly threatened by declining production in the United States and growing demand in neighboring states. As California strives to reduce its greenhouse gas emissions, natural gas sources and use will depend on new technologies (e.g., hybrid vehicles, solar heating) and methods of supply (e.g., liquefied natural gas shipped by tanker, biogas). These developments will depend on and influence natural gas supplies, and contribute to the uncertainty in past and future projections.[87]

3.13.2.3 *Fuel for Motor Vehicles*

Californians consume roughly 16 billion gallons of gasoline and four billion gallons of diesel annually.[88] This represents a 50 percent increase over the amount that was used 20 years ago. The primary factors contributing to this increase are: 1) population growth and more on-road vehicles, 2) low per mile cost of gasoline for the past two decades, 3) lack of alternatives to conventional gasoline and diesel fuels, 4) consumer preference for larger, less fuel-efficient vehicles, and 5) land-use planning that places jobs and housing farther apart without transportation integration. Although gasoline consumption is expected to increase in California by one to two percent each year, Californians used approximately 63 million less gallons of gasoline in 2007 than they did in 2006.[89]

The average fuel economy for the fleet of light-duty vehicles (autos, pickups, vans, and SUVs) steadily increased from about 12.6 miles-per-gallon (mpg) in the mid-1970s to the current 20.7 mpg, in 1985 as a result of federal standards which had not substantially changed in 22 years.[90] In December 2007, the Energy Independence and Security Act of 2007 was signed which mandates a national fuel economy standard of 35 miles per gallon by 2020.[91]

According to the California Energy Commission, if the state takes no further action to reduce the petroleum use and current greenhouse gas regulations remain in place, the demand for gasoline in California will increase to nearly 15.6 billion gallons per years by 2025. The demand for diesel fuel is estimated to grow to 4.9 billion gallons by 2025. Imports of foreign crude oil will increase as in-state and Alaskan supplies diminish. Since California refineries are already operating close to their full capacity, daily imports of refined gasoline and diesel are expected to double over the next 20

[87] California Energy Commission, *2007 Integrated Energy Policy Report*. Pages 167-171.
[88] California Energy Commission, *2007 Integrated Energy Policy Report*. Page 189.
[89] California Energy Commission, *2007 Integrated Energy Policy Report*. Page 9.
[90] California Energy Commission, *2007 Integrated Energy Policy Report*. Page 200.
[91] The White House, *Energy Security for the 21st Century*, February 20, 2008. http://www.whitehouse.gov/infocus/energy

years. Unless out-of-state facilities expand, the gasoline and diesel markets will become more volatile, increasing the likelihood of shortages and more prolonged periods of high prices.[92]

It should be noted that the conditions have rapidly changed within the past year related to the increase in fuel cost and the decrease of vehicle miles traveled in the U.S. According to the U.S. Department of Transportation, between November 2007 and December 2008, Americans have driven 115 billion miles less than they did over the same period a year earlier.[93]

3.13.3 Energy Impacts

For the purposes of this EIR, based upon Appendix G of the CEQA Guidelines, a energy impact is considered significant if the project will:

- Result in a wasteful, inefficient, and unnecessary consumption of energy; or
- Result in a substantial increase in demand upon energy resources in relation to projected supplies; or
- Result in longer overall distances between jobs and housing.

The proposed Area 3 and 4 Specific Plan allows for development of up to 1,260 housing units of various densities, up to a 600-student elementary school (assumed to be approximately 20,000 square feet), a golf course, and open space areas. Existing light industrial and institutional (Ohlone College, City fire station, park, and George Silliman community center uses, industrial office park) would be retained.

Development of the site with the proposed uses would consume energy during both the construction and operational phases of the project. The construction phase would require energy for the actual manufacture and transportation of building materials, preparation of the site (e.g., importing fill and grading), and the actual construction of the buildings. The operational phase will consume energy for multiple purposes including, but not limited to, building heating and cooling, lighting, appliances, and electronics. Operational energy will also be consumed during each vehicle trip associated with the proposed uses.

3.13.3.2 *Electricity and Natural Gas*

Development of the proposed Specific Plan is estimated to increase annual electricity usage by 8,858,000 kilowatt-hours per year (kWh/year) and natural gas usage by 67,000,000 cubic feet per square foot per year (ft^3/ft^2/year). The proposed residential uses are estimated to consume approximately 8,190,000 kWh of electricity and 65,520,000 cubic feet of natural gas each year. These estimates do not include any reductions in energy consumption attributed to energy efficient design or conservation measures.

[92] California Energy Commission, *2007 Integrated Energy Policy Report*. Page 190.
[93] www.fhwa.dot.gov/ February 19, 2009.

Table 3.13-1: Estimated Average Annual Energy Use			
Land Use	**Usage/Unit**	**Size**	**Annual Energy Use**
Proposed Land Uses			
Residential			
Electricity	6,500 kWhr/du/year	Up to 1,260 units	8,190,000 kWh
Natural Gas	45,000 ft^3/du/year	Up to 1,260 units	65,520,000 ft^3
Commercial/School			
Electricity	16.7 kWhr/ft^2/year	Up to 40,000 sf	668,000 kWhr
Natural Gas	37 ft^3/ft^2/year	Up to 40,000 sf	1,480,000 ft^3
Transportation			
Gasoline	0.048 gallons/mile	Daily Trips	1,835,921 gal
Total Net Increase in Energy Use (Development Scenario – Existing Uses)		**Electricity** **Natural Gas** **Gasoline**	9 million kWhr 67 million ft^3 2 million gal

Notes: du=dwelling units, ft^2=square feet, ft^3=cubic feet, kWhr=kilowatt hour. Average vehicle trip length is estimated to be 7 miles (Source: ERBEMIS 2007 model, distributed by the California Air Resources Board and recommended for use by the BAAQMD). The above data are rough estimates. Actual energy usage could (and will) vary substantially depending upon factors such as the type of uses that ultimately occur on the site, actual miles driven by future residents or employees, and the degree to which energy conservation measures are incorporated into the facilities on-site.

Development of the Specific Plan will be constructed to meet the requirements of Title 24 of the California Administrative Code, as it pertains to energy efficiency. All development will also be required to comply with the City of Newark Green Building and Construction and Demolition Recycling Ordinance. The Specific Plan has incorporated Water Conservation Standards into future project design. All residential and non-residential development with Areas 3 and 4 Specific Plan will be developed with the latest technology in water efficient plumbing fixtures and irrigation systems, including but not limited to the following:[94]

For Residential Development within Areas 3 and 4:

- High efficiency (1.3 gallons per flush or less) and dual flush toilets,
- High efficiency clothes washers with a water factor of six (6) or less,
- High efficiency dish washers,
- Water efficient bathroom and kitchen fixtures

For Commercial Development within Areas 3 and 4:

- High efficiency (1.3 gallons per flush or less) and dual flush toilets,
- High efficiency urinals (1/2 gallon per flush or less),
- High efficiency clothes washers with a water factor of six (6) or less,
- High efficiency dish washers, where feasible, sensor driven c-line, or rack conveyor machines that recycle final rinse water,
- Low flow pre-rinse spray nozzles,
- Air-cooled ice machines,
- Water efficient bathroom and kitchen fixtures (e.g. faucets with auto shut-off mechanisms)

For Golf Course and Landscape Development within Areas 3 and 4:

[94] Many, if not most, of these technologies will be legal requirements under the pending Plumbing Code revisions expected in 2010.

- Water efficient irrigation systems include weather-based irrigation-controllers, drip irrigation systems for non-turf areas and the installation of drought-tolerant landscaping in-lieu of irrigated turf, wherever possible.
- All decorative fountains shall recycle water. The latest water efficient technologies for commercial car washing and cooling shall be used.
- Install a separate, non-potable distribution system (i.e. "purple pipe") for the golf course and other non-residential landscape needs. This distribution system will, at a minimum, include a non-potable water transmission main extending through the site with at least two points of connection to Cherry Street (for connection with a future recycled water main) at the northern and southern limits of Area 3 frontage with Cherry Street. The on-site system will also include non-potable distribution mains extending to areas where recycled water could be used.

Water Efficient Landscape Ordinance

- The State of California Department of Water Resources is expected to formally amend Chapter 2.7 Model Water Efficient Landscape Ordinance, Sections 490 through 495 in Division 2, Title 23 of the California Code of Regulations. All local agencies will be required to adopt a similar ordinance by January 2010 to meet new water conservation standards related to landscape improvements. All landscape improvements in Areas 3 and 4 will be subject to these requirements.

There are many other opportunities for the Specific Plan development to use energy efficient design. Since the Specific plan will not be developed/constructed out in one phase, there are options for designing an energy and resource efficient development through measures similar to those described in the Governor's Green Building Action Plan. These measures could include requiring all private development within the Specific Plan to be certified buildings by U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) or similar standards, and partnerships with utility companies to develop a local energy and sustainably plan for all development.

Residential development within the Specific Plan could also include energy conserving design and construction techniques to exceed Title 24 requirements and could incorporate Green Building Practices including pre-wiring and/or installing houses with solar power. It should be noted, that in 2011, State Law requires every new subdivision of 50 houses or more to include an upgrade for solar power.

The Specific Plan also includes the provision of recycled water lines for landscaping, over both Areas 3 and 4, when it is available, which will provide further energy and water savings.

Through the features listed above, the proposed Specific Plan project will implement several energy efficiency measures and would be consistent with the General Plan goal of maximizing Newark's opportunities for energy-efficiency. The actual energy demand, therefore, would be less than what is described above in Table 3.13-1.

Future uses on the Specific Plan site would substantially increase the demand for electricity and natural gas. With incorporation of green building measures in the design and construction of the proposed structures, the proposed project would not result in the wasteful use of these energy resources.

The following measures shall be included in the Specific Plan to further reduce energy usage impacts:

AM ENR-1.1: All residential subdivisions and new commercial buildings within the Specific Plan shall incorporate as many green practices as appropriate and feasible in buildings and structures constructed subject to approval of the City of Newark.

AM ENR-2.2: All public landscaping areas within the Specific Plan shall follow the City of Newark's Bay Friendly Landscape Guide. Future homeowners associations or similar entity shall be encouraged to incorporate as many bay friendly landscape practices as appropriate and feasible.

3.13.3.3 *Fuel for Motor Vehicles*

Operational Energy Usage

Operational energy would be consumed during each vehicle trip associated with the proposed uses. It is estimated that the proposed project would generate approximately 15,000 trips per day. Assuming an average trip length of seven miles and a fuel economy of 20.7 miles per gallon, the proposed project would result in the use of 1,835,921 gallons per year.

Area 3 of the Specific Plan is served by transit, includes some bicycle lanes, and is located within walking distance of some services for proposed project users, such as a school, retail establishments, and restaurants. However, Area 4 is generally located beyond normal walking distance to transit and retail services. Therefore, the residents of the approximately 500 residential units in Area 4 would be required to use motor vehicles to access jobs, services, and transit.

Implementation of many of the mitigation measures to reduce long-term air quality impacts (MM AIR-1.1) would also reduce the amount of fuel required for vehicle trips associated with the proposed project. The following measures summarized from MM AIR-1.1 would encourage the use of alternative transportation modes, such as transit, bicycle, and pedestrian trips:

- Provide pedestrian sidewalks or paths throughout the Specific Plan site.
- Include appropriate bicycle amenities, such as bike lane connections throughout the Specific Plan site.
- Improve existing or construct new bus pullouts and transit stops (with shelters, benches and posting of transit information) at convenient locations along Cherry Street and Stevenson Boulevard.
- Implement feasible means to bring transit and/or shuttle service to Area 4.
- Provide convenient pedestrian access to bus stops along adjacent arterials.
- Consider off-site bicycle lane improvements for roadways that would serve the project.
- Consider making a more pedestrian-friendly environment by providing pedestrian signs and signalization, such as pedestrian crossings with count-down signals at strategic intersections.

Vehicle trips associated with future development on the Specific Plan site would substantially increase the demand for gasoline. Although implementation of the measures listed above would reduce the impact on energy resources, the proposed project would not result in the wasteful use of energy. **(Less than Significant Impact)**

Construction Energy Usage

Construction energy would be consumed during each vehicle trip associated with the transportation of building materials, preparation of the site (e.g., importing 2.1 million cubic yards of fill), demolition and construction of the buildings and roadways. All of these activities result in fuel consumption during construction. Depending on the distances building materials and source fill sites are located from the project site, a substantial increased demand upon energy could occur. Long travel distances associated with construction could also result in an inefficient and unnecessary consumption of energy.

The fuel usage for transport of building materials can be reduced by utilizing local and regional materials in order to reduce travel distances. Utilizing earth fill from local construction projects would reduce truck trip and thus also reduce fuel consumed during project site preparation. Nearby construction projects are anticipated to be the source of fill material for this project, specifically the BART extension project to Warm Springs which involves tunneling under Lake Elizabeth. Demolition and construction fuel usage can be reduced by enforcement of current state law idling restrictions for diesel-fueled trucks and equipment. Maintaining all construction equipment and vehicles in good running conditions would also reduce wasteful fuel usage.

Unless the above features are implemented during project construction, the project would result in a wasteful and inefficient consumption of energy through fuel usage. This would result in a significant energy impact.

Impact ENR–1: Construction could result in a wasteful and inefficient consumption of energy associated with fuel usage and therefore, would result in a significant energy impact. **(Significant Impact)**

MM ENR-1.1: The project shall utilize local and regional building material in order to reduce energy consumption associated with transporting materials over long distances. This shall be enforced by specifying on construction bid documents that 20 to 50 percent of building materials be manufactured within 500 miles of the project site.

MM ENR-1.2: Local construction sites shall be utilized for the source of fill material necessary for the development of Area 4. The Community Development Director shall approve all fill source sites to ensure travel distances are local distances. In addition, designated travel routes from the fill source site to the project site shall be determined by the construction manager and approved by the Community Development Director to ensure the haul-truck utilize most fuel-efficient travel path.

MM ENR-1.3: Reduce equipment and vehicle idle times. Enforce current state law idling restrictions from diesel-fueled trucks by conspicuously posting signs that prohibit excess idling. Construction superintendants shall inform truck drivers to turn engines off when idling times have exceeded or are expected to exceed the idling restrictions (currently five minutes). This would include trucks waiting to deliver or receive soil, aggregate, or other bulk materials. Rotating drum concrete trucks could keep their engines running continuously as long as they were onsite.

MM ENR-1.4: Reduce vehicle emissions. Properly tune and maintain equipment for low emissions. **(Less Than Significant with Mitigation)**

3.13.3 Conclusion

With implementation of proposed energy-efficiency design measures (MM AIR-1.1) the operation of proposed project would not use fuel or energy in a wasteful manner. **(Less than Significant Impact)**

Construction could result in a wasteful and inefficient consumption of energy associated with fuel usage. Implementation of mitigation measures MM ENR-1.1 – MM ENR-1.4 would reduce significant energy impacts to a less than significant level. **(Less than Significant Impact with Mitigation)**

4.0 CUMULATIVE IMPACTS

Cumulative impacts, as defined by CEQA, refer to the combined effects of two or more individual projects, (developments, programs, etc.) which when considered together are considerable or which compound or increase other environmental impacts. Cumulative impacts may result from individually minor, but collectively significant project impacts taking place over a period of time. The CEQA Guidelines (§15130) state that an EIR should discuss cumulative impacts and consider them significant when the project's contribution is "cumulatively considerable." The discussion does not need to be in as great detail as is necessary for project impacts, but is to be "guided by the standards of practicality and reasonableness." The purpose of the cumulative analysis is to allow decision makers to better understand the impacts that might result from approval of past, present and reasonably foreseeable future projects, in conjunction with the proposed project addressed in this EIR.

