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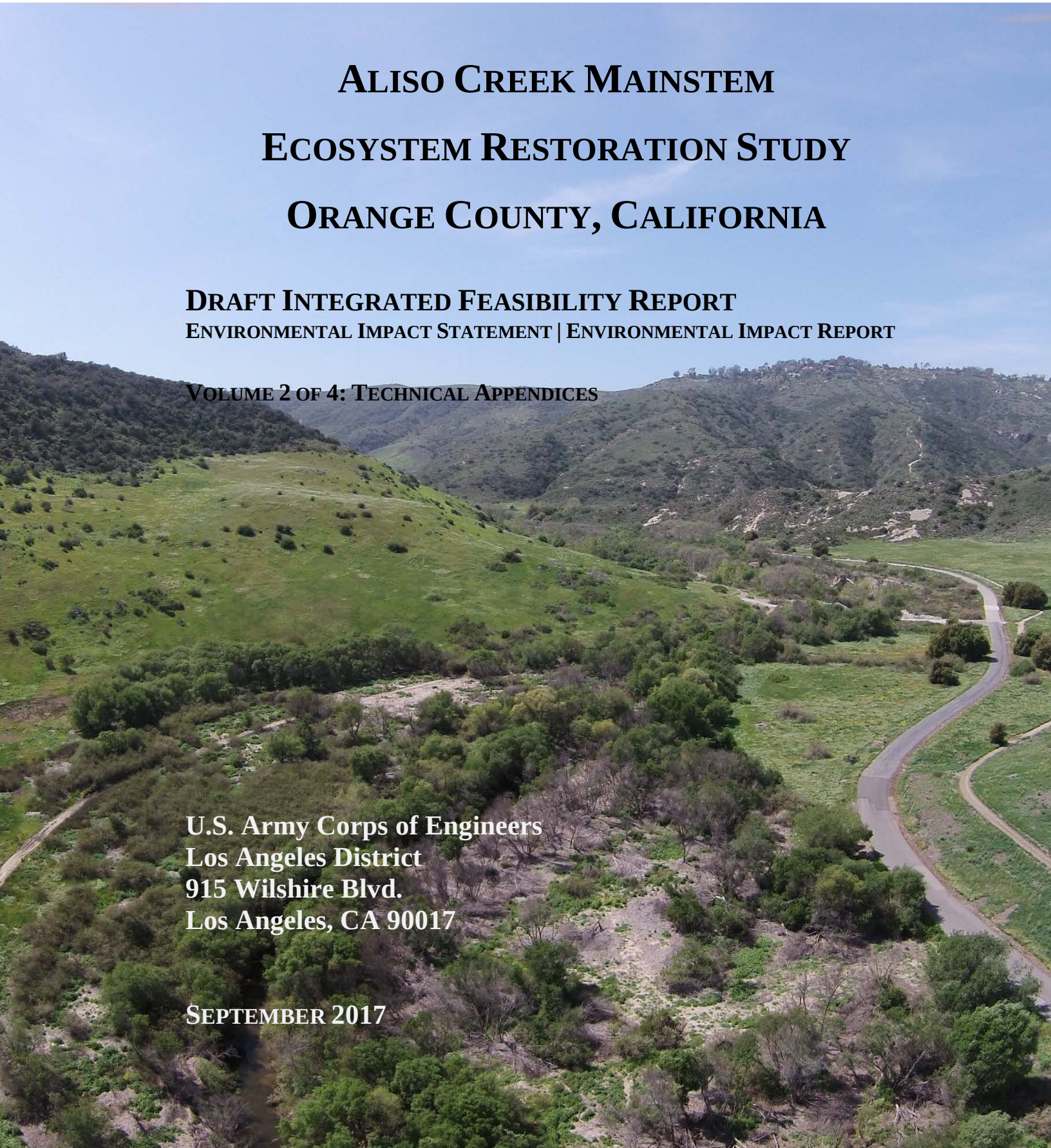

ALISO CREEK MAINSTEM ECOSYSTEM RESTORATION STUDY ORANGE COUNTY, CALIFORNIA

DRAFT INTEGRATED FEASIBILITY REPORT
ENVIRONMENTAL IMPACT STATEMENT | ENVIRONMENTAL IMPACT REPORT

VOLUME 2 OF 4: TECHNICAL APPENDICES

U.S. Army Corps of Engineers
Los Angeles District
915 Wilshire Blvd.
Los Angeles, CA 90017

SEPTEMBER 2017

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Volume 2

Appendix A: Engineering (Part 2)

A-2: Hydrology and Hydraulics

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APPENDIX A-2: Hydrology and Hydraulics

ALISO CREEK MAINSTEM
ECOSYSTEM RESTORATION STUDY
Orange County, California

September 2017

US Army Corps
of Engineers

Orange County Public Works
Environmental Resources
Department

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CLARIFICATION SHEET

EXPANATORY NOTE FOR DEVELOPMENT OF ALTERNATIVES

The development of the focused array of alternatives (described in Chapter 3 of the Draft IFR) consisted of assessing measures which could be combined with each base alternative (i.e. Base Alternative 2, 3, and 4) to create variations of the alternatives. Cost effectiveness and incremental cost analysis was utilized to develop cost effective alternatives.

This appendix refers to a list of the measures, also referred to as "additional measures". It should be noted some measures listed were subsequently screened out, and not carried forward in the alternatives development. Some of the names appear differently in other reports, and are noted here for clarification, if applicable.

The table below summarizes these actions.

Measure	**Other Names Used**	**Screening: Retained?**
East Bank Access Road Construction		Yes; combined with Base alt
Repurposing of AWMA Road	Old AWMA Road	Yes; combined with Base alt
Reconnection of Abandoned Oxbow		Yes
Stream Lengthening Downstream of Wood Canyon Creek Confluence	Sinuosity or Stream Lengthening downstream of Wood Canyon Creek	Yes
Wood Canyon Connection		Yes
Recontouring of Existing Channel Betwn ACWHEP and AWMA Rd Bridge		Yes
Sulphur Creek Connection		Yes, but added to base alternatives
Removal of two 10 ft high vertical drop structures		Yes
Widening in vicinity of Aliso Creek Road Bridge		Yes
Recontouring Existing Channel from 1,400 ft upstream of Aliso Creek Road Bridge to Pacific Park Drive		No
Skate Park/Soccer Field Relocation		No
Stream Lengthening at Skate Park		No
Stream Lengthening Downstream of Pacific Park Drive	Sinuosity downstream of Pacific Park Drive	Yes
Construction of Newbury Riffle Structure	Newbury Riffle Weir	Yes
FRM (Flood Risk Management) Riprap Bank Protection	Streambank Protection (Buried)	Yes, but not under FRM category
Construction of Backwater Areas		No

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ALISO CREEK ECOSYSTEM RESTORATION STUDY
ORANGE COUNTY, CALIFORNIA

TSP DRAFT HYDROLOGY AND HYDRAULICS APPENDIX

Prepared For:

U.S. Army Corps of Engineers
Los Angeles District
P.O. Box 532711
Los Angeles, California 90053

February 2015

TETRA TECH

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Attachment A – Field Investigation Photo Log with Field Notes

Attachment B – Hydraulic Tables & Floodplain Maps

Attachment C – Sediment Transport Data and Results

Attachment D – Scour Analysis Tables

Attachment E – Bank Energy Index (BEI) Results

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Executive Summary

Tetra Tech performed hydrologic, hydraulic and sediment transport engineering, civil engineering design, and cost engineering, in support of the Aliso Creek Mainstem Ecosystem Restoration Study draft report appendices for the U.S. Army Corps of Engineers, Los Angeles District (LACOE). Basic alternatives were established earlier through the plan formulation process associated with the SMART Planning guidelines for the Corps of Engineers feasibility studies. The engineering analyses performed by Tetra Tech in this study are in support of the Tentatively Selected Plan (TSP) milestone to assist in selection of an agency recommended plan.

The study area is located in southern California, approximately 40 miles southeast of the city of Los Angeles. Aliso Creek is located in Orange County on the coast of California. The Project Area (as revised in 2009) includes the lower reaches of Aliso Creek from Pacific Park Drive to the Pacific Ocean plus the lower reach of Wood Canyon Creek and the lower reach of Sulphur Creek.

The purpose of the project is to improve the stream bank and invert stability, protect the infrastructure, provide riparian habitats, improve floodplain reconnection, and achieve aquatic wildlife connectivity within the project limits. The upstream study limit is at Pacific Park Drive, while the downstream study limit is at the SOCWA Coastal Treatment Plant (CTP) Bridge. Overall, this project evaluates four (4) alternatives, including a 'No Action' alternative (Alternative 1). The design components of each alternative are categorized into the 'baseline' features, which are necessary to meet the improvement purposes of each alternative described in Section 1.2, and 'additional measures', described in Section 1.3, which would be considered in addition to the baseline designs to provide additional benefits.

Alternative 1 is a No-Action plan based on the existing creek conditions. The hydraulic and sedimentation impacts were determined for future conditions without implementation of any ecosystem or stream stabilization projects. The No-Action plan will be used by LACOE as a basis for alternative comparison and selection. The purpose of Alternative 2 is to stabilize the existing streambed downstream of ACWHEP structure and construct an associated floodplain within the incised channel margins. Alternative 3 is based on raising the streambed to approach the pre-incised elevations and achieve reconnection to the historic floodplain. Alternative 4 is based on raising the streambed to an intermediate elevation between the current streambed and the historic pre-incised streambed elevation, and constructing an associated floodplain.

The development of the channel templates in Section 2 is guided by fluvial geomorphology principles referred to as *natural channel designs* whose goal is to replicate the channel forms seen in stable, natural streams in order to restore their stability and functions. This is accomplished by sizing the low-flow channel to contain a given flow that over time carries the most sediment (channel-forming discharge concept); designing channels to carry both their water and sediment loads; and constructing channels to mimic the functions of natural waterways to the extent possible.

The hydrologic analyses in Section 3 generate a mean daily flow series used as input to the mobile-bed sediment transport model and the water budget analysis. The water budget analysis in Section 4 identifies the critical water supply components impacted by the proposed alternatives. The hydraulic performance and floodplain connectivity of each alternative are examined in Section 5. The sediment transport analysis in Section 6 verifies the long-term channel stability for each alternative using the new HEC-RAS 5.0 Beta version. The scour analysis in Section 7 evaluates the total potential scour at critical locations for toe down protection and provides rock sizing for pertinent proposed features. Hydraulic uncertainties at the Index Locations with the proposed alternatives in place are determined

in Section 8. The analysis of lateral erosion rates and the procedure used to develop erosion rates for the economic analysis is discussed in Section 9. Section 10 addresses potential hydraulic effects of stream lengthening. Comparative discussion of project alternatives in terms of hydraulic performance, floodplain connectivity, and channel stability is provided in Section 11.

1. INTRODUCTION

1.1 Description of Watershed

The Aliso Creek watershed, which includes Aliso Creek (main stream) and several tributaries, is located in Orange County on the coast of Southern California (Figure 1.1). It drains a long, narrow coastal watershed from the Cleveland National Forest to the Pacific Ocean. The terrain is generally hilly and varies from being somewhat steep in the upper reaches to being somewhat flat in the middle reaches. The lower reach has steep hillsides surrounding a narrow canyon. The 34.6 square mile watershed includes portions of Lake Forest, Aliso Viejo, Mission Viejo, Laguna Niguel, Laguna Hills, and Laguna Beach.

Aliso Creek is mostly a natural channel within the study limits from the Pacific Ocean (downstream limit) to Pacific Park Drive (upstream limit) as shown in Figure 1.2. From Pacific Park Drive to the Skate Park, the creek is in a natural condition flowing south and located parallel to Alicia Parkway. In the vicinity of Aliso Creek Road crossing and downstream of the Skate Park (located in Laguna Niguel) the channel is fully engineered with riprap bank protection and a soft bottom and includes two large grade control structures. Downstream of AWMA Road Bridge, the creek is in a natural condition, with its low-flow channel meandering between an existing paved road on the west bank and a dirt access road used by the South Orange County Wastewater Authority (SOCWA) for emergencies and by the park ranger on the east bank. Aliso Creek enters the Aliso and Wood Canyons Wilderness Park just downstream of the AWMA Road Bridge. Aliso Creek continues a little more than a mile before it joins Wood Canyon Creek, a tributary that drains a 3.8-square mile subarea within the park. The combined flows continue south through a narrowing canyon. Just before the outlet at the Pacific Ocean, the creek passes through a private golf course at the mouth of the canyon, and finally through a narrow strip of development around the Pacific Coast Highway within the City of Laguna Beach.

A significant structure within the project limits is the Aliso Creek Wildlife Habitat Enhancement Project (ACWHEP). ACWHEP structure was built to provide habitat along the creek banks by diverting water into the floodplain to support growth of riparian vegetation. The structure is currently experiencing erosion damage at the downstream toe area with earthen fill exposed underneath grouted rock. However, it is apparent that the structure is providing stability to the upstream channel.

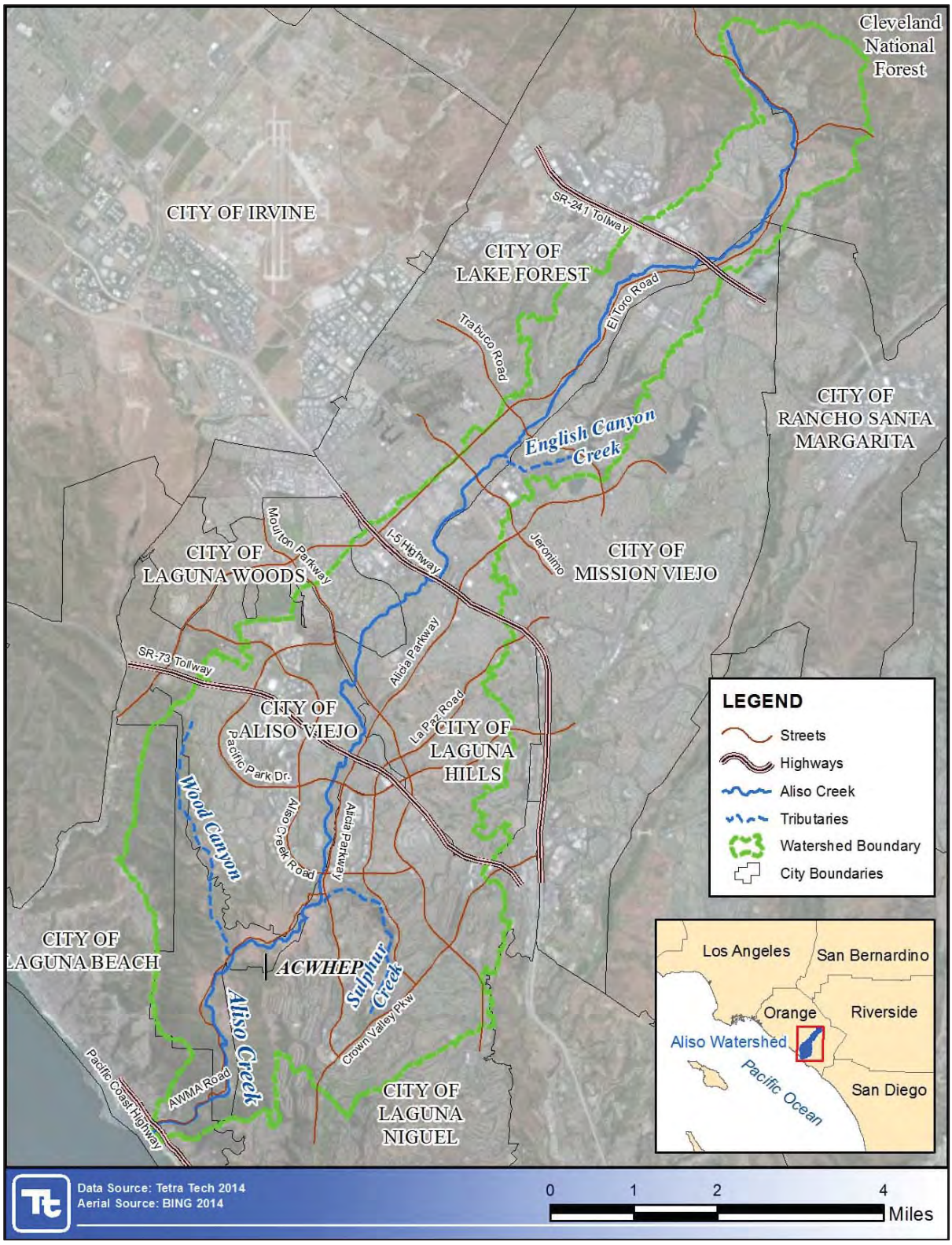


Figure 1-1 – Aliso Creek Watershed Map

Figure 1-2 – Location Map

1.2 Purpose and Scope of Work

The purpose of this project is to improve the stream bank and invert stability, protect the infrastructure, provide riparian habitats, and achieve aquatic wildlife connectivity within the project limits. It should be noted that while the study limit extends downstream to the Pacific Ocean, the downstream project limit is at the SOCWA Coastal Treatment Plant (CTP) Bridge. Overall, this project evaluates four (4) alternatives, including a 'No-Action' alternative (Alternative 1).

Alternative 1

The alternative is a No-Action Plan based on the existing creek conditions. The hydraulic and sedimentation impacts are determined for future conditions (50-year horizon) without implementation of any ecosystem projects. The No-Action Plan will be used as a basis for alternative comparison and selection. According to the *Aliso Creek F4 Geomorphic Assessment* (Tetra Tech 2014), under the No-Action Plan, continued loss of the historical riparian corridor will continue due to bank erosion and channel widening. Future channel incision is expected to be on the order of three to four feet, assuming future hydraulic conditions are similar to past conditions. Further destabilization would be expected downstream of ACWHEP structure should the S-bend (a double horseshoe bend at RM 2.0) be lost in the future due to a headcut that will progress upstream to eventually cutoff this bend.

Alternative 2

The purpose of this alternative is to improve the existing streambed stability downstream of ACWHEP structure and construct an associated floodplain within the incised channel margins. The baseline alternative incorporates the following elements between the SOCWA CTP Bridge and ACWHEP structure:

- Single trapezoidal channel to contain the 2-year and 10-year flood events.
- Channel invert slope of 0.4%.

Alternative 3

The alternative is based on raising the streambed to approach the pre-incised elevations and achieve reconnection to the historic floodplain. The baseline alternative incorporates the following elements between the SOCWA CTP Bridge and AWMA Road:

- Compound channel with a low-flow section to contain the 2-year flood event and main section to contain the 10-year flood event.
- Loose rock riffles with an 18" maximum drop over a 5% maximum slope with a spacing of 400-700 feet between riffles.
- Channel invert slope between riffles of 0.25%.

Alternative 4

This alternative is based on raising the streambed to intermediate elevation between the current streambed and the historic pre-incised streambed elevation, and constructing an associated floodplain. The baseline alternative incorporates the following elements between the SOCWA CTP Bridge and AWMA Road:

- Compound channel with a low-flow section to contain the 2-year flood event and main section to contain the 10-year flood event.
- Loose rock riffles with an 18" maximum drop over a 5% maximum slope with a uniform spacing of 480 feet between riffles.
- Channel invert slope between riffles of 0.25%.

Detailed descriptions of the alternatives and feasibility-level design drawings are prepared to show the proposed improvements for each alternative in the separate *Draft TSP Design Appendix* (Tetra Tech 2015).

Within the overall project limits, the design implementation is limited to the reach between the Pacific Park Drive Bridge (upstream limit) and SOCWA CTP Bridge (downstream limit).

1.3 Baseline Alternatives and Additional Measures

The design components of each alternative can be categorized into the 'baseline' design features, which are necessary to meet the improvement purposes of each alternative described in Section 1.2, and 'additional measures' which would be considered in addition to the baseline designs to provide additional benefits. The impacts and benefits of the additional measures can be independently evaluated, but need the baseline designs in place to be realized to the fullest extent. All the additional measures considered in the project are summarized in Table 1.1. The design components that are associated with each alternative are summarized in Table 1.2.

