

# **Solano County**

*675 Texas Street  
Fairfield, California 94533  
[www.solanocounty.com](http://www.solanocounty.com)*



## **Agenda - Final**

**Thursday, December 3, 2015**

**7:00 PM**

**Board of Supervisors Chambers**

**Planning Commission**

Any person wishing to address any item listed on the Agenda may do so by submitting a Speaker Card to the Clerk before the Commission considers the specific item. Cards are available at the entrance to the meeting chambers. Please limit your comments to five (5) minutes. For items not listed on the Agenda, please see "Items From the Public".

All actions of the Solano County Planning Commission can be appealed to the Board of Supervisors in writing within 10 days of the decision to be appealed. The fee for appeal is \$150.

Any person wishing to review the application(s) and accompanying information may do so at the Solano County Department of Resource Management, Planning Division, 675 Texas Street, Suite 5500, Fairfield, CA. Non-confidential materials related to an item on this Agenda submitted to the Commission after distribution of the agenda packet are available for public inspection during normal business hours and on our website at [www.solanocounty.com](http://www.solanocounty.com) under Departments, Resource Management, Boards and Commissions.

The County of Solano does not discriminate against persons with disabilities and is an accessible facility. If you wish to attend this meeting and you will require assistance in order to participate, please contact Kristine Letterman, Department of Resource Management at (707) 784-6765 at least 24 hours in advance of the event to make reasonable arrangements to ensure accessibility to this meeting.

## **AGENDA**

### **CALL TO ORDER**

### **SALUTE TO THE FLAG**

### **ROLL CALL**

### **APPROVAL OF AGENDA**

### **APPROVAL OF THE MINUTES**

- 1      [PC 15-039](#)      September 17, 2015 PC Minutes  
*Attachments:*    [minutes](#)
  
- 2      [PC 15-036](#)      November 5, 2015 PC minutes  
*Attachments:*    [minutes](#)

- 3      [PC 15-041](#)      November 19, 2015 PC minutes

Attachments:    [minutes](#)

## ITEMS FROM THE PUBLIC:

*This is your opportunity to address the Commission on a matter not heard on the Agenda, but it must be within the subject matter jurisdiction of the Commission. Please submit a Speaker Card before the first speaker is called and limit your comments to five minutes. Items from the public will be taken under consideration without discussion by the Commission and may be referred to staff.*

## REGULAR CALENDAR

- 4      [PC 15-038](#)      Minor Revision No. 2 to Use Permit No. U-90-29 and Marsh Development Permit No. MD-90-05 of Solano Land Trust to allow habitat restoration, facility improvements and site utilization for Rush Ranch located at 3521 Grizzly Island Road, Suisun City, in an "A-SM-160" Suisun Marsh Agricultural and "MP" Marsh Protection Zoning District, APN's: 0046-140-040, 050, 060, 070; 0046-150-010, 030; 0046-160-080. The Planning Commission will also be considering adoption of a Mitigated Negative Declaration of Environmental Impact as recommended by the Solano County Department of Resource Management. (Project Planner: Nedzlene Ferrario)

Attachments:    [A - PC Memo](#)

- 5      [PC 15-037](#)      Conduct a public hearing and adopt a resolution approving Use Permit Application No. U-15-08 (SolAgra Demonstration Research Project) to allow an agricultural research facility to conduct research regarding the feasibility of growing crops beneath solar arrays, in the A-80 zoning district and adopt a Negative Declaration for the project. (Project Planner: Nedzlene Ferrario)

Attachments:    [A - Project Location](#)  
[B - SolAgra Agricultural Research & Demonstration Project Letter](#)  
[C - Site Plan Elevations](#)  
[D - Initial Study Negative Declaration Part 1](#)  
[D - Initial Study Negative Declaration Part 2](#)  
[E - Draft Resolution](#)

## ANNOUNCEMENTS AND REPORTS

## ADJOURN

*To the Planning Commission meeting of January 7, 2016 at 7:00 P.M., Board Chambers, 675 Texas Street, Fairfield, CA*



# ***MINUTES OF THE SOLANO COUNTY PLANNING COMMISSION***

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## **Meeting of September 17, 2015**

The regular meeting of the Solano County Planning Commission was called to order at 7:00 p.m. in the Board of Supervisors' Chambers, Fairfield, California.

**PRESENT:** Commissioners Cayler, Hollingsworth, Castellblanch, and Chairperson Rhoads-Poston

**EXCUSED:** Commissioner Walker

**STAFF PRESENT:** Mike Yankovich, Planning Program Manager; Jim Leland, Principal Planner; Jim Laughlin, Deputy County Counsel; Matt Tuggle, Engineering Manager, and Kristine Letterman, Planning Commission Clerk

### Approval of the Agenda

The Agenda was approved with no additions or deletions.

1. **The Minutes** of the regular meeting of September 3, 2015 were approved as prepared.

### Items from the Public:

There was no one from the public wishing to speak.

2. **PUBLIC HEARING** to consider the **Woodcreek66 project** which would permit 66 residential lots on 33 acres of land southwest of the intersection of Rockville Road and Suisun Valley Road. The project includes consideration of a Final Environmental Impact Report, a Rezoning Petition (Z-11-01) to rezone 33 acres from R-TC-1AC to R-TC-10, with a Policy Plan Overlay District (PP-11-01) and a 66 lot Major Subdivision Application (No. S-11-01) (Project Planner: Jim Leland)

Chairperson Rhoads-Poston announced that the applicant has submitted a request asking that this matter be continued to the next regularly scheduled meeting. The applicant indicated that due to circumstances beyond their control, some of their design team members were not available to attend tonight's meeting. Ms. Rhoads-Poston noted that the meeting will proceed with staff providing a brief summary of the project, public testimony will be taken and then the commission will vote to continue the matter.

Jim Leland introduced the item and gave a brief presentation of the written staff report. Woodcreek Homes has filed applications to allow the development of 66 homes on 33 acres southwest of the intersection of Rockville Road and Suisun Valley Road. The proposal in front of the commission includes the following entitlement requests: 1) An Environmental Impact Report, 2) A Rezoning and Policy Plan Overlay, and 3) A Tentative Subdivision Map.

The report states that the project, at two dwelling units per acre, is consistent with the Solano County General Plan Land Use Element which designates this neighborhood as Traditional Community – Residential with a density range of 1-4 dwelling units per acre. The project is served by public streets and public water and sanitary sewer services. It will be subject to design review for the residential architecture as well as the public landscape and hardscape areas and features. Residential design standards are included in the policy plan overlay. A financing district will be formed to finance the maintenance and replacement of public streets, sidewalks, public landscaping, and sanitary sewer and stormwater drainage facilities.

A Final Environmental Impact Report has been prepared for the proposed project which identifies potentially significant environmental impacts which have been mitigated to less than significant, as well as potentially significant impacts which cannot be mitigated to less than significant. The project has been reviewed by the county as well as affected outside agencies. Each of those agencies has submitted their requirements for the development of the property. The proposed conditions of approval for the tentative map address each of those requirements and are included in the staff report.

Chairperson Rhoads-Poston opened the public hearing.

Linda Ellis, 4151 Oakwood Drive, Fairfield, said that as a resident of Oakwood Drive she objected to the proposal. She said that the view from their residence will be compromised by the proposal for the construction of a brick wall. Ms. Ellis said that she felt there is a better way to make a project that fits with the community. She opposed the rezoning and did not believe the proposed project fits within the intent of the general plan.

Jerry Moore, 4129 Oakwood Drive, Fairfield, stated that he opposes the project. He noted that the initial proposal was for 33 homes but now has been increased to 66 homes. He felt this was retaliation on the developer's part due to previous neighborhood opposition to the project. He said that 66 homes is too many for the area and that Oakwood Drive would not benefit in any way from this development and the project will have environmental impacts.

David Martin, 4064 Suisun Valley Road, Fairfield, voiced his concerns with regard to public safety. He said that there will be increased residential traffic to and from the development as well as contributing elements from the nearby college, travelers to Lake Berryessa, agricultural activities, and visitors to the area. The traffic back up could potentially extend to Rockville Corners commercial area. Mr. Martin also noted that approximately 200 yards to the south on Suisun Valley Road is a housing project that is currently being built by the city which will produce additional traffic. He said the increase in foot and bicycle traffic makes this an enormous safety issue. Mr. Martin suggested that the developer widen Suisun Valley Road to 3 lanes with a middle turn lane. He noted that when his home was built 34 years ago they were required to contribute monies to the county capital improvements fund for future improvements to Suisun Valley Road and he assumed that other developments along the road had to do the same. He said to ignore an immediate future safety and traffic problem with a patch job is not a solution to the problem, it is not wise or cost effective nor is it safe, especially to the local residents. Mr. Martin proposed that the commission deny the rezoning of the project as presented and that the property should remain at 1 acre per unit, otherwise the widening of Suisun Valley Road from the community college to Rockville Corners should be included in the project.

Meredith McKown, 4143 Oakwood Drive, Fairfield, stated that in the Final EIR while it offers many mitigation strategies for most concerns, it glosses over the groundwater concerns. She referred to page 38 saying that the reduction of water to the aquifer due to the housing project is both significant and unavoidable. It completely ignores the fact that all homes along Oakwood Drive rely upon well water. Ms. McKown stated that they do not have other water options available and being that this is the 4<sup>th</sup> year of a record breaking drought this development further threatens their water source. Ms. McKown said that she opposes the rezoning because 66 homes will not sustain the rural character of the community. She stated that she could support the continuation of the 1 acre zoning currently in place. She asked the commission to vote against rezoning the property and ask the developers to address the groundwater concerns before moving forward.

John Martin, 354 Zachary Drive, Vacaville, stated that he became aware of this project through various agencies. He said that it is disappointing that this could reach the level where the commission is considering it and that someone needs to protect the rights of the people who whom have chosen a place to live and raise their families away from city living. It should not be all about the people who have a vision of making more money for a piece of land. Mr. Martin asked that the commission vote no and keep the property at the 1 acre minimum.

John Nelson, 68 Willotta Drive, Fairfield, stated that it does not seem to make sense for a housing development of this size in this area. He said that some years back Solano County had talked about wanting to attract visitors by creating small hubs such as the Iwama Market which sits across from Willotta Drive. He said by placing 66 homes in the area would be the beginning of the destruction of that idea. Mr. Nelson said the valley should be treated like the jewel that it is and in keeping with the agricultural nature.

Larry Welch, 2266 Rockville Road, Fairfield, spoke in opposition to the project. He said that this development project will destroy the jewel that is the valley.

Roy Pearson, 4167 Oakwood Drive, Fairfield, spoke to the inevitable increase in traffic. He said this is a terrible project and the increase from 33 to 66 homes is retribution by the developer because he chose to rally for an entrance on Rockville Road at the time the EIR was before the commission. He said that this is a rural community and should remain that way. He said the proposed sound wall will be unsightly and the developer is not doing anything to benefit the residents who reside on Oakwood Drive, Suisun Valley Road or Rockville Road.

Art Denio, 2458 Rockville Road, Fairfield, stated that he supports keeping Rockville rural. He said that he bought his property with family in mind and enjoys the rural environment and the wildlife that roams the area. He noted that this project is close to Rockville Park and there are many cyclists who ride in the area and the increased traffic can become a safety issue. Mr. Denio spoke about the culvert on his property. He said that when it rains water drains from the hill across Rockville Road where it becomes a swampy mess which attracts mosquitos and frogs and other wildlife that are not healthy. Mr. Denio said that in reading through the summary of the report he realized that there are some serious mitigation issues with regard to water and drainage and the threat to groundwater is an important concern.

Robert Valdez, 248 Plantation Way, Vacaville, spoke about loss of cultural resources and possible and potential significant loss of wildlife within and outside the project area. He stated

that he is concerned with the potential impacts on habitat. He said this area contains significant Native American burial sites and the county is losing this resource because of all of the cumulative development. Mr. Valdez said that the community will endure a tremendous loss if this project is approved. He said the corridors need to be kept open for bird and wildlife species.

Trudy Weins, 4121 Oakwood Drive, Fairfield, spoke to her past experience with construction in the area and how she was negatively impacted. She voiced her concerns regarding potential impacts to groundwater, drainage, and sewer. She felt that the rural nature of the area should be maintained. Ms. Weins commented on the aesthetics of the proposed brick wall saying that it would be unsightly. She said that this area is home to Native American burial grounds and that it is disrespectful to disrupt that. Ms. Weins said that there are other locations that are better suited for this development.

Teri Luchini, 2140 Rockville Road, Fairfield, stated that she has a working knowledge and understanding of the local watershed, wildlife and public usage at Rockville Park. She commented that late in the season the project site is still inundated with standing water and it remains until midsummer. She said the 10 acre meadow next to Mr. Pearson's residence is not passible until June or July, and there is already an existing problem with flooding on Mr. Pearson's property. The overreaching concern with the water is if the project is actually constructed what will happen to the water table in that area. Ms. Luchini stated that the area residents are dependent upon wells and it is a huge concern. She said the cliffs above the project site are nesting habitat for various birds of prey and the light pollution from the proposed project site will be a significant impact to those animals. She said other small mammals and predators are dependent on those corridors as well as the open areas for rearing and feeding, so the meadow has habitat value and the loss of that meadow would be a significant impact to local wildlife. She said that traffic is also a huge concern. The entrance/exit onto Rockville Road has blind corners on both sides. The amount of traffic and cyclists that utilize that road is significant. The speed limit is exceeded significantly by motorists that are coming from Green Valley using Rockville Road to travel into town or over to Suisun Valley Road. Ms. Luchini asked the commission to make the right decision and not allow the development to occur as it is currently being proposed.

A motion was made by Commissioner Cayler and Seconded by Commissioner Hollingsworth to continue this matter to October 1, 2015. The motion passed unanimously.

### 3. **ANNOUNCEMENTS and REPORTS**

Mike Yankovich welcomed Ramon Castellblanch to the Planning Commission who will be representing District 2.

4. Since there was no further business, the meeting was **adjourned**.





# ***MINUTES OF THE SOLANO COUNTY PLANNING COMMISSION***

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## **Meeting of November 5, 2015**

The regular meeting of the Solano County Planning Commission was called to order at 7:00 p.m. in the Board of Supervisors' Chambers, Fairfield, California.

**PRESENT:** Commissioners Cayler, Walker and Chairperson Rhoads-Poston

**EXCUSED:** Commissioners Hollingsworth and Castellblanch

**STAFF PRESENT:** Mike Yankovich, Planning Program Manager; Eric Wilberg, Associate Planner; Jim Laughlin, Deputy County Counsel; and Kristine Letterman, Planning Commission Clerk

### Approval of the Agenda

The Agenda was approved with no additions or deletions.

**The Minutes** of the regular meeting of September 17, 2015 were carried over to the next regular meeting to allow for a majority of those in attendance at that meeting to vote on their approval. The minutes of October 1, 2015 were approved as prepared.

### Items from the Public:

There was no one from the public wishing to speak.

1. **PUBLIC HEARING** to consider Lot Line Adjustment Application No. LLA-15-06 and Certificate of Compliance No. CC-15-09 of **Eric Ian Anderson** for an adjustment of property located at 5966 Birds Landing Road, Birds Landing, in an "A-160" Exclusive Agricultural Zoning District, APN's: 0090-070-310; 0090-090-350. Lot line adjustments are ministerial projects, and therefore are not held to the provisions and requirements of CEQA per CEQA Section 21080 (b)(1). (Project Planner: Eric Wilberg)

Eric Wilberg provided a brief presentation of staff's written report. The applicant proposes to reconfigure interior property lines between two adjacent parcels under common ownership. The purpose of the adjustment is to facilitate the transfer of proposed parcel A. The two parcels are zoned Exclusive Agriculture 'A-160'. In addition, the parcels are entered into an active Williamson Act Contract, therefore requiring action to be taken by the Planning Commission. The report indicated that the project is consistent with the General Plan and Zoning, Subdivision Ordinance, and the Uniform Rules and Procedures Governing Agricultural Preserves and Land Conservation Contracts. Staff recommended approval of the project.

Commissioner Walker commented that in his time on the commission in hearing these ministerial type applications the commission has never received public opposition to, or had

reason to recommend denial of these projects. He said that he understands they come before the commission due to their Williamson Act status and he inquired if there is a possibility at some point in the future the Board of Supervisors could consider making these a Zoning Administrator level approval to save the applicant's time.

Mike Yankovich stated that it is a good possibility and is something the commission could direct staff to pursue. He said that periodically staff will recommend to the Board of Supervisors a number of changes with regard to zoning code amendments and could suggest an amendment to the procedures for Williamson Act contracts.

Charles Capp, engineer for the project, spoke on behalf of the applicant. He stated that he prepared the application for the property owner and has worked with county staff in developing the project information. Mr. Capp stated that the applicant is in agreement with the conditions of approval as listed in the report.

Chairperson Rhoads-Poston opened the public hearing. Since there were no speakers either for or against this matter, the public hearing was closed.

A motion was made by Commissioner Walker and seconded by Commissioner Cayler to approve Lot Line Adjustment Application No. LLA-15-06 subject to the recommended conditions of approval. The motion passed unanimously. (Resolution No. 4630)

2. Use Permit Application No. U-14-01 of **Venoco, Inc. (Hunters Point)** to drill three exploratory natural gas wells over a three year period and, if successful, install the required production equipment including a 5.8 mile natural gas pipeline. The property is located approximately 5.0 miles northwest of the proposed well site at the southeast corner of the intersection of Chadbourne Road and Cordelia Road, Fairfield, APN's: 0046-080-030; 0046-060-140, 030, 060; 0046-010-110, 120, 160. The Planning Commission will also be considering adoption of a Mitigated Negative Declaration of Environmental Impact as recommended by the Solano County Department of Resource Management. (Project Planner: Eric Wilberg)

Eric Wilberg reviewed staff's written report. The applicant proposes to construct the Hunter's Point well site and drill three exploratory natural gas wells from the site over a three year period. If economical quantities of natural gas are discovered production facilities would be installed. A new natural gas pipeline would then be constructed to connect the Hunter's Point site to an existing gas pipeline located at the southeast corner of the intersection of Chadbourne Road and Cordelia Road in the City of Fairfield. The pipeline alignment generally runs in a south-north direction travelling from the well site to the tie in location near the Fairfield Wastewater Treatment Facility. An initial study was completed which resulted in the preparation of a mitigated negative declaration that was circulated for a thirty day public review period ending June 9, 2015. The report indicates that the project is consistent with zoning, the policies and regulations contained in the Suisun Marsh Local Protection Program and Williamson Act policies. Staff recommended approval of the project.

