

QA Table – WAR Appendix D – Limiting Factors Analysis – Draft B

Note: This table includes all comments pertaining directly to the Limiting Factors Memo, which is now Appendix D of the WAR. Listed comments on Draft A of the Limiting Factors Memo were presented and discussed at the third WAR workshop. The numbering of these comments is retained from the comment tables developed for this TM for easy cross-referencing.

Order Number	Subgroup or Group providing comment	Document Name Page(s) / Paragraph(s).	Text Suggested or General Comment	Response to Comment (compared comment with Final Memo)
1	City of Sunnyvale	LFA TM General	<p>Shouldn't there be some "conclusions" discussed in this technical memorandum. The way it ends now is very abrupt.</p> <p>Can we provide some suggestions for future efforts to ways deal with the limiting factors identified? Do we need more data (obviously so in some cases) or do we need to look to management of water flows/resources and water quality issues? These things are hinted at in the text but should be brought forward into some kind of next steps/suggestions for the future assessment work in these watersheds. We don't seem to be seeing these conclusions elsewhere in the other chapters either.</p>	<p>This comment has been addressed in the revised Chapter 2 of the report. The decision was made to discuss the use of the limiting factors analysis and "next steps" in that context rather than to have that discussion be part of this memo/appendix. Similarly, the discussion of limiting factors for specific reaches/uses has been brought into the text of Chapters 4-6.</p> <p>A section on potential uses of the limiting factors analysis has been added to the memo; this discussion is also contained in Chapter 2.</p>
2	Trish Mulvey	LFA TM General	<p>Data "are" should be used consistently in WAR and TMs. See previous comments from Geoff Brosseau</p>	<p>Revision addressed.</p>
3	Debra Caldon Watershed Planning Unit SCVWD	LFA TM Section 1, page 1	<p>This memorandum summarizes the limiting factors that were identified during the pilot assessments and lists suspected or possible causes contributing to the limiting factors. Reference to additional studies currently underway but which were not able to be utilized in the pilot assessments is also included.</p> <p>The text of the memorandum also describes the types of limiting factors identified for each of the five beneficial uses/stakeholder interests studied in the pilot assessments and the most likely cause(s) for each limiting factor. Specific limiting factors within each stream reach and their suspected cause, where identifiable, are presented in more detail in Table 2-6 at the end of the memorandum.</p>	<p>Revision adopted.</p>

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4	Debra Caldon Watershed Planning Unit SCVWD	LFA TM Section 3, page 1	<p>The potential causes of a limiting factor may vary considerably from reach to reach within a stream, or they may be similar. Some causes are relatively easy to identify or hypothesis, others are more difficult.</p> <p><i>Note: Summary Conclusion at the end of section 3. I.e. additional data should be collected to ensure that the causes of limiting factors can be identified. Suggested" limiting factors studies" include:</i></p> <ul style="list-style-type: none"> • <i>Research – better understanding of relationship of recreation access, use to pollutant problems might better resolve the issue</i> • <i>Use identified data indicators to better characterize support levels in the stream</i> • <i>Clarify those limitations which are true, or factual from those arising out of weakness in the beneficial use designation process (tributary rule results in misapplication of designations)</i> <p>The group agreed that these suggested conclusions are good examples. Reviewers support the 1st and 2nd suggestions, and decided that adding something along the line of "better assessment tools are needed" would improve the 3rd suggestion.</p>	General idea is captured in section 1.3. Reference to discussion on potential use of limiting factors analysis/next steps in Section 1.5 is added. Specific recommendations are not included here; reference Chapter 2 for this.
5	City of Sunnyvale	LFA TM Section 3, page 1	Correct the spelling of "hypothesise" to "hypothesize"	Revision adopted.
6	City of Sunnyvale	LFA TM, page 2, Table 1	Please arrange the reaches in numerical order (especially those under the San Francisquito Watershed) It should match the way that Table 2 is organized for these reaches.	Revision adopted.
7	GCRCD WWCC GR Cocaptain	LFA TM, page 2, Table 1	For the GW the Table 1 is incorrect in most cases regarding RARE, COLD, REC-1 and in some cases with PFF as the Use in question is partially supported in most cases of RARE, COLD & REC-1 and fully supported in some cases of PFF.	The support statements for the Guadalupe River are correct insofar as they are based on the data that was available to the assessment teams. There is additional data that has since become available (FAHCE) as well as other data that Larry Johmann has. A thorough review of this data may result in changes to the support statements for Guadalupe reaches. For the time being, however, Larry's detailed comments have been included under the "local knowledge" heading as no data to support his comments was reviewed by the assessment

