Giacomini Wetland Restoration Project
Land Evaluation and Site Assessment
Analysis Summary Report

Point Reyes National Seashore
Point Reyes Station, CA

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Summary

Point Reyes National Seashore (Seashore) has proposed the restoration of natural hydrologic and ecological processes to approximately 600 acres at the head of Tomales Bay. The largest portion of the Project Area -- approximately 550 acres -- is represented by the Waldo Giacomini Ranch property (Giacomini Ranch). The Giacomini Ranch was sold to the National Park Service (Park Service) in 2000 and was operated as a dairy by the Giacomini family under a Reservation of Use agreement with the Park Service until 2006. The Giacomini Ranch was once part of an integrated tidal wetland complex that was leveed for operation of a dairy in 1946. Since then, a majority of the ranch lands has remained wetland, although functionality has been reduced by the lack of hydraulic connectivity. The Land Evaluation and Site Assessment (LESA) system developed by the California Department of Conservation in 1997 is used to determine the impact of farmland conversion associated with the proposed project. The document summarizes the LESA rating and scoring factors for two potential outcomes related to agriculture under the proposed project. All of the alternatives involve closure of the dairy and cessation of agricultural management practices. Under the No Action Alternative, which involves a small bit of restoration (~11 acres) to satisfy mitigation obligations associated with funds received to purchase and restore the ranch, there is the potential for leased grazing of dairy heifers or beef cattle on the remainder of the property. Conversely, there would be no potential for leased grazing under any of the Action Alternatives, and the No Action Alternative may be implemented without leased grazing. ***The result of this analysis shows that neither outcome proposed under the Giacomini Wetland Restoration Project is considered significant under California Environmental Quality Act (CEQ) or major under National Environmental Policy Act (NEPA).*** The Giacomini Wetland Restoration Final EIR/EIS includes complete environmental impact interpretation related to farmland conversion.

Introduction

National Resources Conservation Service (NRCS) uses a Land Evaluation and Site Assessment (LESA) system to establish a farmland conversion impact rating score on proposed sites of federally funded and assisted projects. This score is used as an indicator for the project sponsor to consider alternative sites if the potential adverse impacts on the farmland exceed the recommended allowable level. A similar system has been developed for California by the State Department of Conservation, which oversees California's Farmland Monitoring and Mapping Program. This program was established in 1982 to assess the location, quality, and quantity of agricultural lands and conversion of these lands over time. FMMP is a non-regulatory program and provides an analysis of agricultural land use and land use changes throughout California every two years. The formulation of a California Agricultural LESA Model is the result of Senate Bill 850 (Chapter 812 /1993), which charges the Resources Agency, in consultation with the Governor's Office of Planning and Research, with developing an amendment to

Appendix G of the California Environmental Quality Act (CEQA) Guidelines concerning agricultural lands. Such an amendment is intended "to provide lead agencies with an optional methodology to ensure that significant effects on the environment of agricultural land conversions are quantitatively and consistently considered in the environmental review process" (Public Resources Code Section 21095).

The California Agricultural LESA Model is composed of six different factors. The first two are Land Evaluation factors (LE Factors), which measure the inherent soil-based qualities of land as they relate to agricultural suitability. The remaining four are Site Assessment factors (SA Factors), which provide measures of a given project's size, water resource availability, surrounding agricultural lands, and surrounding protected resource lands. The LESA evaluates each of these factors separately, with ratings based on a 100 point scale. The factors are then weighted relative to one another and combined, resulting in a single numeric score for a given project, with a maximum attainable score of 100 points. The Project LESA score becomes the basis for making a determination of the intensity or significance of a project's impacts, based upon a range of established scoring thresholds.

As part of the Giacomini Wetland Restoration Project, a LESA has been performed to evaluate the potential impacts of the proposed restoration on agricultural land use in the area.

Project Background

The Giacomini Wetland Restoration Project proposes to convert and restore natural hydrologic and ecological processes to approximately 600 acres in western Marin County, at the head of Tomales Bay (Figure C-1). The largest portion of the Project Area -- approximately 550 acres -- is represented by the Waldo Giacomini Ranch property (Giacomini Ranch). The Giacomini Ranch was once part of an integrated tidal wetland complex. Small-scale dairy ranching occurred on portions of these wetlands starting in the early 1900s, as Point Reyes had gained preeminence in the late 1800s for its dairy and beef cattle ranching, with its cream and butter products commanding top dollar in San Francisco. At the end of World War II, the Waldo Giacomini family assumed ownership of the Filippini dairy and, in 1946, built levees on either side of Lagunitas Creek – referred to as the East and West Pastures – for operation of a dairy ranch. Since then, a majority of the ranch lands has remained wetland, although functionality has been reduced by the lack of hydraulic connectivity.