Commissioner Walker referred to the missive from the California State Lands Commission (CSLC) and their input with regard to a mitigation monitoring program and reference to a final mitigated negative declaration. Mr. Wilberg explained that there is no preparation of a final mitigated negative declaration, if the commission adopts the negative declaration tonight that

would become the final document. Mr. Wilberg noted that the majority of the CSLC's comments were administrative. He said that at the request of the CSLC the county has incorporated language into the conditions of approval that a qualified biologist per the California State Department of Fish and Wildlife shall be utilized.

In response to Commissioner Walker's inquiry about the issue of bats, the applicant, Tom Clark, stated that CSLC withdrew their recommendations under the fact that the jurisdictional issues they had brought up in the past are no longer pertinent. He said that CSLC declined any further comment on their recommendations. Mr. Clark stated that this project was previously approved in 2012 and no comments with regard to this issue were received from the CSLC. Venoco believes that this project is a duplicate of what was previously proposed. The time period expired because they were pursuing other environmental obligations and diligently pursuing the purchase of the Lang Tule Ranch for the development of salt marsh harvest mouse restoration. He said that they are finalizing that project with the Army Corps of Engineers. Mr. Clark stated that they believe their obligations on the environmental issues have been met.

Commissioner Walker stated that he appreciated the efforts that Venoco has made to reduce the impacts by combining the project activities onto one central parcel. Mr. Walker presented several questions that the applicant proceeded to answer with regard to where the water for the production phase will come from and its means of disposal, possible emittance of pollutants into the area, and the decommissioning of an abandoned well site.

Since there was no one from the public wishing to speak, Chairperson Rhoads-Poston closed the public hearing.

A motion was made by Commissioner Cayler and seconded by Commissioner Walker to adopt the mitigated negative declaration and approve Use Permit Application No. U-14-01. The motion passed unanimously. (Resolution No. 4631)

### 3. **ANNOUNCEMENTS and REPORTS**

There were no announcements and reports.

4. Since there was no further business, the meeting was **adjourned**.



# ***MINUTES OF THE SOLANO COUNTY PLANNING COMMISSION***

## **Meeting of November 19, 2015**

The regular meeting of the Solano County Planning Commission was called to order at 7:00 p.m. in the Board of Supervisors' Chambers, Fairfield, California.

PRESENT: Commissioners Walker, Hollingsworth, and Castellblanch

EXCUSED: Commissioners Cayler and Rhoads-Poston

STAFF PRESENT: Mike Yankovich, Planning Program Manager; Karen Avery, Senior Planner; Jim Laughlin, Deputy County Counsel; and Kristine Letterman, Planning Commission Clerk

### Approval of the Agenda

The Agenda was approved with no additions or deletions.

**The Minutes** of the regular meetings of September 17 and November 5, 2015 were deferred to the next regular meeting to allow for the majority of those who were in attendance at those meetings to be present to vote.

### Items from the Public:

There was no one from the public wishing to speak.

1. **PUBLIC HEARING** to consider Lot Line Adjustment Application No. LLA-15-07 and Certificate of Compliance No. CC-15-10 of **Chiala Properties, LLC**, for an adjustment of property lines with the purpose of isolating an existing agricultural air strip on an 80 acre parcel. The parcels included in the lot line adjustment are located near 6711 State Highway 113, 3 miles south of the City of Dixon. APN's: 0141-060-030 & 040 are located within an "A-40" Exclusive Agricultural Zoning District and 0141-100-130 & 140 are located within an "A-80" Exclusive Agricultural Zoning District. All of the parcels are under Williamson Act Contract No. 198. Lot line adjustments are ministerial projects, and therefore are not held to the provisions and requirements of CEQA per CEQA Section 21080 (b)(1). (Project Planner: Karen Avery)

Karen Avery gave a brief presentation of staff's written report. The primary purpose of the lot line adjustment is to reconfigure the boundaries of the parcels to isolate the agricultural air strip into a separate parcel. The property owners recently identified three historic parcels within APNs 0141-100-140/130 and 0141-060-040/030. The historic deed and patents have been reviewed by both County Counsel and the acting County Surveyor and found to meet the standards required for recognition by the County as legal, separate parcels. The applicant is requesting that Solano County recognize and reconfigure the boundaries of these parcels. Staff recommended approval of the project.

Commissioner Castellblanch inquired about the property containing the air strip and wanted to know if there were plans for some type of commercial development on that piece of land. Ms. Avery noted that the existing airstrip has a use permit dating back to the early 1960's and she believed that a crop dusting business that has been operating out of there for years was still in existence. Ms. Avery stated that the property is up for purchase and the current owner is looking for someone to operate the airstrip and continue the agricultural use on the property.

Acting Chairman Walker opened the public hearing.

The applicant, Bill Chiala appeared before the commission. He stated that the new buyers of the land did not want the portion of property that contains the air strip included in the purchase. Mr. Chiala stated that the property with the airstrip will remain with the same owners and the use will not change. He stated that Parcel 1 will remain in agriculture most likely in row crops.

Since there were no further speakers, the public hearing was closed.

A motion was made by Commissioner Hollingsworth and seconded by Commissioner Castellblanch to approve Lot Line Adjustment Application No. LLA-15-07 subject to the recommended conditions of approval. The motion passed unanimously. (Resolution No. 4632)

2. **ANNOUNCEMENTS and REPORTS**

There were no announcements or reports.

3. Since there was no further business, the meeting was **adjourned**.







# SOLANO COUNTY

**DEPARTMENT OF RESOURCE MANAGEMENT**

TO: Solano County Planning Commission

FROM: Nedzlene Ferrario, Senior Planner

DATE: December 3, 2015

SUBJECT: Rush Ranch Minor Revision No. 2 to Use Permit & Marsh Development Permit U-90-29/MD-90-05

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The item will be continued to January 21, 2016.



- B. Applicant/Owner:** SolAgra/Islands Inc.
- C. General Plan Land Use Designation/Zoning:** Agriculture/Resource Conservation Overlay/ A-80
- D. Existing Use:** Vacant
- E. Adjacent Zoning and Uses:**
- North:** Crop production
  - South:** Crop production
  - East:** Crop production
  - West:** Pear orchard

## **ANALYSIS:**

### **A. Project Description:**

**Environmental setting:** The property is located at the south side of Highway 220, approximately 350 feet east of Highway 84, on Ryer Island. On the west end of the property is a pear orchard. The project site is flat, without trees and bare. Elkhorn Slough is located 1.27 miles east of the subject parcel. Marshes, wetlands, vernal pools or riparian vegetation do not exist on the project site.

SolAgra, in collaboration with Dr. Heiner Lieth of UC Davis, proposes to conduct research on 9.47 acres regarding the feasibility of growing crops beneath solar arrays. The project components are as follows:

- 1 MW photovoltaic arrays on 2.13 acres. The solar arrays will be mounted atop pilings with a minimum 15-foot ground clearance, at a height sufficient to provide access to normal mechanized farming equipment to tend the crops growing beneath the solar arrays. The electricity produced will connect to an adjacent PG& E power pole located to the west, via a Net Energy Agreement to power Reclamation District 501 pumps on the island.
- 4.70 acre agricultural control plots that will accommodate the growing of alfalfa, sorghum, tomatoes and blueberries.
- Twenty (20) parking stalls, two (2) - 12 foot x 40 foot temporary research office trailers and turning areas on 2.64 acres.

Access to the site is off State Highway 220. Twenty (20) persons including employees are expected to be on site. Potable well water is available onsite and portable toilets will be provided.

According to the applicant, SolAgra Farming is a method of farming that shares sunlight between agricultural crops and solar arrays that are co-located on the same property. Using commercial farming methods, traditional farm crops can be grown beneath solar arrays that are specifically designed to minimize interference with modern farming methods, while also providing sunlight sharing with the crops growing beneath and within the partial shade of the solar arrays. The sharing of sunlight allows for the generation of electrical power and the cultivation of commercial farm commodities simultaneously. The experiment's design shall be coordinated with the Agricultural Advisory Committee. Further detail regarding SolAgra's research goals and methodology is attached.

- B. General Plan & Zoning Consistency:** The property is designated Agriculture with a Resource Conservation Overlay, and zoned Exclusive Agriculture 80 acre minimum (A-80). An Agricultural Research Facility is a conditionally permitted use in the A-80 zoning district. Research conducted on the site is related to the feasibility of growing crops under solar arrays, is consistent with the land use designation.

The project is located within the Primary Zone of the Delta and is consistent with the Sacramento - San Joaquin Delta Policies incorporated by reference in the General Plan.

**C: Williamson Act:** The property is under active Williamson Act contract No. 1165. The proposed facility requires crop production for both the test and control plot; and therefore, compatible with Solano County's Agricultural Preserve Guidelines.

**D. Development Standards:**

Access and parking: Access to the site is off State Highway 220. The driveway width shall be 12-feet wide with compacted class II aggregate base per Section 1-3.1 of the County Road Improvement Standards. A Caltrans encroachment permit is required to connect to Highway 220. Twenty parking (20) stalls for 20 employees and the parking lot shall be constructed in compliance with County Building Code requirements.

Setbacks: The solar arrays are proposed to be setback 190 feet from the front property line and meet the accessory structure setbacks in the A-80 zoning district.

Sewage disposal and water: The research facility is a temporary facility; therefore, chemical toilets will be provided. Potable well water already exists on the property.

Site restoration: Section 28.78.20 (B) of the Solano County Code requires commercial solar facilities to provide financial assurance that there will be funds available at the time of expiration or revocation of the use permit to remove all facility related improvements from the site and to restore the site to its preconstruction condition. Such assurance shall be provided prior to issuance of any grading or building permit for the facility and may be in the form of a bond, letter of credit or other form acceptable to the Director. Proof of financial assurances will be required to be submitted prior to issuance of a building or grading permit. Reclamation of the site to its pre-project conditions will include regrading and revegetation.

**E. Development Review Committee:** The project was reviewed by the Development Review Committee on May 7, 2015. Conditions of approval recommended by the Public Works, Building & Safety Division and Environmental Health Division have been included.

**VII. FINDINGS:**

**1. The establishment, maintenance, or operation of the proposed use is in conformity with the County General Plan with regard to traffic circulations, population densities and distribution, and other aspects of the General Plan.**

The property is designated Agriculture with a Resource Conservation Overlay in the General Plan, and zoned Exclusive Agriculture 80 acre minimum (A-80). Research conducted on the site is related to the feasibility of growing crops under solar arrays and is consistent with the land use designation. The project is located within the Primary Zone of the Delta and is consistent with the Sacramento - San Joaquin Delta Policies incorporated by reference in the General Plan.

**2. Adequate utilities, access roads, drainage and other necessary facilities have been or are being provided.**

The applicant has demonstrated that the adequate utilities, access road, drainage and other necessary facilities have been or shall be provided.

3. **The subject use will not, under the circumstances of the particular case, constitute a nuisance or be detrimental to the health, safety, peace, morals, comfort or general welfare of persons residing or working in or passing through the neighborhood of such proposed use, or be detrimental or injurious to property and improvements in the neighborhood or to the general welfare of the County.**

This project, as conditioned, will not constitute a nuisance or be detrimental to the health, safety, peace, morals, comfort or general welfare of persons residing or working in or passing through the neighborhood of such proposed use or be detrimental or injurious to property and improvements in the neighborhood or to the general welfare of the County.

4. **A Public Draft Initial Study/Negative Declaration was prepared and circulated by the Department of Resource Management. No potentially significant adverse environmental impacts are likely to occur. Implementation of standard County conditions of approval would prevent the project from creating significant effects to the environment.**

#### VIII. RECOMMENDED CONDITIONS OF APPROVAL:

1. Approval is hereby granted to SolAgra to operate a demonstration and research project regarding the economic viability of growing crops underneath solar arrays. SolAgra in collaboration with Dr. Heiner Lieth of UC Davis, proposes to conduct research on 9.47 acres and the project components are as follows:
  - 1 MW photovoltaic arrays on 2.13 acres. The solar arrays will be mounted atop pilings with a minimum 15-foot ground clearance, at a height sufficient to provide access to normal mechanized farming equipment to tend the crops growing beneath the solar arrays. The electricity produced will connect to an adjacent PG& E power pole located to the west, via a Net Energy Agreement to power Reclamation District 501 pumps on the island.
  - 4.70 acre agricultural control plots and growing of alfalfa, sorghum, tomatoes and blueberries are proposed.
  - Twenty (20) parking stalls, two (2) - 12 foot x 40 foot temporary research office trailers and turning areas on 2.64 acres.

The proposed use shall be established in accord with the application and plans for U-15-04, submitted May 7, 2015, for SolAgra, drawn by Kjeldsen Sinnock Neudeck Civil Engineers and Land Surveyors, and as approved by the Solano County Planning Commission.

2. The use permit, approved on \_\_\_\_\_, is granted for a fixed term of five (5) years and shall expire on \_\_\_\_\_, 2020. The permittee shall submit a report, annually by June 30, to the Department of Resource Management covering the science and economic analysis of the SolAgra Demonstration Research Project. The report shall include scientific methods and results, along with a discussion of methods used, recommendations for improvements in agricultural output and electrical power production and, the net Farm Gate value for each crop.

The science and economic analysis of the research shall include peer review by persons of similar qualifications or publication of results in "peer reviewed" journals.

The report shall be reviewed by the Agricultural Commissioner and Agricultural Advisory

Committee, and presented to the Planning Commission on an annual basis.

3. Water rights and other mitigation rights associated with the project site remain with the property for the term of the demonstration project.
4. The permittee shall remove all project facilities within 90 days of the end of the demonstration project. Prior to the issuance of any grading or building permit for the facility, the permittee shall provide financial assurance in the form of a bond, letter or credit or other form acceptable to the Director of Resource Management equivalent to the cost of removal of the project facility and restoration of the site to pre-project conditions. At such time the following procedures shall apply:
  - a. All facilities shall be removed and unsalvageable material shall be disposed of at authorized sites;
  - b. The soft surface shall be restored to its pre-project condition;
  - c. Reclamation procedures shall be based on-site-specific requirements and shall include regrading and revegetation of all disturbed areas;

#### *Building Division*

5. Prior to any construction or improvements taking place, a building permit application shall first be submitted as per Section 105 of the 2013 California Building Code or the latest edition of the codes enforced at the time of building permit application. "Any owner or authorized agent who intends to construct, enlarge, alter, repair, move, demolish, or change the occupancy of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any electrical, gas, mechanical or plumbing system, the installation of which is regulated by this code, or to cause any such work to be done, shall first make application to the building official and obtain the required permit."
6. The project is located in a Flood Insurance Rate Map Zone A and the building(s) shall be raised a minimum of one foot above the Base Flood Elevation and a Pre- and Post-elevation certificate shall be provided to the Building & Safety Division for review and approval.

#### *Public Works Engineering Division*

7. The permittee shall obtain an encroachment permit from the State of California for the proposed connection to State Highway 220; the encroachment shall be constructed to State of California standards.
8. The permittee shall construct the proposed access driveway to Solano County Road improvement standards, section 1-3.1. The driveway shall be constructed of 0.67 feet of compacted Class II aggregate base. The width of the road shall be 12 feet, with 60 foot long by 8 foot wide turnouts every 300 feet (for roads over 300 feet long), plus 2 foot graded shoulders, and shall have an unobstructed width of 20 feet.
9. The permittee shall apply for, secure and abide by the conditions of a grading permit for the proposed access road and parking improvements.

#### **ATTACHMENTS:**

- A - Project Location Map

- B - SolAgra Agricultural Research & Demonstration Project Letter
- C - Site Plan, Elevation
- D - Environmental Document
- E - Draft Resolution

# PROJECT LOCATION





September 12, 2015

**Mr. Mike Yankovich, Planning Director,**  
**Ms. Nedzlene Ferrario, Senior Planner**  
Solano County Department of Resource Management  
675 Texas Street, Suite 5500  
Fairfield, CA 94533

**SUBJ: SolAgra Agricultural Research & Solar Demonstration Project on Ryer Island**

Dear Mr. Yankovich & Ms. Ferrario:

The SolAgra Agricultural Research & Solar Demonstration Project (“DRP”) proposed for Ryer Island (near Rio Vista, California) is located on property that is owned by Islands, Inc. SolAgra Corporation has a long-term lease with Right of First Offer to Purchase this land. The Proposed Project is a ~1 MW photovoltaic electrical power generator that will meet the annual electrical requirements of Reclamation District 501. It is paired with a full scale agricultural research project to evaluate SolAgra Farming®.

SolAgra Farming is a method of farming that shares sunlight between agricultural crops and solar arrays that are co-located on the same property. Using commercial farming methods, traditional farm crops can be grown beneath solar arrays that are specifically designed to minimize interference with modern farming methods, while also providing sunlight sharing with the crops growing beneath and within the partial shade of the solar arrays. The sharing of sunlight allows for the generation of electrical power and the cultivation of commercial farm commodities simultaneously.

SolAgra Farming is a technology that goes beyond just the ability to control the sunlight on growing crops, and to simultaneously generate electricity. Our plan contributes to higher levels of efficiency in farming by giving the farmer options that are not currently available with traditional farming methods. For example:

Electrical power generated on site can power pumping to obtain water from wells and adjacent riparian water supplies or to lower high water tables that negatively impact agricultural production. Cost effective pumping of water can drive state of the art, low-cost drip irrigation to optimize farming in areas that have limited farming potential and to reduce the consumption of irrigation water compared with current farming methods.

- Successful farming using solar double-cropping techniques is ongoing in North Carolina, France, Italy, Israel and Japan. Japanese laws have recently been revised to support and encourage the dual use of farmland to produce crops and electricity simultaneously.

- Reduction of water consumption has been proven by a similar project (generically referred to as solar double-cropping) in France. Crops were grown beneath solar arrays with a 14% to 29% reduction in agricultural water consumption.
- The design of the solar structure will support the use of typical large mechanical farm equipment to plant, tend and harvest the crops.

With wide column spacing to support mechanized farming with traditional farm equipment, our design has only 63 columns distributed over 2.15 acres. The total obstructed land area is less than 30 square feet per acre.

**The key issues raised by Solano County Supervisors** regarding the DRP and the expansion of the project into a commercial scale power plant:

- Positive proof that this project presents no Glare/Glint issues for Travis Air Force Base.
- Evidence that “solar double-cropping” will not negatively impact the Farmgate on farmland.

### **GLARE/GLINT:**

SolAgra has worked collaboratively with the command staff at Travis Air Force Base to use SGHAT (Solar Glare Hazard Analysis Tool) that was developed by Sandia National Laboratories for the FAA and DOD to determine whether PV solar projects have the potential to reflect the sun’s Glare or Glint toward aircraft in critical approach corridors to airports or toward airport control towers.

