Chapter 4
Environmental Impact Analysis

Introduction

Organized by environmental resource area, this chapter provides an integrated discussion of the regulatory setting, environmental setting, and impact analyses (including mitigation measures for potentially significant impacts) associated with the construction, operation, and maintenance of ACEforward’s near-term and longer-term improvements. The near-term alternatives presented in Chapter 2, Description of Near-Term Improvements are analyzed at an equal project level of detail in this EIR. The longer-term alternatives presented Chapter 3, Description of Longer-Term Improvements, are analyzed at an equal programmatic level of detail in this EIR.

This analysis is based on ACEforward’s environmental footprint for near-term and longer-term improvements (Appendix C, ACEforward Environmental Footprint) and 15% preliminary engineering plans (Appendix D, ACEforward 15% Preliminary Engineering Plans). The analysis presented in this section uses a “reasonable worst-case” (i.e., the greatest level of impact) approach to analyzing potential impacts.

Chapter Organization

This chapter is organized into the following environmental resource sections.

- 4.1, Aesthetics
- 4.2, Agricultural Resources
- 4.3, Air Quality
- 4.4, Biological Resources
- 4.5, Cultural Resources
- 4.6, Energy
- 4.7, Geology and Soils
- 4.8, Greenhouse Gas Emissions
- 4.9, Hazardous Materials
- 4.10, Hydrology and Water Quality
- 4.11, Land Use and Planning
- 4.12, Noise and Vibration
- 4.13, Population and Housing
- 4.14, Public Services
- 4.15, Recreation
4.16, Safety and Security
4.17, Transportation and Traffic
4.18, Utilities and Service Systems

Each environmental resource section in this chapter includes the following information.

- **Introduction**—presents an overview of the environmental resource and cross-references related issues addressed elsewhere in the EIR.

- **Regulatory Setting**—identifies the federal, state, regional, and local laws, regulations, ordinances, and policies that are relevant to each environmental resource area and would be applicable to the construction, operation, and maintenance of ACEforward. Appendix H, *Regional Plans and Local General Plans*, provides a list of applicable goals, policies, and objectives from regional and local plans of the jurisdictions in which ACEforward improvements are proposed.

- **Environmental Setting**—provides an overview of the existing physical considerations of an environmental resource in the area at the time of, or prior to, the publication of the Notice of Preparation, which could be affected by implementation of ACEforward. A specific “study area” is identified for each environmental resource, as the extent of a study area varies with each resource, and is defined as the limits of an area in which impacts could be expected to occur. The environmental setting provides the basis of analysis of potential impacts to each environmental resource.

- **Impact Analysis**—describes the methodology used for the analysis, the criteria used to determine the significance of potential impacts, and corresponding discussion of impacts associated with near-term and longer-term improvements. For each potential impact, a significance determination is made (i.e., less than significant, less than significant with mitigation, or significant and unavoidable). If required to reduce a significant impact, feasible mitigation measures are identified. The contents of the impact analysis discussion is described in further detail below under *Approach to Impact Analysis*.

A discussion of ACEforward’s potential contribution to cumulative impacts is discussed separately in Chapter 5, *Other CEQA-Required Analysis*.

**Approach to Impact Analysis**

**Significance Criteria**

The significance criteria used in this EIR to define the level at which an impact would be considered significant in accordance with CEQA is presented under the subheading *Thresholds of Significance* in each environmental resource section. In accordance with Section 15022(a) of the State CEQA Guidelines, San Joaquin Regional Rail Commission uses significance criteria based on CEQA Guidelines Appendix G and Appendix F; factual or scientific information and data; and regulatory standards of federal, state, regional, and local jurisdictions ACEforward improvements are proposed in.
Project-Level versus Program-Level Evaluation

As described in Chapter 1, Introduction, this EIR serves as a project EIR and a program EIR. Chapter 2 describes the near-term improvements evaluated at a project level of detail and Chapter 3 described the longer-term improvements evaluated at a program level of detail. The longer-term improvements are potential future actions that may or may not be necessary depending on future circumstances; these improvements are not proposed to be completed until at least 2023 and have not yet been developed enough to permit a detailed evaluation. Consequently, the longer-term improvements are evaluated in a more general manner.

In each environmental resource section, impacts associated with improvements analyzed at a project level of detail are discussed under the subheading Near-Term Improvements Impacts and Mitigation Measures. Impacts associated with improvements analyzed at a program level of detail are discussed in each environmental resource section under the subheading Longer-Term Improvements Impacts and Mitigation Measures.

Impact Identification and Levels of Significance

Each environmental resource section identifies and lists impacts sequentially. For example, CUL-1 denotes the presentation of the first impact in the cultural resources section. An impact statement precedes the discussion of each impact and provides a summary of the impact topic.

The level of significance associated with an impact is determined by comparing the environmental effects of constructing, operating, and maintaining ACE/forward with existing environmental conditions and applying the identified significance threshold. This EIR uses a variety of terms to describe the levels of significance of impacts identified within the environmental analysis. Each impact is categorized as one of the following:

- **No impact**—near-term or longer-term improvements would not cause any adverse change in the environment.

- **Less-than-significant impact**—near-term or longer-term improvements would not cause a substantial adverse change in the environment as the specified standard of significance would not be exceeded; thus, no mitigation measures are required. An impact is considered "beneficial" if it would result in the improvement of an existing physical condition of the environment. Beneficial impacts of near-term or longer-term improvements are identified within this "less-than-significant impact" significance category.

- **Potentially significant impact**—near-term or longer-term improvements would cause a substantial adverse change in the physical conditions of the environment in excess of the specified standard. This is typically the level of significance of an impact prior to the application of feasible mitigation measures.

- **Less than significant with mitigation**—near-term or longer-term improvements would cause a substantial adverse change in the physical conditions of the environment in excess of the specified standard of significance; however, one or more feasible mitigation measures would reduce environmental effects to levels below the specified standard of significance.

- **Significant and unavoidable**—near-term or longer-term improvements would cause a substantial adverse change in the physical condition of the environment; there is no feasible mitigation available or, even with implementation of feasible mitigation measures, the near-
term or longer-term improvements would cause a significant adverse effect on the environment in excess of the specified standard of significance.

Mitigation Measures

CEQA Guidelines Section 15126.4(a) (1) states that an EIR “shall describe feasible measures which could minimize significant adverse impacts.” Mitigation measures identified in this EIR were developed during the analysis and are designed to reduce, minimize, or avoid potential environmental impacts associated with near-term or longer-term improvements. The mitigation measures are numbered to correspond to the impacts they address. For example, Mitigation Measure CUL-2.1 refers to the first mitigation measure for Impact CUL-2 in the cultural resources section. The description of the mitigation measure identifies which specific near-term or longer-term improvement alternatives the measure would apply to.

Topics Considered but Dismissed from Further Analysis

Although forestry resources are identified in Appendix G of the State CEQA Guidelines, this EIR does not include this topic because there would be no impact, as described below.

Forestry Resources

ACEforward improvements would not be located in or intersect forest lands within identified timberland production zones (TPZs), which are lands dedicated to timber growing for a 10-year period. There are no TPZs identified in the vicinity of ACEforward improvements throughout the five counties (Santa Clara, Alameda, San Joaquin, Stanislaus, and Merced) where improvements proposed (Gamble pers. comm., Meeks pers. comm., Merlie pers. comm., San Joaquin County Assessor’s Office pers. comm.). In addition, ACEforward improvements are generally located within or adjacent to existing developed railroad or roadway rights-of-way where forestry resources would not likely occur. Thus, there would be no impact on forestry resources.