Table 1-1 – List of Additional Design Measures

Additional Measure	Title	Descriptions
A	East bank access road construction	A permanent, paved access road will be constructed along the top of east bank from the SOCWA CTP Bridge to Alicia Parkway near the Sulphur Creek confluence and used by SOCWA
B	Repurposing of AWMA Road	The existing paved AWMA Road along west the bank from the SOCWA CTP Bridge to the Wood Canyon Creek confluence will be realigned as needed to accommodate the proposed channel grading. Additionally, the existing pavement of the road will be removed and replaced with 12-foot wide DG as part of the road repurposing.
C	Reconnection of abandoned oxbow	An abandoned oxbow located between station 118+00 and 132+00 will be reconnected to the active channel by realigning a current active stream line through the area, based on the historical stream line location, to revitalize the future vegetation in the oxbow to its historic condition.
D	Stream lengthening downstream of Wood Canyon Creek confluence	The channel alignment will be realigned and zigzagged at this selective location to add more length to the stream line. The location is selected based on the availability of open space.
E	Wood Canyon Creek connection	A grouted riprap-lined connection channel will be constructed at the confluence to provide aquatic wildlife connection between Wood Canyon Creek and Aliso Creek.
F	Re-contouring of existing channel between ACWHEP and the AWMA Road Bridge	Steep existing channel banks will be re-contoured, or graded, to stable sideslope of 3(H):1(V) between ACWHEP and the AWMA Road Bridge in order to stabilize the incised main channel.

Additional Measure	Title	Descriptions
G	Sulphur Creek connection	A short segment of Sulphur Creek between its confluence with Aliso Creek and the existing RCB culvert underneath Alicia Parkway will be raised and lined with riprap to protect existing steep banks. The connection will also provide aquatic wildlife connection only for turtles.
H	Removal of two 10-foot-high vertical drop structures	The existing two 10-foot-high vertical drop structures in the vicinity of Aliso Creek Road Bridge will be removed and replaced with a series of riffle structures to provide aquatic wildlife connectivity.
I	Widening in the vicinity of the Aliso Creek Road Bridge	The east bank along 2,000-foot-long reach in the vicinity of Aliso Creek Road Bridge will be widened, using sheet pile walls. The widened area will be used as a riparian habitat.
J	Re-contouring of the existing channel from 1,400 feet upstream of the Aliso Creek Road Bridge to Pacific Park Drive	The existing channel will be re-contoured and replaced with the same design cross section as the baseline design (a combined section of 100-foot-wide 2-year channel and 200-foot-wide 10-year channel) and a series of riffle structures.
K	Skate park/soccer field relocation	A recreational complex which includes a skate park, soccer field, and parking lots, on the east bank of Aliso Creek upstream of the Aliso Creek Road Bridge will be relocated to an underutilized federal parking lot across Alicia Parkway. The area, once all the surface features of the park are removed, will be re-graded to be used as additional riparian habitat or potential site for stream lengthening.
L	Stream lengthening at skate park	The channel alignment will be realigned and zigzagged at this selective location to add more length to the stream line. The location is selected based on the availability of open space. This additional measure can be implemented only after the skate park is relocated as part of additional measure K.
M	Stream lengthening downstream of Pacific Park Drive	The channel alignment will be realigned and zigzagged at this selective location to add more length to the stream line. The location is selected based on the availability of open space.
N	Construction of Newbury riffle structure	A Newbury riffle structure will be constructed along the channel invert to create shallow pools and limit lateral migration of the channel.
FRM	FRM (Flood Risk Management). Riprap bank protection	Buried riprap bank protection will be constructed along the outer bends of the proposed channel where the stream gets close to the existing infrastructure or high erosion risk areas, identified in the previous geomorphic study by the USACE, in order to protect the existing infrastructure on the top of banks.

Table 1-2 – Design Components for Proposed Alternatives

Alternative	Baseline Improvements	Additional Design Measures
2	Stabilize existing streambed: CTP to ACWHEP	A, B, C, D, F, H, I, J, K, L, M, N, FRM
3	Raise streambed to historic elevations: CTP to AWMA Road Bridge	A, B, C, D, E, G, H, I, J, K, L, M, FRM
4	Raise streambed to intermediate elevations between historic and existing: CTP to AWMA Road Bridge	A, B, C, D, E, G, H, I, J, K, L, M, FRM

1.4 Field Investigation

The Tetra Tech team conducted a field investigation of the project area on August 27, 2014. The field investigation included a visual field assessment and documentation of existing features that may affect the hydrologic, hydraulic, and sediment modeling and the design of improvement features for the project site. Field measurements of the features were performed as necessary to supplement the topographic mappings described in Section 1.5, *Survey Mapping*. The main features that were investigated during the field investigation were as follows:

- Reinforced Concrete Box (RCB) culverts under Pacific Park Drive
- Skate park/soccer field area to be relocated
- Federal building parking lots on the east side of Alicia Parkway (potential skate park/soccer field relocation site)
- Concrete drop structures in vicinity of Aliso Creek Road Bridge
- Previously improved reach (approximately 2,000-foot long) upstream of AWMA Road Bridge
- Bridges (Aliso Creek Road and AWMA Road crossings)
- Sulphur Creek confluence
- ACWHEP structure
- Wood Canyon confluence
- Abandoned Oxbow area
- SOCWA Coastal Treatment Plant (CTP)

The photos that were taken during the investigation are presented in the photo log with field notes (Attachment A).

1.5 Survey Mapping

For the existing topographic mapping of the project area the mapping from previous studies were merged. From the CTP Bridge to the ACWHEP structure, the channel bank-to-bank mapping based on the ground cross sectional survey at an approximately 50-foot interval in April, 2006, and provided by the Orange County Resources and Development Management Department (RDMD) was merged with overbank area information from a 2-foot contour mapping (also provided by the Orange County RDMD in February, 2006), to provide a complete existing condition mapping.

From the ACWHEP structure to the Skate Park, a 1-foot contour interval mapping generated from a 1:4,300 scale Light Detection and Ranging (LiDAR) photography taken at an altitude of 2,000 feet above terrain in March, 2008, was used. This mapping covers Aliso Creek from downstream of the ACWHEP structure to upstream of the Aliso Creek Road Bridge and Sulphur Creek from the confluence to immediately upstream of the culvert under Alicia Parkway.

Upstream of the Aliso Creek Road Bridge near the Skate Park, a two-foot interval contour mapping generated from a LiDAR photography taken at an altitude of 3,600 feet above terrain in August, 2008, and provided by the U.S. Army Corps of Engineers (USACE) was used.

The horizontal control of the project topographic mapping is based on the California Coordinate System (CCS83) Zone VI, North American Datum of 1983 (NAD 83), and the vertical control is based on the North American Vertical Datum of 1988 (NAVD 88). All units are in U.S. survey feet.

Although the existing topographic mappings were surveyed more than six years prior to this project, it was assumed that for the level of detail required for this study, these survey mappings would be sufficient in achieving the project goals. It is recommended that, in the future, a survey of current topographic conditions be conducted for the construction-level design phase of the work.

2. DESIGN CHANNEL PARAMETERS

The development of the channel parameters was guided by fluvial geomorphology principles referred to as *natural channel designs* whose goal is to replicate the channel forms seen in stable, natural streams in order to restore their stability and functions (EPA 2012). In erodible materials, a stream will shape its cross sections in accordance with its flow, slope, bank materials, and alignment, irrespective of its initial geometry. If the proposed design cross section is not similar to the *regime* (equilibrium) cross section, sediment problems usually require extensive maintenance to keep the project in the designed condition. This concept is valid for both flood control and ecosystem restoration projects.

Using hydraulic and sediment-transport relationships regarding the channel geometry, it is possible to estimate the equilibrium slope and *regime* channel width (channel widths that carry their design flow without significant degradation or aggradation are said to be *in regime*) for specific discharge and sediment inflow conditions. Since the goal is to evaluate the long-term conditions toward which the channel is adjusting, the analysis is performed using dominant (channel-forming) discharge. The dominant discharge is defined as the increment of discharge that carries the most sediment over a long period of time. In perennial, self-adjusted streams, the dominant discharge is often assumed to be the same as the bankfull discharge.

In general, bankfull discharge in stable perennial channels has been found to correspond to an annual flood recurrence interval of approximately 1 to 2.5 years. Aliso Creek is a perennial stream, but is deeply incised, so the bankfull discharge estimate is not directly applicable. For ephemeral streams, the dominant discharge tends to be associated with larger, less frequent flood peaks than in perennial streams, due to the absence of sustained flows and the flashy nature of the storm hydrographs. The dominant discharge for lightly developed watersheds will typically be in the range of the 5- to 10-year peak event. In more highly developed watersheds, the frequency of the dominant discharge is typically less because runoff (and sediment transport) associated with the more frequent storms tends to increase dramatically. As a result, the frequency of the dominant discharge is typically in the range of the 3- to 5-year flood peak (Mussetter 2008). Because of this uncertainty in determination of the dominant discharge, it was decided that the proposed channel geometry should accommodate the range of flows between the 2-year and 10-year flood peaks.

The maximum stable (equilibrium) slope S_e for a channel of given geometry and dominant discharge can be computed by combining the relationship for the Froude number with a uniform flow formula (Mussetter 2008):

$$S_e = C Q_D^{-0.133},\ C = 18.28 n^2 F_D^{0.133} F_R^{2.133} \quad (1)$$

The *regime* width of the channel W_D can be estimated from the relation:

$$W_D = 0.5 F_D^{0.6} F_R^{-0.4} Q_D^{0.4} \quad (2)$$

Where: F_D = width-depth ratio, F_R = Froude number, Q_D = dominant discharge, n = Manning's roughness

It should be noted that *regime* equations (1) and (2) are approximate in nature and carry inherent uncertainty within the range of assumed hydraulic parameters. The equations should be used as an initial estimate of the stable channel geometry and then verified by detailed hydraulic and sediment transport analyses.

The Aliso Creek average hydraulic parameters for existing conditions are presented below in Table 2-1.

Table 2-1. Aliso Creek Hydraulic Parameters

Frequency	Q^1(cfs)	W (ft)	D (ft)	F_D	F_R	S_e(%)	W_D(ft)
2-year	1,590	91	3.7	30	0.53	0.34	94
5-year	2,830	117	4.6	37	0.54	0.34	134
10-year	3,810	137	5.2	41	0.54	0.33	160

Q = discharge, W = Top width, D = Depth, S_e = stable equilibrium slope, W_D = regime width
1. Flows at downstream of Sulphur Creek Confluence (USACE 2009a)

2.1 Design Channel Template for Alternatives 3 & 4

A compound channel template, which does not deviate much from the approximate *regime* widths indicated in Table 2-1, is developed. A top width of 100 feet is selected for the 2-year flow and 200 feet for the 10-year flow to provide larger width-to-depth ratio and wider floodplain benches (see Table 2-2 and Figure 2-1). This results in a flatter stable equilibrium slope of 0.25% based on Equation (1) above. The selected channel slope of 0.25% (this is the channel slope between riffles) is consistent with the observed bed profile in the stabilized geomorphic reach upstream of ACWHEP structure (Tetra Tech 2014). A channel side slope of 3(Horizontal):1(Vertical) is selected as a typical stable earthen slope.

Table 2-2. Design Template Specifications for Alternatives 3 & 4

Frequency	Q^1 (cfs)	B (ft)	W (ft)	D (ft)	SS	S_e(%)
2-year	1,590	76	100	4.0	3H:1V	0.25
10-year	3,810	188	200	6.0	3H:1V	0.25

B = bottom width, SS = side slope, S_e = stable slope from equation (1) for design W and D
1. Flows at downstream of Sulphur Creek Confluence (USACE 2009a)

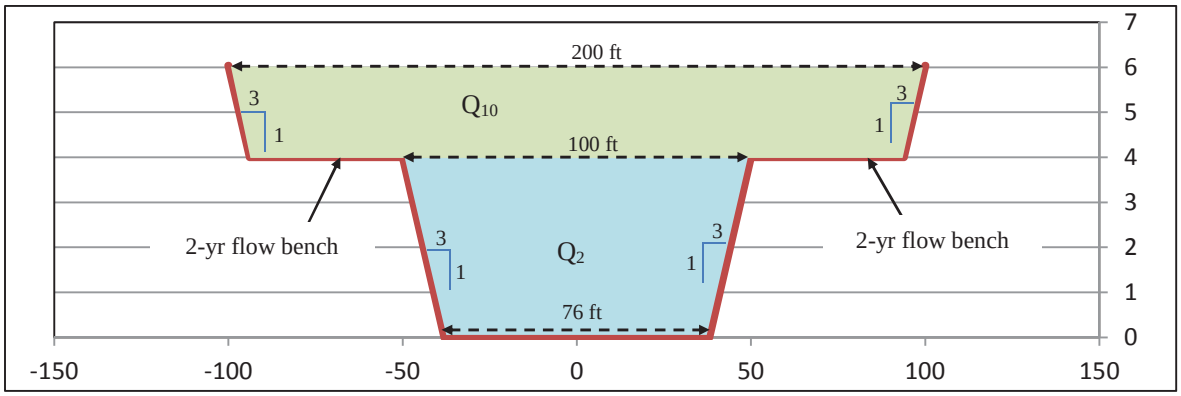


Figure 2-1 – Design Channel Template for Alternatives 3 & 4

The compound channel capacity is designed assuming a post-construction Manning's roughness coefficient of 0.035 (corresponding to unvegetated channel with intermittent rock riffles). The benches would be flooded above the 2-yr frequency. As vegetation grows in the low-flow portion of

the channel (or design discharges increase), it will have less capacity such that the 2-year flow benches would be flooded more often.

A sensitivity analysis was performed assuming an ultimately vegetated channel condition that would be represented with a Manning's roughness coefficient of 0.06 (corresponding to densely vegetated conditions seen today in the existing channel). Under these conditions, the water surface elevations for a densely vegetated channel would be about 1.3 feet higher than for the post-construction channel (see Figure 2-2; red lines correspond to higher roughness; solid lines correspond to 2-yr flow; dashed lines correspond to 10-year flow). The low-flow channel would contain less than 1-year event (900 cfs), while the 10-year channel would actually contain only a 4-year flood (2,000 cfs).

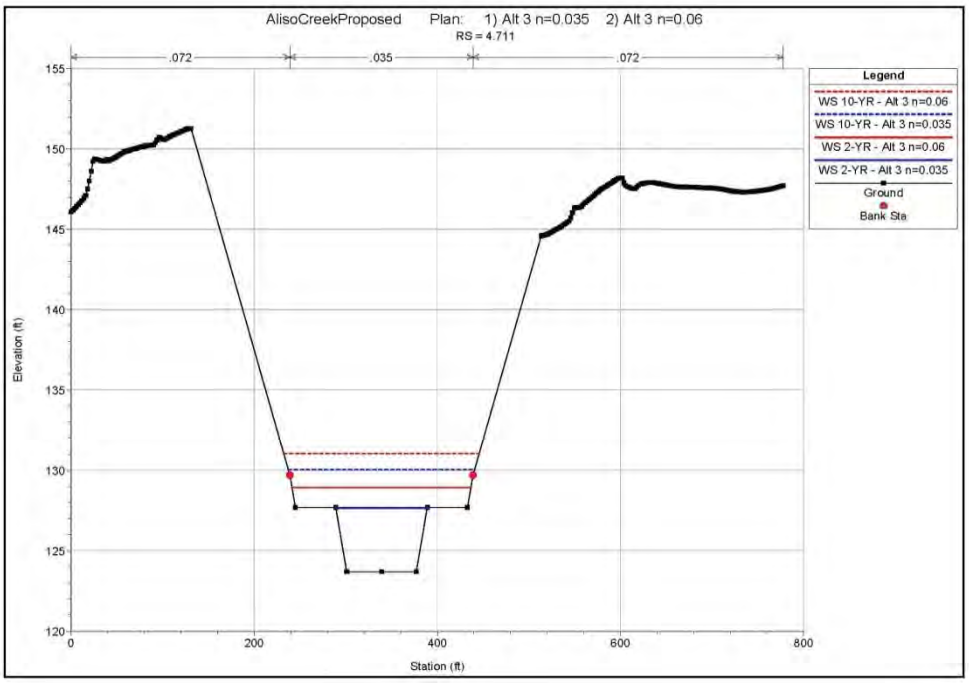


Figure 2-2 – Low-Flow Channel Capacity for Different Vegetation (Roughness)

A roughness sensitivity analysis was also performed with respect to *regime* channel width and equilibrium slope (Table 2-3). The impact of vegetation within the tested range of roughness coefficients is not significant, especially given the approximate nature of regime equations (1) and (2).

Table 2-3. Regime Channel Characteristics for Different Manning's *n*

Frequency	Manning's *n*	Q^1 (cfs)	F_D	F_R	W_a (ft)	W_D(ft)	S_e(%)
2-year	0.035	1,590	25.9	0.46	87	92	0.247
	0.06	1,590	20.6	0.28	92	97	0.244
10-year	0.035	3,810	33.1	0.46	138	151	0.227
	0.06	3,810	26.3	0.29	138	158	0.242

W_a = average channel width, W_D = regime channel width, S_e = stable equilibrium slope
1. Flows at downstream of Sulphur Creek Confluence (USACE 2009a)

The same equilibrium channel slope and compound channel template shown in Figure 2-1 are designed in both Alternative 3 and Alternative 4 to provide a geomorphically stable channel with the

2-year flow benches for floodplain widening. Although these benches are narrower than the fully developed historical floodplain, they do dissipate some flood energy and provide a flat depositional feature, which allows riparian vegetation to become established. The effective conveyance and sediment transport capacity of this template are verified by the hydraulic and sediment transport analyses in Section 5 and Section 6, respectively.

2.2 Design Channel Template for Alternative 2

A single trapezoidal *regime* channel template is developed. A bottom width of 50 feet is designed, resulting in a top width of 77 feet for the 2-year flow and 95 feet for the 10-year flow. A steeper equilibrium slope of 0.4% is selected for Alternative 2 which corresponds well to a non-eroding average bed slope downstream from ACWHEP structure [the expected range of non-eroding bed slopes is 0.3 to 0.45 percent based on the Geomorphic Assessment (Tetra Tech 2014)]. A channel side slope of 3(Horizontal):1(Vertical) is selected as a typical stable earthen slope.