Point Reyes had been the object of land protection efforts since the first park feasibility study was authorized in the 1930s. Point Reyes National Seashore (Seashore) was established in 1963. Almost 10 years later, the Golden Gate National Recreation Area (GGNRA) was established directly adjacent to the Seashore. Expansion of GGNRA's boundaries in the 1980s resulted in incorporation of the Giacomini Ranch and other areas in northern Olema Valley and the eastern Tomales Bay shoreline and opened the door to the Park Service entering into discussions and negotiation with the Giacomini family about purchase of the ranch. However, it was not until the California Department of Transportation approached the National Park Service (Park Service) about transferring its mitigation obligations for a road repair on State Route 1 in exchange for monies to purchase and restore the ranch did acquisition of the ranch become feasible. The Giacomini Ranch was sold to the Park Service in 2000 and was operated as a dairy by the Giacomini family under a Reservation of Use agreement with the Park Service until 2006.

In the interim, the Park Service and the lead agency under CEQA, the California State Lands Commission, have been conducting an extensive planning effort to restore natural hydrologic and ecological processes and functions to the former coastal marsh. There are four Action Alternatives and one No Action Alternative. Under these alternatives, there are two potential outcomes related to

Figure C-1 Project Area

agriculture. All of the alternatives involve closure of the dairy and cessation of agricultural management practices. Under the No Action Alternative, which involves a small bit of restoration (~11 acres) to satisfy mitigation obligations associated with funds received to purchase and restore the ranch, there is the potential for leased grazing of dairy heifers or beef cattle on the remainder of the property. Conversely, there would be no potential for leased grazing under any of the Action Alternatives, and the No Action Alternative may be implemented without leased grazing. These two outcomes are what is analyzed under LESA.

Methods

The LESA analysis was performed by Park Serivce Seashore staff following published methods (California Department of Conservation 1997). All acreage analysis and mapping was conducted using ESRI's ArcGIS 9.1 Geographic Information Systems software.

Analytical methodology for the LESA is summarized for each of the six Factors, below.

Land Evaluation Factors

Factor 1) USDA Land Capability Classification (LCC) - The LCC indicates the suitability of soils for most kinds of crops. Groupings are made according to the limitations of the soils when used to grow crops and the risk of damage to soils when they are used in agriculture. The current LCC includes eight classes of land designated by Roman numerals I thru VIII. Soils having the fewest limitations receive the highest rating (Class I). The first four classes are arable land--suitable for cropland--in which the limitations on their use and necessity of conservation measures and careful management increase from I thru IV. The criteria for placing a given area in a particular class involve the landscape location, slope of the field, depth, texture, and reaction of the soil. The remaining four classes, V thru VIII, are not to be used for cropland, but may have uses for pasture, range, woodland, grazing, wildlife, recreation, and aesthetic purposes. Within the broad classes are subclasses that signify special limitations such as (e) erosion, (w) excess wetness, (s) problems in the rooting zone, and (c) climatic limitations. Within subclasses are capability units that give some prediction of expected agricultural yields and indicate treatment needs. The capability units are groupings of soils that have common responses to pasture and crop plants under similar systems of farming.

Each soil type in the Project Area was assigned its appropriate LCC using the Marin County Soil Survey (SCS 1985). LESA generalizes these LCCs into a numerical point value (0-100) that is called a soil LCC point rating (Table 1, below).

Table 1: Numeric Conversion of Land Capability Classification Units

LCC from Marin Soil Survey	LESA LCC Point Rating
I	100
IIe	90
IIs,w	80
IIIe	70
IIIs,w	60
IVe	50

LCC from Marin Soil Survey	LESA LCC Point Rating
IVs,w	40
V	30
VI	20
VII	10
VIII	0

Under the LESA analysis, the LCC designation (e.g., IV -e) for each mapping unit in the Project Area is identified, and these designations are entered into the worksheet. The Numeric Conversion of Land Capability Classification in Table 1 are then used to obtain a numeric score for each mapping unit, and these scores are entered into the worksheet. The proportion of each soil mapping unit within the Project Area is multiplied by the LCC points for each mapping unit, and these scores are entered into the worksheet.

