

**Work Breakdown Structure and Cost Estimates**  
Land Subsidence Monitoring Program -- FY2015-16

Task Description	Labor		Other Direct Costs						Totals				
	Person Days	Total	Travel	Equip and Expend	Subs	Repro	Misc.	Total	Recommended Budget 2015-16	Budget 2014-15	Net Change 2014-15 to 2015-16	Potential Carry-Over 2014-15	Budget with Carry-Over 2015-16
									a	b	a - b		
<b>Task 1 -- Setup/Maintenance of Monitoring Network</b>		<b>\$17,280</b>						<b>\$29,811</b>	<b>\$47,091</b>	<b>\$109,151</b>	<b>-\$62,060</b>	<b>\$0</b>	<b>\$47,091</b>
1.1 Equipment maintenance													
Routine maintenance of Ayala Park/CCWF/DHX extensometer facilities	11	\$8,920	\$256	\$259			\$515	\$9,435	\$9,992	-\$557			\$9,435
Maintenance at horizontal extensometer site	3	\$2,720	\$32		\$23,600		\$23,632	\$26,352	\$55,502	-\$29,150			\$26,352
Replacement/repair of equipment at extensometer facilities	5	\$5,640	\$68	\$2,000	\$2,000		\$4,068	\$9,708	\$40,347	-\$30,639			\$9,708
1.2 Annual lease fees for CCWF extensometer site	0						\$1,596	\$1,596	\$1,596	\$1,596	\$0		\$1,596
1.3 Maintenance of PB facility													
Remove in situ equipment from the wells									\$1,714		-\$1,714		\$0
<b>Task 2 -- MZ-1: Aquifer-System Monitoring and Testing</b>		<b>\$30,590</b>						<b>\$812</b>	<b>\$50,432</b>	<b>\$200,421</b>	<b>-\$149,989</b>	<b>\$9,813</b>	<b>\$40,620</b>
2.1 Groundwater-level and extensometer data collection and processing													
Download data from the Ayala Park facility	2.5	\$2,060	\$128	\$76			\$204	\$2,264	\$2,136	\$129			\$2,264
Download data from the Daniels Horizontal Extensometer facility	2.5	\$2,060	\$128	\$76			\$204	\$2,264	\$1,100	\$1,164			\$2,264
Download data from the CCWF facility	2.5	\$2,060	\$128	\$76			\$204	\$2,264	\$2,136	\$129			\$2,264
Process, check, and upload data to database	10.5	\$12,660					\$0	\$12,660	\$12,660	\$0			\$12,660
2.2 Conduct Long-Term Pumping Test in the Managed Area													
Coordinate testing with pumpers	1	\$1,320					\$0	\$1,320	\$1,320	\$0	\$1,320		\$0
Collect production data; process, check, and upload to database	2.3	\$2,330					\$0	\$2,330	\$2,823	-\$493	\$2,823		-\$493
Prepare, analyze, and distribute stress-strain diagrams to LSC	4	\$6,080				\$200	\$200	\$6,280	\$3,700	\$2,580	\$3,700		\$2,580
Adjust extensometer hardware	1	\$2,020					\$0	\$2,020	\$1,970	\$50	\$1,970		\$50
2.3 Conduct Injection Test in Managed Area													
Well rehabilitation and retrofit					\$19,030			\$19,030	\$142,950	-\$123,920			\$19,030
Quarterly reports - LGA Grant									\$11,880	-\$11,880			\$0
Project administration - LGA Grant									\$5,868	-\$5,868			\$0
Prepare final report for LGA Grant									\$11,880	-\$11,880			\$0
<b>Task 3 -- Basin Wide: InSAR</b>		<b>\$2,830</b>						<b>\$85,000</b>	<b>\$87,830</b>	<b>\$92,830</b>	<b>-\$5,000</b>	<b>\$0</b>	<b>\$87,830</b>
3.1 InSAR data collection	1	\$1,320			\$85,000		\$85,000	\$86,320	\$91,320	-\$5,000			\$86,320
3.2 Process, check, and upload data to database/GIS	1.25	\$1,510					\$0	\$1,510	\$1,510	\$0			\$1,510
<b>Task 4 -- Ground-Level Surveys</b>		<b>\$5,730</b>						<b>\$168,980</b>	<b>\$136,335</b>	<b>\$123,955</b>	<b>\$12,380</b>	<b>\$34,770</b>	<b>\$101,565</b>
4.1 Conduct Fall 2015 ground-level survey in Central MZ-1 Area	0.25	\$330			\$19,855		\$19,855		\$0	\$0			\$0
4.2 Conduct Fall 2015 ground-level survey in Southeast Area (CCWF)	0.25	\$330			\$26,315		\$26,315	\$26,645	\$26,645	\$0			\$26,645
