



## SJCOG, Inc.

555 East Weber Avenue • Stockton, CA 95202 • (209) 235-0600 • FAX (209) 235-0438

### *San Joaquin County Multi-Species Habitat Conservation & Open Space Plan (SJMSCP)*

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ESCALON,  
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RIPON,  
STOCKTON,  
TRACY,  
AND  
THE COUNTY OF  
SAN JOAQUIN

### 2019 Updated Habitat Fees\*

Habitat Type	Fee Per Acre
Multi-Purpose Open Space	\$6,700
Natural	\$13,399
Agriculture	\$13,399
Vernal Pool - uplands	\$54,576
Vernal Pool - wetted	\$101,033

\* Effective January 1, 2019 – December 31, 2019

### 2018 Endowment Fees with In-lieu Land\*\*

Type of Preserve	Enhancement Cost/acre	Land Management Cost/acre	TOTAL PER ACRE ENDOWMENT
<b>Agricultural Habitat Lands</b>	\$3,727.00	\$821.75	<b>\$4,548.75</b>
<b>Natural Lands</b>	\$3,727.00	\$821.75	<b>\$4,548.75</b>
<b>Vernal Pool Habitat</b>			
<i>Vernal Pool Grasslands</i>	\$14,814.00	\$2,503.33	<b>\$17,317.33</b>
<i>Vernal Pool Wetted</i>	\$61,994.00	\$2,457.61	<b>\$64,451.61</b>

\*\* Effective January 1, 2019 – December 31, 2019 in lieu of fees to be used as the endowment for the dedicated land preserves (Category B + C) based on impacted acres.

## VELB Mitigation

A special fee category shall apply when removal of the Valley Elderberry Long-horned Beetle (VELB) habitat of elderberry shrubs occurs. The fee shall be paid to SJCOG, Inc. or a VELB mitigation bank approved by the Permitting Agencies. The current fee, as established in the VELB Conservation Fund Account managed by the Center for Natural Lands Management, and approved by the USFWS, is \$1,800 per VELB Unit (one unit= one stem over 1" in diameter at ground level which is removed). Fees shall be established by the JPA during preconstruction surveys (i.e., counts of stems to be removed with and without exit holes shall be completed during preconstruction surveys) and shall be paid to the JPA prior to ground disturbance or stem removal, whichever comes first.

FINANCIAL ANALYSIS UPDATE FOR ADOPTION - 08/01/2018

DRAFT MATERIAL ONLY

<b>Table of Contents</b>	List of worksheet tabs and contents
<b>Notes to User</b>	Model overview and instructions for annual updates
<b>Fee Summary Comparison</b>	Table showing calculated fee amounts by habitat type and category; comparison to adopted fees; linked from other sheets; Includes California CPI factor for Category C annual update
<b>A1 PerAcreCostFactorsbyZone</b>	Per acre easement cost factors by zone based on input from comparables and appraisal analysis
<b>A2 PerAcreAcquisitionCost</b>	Weighted acquisition cost factors by habitat type based on distribution of preserves by zone; adds transaction costs
<b>A3 AcquisitionCostHabitatType</b>	Total acquisition cost by habitat type, for preserves remaining to be acquired
<b>A4 AcquisitionFEE</b>	Category A fee by habitat type, based on remaining land conversion
<b>B1 PreserveEnhancementCost</b>	Weighted enhancement cost factors by habitat type based on estimate of acres enhanced and detailed per acre enhancement cost factors
<b>B2 AssessmentEnhancementCost</b>	All assessment and enhancement cost factors by habitat type
<b>B3 AssessEnhancementCostAllocation</b>	Total assessment and enhancement cost by habitat type, remainder of permit term
<b>B4 AssessmentEnhancementFEE</b>	Category B fee by habitat type, based on remaining land conversion
<b>C MonitoringAdminFEE</b>	Category C fee by habitat type, based on remaining land conversion; links to summary comparison for annual update
<b>For 5-Year Update Only =&gt;</b>	Workbook break: the following tabs for Category C are only used in the 5-year economic analysis update
<b>C1 MonitoringCost</b>	Monitoring cost factors by habitat type, including post-permit annual cost
<b>C2 PMAAdminCost</b>	Project management and administrative cost factors, including post-permit annual cost
<b>C3 Endowment</b>	Endowment cash flow, return assumptions, and total in year 51 to support post-permit annual cost
<b>C4 MonitoringAdminCostAlloc</b>	Total monitoring, management, and administrative cost by habitat type, remainder of permit term and endowment for post permit cost
<b>C5 MonitoringAdminFEE</b>	Category C fee by habitat type, based on remaining land conversion
<b>Source for update acres =&gt;</b>	Workbook break: the following tabs are updated annually and every 5 years for acres inputs
<b>1 SJMSCP Acres 6_4_2015</b>	Land conversion and preserve acres by habitat type for the 50-year permit term (source table)
<b>2 RemainingPreservetoAcquire</b>	Preserve Acres, Total and Remaining to be Acquired (from Table 1 and Annual Report updates)
<b>3 Cumulative Take_Remaining</b>	Allowed and Remaining Incidental Take Acreage (from Table 1 and Annual Report updates)
<b>4 PreserveAcquisitionSchedule</b>	Preserve Acquisition Schedule, All Habitat Types, by Index Zone, Remaining Permit Term (from Table 2)

## FINANCIAL ANALYSIS UPDATE FOR ADOPTION - 08/13/2018

This workbook of linked worksheets calculates SJMSCP Impact Fees for Categories A, B, and C. The workbook contains all of the elements needed for annual updates as well as the framework for the more complex 5-year economic analysis updates.

**Category A and Category B** are fees for **one-time costs** for land acquisition, enhancement, restoration and associated site assessments and planning.

These fees will be updated annually by updating the per-acre cost factors and updating the *acres remaining to be acquired* and the *remaining acres of land conversion* based on data from SJMSCP Annual Reports.

