

CHAPTER 4

Environmental Impacts, Setting, and Mitigation Measures

4.0 Introduction to the Analysis

This EIR evaluates the physical environmental effects that would be potentially affected by the implementation of the Proposed Project. Some environmental effects that are typically considered under CEQA would not be affected by the Proposed Project and, pursuant to CEQA, are not further analyzed in this EIR. A discussion of those issues that were not further analyzed in the EIR can be found later in this chapter.

4.01 Definitions of Terms Used in the EIR

This EIR uses a number of terms that have specific meaning under CEQA. Among the most important of the terms used in the EIR are those that refer to the significance of environmental impacts. The following terms to describe environmental effects of the Proposed Project:

- **Significance Criteria:** A set of criteria used by the lead agency to determine at what level or threshold an impact would be considered significant. Standards of Significance used in this EIR include those standards provided by the City of Sacramento. In determining the level of significance, the analysis assumes that the Proposed Project would comply with relevant federal, State, and local regulations and ordinances.
- **Significant Impact:** A project impact is considered significant if the Proposed Project would result in a substantial adverse change in the physical conditions of the environment. Significant impacts are identified by the evaluation of project-related physical change compared to specified significance criteria. A significant impact is defined as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance.”¹
- **Potentially Significant Impact:** A potentially significant impact is identified where the Proposed Project may cause a substantial adverse change in the environment, depending on certain unknown conditions related to the project or the affected environment. For CEQA purposes, a potentially significant impact is treated as if it were a significant impact.

¹ State CEQA Guidelines, section 15382.

- **Less-than-Significant Impact:** A project impact is considered less than significant when the physical change caused by the Proposed Project would not exceed the applicable significance criterion.
- **Significant and Unavoidable Impact:** A project impact is considered significant and unavoidable if it would result in a substantial adverse physical change in the environment that cannot be feasibly avoided or mitigated to a less-than-significant level.
- **Cumulative Impact:** Under CEQA, a cumulative impact refers to “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.”² Like any other significant impact, a significant cumulative impact is one in which the cumulative adverse physical change would exceed the applicable significance criterion and the Proposed Project’s contribution is “cumulatively considerable.”³
- **Mitigation Measure:** A mitigation measure is an action that could be taken that would avoid or reduce the magnitude of a significant impact. Section 15370 of the State CEQA Guidelines defines mitigation as:
 - a. Avoiding the impact altogether by not taking a certain action or parts of an action;
 - b. Minimizing impacts by limiting the degree of magnitude of the action and its implementation;
 - c. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
 - d. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and
 - e. Compensating for the impact by replacing or providing substitute resources or environments.

4.02 Section Format

Chapter 4 is divided into technical sections (e.g., section 4.1, Aesthetics, Light and Glare) that present for each environmental resource issue area the physical environmental setting, regulatory setting, standards of significance, analytical methods, and impacts to the environment, and, where required, potentially feasible mitigation measures for significant impacts. Each section includes an analysis of project-specific and cumulative impacts for each issue area.

The technical environmental sections each begin with a description of the project's **environmental setting** and the **regulatory setting** as it pertains to a particular issue. The environmental setting provides a point of reference for assessing the environmental impacts of the Proposed Project and

² State CEQA Guidelines, section 15355.

³ State CEQA Guidelines, section 15130(a).

project alternatives. The environmental setting discussion addresses the conditions that exist prior to implementation of the project. This setting establishes the baseline by which the Proposed Project and project alternatives are measured for environmental impacts. The regulatory setting presents relevant information about federal, state, regional, and/or local laws, regulations, plans or policies that pertain to the environmental resources addressed in each section.

Next, each section presents **significance criteria**, which identify the standards used by the City of Sacramento to determine the significance of effects of the Proposed Project. The significance criteria used for this project were derived from the City of Sacramento's established significance standards, which, in turn, reflect policies of the 2030 General Plan, as well as other criteria applicable under CEQA, including thresholds established by trustee and responsible agencies.

A **methods and assumptions** description in each section presents the analytical methods and key assumptions used in the evaluation of effects of the Proposed Project, and is followed by an **impacts and mitigation** discussion. The impact and mitigation portion of each section includes impact statements, prefaced by a number in bold-faced type. An explanation of each impact is followed by an analysis of its significance. The subsection concludes with a statement that the impact, following implementation of the mitigation measure(s) and/or the continuation of existing policies and regulations, would be reduced to a less-than-significant level or would remain significant and unavoidable.