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				team, nor has any field-checking or ground-truthing of the assessment results been performed. These comments are included in Chapter 4 and Appendix 4-B.
8	Trish Mulvey	LFA TM, page 2, Table 1	Include reach or segment name, not just its code number. For example, SF/BC-4 = Upper Bear Gulch	Revision adopted.
9	Trish Mulvey	LFA TM, page 2, Table 1	<p>I would rather see a new vocabulary so “non support” or “partial support” terms are used where management actions could be taken – NOT for “Mother Nature at work”. Lessons Learned says this comment will be addressed in the assessment chapters, but that hasn’t been done in this TM.</p> <p>Trish said this relates to Debra’s comment #11. Terry suggested staying away from making a distinction between ‘artificial’ and ‘natural’. The group agreed this was wise.</p> <p>Suggestion to clarify ‘non-support’ in a footnote after it’s mention in text. Also do this in LFA TM tables which use the term. Include the significance of these terms in the chap. 1 Scope and Limitations section.</p>	<p>Where local knowledge comments indicated that a use could not be supported in a given reach based on the natural characteristics of the reach, this information is noted in the text as well as the reach summary tables (under local knowledge comments) in Chapters 4-6. There may, however, be other reaches where this is true as well but no stakeholder input was received. This would need to be assessed during field reconnaissance or future “ground-truthing”.</p> <p>A brief reference to this issue has been added to the memo. The use of the term “non-support” remains the same. The difference is that some limiting factors are natural in origin and some are human-caused.</p>
10	GCRCD WWCC GR Cocaptain	LFA TM, page 4	Is blank is there information missing or just an extra page inserted?	Error in earlier draft; fixed in Draft B.
11	Debra Caldon Watershed Planning Unit SCVWD	LFA TM Section 4.1, page 5	<p>The fundamental cause of for the lack of summer streamflows, however, was not always clear from the data that was available. <i>Note: Awkward sentence, your discussion that follows seems clear.</i> In some cases, such as Dry Creek (SF/BC-2) and Appletree Gulch (SF/WU-3) in the San Francisquito watershed, the streams are naturally ephemeral and thus would not likely ever be able to fully support the beneficial use. <i>Note: here limiting factor is artificial i.e. a function of ill guided beneficial use designation</i> In other cases, such as Los Gatos Creek (GR/LG-1) and Guadalupe Creek (GR/GC-1), diversions from the stream have artificially reduced the summer flow, contributing to poor cold freshwater habitat conditions</p>	Revisions adopted.

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			downstream. In these longer reaches, the quality of the habitat generally declines with distance downstream from the upper end of the reach. <i>Note: Different thought with the previous sentence.</i>	
12	Scott Akin, Water Supply Div. SCVWD	Section 4.1, 2 nd para., p. 5 Cold Freshwater Habitat	<p>Suggestion to take out: "In other cases, such as Los Gatos Creek (GR/LG 1) and Guadalupe Creek (GR/GC1) diversions from the stream have artificially reduced the summer flow, contributing to poor cold freshwater habitat conditions downstream."</p> <p>Comments: This isn't true. District water rights don't permit diversion after 5/1. District operations put more water in streams than occurs naturally during summer. Upper Penn, Los Gatos, Guadalupe, Calero and Alamitos all have greater stream flow as a result of District operations. Also, Upper Penn, Guadalupe, Alamitos, and Calero are all easily demonstrable ephemeral streams. Los Gatos Creek may be intermittent in some water years.</p>	Revisions adopted in memo text
13	Scott Akin, Water Supply Div. SCVWD	Section 4.1, 2 nd bullet, p. 5, Cold Freshwater Habitat	<p>Text: SCVWD reservoirs and dams are impassable barriers limiting the upstream migration of salmonids within the Guadalupe watershed.</p> <p>Comment: What about SJWC facilities? Thirteen diversions upstream of Lexington eliminates access to the tributary headwaters of Los Gatos Creek (best habitat in system)</p>	This has been added to text as well as to discussion in Chapter 4.
14	GCRCDD WWCC GR Cocaptain	LFA TM Section 4.1, page 5	<p>Stream hydrology, morphology, stability and water flows are the prime factors limiting Cold use. If these factors are not within acceptable ranges then habitat, macroinvertebrates, velocities and temperature will be adversely affected</p> <p>Richard agreed that these are important concerns that could be acknowledged in a memo. It could be mentioned that the Framework was limited by not including such hydrogeomorphic factors.</p> <p>Arleen Feng submitted a suggested qualifying paragraph to insert in this section of the Chapter. Rebecca has this handwritten suggestion.</p>	This comment is captured in both Chapter 2 and the Lessons Learned memo (Appendix B). Some text on this has been added to the memo.

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15	City of Sunnyvale	LFA TM Section 4.1, page 5, 3 rd para.	Please clarify the status of the FAHCE data use in the assessment process. Either it was available or it wasn't included. What is meant by the term "generally"? We should be more precise as to exactly what FAHCE data was or was not used.	Comment addressed in text.
16	GCRCD WWCC GR Cocaptain	LFA TM Section 4.1, 3 rd para, page 5	Please define "Planning Level Assessment."	Clarification added to text.
17	Scott Akin, Water Supply Div. SCVWD	Section 4.1, 4th bullet, p. 6, Cold Freshwater Habitat	Add italicized: Seasonal hydrology (<i>naturally low summer flow, and high storm flows resulting from urban run-off</i>) and in stream flow variation due to reservoir operation both limit migration opportunities for adult and juvenile steelhead and Chinook salmon in the Guadalupe River watershed.	Revision adopted.
18	Scott Akin, Water Supply Div. SCVWD	Section 4.1, 7th bullet, p. 6, Cold Freshwater Habitat	On "Factors to blame for this include the release temperature from SCVWD reservoirs..." Comment: Reservoir releases are generally lower than the temperatures found elsewhere in the watershed. Operations changes will extend this benefit throughout the summer.	Revision adopted.
19	Debra Caldon Watershed Planning Unit SCVWD	LFA TM Sections 4.2 and 4.3, p. 7	Data gaps represented a significant impediment to the confident identification of limiting factors affecting the suitability of streams in the pilot watersheds for use as municipal or domestic water supply. In reaches where the assessment team felt it had enough good data to determine the level of use support and where the criteria were exceeded, the limiting factors varied from reach to reach. Turbidity and/or TDS were common limiting factors, as was fecal coliform count. Without additional data collection, however, it is difficult to isolate the cause(s) of these exceedances. As noted in Table 3, urban runoff and channel erosion are likely contributors. Limiting factors affecting support of water contact recreation within the three watersheds were quite varied. In some reaches where data on the primary and secondary indicators were available (fecal coliform count and other water quality constituents), exceedances of the criteria for these indicators represent the limiting factor. As with the MUN use, it is difficult without additional data collection to isolate the	The fish consumption component of the REC-1 assessment has been removed from all documentation of the pilot assessments per request by the Regional Board.