- Category A per-acre cost factors updated by comparables analysis, as established in past practice
- Category B per-acre and annual cost factors updated by applying California CPI to unit cost factors
- The total costs in Category A and Category B for each annual update will reflect the *acres remaining to be acquired* and the fees for each annual update will reflect the *remaining acres of land conversion* from SJMSCP Annual Reports.

**Category C** is a fee for **on-going annual costs** for the remainder of the permit term and post-permit in perpetuity.

Annual updates for this fee Category will apply the California CPI to the prior year **fee** amount, as established in past practice.

- Incorporating Annual Report data in the annual updates of **on-going** permit term and post-permit costs adds unnecessary complexity to the annual update of this component of the SJMSCP fees.
- Updating annually the SJCOG, Inc. fund balance and budget analysis used to estimate costs in this category, as well as the endowment cash flow analysis required to estimate post-permit costs, are more complex work efforts not justified to generally keep Category C fees in line with annual cost inflation. Moreover, because these costs are not as sensitive to habitat type, it is not as important to account for the annual variation in preserve acquisition and land conversion captured in the annual updates to Categories A and B.

#### Components of the workbook:

1. The Fee Summary Comparison worksheet compares calculated updated fees to fees currently in effect and includes the California CPI for Category C updates.
2. Category A tabs A1 - A4 calculate the fees for Category A Acquisition.
3. Category B tabs B1 - B4 calculate the fees for Category B Assessment and Enhancement.
4. Category C Fee tab shows the fees by habitat type calculated in the 2016 Economic Analysis, the basis for the subsequent annual fee update.
5. Category C tabs C1 - C5 calculate the fees for Category C Monitoring, Management, and Administration. **5-YEAR UPDATE ONLY**
6. Tables 1 - 3 provide background data on preserve acres and land conversion by habitat type, updated annually from the SJMSCP Annual Report; Table 4 showing the preserve acquisition schedule by habitat type and zone is used only in the 5-year update.

FINANCIAL ANALYSIS UPDATE FOR ADOPTION - 08/13/2018

### Fee Summary Comparison

Calculates new annual fees and compares to prior year adopted fees.

1. Paste values of prior year adopted fees in cells C11:E14.
2. Insert updated annual California CPI factor in cell F1.
3. Updated fees for Category A show in cells C5:C8 and updated fees for Category B show in cells D5:D8. The fees are linked to other tabs in this workbook.
4. Formulas in cells E5:E8 calculate Category C fee update amounts based on prior year adopted fee amounts in cells E11:E14.

### Category A Acquisition

#### A.1 Category A Per-Acre Acquisition Cost Factors by Zone

1. Input results of annual comparables analysis for updated fee title values in Central Zone and Primary Zone of the Delta.
2. Fixed -70% ( 61% approved - 2018 Analysis ) valuation: Track Input results of annual analysis of SJCOG, Inc. appraisals (easement percent of fee title value). Update appraisal list each year and calculate weighted average percent by dividing cumulative total easement value (cost) by cumulative total before value (fee title value).
3. Value of Southwest Zone easement cost remains unchanged until experience indicates it should be updated.

#### A.2 Per-Acre Acquisition Cost Factors by Preserve/Habitat Type

No annual input needed. Links and formulas calculate total cost factors per acre for each habitat type.

1. Easement cost factor input linked from A.1.
2. Distribution by preserve type is not changed from 1996 Economic Analysis.
3. Transaction cost and VP acquisition assumptions not changed.

#### A.3 Total Acquisition Costs by Habitat Type, Remainder of Permit Term

No annual input needed. Links and formulas calculate total cost for each habitat type.

1. Land acquisition cost factors linked from A.2.
2. Preserve acres remaining to be acquired linked from Table 2 (updated annually based on SJMSCP Annual Report).

#### A.4 Fee Calculations

No annual input needed. Links and formulas calculate fee for each habitat type.

1. Cost by habitat type linked from A.3.
2. Land conversion remaining linked from Table 3 (updated annually based on SJMSCP Annual Report).

FINANCIAL ANALYSIS UPDATE FOR ADOPTION - 08/13/2018

### Category B Assessment and Enhancement

B.1 SJMSCP Preserve land by habitat type, enhancement analysis, and enhancement cost factors per preserve acre

1. 2016 Economic analysis included: refinement of natural lands detail and SJMSCP enhancement requirements refined, and update of costs for enhancements and restoration. Table calculates weighted average cost per preserve acre for agricultural lands, non-vernal pool natural lands, and vernal pool preserves. Update enhancement cost analysis every five years.
2. *Annually, in each shaded cell in table column 5 (Enhancement Cost per Acre), substitute prior year value in the formula. Formula references updated annual California CPI factor in cell E1. Formulas calculate updated weighted average cost per preserve acre.*
3. *Insert updated annual California CPI factor in cell E1.*

B.2 Category B Assessment, Planning, Restoration and Enhancement Cost Factors

1. Update remaining years in permit term.
2. *Annually, in each brown shaded cell in table, substitute prior year value for site assessment, management plans, and enhancement plans in the formula. Formula references updated annual California CPI factor in cell C1. Formulas calculate updated annual costs.*
3. *Insert updated annual California CPI factor in cell C1.*
4. Enhancement and restoration cost factors linked from B.1.

B.3 Category B Assessment, Planning, Restoration, and Enhancement Cost Allocation by Habitat Type

No annual input needed. Links and formulas calculate total cost for each habitat type.

1. Assessment and planning costs linked from B.2. Formulas calculate total enhancement and restoration costs from factors in B.2.
2. Preserve acres remaining to be acquired linked from Table 2 (updated annually based on SJMSCP Annual Report).

B.4 Fee Calculations

No annual input needed. Links and formulas calculate fee for each habitat type.

