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70-2 cont'd

the most notable sources for watershed management in the country, buffers specifically help by:

- restoring and maintaining the chemical, physical and biological integrity of the water resources

- removing pollutants delivered in urban stormwater
- reducing erosion and controlling sedimentation
- stabilizing stream banks
- providing infiltration of stormwater runoff
- maintaining base flow of streams
- contributing the organic matter that is a source of food and energy for the aquatic ecosystem
- providing tree canopy to shade streams and promote desirable aquatic organisms

d. To achieve this plan, the Center for Watershed Protection suggest an ordinance or specific measures that shall:

- Develop a location or vicinity map
- Field delineated and surveyed streams, springs, seeps, bodies of water, and wetlands (include a minimum of two hundred (200) feet into adjacent properties).
- Field delineated and surveyed forest buffers
- Limits of the ultimate one hundred year floodplain
    - *The limits of the ultimate floodplain (i.e., the floodplain under "built-out" conditions) may not be available in all locations.*
- Hydric soils mapped in accordance with the NRCS soil survey of the site area
- Steep slopes greater than fifteen (15) percent for areas adjacent to and within two hundred (200) feet of streams, wetlands, or other waterbodies.

While much of the above is not likely a Rocklin City ordinance, why aren't many of these factors considered -- given the sensitive nature of this pristine and narrow canyon? I understand some of the above surveys have been conducted, but from my reading I cannot find the following:

- a survey adjacent to the property (min. of 200 ft.) -- given much of the storm water discharge may leak, spill or inadvertently run into adjacent properties (obviously outside of the canyon walls), affecting the railroad, residents, roadways, etc.

Letter 70 cont'd

70-2 cont'd

- Forest and riparian areas with a detailed survey – given the importance of the essential wetland functions stated above.
- Hydric soils in accordance with NRCS standards – given the impervious nature of the soils and extremely narrow canyon in places .
- Make clear with maps showing steep slopes greater than 15 percent within roughly 200 to 300 feet of the stream. In the hazards section (4.10), nothing is mentioned about the impact of steep slope precipitation run-off or landslides caused by artificial dirt fill. Contour maps are too difficult to quantitatively assess slope percentages.

e. All trees and vegetation throughout the narrow canyon may be critical to prevent significant pulses of water gushing into the stream through deflection, absorption and other natural mechanism. Why is this not addressed, again, in relation to impervious cover (IC).

70-3

3. Is there a possibility of recovery for anadromous fish in Clover Valley creek?

   a. According to David Baker's comment of the Dry Creek Conservancy (DCC), these fish have visited this area within the past 50 years and have critical habitat designation today. The streambed does not have to have fish present to receive this status. Clearly in the near past salmon migrated into this canyon given the past surveys. Why are past fish surveys from major Federal, State, and local jurisdiction not available in this report?

   b. Given the historic record indicating anadromous fish and limited habitat available today, all urban creeks are of great value to recovery. The study by ECORP is one source suggesting CV Creek is of low value, but it's unclear as to the time span of the study and degree of accuracy from this report. What are the specific obstacles to reaching the upper reaches, according to the ECORP report? What is needed to remove them?

70-4

4. Is this project subject to the Federal Endangered Species Act, specific to anadromous fish?

   a. Within the past few years, the DCC had to consult with the Fish & Wildlife Service (USFWS) - Sec. 7 of the Endangered Species Act (ESA) for the Royer Reforestation Project permit. It's my understanding that the Agency has reinstated this designation.

   b. Clover Valley and Antelope Creek are clearly significant tributaries to the Dry Creek watershed. Yet because conditions downstream are degraded today from previously approved projects along the creeks, does not mean other projects are not subject to a higher standard. Given that fish have

Letter 70 cont'd

70-4 cont'd

been in this area, have archeological studies proven existence of anadromous fish in the Native American sites?

c. Have there been studies to suggest what means are needed to restore a viable fish passage to access this critical habitat?

