6. ALTERNATIVES TO THE PROPOSED PROJECT

6.1. INTRODUCTION

To promote informed decision making, the purpose of the alternatives analysis under CEQA is to "focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project" (CEQA Guidelines, section 15126.6(b)). As discussed throughout Chapter 4 of this PEIR, the potentially significant impacts associated with VCIP implementation – which would occur over an approximately 40-to-50-year period, consisting of 10 years of construction, followed by operation, and decommissioning – can largely be avoided or mitigated to less than significant levels through the mitigation measures identified in this PEIR.[1] The following alternatives are evaluated to provide a comparison of relative impacts between the alternatives and development under the proposed VCIP over this period.

1. No Project Alternative: This alternative assumes that the VCIP would not be implemented, and instead incremental solar and infrastructure development would continue through individual projects alongside existing agricultural operations.

2. Reduced Project Size Alternative: This alternative assumes that only 72,000 acres of District-owned lands would be included in the Development Focus Areas (DFAs) for solar and energy storage facilities, rather than the approximately 136,000 acres identified in the proposed VCIP. (This area is shown in Figure 2.3-1 as "District-Owned Land.") The reduced DFAs would represent 52 percent of the planned DFAs under the proposed VCIP, and would have both a generating and an energy storage capacity of approximately 11,000 megawatts (MW). The Reduced Project Size Alternative would include the District-owned lands in the northern and east-central portions of the Plan Area. The planned five collection substations and connecting transmission lines would remain in this alternative, albeit at approximately half of their planned capacities. It is assumed that construction of the Reduced Project Size Alternative would be phased over 10 years, with an average buildout rate of about 1,100 MW per year.

Additional project alternatives, which were considered but not selected for detailed analysis, are summarized in Section 6.3.5., along with the reasons they were not analyzed further.

6.2. VCIP PROJECT OBJECTIVES

The VCIP is intended to promote the District's overall goals related to its mission of water supply reliability/water service efficiency, and state and industry goals for renewable energy, including objectives related to water supply, energy, climate change, long-term viability of agriculture in the region, and economic development. The specific objectives of each of the project proponents are set forth below.

[1] As described in Section 2. *Project Description*, construction of VCIP solar facilities would be phased, with construction expected to start in 2028 and with full buildout anticipated in 2038. It is anticipated that projects would be decommissioned in the order developed. For example, it is expected that the first projects constructed in 2029 would be the first to be decommissioned, whereas the final projects constructed in 2038 would be the last to be decommissioned. Accordingly, the proposed VCIP implementation period is expressed as a range.

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Westlands Water District

- Utilize the District's location, topography, and excellent insolation (solar radiation energy) attributes to promote the siting of solar generation, storage, and transmission of renewable energy, in furtherance of federal, state, and local renewable energy and carbon reduction goals over the next 25 years or more.

- Balance the promotion of long-term but temporary development of solar energy projects and associated storage and transmission facilities with the protection of environmental resources, which may include, among other things, protection of agricultural, biological, cultural, and water resources.

- Avoid or substantially reduce environmental impacts associated with solar development, construction, and operation through low-impact design, short construction timeline with minimal ground disturbance, low amounts of impervious surfaces, the continued use of existing habitat by present wildlife, co-location of energy and agricultural activities where practicable,

- Ensure financing of decommissioning and site reclamation at the end of the project life in order to restore the site to conditions suitable for agricultural use.

- Utilize existing facilities, roads, and other infrastructure to the extent feasible.

- Identify preferred transmission corridors to efficiently convey renewable energy from VCIP projects to the statewide electricity market and reduce dependence on, and environmental impacts such as wildfire risk associated with, long-distance transmission.

- Contribute to the solution of reduced water supply reliability by: (i) providing productive long-term but temporary repurposing of those lands from irrigated agriculture and for renewable energy production, and (ii) ensuring irrigated agriculture on the repurposed lands can be restored following the decommissioning of the renewable energy projects, particularly with advancement of water conservation and irrigation technologies.

- Facilitate implementation of the Sustainable Groundwater Management Act (SGMA) by: (i) contributing to the conjunctive use of groundwater for irrigation, (ii) promoting drought resiliency, (iii) reducing the likelihood of undesirable results like subsidence, including in the vicinity of sections of the San Luis Canal/California Aqueduct, and (iv) implementing the VCIP pursuant to the Westside Subbasin Groundwater Sustainability Plan (GSP) in conjunction with other agricultural land repurposing management actions.

- Address the chronic shortage of CVP contract water deliveries by promoting repurposing of farmland and by facilitating the redirection of scarce surface water allocations to other productive agricultural land within the District.

- Provide utility-scale power generation on farmland that has been fallowed or removed from irrigated agriculture due to lack of a reliable surface water supply, which reduces pressure to develop renewable energy on prime agricultural land elsewhere. Promote expeditious and efficient repurposing of farmlands through a comprehensive planning process to address transmission capacity constraints on further incremental clean energy development in the District.

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- Provide for development of utility-scale solar generation facilities on highly disturbed lands, which provide minimal habitat value for wildlife.

- Provide a low-impact alternative location for the siting of utility-scale renewable energy development that might otherwise occur on lands with high habitat value for protected wildlife species (such as the Mojave Desert).

- Contribute to overall reduction in greenhouse gas emissions by generating electricity that is not based on the combustion of fossil fuel.

- Positively contribute to the local economy through stimulation of economic activity such as creation of secondary multiplier employment and the purchase of materials and services.

- Provide community benefits through job creation and training programs for local residents, use of local businesses and vendors, financial contributions to community development projects and programs, and increased property tax and sales tax revenues.

Golden State Clean Energy

- Help implement the state's Global Warming Solutions Act of 2006 (AB 32), as supplemented in 2016 by SB 32, by facilitating the development of up to 21,000 MW of non-fossil fuel based sources of electricity that will replace existing fossil-based generation and thereby contribute to achieving the state's goal of carbon neutrality by 2045.

- Provide new sources of energy storage that support the state in achieving its renewable energy and carbon neutrality targets, and provide transmission facilities for conveying the renewable energy to the state's electrical load centers.
- Potentially provide the District with a direct source of renewable energy for operation of the District's Groundwater Management Program wells, filtration booster pumps, and other District owned facilities.
- Provide for utility-scale energy generation on disturbed lands which provide minimal habitat value for wildlife.
- Provide the foundation for a renewables development program which will generate an average of 6,000 construction jobs for at least 10 years, in addition to approximately 800 permanent jobs and approximately 400 part-time jobs upon VCIP buildout.
- Promote local hiring by establishing a job creation and training program for local residents.
- Positively contribute to the local economy through stimulation of economic activity such as creation of secondary multiplier employment and local procurement of equipment, goods and services.

- Provide community benefits through increased property tax revenues and increased sales tax receipts through local procurement and establishment of local points of sale for materials sourced from outside the area.

6.3. ALTERNATIVES ANALYSIS

6.3.1. No Project Alternative

CEQA Guidelines section 15126.6(e)(1) requires that the "specific alternative of 'no project' shall…be evaluated along with its impact." Therefore, this chapter includes a description and evaluation of the environmental impacts associated with the No Project Alternative, relative to those resulting from the proposed project, including a discussion of the ability of the No Project Alternative to meet the project objectives. The No Project Alternative assumes that incremental energy resource and infrastructure development and mitigation for such projects would continue to occur within the District's service area on an ad hoc basis in the absence of a comprehensive plan for such development.

Under the No Project Alternative, the District would not adopt the VCIP to provide a strategic approach to renewable energy development within the Plan Area (i.e., the Fresno County portion of the District's service area). Instead, the District would likely execute purchase or lease agreements with individual developers for renewable energy projects on District-owned lands on an incremental basis as it has done over the past 15 years. Private landowners would also be likely to enter similar arrangements for renewable development on their lands, as has been the case in the recent past. Each renewable energy project would be responsible for connecting to the state's power grid, which would involve the construction of gen-tie lines of various lengths to the nearest collection substations. However, conveying the generated power to the state's load centers would be inhibited by increasing capacity constraints in the bulk transmission system. While planning efforts have been ongoing at the state level to address transmission capacity, there are no specific plans or programs to construct additional transmission capacity in the San Joaquin Valley. Without substantial upgrades to the transmission corridors linking the District to the load centers in northern and southern California, there are limits to the amount of exportable renewable energy that can be produced in the District. Given these constraints, the maximum amount of deliverable renewable energy generated within the District under the No Project Alternative is unknown and cannot be reliably forecasted, but it is likely substantially lower than the amount that would be generated under the VCIP.

The impacts associated with the No Project Alternative are discussed below, relative to the existing environmental baseline and as compared to impacts associated with implementation of the proposed VCIP.

Aesthetics. Given the overall scale of energy development that would occur under the VCIP, and the contiguous nature of much of that development, the planned VCIP solar development would substantially change the character of portions of the Plan Area from cultivated and fallowed farmland to solar and battery energy storage system (BESS) facilities and supporting infrastructure. As discussed in Section *4.1. Aesthetics*, while the visual impacts of individual energy projects on nearby receptors could be mitigated, the overall visual effect of VCIP implementation would be significant and unavoidable.

Under the No Project Alternative, the visual impacts from incremental development of individual energy projects would not be significant. However, under this alternative, the anticipated cumulative development of multiple projects in the areas most suitable for renewable energy facilities within the District (e.g., the DFAs identified by the proposed VCIP) would result in a visually significant and unavoidable impact. The overall scale of cumulative energy development would be limited by capacity constraints in the transmission system serving the San Joaquin Valley. Therefore, while the No Project Alternative would result in significant cumulative visual impacts, the level of overall visual impacts would be lower than those associated with buildout under the VCIP.

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Agricultural Resources. Of the lands identified in the VCIP as DFAs planned for solar/BESS projects, approximately 52 percent consist of "Farmland" and about 48 percent comprise non-Farmland under CEQA. In general, the Farmland areas consist of private lands, and the non-Farmlands generally comprise District-owned lands that have been retired from irrigated agriculture. All energy facilities on the DFAs would be decommissioned and each site would be reclaimed in accordance with an approved Reclamation Plan. All projects on repurposed cropland that are eligible for allocation or delivery of irrigation water (Eligible Cropland) would be reclaimed for the resumption of farming (WWD 2024b). All projects on repurposed Farmlands would be reclaimed after decommissioning, with the exception of 60 acres of Prime Farmland which would be permanently converted at the location of VCIP Substation No. 5. As such, the repurposing of the Farmlands for energy generation would be temporary but long-term and is conservatively considered in this PEIR to result in significant unavoidable impacts related to agricultural resources at the plan level. Although most farmland would not be permanently converted, the permanent conversion of farmland at the Substation No. 5 site would not be fully mitigable and would represent a significant and unavoidable impact of VCIP implementation.

Under the No Project Alternative, it is likely that energy development would be focused on the District-owned lands, mainly because they are clustered together and thus more centralized for purposes of efficient energy collection. The private lands are more dispersed and would be relatively inefficient to serve for energy collection.[2] Thus, under conditions where overall transmission capacity is constrained, it is likely that the District's lands would be favored for development. Since the private lands consist mostly of Farmland, the relatively lower level of incremental cumulative development that would occur on those lands, compared to the level of development expected to occur on the non-Farmlands of the District, would result in a smaller acreage of Farmland being repurposed for energy generation. Thus, VCIP implementation would result in greater amount of Farmland that would be temporarily repurposed relative to the No Project Alternative. As such, the agricultural impacts from VCIP implementation would be relatively greater than the agricultural impacts associated with the No Project Alternative.