1. Cost by habitat type linked from B.3.
2. Land conversion remaining linked from Table 3 (updated annually based on SJMSCP Annual Report).

### Category C Monitoring, Management, and Administration

C.5 Fee Calculations - Annual Update Only

No input needed. Cost and land conversion values frozen based on 2016 Economic Analysis.

1. For 2016 update, Category C fee amounts by habitat type linked to Fee Summary Comparison table.
2. Update annually by applying California CPI factor to prior year Category C fee amounts, as in past practice.

*Note: this is done in the Fee Summary Comparison worksheet.*

FINANCIAL ANALYSIS UPDATE FOR ADOPTION - 08/13/2018

**Category C Monitoring, Management, and Administration - INSTRUCTIONS FOR FIVE-YEAR UPDATE**

**C.1 Category C (part) Compliance and Effectiveness Monitoring Cost Assumptions**

1. Update remaining years in permit term.
2. Preserve acres acquired and preserve acres remaining to be acquired linked from Table 2 (updated based on SJMSCP Annual Report).
3. Update monitoring cost factors (annual costs and annual costs per acre).
4. Total costs by type of monitoring for the remainder of the permit term calculated by worksheet formula.
5. Post permit cost updates by worksheet formula based on updates to detail in rows above. Acres input linked from Tables 2 and 4 (updated based on SJMSCP Annual Report).

**C.2 Category C (part) Project Management and Administrative Cost Assumptions**

1. Update remaining years in permit term.
2. Update annual management and administrative staff cost and cost allocation from analysis of Cumulative Schedule of Receipts and Disbursement in SJMSCP Annual Report, supplemented by cost code detail provided by SJCOG, Inc. staff.
3. Update Existing Preserve Fund Balance input (from SJMSCP Annual Report). Update fund balance allocation using analysis of category breakdown of cumulative fee revenue collected. Worksheet formulas calculate share of existing fund balance available to fund permit term costs and resulting net costs of Project Management and Administration for the remainder of the permit term.
3. Post permit cost updates by worksheet formula based on updates to detail in rows above.

**C.3 SJMSCP Endowment Fund Cash Flow**

This table uses estimates of annual post permit costs, existing fund balances, and interest earnings assumptions to estimate the endowment needed at the end of the permit term to fund annual costs in perpetuity.

This analysis is to be updated at each 5-year economic analysis review. The worksheet solves for fund balance amount in year 51 that generates the annual income to fully fund annual post permit costs. The worksheet calculates the annual fee revenue required over the remainder of the permit term to achieve that fund balance when added to the existing fund balance for management and administrative costs post permit and interest earnings over the remainder of the permit term. That amount is the total cost to be allocated by habitat type remaining to be acquired.

**C.4 Category C Monitoring and Project Management/Administration, including endowment for post-permit costs, Cost Allocation by Habitat Type**

No input needed. Links and formulas calculate total cost for each habitat type.

1. Monitoring costs linked from C.1, management and administrative costs linked from C.2; post-permit endowment cost linked from C.3. Formulas allocate total costs by habitat type.
2. Preserve acres remaining to be acquired linked from Table 2 (updated based on SJMSCP Annual Report).

**C.5 Fee Calculations**

No input needed. Links and formulas calculate fee for each habitat type.

1. Cost by habitat type linked from C.4.
2. Land conversion remaining linked from Table 3 (updated based on SJMSCP Annual Report).

FINANCIAL ANALYSIS UPDATE FOR ADOPTION - 08/13/2018

### Tables 1 - 4 (Source Tables)

**Table 1 Land Conversion and Preserve Acres by Habitat Type for the 50-year permit term**

This table was finalized on June 4, 2015 as part of the Economic Analysis update. This table provides the source data by detailed habitat type for the 50-year permit term totals.

**Table 2 Preserve Acres, Total and Remaining to be Acquired**

1. Total Preserve Acres by habitat type linked from Table 1.
2. Annually, update Total Preserve Acres Acquired through 12/31 from the SJMSCP Annual Report.
3. Total Preserve Acres Remaining to be Acquired calculated by worksheet formula; links to cost and fee calculation worksheets.

**Table 3 Allowed and Remaining Incidental Take Acreage**

1. Take Authorizations by habitat type linked from Table 1 and adding multi-purpose open space from SJMSCP Table 1-1 and Table 4.2-2.
2. Annually, update the Cumulative Acres of Take through 12/31 from the SJMSCP Annual Report.
3. Remaining Acres of Land Conversion calculated by worksheet formula; links to cost and fee calculation worksheets.

**Table 4 Preserve Acquisition Schedule, All Habitat Types, by Index Zone, Remaining Permit Term - ONLY USED IN 5-YEAR UPDATE**

This table is used in Table C.1 to calculate monitoring costs for the remainder of the permit term for preserves remaining to be acquired.

1. Preserve acres remaining to be acquired by zone linked from Table 2 (updated based on SJMSCP Annual Report).
2. At five-year update, update the years remaining in the permit term in Column C.
3. At five-year update, update the years remaining in the permit term in the denominator of the cell formulas.

