

## B-1 CITY OF CHINO COMMENTS AND WATERMASTER RESPONSES

Comment Number	Reference	Comment	Response
1	Page 2-2	Item 5 "Is there an "acceptable rate of <b>permanent</b> land subsidence in the Managed Area?" Permanent should be inserted into the sentence as indicated.	Comment addressed in report, on page 2-2: "permanent" was added.
2	Page 3-1	At the end of Section 3.1.1 the meaning of "a rate of about - 0.01 ft/yr" should be clarified.	Comment addressed in report, on page 3-1: "- 0.01 ft/yr" was changed to "0.01 ft/yr"
3	Page 3-2	Last sentence of the second paragraph suggest using "pre-consolidation" in place of "virgin", that is ...they equilibrate with heads in the pumped aquifers that are lower than <b>pre-consolidation</b> heads."	Comment addressed in report, on page 3-2: "virgin" was replaced with "pre-consolidation"
4	Figure 3-1	Last sentence in text box "The causes of the small amount of <b>recent</b> subsidence are not currently known..."; suggest using "on-going" in place of "recent". On-going more correctly suggests the process causing inelastic subsidence is continuing.	Comment addressed in report, on Figure 3-1: "recent" was replaced with "on-going"
5	Figure 3-7	The horizontal strain is accumulated for each segment of the extensometer from west to east, though it seems like the strain for each segment should be plotted individually normalized such as foot of strain/length of rod (ft/ft) times some fixed scalar to better show the zones where strain is greatest/least.	Figure 3-8 was added to show individual strain across each segment of the Daniels Horizontal Extensometer.

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6	No reference	Please add a discussion describing the protocol and process that is recommended for maintaining efficient communication between Watermaster and the parties participating in, and affected by, the planned pumping test, including review and analysis of the data as it is collected in order to ensure that the timing and duration of the test activities achieves the test objectives.	<p>Comment addressed in report, in Section 2.2.1:</p> <p>“This test should cause drawdown at PA-7 to fall below the Guidance Level. The test will be closely monitored at the Ayala Park Extensometer and the horizontal monitoring facilities, and will be stopped at the first clear indication of permanent subsidence. Groundwater levels recorded at 15-minute intervals at PA-7 will be updated every three-hours on Watermaster’s website. As drawdown approaches to within 20 feet of the Guidance Level, data from the Ayala Park Extensometer will be downloaded and used to prepare a stress-strain diagram. The stress-strain diagram will be distributed immediately to the Land Subsidence Committee by email. Watermaster staff and engineers will remain in close telephonic contact with staff at the City of Chino, City of Chino Hills, and CIM to review and interpret the stress-strain diagram, to plan for the preparation of the next stress-strain diagram, or to make the determination to stop the test when appropriate.”</p>
7	No reference	Please add a description of the anticipated magnitude of permanent compression (subsidence) that is expected to occur as a result of the planned pumping test, and relate this amount of subsidence to historical subsidence that occurred in the affected area.	<p>Comment addressed in report in footnote on Page 2-3:</p> <p>“The aquifer-system stress testing in 2004-05 resulted in about 0.01 feet of permanent compaction and associated land subsidence (WEI, 2006). The Long-Term Pumping Test may cause a similar small amount of permanent subsidence. This small amount of permanent subsidence is far less than the &gt;2 ft of permanent subsidence that occurred from 1987-1995</p>



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			when ground fissures opened in the City of Chino, and is much less than the +/- 0.1 ft of elastic subsidence and rebound that occurs seasonally in this area.”



