Environmental Assessment
Yolo County Department of General Services Land Release
County of Yolo, California

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SECTION 1: INTRODUCTION/PURPOSE, NEED, AND BACKGROUND

Before taking an action, the National Environmental Policy Act (NEPA) requires federal agencies to identify a range of alternatives for that action and to analyze the potential environmental impacts of that action, including any potential adverse environmental effects that cannot be avoided if the proposed action is implemented. The National Park Service (NPS) has evaluated the Federal Land Release of 30 acres at Yolo County Grasslands Park from the National Parks Service for the perpetual use for public park and public recreation areas, and construction of a solar power generating facility. This EA identifies and analyzes the potential environmental and socioeconomic consequences, or impacts, of each of the alternatives considered in the study.

1.1 - Proposed Action

The National Park Service (NPS), the United States General Services Administration (GSA), and the County of Yolo propose the release of federal interest and public benefit conveyance from 30-acres within Grasslands Regional Park in Yolo County, California, to the County of Yolo. The 30-acre area would be developed as an Environmental Education and Sustainability Park with nature trails, a classroom, and a 5-megawatt (mw) photovoltaic solar array. The existing, 323-acre park in Yolo County is owned by the County of Yolo and is operated and maintained by the Yolo County Department of General Services, Parks Division, see Appendix D: Grasslands Regional Park Master Plan.

Concurrently, the County of Yolo proposes the execution of a quitclaim deed from the National Park Service for the 315-acre Davis Global Communications Site, for incorporation into Grasslands Regional Park and perpetual use for public park and public recreation area purposes; however it should be noted that this quitclaim deed execution was completed in the McClellan Air Force Base Programmatic Environmental Impact Statement/Environmental Impact Report completed in July 1997 (State Clearinghouse Number: 96122010). Therefore, environmental analysis of the quitclaim deed for the 315-acre Davis Global Communications Site has been previously completed and is not included in this document. The County is currently exploring mechanisms for funding the environmental management of the Davis Global Communications Site as mandated by U.S. Fish and Wildlife Service. Implementation of the release of the 30-acre parcel within Grasslands Regional Park will allow the County to construct a solar facility that will assist in eliminating the County's electricity costs, thereby potentially opening up funds needed for the environmental management of the Davis Global Communications Site.

1.2 - Purpose, Opportunity and Need for Action

Grasslands Park, a 323-acre park, was originally part of McClellan Air Force Base's Davis Global Communications site, and was deeded to the County in 1972 under the Federal Lands to Parks

Program (FLP) Program. In the transfer deed, the property was designated as a "park or recreation area, for use by the general public." The deed includes restrictive covenants, and the federal government retains a reversionary interest in the land if the terms of the deed are not fulfilled. The FLP program assures continued public access and stewardship of resources. Land acquired through the FLP program must be used for public park and recreational use in perpetuity. Portions of Grasslands Park currently provide recreational opportunities such as model airplane soaring, archery, wildlife viewing, horseshoe pitching, hiking in oak woodland, native grasslands, and restored native habitats.

The Grasslands Park Master Plan was completed in 2005 and identifies provisions for improved general public use of the park, including trails, fencing to define safe use areas, environmental education opportunities, interpretive elements, and environmental restoration. The Master Plan (Appendix D) currently includes plans for future trails in the Park's northern portion. Furthermore, use of the northern portion of the park must be carefully planned so that it does not create the potential for health and safety hazards associated with the existing archery range uses. Relocation of the archery range is not possible, since it would incur significant costs and a loss of a popular recreation activity. Accordingly, the park's northern area has not been developed.

The 315-acre Davis Global Communications site was ceremoniously deeded to the County of Yolo in October 2008; however, Yolo County has yet to officially assume ownership of the site. The Davis Global Communications site contains conservation easements requiring monitoring and reporting to U.S. Fish and Wildlife Service that require funding not currently available in the County's budget. Upon acceptance of the site, Yolo County would take on the responsibilities of the existing easements and management of the site as a part of Grasslands Regional Park. Release of the 30 acres within Grasslands Park and subsequent construction of the Environmental Education and Sustainability Park and associated solar array would assist the County in funding monitoring and reporting requirements at the Davis Global Communications site.

For the purposes of this project, the federal decision is restricted to the approval or non-approval of the NPS's 30- acre land release The 30 acres of released land and adjacent 11 acres (which are not part of the land release) would be developed by Yolo County as an environmental education center, with bird watching platforms, trails, and a 5-megawatt (mw) photovoltaic solar array hereinafter collectively identified as the Environmental Education and Sustainability Park While the proposed solar array would change the development of previously planned uses (e.g., single-use nature trails) within the 30-acre area, the scope of previously planned uses can and will still be implemented onsite. In addition, release of the 30-acre area would assist in facilitating the implementation of the Grasslands Regional Park Master Plan's environmental education goals and objectives by providing a place for learning and community education. The remaining 282 acres of Grasslands Park would continue to be used and managed according to the program of utilization and the terms of the existing deed. The park would continue to be used for conservation of burrowing owls, as vernal pool

conservation and restoration areas, and for active and passive recreation (archery, model airplanes, and scenic trails); see Appendix A. Because the County received the Grasslands Park as a public benefit conveyance, specifically for public park and recreation use according to the terms of its application, this document will discuss the proposed land release's satisfaction of the deed's restrictive covenants and the Federal Government's reversionary interest in the land if the terms of the deed are not fulfilled. In this action, the NPS and the GSA have the discretion to approve a 30 acre portion of the Grasslands Park for partial conversion to ensure that public park and recreation purposes of the public benefit conveyance of surplus property is served.

The purpose of the proposed action is to accommodate the County's desire to provide additional recreational opportunities while providing the County with an alternative form of renewable energy that meets the needs of all involved agencies and the federal programs administered by NPS and GSA. The action meets the need for NPS and GSA to respond to the release request and land acceptance within the rules of their respective programs. Release of the land will allow the County to further develop financial stability by providing an alternative renewable energy source that will provide the County the economic savings to move toward its goal of sustaining the additional and adjacent Davis Communications site lands at a future date.

This EA evaluates the alternatives to and the effects of the proposed land release and land acceptance on (1) recreational use by the public, (2) natural resource management on the proposed parcels, and (3) impacts to the human environment. Indirect effects to neighboring areas are reviewed where applicable. The EA is part of the decision-making process in accordance with the National Environmental Policy Act of 1969 (NEPA) by the NPS. The agency will prepare findings of no significant impact or notices to prepare an environmental impact statement after completing the EA preparation process; see Appendix B: Environmental Screening Form.

In addition, to maintaining the existing uses—which include conservation areas for burrowing owls, vernal pool conservation and restoration areas, and active and passive recreation (archery, model airplanes, and scenic trails)—the proposed action would allow the County of Yolo to move forward with the development of an environmental education center, bird watching platforms, trails, and a 5-mw photovoltaic solar array. The solar array and environmental education center would allow for increased recreational and education opportunities within the park while providing a buffer area for the adjacent burrowing owl conservation easement and appropriate protective measures to ensure potential health and safety issues associated with the adjacent archery range are addressed. A walking path and interpretive signs would provide the public with information related to the solar array, the surrounding natural habitat, and the burrowing owl conservation easement. Yolo County Office of Education would launch energy academies with curriculum tailored to all grade levels. The solar array would serve as a laboratory for operations, maintenance, and data. Curriculum for the environmental education center is expected to be based on input from SunPower, UC Davis,

Woodland Community College, Yolo County school districts, and the Yolo County Regional Occupation Program Business Advisory Committee.

1.3 - Decisions to be Made

NPS, in conjunction with GSA needs to decide whether to recommend the release of the 30 acres within the 323-acres of Grasslands Regional Park. NPS will also decide whether this Environmental Assessment (EA) is adequate to support a Finding of No Significant Impact (FONSI) decision, or whether an Environmental Impact Statement (EIS) will need to be prepared. The decision maker for the NPS in this process is Christine Lehnertz. Upon approval, Yolo County will negotiate the purchase price with GSA.

1.4 - Summary of Authorizing Programs and Laws

A brief overview of the applicable laws and a summary of authorizing programs is provided below. In addition, Appendix C provides a more detailed discussion of laws and regulations.

1.4.1 - Endangered Species Act (ESA)

Section 7 of the ESA requires that any federal action must not jeopardize the existence of any listed endangered or threatened species or adversely modify their critical habitat.

1.4.2 - Federal Lands to Parks (FLP) Program

Federal surplus property is transferred to state and local governments to be used and maintained exclusively, in perpetuity, for public park or recreational purposes (41 CFR 102-75-680). NPS's FLP legal authorities are derived from the Federal Property and Administrative Services Act of 1949 (40 USC §550, et seq.) as amended, especially as amended by the Federal Lands for Parks and Recreation Act (P.L. 91-485). The National Park Service is the administrator.

1.4.3 - National Environmental Policy Act of 1969 (NEPA) (P.L. 91-190)

NEPA requires consideration of environmental effects in the federal decision-making process. An environmental assessment is prepared when a federal agency must determine whether a proposed federal action may have a significant effect on the human environment.

1.4.4 - National Historical Preservation Act

The National Historical Preservation Act requires federal agencies to consider the effects of their actions on properties listed or eligible for listing on the National Register of Historic Places. Section 106 of the Act outlines a process of consultation with the State Historic Preservation Officer prior to the approval of any federal action.

1.5 - Issue Identification

Issues as discussed in NEPA describe the relationships between the action being proposed and the environmental (natural, cultural, and socioeconomic) resources. Issues describe an association or a link between the action and the resource. Issues are not the same as impacts, which include the intensity or results of those relationships. Internal scoping (defining the range of potential issues) was conducted for this EA to identify what relationships exist between the proposed action and environmental resources.

Internal scoping (defining the range of potential issues) was conducted for this EA to identify what relationships exist between the proposed action and environmental resources. The project team completed an Environmental Screening Form (Appendix B) on August 3, 2012. Scoping with federal, state, and local agencies and organizations having direct and indirect jurisdiction, insight, knowledge, expertise, or concern for Grasslands Regional Park resources was also conducted in September 2012.

The National Park Service's DO-12 Handbook requires an Environmental Assessment when the National Park Service plans a land release and when such release will lead to "anticipated changes in the use of land." In addition, the following issues were identified through the internal scoping process for further consideration in an EA:

- The fundamental purpose for preparing this EA stems from NPS plans to release lands that will be put to a different use from their current use.
- The project lies within the range of the Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), and burrowing owl (*Athene cunicularia*)
- There may be impacts on cultural landscapes, historical, and archaeological resources in the area.
- There may be impacts on the visitor enjoyment to the existing park because of anticipated use changes (displacement of recreational activities, visual, etc.).

1.5.1 - Issues and Impacts Discussed in this EA

The issues identified above were translated and focused into impact topics, or a more specific description of resources that may be impacted by the action. These impact topics are then carried through the analysis in the EA. The affected environment under each of the impact topics identified is presented in Section 3. An analysis of the impacts on these resources from each alternative is evaluated in Section 4.

- Visual Resources
- Biological Resources

- Cultural Resources
- Land Use
- Recreation

1.5.2 - Issues and Impact Topic Areas Identified and Considered but not Addressed in this EA

Some issues and impact topics were brought up in the scoping process because they were thought to be problematic but, after further consideration, were thought not to be worthy of an extended analysis. These issues and impact topics are therefore not considered further in this document.

Several resources do not exist on this property; therefore, no further analysis was conducted. These included the topical areas described below.

1.5.2.1. - Air Quality

The 1963 Clean Air Act (42 USC 7401, et seq., as amended) requires federal land managers to have an affirmative responsibility to protect a park's air quality from adverse air pollution impacts. Emissions resulting from the release of park lands would be realized as the additional vehicles enter and leave the site. However, any such emissions would be localized, temporary, and inconsequential to the park's air quality.

1.5.2.2. - Soundscapes

The NPS Management Policies (NPS 2001a) state that the parks will strive to preserve the natural quiet and the natural sounds associated with the physical and biological resources for the parks. Activities that cause excessive or unnecessary unnatural sounds in and adjacent to parks should be minimized so they do not adversely affect park resources, values, or visitors' enjoyment of them. Only a short-term increase in unnatural sounds is expected, during the installation of the solar education facility, with this proposal. Any continuing changes to the level of unnatural sound in the park are expected to be temporary, localized, and insignificant.

1.5.2.3. - Energy Resources

Impacts to energy use are considered negligible and will not be discussed further.

1.5.2.4. - Geologic Resources

NPS regulations and NPS Management Policies provide guidance on geologic resources and processes. There are no geologic resources or processes involved with the action.

1.5.2.5. - Ethnographic Resources

NEPA requires the consideration of possible conflicts between the proposal and land use plans, policies, or controls for cultural groups, including Indian Tribes. Outreach was conducted to interested tribes; however, no identification of any ethnographic resources was received.

1.5.2.6. - Economic Factors

NEPA requires not only cultural and natural factors but also the "human environment" to be analyzed, which includes economics. This may also include land use (occupancy, income, values, ownership, etc.) and socioeconomics (employment, occupation, income changes, tax base, infrastructures, etc.). There could be minor temporary contributions to employment and business in the surrounding area resulting from the land release. However, these impacts are considered negligible and will not be discussed further.

1.5.2.7. - Environmental Justice

Executive Order 12898, Environmental Justice in Minority and Low-Income Populations directs federal agencies to assess whether their actions have disproportionately high and adverse human health or environmental effects on minority and low-income populations. While there is a migrant farm worker camp to the southeast of the study area, none of the alternatives would have disproportionate health or environmental effects on minorities or low-income populations as defined in the Environmental Protection Agency's Environmental Justice Guidance. It is therefore concluded that the actions of Grasslands Regional Park will have no disproportionately high and adverse human health or environmental effects on minority and low-income populations.

1.5.2.8. - Traffic

Impacts to traffic are considered negligible and will not be discussed further.

