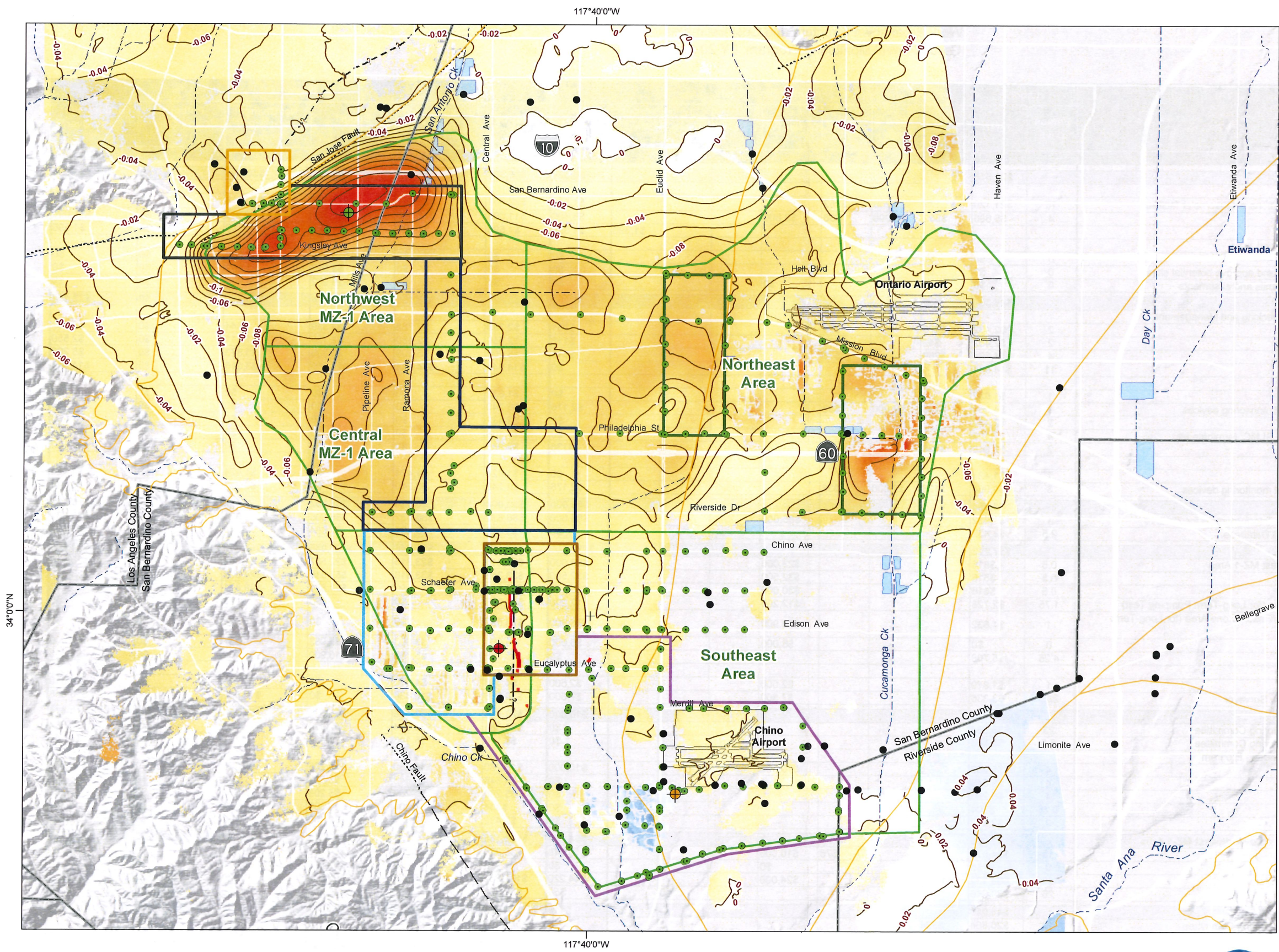


Table 1  
Work Breakdown Structure and Cost Estimates  
Ground-Level Monitoring Program: FY 2018/19