Table 2-4. Design Template Specifications for Alternative 2

Frequency	Q^1 (cfs)	B (ft)	W (ft)	D (ft)	SS	S_e(%)
2-year	1,650	50	77	4.5	3H:1V	0.4
10-year	4,450	50	95	7.5	3H:1V	0.4

B = bottom width, SS = side slope, S_e from equation (1) for design W and D
1. Flows at upstream of SOCWA Treatment Plant (USACE 2009a)

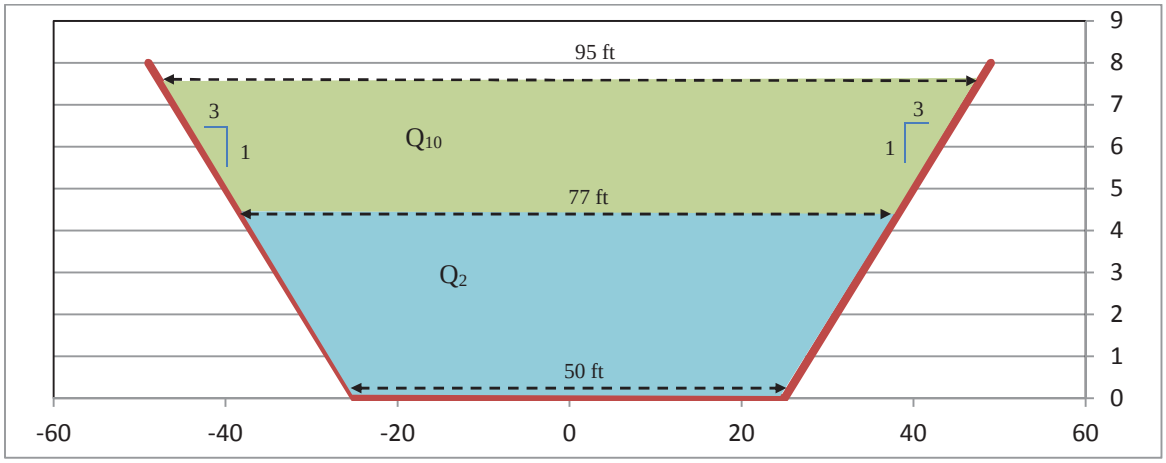
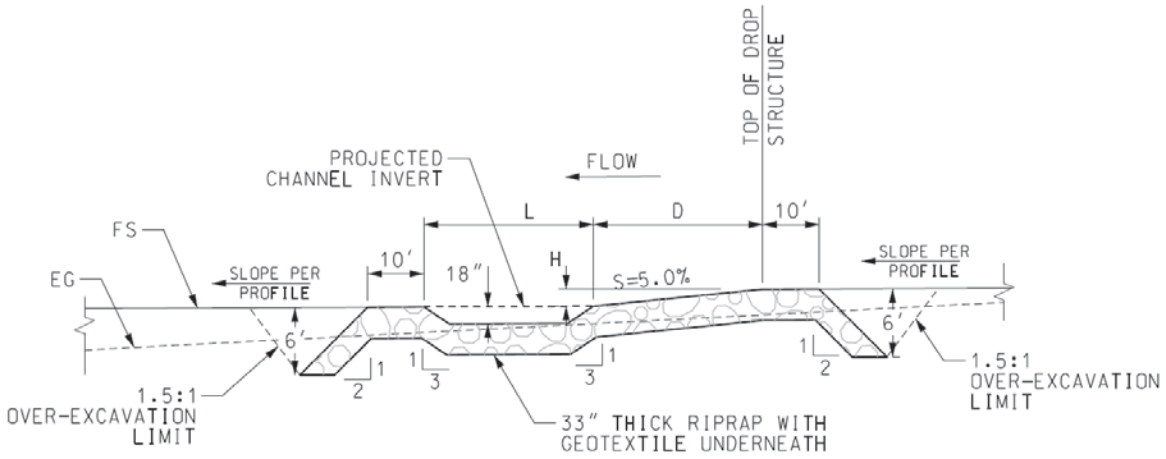


Figure 2-3 – Design Channel Template for Alternative 2

The single trapezoidal channel template shown in Figure 2-3 is designed to provide a geomorphically stable channel within the incised channel margins because the primary goal in Alternative 2 is to stabilize the existing streambed (without raising the invert) downstream of ACWHEP structure. Therefore, the *regime* template used here, without 2-year benches, is narrower than the one used in Alternatives 3 & 4 to minimize excessive soil excavation for cut slopes and to avoid nearby infrastructure as much as possible. The effective conveyance and sediment transport capacity of this template are verified by the hydraulic and sediment transport analyses in Section 5 and Section 6, respectively.

2.3 Rock Riffle Parameters for Alternatives 3 & 4

Based on the discussion in Section 2.1 above, the stable channel slope is designed to be at the equilibrium slope of 0.25%. Because the proposed invert slope is flatter than the current invert slope and to account for the removal of the existing drop structures and ACWHEP, rock riffles are added to accommodate the elevation differences. The rock riffles would consist of 9-inch, 18-inch, and 6-foot high ramps at the 5% maximum slope. The maximum riffle slope is based on Newbury & Gaboury (1993). The rock riffles would be constructed at a spacing of 400 to 700 feet between the structures. The riffle spacing is based on Radspinner (2009) who indicated that a riffle spacing of approximately 5 to 7 times the average channel width is recommended. The lower range of riffle spacing was used when needed to maximize the fill and achieve a balance between the cut and fill.



RIFFLE STRUCTURE DIMENSIONS

DROP HEIGHT, H	DROP LENGTH, D	POOL LENGTH, L
9"	15'	20'
18"	30'	20'
6'	120'	30'

Figure 2-4 – Typical Rock Riffles

The 18" deep pool within the riffle section is designed to provide flow energy dissipation at the downstream end of the 5% slope and serves as a resting area with lower velocities for fish. A deeper pool can be utilized if desired.

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3. HYDROLOGIC ANALYSIS

The hydrologic analysis generates a mean daily flow series to be used as input to the mobile-bed sediment transport model and the water budget analysis which compares the performance of alternative project configurations.

3.1 Mean Daily Flow Series

The mean daily stream flow data at Orange County gages (Jeronimo Road and SOCWA CTP) were obtained from the Orange County Watersheds Program for water year 1991 to water year 2013 (21.5 years of available data). Availability of data for each gage in that period of record is identified in Table 3-1.

Table 3-1. Mean Daily Flow Data for 1991 to 2013 Water Years

Period of Record	Aliso Creek at Jeronimo Road	Aliso Creek at SOCWA Coastal Treatment Plant
7-2-1990 to 6-30-1995	Yes	NA[1]
7-1-1995 to 6-30-1996	NA[2]	NA[1]
7-1-1996 to 12-31-1998	Yes	NA[1]
1-1-1999 to 6-30-1999	NA[2]	NA[1]
7-1-1999 to 6-30-2002	Yes	NA[1]
7-1-2002 to 6-30-2008	Yes	Yes
7-1-2008 to 6-30-2009	Yes	NA[2]
7-7-2009 to 6-30-2012	NA[2]	Yes
7-1-2012 to 6-30-2013	Yes	Yes

1. Gage starts in July 2002
2. Data not available

Peak discharge frequency values for Aliso Creek were adopted from the "Hydrology and Hydraulics Appendix of Aliso Creek Mainstem Ecosystem Restoration Study" (USACE 2009a) and presented in Table 3-2.

Table 3-2 – Adopted Peak Discharges for N-Year Floods

Location (Approximate River Miles)	Drainage Area (sq. mi.)	2-YR (cfs)	5-YR (cfs)	10-YR (cfs)	25-YR (cfs)	50-YR (cfs)	100-YR (cfs)	200-YR (cfs)	500-YR (cfs)
Jeronimo Road Gage (9.81± RM)	8.6	670	1,300	1,760	2,400	2,820	3,320	3,900	4,600
Moulton Parkway (6.70± RM)	10.9	1,020	1,700	2,210	2,650	3,040	3,460	3,780	4,270
Pacific Park Retention Basin Inflow (5.06± RM)	17.0	1,640	2,550	3,110	3,990	4,640	5,450	6,330	7,430

Table 3-2 – Adopted Peak Discharges for N-Year Floods

Location (Approximate River Miles)	Drainage Area (sq. mi.)	2-YR (cfs)	5-YR (cfs)	10-YR (cfs)	25-YR (cfs)	50-YR (cfs)	100-YR (cfs)	200-YR (cfs)	500-YR (cfs)
Pacific Park Retention Basin Outflow (5.06± RM)	17.0	1,560	2,360	2,830	3,460	3,950	4,450	4,900	5,330
Upstream of Sulphur Creek Confluence (4.68± RM)	17.9	1,590	2,400	2,900	3,570	4,060	4,560	4,980	5,480
Downstream of Sulphur Creek Confluence (4.68± RM)	28.1	1,590	2,830	3,810	5,120	6,100	7,240	8,480	10,100
Downstream of Wood Canyon Confluence (3.17± RM)	31.9	1,620	3,040	4,170	5,300	6,890	8,120	9,540	11,400
Upstream of Abandoned Oxbow (2.53± RM)	32.5	1,620	3,100	4,250	5,900	7,100	8,300	9,470	11,400
Upstream of S-Bend (1.88± RM)	33.4	1,640	3,150	4,400	6,000	7,200	8,400	9,610	11,500
Upstream of SOCWA Treatment Plant (1.68± RM)	33.8	1,650	3,200	4,450	6,050	7,300	8,550	9,620	11,500
Upstream end of Golf Course (1.14± RM)	34.3	1,670	3,260	4,550	6,120	7,360	8,610	9,720	11,500
Pacific Coast Highway (0.08± RM)	34.6	1,620	3,110	4,270	5,930	7,130	8,480	9,710	11,500

RM – River Miles

The data set of 2003 to 2008 water years (from 7-1-2003 to 6-30-2008) was used to investigate the correlation between Jeronimo Road and SOCWA CTP gages. Mean daily flows of these two gages were plotted on Figure 3-1 which indicates the gages are poorly correlated. Therefore, the linear relationship of the adopted peak discharge frequency hydrology at these two gages (Figure 3-2) was used to estimate the missing mean daily flow for either gage. The mean daily flow data sets (including both gaged and estimated data) at Jeronimo Road and SOCWA CTP are plotted on Figure 3-3 and Figure 3-4 respectively, and the mean daily flow series consist of twenty one and a half (21.5) years of data. Note that the horizontal red line in Figure 3-3 and Figure 3-4 depicts the 100 cfs daily flow magnitude. Mean daily flows less than 100 cfs were screened out and not used in the sediment

transport analysis due to their minor sediment transport capacity. Figure 3-5 shows the screened mean daily flow series at SOCWA CTP gage. The mean daily flow analysis was performed in an Excel spreadsheet and presented in hydrologic data folder of the project compact disc.

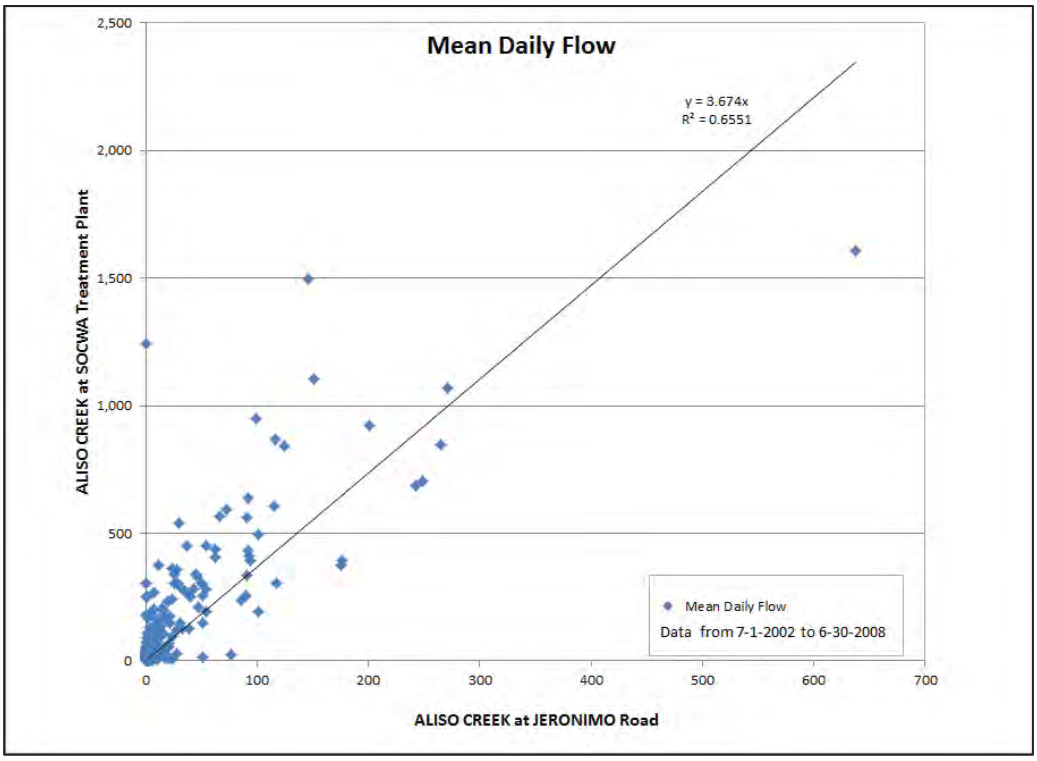

Figure 3-1 – Mean Daily Flow Data (7-1-2002 to 6-30-2008) at Jeronimo Road and SOCWA CTP Gages

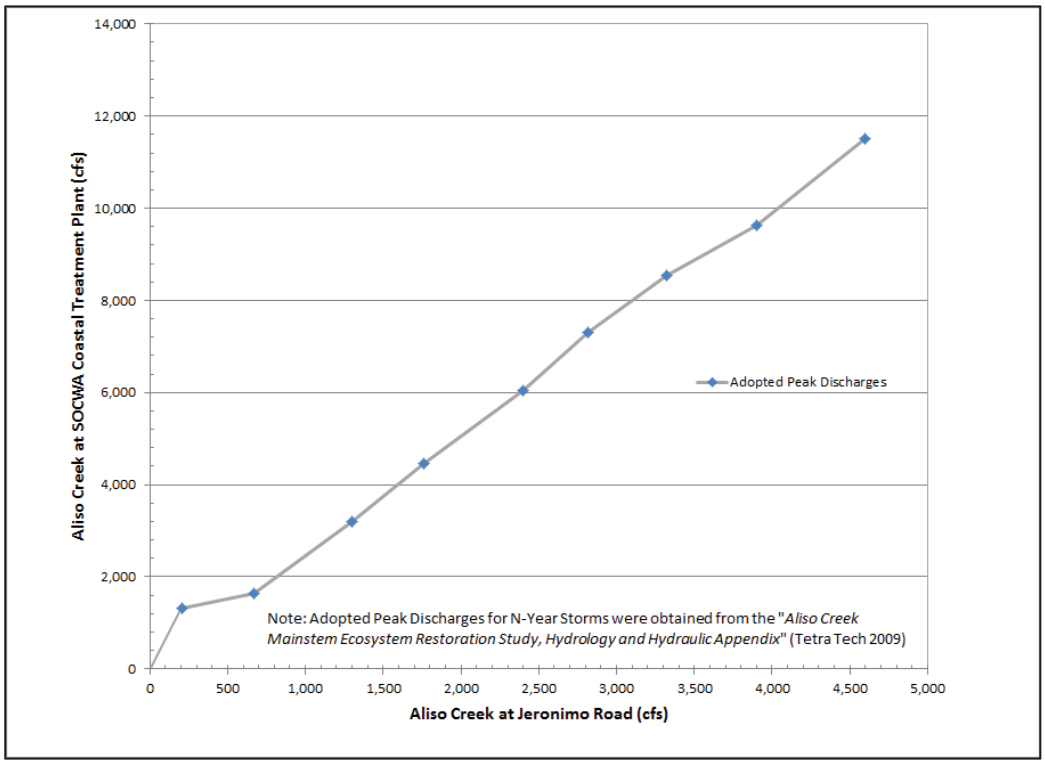

Figure 3-2 – Adopted Correlation between Jeronimo Road and SOCWA CTP Gages

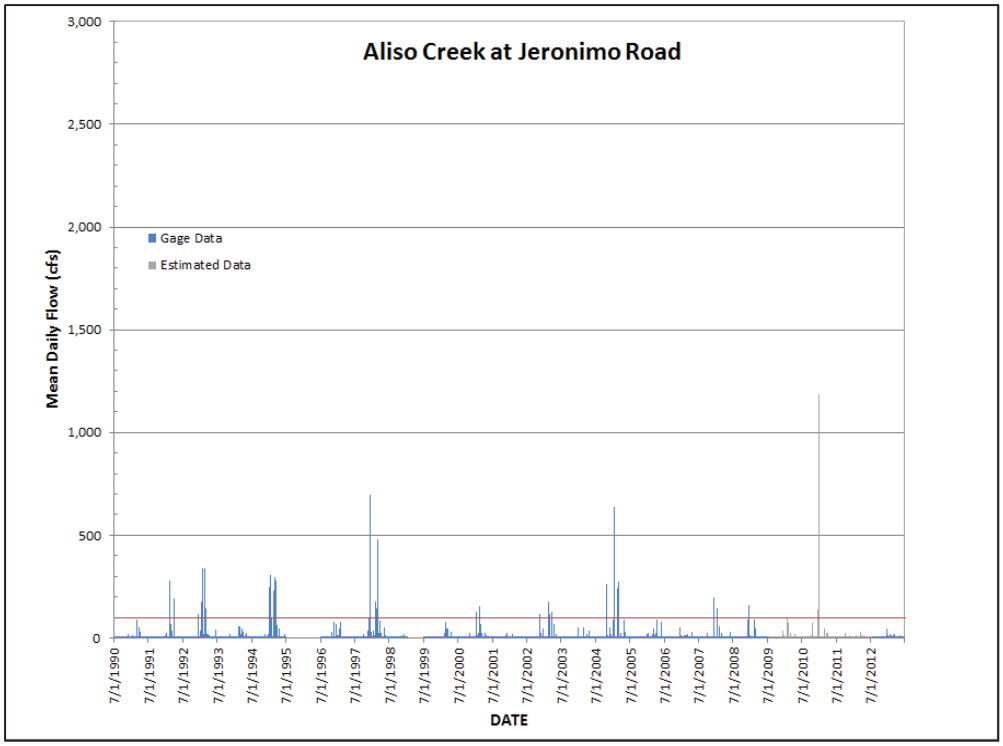

Figure 3-3 – Synthetic Flow Data Set at Jeronimo Road

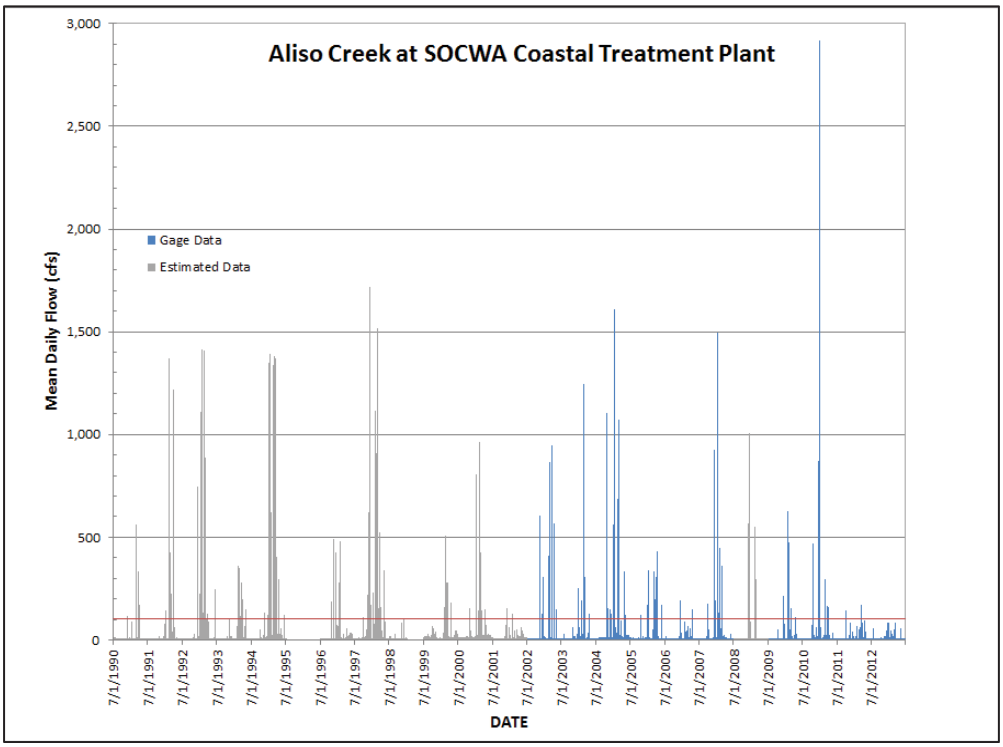

Figure 3-4 – Synthetic Flow Data Set at SOCWA CTP

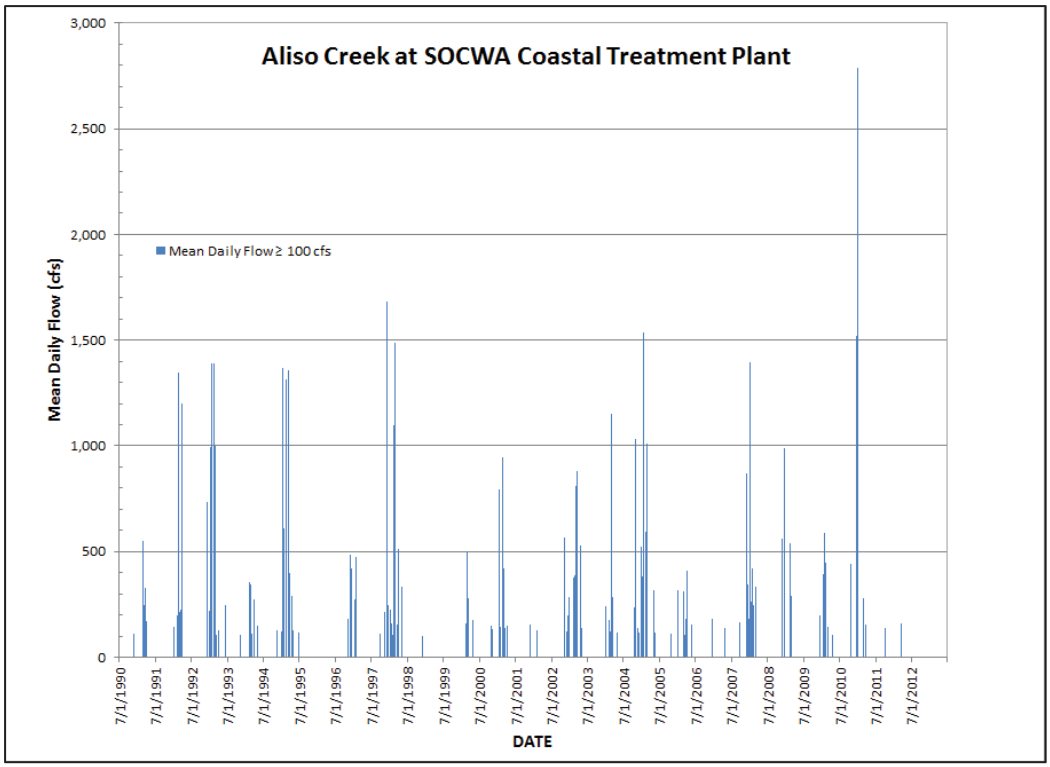

Figure 3-5 – Screened Synthetic Flow Data Set at SOCWA CTP

3.2 Period of Record Flow Data with N-Year Flood Events

A period of record flow data set that incorporates the N-year flood events (2-yr, 5-yr, 10-yr, 25-yr, 50-yr, and 100-yr) was developed. A random sequence of flood events was used to develop the statistically expected floods over a 50-year period (consistent with analyses of future conditions for the alternatives). Using the binomial probability distribution (Haan 1979), the probability of a specified number of N-year flood occurrences in the next 50 years was determined for flood events with return periods ranging from 2- to 100-years as shown in Table 3-3.