1.5.2.9. - Prime Farmlands

The project site contains 41.02 acres of Farmland of Local Potential and does not contain any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. In addition, the agricultural land uses at the Grasslands site are restricted by the National Park Service through a quitclaim deed. Deed restrictions on the site require the property to be used and maintained for public purposes in perpetuity. As such, exclusive agricultural activities are not allowed onsite. However, the site has been used for grazing within the past year.

1.5.2.10. - Floodplains

The Yolo County General Plan indicates that portions of Yolo County are located downstream of dams or are protected by levees along the Sacramento, Feather, and American Rivers. Figure HS-5 of the Yolo County General Plan indicates that Grasslands Regional Park is located within a Dam Inundation Zone. The Grasslands site is located approximately 20 miles from the Monticello Dam on Putah Creek. The dam is owned, operated, and maintained by Solano Irrigation District and is routinely inspected and managed to reduce the potential for dam failure (Yolo County 2008).

1.5.2.11. - National Natural Landmarks

No National Natural Landmarks are located in or within the vicinity of the project site. Impacts to National Natural Landmarks are considered negligible and will not be discussed further.

SECTION 2: ALTERNATIVES

The Council of Environmental Quality (CEQ) has provided guidance on the development and analysis of alternatives under NEPA. A full range of alternatives, framed by the purpose and need, must be developed for analysis for any federal action. They should meet the project/proposal purpose and need, at least to a large degree. They should also be developed to minimize impacts to environmental resources. Alternatives should also be "reasonable," which CEQ has defined as those that are economically and technically feasible, and show evidence of common sense. Alternatives that could not be implemented if they were chosen (for economic or technical reasons), or do not resolve the need for action and fulfill the stated purpose in taking action to a large degree, are therefore not considered reasonable.

2.1 - Alternative 1 – No Action

The CEQ has specified that one of the alternatives must be the "no action" alternative for two reasons: (1) it is almost always a viable choice in the range of alternatives, and (2) it sets a baseline of existing impact that may be projected into the future against which to compare impacts of action alternatives.

Under the No Action Alternative, Grasslands Regional Park would continue to operate under the status quo. Any prospective solar education facility projects proposed by the County of Yolo General Services would not involve Grasslands Regional Park land. Because of the covenants associated with the land proposed for release, under this alternative, the land would have limited options that would not involve solar educational facility development. Alternative 1 would not change the existing land ownership structure of the land in question at Grasslands Regional Park. Further, under this alternative, the County of Yolo's obligations and the commitments for Yolo County Grasslands Regional Park would remain as they are. The County would continue to fulfill its program of utilization for the park.

The No Action Alternative does not include the probability that the County would withdraw its application for the adjacent Davis Global Communications site. However, there cannot be a firm commitment to providing long-term management of the adjacent site without a source of offsetting income to facilitate related management costs resulting from U.S. Fish and Wildlife monitoring and reporting requirements.

2.2 - Alternative 2 – Land Transfer

Under this alternative, 30 acres in the northwest corner of Grasslands Regional Park would be subject to a land release, while the remaining 293 acres adjacent to the site would continue to be utilized as a public park and for recreational uses. Concurrently, the County of Yolo proposes to move toward the

possibility of final acceptance of the 315-acre Davis Global Communications Site for incorporation into Grasslands Regional Park. Under this alternative, in consideration of the site constraints and consistent with the terms of the 1972 land transfer, the County of Yolo would be able to develop its education center and 5-megawatt photovoltaic solar array in the northwestern corner of the park. The solar array and environmental education center would allow for increased recreational and education opportunities within the park, while providing a buffer area for the adjacent burrowing owl conservation easement and appropriate protective measures to ensure potential conflicts with the adjacent archery range are addressed.

In order to fulfill the National Park Service's (NPS's) mission and meet its policy, the land would be released with conditions that would ensure continued protection and integrity of the remaining park lands. These require that:

- No sensitive natural resources are affected.
- Improvements would be located as to screen them from nearby roadways, trails, and other public areas in order to minimize impacts to the area's scenic values.
- Historic/cultural resources would be minimally impacted.
- Offsite stormwater discharge is minimized through the use of Best Management Practices.

The mechanism by which these protections would be established is a Restrictive Covenant, a recorded instrument similar to an easement, which would enact permanent terms and conditions governing the use of the land. The terms and conditions of the land release for the NPS are included in Appendix D.

In order to evaluate this alternative, preliminary project plans were reviewed. The plan forms the basis of Alternative 2 and the NPS assessment of this alternative. It represents the full buildout potential for the property in the event the project proceeds. Scaled-back implementation would also be possible under the selection of this alternative.

2.3 - Alternatives Considered But Rejected

As part of the site selection analysis, the Yolo County General Services Department and Parks Division previously considered the location of a Photo voltaic (PV) facility and education center at the Yolo County Central Landfill. However, after further consideration, a PV facility and education center at this site was determined to have insufficient economic value based on a Financing Plan prepared by Government Financial Strategies, Inc. Economic infeasibility included the requirement of approximately $1 million in infrastructure upgrades to provide an interconnection to PG&E facilities for a 2 MW PV facility. Infrastructure upgrade costs for a 5 MW PV facility and education facility, as preferred, would be in the order of $4 to $5 million. In addition to financial constraints associated with this rejected alternative, aesthetics and air quality (i.e. odors) issues associated with a

location adjacent to the city landfill were also considered in conjunction with a desire to develop a unique education center for K-12 students to learn about environmental conservation and sustainability while utilizing a currently underutilized portion of Grasslands Regional Park. As such, the alternative landfill location was not pursued as it was not economically feasible, nor did it effectively meet education goals associated with Grasslands Regional Park and would not allow for the MW size required due to infrastructure limitations.

SECTION 3: AFFECTED ENVIRONMENT

3.1 - Impact Determination (Generally)

To determine impacts, methodologies were identified to measure the change in park resources that would occur with the implementation of either alternative. Thresholds were established for each impact topic to help understand the severity and magnitude of changes in resource conditions, both adverse and beneficial, of the various alternatives.

Potential impacts are described in terms of type (are the effects beneficial or adverse?), context (are the effects site-specific, local, or even regional?), duration (are the effects short-term, lasting less than one year, or long-term, lasting more than one year?), and intensity (are the effects negligible, minor, moderate, or major?). Because definitions of intensity (negligible, minor, moderate, or major) vary by impact topic, intensity definitions are provided separately for each impact topic analyzed in this document.

Each alternative is compared with a baseline to determine the context, duration, and intensity of resource impacts. For purposes of impact analysis, the baseline is the continuation of current management (Alternative 1, the No Action Alternative) projected over the next 10 years. In the absence of quantitative data, best professional judgment was used to determine impacts. In general, the thresholds used come from existing literature, federal and state standards, and consultation with subject matter experts and appropriate agencies.

For the purposes of analysis, the following assumptions are used for all impact topics:

- *Short-term impacts:* Those impacts occurring in the immediate future (usually 1 to 6 months).
- *Long-term impacts:* Those impacts occurring through the next 10 years.
- *Direct impacts:* Those impacts occurring from the direct use or influence of the alternative.
- *Indirect impacts:* Those impacts occurring from (activity) that indirectly alter a resource or condition.
- *Study Area:* Each resource impact is assessed in direct relationship to those resources affected both inside and outside the park, to the extent that the impacts can be substantially traced, linked, or connected to the alternatives. Each impact topic, therefore, has a study area relative to the resource being assessed, and it is further defined in the impact methodology.

3.2 - Cumulative Impact Determination

The Council on Environmental Quality (CEQ) regulations (40 CFR 1508.7) require the assessment of "cumulative impacts," which are defined as:

> The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of that agency (Federal or non-Federal) or person undertakes such other actions.

In January 1997, the CEQ published a handbook entitled Considering Cumulative Effects Under the National Environmental Policy Act (see http://ceq.eh.doe.gov/nepa/ccenepa/ccenepa.htm). The introduction to the handbook opens with, "Evidence is increasing that the most devastating environmental effects may result not from the direct effects of a particular action, but from the combination of individually minor effects of multiple actions over time."

Cumulative impacts are considered for all alternatives, including the no-action alternative. They were determined by combining the impacts of the alternative being considered with other past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other ongoing or reasonably foreseeable future projects at Grasslands Regional Park and, if applicable, the surrounding region.

An impact to any park resource or value may constitute impairment, but an impact would be more likely to constitute impairment to the extent that it has a major or severe adverse effect upon a resource or value whose conservation is:

- Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- Key to the natural or cultural integrity of the park; or
- Identified as a goal in the park's general management plan or other relevant NPS planning documents.

Impairment may result from NPS activities in managing the park, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the park.

The following process was used to determine whether the alternatives had the potential to impair park resources and values:

1. Grassland Regional Park's enabling legislation, the Grasslands Master Plan, the Yolo County Parks and Open Space Master Plan, and other relevant background were reviewed with

regard to Grassland Regional Park's purpose and significance, resource values, and resource management goals or desired future conditions.

2. Management objectives specific to resource protection goals at Grasslands Regional Park were identified.
3. Thresholds were established for each resource of concern to determine the context, intensity, and duration of impacts, as defined above.
4. An analysis was conducted to determine if the magnitude of impact reached the level of "impairment," as defined by NPS Management Policies (NPS 2001a).

The impact analysis includes any findings of impairment to park resources and values for each of the alternatives.

3.3 - Affected Environment Defined

A detailed description regarding each individual impact area's affected environment is provided as a part of each individual Environmental Impact Topic in Section 4.0, Environmental Impact Analysis. Grasslands Regional Park (Park) is a 323-acre park located 3.5 miles south of Davis. The park was originally part of McClellan Air Force Base's Davis Global Communications site, and was deeded to the County in 1972 under the Federal Lands to Park (FLP) Program. The County has constructive possession of the 315-acres adjacent to the east of Grasslands Regional Park, for which the federal government has executed a quitclaim deed.

In the transfer deed for Grasslands Regional Park, the property was designated as a "park or recreation area, for use by the general public." The deed includes restrictive covenants, and the federal government retains a reversionary interest in the land if the terms of the deed are not fulfilled. The FLP program assures continued public access and stewardship of resources. Land acquired through the FLP Program must be used for public park and recreational use in perpetuity.

Portions of Grasslands Regional Park are currently used by the Sacramento Valley Soaring Society for model airplane gliding, the Yolo Bowmen Archery Range, and other recreational functions that include wildlife viewing, a burrowing owl preserve, horseshoe pitching, oak woodland management, and habitat and native grass restoration and long-term management.

The Grasslands Park Master Plan (Master Plan) was completed in 2005 and identifies provisions for improved general public use of the park, including trails, fencing to define safe use areas, environmental education opportunities, interpretive elements, an educational component, and environmental restoration. The Master Plan currently includes plans for trails in the park's northern portion; as such, trails are included as a part of the planned Environmental Education and Sustainability Park. In addition, use of the northern portion of the park must be carefully planned so

it does not create the potential for conflicts with the existing archery range uses; however, the archery ranges could be moved, but it has been found to be cost prohibitive to do so. Relocation of the archery range would result in a reduction in archery lanes and would effectively eliminate the site for consideration of regional archery competitions, as there would no longer be room for a full-sized archery range. Accordingly, the park's northern area has not yet been developed.

The Grasslands site is located at 30475 County Road 104, approximately 2.5 miles south of the City of Davis. The Grasslands Release property consists of approximately 30 acres of undeveloped land within the 156.49-acre Assessor's Parcel Number (APN) 033-130-03. The Grasslands site is located within the 323-acre Grasslands Regional Park in Yolo County, at the southeastern corner of the intersection of Mace Boulevard/County Road 104 and County Road 35.

The Grasslands site is generally bounded by County Road 35 and agricultural land (north), the burrowing owl preserve area (east), Yolo Bowmen Archery Range and Sacramento Valley Soaring Society Flying Field (south), and Mace Boulevard/County Road 104 and agricultural land (west) (Exhibit 2-4). The Grasslands site is located approximately:

- 1 mile south of South Fork Putah Creek,
- 3 miles west of Yolo Bypass Wildlife Area,
- 2.5 miles south of the City of Davis,
- 0.25 mile north of the Grasslands Regional Park entrance at Tremont Road, and
- Immediately east of the Yolo County/Solano County boundary.

The Grasslands site is designated as Open Space (OS) by the County of Yolo General Plan, and is within the Agricultural General (A-1) zoning classification. Utility polls span the northern and western edges of the site. The vegetation within the study area consists of native and non-native grasses, wildflowers, and several small trees located at the northwest corner of the site. In addition, there is a former drainage channel that runs along the southern border of the project site; the channel was a former flood channel of Putah Creek and currently no longer supports wetlands because of flood levees, Putah Creek no longer floods the area. Further, there is a mapped swale that is located above the elevation of the channel that has surface deposits of clay loams to clay textured soils that retain water and salts located north of the channel. A mid-summer 2012 informal wetland determination was conducted by qualified MBA biologists to verify the findings of the County's mapping efforts. During this determination, MBA biologists found that the swale is a seasonal wetland; conditions observed do not indicate that the swale is a vernal pool or supports vernal pool habitat. The Grasslands site is relatively flat and undeveloped, and is periodically utilized for grazing.

SECTION 4: ENVIRONMENTAL IMPACT ANALYSIS

4.1 - Visual Resources

This section describes the existing visual resources setting and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on a site reconnaissance performed by Michael Brandman Associates (MBA) on July 23, 2012.

4.1.1 - Regulations and Policies

The National Environmental Policy Act of 1969 (NEPA) requires that measures be taken to " . . . assure for all Americans . . . aesthetically pleasing surroundings . . . ." In addition, pursuant to DO-12, NPS is charged with identifying potential impacts to visual resources on park activities.

