



11440 West Bernardo Court
 Suite 360
 San Diego, CA 92127-1644
 (858) 487-9378
 (858) 487-9448 fax

CLIENT/JOB NAME
 San Bernardino County
 Hydrology Manual Update

FY22 Rates

Hourly Rate		Vice President 281.00	Project Manager 250.00	Senior Engineer 195.00	Staff Engineer 133.00	Engineering Technician 107.00	Total Task Hours	COST	
A. LABOR COSTS									
TASK No.	DESCRIPTION								
1	Background Research								
1A	(a) Kickoff meeting	4	4	4			12	2,904	
	(b) Obtain and review Hydrology Manual information	4	16	85	16		121	23,827	
	(c) Compile comments and proposed resolutions	8	24	56	32	8	128	24,280	
	(d) Identify additional work from the previous Hydrology Manual to be reviewed/confirmed	6	16	40	24	8	94	17,534	
1B	(e) Update Hydrology Manual with NOAA Atlas 14 data methodology	2	10	44	16	4	76	14,198	
	(f) Update with NRCS website to determine soil groups; suggest different method when missing	12	48	116	64	84	324	55,492	
	(g) Update method to analyze Sediment Bulking factor and when/where to use it	8	30	125	56	2	221	41,785	
	(h) Provide a post-fire hydrology method to calculate runoff after a fire	2	36	170	4	2	214	43,458	
	(i) Provide different methods for calculating lag time for UH method and recommendations for each	6	20	32	12	2	72	14,736	
	(j) Recommendations for when to use (1) day or (5) day UH and detailed procedures for each	2	40	20	20	80	162	25,682	
	(k) Process and calculations for the maximum loss rate and low loss fraction for (5) day UH	2	20	40	16	20	98	17,630	
	(l) Recommendation when to use rainfall reduction factors for rainfall data with the UH and procedure	2	12	96	28	4	142	26,434	
	(m) Ability to use PZN, ArcHydro, HEC-HMS, and/or develop new software	4	10	16	12	2	44	8,554	
	(n) Provide relation curves and/or equations between different return frequencies	4	14	40	16	4	78	14,980	
	(o) Provide detailed examples for each method showing the hydrology map and detailed hand calcs	4	10	16	12	2	44	8,554	
	(p) Provide list of approved computer software that matches the updated Hydrology Manual	4	10	16	12	2	44	8,554	
	(q) Provide update on the Detention Basin Design Criteria memo to include in Hydrology Manual	8	40	120	40	100	308	51,668	
	(r) Other suggestions based on current industry standards and experience	2	14	92	24	22	154	27,548	
	(s) Impacts of revised methodology on existing studies/projects	6	26	120	32	6	190	36,484	
	(t) Additional work required and/or recommended by the District Committee	4	22	60	40	8	134	24,500	
	(u) Meeting with the District Committee to discuss findings	16	26	24	8		74	16,740	
	(v) Submit final results to District	8	20	48	16	8	100	19,592	
	Subtotal	118	468	1380	500	368	2834	525,134	
2	TAC Meetings								
	(a) 3 weeks prior to Meeting 1, distribute agenda, request comments for previous studies	12	28	38	8		86	18,846	
	(b) Facilitate Meeting 1, prepare meeting minutes, update comment resolution	12	16	30	8		66	14,286	
	(c) 3 weeks prior to Meeting 2, distribute comment spreadsheet, agenda, request comments for applicable sections	12	28	47	8		95	20,601	
	(d) Facilitate Meeting 2, prepare meeting minutes, update comment resolution	12	16	43	8		79	16,821	
	(e) 3 weeks prior to Meeting 3, distribute comment spreadsheet, agenda, request comments for applicable sections	12	28	47	8		95	20,601	
	(f) Facilitate Meeting 3, prepare meeting minutes, update comment resolution	12	16	43	8		79	16,821	
	(g) 3 weeks prior to Meeting 4, distribute comment spreadsheet, agenda, request comments for applicable sections	12	28	47	8		95	20,601	
	(h) Facilitate Meeting 4, prepare meeting minutes, update comment resolution	12	16	43	8		79	16,821	
	(i) 3 weeks prior to Meeting 5, distribute comment spreadsheet, agenda, request comments for applicable sections	12	28	38	8		86	18,846	
	(j) Facilitate Meeting 5, prepare meeting minutes, update comment resolution	12	16	30	8		66	14,286	
	(k) 3 weeks prior to Meeting 6, distribute comment spreadsheet, agenda, request comments for applicable sections	12	28	38	8		86	18,846	
	(l) Facilitate Meeting 6, prepare meeting minutes, update comment resolution	12	16	30	8		66	14,286	
	Subtotal	144	264	474	96	0	978	211,662	
3	Manual Revisions								
3A	(a) <time included in Task 2 for meeting minutes and comments spreadsheet updates>						0	0	
3B	(b) Revise Manual for Chapter A	2	8	12	4		26	5,434	
	(c) Revise Manual for Chapter B	8	20	74	48	12	162	29,346	
	(d) Revise Manual for Chapter C	8	20	124	92	8	252	44,520	
	(e) Revise Manual for Chapter D	8	20	116	24	8	176	33,916	
	(f) Revise Manual for Chapter E	8	20	214	80	8	330	60,474	
	(g) Revise Manual for Chapter F	8	20	50	32	8	118	22,110	
	(h) Revise Manual for Chapter G	4	16	12	6	8	46	9,118	
	(i) Revise Manual for Chapter H	8	20	42	6	8	84	17,092	
	(j) Revise Manual for Chapter I	4	16	12	6	8	46	9,118	
	(k) Revise Manual for Chapter J	4	20	16	8	8	56	11,164	
	(l) Revise Manual for Chapter K	8	20	48	20	8	104	20,124	
	(m) Revise Manual for new Chapter (L)	8	20	90	23	8	149	28,713	
	(n) Revise Manual for new Chapter (M)	8	20	120	38	8	194	36,558	
	Subtotal	86	240	930	387	100	1743	327,687	
4	Draft and Final Manual Submittals								
	(a) Submit Task 1 deliverable via email	1	1				2	531	
	(b) Prepare 2 paper copies of draft manual		1			4	5	678	
	(c) Prepare 2 paper copies of final manual		1			4	5	678	
	(d) Prepare navigable/linkable table of contents, list of figures, list of tables (draft)		1		4		5	782	
	(e) Prepare navigable/linkable table of contents, list of figures, list of tables (final)		1		4		5	782	
	(f) Submit Task 5 deliverable via email	1	1				2	531	
	Subtotal	2	6	0	8	8	24	3,982	
5	Presentations to the District Committee								
	(a) Prepare PowerPoint presentation of final Hydrology Manual and handout with summary of changes	8	32	67	24	8	139	27,361	
	(b) Present presentation to District Committee	8	8	14			30	6,978	
	Subtotal	16	40	81	24	8	169	34,339	
TOTAL HOURS		366	1,018	2,865	1,015	484	5,748		
TOTAL LABOR COST								\$1,102,804	
B. DIRECT COSTS									
								COST	
Mileage (7 trips to San Bernardino)							1204	x Rate 0.625 =	753
Direct Costs (SME travel, shipping, research articles, meals)								=	2,800
River Focus direct costs (mileage, meals, research articles)								=	885
Ted Hromadka and Tory Walker Engineering (senior advisor time)								=	34,000
TOTAL DIRECT COST									\$38,438
TOTAL FOR ALL TASKS									\$1,141,242