Attachment 8: Benefits and Cost Analysis

1. FLOOD DAMAGE REDUCTION BENEFITS ANALYSIS

The flood damage reduction benefits of the project were analyzed using the DWR method described in the IRWM Grant Program PSP and the spreadsheet template provided by DWR. As described in Attachment 7, Wood Rodgers developed a model of the South Sacramento Streams Group (SSSG) Federal Project (Federal Project) for the City of Sacramento, the County of Sacramento, SAFCA, and the US Army Corps of Engineers (USACE). That model was employed to analyze the damage reduction benefits of the Florin Creek Multi-Use Basin. Areas flooded with and without project are also shown in Attachment 7.

1.1. Project Costs

Project costs were estimated by Wood Rodgers using its engineering expertise in consultation with SAFCA and the Southgate Recreation and Park District. Project costs are shown in detail in Attachment 4. Table 1 shows the annual costs of the project. Maintenance costs include sediment removal in the basin and increased park maintenance costs due to increased park acreage.

Table 1 (PSP Table 16) – Annual Costs of Project Project: Florin Creek Multi-Use Basin										
Year	Initial Costs Grand Total Cost from Table 6 (row (i), col. (d))	Adjusted Grant Total Cost[1]	Annual Costs [2]						Discounting Calculations	
			Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) +…+ (g)	Discount Factor	Discounted Project Costs (h) x (i)
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
2012								$0	1.000	**$0**
2013	$231,370							$231,370	0.943	**$218,274**
2014	$3,588,450							$3,588,450	0.890	**$3,193,708**
2015					$51,000			$51,000	0.840	**$42,821**
2016					$51,000			$51,000	0.792	**$40,397**
2017					$51,000			$51,000	0.747	**$38,110**
2018					$51,000			$51,000	0.705	**$35,953**
2019					$51,000			$51,000	0.665	**$33,918**
2020					$51,000			$51,000	0.627	**$31,998**
2021					$51,000			$51,000	0.592	**$30,187**
2022					$51,000			$51,000	0.558	**$28,478**
2023					$51,000			$51,000	0.527	**$26,866**
2024					$51,000			$51,000	0.497	**$25,345**
2025					$51,000			$51,000	0.469	**$23,911**
2026					$51,000			$51,000	0.442	**$22,557**
2027					$51,000			$51,000	0.417	**$21,281**
2028					$51,000			$51,000	0.394	**$20,076**
2029					$51,000			$51,000	0.371	**$18,940**
2030					$51,000			$51,000	0.350	**$17,868**
2031					$51,000			$51,000	0.331	**$16,856**
2032					$51,000			$51,000	0.312	**$15,902**
2033					$51,000			$51,000	0.294	**$15,002**
2034					$51,000			$51,000	0.278	**$14,153**
2035					$51,000			$51,000	0.262	**$13,352**
2036					$51,000			$51,000	0.247	**$12,596**
2037					$51,000			$51,000	0.233	**$11,883**
2038					$51,000			$51,000	0.220	**$11,210**
2039					$51,000			$51,000	0.207	**$10,576**
2040					$51,000			$51,000	0.196	**$9,977**
2041					$51,000			$51,000	0.185	**$9,412**
2042					$51,000			$51,000	0.174	**$8,880**
2043					$51,000			$51,000	0.164	**$8,377**
2044					$51,000			$51,000	0.155	**$7,903**

Table 1 (PSP Table 16) – Annual Costs of Project Project: Florin Creek Multi-Use Basin										
Year	Initial Costs Grand Total Cost from Table 6 (row (i), col. (d))	Adjusted Grant Total Cost[1]	Annual Costs [2]						Discounting Calculations	
			Admin	Operation	Maintenance	Replacement	Other	Total Costs (a) +…+ (g)	Discount Factor	Discounted Project Costs (h) x (i)
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
2045					$51,000			$51,000	0.146	**$7,455**
2046					$51,000			$51,000	0.138	**$7,033**
2047					$51,000			$51,000	0.130	**$6,635**
2048					$51,000			$51,000	0.123	**$6,260**
2049					$51,000			$51,000	0.116	**$5,905**
2050					$51,000			$51,000	0.109	**$5,571**
2051					$51,000			$51,000	0.103	**$5,256**
2052					$51,000			$51,000	0.097	**$4,958**
2053					$51,000			$51,000	0.092	**$4,678**
2054					$51,000			$51,000	0.087	**$4,413**
2055					$51,000			$51,000	0.082	**$4,163**
2056					$51,000			$51,000	0.077	**$3,927**
2057					$51,000			$51,000	0.073	**$3,705**
2058					$51,000			$51,000	0.069	**$3,495**
2059					$51,000			$51,000	0.065	**$3,298**
2060					$51,000			$51,000	0.061	**$3,111**
2061					$51,000			$51,000	0.058	**$2,935**
								Total Present Value of Discounted Costs (Sum of Column (j)) Transfer to Table 17, column (c), Proposal Benefits and Costs Summaries		**$4,119,564**
Comments: Maintenance costs include sediment removal in the basin and increased park maintenance costs due to increased park acreage.										