Table 3-3. Number of N-year Flood Occurrences in 50-year Time Period

Flood Return Period (year)	Max Number of Occurrences	Probability[1] (%)	Adopted Number of Occurrences
2	25	11.2	15
5	10	14.0	5
10	5	18.5	3
25	2	27.6	1
50	1	37.2	0
100	1	30.6	1

1. Binominal distribution: $f_x(x; n, p)$ where x is the number of occurrences in n independent trails and p is the probability of an occurrence in a single trail.

For one 100-year flood event to occur in the 50-year period, the probability is 30.6 percent based on the binomial probability distribution as shown in Table 3-3. Likewise, the occurrence numbers of other flood events (with different return periods) are presented in Table 3-3.

The definition of a specific return period flood event (or one with a specific recurrence interval) is a flood event having an average time interval between actual occurrences with a magnitude that is equaled or exceeded. Therefore, it is appropriate to subtract a maximum number of occurrences for the larger flood event from the maximum number of occurrences for the smaller flood event. In other words, if a 100-year flood event is assumed to occur during the 50-year time period, then it would reduce the number of 50-year floods in Table 3-3 to zero; the number of 25-year floods would be reduced to 1; the number of 10-year floods to 3; the number of 5-year floods to 5; and the number of 2-year floods to 15. The total number of assumed flood events in this case would be 25 rather than maximum 44.

Table 3-3 indicates a total of 25 floods of various return frequencies that could be randomly occurring during a 50-year period. Twenty-five (25) random numbers between 2 and 100 were generated in sequence. By assigning the flood events to those random numbers, several time series of the 50-year duration were constructed. Figure 3-6 shows two possible combinations (blue and red) of the 25 flood events. For sediment transport modeling purposes the 25 flood events can be assumed to occur without including the intervening months of low flows that separate flood years. Therefore each 50-year flood sequence can be compressed into a series of hydrographs with a total simulated time period of about 689 hours as shown on Figure 3-7.

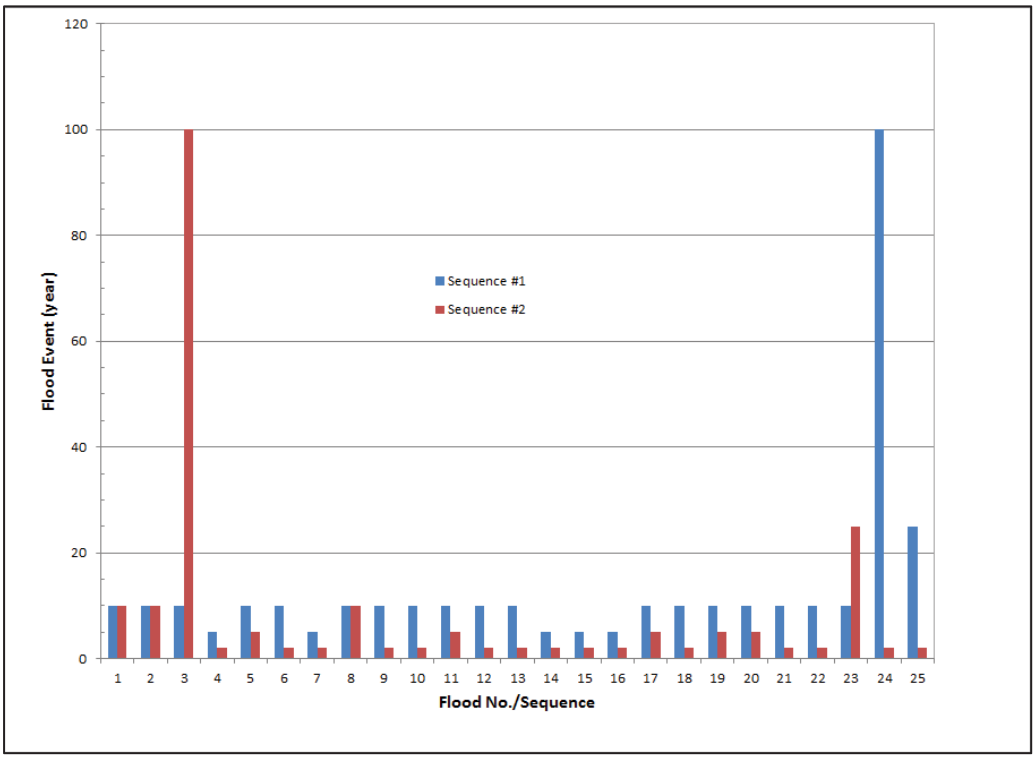

Figure 3-6 – Possible Flood Distributions

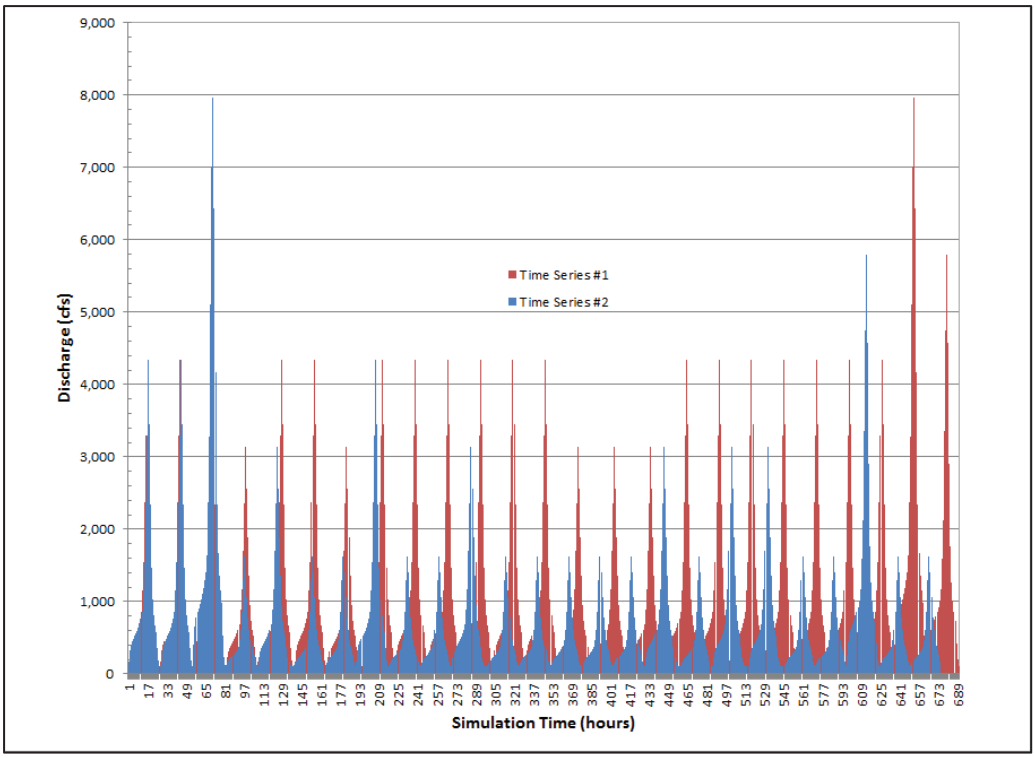

Figure 3-7 – Possible Flood Time Series

It should be noted that the N-year (2-yr, 5-yr, 10-yr, 25-yr, 50-yr, and 100-yr) flood hydrographs at SOCWA CTP gage were obtained from the Hydrology and Hydraulics Appendix of Aliso Creek

Mainstem Ecosystem Restoration Study" (USACE 2009a). The flow data processing was performed in Excel spreadsheet and presented in the hydrologic data folder of the project compact disc.

3.3 Low Flow Analysis

Using the unscreened synthetic mean daily flow record presented in Figure 3-4 above, a mean daily flow series for the low flow season (April through September) at SOCWA CTP was analyzed. Figure 3-8 shows the minimum, mean, and maximum mean daily flow data from April through September. Figure 3-9 shows the mean daily flow time series corresponding to the minimum, median, and maximum total runoff volume from April through September.

Low flow plays a major role in sustaining the aquatic plants during the dry season (April through September). The minimum flow required to sustain the existing aquatic plants is to be determined by the botanist (not part of this study). Figure 3-10 depicts the median and minimum mean daily flow yearly statistics for the low flow season. The smaller the difference between the median and the minimum mean daily flow indicates a more or less constant supply of flow. Low flows are essential for sustaining the existing aquatic plant community along lower Aliso Creek.

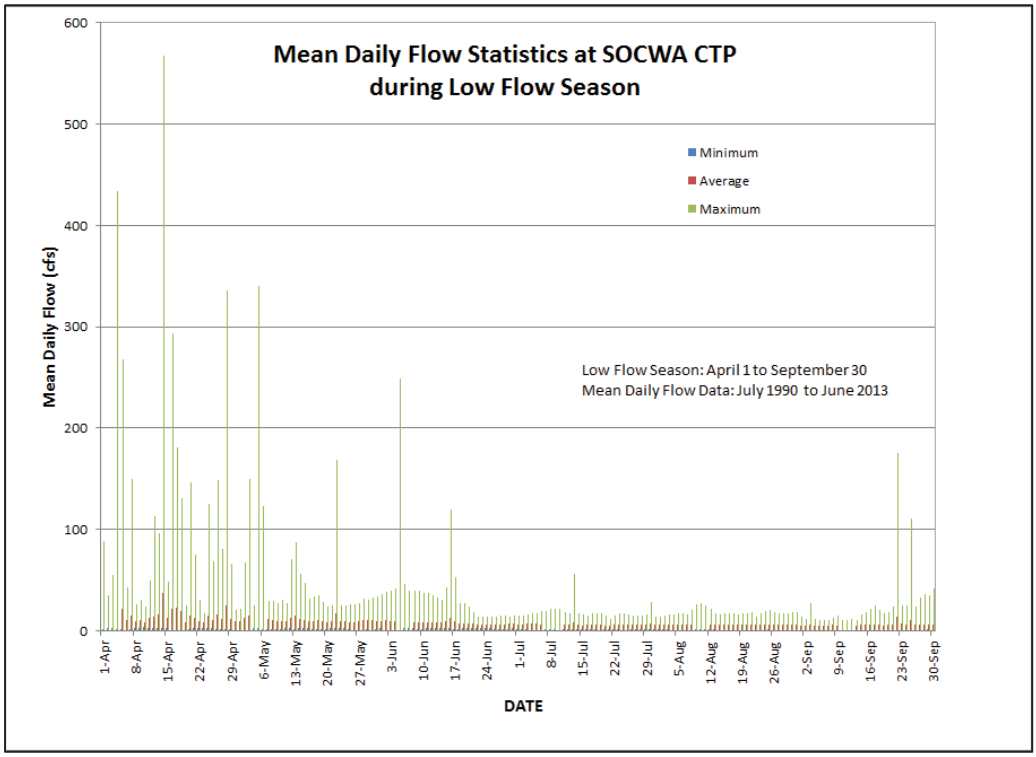

Figure 3-8 – Statistics of Low Flow Season, Mean Daily Flow

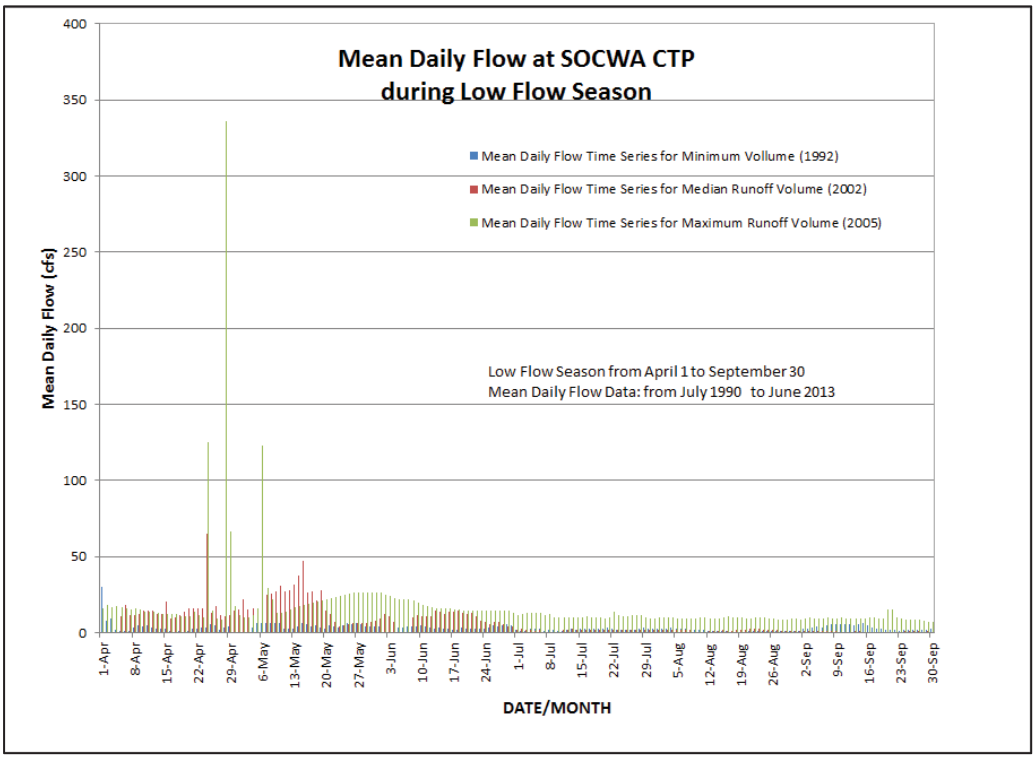

Figure 3-9 – Statistics of Low Flow Season, Total Volume

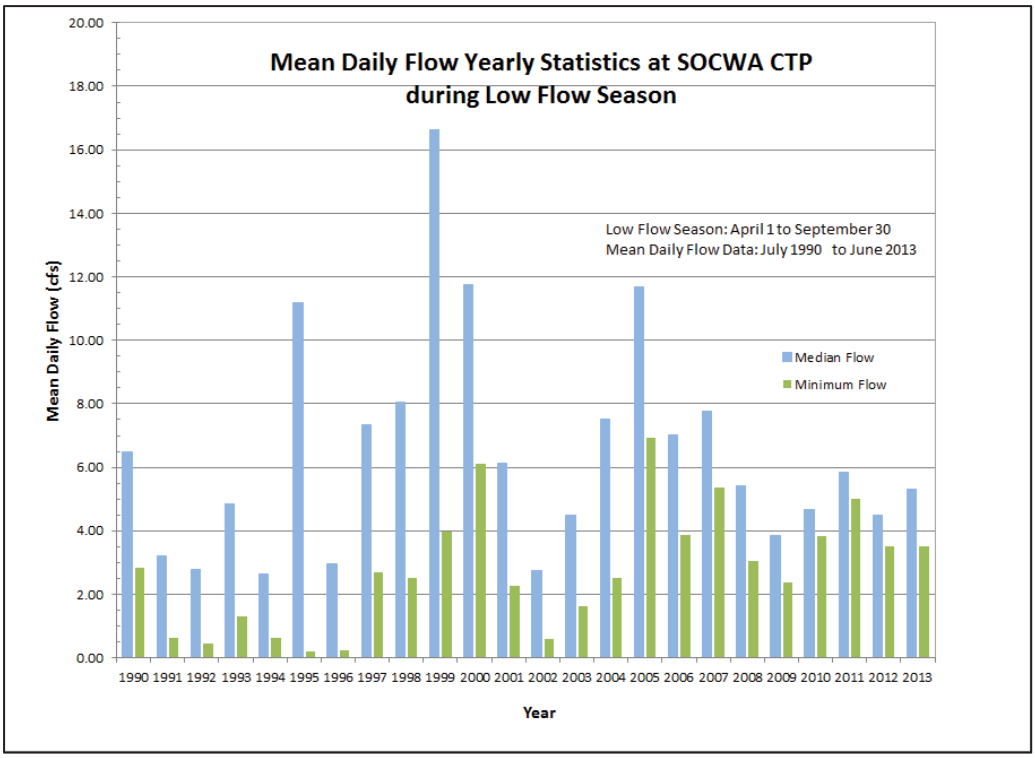

Figure 3-10 – Yearly Statistics of Low Flow Season, Mean Daily Flow

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4. WATER BUDGET

The purpose of the water budget analysis is to identify the critical water supply components impacted by the proposed alternatives.

4.1 Methodology

The general water budget equation is:

$$\Delta S = I - O$$

where ΔS = change in storage, I = inflow and O = outflow.

Figure 4-1 shows a schematic of the Lower Aliso Creek channel water budget.

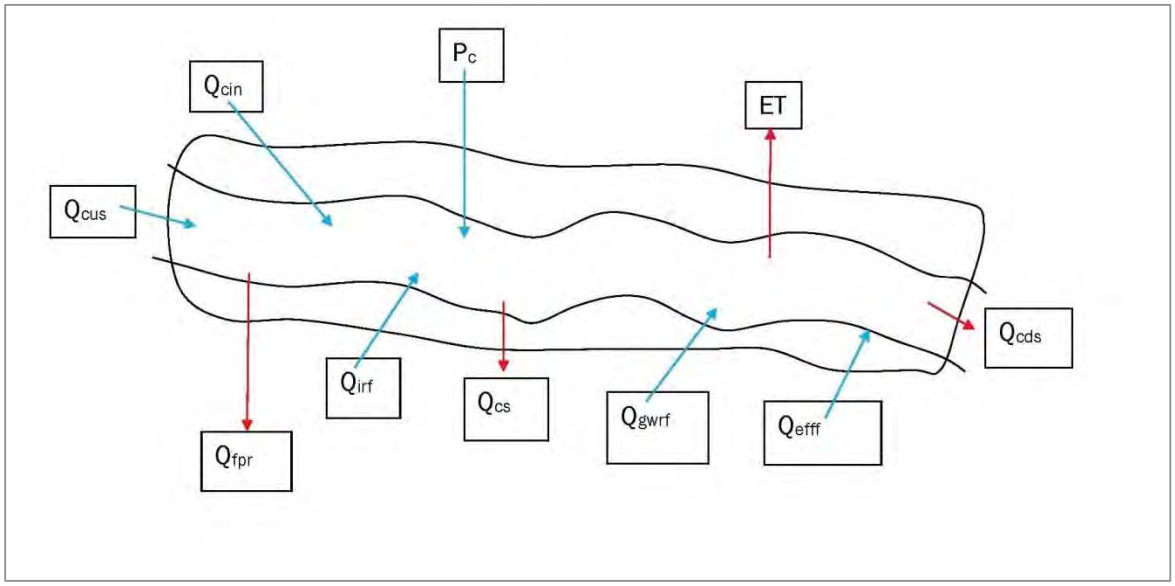

Figure 4-1 – Channel Water Budget Schematic

For a given time Δt, the channel water budget equation is:

$$\Delta S_{ic} = \left(Q_{cus} + P_c + Q_{cin} + Q_{irf} + Q_{gwrf} + Q_{eff}\right) - \left(Q_{cds} + Q_{cs} + Q_{fpr} + ET\right)$$

where ΔS_{ic} = in-channel change in storage, Q_{cus} = upstream inflow, Pc = precipitation, Q_{cin} = stormwater inflow, Q_{irf} = irrigation return flow, Q_{gwrf} = groundwater return flow, Q_{eff} = treated effluent flow; Q_{cds} = downstream channel outflow, Q_{cs} = channel seepage, Q_{fpr} = floodplain recharge, ET = evapotranspiration.