4.3 Conduct Fall 2015 ground-level and EDM survey in Pomona Area (Ayala Park start)	0.25	\$330			\$23,750		\$23,750	\$24,080	\$0	\$24,080			\$24,080
4.4 Conduct Fall 2015 ground-level and EDM survey at the San Jose Fault Zone	0.25	\$330			\$17,860		\$17,860		\$18,190	-\$18,190			\$0
4.5 Conduct ground-level and EDM survey in Managed Area at maximum drawdown	0.25	\$330			\$36,600		\$36,600	\$36,930	\$35,100	\$1,830	\$34,770		\$2,160
4.6 Conduct ground-level and EDM survey in Managed Area at maximum recovery	0.25	\$330			\$36,600		\$36,600	\$36,930	\$37,260	-\$330			\$36,930
4.7 Replace destroyed benchmarks	0	\$0			\$8,000		\$8,000	\$8,000	\$5,000	\$3,000			\$8,000
4.8 Process, check, and upload data to database	3.25	\$3,750					\$0	\$3,750	\$1,760	\$1,990			\$3,750
<b>Task 5 -- Data Analysis and Reports</b>		<b>\$52,180</b>						<b>\$20,000</b>	<b>\$72,180</b>	<b>\$68,720</b>	<b>\$3,460</b>	<b>\$0</b>	<b>\$72,180</b>
5.1 Analysis of Data from the Areas of Subsidence Concern													
Production/recharge/piezometric/extensometer	6	\$7,360			\$20,000		\$20,000	\$27,360	\$27,360	\$0			\$27,360
EDM and ground-level survey data	5	\$5,180					\$0	\$5,180	\$5,180	\$0			\$5,180
InSAR data	1	\$1,160					\$0	\$1,160	\$1,160	\$0			\$1,160
Tectonic data	0.5	\$500					\$0	\$500	\$500	\$0			\$500
Recycled water reuse data	3.5	\$3,660					\$0	\$3,660	\$3,660	\$0			\$3,660
5.2 Prepare Land Subsidence Annual Report													
Prepare draft annual report	23	\$27,520					\$0	\$27,520	\$23,760	\$3,760			\$27,520
Prepare final annual report	5.5	\$6,800					\$0	\$6,800	\$7,100	-\$300			\$6,800
<b>Task 6 -- Work Plan to Develop a Subsidence-Management Plan for the Pomona Area</b>		<b>\$480,795</b>						<b>\$65,202</b>	<b>\$481,397</b>	<b>\$0</b>	<b>\$481,397</b>	<b>\$0</b>	<b>\$481,397</b>
6.1 Describe Initial Hydrogeologic Conceptual Model & the Monitoring and Testing Program	39.125	\$52,815	\$62			\$50	\$112	\$52,927	\$0	\$52,927			\$52,927
6.2 Implement the Initial Monitoring Program	127.75	\$147,390	\$1,368	\$32,950	\$10,000	\$200	\$44,518	\$191,908	\$0	\$191,908			\$191,908
6.3 Develop and Evaluate the Baseline Management Alternative	40.25	\$52,920	\$62		\$15,000	\$50	\$15,112	\$68,032	\$0	\$68,032			\$68,032
6.4 Develop and Evaluate the Initial Subsidence-Management Alternative	78.25	\$124,050	\$186				\$336	\$124,386	\$0	\$124,386			\$124,386
6.5 Design and Install the Pomona Extensometer Facility													
6.5.1 Identify alternative sites for the Pomona Extensometer facility (PX)	16.75	\$22,440	\$62		5000		\$5,062	\$27,502	\$0	\$27,502			\$27,502
6.6 Meetings and Administration (Annual)	11	\$16,580	\$62				\$62	\$16,642	\$0	\$16,642			\$16,642
<b>Task 7 -- Meetings and Administration</b>		<b>\$32,300</b>						<b>\$187</b>	<b>\$32,487</b>	<b>\$28,077</b>	<b>\$4,410</b>	<b>\$0</b>	<b>\$32,487</b>
7.1 Prepare for and attend Land Subsidence Committee meetings	9	\$13,080	\$141				\$141	\$13,221	\$8,811	\$4,410			\$13,221
7.2 Ad hoc meetings	3	\$4,360	\$46				\$46	\$4,406	\$4,406	\$0			\$4,406
7.3 Project Administration and Financial Reporting	7.5	\$10,500					\$0	\$10,500	\$10,500	\$0			\$10,500
7.4 Scope and Budget for FY2016/17	3	\$4,360					\$0	\$4,360	\$4,360	\$0			\$4,360
<b>Totals</b>									<b>\$907,752</b>	<b>\$623,154</b>	<b>\$284,598</b>	<b>\$44,583</b>	<b>\$863,170</b>