## FINANCIAL ANALYSIS UPDATE FOR ADOPTION - 08/13/2018

	Category A	Category B	Category C		
2019 Fees - August 2018	Acquisition	Assessment & Enhancement	Monitoring, Management & Administration, & Post-permit Endowment	Total	Total Rounded
Other Open Space	\$4,425.00	\$1,864.00	\$411.41	\$6,700.41	\$6,700
Natural/Ag Lands	\$8,850.00	\$3,727.00	\$821.75	\$13,398.75	\$13,399
Vernal Pool Grasslands	\$37,259.00	\$14,814.00	\$2,503.33	\$54,576.33	\$54,576
Vernal Pool Wetted	\$36,581.00	\$61,994.00	\$2,457.61	\$101,032.61	\$101,033
	Category A	Category B	Category C		
2018 Fees - Adopted	Acquisition	Assessment & Enhancement	Monitoring, Management & Administration, & Post-permit Endowment	Total	Total Rounded
Other Open Space	\$7,531.00	\$1,774.00	\$395.97	\$9,700.97	\$9,701
Natural/Ag Lands	\$15,062.00	\$3,547.00	\$790.90	\$19,399.90	\$19,400
Vernal Pool Grasslands	\$55,853.00	\$14,261.00	\$2,409.36	\$72,523.36	\$72,523
Vernal Pool Wetted	\$54,837.00	\$59,669.00	\$2,365.36	\$116,871.36	\$116,871
Difference Per Acre (\$)	Acquisition	Assessment & Enhancement	Monitoring, Management & Administration, & Post-permit Endowment	Total	Total Rounded
Other Open Space	(\$3,106)	\$90	\$15	(\$3,001)	(\$3,001)
Natural/Ag Lands	(\$6,212)	\$180	\$31	(\$6,001)	(\$6,001)
Vernal Pool Grasslands	(\$18,594)	\$553	\$94	(\$17,947)	(\$17,947)
Vernal Pool Wetted	(\$18,256)	\$2,325	\$92	(\$15,839)	(\$15,839)
Percent Difference	Acquisition	Assessment & Enhancement	Monitoring, Management & Administration, & Post-permit Endowment	Total	Total Rounded
Other Open Space	-41.2%	5.1%	3.9%	-30.9%	-30.9%
Natural/Ag Lands	-41.2%	5.1%	3.9%	-30.9%	-30.9%
Vernal Pool Grasslands	-33.3%	3.9%	3.9%	-24.7%	-24.7%
Vernal Pool Wetted	-33.3%	3.9%	3.9%	-13.6%	-13.6%

## FINANCIAL ANALYSIS UPDATE FOR ADOPTION - 08/13/2018

**TABLE A.1**  
**SJMSCP Fee Update - 2018 (for 2019 SJMSCP Development Fee Cycle)**  
**Category A Per-Acre Acquisition Cost Factors by Zone (2018 dollars)**

		Central Zone	Primary Zone of the Delta	Southwest Zone <sup>3</sup>
Fee title value <sup>1</sup>	a	\$14,551	\$13,708	na
Easement percent of fee title value <sup>2</sup>	b	61%	61%	na
Easement costs	a x b	<b>\$8,876</b>	<b>\$8,362</b>	<b>\$1,000</b>

1. SJCOG, Inc. Fee Study Property List, Table A and Table B

2. SJCOG, Inc. Appraisals as of May 2018

3. Based on standard easement cost in Southwest Zone of \$1,000/acre.

## FINANCIAL ANALYSIS UPDATE FOR ADOPTION - 08/13/2018

**TABLE A.2**  
**SJMSCP Fee Update - 2018 (for 2019 SJMSCP Development Fee Cycle)**  
**Per Acre Acquisition Cost by Preserve/Habitat Type (2018 dollars)**

Preserve/Habitat Type		SJMSCP Zone			Total Weighted Acquisition Cost	Transaction Costs <sup>5</sup>	Total Land Acquisition Costs Per Acre
		Central Zone	Primary Zone of the Delta	Southwest Zone			
		A	B	C	A + B + C = D	D × 5% = E	D + E
Easement cost by zone <sup>1</sup>	d	\$8,876	\$8,362	\$1,000			
<b>Agricultural Lands</b>							
Percent in zone <sup>2</sup>	e	98%	2%	0%			
Weighted costs <sup>3</sup>	d × e	\$8,716	\$151	\$0	<b>\$8,867</b>	\$443	<b>\$9,310</b>
<b>Natural Lands</b>							
Non-vernal pool natural lands							
Percent in zone <sup>2</sup>	f	77%	4%	18%			
Weighted costs <sup>3</sup>	d × f	\$6,857	\$371	\$183	<b>\$7,411</b>	\$371	<b>\$7,782</b>
Vernal pool grasslands <sup>4</sup>		n/a	n/a	n/a	<b>\$11,641</b>	\$582	<b>\$12,223</b>
Vernal pool wetted <sup>4</sup>		n/a	n/a	n/a	<b>\$11,641</b>	\$582	<b>\$12,223</b>

1. See Table A.1.

2. Percent of total lands in each category assumed to be in a given zone. Based on 1996 Economic Analysis.

3. Weighted average cost based on generalized proportion of total preserve land in each zone. Assumes easement acquisition for lands categorized as agriculture and all natural lands except vernal pool habitat.

4. Assumes fee title acquisition for vernal pool lands. Vernal pool habitat fee title land costs assumed to be about 80% of average Central Zone fee title costs.

5. Transaction costs include biological baseline reporting, appraisal, escrow, and survey costs. Costs are estimated at 5 percent of acquisition cost.

## FINANCIAL ANALYSIS UPDATE FOR ADOPTION - 08/13/2018

**TABLE A.3**  
**SJMSCP Fee Update - 2018 (for 2019 SJMSCP Development Fee Cycle)**  
**Total Acquisition Costs by Habitat Type, Remainder of Permit Term (2018 dollars)**

<b>Preserves by Habitat Type</b>	<b>Land Acquisition Cost Per Acre</b>	<b>Preserve Acres Remaining to be Acquired</b>	<b>Total Costs of Acquisition</b>
Agricultural lands	\$9,310	50,243.47	\$467,766,706
Natural lands			
Non-vernal pool natural lands	\$7,782	17,736.77	\$138,027,544
<b>Total for Natural/Ag Lands</b>	\$8,911	67,980.24	\$605,794,250
Vernal pool grasslands	\$12,223	15,792.42	\$193,030,689
Vernal pool wetted	\$12,223	2,115.00	\$25,851,645

Sources: SJCOG, Inc., *SJMSCP 2015 Annual Report*, and Hausrath Economics Group.