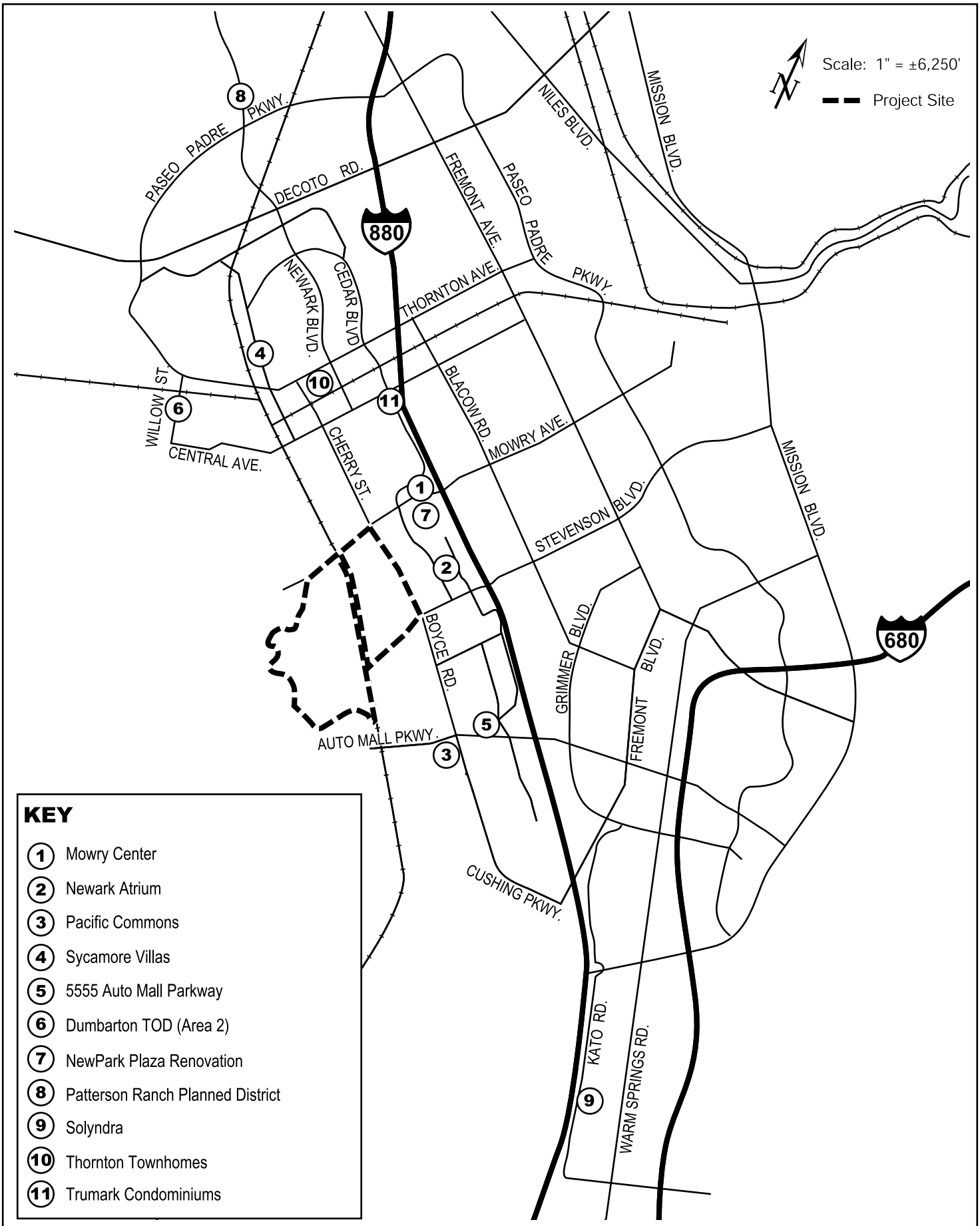
The CEQA Guidelines advise that a discussion of cumulative impacts should reflect both their severity and the likelihood of their occurrence. To accomplish these two objectives, the analysis should include either a list of past, present and probable future projects or a summary of projections from an adopted general plan or similar document. The effects of past projects are generally reflected in the existing conditions described in the specific sections of this EIR. For instance, the traffic from recently-approved projects is reflected in the Background Conditions described in *Section 3.2, Transportation*. The analysis must then determine what the project's contribution to any cumulatively significant impact is cumulatively considerable, as defined by Section 15065(a)(3) of the CEQA Guidelines.

Given the nature of the pending and approved projects (Table 4.0-1), their locations, and the impacts and scale of the proposed project, the issue areas for which cumulative impacts could be substantial include land use, transportation, air quality, noise, biology, cultural, water quality, visual, water supply, and energy. The potential for the project to make a cumulatively considerable impact to greenhouse gas emissions and global warming is also considered.

The projects included in the cumulative analysis may have other significant impacts, but the specific project development evaluated in this EIR would not increase or result in cumulatively considerable significant impacts on those particular resources. Those areas of impact are, therefore, not discussed further in this section. Unless otherwise stated, the thresholds of significance used throughout the analyses of cumulative impacts are the same listed as those listed in *Section 3, Environmental Setting, Impacts, and Mitigation* of this EIR.

The analysis in this section is based upon consideration of a list of approved and pending projects near the proposed Specific Plan (refer to Table 4.0-1. and Figure 4.0-1) that was provided by the City of Newark Community Development Department, as well as pending projects in Fremont.

The City of Newark is currently in the process of updating the General Plan Housing Element. The Housing Element Update is required by the State of California. The State requires that communities plan for future housing. It is a plan, not a particular housing project. There are no specific developments proposed as a part of this plan. If, in the future, a specific housing project were proposed, it would require additional environmental evaluation, consideration, and community outreach.



CUMULATIVE PROJECTS LOCATION MAP FIGURE 4.0-1

Table 4.0-1:
List of Cumulative Projects

	Project Name/Location	Acres	Project Description
	Approved But Not Completely Built Out		
1	Mowry Center; Mowry Avenue and Interstate-880, Newark	13.3	500,000 SF Retail with two restaurant pads. 325,000 SF and two pads are currently under construction
2	Newark Atrium; Cedar Boulevard and Joaquin Murieta Avenue, Newark	4.3	70,000 SF Retail/Office Complex
3	Pacific Commons; southwest quadrant of Auto Mall/Boscell (Planning Area 4), Fremont	15.3	171,060 SF shopping center (40 percent complete)
4	Sycamore Villas; Sycamore Street and George Avenue, Newark	<1	Eight (8) single-family houses
	Pending Projects		
5	5555 Auto Mall Parkway; north of Auto Mall Parkway between Boscell Road/Christy Street, Fremont	8	224,442 SF retail
6	Dumbarton Transit Oriented Development Specific Plan (Area 2); Willow Street and Enterprise Drive, Newark	233	Approximately 2,500 Medium to High Density Residential units and 400,000 SF retail
7	New Park Plaza Renovation; Mall Loop Road, Newark	12	Renovation of Existing Retail Center (4,000 seat theater, 22,500 sf restaurant, 2,700 SF retail)
8	Patterson Ranch Planned District; west of Interstate 880 and north of State Route 84, Fremont	428	General Plan Amendment, Planned District and Development Agreement for the Patterson Ranch Planned District. 839 residential units on 90 acres, 50,000 SF commercial on two acres, eight acres of streets and right-of-way, 10 acres of quasi-public (church uses), 10-acre elementary school, 30 acres of City community park. Remaining acres dedicated to East Bay Regional Parks District
9	Solyndra; Kato Road, Fremont	32	580,000 SF solar panel manufacturing/R&D facility
10	Thornton Townhomes; 6249 Thornton Avenue between Newark Boulevard and Cherry Street, Newark	<1	14 Townhouses
11	Trumark Condominiums; Cedar Boulevard, end of Timber Street	12	200 Townhouses
12[1]	City of Newark General Plan Housing Element Update	1,189	Future housing allocation up to 5,300 housing units and general plan and zoning amendments

Note: The numbers of the cumulative projects refer to the Cumulative Projects Location Map, Figure 4.0-1
[1] Due to the number of proposed housing sites throughout the City, they are not included on the cumulative map.

It should be noted that the transportation impact analysis considered the Ohlone College Newark Campus stadium project and the A's Ballpark Village project in its cumulative analysis; however, both projects are no longer reasonably foreseeable projects and are not included in the cumulative project list.[95]

The thresholds of significance used for the following cumulative analysis are the same as thresholds used in the previous specific environmental sections unless otherwise noted below.

4.1 LAND USE

The existing City of Newark General Plan land use diagram shows the proposed Area 3 residential, school and park area designated *Special Industrial*. Special Industrial uses including a high-tech business park plan that was approved by the City in 1989 for this 78-acre area. The project proposes a General Plan amendment for this area to allow development of residential single-family, residential below market rate (BMR), and elementary school and park uses. The proposed General Plan land use designation for Sub-Area A would be *Medium Density Residential*.

Area 4 is designated by the City of Newark General Plan as *Low Density Residential*, with a requirement for preparation of a Specific Plan to guide development on Area 4, due to the complex conditions in this area including access, ownership, and environmental constraints. The existing General Plan assumed 2,700 residential units for Area 4 which is well above the current planned 1,260 residential units for Areas 3 and 4.

If all the pending projects including the proposed Areas 3 and 4 Specific Plan are approved and completed this will result in approximately 4,800 residential units, 720,000 sf of commercial development, 580,000 sf of office and R&D development and two schools within the project vicinity. General Plan amendments and zoning changes would be required to allow the anticipated development.

In terms of the cumulative analysis, land use compatibility can be divided into short-term and long-term impacts. Short-term impacts occur during construction and primarily affect existing sensitive land uses, such as hospitals, schools, and residential development near the construction sites. These impacts include the noise and dust generated by grading and excavation activities and the use of heavy machinery. These specific impacts are discussed in greater detail in the Noise and Air Quality subsections of this cumulative discussion.

The projects listed in the cumulative analysis would all be required to implement General Plan policies and to conform to residential and commercial design guidelines that are intended to minimize land use conflicts. Implementation of setbacks, buffers, appropriate site design and building orientation, and/or soundproofing will be considered during the site and architectural review process on a project-by-project basis.

[95] Ohlone College Newark Campus stadium project: Patrice Birkedahl, Public Information Officer, Director, College Advancement, Ohlone College stated that no joint funding agreement could be completed for the potential stadium project; (telephone communications, November 2008); A's Ballpark Village project: City of Fremont, announced environmental process for A' Ballpark Village has stopped, February 24, 2009 http://www.ci.fremont.ca.us/Community/BallparkVillage/default.htm#letter

Project-specific construction dust control measures during construction would be implemented at each site in accordance with the City's Grading Ordinances and Bay Area Air Quality Management District (BAAQMD) requirements. Construction-related noise impacts would also be mitigated on a project-by-project basis depending upon distances to sensitive receptors and construction methods.

Development in accordance with the City's General Plan, Zoning and Grading Ordinances, and adopted design guidelines will reduce the likelihood that the projects considered in this cumulative scenario would result in a significant cumulative land use compatibility impact. The proposed combined projects would not contribute to a significant cumulative land use compatibly impact. **(Less than Significant Cumulative Impact)**

4.1.2 Cumulative Loss of Agricultural Lands

While portions of Areas 3 and 4 are currently used for agriculture, the site is not designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resource Agency.[96] Nor is any portion of the project site currently under Williamson Act contract.[97] The Specific Plan area is not designated by the City General Plan for agricultural use. The Patterson Ranch property includes approximately 286 acres designated as prime farmland of the entire 428-acre site. With the exception of the Patterson Ranch property, the other cumulative projects and the proposed Specific Plan project would not result in the loss of lands mapped Prime Farmland, Farmland of Statewide Importance, and Farmland of Local Importance by the California Department of Conservation. The proposed Specific Plan project would not make a cumulatively considerable contribution to the loss of agricultural lands. **(Less than Significant Cumulative Impact)**

4.2 TRANSPORTATION

Cumulative conditions were represented by adding to project condition traffic volumes the additional traffic generated by all other potential projects in the general study area that have been proposed but have not yet been approved. The roadway network under cumulative conditions was assumed to be the same as described under project conditions.

4.2.1 Thresholds of Significance

City of Newark Signalized Intersections

For the purposes of this EIR, a project would result in a significant adverse impact on cumulative traffic conditions at a signalized intersection in the City of Newark if for either peak hour:

- The level of service at the intersection degrades from an acceptable LOS C or better under cumulative without project conditions to an unacceptable LOS D, E, or F under cumulative with project conditions; or
- The level of service at the intersection is an unacceptable LOS under cumulative without project conditions and the addition of project trips causes the average delay at the intersection to increase by four (4) or more seconds

[96] California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, *Alameda County Important Farmlands Map 2006*, March 2007.
[97] City of Newark Resolution 4258, adopted in 1983, passed a Notice of Nonrenewal for the parcels previously under Williamson Act contract.

A significant impact by the City of Newark standards is said to be satisfactorily mitigated when measures are implemented that would restore intersection level of service to no project conditions or better.

City of Fremont Signalized Intersections

For the purposes of this EIR, a project would result in a significant adverse impact on traffic conditions at a signalized intersection in the City of Fremont if for either peak hour:

- The level of service at the intersection degrades from an acceptable LOS D or better under cumulative without project conditions to an unacceptable LOS E or F under cumulative with project conditions; or
- The level of service at the intersection is an unacceptable LOS under cumulative without project conditions and the addition of project trips causes the average delay at the intersection to increase by four (4) or more seconds.

A significant impact by the City of Fremont standards is said to be satisfactorily mitigated when measures are implemented that would restore intersection level of service to cumulative without project conditions or better.

Unsignalized Intersections

Level of service for the unsignalized intersections was determined using TRAFFIX based on the 2000 Highway Capacity Manual (HCM) methodology. For the purpose of this study, the level of service reported is based on the average delay at the unsignalized intersections. The correlation between average delay and level of service is shown in Table 3.2-2.

The cities of Newark and Fremont do not have formal criteria to apply to unsignalized intersections. This is common for many jurisdictions because signalized intersections typically limit the overall capacity of a roadway. The analysis of unsignalized intersections is typically evaluated by considering overall level of service, movement delay, availability of alternate routes, intersection spacing, and an analysis of traffic signal warrants.

The results of the level of service analysis under cumulative conditions are summarized in Table 4.2-1. Under cumulative conditions, the results show the following significant impacts:

Impact C-TRAN-1: Cherry Street and Central Avenue – Under cumulative without project conditions, the intersection would operate at LOS C during the PM peak hour. The addition of project traffic would cause the intersection to degrade to LOS D during the PM peak hour. **(Significant Impact)**

MM C-TRAN-1: Cherry Street and Central Avenue mitigation: Add a left turn lane to the northbound approach on Cherry Street. This mitigation measure would allow the intersection to operate at LOS C during the PM peak hour under both project alternatives. It would also require a detailed evaluation of signal phasing, clearance of opposing northbound and southbound left turns, and a review of intersection alignment. To construct this improvement would require signal, striping, curb, and gutter modifications. Depending on the

final design, these mitigation measures could be accommodated within the existing right-of-way. Because this impact would occur under cumulative conditions, but not under project conditions, this impact could be mitigated by a "fair share" monetary contribution from the project toward these improvements. **(Less Than Significant Impact with Mitigation)**

Impact C-TRAN-2: Cherry Street and Mowry Avenue – Under cumulative without project conditions, the intersection would operate at LOS C during the AM and PM peak hours. The addition of project traffic would cause the intersection to degrade to LOS D during the AM and PM peak hours. **(Significant Impact)**

MM C-TRAN-2: Cherry Street and Mowry Avenue mitigation: Add a left turn lane on the westbound approach. This is the same mitigation proposed under project conditions. Depending on the final design, these mitigation measures could be accommodated within the existing right-of-way. This mitigation measure would allow the intersection to operate at LOS C during the AM and PM peak hours under both cumulative project alternatives. **(Less Than Significant Impact with Mitigation)**

All of the remaining study intersections would operate at acceptable levels under cumulative with project conditions. Please note that some intersection delays decrease with the addition of project traffic. This occurs because the project will add traffic to intersection movements that are not critical to the intersection operations (such as right turns). The delays at non-critical movements are typically lower than those at critical movements. Correspondingly, the delays experienced by project traffic at non-critical movements would be less than the delays that are experienced at the intersection as a whole. This has the effect of reducing the overall delay experienced by the intersection.

Table 4.2-1:
Cumulative Intersection Levels of Service

Study Intersection	Peak Hour	Cumulative Conditions				
		No Project		With Project		
		Ave. Delay	LOS	Ave. Delay	LOS	Incr. In Delay
Newark Signalized Intersections:						
Cherry St and Thornton Ave	AM	51.3	D	54.0	D	2.7
	PM	64.3	E	65.1	E	0.8
Cherry St and Central Ave	AM	29.5	C	32.8	C	3.3
	PM	34.6	C	**40.0**	**D**	**5.4**
Cherry St and Mowry Ave	AM	32.5	C	**51.5**	**D**	**19.0**
	PM	31.4	C	**37.2**	**D**	**5.8**
Cherry St/Boyce Rd and Stevenson Blvd	AM	26.7	C	29.5	C	2.8
	PM	28.0	C	32.4	C	4.4
Newark Blvd and Thornton Ave	AM	20.7	C	21.1	C	0.4
	PM	22.2	C	23.3	C	1.1
Newark Blvd and Central Ave	AM	11.2	B	11.5	B	0.3
	PM	14.8	B	15.2	B	0.4
Cedar Blvd and Mowry Ave	AM	24.7	C	24.7	C	0.0
	PM	28.1	C	28.5	C	0.4
Cedar Blvd and Stevenson Blvd	AM	20.2	C	20.1	C	-0.1
	PM	21.6	C	22.0	C	0.4

Table 4.2-1:
Cumulative Intersection Levels of Service

Study Intersection	Peak Hour	Cumulative Conditions				
		No Project		With Project		
		Ave. Delay	LOS	Ave. Delay	LOS	Incr. In Delay
Albrae St/Balentine Dr and Stevenson Blvd	AM	18.1	B	18.1	B	0.0
	PM	28.8	C	32.8	C	4.0
I-880 SB off-ramp and Stevenson Blvd	AM	10.4	B	10.3	B	-0.1
	PM	14.0	B	15.3	B	1.3
I-880 SB off-ramp and Mowry Ave	AM	10.7	B	10.7	B	0.0
	PM	12.4	B	12.4	B	0.0
Cherry St and Street N of Jasmine Ave	AM	7.9	A	9.3	A	1.4
	PM	15.8	B	16.7	B	0.9
Cedar Blvd and Moores Avenue	AM	4.9	A	9.1	A	4.2
	PM	8.7	A	8.9	A	0.2
Newark Blvd and 84E	AM	12.4	B	12.5	B	0.1
	PM	44.6	D	46.6	D	2.0
Sycamore St and Thornton Ave	AM	28.1	C	28.3	C	0.2
	PM	31.0	C	33.1	C	2.1
Spruce St and Thornton Ave	AM	19.9	B	20.0	B	0.1
	PM	15.6	B	16.2	B	0.6
Thornton Ave and Gateway Blvd	AM	9.4	A	9.4	A	0.0
	PM	11.1	B	11.5	B	0.4
Newark Blvd and Jarvis Ave	AM	27.1	C	27.3	C	0.2
	PM	31.0	C	31.2	C	0.2
Newark Blvd and Cedar Blvd	AM	21.9	C	21.9	C	0.0
	PM	21.3	C	21.3	C	0.0
Newark Blvd and Lafayette Ave	AM	20.5	C	20.7	C	0.2
	PM	12.0	B	11.8	B	-0.2
Newark Blvd and Mayhews Landing Rd	AM	12.8	B	13.1	B	0.3
	PM	12.0	B	11.9	B	-0.1
Cedar Blvd and Central Ave	AM	21.4	C	21.8	C	0.4
	PM	22.0	C	22.7	C	0.7
Cedar Blvd and Thornton Ave	AM	34.2	C	34.6	C	0.4
	PM	46.2	D	49.2	D	3.0
Willow St and Thornton Ave	AM	18.8	B	18.9	B	0.1
	PM	34.6	C	34.4	C	-0.2
Cherry St and Clark Ave	AM	17.6	B	17.5	B	-0.1
	PM	14.5	B	13.9	B	-0.6
Alpenrose St and Mowry Ave	AM	15.9	B	16.1	B	0.2
	PM	22.3	C	23.3	C	1.0
Cherry St and Smith Ave	AM	15.5	B	15.5	B	0.0
	PM	9.3	A	9.4	A	0.1
Fremont Signalized Intersections:						
Boyce Rd and Auto Mall Pkwy	AM	30.6	C	31.1	C	0.5
	PM	32.5	C	32.5	C	0.0
I-880 NB off-ramp and Stevenson Blvd	AM	9.3	A	9.3	A	0.0
	PM	11.0	B	12.3	B	1.3
I-880 NB off-ramp and Mowry Ave	AM	9.9	A	9.9	A	0.0
	PM	14.0	B	14.0	B	0.0
I-880 SB off-ramp and Auto Mall Pkwy	AM	15.4	B	15.6	B	0.2
	PM	30.4	C	32.9	C	2.5