SolAgra has completed the SGHAT analysis for Travis Air Force Base and Rio Vista Municipal Airport and verified a “NO GLARE” result. Our analysis has been independently verified by the Command Staff of Travis AFB. Their results agree with SolAgra’s results. SolAgra’s SGHAT results have been transmitted to Solano County Planning. The Travis AFB Command Staff has also provided written confirmation of their results to Solano County Planning and the Solano County Airport Land Use Commission.

### **Crop Production in Partial Shade**

The science and functionality of these concepts and techniques have been developed by SolAgra in collaboration with UC Davis Plant Sciences Department’s Dr. Heiner Lieth. These techniques were tested at the U.C. Davis Shade House on South Campus during 2014. It is clear that the ratio of optimal sunlight sharing varies from crop to crop. For example, research indicates that milo (sorghum) grows very efficiently with a higher degree of sunlight sharing (light restriction) than alfalfa. This allows a science-based analysis to provide the correct level of sunlight to each crop while still maximizing electrical power production.

These studies will be advanced in this Agricultural Research and Solar Demonstration Project by growing a minimum of four different crops with differing sunlight sharing levels under the one megawatt solar array.

- We can control the sunlight sharing percentages by changing the sunlight thru-put on specially designed and constructed solar panels, but also by varying the tracking angles of the single-axis tracking solar arrays to adjust the percentage of sunlight directed on crops at different times of day and throughout the growing season.

These results will allow us to select solar shading degrees and methods that will optimize the growth potential for each crop.

### **FARMGATE:**

Demonstration that Farmgate will be maintained during the production of solar power is a key element to obtaining the approvals for expansion of the Ryer Island Solar Project to its full design scale. **“Farmgate” is defined as the average gross agricultural revenue that is generated per acre on farmland.**

- Islands, Inc., owners of 6,202 acres on Ryer Island has owned and farmed their land for more than 60 years. Islands, Inc. has been reporting the crop yields to the Solano County Ag Commissioner annually for many years. These reports include the crops grown, the number of acres of each crop, and the gross revenue received for those crops.
- To determine the criteria for sustaining Farmgate, SolAgra will work collaboratively with the Ag Commissioner’s office and the County’s Ag Advisory Committee to review those reported results and develop the average gross revenue historically produced per acre on Islands, Inc. owned property on Ryer Island.

This will provide additional information that will be incorporated into the larger solar power plant on Ryer Island in future phases of the project. These future phases will employ knowledge learned from the DRP for production agriculture beneath solar arrays, but will also continue the research on other crops and crop varieties.

### **PROJECT GOALS**

The DRP has two principle goals:

- Demonstrate that historic “farmgate” can be sustained while simultaneously producing commercially significant electrical power on farmland.
- Conduct research to determine the optimization point (aka “the sweet spot”) between generation of solar electrical energy and crop production for a variety of farm crops.

### **ANALYSIS OF RESULTS**

To expand and continue the solar/ag research begun at U.C. Davis; it must be noted that the ability to control sunlight on crops being grown beneath the solar arrays may enable SolAgra to grow crops that produce a higher Dollar value per acre than other lower Dollar yielding crops that may have been historically grown nearby.

**The true test of sustaining Farmgate is whether the selection of crops grown beneath the solar arrays provides a similar or higher gross Dollar yield per acre than the gross average Dollar yield for crops historically grown by Islands, Inc. on Ryer Island.**

## AGRICULTURAL ADVISORY COMMITTEE (“AAC”) RECOMMENDATIONS

We received the letter dated February 11, 2015, from the AAC to the Board of Supervisors. The AAC’s *bullet points* in that letter are addressed below:

*That project success be defined as being compatible with agriculture in maintaining 100% of net Farm Gate Value, determined by using acceptable economic methodology.*

SolAgra agrees but believes that **gross** Farm Gate Value is a more accurate benchmark, for the reasons enumerated above. Recent discussions have confirmed that the AAC has agreed gross Farm Gate Value is a better benchmark.

*Another indicator of success is a confident prediction by an agricultural economist from a reputable research institution that the area would still be in profitable agriculture through the useful life of the solar panels ~30yrs*

- *That the experimental design and statistical analysis be scientifically rigorous.*
- *That a component of the research analyzes changes in soil flora, fauna and chemistry under the panels as well as environmental impacts to the area around the site.*
- *That any predictive model for scaling up from pilot to utility size uses economic analyses accounting for crop rotation, impacts to markets, feasibility studies, etc.*
- *That the experimental design be vetted by an independent agricultural expert(s) from a reputable research institution.*

SolAgra agrees. Each principle above is a hallmark of the scientific review and analysis that will be included as a part of our DRP.

- Agricultural supervision of the project and follow up analysis of the results will be under the auspices and direction of Dr. Heiner Lieth of U.C. Davis, Plant Sciences Department.
- An independent peer review of the results will be conducted by a review team selected by the U.C. Davis Ag Department and reviewed and approved by Solano County Resource Management.
  - Alternatively, publication of results in an acceptable peer reviewed journal will be acceptable in lieu of independent peer review.

*A bond be posted so that at the end of the project’s useful life, arrangements can be secured for returning the site to pre-project conditions.*

Reclamation District 501 (Ryer Island) will purchase the electrical power produced by the SolAgra DRP under a Power Purchase Agreement. The 1 MW power arrays provide the power necessary to operate the District’s Agricultural Pump stations; therefore RD-501 intends to maintain this facility as a renewable energy solution to power generation for agricultural support services. The solar panels and mechanical & electrical elements on the steel frames will be replaced over time with newer technology to continue to service RD-501’s demand. The 1 MW array will be an accessory to their agricultural operations in much the same way as a storage barn or other structure. Therefore it will not be removed.

Future, large power generations phases on Ryer Island will be the subject of a Development Agreement between Solano County and SolAgra. Provisions for bonding the removal of those future structures after their useful life can be negotiated through that Development Agreement.

*The county development fees compensate the county for the theoretical property tax increase from the development.*

Direct property taxes would be a violation of State Law under the Solar Exclusion of SB871 which extended the Solar Exclusion until January 1, 2025. Payments in lieu of taxes can be negotiated within a Development Agreement for expansion of the project to full buildout, to provide compensation for Local Agencies that currently benefit from property taxes on the underlying property.

*Approval of the pilot project does not imply or promise future approval of a larger scale project regardless of results obtained.*

As previously discussed with Resource Management, positive results of the DRP will lead to the negotiation of a mutually beneficial Development Agreement between Solano County and SolAgra that will hopefully permit the development and construction of the full-scale solar/agriculture project at Ryer Island.

*That the water rights and other mitigation rights remain with the property for the term of the project.*

SolAgra agrees.

## **FOLLOW UP QUESTIONS FROM SOLANO COUNTY STAFF**

In a follow up meeting (to the August 12 meeting of the Solano County Agricultural Advisory Committee) with you and County Agriculture Commissioner Jim Allan on August 24<sup>th</sup>, you asked for expanded information on:

***Description of how researchers will design cropping patterns to facilitate statistical analysis of research results by both crop and solar shading type with crops grown in traditional fields.***

In SolAgra Farming, the solar arrays are constructed with sufficient height and with wide column spacing so that traditional mechanized farming methods, using conventional farm equipment, can continue without interference, and so that sufficient sunlight passes through those solar arrays to support farming of crops typically grown in the region.

### **Design:**

This project will have both an agricultural research as well as a solar demonstration component.

- The demonstration will focus on showing approaches (shading percentages, shading methods) that are already known to be feasible based on testing at the U.C. Davis Shade House on South Campus over the last few years.

- The PV solar technology will be configured as part of a utility-scale power production system but not as the sole productive use of the land. Simultaneous with using solar energy for electricity production, part of the light will be used by plants.

It is relevant to note that this hybrid system has various products and all will be regularly sold so as to have a profitable enterprise. It is anticipated that all the electricity generated by this initial solar array will be used productively, either to sell to RD-501 to power the pumps which maintain Ryer Island as productive agricultural land, or for on-site uses.

- All this created value will be calculated to establish quantitatively how this hybrid production compares with conventional agriculture that uses no PV.

It is the basis of this project that with the dual use of sunlight, there is an optimal balance of sharing the light between the plants and power generation.

- It is also relevant that with electricity readily at hand, more intensive agriculture becomes possible on the farm. Some of the electricity generated by the solar panels will be available within the system, for pumping of drip irrigation, fertigation, etc.
- The project is designed to demonstrate the efficacy of the “marriage” between traditional field agriculture and electrical power production.

For the DRP, each crop will be planted in approximately 1,000 foot long east-west rows that are 80 feet wide (north-south). Approx. 290 feet of these rows will be grown beneath the solar array.

- The remainder will extend to the east of the solar array as a scientific control area.
- Outside of the solar array structure the same rows of crops will continue on the land to demonstrate the contrast to full-sun agricultural plant production of the same crops.

Differing levels of light restriction will occur beneath the solar array in North-South Light Restriction Bands that are 80’ wide each. Portions of these rows will be partially covered with photovoltaic solar panels in such a way that the shade treatments will be oriented north-south. This allows the shadows cast to the plants below to move over the course of the day due to the propagation of the sun. Various light control techniques will provide varying percentages of light passing through to the crops growing beneath.

When crops are grown beneath the SolAgra solar arrays as part of the DRP, those crops will be harvested, the produced quantities will be measured and recorded, and crop values will be computed in exactly the same manner as other crops that are grown by Islands, Inc. in adjacent and nearby fields on Ryer Island.

- The approximately 2.15 acres beneath the solar arrays will be divided into 48 Segments that are equal in size, shape and location to the solar array Segments that are directly above it. Each Segment is 40’ North-South by 50’ East-West. Each crop will have 12 Segments planted.
- Each of those Segments will be divided into 4 replicates that are 20’ x 25’. Four different sun-sharing treatments will exist above the 48 replicates of each crop.
- Each light treatment will have 12 replicates beneath it.
- The adjacent Control Plots will grow in full sunlight and will have replicates divided and evaluated in the same way as the crops growing beneath the solar arrays.



It is relevant to note that the plants will perceive the shade cast by the solar array and will respond to this accordingly. For each cropping system there is a particular part of the plant that is harvested for economic gain. Some crops are harvested for the reproductive parts (corn, soybeans, wheat, hops,...) while other crops are produced for stems (sugarcane) or leaves (lettuce, spinach,...) while yet other plants are harvested for both stem and leaf as a combined product (alfalfa, cabbage, chard, celery, etc.). As such, each set of rows of a particular crop will be treated separately during the scientific analysis.

Experts will be engaged to assist in the design and growth of each crop. Each agricultural crop has special methods that are used as “best management practices” in terms of field preparation, planting, cultivation, irrigation, fertilization and production management. The section of land to be used will have support pilings for the solar arrays installed and then the land will be cultivated in preparation for the project prior to the winter. Solar PV technology will then be installed on the previously installed pilings so that portions of each crop are exposed to the variable shade generated by these tracking solar arrays.

In consultation with research scientists familiar with each crop, sample areas will be designated and marked to allow hand-harvesting of such plots. Adequate numbers of sample plots will be established to allow statistical analysis of the plant production. In addition to hand-harvesting sample plots, the farmer will also harvest the field using conventional mechanized equipment as a proof of principle. As such we will end up with crop productivity data for each of the sample plots, giving us a way to use standard statistical methods to identify statistically significant differences in the research studies. At the same time we will have total productivity data from the demonstration as a whole.

### **Specific crops:**

Four crops will be grown on a 10 acre plot by the professional farmer that has been farming that land for decades.

- Hops – there have traditionally been extensive plantings of hops in Northern California (e.g. along the American River in Sacramento and around Pleasanton). Prior to the revolution in craft beer production much of this hops production disappeared from California. In recent years, as many new craft beers have come on the market, the demand for high-quality, specialty hops varieties has increased dramatically with shortages causing substantial price increases so that today there is good reason to grow hops in California. It is particularly relevant that the tall structures that are part of the solar array system make it relatively inexpensive to set up the normally expensive trellising system that is needed to grow hops. We view the inclusion of hops in this trial as forward-thinking and highly innovative. Choosing hops varieties that are known to grow well in high ambient temperatures and in partial shade is compatible with the SolAgra sun-sharing techniques. Hops are perennials that are initially planted in the spring when danger of frost is over. In following years the plants regenerate from rhizomes existing in the ground. The plants are trained to grow up a bine and cable network, growing vegetative for the early growth months, and then generating many branches with flower cones. There are male and female

- plants. On hops farms only female plants are grown. It is very important that no male flowers (pollen) be present to pollinate the female flowers because the hops oil production in the female flower ceases when pollinated. During late summer the unpollinated female flowers are harvested, dried and packaged for sale to brewers. After the harvest, the plants continue to grow. This causes the plants to send carbohydrates into the remaining underground rhizomes. These are the organs that will be the basis for a crop the next year; the more storage in the rhizomes, the better the production in the following year.
- Tomatoes – in an informal trial with tomatoes at UC Davis it was seen that tomatoes can produce quite well under partial shade. The focus here will be canning tomatoes, since these have been successfully grown on Ryer Island for many years. During 2014, 232 Acres of tomatoes were grown on Ryer Island by a tenant farmer of Islands, Inc.
  - Alfalfa – is a very important agricultural plant in northern California as it provides feed for large animals (horses, cows, etc.). It has a reputation of requiring significant quantities of water to grow. The plants are grown in open fields. Several cuts are made during each growing season. After each cut the alfalfa is baled and moved off the field to allow the cut plants to regrow. There may be as many as 6 or more cuts per growing season, each with a typically decreasing level of total biomass harvested. It is not only the total biomass that is relevant. There is also a very important quality component referred to as Total Digestible Nutrients (“TDN”). Softer stems (which will likely be the result of partial shade) will enhance the quality of the alfalfa and increase the TDN. Quality rather than quantity yields will lead to higher sale prices which will better sustain farmgate. In 2014, 348 acres of Alfalfa were grown on Ryer Island by Islands, Inc.
  - Milo (Sorghum) – a grain crop that has become increasingly popular as a substitute for corn. The crop was very successfully tested at the U.C. Davis Shade House on South Campus during summer of 2014. It was one of the crops that grew significantly better in a sun-sharing environment than in full sunlight. In 2014, 461 acres of Milo were grown on Ryer Island by Islands, Inc.

The research portion of the project will expand our knowledge about particular crops growing in this system - testing both the known approaches as well as new proposed approaches where the outcome is not currently known. These methods are all within the limits of scientific research.

For example, we expect plants growing under sun-sharing will consume less water to produce a defined quantity of harvested material. This has been documented in other solar double-cropping research in France.

- A portion of our research will study how much water could be saved using SolAgra Farming. Water supply to crops grown in northern California is completely under the farmer’s control because we normally have little or no summer rain during the growing season. Failure to irrigate results in no productivity. The amount of water that the farmer applies depends on the farmer’s decision-making process.
- Many farmers use the CIMIS system which was developed at UC Davis in conjunction with the California Department of Water Resources (which today



- manages the system for the farmers of California). This system provides a reference evapotranspiration index which is used to calculate how much water would have been evaporated. Each crop has a different coefficient that is multiplied to the reference ET value so as to estimate how much water the farmer should apply.
- We will use on-project weather stations to identify each of the shading systems using the same formulas as used by the CIMIS system. We will also have a weather station in the unshaded part of the field. We will not be using the CIMIS data per se because the closest station is not close enough to our study site. Each of the weather stations will log air temperature, light, humidity, wind speed and direction. Irrigation will be controlled to provide the amount calculated to be the reference ET plus 10%. Normally that might be a bit tight for the grower but we know that our site has a relatively high water table, so there should be little danger of “shaving it too close”. Still, this may need to be adjusted if we find that it does not provide enough water for plant production.

Hand sampling of small areas of crop growth will be done by supervising U.C. Davis scientists. These samplings will be taken toward the center of each replicate to zone out any light propagation that could come from another replicate with a different light treatment. This is done to make valid comparative analyses between various percentages of light restriction for purposes of optimizing the degrees of sunlight sharing that are being tested by the research analysis.

Following hand sampling, the entire area beneath the 1 MW solar array will be harvested so that the areas beneath the array can be combined with the areas between the array rows, and those quantities will be compared for yield on a crop by crop basis and with the average gross Dollar yield per acre on lands owned and farmed by Islands, Inc.

### **Outline the business relationship SolAgra will maintain with academic plant science researchers and how peer review will be accomplished**

The outcome of this project will be determined by the measurement of all the financial elements of each production system that contributes to the farmgate value. The scientific team will include research scientists with expertise in crop production, agricultural economics, and the integration of these areas. A report will be produced describing the scientific methods and the results along with a discussion of methods used and recommendations for improvements in agricultural output and electrical power production.

Since the outcome is an economic analysis, peer review of the report will be conducted by a person or group with expertise in evaluating the economics of agricultural production. The core feature of “Peer Review” is that it involves “peers”. I.e. the work being reviewed is being done by one person or team; the review would be conducted by a person or persons who have similar qualifications to qualify them as peers.

Alternatively, publication of results in “peer-reviewed” journals, will also accomplish the peer review task since we have the expectation that the reviewers are also scientists with

expertise in the areas of the project. In both peer review methods described above, the reviewer and the reviewed are independent of each other.

**Negative Declaration facts:**

The CEQA Negative Declaration for this project will be supported by the following facts: all areas of farmland owned by Islands, Inc., including all of the area proposed for the DRP have been continuously active farmland for more than 60 years. This land has been constantly disturbed by agricultural operations. The potential for habitat for Species of Special Concern on this small area of land is virtually non-existent.

Soil samples will be taken to provide proper pH and soil chemistry to support the selected crops and nutrients and soil amendments will be applied if necessary. Soil sampling will include monitoring of pre-testing micro and macro fauna. These soil samplings will be repeated after harvesting to evaluate the farming impacts, if any, to the soil from farming in a sun-sharing environment. If any impacts are detected, they will be mitigated.

The photovoltaic (PV) solar panels used in this project will be passive solar panels. This means they will absorb the sunlight, but no propagation of solar energy will be concentrated or externally re-focused as is done in active solar systems like CSP. The solar panels used on the DRP will be conventional PV panels similar to the passive solar power generation that is found on many homes and buildings all over California.

Please contact me at your earliest convenience to discuss this submittal and the necessary steps to complete the application for the Use Permit so that we may proceed with the project as soon as possible.

Thank you,

A handwritten signature in blue ink that reads 'Barry Sgarrella'.