The analysis of environmental impacts considers both the construction and operational phases associated with implementation of the Proposed Project. As required by section 15126.2(a) of the State CEQA Guidelines, direct, indirect, short-term, long-term, onsite, and/or off-site impacts are addressed, as appropriate, for the environmental issue area being analyzed. Under CEQA, economic or social changes by themselves are not considered to be significant impacts, but may be considered in linking a project to a physical environmental change, or in determining whether an impact is significant.

Where enforcement exists and compliance can be reasonably anticipated, this EIR assumes that the Proposed Project would meet the requirements of applicable laws and other regulations.

Mitigation measures pertinent to each individual impact, if available, appear after the impact discussion section. The magnitude of reduction of an impact and the potential effect of that reduction in magnitude on the significance of the impact is also disclosed. An example of the format is shown below.

4.02.1 Impacts and Mitigation Measures

Impact 4.X-1: Impact statement.

A general discussion of impact for the Proposed Project in paragraph form is provided. To identify impacts that may be site- or project element-specific, where appropriate, the discussion differentiates between effects at the Downtown project site, including the Entertainment and Sports Center (ESC) project element and the future development within the PUD area, and the

Offsite Digital Billboard sites. A statement of the level of significance before application of any mitigation measures is provided in ***bold and italics***.

Mitigation Measure

4.X-1 (ESC/PUD/DB)

Recommended mitigation measure in italics and numbered in consecutive order.

Where appropriate, one or more potentially feasible mitigation measures are described. If necessary, a statement of the degree to which the available mitigation measure(s) would reduce the significance of the impact is included in ***bold and italics***.

4.02.2 Cumulative Impacts

An analysis of cumulative impacts follows the project-specific impacts and mitigation measures evaluation in the each section. As defined in State CEQA Guidelines section 15355, a cumulative impact consists of an impact that is created as a result of the combination of the project evaluated in the EIR together with other past, present and reasonably foreseeable projects causing related impacts. An introductory explanation that defines the cumulative analysis methodology and the cumulative context being analyzed for respective sections (e.g., SACOG projections, the Sacramento Valley Air Basin) is included at the beginning of the cumulative impact analysis in each technical section. In some instances a project-specific impact may be considered less than significant, but may be considered potentially significant in combination with development of the surrounding area or in combination with regional growth projections. In some instances, a potentially significant impact may result on a project level but would not result in a considerable contribution to a significant cumulative impact. The cumulative impacts analysis is formatted the same as the project-specific impacts, as shown above.

4.03 Issues Previously Determined to be Less Than Significant

Upon review of the Proposed Project, the City of Sacramento determined that due to the physical characteristics of the project site and the project as proposed several environmental issues would involve impacts that would be less than significant and need not be further considered in the Draft EIR.⁴ The discussions below provide brief statements of reasons for the City's determination that these issues do not warrant further consideration in the EIR.

⁴ Public Resources Code, Section 21003(e) states that “[t]o provide more meaningful public disclosure, reduce the time and cost required to prepare an environmental impact report, and focus on potentially significant effects on the environment of a proposed project, lead agencies shall, in accordance with Section 21100, focus the discussion in the environmental impact report on those potential effects on the environment of a proposed project which the lead agency has determined are or may be significant. Lead agencies may limit discussion on other effects to a brief explanation as to why those effects are not potentially significant.”

4.03.1 Geology and Soils

Seismic Ground Shaking

No Alquist-Priolo Earthquake Fault Zones are present in the city of Sacramento. Therefore, no evidence exists to suggest that there is a reasonable chance of fault rupture within the Downtown project site or Offsite Digital Billboard sites. As discussed in the City of Sacramento 2030 General Plan Master EIR, despite its relatively distant location from known faults and fault zones, people and structures within the city could be subject to the effects of groundshaking caused by a seismic event located miles away.⁵ The resulting vibration could cause damage to buildings, roads, and infrastructure (primary effects), and could cause ground failures such as liquefaction or settlement in loose alluvium and/or poorly compacted fill (secondary effects).⁶

Portions of the city, including the Downtown project site, are underlain by artificial fill and alluvial deposits that, in their present states, could become unstable during seismic ground motion. To reduce the primary and secondary risks associated with seismically induced groundshaking, it is necessary to take the location and type of subsurface materials into consideration when designing foundations and structures.

As part of the construction permitting process, the City requires completed reports of soil conditions at the specific construction sites to identify potentially unsuitable soil conditions including potential exposure to potentially damaging seismic vibrations, ground failure, liquefaction, settlement, subsidence, lateral spreading, and collapse. The City requires that these evaluations be conducted by registered soil professionals, and measures to eliminate inappropriate soil conditions must be applied, depending on the soil conditions. The design of foundation and excavation-wall support must conform to the analysis and implementation criteria described in the California Building Code (CBC), Chapters 16, 18, 33, and the appendix to Chapter 33.