Table 4.2-1:
Cumulative Intersection Levels of Service

Study Intersection	Peak Hour	Cumulative Conditions				
		No Project		With Project		
		Ave. Delay	LOS	Ave. Delay	LOS	Incr. In Delay
I-880 NB off-ramp and Auto Mall Pkwy	AM	7.4	A	7.3	A	-0.1
	PM	13.4	B	13.5	B	0.1
Boscell Rd and Auto Mall Pkwy	AM	15.2	B	14.8	B	-0.4
	PM	27.8	C	27.7	C	-0.1
Pacific Commons and Auto Mall Pkwy	AM	14.2	B	14.1	B	-0.1
	PM	51.7	D	53.7	D	2.0
Blacow Rd and Mowry Ave	AM	28.5	C	28.5	C	0.0
	PM	29.6	C	29.6	C	0.0
Blacow Rd and Stevenson Blvd	AM	30.7	C	30.7	C	0.0
	PM	30.0	C	30.3	C	0.3
Grimmer Blvd and Auto Mall Pkwy	AM	33.7	C	33.8	C	0.1
	PM	71.2	E	74.2	E	3.0
Fremont Blvd and Stevenson Blvd	AM	34.9	C	35.1	D	0.2
	PM	34.8	C	35.0	C	0.2
Ardenwood Blvd and 84 W	AM	31.9	C	32.3	C	0.4
	PM	22.0	C	22.5	C	0.5
Fremont Blvd and Mowry Ave	AM	31.7	C	31.7	C	0.0
	PM	33.9	C	34.0	C	0.1
Farwell Dr and Mowry Ave	AM	22.0	C	22.0	C	0.0
	PM	21.9	C	21.7	C	-0.2
Christy St and Automall Pkwy	AM	17.0	B	16.8	B	-0.2
	PM	38.5	D	40.0	D	1.5
Farwell Dr/Omar St and Stevenson Blvd	AM	17.2	B	17.2	B	0.0
	PM	13.2	B	13.5	B	0.3

Notes:
Bold and shaded text indicates a significant project impact.

4.3 AIR QUALITY

As described previously in Section 3.3 of this EIR, the proposed Specific Plan's new traffic trips would lead to increased emissions of air pollutants. The new emissions of ROG would be above the current significance thresholds established by the BAAQMD and would result in a significant and unavoidable air quality impact. As stated in the BAAQMD guidance for CEQA documents, if a project is found to have an individually significant regional air quality impact, it would also be considered to have a significant cumulative impact.

Impact C-AIR-3: According to BAAQMD thresholds, the proposed project, in combination with the cumulative projects, would result in a significant regional air quality impact. **(Significant Unavoidable Cumulative Impact)**

4.4 CUMULATIVE GLOBAL CLIMATE CHANGE IMPACTS

This section provides a general discussion of global climate change and focuses on emissions from human activities that alter the chemical composition of the atmosphere. The discussion on global climate change and greenhouse gas emission is based upon the California Global Warming Solutions

Act of 2006 (Assembly Bill (AB) 32), the 2006 Climate Action Team (CAT) Report to Governor Schwarzenegger and the Legislature, and research, information and analysis completed by the International Panel on Climate Change (IPCC), the United States Environmental Protection Agency, California Air Resources Board, and the CAT. Estimates of greenhouse gas emissions for several components of the project are provided in Appendix C and Appendix G of this EIR.

Global climate change refers to changes in weather including temperatures, precipitation, and wind patterns. Global temperatures are modulated by naturally occurring and anthropogenic-generated (generated by mankind) atmospheric gases such as carbon dioxide, methane, and nitrous oxide.[98] These gases allow sunlight into the Earth's atmosphere but prevent heat from radiating back out into outer space and escaping from the earth's atmosphere, thus altering the Earth's energy balance. This phenomenon is known as the greenhouse effect.

Naturally occurring greenhouse gases include water vapor[99], carbon dioxide, methane, nitrous oxide, and ozone. Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also greenhouse gases, but are for the most part solely a product of industrial activities. The major greenhouse gases, other than water vapor, are briefly described below.[100]

Carbon Dioxide (CO_2) enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, respiration, and as a result of other chemical reactions (e.g., manufacturing of cement). Carbon dioxide is also removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.

Methane (CH_4) is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.

Nitrous Oxide (N_2O) is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.

Fluorinated Gases are synthetic, strong greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes referred to as High Global Warming Potential gases. High Global Warming Potential gases are emitted from a variety of industrial processes including aluminum production, semiconductor manufacturing, electric power transmission, and magnesium production and

[98] IPCC, 2007: Summary for Policymakers. In: Climate Change 2007: The Physical Science Bases. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor, and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. Available at: http://ipcc.ch/

[99] Concentrations of water are highly variable in the atmosphere over time, with water occurring as vapor, cloud droplets and ice crystals. Changes in its concentration are also considered to be a result of climate feedbacks rather than a direct result of industrialization or other human activities. For this reason, water vapor is not discussed further as a greenhouse gas.

[100] U.S. EPA, 2009 U.S. Greenhouse Gas Inventory Report, http://www.epa.gov/climatechange/emissions/usinventoryreport.html (accessed April 20, 2009) and National Oceanic and Atmospheric Administration, Greenhouse Gases Frequently Asked Questions, http://lwf.ncdc.noaa.giv/oa/climate/gases.html (accessed April 22, 2009).

processing, and the production of HCFC-22, a hydrochlorofluorocarbon used as a refrigerant and in air conditioners.

4.4.1 Human Influence on Climate

The world's leading climate scientists have reached consensus that global climate change is underway, is "very likely" caused by humans, and hotter temperatures and rises in sea level "would continue for centuries," no matter how much humans control future emissions. A report of the Intergovernmental Panel on Climate Change (IPCC), an international group of scientists and representatives concluded "the widespread warming of the atmosphere and ocean, together with ice-mass loss, support the conclusion that it is extremely unlikely that global climate change of the past 50 years can be explained without external forces, and very likely that it is not due to known natural causes alone."[101]

Human activities have exerted a growing influence on some of the key factors that govern climate by changing the composition of the atmosphere and by modifying vegetation. The concentration of carbon dioxide in the atmosphere has increased from the burning of coal, oil, and natural gas for energy production and transportation and the removal of forests and woodlands around the world to provide space for agriculture and other human activities. Emissions of other greenhouse gases, such as methane and nitrous oxide, have also increased due to human activities. Carbon dioxide accounts for approximately 85 percent of total emissions, and methane and nitrous oxide account for almost 14 percent. Each of these gases, however, contributes to global warming at a different relative rate. Methane has a global warming potential 23 times that of carbon dioxide, while nitrous oxide is 296 times that of the same amount of carbon monoxide. To account for these differences, estimates of greenhouse gas emissions are often described in terms of carbon dioxide equivalents.

In 2007, the IPCC predicted a temperature increase of between two and 11.5 degrees Fahrenheit (F) (1.1 and 6.4 degrees Celsius) by the end of the 21st century under six different scenarios of emissions and carbon dioxide equivalent concentrations.[102] Sea levels were predicted to rise by 0.18 to 0.59 meters (seven to 23 inches) during this time, with an additional 3.9 to 7.8 inches possible depending upon the rate of polar ice sheets melting from increased warming. The IPCC report states that the increase in hurricane and tropical cyclone strength since 1970 can likely be attributed to human-generated greenhouse gases.

On a per person basis, greenhouse gas emissions are lower in California then most other states; however, California is a populous state and the second largest emitter of greenhouse gases in the United States and one of the largest emitters in the world.[103] Transportation is the largest source of greenhouse gas emissions in California, followed by industrial sources and electric power generation.[104]

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[101] *Climate Change 2007 – The Physical Science Basis Contribution of Working Group I to the Fourth Assessment Report of the IPCC.* February 2, 2007. [http://ipcc-wg1.ucar.edu/wg1/wg1-report.html]

[102] IPCC, 2007: Summary for Policymakers. In: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. [http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf]

[103] California Legislative Analyst's Office. 2006. *Analysis of the 2006-07 Budget Bill (Governor's Climate Change Initiative).* [http://www.lao.ca.gov/analysis_2006/resources/res_04_an106.html]

[104] California Air Resources Board. 2008. Climate Change Scoping Plan. http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm

According to the Draft 2009 Climate Action Team Report[105] that the following climate change effects and conditions can be expected in California over the course of the next century:

- **Warming Trends.** Increasing temperatures with summer warming increasing from about 0.9 to 3.6 degrees Fahrenheit (F) in the first 30 years of the 21st century and from about 2.7 to 10.5 degrees F in the last 30 years of the 21st century.
- **Precipitation.** Changes in precipitation patterns and earlier melting of the Sierra snow pack that will have an effect on river flows, runoff, and water supplies in California.
- **Sea-Level Rise**. By 2050, sea-level rise could range from 11 to 18 inches higher and by 2100 sea-level rise could be 23 to 55 inches higher than in the year 2000. As sea level rises, major transportation infrastructure could be inundated and there also will be an increased rate of coastal flooding when high tides coincide with winter storms. Other impacts of sea-level rise include loss of coastal habitats (such as beaches and wetlands), direct impacts to coastal communities, and biodiversity reduction due to species loss.
- **Agriculture**. Increased challenges for the state's agricultural sector from temperature and precipitation effects on crop yields, crop losses from extreme weather events, and changes to pest and weed ranges.
- **Forestry**. Increased vulnerability of forests due to pest infestation, increased temperatures, wildfire frequency, and precipitation changes.
- **Water Resources**. Reduced reliability of State Water Project (SWP) and Central Valley Project (CVP) water supply systems due to the interaction of projected growth, a warmer-drier climate resulting in reduced stream flows and reservoir storage, and salinity increases in the Delta.
- **Coastal Areas**. Coastal erosion of beaches (especially during severe winter storms), and impacts to property, infrastructure, and housing due to flooding in coastal areas and the San Francisco bay area (including due to levee breaching).
- **Energy**. Increased electricity demand, particularly in the Central Valley, during hot summer months and possible reductions in energy generation from hydropower systems due to changes in runoff patterns.
- **Air Quality**. Increased concentrations of ozone and particulate matter associated with higher temperatures and increased natural biogenic emissions, which could impact air quality (particularly in the South Coast and San Joaquin air basins).
- **Public Health**. Effects on public health due to an increased frequency, duration and severity of heat events, increased air pollution, wildfire outbreaks, and physical events such as flooding. Air pollution and increased wildfires have the potential to increase respiratory problems.

The report concludes that extreme events from heat waves, floods, droughts, wildfires, and bad air quality are likely to become more frequent in the future in California.

[105] California Environmental Protection Agency. 2009. *Draft Climate Action Team Report to Governor Schwarzenegger and the Legislature.* April 1, 2009. http://www.climatechange.ca.gov/publications/cat/ (accessed April 22, 2009)

4.4.2 Regulatory Overview

Global climate change resulting from greenhouse gas emissions is an emerging environmental concern being raised and discussed at the international, national, and statewide level. At each level, agencies are considering strategies to control emissions of gases that contribute to global warming.[106] Regulatory efforts in California that apply to the project are summarized below.

4.4.2.1 *State of California Executive Order S-3-05*

In June 2005, the Governor of California signed Executive Order S-3-05 which identified Cal/EPA as the lead coordinating State agency for establishing climate change emission reduction targets in California. A multi-agency "Climate Action Team" was set up to implement Executive Order S-3-05. Under this order, the state plans to reduce greenhouse gas emissions to 80 percent below 1990 levels by 2050. Greenhouse gas emission reduction strategies and measures to reduce global warming were identified by the California Climate Action Team in 2006 and in the Climate Change Scoping Plan adopted in December 2008.[107]

4.4.2.2 *Assembly Bill (AB) 32 - The California Global Warming Solutions Act of 2006*

In the fall of 2006, California Assembly Bill 32 (AB 32), the global warming bill, was signed into law. AB 32 (California Health and Safety Code Section 38500 et seq.) requires the state Air Resources Board (ARB) to adopt regulations by set dates to require reporting and verification of statewide greenhouse gas emissions and to monitor and enforce compliance with that program. The bill requires achievement by 2020 of a statewide greenhouse gas emissions limit equivalent to 1990 emissions, and the adoption of rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions. According to the California Air Pollution Control Officers Association, reducing greenhouse gas emission levels from 2020 to 1990 levels would require a 28 to 33 percent reduction of "business-as-usual" greenhouse gas emissions depending on the methodology used to determine the future emission inventories.[108]

Strategies identified by ARB to reduce greenhouse gas emissions include, but are not limited to, new vehicle emission standards, enforcement of diesel truck anti-idling requirements, capture of more methane from landfills, hydrofluorocarbon (HCF) reduction strategies for the use and disposal of refrigerants, manure management in agricultural operations, and increased use of alternative fuels.

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[106] On April 2, 2007, the United States Supreme Court issued a 5-4 decision in *Massachusetts v. EPA*, which holds that the U.S. Environmental Protection Agency has authority under the Clean Air Act to regulate greenhouse gas emissions from new vehicles. The U.S. EPA had previously argued it lacked legal authority under the Clean Air Act to regulate greenhouse gases. The majority opinion of the Supreme Court decision noted that greenhouse gases meet the Clean Air Act's definition of an "air pollutant," and the EPA has the statutory authority to regulate the emission of such gases from new motor vehicles.

[107] California Environmental Protection Agency. 2006. *Climate Action Team Executive Summary Climate Action Team Report to Governor Schwarzenegger and the California Legislature.* [http://www.climatechange.ca.gov/climate_action_team/reports/2006-04-03_FINAL_CAT_REPORT_EXECSUMMARY.pdf] and California Air Resources Board. 2008. Climate Change Scoping Plan.

[108] California Air Pollution Control Officers Association. *CEQA & Climate Change, Evaluating and addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act*. January 2008. Available at: http://www.capcoa.org/CEQA/CAPCOA%20White%20Paper.pdf.

As part of implementation of AB 32, a statewide 1990 Greenhouse Gas Emissions inventory and 2020 Emissions Limit were adopted by the ARB in 2007. ARB's mandatory reporting regulation was approved by the Board in December 2007, and became effective on December 2, 2008. Starting in 2009, facilities in several key industrial sectors, such as electricity generation, petroleum refineries, and cement manufacturing, are required to report greenhouse gas emissions. The ARB also approved another key requirement of AB 32, the *Climate Change Scoping Plan*, on December 11, 2008.[109] The *Scoping Plan*, developed by ARB with input from the Climate Action Team, proposes a comprehensive set of actions designed to reduce overall carbon emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, and enhance public health while creating new jobs and enhancing the growth in California's economy. The ARB is currently working on additional regulations to implement the *Scoping Plan*. Regulations to obtain the maximum technologically feasible and cost-effective reductions in greenhouse gases are to be adopted by January 1, 2011.

4.4.2.3 *Senate Bill 97 - Modification to the Public Resources Code*

On August 24, 2007, Governor Schwarzenegger signed Senate Bill (SB 97) which requires the Office of Planning and Research (OPR) to prepare, develop, and transmit to the Resources Agency guidelines for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions, including, but not limited to effects associated with transportation or energy consumption. The Resources Agency is required to certify and adopt these guidelines by January 1, 2010.

At the direction of the Governor's Office of Planning and Research, ARB developed preliminary recommendations for statewide interim thresholds of significance for greenhouse gas emissions. ARB focused on common project types that, collectively, are responsible for substantial greenhouse gas emissions – specifically industrial, residential, and commercial projects. These recommended approaches have not been adopted by ARB and additional workshops are not currently scheduled.

Draft CEQA Guideline Amendments for Greenhouse Gas Emissions

The Office of Planning and Research has drafted amendments to the CEQA Guidelines for greenhouse gas emissions as required by Senate Bill 97. The OPR held two public hearings in August 2009 to present the amendments and obtain input from the public. Under the October 2009 text revisions to *Draft CEQA Guidelines* amendments, changes to the CEQA Guidelines address determination of a project's incremental contribution to a cumulative effect, determining the significance of impacts from Greenhouse Gas Emissions based upon scientific and factual data, consistency with plans, mitigation measures related to greenhouse gas emissions, and tiering from an EIR. In the proposed CEQA Guideline changes, Lead Agencies would retain discretion to establish thresholds of significance based on individual circumstances.[110] Thresholds developed by other agencies may be used so long as the threshold chosen is supported by substantial evidence. Currently there is no established guidance, from the state or in published CEQA case law, for the determination of what constitutes a significant global climate change impact or what measures are necessary to off-set new greenhouse gas emissions. These most recent revisions will be available for written comments until November 10, 2009.