**Barry Sgarrella**  
**Chief Executive Officer**

**O: 415-892-6149**

**C: 415-720-5060**

**E: [barry@solagra.com](mailto:barry@solagra.com)**

**[www.SolAgra.com](http://www.SolAgra.com)**

CC:

Solano County Agriculture Commissioner Jim Allan



APN:  
0042-240-190

SOLANO COUNTY GIS PARCEL LINES

SR 220 RIGHT OF WAY

EXISTING DRIVEWAY

SR 84 RIGHT OF WAY

20 PARKING STALLS

TEMPORARY RESEARCH OFFICE TRAILERS 12 X40

CONTROL ZONE 4 - ALFALFA  
CONTROL ZONE 3 - SORGHUM  
CONTROL ZONE 2 - TOMATOES  
CONTROL ZONE 1 - BLUEBERRIES

SYMBOL	DESCRIPTION	ACREAGE
[Red Box]	RESEARCH OFFICES/PARKING/FACILITIES & PRESERVATION	0.88
[Light Blue Box]	EQUIPMENT TURNING AREA	1.76
[Green Box]	SOLAR ARRAY WITH CROPS GROWING BENEATH	2.13
[Yellow Box]	AG CONTROL PLOTS	4.70
<b>TOTAL PROJECT ACRES</b>		<b>9.47</b>

PARKING STALL LAYOUT SHALL BE IN ACCORDANCE WITH SOLANO COUNTY ORDINANCE NO. 2012 - CHAPTER 28: Z1-11-02 & Z-11-03, SECTION 28.94 - PARKING REQUIREMENTS

TRAFFIC CIRCULATION

APN:  
0042-240-120

NOTES:  
- SOLANO COUNTY PARCEL LINES WERE OBTAINED FROM THE COUNTY GIS DATA DATED SEPTEMBER 19, 2014. UNPAVED FOR REFERENCE  
- ONLY FEATURE LOCATION SHOWN ARE NOT PRECISE.

**K S K**  
**KJELSDEN**  
**SINNOCK**  
**S NEUDECK**  
**INC.**  
Civil Engineers  
and Land Surveyors

Post Office Box 844  
711 N. Pershing Avenue  
Stockton, CA 95201-0844  
Phone: (209) 946-0296  
Fax: (209) 946-0296  
E-mail: KSN@ksnlc.com

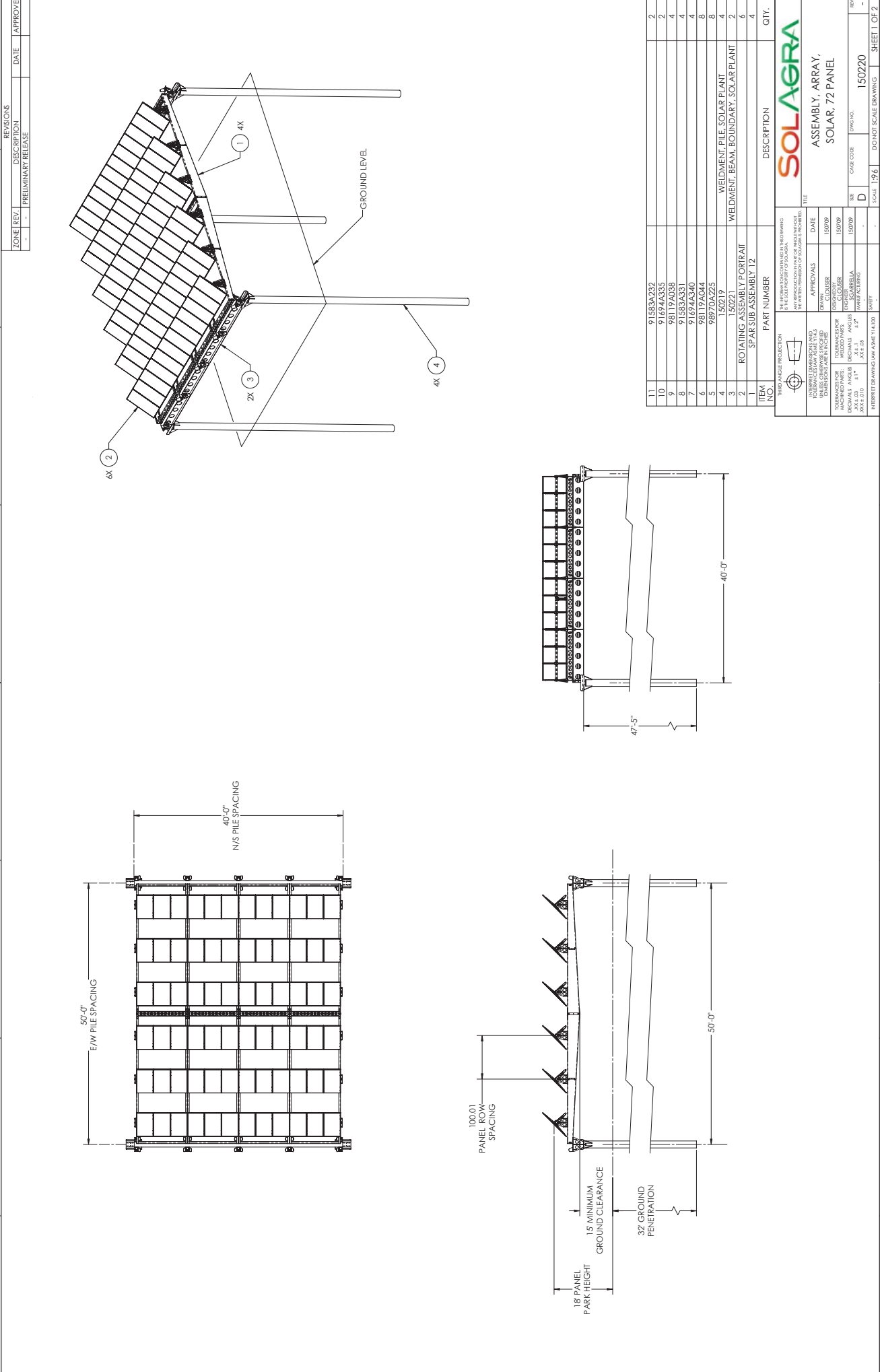
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Original Drawing Scale  
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SOLAGRA DEMONSTRATION  
RESEARCH PROJECT  
RYER ISLAND - RANCH 9  
SITE PLAN

EXHIBIT  
1  
PAGE 1

ZONE	REV.	DESCRIPTION	DATE	APPROVED
		PRELIMINARY RELEASE		



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
11	91583A232		2
10	91694A335		2
9	98119A038		4
8	91583A331		4
7	91694A340		4
6	98119A044		8
5	9870A225		8
4	150219	WELDMENT, PILE, SOLAR PLANT	4
3	150219	WELDMENT, BEAM, BOUNDARY, SOLAR PLANT	2
2	ROTATING ASSEMBLY PORTAIT		2
1	SPARSUB ASSEMBLY 12		4

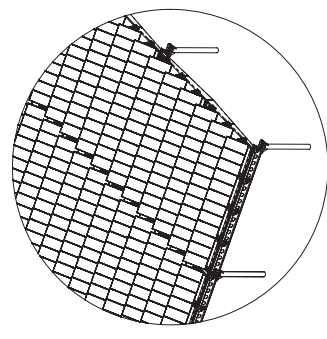
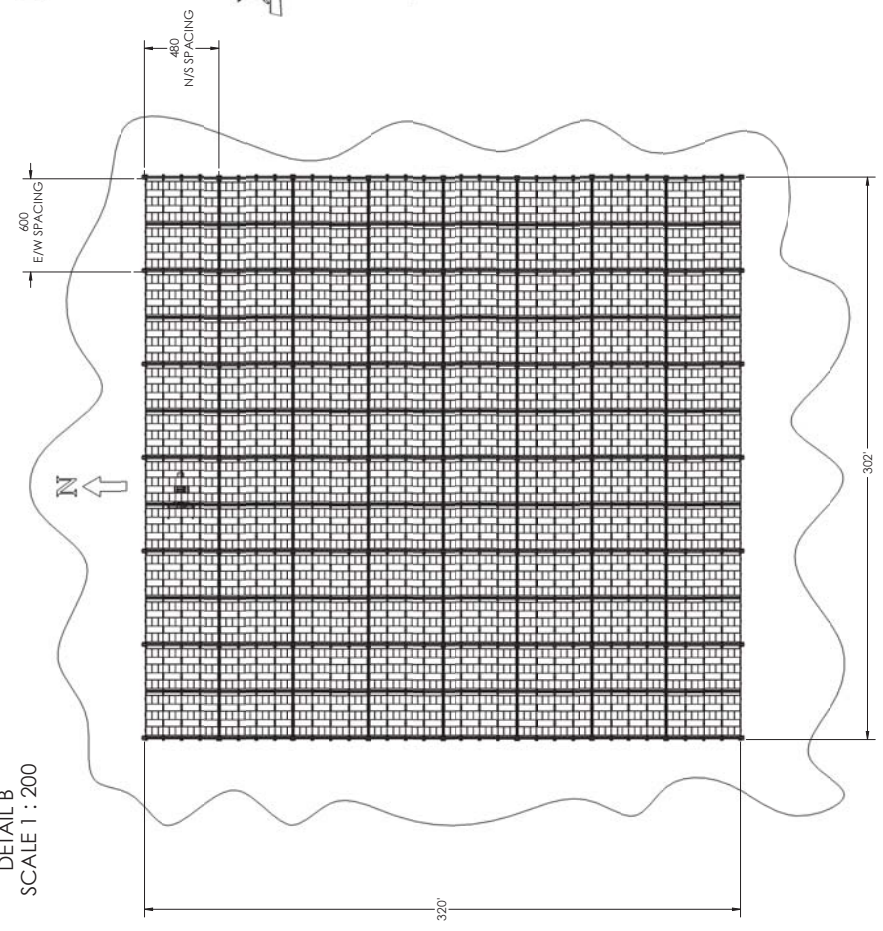
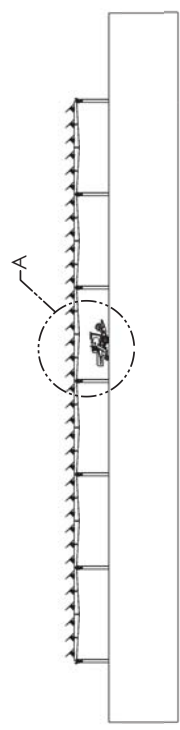
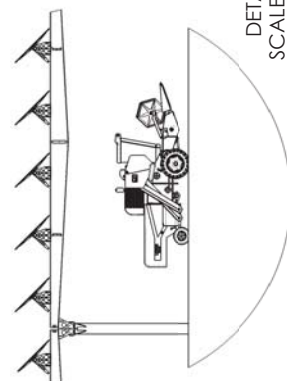
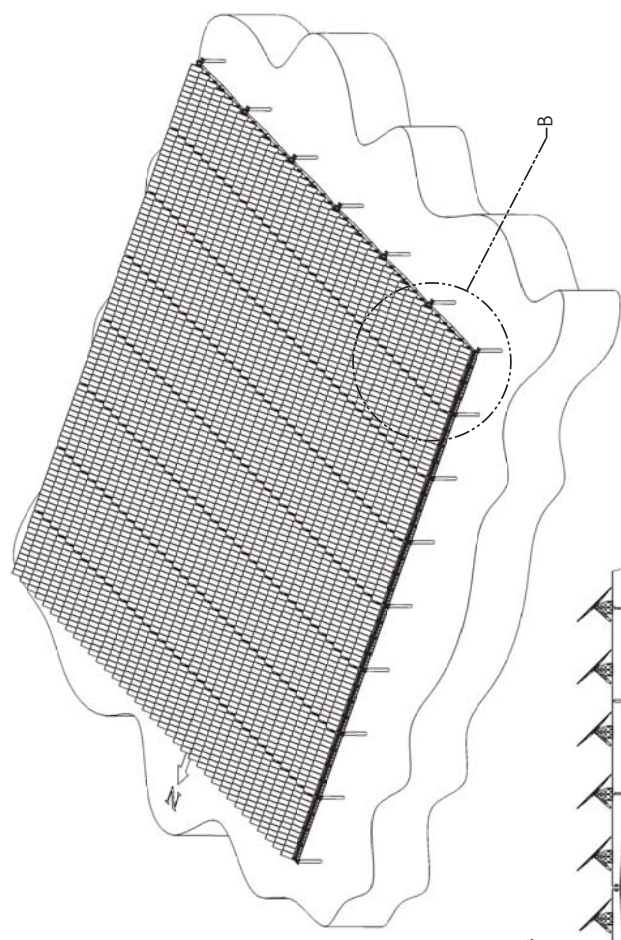
THIRD ANGLE PROJECTION		APPROVALS		DATE	
DESIGNED BY	DATE	DRAWN BY	DATE	APPROVED BY	DATE
150219	150709	150219	150709		
CHECKED BY	DATE	DESIGNED FOR	DATE	PROJECT	NO.
150219	150709	ASSEMBLY ARRAY, SOLAR, 72 PANEL	150709		
MANUFACTURED BY	DATE	MANUFACTURING	DATE	MANUFACTURING	DATE

SOLAERA		ASSEMBLY ARRAY, SOLAR, 72 PANEL	
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SCALE	1:56	REV.	-
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SCALE	1:56	DO NOT SCALE DRAWING	7
SCALE	1:56	DO NOT SCALE DRAWING	8



REV	DATE CODE	DESCRIPTION	BY
D			
SCALE 1:400			
PROJECT NO. 150222			
SHEET 2 OF 2			

# DP PROJECT OVERVIEW



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**NEGATIVE DECLARATION  
OF THE  
SOLANO COUNTY DEPARTMENT OF RESOURCE MANAGEMENT**

**PROJECT TITLE:**

SolAgra Demonstration & Research Project Application No. U-15-04

**PROJECT DESCRIPTION AND LOCATION:**

The project site is located on the south side of Highway 220, approximately 350 feet east of Highway 84, on Ryer Island, Solano County.

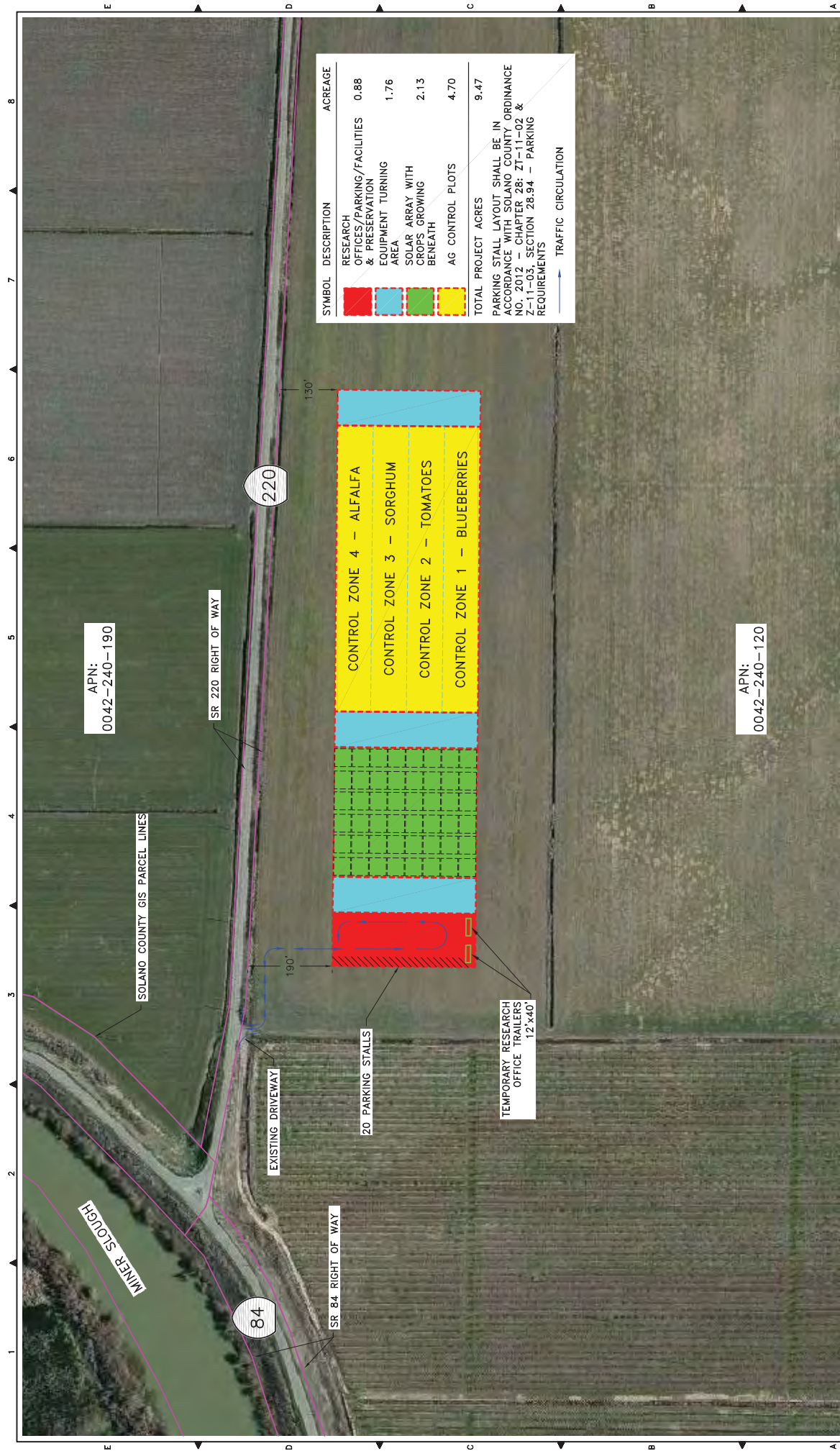
SolAgra, in collaboration with Dr. Heiner Lieth of UC Davis, proposes to conduct research on 9.47 acres regarding the feasibility of growing crops beneath solar arrays. The project components are as follows:

- 1 MW photovoltaic arrays on 2.13 acres. The solar arrays will be mounted atop pilings with a minimum 15-foot ground clearance, at a height sufficient to provide access to normal mechanized farming equipment to tend the crops growing beneath the solar arrays. The electricity produced will connect to an adjacent PG& E power pole located to the west, via a Net Energy Agreement to power Reclamation District 501 pumps on the island.
- 4.70 acre agricultural control plots and growing of alfalfa, sorghum, tomatoes and blueberries are proposed.
- 20 parking stalls, two (2) - 12 foot x 40 foot temporary research office trailers and turning areas on 2.64 acres.

Access to the site is off Highway 220. Potable water is available onsite and portable toilets will be provided.