**B-2 STATE OF CALIFORNIA, CALIFORNIA INSTITUTION FOR MEN COMMENTS AND WATERMASTER RESPONSES**

Comment Number	Reference	Comment	Response
1	Page 1-1, section 1.1.1	Refers to an accelerated occurrence of ground fissuring after 1991 and later refers to the scientific studies that followed but references Fife (1976) as one of the studies. Consider minor re-wording (perhaps “scientific studies of the area...”) to avoid this apparent inconsistency in timing.	Comment addressed in report, on page 1-1:  “The scientific studies of the area attributed the fissuring phenomenon to differential land subsidence that was caused by pumping of the underlying aquifer system and the consequent drainage and compaction of aquitard sediments (Fife et al., 1976; Kleinfelder, 1993, 1996; Geomatrix, 1994).”
2	Table 1-1 and Figure 3-2	Reference to perforated interval of CIM Well 11A. Should note somewhere in the tables and figure that the lower part of the casing of CIM Well 11A collapsed circa 2011. The well was video logged on July 20, 2011 and it was documented that the well was obstructed below a depth of 470.5 feet. A copy of the Layne Christenson Co. Well Inspection Report is attached for reference. A 12-inch liner was subsequently placed in the well with a screen interval from 155 to 470 feet (see attached email from Layne Christenson).	Comment addressed in report, on Table 1-1 and Figure 3-2:  Table 1-1 shows the screened interval as “174-187, 240-283, 405-445 ft bgs <sup>2</sup> ” And a footnote was added: “ <sup>2</sup> The casing in CIM-11A collapsed below 470 ft-bgs in 2011. A liner was installed to 470 ft-bgs with screen intervals from 155 to 470 ft-bgs.”  Figure 3-2 shows the screen interval as “155-445 ft-bgs”
3	Figure 2-1 and 4-1	Transducer instrumented well Xref 5767 is shown on these figures at a location west of Euclid and south of the projected east-west line of Merrill Ave. If this location is accurate, the well would be located on property belonging to the State of California (State). If the well belongs to the State, then it should be identified by its common name.	Comment addressed in the report, on Figures 2-1 and 4-1:  The well is owned by the State. Its local name is YTS-3. References to the well have been updated.
4	Page 2-3	First non-enumerated paragraph, first sentence. “CH-17 and CH-15...” Should this be CH-15B?	Comment addressed in report, on page 2-3:  The well should be CH-15B. The text was changed to “CH-17 and CH-15B”

## CIM COMMENTS AND WATERMASTER RESPONSES

Comment Number	Reference	Comment	Response
5	Page 3-4 and figure 3-9	An estimate of a potential for 4.2 feet of permanent subsidence in the Pomona/San Jose fault area is given but is explained as being based on an extrapolated rate of -0.06 feet/year. The text on page 4-1 states, "It is likely that about 4.2 feet of permanent, differential subsidence has occurred in this area since the onset of increased drawdown in the 1940s." This latter statement may suggest a greater degree of certainty in the estimate than indicated by the previous statements and by the available data.	Comment addressed in report on Page 4-1:  The identified sentence was replaced with: "It is logical to assume that at least 4.2 feet of permanent, differential subsidence has occurred in this area since the onset of increased drawdown in the 1940s."
6	Table 3-1	Well Xref8730. This well is located in the Managed Area but does not appear on any of the figures. Note 1 in the table indicates that the well screen interval for this well is unknown but it is placed in the category of wells screened in the Shallow aquifer layer for the purpose of tabulation. Suggest expanding on note 1. Example - Perforated interval of well is unknown but assumed to be shallow based on typical well construction for other wells in the general vicinity.	This well is not on any figures because the wells that produced groundwater during 2013 are not displayed on any figures.  Text was added to Note 1 of Table 3-1 to address this comment.
7	Figure 3-1	Last paragraph of narrative, 7 <sup>th</sup> sentence, "...when piezometric-levels declined below 250 feet below...). Delete first "below" in sentence.	Comment addressed in report, on Figure 3-1:  Text was changed to "piezometric-levels declined below a depth of 250 feet below the reference point (ft-brp)"



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8	Figure 3-4 and Figure 3-5	Earthquake epicenters are posted on both maps. The text in the report does not have an explanation as to why these data are relevant to subsidence.	Comment addressed in report, on Page 3-2:  "Epicenters of earthquakes that occurred from 2011 to 2014 are included on Figure 3-4 and 3-5. The data show that the vertical ground motion shown on the maps is not associated with earthquake events."
9	Figures 2-1 and 4-1	Regarding comment number 3, Xref 5767, in Appendix B, comment indicate that well Xref 5767 is YTS-3 and that the reference to the well on Figures 2-1 and 4-1 have been updated. In the second draft, these figures still have the label Xref 5767.	Comment addressed in report, on Figures 2-1 and 4-1:  The labels were updated in the final draft.
10	Table 3-1 and Figure 3-2	There appears to be a typo in the perforated interval for CIM-11A. A liner was installed in the well from 155 to 470 feet below ground surface (bgs) after the well collapsed. The lowest perforated interval within the depth range of the liner extends to 465 feet bgs, therefore, the lowest perforated interval after the collapse should be 405-465 feet bgs not 405-445 feet bgs. It might also be useful to document the original perforated interval in the footnote of the table for the record.	Comment addressed in report, on Table 1-1 and Figure 3-2:  Well screen intervals for CIM-11A were updated according to the comment, and a footnote to explain was added: "174-187, 240-283, 405-465 ft bgs <sup>2</sup>  <sup>2</sup> The original casing was perforated from 135-148, 174-187, 240-283, 405-465, 484-512, 518-540 ft-bgs. This casing collapsed below 470.5 ft-bgs in 2011. A liner was installed to 470 ft-bgs with screen interval from 155 to 470 ft-bgs."