For this project, the proportion of each soil mapping units in the Project Area was calculated by using digital coverage from Natural Resources Conservation Service (formerly - Soil Conservation Service), United States Department of Agriculture for the Marin County Soil Survey using ArcGIS 9.1. Soils data was "clipped" to the Project Area boundary and acreages were then calculated for each soil type. Then the acreages for each soil type were divided by the entire Project Area acreage to get the proportion of each soil type. These were multiplied by the conversion factors in Table 1. All of the individual LCC scores were then summed to obtain a single LCC Score for the two possible agricultural outcomes that could result from proposed project.

Factor 2) Storie Index - The Storie Index provides a numeric rating (based upon a 100 point scale) of the relative degree of suitability or value of a given soil for intensive agriculture. The rating is based on soil characteristics only and is obtained by evaluating such factors as soil depth, surface layer texture, subsoil characteristics, drainage, salts and alkali, and relief. Four general factors are considered in the index rating. These factors are A-the characteristics of the soil profile and soil depth; B-the texture of the surface layer; C-the dominant slope of the soil area; and X-other factors more readily subject to management or modification.

Soils are placed in one of six grades according to their suitability for general intensive agriculture as shown by their Storie index ratings. Soils of grade 1 are excellent or well suited to general intensive agriculture. Soils of grade 2 are good and are also well suited to agriculture, although they are not so desirable as soils of grade 1. Soils of grade 3 are only fairly well suited; soils of grade 4 are poorly suited; and soils of grade 5 are very poorly suited. Grade 6 consists of soils and miscellaneous areas that are not suited to agriculture.

As part of the LESA analysis, the Storie Index Rating for each mapping unit is determined and entered into the worksheet. The proportion of each soil mapping unit found within the Project Area is multiplied by the Storie Index Rating. The individual Storie Index Rating scores are then summed to generate a single Storie Index Rating.

As discussed under LCC, for this project, the proportion of each soil mapping units in the Project Area was calculated by using digital coverage from Natural Resources Conservation Service (formerly - Soil Conservation Service), United States Department of Agriculture for the Marin County Soil Survey using

ArcGIS 9.1. Analysis of Factor 2 involved getting a list of the Storie Indexes for soil types in Marin County from United States Department of Agriculture Petaluma, CA office. The Storie Index Rating scores were then summed to obtain a single Storie Index Rating score for the two possible agricultural outcomes that could result from proposed project.

Site Assessment Factors

Factor 3) Project Size Rating - The inclusion of the measure of a project's size in the California Agricultural LESA Models is a recognition of the role that farm size plays in the viability of commercial agricultural operations (California Department of Conservation 1997). In general, larger farming operations can provide greater flexibility in farm management and marketing decisions (California Department of Conservation 1997). Certain economies of scale for equipment and infrastructure can also be more favorable for larger operations (California Department of Conservation 1997). In addition, larger operations tend to have greater impacts upon the local economy through direct employment, as well as impacts upon support industries (e.g., fertilizers, farm equipment, and shipping) and food processing industries (California Department of Conservation 1997).

The Project Size Rating (PSR) relies upon acreage figures that were tabulated for the first two factors using ArcGIS 9.1. The PSR is based upon identifying acreage figures for three potential separate groupings of soil classes within the Project Area and then determining which grouping generates the highest Project Size Score. Each of the three categories is given a project size score based on the number of acres (Table 2).