**FINDINGS:**

The Solano County Department of Resource Management has evaluated the Initial Study which was prepared in regards to the project. The County found no potentially significant adverse environmental impacts likely to occur. The County determined that the project qualifies for a Negative Declaration. The Initial Study of Environmental Impact, including the project description, findings and disposition, are attached.



APN:  
0042-240-190

SOLANO COUNTY GIS PARCEL LINES

SR 220 RIGHT OF WAY

220

EXISTING DRIVEWAY

130'

SR 84 RIGHT OF WAY

84

20 PARKING STALLS

TEMPORARY RESEARCH OFFICE TRAILERS 12 X40

CONTROL ZONE 4 - ALFALFA  
CONTROL ZONE 3 - SORGHUM  
CONTROL ZONE 2 - TOMATOES  
CONTROL ZONE 1 - BLUEBERRIES

APN:  
0042-240-120

SYMBOL	DESCRIPTION	ACREAGE
[Red Box]	RESEARCH OFFICES/PARKING/FACILITIES & PRESERVATION	0.88
[Light Blue Box]	EQUIPMENT TURNING AREA	1.76
[Green Box]	SOLAR ARRAY WITH CROPS GROWING BENEATH	2.13
[Yellow Box]	AG CONTROL PLOTS	4.70
<b>TOTAL PROJECT ACRES</b>		<b>9.47</b>

PARKING STALL LAYOUT SHALL BE IN ACCORDANCE WITH SOLANO COUNTY ORDINANCE NO. 2012 - CHAPTER 28: Z1-11-02 & Z-11-03, SECTION 28.94 - PARKING REQUIREMENTS

TRAFFIC CIRCULATION

NOTES:  
- SOLANO COUNTY PARCEL LINES WERE OBTAINED FROM THE COUNTY GIS DATA DATED SEPTEMBER 19, 2014.  
- DIMENSIONS SHOWN ARE FOR REFERENCE ONLY. FEATURE LOCATION SHOWN ARE NOT PRECISE.

**K S K**  
**J S**  
**S S**  
**NEU**  
**DECK**  
INC.  
Civil Engineers  
and Land Surveyors

Post Office Box 844  
711 N. Pershing Avenue  
Stockton, CA 95201-0844  
Phone: (209) 946-0296  
Fax: (209) 946-0296  
E-mail: KSN@ksnj.com

Scale  
1" = 100'  
Original Drawing Scale  
0 1/2" 1" 1 1/2"

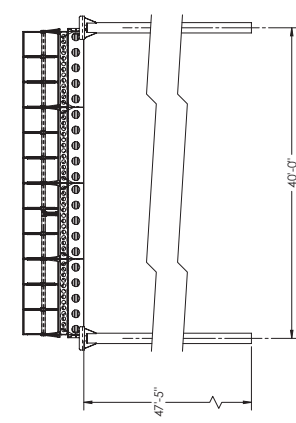
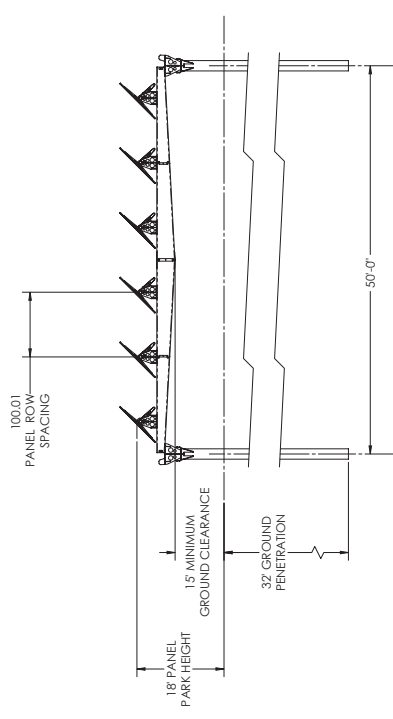
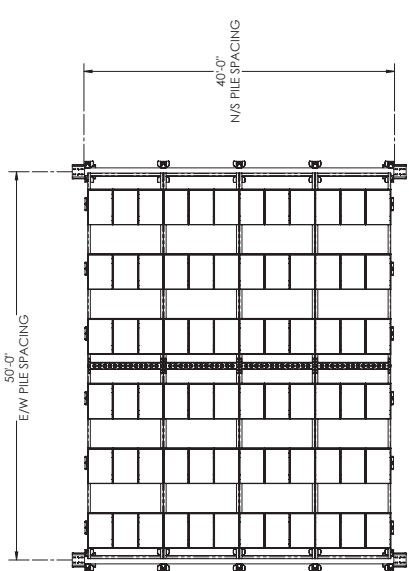
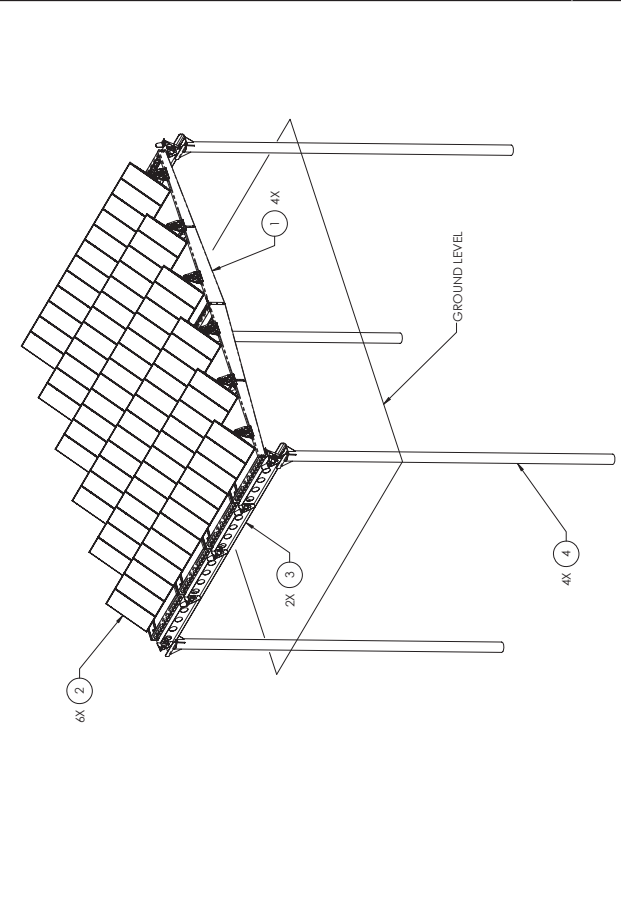


SOLAGRA DEMONSTRATION  
RESEARCH PROJECT  
RYER ISLAND - RANCH 9  
SITE PLAN

EXHIBIT  
1  
PAGE 1



ZONE	REV.	DESCRIPTION	DATE	APPROVED
		PRELIMINARY RELEASE		



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
11	91583A232		2
10	91694A335		2
9	98119A038		4
8	91583A331		4
7	91694A340		4
6	98119A044		8
5	9870A225		8
4	150219	WELDMENT, PILE, SOLAR PLANT	4
3	150219	WELDMENT, BEAM, BOUNDARY, SOLAR PLANT	2
2	150219	WELDMENT, BEAM, BOUNDARY, SOLAR PLANT	2
1	150219	WELDMENT, BEAM, BOUNDARY, SOLAR PLANT	2
		ROTATING ASSEMBLY FOR RAIL	4
		SPARS SUB ASSEMBLY 12	4

THIRD ANGLE PROJECTION		APPROVALS		DATE	
DESIGNED BY	DATE	DRAWN BY	DATE	APPROVED BY	DATE
150219	150709	150219	150709		
CHECKED BY	DATE	DESIGNED FOR	DATE	PROJECT	DATE
150219	150709	150219	150709	150219	150709
MANUFACTURED BY	DATE	MANUFACTURED BY	DATE	MANUFACTURED BY	DATE
150219	150709	150219	150709	150219	150709

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**SOLAERA**

ASSEMBLY ARRAY,  
SOLAR, 72 PANEL

SCALE: 1/8" = 1'-0"

DO NOT SCALE DRAWING

SHEET 1 OF 2

1 2 3 4 5 6 7 8

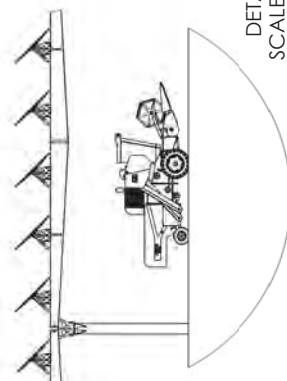
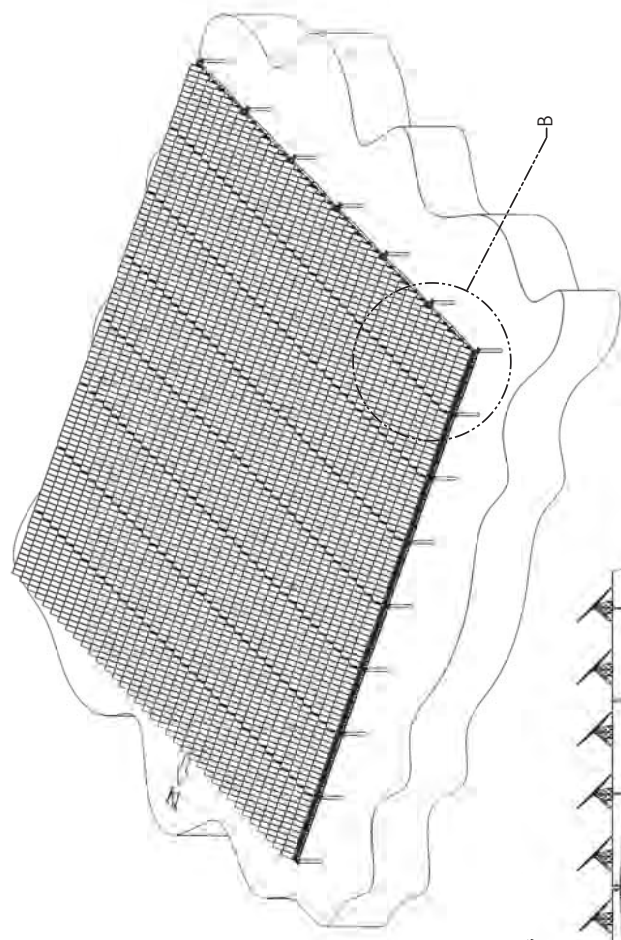
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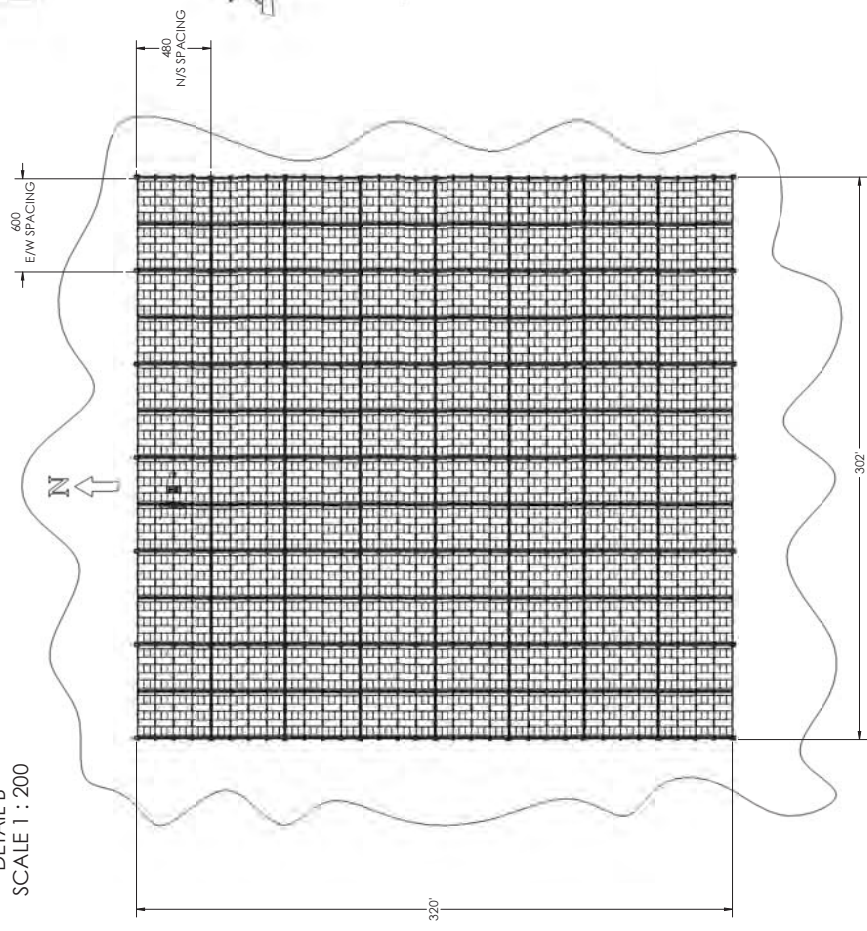


REV	DATE CODE	DESCRIPTION	REV
D		150222	-
SCALE 1:400			SHEET 2 OF 2

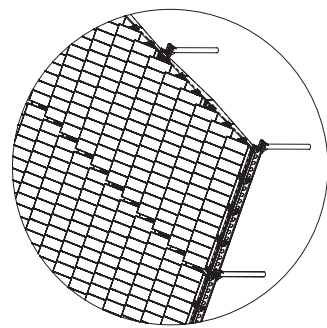
# DP PROJECT OVERVIEW



DETAIL A  
SCALE 1 : 100



DETAIL B  
SCALE 1 : 200



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D C B A

**PREPARATION:**

This Negative Declaration was prepared by the Solano County Department of Resource Management. Copies may be obtained at the address listed below or at [www.solanocounty.com](http://www.solanocounty.com) under Departments, Resource Management, Documents, Departmental Reports.



---

Michael Yankovich, Planning Program Manager  
Solano County Dept. of Resource Management  
675 Texas Street, Suite 5500, Fairfield, CA 94533  
(707) 784-6765

# **SolAgra Demonstration & Research Project U-15-04**

## **Draft Initial Study and Negative Declaration**



**October 2015**

**Prepared By  
Department of Resource Management  
County of Solano**

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## DEPARTMENT OF RESOURCE MANAGEMENT PART II OF INITIAL STUDY OF ENVIRONMENTAL IMPACTS

### Introduction

The following analysis is provided by the Solano County Department of Resource Management as a review of and supplement to the applicant's completed "Part I of Initial Study". These two documents, Part I and II, comprise the Initial Study prepared in accordance with the State CEQA Guidelines, Section 15063.

<b>Project Title:</b>	SOLAGRA DEMONSTRATION & RESEARCH PROJECT
<b>Application Number:</b>	U-15-04
<b>Project Location:</b>	Southeast corner of Highway 84 and 220
<b>Assessor Parcel No.(s):</b>	042-240-120
<b>Project Sponsor's Name and Address:</b>	Barry Sgarrella SolAgra Corporation 1100 Cabro Ridge, Novato, CA 94947

### General Information

This document discusses the proposed project, the environmental setting for the proposed project, and the impacts on the environment from the proposed project and any measures incorporated which will minimize, avoid and/or provide mitigation measures for the impacts of the proposed project on the environment.

- Please review this Initial Study. You may order additional copies of this document from the Planning Services Division, Resource Management Department, County of Solano County at 675 Texas Street, Fairfield, CA, 94533.
- We welcome your comments. If you have any comments regarding the proposed project please send your written comments to this Department by the deadline listed below.
- Submit comments via postal mail to

Planning Services Division  
Resource Management Department  
Attn: Nedzlene Ferrario, Senior Planner  
675 Texas Street  
Fairfield, CA 94533

- Submit comments via fax to: (707) 784-4805
- Submit comments via email to: [nferrario@solanocounty.com](mailto:nferrario@solanocounty.com)
- Submit comments by the deadline of: November 24, 2015, 5 pm**

### Next Steps

After comments are received from the public and any reviewing agencies, the Department may recommend that the environmental review is adequate and that a Negative Declaration be adopted or that the environmental review is not adequate and that further environmental review is required.

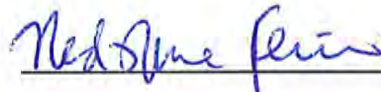
## ENVIRONMENTAL DETERMINATION

### On the basis of this initial study:

- I find the proposed project could not have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.
  
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the project proponent has agreed to revise the project to avoid any significant effect. **A MITIGATED NEGATIVE DECLARATION** will be prepared.
  
- I find the proposed project could have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT (EIR)** is required.
  
- I find the proposed project could have a significant effect on the environment, but at least one effect has been (1) adequately analyzed in a previous document pursuant to applicable legal standards, and (2) addressed by mitigation measures based on the previous analysis as described in the attached initial study.  
An EIR is required that analyzes only the effects that were not adequately addressed in a previous document.
  
- I find that although the proposed project could have a significant effect on the environment, no further environmental analysis is required because all potentially significant effects have been (1) adequately analyzed in an earlier EIR or **NEGATIVE DECLARATION** pursuant to applicable standards, and (2) avoided or mitigated pursuant to that earlier EIR or **NEGATIVE DECLARATION**, including revisions or mitigation measures that are included in the project, and further analysis is not required.

10/27/2015

Date



Nedzlene Ferrario  
Senior Planner







- 20 parking stalls, two (2) - 12 foot x 40 foot temporary research office trailers and turning areas on 2.64 acres.

Access to the site is off Highway 220. Potable water is available onsite and portable toilets will be provided.

### 1.2.1 ADDITIONAL DATA:

NRCS Soil Classification:	Ryde Clay Loam, Class 3
Agricultural Preserve Status/Contract No.:	Contract No. 1165
Non-renewal Filed (date):	Not applicable
Airport Land Use Referral Area:	Not Applicable
Alquist Priolo Special Study Zone:	Not Applicable
Primary or Secondary Management Area of the Suisun Marsh:	Not Applicable
Primary or Secondary Zone identified in the Delta Protection Act of 1992:	Primary Zone
Other:	Not applicable

## 1.2.2 Surrounding General Plan, Zoning and Land Uses

	General Plan	Zoning	Land Use
<b>Property</b>	Agriculture	A-80	Crop production
North	Agriculture	A-80	Crop production
South	Agriculture	A-80	Crop production
East	Agriculture	A-80	Crop production
West	Agriculture	A-80	Orchard

## 1.3 CONSISTENCY WITH EXISTING GENERAL PLAN, ZONING, AND OTHER APPLICABLE LAND USE CONTROLS:

### 1.3.1 General Plan

The property is designated Agriculture with a Resource Conservation Overlay on the Solano County Land Use Diagram.

### 1.3.2 Zoning

The property is zoned Exclusive Agriculture – 80 acre minimum.