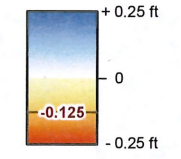
Task Description	Labor		Other Direct Costs								Totals					
	Person Days	Total	Travel	New Equip.	Equip. Rental	Outside Pro	Lab	Repro	Misc.	Total	Totals by Task	Recommended Budget 2018-19	Budget 2017-18	Net Change 2017-18 to 2018-19	Potential Carry-Over 2018-19	Budget with Carry-Over 2018-19
											a	b	a - b	c	a - c	
<b>Task 1 -- Setup and Maintenance of the Monitoring Network</b>		<b>\$26,816</b>								<b>\$8,537</b>	<b>\$35,353</b>	<b>\$35,353</b>	<b>\$66,274</b>	<b>-\$30,921</b>	<b>\$0</b>	<b>\$35,353</b>
1.1 Maintain Extensometer Facilities																
Routine maintenance of Ayala Park, Chino Creek, and Pomona extensometer facilities	16	\$21,120	\$1,139	\$250	\$152					\$1,541	\$22,661	\$22,661	\$12,443	\$10,218	\$0	\$22,661
Replacement/repair of equipment at extensometer facilities	4	\$5,696	\$362	\$3,000	\$38	\$2,000				\$5,400	\$11,096	\$11,096	\$10,727	\$369	\$0	\$11,096
1.2 Annual Lease Fees for CCX Extensometer Site										\$1,596	\$1,596	\$1,596	\$1,596	\$0	\$0	\$1,596
1.3 Identify a Site and Install a Horizontal Extensometer in the Managed Area													\$0			
Coordinate with the City of Chino	0	\$0	\$0							\$0	\$0	\$0	\$10,954	-\$10,954	\$0	\$0
Prepare for and attend a meeting of the GLMC to discuss and approve potential sites	0	\$0	\$0							\$0	\$0	\$0	\$3,582	-\$3,582	\$0	\$0
Perform CEQA for the potential new sites and procure permits and easements	0	\$0				\$0				\$0	\$0	\$0	\$26,972	-\$26,972	\$0	\$0
<b>Task 2 -- MZ-1: Aquifer-System Monitoring and Testing</b>		<b>\$48,304</b>								<b>\$5,303</b>	<b>\$53,607</b>	<b>\$33,150</b>	<b>\$22,774</b>	<b>\$10,375</b>	<b>\$0</b>	<b>\$33,150</b>
2.1 Conduct Quarterly Data Collection from Extensometers; Data Checking and Management																
Download data from the Ayala Park Extensometer facility	2	\$2,432	\$275		\$76					\$351	\$2,783	\$2,783	\$2,339	\$444	\$0	\$2,783
Download data from the Chino Creek Extensometer facility	2	\$2,432	\$42		\$76					\$118	\$2,550	\$2,550	\$1,139	\$1,411	\$0	\$2,550
Download data from Pomona Extensometer facility	4	\$4,864	\$269		\$76					\$345	\$5,209	\$5,209	\$1,336	\$3,873	\$0	\$5,209
Process, check, and upload data to database	11	\$14,944								\$0	\$14,944	\$14,944	\$17,960	-\$3,016	\$0	\$14,944
2.2 Conduct Long-Term Pumping Test in the Managed Area																
Coordinate testing with pumpers	1	\$1,632								\$0	\$1,632	\$0	\$0	\$0	\$0	\$0
Equip CH-15B and CH-17 with high-frequency water-level monitoring devices	3	\$4,064	\$138	\$2,000	\$38					\$2,176	\$6,240	\$0	\$0	\$0	\$0	\$0
Collect data; process, check, and upload to database	2	\$2,432								\$0	\$2,432	\$0	\$0	\$0	\$0	\$0
Prepare, analyze, and distribute stress-strain diagrams to GLMC; terminate test	4	\$7,168								\$0	\$7,168	\$0	\$0	\$0	\$0	\$0
Adjust extensometer hardware, as necessary	2	\$2,848	\$138							\$138	\$2,986	\$0	\$0	\$0	\$0	\$0
2.3 Conduct Pilot Injection Test in the Managed Area																
Coordinate testing with pumpers	1	\$1,424								\$0	\$1,424	\$1,424	\$0	\$1,424	\$0	\$1,424
Equip CH-15B and CH-17 with high-frequency water-level monitoring devices	3	\$4,064	\$138	\$2,000	\$38					\$2,176	\$6,240	\$6,240	\$0	\$6,240	\$0	\$6,240
<b>Task 3 -- Basin Wide: InSAR</b>		<b>\$5,064</b>								<b>\$85,000</b>	<b>\$90,064</b>	<b>\$90,064</b>	<b>\$89,292</b>	<b>\$772</b>	<b>\$0</b>	<b>\$90,064</b>
3.1 Acquire SAR Data from German Aerospace Center and Prepare Interferograms for 2018/19	1	\$1,632				\$85,000				\$85,000	\$86,632	\$86,632	\$86,608	\$24	\$0	\$86,632
3.2 Convert Interferograms to GIS Layers; Check and Upload to GIS Database	2.5	\$3,432								\$0	\$3,432	\$3,432	\$2,684	\$748	\$0	\$3,432
<b>Task 4 -- Ground-Level Surveys</b>		<b>\$17,722</b>								<b>\$190,600</b>	<b>\$208,322</b>	<b>\$84,046</b>	<b>\$127,058</b>	<b>-\$43,012</b>	<b>\$0</b>	<b>\$84,046</b>