4.1.2 - Affected Environment

Grasslands Regional Park is located in a rural, unincorporated area of Yolo County, south of the City of Davis in an area dominated by agricultural land used for row crops, orchards, and cattle grazing. The general aesthetic and visual character of this area consists of an expansive horizon and sparsely inhabited landscape of mostly agriculture lands, rural residences, agricultural outbuildings, scattered stands of trees or vegetation, and views of the surrounding Costal Range and Sierra Nevada Mountain range in the distance. The Grasslands Regional Park does not contain nor is visible from any unique or locally significant scenic area, vista, or view designated by Yolo County or any other public entity. Grasslands Regional Park consists of a developed area that has been planted with native and non-native trees, amongst which are existing-use facilities including the archery range and horseshoe pitching area. The facilities include but are not limited to a modular building, several outbuildings, portable restrooms, storage containers, and picnic areas. Areas surrounding the developed area within the Park consist primarily of open grassland and include a model aircraft flying field. The 30-acre site proposed for use as an Environmental Education and Sustainability Park is primarily flat and consists of native and non-native grasses, wildflowers, and several small trees located at the northwest corner of the site. There is a former drainage channel that runs along the southern border of the project site; the channel was a former flood channel of Putah Creek and currently no longer supports wetlands, since because of flood levees, Putah Creek no longer floods the area. In addition, there is a mapped swale that is located above the elevation of the channel that has surface deposits of clay loams to clay textured soils that retain water and salts located north of the channel. A mid-summer 2012 informal wetland determination was conducted by qualified MBA biologists to verify the findings of the County's mapping efforts. During this determination, MBA biologists found that the swale is a seasonal wetland; conditions observed do not indicate that the swale is a vernal pool or supports vernal pool habitat. The 30-acre site does not contain any items of visual interest and is surrounded by roads on the north and west, but the space does contribute to the open space of the surrounding area. Utility poles span the northern and western edges of the site. There are no existing

recreational facilities within the 30-acre site, which has been used for cattle grazing in the recent past. As such, visitors to the park do no currently have access to the site.

Views of the Grasslands site are limited almost exclusively to motorists along County Road 104 and County Road 35 and those recreating at the Grasslands Regional Park. Motorists would have fleeting views of the project site and a lower expectation of an aesthetically pleasing view, particularly given their perceived focus on the road ahead, as well as the general lack of scenic vistas or points of interest in the immediate project area. Views of the site from the developed areas of Grasslands Regional Park are limited by intervening vegetation. In addition, the rural farm residences located in the project vicinity have intermittent views of the project site, which vary depending on their individual orientations, the length of their setback from the roadway and site, and the presence of frontage trees and foliage that obstruct views of the site. Specific views from these vantage points currently include both fallow and active agricultural fields, agricultural outbuildings, and existing park vegetation and facilities. None of these vantages is considered to hold moderate to high visual value, and none of these uses are identified by the Yolo County General Plan as containing visual value. The nearest residence is located approximately 250 feet south of the site on the west site of County Road 104 and approximately 300 feet away from the project site's southern most edge. Views of the project site or mostly obstructed by existing mature trees and vegetation.

4.1.3 - Methodology

In this environmental assessment, impacts to scenic values are described in terms of type, context, duration, and intensity, which is consistent with the Council on Environmental Quality (CEQ) regulations. These impact analyses are intended to comply with the requirements of the National Environmental Policy Act (NEPA).

Impacts to scenic values were identified and evaluated by (1) determining the area of potential effects; (2) identifying existing scenic values present in the area of potential effects; (3) applying how the action affects the visual resource; and (4) considering ways to avoid, minimize, or mitigate impacts to scenic values. CEQ regulations and DO-12 also call for a discussion of the appropriateness of mitigation, as well as an analysis of how effective the mitigation would be in reducing the intensity of a potential impact (e.g., reducing the intensity of an impact from major to moderate or minor).

Under Alternative 2 (discussed below), 30 acres in the northwest corner of Grasslands Regional Park would be subject to a land release, thereby allowing Yolo County to develop a 30-acre solar facility, adjoining environmental education center, and trails as a part of the Environmental Education and Sustainability Park.

For the purposes of analyzing potential impacts to scenic values, the thresholds of change for intensity of an impact are defined as follows:

Negligible: Impact(s) is at the lowest level of detection; barely perceptible and not measureable.

Minor: Adverse impact(s) would nominally affect a small number of the scenic features/resources of the site.

Beneficial impact(s) would include restoration of the some the existing scenic resources of the site through the removal of incompatible elements or improvement of site features.

Moderate: Adverse impact(s) would negatively impact numerous scenic features/resources of the site through the removal or change of contributing features or the introduction of incompatible elements.

Beneficial impacts would include the restoration of some scenic features and the protection of all scenic resources of the site.

Major: Adverse impact(s) would alter major scenic features/resources of the site through the removal or change of contributing features or the introduction of incompatible elements, significant enough to diminish the scenic values of the surrounding areas.

Beneficial impact(s) would include the restoration and protection of the scenic features/resources of the site, thereby improving the overall scenic resources of the surrounding areas.

4.1.4 - Alternative 1 – No Action

Direct Impacts: Under Alternative 1, the northwestern corner of Grasslands Regional Park would not be released from the National Park Service (NPS) and would remain as is; further, under this alternative, the County of Yolo may or may not finalize the acceptance of the 315-acre Davis Global Communications Site for incorporation into Grasslands Regional Park, depending on other circumstances. No direct impacts are expected with Alternative 1.

Indirect Impacts: Under Alternative 1, the solar facility and environmental education center would not be developed and would not provide additional recreational facilities or educational amenities. As such, no indirect impacts are expected with Alternative 1.

Cumulative Impacts: Under Alternative 1, the solar facility and environmental education center would not be developed and existing views and visual resources would remain. As such, no cumulative impact is expected under Alternative 1.

Conclusion: Under this alternative, no changes to the existing aesthetic environment are anticipated and the property will continue to be utilized as a portion of Grasslands Regional Park. In addition, surrounding property is envisioned to become part of the Park or is encumbered by Williamson Act

contracts, which prohibit use other than agriculture. As such, cumulative visual resource impacts on the site and surrounding areas are unlikely.

4.1.5 - Alternative 2 – Land Transfer (Release)

Direct Impacts: Under Alternative 2, the land release in itself would not result in any changes to the existing aesthetic environment. No impacts would occur.

Indirect Impacts: Under Alternative 2, the land release would enable Yolo County to develop 30 acres as an Environmental Education and Sustainability Park in the northwest corner of Grasslands Regional Park.

During the construction phase of the project, negative visual elements such as construction vehicles, construction materials, site construction trailers, and other temporary construction elements would be located on the project site and the proposed tie-in route. These temporary elements would be removed upon completion of the construction phase.

Tie-in lines would be needed in order to supply power to the grid network. They would be installed along County Road 104 and Tremont Road. The County Road 104 tie-in lines would be 110 feet in length using existing overhead power lines, and the Tremont Road tie-in line would be 3,705 feet in length and would utilize existing overhead power lines. It is assumed that no more than three power poles would be required onsite to support the interconnection. Power poles would be similar in structure and height to those that currently exist in the area, including those along the northern and western edges of the site. The tie-in lines would make use of existing power poles, and it is possible that three more poles may need to be installed; however, these would have a negligible impact on the visual character of the project site and surrounding area.

Upon completion, the site would be surrounded on the north and west sides (along County Road 35 and County Road 104) by hedgerows of evergreen shrubs and ranch-style fencing that would screen views of the developed areas and keep with the agrarian surroundings. The vegetation would screen the site from view of passengers in vehicles traveling on County Road 35 and County Road 104. The vegetation would also screen long-range views of the site and would be consistent with the general open space characteristic of the surrounding areas. As such, impacts to the site's contribution of open space views would be minimized.

During the construction phase of the project, light and glare may be produced from construction vehicles, construction materials, site construction trailers, and other temporary construction elements on the site. These temporary elements would be removed upon completion of the construction phase.

Pole-mounted infrared exterior security lighting would be installed at the site entrances. Wall-mounted exterior security lighting would be installed at the environmental educational center and the park host may have outdoor lighting. Wall mounted lights and park host lights would be downward-

facing and sensor-controlled to reduce offsite illumination and would remain on only when in use. Other security lighting will use high-technology infrared security sensors only, no other light source is planned. Because the project would use shielded and downward-directed lighting, and infrared sensor lighting the proposed project would not create a new source of substantial light. The proposed project would not create a new source of substantial light that would adversely affect day or nighttime views in the area.

The potential for glare from a photovoltaic (PV) panel's surface exists when the angle of the sun to the surface is such that light is reflected toward a viewer. The proposed trackers would change orientation during the course of a day, tracking the sun across a 90-degree arc. That is, the tracker would rotate from a 45-degree angle to the east in the morning to a 45-degree angle to the west in the afternoon. At midday, the tracker is horizontal and tilted south, and all reflections from the surface of the panels would be toward or near the sun's position in the sky, except when the angle of the sun above the horizon is greater than 70 degrees. This occurs at midday hours between May and August, peaking at the summer solstice on June 21. The maximum angle of the sun above the horizon at the latitude of the Solar Generation Facility is 78 degrees. At angles between 70 and 78 degrees, reflections off the panels would be directed into the sky as well, below the sun's position but above any potential viewpoint on the ground. Similarly, the angle of trackers during the morning and afternoon would direct reflections skyward. Therefore, no glare would be observed by viewers on the ground from midday reflections.

As noted, the PV panels can reflect sunlight skyward, creating a potential glare impact for aircraft. The effect could be similar to what a motorist experiences when the sun is low in the sky and the car passes between the sun and a glass-fronted building. If the motorist were heading directly toward the building, the glare would be in the motorist's eyes. Otherwise, the motorist would have to rotate his or her head to observe the glare off to the side. Water bodies have a similar glare effect when the incident sun angle is such that the reflected light strikes an aircraft on the opposite side of the water body from the sun.

Because aircraft move, the effect is momentary, lasting only as long as the angle between the sun, water body, and aircraft is maintained. Unless an aircraft were descending at an angle sloped directly at the solar array with the sun directly behind the aircraft, any glare that might occur from solar panels would be below the pilot's horizon. At the speed of an aircraft and the changing angles between the sun, panel, and aircraft, any glare effect would be momentary. In addition, the reflectance of the glass used in PV cells is about half that of standard residential and commercial glass. Consultation with the Federal Aviation Administration is not necessary. Therefore, indirect glare impacts on aircraft would be negligible.

Cumulative Impacts: The property will continue to be utilized as Grasslands Regional Park. In addition, surrounding property is envisioned to become part of the Park or is encumbered by

Williamson Act contracts, which prohibit use other than agriculture. As such, cumulative visual resource impacts on the site and surrounding areas are unlikely.

Conclusion: Alternative 2 does have the potential for minor adverse impacts to the overall scenic value of the surrounding open space as a result of the change of onsite features from that of open grassland to an Environmental Education and Sustainability Park. However, such changes to the visual appearance of the surrounding area would be minimized by evergreen hedgerows surrounding the site, thereby making it consistent with existing general views in the project vicinity.

4.2 - Biological Resources

This section describes the existing biological setting and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on a site reconnaissance performed by Michael Brandman Associates on July 23, 2012 and on August 6, 2012. See Appendix A for additional information.

4.2.1 - Special-Status Species

4.2.1.1. - Regulations and Policies

The Federal Endangered Species Act (FESA) protects plants and wildlife listed by the United States Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration Fisheries as endangered or threatened. Section 9 of the FESA prohibits the taking of listed wildlife, where taking is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 CFR 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any listed plant on federal land and removing, cutting, digging-up, damaging, or destroying any listed plant on non-federal land in knowing violation of state law (16USC1538). Pursuant to Section 7 of the FESA, federal agencies are required to consult with the USFWS if their actions, including permit approvals or funding, could adversely affect a listed plant or wildlife species or its critical habitat. Through consultation and the issuance of a biological opinion, the USFWS may issue an incidental take statement allowing take of the species that is incidental to another authorized activity, provided the action will not jeopardize the continued existence of the species. Section 10 of the FESA provides for issuance of incidental take permits to private parties, provided a Habitat Conservation Plan (HCP) is developed.

The Migratory Bird Treaty Act (MBTA) implements international treaties devised to protect migratory birds and any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits are in 50 CFR part 13

General Permit Procedures and 50 CFR part 21 Migratory Bird Permits. The State of California has incorporated the protection of birds of prey into Sections 3800, 3513, and 3503.5 of the California Department of Fish and Game (CDFG) Code.

4.2.1.2. - Affected Environment

Yolo County encompasses a portion of the Sacramento Valley and eastern edge of the Inner Coast Range. As such, the subregions of the county vary in topography, climate, and plant communities. The eastern and southern portions of the County are located on the relatively level valley floor. Yolo County has a Mediterranean climate characterized by hot, dry summers and temperate, wet winters. There are several main types of habitats within Yolo County:

- Croplands/Agricultural
- Wetlands
- Riparian
- Oak Woodland/Chaparral
- Grassland Prairies/Valley Oak Savannah
- Remnant Oak Trees, Groves, and Tree Rows
- Urban

The land release area consists of 30 acres of undeveloped land within Assessor's Parcel Number (APN) 033-130-03, which contains 156.49 acres in an unincorporated area of Yolo County approximately 2.5 miles south of the City of Davis's city limits. This site is designated as Open Space (OS) by the Yolo County General Plan, and is within the Agricultural General (A-1) zoning classification. The land within the project site is generally characterized as open space, having been used in the past for grazing, and is vegetated with both native and non-native grasses and forbs, and several young oak trees (*Quercus* sp.) in the northwest corner of the site. No sign of nesting activity (e.g., white wash, feathers) was detected in or around the young trees. The project site is surrounded by County Road 35 and agricultural land to the north, Grasslands Regional Park to the east, Yolo Bowmen Archery Range and Sacramento Valley Soaring Society Flying Field to the south, and Mace Boulevard/County Road 104 and agricultural land to the west. Scattered rural farm residences and farming-related buildings occur within the general vicinity of the site and within the grounds of the Grasslands Regional Park; however, no structures occur on the actual site. The nearest rural residences occur approximately 300 feet to the southwest of the site (across the street on County Road 104). No existing developments occur within the boundaries of the site. A swale and drainage channel are located onsite. The swale is located above the elevation of the channel, as the channel has coarser textured soil, while the uplands has surface deposits of clay loams to clay textured soils that retain water. The channel was a former flood channel of Putah Creek and no longer supports wetlands, because of the flood control levees that keep Putah Creek from flooding the area. The clay soils in the swale pond during the rainy season from precipitation.