## 1.4 Permits and Approvals Required from Other Agencies (Responsible, Trustee and Agencies with Jurisdiction):

Montezuma Fire Protection District  
Caltrans

### 1.41 Agencies that May Have Jurisdiction over the Project

US Fish and Wildlife  
Department of Fish and Wildlife  
Energy Commission

## 2.0 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES AND AVOIDANCE, MINIMIZATION AND/OR PROTECTION MEASURES

This chapter discusses the potential for adverse impacts on the environment. Where the potential for adverse impacts exist, the report discusses the affected environment, the level of potential impact on the affected environment and methods to avoid, minimize or mitigate for potential impacts to the affected environment.

### Findings of SIGNIFICANT IMPACT

Based on the Initial Study, Part I as well as other information reviewed by the Department of Resource Management, the project does not have the potential for significant impacts to any environmental resources.

### Findings of LESS THAN SIGNIFICANT IMPACT Due to Mitigation Measures Incorporated Into the Project

Based on the Initial Study, Part I as well as other information reviewed by the Department of Resource Management, the following environmental resources were considered and the project does

not have the potential for significant impacts that would be reduced to less than significant due to mitigation measures incorporated into the project.

### **Findings of LESS THAN SIGNIFICANT IMPACT**

Based on the Initial Study, Part I as well as the review of the proposed project by the Department of Resource Management, the following environmental resources were considered and the potential for impact is considered to be less than significant. A detailed discussion of the potential adverse effects on environmental resources is provided in the sections below:

- |                          |                               |                          |                   |
|--------------------------|-------------------------------|--------------------------|-------------------|
| <input type="checkbox"/> | Aesthetics                    | <input type="checkbox"/> | Hydrology & Water |
| <input type="checkbox"/> | Agricultural Resources        | <input type="checkbox"/> | Noise             |
| <input type="checkbox"/> | Geology & Soils               | <input type="checkbox"/> | Public Services   |
| <input type="checkbox"/> | Hazards & Hazardous Materials |                          |                   |

### **Findings of NO IMPACT**

Based on the Initial Study, Part I as well as the review of the proposed project by the Department of Resource Management, the following environmental resources were considered but no potential for adverse impacts to these resources were identified. A discussion of the no impact finding on environmental resources is provided in the sections below:

- |                          |                      |                          |                      |
|--------------------------|----------------------|--------------------------|----------------------|
| <input type="checkbox"/> | Aesthetics           | <input type="checkbox"/> | Greenhouse gases     |
| <input type="checkbox"/> | Air Quality          | <input type="checkbox"/> | Land Use             |
| <input type="checkbox"/> | Biological Resources | <input type="checkbox"/> | Population & Housing |
| <input type="checkbox"/> | Cultural Resources   | <input type="checkbox"/> | Recreation           |
|                          |                      | <input type="checkbox"/> | Utilities & Sewage   |
-

## 2.1 Aesthetics

Would the project	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Substantially damage scenic resources, including, but not limited to, trees, rock out-croppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Increase the amount of shading on public open space (e.g. parks, plazas, and/or school yards)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a-c. The project site is not located along a Scenic Highway Corridor, would not substantially effect the scenic vista, does not require removal of scenic resources and will not degrade the visual character of the surroundings. **Less than significant impacts** are anticipated.

d. The project would not create substantial light that would adversely affect the day or nighttime views in the area. With regard to glare, the applicant prepared a Solar Glare Hazards analysis report which concluded that the project would not create glare; therefore is not a nuisance to aircraft or the surroundings. **Less than significant impacts** are anticipated.

e. The project is located on agricultural land and will not increase the shading on public open space. **No impacts are anticipated.**

## 2.2 Agricultural Resources

Checklist Items: Would the project

Would the project	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a-c: The property is currently under Williamson Act contract. The propose facility requires crop production for both the test and control plot; therefore, is compatible with Solano County's Agricultural Preserve Guidelines. **Less than significant impacts** are anticipated.

### 2.3 Air Quality

Checklist Items: Would the project	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is classified as non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a-e: The project site will not conflict, violate any air quality standard, create pollution or objectionable odors. **No impacts are anticipated.**

### 2.4 Biological Resources

Checklist Items: Would the project	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Have a substantial adverse effect on any aquatic, wetland, or riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

c.	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act including, but not limited to, marsh, vernal pool, coastal, etc., through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d.	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f.	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a – f: The project site was actively farmed in corn this season. After harvest, the land was disced. No trees or wetlands or riparian vegetation exist on the subject site; therefore, no construction impacts to biological resources are anticipated. The solar panels will generate heat but heat levels will not cause an adverse impact to wildlife. **No impacts** are anticipated.

## 2.5 Cultural Resources

Checklist Items: Would the project	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of an historical resource as defined in CEQA Guidelines §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Directly or indirectly destroy a unique paleontological resource or site, or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a. There are no structures on the subject site; therefore, **no impacts** to historic resources are anticipated.

b-d: The property has been tilled for agricultural purposes for many years and the proposed facility primarily effect the ground surface. Cultural resources are not likely to be unearthed. State law (Section 7050.5 of the California Health and Safety Code) dictates that any human remains found

during construction activities shall be reported to the proper official(s). Therefore, **less than significant impacts** are anticipated.

## 2.6 Geology and Soils

Checklist Items: Would the project	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a.				
1) Rupture of a known earthquake fault, as described on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, differential settlement, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a. 1) - 4): No portion of the project site is located within an Alquist-Priolo Special Studies Zone or unstable ground. Compliance with the Uniform Building Code requirements, should reduce any damage from ground shaking, and impacts are considered to be **less than significant**.

b, e: The project will not result in substantial loss of topsoil. Portable toilets are proposed; therefore, no septic system evaluation is necessary. **No impacts** are anticipated.

c, d, The project is not located on unstable soil or cause substantial risk to life or property. Compliance with the County's Building Code shall minimize impacts to a **less than significant level**.

## 2.7 Greenhouse Gas Emissions

Checklist Items: Would the project	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a-b: The project will not generate greenhouse gases that would significantly impact the environment or conflict with any applicable plan. **No impacts** are anticipated.

## 2.8 Hazards and Hazardous Materials

Checklist Items: Would the project	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



evacuation plan?

- h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

a-h: The project does not propose to store any hazardous materials or have the potential to expose people to any hazardous situation. Electrical fire could potentially occur; however, compliance with the Montezuma Fire Protection District and Building Code requirements would minimize impacts to **less than significant level**. The site is located more than two miles from the Rio Vista Airport; therefore, does not conflict with any airport plan. **No impacts are anticipated.**

## 2.9 Hydrology and Water

Checklist Items: Would the project	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on-or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on-or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g. Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

h.	Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i.	Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j.	Be subject to inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a-f, j: The project will not violate any water quality standard, substantially alter the drainage pattern or runoff, or expose people to significant risk of flooding. **No impacts are anticipated.**

g. The site is located within a 100-year floodplain and compliance with County Building Code requirements shall minimize impacts to a **less than significant level.**

### 2.10 Land Use and Planning

Checklist Items: Would the project	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a. Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a-b: The project will not physically divide an established community, conflict with land use plan or conflict with applicable conservation plan. **No impacts are anticipated.**

### 2.11 Mineral Resources

Checklist Items: Would the project	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a-b: The project site is not designated as an important mineral resource area. **No impacts are anticipated.**

## 2.12 Noise

Checklist Items: Would the project	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a. Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Exposure of persons to or generation of, excessive ground borne vibration or ground borne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a-f: Project construction could raise the ambient noise levels; however, construction noise is temporary in nature and the nearest residence is 2 miles away; therefore, **less than significant impacts** are anticipated.

### 2.13 Population and Housing

Checklist Items: Would the project	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a-c: The project would not generate additional or displace population or growth inducing in nature. **No impacts are anticipated.**

### 2.14 Public Services

Checklist Items: Would the project	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
1) Fire Protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2) Police Protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5) Other Public Facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

A. 1) -5): The project will **not impact** schools or park facilities. Compliance with Sheriff and Montezuma Fire Protection District rules and regulations will minimize impacts to **less than significant level.**

## 2.15 Recreation

Checklist Items: Would the project	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Physically degrade existing recreational resources?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a-c: The project will not increase the use of neighborhood or regional parks or include recreational facilities. **No impacts are anticipated.**

## 2.16 Transportation and Traffic

Checklist Items: Would the project	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict with an applicable congestion management program, including, but not limited to level of service standard and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible land uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities or	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

otherwise decrease the performance or safety of such facilities?

a-f: The project would generate additional truck trips during the construction period, approximately 2 – 4 months. However, impacts to the road system are considered temporary and less than significant. However, 20 employees are anticipated at one given time, and 20 parking stalls will be provided. Compliance with the County’s parking layout and standards (Section 28.94) of the Zoning Code shall minimize impacts to a **less than significant level**.

## 2.16 Utilities and Service Systems

Checklist Items: Would the project	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project’s projected demand in addition to the provider’s existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g. Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a-g: The project proposes use on on-site potable water and portable toilets for the construction and permanent employees. **No impacts are anticipated.**

## 2.17 Mandatory Findings of Significance

Checklist Items: Would the project	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a. Does the project have the potential to (1) degrade the quality of the environment, (2) substantially reduce the habitat of a fish or wildlife species, (3) cause a fish or wildlife population to drop below self-sustaining levels, (4) threaten to eliminate a plant or animal community, (5) reduce the number or restrict the range of a rare or endangered plant or animal, or (6) eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Does the project have impacts that are individually limited, but cumulatively considerable? "Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a-c: The project will not have the potential to degrade the quality of the environment, reduce habitat, threaten to eliminate plant community, or eliminate important examples of California prehistory or history, or adversely effect human beings. **No impacts are anticipated.**

### **3.0 Agency Coordination and Public Involvement**

#### **3.1 Consultation and Coordination with Public Agencies**

The Initial Study is being circulated for 20 days. Public Comment deadline is November 24, 2015, 5 pm. See below for contact information.

#### **3.2 Public Participation Methods**

The Initial Study is available at the Solano County Department of Resource Management and online at the Department's Planning Services Division website at:

<http://www.solanocounty.com/depts/rm/documents/eir/default.asp>

Interested parties may contact the planner assigned to this project at the contact points provided below:

Nedzlene Ferrario  
Planning Services Division  
Resource Management Department  
675 Texas Street  
Fairfield, CA 94533

PHONE: (707) 784-6765  
FAX: (707) 784-4805  
EMAIL: [nnferrario@solanocounty.com](mailto:nnferrario@solanocounty.com)

### **4.0 List of Preparers**

This Initial Study was prepared by the Solano County Department of Resource Management. The following staff and consultants contributed to the preparation of this Initial Study:

#### **Solano County Department of Resource Management**

### **5.0 Distribution List**

#### **Federal Agencies**

#### **State Agencies**

#### **Regional Agencies**

#### **Local Agencies**

### **6.0 Appendices**

#### **6.1 Site Plan & Elevations**

#### **6.2 Application Form**

#### **6.3 Solar Glare Hazards Analysis**

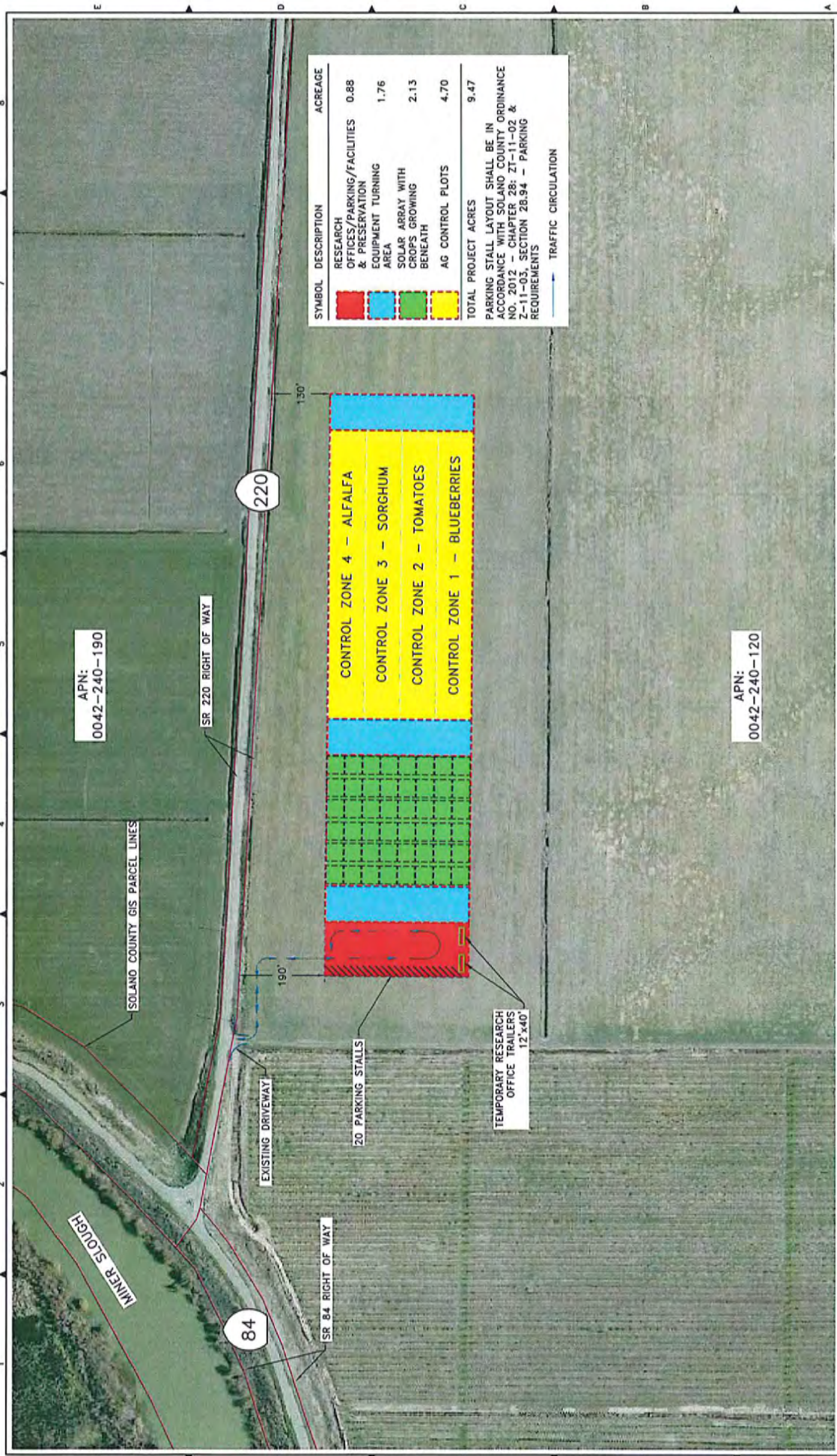
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# 6.0

## Appendices

# 6.1



SYMBOL DESCRIPTION	ACREAGE
RESEARCH OFFICES/PARKING/FACILITIES & PRESERVATION	0.88
EQUIPMENT TURNING AREA	1.76
SOLAR ARRAY WITH CROPS GROWING BENEATH	2.13
AG CONTROL PLOTS	4.70
<b>TOTAL PROJECT ACRES</b>	<b>9.47</b>

PARKING STALL LAYOUT SHALL BE IN ACCORDANCE WITH SOLANO COUNTY ORDINANCE NO. 2012 - CHAPTER 28; ZT-11-02 & Z-11-03, SECTION 28.94 - PARKING REQUIREMENTS

TRAFFIC CIRCULATION

APN: 0042-240-190

APN: 0042-240-120

NOTES:  
 - SOLANO COUNTY PARCEL LINES WERE OBTAINED FROM THE COUNTY GIS DATA DATED SEPTEMBER 19, 2014.  
 - THE PHOTOGRAPHY BACKGROUND IS INTENDED FOR REFERENCE ONLY. FEATURE LOCATIONS SHOWN ARE NOT PRECISE.

**K KJELDSEN**  
**S SINNOCK**  
**N NEUDECK**  
 INC. Civil Engineers and Land Surveyors

Scale: 1" = 100'  
 English (Imperial) Units  
 0' 1" 2" 3" 4" 5" 6" 7" 8" 9" 10"

Field Office, Box 844,  
 7150  
 Stockton, CA 95201-0844  
 Office: (209) 946-2268  
 Fax: (209) 946-2269  
 E-mail: ksj@knsn.com

SOLAGRA DEMONSTRATION RESEARCH PROJECT  
 RYER ISLAND - RANCH 9  
 SITE PLAN

EXHIBIT 1  
 PAGE 1

# 6.2





**DEPARTMENT OF RESOURCE MANAGEMENT  
PLANNING SERVICES APPLICATION FORM**

675 Texas Street Suite 5500, Fairfield, CA 94533

(707) 784-6765 Phone  
(707) 784-4805 Fax

www.solanocounty.com

- Application Type:  New     Extension (maps)     Minor Revision     Map Modification
- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Administrative Permit (AD)    | <input type="checkbox"/> Minor Use Permit (MU)          | <input type="checkbox"/> Sign Permit (SGN)         |
| <input type="checkbox"/> Architectural Review (AR)     | <input type="checkbox"/> Mobilehome Storage Permit (MH) | <input checked="" type="checkbox"/> Use Permit (U) |
| <input type="checkbox"/> General Plan Amendment (G)    | <input type="checkbox"/> Mutual Agreement (MA)          | <input type="checkbox"/> Variance (V)              |
| <input type="checkbox"/> Major Subdivision (S)         | <input type="checkbox"/> Performance Standards (PS)     | <input type="checkbox"/> Waiver (WA)               |
| <input type="checkbox"/> Marsh Development Permit (MD) | <input type="checkbox"/> Policy Plan Overlay (PP)       | <input type="checkbox"/> Zone Text Amendment (ZT)  |
| <input type="checkbox"/> Minor Subdivision (MS)        | <input type="checkbox"/> Rezone (Z)                     |  |

**FOR OFFICE USE ONLY**

Application No: U-15-04    MR#    Hrg: AD ZA PC BOS    Date Filed:    Plnr:

**Project Name:** SolAgra Demonstration Project, Ryer Island - Ranch 9. Mailing address: Walnut Grove

**Subject Site Information**

Site Address: State Highway 84 @ State Highway 220    City: Walnut Grove    State: CA    Zip: 95690

Assessor's Parcel Number (s): 42-240-12    Size (sq. ft/acre): 2.13 acres

Preferred Property Access by Staff:  OK to access     Call applicant before access     Call owner before access

**Contact Information**

**Property Owner Name:** Islands, Inc.

Contact Name: Tom Hester, President    Phone: 916-870-9522    Email: islandsfarmer@hotmail.com

Mailing Address: 3554 State Highway 84    City: Walnut Grove    State: CA    Zip: 95690

**Architect/Engineer/Land Surveyor Company Name:** Kjelsen, Sinnock & Neudeck, Inc.

Contact Name: Chris Neudeck, P.E.    Phone: 209-946-0268    Email: cneudeck@ksninc.com

Mailing Address: 711 N. Pershing Ave.    City: Stockton    State: CA    Zip: 95203

**Applicant/Company Name:** SolAgra Corporation

Contact Name: Barry Sgarrella    Phone: 415-720-5060    Email: barry@solagra.com

Mailing Address: 1100 Cabro Ridge    City: Novato    State: CA    Zip: 94947

**Other Contacts:**

Name: J. Dennis McQuaid, Vice President, Islands, Inc.    Phone: 415-995-5066    Email: DMcQuaid@hansonbridgett.com

Mailing Address: 80 E. Sir Francis Drake Boulevard, Suite 3E    City: Larkspur    State: CA    Zip: 94939



### 3 Williamson Act Contract

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A. Is any portion of the property under Williamson Act Contract?  Yes  No

If yes, Contract No. 1165 please provide a copy.