Table 2. LCC Soil Class PSR Scoring

LCC Class I or II soils		LCC Class III soils		LCC Class IV or lower	
Acres	*Score*	*Acres*	*Score*	*Acres*	*Score*
80 or above	100	160 or above	100	320 or above	100
60-79	90	120-159	90	240-319	80
40-59	80	80-119	80	160-239	60
20-39	50	60-79	70	100-159	40
10-19	30	40-59	60	40-99	20
fewer than 10	0	20-39	30	fewer than 40	0
		10-19	10		
		fewer than 10	0		

Factor 4) Water Resources Availability Rating - The Water Resources Availability Rating is based upon identifying the various water sources that may supply a given property and then determining whether different restrictions in supply are likely to take place in years that are characterized as being periods of drought and non-drought. For each water resource supply portion of the project site, the feasibility for irrigated and dryland agriculture is evaluated, as well as whether any physical or economic restrictions exist during both drought and non-drought years. A physical restriction is an occasional or regular interruption or reduction in a water supply, or a shortened irrigation season, that forces a change in agricultural practices -- such as planting a crop that uses less water, or leaving land fallow. This could be from cutbacks in supply by irrigation and water districts or by ground or surface water becoming depleted or unusable. An economic restriction is a rise in the cost of water to a level that forces a reduction in consumption. Irrigated agricultural production is feasible when: 1) There is an existing irrigation system on the project site that can serve the portion of the project; 2) Physical and/or economic restrictions are not severe enough to halt production; and 3) It is possible to achieve a viable economic return on crops though irrigated production. Table 3 includes 14 scenarios for developing the Water Resource Score.

The Seashore staff digitized the areas of known irrigation activity on the Giacomini Ranch. This area was then divided by the total Project Area to get a proportion. The Giacominis perform seasonal irrigation under an appropriative water right issued to them with water piped to the ranch through a contract with North Marin Water District that ends in July 2008. The Giacominis used to install a seasonal gravel dam and pump water directly out of Lagunitas Creek, but the State Water Resources Control Board required the Giacomini family to cease installing the gravel dam at that location after 1997 due to concerns about effect on salmonids and other threatened and endangered species.

Table 3. Water Resources Score Table, including drought and non-drought conditions

Option	Non-Drought Years			Drought Years			WATER RESOURCE SCORE
	RESTRICTIONS			RESTRICTIONS			
	Irrigated Production Feasible?	Physical Restrictions ?	Economic Restrictions ?	Irrigated Production Feasible?	Physical Restrictions ?	Economic Restrictions ?	
1	YES	NO	NO	YES	NO	NO	100
2	YES	NO	NO	YES	NO	YES	95
3	YES	NO	YES	YES	NO	YES	90
4	YES	NO	NO	YES	YES	NO	85
5	YES	NO	NO	YES	YES	YES	80
6	YES	YES	NO	YES	YES	NO	75
7	YES	YES	YES	YES	YES	YES	65
8	YES	NO	NO	NO	-- --	-- --	50
9	YES	NO	YES	NO	-- --	-- --	45
10	YES	YES	NO	NO	-- --	-- --	35
11	YES	YES	YES	NO	-- --	-- --	30
12	Irrigated production not feasible, but rainfall adequate for dryland production in both drought and non-drought years						25
13	Irrigated production not feasible, but rainfall adequate for dryland production in non-drought years (but not in drought years)						20
14	Neither irrigated nor dryland production feasible						0

Factor 5) Surrounding Agricultural Land Rating /
Factor 6) The Surrounding Protected Resource Land Rating –
Determination of the surrounding land use rating is based upon the identification of a project's "Zone of Influence" (ZOI), which is defined as that land near a given project, both directly adjoining and within a defined distance away, that is likely to influence, and be influenced by, the agricultural land use of the subject project site.

The zone of influence is found by first drawing the smallest possible rectangle that completely contains the project area. Then a second rectangle is drawn 0.25 mile beyond the first rectangle on all sides. The county parcel layer was used and all parcels that fell within or were intersected by the larger rectangle (minus the actual project area) were analyzed. Parcels within or partially within the survey rectangles are considered the ZOI.

All parcels that are in current agricultural use are grouped together and given a total acreage. Agricultural use can be determined using information from the Department of Conservation's Important Farmland Map Series, the Department of Water Resources' Land Use Map Series, locally derived maps, or direct site inspection. For agricultural land that is currently fallowed, a determination must be made concerning whether the land has been fallowed as part of a rotational sequence during normal agricultural operations, or because the land has become formally "committed" to a nonagricultural use.

Land that has become formally committed, whether fallow or not, should generally not be included in determining the proportion of the Zone of Influence that is agricultural land. The percentage of lands that are in agricultural use is divided by the total ZOI acreage and multiplied by 100 to get a percentage used for the Surrounding Agricultural Land Rating (Factor 5). Within this Project Area, the percentage of lands within the ZOI that are currently used for agriculture was based on whether the land was used strictly for residential or commercial usage or whether there were ongoing agricultural operations. The percentage is then assigned a Surrounding Agricultural Land Score using the numerical conversion in Table 4.