Topographic Features

Grasslands Regional Park is situated on the lower reaches of an old floodplain of Putah Creek that is covered with small basins and shallow drainages that trend to the southeast towards the Yolo Basin.

The project site generally comprises flat, undeveloped annual grassland that contains several young oaks in the northwestern portion of the site, with an elevation range of approximately 33 to 34 feet above sea level. There is one small depression in the eastern portion of the site, as well as the remnants of a former flood control channel of Putah Creek; it no longer supports wetlands, since Putah Creek no longer floods the area because of the flood control levees that are now in place. There are a few undulating areas throughout the project site. On aerial photographs, these areas appeared to convey water flow throughout the project site when the land previously flooded. The field visit confirmed that these areas do not show evidence of water flow and water conveyance, and do not demonstrate connectivity with any natural drainage or water course.

Soils

The Yolo County soil surveys provide soils data for the land release area indicating two independent soils series: Brentwood silty clay loam, 0 to 2 percent slopes; and Marvin silty clay loam. The project site is dominated by Brentwood silty clay loam, 0 to 2 percent slopes, with a small inclusion of Marvin silty clay loam in the eastern portion of the project site.

Brentwood silty clay loam, 0 to 2 percent slopes occurs on nearly level to gently sloping fans, formed in valley fill from sedimentary rocks. This is a moderately well drained soil with associated vegetation such as annual grasses, forbs, and scattered oaks.

Marvin silty clay loam is found on nearly level floodplains at elevations of 10 to 100 feet under annual grasses and forbs. It is a moderately well drained to somewhat poorly drained soil, formed in fine textured alluvium from mixed sources.

Plant Communities

The vast majority of the 30-acre survey area consists of annual grassland that has been used in the past for grazing. This plant community is an upland plant community typically dominated by non-native annual grasses, but contains a diverse assemblage of native and nonnative grasses and forbs. Plants observed onsite include yellow starthistle (*Centaurea solastis*), prickly lettuce (*Lactuca serriola*), brome (*Bromus* sp.), lamb's ear (*Stachys byzantina*), barbed goat grass (*Aegilops triuncialis*), wild oat (*Avena fatua*), Italian rye grass (*Lolium multiflorum*), and red-stemmed filaree (*Erodium cicutarium*).

Wildlife

The existing conditions and plant communities onsite provide suitable habitat for a number of local wildlife species that occur in open-space and agricultural settings. Small mammal burrows were observed scattered throughout the project site. The following wildlife species were observed and/or detected on the project site during the reconnaissance-level field survey.

Reptiles

- Western fence lizard (*Sceloporus occidentalis*)

Birds

- Red-tailed hawk (*Buteo jamaicensis*)
- Turkey vulture (*Cathhartes aura*)
- Rock dove (*Coumba livia*)
- Common raven (*Corvus corax*)
- House sparrow (*Passer domesticus*)
- Brewer's blackbird (*Euphagus cyanocephalus*)
- Northern mockingbird (*Mimus polyglottos*)
- Mourning dove (*Zenaida macroura*)

Mammals

- Black-tailed jackrabbit (*Lepus californicus*)
- Ground squirrel (*Otospermophilus beecheyi*)

Based on the results of the literature review and reconnaissance-level field survey of the project site, MBA documented existing project site conditions and determined whether rare, threatened, or endangered plants and wildlife; species of concern; or those listed on non-government "watch" lists (hereafter referred to collectively as special-status species) occur or could potentially occur within the project site). Appendix A provides a map of California Natural Diversity Database (CNDDB)-recorded occurrences of special-status species within 5 miles of the Grasslands project site.

Sensitive Plants

Sensitive Plant Communities

Plant communities are considered to be sensitive biological resources, based upon federal, state, or local laws regulating their development, limited distributions, and habitat requirements of sensitive plant or wildlife species that occur within them. No sensitive plant communities occur on the project site.

Sensitive Plant Species

Several sensitive plant species were recorded as occurring within 5 miles of the project site. In particular, San Joaquin spearscale, Colusa grass, Solano grass, and alkali milkvetch are known to occur southeast of the project site within Grasslands Regional Park. No sensitive plant species were observed on the project site during the reconnaissance-level survey.

Sensitive Wildlife Species

Based on the results of the literature review and knowledge of the species that occur in the Central Valley, 35 sensitive wildlife species have been previously recorded or known to occur within the Davis USGS Quad, on which the project is located. The project site supports foraging habitat for special-status avian species such as Swainson's hawk and burrowing owl, and it supports habitat for the burrowing owl because of the presence of small mammal burrows onsite and proximity to a burrowing owl conservation area and known sightings. A discussion of each sensitive wildlife species recognized as potentially present on the project site is presented in Table 4-1.

Table 4-1: Grasslands Site Sensitive Wildlife Species

Species		Status			Preferred Habitat	Potential to Occur/ Known Occurrence/ Suitable Habitat
Scientific Name	Common Name	ESA	CESA	Other		
Plants						
Astragalus tener var. *tener*	Alkali milkvetch	None	None	1B.2	Low ground, alkali flats, and flooded lands in alkali playas, grasslands, and vernal pools. 1 to 170 meters in elevation. Blooms from March to June.	**Low potential to occur.** CNDDB records in vernal pool complexes. While this species has not been observed within the project site as there are no vernal pools where project activities are proposed, the Yolo Natural Heritage Program has recorded occurrences of this species within the Grasslands Regional Park property (southeast of project activities).
Atriplex joaquinana	San Joaquin spearscale	None	None	1B.2	Seasonal alkali wetlands or alkali sink scrub in chenopod scrub, alkali meadow, and grasslands. 1 to 250 meters in elevation. Blooms from April to October.	**Moderate potential to occur.** While this species has not been observed within the project site as there are no vernal pools where project activities are proposed, the Yolo Natural Heritage Program has recorded occurrences of this species within the Grasslands Regional Park property (southeast of project activities).
Neostapfia colusana	Colusa grass	FT	SE	1B.1	Large or deep vernal pool bottoms with adobe soils. 2 to 200 meters in elevation. Blooms from May to August	**Low potential to occur.** CNDDB records in vernal pool complexes. While this species has not been observed within the project site as there are no vernal pools where project activities are proposed, the Yolo Natural Heritage Program has recorded occurrences of this species within the Grasslands Regional Park property (southeast of project activities).

Table 4-1 (cont.): Grasslands Site Sensitive Wildlife Species

Species		Status			Preferred Habitat	Potential to Occur/ Known Occurrence/ Suitable Habitat
Scientific Name	Common Name	ESA	CESA	Other		
Tuctoria mucronata	Solano grass	FE	SE	1B.1	Solano grass only grows on salt affected clay soils in alkaline vernal pools or alkaline playas that are subject to long periods of inundation. Occurs at elevations from 5 to 11 meters. Blooms from April through July.	**Low potential to occur.** CNDDB records in vernal pool complexes. While this species has not been observed within the project site as there are no vernal pools where project activities are proposed, the Yolo Natural Heritage Program has recorded occurrences of this species within the Grasslands Regional Park property (southeast of project activities).
Wildlife						
Athene cunicularia	Burrowing owl	None	None	CSC	Favors flat, open grassland or gentle slopes and sparse-shrub land ecosystems. Mainly utilize ground squirrel burrows for nesting and avoiding predators, though also known to utilize debris piles and old pipes for breeding and refuge.	**High potential to occur**. While the project site supports some small mammal activity, no individual owls or their sign (e.g., white wash, pellets, feathers) were observed during the reconnaissance surveys. There more than 10 recorded occurrences within 5 miles of the site, within the agricultural and open space found in the region.
Buteo swainsoni	Swainson's hawk	None	ST	None	Typically nest at edge of narrow bands of riparian vegetation, in isolated oak woodland, in lone trees, and in trees associated with roads, farmyards, as well as in adjacent urban residential areas. This hawk forages in open stands of grass-dominated vegetation, sparse shrublands, and small open woodlands. In agricultural lands, its preferred foraging grounds are alfalfa fields.	**High potential to occur.** The project site provides low quality foraging habitat for the Swainson's hawk. There are more than 10 recorded occurrences within 5 miles of the project site, within the open space and agricultural lands found in the region.

Table 4-1 (cont.): Grasslands Site Sensitive Wildlife Species

Species		Status			Preferred Habitat	Potential to Occur/ Known Occurrence/ Suitable Habitat
Scientific Name	Common Name	ESA	CESA	Other		

ESA
FE Federally listed endangered
FT Federally listed threatened
FPE Federally proposed endangered
FPT Federally proposed threatened
FC Federal candidate

CESA
SE State listed endangered
ST State listed threatened

Other
CDFG:CSC California Species of Concern
CDFG:FP Fully Protected Species
CDFG:P Protected Species
CNPS: 1B.1/2 Rare, threatened or endangered in California or elsewhere

Species Present – The species was observed on the project site at the time of the survey or during a previous biological survey.
High Potential to Occur – There is both suitable habitat associated with the species and a historical record of the species on or in the immediate vicinity of the project site, within 3 miles.
Moderate Potential to Occur – The diagnostic habitats associated with the species occur on or in the immediate vicinity of the project site, but there is not a recorded occurrence of the species within the immediate vicinity, within 3 miles. Some species that contain extremely limited distributions may be considered moderate, even if there is a recorded occurrence in the immediate vicinity.
Low Potential to Occur – There is a historical record of the species in the vicinity of the project site and potentially suitable habitat onsite, but existing conditions, such as density of cover, prevalence of non-native species, evidence of disturbance, limited habitat area, isolation, substantially reduce the possibility that the species may occur. The site is above or below the recognized elevation limits for this species.
Not Likely to Occur – A combination of the nearest recorded occurrence of the species is not within the near vicinity of the site, and the habitat onsite is marginally suitable at best. There is virtually no potential for this species to occur on the project site and further discussion is excluded from this report.

4.2.1.3. - Methodology

Information was collected regarding habitat use and potential threats to 35 special-status species of plants and wildlife confirmed or likely to occur in or near the project area by reviewing Park surveys and literature, USFWS species lists (USFWS 2005), CDFG species accounts (CDFG 2012), original literature, discussions with other biologists that have worked on the Site, discussions with CDFG, discussions with USFWS, and the Yolo Natural Heritage Program.

The thresholds of change for the intensity of an impact to threatened, endangered, and sensitive species are defined as follows:

Negligible: An action that would not affect any individuals of a listed or sensitive species or their habitat within the Park. No federally listed species would be affected, or the alternative would affect an individual of a listed species or its critical habitat, but the change would be so small that it would not be of any measurable or perceptible consequence to the protected individual or its population. Any impact would be site-specific. A negligible effect would equate with a "no effect" determination in USFWS terms.

Minor: An action that would affect a few individuals of sensitive species or have highly localized impacts upon their habitat within the Park. The change would require considerable scientific effort to measure and have barely perceptible consequences to the species or habitat function. The alternative would affect an individual(s) of a listed species or its critical habitat, but the change would be small. A minor effect would equate with a "may affect" determination in USFWS terms, and would be accomplished by a statement of "not likely to adversely affect" the species.

Moderate: An action that would cause measurable effects on (1) a relatively moderate number of individuals within a sensitive species population, (2) the existing dynamics among multiple species (e.g., predator-prey, herbivore-forage, vegetation structure-wildlife breeding habitat), or (3) a relatively large habitat area or important habitat attributes within the park. A sensitive species population or habitat might deviate from normal levels under existing conditions, but would remain indefinitely viable within the park. An individual or population of a listed species or its critical habitat would be noticeably affected. The effect could have some consequence to the individual, population, or habitat. Mortality or interference with activities necessary for survival are expected on an occasional basis, but are not expected to threaten the continued existence of the listed species in the park. A moderate effect would equate with a "may affect" determination in USFWS terms and would be accompanied by statement of "not likely to adversely affect" the species. State species of concern could also be affected.

Major: An action that would have drastic and permanent consequences for a sensitive species population, dynamics among multiple species, or almost all available critical or unique habitat area within the park. A sensitive species population or its habitat would be permanently altered from normal levels under existing conditions, and the species would be at risk of extirpation from the park. An individual or population of a listed species, or its critical habitat, would be noticeably affected with a vital consequence to the individual, population, or habitat. Mortality or other effects are expected on a regular basis and could threaten continued survival of the species in the park. A major effect would equate with a "likely to adversely affect" determination in USFWS terms. A "take" under Section 7 of the Endangered Species Act could occur.

4.2.1.4. - Alternative 1 – No Action

Direct Impacts: Under Alternative 1, the northwestern corner of Grasslands Regional Park would not be released from the NPS and would remain as is; further, under this alternative, the County of Yolo may or may not finalize the acceptance of the 315-acre Davis Global Communications site for incorporation into Grasslands Regional Park, depending on other circumstances. No direct impacts are expected with Alternative 1.

Indirect Impacts: Under the No Action alternative, no indirect impacts are expected.

Cumulative Impacts: Under Alternative 1, no cumulative impacts are expected.

Conclusion: Under the No Action alternative, no impacts to special-status species are expected.

4.2.1.5. - Alternative 2 – Land Transfer (Release)

Direct Impacts: Under Alternative 2, the land release in itself would not result in any changes to the existing habitat and would thus not result in impacts to special status species.