If yes, has a Notice of Non-Renewal been filed?  Yes  No

*If yes, please provide a copy.*

B. Are there any agricultural conservation, open space or similar easements affecting the use of the project site? (such easements do not include Williamson Act contracts)

Yes  No *if yes, please list and provide a copy.*

### 4 Additional Background Information

---

A. Does the proposal propose the demolition or alteration of any existing structures on the subject site?

Yes  No *If yes, please describe in the project narrative.*

B. List any permits that are required from Solano County and/or other local, state, federal agencies (i.e. building permit, Department of Fish and Game permits, etc.)

Building Permit

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C. List any known previously approved projects located on the property (i.e. Use Permit, Parcel Maps, etc). Identify the project name, type of project and date of approval.

none

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---

D. List any known professionally prepared reports for the project (i.e. biological survey, traffic study, geologic, hazardous materials, etc.)

soils report by Engeo, Inc.

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E. Does the project involve Housing and Urban Development (HUD) federal funding?  Yes  No  
Is HUD funding anticipated?  Yes  No

*If yes, indicate the type of funding (i.e. CDBG grant, HOME, Investment Partnership Program, etc), funding amount, whether awarded or application pending and fiscal year of award or application request.*

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H. Is this part of a larger project? If yes, please explain.  Yes  No

Upon successful proof of the combining of solar generation and sustaining agricultural, we anticipate applying to expand the concept to adjacent properties. However, that will be a separate application.

## 5 Existing Conditions

Describe in general the project site and surrounding properties as they presently exist; including but not limited to, information on existing land uses, unique physical and topographic features, soil stability, plants and animals, cultural, historical, or scenic aspects, and any other information which would assist the Department in understanding the project's environmental setting. Clear, representative color photographs may be submitted to show the project area. Draw in property boundaries on the photographs.

A. Project site:

Existing property is known as Ranch 9, Ryer Island. Except for a levee to the west end of the Ranch, the property is flat and level. Current use is growing of agricultural crops. Future use is unchanged. Growing of agricultural crops will continue.

B. Surrounding properties:

Surrounding property is agricultural land with the same uses as the subject property - no changes to adjacent properties or subject will occur. All property will remain as farmland. The subject will have a solar array added above the farmland but farming will continue on all properties.

C. Existing use of land:

Agricultural

D. Describe number and type of existing structures:

	Type/Number	Square Feet
Residential	0	
Agricultural	0	
Commercial	0	
Industrial	0	
Other	0	

E. Describe existing vegetation on site, including number and type of existing trees.

Land is currently fallow in anticipation of planting crops for Demonstration Project no trees exist on the subject property. West end of Ranch 9 has a pear orchard that will remain.

F. If in agricultural use, describe type of use or crop (cattle, sheep, hay, vegetables, fruit, etc).

Current crop this year will be per Demonstration Project pallet - see attached site plan.





Q. List and describe the nature and location of all existing easements serving or affecting the property, including access, utility, and other public or private easements (see deed or recent preliminary title report).

No easements on subject property. PUE exists on northeast corner of Ranch 9.

R. List and describe any freestanding and attached signage on the property. Describe the dimensions, area and height. Include the location on the site plan.

No signage exists on subject property. Road signs exist on SR84/SR220 to the northwest of subject

## 6 Proposed Changes to the Site

A. Topography and grading (attach copy of grading plan showing existing and proposed topography and drainage patterns.)

i. Percent of site previously graded: 0 %.

ii. Project area (area to be graded or otherwise disturbed): 150 sf. sq. ft./acres.

iii. Estimate amount of soil to be moved (cut and/or fill):

X Less than 50 cubic yds<sup>3</sup>  More than 50 cubic yds<sup>3</sup>  More than 1000 cubic yds<sup>3</sup>

iv. Estimate amount of soil to be:

Imported 0 yd<sup>3</sup> Exported 0 yd<sup>3</sup> Used on site 0 yd<sup>3</sup>.

B. Number, size and type of trees, and type and quantity of vegetation to be removed. ( size of trees = diameter at 4ft. above grade)

No vegetation to be removed. No trees to be removed.

C. Number, type and use of existing structures to be removed, and removal schedule:

No structures will be removed

D. Describe proposed fencing and/or visual screening (landscaping):

Chain link fence to protect 2.5 acres area around solar array.

E. Proposed access to project site (road name, driveway location, etc.):

Existing access via SR 220 and adjacent farm roads

F. Proposed source and method of water supply:

current farmers on site water supply for crops grown beneath and adjacent to solar array

G. Proposed method of sewage disposal (specify agency if public sewer):

Portable toilets will be provided on site for employees, subcontractors, researchers, consultants, guests, etc.

H. Provisions for solid/hazardous waste disposal (specify company or agency if applicable):

n/a - so solid/hazardous waste disposal is required

I. List hazardous materials or wastes handled on-site:

none

J. Duration of construction and/or anticipated phasing:

two to four months of installation, followed by research farming beneath generating solar arrays.

K. Will the proposed use be affected by or sensitive to existing noise in the vicinity? If so, describe source (e.g. freeway, industrial) and distance to noise source.

minimal noise during construction, followed only by normal noise from farming equipment.

Solar array tracking actuators are virtually silent.

## 7 Proposed Site Utilization

A. RESIDENTIAL PROJECTS n/a

1. Number of structures: Single Family: \_\_\_\_\_ Multi-family: \_\_\_\_\_ Accessory: \_\_\_\_\_

If multi-family, number of units: \_\_\_\_\_ Maximum height: \_\_\_\_\_

2. Signage: Freestanding: \_\_\_\_\_ Dimension(s): \_\_\_\_\_ Area: \_\_\_\_\_ (sq.ft)

Attached/Wall: \_\_\_\_\_ Dimensions(s): \_\_\_\_\_ Area: \_\_\_\_\_ (sq.ft)

B. NON-RESIDENTIAL PROJECTS (Commercial, Industrial, Agricultural, Other)

1. Lot coverage:

Building coverage: Temp. Office Trailers - 2,000 (sq.ft) Surfaced area: 0 (sq.ft)

Landscaped or open space: 0 (sq.ft)

2. Total floor area: Temp. Office Trailers - 2,000 (sq.ft)

3. Number of stories: 1 Maximum height: 18 (ft.)

4. Proposed hours of operation:

Days: 7 days per week

From: sunrise a.m./p.m to sunset a.m./p.m

Year round:  Yes  No

Months of operation: from All through \_\_\_\_\_

5. Proposed construction schedule:

Daily construction schedule: from 7:00 a.m./p.m. to 5:00 a.m./p.m.

Days of construction: Monday - Saturday

6. Will this project be constructed in phases? Describe:

No

7. Maximum number of people using facilities:

At any one time: 20 Throughout day: 20

8. Total number of employees: 30

Expected maximum number of employees on site: 30

During a shift: 30 During day: 30

9. Number of parking spaces proposed: 30

10. Maximum number of vehicles expected to arrive at site:

At any one time: 30 day: 40

11. Radius of service area: 650 feet

12. Type of loading/unloading facilities:

truck crane & forklift

13. Type of exterior lighting proposed:

night security

14. Describe all anticipated noise-generating operations, vehicles or equipment on-site.

trucks, cranes, forklifts, manlifts, farm tractors, combines, harvesters

15. Describe all proposed uses which may emit odors detectable on or off-site.

temporary exhaust from construction equipment and farm equipment

16. Describe all proposed freestanding and wall signage. Include the dimensions, area and height.

Two - SolAgra Project Signs - 4'x8' Speed limit signs for equipment and trucks  
"No Trespassing" signs on fence, "Caution - Electrical Power Generation" signs on fence

## 8 Environmental Checklist

Indicate the following items applicable to the project or its effects. Discuss in Section 9 all items checked "Yes" or "Maybe". **Attach additional sheets as necessary.**

	YES	MAYBE	NO
A. Change in existing natural features including any bays, tidelands, lakes, streams, beaches, natural landforms or vegetation.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
B. Change in scenic views or vistas from existing residential areas, public lands or roads. Solar Array will be visible from SR84 & SR220	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C. Change in scale, pattern or character of general area of project.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D. Increased amounts of solid waste or litter.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
E. Dust, ash, smoke, fumes or odors on site or in vicinity.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
F. Change in ground water quality or quantity.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
G. Alteration of existing drainage patterns, or change in surface water quantity or quality.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
H. Change in existing noise or vibration levels.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
I. Construction on filled land or construction or grading on slopes of 25% or more.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
J. Storage, use or disposal of materials potentially hazardous to man or wildlife, including gasoline and diesel fuel. (See Environmental Health Division for assistance or information).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
K. Increase in demand for public services (police, fire, water, sewer, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
L. Increase in fossil fuel consumption (electricity, natural gas, oil, etc.).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
M. Change in use of or access to an existing recreational area or navigable stream.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
N. Change in traffic or vehicular noise on road system in immediate vicinity.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
O. Increased hazards for vehicles, bicycles or pedestrians.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
P. Removal of agricultural or grazing lands from production.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Q. Relocation of people.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**9 Additional Information by Applicant**

In order to make this application COMPLETE, please submit any additional data, information or special study reports that may be necessary to determine whether the project may have significant effect on the environment or to evaluate any adverse impacts, and to determine how they may be mitigated. Add additional pages as necessary.

**10 Information Verification - Signed by Owner and Applicant**

Owner and Applicant must sign below certifying that all information is to the best of his/her knowledge true and correct.

If the applicant is not the owner of record of all property included in this application, the signature given below is certification that the owners of record have knowledge of and consent to the filing of this application and supporting information. Additionally, the undersigned does hereby authorize representatives of the County to enter upon the above mentioned property for inspection purposes. This certification acknowledges that if the project exceeds double that of the application fee, applicants are subject to the hourly billing rate of staff time. You will be notified if the project is approaching this threshold.

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this initial evaluation to the best of my ability, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Owner signature: X *Thomas Hester* Date: 4/26/2015

PRINTED NAME: Islands, Inc., by: Thomas Hester, President

Applicant signature: X *Barry P. Sgarrella* Date: 4/26/2015

PRINTED NAME: SolAgra Corporation, by: Barry P. Sgarrella, Chief Executive Officer

**For Office Use Only**

Planning Permit Fee(s)		Environmental Review Fees	
_____	\$ _____	Initial Study	\$ _____
_____	\$ _____	Archaeological Study (Sonoma State NWIC)	\$ _____
_____	\$ _____	Negative Declaration	\$ _____
_____	\$ _____	CA Fish and Games (ND or EIR)	\$ _____
_____	\$ _____	Initiate EIR	\$ _____
_____	\$ _____	Mitigation Monitoring Plan	\$ _____
Total	\$ _____	Total	\$ _____
Total Fees Paid (P + E)	\$ _____	Receipt No.:	DATE:

Staff verify: Zoning: \_\_\_\_\_ GP Land Use & Consistency: \_\_\_\_\_

Comments: \_\_\_\_\_ Staff/Date: \_\_\_\_\_

T:\PLANNING\Planning Templates\Front Counter Application and Instruction Forms\COUNTER FORMS - (O-R-I-G-I-N-A-L-S)\Land Use Permit\Permit Application & Instructions\Land Use Permit - Application.docx(June 23, 2011)

**FILE COPY**

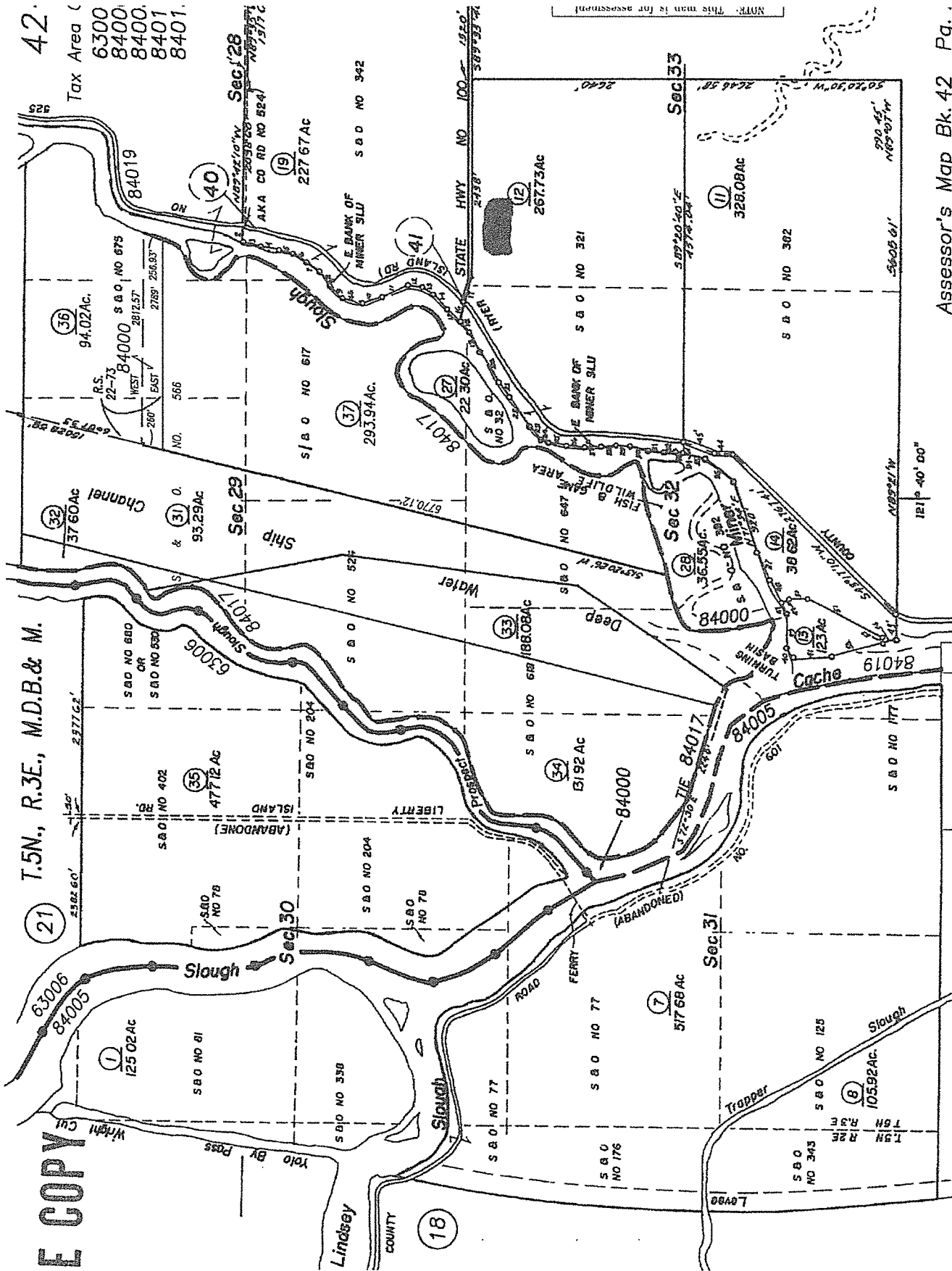
T.5N., R.3E., M.D.B.& M.

42.

Tax Area (

- 6300
- 8400
- 8400
- 8401
- 8401.

30°E.	34.00'
10°W.	75.00'
00°W.	149.86'
00°W.	202.83'
00°W.	157.50'
00°W.	202.75'
00°W.	178.23'
00°W.	199.01'
00°W.	242.15'
00°E.	236.60'
00°E.	347.52'
00°W.	201.81'
00°W.	128.02'
00°W.	201.79'
00°W.	254.50'
40°W.	200.00'
10°W.	354.69'
30°W.	168.27'
40°W.	318.53'
00°W.	431.85'
00°W.	202.32'
00°W.	599.46'
00°W.	189.23'
00°W.	71.57'
00°W.	200.90'
00°W.	201.95'
00°E.	203.25'
00°E.	200.81'
00°W.	198.33'
00°W.	201.24'
00°W.	200.99'
00°E.	199.01'
00°E.	50.72'
40°E.	62.00'
10°E.	296.72'
30°E.	427.15'
00°E.	352.31'
00°E.	420.00'
10°W.	143.27'
00°W.	482.10'
00°W.	300.00'
30°W.	189.01'
50°W.	434.25'
00°W.	202.78'
00°E.	149.57'
00°E.	339.22'
40°E.	106.12'
	225.00'
26°W.	1062.66'
30°W.	17.49'
30°W.	642.29'
30°W.	172.29'



S.B.E.	REVISION	DATE	BY
05-007		2-14-05	SE
Map Maint.		10-14-03	JS
240-36 (fs)		5-12-98	FG
240-36.37, Dd.		7-14-97	SW
SBE 349-G		9-30-92	PG

Assessor's Map Bk. 42 Pg. 1

County of Solano, Calif.