## FINANCIAL ANALYSIS UPDATE FOR ADOPTION - 08/13/2018

**TABLE A.4**  
**SJMSCP Fee Update - 2018 (for 2019 SJMSCP Development Fee Cycle)**  
**Category A Acquisition**  
**Fee Calculations (2018 dollars)**

Habitat Type	Preserve Land Acquisition
Costs associated with natural/agricultural lands conversion	\$605,794,250
Natural/Agricultural land conversion (acres), remaining	50,971.92
Multi-purpose open space conversion (acres), remaining <sup>1</sup>	34,959.22
Multiplier for natural/agricultural land conversion	1
Multiplier for multi-ourpose open space conversion <sup>1</sup>	0.5
<b>Acquisition Component of Natural/Agricultural Lands Fee</b>	<b>\$8,850</b>
<b>Acquisition Component of Multi-Purpose Open Space Fee<sup>1</sup></b>	<b>\$4,425</b>
Costs associated with vernal pool grasslands	\$193,030,689
Vernal pool grassland conversion (acres), remaining	5,180.80
<b>Acquisition Component of Vernal Pool Grasslands Fee</b>	<b>\$37,259</b>
Costs associated with vernal pool wetted	\$25,851,645
Vernal pool wetted conversion (acres), remaining	706.70
<b>Acquisition Component of Vernal Pool Wetted Fee</b>	<b>\$36,581</b>

1. As described in SJMSCP Section 7.4.1.2, the fee calculation allocates the costs associated with agricultural habitat and non-vernal pool natural lands preserves to conversion of both those high value lands (agricultural land and non-vernal pool natural land) and lower value multi-purpose open space. In other words, the SJMSCP does not enhance multi-purpose open space lands but allocates some of the costs of enhancements on agricultural and natural lands preserves to the conversion of multi-purpose open space lands to assist with the financing of those enhancements.

Sources: SJCOG, Inc., *SJMSCP 2015 Annual Report*, and Hausrath Economics Group.

FINANCIAL ANALYSIS UPDATE FOR ADOPTION - 08/13/2018

update annually, California CPI factor: 3.9% California CPI factor (June 2016 - June 2017)  
 substitute value from prior year workbook in formula in shaded cells in table column 5.

TABLE B.1

SJMSCP Fee Update - 2018 (for 2019 SJMSCP Development Fee Cycle)

Category B Assessment, Planning, Restoration and Enhancement

SJMSCP Preserve land by habitat type, enhancement analysis, and enhancement cost per preserve acre (2018 dollars)

Habitat Type	Total Preserve Acres (including neighboring lands preserves)	Percent of Preserve Acres Enhanced <sup>1</sup>	Acres Benefiting from Enhancements	Perimeter Hedgerow or Other Linear Habitat Feature (acres) <sup>2</sup>	Enhancement Cost per Acre <sup>3</sup>	Total Enhancement Cost	Enhancement Cost per Preserve Acre
	1	2	3	4	5	6	7
Agricultural Habitat Lands <sup>4</sup>	57,935	10%	5,794	776	\$59,056	\$45,827,239	\$791
<b>Natural Lands</b>							
Ditches	378	33%	126		\$126,908	\$15,990,360	
Grasslands	14,559	33%	4,853		\$21,659	\$105,111,098	
Oak woodlands	858	33%	286		\$34,067	\$9,743,085	
Riparian	2,725	33%	908		\$100,205	\$91,019,829	
Submerged aquatic in the Delta	10	100%	10		\$73,075	\$730,749	
<i>Subtotal</i>	<i>18,530</i>		<i>6,183</i>		<i>\$35,999</i>	<i>\$222,595,121</i>	
Other natural lands <sup>5</sup>	6,445	33%	2,148		\$35,999	\$77,338,305	
<b>Subtotal Non VP Natural</b>	<b>24,975</b>					<b>\$299,933,426</b>	<b>\$12,009</b>
Vernal pool wetted	2,121	33%	707		\$62,039	\$43,861,354	\$20,680
Vernal pool grasslands	15,811	33%	5,270		\$14,475	\$76,289,909	\$4,825
<b>Subtotal All Natural Lands</b>	<b>42,907</b>		<b>14,309</b>			<b>\$420,084,689</b>	
<b>Total</b>	<b>100,842</b>		<b>20,103</b>			<b>\$465,911,928</b>	

See notes on following page

1. Enhancement criteria derived from the SJMSCP, Section 5.4.6.

2. Unlike most other habitat types, agricultural lands are enhanced by treating linear features that run along the edge of or through fields--features such as roads or drainage ditches. In these cases, the land area of direct enhancement activity is substantially less than that area benefiting from the enhancement. This has the advantage of minimizing impacts to agricultural land production. Installing pollinator hedgerows at the edges of fields and grassland borders along irrigation and drainage ditches, and planting nest trees and associated shrubs and grasses, are enhancements used in the cost analysis to represent the range of types of agricultural land enhancements outlined in the SJMSCP. In addition to benefits to species, these linear features offer benefits of preventing soil erosion and reducing costs for weed control and linear water conveyance infrastructure maintenance. They also enhance the entire field they are associated with, meeting the 10 percent enhancement criterion while also minimizing loss of productive agricultural land. The enhancement cost estimate for agricultural lands is therefore based on the acres of hedgerow or other linear feature multiplied by the cost per acre to install hedgerows and similar linear features.

3. The enhancement cost applies to the acres where construction and/or installation actually takes place. In the case of hedgerows or other edge features, this is only the relatively small area of activity, not the total area that is thereby enhanced. Enhancement cost includes costs for materials, construction labor, and equipment. In addition to the installation activity, the cost per enhanced acre also includes a cost for project oversight and contract administration and three years of maintenance and monitoring. For vernal pool wetted restoration, the cost includes 15 years of post-restoration monitoring.