(1) If any, based on opportunity costs, sunk costs and associated costs

(2) The incremental change in O&M costs attributable to the project

1.2. Flood Damage Reduction Benefits

Flood damage reduction benefits were analyzed using the 10-, 50-, 100-, 200-, 500-, and 1000-year recurrence interval events. The without-project baseline condition assumes construction of the Federal Project, which is scheduled to be constructed in 2014 and would be in service beginning in the same year that the Florin Creek Multi-Use Basin project would be. Based on the modeling results presented in Attachment 7 and Depth-Damage Curves for the analysis events, total expected annual damages were calculated, as shown in Table 2.

Table 2 (PSP Table 11) – Expected Annual Damage								
Hydrologic Event	**Event Exceedance Probability**	**Expected Event Damage**		**Interval Probability**	**Average Damage in Interval**		**Average Damage in Interval times Interval Probability**	
		Without Project	**With Project**		**Without Project**	**With Project**	**Without Project**	**With Project**
(a)	**(b)**	**(c)**	**(d)**	**(e)**	**(f)**	**(g)**	**(h)**	**(i)**
				from (b)	from (c)	from (d)	(e) x (f)	(e) x (g)
10-year	0.1	$0	$0					
50-year	0.02	$2,877,000	$0	0.08	$1,438,500	$0	$115,080	$0
100-Year	0.01	$3,154,000	$54,000	0.01	$3,015,500	$27,000	$30,155	$270
200-Year	0.005	$4,813,000	$66,000	0.005	$3,983,500	$60,000	$19,918	$300
500-Year	0.002	$7,329,000	$290,000	0.003	$6,071,000	$178,000	$18,213	$534
1000-Year	0.001	$16,899,000	$16,899,000	0.001	$12,114,000	$8,594,500	$12,114	$8,595
Expected Annual Damages, Without and With Project							$195,480	$9,699

The project basin will be below grade and function with a fixed weir, so it is not subject to structural failure in a flood event. The present value of future benefits is shown in Table 3.

Table 3 (PSP Table 12) – Present Value of Expected Annual Damage Benefits Project: Florin Creek Multi-Use Basin			
(a)	Expected Annual Damage Without Project (1)		**$195,480**
(b)	Expected Annual Damage With Project (1)		**$9,699**
(c)	Expected Annual Benefit	(a) – (b)	**$185,781**
(d)	Present Value Coefficient (2)		**15.76**
(e)	**Present Value of Future Benefits Transfer to Table 17, column (d).**	**(c) x (d)**	**$2,928,254**

(1) This program assumes no land use changes in the floodplain. So, EAD will be constant over the analysis period.

(2) 6% discount rate; 50-year analysis period.

2. NON-MONETIZED BENEFIT ANALYSIS

Non-monetized physical benefits of the project are described in Attachment 7. They are summarized in Table 4.