Air Quality. During the construction phases, the proposed VCIP energy development would result in an incremental increase in air emissions due to on-site construction activity and from traffic generated by delivery trucks and commuting construction workers. However, the air quality impacts occurring during construction would be reduced due to the relatively minor amount of grading required on the flat terrain, and would be mitigated to less than significant by mitigation measures implemented in conformance with San Joaquin Valley Air Pollution Control District (SJVAPCD) requirements. The air emissions from commuting construction workers would be substantially reduced by trip reduction measures required to relieve traffic congestion and maintain acceptable service levels on travel routes to the VCIP construction sites. Once operational, the energy facilities would generate very low levels of air pollutants due to the low levels of operational and maintenance activities (see Section *4.3. Air Quality*).

Under the No Project Alternative, individual solar projects and related infrastructure would generate air emissions, but these would be mitigated by measures required by the SJVAPCD. Since the overall level of development is expected to be lower under the No Project Alternative due to transmission capacity constraints, the overall air emissions from construction would also be lower under the No Project Alternative, relative to VCIP implementation. Once the solar/BESS project facilities are operational, emissions would be higher under the No Project Alternative because relatively more agriculturally related operations (including disking and weed control

[2]As discussed in Section *6.3.5.*, the dispersed nature of these privately owned lands makes a reduced project size alternative limited to such privately owned lands infeasible and unable to satisfy the project objectives.

on fallowed land) would be expected to continue, as solar/BESS development would be limited due to the transmission capacity constraints within the District. In total, the emissions associated with those agricultural activities throughout the DFAs would be greater than operational emissions of potential solar/BESS facilities under the VCIP. As such, the results would be mixed with air emissions of the No Project Alternative being less during construction but greater during operation. The impacts from solar and related development would be mitigated to less-than-significant levels under both the VCIP and the No Project Alternative. However, under the No Project Alternative, emissions of air quality pollutants from agricultural activities (e.g., particulate matter) would continue (i.e., not be mitigated) on lands within the VCIP's DFAs. Consequently, when all lifetime emissions from VCIP construction, operation, and decommissioning are compared to overall emissions that would occur under the No Project Alternative, the emissions associated with the No Project Alternative would be greater. In summary, the overall air quality impacts associated with the No Project Alternative would be greater than those associated with VCIP implementation.

Biological Resources. Implementing the VCIP would result in potentially significant impacts to wildlife species, although these impacts would be reduced to less than significant by mitigation measures to be implemented in conjunction with each energy project, specifically measures to protect any special-status species during construction (see Section *4.4. Biological Resources*). The No Project Alternative would also result in potentially significant impacts to biological resources, but these impacts would also be mitigated to less than significant through similar mitigation measures that would be imposed on individual projects as conditions of approval. However, since the No Project Alternative would result in less overall land disturbance than VCIP implementation, it would result in a lower potential for biological impacts. Thus, the No Project Alternative would result in a lower level of biological impacts than VCIP implementation.

Cultural and Tribal Cultural Resources. In general, the archaeological sensitivity of lands within the Plan Area is low, with a few sensitive areas occurring along drainage courses and along the base of the foothills. Any potential impacts to previously undiscovered resources would be mitigated by contingent measures to be implemented in the event any artifacts are encountered during grading and excavation for each VCIP project, thereby reducing any potential project impacts to less than significant (see Section *4.5. Cultural and Tribal Cultural Resources*). Under the No Project Alternative, the potential for impacts to cultural resources at any given project site would similarly be generally low and mitigable. However, since the No Project Alternative would result in less overall land disturbance than VCIP implementation, it would result in less potential for cultural resources impacts. Therefore, the No Project Alternative would result in less potential impact to cultural resources than VCIP implementation.

Energy. As discussed in Section *4.6. Energy*, the construction, operation, and decommissioning of the VCIP projects would be subject to an array of regulatory requirements related to the efficient use of fuel, use of renewable energy sources, solid waste reduction and diversion, and energy efficient building standards, among other requirements. These requirements would ensure that VCIP implementation would not result in the wasteful, inefficient, or unnecessary use of energy. In addition, 21,000 MW of the renewable energy generated under the VCIP would allow for the decommissioning of equivalent generation from natural gas fired power plants, which are approximately 940 times less energy efficient on an operational basis. As such, implementation of the VCIP would generate substantial energy-related environmental benefits.

Under the No Project Alternative, the amount of energy expended in project construction, operation, and decommissioning would be less than overall consumption by VCIP projects. However, the overall amount of

renewable energy generation would also be less than would occur under full operation of the VCIP projects.[3] The amount of fossil generation avoided by the VCIP projects would be greater than that offset under the No Project Alternative, and would more than compensate for the greater amount of energy consumed overall by the VCIP projects. As such, the No Project Alternative would result in fewer and less substantial environmental benefits than the VCIP over the subject implementation period. Therefore, selecting the No Project Alternative instead of the VCIP would result in greater energy impacts than those associated with VCIP implementation.

Geology, Soils and Paleontology. VCIP energy development would be exposed to geologic and soils hazards, although any potential hazards would be mitigated to less than significant through mitigation measures to be implemented in conjunction with each VCIP project (see Section *4.7. Geology, Soils, and Paleontology*). Regarding paleontological resources, the Plan Area has generally very low sensitivity for the discovery of fossils, and any fossil discoveries during VCIP implementation would be mitigated by required protection and recovery protocols. Under the No Project Alternative, the potential for geology, soils, and paleontological impacts at any given project site would similarly be generally low and mitigable. However, since the No Project Alternative would result in less overall land disturbance than VCIP implementation, it would result in lower potential for geology, soils, and paleontological impacts. Therefore, the No Project Alternative would result in lower levels of geology, soils, and paleontological impacts than VCIP implementation.

Greenhouse Gas Emissions. Under the VCIP implementation, the greenhouse gases (GHGs) emitted in the construction, operation, and decommissioning of solar/BESS facilities and supporting infrastructure would be more than offset by the substantial avoided emissions from fossil-fueled power plants with equivalent generating capacity. The emissions generated by these gas-fired power plants offset by potential VCIP projects would be approximately 251 times greater than emissions under the VCIP. Under full buildout, the VCIP solar facilities would represent an annual net reduction of 13,408,070 MTCO2e/yr, or a 99.6 percent net reduction in GHG emissions compared to the natural gas facilities replaced by the VCIP (see Section *4.8. Greenhouse Gas Emissions*). As such, the VCIP would generate substantial environmental benefits related to GHG emissions reductions.

The No Project Alternative would involve lower overall levels of development, and thus would result in lower overall emissions of GHGs during construction, operation, and decommissioning. However, the lower levels of renewable energy generation under the No Project Alternative within the Plan Area would result in a less substantial net offset of fossil generation and therefore fewer environmental benefits. VCIP renewable development would result in a greater net avoidance of GHG emissions overall and thus would have a greater beneficial effect in terms of reducing the effects of climate change and achieving the state's GHG reduction targets, relative to the No Project Alternative. Therefore, selecting the No Project Alternative instead of the VCIP could result in higher levels of GHG emissions than those associated with VCIP implementation, in the sense that the No Project Alternative would forego opportunities in the Plan Area for offsetting the impacts of fossil-fueled generation which would continue to exacerbate adverse climate change effects.

Hazards and Hazardous Materials. During construction, operation, and decommissioning, the VCIP energy projects would involve the use of various fuels and materials which are classified as hazardous materials. However, hazardous materials management plans and response plans would be required for each solar/BESS

[3] In the absence of a centralized power collection system as proposed for the VCIP, the amount of power that could be exported from the Plan Area would be very limited given the capacity constraints in the transmission system. While the maximum amount of power that could be generated under the No Project Alternative is unforeseeable, it would be substantially less than the 21,000 MW proposed for the VCIP.

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facility and would be implemented in case of accidental spill or unauthorized release of hazardous materials, resulting in a less-than-significant hazardous materials impact. In addition, for the VCIP projects, the potential for residual contamination from previous agricultural and petroleum industry operations within each project site would be fully investigated and remediated as appropriate. By temporarily repurposing farmlands, which have a greater overall potential for release of hazardous materials during farming operations compared to implementation of the VCIP, it is anticipated that the VCIP would have environmentally beneficial effects. Other potential hazards, such as development in proximity to oil and gas wells, safety hazards associated with existing fuel pipelines and electrical transmission lines, fire hazard from BESS, potential exposure to valley fever, potential exposure to electromagnetic fields (EMFs) from VCIP transmission and gen-tie lines, photo-voltaic heat island effects, or hazards to aviation, would all be less than significant or reduced to less than significant by mitigation measures identified in this PEIR. Thus, the potential impacts due to hazards or hazardous materials associated with implementing the proposed VCIP would be reduced to less-than-significant levels (see Section *4.9. Hazards and Hazardous Materials*). As such, implementation of the VCIP would result in environmental benefits in this regard. In sum, under implementation of the proposed VCIP, the contamination from past and future sources of hazardous materials would be reduced to less than significant levels (see Section *4.9. Hazards and Hazardous Materials*).

Under the No Project Alternative, the lands that would be developed for renewable energy and related infrastructure would be subject to the same conditions and requirements as addressed above for VCIP implementation. Since the No Project Alternative would involve relatively less development overall, the potential for hazardous materials impacts to occur during construction, operation, and decommissioning would be lower than for VCIP implementation. However, since there would be more farmland remaining in production under the No Project Alternative, there would also be greater overall potential for release of hazardous materials associated with the remaining farming operations (e.g., fertilizers, pesticides, fuels, lubricants, and solvents). In other words, the No Project Alternative would not fully result in the environmentally beneficial effects associated with long-term but temporary repurposing of farmland. Yet, it must be noted that the potential for site contamination is low given that agricultural operations would handle and utilize pesticides and herbicides in a safe manner as directed in manufacturers' specifications, although there is always the risk of uncontrolled leaks and spills of agricultural chemicals and fuels. Nevertheless, on balance, selecting the No Project Alternative instead of implementing the proposed VCIP would result in a slightly greater risk of hazardous material contamination relative to VCIP implementation.

In summary, the potential for hazardous materials impacts is low for both the planned VCIP implementation and the No Project Alternative, with no reliably forecasted difference between them in terms of impact level. Thus, the No Project Alternative would result in a similar potential for hazardous materials impacts compared to VCIP implementation.

Hydrology and Water Quality: Regarding erosion, sedimentation and runoff, VCIP implementation would result in very small increases in site coverage by impervious surfaces, and would not result in off-site discharges of stormwater runoff. The potential for erosion and sedimentation during construction and decommissioning would be minimized through standard erosion control measures, as required (see Section *4.10. Hydrology and Water Quality*). The No Project Alternative would result in less overall development in the Plan Area, and thus would have a lower potential to result in hydrology and water quality impacts. Therefore, the No Project Alternative would result in a lower level of hydrology and water quality impacts related to erosion, sedimentation, and runoff than VCIP implementation, although the impact would be less than significant in both cases.

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Regarding consistency with implementation of a sustainable groundwater management plan, the VCIP would be implemented as an agricultural repurposing program pursuant to the GSP. As provided in Section *4.10. Hydrology and Water Quality*, the GSP identifies the VCIP as a potential groundwater management action that would promote the Subbasin's long-term groundwater sustainability. Thus, implementation of the VCIP would significantly advance the District's project objective of facilitating SGMA implementation. Because the No Project Alternative would not be implemented pursuant to the GSP, it would not advance the District's efforts to implement the GSP and enhance groundwater sustainability. Nevertheless, because all groundwater use related to the No Project Alternative would be subject to the GSP, it is assumed that the No Project Alternative would not conflict or obstruct implementation of the GSP.