4.2 Limits of Study Reach

The Project Area includes the lower reaches of Aliso Creek from Pacific Park Drive to the Pacific Ocean plus the lower reach of Wood Canyon Creek and the lower reach of Sulphur Creek. For the water budget analysis, the study reach (Figure 4-2) is limited to Aliso Creek from Pacific Park Drive to SOCWA CTP. For this water budget analysis, the study area is limited to low-flow channel and its adjacent areas that the aquatic habitats have significant interaction with. In this analysis, the boundaries of the study area were determined based on the existing aquatic habitats along the study reach (Figure 4-2).

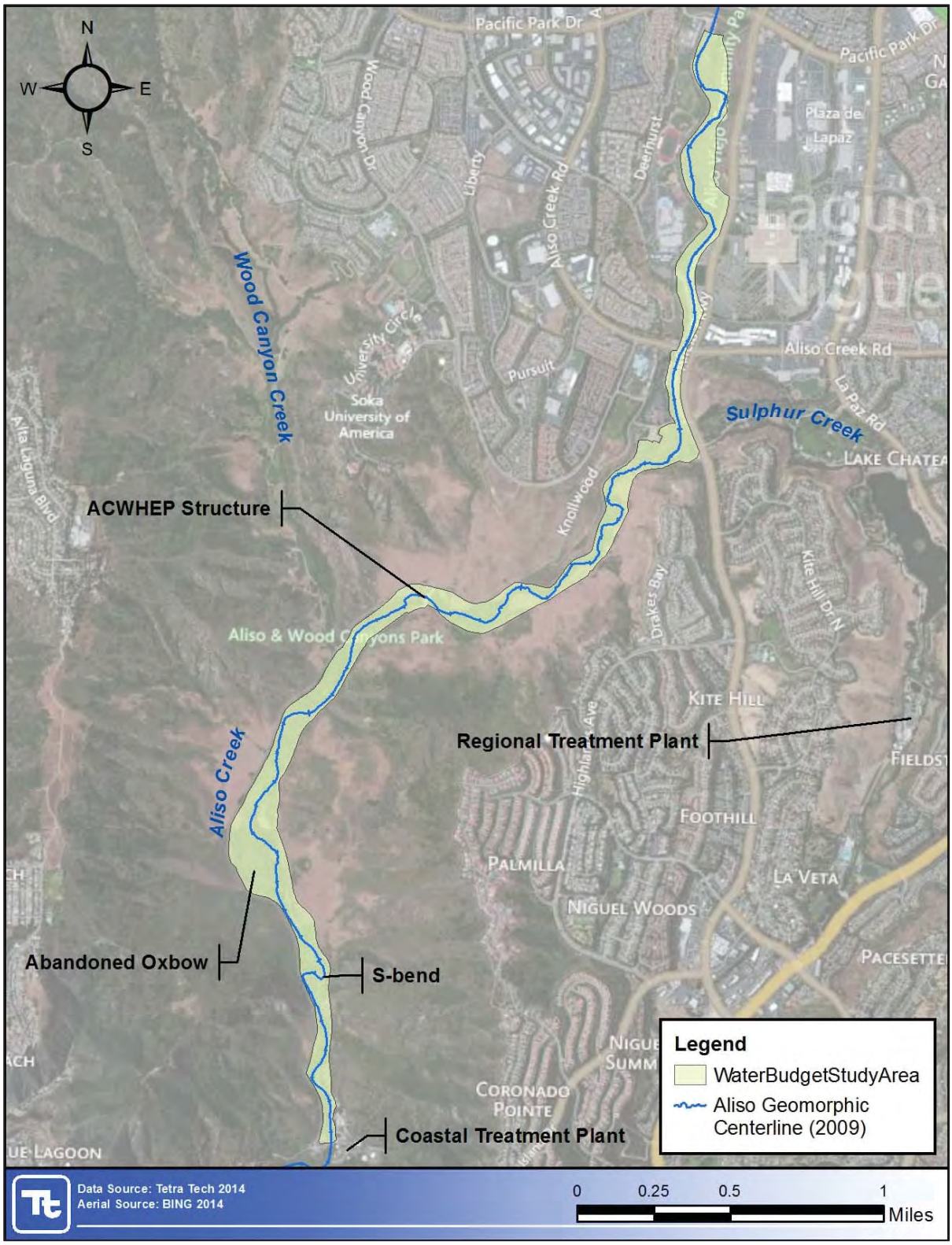

Figure 4-2 – Water Budget Study Limits

4.3 Flow Data and Simulation Period

Mean daily stream flow data of Orange County gages at the Jeronimo Road and SOCWA Coastal Treatment Plant from water year 1991 to water year 2013 were used to synthesize the mean daily flow data set. The synthesized mean daily flow data set downstream of Pacific Park Drive (followed the same procedures discussed in Section 3.1) was derived using the Jeronimo Road stream gage data to represent upstream inflow (Q_{cin} parameter). The SOCWA CTP gage data was used to represent the downstream outflow (Q_{cds} parameter).

4.4 Channel Inflow Components

4.4.1 Upstream Inflow, Q_{cus}

The synthesized mean daily flow data set downstream of Pacific Park Drive was used as the upstream inflow.

4.4.2 Precipitation, P_c

Daily precipitation data from the Orange County precipitation Station 176, located at Sulphur Creek Dam, were obtained from the Orange County Watershed Program. The precipitation data will be utilized in the water budget study only as an inflow for precipitation over the study area. Therefore, the daily precipitation inflow is computed by multiplying the daily precipitation data to the acreage of study area.

4.4.3 Stormwater Inflow, Q_{cin}

This data includes municipal stormwater flow and flow from adjacent canyons contributing to the study reach and is generally not quantified and unavailable. Therefore, this component is excluded from the water budget analysis.

4.4.4 Irrigation Return Flow, Q_{irf}

This data consists of urban landscape and/or agriculture irrigation flow contributing to the study reach and the flows are captured and recorded at both stream gage stations. Therefore, this component is excluded from the water budget analysis.

4.4.5 Groundwater Return Flow, Q_{gwrf}

"Aliso Creek Environmental Restoration Study final Hydrologic Documentation" prepared by Simons, Li & Associates, Inc. 1999 for the USACE LA District stated:

> A*ccording to the San Juan and Aliso Creeks Watershed Management Study Reconnaissance Report (USACE 1997), the ground water basin within the Aliso Creek alluvial deposits is small and isolated (thickness of about 50-60 feet). The deposits are divided into the upper and lower basins with a mostly shale formation as the barrier between the two. ... The lower groundwater basin starts from the 1-5 crossing and extends all the way to the Pacific Ocean. From Wood Canyon to the ocean, very high ground water conditions prevail with the basin almost reaching the surface.*

Because of the high groundwater surface within the study area, groundwater return flow to the Aliso Creek channel is likely to occur when channel flow is low enough. Estimating the return flow generally requires more detailed monitoring of groundwater within the study area. In this water budget analysis, a simplified approach presented in Section 4.5.4 will be used.

4.4.6 Treated Effluent Flow, Q_{eff}

Treated effluent flows from six water treatment facilities are discharging to the Pacific Ocean through the Aliso Creek Ocean Outfall. These facilities are listed below:

- Irvine Desalter Project Shallow Groundwater Unit (IDP SGU).
- Irvine Desalter Project Potable Water Treatment System (IDP PWTS).
- Irvine Ranch Water District Los Alisos Water Reclamation Plant (Los Alisos WRP).
- El Toro Water District Water Reclamation Plant (El Toro WRP).
- SOCWA Regional Treatment Plant (SOCWA RTP).
- SOCWA Coastal Treatment Plant (SOCWA CTP).

Aliso Creek Ocean Outfall (ACOO) receives treated effluent from the SOCWA RTP, SOCWA CTP, Los Alisos WRP, and El Toro WRP. Non-potable treated groundwater and brine discharges from the IDP SGU and IDP PWTS are also routed to the ACOO. The effluent is treated to strict state and federal environmental health standards and is discharged into the ocean 1.5 miles off the coast of Aliso Beach via ACOO. Thus, no treated effluent flows are used in this water budget.

4.5 Channel Outflow Components

4.5.1 Downstream Channel Outflow, Q_{cds}

The mean daily flow data set at SOCWA CTP was used as the downstream outflow.

4.5.2 Incised Channel Seepage, Q_{cs}

Channel seepage might not occur because of the high groundwater surface. The seepage amount has yet to be quantified and the groundwater table within the study area needs to be determined via additional field investigation to gain a thorough understanding of the process. In this water budget analysis, a simplified approach presented in Section 4.5.4 will be used and the data pertaining to the groundwater table within the study area were obtained from the log of boring hole presented in the Geotechnical Appendix of Aliso Creek Mainstem Ecosystem Restoration Study" (USACE, 2009b).

4.5.3 Incised Floodplain Recharge, Q_{fpr}

Floodplain recharge might not occur because of the high groundwater surface. The recharge amount has yet to be quantified and the groundwater surface within the study area needs to be determined via additional field investigation to gain a thorough understanding of the process. In this water budget analysis, a simplified approach presented in Section 4.5.4 will be used.

4.5.4 Channel and Groundwater Interflow

Due to lack of field data pertaining to the groundwater return flow, channel seepage, and floodplain recharge, the groundwater interflow methodology presented in the HEC-RAS User Manual (USACE

2010) was adopted and used in this analysis. The Darcy Equation (Bear 1979) was used to estimate seepage or groundwater return flow (Figure 4-3).

The Darcy Equation can be written as:

$$Q = K_s * \frac{h}{y} * A \quad where \quad A = WP * L$$

Where Q = groundwater interflow (cubic feet/day), h = depth (feet) from water surface elevation to the groundwater table elevation at boring hole, y = distance (feet) from channel center to boring hole, A = wetted area (square feet), L = distance (feet) measured from current cross section to halfway of the downstream and upstream cross sections, and K_s = saturated hydraulic conductivity of the stream sediments (feet/day).

Soil data obtained from the NRCS National Soil Survey (http://websoilsurvey.nrcs.usda.gov/app/) indicate that the bed material below the study area has K_s values that range from 0.42 to 141 micron meter/sec or 0.12 to 40 feet/day (see Figure 4-4) and K_s values that range from 1.4 to 141 micron meter/sec or 0.40 to 40 feet/day for area adjacent to the channel bed. The majority of the bed material adjacent to the channel bed is classified as riverwash with K_s values ranging from 42 to 141 micro meter/sec or 12 to 40 feet/day. Since no field investigation was conducted to supplement the NRCS soil mapping, a K_s value of 42 micron meter/sec or 12 feet/day was used for water budget analysis.

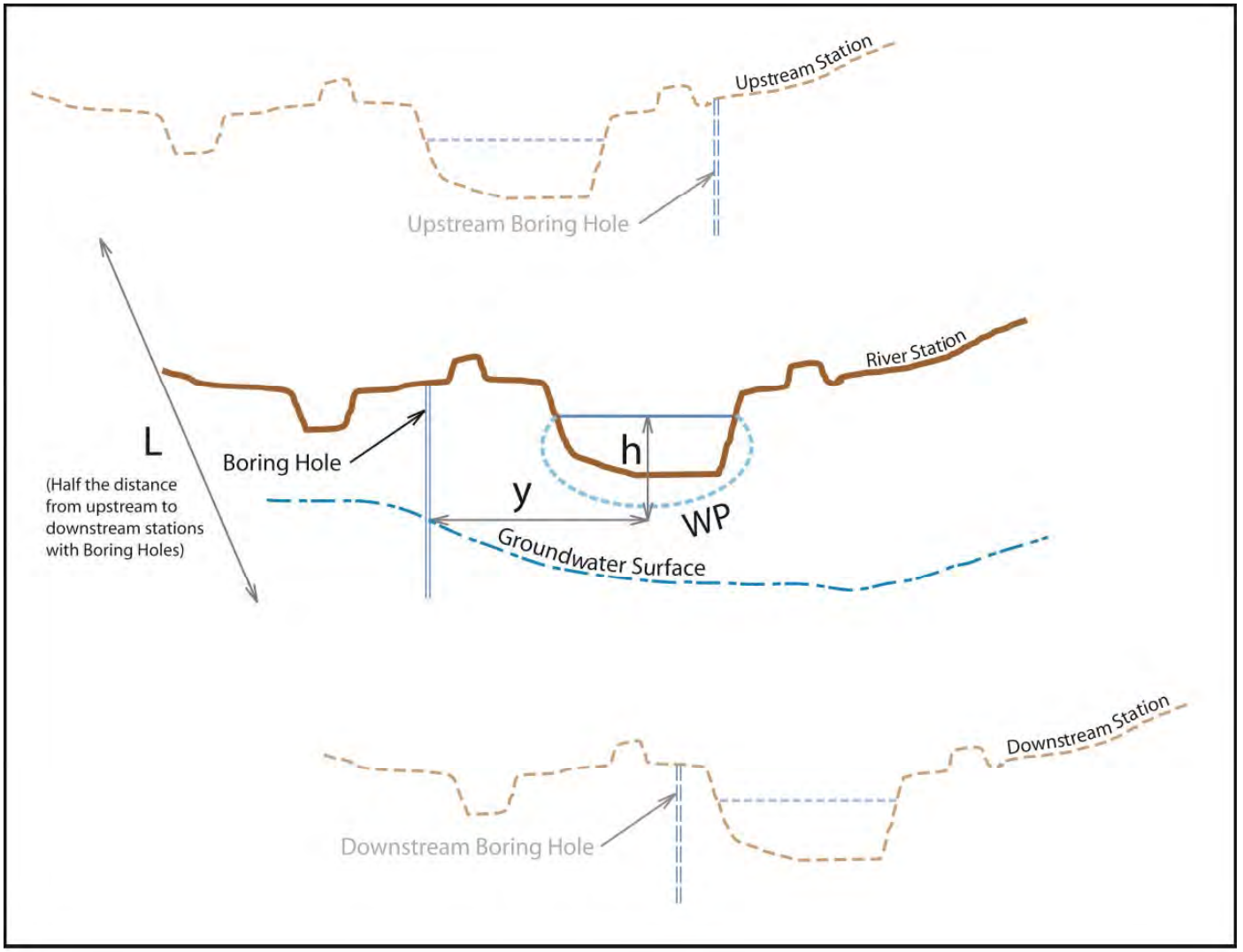

Figure 4-3 – Channel and Groundwater Interflow Schematic

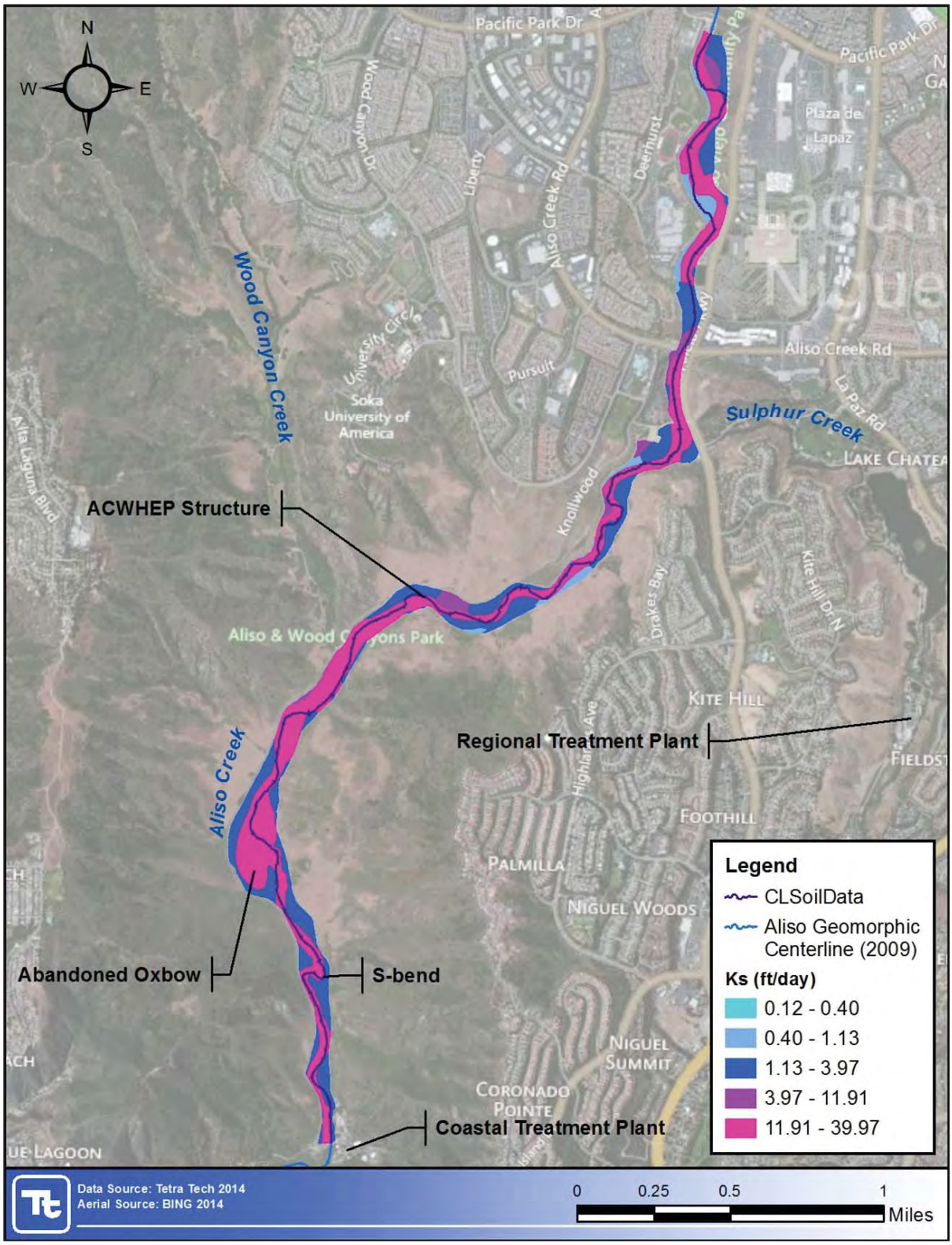

Figure 4-4 – Study Area Saturated Hydraulic Conductivity

4.5.4.1 Groundwater Table

Data pertaining to the groundwater table within the study area were obtained from the log of boring hole presented in the Geotechnical Appendix of Aliso Creek Mainstem Ecosystem Restoration Study" (USACE, 2009b). Locations of the boring holes with respect to the HEC-RAS cross sections are shown on Figure 4-5. Table 4-1 shows the groundwater table elevation at each boring location and its associated HEC-RAS cross section.

Table 4-1. Groundwater Table at Boring Holes

Boring ID	Groundwater Table (feet)		HEC-RAS Cross Section
	(MSL[1])	(NAVD 88)	
DYB-2	37	39.3	1.625
DYB-3	46	48.3	2.131
DYB-4	44	46.3	2.634
DBY-5	57	59.3	2.881
DYB-6	55	57.3	3.033
DYB-7	58	60.3	3.191
DYB-8	59	61.3	3.484
DYB-9	66	68.3	3.594
DYB-10	136	138.3	5.169
DYB-11	123	125.3	5.416
1. Mean sea level.			