Protected resource lands are those lands with long term use restrictions that are compatible with or supportive of agricultural uses of land. Included among them are the following:

- Williamson Act contracted lands
- Publicly owned lands maintained as park, forest, or watershed resources
- Lands with agricultural, wildlife habitat, open space, or other natural resource easements that restrict the conversion of such land to urban or industrial uses.

All parcels designated for Protected Resource Land are grouped together and given a total acreage. The Protected Resource Land area is divided by the total ZOI acreage and multiplied by 100 to get a percentage for the Surrounding Protected Resource Land Rating. The surrounding protected resource land score is determined based on evaluation against Table 4. Within this Project Area, Protected Resource lands were determined by calculating which lands were in private ownership versus ownership by a resource agency (e.g., National Park Service, Wildlife Conservation Board, Marin County Department of Parks and Open Space) and, for those lands that are in private ownership, properties that are under Williamson Act or have a conservation easement through Marin Agricultural Land Trust (MALT) were also treated as Protected Resource Lands. The acreage of these areas was determined using ArcGIS 9.1.

Table 4. ZOI Surrounding Land Scoring Tables

Percent of ZOI in Agriculture	Surrounding Agricultural Land Score
90-100	100
80-89	95
70-79	90
65-69	85
60-64	80
55-59	70
50-54	60
45-49	50
40-44	40
35-39	30
30-34	20
20-29	10
<19	0

Percent of ZOI Protected	Protected Resource Land Score
90-100	100
80-89	95
70-79	90
65-69	85
60-64	80
55-59	70
50-54	60
45-49	50
40-44	40
35-39	30
30-34	20
20-29	10
<20	0

Results

The results of the LESA analysis for the Giacomini Wetland Restoration Project are summarized for each of the six factors below.

Land Evaluation Factors

Factor 1) USDA Land Capability Classification (LCC) - The soil types and corresponding LCCs for soils in the Project Area are shown in Figure C-2. Under the No Action alternative in which only 11 acres would be converted from agriculture to wetland and leased grazing would be allowed on the remainder of the property, the LCC score would be 0.00 (Table 6). Under the No Action Alternative and all of the Action Alternatives where there would be no leased grazing, the final LCC score would be 17.21 (Table 5).

Factor 2) Storie Index -

Under the No Action alternative in which only 11 acres would be converted from agriculture to wetland and leased grazing would be allowed on the remainder of the property, the Storie Index score would be 1.70 (Table 6). Under the No Action Alternative and all of the Action Alternatives where there would be no leased grazing, the final LCC score would be 17.05 (Table 5).

Table 5. Giacomini Project – No Action without Grazing and Action Alternative Land Evaluation Factors Score Results

Land Evaluation Worksheet
Land Capability Classification (LCC) and Storie Index Scores
Action Alternatives

Soil Map Unit	Soil Name	Project Acres	Proportion of Project (653.37 acres)	LCC	LCC Rating	LCC Score	Storie Index	Storie Index Score
103	Barnabe very gravelly loam	3.27	0.01	VIe	20	0.10	13	0.07
105	Blucher-Cole complex	165.13	0.25	IIIw-3	60	15.16	54	13.65
114	Cortina gravelly sandy loam	3.43	0.01	IVs-4	40	0.21	70	0.37
127	Fluvents, channeled	13.07	0.02	VIIw	10	0.20	0	0.00
131	Hydraquents, saline	14.46	0.02	VIIw	10	0.22	9	0.20
133	Inverness loam	1.54	0.00	IVe-1	50	0.12	70	0.16
135	Inverness loam	24.42	0.04	VIIe	10	0.37	21	0.78
147	Novato clay	356.36	0.55	VIIIw	0	0.00	2	1.09
161	Saurin-Bonnydoon complex	4.08	0.01	IIIe-1	70	0.44	48	0.30
163	Saurin-Bonnydoon complex	12.68	0.02	VIe	20	0.39	22	0.43
203	Xerorthents, fill	8.17	0.01	VIIIs	0	0.00	0	0.00
250	Water	46.76	0.07	-	0	0	0	0.00
Totals		653.37	1.00		LCC Total	17.21	Storie Total	17.05