For these reasons, there would be no adverse effects of the Proposed Project related to seismic ground shaking.

Soil Erosion

Construction activities at the Downtown project site would result in site preparation activities, such as excavation, grading and trenching, which would result in the exposure of soils. The Downtown project site and the Offsite Digital Billboard sites are relatively flat and in the case of the ESC site, below grade.

Compliance with the City of Sacramento's Grading Ordinance, Chapter 15.88 of the Sacramento Municipal Code, requires that an Erosion and Sediment Control Plan must be prepared for each project within the city prior to the commencement of grading. An erosion control professional,

⁵ City of Sacramento, 2009. *City of Sacramento 2030 General Plan Master Environmental Impact Report*. March 3, 2009. p. 6.5-20.

⁶ City of Sacramento, 2009. *City of Sacramento 2030 General Plan Master Environmental Impact Report*. March 3, 2009. p. 6.5-20.

landscape architect, or civil engineer specializing in erosion control must design the Erosion and Sediment Control Plan and be on the project site during the installation of erosion and sediment control measures, and supervise implementation of the installation and maintenance of such facilities throughout the site clearing, grading and construction periods.⁷

For these reasons, construction of the Proposed Project would not substantially alter topography and there would be minimal, if any, erosion from the project sites.

Unstable Geological Units and Expansive Soils

Due to the relatively flat topography of the city, landslides are not considered to be major threats to any areas within the city, including the Downtown project site and the Offsite Digital Billboard sites.

Subsidence occurs over large areas with substantial withdrawal of oil, natural gas, or groundwater. There are no active oil or natural gas production operations near the project site or the city as a whole, so subsidence resulting from such activities would not occur within the city, including the Downtown project site or the Offsite Digital Billboard sites.⁸ There are groundwater withdrawal activities located within the city and subsidence has been observed within the city, specifically in downtown Sacramento near I-5 associated with the long-term dewatering of the “boat” section of I-5.⁹ The Proposed Project would not include any long-term, permanent dewatering.

Subsidence or settlement may also occur over smaller areas near dewatering activities. Because of the shallow water table, dewatering would be necessary during excavation and foundation support construction activities within the Downtown project site. Often, groundwater provides partial support for the near-surface soil materials and, when withdrawn, allows the soils to slough into the excavation. If the dewatering system draws down the water table adjacent to the excavation, there is the possibility of undermining foundations on the adjacent site, causing cracking or collapse. To avoid these conditions, dewatering system design and excavation-wall support need to be designed appropriate to the soil conditions. The required site-specific evaluation of soil conditions must contain recommendations for these systems specific to the site, and be incorporated into the construction design.

As is described in Chapter 2, Project Description, the project proposes to use monitor wells to gain historical data both prior to and during the construction dewatering period. The wells would be either new or existing wells around the ESC site, including the project vicinity covering an area with a radius of about three-quarters of a mile. The system of monitoring wells would be used to determine subsidence parameters which in turn would dictate to the dewater subcontractor how low the immediate ESC water table can be dropped. Automatic controls may be used to

⁷ City of Sacramento, 2009. *City of Sacramento 2030 General Plan Master Environmental Impact Report*. March 3, 2009. p. 6.5-20.

⁸ City of Sacramento, 2009. *City of Sacramento 2030 General Plan Master Environmental Impact Report*. March 3, 2009. p. 6.5-20.

⁹ City of Sacramento, 2009. *City of Sacramento 2030 General Plan Master Environmental Impact Report*. March 3, 2009. p. 6.5-20.

alternate pumps and subsequent discharge quantities during the construction dewatering period. For special areas, such as the loading ramp on the 5th Street side of event level and adjacent to the Hotel Marshall, a shallow well point system would be utilized to reduce the cone of influence that typically develops with dewatering systems of any type.

As part of the construction permitting process, the City requires completed reports of soil conditions at the specific construction sites to identify potentially unsuitable soil conditions including liquefaction, settlement, subsidence, lateral spreading, and collapse. The City requires that these evaluations be conducted by registered soil professionals, and measures to eliminate inappropriate soil conditions must be applied, depending on the soil conditions. The design of foundation and excavation-wall support must conform to the analysis and implementation criteria described in the CBC, Chapters 16, 18, 33, and the appendix to Chapter 33.¹⁰

For these reasons, the project would not adversely affect the local geology or soil, or contribute to subsidence that could adversely affect nearby structures.