In sum, the results would be mixed, as the No Project Alternative would result in a lower level impacts related to erosion, sedimentation, and runoff than VCIP implementation, whereas the VCIP would directly advance SGMA implementation and more directly promote groundwater sustainability.

Land Use and Planning: As discussed in Section *4.11. Land Use and Planning*, VCIP implementation would be consistent with all applicable plans, policies and regulations, and thus would have no impact in this regard. Under the No Project Alternative, all proposed development would be required to be consistent with applicable plans, policies, and regulations to receive project approval. As such, there would be no land use and planning impact associated with the No Project Alternative. Therefore, the level of impact under the No Project Alternative would be same as the impact under the VCIP.

Mineral Resources: As discussed in Section *4.12. Mineral Resources*, the only mineral resource sites within the Plan Area are a few exploratory oil wells which are not near any contemplated VCIP facilities. Thus, the impact of VCIP implementation on mineral resources would be less than significant. The No Project Alternative would be unlikely to have an impact on these few mineral resource sites since CalGEM would require any projects to be designed to provide any active or abandoned wells with secure separation from project facilities. Therefore, the impact of No Project Alternative would be similar to the impact of VCIP implementation on mineral resources.

Noise: VCIP implementation would result in increased noise from construction and decommissioning, as well as increased traffic noise along roadways used for truck deliveries and commute trips by construction workers, although the noise impacts from these construction-related activities would be temporary and less than significant. Once completed, the noise from the operation of potential VCIP facilities would be mitigated by the application of required setbacks and other measures to ensure that operating equipment noise reaching sensitive receptors meets applicable noise standards (see Section *4.13. Noise*). Under the No Project Alternative, the construction noise from individual projects would also be temporary and less than significant, and the operational noise would also be subject to mitigation. However, since less overall development would occur under the No Project Alternative, the potential noise generation would also be less than under the VCIP. Thus, the No Project Alternative would result in a lower level of noise impacts than VCIP implementation, although the impacts would be less than significant in both cases after mitigation.

Public Services: Projects under the proposed VCIP would result in a small increase in demand for public services such as police and fire protection, and this impact would be less than significant (see *Section 4.14. Public Services*). The No Project Alternative would result in less overall development and therefore would generate relatively less demand for fire and police services. Thus, the No Project Alternative would result in less public services impacts than the VCIP projects, although the impact would be less than significant in both cases.

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Transportation: During the construction and decommissioning phases, the potential VCIP projects would result in commuter trips to and from their sites by construction workers, and truck trips for delivery of equipment and materials. Given the geographic concentration of the contemplated VCIP implementation, especially in the early years, the VCIP traffic would result in potential level of service (LOS) impacts (the Fresno County General Plan Policy TR-A.3 imposes a LOS requirement). However, these impacts would be mitigated by required trip reduction measures, which would also result in substantial reductions in vehicle miles traveled (VMT). During project operations, the small operations and maintenance staff associated with potential VCIP projects would generate minimal traffic, which would be well below VMT screening levels (see Section *4.15. Transportation*). The No Project Alternative would result in less overall development, and the traffic generated by incremental projects would likely be more dispersed than under the VCIP. Thus, the traffic volumes on any given roadway would likely be lower under the No Project Alternative. Construction VMT would also likely be lower under the No Project Alternative, although this would be somewhat offset by the greater relative reductions in VMT under the VCIP resulting from substantial required trip reduction measures. On balance, the No Project Alternative would generally result in less traffic impacts than the VCIP projects, although the impact would be less than significant in both cases.

Utilities and Service Systems: The potential VCIP facilities would require water supply, wastewater disposal, and solid waste disposal (see Section *4.17. Utilities and Service Systems*). The VCIP's impacts on these utilities and service systems are summarized below, in comparison with the No Project Alternative.

Water Supply

The potential VCIP projects would require water supply during both the construction and operational phases. During grading and construction, water would be needed for dust control, equipment and vehicle cleaning, and domestic use. As discussed in Section *4.17. Utilities and Service Systems*, construction water requirements would be approximately 0.15 acre-feet per acre of construction. It is expected that existing on-site agricultural wells would provide non-potable water for non-domestic use during construction, and that potable water for consumption by construction workers would be provided by bottled water brought to the site. Operational water demands would include water for periodic panel washing and general maintenance and cleaning. It is estimated that operational water requirements would average 0.004 acre-feet per acre per year. For projects on District-owned land, operational water would be provided from the District's contracted Central Valley Project (CVP) supply. For projects on private lands, operational water would be obtained from the underlying landowner from the owner's overall allocation of CVP contract water, groundwater, and/or supplemental surface water supplies procured by the District or private landowners – with sufficient groundwater supplies available to meet such operational water demands. For potential VCIP projects on District and privately-owned land, extremely minor demands for potable water supplies would be met through a water delivery service, which would provide municipal water from a source outside the Subbasin.

Under the No Project Alternative, less PV solar development would occur compared to VCIP implementation, so more land would be available for agricultural cultivation. Similar to baseline conditions, much of this land would be fallowed under the No Project Alternative due to overall water supply constraints. However, unlike the No Project Alternative, the proposed VCIP would be implemented as an agricultural land repurposing project pursuant to the GSP. Specifically, VCIP implementation would create an orderly framework for significant fallowing that has and will continue to occur and promote water supply reliability while utilizing the physical attributes that make the DFAs an excellent location for utility-scale solar generation and storage facilities. Under VCIP implementation, the relatively low water demands for facility construction and operation would facilitate the redirection of scarce water resources to productive agricultural lands with the most

pressing needs. This would increase water supply reliability within the overall farming unit(s) within the Plan Area. In sum, the implementation of VCIP would advance the District's objectives related to water supply and SGMA implementation, which would result in significant environmentally beneficial effects. In contrast, due to its lack of a coordinated approach, the No Project Alternative would not directly advance these objectives and would result in less substantial environmental benefits. Instead, the No Project Alternative would maintain the status quo which would not support progress toward achieving groundwater sustainability in the District, and therefore would have a greater impact on water supply than would occur under VCIP implementation.

Wastewater

The wastewater disposal for the potential VCIP projects would be provided by portable chemical toilets during construction and decommissioning, with off-site disposal by sanitary contractors. During facility operation, wastewater disposal and treatment would be provided by onsite septic systems, which would be designed in accordance with County requirements to avoid impacts to groundwater. Under the No Project Alternative, wastewater treatment and disposal would be handled in the same way as for the potential VCIP projects. However, since less overall development would occur under the No Project Alternative, the potential for wastewater impacts would be relatively lower. Therefore, the No Project Alternative would result in lower level of wastewater disposal impact than VCIP implementation, although impacts would be less than significant in either case.

Solid Waste

With potential VCIP implementation, solid waste would be generated during construction, operation, and decommissioning. There are no constraints to solid waste collection, and there is sufficient landfill capacity to accommodate non-recyclable waste from the VCIP facilities, so the impact would be less than significant. Under the No Project Alternative, because less overall development would occur, there would be lower overall quantities of solid waste generation, compared to VCIP implementation. Therefore, the No Project Alternative would result in a lower level of potential solid waste disposal impact than VCIP implementation, although the impacts would be less than significant in either case.

Wildfire: As discussed in Section *4.18. Wildfire*, none of the lands within the VCIP Plan Area are classified as Very High Fire Hazard Severity Zone, and VCIP implementation would have a less-than-significant impact regarding potential exposure of people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. Since the No Project Alternative would be located entirely within the VCIP Plan Area and similar renewable energy facilities would be developed, the potential wildfire impacts under this alternative would be similar and less than significant.

In summary, the No Project Alternative would result in lower levels of impact than VCIP implementation in some categories, but would result in greater or similar levels of impact in others. The No Project Alternative would result in relatively lower levels of impact in the categories of biological resources, cultural and tribal cultural resources, geology, soils and paleontology, noise, public services, transportation, wastewater disposal, and solid waste disposal, although all these impacts would be less than significant or fully mitigable with VCIP implementation. The No Project Alternative would result in greater levels of impact than VCIP implementation in the categories of air quality, energy, greenhouse gas emissions, and water supply, and similar levels of impact to VCIP implementation in terms of hazards and hazardous materials, hydrology and water quality, mineral resources, land use and planning, and wildfire. In addition, while VCIP implementation would result in significant and unavoidable impacts relative to aesthetics and agricultural resources, the No Project Alternative would also result in significant and unavoidable aesthetic and agricultural impacts, and thus would not eliminate or

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substantially reduce such impacts. Therefore, the No Project Alternative is not an environmentally superior alternative to implementation of the proposed VCIP. Moreover, the No Project Alternative would not go as far as the VCIP in fulfilling the project objectives, as restated at the beginning of this chapter, particularly the objectives related to enhancing water supply reliability, facilitating SGMA implementation, and helping meet the state's renewable energy and greenhouse gas reduction targets through long-term but temporary repurposing of farmland for the generation of fossil-free sources of electricity. (See Section *3.3.3.* for detailed discussion of the environmentally superior alternative.)

6.3.2. Reduced Project Size Alternative

This alternative assumes that only 72,000 acres, which are owned by the District and have been removed from irrigated agriculture, would be included in Development Focus Areas for development of solar and energy storage facilities. (This area is shown in Figure 2.3-1 as "District-Owned Land.") Renewable energy projects would not occur on the 64,000 acres of privately owned lands, as contemplated by the VCIP. Instead, these privately owned lands would remain in agricultural cultivation or fallowed. Under the Reduced Project Size Alternative, the reduced DFAs would represent 53 percent of the proposed DFAs under the VCIP, and would have a generating capacity of approximately 11,000 MW, along with an equal amount of energy storage. The Reduced Project Size Alternative would include the District-owned lands in the northern and east-central portions of the Plan Area. The planned five substations and connecting transmission lines would remain in this alternative, albeit at approximately half of their planned capacities and sizes. It is assumed that construction of the Reduced Project Size Alternative would be phased over a period of 10 years, with an average buildout rate of about 1,100 MW per year. Like the VCIP, projects under the Reduced Project Size Alternative would also have an operations period of approximately 35 years.

The impacts associated with the Reduced Project Size Alternative are discussed below, relative to the impacts associated with VCIP implementation.

Aesthetics. Given the overall scale of energy development that would occur under the VCIP, and the contiguous nature of much of that development, VCIP implementation would substantially change the character of portions of the Plan Area from cultivated and fallowed farmland to solar and BESS facilities and supporting infrastructure. As discussed in Section *4.1. Aesthetics*, while the visual impacts of individual energy projects on nearby receptors could be mitigated, the overall visual effect of VCIP implementation would be significant and unavoidable.

Under the Reduced Project Size Alternative, the visual impacts from individual VCIP projects would not be significant, but the concentrated solar/BESS development of large contiguous areas in the east-central portion of the Plan Area under this alternative would result in a significant and unavoidable visual impact. For example, motorists traveling along SR-33 between Three Rocks and Mendota would still experience 13 miles of near-continuous solar development on both sides of the highway. However, since the overall scale of development under the Reduced Project Size Alternative would be substantially smaller than implementation of the proposed VCIP, the overall visual impact under this alterative would be lower but still significant. In summary, while the Reduced Project Size Alternative would result in significant and unavoidable visual impacts, as would occur with VCIP implementation, the level of overall visual impacts would be lower than those associated with buildout under the VCIP.