4. For agricultural habitat lands, a SJMSCP describes a broad range of enhancement activities and a generalized target of 10 percent enhancement; providing benefits to species without substantially reducing the amount of agricultural land in production. This can be achieved by implementing the linear features described in footnote 2. Pollinator hedgerows or similar linear features enhance the entire field that they are associated with, thereby counting toward the 10 percent enhancement criteria while taking substantially less land out of production.

5. Estimated based on the weighted average cost for all other non-vernal pool natural lands.  
 Sources: Table A.1, SICO, Inc., ICF, and Hausrath Economics Group

## FINANCIAL ANALYSIS UPDATE FOR ADOPTION - 08/13/2018

**TABLE B.2**  
**SJMSCP Fee Update - 2018 (for 2019 SJMSCP Development Fee Cycle)**  
**Category B Assessment, Planning, Restoration and Enhancement Cost Factors (2018 dollars)**  
**Remainder of Permit Term**

Remaining years in permit term	32	used in formulae below to calculate costs for the remainder of the permit term
<b>Biological Site Assessment</b>		
Number of site visits per year	10	assumes 6 hours per visit
Annual cost	\$8,490	replace value from prior year workbook in formula before changing CPI every year
<b>Total Site Assessment cost remainder of permit term</b>	<b>\$271,669</b>	
<b>Preserve Management Plan Preparation</b>		
Number of management plans per year	10	assumes 40 hours per plan
Annual cost	\$56,596	replace value from prior year workbook in formula before changing CPI every year
<b>Total Preserve Management Plan cost remainder of permit term</b>	<b>\$1,811,085</b>	
<b>Preserve Enhancement Plan Preparation</b>		
Number of enhancement projects per year	5	assumes 40 hours per plan for each enhancement project
Annual cost	\$28,298	replace value from prior year workbook in formula before changing CPI every year
<b>Total Preserve Enhancement Plan cost remainder of permit term</b>	<b>\$905,543</b>	
<b>Preserve Enhancements on Agricultural Lands</b>		
Enhancement cost per preserve acre	\$791	
<b>Preserve Enhancements on Non-Vernal Pool Natural Lands</b>		
Enhancement cost per preserve acre	\$12,009	
<b>Vernal Pool Creation/Enhancement</b>		
Enhancement cost per preserve acre	\$20,680	
<b>Vernal Pool Upland Grassland Enhancement</b>		
Enhancement cost per preserve acre	\$4,825	

Sources: SJCOG, Inc., ICF, and Hausrath Economics Group

## FINANCIAL ANALYSIS UPDATE FOR ADOPTION - 08/13/2018

TABLE B.3  
 SJMSCP Fee Update - 2018 (for 2019 SJMSCP Development Fee Cycle)  
 Category B Assessment, Planning, Restoration and Enhancement (2018 dollars)  
 Cost Allocation by Habitat Type  
 Remainder of Permit Term

Preserves by Habitat Type	Acres Remaining to be Acquired <sup>1</sup>	Percent of Total	Costs - Remainder of Permit Term				
			Total cost allocated by preserve type percent of total preserve land remaining to be acquired			Cost per acre multiplied by preserve acres by type remaining to be acquired	
			Biological Site Assessment	Preserve Management Plans	Preserve Enhancement Plans	Preserve Enhancements	Vernal Pool Restoration
Agricultural lands	50,243.47	58%	\$158,924	\$1,059,468	\$529,734	\$39,743,152	na
Non-vernal pool natural lands	17,736.77	21%	\$56,103	\$374,009	\$187,005	\$213,007,015	na
Vernal pool grasslands	15,792.42	18%	\$49,953	\$333,010	\$166,505	\$76,200,234	na
Vernal pool wetted	2,115.00	2%	\$6,690	\$44,598	\$22,299	na	\$43,737,276
	<b>85,887.66</b>	<b>100%</b>	<b>\$271,669</b>	<b>\$1,811,085</b>	<b>\$905,543</b>	<b>\$328,950,401</b>	<b>\$43,737,276</b>

1. Includes 600 acres of neighboring lands preserves.

Sources: SJCOG, Inc., SJMSCP 2015 Annual Report, ICF, and Hausrath Economics Group.

## FINANCIAL ANALYSIS UPDATE FOR ADOPTION - 08/13/2018

TABLE B.4  
 SJMSCP Fee Update - 2018 (for 2019 SJMSCP Development Fee Cycle)  
 Category B Assessment, Planning, Restoration and Enhancement  
 Fee Calculations (2018 dollars)  
 Remainder of Permit Term

Habitat Type	Biological Site Assessment	Preserve Management Plans	Preserve Enhancement Plans	Agricultural and Non VP Natural Land Enhancement	Total for Agricultural and Non VP Natural Land (incl. assessment and plans)	Vernal Pool Restoration / Enhancement	Total for Vernal Pool (incl. assessment and plans)
Costs associated with natural/agricultural lands conversion	\$215,027	\$1,433,477	\$716,739	\$252,750,167	<b>\$255,115,410</b>		
Natural/Agricultural land conversion (acres), remaining	50,971.9	50,971.9	50,971.9	50,971.9	50,971.9		
Multi-purpose open space conversion (acres), remaining <sup>1</sup>	34,959.2	34,959.2	34,959.2	34,959.2	34,959.2		
Multiplier for natural/agricultural land conversion	1	1	1	1	1		
Multiplier for multi-purpose open space conversion <sup>1</sup>	0.5	0.5	0.5	0.5	0.5		
<b>Assessment &amp; Enhancement Component of Natural/Agricultural Lands Fee</b>	<b>\$3</b>	<b>\$21</b>	<b>\$10</b>	<b>\$3,692</b>	<b>\$3,727</b>		
<b>Assessment &amp; Enhancement Component of Multi-Purpose Open Space Fee<sup>1</sup></b>	<b>\$2</b>	<b>\$11</b>	<b>\$5</b>	<b>\$1,846</b>	<b>\$1,864</b>		
Costs associated with vernal pool grasslands	\$49,953	\$333,010	\$166,505			\$76,200,234	<b>\$76,749,702</b>
Vernal pool grassland conversion (acres), remaining	5,180.8	5,180.8	5,180.8			5,180.8	5,180.8
<b>Assessment &amp; Enhancement Component of Vernal Pool Grasslands Fee</b>	<b>\$10</b>	<b>\$64</b>	<b>\$32</b>			<b>\$14,708</b>	<b>\$14,814</b>
Costs associated with vernal pool wetted	\$6,690	\$44,598	\$22,299			\$43,737,276	<b>\$43,810,863</b>
Vernal pool wetted conversion (acres), remaining	706.7	706.7	706.7			706.7	706.7
<b>Assessment &amp; Enhancement Component of Vernal Pool Wetted Fee</b>	<b>\$9</b>	<b>\$63</b>	<b>\$32</b>			<b>\$61,889</b>	<b>\$61,994</b>