Capability to Support Septic Tanks

There are no plans to provide wastewater service via septic tank or other alternative wastewater disposal systems. All proposed sewer impacts would involve connections to existing service systems (addressed in section 4.11, Utilities and Service Systems). For this reason, the ability of the project soils to support septic is not further considered in this EIR.

4.03.2 Biological Resources – Conflicts with a Recognized Habitat Conservation Plan

The Downtown project site and eight Offsite Digital Billboard sites are located in primarily urbanized environments that are not within the boundaries of a local Habitat Conservation Plan (HCP), a Natural Communities Conservation Plan (NCCP), or any other habitat conservation plan.

Two of the proposed Offsite Digital Billboard sites – I-5 at Bayou Road and I-5 at San Juan Road – are within the boundary of the Natomas Basin Habitat Conservation Plan (NBHCP). The NBHCP authorizes a maximum of 17,500 acres of development in the Natomas Basin within the approved development areas, to be mitigated at a ratio of 0.5 to 1 (i.e., every acre of development requires one-half acre of compensatory mitigation). The proposed billboard sites within the Natomas Basin are located within existing developed areas or areas planned for future development. The City of Sacramento is currently a participant in the NBHCP and would comply with general guidelines and specific mitigation requirements of the NBHCP. Thus, the Proposed Project would be consistent with the NBHCP. Therefore, this issue is not further considered in this EIR. All impacts to sensitive species habitat are addressed in section 4.3, Biological Resources.

¹⁰ City of Sacramento, 2009. *City of Sacramento 2030 General Plan Master Environmental Impact Report*. March 3, 2009. p. 6.5-20.

4.03.3 Hydrology and Water Quality – Impacts Resulting from Seiche, Tsunami, or Mudflow

Due to the relatively flat topography of the Downtown project site and Offsite Digital Billboard sites, the potential for mudflow or a mudslide would be highly unlikely. A seiche is an oscillation of the surface of a landlocked body of water that varies in period from a few minutes to several hours. Although there is potential for inundation from a seiche from the Sacramento River, the probability of seiche is very low. Further, the Downtown project site and Offsite Digital Billboard sites are not located in an area subject to tsunami waves. Therefore, the project's potential to expose people or structures to a significant risk of flooding, as a result of inundation by seiche, tsunami, or mudflow is extremely low. For these reasons, impacts from seiches, tsunamis or mudflows were not further considered in this EIR.

4.03.4 Mineral Resources – Loss of Availability of Important Mineral Resources

The Downtown project site and Offsite Digital Billboard sites are located in a disturbed environment surrounded by urban uses. The Surface Mining and Reclamation Act (SMARA) directs the State Geologist to classify (identify and map) the non-fuel mineral resources of the State to show where economically significant mineral deposits occur and where they are likely to occur based upon the best available scientific data. Areas known as Mineral Resource Zones (MRZs) are classified on the basis of geologic factors, without regard to existing land use and land ownership. The areas are categorized into four general classifications (MRZ-1 through MRZ-4) as described below.

MRZ-1: Areas where available geologic information indicates there is little or no likelihood for presence of significant mineral resources.

MRZ-2a: Areas underlain by mineral deposits where geologic data indicate that significant measured or indicated resources are present. Areas classified MRZ-2a contain discovered mineral deposits as determined by such evidence as drilling records, sample analysis, surface exposure, and mine information. Land included in the MRZ-2a category is of prime importance because it contains known economic mineral deposits.

MRZ-2b: Areas underlain by mineral deposits where geologic information indicates that significant inferred resources are present. Areas classified MRZ-2b contain discovered mineral deposits that are either inferred reserves as determined by limited sample analysis, exposure, and past mining history or are deposits that presently are sub-economic. Further exploration and/or changes in technology or economics could result in upgrading areas classified MRZ-2b to MRZ-2a.

MRZ-3a: Areas containing known mineral occurrences of undetermined mineral resource significance. Further exploration within these areas could result in the reclassification of specific localities as MRZ-2a or MRZ-2b.

MRZ-3b: Areas containing inferred mineral occurrences of undetermined mineral resource significance. Land classified MRZ-3b represents areas in geologic settings that appear to be favorable environments for the occurrence of specific mineral deposits. Further exploration could result in the reclassification of all or part of these areas as MRZ-3a or specific localities as MRZ-2a or MRZ-2b.

MRZ-4: Areas of no known mineral occurrences where geologic information does not rule out the presence or absence of significant mineral resources.

Public Resources Code Section 2762 directs that if a use is proposed that might threaten the potential recovery of minerals from an area that has been classified MRZ-2, the county (or city) must specify its reasons for permitting use, provide public notice of those reasons, and forward a copy of its statement of reasons to the State Geologist and State Mining and Geology Board.