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			<p>cause(s) of these exceedances. As noted in Table 4, urban runoff and channel erosion, as well as legacy contamination from historic mining are likely contributors. For the other reaches, however, limitations concerning access to the stream and aesthetic problems (trash, water clarity, streamflow) form the limiting factor. The list of possible causes for these conditions can only be speculated at within the context of this study. For example, while trash is common in urban stream corridors, the data used in the assessment does not allow for a more specific source to be identified. On the other hand, the factor limiting fish consumption within the mainstem Guadalupe River and Herbert Creek (GR/AL-4), elevated mercury in fish tissue samples, is likely to be directly traceable to the presence of historic mining waste in the stream sediment.</p> <p><i>Note: Here the issue is lack of linkage between use and data types that indicate non-support.</i></p>	
20	GCRCD WWCC GR Cocaptain	LFA TM Section 4.3, page 7	<p>Although waterborne pathogens are prime factors that would limit REC-1, other prime factors include access, flows, in stream blockages/structures, debris, hardscape banks, stream morphology, other forms of pollution and dangerous conditions e.g. vagrant encampments. Fish consumption has no relationship to REC-1 and is not a limiting factor for this use!</p>	<p>Based upon input from Richard McMurtry of the Regional Board, the fish consumption component of the REC-1 evaluation has been removed from the report. The analysis is available if future interest warrants its use, but the assessment results no longer appear in the text or tables.</p> <p>Larry’s comments are included under the “local knowledge” section of the reach summary tables and are discussed in the text of Chapter 4, along with some general conclusions from the FAHCE data. The assessment results, however, have not been altered to address these comments and they are not included in the Limiting Factors memo.</p>
21	GCRCD WWCC GR Cocaptain	LFA TM Section 4.4, page 7	<p>The degree to which most stream channels support most beneficial uses is directly proportional to the degree of the channel's stability and incision. Properly functioning stream channels reach the bankfull stage every 1.2 to 1.5 years. Higher flows cause inundation of the flood prone area. This flooding is normally beneficial as it relieves river energy, preventing downstream erosion and rejuvenates the soil in the flooded area. Problems are caused when the arrogant and foolish try to confine the river and build in its floodplain. Properly functioning channels do not carry the 100 year flow so if this unrealistic definition is used to identify support for PFF then it can only hope to be supported by newly constructed artificial channels and most all beneficial uses, as well as water quality</p>	<p>Some text has been added to emphasize this concept.</p>

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			will be degraded.	
22	Trish Mulvey	LFA TM Section 4.4, page 7	Need to revise text to reflect that creeks are engineered by Mother Nature to get to bank full discharge at 1 or 2 year events. See comment #60 in consolidated lessons learned table – what is the continuing difficulty with this concept?	Uncertain what comment is referring to. This information was already part of the first draft of the memo.
23	GCRCDD WWCC GR Cocaptain	LFA TM Section 4.5, page 8	Stream hydrology, morphology, stability and water flows are the prime factors limiting Rare aquatic species use. If these factors are not within acceptable ranges then habitat (including riparian areas), macroinvertebrates, flow velocities and temperature will be adversely affected.	Some text has been added to emphasize this concept.
24	Scott Akin, Water Supply Div. SCVWD	Section 4.5, p. 9 Preservation of Rare and Endangered Species (RARE)	Table 2, Upper Penitencia, Reach UP-1, Suspected Causes Augmented summer stream flow (as releases from off-channel percolation ponds) usually does not extend downstream to this reach. Comment: What about Cherry Creek Reservoir?	Releases from Cherry Flat Reservoir do augment natural flow in Upper Penitencia Creek through Alum Rock Park, but generally infiltrate by the time they reach the lower portion of the creek. This will vary by year.
25	Scott Akin, Water Supply Div. SCVWD	Section 4.5, p. 9, Preservation of Rare and Endangered Species (RARE)	Table 2, Upper Penitencia, Reach UP-1, Suspected Causes Winter and spring stream flow is variable and may be too warm for Chinook spawning and rearing due to relatively open channel... Comment: No evidence that Chinook use Upper Pen.	While no data exist to indicate Chinook presence in the subwatershed, the COLD logic diagram requires that suitability for use by Chinook be evaluated where the data allow.
26	Trish Mulvey	LFA TM, pages 9-20, Tables 2-5	Add to header the use or interest for any table that is more than one page long. The header can be adjusted to include it in the top line for limiting factor and suspected cause.	Revision adopted.
27	GCRCDD WWCC GR Cocaptain	LFATM, Table 2, p. 9-13	All of the rest of the streams for the GW streams have similar problems for Cold, with segmentation, support status, limiting factors and probable cause, as noted in my January 21, 2002 comments letter.	Larry’s comments are included under the “local knowledge” section of the reach summary tables and are discussed in the text of Chapter 4, along with some general conclusions from the FAHCE data. The assessment results, however, have not been altered to address these comments and they are not included in the Limiting Factors memo.
28	GCRCDD WWCC GR Cocaptain	LFA TM, page 9, Table 2	The stream segmentation for the GW is not realistic. Reaches lumped together have vastly different physical properties and are substantially different so the limiting factors or suspected causes are not accurate	Larry’s suggestions for a more refined segmentation of a few of the Guadalupe stream reaches are included under the “local knowledge” section of the reach summary tables and are discussed in the text of Chapter 4. They are not addressed in the Limiting Factors memo.