Indirect Impacts: Under Alternative 2, the release of 30-acres of Grasslands Regional Park would result in the development of the northwestern 30 acres of Grasslands Park site by Yolo County as an environmental education center, with bird watching platforms, trails, and a 5-megawatt (mw) photovoltaic solar array, consistent with the Master Plan's environmental education component. The remaining 293 acres adjacent to the site would continue to be utilized in its existing state for conservation of burrowing owls; as vernal pool conservation and restoration areas; and for active and passive recreation (archery, model airplanes, and scenic trails).

Under this alternative, implementation of the solar array may provide the financial resources needed to implement U.S. Fish and Wildlife required monitoring and reporting at the adjacent Davis Global Communications site. Nonetheless, addition of this site to Grasslands Park would result in cost implications beyond those of the environmental benefits. Furthermore, the proposed action's impacts

can be appropriately mitigated using existing Grasslands Park lands without the use of the adjoining acreage.

Swainson's Hawk and White Tailed Kite

The open field within the project site provides highly suitable foraging habitat for Swainson's hawk, a State Threatened species, and white tailed kite, a State Fully Protected species. The release of Grasslands Regional Park and the resulting construction of the environmental education center and photovoltaic solar array will result in physical alteration to the existing land use and will result in the loss of Swainson's hawk and white tailed kite foraging habitat.

Burrowing Owl

The project site is open, annual grassland with small mammal burrows. The construction phase of the proposed project will result in a significant physical alteration to the existing land use and will result in the loss of potential burrowing owl habitat if found present onsite. Since suitable burrowing owl habitat occurs on the project site, burrowing owls may migrate onto the site given the site's proximity to a burrowing owl conservation area to the east and regional sightings of the species.

Special-Status Plants

Several special-status plants (San Joaquin spearscale, Colusa grass, Solano grass, and alkali milkvetch) are known to occur southeast of the land release area within the grasslands site. The release of Grasslands Regional Park and the resulting construction of the environmental education center and photovoltaic solar array would result in physical alteration to the existing land use that may impact special-status plants onsite.

Nesting Birds

The open ruderal and grassland habitat found on the undeveloped parcel and surrounding trees offsite may provide suitable nesting habitat for several ground and tree-nesting avian species known to occur in the area, such as Northern harrier (*Circus cyaneus*) and white-tailed kite (*Elanus leucurus*). Additionally, the undeveloped field may provide marginal foraging habitat for a number of raptor species such as red-tailed hawk.

In order to minimize the degree and/or severity of adverse effects, the following measures would be implemented during all activities associated with the proposed action:

- To offset impacts to suitable foraging habitat for Swainson's hawk, one of the following two measures would be implemented:
  - Measure 1: Pursuant to the Solar Facility Ordinance of Yolo County, if more than 2.5 acres of Swainson's hawk foraging habitat is impacted, a Minor Use Permit shall be required and include conditions for mitigation for the permanent loss of such habitat as required under the Yolo Natural Heritage Program. The Yolo National Heritage Program

reviews applications for development within the planning area, and it collects acreage-based mitigation fees for development of the lands, which are sufficient to fund the acquisition, enhancement, and long-term management of 1 acre of Swainson's hawk foraging habitat for every 1 acre of foraging habitat lost to development.

- Measure 2: Prior to any ground disturbance, the County of Yolo shall place and record one or more Conservation Easements within Grasslands Regional Park that meet the acreage requirements of California Department of Fish and Game's Swainson's Hawk foraging habitat mitigation guidelines. The conservation easement(s) shall be executed by the County of Yolo The conservation easement(s) shall be reviewed and approved in writing by the California Department of Fish and Game, prior to recordation for the purpose of confirming consistency. The purpose of the conservation easement(s) shall be to preserve the value of the land as foraging habitat for the Swainson's hawk.

- Since suitable burrowing owl habitat occurs on the project site, and burrowing owls may migrate onto the site, a pre-construction clearance survey shall be conducted to determine if burrowing owls currently occupy the project site. The pre-construction clearance survey shall be conducted within 14 days prior to ground-disturbing activities. Survey methodology shall be consistent with the new California Department of Fish and Game 2012 Staff Report on Burrowing Owl Mitigation. Since no suitable burrows were discovered during the initial biological reconnaissance survey, the pre-construction survey shall consist of a 1-day survey effort within all suitable habitat and within 500 feet of the project site. If burrowing owls are observed onsite, the subsequent measure shall be implemented to reduce any potential project impact.

- If burrowing owl(s) are observed onsite during the pre-construction clearance survey, consultation with CDFG shall occur to determine the next appropriate steps. Additional focused surveys may be warranted as determined by CDFG to determine the quantity and location of nesting/migrating burrowing owls. Areas currently occupied by burrowing owls shall be avoided for the duration of residing onsite and/or nesting period. If burrowing owls cannot be avoided by the proposed project, implementation of the subsequent measure shall be warranted to reduce any potential project-related impacts to less than significant.

- If burrowing owls are determined to occupy the project site prior to construction activities and these occupied areas cannot be avoided, then additional measures such as passive relocation during the non-breeding season may be utilized to reduce any potential impacts. Burrow exclusion involves the installation of one-way doors in burrow openings during the non-breeding season to temporarily exclude burrowing owls, or permanently exclude burrowing owls and close burrows after verifying burrows are empty by site monitoring and scoping. Existing or artificial burrows situated less than 75 meters from the project site represent the ideal scenario for successful passive relocation. Additional factors for successful passive

relocation are included in the California Department of Fish and Game 2012 Staff Report on Burrowing Owl Mitigation. When a qualified biologist is able to determine that burrowing owls are no longer occupying the project site and passive relocation deemed successful, construction activities may continue.

- Prior to project construction and during the appropriate blooming or survey period, focused plant surveys shall be performed for San Joaquin spearscale, Colusa grass, Solano grass, and alkali milkvetch within the project site because of the proximity and known occurrences within Grasslands Regional Park. A survey report will be prepared by a qualified botanist and submitted to Yolo County prior to disturbance of the project area.

- Pursuant to the Migratory Bird Treaty Act and California Department of Fish and Game Code, removal of any trees, shrubs, or any other potential nesting habitat shall be conducted outside of the avian nesting season. The nesting season generally extends from early February through August, but can vary slightly from year to year based upon seasonal weather conditions. Construction generally occurs during the dry season in the spring and summer months (during nesting season) to avoid inclement weather. If construction is planned during the nesting season (between February and August), the County will be required to conduct pre-construction presence/absence surveys to determine if any birds or raptors are nesting within or adjacent to the project site.

- A qualified biologist shall conduct a pre-construction survey for nesting migratory birds and raptors within all suitable habitat on the project site, and within 500 feet of the project site. The pre-construction survey shall be conducted within 30 days of ground-disturbing activities if construction occurs within the breeding season. If an active nest is discovered during the pre-construction survey, no construction activities should encroach within a 500-foot buffer from the active nest, until the nestlings have fledged. If construction activities must occur within 500 feet of the active nest, a biological monitor will be required to be onsite during the construction phase to ensure no direct or incidental take of the active nest occurs. If the biological monitor determines that construction activities will result in take of the active nest, then all construction activities must halt within the established buffer for the nest.

Cumulative Impacts: Under Alternative 2, impacts to special-status species could occur from any past, present, and reasonably foreseeable future activities. Past and present projects affecting special-status species have included park operations. Park operations and developments within Grasslands Regional Park, particularly development of park facilities, may result in impacts to sensitive species habitat. Future projects that could affect special-status species include additional wetland restoration, educational facility construction, and trail infrastructure construction. Overall, the cumulative effects on special-status species, in conjunction with other past, present, and future activities, would be long-term, localized, minor, and generally beneficial.

Conclusion: Under Alternative 2, as a result of the release of Grasslands Regional Park to Yolo County, negative impacts to special-status species could be expected. With the incorporation of the measures identified above, for the purposes of FESA compliance, Alternative 2 is not expected to result in the substantial impairment of park resources.

4.2.2 - Water Resources and Wetlands

4.2.2.1. - Regulations and Policies

Executive Order 11990, Protection of Wetlands requires federal agencies to avoid, where possible, adversely impacting wetlands. Management Policies 2006 and DO-11-1 Wetlands Protection mandate that NPS will strive to prevent the loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.

In addition, the United States Army Corps of Engineers (USACE) administers Section 404 of the federal Clean Water Act (CWA). This section regulates the discharge of dredge and fill material into waters of the U.S. The USACE has established a series of nationwide permits that authorize certain activities in waters of the U.S., if a proposed activity can demonstrate compliance with standard conditions. Normally, the USACE requires an individual permit for an activity that will affect an area equal to or in excess of 0.5 acre of waters of the U.S. Projects that result in impacts to less than 0.5 acre can normally be conducted pursuant to one of the nationwide permits, if consistent with the standard permit conditions. The USACE also has discretionary authority to require an Environmental Impact Statement for projects that result in impacts to an area between 0.1 and 0.5 acre. Use of any nationwide permit is contingent on the activities having no impacts to endangered species.

4.2.2.2. - Affected Environment

Portions of Grasslands Regional Park are already utilized as vernal pool conservation areas. In addition to vernal pool habitat, soil conditions within the park are suitable for seasonal wetlands. Seasonal wetlands are plant communities typically characterized by any number of seasonal wetland generalist plants, many of which are non-native and adapted to frequent disturbance, and may be found within Grasslands Regional Park. The Yolo NHP conducted mapping of wetlands within Grasslands Regional Park in 2010 and 2011. There is a former drainage channel that bisects Grasslands Regional Park; the channel was a former flood channel of Putah Creek and currently no longer supports wetlands, since because of flood levees, Putah Creek no longer floods the area. In addition, there is a mapped swale that is located above the elevation of the channel that has surface deposits of clay loams to clay textured soils that retain water and salts located north of the channel. A mid-summer 2012 informal wetland determination was conducted by qualified MBA biologists to verify the findings of the County's mapping efforts. During this determination, MBA biologists found that the swale is a seasonal wetland; conditions observed do not indicate that the swale is a vernal pool or supports vernal pool habitat. Species observed included rabbit's foot grass (*Polypogon monspeliensis*), Italian ryegrass (*Lolium perenne* ssp. *multiflorum*), curly dock (*Rumex crispus*), and perennial pepperweed (*Lepidium latifolium*).

4.2.2.3. - Methodology

Information was collected regarding potential threats to water resources or wetlands confirmed or likely to occur in or near the project area by reviewing Park surveys and literature, original literature, discussions with other biologists that have worked on the Site, discussions with CDFG, discussions with USFWS, and the Yolo Natural Heritage Program.

The thresholds of change for the intensity of an impact to water resources or wetlands are defined as follows:

Negligible: Impact(s) are at the lowest level of detection; barely perceptible and not measurable.

Minor: Adverse changes in water quality would be measurable, although small, likely short-term, indirect, and localized; localized and indirect riparian impacts that do not substantively increase stream temperatures or affect stream habitats; no alteration of natural hydrology of wetlands; A U.S. Army Corps of Engineers 404 permit would not be required; no filling or disconnecting of the floodplain; short-term impacts that do not affect the functionality of the floodplain.

Moderate: Adverse changes in water quality would be measurable and long-term but would be relatively local, direct and/or indirect; localized and indirect riparian impacts that may slightly increase stream temperatures or affect stream habitats; alteration of natural hydrology of wetlands would be apparent such that an U.S. Army Corps of Engineers 404 permit could be required; alteration of the floodplain apparent; wetland or floodplain functions would not be affected in the long-term.

Major: Adverse changes in water quality would be readily measurable, would have substantial consequences, direct and/or indirect, and would be noticed on a regional scale; localized and indirect riparian impact that may substantively increase stream temperatures or affect stream habitats; effects to wetlands or floodplains would be observable over a relatively large area and would be long-term, and would require a U.S. Army Corps of Engineers 404 permit; filling or disconnecting of the floodplain; long-term impacts that affect the functionality of the floodplain.

4.2.2.4. - Alternative 1 – No Action

Direct Impacts: Under Alternative 1, the northwestern corner of Grasslands Regional Park would not be released from the NPS and would remain as is; further, under this alternative, the County of Yolo would not be obligated to accept the 315-acre Davis Global Communications Site for incorporation into Grasslands Regional Park. No direct impacts are expected with Alternative 1.

Indirect Impacts: Under the No Action alternative, no indirect impacts are expected.

Cumulative Impacts: Under Alternative 1, no cumulative impacts are expected.

Conclusion: Under the No Action alternative, no impacts to water resources and wetlands are expected. Therefore, no impairment of park resources is expected to result under selection of this alternative.

4.2.2.5. - Alternative 2 – Land Transfer (Release)

Direct Impacts: Under Alternative 2, the land release in itself would not result in any changes in land use that would result in impacts to water resources or wetlands. No impacts would occur.

Indirect Impacts: Under Alternative 2, the release of Grasslands Regional Park would result in the development of the northwestern 30 acres of Grasslands Park site by Yolo County as an environmental education center, with bird watching platforms, trails, and a 5-mw photovoltaic solar array, consistent with the Master Plan's environmental education component. The remaining 293 acres adjacent to the site would continue to be utilized in its existing state as conservation easements for burrowing owls, as vernal pool conservation and restoration areas, and for active and passive recreation (archery, model airplanes, and scenic trails).

Because the seasonal wetland swale has no nexus to Waters of the United States, it appears that the isolated wetland is outside of the United States Army Corps of Engineers' jurisdiction, and regulation of the swale would fall under the State of California's Porter-Cologne Water Quality Control Act. As such, filling the seasonal wetland swale requires coordination with the Regional Water Board for the issuance of either individual or general waste discharge requirements. To replace the impacted seasonal wetland on the project site, a habitat restoration plan shall be developed prior to the approval of grading plans and building permits and would identify appropriate mitigation areas onsite based on underlying soils and local hydrology. This data would be used to prioritize sites for enhancement or seasonal wetland creation (such as the relocation of the seasonal wetland swale) within another portion of Grasslands Regional Park. Habitat shall be restored or replaced at a minimum ratio of 1:1 acre of habitats permanently impacted. As such, indirect impacts to water resources and wetlands would be minimal.