[109] California Air Resources Board, http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm, accessed December 15, 2008.
[110] California Natural Resources Agency, *Notice of 15 day comment period on Changes to Proposed Amendment to the State CEQA Guidelines*. www.ceres.ca.gov/ceqa/guidelines/ October 23, 2009

Proposed Revisions to BAAQMD CEQA Guidelines

The adopted *BAAQMD CEQA Guidelines* (1999) provides procedures for evaluating possible air quality impacts for proposed projects and plans consistent with CEQA requirements. The current guidelines do not include procedures for analyzing greenhouse gas emissions or a threshold of significance for these emissions.

The BAAQMD released *CEQA Draft Air Quality Guidelines* (September 2009), which is an update to its current CEQA Guidelines. The draft guidelines include proposed new and updated thresholds for analyzing air quality impacts, including a threshold for greenhouse gas emissions. The BAAQMD *CEQA Draft Air Quality Guidelines* also outline a methodology for estimating greenhouse gases, including use of the URBEMIS model for direct emissions from land use projects. In October 2009, the BAAQMD released a *Revised Draft CEQA Thresholds Options and Justification Report* for public comment. This report provides the substantial evidence and justification for District-recommended thresholds of significance. In addition, certain significance thresholds in the September 2009 *Draft CEQA Guidelines* are superseded by the revised thresholds in the Thresholds Report.

The *Draft Air Quality Guidelines* (if adopted) would supersede the BAAQMD's current *BAAQMD CEQA Guidelines* (1999). The public comment period for the *Thresholds Report* and *Draft Guidelines* ends on November 23, 2009. It is anticipated that the BAAQMD Board of Directors will consider adoption of the BAAQMD CEQA Guidelines Update and Thresholds in December 2009.

4.4.2.4 *Senate Bill 375 - Redesigning Communities to Reduce Greenhouse Gases*

SB 375 encourages housing and transportation planning on a regional scale, in a manner designed to reduce vehicle use and associated greenhouse gas emissions. It requires the California Air Resources Board (ARB) to set regional targets for the purpose of reducing greenhouse gas emissions from passenger vehicles for 2020 and 2035. Once plans and strategies are in place to meet the SB 375 targets, certain projects in these regions can be relieved of specific review requirements of CEQA. The targets apply to the regions in the State covered by the 18 metropolitan planning organizations (MPOs), including the Metropolitan Transportation Commission (MTC) in the San Francisco Bay Area. The MTC has developed the currently proposed *Transportation 2035 Plan* (January 2009) with the AB 32 GHG reduction targets in mind; however MTC's RTP update for 2013 would be the first MTC plan subject to SB 375.[111]

SB 375 requires MPOs to prepare a Sustainable Communities Strategy (SCS) within the Regional Transportation Plan that sets forth a vision for growth for the region while taking into account transportation, housing, environmental, and economic needs. The SCS will be the blueprint by which the region will meet its GHG emissions reductions target if there is a feasible way to do so. The MPOs also will be required to prepare an alternative planning strategy with alternative development patterns, infrastructure, or additional transportation measures or policies to meet identified targets.

[111] MTC. 2009. *Draft EIR for the Transportation 2035 Plan(Transportation in Motion 2035). January 2009.* http://www.mtc.ca.gov/planning/2035_plan/EIR.htm, accessed February 18, 2009.

Per SB 375, the ARB appointed a Regional Targets Advisory Committee (RTAC) on January 23, 2009, to provide recommendations on factors to be considered and methodologies to be used in ARB's target setting process. The RTAC may consider any relevant issues, including, but not limited to, data needs, modeling techniques, growth forecasts, the impacts of regional jobs-housing balance on interregional travel and greenhouse gas emissions, economic and demographic trends, the magnitude of greenhouse gas reduction benefits from a variety of land use and transportation strategies, and appropriate methods to describe regional targets and to monitor performance in attaining those targets. The RTAC is required to provide its recommendations in a report to ARB by September 30, 2009. ARB must propose draft targets by June 10, 2010, and adopt final targets by September 30, 2010.[112]

4.4.2.5 *San Francisco Bay Conservation and Development District*

The San Francisco Bay Conservation and Development District (BCDC) has proposed several changes to their authority including expanding BCDCs regulatory authority to allow BCDC to decide if and under what conditions shoreline development may be authorized. In May 2009, BCDC submitted preliminary recommendations for amendments to the Bay Plan to incorporate climate change. This proposal adopts sea level rise estimates of 16 inches (1.3 feet) by 2050 and 55 inches (4.6 feet) by 2100. Proposed changes to the Bay Plan which may be relevant to the proposed project include the following:[113]

- Addressing the impacts of sea level rise and shoreline flooding may require large-scale flood protection projects, including some that extend across jurisdictional or property boundaries. Coordination with adjacent property owners or jurisdictions to create contiguous, effective shoreline protection is critical when planning and constructing flood protection projects. Failure to coordinate may result in inadequate shoreline protection. (e.g., a protection system with gaps or one that causes accelerated erosion in adjacent areas)
- New shoreline protection projects and the maintenance or reconstruction of existing projects should be authorized if: (a) the project is necessary to project the shoreline from erosion or to protect shoreline development from flooding; (b) the type of the protective structure is appropriate for the project site, the uses to be protected, and the erosion and flooding conditions at the site, (c) the project is properly engineering to provide erosion control and flood protection for the expected life of the project based on a 100-year flood event that takes future sea level rise into account; (d) the project is properly designed and constructed to prevent significant impediments to physical and visual public access; and (e) the protection is integrated with adjacent shoreline protection measures.
- "…the Commission should…encourage new projects on the shoreline to be set back from the edge of the shore above a 100-year flood level that takes future sea level rise into account for the expected life of the project, or otherwise be specifically designed to tolerate sea level rise and storms and to minimize environmental impacts; discourage new projects that will require new structural shoreline protection during the expected life of the projects, especially where no shoreline protection currently exits [sic]; determine whether alternative measures that would involve less fill or impacts to the Bay are feasible; require an assessment of risks from a 100-year flood that takes future sea level rise into account for the expected life of the

[112] http://www.arb.ca.gov/cc/sb375/rtac/rtac.htm, accessed February 18, 2009
http://www.leginfo.ca.gov/pub/07-08/bill/sen/sb_0351-0400/sb_375_bill_20080930_chaptered.pdf , accessed February 18, 2009

[113] Travis, W., Executive Director, Lacko, L., Senior Planner, San Francisco Bay Conservation and Development Commission. Memo to the Commissioners and Alternates, San Francisco, CA. April 7, 2009.

project; and require that where shoreline protection is necessary, ecosystem impacts are minimized."

- The Commission may approve fill that is needed to provide flood protection for existing projects. New projects on fill or near the shoreline should either be set back from the edge of the shore so that the project will not be subject to dynamic wave energy, be built so the bottom floor level of structures will be above a 100-year flood elevation that takes future sea level rise into account for the expected life of the project, be specifically designed to tolerate periodic flooding, or employ other effective means of addressing the impacts of future sea level rise and storm activity. Right-of-way for levees or other structures protecting inland areas from tidal flooding should be sufficiently wide on the upland side to allow for future levee widening to support additional levee height so that no fill for levee widening is placed in the Bay.
- Design and evaluation (of any ecosystem restoration project) should include an analysis of: (a) how the system's adaptive capacity can be enhanced so that it is resilient to sea level rise an climate change…(h) an appropriate buffer, where feasible, between shoreline development and habitats to protect wildlife and provide space for marsh migration as sea level rises…"
- Public access should be sited, designed, managed, and maintained to avoid significant adverse impacts from sea level rise and shoreline flooding.

4.4.2.6 *City of Newark Plans and Ordinances*

The City of Newark is working on and has adopted plans and policies to reduce greenhouse gas emissions, as described below.

City of Newark Climate Protection Plan

The City of Newark is working on a Climate Protection Plan. As part of this plan, community and government greenhouse gas emissions were inventoried. In 2005, the City of Newark emitted approximately 6,935,375 tons of carbon dioxide equivalents (CO2e) from the residential, commercial, industrial, transportation, waste, and government sectors.[114] Vehicle travel on local roads accounted for 43 percent of the emissions. About one percent of the community-based emissions are from residential natural gas combustion and electricity use. Commercial and industrial uses were estimated to make up three percent of the community-based emissions. Of the 6,935,375 tons of CO2e, government operations were estimated to make up about 56 percent.

Green Building and Construction and Demolition Recycling Ordinance

This ordinance was presented to the City Council on May 24, 2007. A public hearing was held in Council Chambers on June 14, 2007 and the ordinance subsequently adopted. The purpose of the green building and construction and demolition debris recycling ordinance is to minimize or avoid a variety of adverse impacts by regulating the following four components of development: (1) design, (2) construction, (3) operation of buildings, and (4) landscaping.

[114] City of Newark, *Government Greenhouse Gas Emissions in 2005 Detailed Report*, November 3, 2006 and *Community Greenhouse Gas Emissions in 2005 Detailed Report*, November 1, 2006. http://www.newark.org/residents/going-green/

Construction and Demolition Debris Recycling

All City or privately owned construction projects[115] shall divert one hundred percent of all portland cement concrete and asphalt concrete and an average of no less than fifty percent of all remaining construction and/or demolition debris.

Green Building Practices for City Buildings

All City building projects with over five thousand square feet of new or added gross floor area shall be certified as meeting the Leadership in Energy and Environmental Design (LEED) "Silver" rating or a City-approved equivalent. Certification shall be performed by a LEED accredited professional, the City architect, or the architect of record. The LEED "Silver" standards applicable shall be those LEED "Silver" standards in effect on the effective date of this ordinance, unless other LEED standards are selected by city council by resolution.

All City building projects with five thousand square feet or less of new, altered, or added gross floor area and submitted for a building permit after June 24, 2007, shall be designed and constructed using as many green practices as appropriate and feasible.

Green Building Practices for Private Buildings

Developers of private property are encouraged to incorporate as many green practices as appropriate and feasible in buildings and structures constructed within the City of Newark.

Bay Friendly Landscaping Practices

The City of Newark shall follow the City of Newark's Bay Friendly Landscape Guide whenever additions, renovations, or replacements are made to city-owned or controlled landscape areas. All projects requiring development review and approval by the planning commission or city council and that involve landscaping shall follow the City of Newark's Bay Friendly Landscape Guide in the design of landscaped areas. Landscapers of private property not otherwise required to follow the City of Newark's Bay Friendly Landscape Guide are encouraged to incorporate as many bay friendly landscape practices as appropriate and feasible in projects involving additions, renovations, or replacements in landscaped areas.

The Bay-Friendly Landscape Guidelines[116] are based on seven environmental principles, consisting of the following:

- Landscaping locally, in harmony with the San Francisco Bay watershed.
- Reducing waste and recycling materials.
- Nurturing healthy soils.
- Conserving water.
- Conserving energy
- Protecting water and air quality.
- Creating wildlife habitat.

[115] All city or privately owned construction projects identified in Municipal Code 15.44.040 whose total costs are greater than one hundred thousand dollars, or structure demolition projects whose total costs are greater than twenty thousand dollars, or pavement demolition projects involving over one thousand square feet of removed pavement, are subject to the requirements.

[116] http://www.stopwaste.org/home/index.asp?page=378

Incorporating Green Features in Updates to the General Plan and Area Specific Plans

Environmentally friendly community design concepts shall be encouraged when updating the general plan and area specific plans.

Environmentally Preferable Purchasing

It is the policy of the City of Newark to institute practices that reduce waste by increasing product efficiency and effectiveness; purchase products that minimize environmental impacts, toxics, pollution, and hazards to worker and community safety to the greatest extent practicable; and purchase products that include recycled content, are durable and long-lasting, conserve energy and water, use agricultural fibers and residues, reduce greenhouse gas emissions, use unbleached or chlorine free manufacturing processes, are lead-free and mercury-free, and use wood from sustainably harvested forests.
The City shall follow the City of Newark Environmentally Preferable Purchasing Policy Handbook when making purchases for products for use by the City.

4.4.2.7 *California's Energy Efficiency Standards for Residential Buildings, Title 24, Part 6, of the California Code of Regulations*

The Energy Efficiency Standards for Residential Buildings were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The 2008 Standards went into effect August 1, 2009. Projects that apply for a building permit on or after this date must comply with the 2008 Standards. California's building efficiency standards (along with those for energy efficient appliances) have saved more than $56 billion in electricity and natural gas costs since 1978. It is estimated the 2008 standards will save an additional $23 billion by 2013. The energy cost saving is also a proportionate reduction in greenhouse gas emission from reduced energy use.

4.4.3 Existing Conditions

Under existing conditions, greenhouse gas emissions from human activities on undeveloped portions of the project site are limited to any mobile sources from equipment used to annually disc Areas 3 and 4 (i.e., a tractor and truck and trailer). The developed portion of Area 3 will remain with the proposed Specific Plan; therefore, those uses are part of the greenhouse gas emission base. In Area 4, the auto dismantlers will be removed from the site and, therefore, a reduction in emissions would occur since that area is proposed for open space.

4.4.4 Global Climate Change Impacts

Given the global scope of global climate change and the large quantity of greenhouse gas emissions, the challenge under CEQA is for a Lead Agency to present information on the possible impacts of a project on global warming in a way that is meaningful to the decision making process. Under CEQA, there are two essential questions: would the project increase or substantially contribute to an environmental impact *and* would the project be subject to impacts from the environment associated with global climate change.

Accordingly, projects can both contribute to global climate change and be exposed to impacts from global climate change, and mitigation measures can be identified to minimize project impacts to and from global climate change.

4.4.4.1 *Thresholds of Significance*

Under State Senate Bill (SB) 97 (August 2007), the State Office of Planning and Research (OPR) is to certify and adopt guidelines for evaluation of the effects of greenhouse gas emissions and mitigation of those effects by January 1, 2010. Neither CEQA nor the CEQA Guidelines currently provide any methodology for analysis of greenhouse gases.

The Lead Agency has not adopted its own standards of significance for global climate change impacts. Therefore, in lieu of OPR guidance or locally adopted thresholds, a primarily qualitative approach will be used to evaluate possible impacts for this project.

For the purposes of this EIR, a global climate change impact would be significant if the project will:

- result in substantial new greenhouse gas emissions; or
- qualitatively hinder attainment of the State's goals of reducing greenhouse gas emissions to 1990 levels by the year 2020 as stated in the Global Warming Solutions Act of 2006 (AB 32).
- be adversely impacted by sea level rise of two to three feet; or
- be adversely impacted by increasing temperatures from eight to 10.4 degrees Fahrenheit (F) under the higher emission scenarios, leading to a 25 to 35 percent increase in the number of days ozone pollution levels are exceeded in most urban areas; or
- be adversely impacted by increased electricity demand or water supply, particularly in the hot summer months; or

The BAAQMD released *CEQA Draft Air Quality Guidelines* which update the current BAAQMD CEQA Guidelines include the first quantified greenhouse gas (GHG) emissions threshold for land use projects. The BAAQMD *CEQA Draft Air Quality Guidelines* also outline a methodology for estimating greenhouse gases, including use of the URBEMIS model for direct emissions from land use projects. The *Draft Air Quality Guidelines* (if adopted) would supersede the BAAQMD's current *BAAQMD CEQA Guidelines* (1999). It is anticipated that the BAAQMD Board of Directors will consider adoption of the BAAQMD CEQA Guidelines Update and Thresholds in December 2009.

The basis for the GHG threshold established by BAAQMD is to help bring the Bay Area in to compliance with the goals of AB 32, by ensuring that future emissions from land use projects will not interfere with the AB 32 goal that would reduce 2020 GHG emissions to 1990 levels. The proposed new BAAQMD thresholds do not require quantification of GHG emission from projects that comply with a qualified Climate Action Plan. Since Newark and most Bay Area communities have not adopted a qualified Climate Action Plan, BAAQMD is recommending two different project thresholds: The first is a bright-line threshold of total direct and indirect emissions of 1,100 metric tons per year. This threshold basically serves as a de minimus threshold. Projects with emissions below this level are not expected to conflict with the overall goal of the Bay Area doing its fair share to help the State reach AB 32's goal in 2020. The Areas 3 and 4 Specific Plan project, like many others, would have emissions well above the thresholds mostly due to the size. The second threshold is to have emissions that meet an efficiency standard of 4.6 metric tons per service population per year. This threshold is developed by dividing the project's annual direct and indirect GHG emissions by the sum of the predicted population increase and the number of new jobs. For the purposes of this

EIR, the proposed BAAQMD threshold has been used in evaluating the GHG impact of the proposed Areas 3 and 4 Specific Plan project.

4.4.4.2 *Impacts from the Project (Changes in Emissions of Greenhouse Gases)*

Carbon dioxide, the primary man-made greenhouse gas of concern, would be generated by the proposed project primarily from mobile sources and energy usage. Currently, neither CARB, BAAQMD, nor the City of Newark, have established regulations, guidance, methodologies, or other means that would require the implementation of measures that would reduce GHG emissions from projects. The BAAQMD proposed thresholds and methodology have been used to evaluate the proposed Specific Plan project.