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29	City of Sunnyvale	LFA TM, page 9, Upper Penn Reach UP-1	What is the role of the Cherry Flats Reservoir in keeping water in the stream - especially augmenting low flow times? No mention is made of that as a possible mechanism to add to flows when needed.	Releases from Cherry Flat Reservoir do augment natural flow in Upper Penitencia Creek through Alum Rock Park, but generally infiltrate by the time they reach the lower portion of the creek. This will vary by year. Due to a lack of data on Cherry Flat Reservoir, it is not known whether there is potential for additional release for flow maintenance farther down Upper Penitencia Creek.
30	City of Sunnyvale	LFA TM, page 9, Table 2, Upper Penn	Why is UP-2 not included in this table? It is listed on Table 1 as Partial support with high certainty for “Cold”.	This oversight has been corrected.
31	GCRCD WWCC GR Cocaptain	LFA TM, page 9, Table 2, GR-1	The limiting factors and suspected causes indicated for this reach are grossly inaccurate. All but one section of the GR support Chinook salmon and steelhead to some degree so the support is more than potential. "Seasonal" needs to be defined. Chinook and/or steelhead have been documented in various sections of the GR most months of the year. Temperatures in GR-1 either do not exceed Chinook and steelhead temperature criteria or the temperature criteria are not correct. GR-1 is a tidewater area and temperatures in this section rarely exceed 72 degs. F and average below 70 deg. They are primarily affected by and related to bay temperatures so they do not fluctuate as much as they do in other reaches of the river. Salmon and steelhead have been documented in the river and bay and there are no known cases where high temperatures have killed or stressed them. Freshwater macroinvertebrate criteria are not appropriate or applicable for this section of river as it is a brackish tidewater reach. Small flows released by reservoirs have little, if any, impact in this reach. Except for the upper few hundred yards of this reach, the river has no shade cover. Salmonids do not spawn in tidewater so this reach would not support spawning. However, this reach is critical for the further rearing of smolts. According to salmonid experts, outmigrating salmonids in short river systems spend a significant amount of time rearing in estuary waters prior to going to sea. This reach of the river has a relatively smooth muddy bottom, as expected for a tidewater area. There are no riffle areas and none are expected. Food availability is probably high, as it is in most estuary areas. FAHCE information, which indicates different conditions is flawed. The real limiting factor for this reach is	Larry’s comments are included under the “local knowledge” section of the reach summary tables and are discussed in the text of Chapter 4, along with some general conclusions from the FAHCE data. The assessment results, however, have not been altered to address these comments and they are not included in the Limiting Factors memo.

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			proper stream morphology. The river has been straightened and its floodplain is confined by levees. This has negatively impacted channel stability, efficiency and most beneficial uses.	
32	GCRCO WWCC GR Cocaptain	LFA TM, page 10, Table 2, GR-2	<p>The limiting factors and suspected causes indicated for this reach are inaccurate. The valid segmentation for this reach is from Trimble Ave. to Montegue Exp., as it is vastly different and has completely different physical properties than the reaches above or below it. This affects the level of use support and the limiting factors and causes for all uses. The main river channel in this area, for the most part, is densely shaded and isolated, contrary to the reaches up and down stream. However, the main channel is confined by an inner corridor berm and there is a bypass channel down right side of the river. This reach has riffles and pools and decent spawning gravel. Temperatures in the spring and summer are marginal but adequate for adult salmonids and temperatures in the late fall and winter are adequate for salmonid spawning. Although macroinvertebrates may be absent from the area it has plenty of food sources from instream and overhanging plants, leaf and woody debris and associated insects. Just downstream is the brackish water area rich with brackish water organisms. Steelhead would most likely not use the area for spawning but Chinook salmon do and so would chum salmon as chum traditionally spawn just above tidewater. If FAHCE information for this reach is the same as for GR-1 then it is flawed as the reaches are in no way similar. Limiting factors in this reach are flow rates, warm water from problems upstream, channel morphology (a unnaturally confined river channel) and pulse flows from upstream outfalls. Since the bypass channel effectively widens the river it has become a depositional area and this has wiped out most riparian mitigation planted on the left side of the bypass. Levees confine the riverine corridor and thus flood flows and river meander patterns.</p>	Larry’s comments are included under the “local knowledge” section of the reach summary tables and are discussed in the text of Chapter 4, along with some general conclusions from the FAHCE data. The assessment results, however, have not been altered to address these comments and they are not included in the Limiting Factors memo.
33	GCRCO WWCC GR Cocaptain	LFA TM, page 10, Table 2, GR-3	The segmentation for this reach should be from Trimble Ave. to I-880. This reach is vastly different and has completely different physical properties from sections both up and down stream. This section of the river has little shade cover and there is no main channel bypass. The main channel was straightened	Larry’s comments are included under the “local knowledge” section of the reach summary tables and are discussed in the text of Chapter 4, along with some general conclusions from the FAHCE data. The assessment results, however, have not been altered to address these comments and they are not included in the Limiting Factors memo.