5. What is the impact of housing units on the valley floor to maintaining the base flow? Fish and other aquatic flora and fauna rely upon natural and historic flows. Storm Drain Systems D, G, H, J and P would discharge near the top of the eastern and western hillsides. Yet normally this precipitation would have a chance to infiltrate into the groundwater (especially on valley floor 4.11-4) and/or be retained by vegetation.

   a. Referring to the shallow groundwater tables, especially on the eastern side (Plate 2 – appendix K – sites TP-10, 11, 7, 6, 1…), how is placing structures and roads going to allow for recharge, which feeds stream flow into CV creek throughout the year?

   b. The subsurface consists of very dense bedrock which has faults, cracks, etc. that allow for seepage and infiltration. Where are the critical geographic regions to protect from IC and ground water recharge?

70-5

   c. Shallow groundwater will have an adverse impact upon building sites (appendix K). The reports suggest many methods to eliminate or remedy saturated soils, such as subsurface drainages. But what is the impact on storing and maintaining natural groundwater for year-round discharge into the stream (i.e. the ability of the base flow to maintain its existing and natural conditions)? This is important for minimum flows and water temperatures for fish and other aquatic animals.

6. Placing fill for building pads on top of shallow top soil and hard bedrock is a highly engineered feat.

   a. How can you adequately dewater hard, impenetrable subsurface granite and the Mehrten volcanics, especially on steep slopes?

   b. Given the precarious nature of slides on hard rocks with a shallow ground water table, slopes steeper than 25% should remain undeveloped. What is the industry standard, according to the major and recognized geotechnical organization? What is the percentage of structures in this category?

70-6

   c. What is the chance of landslides or a creep? In the hazards section (4.10), nothing is mentioned about the impact of steep slope precipitation and landslides or creeps caused by artificial dirt fill.

Letter 70 cont'd

70-6 cont'd

d. Oroville had an earthquake around 6.0, with the same foothill fault system running north. In fact, that earthquake was instrumental in stopping the construction of the Auburn Dam. What is the likelihood of a 6.0 or greater earthquake in the next 100 years or greater? How would a seismic event of 6.0 affect the drainage system? The seismic report needs more details given the dependence on a highly engineered drainage and flood prevention system.

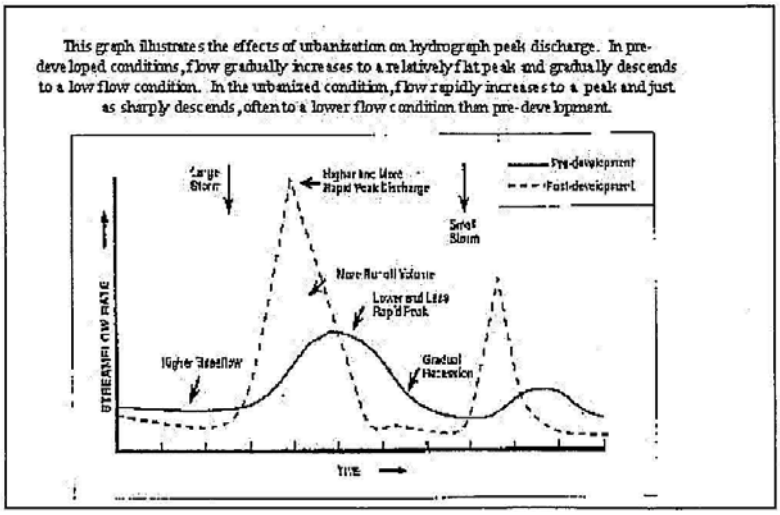
7. What are the hydrological effects of this development plan, specifically:

a. The impervious cover (IC) is suggested at 21 percent from 4 or 5 percent within this section of the watershed. How did the study arrive at that IC percentage and where is an illustration to explain the factors and cumulative impacts for the average layperson to understand?

b. Where is a hydrological graph in the DEIR, such as below to explain the hydrologic modeling and flow? Graphs people can better understand and critique. Models (such as HEC-1) are too abstract for ordinary reviewers, including myself and the city council members. While the models may be valid, it only looks at the Dry Creek watershed as a whole, not this specific location and tributary. Please include sections of the Placer County Flood Control's "Dry Creek Watershed Flood Control Plan" in this DEIR as well as comprehensive translation of the findings.

c. Why does the DEIR not make it transparent and graphical as to the hydrological / flooding effects with added IC? (See rough example below)

70-7



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70-7 cont'd

d. In 4.11 – Hydrology and Water Quality, the Conditional Letter of Map Revision (CLOMR) shows the modified floodplain, but it's difficult to see the original FEMA floodplain. The document on 4.11-15 says "the proposed floodplain is essentially unchanged from the existing FEMA 100-year floodplain designations, and off-site, the flood stage would remain the same as under existing conditions."