Figure C-2 Land Capability Classification (LCC)

Table 6. Giacomini Project – No Action Alternative with Grazing Land Evaluation Factors Score Results

Land Evaluation Worksheet
Land Capability Classification (LCC) and Storie Index Scores
No-Action Alternative

Soil Map Unit	Soil Name	Project Acres	Proportion of Project (12.89 acres)	LCC	LCC Rating	LCC Score	Storie Index	Storie Index Score
147	Novato clay	10.97	0.85	VIIIw	0	0.00	2	1.70
250	Water	1.92	0.15	-	0	0	0	0.00
Totals		12.89	0.02		LCC Total	0.00	Storie Total	1.70

Site Assessment Factors

Factor 3) Project Size Rating – As discussed under methods, the Project Size Rating is calculated using grouping of LCCs ranging from I to VIII into three categories: I-II, III, and IV-VIII. The acreages are totaled for each of the three categories. The highest of the three scores is then used for the overall Project Size Score. Analysis of the Action Alternatives showed that within the Project Area, the area for Class I-II soils was 0 acres, the area for Class III soils was 169.21 acres, and the area for the Class IV or lower soils was 484.16 acres. The PSR for both the Class III and Class IV or lower scores was 100, resulting in an overall Project Size Score of 100 for the No Action Alternative without leased grazing and all Action Alternatives (Table 7).

Table 7. Project Size Score for Giacomini Project Action Alternative.

Site Assessment Worksheet
Project Size Score
Action Alternative

Soil Map Unit	Soil Name	LCC Class I-II	LCC Class III	LCC Class IV-VIII	
103	Barnabe very gravelly loam			3.27	
105	Blucher-Cole complex		165.13		
114	Cortina gravelly sandy loam			3.43	
127	Fluvents, channeled			13.07	Highest Project Size Score
131	Hydraquents, saline			14.46	100
133	Inverness loam			1.54	
135	Inverness loam			24.42	
147	Novato clay			356.36	
161	Saurin-Bonnydoon complex		4.08		
163	Saurin-Bonnydoon complex			12.68	
203	Xerorthents, fill			8.17	
250	Water			46.76	
Totals		0	169.21	484.16	
		Project Size Score			
		0	100	100	

Under the No Action Alternative with leased grazing, the portion of the Project Area that would be eliminated from agricultural activities totals 12.89 acres, which includes the 11-acre mitigation area. This outcome would result in a Project Size Score of 0.00 (Table 8).

Table 8. Project Size Score for Giacomini Project – No Action Alternative.

Site Assessment Worksheet
Project Size Score
No Action Alternative

Soil Map Unit	Soil Name	LCC Class I-II	LCC Class III	LCC Class IV-VIII	
147	Novato clay			10.97	Highest Project Size Score
250	Water			1.92	0
Totals		0	0	12.89	
		Project Size Score			
		0	0	0	

Factor 4) Water Resources Availability Rating - As discussed under Methods, the Giacominis perform seasonal irrigation under an appropriative water right issued to them with water piped to the ranch through a contract with North Marin Water District that ends in July 2008. The Giacominis have used these irrigation waters to flood- or spray irrigate a large portion of the East Pasture, but they have not irrigated the West Pasture. The Giacominis used to install a seasonal gravel dam and pump water directly out of Lagunitas Creek, but the State Water Resources Control Board required the Giacomini family to cease installing the gravel dam at that location after 1997 due to concerns about effect on salmonids and other threatened and endangered species. The potential for provision of -- and viability of obtaining --irrigation waters from NMWD in the future is both physically and economically uncertain. Under its purchase agreement with the Giacomini family, the Park Service would assume full ownership of 2 cfs of the appropriative water right. The Park Service does not plan to continue irrigation once it assumes full management of the Giacomini Ranch, but rather plans to designate this right for beneficial in-stream uses.

The irrigated and not-irrigated areas were then given a numerical score according to Table 3. These scores were then multiplied by their proportion to get a water availability score for each area (irrigated and not-irrigated). These scores were then added together for a total water availability score of 39.5 for the (Table 9). This score is applicable to the outcome under which there is no leased grazing under the Action Alternatives and the no Action Alternative.