Bk. 48

Ryer Island Recl'n Dist. No. 501, R.M. Bk. 04 Pg. 02

NOTE: Assessor's Block Numbers Shown in Ellipses  
Assessor's Parcel Numbers Shown in Circles

05-06

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# 6.3


# Solar Glare Hazard Analysis Flight Path Report

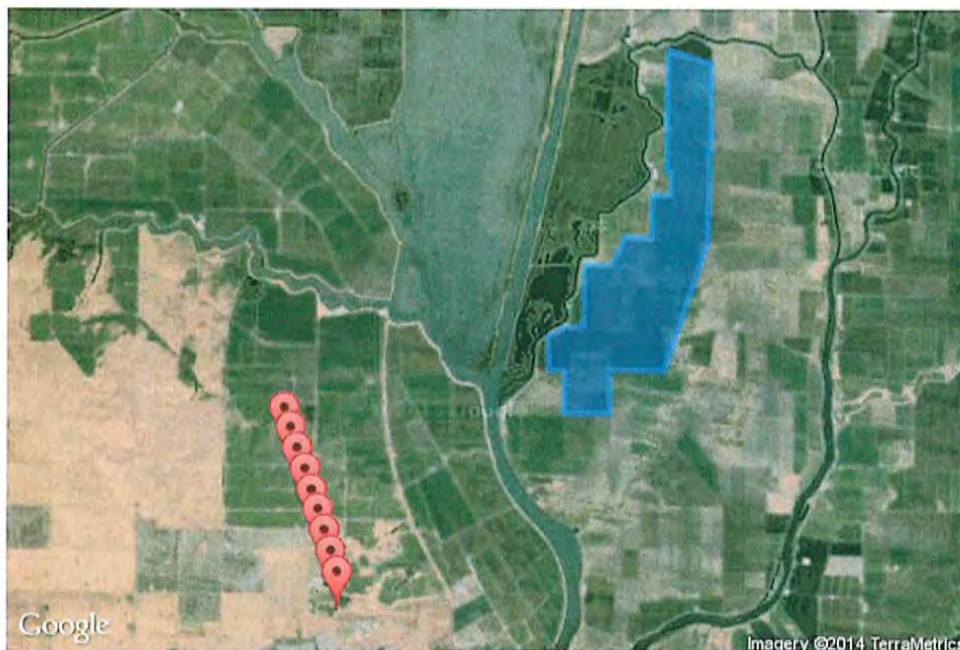
Generated Aug. 21, 2014, 5:52 p.m.

Flight path: Runway 15 - 33

Secondary Short Runway

No glare found

 Print



## Analysis & PV array parameters

Analysis name	Solano Solar Farm - Ryer Island CA
PV array axis tracking	single
Tilt of tracking axis (deg)	0.0
Orientation of tracking axis (deg)	0.0
Offset angle of module (deg)	0.0
Limit rotation angle?	True
Maximum tracking angle (deg)	50.0
Rated power (kW)	720000.0
Vary reflectivity	True
PV surface material	Smooth glass without ARC
Timezone offset	-8.0
Subtended angle of sun (mrad)	9.3
Peak DNI (W/m <sup>2</sup> )	1000.0
Ocular transmission coefficient	0.5
Pupil diameter (m)	0.002
Eye focal length (m)	0.017
Time interval (min)	1
Slope error (mrad)	0.0

## Flight path parameters

Direction (deg)	162.0
Glide slope (deg)	3.0

Consider pilot visibility from cockpit	False
--	-------

## PV array vertices

<b>id</b>	<b>Latitude (deg)</b>	<b>Longitude (deg)</b>	<b>Ground Elevation (ft)</b>	<b>Eye-level height above ground (ft)</b>	<b>Total elevation (ft)</b>
1	38.2280098172	-121.659364414	-9.29	30.0	20.71
2	38.2280098172	-121.649351407	-9.22	30.0	20.78
3	38.2354261541	-121.649579717	-7.5	30.0	22.5
4	38.2351564824	-121.637735082	-8.21	30.0	21.79
5	38.257109205	-121.628293706	0.55	30.0	30.55
6	38.2868026082	-121.627578735	2.56	30.0	32.56
7	38.2890035574	-121.637020111	3.96	30.0	33.96
8	38.2686555343	-121.637420942	-2.66	30.0	27.34
9	38.2684756109	-121.636419296	-2.35	30.0	27.65
10	38.2648366134	-121.636476804	-4.54	30.0	25.46
11	38.2647018322	-121.640539169	-1.58	30.0	28.42
12	38.257513589	-121.640596677	-3.31	30.0	26.69
13	38.2576483835	-121.646375656	-4.06	30.0	25.94
14	38.2530200706	-121.649008084	-3.21	30.0	26.79
15	38.2530200727	-121.654958725	-1.85	30.0	28.15
16	38.2427743238	-121.655244543	-6.29	30.0	23.71
17	38.242684667	-121.659078598	-4.12	30.0	25.88
18	38.2409764515	-121.662740993	-5.09	30.0	24.91
19	38.2352690714	-121.662569332	-7.42	30.0	22.58
20	38.2353135675	-121.659307767	-6.67	30.0	23.33

## Flight Path Observation Points

	Latitude (deg)	Longitude (deg)	Ground Elevation (ft)	Height above ground (ft)	Glare?
Threshold	38.1951159953	-121.70749569	24.18	50.0	No
1/4 mi	38.1985528697	-121.708918264	9.75	133.61	No
1/2 mi	38.201989744	-121.710340838	17.23	195.32	No
3/4 mi	38.2054266184	-121.711763412	15.58	266.14	No
1 mi	38.2088634927	-121.713185985	16.07	334.82	No
1 1/4 mi	38.2123003671	-121.714608559	9.04	411.04	No
1 1/2 mi	38.2157372414	-121.716031133	5.95	483.3	No
1 3/4 mi	38.2191741158	-121.717453707	1.56	556.88	No
2 mi	38.2226109901	-121.718876281	3.44	624.17	No

No glare found.

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# Solar Glare Hazard Analysis Flight Path Report

Generated Aug. 21, 2014, 5:36 p.m.

Flight path: 25 - 7

Rio Vista Municipal Airport - Short Runway - Landing to Northwest

No glare found

 Print





## Analysis & PV array parameters

Analysis name	Solano Solar Farm - Ryer2 - 8-21-2014
PV array axis tracking	single
Tilt of tracking axis (deg)	0.0
Orientation of tracking axis (deg)	0.0
Offset angle of module (deg)	0.0
Limit rotation angle?	True
Maximum tracking angle (deg)	50.0
Rated power (kW)	720000.0
Vary reflectivity	True
PV surface material	Smooth glass without ARC
Timezone offset	-8.0
Subtended angle of sun (mrad)	9.3
Peak DNI (W/m <sup>2</sup> )	1000.0
Ocular transmission coefficient	0.5
Pupil diameter (m)	0.002
Eye focal length (m)	0.017
Time interval (min)	1
Slope error (mrad)	0.0

## Flight path parameters

Direction (deg)	341.83
Glide slope (deg)	3.0

Consider pilot visibility from cockpit

False

## PV array vertices

id	Latitude (deg)	Longitude (deg)	Ground Elevation (ft)	Eye-level height above ground (ft)	Total elevation (ft)
1	38.2280098172	-121.659364414	-9.29	30.0	20.71
2	38.2280098172	-121.649351407	-9.22	30.0	20.78
3	38.2354261541	-121.649579717	-7.5	30.0	22.5
4	38.2351564824	-121.637735082	-8.21	30.0	21.79
5	38.257109205	-121.628293706	0.55	30.0	30.55
6	38.2868026082	-121.627578735	2.56	30.0	32.56
7	38.2890035574	-121.637020111	3.96	30.0	33.96
8	38.2686555343	-121.637420942	-2.66	30.0	27.34
9	38.2684756109	-121.636419296	-2.35	30.0	27.65
10	38.2648366134	-121.636476804	-4.54	30.0	25.46
11	38.2647018322	-121.640539169	-1.58	30.0	28.42
12	38.257513589	-121.640596677	-3.31	30.0	26.69
13	38.2576483835	-121.646375656	-4.06	30.0	25.94
14	38.2530200706	-121.649008084	-3.21	30.0	26.79
15	38.2530200727	-121.654958725	-1.85	30.0	28.15
16	38.2427743238	-121.655244543	-6.29	30.0	23.71
17	38.242684667	-121.659078598	-4.12	30.0	25.88
18	38.2409764515	-121.662740993	-5.09	30.0	24.91
19	38.2352690714	-121.662569332	-7.42	30.0	22.58
20	38.2353135675	-121.659307767	-6.67	30.0	23.33

## Flight Path Observation Points

	Latitude (deg)	Longitude (deg)	Ground Elevation (ft)	Height above ground (ft)	Glare?
Threshold	38.1898246203	-121.705075263	21.71	50.0	No
1/4 mi	38.1863910744	-121.70363981	24.22	116.66	No
1/2 mi	38.1829575285	-121.702204356	29.8	180.27	No
3/4 mi	38.1795239826	-121.700768902	32.77	246.47	No
1 mi	38.1760904367	-121.699333448	35.34	313.07	No
1 1/4 mi	38.1726568909	-121.697897995	42.78	374.82	No
1 1/2 mi	38.169223345	-121.696462541	30.19	456.59	No
1 3/4 mi	38.1657897991	-121.695027087	22.43	533.53	No
2 mi	38.1623562532	-121.693591633	22.64	602.49	No

No glare found.

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# Solar Glare Hazard Analysis Flight Path Report

Generated Aug. 21, 2014, 5:50 p.m.

Flight path: Runway 7 - 25

Rio Vista Municipal Airport

No glare found

 Print



## Analysis & PV array parameters

Analysis name	Solano Solar Farm - Ryer Island CA
PV array axis tracking	single
Tilt of tracking axis (deg)	0.0
Orientation of tracking axis (deg)	0.0
Offset angle of module (deg)	0.0
Limit rotation angle?	True
Maximum tracking angle (deg)	50.0
Rated power (kW)	720000.0
Vary reflectivity	True
PV surface material	Smooth glass without ARC
Timezone offset	-8.0
Subtended angle of sun (mrad)	9.3
Peak DNI (W/m <sup>2</sup> )	1000.0
Ocular transmission coefficient	0.5
Pupil diameter (m)	0.002
Eye focal length (m)	0.017
Time interval (min)	1
Slope error (mrad)	0.0

## Flight path parameters

Direction (deg)	266.02
Glide slope (deg)	3.0

Consider pilot visibility from cockpit

False



## PV array vertices

id	Latitude (deg)	Longitude (deg)	Ground Elevation (ft)	Eye-level height above ground (ft)	Total elevation (ft)
1	38.2280098172	-121.659364414	-9.29	30.0	20.71
2	38.2280098172	-121.649351407	-9.22	30.0	20.78
3	38.2354261541	-121.649579717	-7.5	30.0	22.5
4	38.2351564824	-121.637735082	-8.21	30.0	21.79
5	38.257109205	-121.628293706	0.55	30.0	30.55
6	38.2868026082	-121.627578735	2.56	30.0	32.56
7	38.2890035574	-121.637020111	3.96	30.0	33.96
8	38.2686555343	-121.637420942	-2.66	30.0	27.34
9	38.2684756109	-121.636419296	-2.35	30.0	27.65
10	38.2648366134	-121.636476804	-4.54	30.0	25.46
11	38.2647018322	-121.640539169	-1.58	30.0	28.42
12	38.257513589	-121.640596677	-3.31	30.0	26.69
13	38.2576483835	-121.646375656	-4.06	30.0	25.94
14	38.2530200706	-121.649008084	-3.21	30.0	26.79
15	38.2530200727	-121.654958725	-1.85	30.0	28.15
16	38.2427743238	-121.655244543	-6.29	30.0	23.71
17	38.242684667	-121.659078598	-4.12	30.0	25.88
18	38.2409764515	-121.662740993	-5.09	30.0	24.91
19	38.2352690714	-121.662569332	-7.42	30.0	22.58
20	38.2353135675	-121.659307767	-6.67	30.0	23.33

## Flight Path Observation Points

	Latitude (deg)	Longitude (deg)	Ground Elevation (ft)	Height above ground (ft)	Glare?
Threshold	38.1942525624	-121.695899963	17.25	50.0	No
1/4 mi	38.194503386	-121.691307574	10.57	125.85	No
1/2 mi	38.1947542097	-121.686715185	10.27	195.34	No
3/4 mi	38.1950050333	-121.682122796	3.59	271.19	No
1 mi	38.1952558569	-121.677530407	4.17	339.79	No
1 1/4 mi	38.1955066805	-121.672938018	4.51	408.64	No
1 1/2 mi	38.1957575042	-121.668345629	0.0	482.31	No
1 3/4 mi	38.1960083278	-121.66375324	0.0	551.5	No
2 mi	38.1962591514	-121.659160851	0.0	620.67	No

No glare found.

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# SOLANO COUNTY PLANNING COMMISSION RESOLUTION NO.

---

**WHEREAS**, the Solano County Planning Commission has considered duly considered, in public hearing, a use permit to operate Use Permit Application No. U-15-04 by SolAgra to permit an agricultural research facility to conduct the feasibility of growing crops under solar arrays in the Exclusive Agriculture 80 acre minimum zoning district (A-80) located approximately 350 feet east of Highway 84, on Ryer Island. APN 0042-240-120 and;

**WHEREAS**, the Commission has reviewed the report of the Department of Resource Management and heard testimony relative to the subject application at the duly noticed public hearing held on December 3, 2015 and;

**WHEREAS**, after due consideration, the Planning Commission has made the following findings in regard to said proposal:

- 1. The establishment, maintenance, or operation of the proposed use is in conformity with the County General Plan with regard to traffic circulations, population densities and distribution, and other aspects of the General Plan.**

The property is designated Agriculture with a Resource Conservation Overlay in the General Plan, and zoned Exclusive Agriculture 80 acre minimum (A-80). Research conducted on the site is related to the feasibility of growing crops under solar arrays and is consistent with the land use designation. The project is located within the Primary Zone of the Delta and is consistent with the Sacramento – San Joaquin Delta Policies incorporated by reference in the General Plan.

- 2. Adequate utilities, access roads, drainage and other necessary facilities have been or are being provided.**

The applicant has demonstrated that the adequate utilities, access road, drainage and other necessary facilities have been or shall be provided.

- 3. The subject use will not, under the circumstances of the particular case, constitute a nuisance or be detrimental to the health, safety, peace, morals, comfort or general welfare of persons residing or working in or passing through the neighborhood of such proposed use, or be detrimental or injurious to property and improvements in the neighborhood or to the general welfare of the County.**

This project, as conditioned, will not constitute a nuisance or be detrimental to the health, safety, peace, morals, comfort or general welfare of persons residing or working in or passing through the neighborhood of such proposed use or be detrimental or injurious to property and improvements in the neighborhood or to the general welfare of the County.

- 4. A Public Draft Initial Study/Negative Declaration was prepared and circulated by the Department of Resource Management. No potentially significant adverse environmental impacts are likely to occur.**

**Implementation of standard County conditions of approval would prevent the project from creating significant effects to the environment.**

**BE IT, THEREFORE, RESOLVED**, that the Planning Commission of the County of Solano does hereby APPROVE Use Permit Application Number U-15-04, subject to the following recommended conditions of approval:

1. Approval is hereby granted to SolAgra to operate a demonstration and research project regarding the economic viability of growing crops underneath solar arrays. SolAgra in collaboration with Dr. Heiner Lieth of UC Davis, proposes to conduct research on 9.47 acres and the project components are as follows:
  - 1 MW photovoltaic arrays on 2.13 acres. The solar arrays will be mounted atop pilings with a minimum 15-foot ground clearance, at a height sufficient to provide access to normal mechanized farming equipment to tend the crops growing beneath the solar arrays. The electricity produced will connect to an adjacent PG& E power pole located to the west, via a Net Energy Agreement to power Reclamation District 501 pumps on the island.
  - 4.70 acre agricultural control plots and growing of alfalfa, sorghum, tomatoes and blueberries are proposed.
  - Twenty (20) parking stalls, two (2) - 12 foot x 40 foot temporary research office trailers and turning areas on 2.64 acres.

The proposed use shall be established in accord with the application and plans for U-15-04, submitted May 7, 2015, for SolAgra, drawn by Kjeldsen Sinnock Neudeck Civil Engineers and Land Surveyors, and as approved by the Solano County Planning Commission.

2. The use permit, approved on \_\_\_\_\_, is granted for a fixed term of five (5) years and shall expire on \_\_\_\_\_, 2020. The permittee shall submit a report, annually by June 30, to the Department of Resource Management covering the science and economic analysis of the SolAgra Demonstration Research Project. The report shall include scientific methods and results, along with a discussion of methods used, recommendations for improvements in agricultural output and electrical power production and, the net Farm Gate value for each crop.

The science and economic analysis of the research shall include peer review by persons of similar qualifications or publication of results in "peer reviewed" journals.

The report shall be reviewed by the Agricultural Commissioner and Agricultural Advisory Committee, and presented to the Planning Commission on an annual basis.

3. Water rights and other mitigation rights associated with the project site remain with the property for the term of the demonstration project.
4. The permittee shall remove all project facilities within 90 days of the end of the demonstration project. Prior to the issuance of any grading or building permit for the facility, the permittee shall provide financial assurance in the form of a bond, letter or credit or other form acceptable to the Director of Resource Management equivalent to the cost of removal of the project facility and restoration of the site to pre-project conditions. At such time the following procedures shall apply:
  - a. All facilities shall be removed and unsalvageable material shall be disposed of at authorized sites;
  - b. The soft surface shall be restored to its pre-project condition;
  - c. Reclamation procedures shall be based on-site-specific requirements and shall include regrading and revegetation of all disturbed areas;

#### *Building Division*

5. Prior to any construction or improvements taking place, a building permit application shall first be submitted as per Section 105 of the 2013 California Building Code or the latest edition of the codes enforced at the time of building permit application. "Any owner or authorized agent who intends to construct, enlarge, alter, repair, move, demolish, or change the occupancy of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any electrical, gas, mechanical or plumbing system, the installation of which is regulated by this code, or to cause any such work to be done, shall first make application to the building official and obtain the required permit."
6. The project is located in a Flood Insurance Rate Map Zone A and the building(s) shall be raised a minimum of one foot above the Base Flood Elevation and a Pre- and Post-elevation certificate shall be provided to the Building & Safety Division for review and approval.

#### *Public Works Engineering Division*

7. The permittee shall obtain an encroachment permit from the State of California for the proposed connection to State Highway 220; the encroachment shall be constructed to State of California standards.
8. The permittee shall construct the proposed access driveway to Solano County Road improvement standards, section 1-3.1. The driveway shall be constructed of 0.67 feet of compacted Class II aggregate base. The width of the road shall be 12 feet, with 60 foot long

by 8 foot wide turnouts every 300 feet (for roads over 300 feet long), plus 2 foot graded shoulders, and shall have an unobstructed width of 20 feet.

9. The permittee shall apply for, secure and abide by the conditions of a grading permit for the proposed access road and parking improvements.

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I hereby certify that the foregoing resolution was adopted at the regular meeting of the Solano County Planning Commission on ----- by the following vote:

AYES:	Commissioners	_____
		_____
NOES:	Commissioners	_____
EXCUSED:	Commissioners	_____

By: \_\_\_\_\_  
Bill Emlen, Secretary