- Are there houses, structures or roads located in the original floodplain? From my review of the City document (FEMA maps) and the CLOMR maps, it appears the floodplain downstream of the 2 lower bridges has decreased. It's difficult to compare the before and after changes, even looking at the 4.11-3 CLOMR map.

e. Referring to 4.11 – 32 statement from the Placer County Flood Control District and Dry Creek watershed flooding, the quote clearly states on-site detention basins will only reduce flooding events.

Yet this canyon is especially vulnerable to flooding because of its confined area. Once these two detention basins are full, they will have no control to halt water flow as it pour over the bridges. Mitigation measures 4.11MM-1(a-c) does not show the reader how the development plans will overcome peak flows problems. They are too vague to scrutinize, as listed below:

- The first (a) measure simple lists: "drainage easements, underground piped drainage systems, ditches and open channels, and Clover Valley Creek." That is all that is mentioned with no reference elsewhere. While I understand the drainage plan will likely change with modification to the development plan, how is this proposed system in the mitigation measures going to handle an inundation of floodwaters? Only a 10 cfs overflow from the Whitney Reservoir seems to be addressed.

f. The detention basins are located at the two southern crossings, which will impound water behind them and restrict flow. As stated (4.11-27) "The flow restrictions are what allow the bridge to create a detention basin." During flooding, if the open arch of the bridge is obstructed (with no or little flow through it), what are the flooding effects upstream given the following scenarios: mild, moderate and extreme flooding?

g. How will these flooding scenarios affect upstream and downstream areas near the detention basins?

- How will upstream housing lots (391-398 and 419-42) be affected?

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70-7 cont'd

- On the other side, how will lots 487-493 and 448-456 and others adjacent them) be affected by rising flood waters?
- On the second upstream detention basin, how will downstream lots 384 – 390 be affected by spill-over from a flooding event? Were they in the previous 100 year floodplain delineation?
- On the other side, how will lots 422, 431-39 be affected?

h. As mentioned, reduced flows will increase sedimentation within the detention basins. The mitigation measures to address this significant impact on the creek are the following:

- Not use a culvert under one of the spans (open arch)
- Use single span for 2 upstream bridges
- Allow maintenance to remove excess sediment
- Seek funding sources for maintenance

➢ Yet the development plans are creating an impounding structure. What is the rate of sedimentation behind this structure?

➢ How many individual storm events, months, or years will it take to fill up the detention basins?

➢ How can homeowners be assured such an engineered measure is sustainable and will keep flows at pre-construction levels? Already there is a flooding problem downstream according to the Planning Dept. and photo of flooding at Clover Valley Park (included at end of document.)

➢ Why are the setbacks from the creek just 50 feet. Low Impact Development (LID) stress 100 feet buffers to allow infiltration of water. In 4.11-18 the BMPs for sediment control do not include minimum buffer area or setback.

➢ IF just one event pours a significant amount of material to fill the detention basin -- given the likely increased run-off due to IC (est. at 26%) – or the basin arch and spill-over portion becomes clogged, what are the worst case scenarios? Perhaps a rare but very possible events, this scenario has not been adequately addressed in this document.

i. If fish are proven to migrate or eventually can migrate into these reaches of Clover Valley Creek, or the area can be restored as critical habitat, what are the impacts of:

- Increases in stream flow and pulses of water due to increased storm run-off and significantly increased IC?
- Decreased velocity in some (such as the detention basins areas) resulting in sedimentation fill in other areas), to viability of

Letter 70 cont'd

anadromous fish to survive (habitat alteration)?

j. Perhaps the most important factor for the entire development project as currently designed hinges on the accuracy and confidence in the hydrological modeling. Looking at the flow chart in section 4.11-12, all of these cfs numbers appear to be based on one model developed for the Dry Creek Watershed Flood Control Plan. Extreme transparency, caution and scrutiny must be applied to this model. Given the significant increases in IC, the geologic setting, the perched water table, etc., many questions need to be addressed on the inputs and methodology of the hydrological modeling.