Cumulative Impacts: Under Alternative 2, impacts to water resources and wetlands could occur from any past, present, and reasonably foreseeable future activities. Past and present projects affecting water resources and wetlands have included park operations. Park operations and developments within Grasslands Regional Park, particularly development of park facilities, may result in impacts to wetland habitat. Future projects that could affect wetland habitat include additional wetland restoration within the park itself, educational facility construction, and trail infrastructure construction. Overall, the cumulative effects on special-status species, in conjunction with other past, present, and future activities, would be long-term, localized, minor, and generally beneficial.

Conclusion: Under Alternative 2, as a result of the release of Grasslands Regional Park to Yolo County, negative impacts to water resources and wetlands could be expected. By replacing impacted wetland cells and restoring wetland habitat within Grasslands Regional Park, for the purposes of Clean Water Act compliance, Alternative 2 is not expected to result in the impairment of park resources.

4.3 - Cultural Resources

As stated in the NPS Cultural Resource Management Guideline (NPS 1997), cultural resources are ". . . the material evidence of past human activities. Finite and nonrenewable, these tangible resources begin to deteriorate almost from the moment of their creation. Once gone, they cannot be recovered." Thus, it is imperative that "park management activities reflect awareness of the irreplaceable nature of these material resources." If these resources "are degraded or lost, so is the parks' reason for being." The main cultural resources of Grasslands Regional Park can be categorized as archaeological resources.

4.3.1 - Regulations and Policies

If areas of prehistoric or historic archaeological resources are encountered during subsurface excavation, ground disturbance work within 100 feet of the discovery shall cease until a qualified archaeologist can determine the significance of the find. The discoveries shall be evaluated for their CR and NRHP eligibility and recommendations made. The identified resources or resource area shall be avoided by project activities during evaluation. The County of Yolo shall require the project applicant to include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. Upon completion of the archaeologist's evaluation, a report shall be prepared documenting the methods and results, and offering recommendations. The report shall be submitted to the County of Yolo, the Northwest Information Center, and the State Historic Preservation Officer (SHPO), if required.

If human remains are encountered during excavation activities, ground disturbance work shall stop within 100 feet of the find, and the County Coroner will be notified (Section 7050.5 of the California Health and Safety Code). If the coroner determines that the remains are of Native American origin, he or she will contact the Native American Heritage Commission (NAHC). The NAHC will be responsible for designating the most likely descendant (MLD), who will be responsible for the ultimate disposition of the remains, as required by Public Resources Code Section 5097.98. The MLD will make his or her recommendations within 48 hours of notification by the NAHC.

Archeological resources will be managed *in situ*, unless the removal of artifacts or physical disturbance is justified by research, consultation, preservation, protection, or interpretive requirements. Preservation treatments will include proactive measures that protect resources from vandalism and looting, and maintain or improve their condition by limiting damage due to natural and

human agents. Data recovery actions will be taken only in the context of planning, consultation, and appropriate decision-making. Preservation treatments and data recovery activities will be conducted within the scope of an approved research design. Archeological research will use non- destructive methods of testing and analysis wherever possible. The Park Service will incorporate information about archaeological resources into interpretive and educational, and preservation, programs. Artifacts and specimens recovered from archaeological resources, along with associated records and reports, will be maintained together in the park museum collection.

(Also see 36 CFR Part 79; Secretary of the Interior's Standards and Guidelines for Archeological Documentation [48 FR 44734- 737]; Museum Handbook)

4.3.1.1. - Affected Environment

The term "cultural resources" encompasses historic, archaeological, and paleontological resources, and burial sites. Below is a brief summary of each component:

- **Historic Resources:** Historic resources are associated with the recent past. In California, historic resources are typically associated with the Spanish, Mexican, and American periods in the State's history and are generally less than 200 years old.
- **Archaeological Resources:** Archaeology is the study of prehistoric human activities and cultures. Archaeological resources are generally associated with indigenous cultures.
- **Paleontological Resources:** Paleontology is the study of plant and animal fossils.
- **Burial Sites:** Burial sites are formal or informal locations where human remains, usually associated with indigenous cultures, are interred.

Cultural Setting

The following is a brief overview of the prehistory, ethnography, and historic background, providing a context in which to understand the background and relevance of sites found in the general project area. This section is not intended to be a comprehensive review of the current resources available; rather, it serves as a general overview.

Further details can be found in ethnographic studies, mission records, and major published sources, including Beardsley (1948), Bennyhoff (1950), Fredrickson (1973 and 1974), Kroeber (1925), Chartkoff and Chartkoff (1984), and Moratto (1984).

Prehistoric Background

Early archaeological investigations in central California were conducted at sites located in the Sacramento-San Joaquin Delta region. The first published account documents investigations in the Lodi and Stockton area (Schenck and Dawson 1929). The initial archaeological reports typically contained descriptive narratives, with more systematic approaches sponsored by Sacramento Junior

College in the 1930s. At the same time, University of California at Berkeley excavated several sites in the lower Sacramento Valley and Delta region, which resulted in recognizing archaeological site patterns based on variations of inter-site assemblages.

Research during the 1930s identified temporal periods in central California prehistory and provided an initial chronological sequence (Lillard and Purves 1936; Lillard, et al. 1939). Three Periods were defined (Early, Transitional, and Late) which were later designated as Horizons (Heizer and Fenenga 1939). In 1939, Lillard noted that each cultural period led directly to the next and that influences spread from the Delta region to other regions in central California (Lillard, et al. 1939). In the late 1940s and early 1950s, Beardsley documented similarities in artifacts among sites in the San Francisco Bay region and the Delta and refined his findings into a cultural model that ultimately became know as the Central California Taxonomic System (CCTS). This system proposed a uniform, linear sequence of cultural succession (Beardsley 1948 and 1954). The CCTS system was challenged by Gerow, whose work looked at radiocarbon dating to show that Early and Middle Horizon sites were not subsequent developments but, at least partially, contemporaneous (1954; 1974; Gerow with Force 1968).

To address some of the flaws in the CCTS system, Fredrickson (1973) introduced a revision that incorporated a system of spatial and cultural integrative units. Fredrickson separated cultural, temporal, and spatial units from each other and assigned them to six chronological periods: Paleo-Indian (10000 to 6000 B.C.); Lower, Middle and Upper Archaic (6000 B.C. to A.D. 500), and Emergent (Upper and Lower, A.D. 500 to 1800). The suggested temporal ranges are similar to earlier horizons, which are broad cultural units that can be arranged in a temporal sequence (Moratto 1984). In addition, Fredrickson defined several patterns—a general way of life shared within a specific geographical region. These patterns include:

- Windmiller Pattern or Early Horizon (3000 to 1000 B.C.)
- Berkeley Pattern or Middle Horizon (1000 B.C. to A.D. 500)
- Augustine Pattern or Late Horizon (A.D. 500 to historic period)

Brief descriptions of these temporal ranges and their unique characteristics follow.

Windmiller Pattern or Early Horizon (3000 to 1000 B.C.)

Characterized by the Windmiller Pattern, the Early Horizon was centered in the Cosumnes district of the Delta and emphasized hunting rather than gathering, as evidenced by the abundance of projectile points in relation to plant processing tools. Additionally, atlatl, dart, and spear technologies typically included stemmed projectile points of slate and chert but minimal obsidian. The large variety of projectile point types and faunal remains suggests exploitation of numerous types of terrestrial and aquatic species (Bennyhoff 1950; Ragir 1972). Burials occurred in cemeteries and intra-village graves. These burials typically were ventrally extended, although some dorsal extensions are known

with a westerly orientation and a high number of grave goods. Trade networks focused on acquisition of ornamental and ceremonial objects in finished form rather than on raw material. The presence of artifacts made of exotic materials such as quartz, obsidian, and shell indicates an extensive trade network that may represent the arrival of Utian populations into central California. Also indicative of this period are rectangular Haliotis and Olivella shell beads, and charmstones that usually were perforated.

Berkeley Pattern or Middle Horizon (1000 B.C. to A.D. 500)

The Middle Horizon is characterized by the Berkeley Pattern, which displays considerable changes from the Early Horizon. This period exhibited a strong milling technology represented by minimally shaped cobble mortars and pestles, although metates and manos were still used. Dart and atlatl technologies during this period were characterized by non-stemmed projectile points made primarily of obsidian. Fredrickson (1973) suggests that the Berkeley Pattern marked the eastward expansion of Miwok groups from the San Francisco Bay Area. Compared with the Early Horizon, there is a higher proportion of grinding implements at this time, implying an emphasis on plant resources rather than on hunting. Typical burials occurred within the village with flexed positions, variable cardinal orientation, and some cremations. As noted by Lillard, the practice of spreading ground ochre over the burial was common at this time (Lillard, et al. 1939). Grave goods during this period are generally sparse and typically include only utilitarian items and a few ornamental objects. However, objects such as charmstones, quartz crystals, and bone whistles occasionally were present, which suggest the religious or ceremonial significance of the individual (Hughes 1994). During this period, larger populations are suggested by the number and depth of sites compared with the Windmiller Pattern. According to Fredrickson (1973), the Berkeley Pattern reflects gradual expansion or assimilation of different populations rather than sudden population replacement and a gradual shift in economic emphasis.

Augustine Pattern or Late Horizon (A.D. 500 to Historic Period)

The Late Horizon is characterized by the Augustine Pattern, which represents a shift in the general subsistence pattern. Changes include the introduction of bow and arrow technology; and most importantly, acorns became the predominant food resource. Trade systems expanded to include raw resources as well as finished products. There are more baked clay artifacts and extensive use of *Haliotis* ornaments of many elaborate shapes and forms. Burial patterns retained the use of flexed burials with variable orientation, but there was a reduction in the use of ochre and widespread evidence of cremation (Moratto 1984). Judging from the number and types of grave goods associated with the two types of burials, cremation seems to have been reserved for individuals of higher status, whereas other individuals were buried in flexed positions. Johnson (1976) suggests that the Augustine Pattern represents expansion of the Wintuan population from the north, which resulted in combining new traits with those established during the Berkeley Pattern.

Central California research has expanded from an emphasis on defining chronological and cultural units to a more comprehensive look at settlement and subsistence systems. This shift is illustrated by the early use of burials to identify mortuary assemblages and more recent research using osteological data to understand the health of prehistoric populations rather than only using burials to identify mortuary assemblages (Dickel et al. 1984). Although debate continues over a single model or sequence for central California, the general framework consisting of three temporal/cultural units is generally accepted, although the identification of regional and local variation is a major goal of current archaeological research.

A good synopsis of San Joaquin and Central Valley prehistory can be found in Fagan (2003), who does not utilize the conceptual *Horizon*-based paradigms set forth by previous archaeologists. Unfortunately, archaeological work in the southern San Joaquin Valley has been limited, and the cultural sequence for the lower reaches of the Valley is not confirmed by good radiometric dating. In relatively recent times, a four-part sequence has been proposed. In very general terms, the current and most common archaeological sequences (see Parr and Osbourne 1992, Moratto 1984, Walker 1947 and Wedel 1941) are associated with increasing complexity, population growth, and an increase in environmental desiccation:

- **Paleo-Indian to 9000 B.C.** – The first native use of the area and unique flaked stone tools linked to big-game hunting with few millingstones.
- **Proto-Archaic to 7000 B.C.** – Increasing sedentism with shifting emphasis on smaller game as well as an increase in plant foodstuff utilization and more grinding implements in the tool kit.
- **Archaic to 3000 B.C.** – Ever more increasing sedentism and utilization of plant foods such as acorns and other seeds.
- **Post-Archaic from 3000 B.C. to the present** – Extensive diversity of California groups through the historic era.

It is clear that early sites may not exhibit the complexity of later sites simply because such sites are rare and have been lost to erosion and the plow. The periods noted above are as much a function of site preservation as a reflection of the assumptive procedures prehistoric Californians may have used to survive. Fagan shows (2003) that Penutian speakers expanded southward into the Central Valley around A.D. 1000 and were likely the ancestors of the Yokuts.

The lakes of the southern San Joaquin Valley have attracted human settlements since entering California approximately 18,000 years ago. The earliest evidence along Buena Vista Lake is in the form of a radiocarbon date of stone tools associated with big-game butchering. The Valley once exhibited marshes and aquatic flora of extreme density. Although temperatures hover over 100 degrees in the summer, the marshes were always filled with animals, fish, birds, and other edible

resources. Tulare Lake, when first mapped, was considered to cover about 680 square miles, and, at maximum, the water's edge would have been at an altitude about 210 to 215 feet above sea level (see Preston 1981).

Native American Background

At the time of European contact, the project vicinity was occupied by the Patwin tribe of the Native Americans. The Patwin occupied the southwestern Sacramento Valley from the town of Princeton, north of Colusa, south to San Pablo and Suisun bays, and from the lower hills of the eastern North Coast Ranges to the Sacramento River. Patwin territory extended approximately 40 miles east to west and 90 miles north to south. Based primarily on linguistic variation, the Patwin are the most southern division of the Wintuan population, who are members of the Penutian linguistic stock. Distinction is made between the Hill and River Patwin. Hill Patwin had villages located in valleys along the hills of the Vaca Mountains and Coast Ranges with populations concentrated in the Indian, Bear, Capay, Cortina, Long, and Napa valleys. In general, the River Patwin occupied the west banks of the lower Sacramento River below the Feather River as well as the lower reaches of Cache and Putah creeks in the Sacramento Valley (Cook 1976; Johnson 1978). The Patwin political organization was centered on the tribelet, which consisted of a primary village with smaller satellite villages governed by a chief. Tribelets were autonomous and differed from each other with minor cultural variations. The economic and ceremonial activities of each village were administered by a chief whose position was typically passed on patrilineally, although some chiefs were chosen by village elders. The chief administered subsistence ventures, such as hunting and gathering expeditions, and served as the primary resource distributor (Johnson 1978).