Due to limited field data, assumptions used in the surface water and groundwater interflow analysis are listed below:

- Groundwater table remains constant throughout the entire simulation period.
- Each boring is assigned to a single HEC-RAS cross section and associated to a segment halfway to the next upstream and downstream boring locations except for the first boring (DVB-2) and last boring (DYB-11) where segments (upstream of DYB-11 and downstream of DYB-2) extend to the study limits.
- Interflow direction is determined by the groundwater table elevation at the boring (assumed constant) and the water surface elevation (varied) at the associated HEC-RAS cross section.
- Interflow gradient is estimated at each HEC-RAS cross section as the difference of channel water surface elevation and the associated groundwater table elevation divided by the distance from the channel center to the boring location.

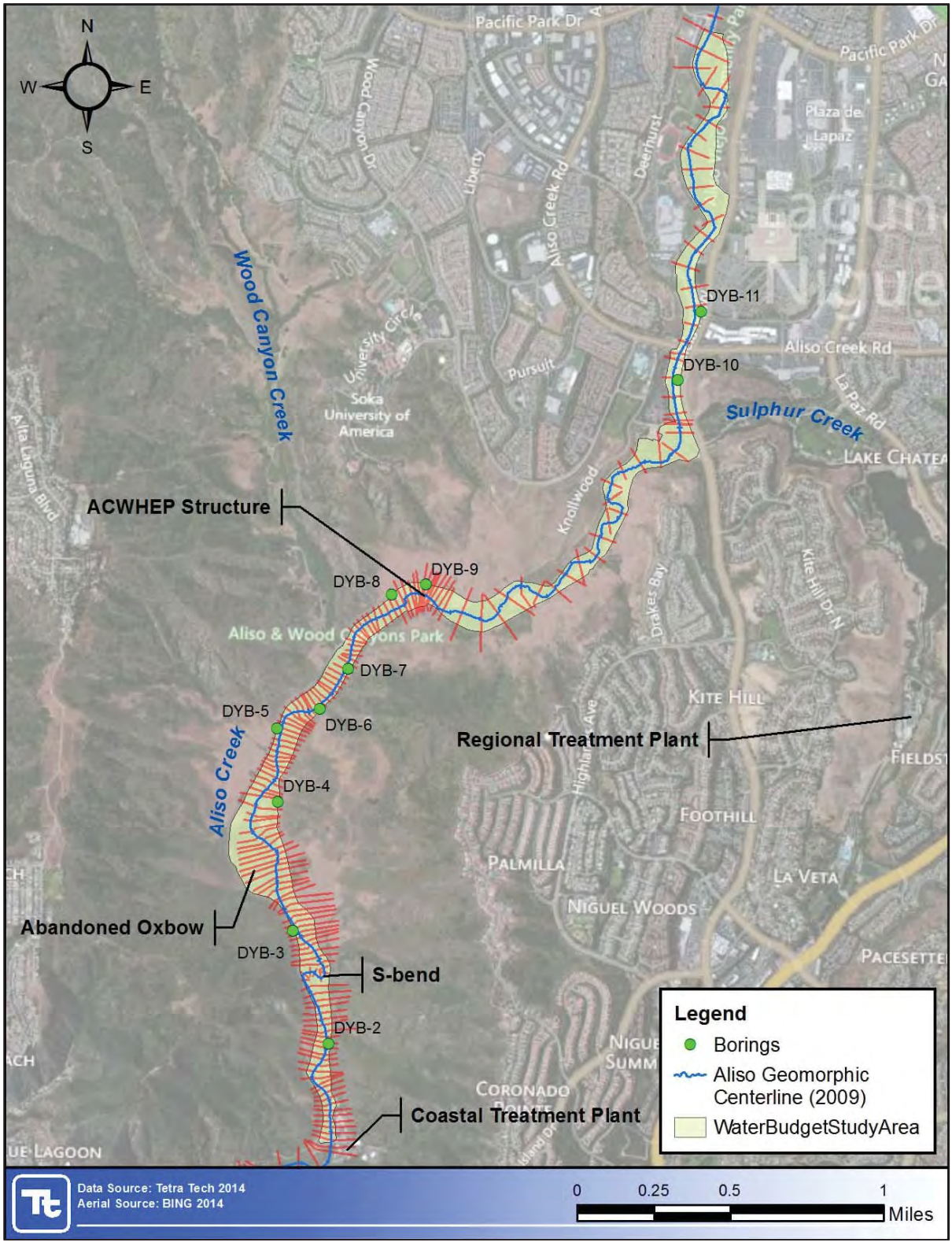

Figure 4-5 – Boring Holes Location Map

4.5.5 Evapotranspiration, ET

Mean monthly pan evaporation data (from 1978 to 2011) at Orange County Station 216 located at Sulphur Creek Dam were obtained from the Orange County Watershed Program. A pan coefficient between 0.7 and 0.8 was used to adjust the pan evaporation data to more closely estimate the evaporation from naturally existing shallow water surfaces such as ponds and depressions.

The evapotranspiration (ET_o) region map compiled by the California Irrigation Management Information System (CIMIS) in 1999 provides monthly ET_o for 18 regions throughout California. Using crop coefficients (Kc) enables specific crop evapotranspiration (ET_c) to be estimated from ET_o (i.e., $ET_c = K_c \times ET_o$). The University of California has developed two booklets on crop coefficients titled "Using Reference Evapotranspiration (ET_o) and Crop Coefficients to Estimate Crop Evapotranspiration (ET_o) for Agronomic Crops, Grasses, and Vegetable Crops" and "Using Reference Evapotranspiration (ET_o) and Crop Coefficients to Estimate Crop Evapotranspiration (ET_c) for Trees and Vines." Crop coefficients of interest are listed in Table 4-2.

Table 4-2. Selected Crop Coefficient

Crop/Cover Type	K_c
Open water surfaces	1.10
Wet light soil	1.05
Wet dark soil	1.10
Grazed pasture	0.90
Grass-clover	1.05
Evergreen shrubbery	1.15
Evergreen tress	1.20

The study area is located in Regions 2 and 3 of the California ET_o region map. The estimated monthly evaporation for open water surfaces based on the Sulphur Creek Dam data and CIMIS data are shown in Table 4-3. Table 4-3 indicates that the estimated monthly evaporation rates, using the pan coefficient of 0.8 at Sulphur Creek Dam, are consistent with the CIMIS regional data for open water surfaces (see shaded rows). Therefore, historical monthly pan evaporation data at Sulphur Creek Dam were used in estimating the ET for the study area.

Table 4-3. Comparisons of Estimated Monthly Evaporation Data

	JUL	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
Sulphur Creek Dam													
Mean (inch)	7.42	6.93	5.70	4.31	3.23	2.61	2.53	2.57	3.86	5.01	6.00	6.45	56.68
0.7[1]	5.20	4.85	3.99	3.01	2.26	1.83	1.77	1.80	2.70	3.50	4.20	4.52	39.63
0.8[1]	5.94	5.54	4.56	3.45	2.58	2.09	2.02	2.06	3.09	4.01	4.80	5.16	45.29
CIMIS Region 2 – Coastal mixed fog area													
ET_o (inch)	4.96	4.65	3.90	2.79	1.80	1.24	1.24	1.68	3.10	3.90	4.65	5.10	39.01
K_c[2]	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	
ET_c (inch)	5.46	5.12	4.29	3.07	1.98	1.36	1.36	1.85	3.41	4.29	5.12	5.61	42.91

	JUL	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
CIMIS Region 3 – Coastal valleys and plains													
ET_o (inch)	5.58	5.27	4.20	3.41	2.40	1.86	1.86	2.24	3.72	4.80	5.27	5.70	46.31
K_c[2]	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	
ET_c (inch)	6.14	5.80	4.62	3.75	2.64	2.05	2.05	2.46	4.09	5.28	5.80	6.27	50.94

1. Class A evaporation pan coefficient varies from 0.7 to 0.8.
2. Crop coefficient for open water surfaces.

Data for vegetation cover types within the study area were obtained from the Cal-Atlas Geospatial Clearinghouse website (Cal-Atlas 2006). The study area contains five vegetation covers: desert shrub, hardwood woodland, shrub, herbaceous, and wetland (Figure 4-6). Areas with homogenous cover type (Table 4-2 and Figure 4-6) were delineated and used with the associated crop coefficient to compute the ET for individual subareas, and the summation ET of each homogeneous area was used for the study reach.

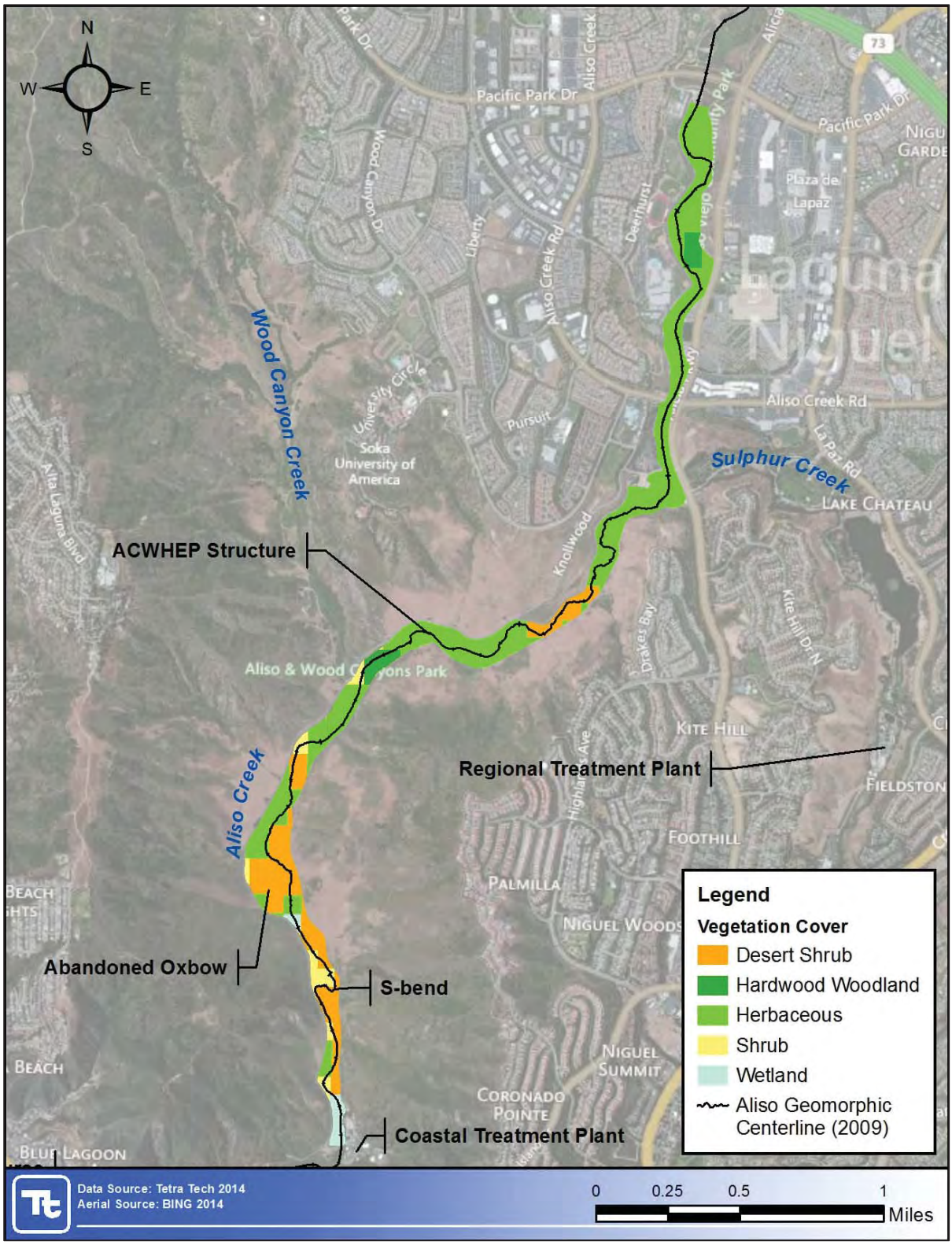

Figure 4-6 – Water Budget Study Area Vegetation Covers

4.6 In-channel Change in Storage, ΔS_{ic}

In-channel change in storage, ΔS_{ic}, can be computed using conservation of mass via the water budget model and synthesized flow data to establish a baseline condition. If an alternative ΔS_{ic} is less than baseline conditions ΔS_{ic}, it indicates more water would infiltrate to the groundwater or be consumed by the proposed aquatic habitats. This condition would result in less downstream surface outflow. However if an alternative ΔS_{ic} is greater than the baseline condition ΔS_{ic}, it indicates less water would infiltrate to groundwater or be consumed by the proposed habitats. Hence this condition would result in larger downstream channel outflow.

4.7 Water Budget Computation

Water budget computations for the baseline conditions (Alternative 1) and alternatives were computed in accordance with the assumptions and descriptions of water budget inflows and outflows in paragraphs 4.4 through 4.6 above.

In the water budget computation, the stormwater inflow, irrigation return flow and treated effluent flow components are not included due to lack of the field data necessary to quantify them. Therefore the in-channel change in storage, ΔS_{ic}, will vary only with the ET and the interflow between surface water and groundwater for all the alternatives.

Comparisons of ET, interflow between surface water and groundwater, and in-channel change in storage are shown on Figures 4-7, 4-8, and 4-9, respectively, for all alternatives. Figure 4-7 indicates minor to no variation of ET among alternatives. Figure 4-8 indicates more surface water infiltrating to groundwater for Alternatives 3 and 4. This is due to the proposed channel improvements that raises channel invert at boring locations. It results in higher water surface elevations and a higher flow gradient to the groundwater table. Alternative 2 shows slight deviations from the existing conditions because only the reach between SOCWA CTP and ACWHEP structure was improved. Figure 4-9 indicates less downstream channel flow under Alternatives 3 and 4 conditions and similar conditions for Alternative 2.

Results of this water budget computation are primarily for alterative comparison purposes and should not be used for quantitative purposes. Water budget computations were performed using an Excel spreadsheet and details are presented in the hydrologic data folder of the project compact disc.