- What are all of the inputs to the model? Given the unique nature of this small, narrow canyon, hard bedrock and volcanic lahars -- a generic watershed analysis is completely inadequate.
- What is the methodology of this model? There are no details provided to critique this methodology.
- Regarding Storm Drain Systems D, G, H, J and P, where is this water going? How will impact Antelope Creek both qualitatively and quantitatively?
- Has the run-off from Bickford Ranch been researched and incorporated? See attached map of watershed, topography and projects. Bickford clearly is in the upper reaches of this watershed. (Source: 3)
- Has Placer County Flood Control District researched the impacts of Bickford Ranch impervious cover?

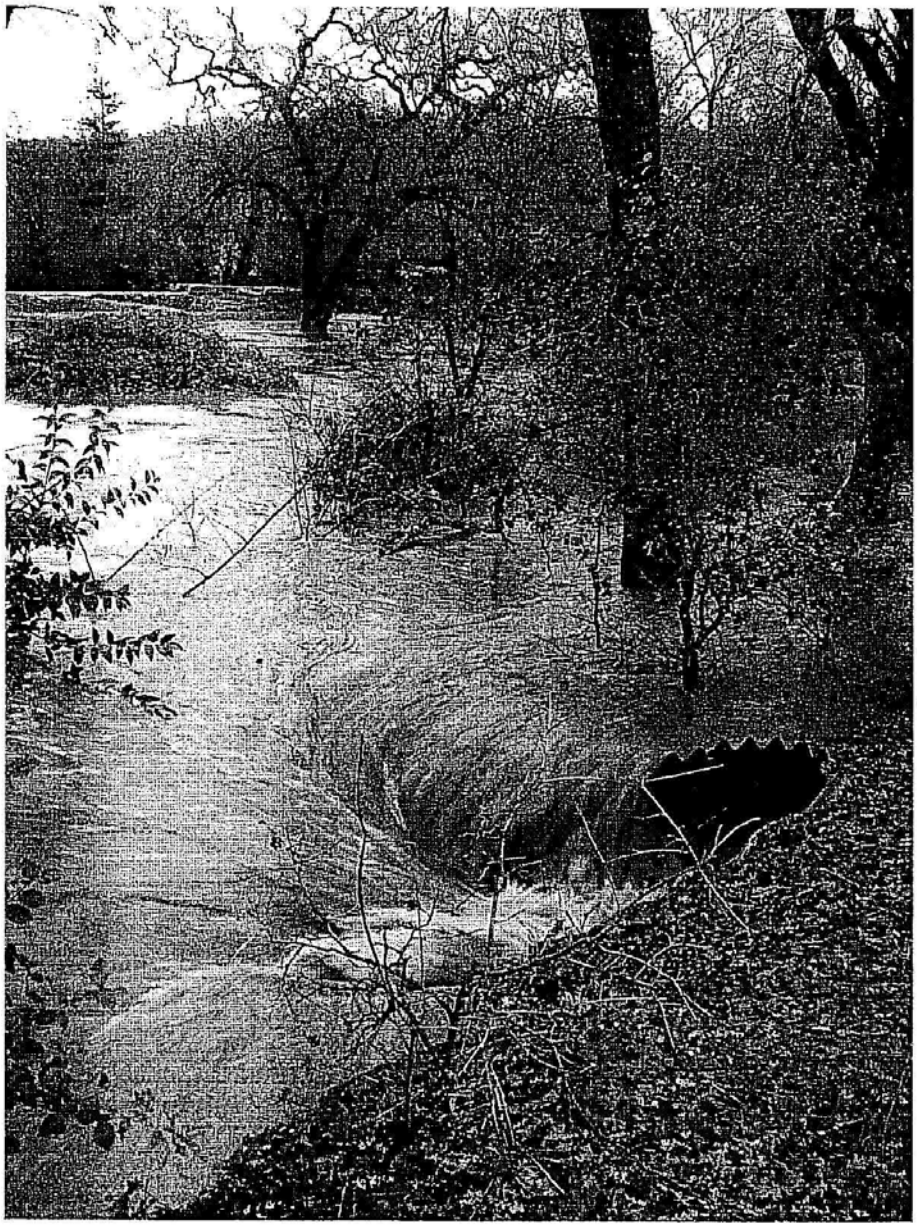
70-7 cont'd

The City of Rocklin needs to take a serious look at this extremely engineered and over-built project. Members of the council and others need to scrutinize the impacts of this project on the upper watershed, especially given the current conditions downstream, which flood frequently. On Dec. 31 significant flooding occurred downstream, yet this storm event was not an extreme event. The 100 year event would be much larger, and if nothing were built upstream, the downstream flooding would have been much worse. Home owners adjacent to the floodplain have a right to know a more detailed analysis of the hydrological impacts from this large-scale project upstream. Adding all of the structures, roads, engineered water works will surely only aggravate the situation.