Agricultural Resources. Of the lands identified in the VCIP as DFAs planned for solar/BESS, approximately 52 percent consist of "Farmland" (e.g., Prime Farmland and Farmland of Statewide Importance as mapped by CDOC)

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and about 48 percent comprise non-Farmland. In general, the Farmland areas consist of private lands, and the non-Farmlands are District-owned lands that have been retired from irrigated agriculture. While approximately 6,000 acres of District-owned land within the proposed DFAs are mapped as Farmland, these lands have also been removed from irrigated agriculture. All projects on repurposed cropland that are eligible for allocation or delivery of irrigation water (Eligible Cropland) would be reclaimed for the resumption of farming (WWD 2024b). All projects on repurposed Farmlands would reclaimed after decommissioning, with the exception of 60 acres of Prime Farmland which would be permanently converted at the location of VCIP Substation No. 5. As such, except for these 60 acres, the repurposing of the Farmlands for energy generation/BESS facilities would be temporary. Although most Farmland would not be permanently converted, the permanent conversion of farmland at the Substation No. 5 site would not be fully mitigable and would represent a significant and unavoidable impact of VCIP implementation.

Under the Reduced Project Size Alternative, implementation of the proposed VCIP would be confined to the District-owned lands, most of which are not categorized as Farmland, and none of which are under Williamson Act contracts. This alternative would exclude private lands, most of which consist of Farmland (e.g., Prime Farmland and Farmland of Statewide Importance as mapped by CDOC). Thus, although VCIP implementation would not result in permanent Farmland conversion (except for the 60-acre site of VCIP Substation No. 5), it would result in temporary repurposing of Farmland, while the Reduced Project Size Alternative would result in relatively little repurposing of Farmland (i.e., since most District-owned lands are mapped as Farmlands of Local Importance which is not a category of Farmland under CEQA). As such, the agricultural impacts from overall VCIP implementation, would be relatively greater than the agricultural impacts associated with the Reduced Project Size Alternative. However, the Reduced Project Size Alternative would likely retain most of the infrastructure proposed for the VCIP including the backbone transmission corridor and the five collection substations in their present locations. Since substation No. 5 would involve the permanent conversion of up to 60 acres of Prime Farmland under this alternative, this would represent a significant and unavoidable impact which would not be avoided or substantially reduced in this alternative.

Air Quality. During the construction phases, VCIP implementation would result in an incremental increase in air emissions due to on-site construction activity and from traffic generated by delivery trucks and commuting construction workers. However, the air quality impacts occurring during construction would be minimized due to the relatively minor amount of grading required on the flat terrain, and would be mitigated to less-than-significant levels by mitigation measures implemented in conformance with Air District requirements. The air emissions from commuting construction workers would be substantially reduced by trip reduction measures required to relieve traffic congestion and maintain acceptable service levels on travel routes to the VCIP construction sites. Once operational, the energy facilities would generate very low levels of air pollutants due to the low levels of operational and maintenance activities (see Section *4.3. Air Quality*).

Under the Reduced Project Size Alternative, the overall level of development would be approximately half (52 percent) of that planned under VCIP. Thus, the overall project-related air emissions would also be approximately half of those under the Reduced Project Size Alternative, relative to VCIP implementation. For example, the total annual VCIP construction criteria pollutant emissions illustrated in Table 4.3-5 would be proportionally lower under the Reduced Project Size Alternative. However, this alternative would also include approximately 64,000 acres of agricultural land that would not be repurposed under the VCIP. Since air emissions associated with agricultural cultivation and managing fallowed land would be far greater than operational emissions from an equivalent area of VCIP development, and since project operations would occur for a substantially longer period than project construction and decommissioning, the overall lifetime air quality impacts associated with the Reduced Project Size Alternative would be greater than would occur under VCIP implementation.

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This analysis also considers the comparative air quality impacts that would occur in the vicinity of the Cantua Creek community, which contains the highest concentration of sensitive receptors in the VCIP DFAs. It is noted that compared to VCIP development, construction-related air quality emissions that would occur in the vicinity of Cantua Creek would be lower under the Reduced Project Size Alternative. This is because, under the VCIP, most of the contemplated projects in this area would occur on privately owned land (see *Chapter 3. Environmental Setting*, Figure 3.1-5), which would not be developed under this alternative. The VCIP would include portions of three DFAs within one mile of the Cantua Creek Community. Under the Reduced Project Size Alternative, the nearest DFA would be located over one mile to the southwest on District-owned land. Without the proposed solar/BESS development in the vicinity, there also would be no need for a potential gen-tie line to pass through the vicinity of Cantua Creek. However, during the period of project operations, the privately-owned VCIP DFA lands not repurposed under the Reduced Project Size Alternative would continue to be cultivated and/or managed as fallowed fields, which would generate substantially greater air emissions in the vicinity of Cantua Creek than development under VCIP. As provided in *Section 4.3 Air Quality*, the VCIP's potential to expose sensitive receptors to substantial pollutant concentrations would be less than significant, and this would also be anticipated to be the case under the Reduced Size Project Alternative. Ultimately, all air quality impacts with mitigation, to the extent required, would be less than significant under the VCIP and the Reduced Project Size Alternative. However, the comparative air quality impacts associated with the Reduced Project Size Alternative would be greater than those associated with VCIP implementation.

Biological Resources. Implementation of projects under the VCIP would result in potential impacts to protected wildlife species, although these impacts would be reduced to less than significant by mitigation measures to be implemented in conjunction with each VCIP project (see Section *4.4. Biological Resources*). The Reduced Project Size Alternative would also result in potential impacts to biological resources, and these impacts would also be mitigated to less than significant. However, since the Reduced Project Size Alternative would result in less overall land disturbance than VCIP implementation, it would result in a lower potential for biological impacts. Additionally, as the Reduced Project Size Alternative would only be implemented on non-irrigated lands, a smaller range of habitat types would be affected compared to the VCIP. For example, whereas the DFAs under the VCIP would contain 33,610 acres of orchards/vineyards, little to none of this habitat (albeit habitat of low value, especially for raptors) exists within the previously identified 72,000 acres of District-owned lands. Thus, the Reduced Project Size Alternative would result in a similar or slightly lower level of potential biological impacts than VCIP implementation.

Cultural and Tribal Cultural Resources. In general, the archaeological sensitivity of lands within the Plan Area is low, with a few sensitive areas occurring along drainage courses and along the base of the foothills. Any potential impacts to previously undiscovered resources would be mitigated by contingent measures to be implemented in the event any artifacts are encountered during grading and excavation for each potential VCIP energy project, thereby reducing any potential project impacts to less-than-significant levels (see Section *4.5. Cultural and Tribal Cultural Resources*). Under the Reduced Project Size Alternative, the potential for impacts to cultural resources at any given project site would similarly be low and mitigable. However, since the Reduced Project Size Alternative would result in less overall land disturbance than VCIP implementation, it would result in a lower potential for cultural resources impacts. Therefore, the Reduced Project Size Alternative would result in lower levels of impacts to cultural resources than the proposed VCIP.

Energy. As discussed in Section *4.6. Energy*, the construction, operation, and decommissioning of potential VCIP projects would be subject to an array of regulatory requirements related to the efficient use of fuel, use of renewable energy sources, solid waste reduction and diversion, and energy efficient building standards,

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among other requirements. These requirements would ensure that VCIP implementation would not result in the wasteful, inefficient, or unnecessary use of energy. While VCIP's lifetime energy consumption would be approximately 284,215,668 MBtu[4] (Table 4.6-1 of this PEIR), it would generate approximately 45,669,964,560 MBtu of renewable energy, which would allow for the decommissioning of equivalent generation from natural gas fired power plants. After accounting for its energy consumption demands, the VCIP would have the benefit of producing a total of 45,385748,892 MBtu of renewable energy.

Under the Reduced Project Size Alternative, the amount of energy expended in project construction, operation, and decommissioning would be approximately 52 percent less than overall consumption by VCIP projects as provided in Table 4.6-1 of *Section 4.6 Energy*. However, the overall amount of renewable energy generation would also be approximately half of that under full operation of the VCIP projects. Specifically, over its lifetime, the Reduced Project Size Alternative would consume approximately 148,874,874 MBtu and generate approximately 23,922,362,389 MBtu of renewable energy. Thus, after accounting for its energy consumption demands, the Reduced Project Size Alternative would have the benefit of producing a total of 23,773,487,515 MBtu of renewable energy. While this net renewable energy production would be substantial, it would be 21,463,386,503 MBtu lower than that associated with the VCIP.

Consequently, the amount of fossil fuel consumption (e.g., by natural gas power plants) avoided by the VCIP projects would be correspondingly greater than that offset under the Reduced Project Size Alternative, and would more than compensate for the greater amount of energy consumed overall by the VCIP projects. As such, implementation of the Reduced Project Size Alternative would generate fewer and far less substantial environmental benefits related to energy than implementation of the VCIP. As the contemplated solar facilities would be vastly more efficient than even the most energy efficient natural gas-fueled power plants, there is a significant difference in the environmental benefits associated with an offset of 21,000 MW (VCIP) versus 11,000 MW (Reduced Project Size Alternative). Therefore, selecting the Reduced Project Size Alternative instead of the VCIP would result in greater impacts related to energy than those associated with VCIP implementation.

Geology, Soils and Paleontology. Potential VCIP energy development would be exposed to geologic and soils hazards, although any potential hazards would be mitigated to less than significant through mitigation measures to be implemented in conjunction with each solar project (see Section *4.7. Geology, Soils, and Paleontology*). Regarding paleontological resources, the Plan Area has generally very low sensitivity for the discovery of fossils, and any fossil discoveries during VCIP implementation would be mitigated by required protection and recovery protocols. Under the Reduced Project Size Alternative, the potential for geology, soils, and paleontological impacts at any given project site would similarly be low and mitigable. However, since the Reduced Project Size Alternative would result in less overall land disturbance than VCIP implementation, it would result in lower potential for geology, soils, and paleontological impacts. Therefore, the Reduced Project Size Alternative would result in lower levels of geology, soils, and paleontological impacts than VCIP energy development.

Greenhouse Gas Emissions. During its lifetime, the proposed VCIP's total GHG emissions would be approximately 2,086,601 MT CO_2e (see Table 4.8-1 [construction and decommissioning], and Table 4.6.1 [total lifetime]). However, under full buildout, the VCIP solar facilities would represent an annual net reduction of 13,401,152 MTCO2e/yr, or a 99.5 percent net reduction in GHG emissions compared to the natural gas facilities replaced by the VCIP (see Section *4.8. Greenhouse Gas Emissions*). Thus, under implementation of the

[4] MBtu is defined as one thousand British thermal units (Btu). The consumption of 284,215,668 MBtu from fossil fuel (gasoline) equates to 2,107,946 MT CO_2e (Metric Tons Carbon Dioxide Equivalent).

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proposed VCIP, the GHGs emitted in the construction, operation, and decommissioning of solar/BESS facilities and supporting infrastructure would be more than offset by the substantial avoided emissions from fossil-fueled power plants with equivalent generating capacity (see Section *4.8. Greenhouse Gas Emissions*). The emissions generated by these gas-fired power plants offset by potential VCIP projects would be approximately 223 times greater than emissions under the VCIP. As such, the VCIP would generate substantial environmental benefits related to GHG emissions reductions.