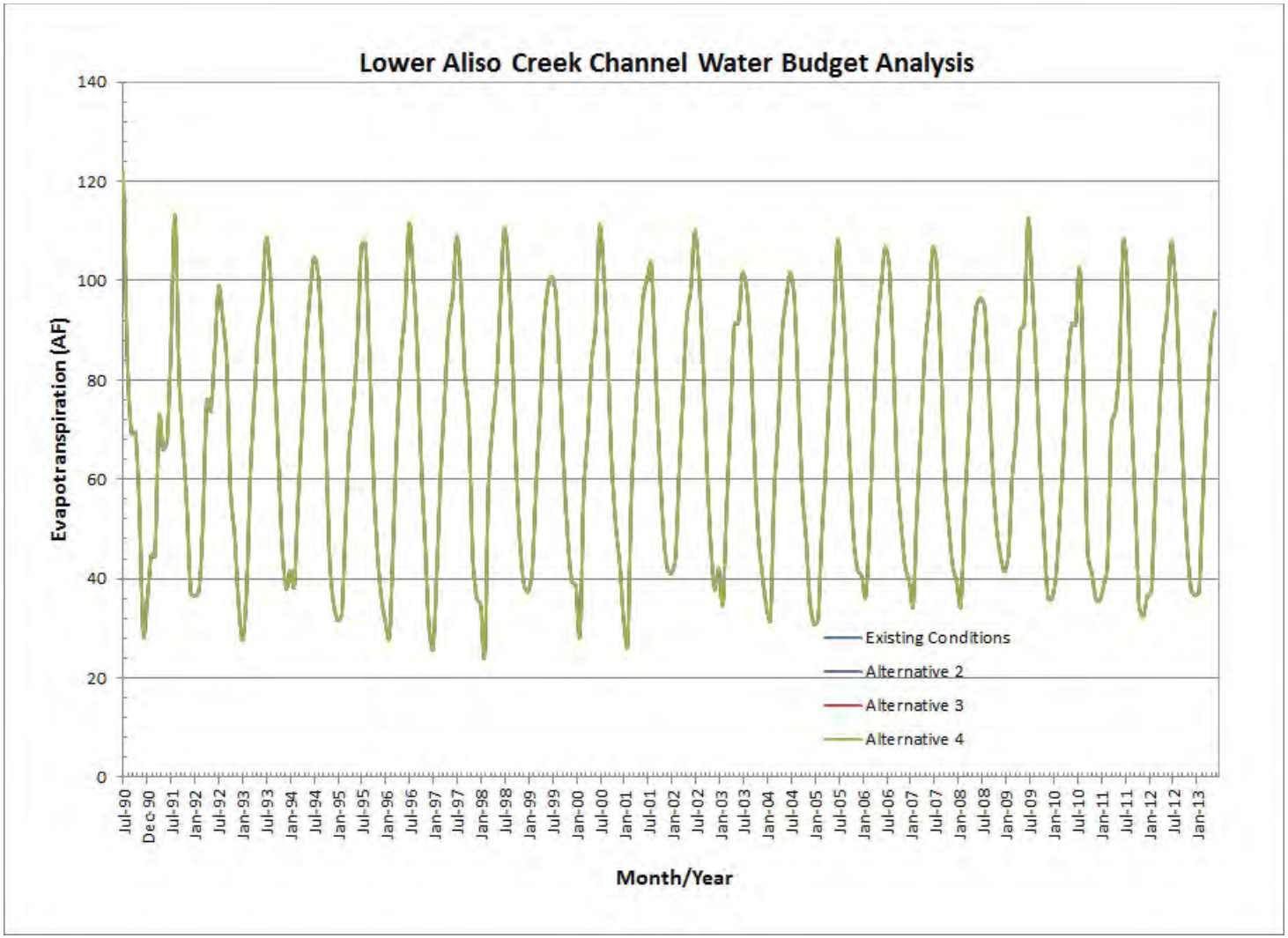

Figure 4-7 – Comparison of Evapotranspiration

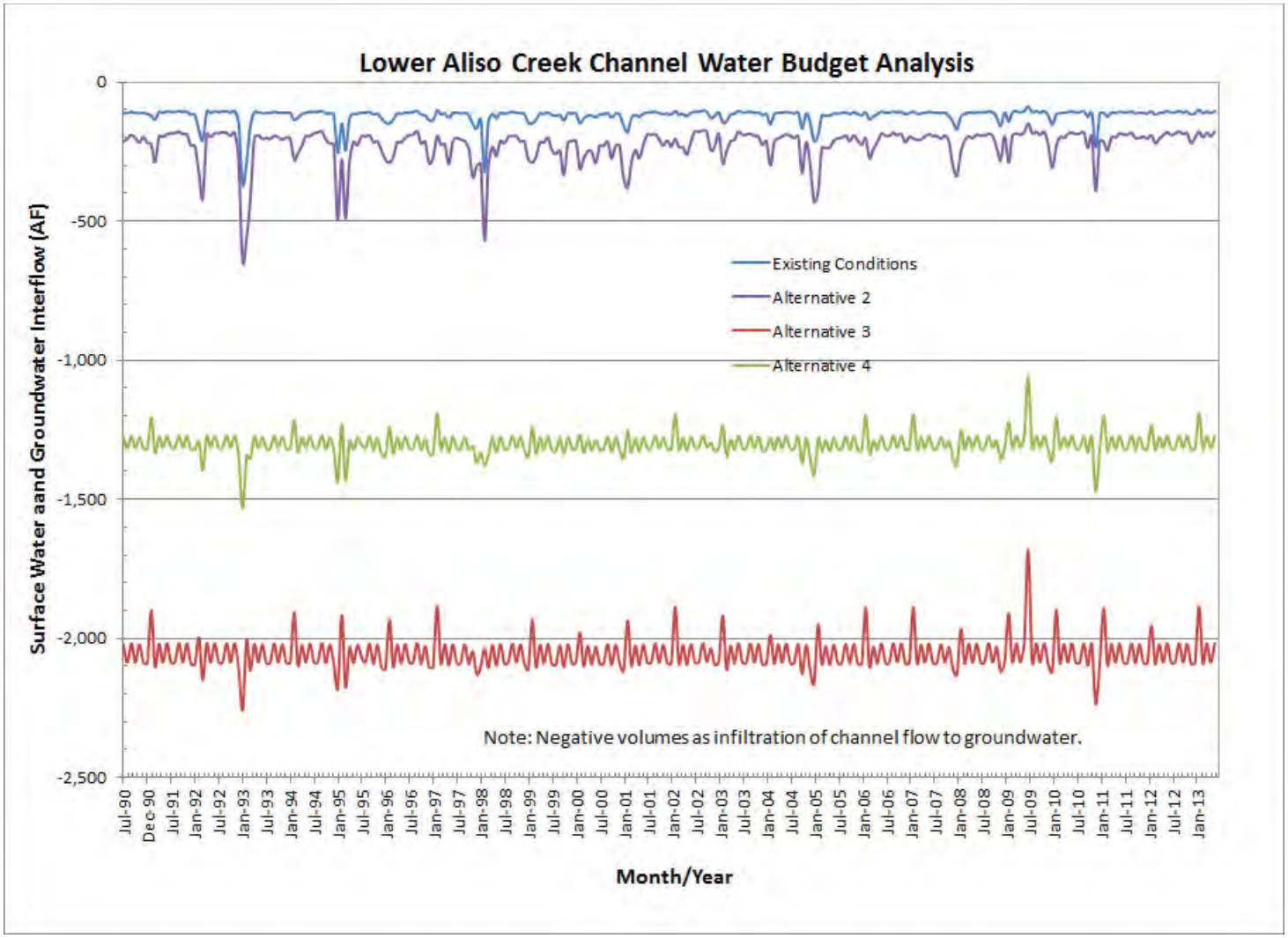

Figure 4-8 – Comparison of Interflow between Surface Water and Groundwater

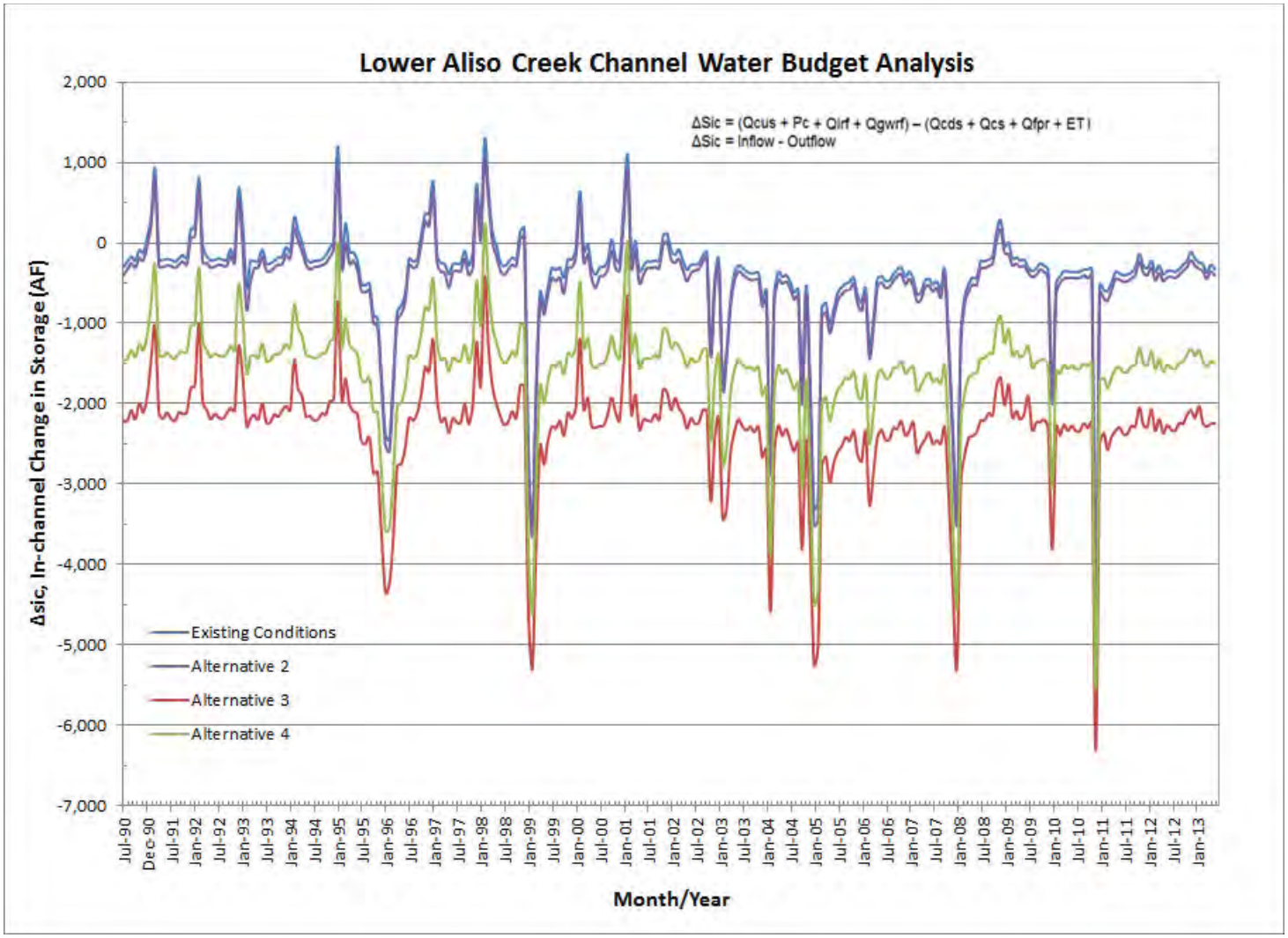

Figure 4-9 – Comparison of In-channel Change in Storage

5. HYDRAULIC ANALYSIS

Hydraulic analyses for the four (4) alternatives (Alternatives 1, 2, 3, and 4) were performed using the HEC-RAS models. The existing HEC-RAS model (cross section locations shown in Figure 5-1; cross section stationing along the creek can be found on floodplain maps in Attachment B) from the *Aliso Creek F4 Geomorphic Assessment Study* (Tetra Tech 2014), prepared for USACE Los Angeles District, was used as the base model along Aliso Creek. Then, the base model was modified for each alternative to reflect various 'baseline' design conditions, which extend from the SOCWA CTP Bridge to the AWMA Road Bridge, using proposed channel templates and profiles, as presented in Section 2 of this report. Also, in the same HEC-RAS model, 'additional measures' were modeled between the AWMA Road Bridge and Pacific Park Drive for each alternative as necessary to analyze their impacts on the hydraulic conditions of Aliso Creek. The descriptions of 'baseline' design and 'additional measure' features are included in Section 1.3. Development of the HEC-RAS model for each alternative is described further in the following subsections. The hydraulic models are provided on the submitted project CD.

5.1 Manning's *n*-values

5.1.1 Existing Conditions

The existing channel geometry including the Manning's *n*-values from the USACE's 2010 study were used for the hydraulic models. The *n*-values were originally determined in the USACE's 2009 *Revised Hydrology and Hydraulics Appendix Study* (USACE 2009a), based on procedures by Chow (1959) and Arcement and Schneider (1989). In these procedures, a base *n*-value (nb) for a straight, uniform, smooth channel of a given material was selected and adjusted according to the degree of surface irregularity (n1), variations in shape and size (n2), obstructions (n3), vegetation (n4), and meandering (m) as shown in Equation 5.1.

Adjusted '*n*_channel' = (nb + n1 + n2 + n3 + n4) * m Equation 5.1

For overbanks areas, the *n*-values were determined based on a base *n*-value (nb) for a smooth, bare floodplain surface, surface irregularities (n1), obstructions (n3, tree trunks, etc.), and vegetation (n4) as shown in Equation 5.2.

Adjusted '*n*_overbank' = (nb + n1 + n3 + n4) Equation 5.2

In the 2010 study, these *n*-values from the 2009 study were calibrated and adjusted for the observed high-water marks in the field. The *n*-values and their horizontal distribution within each cross section were adjusted to increase or decrease the modeled water surface elevations to approximate the high-water elevations.

5.1.2 Proposed Conditions

The Manning's *n*-values for the incised portion of Aliso Creek where the channel improvement was implemented were updated to reflect the proposed channel conditions. The Manning's *n* for the post-construction channel was set to an average value of 0.035 to represent unvegetated earthen channel with intermittent rock riprap in riffle structures based on EM 1110-2-1601 (USACE 1994). The Manning's *n* of 0.06 for the capacity evaluation in ultimately vegetated conditions was estimated conservatively high based on dense vegetation observed in the creek. The *n*-values outside the proposed channel footprints were not changed from the existing condition *n*-values in Section 5.1.1.

5.2 Alternative 1

This alternative is a No-Action Plan, and the HEC-RAS model represents existing conditions of Aliso Creek without any improvements to the base model. The model extends from Moulton Parkway at the upstream end (RS 9.0; this location is far enough upstream to provide hydraulic tie-ins between the four Alternatives) to the Pacific Ocean at the downstream end (RS 0.0). The channel roughness coefficient varies between 0.035 (bed surface roughness; no vegetation) and 0.054 (dense vegetation). The downstream boundary condition was set to the normal depth with a slope of 0.005 ft/ft. The model was run for a range of flows listed in Table 3-2.

5.3 Alternative 2

Using the base model from Alternative 1, a reach between the SOCWA CTP Bridge and the ACWHEP structure was modified to reflect the Alternative 2 'baseline' design improvement conditions. The single-trapezoidal channel template was incorporated into the base model along the design profile which approximately follows the existing thalweg with a uniform slope of 0.4% as described in Section 2.2. The horizontal alignment of the channel generally follows the existing low-flow channel with the exceptions of the areas where the low-flow channel gets too close to the east bank. In these areas, the horizontal alignment was shifted away from the existing channel to protect the east bank and the utilities buried underneath. The same boundary and flow conditions were used as in Alternative 1.

5.4 Alternative 3

Using the base model from Alternative 1, the reach between the SOCWA CTP Bridge and the AWMA Road Bridge was modified to reflect the Alternative 3 'baseline' design improvement conditions. The compound channel template with raised bed elevations, along with 9" and 18" high riprap riffles, was incorporated into the base model as described in Section 2.1. The riffles were placed at various intervals that would result in balancing of the earthwork quantities (excavation and compacted fill) and reconnection with historic floodplains. Determination of the locations and types of riffles is further described in the *Draft TSP Design Appendix* (Tetra Tech 2015) of this project.

The bed elevations at the SOCWA CTP Bridge (RS 1.262) and AWMA Road Bridge (RS 4.725) were assumed to be fixed points (i.e., no change to the bridge or culvert structure including the invert elevation). The proposed model ties into the existing model geometry at the HEC-RAS cross sections located downstream of SOCWA CTP Bridge and upstream of AWMA Road. The same boundary and flow conditions were used as in Alternative 1.

5.5 Alternative 4

Using the base model from Alternative 1, the reach between the SOCWA CTP Bridge and the AWMA Road Bridge was modified to reflect the Alternative 4 'baseline' design improvement conditions. The compound channel template with raised bed elevations, along with 18" riprap riffles, was incorporated into the base model as described in Section 2.1. The riffles were placed at a constant interval of 480'. In general, the invert profile is lower than the profile associated with Alternative 3 (5 feet lower at the location of ACWHEP structure) since the design target here is to raise the streambed to intermediate elevation between the current streambed and the historic pre-incised streambed. Alternative 4 requires fish connectivity through the main channel, as such the invert elevations have to be closer to Alternative 3 (which also requires fish connectivity) than that of Alternative 2 (which basically halts fish connectivity at ACWHEP structure). If Alternative 4 was lower (say half way between Alternative 2 and Alternative 3), it would require more grade stabilizers upstream of

ACWHEP structure to cover larger elevation difference. This would also increase the overall erosion potential upstream of ACWHEP structure as the reach-averaged flow velocities would increase.

The bed elevations at the CTP Bridge (RS 1.262) and AWMA Road Bridge (RS 4.725) were assumed to be fixed points (i.e., no change to the bridge or culvert structure including the invert elevation). The proposed model ties into the existing model geometry at the HEC-RAS cross sections located downstream of SOCWA CTP Bridge and upstream of AWMA Road. The same boundary and flow conditions were used as in Alternative 1.

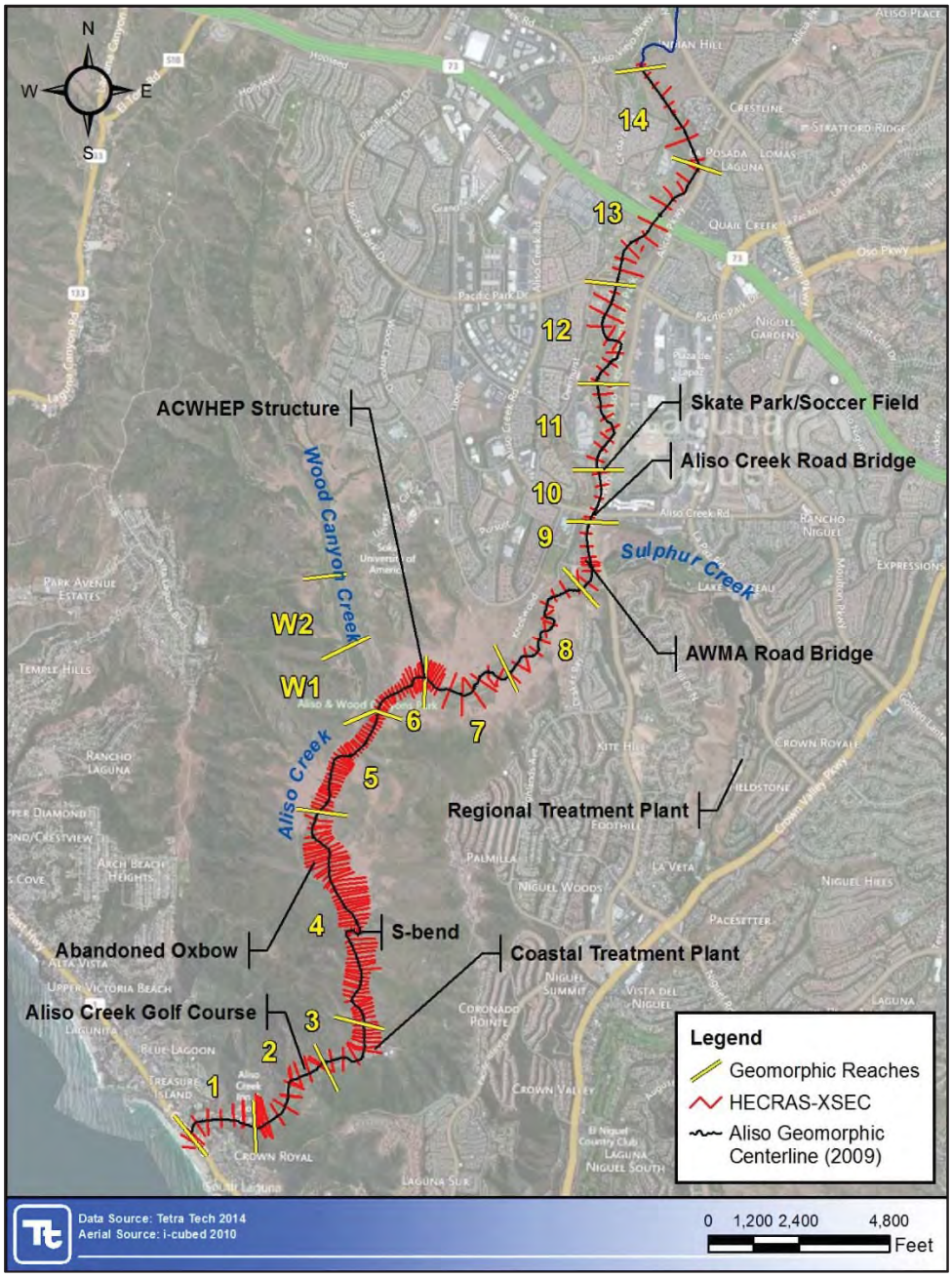

Figure 5-1 – Aliso Creek HEC-RAS Cross Sections and Geomorphic Reaches

5.6 Additional Measures

In order to analyze the hydraulic impacts of additional measures H, I and J (see Table 1.1), the Aliso Creek reach upstream of the AWMA Road Bridge was modeled with the 'additional measures' design for each alternative. This additional measure reach includes a previously improved reach between the AWMA Road Bridge and Skate Park, which would be widened using a sheet pile wall on the east bank as part of the additional measure, and natural reach between the Skate Park and Pacific Park Drive, which would be improved with the compound channel template. Riffles were added as necessary to accommodate the removal of existing drop structures. The design features of the additional measures are further described in the *Draft TSP Design Appendix* (Tetra Tech 2015) of this project.

The bed elevations at the AWMA Road Bridge (RS 4.725), Aliso Creek Road Bridge (RS 5.000), and Pacific Park Drive Culvert (RS 6.588) were assumed to be fixed points (i.e., no change to the bridge or culvert structure including the invert elevation). The additional measures model ties into the baseline design model (see Sections 5.3 through 5.5) at the AWMA Road Bridge (which is the upstream limit of the baseline design model) and downstream of Pacific Park Drive.

Based on the 100-year flow hydraulic analysis (Figure 5-6), the additional measures H, I, and J increase the water surface elevation up to 4 feet between AWMA Road and Aliso Creek Road compared to existing conditions (Alternative 1). However, this rise in the water surface elevation does not cause flooding of existing infrastructure in this area because the existing west overbank (where the current access road is located between Alicia Parkway and the channel) is at least 5 feet above the 100-year water surface profile. Upstream of Aliso Creek Road, the impact of these additional measures is minimal, as the proposed water surface elevation (green line on Figure 5-6) is generally below or at the water surface elevation for existing conditions (blue line on Figure 5-6) due to increased hydraulic capacity of the compound channel template described in Section 2.1.

The hydraulic and sedimentation effects of stream lengthening are presented in Section 10. Other relevant measures do not have significant hydraulic impact.

5.7 Results

5.7.1 Breakdown of Geomorphic Reaches

To be consistent with the previous USACE studies of Aliso Creek, Aliso Creek was divided into multiple geomorphic reaches from the Pacific Ocean to upstream limit of the Aliso Creek Watershed for the hydraulic analysis and subsequent analyses. Based on the Tetra Tech study (Tetra Tech 2014), Aliso Creek was divided into fourteen (14) individual reaches along Aliso Creek between the Ocean and Moulton Parkway and one (1) additional reach for Wood Canyon Creek, a tributary, each with similar hydraulic and geomorphic characteristics within itself as shown in Figure 5-1. A summary of the Aliso Creek reaches is presented in Table 5-1.

Table 5-1. Geomorphic Reaches along Aliso Creek

Stream Reach No.	Downstream Limit		Upstream Limit	
	RS	Description	RS	Description
1	1.118	PCH Bridge	0.415	D/S Pedestrian Bridge #1
2	0.480	D/S Pedestrian Bridge #1	0.976	U/S End of Golf Course
3	1.032	U/S End of Golf Course	1.249	SOCWA CTP Bridge

Stream Reach No.	Downstream Limit		Upstream Limit	
	RS	Description	RS	Description
4A	1.274	SOCWA CTP Bridge	1.789	S-Bend
4B	1.817	S-Bend	2.434	U/S limit of Abandoned Oxbow
5A	2.456	U/S limit of Abandoned Oxbow	2.736	Clay Outcrop approx. 1,400' U/S of Abandoned Oxbow
5B	2.753	Clay Outcrop approx. 1,400' U/S of Abandoned Oxbow	3.095	1,800' U/S of Clay Outcrop
5C	3.110	1,800' U/S of Clay Outcrop	3.314	Wood Cyn Creek Confluence
6	3.335	Wood Cyn Creek Confluence	3.580	ACWHEP Structure
7	3.677	ACWHEP Structure	4.199	Channel Bend (near 15' high banks)
8	4.266	Channel Bend (near 15' high banks)	4.854	Sulphur Creek Confluence
9	4.916	Sulphur Creek Confluence	4.984	Ex. Concrete Drop Structure No.1
10	5.051	Ex. Concrete Drop Structure No.1	5.664	Ex. Concrete Drop Structure No.2
11	5.728	Ex. Concrete Drop Structure No.2	6.234	Ex. Riprap Drop Structure near Foxborough Park
12	6.291	Ex. Riprap Drop Structure near Foxborough Park	6.532	Pacific Park Drive Crossing
13	6.650	Pacific Park Drive Crossing	7.297	Aliso Viejo Middle School
14	7.353	Aliso Viejo Middle School	9.000	Moulton Parkway

5.7.2 Hydraulic Comparison of Alternatives

The hydraulic tables, which include hydraulic results from the HEC-RAS models and other important hydraulic parameters such as width/depth and entrenchment ratios, are provided in Attachment B. The 100-year water surface profiles for Alternatives 1 through 4 are shown in Figures 5-2 through 5-5, respectively. The water surface profiles for Alternatives 2 through 4 include the profile lines for the two different roughness coefficients: 0.035 for post-construction condition and 0.060 for ultimate vegetation condition (see Section 5.1.2 for explanation of the *n*-values selected). The profiles for the two different *n*-values are presented only within the limits of the 'baseline' design and 'additional measures'. Beyond these limits, the profiles represent existing conditions from Alternative 1.