Predicted annual emissions of GHG associated with the development of the proposed Areas 3 and 4 Specific Plan were calculated. The California Air Pollution Control Officers Association (CAPCOA) has provided guidance for calculating project emissions. Emissions from area, mobile and electricity usage are recommended by CAPCOA. Area and mobile source emissions were calculated using the URBEMIS2007 model with the same inputs used to calculate emissions of air pollutant. The estimated emissions also include emissions from water conveyance. These emissions are recommended in the proposed BAAQMD guidelines, based on water usage and generic statewide electricity consumption rates for conveying water to residences. Indirect source emissions from electricity usage were based on rates recommended by the California Climate Action Registry General Reporting Protocol and electricity emission rates recommended by EPA. CAPCOA and CCAR recommend an annual electricity usage rate of 16.7 kilowatts per square foot for commercial spaces (these rates were also used for school uses). CO2 emission rates for electricity use in California are 878.7 pounds per megawatt-hour or 0.8787 pounds per kilowatt-hour. CO2 is the primary GHG emitted from this type of project. Although there are emissions of methane and nitrous oxide, which are more potent GHGs, their emissions are very small compared to CO2 (i.e., less than three percent equivalent CO2). As a result, these emissions are not calculated. Table 4.4-1 shows the annual GHG emissions in tons per year.

Unmitigated, the project would result in 19,991 metric tons of GHG per year. The Specific Plan is expected to increase population by 3,427 people, based on up to 1,260 new residential units. Approximately 482 total new jobs would be created, including jobs associated with the proposed elementary school and golf course. As a result, the project would generate 5.1 metric tons of CO2 per year per service population (residents plus employees). Obtaining LEED certification that reduces energy usage emissions by 20 percent would reduce the efficiency number to 4.8 metric tons of CO2 per year per service population

The results reported in Table 4.4-1 are based primarily on a “business-as-usual” scenario, where current emission rates would apply. This will not likely be the case as AB 32 will require GHG emission reductions in all sectors. Area source emissions could be reduced by 20 percent or more through increased energy efficiency (e.g., green building practices). Transportation emission rates will likely decrease due to increased fuel efficiency and lower carbon content in fuels. The URBEMIS2007 model does not accurately reflect future fuel efficiency. Fuel efficiency is regulated by the U.S. Department of Transportation and current CARB regulations that address climate change. Newer fuel standards would increase light-duty automobile and light-duty truck fuel efficiency by 10 miles per gallon (to 34 miles per gallon for cars sold in 2020). CARB proposes more efficient standards as part of the State’s efforts to reduce GHG emissions. These standards would apply to new vehicles sold, and therefore, would gradually effect the overall fleet as these new vehicles

replace older vehicles. As a result the CO2 emissions estimates for vehicle travel do not accurately reflect future conditions and it is likely that CO2 emissions with a more fuel-efficient vehicle fleet would be less.

Table 4.4-1:
Summary of Estimated Project Greenhouse Gas Emissions

Source Type	Basis for Calculation	Annual Emissions (tons per year)	Annual Emissions (metric tons per year)
Area Source	Natural gas and landscape equipment from URBEMIS2007	3,938[1]	3,573
Mobile Sources	Traffic from URBEMIS2007	15,292[2]	13,873
Electricity Usage	Estimated commercial/school space and residential energy usage along with PG&E emission rates	2,485	2,254
Water Conveyance	Assuming 356 million gallons (mg) annual water and 3,950 kwh to convey 1 mg water	321	291
Total		**22,036**	**19,991**

Notes: The URBEMIS model was used to estimate the project's construction, area source, and mobile source emissions. An estimate of possible greenhouse gas emissions from electricity use was made based on certified PG&E emission rates.

(1) Could be reduced by 20% or more through increased energy efficiency (e.g., green building practices)

(2) Includes reduction due to existing mix of uses, alternative transportation options and other project features that reduce trips and vehicles miles traveled – mostly applied to Area 3.

Source: Illingworth & Rodkin, 2009.

Most GHG emissions associated with the project would come from motor vehicle use. The Area 3 project would be located within walking distance of some services for proposed project users, such as a school, retail establishments, and restaurants. Area 4 would be mostly located beyond normal walking distance to transit and retail services.

Energy usage (natural gas and electricity usage combined) would generate about 36 percent of the proposed project GHG emissions. Features that reduce energy consumption and waste can be included in new development that would reduce emissions. These would include energy-efficient construction methods, inclusion of solar photovoltaic panels to produce energy, solar water heaters, passive solar design, appropriate landscape, and water recycling systems. For example, Energy Star rated buildings have CO2 emissions that are about 25 percent lower than existing buildings of similar size and use.[117]

[117] Energy Star – U.S. EPA and U.S. Department of Energy - http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfoliomanager_carbon

Energy Efficiency and Use

Implementation of the Specific Plan will be required to meet the requirements of Title 24 of the California Administrative Code, as is pertains to energy efficiency. All development will also be required to comply with the City of Newark Green Building and Construction and Demolition Recycling Ordinance. The Specific Plan has incorporated Water Conservation Standards into future project design. All residential and non-residential development within the Areas 3 and 4 Specific Plan will be developed with the latest technology in water efficient plumbing fixtures and irrigation systems, including but not limited to the following:[118]

For Residential Development within Areas 3 and 4:

- High efficiency (1.3 gallons per flush or less) and dual flush toilets,
- High efficiency clothes washers with a water factor of six (6) or less,
- High efficiency dish washers,
- Water efficient bathroom and kitchen fixtures

For Commercial Development within Areas 3 and 4:

- High efficiency (1.3 gallons per flush or less) and dual flush toilets,
- High efficiency urinals (1/2 gallon per flush or less),
- High efficiency clothes washers with a water factor of six (6) or less,
- High efficiency dish washers, where feasible, sensor driven c-line, or rack conveyor machines that recycle final rinse water,
- Low flow pre-rinse spray nozzles,
- Air-cooled ice machines,
- Water efficient bathroom and kitchen fixtures (e.g. faucets with auto shut-off mechanisms)

For Golf Course and Landscape Development within Areas 3 and 4:

- Water efficient irrigation systems include weather-based irrigation-controllers, drip irrigation systems for non-turf areas and the installation of drought-tolerant landscaping in-lieu of irrigated turf, wherever possible.
- All decorative fountains shall recycle water. The latest water efficient technologies for commercial car washing and cooling shall be used.
- Install a separate, non-potable distribution system (i.e. “purple pipe”) for the golf course and other non-residential landscape needs. This distribution system will, at a minimum, include a non-potable water transmission main extending through the site with at least two points of connection to Cherry Street (for connection with a future recycled water main) at the northern and southern limits of Area 3 frontage with Cherry Street. The on-site system will also include non-potable distribution mains extending to areas where recycled water could be used.

Water Efficient Landscape Ordinance

- The State of California Department of Water Resources is expected to formally amend Chapter 2.7 Model Water Efficient Landscape Ordinance, Sections 490 through 495 in Division 2, Title 23 of the California Code of Regulations. All local agencies will be required to adopt a similar ordinance by January 2010 to meet new water conservation standards related to landscape

[118] Many, if not most, of these technologies will be legal requirements under the pending Plumbing Code revisions expected in 2010.

improvements. All landscape improvements in Areas 3 and 4 will be subject to these requirements.

There are many other opportunities for the Specific Plan development to use energy efficient design. Since the Specific plan will not be developed/constructed in one phase, there are options for designing an energy and resource efficient development through measures similar to those described in the Governor's Green Building Action Plan. These measures could include requiring all private development within the Specific Plan to be certified buildings by U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) or similar standards, and partnerships with utility companies to develop a local energy and sustainably plan for all development.

Residential development within the Specific Plan could also include energy conserving design and construction techniques to exceed Title 24 requirements and could incorporate Green Building Practices including pre-wiring and/or installing houses with solar power. It should be noted, that in 2011, State Law requires every new subdivision of 50 houses or more to include an upgrade for solar power.

The Specific Plan also includes the provision of recycled water lines for landscaping, over both Areas 3 and 4, when it is available, which will provide further energy and water savings.

Through the features listed above, the proposed Specific Plan project will implement several of the greenhouse gas (GHG) reduction measures identified in the California Governor's Office of Planning and Research *CEQA and Climate Change Technical Advisory* (June 19, 2008, Attachment 3).

Planning and Smart Growth Principles

The Governor's Office of Planning and Research *CEQA and Climate Change Technical Advisory* recommends implementing land use strategies to encourage jobs/housing proximity, transit-oriented development, high density development along transit corridors, and mixed use projects that integrate housing, including affordable housing, civic and retail amenities, and walkable communities.

The proposed Areas 3 and 4 Specific Plan includes a mix of housing types, with higher density and affordable housing located along a transit corridor that is proximate to community amenities and retail. The Specific Plan includes a neighborhood-serving elementary school and parks.

According to the Association of Bay Area Governments (ABAG) *Projections 2007*, the City of Newark has a good balance (1.02:1) ratio of jobs to employed residents (2005-2010). Projections for the year 2020 continue to show a general balance, with 0.95:1 ratio of jobs to employed residents. The proposed Specific Plan proposes 1,260 dwelling units compared to 2,700 dwelling units assumed for Area 4 in the General Plan. Therefore, the proposed Specific Plan includes fewer dwelling units than what is included in the City's General Plan for Areas 3 and 4. The proposed Specific Plan would result in a reduction in potential jobs on the site, from 2,920 jobs projected under the existing General Plan to 1,940 jobs under the proposed General Plan and Specific Plan designations. Since the potential jobs and housing would both be reduced, the Specific Plan would not result in a noticeable change to the City's jobs/housing balance.

Currently, compliance with AB32 is the State's plan to achieve reductions in GHG emissions to 1990 levels. This will not be an easy task, as the State is expected to experience population growth that

would include increased vehicle usage and energy demand. As a result, long-term emissions would require substantial reductions to achieve AB 32 goals.

The Specific Plan would result in a net increase in greenhouse gas emissions, in terms of carbon dioxide equivalents. While Area 3 of the Specific Plan would provide a range of residential density development and a elementary school at an infill location in the City that would be proximate to existing civic and retail amenities, Area 4 is generally located beyond normal walking distance to transit and retail services. Development under the proposed Specific Plan would, however, be designed and constructed pursuant to the City of Newark Green Building and Construction and Demolition Recycling Ordinance and would include provisions for recycled water for all non-potable water needs. Despite these inclusion of these measures, implementation of the proposed Specific Plan is not anticipated to be able to reduce overall greenhouse gas emissions to 1990 levels. Even with a 20% reduction in area source emissions achieved through proposed increased energy efficiency, the Specific Plan is projected to generate 4.8 metric tons of CO2 per year per service area population. The proposed BAAQMD threshold for GHG is 4.6 metric tons per year per service area; therefore, the project would not reduce GHG sufficiently to help the State reach AB 32's goal in 2020. For the reasons described above, the project would make a cumulatively significant contribution to global climate changes impacts.

Impact C-GCC-4: The proposed project would result in a cumulatively considerable contribution global climate change impact. **(Significant Cumulative Impact)**

MM C-GCC-4.1: All residential subdivisions and new commercial buildings within the Specific Plan shall incorporate as many green practices as appropriate and feasible in buildings and structures constructed subject to approval of the City of Newark.

MM C-GCC-4.2: All public landscaping areas within the Specific Plan shall follow the City of Newark's Bay Friendly Landscape Guide. Future homeowners associations or similar entity shall be encouraged to incorporate as many bay friendly landscape practices as appropriate and feasible.

While incorporation of the above measures will partially reduce the global climate change impact, the overall implementation of the Specific Plan will still make a cumulatively considerable contribution to global climate changes impacts and, therefore, result in a significant unavoidable impact. (**Significant Unavoidable Impact)**

Project Construction GHG Emissions

The BAAQMD is not proposing a threshold of significance for GHG emissions during construction. The guidelines, however, recommend that Lead Agencies quantify and disclose GHG emission that would occur during construction and make a determination of the significance in relation to meeting AB 32 GHG reduction goals. At this time, the City of Newark has not developed any criteria for reducing GHG emissions during construction. As described previously, the City has programs to reduce construction period emissions. In 2007, the City adopted the Green Building and Construction and Demolition Recycling ordinance. This ordinance requires construction projects to recycle 100 percent of all demolished Portland cement and at least 50 percent of all other materials.

The City requires green building practices for City buildings and encourages this practice for private buildings.

Project construction period emissions were predicted using the URBEMIS2007 model. In the case of this GHG assessment, annual emissions were predicted. These annual emissions were expected to range from 1,721 to 6,677 metric tons of CO2 per year over the 8-year construction period used in the air quality analysis. Annual emissions would vary depending on the length of the construction period. A longer build out period would most likely result in lower annual construction emissions. Highest emission would occur during the grading period when fill material would be imported to the site.

4.4.4.3 *Impacts to the Proposed Project from Global Climate Change*

As noted previously, climate change effects expected in California over the next century could include reduced water supply, impacts from sea level rise, increase in the number of days per year ozone pollution levels are exceeded, and increased electricity demand, particularly in the hot summer months.

Water Supply

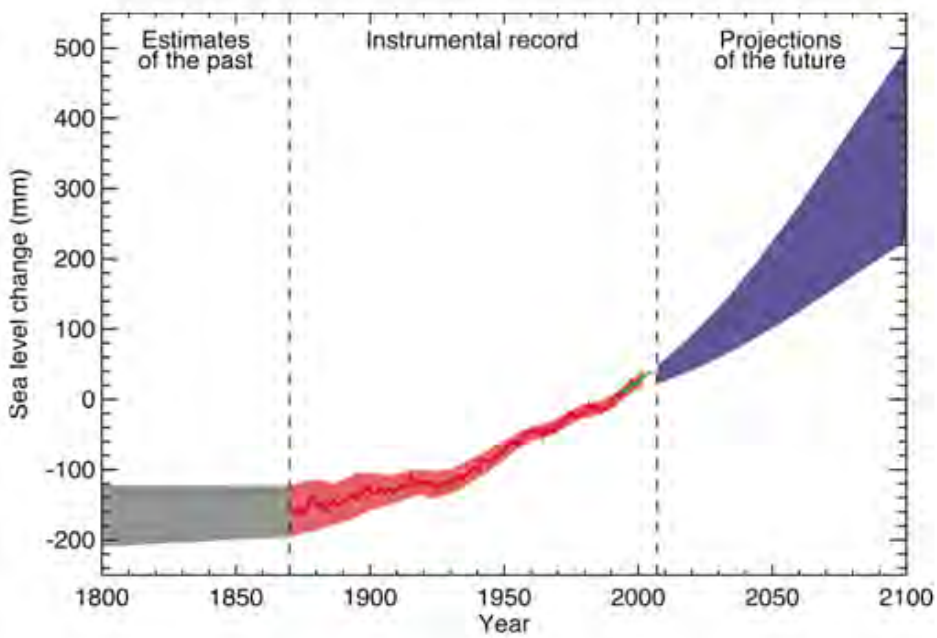
Impacts to the project from global climate change could include reduced water availability due to droughts. Water would be used on the site for potable water supplies, plumbing fixtures, and landscape use. At this time, based on recent case law, neither the State Department of Water Resources (DWR) or the Alameda County Water District has established the effects of global climate change on water supplies in California or locally. Key uncertainties facing ACWD's supplies include the effects of climate change as well as supply restrictions due to endangered species and environmental protection. The restrictions on Delta export pumping imposed by a recent federal district court decision (Wanger Decision) on California State Water Project (SWP) supplies would significantly impact ACWD's water supplies, if maintained over the long-term. Based on DWR projections, ACWD's SWP supplies may be reduced by approximately 4,600 AF/Yr under normal year conditions, representing a five (5) percent decrease in ACWD's total water supplies. With the magnitude of the climate change impact on water supplies unknown, the Specific Plan has incorporated a number of water conservation standards, described in *Section 2.4.11.1*, that will reduce the potential uncertainties in future water supply. Key changes since the Specific Plan WSA was completed include the biological opinion for Delta smelt, and the biological opinion for Delta salmonids - both of which will likely result in less State Water Project supplies than anticipated in the WSA. All projects within the ACWD service area that require a water supply assessment will be required to incorporate water conservation standards as a condition of approval and possibly additional mitigation measures that the ACWD has not yet determined. The additional measures would be dependent on the magnitude of the water supply shortages that ACWD may be facing. Consistent with the provisions in the November 2008 WSA, the implementation of additional mitigation measures may be a condition for providing a water supply verification and/or as a condition of providing water service to individual developments within the Newark Areas 3 & 4 Specific Plan Project. The future Specific Plan development would incorporate any additional measures required by ACWD, in order to receive water service. For these reasons, the cumulative projects should not result in a significant water supply impact. **(Less Than Significant Cumulative Impact)**

Sea Level Rise

Global temperatures have increased by about one degree Fahrenheit and sea level has risen by approximately 0.5 foot over the past century.[119] An historic rate of sea level rise of 1.3 mm per year (0.4 foot per century, has been estimated for San Francisco Bay.[120] Although quantitative consensus regarding future sea level rise is difficult to obtain, most credible scientific organizations agree that sea level will most likely continue to rise, perhaps at an accelerated rate. Figure 4.4-1 shows a range of potential future sea levels based on IPCC climate change scenarios.[121] The mid-range projection of sea level change by 2058 from Figure 4.4-1 is approximately 160 mm, or about six inches. Within the proposed Area 3 and 4 Specific Plan, the residential structures of Area 4 would be most directly impacted by global climate and sea level changes.

A 50-year planning horizon is consistent with Bay Conservation and Development Commission (BCDC) practices, in terms of projecting sea level change.[122] In May 2009, BCDC submitted preliminary recommendations for amendments to the Bay Plan to incorporate climate change. This proposal adopts sea level rise estimates of 16 inches (1.3 feet) by 2050 and 55 inches (4.6 feet) by 2100.