70-8

The information provided in the DEIR makes a simple and inadequate effort to address these concerns. I suggest numerous and independent watershed studies looking specifically at IC and flooding be conducted until this project moves forward.

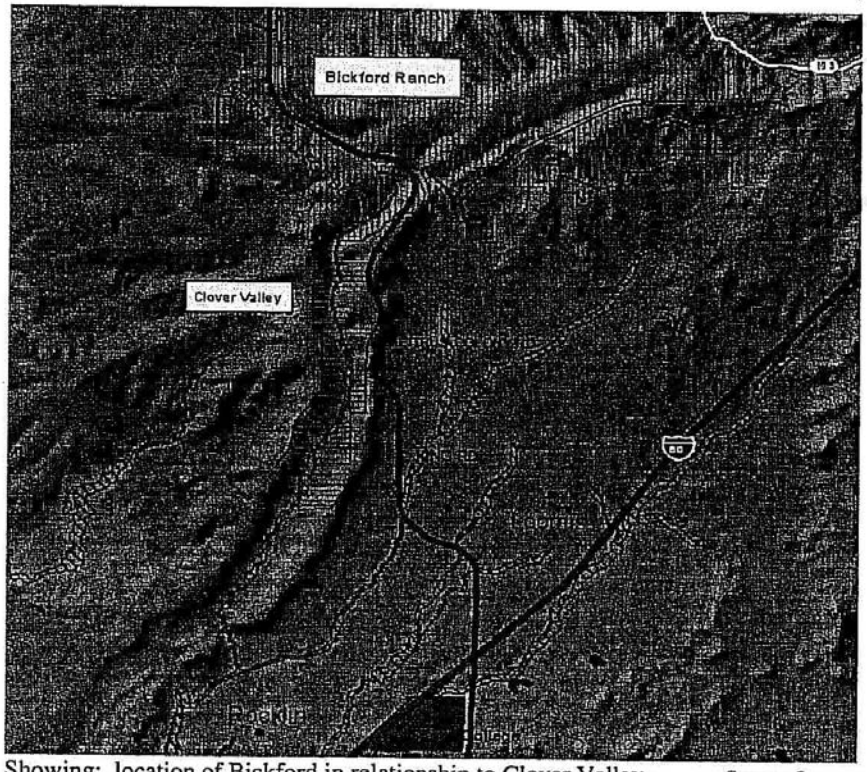
Sincerely,
Sean Booth
Sean Booth, Professor of Geography & GIS
Sierra College



Clover Valley Park (adjacent to Midas Street), Dec. 2005

Sources:

1) Land-Use Planning: The Ultimate BMP – http://www.forester.net/ec_0004_land.html
2) Center for Watershed Protection – http://www.cwp.org
3) GIS Map: Data Sources: Bickford area from Placer County Planning, Clover Valley area estimated from paper maps (not exact), topography from USGS Digital Elevation Models, Floodplains from FEMA Q3 flood data – 100 year



Showing: location of Bickford in relationship to Clover Valley Source: 3

LETTER 70: BOOTH, SEAN

Response to Comment 70-1

The commenter suggests that the EIR compare the proposed project with other existing developments that exist in comparable geologic conditions and then correctly acknowledges that there are no comparable projects that have been built in sufficiently similar conditions, thereby highlighting the infeasibility of the commenter's suggestion.

The best and most accessible method of analysis is the use of hydrologic modeling. Additionally, the EIR utilizes the FEMA 100-year flood maps, which are considered to be the most conservative and dependable standards for anticipating peak floodwaters. See Impact 4.11I-2 for more information regarding potential impacts that would result from exposing residents to potential flood hazards.

Response to Comment 70-2

The comment appears to suggest additional analysis relating to flooding and related issues. The hydrologic analysis described in Chapter 4.11 of the RDEIR was prepared by engineers with expertise in the field, and was designed to evaluate the potential drainage and flooding impacts which would result from development of the project, and the resulting increase in impervious surfaces. While additional studies and analysis can always be performed, it is believed that the analysis set forth in the EIR adequately addresses such impacts.