The Reduced Project Size Alternative would involve lower overall levels of renewable energy infrastructure development, and thus would result in lower overall emissions of GHGs during construction, operation, and decommissioning. During its lifetime, this alternative would emit a total of approximately 1,104,671 MTCO2e, whereas the VCIP would emit 2,086,601 MTCO2e (Table 4.6-1 of this PEIR). However, the lower levels of renewable energy generation and storage under the Reduced Project Size Alternative (i.e., 10,000 MW less than the VCIP) would result in a less substantial net offset of fossil fuel consumption. Specifically, once fully operational, the Reduced Project Size Alternative would represent an annual net reduction of approximately 7,050,879 MTCO2e/yr, whereas the annual net reduction under the VCIP would be 13,401,152 MTCO2e/yr once fully operational. Thus, VCIP renewable development would result in a greater net avoidance of GHG emissions overall and would therefore have a greater beneficial effect in terms of reducing the effects of global warming, relative to the Reduced Project Size Alternative. Therefore, selecting the Reduced Project Size Alternative instead of the VCIP would result in greater impacts relative to GHG emissions than the planned VCIP energy development.

Hazards and Hazardous Materials. During construction, operation, and decommissioning, the potential VCIP energy projects would involve the use of various fuels and materials which are classified as hazardous materials. However, hazardous materials management plans and response plans would be required for each solar/BESS facility and would be implemented in case of accidental spill or unauthorized release of hazardous materials, resulting in a less-than-significant hazardous materials impact. For the VCIP projects, the potential for residual contamination from previous agricultural and petroleum industry operations within each project site would be investigated and remediated as appropriate. By temporarily repurposing farmlands, which have a greater overall potential for release of hazardous materials during farming operations compared to implementation of the VCIP, it is anticipated that the VCIP would have environmentally beneficial effects. Other potential hazards, such as development in proximity to oil and gas wells, safety hazards associated with existing fuel pipelines and electrical transmission lines, fire hazards from BESS, potential exposure to valley fever, potential exposure to EMFs from VCIP transmission and gen-tie lines, photo-voltaic heat island effects, or hazards to aviation, would all be less than significant or reduced to less than significant by mitigation measures identified in this PEIR. Thus, the potential impacts due to hazards or hazardous materials associated with implementing the proposed VCIP would be reduced to less-than-significant levels (see Section *4.9. Hazards and Hazardous Materials*).

Under the Reduced Project Size Alternative, the lands that would be developed for renewable energy and related infrastructure would be subject to the same conditions and requirements as addressed above for VCIP implementation. Since the Reduced Project Size Alternative would involve relatively less development overall, the potential for hazards and hazardous materials impacts to occur during construction, operation, and decommissioning would be lower than for VCIP implementation. However, given the Reduced Project Size Alternative's smaller scale, there would be more acreage requiring historic agricultural management activities (e.g., cultivation, disking, and managing fallowed fields). While more farmland would potentially be available for cultivation under the Reduced Project Size Alternative, much of this additional farmland would likely be fallowed (which still requires disking and weed management) and/or dry farmed due to chronic water supply constraints,

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there would be greater overall potential for soil and groundwater contamination from agricultural operations. While the potential for site contamination is low for pesticide contamination given that agricultural operations would handle and utilize agricultural chemicals in a safe manner as directed in manufacturers' specifications, there is always the risk of uncontrolled leaks and spills of agricultural chemicals and fuels. As such, this alternative would result in greater potential hazardous materials impacts, and generate fewer and less substantial environmental benefits than the VCIP, given the overall greater potential for releases of hazardous materials associated with farming operations compared to renewable energy facilities. Therefore, a greater risk of hazardous material contamination with farming operations would remain under the Reduced Project Size Alternative, relative to VCIP implementation.

In summary, the potential for hazardous materials impacts is low for implementation of the proposed VCIP and for the Reduced Project Size Alternative, with no reliably forecasted difference between them in terms of impact level. Thus, the Reduced Project Size Alternative would result in similar potential hazardous materials impacts compared to VCIP implementation.

Hydrology and Water Quality: Regarding erosion, sedimentation and runoff, VCIP implementation would result in very small increases in site coverage by impervious surfaces, and would not result in off-site discharges of stormwater runoff. The potential for erosion and sedimentation during construction and decommissioning would be minimized through standard erosion control measures, as required (see Section *4.10. Hydrology and Water Quality*). The Reduced Project Size Alternative would result in less overall development in the Plan Area, and thus would have less potential to result in hydrology and water quality impacts. Therefore, the Reduced Project Size Alternative would result in a lower level of hydrology and water quality impacts than VCIP implementation, although the impact would be less than significant in both cases.

Regarding consistency with implementation of a sustainable groundwater management plan, the VCIP would be implemented as an agricultural repurposing program pursuant to the Westside Subbasin GSP. As discussed in Section *4.10. Hydrology and Water Quality*, the GSP identifies the VCIP as a potential groundwater management action that would promote the Subbasin's long-term groundwater sustainability. The Reduced Project Size Alternative would also be implemented as an agricultural repurposing program pursuant to the GSP. However, compared to the VCIP, the Reduced Project Size Alternative would be less effective as a groundwater sustainability management action for two reasons. First, implementation of the Reduced Project Size Alternative would result in groundwater sustainability management actions being conducted on substantially fewer acres. Second, the Reduced Project Size Alternative would only include District-owned lands that do not use groundwater and are not eligible for a groundwater allocation pursuant to the GSP and Article 1 of the District's Rules and Regulations. In fact, groundwater rights associated with District-owned lands were re-allocated to privately owned eligible land. In contrast, implementation of the VCIP would more effectively implement the GSP by repurposing privately-owned lands that have historically used groundwater and are eligible for a groundwater allocation. Thus, because the Reduced Project Size Alternative would not implement the GSP on 64,000 acres of privately-owned lands, selecting the Reduced Project Size Alternative instead of the VCIP would result in a greater potential for conflicts with the GSP on these privately owned lands.

In sum, the results would be mixed, as the Reduced Project Size Alternative would result in lower level impacts related to erosion, sedimentation, and runoff than VCIP implementation, whereas the VCIP would more effectively advance SGMA implementation and promote groundwater sustainability.

Land Use and Planning: As discussed in Section *4.11. Land Use and Planning*, VCIP implementation would be consistent with all applicable plans, policies and regulations, and thus would have no impact in this regard. Under the Reduced Project Size Alternative, all proposed development would be required to be consistent with applicable plans, policies, and regulations to receive project approval. As such, there would be no land use and planning impact associated with the Reduced Project Size Alternative. Therefore, the level of impact under the Reduced Project Size Alternative would be same as the impact under VCIP.

Mineral Resources: As discussed in Section *4.12. Mineral Resources*, the only mineral resource sites within the Plan Area are a few exploratory oil wells which are not near any contemplated VCIP facilities. Thus, the impact of VCIP implementation on mineral resources would be less than significant. Similarly, the Reduced Project Size Alternative would be unlikely to have an impact on these few mineral resource sites since there are no facilities near the exploratory wells under this alternative. Therefore, the impact of the Reduced Project Size Alternative would be similar to the impact of VCIP implementation with regard to mineral resources.

Noise: VCIP implementation would result in increased noise from construction and decommissioning, as well as increased traffic noise along roadways used for truck deliveries and commuter trips by construction workers, although the noise impacts from these construction-related activities would be temporary and less than significant. Once completed, the noise from the operation of VCIP facilities would be mitigated by the application of required setbacks and other measures to ensure that operating equipment noise reaching sensitive receptors meets applicable noise standards (see Section *4.13. Noise*). Under the Reduced Project Size Alternative, the construction noise from individual projects would also be temporary and less than significant, and the operational noise would also be subject to mitigation. However, less development would also occur within the vicinity of sensitive noise receptors. For example, the VCIP would include portions of three DFAs within one mile of the Cantua Creek community, which contains the highest concentration of sensitive noise receptors in the VCIP DFAs. Under the Reduced Project Size Alternative, the nearest DFA would be located over one mile to the southwest on District-owned land and well away from the sensitive receptors in this community (see *Chapter 3. Environmental Setting*, Figure 3.1-5). Without the proposed solar/BESS development in the vicinity, there also would be no need for a potential gen-tie line to pass through the vicinity of Cantua Creek. Thus, under the Reduced Project Size Alternative, the potential noise generation would be less than under the VCIP (see Figure 4.13-2). Thus, the Reduced Project Size Alternative would result in a lower level of noise impacts than VCIP implementation, although the impacts would be less than significant in both cases after mitigation.

Public Services: The contemplated VCIP projects would result in a small increase in demand for public services such as police and fire protection, and this impact would be less than significant (see *Section 4.14. Public Services*). The Reduced Project Size Alternative would result in less overall development and therefore would generate relatively less demand for fire and police services. Thus, the Reduced Project Size Alternative would result in a lower level of public services impacts than the potential VCIP projects, although the impact would be less than significant in both cases.

Transportation: During the construction and decommissioning phases, the potential VCIP projects would generate commuter trips to and from their sites by construction workers, and truck trips for delivery of equipment and materials. Given the geographic concentration of potential development associated with the proposed VCIP, especially in the early years, the VCIP traffic would result in potential LOS impacts. However, these impacts would be mitigated by required trip reduction measures, which would also result in substantial reductions in VMT. During project operations, the small amount of operations and maintenance staff would generate minimal traffic, which would be well below VMT screening levels (see Section *4.15. Transportation*).

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The Reduced Project Size Alternative would result in less overall development. While the overall phasing plan would likely be similar to the VCIP phasing plan, the overall development would be less in any given year. Thus, the traffic volumes on any given roadway would be lower under the Reduced Project Size Alternative. Construction VMT would also likely be lower under the Reduced Project Size Alternative, although this would be somewhat offset by the greater relative reductions in VMT under the VCIP resulting from the more substantial trip reduction measures that would be required for VCIP relative to this alternative. On balance, the Reduced Project Size Alternative would generally result in a lower level of traffic impacts than VCIP implementation, although the impact would be less than significant in both cases.

Utilities and Service Systems: The VCIP facilities would require water supply, wastewater disposal, and solid waste disposal (see Section *4.17. Utilities and Service Systems*). The VCIP's impacts on these utilities and service systems are summarized below, in comparison with the Reduced Project Size Alternative.

Water Supply

As discussed in detail above, the potential VCIP projects would require water supply during both the construction and operational phases. Operational water demands would include water for periodic panel washing and general maintenance and cleaning. It is estimated that operational water requirements would average 0.004 acre-feet per acre per year. As discussed in Section *4.17. Utilities and Service Systems* and Appendix F of this PEIR, the sources available to VCIP projects on District-owned lands would be available to projects under the Reduced Project Size Alternative. Specifically, construction water would be obtained from groundwater sources by purchasing groundwater credits via District-approved transfers. The District would provide operational municipal and industrial (M&I) water from the District's CVP contract supplies pursuant to Article 19 of the District's Rules and Regulation to projects on District-owned lands. Regarding potable water demands, bottled water would be provided during construction, and municipal water would be delivered by truck to on-site tanks during operations.