Figure 4.4-1: Projections of Future Sea Level Rise



The United States Army Corps of Engineers (USACE) published an engineering circular (July 1, 2009) to direct the consideration of sea level rise estimates in project planning and design. While this methodology is required only for USACE civil work activities, it offers valuable guidance for any planning effort. The USACE report recommends that the planning, engineering and designing for projects within the tidal zone or with downstream tidal boundary conditions consider how

[119] Intergovernmental Panel on Climate Change (IPPC), 1996.
[120] National Oceanographic and Atmospheric Administration (NOAA), 2001.
[121] IPPC AR4, WG1.
[122] ASCE San Francisco Section Symposium on Climate Change and Coastal Systems, September 28, 2007.

sensitive and adaptable the project is to a range of sea level rise estimates (low, intermediate and high). Specifically, the USACE directs determination of "how sensitive alternative plans and designs are to these rates for future local mean sea-level change, how this sensitivity affects calculated risk, and what design of operations and maintenance measures should be implemented to minimize adverse consequences while maximizing beneficial effects"[123].

The "low" sea level rise estimate recommended by the USACE report is based on local historic tide gauges. In San Francisco, the Presidio tide gauge has the longest period of record and is consistently used for historic sea level trends in San Francisco Bay. The long term average sea level rise at the Presidio gauge is 2.01 millimeters per year (mm/yr), with a 95 percent confidence limit of plus or minus 0.21 mm/yr (NOAA, Station 9414290). "Intermediate" and "high" sea level rise estimates are based on the National Resource Council (NRC) curves and equations developed for a 1987 Report (*Responding to Changes in Sea Level: Engineering Implications*), modified to account for the updated annual estimate of sea level rise made in the *2007 IPCC report* and to account for the date of the development of the equation. Table 4.4-2 identifies the range of sea level rise potential for the City of Newark using this methodology, assuming adoption of the Presidio gauge for the local historic sea level trend, and construction of a given project in 2010.

Table 4.4-2:
Range of Sea Level Rise Projections
Using USACE Methodology (feet)

Year	Low	Intermediate	High
2025	0.1	0.2	0.4
2050	0.3	0.5	1.4
2075	0.4	0.9	2.8
2100	0.6	1.5	4.6

The sea level rise scenario adopted by the BCDC (16 inches by 2050 and 55 inches by 2100) is based on the *Impacts of Sea-Level Rise on the California Coast* Report, developed by The Pacific Institute for the California Climate Change Center (CCCC) in August 2009. The development of this sea level rise estimate is discussed in more detail in the *Climate Change Scenarios and Sea Level Rise Estimates for the California 2009 Climate Change Scenarios Assessment Report* (*2009 Assessment Report*) prepared in August 2009, also produced for the CCCC. The sea level rise estimates adopted by the CCCC are based on an empirical formula developed by Rahmstorf (2007) which relates global mean sea level rise to global mean surface air temperature.

Using the above methodology, the *2009 Assessment Report* gives a range of sea level rise of 30-45 cm (12 – 18 inches) by 2050 (relative to 2000 levels). Although other CCCC reports, as well as the San Francisco BCDC, have adopted a 2100 sea level rise projection of 1.4 meters (4.6 feet), this projection is not explicitly stated in the text of the *2009 Assessment Report* (it can only be deduced from included graphs). It should be noted that the range of sea level rise estimates produced from this methodology is about 0.6 m – 1.45 m (2.0 – 4.8 feet). The 4.6 feet of rise by 2100 predicted at the upper end of this range is similar to the USACE methodology high range for 2100 for San Francisco Bay, as shown in Table 4.4-2. In summary, significant uncertainties remain in sea level rise projections, particularly as one forecasts farther into the future. The most currently available

[123] USACE, "Water Resource Policies and Authorities Incorporating Sea-level Change Considerations in Civil Works Programs", July 1, 2009.

estimates for sea level rise by 2050 range from 0.3 foot to 1.5 feet, and by 2100 from 0.6 foot to 4.8 feet.

Impacts to the Project from Sea Level Rise

It is expected that as sea levels rise, not only will the occurrence of storm-related high sea level, or surge, events increase, but so may the amount of surge itself (currently about 3.1 feet above mean-high high water in Newark). Newark's Municipal Code calls for residential structures to be "elevated to or above the base flood elevation or to a minimum of six inches above the building pad which shall be at a minimum elevation of 11.25 feet on the National Geodetic Vertical Datum (NGVD), whichever affords the greater degree of flood damage protection." Fill placed within the project site to a minimum elevation of 11.25 feet NGVD will provide 3.75 feet of freeboard above the current one-percent stillwater elevation of 7.5 feet and 3.25 feet of freeboard over the regulatory base flood elevation of eight (8) feet NGVD. Assuming the USACE methodology low sea level rise projection for 2100, an additional 0.6 foot added to the 100-year stillwater flood elevation of 7.5 feet NGVD, the Municipal Code's minimum building pad elevation (11.25 feet) would provide 3.15 feet of freeboard, which exceeds the current National Flood Insurance Program (NFIP) coastal freeboard criterion for stillwater surge of two feet. If the predicted "intermediate" scenario of a 1.5 feet rise in sea level comes to fruition by 2100; the placed fill to elevation 11.25 would provide 1.75 feet of freeboard. For the "high" sea level rise scenario, the one-percent water surface elevation would inundate the project by nearly one foot. That is, a rise in extreme storm surge equal to the extreme mean sea level rise would create a storm surge water surface elevation of 12.1 feet (7.5 ft + 4.6 ft sea level rise) which would inundate the minimum project elevation of 11.25 feet by 10.2 inches. If the "high" sea level rise scenario proves to be true, adaptive strategies to improve flood protection (for example levees or floodwalls) may prove to be necessary in the future. These estimates account for a range of estimates for the increase in mean sea level, but do not include any increase to the surge itself. Quantitative estimates for the increased storm surge have not been made, and are unlikely to be determined in the foreseeable future.

In conclusion, the only quantifiable flood risk impact to Newark due to climate change is the increase in sea level rise, and a wide range of increases, with no assigned certainties or upper bounds to that range, is projected. Reports specific to the state of California as well as the BCDC have recently adopted specific values for sea level rise projections: 16 inches (1.3 feet) by 2050 and 55 inches (4.6 feet) by 2100.

The project will provide 3.75 feet of freeboard above the current one-percent stillwater elevation of 7.5 feet. Using the USACE methodology and assuming construction in 2010 (for consistency), available project freeboard would not be overwhelmed by projected sea level rise through 2178 for the "intermediate" scenario, but would be overwhelmed by 2089 for the "high" sea level rise scenario.

Given the uncertainty in these sea level rise projection scenarios, it is not clear that the additional foot of fill needed for theoretical protection against rising one-percent storm surge for an additional ten years or so, particularly when the weight of such additional fill accelerates ground settlement. A regional area-wide adaptive strategy against rising sea level, which might include an earthen levee or structural floodwall, may be more appropriate and can take advantage of more complete climate change data and predictions in the future.

The proposed Specific Plan would abide by the City's Municipal Code Flood Ordinance, which provides flood protection for the life of the project. A 50-year planning horizon is assumed for the life of the project, consistent with BCDC practices. Since the proposed project would provide sufficient freeboard from 100-year flood events under low, intermediate, and high sea level rise projections in this planning horizon, the proposed Specific Plan would not be adversely impacted by predicted global climate change sea level rise. **(Less Than Significant Cumulative Impact)**

Non-Sea Level Flooding

The paragraphs above describe the expected changes and uncertainties of sea level increases. An understanding and consensus of how climate change will affect extreme events has yet to be determined, and this has been identified as one of the key uncertainties in the *IPCC 2007 Assessment Report*. The *Projections of Potential Flood Regime Changes in California* report, produced for the CCCC (August 2009) projects flood regime changes in those watershed areas affected by snowmelt and distribution of precipitation between rain and snow. These projections are not useful to the project, given that snowfall in Newark is exceedingly rare.

It is unknown whether the net effect of changes in precipitation timing and intensity will result in an increase of local runoff in Alameda County. Although precipitation events are expected to be more intense, they are also expected to be spaced father apart. A longer period between storms would allow for drying of the watershed. Currently, runoff estimates for extreme storm events assume that soils are at a certain level of saturation. If the soils have the opportunity to dry between storm events, this may offset the increased precipitation intensity such that there is little or no net effect on runoff. Local reservoir operation may also need to be updated to reflect changing patterns in precipitation timing and intensity.

Flooding from San Francisco Bay and the creeks discharging to the Bay are likely to be the primary aspect of increased flood risks to Newark due to global warming. Due to the wide ranges and remaining uncertainty in predicted long term sea level increases, storm surge, and wave runup, it is not feasible to presently mitigate for this unknown risk. There is no agreed upon final elevation or amount of freeboard that would be appropriate. In general, sea level rise is expected to occur gradually, offering a long time horizon for planning and implementation strategies for mitigation. That said, its rise is also inevitable, given the long scale process of thermal expansion that accounts for most sea level rise. Planning for the long term eventuality of higher mean sea levels, increased storm surge and wave runup in a flexible and time-scale appropriate approach is recommended.

While increased flood risk is very generally identified as an impact of climate change in most reports, in general, the knowledge about this impact is limited to those impacts caused by increased sea level rise and occurrence and magnitude of extreme high tide events, as described in detail previously. Whether climate change will result in increased runoff in areas with no snow is unknown due to the project site location, therefore, along with compliance with the City of Newark Municipal Code Flood Ordinance, the proposed Specific Plan would not be adversely impacted by non-sea level flooding**. (Less Than Significant Cumulative Impact)**

Temperature Changes

An increase in summer temperatures and the number of days ozone pollution levels are exceeded can contribute to adverse health effects ranging from minor restricted activity days and work loss days, to hospitalizations due to asthma-related, bronchitis, and other respiratory or cardiovascular symptoms,

to premature deaths. The proposed Specific Plan includes a mix of uses, including residential populations. Like other residential uses in Newark, new residents could be subject to temperature change effects of higher temperatures and air pollution if warming temperatures occur locally. Due to the proximity to San Francisco Bay, new residents would not be subject effects as severe as in inland areas.

Energy use on the project site could rise during the hot summer months because energy use for building cooling could increase. In the event regional demand exceeded supply, this could result in temporary interruptions in power supply. For the proposed uses, this would be primarily an economic, rather than an environmental impact and is not discussed further. **(Less Than Significant Cumulative Impact)**

Agricultural and Forest Resources

While portions of Areas 3 and 4 are currently used for agriculture, the site is not designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resource Agency.[124] The Specific Plan area is not designated by the City General Plan for agricultural use. It is possible that future undeveloped wetland areas could continue to be farmed, as part of the Specific Plan development. Given the project location near San Francisco Bay, anticipated temperature rise from global climate change would not substantially affect any remaining agricultural use of the project site. There are no forest resources on or adjacent to the project site, therefore, forest resources would not be impacted by implementation of the proposed Specific Plan. **(Less than Significant Impact)**

Wildfires

Wildfires have increase in frequency and intensity has development has continued to expand into areas subject to wildfires. Warmer temperatures, long dry season, reduced winter precipitation, and early snowmelt contribute to the increase in wildfires.[125] Low- to moderate-intensity fires can be beneficial to ecosystems; there are no benefits from high-intensity fires.[126] The project site is not located within or adjacent to areas subject to wildland fires and, therefore, possible increases in wildfires from global temperature increases would not expose people or structures on the site to a significant risk involving wildland fires. **(Less than Significant Impact)**

4.5 NOISE

Implementation of the Specific Plan would result in a significant cumulative traffic noise impact if existing sensitive receivers would be exposed to cumulative traffic noise level increases greater than three (3) dBA Ldn above existing traffic noise levels and if the project would make a "cumulatively considerable" contribution to the overall traffic noise level increase. A "cumulatively considerable"

[124] California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, *Alameda County Important Farmlands Map 2006*, March 2007.
[125] Moser, Susie, et al. 2009. The Future Is Now: An Update on Climate Change Science Impacts and Response Options for California. California Energy Commission, PIER Energy-Related Environmental Research Program. www.energy.ca.gov/2008publications/CEC-500-2008-071/CEC-500-2008-071.PDF
[126] California Natural Resources Agency. 2009 California Climate Adaptation Strategy, Discussion Draft, a Report to the Governor of the State of California in Response to Executive Order S-13-08. www.climatechange.ca.gov/adaptation/index.html. Note: The draft was released August 3, 2009, and the comment period ended September 17, 2009; a final version is anticipated in late 2009.

contribution would be defined as an increase of one (1) dBA Ldn or more attributable solely to the proposed project. Cumulative traffic noise levels are calculated to increase substantially along roadways serving the project site because of cumulative growth forecast in local General Plans. The cumulative noise impacts to sensitive receptors along the affected roadway segments are described below.

Cumulative traffic noise levels are anticipated to increase by three (3) dBA Ldn as a result of cumulative plus project conditions along Cherry Street between Stevenson Boulevard and Mowry Avenue. One (1) dB of the three (3) dB increase can be attributed to the project. This would result in a significant cumulative impact at receivers east of Cherry Street between Stevenson Boulevard and Mowry Avenue.

Cumulative traffic noise levels are anticipated to increase by four (4) dBA Ldn as a result of cumulative plus project conditions along Stevenson Boulevard between Cherry Street and Cedar Boulevard. Two (2) dB of the four (4) dB increase can be attributed to the project. This would result in a significant cumulative impact at receivers north of Stevenson Boulevard between Cherry Street and Cedar Boulevard.

Impact C-NOI-5: Implementation of the proposed Specific Plan would measurably contribute to significant cumulative traffic noise increases. **(Significant Cumulative Impact)**

MM C-NOI-5: **A** combination of mitigation measures would help reduce impacts to affected property owners along Cherry Street between Stevenson Boulevard and Mowry Avenue and along Stevenson Boulevard between Cherry Street and Cedar Boulevard from project-generated cumulative traffic noise. These noise reduction measures include the following:

- New or larger noise barriers could reduce noise levels by 5 dBA Ldn. Final design of such barriers, including an assessment of their feasibility and reasonableness, should be completed during project level review. Single-family residential receivers east of Cherry Street and north of Stevenson Boulevard could be provided with new or larger noise barriers to provide the additional necessary noise attenuation in private outdoor use areas. Typically, increasing the height of an existing barrier results in about one (1) dBA of attenuation per one (1) foot of additional barrier height. The design of such would require additional analysis.

- Sound insulation treatments to the impacted buildings, such as sound-rated windows and doors, could reduce noise levels in interior spaces. Affected residential receivers along affected roadways could be provided with sound insulation treatments if further study finds that interior noises with the affected residential units would exceed 45 dBA Ldn assuming plus project traffic conditions.

- In addition, alternative noise reduction techniques shall be considered in coordination with the City of Newark. Such techniques could include: installation of traffic calming measures to slow traffic; coordination of routing and other traffic control measures; repaving the affected roadways

with "quiet" pavement types such as Open-Grade Asphalt Concrete. The replacement of dense grade asphalt (standard type) with open-grade or rubberized asphalt can reduce traffic noise levels along residential-type streets by 2 to 3 dBA. A possible noise reduction of 2 dBA would be expected using conservative engineering assumptions. Opportunities to lower noise levels through pavement surface treatments can only be identified after an assessment of the current roadway surface with respect to noise.

- Final design of such barriers and/or treatments, including an assessment of their feasibility and reasonableness, shall be completed during project level review.

Each of these mitigation measures involves other non-acoustical considerations. Other engineering issues may dictate continued use of dense grade asphalt. Therefore, it may not be reasonable or feasible to reduce project-generated cumulative traffic noise at all affected receivers. If the City of Newark determines that the mitigation is feasible, then with implementation of the mitigation measures, the impact would be less than significant. However, if the City of Newark determines that the mitigation is not feasible, the impact would be considered significant and unavoidable.[127] Due to the uncertainty regarding the feasibility of this mitigation, the impact would be considered significant and unavoidable. **(Significant Unavoidable Cumulative Impact)**

4.6 BIOLOGICAL RESOURCES

Areas 3 and 4 are the largest remaining tracts of relatively undeveloped land in Newark. Other proposed development in Newark includes the Dumbarton Transportation Oriented Development project in Newark Area 2, and additional development in Area 3 as part of the Ohlone College Campus. Additional development planned in the region includes the Patterson Ranch development proposal in northern Fremont, additional development within the Pacific Commons Area in Fremont (including the addition of the A's baseball stadium and 3,150 housing units in Fremont), and the conversion of infill sites and redevelopment of areas within the Cities of Fremont and Newark. Each of these projects will impact some of the biological resources that will be impacted by the Areas 3 and 4 Specific Plan. In contrast, the South Bay Salt Ponds Restoration Project will provide habitat for a number of tidal habitat-associated species, including the salt marsh harvest mouse, salt marsh wandering shrew, and will include enhancement of managed ponds specifically for use by waterbirds.

In the absence of project-specific mitigation, the impacts resulting from the Areas 3 and 4 Specific Plan project that are considered "less than significant with mitigation" would all contribute to cumulatively significance impacts in the region. In particular, the cumulative losses of seasonal wetland habitat around the South Bay are significant, and both direct and indirect impacts resulting from the Areas 3 and 4 Specific Plan would be significant without mitigation. The mitigation

[127] If the City of Newark determines that the mitigation is not feasible, they should provide clear and detailed documentation in the record.

measures prescribed for all of these impacts will, however, adequately mitigate the project's contribution to these cumulative impacts.

The project's impacts to wildlife movement and California tiger salamanders are negligible. Impacts to upland agricultural, ruderal, developed, and coastal scrub habitats and associated species, and to habitat for certain breeding and non-breeding special-status species, are likewise minimal, and do not contribute to regional, cumulative impacts. As a result, no cumulatively significant impacts will result from the Areas 3 and 4 Specific Plan project. **(Less Than Significant Cumulative Impact)**

4.7 CULTURAL RESOURCES

The entire bay land area has a potential for containing subsurface prehistoric and historic archaeological resources, particularly near former and existing waterways. The project vicinity would have provided a favorable environment during the prehistoric period with riparian, bay, and inland resources available to the aboriginal population. Numerous small and large size sites, including major villages occupied during the past 5,000 years, are located within several miles of the project site. Many of the cumulative project sites listed in Table 4.0-1 are considered to have a moderate to high potential for subsurface archeological resources.