1. As described in SJMSCP Section 7.4.1.2, the fee calculation allocates the costs associated with agricultural habitat and non-vernal pool natural lands preserves to conversion of both those high value lands (agricultural land and non-vernal pool natural land) and lower value multi-purpose open space. In other words, the SJMSCP does not enhance multi-purpose open space lands but allocates some of the costs of enhancements on agricultural and natural lands preserves to the conversion of multi-purpose open space lands to assist with the financing of those enhancements.

Sources: SJCOG, Inc., SJMSCP 2015 Annual Report, ICF, and Hausrath Economics Group.

## FINANCIAL ANALYSIS UPDATE FOR ADOPTION - 08/13/2018

TABLE C.5 for Annual Update  
 SJMSCP Fee Update - 2018 (for 2019 SJMSCP Development Fee Cycle)  
 Category C Monitoring and Program Management/Administration, including endowment for post-permit costs  
 Fee Calculations (2018 dollars)  
 Remainder of Permit Term

Habitat Type	Project Management & Administration						Total
	Monitoring	Project Management	Administration	Land Manager Coordination	Financial Plan 5-Year Updates	Post Permit Costs	
Costs associated with natural/agricultural lands conversion	\$19,920,137	\$12,542,577	\$5,413,076	\$211,667	\$411,840	\$14,921,108	\$53,420,405
Natural/Agricultural land conversion (acres), remaining	53,133.4	53,133.4	53,133.4	53,133.4	53,133.4	53,133.4	53,133.4
Multi-purpose open space conversion (acres), remaining <sup>1</sup>	35,288.7	35,288.7	35,288.7	35,288.7	35,288.7	35,288.7	35,288.7
Multiplier for natural/agricultural land conversion	1	1	1	1	1	1	1
Multiplier for multi-purpose open space conversion <sup>1</sup>	0.5	0.5	0.5	0.5	0.5	0.5	0.5
<b>Monitoring &amp; Administration Component of Natural/Agricultural Lands Fee</b>	<b>\$281</b>	<b>\$177</b>	<b>\$76</b>	<b>\$3</b>	<b>\$6</b>	<b>\$211</b>	<b>\$755</b>
<b>Monitoring &amp; Administration Component of Multi-Purpose Open Space Fee<sup>1</sup></b>	<b>\$141</b>	<b>\$89</b>	<b>\$38</b>	<b>\$2</b>	<b>\$3</b>	<b>\$106</b>	<b>\$378</b>
Costs associated with vernal pool grasslands	\$4,443,040	\$2,797,529	\$1,207,347	\$47,211	\$91,858	\$3,328,043	\$11,915,028
Vernal pool grassland conversion (acres), remaining	5,180.8	5,180.8	5,180.8	5,180.8	5,180.8	5,180.8	5,180.8
<b>Monitoring &amp; Administration Component of Vernal Pool Grasslands Fee</b>	<b>\$858</b>	<b>\$540</b>	<b>\$233</b>	<b>\$9</b>	<b>\$18</b>	<b>\$642</b>	<b>\$2,300</b>
Costs associated with vernal pool wetted	\$595,034	\$374,659	\$161,694	\$6,323	\$12,302	\$445,708	\$1,595,720
Vernal pool wetted conversion (acres), remaining	706.7	706.7	706.7	706.7	706.7	706.7	706.7
<b>Monitoring &amp; Administration Component of Vernal Pool Wetted Fee</b>	<b>\$842</b>	<b>\$530</b>	<b>\$229</b>	<b>\$9</b>	<b>\$17</b>	<b>\$631</b>	<b>\$2,258</b>

Note: Accounts for existing preserve fund balances applied against these costs.

1. The fee calculation allocates the costs associated with agricultural habitat and non-vernal pool natural lands preserves to conversion of both those high value lands (agricultural land and non-vernal pool natural land) and lower value multi-purpose open space, thereby assisting with the financing of management and monitoring on agricultural and natural lands preserves.

Sources: SJCOG, Inc. and SJMSCP 2014 Annual Report (February 2015 draft), ICF, and Hausrath Economics Group.