CIM COMMENTS AND WATERMASTER RESPONSES

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11	Figure 3-2	Explanation indicates “perforated depth interval.” In some cases, the values reported are the upper and lower bounds of the perforated interval rather than the actual perforated intervals of the wells (e.g., CH-15B and CH-17). WEI should probably provide the actual perforated intervals or clarify with footnote or modified explanation description.	<p>Comment addressed in report, on Figures 3-1, 3-2, and 3-9 through 3-12:</p> <p>“Perforated Depth Interval” was changed to “Top-Bottom Screen Interval”</p> <p>And, the following changes were made for consistency: Table 1-1, “Screened Interval” was changed to “Well Screen Intervals”</p> <p>Figure 3-3, “Depth Interval of PA-7 Perforations” was changed to “PA-7 Well-Screen Interval”</p> <p>Figures 3-13 and 4-2, “Perforated Depth Interval” was changed to “Well-Screen Interval”</p>



### B-3 MONTE VISTA WATER DISTRICT COMMENTS AND WATERMASTER RESPONSES

Comment Number	Reference	Comment	Response
1	Figure 1-1	Three wells are not currently active (see figure from MVWD)	This figure was updated to show wells that were active during the period specified in the figure. Text was added to the figure to clarify.
2	Section 4.1	Is this goal too ambitious for now? Shouldn't the first big thing we do is to assess and monitor the Pomona area. Do we have guidance criteria for the other unmanaged areas? If not, why not?	<p>The recommendation in the annual report is to “develop a subsidence management plan for the Pomona Area with the long-term objective to minimize or abate the occurrence of the differential land subsidence” in the area. This is a long-term recommendation.</p> <p>The recommendation for 2014-15 is to begin the process with a scoping effort by the Land Subsidence Committee. This will likely entail multiple meetings over the year to develop scope, schedule, and budget estimates. The scope may need to include a hydrogeologic investigation to (i) definitively characterize the mechanisms driving the observed subsidence and (ii) develop subsidence-management criteria.</p>
3	Section 4.2	When is the benchmark surveys for the areas due? Or said another way, what is the target interval for benchmark surveys?	The intervals for ground-level surveys are decided by the Land Subsidence Committee annually.
4	Page 4-4, Table 4-1	<p>The page right after this one, Task 5.3, shows a budget of \$15k to update MZ-1 plan. However, if the scoping hasn't begun yet, the \$15k may grossly under- (or-over) state the budgeting requirement?</p> <p>Subsidence Management-Pomona: though this is eventually the goal, is this too ambitious for now?</p>	<p>See Response to Comment 2.</p> <p>The \$15,000 was a general place-holder for updating the MZ-1 Plan, and was not intended to represent costs associated with developing a new subsidence management plan for the Pomona Area. The LSC did</p>

MVWD COMMENTS AND WATERMASTER RESPONSES

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		<p>Meaning, I thought we have very limited understanding of the Pomona area, so the first big step is really to investigate/assess in the near-term?</p>	<p>not recommend this line item for FY 2014/15, so it is not included in the Watermaster's approved budget for FY 2014/15.</p> <p>In 2014/15, the scope of work to update the MZ-1 Plan is generally this:</p> <ol style="list-style-type: none"> <li>1. Developing a draft scope(s) and cost estimate(s) for the development of a subsidence management plan for the Pomona Area.</li> <li>2. Conducting ad hoc technical meetings, as necessary, to assist in the development of scope and cost estimates.</li> <li>3. Conducting additional meetings of the LSC to discuss/revise the draft scope and cost estimates.</li> <li>4. Prepare a draft revision of the MZ-1 Plan, and conduct meetings with LSC to review and revise.</li> <li>5. Prepare final MZ-1 Plan.</li> </ol> <p>The approximate engineering costs for this effort are \$100,000 for 2014/15. Again, Watermaster has no approved budget for this effort, so it would require a budget transfer or budget amendment to perform this effort in 2014/15.</p>