There are prehistoric sites recorded on and adjacent to the Specific Plan area. During archaeological subsurface testing significant buried cultural resources were encountered on the site. These resources will be impacted through the placement of fill and soil compression.

If prehistoric or historic archaeological sites are encountered during any of the cumulative project's construction and proper mitigating procedures are not implemented, a significant impact to the resource will result. The City of Newark and the City of Fremont recognize the irreplaceable nature of cultural resources, and require that preservation should be a key consideration in the development review process. Each of the cumulative projects will include the City's standard mitigation measures for reporting and evaluating cultural resources, in the event such resources are found during project construction. Reporting and evaluation requirements would be in accordance with current archaeological standards. In light of the above-described state law, as well as the mitigation of archaeological resource impacts, it is concluded that the cumulative development will not result in a cumulatively significant impact to archaeological resources. **(Less Than Significant Cumulative Impact)**

4.8 HYDROLOGY AND WATER QUALITY

This section analyzes potential cumulative hydrologic and water quality impacts that could occur from the combination of the proposed project with other reasonably foreseeable projects in the near vicinity.

The watershed upstream of Area 3 is completely urbanized. Therefore, future projects would entail redevelopment and would not be expected to significantly impact area hydrology. Area 4 is a closed hydrologic system and outfalls directly to San Francisco Bay. Future projects will not create a cumulative flooding impact since tidal influences rule and as long as any project complies with City, State and federal regulations regarding water quality within existing land use designations there should be no cumulative water quality impact on Mowry Slough or San Francisco Bay.

It is assumed that other related projects would implement similar stormwater quality and drainage mitigation that would reduce potential impacts to downstream waterways to a less than significant level. Therefore, the proposed project, in conjunction with other planned and approved projects, would not have a cumulatively considerable impact on hydrology and water quality. **(Less Than Significant Cumulative Impact)**

4.9 VISUAL RESOURCES

Each project's visual and aesthetic impacts would contribute to similar impacts within the regional basis. The pending Dumbarton TOD Specific Plan, Patterson Ranch Planned District, and Areas 3 and 4 Specific Plan project will convert large areas of open space to a developed environment. It is estimated that approximately 500 acres of visual open space will be lost from these three projects.

While the consideration of visual impacts is largely subjective, CEQA defines adverse effects to scenic vistas and substantial degradation of existing visual character as significant aesthetic impacts. Development of the large expanses of open space by the Bay and the resulting change in the scenic vistas they provide is considered an adverse visual impact.

The adverse visual and aesthetic effects would be lessened by implementing various mitigation measures. Such measures include incorporating parks and open space areas into Specific Plan and/or site designs, the use of aesthetically-pleasing architectural features in building designs, and the installation of landscaping. The substantial combined visual impacts of these significant projects cannot, however, be reduced to a less-than-significant level by these measures.

The proposed Specific Plan project will introduce single-family detached buildings, an elementary school, golf course, a roadway network, railroad overcrossing bridge, parks and landscaping onto a site that currently consists of undeveloped open space. The new buildings will create a substantial change in the visual character of the site. This project would substantially contribute to the cumulative impacts to visual resources. There is no feasible mitigation to reduce this impact to a less than significant level.

Impact C-VIS-6: The cumulative projects would result in cumulatively significant visual and aesthetic impacts, and the proposed Specific Plan project would make a cumulatively considerable contribution towards this cumulative impact. **(Significant Unavoidable Cumulative Impact)**

4.10 ENERGY

The proposed project would demand an estimated 11 million kWh of electricity on an annual basis. The proposed project would also utilize natural gas. The project is expected to use approximately 71 million cubic feet of natural gas annually. The proposed projects structures would be designed in accordance with Title 24 California's Energy Efficiency Standards for Residential and Non-residential Buildings. These standards include minimum energy efficiency requirements related to building envelope mechanical systems (e.g. heating. ventilation. air conditioning (HVAC) and water heating systems), indoor and outdoor lighting, and illuminated signs. The incorporation of the 2005 Title 24 standards into the project would ensure that the project would not result in the inefficient unnecessary or wasteful consumption of energy. It is reasonable to assume that other planned and approved projects would be required to comply with Title 24 energy efficiency standards and, therefore, would not result in excessive energy consumption. Therefore, the proposed project in

conjunction with other future projects would not have a cumulatively considerable impact on electricity. **(Less Than Significant Cumulative Impact)**

5.0 ALTERNATIVES TO THE PROPOSED PROJECT

5.1 INTRODUCTION

CEQA requires that an EIR identify alternatives to a project as it is proposed. The CEQA Guidelines specify that the EIR should identify alternatives that "will feasibly attain most of the basic objectives of the project but will avoid or substantially lessen any of the significant effects of the project." The purpose of this section is to determine whether there are alternatives of design, scope or location that will substantially lessen the significant impacts, even if those alternatives "impede to some degree the attainment of the project objectives," or are more expensive. (Section 15126.6)

In order to comply with the purposes of CEQA, it is important to identify alternatives that reduce the significant impacts that are anticipated to occur if the project is implemented and to try to meet as many of the project's objectives as possible. The Guidelines emphasize a common sense approach -- the alternatives should be reasonable, should "foster informed decision making and public participation," and should focus on alternatives that avoid or substantially lessen the significant impacts.

5.1.1 Significant Unavoidable Impacts

As discussed above, the CEQA Guidelines advise that the alternatives analysis in an EIR should be limited to alternatives that would avoid or substantially lessen any of the significant effects of the project and would achieve most of the project objectives. The significant unavoidable impacts identified in this EIR that would result from approval of the proposed project include the following:

- Emissions of Reactive Organic Gases (ROG) and NOx from development and operation of the proposed Areas 3 and 4 Specific Plan will exceed BAAQMD significance thresholds and result in a significant unavoidable air quality impact, and contribute to a significant unavoidable cumulative air quality impact.

- Temporary daily emissions of NOx and ROG from truck hauling along with emissions from on-site equipment used to move fill material would have emissions above the BAAQMD daily thresholds. Because they are above the BAAQMD threshold of significance, the effect of these emissions to the air basin would be significant. There is no feasible mitigation to reduce this impact to a less than significant level.

- Implementation of the Specific Plan will destroy archaeological deposits through placement of fill and soil compression and, therefore, result in a significant unavoidable cultural resources impact.

- The proposed residential and golf course development and Stevenson Boulevard railroad overpass would result in a substantial visual change to Area 4, resulting in a significant unavoidable project visual impact and contribute to a significant cumulative visual impact.

The Specific Plan would result in several significant impacts to biological resources, related primarily to development of Area 4, including loss of wetland habitat, impacts to various special status species, and impacts related to degradation of water quality and changes to wetland hydrology. These impacts are proposed to be mitigated to a less than significant level through measures that are included in the project.

The significant impacts of the projects including construction-related air quality, energy, geology and soils, hazardous materials, hydrology, flooding, water supply and water quality, land use, noise, and transportation would all be reduced to a less than significant level through the incorporation of the mitigation and avoidance measures identified in this EIR.

5.1.2 Objectives of the Project

While CEQA does not require that alternatives must be capable of meeting all the project objectives, their ability to meet most of the objectives is relevant to their consideration. The following represent the objectives for the City of Newark:

The primary objective of the Areas 3 and 4 Specific Plan is to provide low density residential, a golf course, and/or recreational facilities, and land for a school for the current and future residents of Newark. Specific project objectives include the following:

- Through a General Plan amendment allow residential uses;
- Provide up to 1,260 units of low density residential uses (4.2 – 8.5 units per acre) in Areas 3 and 4;
- Provide high quality residential uses including a mix of executive housing types;
- Provide up to 189 below market rate housing units that are within the 1,260 total residential units;
- Provide land for an up to 600-student elementary school in Area 3 to serve both the Specific Plan development and neighboring residential
- Provide vehicle access to Area 4 via a railroad overcrossing at Stevenson Boulevard;
- Provide and contribute toward community recreational facilities;
- Provide land for a golf course available to the public.
- If a golf course is found unfeasible, then another recreation use that is acceptable to the City shall be provided as a condition of development.

5.1.3 Feasibility of Alternatives

CEQA, the CEQA Guidelines, and the case law on the subject have found that feasibility can be based on a wide range of factors and influences. The Guidelines advise that such factors can include (but are not necessarily limited to) the suitability of an alternate site, economic viability, availability of infrastructure, consistency with a general plan or with other plans or regulatory limitations, jurisdictional boundaries, and whether the project proponent can "reasonably acquire, control, or otherwise have access to the alternative site [§15126.6(f)(1)]."

5.1.4 Selection of Alternatives

The CEQA Guidelines require an EIR to include a "No Project" alternative, which addresses both "the existing conditions, as well as what will be reasonably expected to occur in the foreseeable future if the project is not approved, based on current plans and consistent with available infrastructure and community services."

CEQA encourages consideration of an alternative site when the significant effects of the project might be avoided or substantially lessened. The Lead Agency possible options and alternatives to the proposed Areas 3 and 4 Specific Plan project are:

1) Abandon the project; this constitutes a "no project" alternative;

2) Reduce the scale of the project, either by reducing the number of residences, or removal of individual elements of the project (i.e., golf course, elementary school); these constitute variations of the "reduced scale" alternative;

3) Retain all of the proposed development on a smaller development footprint; this constitutes the revised design alternative.

3) Select another site for the project.

The discussion of alternatives should include enough information to allow a meaningful evaluation and comparison with the proposed project. The CEQA Guidelines state that if an alternative would cause one or more additional impacts, compared to the proposed project, the discussion should identify the additional impact, but in less detail than the significant effects of the proposed project.

The three critical factors to consider in selecting and evaluating alternatives are, (1) the significant impacts from the proposed project that could be reduced or avoided by an alternative, (2) the project's objectives, and (3) the feasibility of the alternatives available. Each of these factors is discussed below.

5.1 NO PROJECT (CONTINUATION OF EXISTING CONDITIONS) ALTERNATIVE

As noted above, the CEQA Guidelines require an EIR to include a "No Project" alternative, which includes two options, 1) continuation of the existing conditions; and 2) what is reasonably expected to occur in the foreseeable future if the project is not approved, based on current plans and consistent with available infrastructure and community services.

The No Project alternative consists of a continuation of the existing farming and discing the 78-acre property in Area 3 and approximately 520 acres of Area 4. As long as the property owner(s) continue with this operation, the existing conditions could continue.

Approximately 30 acres within Area 4 is utilized by two auto dismantler businesses. According to an conditional use permit with the City of Newark, these businesses must cease to operate within Area 4 no later than 2014.

5.1.1 <u>Comparison of Environmental Impacts</u>

The continued operation of existing uses on the project site would not result in any significant impacts, as defined by CEQA.[128] Impacts from the continued operation of the site would be those that occur from the conditions reflected throughout this EIR in the sections entitled "Existing Setting". The No Project Alternative (assuming the continued use of the existing agricultural uses)

[128] Section 15126.6 (e) (3) (B) of the CEQA Guidelines state the following, "If the project is other than a land use or regulatory plan, for example a development project on identifiable property, the "no project" alternative is the circumstance under which the project does not proceed. Here the discussion would compare the environmental effects of the property remaining in its existing state against environmental effects which would occur if the project is approved."

would avoid the significant environmental impacts of the project. The No Project would not result in the enhancement of Area 4 wetland areas that is proposed as mitigation for project impacts.

5.1.2 Relationship to Project Objectives

This alternative would not provide any housing, or recreational use including a golf course for the residents of Newark, therefore, the No Project Alternative would not meet any of the project objectives.

5.1.3 Conclusion

This No Project (Existing Conditions) Alternative would not result in any significant impacts, as defined by CEQA. This Alternative would not implement the City's General Plan and, therefore, would not meet any of the project objectives.

5.2 NO PROJECT (IMPLEMENTATION OF EXISTING GENERAL PLAN) ALTERNATIVE

The existing City of Newark General Plan land use diagram designates the 78-acres within Area 3 as *Special Industrial.* Special Industrial uses including a high-tech business park plan that was approved by the City in 1989 for this 78-acre area. Under the No Project (existing General Plan) Alternative, the 78-acre property in Area 3 would be developed with an approximate 1.175 million square foot industrial/office business park.

According to the General Plan, Area 4 is planned for high-quality low-density residential use with up to 2,700 units, a 18-hole golf course, and open space, with a requirement for preparation of a Specific Plan to guide development on Area 4, due to the complex conditions in this area including access, ownership, and environmental constraints. The proposed Specific Plan implements the General Plan vision for Area 4; therefore, the proposed project and this No Project Alternative are the same for Area 4.

5.2.1 Comparison of Environmental Impacts

Implementation of this alternative would not avoid any impacts compared to the proposed project because it assumes a greater intensity of development in Areas 3 and 4. Overall the impacts associated with the entire development of Areas 3 and 4 would similar or greater compared to the proposed project. Both short-term construction impacts and long-term air quality and noise impacts would occur. The additional housing in Area 4 would result in similar or greater impacts associated with biology, cultural resources, and water quality compared to the proposed project.

Impacts associated with geology, hazardous materials, land use, visual resources, energy and water supply would be the same as the proposed project.

The traffic impacts of this alternative would be the same as what was assumed in the transportation impact analysis as the 2015 No Project scenario under the Congestion Management Analysis (refer to Appendix B of this document. With the 1.175 million industrial office park the proposed project would result in less overall development compared to what is currently allowed by the existing General Plan. The CMA model determined the impact of the project for the 2015 and 2030 horizon years, the net project volumes of the residential and employment uses were added to the forecasted

2015 and 2030 peak-hour traffic volumes and compared the existing General Plan and the proposed project. Because the existing General Plan buildout would result in greater overall land use density in Areas 3 and 4 than the proposed project, and several of the roadway segments that are projected to operate at LOS F under the existing General Plan. Under the proposed project these roadway segments would experience traffic decreases under the proposed Specific Plan, thereby improving traffic conditions, thus the traffic impacts under the existing General Plan would be greater than the proposed project.

5.2.2 Relationship to Project Objectives

This alternative would meet the project objective of implementing the General Plan, however, the project objectives also include amending the General Plan to allow housing within Area 3, which would not be met under this alternative.

5.2.3 Conclusion

The No Project (Implementation of the Existing General Plan) Alternative would result in similar or greater impacts compared to the proposed project. Further, this Alternative would not lesson any of the significant unavoidable project impacts. This Alternative does not meet the objectives to develop single family and multi-family housing and to provide land for a school within Area 3 instead of industrial office use.

5.3 NO DEVELOPMENT IN AREA 4 AND HIGHER DENSITY AREA 3 ALTERNATIVE

Given the biological, hydrologic, and other environmental issues involved with developing Area 4, an alternative to the proposed Specific Plan would be no development in Area 4 and to intensify the housing development on Area 3, while retaining the land for a school. Without developing any of Area 4, this alternative would not have sufficient acreage to include the golf course. The No Development in Area 4 and Higher Density in Area 3 Alternative consists of the same number of residential units as the proposed Specific Plan project, but all the residential units would be located within Area 3. The elementary school would be the same size (up to 600-student capacity) as the proposed project. In order to accommodate up to 1,260 units, Area 3 would have a density of 18 units per acre. This would likely consist of two- and three-story residential structures. Area 4 would remain in its current existing condition, as long as the property owner(s) continue with the current agricultural operation.

5.3.1 Comparison of Environmental Impacts

All impacts associated with development in Area 4 would be eliminated with this alternative. This alternative would generate slightly fewer daily trips on the roadway network ,without the golf course, but would still result in similar traffic impacts as the proposed project (because the golf course is not a large traffic generator compared to the residential uses). Air quality, noise, and energy impacts would be similar to the proposed project because the number of residential units would be same and the residential uses are the greatest energy user. There would a substantial reduction in the short-term energy usage associated with importing soil to Area 4 because no imported soil would be required under this alternative.

All wetland, marsh, and aquatic habitat and specific status species impacts would be avoided under this alternative since there is none of this habitat within the planned development portion of Area 3.

The imported fill necessary to raise the Area 4 residential area out of the floodplain would also not be required. With no development and no need to import fill, cultural resources impacts would be avoided within Area 4. The Area 3 development would still result in impacts to archaeological resources located within Area 3.

The impacts associated with geology, hazardous materials, water quality, and visual resources would not occur in Area 4, however, these impacts related to Area 3 would still occur and all the mitigation measures associated with Area 3 would continue to be required to reduce or avoid impacts.

5.3.2 Relationship to Project Objectives

This alternative would meet the project objective of providing additional residential but not for low density residential (4.2 -8.5 dwelling units per acre). This alternative would not meet the project objectives for providing a golf course and public open space areas within Area 4.

5.3.3 Conclusion

This alternative would result in substantially less biological impacts compared to the proposed project. The significant unavoidable visual impacts associated with development in Area 4 and short-term air quality impacts related to importing fill in Area 4 would not occur under this alternative. However, significant unavoidable impacts associated with long-term air quality emissions and cultural resources would still occur in Area 3 under this alternative. Overall the other impacts would be slightly less or similar to the proposed project. While this alternative is feasible from a land use and planning standpoint, and would avoid all impacts from development within Area 4, it would not meet the General Plan goals and project objectives of providing high quality housing with a mix of executive house types and a golf course within Area 4. This alternative would also result in densities in Area 3 that are not consistent with the communities vision and which would create greater aesthetic impacts due to building height and massing.