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			<p>in the past and there are high levees confining the corridor. This reach has marginal temperatures but they are marginally adequate to support adult salmonids throughout the year and temperatures in the late fall and winter are adequate to support salmonid spawning. Adult Chinook and steelhead have been documented in this reach from late June thru January and steelhead migrating in the upper section of the river in the Feb. to April period must pass through this reach. Limiting factors in this reach are inadequate low flow rates, excessive velocities at high flows, warm water from problems upstream, warm water and/or flash flows from outfalls, in channel rubble, improper channel morphology, lack of shade/hide cover. Concrete weirs and mats at the upstream end of the reach causing downcutting immediately below them creating fish passage problems. This area has many area with upwelling water which is likely cooler than surface flows. This reach would probably not likely be used as rearing habitat by steelhead. The absence of macroinvertebrates in the summer is not a limiting factor for salmon as there are likely no juvenile salmon in the reach in the summer.</p>	
34	GCRCDD WWCC GR Cocaptain	LFA TM, page 10, Table 2, GR-4	<p>The segmentation for this reach should be from I-880 to Coleman Ave. This reach has for the most part a narrow well shaded channel. The reach is vastly different and has completely different physical properties from sections both up and down stream. This reach of stream has a bypass corridor to the left of the river but there have been repetitive expensive attempts to confine the straightened channel and prevent it from accessing its floodplain. High velocities in the main channel are causing it to down cut. A secondary channel has been constructed down the bypass corridor in an apparent attempt to provide water to the bypass area so riparian credit could be claimed for vegetation that was planted outside the riparian zone. The secondary channel is eroding both vertically and horizontally and cutting around blocked culverts. Its temperature has been measured between 6 to eight degrees warmer than the main channel and it is filled with small fish. The channel is thus causing sediment and thermal pollution of the main channel and poses a threat for trapping fish. The riparian vegetation planted in the non riparian area is not doing well as many of the trees root systems reportedly can't penetrate</p>	<p>Larry's comments are included under the "local knowledge" section of the reach summary tables and are discussed in the text of Chapter 4, along with some general conclusions from the FAHCE data. The assessment results, however, have not been altered to address these comments and they are not included in the Limiting Factors memo.</p>

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			<p>the clay layer to get water. At the upstream end of the reach concrete mats and weirs are currently accelerating flows in the main channel and the river is attempting to narrow itself. When the mats and weirs were first installed the channel was far too wide which caused a large sedimentation problem and a blockage for fish migration. Salmon are known to spawn in this reach and steelhead/rainbow trout have been documented living in the area all summer. The area is used by vagrants and poachers to trap salmon. There is a lot of upwelling water in the lower end of this reach. Limiting factors are improper stream morphology, low dry season flows, elevated water temperature, poaching, bank and in-channel rubble, bank hardscape, concrete weirs at the upstream end of the reach. The eroding, elevated temperature secondary channel is also a severe impairment. The absence of macroinvertebrates in the summer is not a limiting factor for salmon as there are likely no juvenile salmon in the reach in the summer.</p>	
35	GCRCD WWCC GR Cocaptain	LFA TM, page 10, Table 2, GR-5	<p>The segmentation for this reach should be from Coleman Ave. to I-280. This reach has for the most part a narrow well shaded channel but it is confined and incised. The reach is vastly different and has completely different physical properties from sections both up & downstream. The reach contains a number of obstructions only passable at moderate to high flows. Large sections of the channel are lined with gabions and there are asphalt pedestrian trail/maintenance roads along some sections of the reach. Large office buildings have been built almost on top of the river bank and more construction is scheduled. Large bypass culverts are being constructed & more are scheduled for construction in this area. When finished the bypass culverts are supposed to convey high flow around the downtown area but this will surely cause sediment problems at the entrance to the culverts as the river has been overly widened. Severe erosion will surely be caused downstream where the culverts return flows to the river. When this happens velocities will be high and the water will be sediment starved, having dropped much its load before entering the culverts. Los Gatos Creek, one of the river's largest tributaries joins the river in the middle of this reach. Salmon and lamprey eels are known to spawn in this reach and steelhead/ rainbow trout are known to frequent the area, even in summer months. The absence of</p>	<p>Larry's comments are included under the "local knowledge" section of the reach summary tables and are discussed in the text of Chapter 4, along with some general conclusions from the FAHCE data. The assessment results, however, have not been altered to address these comments and they are not included in the Limiting Factors memo.</p>

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			macroinvertebrates in the summer is not a limiting factor for salmon as there are likely no juvenile salmon in the reach in the summer. Limiting factors are improper stream morphology, low dry season flows, high velocity high flows, elevated water temperature, poaching, bank and in-channel rubble, bank hardscape, concrete weirs, vagrant encampments and trash garbage and human waste and urban construction on top of the river banks with little to know riparian buffer.	
36	GCRCO WWCC GR Cocaptain	LFA TM, page 10, Table 2, GR-6	The segmentation for this reach should be from I-280 Ave. to Curtner Ave. This reach has for the most part a narrow well shaded but incised channel. The reach is vastly different and has completely different physical properties from sections both up & downstream and is quite isolated with limited access. Water temperatures in this area tend to decrease from the warmer temperatures recorded upstream because of the shaded channel. Salmon are known to use sections of this reach for spawning. The absence of macroinvertebrates in the summer is not a limiting factor for salmon as there are likely no juvenile salmon in the reach in the summer. Limiting factors are improper stream morphology, low dry season flows, high velocity high flows, elevated water temperature, bank and in-channel rubble, bank hardscape, and development directly adjacent to the top of the banks.	Larry’s comments are included under the “local knowledge” section of the reach summary tables and are discussed in the text of Chapter 4, along with some general conclusions from the FAHCE data. The assessment results, however, have not been altered to address these comments and they are not included in the Limiting Factors memo.
37	GCRCO WWCC GR Cocaptain	LFA TM, page 10, Table 2, GR-7	The segmentation for this reach should be from Curtner Ave. to Gage Station 23B. This reach is open and unshaded with fairly easy access. The channel was straightened and widened and the banks lined with gabions. The reach is vastly different and has completely different physical properties from sections both up & downstream. Canoas Creek enters the river at the lower part of the reach. The channel has attempted to narrow itself in the area and reestablish a meander pattern. Trees attempting to reestablish themselves in this area have been killed off with herbicide. This area contained good spawning gravel and salmon used it heavily in the past. Steelhead have also been observed in the area during winter months so it is a potential area for steelhead spawning. The absence of macroinvertebrates in the summer is not a limiting factor for salmon as there are likely no juvenile salmon in the reach in the summer. However, juvenile Chinook salmon have been captured in fisherman's minnow traps in the lower end of this reach in the	Larry’s comments are included under the “local knowledge” section of the reach summary tables and are discussed in the text of Chapter 4, along with some general conclusions from the FAHCE data. The assessment results, however, have not been altered to address these comments and they are not included in the Limiting Factors memo.