Table 4 (PSP Table 13) – Non-monetized Benefits Checklist		
No.	Question	Enter "Yes", "No" or "Neg"
	Community/Social Benefits **Will the proposal**	
1	**Provide education or technology benefits?**	Yes
	Examples are not limited to, but may include: - Include educational features that should result in water supply, water quality, or flood damage reduction benefits? - Develop, test or document a new technology for water supply, water quality, or flood damage reduction management? - Provide some other education or technological benefit?	The project includes additional riparian and wetland areas that can be utilized by the local schools for outdoor education activities. It will also include interpretive panels in the habitat area for self-guided nature interpretation and education.
2	**Provide social recreation or access benefits?**	Yes
	Examples are not limited to, but may include: - Provide new or improved outdoor recreation opportunities? - Provide more access to open space? - Provide some other recreation or public access benefit?	The project will increase the number of activity fields within the park. The project will increase the size of the recreation pond used by the Southgate Park District for their "Fishing in the City" event. The project will increase the amount of riparian and wetland areas within the park.
3	**Help avoid, reduce or resolve various public water resources conflicts?**	Yes
	Examples are not limited to, but may include: - Provide more opportunities for public involvement in water management? - Help avoid or resolve an existing conflict as evidenced by recurring fines or litigation? - Help meet an existing state mandate (e.g., water quality, water conservation, flood control)?	The project will provide 100-year storm event protection to 181 structures presently within the 100-year floodplain. It will provide 200-year protection to 207 structures.
4	**Promote social health and safety?**	No
	Examples are not limited to, but may include: - Increase urban water supply reliability for fire-fighting and critical services following seismic events? - Reduce risk to life from dam failure or flooding? - Reduce exposure to water-related hazards?	The project will reduce flooding, but for the most part the avoided flooding would be shallow and economically damaging (described elsewhere) rather than life-threatening. Avoided response and cleanup costs are unquantified.
5	**Have other social benefits?**	Yes
	Examples are not limited to, but may include: - Redress or increase inequitable distribution of environmental burdens? - Have disproportionate beneficial or adverse effects on disadvantaged communities, Native Americans, or other distinct cultural groups?	The project will redevelop and improve an existing park located within a disadvantaged community.
	Environmental Stewardship	

Table 4 (PSP Table 13) – Non-monetized Benefits Checklist		
No.	Question	Enter "Yes", "No" or "Neg"
	Benefits: **Will the proposal**	
6	**Benefit wildlife or habitat in ways that were not quantified in Attachment 7?**	Yes
	Examples are not limited to, but may include: - Cause an increase in the amount or quality of terrestrial, aquatic, riparian or wetland habitat? - Contribute to an existing biological opinion or recovery plan for a listed special status species? - Preserve or restore designated critical habitat of a listed species? - Enhance wildlife protection or habitat?	As noted in Attachment 7, the project would create or improve about an acre of wildlife habitat. Although the acreage can be quantified, the benefits to wildlife of enlarging a wetland, increasing native riparian tree cover, and improving the water quality in the on-site pond are unquantifiable.
7	**Improve water quality in ways that were not quantified in Attachment 7?**	Yes
	Examples are not limited to, but may include: - Cause an improvement in water quality in an impaired water body or sensitive habitat? - Prevent water quality degradation? - Cause some other improvement in water quality?	The project would have unquantified water quality benefits by detaining stormwater, filtering it with a wetland, and infiltrating a portion of it into the ground.
8	**Reduce net emissions in ways that were not quantified in Attachment 7?**	Yes
	Examples are not limited to, but may include: - Reduce net production of greenhouse gasses? - Reduce net emissions of other harmful chemicals into the air or water?	The project would have quantified vehicle miles travelled reduction, but the emissions benefits are unquantified, as are the benefits of sequestering carbon in trees onsite.
9	**Provide other environmental stewardship benefits, other than those claimed in Sections D1, D3 or D4?**	Yes. The project will provide interpretive panels, increasing enjoyment of passive recreation and educating the public.
	Sustainability Benefits: **Will the proposal**	
10	**Improve the overall, long-term management of California groundwater resources?**	Yes
	Examples are not limited to, but may include: - Reduce extraction of non-renewable groundwater? - Promote aquifer storage or recharge?	The project will detain stormwater throughout the year within proposed wetland areas and during flood conditions within the entire basin. Infiltration of this detained water will recharge the groundwater aquifer. The project also includes a location for future groundwater recharge wells.
11	**Reduce demand for net diversions for the regions from the Delta?**	No
12	**Provide a long-term solution in place of a short-term one?**	Yes