## FINANCIAL ANALYSIS UPDATE FOR ADOPTION - 08/13/2018

**TABLE 1**  
**2018 Economic Analysis and Fee Update**  
**Land Conversion and Preserve Acres by Habitat Type for the 50-year Permit Term**

Habitat Type	Number of Preserve		Total Preserve	Neighboring Land	Total All	
	Land Conversion	Acres to Land Conversion Acres	Acres for Compensation	Protection Preserves	Preserve Acres	Percent Total Acres
<b>Agricultural lands<sup>1</sup></b>	<b>57,635</b>	<b>1.00</b>	<b>57,635</b>	<b>300</b>	<b>57,935</b>	<b>57%</b>
<b>Natural Lands</b>						
Ditches <sup>2</sup>	126	3.00	378		378	0.37%
Grasslands <sup>3</sup>	4,853	3.00	14,559		14,559	14.44%
Oak woodlands <sup>4</sup>	286	3.00	858		858	0.85%
Riparian <sup>5</sup>	900	3.00	2,700	25	2,725	2.70%
Submerged aquatic in the Delta Zone	3	3.00	10		10	0.01%
Vernal pool grasslands <sup>6</sup>						
VP - wetted surface area	707	3.00	2,121		2,121	2.10%
VP -upland grassland	5,187	3.00	15,561		15,561	15.43%
VP -Neighboring Land Protection preserves <sup>7</sup>		na		250	250	0.25%
Other natural lands <sup>8</sup>	2,140	3.00	6,420	25	6,445	6.39%
<b>Subtotal Natural Lands</b>	<b>14,202</b>		<b>42,607</b>	<b>300</b>	<b>42,907</b>	<b>42.55%</b>
<b>Total</b>	<b>71,837</b>		<b>100,242</b>	<b>600</b>	<b>100,842</b>	<b>100.00%</b>

NOTE: In the following footnotes, "type" refers to the mapped habitat unit identified in the SJMSCP Biological Analysis (Chapter 2). The following footnotes provide summaries only and the reader should refer to the Biological Analysis for a detailed description of each habitat type.

1. Neighboring Land Protection Preserves consist of ditched agricultural lands providing habitat for giant garter snake and pond turtle and other lands as needed for compensation to other covered species associated with agricultural land preserves;
2. Drainage ditches (unlined) generally found in agricultural fields (D types).
3. Valley grasslands (G types) and Foothill grasslands (G2 types).
4. Blue Oak woodlands, savanna and forests (BL types), Blue Oak Conifer woodlands, savanna and forests (BCN types), Valley Oak Woodland, savanna and forests (V types), and Mixed Oak Woodlands, savanna and forests (O types).
5. This category includes those portions of rivers and major streams located outside the Primary Zone of the Delta (Mokelumne, Calaveras, Stanislaus, and San Joaquin Rivers). These were originally included in a separate "Riparian Zone" during the SJMSCP planning process (i.e., "Riparian" refers to a zone rather than to the "Riparian" habitat type. The Riparian Zone was "absorbed" or combined into its surrounding zone (i.e., Central/Central-Southwest) in the final SJMSCP. It generally included River and Deep water channel (W), Tributary Streams (W2), Creeks-Intermittent and perennial (W3, W3-i, W3-p), Dead-end sloughs (W-4) and their associated riparian habitats (Great Valley Riparian - R, R2, R3, R5, R4, S, S2). This category includes 25 acres of Neighboring Lands Protection Preserves for Valley elderberry longhorn beetle habitat.
6. Vernal pool grasslands (G3 type).
7. The vernal pool preserves for Neighboring Land Protection consist of existing vernal pools (no creation requirement). Enhancements will benefit the tiger salamander.
8. This category includes all natural land types except for Vernal Pools. Cost estimates in this category are an average of the costs of acquiring, restoring, enhancing the Natural Land categories specified in the preceding categories excluding Vernal Pools. This category also includes natural lands not included in other categories: All Water Features (W types), Channel Islands (I types), tule island and mudflat (I2) marsh, and Diabian sage scrub (S3 types) and all other types of Natural Lands.

## FINANCIAL ANALYSIS UPDATE FOR ADOPTION - 08/13/2018

**TABLE 2**  
**2018 Economic Analysis and Fee Update**  
**Preserve Acres, Total and Remaining to be Acquired**

<b>Preserve/Habitat Type</b>	<b>Total Preserve Acres - 50-year Permit</b>	<b>Total Preserve Acres Acquired through 12/31/2017</b>	<b>Total Preserve Acres Remaining to Be Acquired (links to A.3, B.3. and C.4)</b>
Agricultural lands	57,935	7,691.53	50,243.47
Natural lands			
Ditches	378	-	378.00
Grasslands	14,559	7,156.83	7,402.17
Oak woodlands	858	-	858.00
Riparian	2,725	50.80	2,674.20
Submerged aquatic in the Delta	10	-	10.00
Other natural lands	6,445	30.60	6,414.40
<i>Subtotal non-vp natural lands</i>	24,975	7,238.23	17,736.77
<b>Total Non VP Natural/Ag Lands</b>	<b>82,910</b>	<b>14,929.76</b>	<b>67,980.24</b>
Vernal pool wetted	2,121	6.00	2,115.00
Vernal pool grasslands	15,811	18.585	15,792.42
<b>Total</b>	<b>100,842</b>	<b>14,954.35</b>	<b>85,887.66</b>

Sources: Table 1 and SJCOG, Inc., 2017 Annual Report Table 6 and Table 12

## FINANCIAL ANALYSIS UPDATE FOR ADOPTION - 08/13/2018

**TABLE 3**  
**2018 Economic Analysis and Fee Update**  
**Allowed and Remaining Incidental Take Acreage**

Preserve/Habitat Type	Take Authorizations -		
	50-year Permit (including multi- purpose open space)	Cumulative Acres of Take through 12/31/2017	Remaining Acres of Land Conversion, (links to A.4, B.4. and C.5)
Agriculture	57,635	14,433.64	43,201.36
Multi-purpose (other open space)	37,465	2,505.78	34,959.22
Natural lands			
Vernal pool wetted	707	0.30	706.70
Vernal pool upland grassland	5,187	6.20	5,180.80
All other natural lands	8,308	537.77	7,770.56
<b>Total</b>	<b>109,302</b>	<b>17,483.69</b>	<b>91,818.64</b>

Sources: Table 1, SJMSCP Table 1-1 and Table 4.2-2; SJCOG, Inc., 2017 Annual Report Table 4 (revised)