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			<p>early spring. Limiting factors are improper stream morphology, low dry season flows, elevated water temperature, bank hardscape, lack of riparian vegetation (shade/hide cover) flash flows from development and Canoes Creek, which was turned into a concrete ditch by flood control projects. Vagrant encampments are common under the Almaden Expressway Bridge at Lincoln Ave., which add trash, garbage and human waste to the river. They also pose a poaching threat to fish and wildlife.</p>	
38	GCRCO WWCC GR Cocaptain	LFA TM, page 10, Table 2, GR-8	<p>The segmentation for this reach should be from Gage Station 23B to Branham Lane. This reach is a relatively shaded but incised channel with limited access. The channel was straightened and lined with concrete rubble. The reach is vastly different and has completely different physical properties from sections both up & downstream.</p> <p>Chinook salmon and lamprey eels used to spawn in the area from Gage 23 B to the old Hillsdale Ave. drop structure. Many salmon died trying to jump the structure, as it was impassible below moderate flows. Salmon making it over the Hillsdale structure could also spawn upstream. The SCVWD removed much of the concrete rubble in the area and installed a series of rock weirs in 1998 but they were improperly designed and installed so they do not provide low flow passage and are failing. A low flow road crossing was also a migration barrier at Bryan Lane. This structure was also replaced with rock weirs in 1998 but they were also designed and installed wrong and are failing. However, the rock structures are far superior to the concrete rubble and structure that they replaced. A steelhead/rainbow trout was observed swimming normally during the summer months in this area. Water temperatures in this area tend to be fairly high due to the lack of shade, overly widened channels upstream and low dry weather flows. Ross Creek enters the river just upstream of Bryan Lane. This straightened, unshaded dirt ditch elevates temperatures in the river when it has dry weather flows. Limiting factors are improper stream morphology, low dry season flows, elevated water temperature, bank hardscape, marginal riparian vegetation (shade/hide cover) flash flows from development and Ross Creek. Vagrant encampments are common under the bridges and below the Hillsdale drop, which add trash, garbage</p>	<p>Larry’s comments are included under the “local knowledge” section of the reach summary tables and are discussed in the text of Chapter 4, along with some general conclusions from the FAHCE data. The assessment results, however, have not been altered to address these comments and they are not included in the Limiting Factors memo.</p>

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			and human waste to the river. They also pose a poaching threat to fish and wildlife.	
39	GCRCD WWCC GR Cocaptain	LFA TM, page 10, Table 2, GR-9	The segmentation for this reach should be from Branham Lane to the Blossom Hill Drop structure. This reach was a wide unshaded reach but the river is attempting to restore itself. The reach is vastly different and has completely different physical properties from sections both up & downstream. The SCVWD used much of this area for instream recharge up until 1995. Instream gravel/dirt dams were installed during the dry season yearly. These dams drown vegetation upstream and dewatered the down stream area so there was no riparian habitat. In the late fall and winter when the dams were removed the channel was straight with no aquatic habitat and was mostly silted up from the dams. Since the SCVWD lost their permits for the dams the river has been attempting to restore itself. The channel has narrowed and is starting to meander and form riffles and pools. Trees and vegetation are establishing themselves so in a few years it may be a productive spawning area, if not destroyed by the upper GRFCP or "Stream Maintenance." Chinook salmon and steelhead are known to use the area up to the dam, which has recently been laddered for fish passage. Limiting factors are improper stream morphology, low dry season flows, elevated water temperature, lack of riparian vegetation (shade/hide cover) flash flows from development, Blossom Hill drop structure.	Larry's comments are included under the "local knowledge" section of the reach summary tables and are discussed in the text of Chapter 4, along with some general conclusions from the FAHCE data. The assessment results, however, have not been altered to address these comments and they are not included in the Limiting Factors memo.
40	GCRCD WWCC GR Cocaptain	LFA TM, page 10, Table 2, GR-10	The segmentation for this reach should be from the Blossom Hill Drop structure to Lake Almaden. The reach is vastly different and has completely different physical properties from sections both up & downstream. This reach is wide with no riparian habitat or shade cover. In dry months the SCVWD floods the area with a flashboard dam placed on top of the Blossom Hill Drop. The water temperature is very high in this area, as the area, the lake above it and the lower portions of the streams feed it are relatively shallow and unshaded. Water temperatures in lower Guadalupe Creek have been measured in the upper 80's in the summer, which is lethal for salmonids. This reach has no salmonid habitat and would not support	Larry's comments are included under the "local knowledge" section of the reach summary tables and are discussed in the text of Chapter 4, along with some general conclusions from the FAHCE data. The assessment results, however, have not been altered to address these comments and they are not included in the Limiting Factors memo.