5.4 REDUCED HOUSING ALTERNATIVE

> **Section 21159.26. Density reductions not a mitigation measure**. With respect to a project that includes a housing development, a public agency may not reduce the proposed number of housing units as a mitigation measure or project alternative for a particular significant effect on the environment if it determines that there is another feasible specific mitigation measure or project alternative that would provide a comparable level of mitigation. This section does not affect any other requirement regarding the residential density of that project.

For the Reduced Housing Alternative, the development within Area 3 would be the same as the proposed project. Approximately 400 single-family units and 189 multi-family units were assumed to be constructed in Area 3 under this alternative. There would be a 120-acre golf course in Area 4 but no residential development within Area 4. The Stevenson Bridge overcrossing would be the same as the proposed project in order to provide access to the golf course. The layout of the 120-acre golf course would be designed to minimize wetland fill to the maximum extent possible.

5.4.1 Comparison of Environmental Impacts

This alternative would generate fewer daily trips on the roadway network without Area 4 residential; however, the impact at Cherry Street and Mowry Avenue would still slightly exceed the Level of Service threshold and result in the same impact and mitigation as the proposed project. Air quality and noise would be less than the proposed project but would still require mitigation measures to reduce the impacts associated with traffic on the local level. The Reduced Density Alternative would not avoid the significant unavoidable regional air quality impact of the project. There would a substantial reduction in the short-term energy usage associated with importing soil to Area 4 because no imported soil would be required under this alternative.

Impacts to wetland, marsh, and aquatic habitat and specific status species would be reduced under this alternative, but would still require mitigation for any impacts associated with development of the golf course and Stevenson Bridge overcrossing.

The fill necessary to raise the Area 4 residential area out of the floodplain would not be required for the golf course. With less ground disturbance and no imported fill in Area 4, it is likely cultural resource impacts could be avoided in Area 4 through design of the golf course. Cultural resource impacts will still be significant in Area 3.

The impacts associated with geology, hazardous materials, water quality, and visual resources would be the similar to the proposed project.

5.4.2 Relationship to Project Objectives

This alternative would meet all of the project objectives except it will not meet the project objective of providing high quality, executive (low density) residential in Area 4.

5.4.3 Conclusion

This alternative would reduce biological and cultural impacts in Area 4, but not to a less than significant level and cultural resources impact would still remain significant and unavoidable in Area 3. All impacts associated with importing fill to Area 4 will be avoided including significant unavoidable short-term air quality impacts. This alternative is feasible from a land use and planning standpoint, but would not meet the General Plan objective to provide up to 1,260 high quality, executive (low density) housing and to provide housing within Area 4.

5.5 NO GOLF COURSE ALTERNATIVE

The No Golf Course Alternative would be the same as the proposed project, in terms of residential and school uses, except the Area 4 golf course component would be replaced with a passive recreation area and habitat restoration. The recreation area could include public trails and wildlife viewing platforms/areas, while the wildlife restoration areas would be protected for restoration by the appropriate public agencies.

5.5.1 Comparison of Environmental Impacts

This alternative would generate slightly fewer daily trips on the roadway network without the golf course, but would still result in similar traffic impacts as the proposed project because the golf course

is not a large traffic generator compared to the residential uses. Air quality, noise, and energy would be similar to the proposed project because the number of residential units would be same, so traffic-related noise and air quality impacts would be the same, and the residential uses are also the greatest energy user. The impacts associated with importing fill will be the same as the proposed project because there would be the same amount of residential in Areas 3 and 4 under this alternative. The impacts to cultural resources from the placement of fill would also be the same under this alternative as under the proposed project.

Some biological habitat impacts would be avoided under this No Golf Course Alternative, but there would still be significant biological resources related to the residential development and temporary impacts associated with habitat restoration and trail construction. There ultimately would be some beneficial biological impacts associated with preservation and habitat restoration under this alternative. It should be noted that the proposed project also proposed the enhancement of wetland habitat on Area 4 through mitigation measures.

The impacts associated with cultural resources, geology, hazardous materials, water quality, and visual resources would be the similar to the proposed project because residential development is the main source of impacts within Areas 3 and 4.

5.5.2 Relationship to Project Objectives

This alternative would meet the project objectives of providing additional residential within the City of Newark. The alternative would not meet the project objective of providing a golf course, but would meet the objectives of providing open space.

5.5.3 Conclusion

This alternative is feasible from a land use and planning standpoint and would slightly reduce some impacts compared to the proposed project. Significant unavoidable project impacts including long-term and short-term air quality, cultural resources, and visual impacts would still under this Alternative. This Alternative would not meet the General Plan goals and project objectives of providing a golf course within Area 4. According to the General Plan if a golf course is found unfeasible then another recreation use that is acceptable to the City shall be provided as a condition of development.

5.6 LOCATION (AREA 2) ALTERNATIVE

CEQA Guidelines encourage consideration of an alternative site when significant effects of the project might be avoided or substantially lessened. Only locations that would avoid or substantially lessen any of the significant effects of the project and meet most of the project objectives need be considered for inclusion in an EIR.

Area 2 Alternative

Within the City of Newark, the other area with an similar amount of infill area would be Area 2. Area 2 is located south of Thornton Avenue and west of Willow Street and encompasses 232 acres. Exiting uses include some vacant and open space lands as well as heavy industrial operations (e.g., FMC chemical plant and a 375,000 square foot warehouse/research and development complex), a railroad line, salt production facilities, the Hetch Hetchy water line, and the Newark pump station of

the Union Sanitary District. Current zoning for the Area 2 plan was updated in 1999 with the adoption of the Newark Area Two Specific Plan, which anticipated the construction of a community college surrounded by multi-level office and R&D buildings. However, after adoption of that Plan, the Ohlone Community College located elsewhere and the market for office space in South Alameda County diminished. The City is currently evaluating a new plan for Area 2 that would provide a new transit-oriented center in Newark that will provide new housing to support the Dumbarton Transit Center.

5.6.1 Comparison of Environmental Impacts

The Location Alternative would result in the same amount of traffic on local roadways and thus it is assumed it would result in similar traffic impacts. There is a planned Transit Center located within this site which would provide a transit benefit for future housing. Air quality, noise, and energy would be similar to the proposed project because the development buildout is assumed to be the same.

There would also be impacts associated with importing fill because portions of Area 2 are within the 100-year flood zone. There are known cultural resources sites located adjacent to Area 2, therefore, it is possible that cultural resources could be impacted during development or impacted during placement of fill. As a result the impacts to cultural resources would be considered the same under this alternative as under the proposed project.

Area 2 contains a mix of high, medium, and low quality habitat including wetland habitat throughout the developable area of the site. Based upon the similar habitat impacts and possible filling of wetlands, the impacts to biological resources are assumed to be similar to the proposed project.

It is assumed that the same amount of open space to be preserved in the 1999 Area 2 Specific Plan would be preserved in the Location Alternative. Based upon this assumption, the location alternative would result in a reduced visual impact compared to the proposed project.

Based upon the past usage of the site it is likely there may be hazardous contamination that would require soil and ground water mitigation which is similar to what is required on the proposed project site.

5.6.2 Relationship to Project Objectives

The Location Alternative would meet some of the project objectives of provide low-density housing, however, the amount of developable acres is less than was is planned for development in the proposed project. The less acres would result in less housing and not sufficient space for a golf course. This alternative does also not implement the development that was assumed under the existing general plan for this location.

5.6.3 Conclusion

While this alternative is feasible from a land use and planning standpoint, and would reduce significant unavoidable visual impacts compared to the proposed project, it would not meet the General Plan goals and project objectives for providing a golf course because there is not sufficient acreage available within Area 2. It should also be noted that the developable land in Area 2 is not currently available for sale.

5.7 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The CEQA Guidelines state that an EIR shall identify an environmentally superior alternative. Based on the above discussions, the environmentally superior alternative is the No Project Alternative, because all of the project's significant environmental impacts would be avoided if no new construction occurred under this Alternative. CEQA Guidelines Section 15126.6(e)(2), however, states that "if the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives."

The No Development in Area 4 and Higher Density in Area 3 Alternative and the Reduced Housing Alternative would be the environmentally superior alternatives. The No Development in Area 4 and High Density in Area 3 Alternative would avoid impacts to wetland, marsh, and aquatic habitat, because no development would occur in Area 4. The Reduced Housing Alternative would result in less impacts to wetland, marsh, and aquatic habitat compared to the proposed project but not to a less than significant level. Both alternatives would avoid land use impacts and would not result in impacts in Area 4 associated with import of soil compared to the proposed project. These Alternatives would not meet all of the project objectives because the No Development in Area 4 and Higher Density in Area 3 Alternative will not provide any development in Area 4 which is one of the main objectives of the project. The Reduced Housing Alternative does not include housing in Area 4 which is also one of the main project objectives.

A summary of the environmental impacts of the proposed project and the project alternatives is provided in Table 5.5-1.

Table 5.5-1:
Matrix Comparison of Project Alternative Impacts

Impacts	Proposed Project	No Project Alternative (continuation of existing conditions)	No Project Alternative (implementation of existing General Plan)	No Development in Area 4 and Higher Density in Area 3	Reduced Housing Alternative	No Golf Course Alternative	Location Alternative
Transportation	SM	**NI**	SM	SM	SM	SM	SM
Air Quality	SU	**NI**	SU	SU	SU	SU	SM
Noise	SM	**NI**	SM	SM	SM	SM	SM
Biological Resources	SM	**NI**	SM	**LTS**	SM	SM	SM
Cultural Resources	SU	**NI**	SU	SU	SU	SU	SU
Geology	SM	**NI**	SM	SM	SM	SM	SM
Hydrology	SM	**NI**	SM	SM	SM	SM	SM
Hazardous Materials	SM	**NI**	SM	SM	SM	SM	SM
Visual Resources	SU	**NI**	SU	SU	**SM**	SU	**SM**
Energy	SM	**NI**	SM	SM	SM	SM	SM
Meets Project Objectives	YES	NO	NO	NO	NO	YES*	NO

Notes: * Only meets project objectives if the golf course is determined to be unfeasible.
Bold text indicates environmentally superior to the proposed project.
NI = No Impact
LTS = Less Than Significant Impact
SM = Significant, but can be Mitigated to a Less Than Significant Level
SU = Significant and Unavoidable Impact

6.0 GROWTH INDUCING IMPACTS

The purpose of this section of an EIR is to disclose whether or not the construction of a project is likely to foster additional growth, either directly or indirectly. This information can be an important factor in a decision to approve a project because such approval can, in turn, lead to additional projects that may have environmental consequences.

A project could be considered to have growth-inducing effects if it: 1) either directly or indirectly fosters economic or population growth or the construction of additional housing in the surrounding area; 2) removes obstacles to population growth; 3) requires the construction of new community facilities that could cause significant environmental effects; or 4) encourages and facilitates other activities that could significantly affect the environment, either individually or cumulatively. Growth-related impacts are those that occur later in time or are farther removed in distance, but which are still reasonably foreseeable.

A project's potential to induce growth does not automatically mean that it will result in growth. This potential growth-inducing effect is regulated by local governments in California through the development, adoption, and implementation of land use plans and policies intended to avoid or minimize the growth inducing potential or pressure created by projects, both individually or cumulatively. Growth occurs through capital investment in new economic opportunities from both public and private entities. Development occurs as a result of economic investment in a particular region. New economic (i.e., employment) opportunities will naturally create the need for infrastructure to support an increased population.

Growth typically is the result of numerous factors that affect the location, size, direction, timing, type, and rate of population increase and does not necessarily result from a single project or factor. Such factors include local government planning, availability of public services; natural resources, the economic climate, and political and environmental concerns. Local planning agencies adopt and administer general and specific plans, zoning maps and ordinances, and other planning documents that contain policies and maps to identify the intensity and type of development allowed in specific locations.

Although local governments play a major role in growth management, the location and timing of growth also depends on economic factors such as the availability and cost of developable land, regional and national economic cycles, and mortgage interest rates and the demand for new housing. Political factors that affect growth include state and local laws that mandate businesses to comply with certain rules and regulations, permitting requirements that address environmental and community concerns, and tax incentives designed to attract businesses.

Quality of life issues are also important factors influencing the timing and location of population growth. These include: the incidence of crime; air quality; traffic congestion; and the availability, cost, and quality of community services such as schools, transportation facilities, recreational facilities, and fire and law enforcement services.

Growth Inducing Impacts

Economic growth in a community that is caused by a project can induce secondary development or growth.

The following discussion focuses on the potential for the economic growth to result in physical changes in the environment, from development of new housing, employment, or infrastructure.

Additional Housing Growth

The construction of 1,260 new residential unit is a form of growth. This growth on the site, however, would not be "induced" by the proposed project – it is the proposed project. The General Plan assumed a higher level of potential residential growth on the project site - 2,700 new residential units, which is more than twice the amount of the residential units than is currently being proposed. The residential growth has been assumed in the General Plan since adoption of the current General Plan.

The new Stevenson Bridge overcrossing will increase public access into Area 4, but this would not foster new housing into surrounding areas. Area 4 is at the western edge of the developable area of Newark, meaning that there is nowhere else for development to occur beyond Area 4. Therefore, the proposed development would not encourage additional growth beyond what is currently proposed.

Additional Economic Growth

Development of the Specific Plan will result in economic growth for the area. There are short-term jobs directly tied to the construction phases of the project. In addition to the direct construction jobs, there will be an indirect increase of workers with businesses with whom the project is engaged in a buyer-seller relationship, primary in retail and services. It is expected that some of these jobs will be filled by local residents, employees, and suppliers already in the Alameda County area, and some of the jobs may be filled will people who temporarily transfer to the area during the construction phase. Given that these are temporary jobs, it would be speculative to assume that these jobs would induce substantial new housing or commercial development.

While the proposed Specific Plan would allow less job-producing development than the current General Plan land use designation, the proposed project would result in job growth at the site. The elementary school would provide approximately 50 jobs. When construction is complete the proposed golf course, is expected to employ approximately 42 full-time equivalent employees.[129] The golf course will provide a minimal amount of new jobs for the City of Newark. The total job growth allowed by the Specific Plan would be approximately 482 jobs.

The proposed development would generate tax revenues for the City of Newark. The project will require services that would increase expenditures for City departments. The project would not require the construction of new community facilities. As discussed in *Section 3.11* of this document, all of the public facilities are adequate to serve the proposed Specific Plan. The City of Newark will provide police and fire protection. The proposed project would include recreational facilities, which will reduce the residential development's demands on local parks and recreation.

[129] Full-time equivalent is used for comparative purposes between part-time and full-time employees.

The Specific Plan development will obtain sewer service from the Union Sanitary District (USD), which has indicated that the Alvarado Treatment Plant has sufficient capacity to serve the Specific Plan-proposed development and the connection mains have sufficient capacity for development of both Area 3 and Area 4. Area 3 is within the existing USD service area boundary but USD has indicated that Area 4 will need to be annexed into their jurisdictional boundaries. Upon development of Area 4, a new pump station will be constructed and maintained within the Area 4 to discharge wastewater generated by the residential and golf course projects. The utilities that would be extended are a potable water line, and a sanitary sewer line. No improvements or contributions to existing or future planned capital projects were necessary for Areas 3 and 4 development, thus no additional sewer system growth will be induced by the project.

While the proposed development is intended to accommodate planned population growth, the project may indirectly induce some growth in the immediate vicinity of the project site. The golf course facilities and residential development could attract additional commercial, support services, and residential development; however, the surrounding area is largely built out. The vacant industrial buildings within Area 3 are the only areas that could become more desirable for increased density development or land uses changes. Any development that is not consistent or is more intense than currently allowed by the General Plan and zoning ordinance would be subject to individual project review and environmental review processes.

One of CEQA's primary purposes in addressing "growth inducing impacts" is to identify the environmental impacts or consequences of growth that results from implementing a project.

To attempt to predict specifically where growth would occur would be speculative. It is known that this indirect growth could result in transportation, air quality, noise, water quality impacts. These indirect impacts could also include temporary construction impacts related to air quality, noise and water quality. The severity of these impacts will depend on the size and location of the induced growth. Based upon the limited possible amount of growth that could occur as a result of the proposed Specific Plan project, the development would not result in a significant growth inducing impact. **(Less than Significant Impact)**

7.0 SIGNIFICANT UNAVOIDABLE IMPACTS

If the project is implemented, the following significant unavoidable environmental impacts will occur:

- Significant air quality impact
- Significant cultural resources impact
- Significant visual impact
- Significant cumulative air quality impact
- Significant cumulative global climate change impact
- Significant cumulative noise impact
- Significant cumulative visual impact

8.0 SIGNIFICANT IRREVERSIBLE IMPACTS

This section was prepared pursuant to CEQA Guidelines Section 15126.2(c), which requires a discussion of the significant irreversible changes that would result from the implementation of a proposed project. Significant irreversible changes include the use of nonrenewable resources, the commitment of future generations to similar use, irreversible damage resulting from environmental accidents associated with the project, and irretrievable commitments of resources.

Construction and operation of the proposed project will require the use and consumption of nonrenewable resources, such as steel and other metals used to construct the campus buildings and single-family houses. Renewable resources, such as lumber and other wood byproducts, will also be used. Unlike renewable resources, nonrenewable resources cannot be regenerated over time. Nonrenewable resources include fossil fuels and metals.

Energy will be consumed during both construction and operation of the proposed project. The construction phase would require the use of nonrenewable construction material, such as concrete, metals, and plastics. Nonrenewable resources and energy would also be consumed during the manufacturing and transportation of building materials, preparation of the site, and construction of the school buildings, single-family houses, and golf course facilities. The operational phase will consume energy for multiple purposes including lighting and electronics. Energy in the form of fossil fuels will be used to fuel vehicles traveling to and from the area.

The Specific Plan construction will occur on lands that are currently undeveloped. The transformation of these lands from an undeveloped/open space character to a suburban/urban environment would, from a practical perspective, be an irreversible change.

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