With respect to the comment as it pertains to oak trees, Appendix J summarizes the tree removal data for each of the various areas of the project. Also on file with the city are exhibits depicting the existing oak tree inventory found throughout the project. Those exhibits display the locations of oak trees throughout the project and differentiate between trees being removed and those remaining. See also Section 2 of Master Response 8 – Biological Resources.

Response to Comment 70-3

Commenter refers to David Baker's (Dry Creek Conservancy) comment noting anadromous fish have been observed in areas downstream of the project site. Commenter also believes Clover Valley Creek is designated critical habitat for salmonids. Further, Commenter asks why federal, state and local fish surveys are not made available in the RDEIR.

Nothing contained within the Clover Valley project design would prevent migration of fish throughout Clover Valley Creek. Bridge crossings will be designed in accordance with NMFS Guidelines for Salmonid Passage at Stream Crossings.

As noted in City's response to Comment 26-10, the reach of Clover Valley Creek located within the project boundaries is not included in the September 2005, NMFS designation of anadromous critical habitat.

Federal, state and local agencies were provided an opportunity to comment on the proposed project. The NMFS BO comprises the federal response. It notes that data on steelhead use of small creeks in the Central Valley is sparse. At the state level, the California Department of Fish and Game in a May 9, 2002, letter responding to an inquiry regarding the presence of salmonids in Clover Valley Creek at the project site notes CDFG could not locate any records of salmonids using Clover Valley Creek at the project site.

Commenter asserts that, given the limited amount of anadromous fish habitat, all urban creeks have value for recovery of the species. Commenter further asks what obstacles prevent upstream migration.

The City recognizes the potential value of Clover Valley Creek for salmonid migration should downstream impediments be removed. Mitigation measures 4.8MM-15(a) and 4.8MM-15(b) implement actions intended to permit salmonid migration throughout the project site. Obstacles to upstream migration are described at RDEIR section 4.8I-15.

Response to Comment 70-4

See response to comment 26-10 for information pertaining to species status and critical habitat designations, and to response to comment 43-171 for fish passage and stream restoration issues. In addition, information on stream habitats and fish species documented in Clover Valley Creek within the Project area is available in the *Aquatic habitat survey and fishery assessment for Clover Valley* conducted by ECORP in June 2006.

For clarification purposes, the initial stream assessment conducted by ECORP (2001) did not suggest that Clover Valley Creek is of low value. In fact, the fishery sampling conducted by ECORP in 2006 documented the presence of hitch and Sacramento suckers (both native species) within the Clover Valley Project area. Both of these fish commonly occur in Sierra foothill streams with sandy substrates. See response to comment 43-171 regarding potential restoration of the creek.

a. Neither Clover Valley Creek or Antelope Creek are included within critical habitat for either Chinook salmon or steelhead trout; however, the Army Corp of Engineers may still require consultation with the National Marine Fisheries Service regarding downstream Essential Fish Habitat issues relative to anadromous fish. Refer to response to comment 26-10 regarding species status and designation of critical habitat for anadromous salmonids.

b. Refer to response to comment 26-10 for historical data on the historical presence of anadromous salmonids in Clover Valley Creek.

As mentioned earlier, Clover Valley Creek is not designated as critical habitat for anadromous salmonids, see response to comment 26-10. Refer to response to comment 43-171 regarding barriers to passage and stream restoration issues.

Response to Comment 70-5

This comment states that base flow (flow entering the creek from the ground) will be decreased because of the impervious surfaces and storm drainage system. This statement is correct. However, only about 21 percent of the project area is expected to be impervious, so the project will have a minor reduction in base flow occurring from infiltration of rainfall. Also, landscape watering would occur with the project but does not occur now. The landscape watering would contribute to base flow in the creek. Additionally, the creek is used to convey water from the PCWA to the Sunset Whitney Golf Course. Consequently, the creek does not function in a natural condition now. The use of the creek for water conveyance likely overwhelms the potential changes in base flow resulting from the proposed project.

Response to Comment 70-6

No dewatering is anticipated for the construction of building pads. As explained on page 4.9-15 of the RDEIR, some dewatering may be necessary for utility installation, but this potential only exists in the low-lying areas, such as where utilities cross existing drainages. No lots are proposed for development with slopes greater than 25%.