The proposed VCIP and the Reduced Project Size Alternative would have similar effects related to water supply and would not significantly affect overall water supplies within the District compared to existing conditions. Due to its smaller size, implementation of the Reduced Project Size Alternative would require approximately half the amount of water for construction and maintenance activities compared to the VCIP. Implementation of the Reduced Project Size Alternative would require the use of water on District-owned lands that currently receive no water supply (i.e., are unirrigated). But the quantities required would be insubstantial and the use of such water would be consistent with the District's Rules and Regulations and the GSP. As such, like implementation of the proposed VCIP, the use of water associated with the Reduced Project Size Alternative would result in an insubstantial reduction in water supply that would otherwise go to crop irrigation on private lands. This conclusion is supported by the short-term nature of construction (10 years) and decommissioning, in addition to the very minor water requirements for operational uses over the anticipated 35-year operational period.

Under the Reduced Project Size Alternative, projects would not occur on 64,000 acres of privately owned land, which would remain available for irrigated agricultural cultivation. As such, while the VCIP facilities would require more water compared to those associated with the Reduced Project Size Alternative, the long-term but temporary repurposing of privately owned lands under the VCIP would facilitate the redirection of scarce water resources to farmlands with the most pressing needs. Thus, while the VCIP would more effectively advance the District's project objectives related to water supply, both the Reduced Project Size Alternative and the VCIP would result in insubstantial changes to the overall amount of water available for irrigation under

existing conditions. Apart from forgoing the opportunity to implement agricultural land repurposing projects pursuant to the GSP on 64,000 acres of privately-owned land, selecting the Reduced Project Size Alternative would have no impact on achieving groundwater sustainability in the District. Therefore, implementation of the Reduced Project Size Alternative would have a similar impact on overall water supply relative to what would occur under VCIP implementation.

Wastewater

The wastewater disposal for the potential VCIP projects would be provided by portable chemical toilets during construction and decommissioning, with off-site disposal by sanitary contractors. During facility operation, wastewater disposal and treatment would be provided by onsite septic systems, which would be designed in accordance with County requirements to avoid impacts to groundwater. Under the Reduced Project Size Alternative, wastewater treatment and disposal would be handled in the same way as for VCIP projects. However, since less overall development would occur under the Reduced Project Size Alternative, the potential for wastewater impacts would be relatively lower. Therefore, the Reduced Project Size Alternative would result in a lower level of wastewater disposal impact than VCIP implementation, although impacts would be less than significant in either case.

Solid Waste

With implementation of the proposed VCIP, solid waste would be generated during construction, operation, and decommissioning. There are no constraints to solid waste collection, and there is sufficient landfill capacity to accommodate non-recyclable waste from the VCIP facilities, so the impact would be less than significant. Because less overall development would occur under the Reduced Project Size Alternative, there would be lower overall quantities of solid waste generation, compared to VCIP projects. Therefore, the Reduced Project Size Alternative would result in a lower level of potential solid waste disposal impact than VCIP implementation, although the impacts would be less than significant in either case.

Wildfire: As discussed in Section *4.18. Wildfire*, none of the lands within the VCIP Plan Area are classified as Very High Fire Hazard Severity Zone, and VCIP implementation would have a less-than-significant impact regarding potential exposure of people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. Since the Reduced Project Size Alternative would be located entirely within the VCIP Plan Area and similar renewable energy facilities would be developed, the potential wildfire impacts under this alternative would be similar and less than significant.

In summary, the Reduced Project Size Alternative would result in lower levels of impact than VCIP implementation in some categories, but would result in greater or similar levels of impact in others. The Reduced Project Size Alternative would result in relatively lower levels of impact in the categories of agricultural resources, biological resources, cultural and tribal cultural resources, geology, soils and paleontology, noise, public services, transportation, wastewater disposal, and solid waste disposal, although all these impacts would be less than significant or fully mitigable with VCIP implementation. Compared to implementation of the proposed VCIP, selection of the Reduced Project Size Alternative would result in greater levels of impact in the categories of air quality, energy, and GHG emissions, and similar levels of impact to VCIP solar development in terms of hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, water supply, and wildfire. In addition, while VCIP implementation would result in significant and unavoidable impacts relative to aesthetics and agricultural resources, the Reduced Project Size Alternative would also result in significant and unavoidable impacts related to aesthetics and agricultural resources, although the overall visual impact would be less relative to VCIP implementation.

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On balance, the proposed VCIP represents an environmentally superior alternative to implementation of the Reduced Project Size Alternative. Almost all the VCIP's potential impacts are either less than significant or can be avoided or substantially reduced to less-than-significant levels through implementation of mitigation measures. In these impact categories, the Reduced Project Size Alternative would not avoid or substantially lessen any of the VCIP's significant effects because they would be avoided or fully mitigated under VCIP implementation. Likewise, under both the VCIP and the Reduced Project Size Alternative, implementation would result in significant and unavoidable impacts related to aesthetics and agricultural resources. As such, their effects upon aesthetics and agricultural resources would be substantially similar. Overall, the proposed VCIP and the Reduced Project Size Alternative would result in substantially similar effects across most impact categories. However, in terms of their respective merits, the proposed VCIP would result in substantially greater environmentally beneficial effects related to renewable energy generation and storage (i.e., 21,000 MW capacity versus 11,000 MW capacity), which would offset substantially more GHG emissions associated with the consumption of fossil fuel to produce electricity. Thus, while the proposed VCIP and the Reduced Project Size Alternative are generally similar from an impacts perspective, the VCIP's substantially greater environmental benefits make the proposed VCIP environmentally superior. Relatedly, the Reduced Project Size Alternative would not go as far as the VCIP in fulfilling the basic project objectives of the VCIP, as restated at the beginning of this chapter, particularly the objectives related to water supply, facilitating SGMA implementation, and helping to meet the state's renewable energy and GHG reduction targets through repurposing farmland affected by water supply constraints for the generation of fossil-free sources of electricity. (See Section *6.7.3.* for detailed discussion of the environmentally superior alternative.)

6.3.3. Comparison of the VCIP and its Alternatives

The foregoing analysis of comparative impacts between the VCIP and the project alternatives is summarized in Table 6.3-1 (see below).

The No Project Alternative would result in somewhat lower impacts in several categories, and similar levels of impact in other categories relative to implementation of the proposed VCIP. However, if selected instead of the VCIP, the No Project Alternative would result in greater impacts in several categories, such as air quality, energy, GHG emissions, and water supply because the VCIP would generate environmental benefits in these impact areas. Moreover, the No Project Alternative would not reduce the significant and unavoidable aesthetic impacts of VCIP implementation to less than significant. The No Project Alternative would also fail to satisfy many of the project objectives, unlike the proposed VCIP which would satisfy every project objective. Therefore, the No Project Alternative would not represent an environmentally superior alternative to the implementation of the proposed VCIP. Moreover, the No Project Alternative would not go as far as the VCIP in fulfilling the basic project objectives, as restated at the beginning of this chapter, particularly the objectives of achieving sustainable groundwater supplies in the District, and helping to meet the state's renewable energy and GHG reduction targets through repurposing of less productive farmland for the generation of fossil-free sources of electricity.

The Reduced Project Size Alternative would result in somewhat lower levels of impact under several categories, and similar levels of impact in other categories relative to implementation of the proposed VCIP. However, as provided above, in most of these categories, the impacts associated with implementation of the proposed VCIP would already be less-than-significant. Additionally, selecting the Reduced Project Size Alternative instead of the VCIP would diminish key environmental benefits provided by the VCIP regarding energy, GHG emissions, and water supply. Moreover, the Reduced Project Size Alternative would not eliminate the significant and unavoidable aesthetic and agricultural impacts of VCIP implementation to less than significant.
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TABLE 6.3-1

SUMMARY COMPARISON OF VCIP IMPLEMENTATION WITH PROJECT ALTERNATIVES

Impact Category	Level of Impacts		
	VCIP	Impacts of Alternatives Compared to VCIP	
		No Project Alternative	Reduced Project Size Alternative
Aesthetics	Significant & Unavoidable (SU)	Lower/SU*	Lower/SU*
Air Quality	Less than Significant	Greater	Greater
Agriculture & Forestry Resources	Significant & Unavoidable (SU)	Lower/SU*	Lower/SU*
Biological Resources	Less than Significant	Lower	Lower
Cultural & Tribal Cultural Resources	Less than Significant	Lower	Lower
Energy	Less than Significant	Greater	Greater
Geology, Soils, & Paleontology	Less than Significant	Lower	Lower
Greenhouse Gas Emissions	Less than Significant	Greater	Greater
Hazards & Hazardous Materials	Less than Significant	Similar	Similar
Hydrology & Water Quality	Less than Significant	Lower	Similar
Land Use & Planning	No Impact	Similar	Similar
Mineral Resources	Less than Significant	Similar	Similar
Noise	Less than Significant	Lower	Lower
Public Services	Less than Significant	Lower	Lower
Transportation	Less than Significant	Lower	Lower
Utilities & Service Systems	Less than Significant	Mixed	Mixed
Wildfire	Less than Significant	Similar	Similar
Environmentally Superior Alternative?	**Yes**	**No**	**No**

* The impact under the alternatives would remain Significant and Unavoidable.

** The Reduced Project Size Alternative would substantially reduce the VCIP's significant effects associated with aesthetics by virtue of its smaller size, but it would not reduce the aesthetic impact to less than significant. However, compared to the VCIP, the Reduced Project Size Alternative would provide fewer and less substantial environmental benefits regarding energy, GHG emissions reductions, and water resources. Therefore, selecting the Reduced Project Size Alternative instead of the VCIP would result in comparatively significant adverse effects in these impact categories.

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The Reduced Project Size Alternative would also fail to satisfy many of the project objectives, unlike the proposed VCIP which would satisfy every project objective. On balance, the Reduced Project Size Alternative would not be the environmentally superior alternative because, while it would result in generally lower levels of impact in most categories compared to implementation of the proposed VCIP, it would not provide full environmental benefits from implementation of the VCIP as proposed. In particular, the Reduced Project Size Alternative would not go as far as the proposed VCIP in meeting the objectives of related to water supply, facilitating SGMA implementation, and helping to meet the state's renewable energy and GHG reduction targets through repurposing farmland affected by water supply constraints for the generation of fossil-free sources of electricity. (See detailed discussion at the end of this section.)

The Reduced Project Size Alternative would partially meet the basic objectives of the VCIP, but not fully. Specifically, the Reduced Project Size Alternative would not go as far as the VCIP in terms of contributing to the solution of reduced water supply reliability by promoting repurposing of farmland, of facilitating the redirection of scarce water resources to farmland with the most pressing needs, of facilitating SGMA implementation, and of helping meet the state's renewable energy and GHG reduction targets. The ability to fully realize these goals is directly related to the scale of the proposed project. Because the Reduced Project Size Alternative would repurpose substantially fewer acres of land for the generation, storage, and transmission of fossil fuel-free sources of electricity, it would only partially meet the following objectives:

- Utilize the District's location, topography, and excellent insolation (solar radiation energy) attributes to promote the siting of solar generation, storage, and transmission of renewable energy, in furtherance of federal, state, and local renewable energy and carbon reduction goals over the next 25 years.
- Contribute to the solution regarding the problem of reduced reliability of water supplies by providing productive long-term but temporary repurposing of those lands from irrigated agriculture and for renewable energy production.
- Facilitate SGMA implementation.
- Constructively address the chronic shortage of surface water deliveries by promoting repurposing of farmland and by facilitating the redirection of scarce surface water allocations to other productive agricultural land within the District.
- Promote expeditious and efficient repurposing of farmlands through a comprehensive planning process to address transmission capacity constraints affecting further incremental clean energy development in the District.
- Provide for development of utility-scale solar generation facilities on highly disturbed lands, which provide minimal habitat value for wildlife.
- Provide a low-impact alternative location for the siting of utility-scale renewable energy development that might otherwise occur on lands with high habitat value for protected wildlife species (such as the Mojave Desert).
- Contribute to overall reduction in greenhouse gas emissions by generating electricity that is not based on the combustion of fossil fuel and provide new sources of energy storage that support the state in achieving its renewable energy and carbon neutrality targets.
- Positively contribute to the local economy and provide community benefits.