Table 9. Water Resources Availability Score Giacomini Project Action Alternative.

Site Assessment Worksheet
Water Resources Availability
Action Alternative

Project Portion	Water Source	Proportion of Project Area (655.60 acres)	Water Availability Score	Weighted Availability Score (C x D)
1	Irrigated (Water Right)	26%	95	24.7
2	Not Irrigated	74%	20	14.8
		100%	Water Total	39.5

Under the No Action Alternative, the area of restoration is not irrigated, so the scores are adjusted accordingly (20; Table 10).

Table 10. Water Resources Availability Score Giacomini Project – No Action Alternative.

Site Assessment Worksheet
Water Resources Availability
No Action Alternative

Project Portion	Water Source	Proportion of Project Area (655.60 acres)	Water Availability Score	Weighted Availability Score (C x D)
1	Irrigation District	0	95	0
2	Not Irrigated	100%	20	20
		100%	Water Total	20

Factor 5) Surrounding Agricultural Land Rating /
Factor 6) The Surrounding Protected Resource Land Rating –
Figure C-3 shows the ZOI with the surrounding agricultural land and protected resource land categories in the Project Area highlighted. Because of the smaller size of the proposed project under the No Action Alternative and the manner in which the corresponding ZOI boundaries were aligned (Figure C-4), the No Action Alternative with leased grazing would have a larger Surrounding Agricultural Land Score (80) and a smaller Surrounding Protected Resource Land Score (30; Table 11) than the other outcome. The Action Alternatives and the No Action Alternative without leased grazing would have a lower Surrounding Agricultural Land Score (10) and a higher Surrounding Protected Resource Land Score (60; Table 11) than the other agricultural outcome (Figure C-3). Again, the difference in numbers relative to each outcome relates primarily to how the ZOI boundaries are drawn relative to the different boundaries of the proposed project under each outcome or the amount of land that would be converted under each outcome from agricultural uses (Figures C-3 and C-4).

Table 11. Surrounding Agricultural Land and Protected Land Resource Factor Scores for Action and No Action Alternatives for the Giacomini Wetland Restoration Project

Site Assessment Worksheet 3
Surrounding Agricultural Land and Surrounding Protected Resource Land

	Zone of Influence						
	ZOI Total Acres	Acres in Agriculture	Acres of Protected Resource Land	Percent in Agriculture	Percent Protected Resource Land	Surrounding Agricultural Land Score	Surrounding Protected Resource Land Score
Action Alternative and No Action without leased grazing (Figure C-3)	3753	758	2041	20.20%	54.38%	10	60
No Action Alternative with leased grazing (Figure C-4)	1206	730	429	60.53%	35.57%	80	30

Figure C-3 Surrounding Land Use – Action Alternatives

Figure C-4 Surrounding Land Use – No Action Alternatives

Final LESA Scoring

Background: The California LESA Model is weighted so that 50 percent of the total LESA score of a given project is derived from the Land Evaluation factors and 50 percent from the Site Assessment factors. The below table, "Final LESA Score Sheet", shows the individual factor scores with their respective weights, which are multiplied. The weighted scores are then totaled for a final LESA.

The California Agricultural LESA Model is designed to make determinations of the potential significance of a project's conversion of agricultural lands during the Initial Study phase of the CEQA review process (Table 12). Scoring thresholds are based upon the total LESA score as well as the component LE and SA subscores. In this manner, the scoring thresholds are dependent upon the attainment of a minimum score for the LE and SA subscores so that a single threshold is not the result of heavily skewed subscores (i.e., a site with a very high LE score, but a very low SA score, or vice versa).

Table 12. LESA Scoring Table for CEQA Impact Determination

Total LESA Score	Scoring Decision
0 to 39 Points	Not Considered Significant
40 to 59 Points	Considered Significant only if LE and SA subscores are each greater than or equal to 20 points
60 to 79 Points	Considered Significant unless either LE or SA subscore is less than 20 points
80 to 100 Points	Considered Significant

Under Park Service NEPA guidance, parks are expected to evaluate the intensity of impacts under a broader context that rates impacts as "No Effect," "Negligible," "Minor," "Moderate," and "Major." To allow for this broader evaluation of impacts, the cut-off scores for impacts that would be considered significant under CEQA were equated with major impacts under NEPA, and the range of possible scores below this cut-off score was equally divided, where possible, to obtain numerical thresholds for Negligible to Moderate impacts (Table 13).