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			salmonids especially in the summer and fall months. There is currently no Chinook salmon habitat above the dam but steelhead may be able to make it to the upper Alamitos and Guadalupe Creeks to suitable habitat in the upper watershed during high winter flows.	
41	GCRCD WWCC GR Cocaptain	LFA TM, Table 2, GR/LG	<p>The segmentation, support status, limiting factors and suspected causes for LG Creek are grossly inaccurate. Segmentation, support status, limiting factors and probable causes are as follows:</p> <p>The 1st segment of the Creek should run from its confluence with the GR to Auzerias St. This section of the creek always has water in it so it has very different physical properties from the section upstream. It generally has a well shaded but incised channel. Although higher flows depend on reservoir releases the creek still has flowing water in it when reservoir water is shut off or all diverted out of the creek upstream. This factor is most likely due to outfalls and subsurface flows upwelling in this reach. This reach is known to support salmon spawning and steelhead/trout throughout the year. As a result of the GCRCD's Water Rights Complaint the chances that future flows will be improved as the law requires owners of dams and diversions to provide enough water downstream to keep fish in good condition. Limiting factors are improper stream morphology, low dry season flows, high velocity storm flows, elevated water temperature, bank and in-channel rubble, bank hardscape, vagrant encampments, poaching trash, garbage and human waste and construction on top of the river banks with little to no riparian buffer.</p>	Larry's comments are included under the "local knowledge" section of the reach summary tables and are discussed in the text of Chapter 4, along with some general conclusions from the FAHCE data. The assessment results, however, have not been altered to address these comments and they are not included in the Limiting Factors memo.
42	GCRCD WWCC GR Cocaptain	LFA TM, Table 2, GR/LG-2	<p>The 2nd segment of the Creek should run from Auzerias St. to Lincoln Ave. In the past this segment of the creek usually dried out in the dry season due to water being shut off or diverted by the SCVWD. This segment has very different physical properties from up or downstream reaches. As a result of the GCRCD's Water Rights Complaint the chances that future flows will be improved as the law requires owners of dams and diversions to provide enough water downstream to keep fish in good condition. Limiting factors are improper stream morphology, no dry season flows, high velocity storm flows, elevated water temperature, poaching, bank and in-channel rubble, bank hardscape, vagrant encampments and trash</p>	Larry's comments are included under the "local knowledge" section of the reach summary tables and are discussed in the text of Chapter 4, along with some general conclusions from the FAHCE data. The assessment results, however, have not been altered to address these comments and they are not included in the Limiting Factors memo.

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			garbage and human waste and construction on top of the river banks with little to no riparian buffer. The concrete weir at Lincoln Ave may pose a migration barrier at lower flows.	
43	GCRCD WWCC GR Cocaptain	LFA TM, Table 2, GR/LG-3	There should be a separate segment of stream from Lincoln Ave to Leigh Ave. This segment of stream always has water unless it is shut off or all diverted by the SCVWD operations. It has a well shaded channel and is know to support Chinook salmon spawning in the fall and winter. This segment has very different physical properties from up or downstream reaches. As a result of the GCRCD's Water Rights Complaint the chances that future flows will be improved as the law requires owners of dams and diversions to provide enough water downstream to keep fish in good condition. Limiting factors are improper stream morphology, low dry season flows, high velocity storm flows, elevated water temperature, poaching, bank and in-channel rubble, bank hardscape, vagrant encampments and trash garbage and human waste and construction on top of the river banks with little to no riparian buffer.	Larry's comments are included under the "local knowledge" section of the reach summary tables and are discussed in the text of Chapter 4, along with some general conclusions from the FAHCE data. The assessment results, however, have not been altered to address these comments and they are not included in the Limiting Factors memo.
44	GCRCD WWCC GR Cocaptain	LFA TM, Table 2, GR/LG-4	There should be a separate segment of stream from Leigh Ave. to Camden/San Tomas Expressway. This segment of stream always has water unless it is shut off or all diverted by the SCVWD operations. It has been poorly shaded, as most riparian vegetation was destroyed by instream gravel/dirt spreader dams operated by the SCVWD until 1995. The area is now starting to restore itself as the channel is narrowing itself and developing a meander and trees are establishing themselves along its banks. This area has become one of the prime Chinook salmon spawning areas in the fall and winter, as the gravel is excellent. Steelhead have also been observed spawning in the area in the winter months. This segment has very different physical properties from up or downstream reaches. As a result of the GCRCD's Water Rights Complaint the chances that future flows will be improved as the law requires owners of dams and diversions to provide enough water downstream to keep fish in good condition. Limiting factors are improper but improving stream morphology, low dry season flows, high velocity storm flows, elevated water temperature, bank and in-	Larry's comments are included under the "local knowledge" section of the reach summary tables and are discussed in the text of Chapter 4, along with some general conclusions from the FAHCE data. The assessment results, however, have not been altered to address these comments and they are not included in the Limiting Factors memo.