In conclusion, there are no environmentally superior alternatives to implementation of the proposed VCIP that would go as far as the proposed VCIP in meeting the project objectives. In particular:

- VCIP implementation would result in the capacity to generate and store 21,000 MW of clean energy, compared with approximately 11,000 MW of clean energy under the Reduced Project Size Alternative,

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which would not take full advantage of the opportunity for reducing the state's dependence on fossil-fueled generation and associated greenhouse gas emissions;

- VCIP implementation would facilitate the redirection of water allocations from 64,000 acres of private lands to other farmlands in the District thus enhancing the agricultural productivity within the District's overall farming unit(s) and facilitating the redirection of scarce water resources to farmlands with the most pressing needs, while the Reduced Project Size Alternative would not facilitate any such redirection of water allocations because it would only include unirrigated District-owned lands;
- The VCIP would be implemented as an agricultural land repurposing program pursuant to the GSP and would temporarily repurpose 64,000 acres of irrigable farmland for renewable energy facilities that would require insubstantial quantities of water, advance the GSP and the purpose of SGMA in improving overall water supply reliability and avoiding undesirable results, and would preserve economic opportunities for growers and the communities, whereas the Reduced Project Size Alternative would repurpose no irrigable farmland and thus would not effectively facilitate SGMA implementation;
- VCIP implementation would maximize the District's location, topography, and excellent solar insolation attributes to promote solar generation, storage, and transmission facilities on highly disturbed lands that provide minimal habitat value for wildlife and are impacted by chronic water supply constraints, whereas the Reduced Project Size Alternative would represent a decision to utilize approximately half of this available potential;
- VCIP implementation would maximize the potential to convey renewable energy generated and stored by potential VCIP projects by providing a complete power collection and transmission system for transferring VCIP generation to the state's electrical grid, while the Reduced Project Size Alternative would provide a reduced collection and transmission system which would utilize less than the full generation potential of VCIP implementation;
- VCIP implementation would maximize the opportunity to contribute positively to the local economy and provide community benefits, while the Reduced Project Size Alternative would provide substantially less economic and community benefits.

6.3.5. Alternatives to the VCIP Considered but Not Included in Detailed Alternatives Analysis

While selecting a reasonable range of project alternatives, the CEQA Guidelines require the following:

"The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination." (CEQA Guidelines, Section 15126.6(c).)

The alternatives considered during this analysis are identified below, along with brief explanations as to why they were not carried forward for detailed analysis.

Reduced Project Size Alternative Which Includes Only Privately-Owned DFA Lands

This alternative represents the opposite of the Reduced-Size Project Alternative evaluated above, which considers only District-owned lands for VCIP development. This alternative would include all of the approximately 64,000 acres of privately-owned DFA lands in the Plan Area (see Figure 2.2-1). Under this alternative the backbone transmission corridor would be realigned westward to be more centrally located {AM0015.1}

relative to the DFA lands, and would likely run just east of the San Luis Canal/California Aqueduct. Since the private DFA lands tend to be widely dispersed, with few areas of concentration, the collection of solar generation from these sites would involve an inefficient and disorderly system of gen-tie lines conveying power to the collection substations compared to the proposed VCIP. Under the proposed VCIP, Substations 1, 2, 3, and 4 would be located on District-owned lands, with the DFAs generally concentrated around these substations (see Section *3. Environmental Setting*). The DFAs in the vicinity of Substations 1, 2, and 4 primarily consist of District-owned lands, with the privately-owned lands largely supplemental. Under the proposed VCIP, the contemplated internal transmissions lines are also expected to traverse District-owned land to the greatest extent feasible. As such, while the five substations and connecting transmission lines would remain (albeit at approximately half of their planned capacities and sizes) under the District-owned Reduced Project Size Alternative, the same would likely not be feasible under an alternative that solely consists of privately owned lands. Thus, due to the dispersed nature of the privately owned lands included in the DFAs and the substantial reliance on District-owned lands for the location of key facilities and infrastructure, it would not be feasible to implement the VCIP at a reduced scale on the privately owned lands identified within the VCIP DFAs.

As is the case with the proposed VCIP, the overall aesthetic impact of this alternative would be significant and unavoidable. Similarly, this alternative would also necessitate the location of the southern collection substation on Prime Farmland, and thus would not avoid the significant and unavoidable impact of permanent conversion of up to 60 acres of Farmland for the substation. Analysis of the FMMP mapping indicated that the vast majority of the lands in the central and western portions of the Plan Area, including almost all of the DFA lands that are not owned by the District, are mapped as either Prime Farmland or Farmland of Statewide Importance, both of which are defined as Farmland under CEQA. As such, locating Substations 1, 2, and 4 on privately owned lands would likely result in the permanent conversion of additional Farmland. As such, this alternative would not be capable of avoiding or substantially lessening the significant effects of VCIP implementation and would likely result in additional significant and unavoidable impacts. In addition to not going as far as the proposed VCIP in meeting all of the project objections for the reasons provided above and in the analysis of the Reduced Project Size Alternative with District-owned lands, this alternative would not meet one of the District's primary project objectives: to "[p]rovide utility-scale power generation on farmland that has been fallowed or removed from irrigated agriculture due to lack of a reliable surface water supply, which reduces pressure to develop renewable energy on prime agricultural land elsewhere." This objective would not be met because an alternative that only consists of privately owned lands would not include lands permanently removed from irrigated agriculture, which are generally located along the eastern Plan Area and include a substantial amount of the lands identified in the proposed DFAs under the VCIP.

Therefore, this alternative was not retained for detailed analysis.

Alternative Project Location for the VCIP

An alternative site to the VCIP would need to support the generation of 21,000 MW of renewable energy on approximately 136,000 acres of non-urbanized land suitable for these activities and within the District's boundaries. A suitable alternative site would need to include large expanses of contiguous or proximate lands capable of being developed for utility-scale solar and BESS facilities, and capable of being efficiently served by a comprehensive power collection and transmission delivery system. The Plan Area is the only area within the District's boundaries sufficient to support this amount of renewable energy generation. The Kings County portion of the District's service area is not a suitable project location because it is approximately 78,900 acres, and the implementation of solar projects there are already covered by the Westlands Solar Park Master Plan which is currently being implemented.

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In fact, the only area in the state that would satisfy the VCIP's project site requirements is the California desert region in the southeastern portion of the state. However, this desert area is already covered by a comprehensive plan for renewable energy and infrastructure development, known as the Desert Renewable Energy Conservation Plan (DRECP), which is a multi-agency planning document between the California Energy Commission, California Department of Fish and Wildlife, the U.S. Bureau of Land Management (BLM), and the U.S. Fish and Wildlife Service. It provides for the comprehensive development of 20,000 MW of renewable energy generation. The DRECP is focused on 10.8 million acres of public lands in the desert regions of Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego Counties and has a total plan area of 22.5 million acres (US BLM 2025a). In 2016, BLM signed its Record of Decision approving the DRECP pursuant to the National Environmental Policy Act (US BLM 2025b, CEC 2025). Since the implementation of both the VCIP and DRECP would be needed to achieve the state's renewables development and GHG reduction targets, the DRECP would not be considered a substitute for the VCIP. Given also that DRECP is established as an environmentally approved master plan for renewable development in the California desert, consideration of the desert as an alternative location for the VCIP would be redundant and unnecessary for this PEIR. In summary, since there are no suitable alternative sites available, the "Alternative Project Location for the VCIP" was not included in the detailed alternatives analysis.

Alternative Location for VCIP Collection Substation No. 5

As discussed in Section *4.2. Agriculture and Forestry Resources*, under Impact AG-1, the VCIP Infrastructure Plan includes the construction of a collection substation on approximately 60 acres near the junction of SR-198 and SR-269 in the southern portion of the Plan Area. The substation site is mapped as Prime Farmland by CDOC's Farmland Mapping and Monitoring Program (FMMP), and the use of the site for the substation would constitute a permanent conversion of Farmland, a significant impact under CEQA. Unless exempted by Fresno County pursuant to General Plan Policy LU-A.23, this conversion could be partially mitigated by preservation of Farmland elsewhere through conservation easements or similar measures. If agricultural mitigation is required at the project-level, this would not provide full mitigation for Farmland conversion to a less-than-significant level. Therefore, the impact to Farmland would be significant and unavoidable. As such, CEQA requires consideration of whether there is a feasible alternative to the project or its location that would be capable of avoiding or substantially lessening its significant impact related to agricultural resources. Specifically, this alternatives analysis considers whether there is a feasible alternative site for VCIP Substation No. 5 that does not result in permanent conversion of Farmland while being capable of meeting most of the District's project objectives.

The screening analysis for alternative sites for Substation No. 5 focused on lands in the vicinity of the proposed substation site that are not mapped as Farmland and that are included in a VCIP DFA, either as District-owned land or privately owned land. To be feasible, the alternative site would need to comprise at least 60 contiguous acres and be located within a reasonable distance of the currently proposed Substation No. 5 site so that it could effectively serve the DFAs in its service area in the southern portion of the Plan Area. An alternative substation site also would need to be separated from the proposed site for Substation No. 4, located 12 miles north, to avoid substantial encroachment upon the service/collection area of Substation No. 4. Based on these considerations, the maximum reasonable search radius was considered to be about eight miles from the proposed site of Substation No. 5, a distance which extends to the east and west boundaries of the Plan Area and also provides a separation of about four miles from the proposed Substation No. 4 site. This search area encompasses 200 square miles (128,000 acres), including approximately 12,000 acres within DFAs, all of which are privately owned.

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Analysis of the FMMP mapping indicated that the vast majority of the lands in the search area, including all of the DFA lands, are mapped as either Prime Farmland or Farmland of Statewide Importance, both of which are defined as Farmland under CEQA. The lands that are not mapped as Farmland include the City of Huron and its nearby detention basin and recharge facility, the Harris Ranch complex, several solar facilities, and various ranch complexes and agricultural processing facilities. Since all of the DFA lands within the eight-mile search radius are mapped as Farmland by the FMMP, the selection of an alternative site on any one of these DFA parcels would result in permanent conversion of Farmland, and thus would not be capable of avoiding or substantially lessening the significant effects of the project to Farmland resulting from construction of Substation No. 5 at its proposed location. The potential location of Substation No. 5 at a site outside the eight-mile search radius would not be feasible because a substation at that distance would be too far from the DFAs it is intended to serve in the southern portion the Plan Area, resulting in gen-tie lines that would extend too far from the substation to effectively serve the solar and BESS facilities within its service area. Since no feasible alternative sites for the location of Substation No. 5 were identified in the screening analysis, this alternative was not retained for detailed analysis.

Alternative Solar Technologies

Other technologies that utilize solar radiation include concentrated solar power (CSP) technologies such as solar power tower and parabolic trough. These represent different forms of thermal solar generation, which rely on controlled heating of water or other liquids by reflected and focused sunlight to drive steam turbines. Overall land requirements per MWh for thermal solar are similar to photovoltaic (PV) solar (NREL 2013). These processes all involve cooling cycles, which can be largely accomplished by fans (dry cooling) although some volume of water is still required in the cooling process. If dry cooled, the generating efficiency of thermal solar facilities would be reduced by 5-10 percent, making them less efficient than PV solar facilities (Nexus 2016). In addition, the energy requirements of the fans reduce the overall generating output of the associated power plant.