Downtown Sacramento, including the Downtown project site is classified as MRZ-1. In addition, all but two of the Offsite Digital Billboard sites are classified as MRZ-1. These sites are not underlain by significant mineral resources. Two Offsite Digital Billboard sites, the Business 80 at Sutter's Landing Regional Park/American River and the SR 99 at Calvine Road sites are classified as MRZ-3. The two sites are within the urbanized area of the City of Sacramento, and unlikely to be available in the long-term for mineral extraction. Further, at the Business 80 at Sutter's Landing Regional Park/American River site, mineral extraction would be inconsistent with the American River Parkway Plan.

For these reasons the potential for the Proposed Project to cause loss of a local or regionally identified mineral resource was not further considered in this EIR.

4.03.5 Transportation and Circulation

The potential Offsite Digital Billboard sites are each located within the city limits and are in close proximity to a freeway. Five of the proposed Offsite Digital Billboard sites (US 50 at Pioneer Reservoir, Business 80 at Sutter's Landing Regional Park, Business 80 at Sutter's Landing Regional Park/American River, I-5 at Roseville Road, and I-5 at Sacramento Railyards) are located near an existing rail line. While five of the proposed sites are located near a rail line, the orientation of the digital billboard face and restrictions on light intensity would ensure that no significant hazards to rail traffic would occur. The remaining digital billboard locations are not adjacent to any rail line, waterway or airport, and would not result in uses that would generate significant rail, waterborne or air traffic.

The construction of Offsite Digital Billboards would involve just a few truck trips over approximately five days, and billboard operations would not result in any increase in vehicle trips. The proposed Offsite Digital Billboards would be located outside traveled portions of roadways, and would present no obstacles to emergency access. The digital billboards would have the capacity to display official messages regarding emergencies, and could perform as part of the emergency response system, thus resulting in beneficial effects on emergency response. No parking demand would result from the Offsite Digital Billboards, and the digital billboards would not present any conflict with policies regarding alternative transportation. In particular, the digital

billboard that could be constructed at the Business 80 at Sutter's Landing Regional Park would be oriented to be seen by motorists on eastbound Business 80, and would not visually conflict with the Caltrans digital information sign located immediately to the east and which is oriented to be viewed by motorists on westbound Business 80.

For these reasons, the effects of the Offsite Digital Billboards on transportation and circulation were not further considered in this EIR.

4.03.6 Noise and Vibration

Aircraft Noise

The Downtown project site is located approximately eight miles southeast of Sacramento International Airport and approximately four miles northwest of Sacramento Executive Airport. McClellan Park is approximately six miles northeast of the Downtown project site. The Downtown project site is not located within an airport land use plan area or within two miles of an airport or private airstrip; therefore, development of the Downtown project site would not expose people to excessive airport noise levels.

Development of the Offsite Digital Billboards would result in construction workers temporarily present at the billboard sites. The I-5 at Bayou Road billboard site is approximately two miles southeast of Sacramento International Airport, and outside of the overflight zone. The I-5 at Water Tank billboard site is approximately two miles southwest of Sacramento Executive Airport, and outside of its overflight zone. The Business 80 at Del Paso Regional Park/Haggin Oaks billboard site is one and a half miles south of McClellan Park, and within the overflight zone. Construction of digital billboards at these locations would only expose a few construction workers at each site to aircraft overflight for a maximum of approximately five days. No permanent workers would remain at the Offsite Digital Billboard sites. Therefore, there would be no adverse impacts resulting from exposure to aircraft noise. For these reasons, impacts related to aircraft noise are not discussed further in the EIR.

Operational Vibration

The most common sources of operational ground-borne vibration in urban environments are trains, buses and trucks driving on rough roads. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Vibration can also occur from traffic on highways and heavy rail lines. The Downtown project site is approximately one-tenth of a mile from the I-5 main line and approximately one-quarter mile from the Union Pacific lines north of the site. Although the Downtown project site is proximate to two potential operational vibration sources, intervening buildings cause some dissipation of vibration levels. Operational activities at the Downtown project site would not result in vibration levels in excess of normal urban vibration levels caused by roadway activities and other urban activities.

Operation of the Offsite Digital Billboards would not result in any vibration that could affect adjacent uses. Likewise, adjacent highway traffic and other potential vibration sources would not

affect operation of the Offsite Digital Billboards. Therefore, there would be no adverse impact resulting from operational vibration. For these reasons, impacts related to operational vibration are not discussed further in the EIR.

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