4.1 Conduct Spring-2019 Elevation and EDM surveys in the Northwest MZ-1 Area	0.5	\$816				\$23,000				\$23,000	\$23,816	\$23,816	\$22,507	\$1,309	\$0	\$23,816
4.2 Conduct Spring-2019 Elevation Survey in the Northeast Area	0.5	\$816				\$32,500				\$32,500	\$33,316	\$33,316	\$57,818	-\$24,502	\$0	\$33,316
4.3 Conduct Spring-2019 Elevation Survey in the Southeast Area	0.5	\$816				\$30,000				\$30,000	\$30,816	\$0	\$29,871	-\$945	\$0	\$0
4.4 Install Closely-Spaced Benchmarks along Edison and Eucalyptus (for Long-Term Pumping Test)	1.75	\$2,728				\$12,200				\$12,200	\$14,928	\$0	\$0	\$0	\$0	\$0
4.5 Conduct Two Elevation and EDM Surveys in the Managed Area/Fissure Zone Area (for Long-Term Pumping Test)	1	\$1,632				\$76,900				\$76,900	\$78,532	\$0	\$0	\$0	\$0	\$0
4.6 Replace Destroyed Benchmarks (if needed)	0	\$0				\$6,000				\$6,000	\$6,000	\$6,000	\$5,963	\$37	\$0	\$6,000
4.7 Process, Check, and Update Database	4.25	\$5,768								\$0	\$5,768	\$5,768	\$10,900	-\$5,132	\$0	\$5,768
4.8 Select New Surveyor and Support Transition																
Identify and Selecting a New Surveyor	1	\$1,810				\$2,500				\$2,500	\$4,310	\$4,310	\$0	\$4,310	\$0	\$4,310
Support the Transition of Work from Prior Surveyor to New Surveyor	2.25	\$3,336				\$7,500				\$7,500	\$10,836	\$10,836	\$0	\$10,836	\$0	\$10,836
<b>Task 5 -- Data Analysis and Reports</b>		<b>\$60,476</b>								<b>\$10,000</b>	<b>\$70,476</b>	<b>\$70,476</b>	<b>\$79,644</b>	<b>-\$9,168</b>	<b>\$0</b>	<b>\$70,476</b>
5.1 Prepare Draft 2017/18 Annual Report of the Ground-Level Monitoring Committee	23	\$33,384								\$0	\$33,384	\$33,384	\$32,920	\$464	\$0	\$33,384
5.2 Prepare Final 2017/18 Annual Report of the Ground-Level Monitoring Committee	5.5	\$8,148								\$0	\$8,148	\$8,148	\$8,036	\$112	\$0	\$8,148
5.3 Compile and Analyze Data from the 2018/19 Ground-Level Monitoring Program																
Production/recharge/piezometric/extensometer	4	\$5,280				\$10,000				\$10,000	\$15,280	\$15,280	\$25,208	-\$9,928	\$0	\$15,280
Ground-level survey and Northwest MZ-1 Area EDM data	4	\$5,648								\$0	\$5,648	\$5,648	\$5,572	\$76	\$0	\$5,648
InSAR data	4	\$5,280								\$0	\$5,280	\$5,280	\$5,208	\$72	\$0	\$5,280
Tectonic data	0.25	\$304								\$0	\$304	\$304	\$300	\$4	\$0	\$304
Recycled water reuse data	2	\$2,432								\$0	\$2,432	\$2,432	\$2,400	\$32	\$0	\$2,432
<b>Task 6 -- Work Plan to Develop a Subsidence-Management Plan for the Northwest MZ-1 Area</b>		<b>\$118,320</b>								<b>\$54,818</b>	<b>\$173,138</b>	<b>\$173,138</b>	<b>\$1,582,576</b>	<b>-\$1,409,438</b>	<b>\$136,732</b>	<b>\$36,406</b>
6.1 Implement the Monitoring Program and Conduct Passive Monitoring	19	\$24,672	\$472		\$76	\$10,000				\$10,548	\$35,220	\$35,220	\$84,918	-\$49,698	\$0	\$35,220
6.2 Install the Pomona Extensometer Facility	0	\$0	\$0			\$0				\$0	\$0	\$0	\$1,360,926	-\$1,360,926	\$0	\$0
6.3 Install and Test Monitoring Equipment at the Pomona Extensometer	48	\$63,132	\$1,920	\$18,300		\$24,000				\$44,220	\$107,352	\$107,352	\$106,532	\$820	\$106,532	\$820
6.4 Prepare Completion Report for the Pomona Extensometer Facility	20	\$30,516								\$50	\$30,566	\$30,566	\$30,200	\$366	\$30,200	\$366
<b>Task 7 -- Meetings and Administration</b>		<b>\$44,016</b>								<b>\$418</b>	<b>\$44,434</b>	<b>\$44,434</b>	<b>\$43,646</b>	<b>\$788</b>	<b>\$0</b>	<b>\$44,434</b>
7.1 Prepare for and Conduct Four Meetings of the Ground-Level Monitoring Committee	12	\$20,864	\$334							\$334	\$21,198	\$21,198	\$20,770	\$428	\$0	\$21,198
7.2 Prepare for and Conduct One As-Requested Ad-Hoc Meetings	3	\$5,216	\$84							\$84	\$5,300	\$5,300	\$5,192	\$107	\$0	\$5,300
7.3 Perform Monthly Project Management	7.5	\$12,720								\$0	\$12,720	\$12,720	\$12,540	\$180	\$0	\$12,720
7.4 Prepare a Recommended Scope and Budget for the GLMC for FY 2019/20	3	\$5,216								\$0	\$5,216	\$5,216	\$5,144	\$72	\$0	\$5,216
<b>Totals</b>											<b>\$675,393</b>	<b>\$530,660</b>	<b>\$2,011,265</b>	<b>-\$1,480,605</b>	<b>\$136,732</b>	<b>\$393,928</b>