Table 4 (PSP Table 13) – Non-monetized Benefits Checklist		
No.	Question	Enter "Yes", "No" or "Neg"
	Examples are not limited to, but may include: - Replace a temporary water supply with a more permanent supply? - Replace a temporary water quality solution with a more permanent solution? - Replace temporary flood control management with a more permanent solution? - Replace temporary habitat with a more permanent solution?	The project will provide a permanent flood control basin to mitigate the 100-year storm water flows within Florin Creek, preventing flooding of the communities west of the proposed location and avoiding reliance on NFIP as mitigation for existing homes in the floodplain.
13	**Reduce water consumption on a permanent basis?**	No
14	**Promote energy savings or replace fossil fuel based energy sources with renewable energy and resources?**	Yes
	Examples are not limited to, but may include: - Reduce net energy use on a permanent basis? - Increase renewable energy production? - Include new buildings or modify buildings to include certified LEED features? - Provide a net increase in recycling or reuse of materials? - Replace unsustainable land or water management practices with recognized sustainable practices?	This is described in the answer to question 8, above. By increasing neighborhood park availability in an underserved area, the project will allow neighborhood users to recreate without driving to a more distant location, thus reducing fuel use.
15	**Improve water supply reliability in ways not quantified in Attachment 7?**	No
	Examples are not limited to, but may include: - Provide a more flexible mix of water sources? - Reduce likelihood of catastrophic supply outages? - Reduce supply uncertainty? - Reduce supply variability?	
16	**Other (If the above listed categories do not apply, provide non-monetized benefit description)?**	Yes. It will engage children in the outdoors, counteracting the "nature deficit disorder" (NDD) described by Richard Louv in *Last Child in the Woods* in which children do not have opportunities to experience nature. Louv reports that NDD can lead to a variety of maladies from attention deficit disorder to obesity and that time in nature can help offset these social problems.

3. MONETIZED BENEFIT ANALYSIS

In addition to the flood damage reduction benefits described in Section 1 of this Attachment, the project would provide benefits by allowing property owners who currently buy flood insurance because their properties are in a floodplain to forego the insurance. This is calculated in Table 5.

Table 5 (PSP Table 14) Flood Insurance Relief
Project: Florin Creek Multi-Use Basin

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
Year	Item	Type of Benefit	Measure of Benefit (Units)	Without Project	With Project	Change Resulting from Project (f) – (e)	Unit $ Value (1)	Annual $ Value (1) (g) x (h)	Discount Factor (1)	Discounted Benefits (1) (i) x (j)
2012	**A**								1.000	
2013	**A**								0.943	**$0**
2014	**A**								0.890	**$0**
2015	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.840	**$83,962**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.840	**$44,080**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.840	**$18,891**
2016	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.792	**$79,209**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.792	**$41,585**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.792	**$17,822**
2017	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.747	**$74,726**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.747	**$39,231**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.747	**$16,813**
2018	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.705	**$70,496**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.705	**$37,010**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.705	**$15,862**
2019	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.665	**$66,506**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.665	**$34,915**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.665	**$14,964**
2020	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.627	**$62,741**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.627	**$32,939**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.627	**$14,117**
2021	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.592	**$59,190**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.592	**$31,075**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.592	**$13,318**
2022	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.558	**$55,839**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.558	**$29,316**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.558	**$12,564**
2023	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.527	**$52,679**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.527	**$27,656**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.527	**$11,853**
2024	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.497	**$49,697**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.497	**$26,091**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.497	**$11,182**
2025	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.469	**$46,884**

Table 5 (PSP Table 14) Flood Insurance Relief Project: Florin Creek Multi-Use Basin										
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
Year	Item	Type of Benefit	Measure of Benefit (Units)	Without Project	With Project	Change Resulting from Project (f) – (e)	Unit $ Value (1)	Annual $ Value (1) (g) x (h)	Discount Factor (1)	Discounted Benefits (1) (i) x (j)
	B	MFS	Building	7	0	7	$7,500	$52,500	0.469	**$24,614**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.469	**$10,549**
2026	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.442	**$44,230**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.442	**$23,221**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.442	**$9,952**
2027	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.417	**$41,727**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.417	**$21,906**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.417	**$9,388**
2028	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.394	**$39,365**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.394	**$20,666**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.394	**$8,857**
2029	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.371	**$37,136**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.371	**$19,497**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.371	**$8,356**
2030	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.350	**$35,034**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.350	**$18,393**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.350	**$7,883**
2031	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.331	**$33,051**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.331	**$17,352**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.331	**$7,437**
2032	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.312	**$31,180**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.312	**$16,370**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.312	**$7,016**
2033	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.294	**$29,416**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.294	**$15,443**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.294	**$6,618**
2034	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.278	**$27,751**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.278	**$14,569**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.278	**$6,244**
2035	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.262	**$26,180**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.262	**$13,744**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.262	**$5,890**
2036	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.247	**$24,698**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.247	**$12,966**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.247	**$5,557**
2037	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.233	**$23,300**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.233	**$12,232**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.233	**$5,242**
2038	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.220	**$21,981**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.220	**$11,540**