The Hill Patwin subsistence base varied seasonally and included gathering seeds and plant resources on the plains, netting migratory waterfowl in the tule marshes, and netting salmon and other fish in the rivers and streams. Acorns were a staple in the Patwin diet and were obtained from communally owned hill and valley oak groves (Johnson 1978). The Patwin typically stored the acorns in granaries as insurance against famine in poor harvest years. Ethnographic reports indicate the Patwin obtained large game such as deer, tule elk, and antelope, by using nets or shooting with bows and arrows.

The Hill Patwin trade system included various resources that were exchanged with Wappo, Nomlaki, and Southeastern Pomo, and the River Patwin. The River Patwin obtained obsidian from sources to the west and east. Initially, finished shell beads were obtained from coastal tribes, but later, the River Patwin traded for whole shells from the Pacific Coast and produced the beads themselves (Johnson 1978). Relationships with nearby tribes as well as other Patwin tribelets were not always friendly. Johnson notes that relations were strained especially with Napa Valley groups and that the provocations primarily consisted of poaching, with the subsequent retaliations consisting of organized battles on individuals or groups or surprise attacks on villages (Johnson 1978).

Patwin mortuary practices included burials in cemeteries located at one end of the village, possessions of the deceased being buried along with them, and at some locations, property was burned near the grave. Typically, only people who died away from the village were cremated (Johnson 1978). Johnson notes that according to a Hill Patwin informant "the River people [Patwin] set a corpse upright, then pushed the head down, broke the back, wrapped the body in a skin, and put it in the grave" (Johnson 1978). In addition, long burial ropes constructed of hemp were wrapped around the deceased and temporary containers made of tule reeds were utilized for transport (Johnson 1978).

Spanish Exploration and Settlement

Spanish exploration into the Central Valley dates back to the late 1700s. Spanish mission records indicate that by 1800, Patwin inhabitants at Aguastos, the south-central area, and other villages were being taken to Mission Dolores (San Francisco de Asis), and that Mission Sonoma (San Francisco Solano), built in 1823, was baptizing Patwin tribal members until secularization of the missions in 1832-1836. Many Native Americans were not willing converts. There are numerous accounts of neophytes fleeing the missions, and a series of "Indian Wars" broke out when the Spanish tried to return them to the missions (Johnson 1978).

The Mexican Period

With the declaration of Mexican independence in 1821, Spanish control of Alta California ended, although little change actually occurred. Political change did not take place until mission secularization in 1834, when Native Americans were released from missionary control and the mission lands were granted to private individuals. Shoup and Milliken (1999) state that mission secularization removed the social protection and support on which Native Americans had come to rely. It exposed them to further exploitation by outside interests, often forcing them into a marginal existence as laborers for large ranchos. Following mission secularization, the Mexican population grew as the native population continued to decline. Anglo-American settlers began to arrive in Alta California during this period and often married into Mexican families, becoming Mexican citizens, which made them eligible to receive land grants. In 1846, on the eve of the U.S.-Mexican War (1846 to 1848), the estimated population of Alta California was 8,000 non-natives and 10,000 natives. However, these estimates have been debated. Cook (1976) suggests the Native American population was 100,000 in 1850; the U.S. Census of 1880 reports the Native American population as 20,385.

During this period, General Mariano Guadalupe Vallejo assumed authority of Sonoma Mission and established a friendly relationship with the Native Americans who were living there. In particular, Vallejo worked closely with Chief Solano, a Patwin who served as Vallejo's spokesperson when problems with Native American tribes arose. In 1843, Governor Manuel Micheltorena gave General Vallejo the 84,000 acre Soscoe land grant of Rancho Suscolto, which included present-day Vallejo.

Euro-American Expansion

During this period, and prior, Native American populations were declining rapidly because of an influx of Euro-American diseases. In 1832, a party of trappers from the Hudson's Bay Company, led by John Work, traveled down the Sacramento River, unintentionally spreading a malaria epidemic to Native Californians. Four years later, a smallpox epidemic decimated local populations, and it is estimated that up to 75 percent of the native population died (Cook 1955).

After the upheaval of the Bear Flag Revolt in 1846, and the result of the Treaty of Guadalupe Hidalgo in 1848, California became a United States territory. In 1848, James W. Marshall discovered gold at Coloma in modern-day El Dorado County, which started the gold rush into the region that forever altered the course of California's history. The arrival of thousands of gold seekers in the territory contributed to the exploration and settlement of the entire State. By late 1848, approximately four out of five men in California were gold miners.

The gold rush originated along the reaches of the American River and other tributaries to the Sacramento River, and Hangtown, present-day Placerville, became the closest town offering mining supplies and other necessities for the miners in El Dorado County. Gold subsequently was found in the tributaries to the San Joaquin River, which flowed north to join the Sacramento River in the great delta east of San Francisco Bay.

By 1864, California's gold rush had essentially ended. The rich surface and river placers were largely exhausted and the miners either returned to their homelands or stayed to start new lives in California. After the gold rush, people in towns such as Jackson, Placerville, and Sonora turned to other means of commerce, such as ranching, agriculture, and timber production. With the decline of gold mining, agriculture and ranching came to the forefront in the State's economy. California's natural resources and moderate climate proved well suited for cultivation of a variety of fruits, nuts, vegetables, and grains.

Historic Background

Yolo County was one of the original 27 counties when California became a state in 1850. Originally, Yolo County was almost double its current size, since it included a large portion of present day Colusa County. In the mid-1920s, the county boundaries were redrawn to their current configuration. At one time, a majority of the County was covered with fields of tule rushes, as well as swamplands, marshes, and sloughs. Immigration and settlement in Yolo County began relatively early in California's history and spiked with the influx of miners during the Gold Rush.

The Gold Rush transformed Yolo County from a farming community to a prosperous agricultural region, when the gold miners realized they could make their fortunes by farming and ranching rather than gold prospecting. Yolo County records estimate the population in 1850 to be 1,080 people and by 1870, the population had grown to 9,900. The population expansion was predominantly in the

western and central portions of the County near Putah and Cache Creeks. Early interior settlements were located along the main road from Benicia to present-day Winters, adjacent to Putah Creek.

Local conditions in the County were ideal for raising livestock but floods and droughts forced the ranchers to turn increasingly to agricultural crops. The fertile soil, enriched from centuries of runoff and sedimentation from coastal mountains and flooding from the Sacramento River, was especially conducive to growing crops. In addition, Putah Creek, Cache Creek, and the Sacramento River provided plentiful water for irrigation.

The turn of the 20th century brought many agricultural changes to the County. Irrigation improvements introduced new crops such as rice and nut trees to the area. Commercial enterprises related to livestock and agriculture, such as rice mills, dried fruit companies, and vegetable and fruit-packing plants led to further growth in the region. Agricultural endeavors continued to grow within the County, spurred on by massive flood control efforts and the conversion of thousands of acres of swampland into agricultural fields. Large agricultural companies such as Holland Land Company of Clarksburg and River Garden Farms of Knights Landing developed large farms that revitalize many small communities. At the end of World War II, technological advancements revolutionized crop planting and rotation, irrigation, cultivation, harvesting, and transportation and mechanized farm equipment resulted in increased production and profits.

Although the majority of Yolo County retained its agricultural economic base, other areas such as Woodland, Davis, and West Sacramento areas were increasingly urbanized during the 20th century. The City of Davis continues to expand, which is due in large part to the University of California campus. Woodland, as the County seat, is home to a thriving agribusiness with various industrial centers.

Local History

Davis

Joseph Chiles acquired approximately 4,200 acres of the Rancho Laguna de Santo Calle in 1850, and later divided it between his sons-in-law Jerome Davis and Gabriel Brown. Large ranches producing grains crops, fruits, and nuts, livestock and dairy products developed in the area and led to a rapid population increase. The small farming community known as the Putah Township experienced major growth and became a commercial center when the California Pacific Railroad established Davisville as a new junction. In 1906, the University of California purchased Jerome Davis's 780-acre farm, which functioned as part of the university's College of Agriculture. The Davis farm evolved into a separate campus of the University of California and is now a world-renowned agricultural research and education facility.

4.3.2 - Methodology

The analysis of impacts on the archaeological resources is a qualitative assessment based on a review of existing NPS and park policies on the protection of archaeological sites, existing park data on archaeological resources, and consultation with resources specialists (regional archaeologists and the park's Section 106 coordinator).

Potential impacts on archaeological resources may occur from any undertaking that includes any project, activity, or program that can result in changes in ground disturbance. Protecting and preserving the archaeological sites of the park is one of the principal goals for cultural resource protection. Thus, the primary goal in this EA is to protect these resources.

In this environmental assessment, impacts to archaeological resources are described in terms of type, context, duration, and intensity, which is consistent with the CEQ regulations. These impact analyses are intended to comply with the requirements of the National Environmental Policy Act.

Impacts to archaeological resources were identified and evaluated by (1) determining the area of potential effects; (2) identifying resources present in the area of potential effects (3) applying how the action affects the resource; and (4) considering ways to avoid, minimize, or mitigate adverse effects. CEQ regulations and DO-12 also call for a discussion of the appropriateness of mitigation, as well as an analysis of how effective the mitigation would be in reducing the intensity of a potential impact (e.g., reducing the intensity of an impact from major to moderate or minor).

For purposes of analyzing potential impacts to archaeological resources, the thresholds of change for the intensity of an impact are defined as follows:

Negligible: Impact(s) is at the lowest levels of detection; barely perceptible and not measurable. For purposes of Section 106, the determination of effect would be no adverse effect.

Minor: Adverse impact. Impact(s) to the site would be shallow and small in their extent and would not affect the integrity the site. For purposes of Section 106, the determination of effect would be no adverse effect.

Beneficial impact. Preservation of some archaeological features in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties. For purposes of Section 106, the determination of effect would be no adverse effect.

Moderate: Adverse impact. Impact(s) to site could be deeper but small in extent or be shallow over a wider extent. Extent of disturbance could jeopardize the site's eligibility for listing onto the National Register of Historic Places. For purposes of Section 106, the determination of effect would be no adverse effect.

Beneficial impact. Preservation of most archaeological features in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties. For purposes of Section 106, the determination of effect would be no adverse effect.

Major: Adverse impact. The level of impact would be significant enough to render the site ineligible for listing onto the National Register of Historic Places. For purposes of Section 106, the determination of effect would be an adverse effect.

Beneficial impact. Preservation of all archaeological features in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties. For purposes of Section 106, the determination of effect would be no adverse effect.

4.3.2.1. - State Historic Preservation Office Review

Compliance with Section 106 of the NHPA was initiated for the preferred alternative (Alternative 2). The State of California Historic Preservation Officer (SHPO) was provided notice on October 11, 2012 of a Finding of No Effect for historic properties for the project. Once the concurrence letter is received from SHPO, it will be incorporated into the EA record.

4.3.2.2. - Alternative 1 – No Action

Direct Impacts: Under Alternative 1, the northwestern corner of Grasslands Regional Park would not be released from the NPS and would remain as is; further, under this alternative, the County of Yolo would not be obligated to accept the 315-acre Davis Global Communications Site for incorporation into Grasslands Regional Park. No direct impacts are expected with Alternative 1.

Indirect Impacts: Under the No Action alternative, no indirect impacts are expected.

Cumulative Impacts: Under Alternative 1, no cumulative impacts are expected.

Conclusion: Under the No Action alternative, no impacts to archaeological resources is expected. Therefore, no impairment of park resources is expected to result under selection of this alternative.

4.3.2.3. - Alternative 2 – Land Transfer (Release)

Direct Impacts: Under Alternative 2, the land release in itself would not result in any ground disturbance that would affect cultural resources. No impacts would occur.

Indirect Impacts: Under Alternative 2, the park the release of Grasslands Regional Park would result in the development of the northwestern 30 acres of Grasslands Park site by Yolo County as an environmental education center, with bird watching platforms, trails, and a 5-mw photovoltaic solar array, consistent with the Master Plan's environmental education component. The remaining 293 acres adjacent to the site would continue to be utilized in its existing state for conservation easements

for burrowing owls, as vernal pool conservation and restoration areas, and for active and passive recreation (archery, model airplanes, and scenic trails).

No archaeological resources have been previously recorded within the project area or a 0.25-mile radius, nor were any encountered during the field survey. However, there is always the possibility that ground-disturbing activities during project development could potentially impact prehistoric or historic archaeological resources. Prehistoric resources can include flaked-stone tools (e.g., projectile points, knives, and choppers) or obsidian, chert, or quartzite toolmaking debris; culturally darkened soil (such as midden soil containing heat-affected rock, ash, and charcoal, shellfish remains, and animal bones); and stone milling equipment (such as mortars, pestles, handstones). Historical materials can include wood, stone, foundations, and other structural remains; debris-filled wells or privies; and deposits of wood, glass, ceramics, and other refuse. While it is likely that that subsurface materials are already disturbed, there is the potential for minor indirect impacts to the site.

Cumulative Impacts: Under Alternative 2, while the release of Grasslands Regional Park would result in the development of the northwestern 30 acres of Grasslands Park site by Yolo County as an environmental education center, with bird watching platforms, trails, and a 5-mw photovoltaic solar array, this development is consistent with the Master Plan's environmental education component. The remaining 293 acres adjacent to the site would continue to be utilized in its existing state for conservation of burrowing owls, as vernal pool conservation and restoration areas, and for active and passive recreation (archery, model airplanes, and scenic trails); no cumulative impacts are expected. Because the entire park property would continue to be operated for the benefit of the public and development would largely be limited by the terms of the release, impacts to archaeological resources are expected to be minor.

Conclusion: Under Alternative 2, as a result of the release of Grasslands Regional Park to Yolo County, negative impacts to archaeological resources could be expected under Alternative 2. For the purposes of Section 106 compliance, Alternative 2 is not expected to result in the impairment of park resources.