Relative Change in Land Surface Altitude as Measured by InSAR March 2011 to January 2017



■ InSAR absent or incoherent

Groundwater-Level and Aquifer-System Deformation Monitoring

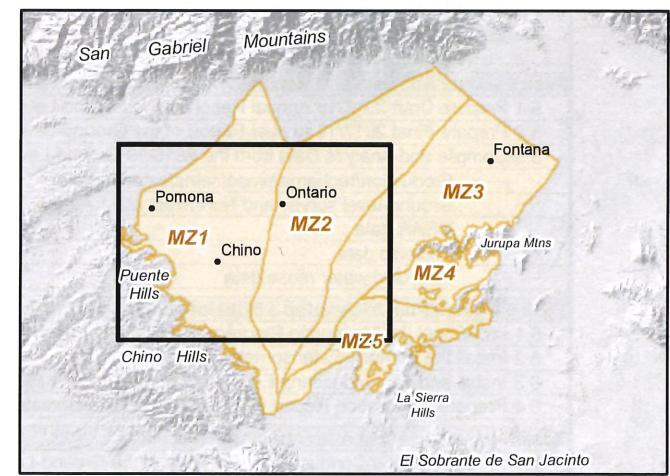
- Piezometer Equipped Transducers as of December 2017
- Ayala Park Extensometer
- Chino Creek Extensometer
- Pomona Facility Extensometer

Ground-Level Survey Areas

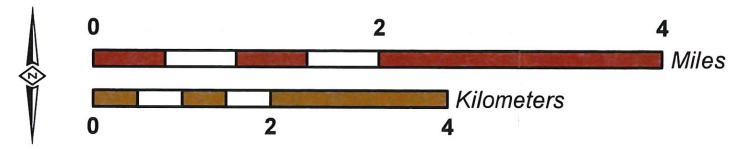
- Survey Benchmark
- Northeast Area
- MZ-1 Managed Area
- Fissure Zone Area
- Southeast Area
- Central Area
- Northwest MZ-1 Area
- San Jose Fault Zone Area

- Areas of Subsidence Concern
- Flood Control and Conservation Basins

- Ground Fissures
- Approximate Location of the Riley Barrier
- Fault - Solid where accurately located. Dashed where approximately located or inferred; dotted where concealed.



Prepared by:  
 Author: MAB  
 Date: 2/7/2018  
 Document Name: Figure1\_FY2018\_19\_v1



Ground-Level Monitoring Committee  
 Ground-Level Monitoring Program

Ground-Level Monitoring Program  
 Fiscal Year 2018-19

Figure 1