Table 5 (PSP Table 14) Flood Insurance Relief Project: Florin Creek Multi-Use Basin										
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
Year	Item	Type of Benefit	Measure of Benefit (Units)	Without Project	With Project	Change Resulting from Project (f) – (e)	Unit $ Value [1]	Annual $ Value [1] (g) x (h)	Discount Factor [1]	Discounted Benefits [1] (i) x (j)
	C	NRS	Building	4	1	3	$7,500	$22,500	0.220	**$4,946**
2039	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.207	**$20,737**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.207	**$10,887**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.207	**$4,666**
2040	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.196	**$19,563**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.196	**$10,271**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.196	**$4,402**
2041	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.185	**$18,456**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.185	**$9,689**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.185	**$4,153**
2042	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.174	**$17,411**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.174	**$9,141**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.174	**$3,917**
2043	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.164	**$16,425**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.164	**$8,623**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.164	**$3,696**
2044	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.155	**$15,496**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.155	**$8,135**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.155	**$3,487**
2045	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.146	**$14,619**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.146	**$7,675**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.146	**$3,289**
2046	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.138	**$13,791**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.138	**$7,240**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.138	**$3,103**
2047	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.130	**$13,011**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.130	**$6,831**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.130	**$2,927**
2048	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.123	**$12,274**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.123	**$6,444**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.123	**$2,762**
2049	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.116	**$11,579**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.116	**$6,079**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.116	**$2,605**
2050	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.109	**$10,924**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.109	**$5,735**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.109	**$2,458**
2051	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.103	**$10,306**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.103	**$5,410**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.103	**$2,319**

Table 5 (PSP Table 14) Flood Insurance Relief Project: Florin Creek Multi-Use Basin										
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
Year	Item	Type of Benefit	Measure of Benefit (Units)	Without Project	With Project	Change Resulting from Project (f) – (e)	Unit $ Value (1)	Annual $ Value (1) (g) x (h)	Discount Factor (1)	Discounted Benefits (1) (i) x (j)
2052	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.097	**$9,722**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.097	**$5,104**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.097	**$2,187**
2053	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.092	**$9,172**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.092	**$4,815**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.092	**$2,064**
2054	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.087	**$8,653**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.087	**$4,543**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.087	**$1,947**
2055	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.082	**$8,163**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.082	**$4,286**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.082	**$1,837**
2056	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.077	**$7,701**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.077	**$4,043**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.077	**$1,733**
2057	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.073	**$7,265**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.073	**$3,814**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.073	**$1,635**
2058	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.069	**$6,854**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.069	**$3,598**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.069	**$1,542**
2059	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.065	**$6,466**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.065	**$3,395**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.065	**$1,455**
2060	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.061	**$6,100**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.061	**$3,202**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.061	**$1,372**
2061	**A**	SFR	Building	101	1	100	$1,000	$100,000	0.058	**$5,755**
	B	MFS	Building	7	0	7	$7,500	$52,500	0.058	**$3,021**
	C	NRS	Building	4	1	3	$7,500	$22,500	0.058	**$1,295**
								Total Present Value of Discounted Benefits Based on Unit Value (Sum of the values in Column (k) for all Benefits shown in table)		**$2,427,981**
Comments: SFR = Insurance relief for Single Family Residences (SFR) by providing 100-year flood protection; MFS = Insurance relief for Multi-Family Structures (MFS) by providing 100-year flood protection; NRS=Insurance relief for non-Residential Structures (NRS) by providing 100-year flood protection.										

(1) Complete these columns if dollar value is being claimed for the benefit.

As described in Attachment 7, the increase in developed park area would increase surrounding property values. This is calculated based on a 5% increase in property values for properties within 500 feet of a new park, reduced by the ratio of new park area to the old park area. This reduced percentage (1.9%) was then applied to the average property value for properties recently sold within the project area ($110,000) as provided by the Sacramento County Assessor Parcel Viewer. The results are shown in Table 6.