Thermal solar technologies were not considered as viable options for the VCIP for several reasons. First, thermal solar facilities require a minimum solar resource value (insolation) of 6.0 kWh/M^2/day, and optimally 7.0 kWh/M^2/day or greater, which is available in the Mojave Desert (NREL 2015). In contrast, Fresno County has a solar resource value of 5.0-5.5 kWh/M^2/day, which is sufficient for PV solar but less than the minimum requirement for thermal solar (NREL 2018). As such, due to the Plan Area's environmental factors (i.e., inadequate minimum solar resource value), CSP technologies are not feasible alternatives.

Second, CSP technologies are infeasible because of the lack of water available for their operation and maintenance. The water requirements for CSP technologies would be approximately 0.0936 acre-feet per year per acre (afy/ac), which includes 0.0624 afy/ac for dry cooling, and 0.0312 afy/ac for mirror washing (NREL 2015). In sum, these water requirements would amount to 15 acre-feet per 160 acres, which would greatly exceed the District's water allowance for solar facilities on District-owned land of 5 acre-feet per 160 acres per year (WWD 2023b). As the VCIP's contemplated PV facilities would require substantially less water for renewable electricity generation, selecting a CSP technology would be inconsistent with the District's duty to put water to beneficial uses to the fullest extent of which they are capable. It would also be inconsistent with the VCIP's goals of redirecting scarce surface water allocations to other productive agricultural land within the District and facilitating SGMA implementation. As such, this alternative is not feasible due to environmental, legal, economic, and technological factors.

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Third, combined with the relatively large capital costs involved in bringing solar thermal facilities online, the lower generating efficiencies (i.e., 10 percent less efficient than PV facilities) would necessitate pricing levels that would not be competitive with solar PV at the VCIP site, particularly since PV installation costs have dropped much more than thermal power installation costs over the past 15 years. Consequently, such an alternative is not feasible after considering relevant economic factors.

Fourth, in addition, to their greater impacts upon water resources, thermal solar projects such as solar power tower involve greater levels of impacts in terms of visual impacts (400- to 500-foot towers and tall mirror arrays), intense glare (from top of towers), as well as biological resources (i.e., bird mortality) due to solar flux (intense heating of the air near the power tower). The operational Ivanpah thermal solar facility in the Mojave Desert includes 3 towers for 394 MW of generation on 4,000 acres, suggesting that any substantial development of solar power tower facilities at the VCIP site would involve numerous towers with substantial glare and biological impacts. Thus, the impacts associated with CSP technologies would be substantially greater than those associated with solar PV, and these alternative technologies would not reduce any impacts associated with the planned VCIP solar facilities. Considering also that this alternative is not feasible in Fresno County, due to inadequate solar insolation as discussed above, this alternative was not evaluated further.

Finally, whereas the District is authorized to provide, generate, and deliver solar PV electricity and to construct, operate, and maintain works, improvements, and property necessary or convenient for generating and delivering that electricity, the District's authority does not include thermal solar using CSP technologies (Wat. Code, section 37860(b), (c)). This further demonstrates the legal infeasibility of a CSP alternative.

Green Hydrogen

Hydrogen has an important role in decarbonizing sectors which require large-scale energy inputs that cannot be readily provided by renewable electricity. Examples include long-haul transportation, heavy industry, shipping, and aviation. The principal means of producing hydrogen fuel are by reforming natural gas or by electrolysis of water powered by clean energy, with the latter referred to as "green hydrogen" because it represents a 100 percent renewable resource. Green hydrogen is produced by splitting water into its constituent hydrogen and oxygen elements through electrolysis, wherein 7 gallons of raw water (purified through reverse osmosis) and 50 kWh of electricity are required to produce one kg of hydrogen gas (NREL 2018). If a typical 250 MW solar facility (on 1,600 acres) was dedicated to hydrogen production, it would generate the electricity needed to produce approximately 25,000 kg of hydrogen gas per day (assuming an average of 5 hours of solar insolation per day, with no battery storage). It would require approximately 0.54 acre-feet of raw water to produce 25,000 kg of hydrogen gas per day.

Assuming 365 production days per year, a total of 197 AF/year would be consumed on the 1,600-acre site, not including operational water needed for solar facility maintenance and panel cleaning. The water demand rate of the hydrogen facility would be 0.123 afy/ac or 19.7 AF/160 ac/yr For projects on District-owned land, this would exceed the District's water allowance for solar facilities of 5 acre-feet per 160 acres per year. For projects on private land, the project proponent would need to obtain operational water from the underlying landowner's allocations for groundwater and/or surface water. Otherwise, water could be purchased outside the District and conveyed to the project site via the District's water distribution system. In contrast, the annual water demand from the VCIP's contemplated solar/BESS operations would be approximately 0.004 afy/ac, or 3.3 percent of annual water demand for hydrogen production. Therefore, as it would require substantially less water to generate the same amount renewable energy (with equal storage capacity), a Green Hydrogen alternative would be inconsistent with the District's duty to put water to beneficial uses to the fullest extent of

which they are capable. It would also be inconsistent with the VCIP's goals of redirecting scarce surface water allocations to other productive agricultural land within the District and facilitating SGMA implementation. As such, this alternative is not feasible due to environmental, legal, economic, and technological factors. It would also result in greater environmental impacts.

Further, once produced, the green hydrogen would need to be delivered to market by truck or pipeline, with the latter involving substantial additional cost and additional potentially significant environmental impacts. The hydrogen gas could be converted to liquid form for less bulky transport, but this would involve freezing the hydrogen to near absolute zero which would require large volumes of additional water for condensers, which is expensive, and would consume 35 percent of the energy content of the hydrogen (NREL 2018).

Market factors are also an important consideration. Currently, the cost per mile for hydrogen gas is two times greater than the cost of gasoline, which raises a question of the current feasibility hydrogen fuel for transportation (Stillwater Assoc. 2022).

In summary, it is uncertain whether hydrogen production within VCIP would be economically feasible under current market conditions. In any event, hydrogen production would not currently represent a viable alternative for the generation of the equivalent of 21,000 MW of electricity. Therefore, this alternative was not evaluated further.

Finally, whereas the District is authorized to provide, generate, and deliver solar PV electricity and to construct, operate, and maintain works, improvements, and property necessary or convenient for generating and delivering that electricity, the District's authority does not include green hydrogen production (Wat. Code, section 37860(b), (c)). This further demonstrates the legal infeasibility of a green hydrogen alternative.

Other Forms of Renewable Energy

In addition to solar generation, other qualifying forms of electrical generation under the state's Renewable Portfolio Standard (RPS) include wind generation, small hydroelectric plants, and cogeneration. The VCIP Plan Area does not include adequate wind resources to support wind generation. Hydroelectric power generation is not viable given the lack of sufficient water and absence of steep topographic gradients required for hydroelectric generation. Cogeneration consists of capturing waste heat produced during thermal power generation; however, there are no residential, commercial, or industrial facilities in the VCIP vicinity that could utilize the waste heat as a substitute for their on-site fossil fueled or electrically powered heating systems. Therefore, alternative forms of renewable energy production would not be feasible within the VCIP Plan Area, and thus were not evaluated further.

Distributed Generation

Distributed generation (DG) consists of numerous small-scale generation systems that do not require connection to the state transmission grid but are connected to the local power distribution system at or near locations where the energy is used. The California Energy Commission (CEC) defines renewable DG projects as 20 MW or smaller. Renewable DG is divided into two major categories: self-generation DG and wholesale DG.

Self-generation or "behind-the-meter" DG is typified by rooftop solar on residential, commercial, industrial, and government buildings, or on carports or shade structures for playgrounds and parks. These facilities consist of small generators of 1 MW or less and are subject to various incentives administered through the California Solar

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Initiative under the Self-Generation Incentive Program. Much of the power generated is consumed at the individual DG sites, although some generators produce surplus power that would be conveyed offsite for local and regional distribution. The implementation of "net metering" by utility companies allows excess rooftop solar to be exported from the DG site to the distribution system during non-peak usage hours when it is not needed at the small DG site, and then allows the DG site to recapture the power from the distribution system during peak usage hours when rooftop solar panels at the DG site are not producing sufficient energy to meet on-site needs.

Wholesale DG includes commercial generators producing between 1 and 20 MW. There are numerous operating and pending projects for wholesale PV solar projects in the State, most of which consist of solar PV projects, but also include a few wind projects.

Distributed generation would not meet the basic project objectives because it would not provide for the generation of 21,000 MW of utility-scale renewable power within the Plan Area. Moreover, distributed generation by nature involves installation of small renewable generation facilities on numerous dispersed small sites with many owners, which is the opposite of the proposed VCIP, which involves the comprehensive development of proximate large sites with few owners. Therefore, the distributed generation alternative was not evaluated further.

Demand Management/Conservation

A demand management/conservation alternative would not feasibly accomplish the District's most basic objectives. A demand management alternative would involve increased energy and water conservation and demand-side management instead of implementing the VCIP.

Regarding energy, this alternative would involve increased energy conservation and demand-side management within the utilities' service areas instead of developing 21,000 MW of new generation within the Plan Area. Energy conservation is ongoing through implementation of increasingly stringent energy-efficient building requirements of the California Building Code and appliance standards, as well as financial incentive programs. Public utilities are also required to achieve aggressive energy efficiency goals established by the CPUC. Given the mandates and incentives for energy conservation under baseline conditions, it is unlikely that sufficient additional energy conservation is achievable as a substitute for the 21,000 MW of new generation planned under the VCIP.

Regarding water supply, the District, which first authorized a water conservation program in 1972, is a world leader in water conservation. The District's water distribution system is comprised entirely of pressurized, buried pipeline and is outfitted with over 3,000 water meters that measure every drop of water and minimize losses caused by seepage and evaporation. The District also has long encouraged farmers to deploy innovative irrigation methods that use the best available technology like micro-sprayers and drip irrigation to maximize every drop of water. Since the implementation of the District's Expanded Irrigation System Improvement and Recharge Program (EISIP) in 1999, the District has funded over 500 irrigation system improvement loans. The District estimates approximately 219,750 af of water savings *annually* compared to 1985 due to the increase in water efficient irrigation methods. Due to this long history of water conservation, currently 90 percent of the District's irrigable lands are in drip, which is 90 percent efficient in terms of water use. This contrasts sharply with the highly inefficient irrigation practices of the past, and the District has reached maximum feasible conservation. It is also not feasible for the District to control crop selection, which depends on grower choices based on market forces. The benefits of water-limited crops are difficult to leverage at the scale of the Plan Area and would require substantial continued research and development to be a reasonably feasible

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alternative. Water-limited crops also face uncertainties in both market conditions and production risks (e.g., potential increases in soil salinity with less irrigation and higher weed pressure with less weed management). In sum, water demand management/conservation is not considered a feasible alternative to meet the District's objectives related to water supply. It would also not advance the District's objectives related to promoting the siting of solar generation, storage, and transmission of renewable energy in furtherance of the state's renewable energy and carbon neutrality goals.

Therefore, the demand management/conservation alternative is not considered a feasible alternative and was not evaluated further.

6.4. REFERENCES – PROJECT ALTERNATIVES

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