4.4 - Land Use

4.4.1 - Regulations and Policies

To establish continued public access and stewardship of resources that are consistent with the Federal Lands Program, land use at the Grasslands Regional Park is governed by the Yolo County General Plan, Yolo County Code, Yolo County Parks and Open Space Master Plan, Grasslands Park Master Plan, and restrictive covenants of the transfer deed.

4.4.2 - Affected Environment

Grasslands Regional Park is located within and owned by Yolo County and is operated by Yolo County General Services' Department, Parks Division. Portions of Grasslands Regional Park are currently used by the Sacramento Valley Soaring Society for model airplane gliding, the Yolo Bowmen Archery Range, and other recreational functions that include wildlife viewing, a burrowing owl preserve, horseshoe pitching, oak woodland management and habitat, and native grass restoration. Land uses surrounding Grasslands Regional Park are primarily agriculturally related and consist of field crops, orchards, grazing lands, rural residences, and agricultural related facilities. The majority of agricultural lands surrounding Grasslands Regional Park are encumbered by Williamson Act contracts, which limit land uses to agricultural-related activities. Two rural residences are located directly to the west of the project site (approximately 250 feet) on the west side of County Road 104. In addition, a single rural residence is located approximately 0.30 mile from the Park on Tremont Road. A cluster of four rural residences is located directly south of Grasslands Regional Park on County Road 36 and Hyde Road. Finally, a migrant farmworker housing complex is located approximately 0.40 mile to the southeast of Grasslands Regional Park.

4.4.3 - Methodology

Impacts to land use are described in terms of type, context, duration, and intensity, which is consistent with the CEQ regulations. These impact analyses are intended to comply with the requirements of NEPA.

Impacts to land use were identified and evaluated by (1) determining the area of potential effects; (2) identifying resources present in the area of potential effects; (3) applying how the action affects the resource; and (4) considering ways to avoid, minimize, or mitigate adverse effects. CEQ regulations and DO-12 also call for a discussion of the appropriateness of mitigation, as well as an analysis of how effective the mitigation would be in reducing the intensity of a potential impact.

For purposes of analyzing potential impacts to Land Use, the thresholds of change for the intensity of an impact are defined as follows:

Negligible: Impact(s) are at the lowest level of detection; barely perceptible and not measurable.

Minor: Adverse impact. Land use conflicts arise but would not affect use/enjoyment of the adjoining properties. No change of use for adjacent lands is required.

Beneficial impact. Any existing conflicts of use or enjoyment are reduced, thereby increasing use/enjoyment of adjoining properties.

Moderate: Adverse impact. Land use conflicts begin to affect use/enjoyment of adjoining properties and could result in changes of use.

Beneficial impact. Any existing conflicts of use or enjoyment are eliminated, thereby increasing use/enjoyment of adjoining properties.

Major: Adverse impact. Land use conflicts affect enjoyment of adjoining properties and would require change of use.

Beneficial impact. All existing conflicts of use are eliminated and additional buffering is created, thereby increasing use/enjoyment of adjoining properties.

4.4.3.1. - Alternative 1 – No Action

Direct Impacts: Under Alternative 1, there would be no land release; therefore, the PV facility and environmental education center would not be constructed. The County would also still be required to fulfill its program of utilization for the 30-acre area, which would serve a public park and recreation purpose. Land use conflicts currently exist between plans for future recreational trails in the northern portion of Grasslands Regional Park and the existing burrowing owl preserve. Placing recreational trails within the burrowing owl preserve may disturb owl activities and presents a land use conflict. This conflict should be addressed as the Grasslands Park Master Plan is implemented. Other surrounding properties used for agricultural operations or rural residences would not result in impacts related to land uses and land use conflicts.

Indirect Impacts: No immediate indirect impacts were identified under the No Action alternative.

Cumulative Impacts: No cumulative impacts are expected under Alternative 1.

Conclusion: Under Alternative 1, moderate adverse land use impacts could occur if recreational trails are constructed in the northern portion of Grasslands Regional Park as designed by the Park's Master Plan. Developing the northern portion of the park for recreational trails would conflict with the existing burrowing owl preserve land use.

4.4.3.2. - Alternative 2 – Land Transfer (Release)

Direct Impacts: Alternative 2 would be consistent with the Grasslands Park Master Plan and would further its educational and park use initiatives. Alternative 2 would eliminate the potential for conflicts between the existing burrowing owl preserve and planned recreational trails by limiting areas accessible by trails and providing a buffer space between the solar facility/environmental education center and the preserve. While the proposed site does not currently contain any developed park features, its intended use was to provide open space, preservation, ecological restoration, and public access. These uses will still be accommodated on the site despite the overall reduction in area available for such uses.

However, Alternative 2 may create conflicts between existing agricultural uses and the solar facility, because agricultural dust would settle on the solar panels and reduce their ability to generate

electricity. Bi-annual washing of the solar panels would reduce this conflict and impacts would be considered negligible.

Short-term land use conflicts may occur during construction when increased noise and visual impacts would affect nearby residences. However, these impacts would be temporary and characterized as negligible.

Indirect Impacts: Indirect impacts would include an increase in usage at the park. However, because the park is an existing use and heretofore has been compatible with surrounding land uses, impact would be negligible.

Cumulative Impacts: Under Alternative 2, no cumulative impacts are expected. Restrictions on the land uses within the Grasslands Regional Park and surrounding agricultural lands encumbered by Williamson Act contracts limit development and reduce the risk of further cumulative impacts to land use conflicts.

Conclusion: Alternative 2 would result in several impacts, both negative and positive, to Grasslands Regional Park and adjoining properties. Negligible impacts would be expected to occur as a result of temporary construction and agricultural dust settling on the PV panels. Beneficial impacts would result from the provision of a buffer area between active park use areas and the existing burrowing owl preserve. Overall, no impairment of land use or park resources would be expected to occur under this alternative.

4.5 - Recreation

This section describes the existing recreational setting and potential effects from project implementation on the site and its surrounding area. This analysis is based on information contained within the Yolo County General Plan, Yolo County Parks and Open Space Master Plan, and Grasslands Park Master Plan.

4.5.1 - Regulations and Policies

Recreational activities within Grasslands Regional Park are governed by the Grasslands Park Master Plan and the restrictive covenants of the park's deed. Recreational space within Yolo County is governed by the Yolo County Parks and Open Space Master Plan.

4.5.2 - Affected Environment

Grasslands Regional Park is located within and owned by Yolo County and is operated by Yolo County General Services Department, Parks Division. Portions of Grasslands Regional Park are currently used by the Sacramento Valley Soaring Society for model airplane gliding, the Yolo Bowmen Archery Range, and other recreational functions including wildlife viewing, dog walking, a burrowing owl preserve, horseshoe pitching, oak woodland management and habitat, and native grass

restoration. The park includes infrastructure such as buildings, irrigation systems, picnic facilities, and parking areas that have been implemented and maintained in cooperation with groups or clubs who use the park, including the Yolo County Bowmen Archery Club, the Sacramento Valley Soaring Society, and the Yolo County Horseshoe Pitching Club. A 65-acre area within the northern portion of the park has been established as the previously mentioned western burrowing owl preserve.

4.5.3 - Methodology

Impacts to recreation are described in terms of type, context, duration, and intensity, which is consistent with the CEQ regulations. These impact analyses are intended to comply with the requirements of NEPA.

Impacts to recreation were identified and evaluated by (1) determining the area of potential effects; (2) identifying resources present in the are of potential effects; (3) applying how the action affects the resource(s); and (4) considering ways to avoid, minimize, or mitigate adverse effects. CEQ regulations and DO-12 also call for a discussion of the appropriateness of mitigation, as well as an analysis of how effective the mitigation would be in reducing the intensity of a potential impact.

For the purposes of analyzing potential impacts to recreation, the thresholds of change for the intensity of an impact are defined as follows:

Negligible: Impact(s) are at the lowest level of detection; barely perceptible and not measurable.

Minor: Adverse impact. Use of existing recreational facilities would be increased but would not result in substantial physical deterioration.

Beneficial impact. Additional recreational facilities would be provided.

Moderate: Adverse impact. Use of existing recreational facilities would be increased and may accelerate physical deterioration.

Beneficial impact. Additional recreational facilities would be provided that would further the planned uses of the park.

Major: Adverse Impact: Use of existing recreational facilities would be increased and would accelerate physical deterioration and exceed existing capacity.

Beneficial Impact. Additional recreational facilities would be provided that further the planned use of the park and meet the goals and objectives of the Grasslands Park Master Plan.

4.5.4 - Alternative 1 – No Action

Direct Impacts: Under Alternative 1, the northwestern corner of Grasslands Regional Park would not be released from the NPS and would remain as is; further, under this alternative, the County of Yolo would not be obligated to accept the 315-acre Davis Global Communications Site for incorporation into Grasslands Regional Park. No direct impacts are expected with Alternative 1.

Indirect Impacts: Under Alternative 1, no indirect impacts are expected.

Cumulative Impacts: Under Alternative 1, no cumulative impacts are expected.

Conclusion: Under the No Action alternative, no impacts to recreational resources are expected. Therefore, no impairment of park resources is expected to result under selection of this alternative.

4.5.5 - Alternative 2 – Land Transfer (Release)

Direct Impacts: Under Alternative 2, the land release in itself would not result in any increases in park usage. No impacts would occur.

Indirect Impacts: Alternative 2 would enable the County to construct a solar facility on the 30 acres of released land and an adjacent environmental education center, including a park host building, classroom, trails, wildlife viewing platform, interpretive signs, and conservation area. As such, the land release would result in major indirect beneficial impacts from the provision of additional recreational facilities that are consistent with planned uses of the park and meet specific goals and objectives of the Grasslands Park Master Plan.

Construction of the PV facility and environmental education center at the Grasslands site is expected to utilize the considerable workforce available within the project region. As such, local residents are expected to serve the labor requirements of the proposed project, negating the need for a significant percentage of outside labor. Construction workers at the Grasslands site may use other developed portions of Grasslands Regional Park; however, such use would be temporary and would not involve a significant increase in park usage. As a result, construction of the proposed project is not anticipated to induce substantial population growth in the area either directly or indirectly, and existing recreational facilities would continue to adequately serve the regional population and would not experience substantial physical deterioration.

Operation of the environmental education center would result in field trips to the Grasslands site from Yolo County elementary (K-12) schools. While the field trips would primarily use the proposed environmental education center, use of other existing facilities, such as picnic areas and restrooms, at the Grasslands Regional Park may occur. Trails constructed as part of the proposed project would provide connections from the environmental education center to existing developed areas of Grasslands Regional Park. However, usage of the environmental education center would be seasonal, corresponding to the school year, and managed by the Yolo County Office of Education in

coordination with the Yolo County Department of General Services, Parks Division. As such, park usage would not be expected to reach a level that would result in substantial physical deterioration.

The environmental effects resulting from the implementation of the environmental education center have been considered in a separate Environmental Impact Report in accordance with the California Environmental Quality Act. Where necessary, mitigation measures have been proposed therein to ensure that any potentially significant environmental impacts would be reduced to a less than significant level. Furthermore, operation of the environmental education center would be consistent with the Grasslands Park Master Plan. As such, the project's recreational facilities would not result in an adverse physical impact on the environment.

Cumulative Impacts: Under Alternative 2, no cumulative impacts are expected to occur.

Conclusion: The project would not result in a substantial increase in population during or after construction and, therefore, would not increase the demand for parks. Use of existing facilities at Grasslands Regional Park may increase as a result of the environmental education center; however, usage levels would not be expected to result in substantial physical deterioration or acceleration of such deterioration beyond normal park usage. Furthermore, the proposed project would develop lands for recreational and educational purposes that have long been identified for such uses. As such, adverse impacts would be minor and beneficial impacts resulting from the provision of additional recreational facilities would occur.

SECTION 5: CONSULTATION AND COORDINATION

5.1 - Public Involvement

A Notice of Availability for this Environmental Assessment will be published in the Federal Register, and posted on the Yolo County Park's website. The 30-day public review period would begin on the date the Notice is published in the Sacramento Bee, a newspaper of regional circulation. Reference copies will be made available at National Park Service Headquarters, the Yolo County Department of General Services, and local public libraries.

Following the 30-day public review period, the NPS would consider all substantive written comments that are received. Additional mitigation measures resulting from the public involvement process would be identified in the decision document. The Environmental Assessment and decision document would be available to all interested parties.

5.2 - Individuals and Agencies Contacted

5.2.1 - Lead Agency

National Park Service

Pacific West Region .....David Siegenthaler

5.2.2 - State Agencies

California Department of Fish and Game .....Danille Roch

5.2.3 - Yolo County General Services and Parks

Deputy Director..... Terry Vernon
Associate Park Planner.....Jennifer Santos

5.2.3.1. - Yolo County Planning and Public Works

Assistant Director.....David Morrison

5.2.3.2. - Yolo County Resource Conservation District

Executive Director.....Jeanette Wrysinski

5.2.3.3. - Yolo County Habitat/Natural Community Conservation Plan JPA

Former Executive Director.....Maria Wong
Interim Executive Director..... Petrea Marchand

5.2.4 - Private Parties and Organizations

5.2.4.1. - SunPower Corporation

Project Development Manager.....Beberly Velasquez
Director of Permitting, Senior Counsel for Regulatory Affairs ..... Renee Robin

5.3 - List of Preparers

5.3.1 - Lead Agency

National Park Service

Pacific West Region..... David Siegenthaler

5.3.2 - Lead Consultant Team

5.3.2.1. - Michael Brandman Associates

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Project Manager/Regulatory Analyst.....Angela C. McIntire
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5.3.2.2. - Yolo County General Services and Parks

Deputy Director .....Terry Vernon
Associate Park Planner ..... Jennifer Santos

SECTION 6: REFERENCES

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