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			channel rubble, bank hardscape and trash. There is a drop structure at Campbell Ave., which serves as fish migration barrier at low to moderate flows and the dam at Camden/San Tomas Exp. is a migration barrier at all flows.	
45	GCRCDD WWCC GR Cocaptain	LFA TM, Table 2, GR/LG-5	There should be a segment from San Tomas to Lark. This reach is vastly different from reaches above or below it. The reach contains no riparian habitat and is distinguished by a series of instream dams, which prevent fish migration and serve to heat up the water as it bakes in the sun. There is no cold water fish habitat so this section would not support cold water species or permit their upstream migration.	Larry’s comments are included under the “local knowledge” section of the reach summary tables and are discussed in the text of Chapter 4, along with some general conclusions from the FAHCE data. The assessment results, however, have not been altered to address these comments and they are not included in the Limiting Factors memo.
46	GCRCDD WWCC GR Cocaptain	LFA TM, Table 2, GR/LG-5	There should be a segment from Lark to Vasona Reservoir. This segment has different properties from the down stream reach as it is well shaded and has a defined meandering channel. It has the potential for supporting rainbow trout that may enter the area from upstream but fish migrating up the river are unable to reach the area due to downstream dams.	Larry’s comments are included under the “local knowledge” section of the reach summary tables and are discussed in the text of Chapter 4, along with some general conclusions from the FAHCE data. The assessment results, however, have not been altered to address these comments and they are not included in the Limiting Factors memo.
47	City of Sunnyvale	LFA TM, page 11, Table 2, Guadalupe GR/GC-1	This reach is not listed on Table 1. Why?	This oversight has been corrected.
48	Scott Akin, Water Supply Div. SCVWD	Section 4.5, p. 12, Preservation of Rare and Endangered Species (RARE)	Table 2, Guadalupe, Reach GR/AL-2, Suspected Causes Take out: Draining in 1997 may have been responsible for failure to meet insect criteria in 1998 Comment: Reservoir was not drained in 1997	Revision adopted.
49	SCVWD-Water Quality Unit	Table 3	Why is there no support/non-support statement for MUN use in Almaden, Lexington and Vasona Reservoirs? We submitted the same data set for those reservoirs as for Guadalupe Reservoir.	These reservoirs do not show up in Table 3 because the uncertainty level was too high to warrant identifying suspected causes for the limiting factors. More detailed discussion is provided in sections 4.2 and 4.3 on each of these reservoirs.
50	SCVWD-Water Quality Unit	Table 3	Calero Reservoir MTBE has not exceeded the Action Level of 5 ug/l since 2000 when we developed an MTBE management strategy with the Parks Department.	Comment noted and added to table as well as Chapter 4.

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	SCVWD-Water Quality Unit	General Comment	It is difficult to review these chapters in the absence of the remaining and preceding chapters.	Comment noted.
51	City of Sunnyvale	LFA TM, page 14, Table 3, GR-3 –Suspected Causes	<p>A statement is made that urban runoff contributes to elevated metals. Which metals are these? This type of statement should be more precise and not general. Is nickel the metal of concern or are there others? Are there other sources that contribute to the elevated metals?</p> <p>Kristy suggests clarifying this statement to explain WHAT metals are being discussed. It is previously mentioned that mercury and nickel were problems- Kristy suggests consistent references to specific sources, if possible.</p> <p>Suggestion by group to add the word “may” before contribute in this sentence and omitting the word “elevated” in the same sentence. Also, ‘natural sources and urban runoff’ to be included.</p>	The text in the table has been revised to adopt the suggested wording.
52	City of Sunnyvale	LFA TM, page 15, Table 4, UP-3 &UP-4	Why are these two reaches not listed on Table 1?	This oversight has been corrected.
53	GCRCD WWCC GR Cocaptain	LFA TM, Page 15, Table 4	Most all segments of waterbodies in the GW support at least some form of REC-1 on a limited basis as already noted in my January 21, 2002 comments letter. The support status listed in the table is incorrect. The limiting factors and suspected causes are incorrect and have nothing to do with REC-1. Limiting factors are waterborne pathogens, access, instream blockages/ structures, low or extremely high flows, rubble, debris and garbage and vagrant encampments	Larry’s comments are included under the “local knowledge” section of the reach summary tables and are discussed in the text of Chapter 4, along with some general conclusions from the FAHCE data. The assessment results, however, have not been altered to address these comments and they are not included in the Limiting Factors memo.
54	Trish Mulvey	LFA TM, page 16, Table 4, SF/WU-5	The car body in Squealer Gulch should be referred to as “illegal dumping” – NOT “illicit discharge”	Revision adopted here and in Chapter 5.

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55	GCRCDD WWCC GR Cocaptain	LFA TM, page 17, Table 5	Some segments noted above, currently support PFF even as inappropriately defined, so there are inaccuracies associated with this interest as well.	Larry’s comments are included under the “local knowledge” section of the reach summary tables and are discussed in the text of Chapter 4, along with some general conclusions from the FAHCE data. The assessment results, however, have not been altered to address these comments and they are not included in the Limiting Factors memo.
56	GCRCDD WWCC GR Cocaptain	LFA TM, page 20, Table 6	This use has similar problems identified for Cold as previously identified in my January 21, 2002 comments letter.	Larry’s comments are included under the “local knowledge” section of the reach summary tables and are discussed in the text of Chapter 4, along with some general conclusions from the FAHCE data. The assessment results, however, have not been altered to address these comments and they are not included in the Limiting Factors memo.
57	City of Sunnyvale	LFA TM, page 20, Table 6, GR/LG-1	<p>What is a “salmonid redd”? This was listed in the assessment comments for this reach in the tables for Chapter 4 as well. It should be corrected to whatever salmonid we are talking about.</p> <p>Also, as a general note, the way common names are capitalized should also be addressed in a consistent manner throughout the tables. It’s very inconsistent (and incorrect in some cases) the way that it is now.</p>	<p>A salmonid redd is a “nest” . This explanation has been added to the table as well as to the reach summary tables in Appendix 4-B.</p> <p>Consistent capitalization formats have also been applied.</p>