Slope stability issues (including the potential for landslides) are addressed in chapter 4.9, under Impact 4.9I-1 (pages 4.9-6 to 4.9-12), which sets forth numerous measures to mitigate any potential for impacts. Likewise, the potential for earthquakes is addressed under Impact 4.9I-3 (pages 4.9-13 to 4.9-14), which sets forth measure to mitigate any impact. The comment does not suggest any inadequacy in these measures.

Response to Comment 70-7

a. The impervious coverage of 21 percent was derived as shown in Table 1. The density of the single-family residential units is 2.8 units per acre. The Sacramento City/County drainage Manual, Volume 2, Hydrology Standards (Table 5-2) indicates an impervious coverage of 25 percent for this housing density. The 25 percent includes the roads within the neighborhood so the impervious coverage of the housing lots is actually lower than 25 percent. As shown in Table 1, for this analysis, the lots were assumed to be 40 percent impervious, which represents a reasonably conservative coverage assumption.

Table 3.3-4 Development of Impervious Coverage

Land use	Area, Acres	Approximate Impervious Percentage	Impervious Area, Acres
Single Family Residential (558 units)	198.6	40	79.4
Open Space (Including roadway landscape lost)	366	1	3.7
Core Roadways	46.4	95	44.1
Neighborhood Parks	5.3	10	0.5
Neighborhood Commercial	5	90	4.5
Fire Station	1	90	0.9
Total	622.3		133.1
Average Impervious Percent (impervious area/total area)			21.4

b. The data represented by the requested graph is fundamental and included in the hydrologic modeling performed to analyze the project's hydrologic impacts.

c. The data represented by the requested graph is fundamental and included in the hydrologic modeling performed to analyze the project's hydrologic impacts.

d. The original flood plain is shown on Exhibit L. As shown, there are no houses or structures located in the original flood plain. All of the road crossings of Clover Valley Creek are within the original flood plain.

e. The Placer County Flood Control and Water Conservation District (PCFCWCD) statement says that local detention basins can be effective in addressing local flooding (see the Master Response 11). The PCFCWCD statement also says that regional detention basins are needed. Mitigation measure 4-11MM.1(b) requires the project to pay the Dry Creek Watershed drainage fee, which will be used by PCFCWCD to construct regional flood control facilities. Thus, the project will address local flooding problems directly and will contribute its fair share to addressing regional flooding problems.

All drainage/flood control facilities must be sized for some storm event. In this area, the City, PCFCWCD, and FEMA require that the detention basins be sized for the 100-year storm. It is possible that a larger storm could occur, which is why 3 feet of freeboard is required in the detention basin design. If a storm occurs that overtops the freeboard, this water will spill down the creek.

The list of drainage facilities is provided to ensure the long-term maintenance of the facilities occurs. Placer County Water Agency's Whitney Reservoir can spill

up to 10 cfs of flow to Clover Valley Creek, and this flow should be included in future watershed modeling.

f. See Master Response 11.

g. See Master Response 11. All of the houses along the creek are planned to be above the 100-year water level

h. See Master Response 11.

i. Since no special status fish species were found to be present in Clover Valley Creek, the implementation of the project is not required to mitigate for future speculative impacts.

j. Technical Appendix O presents the hydrologic modeling for the project.

Response to Comment 70-8

The commenter states that significant flooding occurred downstream from the proposed project on December 31, 2005, also noting that, "if nothing were built upstream, the downstream flooding would have been much worse." The commenter's point is accurate in that the construction of improvements such as the detention basins included in the proposed project, would increase flood controls along the Clover Valley Creek and act as a controlling factor in extreme weather events and would result in more controlled flows during extreme storms, such as the 100-year flood event. Table 4.11-2 illustrates that the proposed project would be expected to result in a small decrease in floodwater flows during the 100-year flood event at all locations as well as a decrease in peak flows during the 2-year and 10-year storm event scenarios at all locations with the exception of Dry Creek at the Natomas East Main Drainage Channel which would have slight increases (14 cfs in the 2-year storm event and 1 cfs in the 10-year storm event).

Impact 4.11-1 of the DEIR, find that impacts related to flooding and flood control for the proposed project area would be reduced to less-than-significant through the implementation of suggested mitigation measures.