Table 6 (PSP Table 14) – Annual Benefit
Property Value Increase
Project: Florin Creek Multi-Use Basin

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
Year	Item	Type of Benefit	Measure of Benefit (Units)	Number of Parcels with Increased Value	Unit $ Value (1)	Annual $ Value (1) (e) x (f)	Discount Factor (1)	Discounted Benefits (1) (g) x (h)
2012	**A**						1.000	
2013	**A**						0.943	**$0**
2014	**A**						0.890	**$0**
2015	**A**	Increase in property values around improved park	parcel	203	$2,070	$420,210	0.840	**$352,816**
2016	**A**						0.792	**$0**
2017	**A**						0.747	**$0**
2018	**A**						0.705	**$0**
2019	**A**						0.665	**$0**
2020	**A**						0.627	**$0**
2021	**A**						0.592	**$0**
2022	**A**						0.558	**$0**
2023	**A**						0.527	**$0**
2024	**A**						0.497	**$0**
2025	**A**						0.469	**$0**
2026	**A**						0.442	**$0**
2027	**A**						0.417	**$0**
2028	**A**						0.394	**$0**
2029	**A**						0.371	**$0**
2030	**A**						0.350	**$0**
2031	**A**						0.331	**$0**
2032	**A**						0.312	**$0**
2033	**A**						0.294	**$0**
2034	**A**						0.278	**$0**
2035	**A**						0.262	**$0**
2036	**A**						0.247	**$0**
2037	**A**						0.233	**$0**
2038	**A**						0.220	**$0**
2039	**A**						0.207	**$0**

Table 6 (PSP Table 14) – Annual Benefit Property Value Increase Project: Florin Creek Multi-Use Basin								
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
Year	Item	Type of Benefit	Measure of Benefit (Units)	Number of Parcels with Increased Value	Unit $ Value (1)	Annual $ Value (1) (e) x (f)	Discount Factor (1)	Discounted Benefits (1) (g) x (h)
2040	**A**						0.196	**$0**
2041	**A**						0.185	**$0**
2042	**A**						0.174	**$0**
2043	**A**						0.164	**$0**
2044	**A**						0.155	**$0**
2045	**A**						0.146	**$0**
2046	**A**						0.138	**$0**
2047	**A**						0.130	**$0**
2048	**A**						0.123	**$0**
2049	**A**						0.116	**$0**
2050	**A**						0.109	**$0**
2051	**A**						0.103	**$0**
2052	**A**						0.097	**$0**
2053	**A**						0.092	**$0**
2054	**A**						0.087	**$0**
2055	**A**						0.082	**$0**
2056	**A**						0.077	**$0**
2057	**A**						0.073	**$0**
2058	**A**						0.069	**$0**
2059	**A**						0.065	**$0**
2060	**A**						0.061	**$0**
2061	**A**						0.058	**$0**
Total Present Value of Discounted Benefits Based on Unit Value (Sum of the values in Column (k) for all Benefits shown in table)								**$352,816**
Comments:								

4. PROJECT BENEFITS AND COST SUMMARY

Table 7 summarizes the benefits and costs of the Florin Creek Multi-Use Basin described in preceding sections of this attachment.

Table 7 (PSP Table 17) – Proposal Benefits and Costs Summary

Proposal: American River Basin IRWM: Florin Creek Multi-Use Basin

Agency: Sacramento Area Flood Control Agency

Project	Project Proponent	Total Present Value Project Costs (1)	Total Present Value Project Benefits				From Section D2 – Briefly describe the main Non-monetized benefits	B/C Ratio
			From Section D2 – Flood Damage Reduction (2)	From Section D3 – Monetized (3) Flood Insurance Relief	From Section D3 - Monetized (4) Property Value Increase	Total		
(a)	(b)	(c)	(d)	(e)	(f)	(g) = (f) + (d) + (e)	(h)	(h)=(f) /(c)
Florin Creek Multi-Use Basin	SAFCA	$4,119,564	$2,928,254	$2,427,981	$352,816	$5,709,052	Provide groundwater recharge through infiltration within the wetland areas and storage basin; provide location for future groundwater recharge wells; increase the water quality for Florin Creek through the development of a permanent pool and wetland and riparian areas; increase recreation areas by expanding the size of the existing Florin Park; create educational opportunities through the development of wetland and riparian areas; reduce greenhouse gas emissions by reducing the number of trips to out-of-area parks; reduce greenhouse gases by providing additional trees and landscaping that absorb greenhouse gases.	1.39

(1) From Table 1 (PSP Table 16)
(2) From Table 3 (PSP Table 12)
(3) From Table 5 (PSP Table 14)
(4) From Table 6 (PSP Table 14)