Table 13. LESA Scoring Table for NEPA Impact Determination for Giacomini Wetland Restoration Project

No Impact/ Not Applicable	There would be no potential for an impact to agricultural resources.
Negligible	There would be a barely detectable effect on agricultural resources such that the LESA score would total ≤20 points.
Minor	There would be a measurable effect on agricultural resources such that: 1) the LESA score would total between 20 and 49 points; ***OR*** 2) the LESA score would be between 20 and 39 points if the Land Evaluation **OR** Site Analysis subscores ≥ 20 points.

Table 13. LESA Scoring Table for NEPA Impact Determination for Giacomini Wetland Restoration Project

Moderate	There would be an appreciable effect on agricultural resources such that: 1) the LESA score would total between 50 and 79 points; ***OR*** 2) the LESA score would be between 40 and 59 points if the Land Evaluation **OR** Site Analysis subscores ≥ 20 points.
Major or Substantial	There would be a substantial or major effect on agricultural resources such that: 1) the LESA score would total between 80 and 100 points; ***OR*** 2) the LESA score would be between 60 and 79 if the Land Evaluation **OR** Site Analysis subscores ≥ 20 points; ***OR*** 3) the LESA score would be between 40 to 59 points if the Land Evaluation **AND** Site Analysis subscores ≥ 20 points.

Results: The Action Alternatives associated with the Giacomini Wetland Restoration Project and the No Action Alternative without leased grazing received a score of 33.99 (Table 14). This score results in a determination that Alternatives A-D and the No Action without leased grazing would have the potential for a minor effect (Table 13) under NEPA and a less than significant effect under CEQA (Table 12). The Site Assessment subanalysis totaled more than 20 points (25.43), although the Land Evaluation subanalysis totaled considerably less than 20 points (8.56), so the total LESA score needed to fall between 20 and 39 points (33.99; Table 14). Therefore, Action Alternatives and the No Action Alternative without leased grazing would not result in substantial or major impacts to agricultural conditions in the area and is therefore not considered significant under CEQA (Table 14).

Table 14. Final LESA Score for Action Alternatives under Giacomini Project

Final LESA Score Sheet
Action Alternatives

	Factor Scores	Factor Weight	Weighted Factor Scores
Land Evaluation Factors			
Land Capability Classification	17.21	0.25	4.30
Storie Index	17.05	0.25	4.26
LE Subtotal		0.50	8.56
Site Assessment Factors			
Project Size	100.00	0.15	15.00
Water Resource Availability	39.50	0.15	5.93
Surrounding Agricultural Land	10.00	0.15	1.50
Surrounding Protected Resource Land	60.00	0.05	3.00
SA Subtotal		0.50	25.43
	Final LESA Score		33.99

The No Action Alternative with leased grazing associated with the Giacomini Wetland Restoration Project would result in conversion from agricultural use for approximately 12 acres of the Project Area, with the remaining area potentially supporting limited grazing activities. The LESA score of 16.93 would result in only a negligible effect under NEPA and a less than significant effect under CEQA, therefore, the No Action Alternative with leased grazing would not result in major or substantial impacts

to agricultural conditions in the area and is, therefore, not considered significant under CEQA (Table 15).

Table 15. Final LESA Score for the No Action Alternative under Giacomini Project

Final LESA Score Sheet
No Action Alternatives

	Factor Scores	Factor Weight	Weighted Factor Scores
Land Evaluation Factors			
Land Capability Classification	0.00	0.25	0.00
Storie Index	1.70	0.25	0.43
LE Subtotal		0.50	0.43
Site Assessment Factors			
Project Size	0.00	0.15	0.00
Water Resource Availability	20.00	0.15	3.00
Surrounding Agricultural Land	80.00	0.15	12.00
Surrounding Protected Resource Land	30.00	0.05	1.50
SA Subtotal		0.50	16.50
	Final LESA Score		16.93

References

California Department of Conservation (1997). California Agricultural Land Assessment and Site Assessment Model. Instruction Manual Sacramento, Calif.

U.S. Soil Conservation Service (1985). Soil Survey of Marin County, California, U.S. Department of Agriculture. Prepared in cooperation with the National Park Service and University of California Agricultural Experiment Station: 229.