The predominant subcritical hydraulic parameters along Aliso Creek for the baseline design conditions of all four (4) alternatives are summarized in Table 5-2 through Table 5-5 for different flow events. The absolute minimums/maximums (depth and velocity) are not shown in the tables as they apply only to very localized areas, but are used in the design as appropriate (e.g. maximum supercritical riffle velocity of 14 fps was used for the riffle rock sizing in Section 7.7). All the values listed in the hydraulic tables should be interpreted with the understanding of inherent uncertainty in modeling parameters (roughness coefficients, hydrology, topographic map resolution, etc.).

Table 5-2. Predominant Subcritical Hydraulic Parameters for 100-year Flow

Alternative	SOCWA CTP Bridge to ACWHEP		ACWHEP to AWMA Rd Bridge		AWMA Rd Bridge to Pacific Park Drive *	
	Flow Depth [ft]	Flow Velocity [fps]	Flow Depth [ft]	Flow Velocity [fps]	Flow Depth [ft]	Flow Velocity [fps]
1	8 to 15	4.5 to 12	10 to 15	5.5 to 11.5	5 to 15	5 to 10
2	9 to 14	5 to 9	10 to 15	5.5 to 11.5	4.5 to 13	5.5 to 12
3	6 to 8	6 to 11	6 to 8	6 to 11	4.5 to 13	5.5 to 12
4	6 to 8	6 to 11	6 to 8	6 to 11	4.5 to 13	5.5 to 12
* The reach between AWMA Road Bridge and Pacific Park Drive is part of 'additional measure' features for Alternatives 2, 3, and 4.						

Table 5-3. Predominant Subcritical Hydraulic Parameters for 10-year Flow

Alternative (10-Year)	SOCWA CTP Bridge to ACWHEP		ACWHEP to AWMA Rd Bridge		AWMA Rd Bridge to Pacific Park Drive*	
	Flow Depth [ft]	Flow Velocity [fps]	Flow Depth [ft]	Flow Velocity [fps]	Flow Depth [ft]	Flow Velocity [fps]
1	1.5 to 10	3.5 to 14	3.5 to 8.5	4 to 12.5	2 to 8	2.5 to 12
2	2 to 11.5	4.5 to 12	3.5 to 8.5	4 to 12.5	2.5 to 5.5	4.5 to 11.5
3	2 to 10	2 to 9.5	2 to 9	4 to 13.5	2.5 to 5.5	4.5 to 11.5
4	2 to 10	2 to 9.5	2 to 9	4 to 13.5	2.5 to 5.5	4.5 to 11.5
* The reach between AWMA Road Bridge and Pacific Park Drive is part of 'additional measure' features.						

Table 5-4. Predominant Subcritical Hydraulic Parameters for 2-year Flow

Alternative (2-Year)	SOCWA CTP Bridge to ACWHEP		ACWHEP to AWMA Rd Bridge		AWMA Rd Bridge to Pacific Park Drive*	
	Flow Depth [ft]	Flow Velocity [fps]	Flow Depth [ft]	Flow Velocity [fps]	Flow Depth [ft]	Flow Velocity [fps]
1	1 to 7.5	2.5 to 11	2 to 5.5	3 to 10.5	1 to 5	2.5 to 9.5
2	1.5 to 7.5	2.5 to 10	2 to 5.5	3 to 10.5	2 to 4	4 to 10
3	2 to 7.5	1 to 8.5	2 to 5	3.5 to 11	2 to 4	4 to 10
4	2 to 7.5	1 to 8.5	2 to 5	3.5 to 11	2 to 4	4 to 10
* The reach between AWMA Road Bridge and Pacific Park Drive is part of 'additional measure' features.						

The hydraulic parameters are the same along the segment of Aliso Creek downstream of the SOCWA CTP bridge (Reaches 1 through 3) for all four alternatives, because no channel modification was incorporated downstream of the SOCWA CTP Bridge and the subcritical flow regime was assumed for the hydraulic analysis.

Table 5-5. Predominant Subcritical Hydraulic Parameters for 100 cfs

Alternative (100 cfs)	SOCWA CTP Bridge to ACWHEP		ACWHEP to AWMA Rd Bridge		AWMA Rd Bridge to Pacific Park Drive*	
	Flow Depth [ft]	Flow Velocity [fps]	Flow Depth [ft]	Flow Velocity [fps]	Flow Depth [ft]	Flow Velocity [fps]
1	0 to 4.5	0.5 to 7.5	0 to 2	1 to 6	0 to 2.5	0.5 to 4.5
2	0 to 3.5	0.5 to 5	0.5 to 2	1 to 6	0 to 1	1 to 4
3	0 to 4.5	0 to 4.5	0 to 1	1 to 5	0 to 1	1 to 4
4	0 to 4.5	0 to 4.5	0 to 1	1 to 5	0 to 1	1 to 4

* The reach between AWMA Road Bridge and Pacific Park Drive is part of 'additional measure' features.

Between the SOCWA CTP Bridge and ACWHEP structure (Reaches 4A through 6), the flow depth for the 100-year discharge varies generally from 8 to 15 feet for Alternative 1; 9 to 14 feet for Alternative 2; and 6 to 8 feet for Alternatives 3 and 4. The flow depth increases up to 18 feet for all the alternatives immediately upstream of the SOCWA CTP Bridge due to constriction of flow conveyance by the bridge and backwater effect. The channel velocity for the 100-year discharge varies generally from 4.5 to 12 feet per seconds (fps) for Alternative 1; 5 to 9 fps for Alternative 2; and 6 to 11 fps for Alternatives 3 and 4. The high flow velocity (~11 fps for subcritical flow; ~14 fps for supercritical flow) for Alternatives 3 and 4 occurs as the flow travels over the riffle structures with 5% profile slope. Therefore, each riffle structure would include downstream riprap protection against potential scour caused by this high velocity flow (see Section 7.7).

Between the ACWHEP structure and AWMA Road Bridge (Reaches 7 through partially 9), the flow depth for the 100-year discharge generally varies from 10 to 15 feet for Alternative 1 and 6 to 8 feet for Alternatives 3 and 4. The hydraulic parameters of Alternative 2 are the same as those of Alternative 1 in this segment as no design improvement is planned beyond the ACWHEP structure for both alternatives. The channel velocity for the 100-year discharge varies from 5.5 to 11.5 fps for Alternative 1 and 6 to 11 fps for Alternatives 3 and 4, with the high velocity occurring as the flow travels over the riffle structure with 5% profile slope.

Between the AWMA Road Bridge and Pacific Park Drive, the reach presented is with additional measures (H, I, J in Table 1-1). The flow depth for the 100-year discharge generally varies from 13 to 15 feet along the previously improved reach (Reaches partially 9 and 10) and 5 to 10 feet along the upstream reach (Reach 11 and 12) for Alternative 1. The flow depth varies 4.5 to 13 feet along the previously improved reach and 4.5 to 7 feet along the upstream reach for Alternatives 2 through 4. The high flow depths usually occur immediately upstream of the existing bridges due to flow constriction and backwater effects. The flow velocity varies 5 to 10 fps for Alternative 1 and mostly 5.5 to 12 fps for Alternatives 2 through 4. The high flow velocity (~12 fps) for Alternatives 2 through 4 occurs as the flow travels over the riffle structure with 5% profile slope. The highest flow velocity (supercritical 18 fps) occurs at 6-foot high riffle structures which would be grouted.

For Alternatives 3 and 4, despite different locations of riffle structures, the channels have the same streambed slope range (0.25 to 0.27%) and the same channel templates, resulting in similar hydraulic parameters along the baseline design reach. The additional measure reach upstream of the AWMA Road Bridge implements the same design features for Alternatives 2 through 4 resulting in the same hydraulics parameters. Although the three (3) proposed alternatives have different hydraulic conditions downstream of AWMA Road, the bridge acts as a hydraulic control (due to constriction), effectively limiting upstream propagation of hydraulic impacts from the downstream reach.

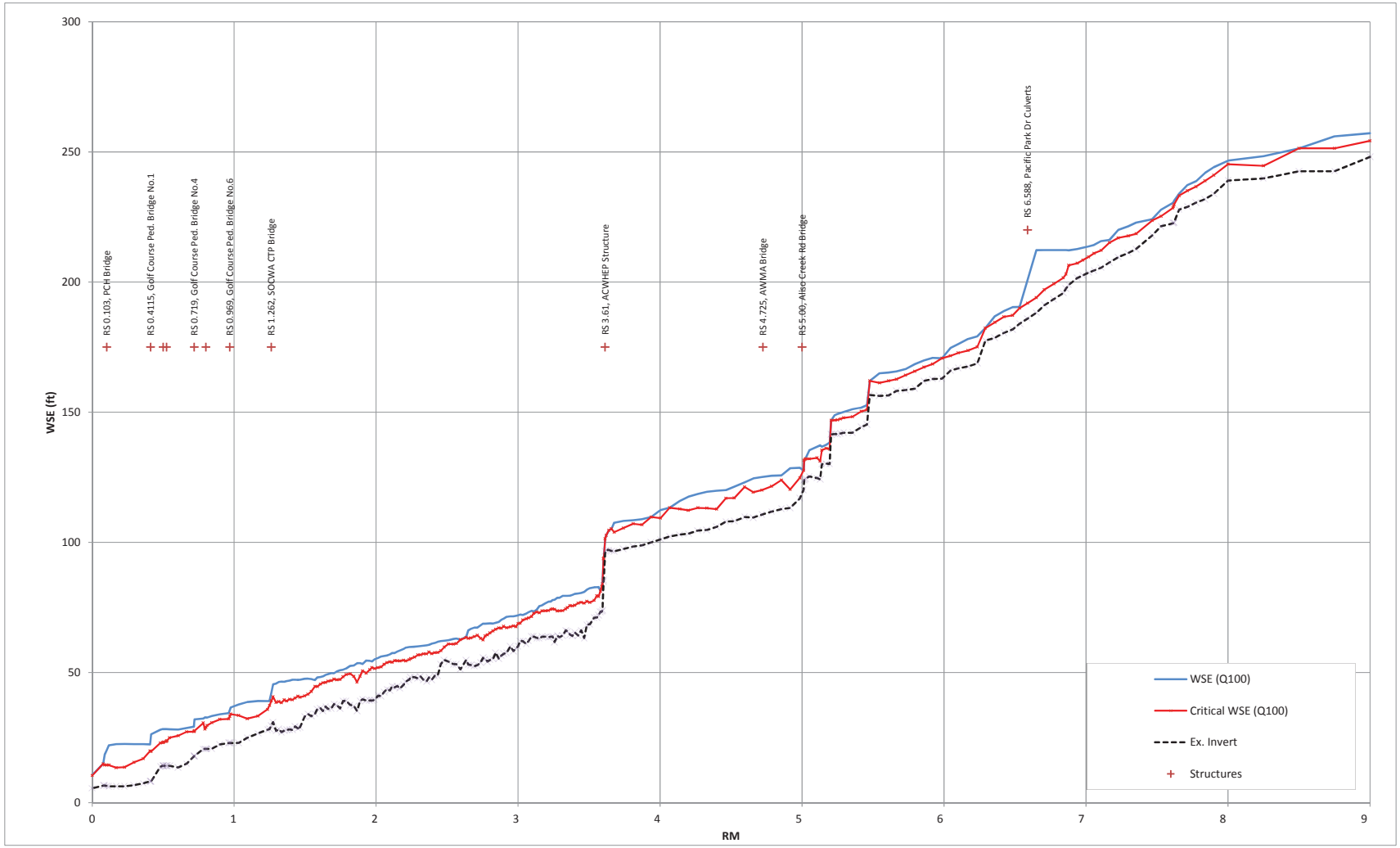

Figure 5-2 – Aliso Creek 100-Year Water Surface Profile – Alternative 1

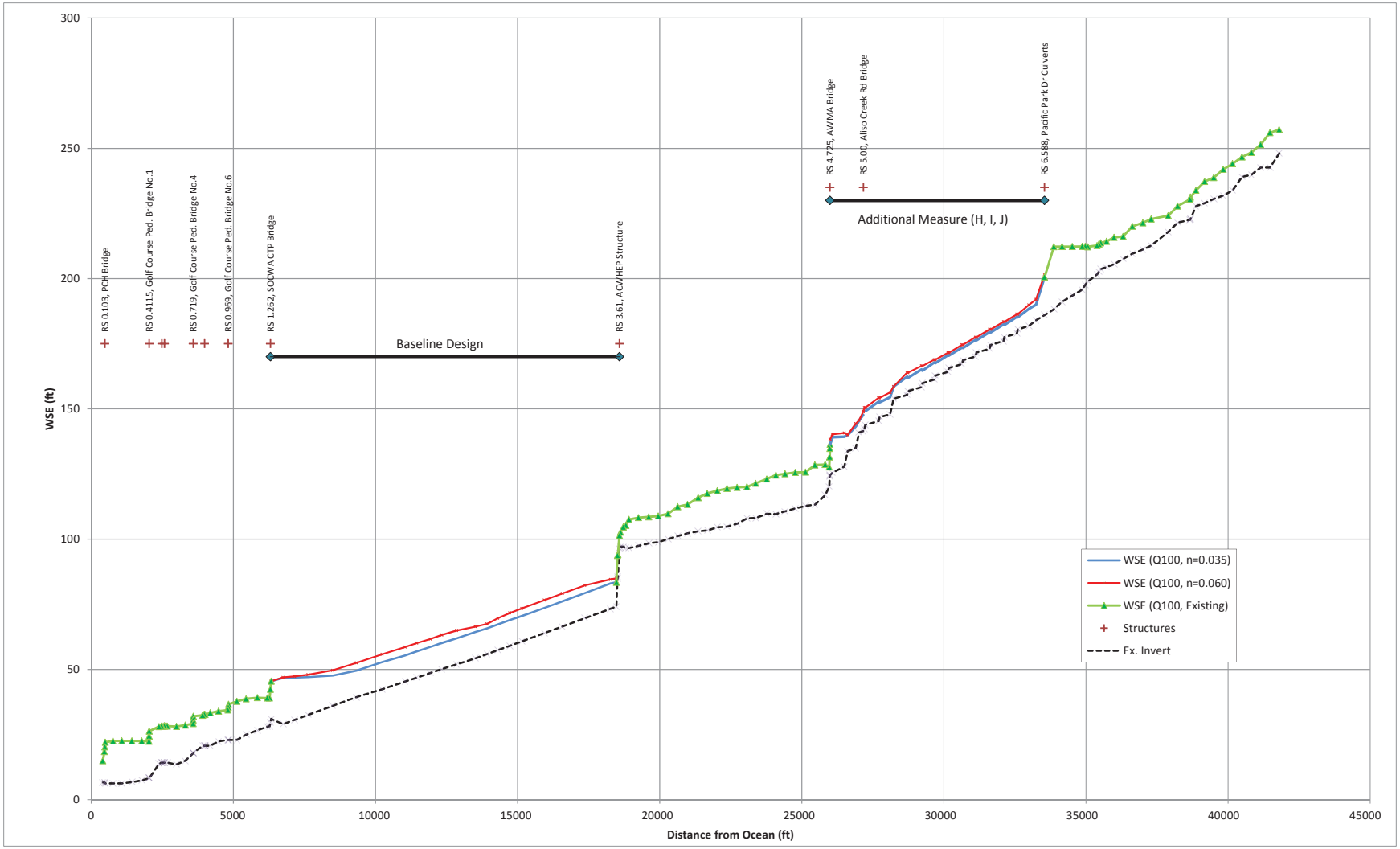

Figure 5-3 – Aliso Creek 100-Year Water Surface Profile – Alternative 2

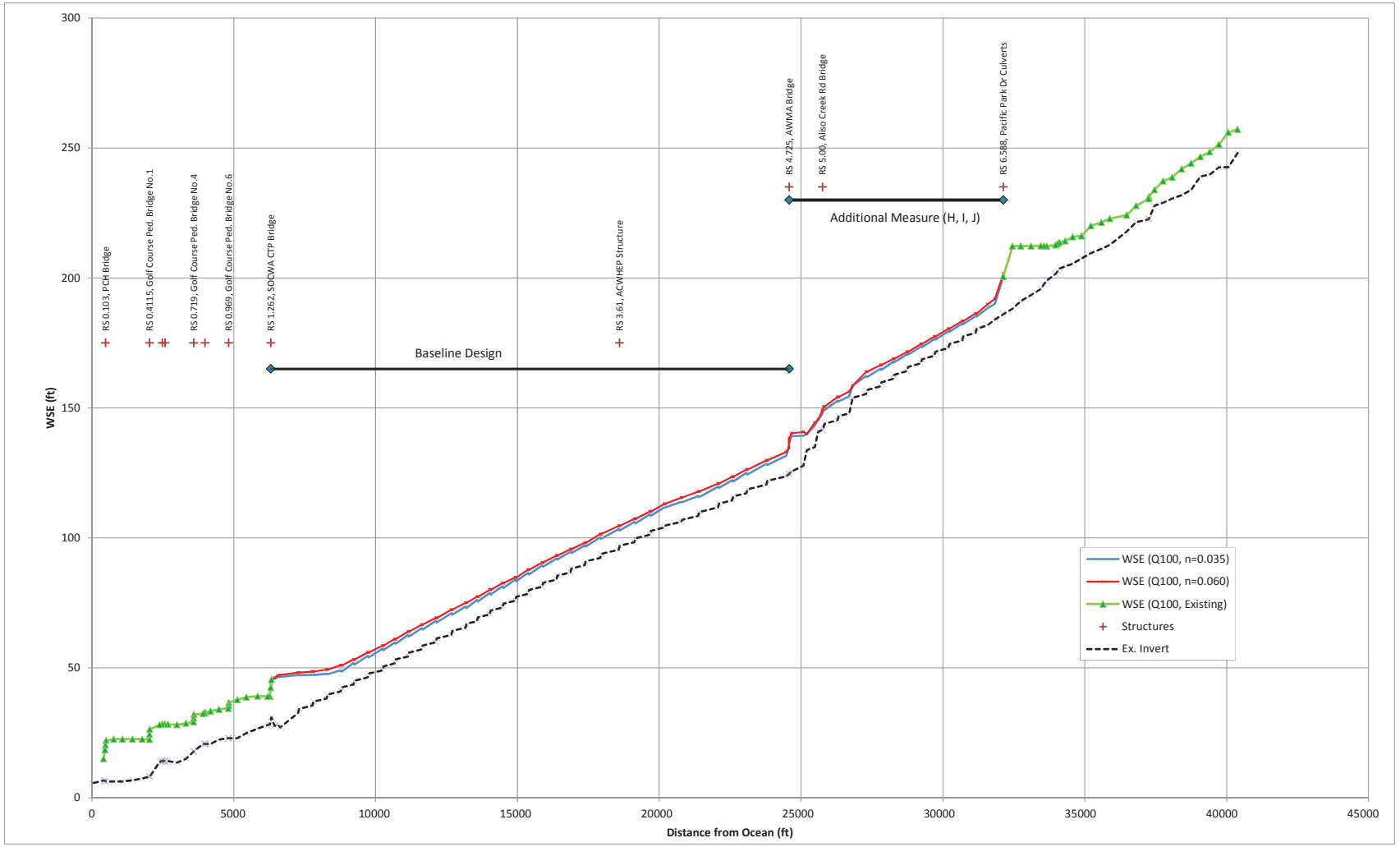

Figure 5-4 – Aliso Creek 100-Year Water Surface Profile – Alternative 3

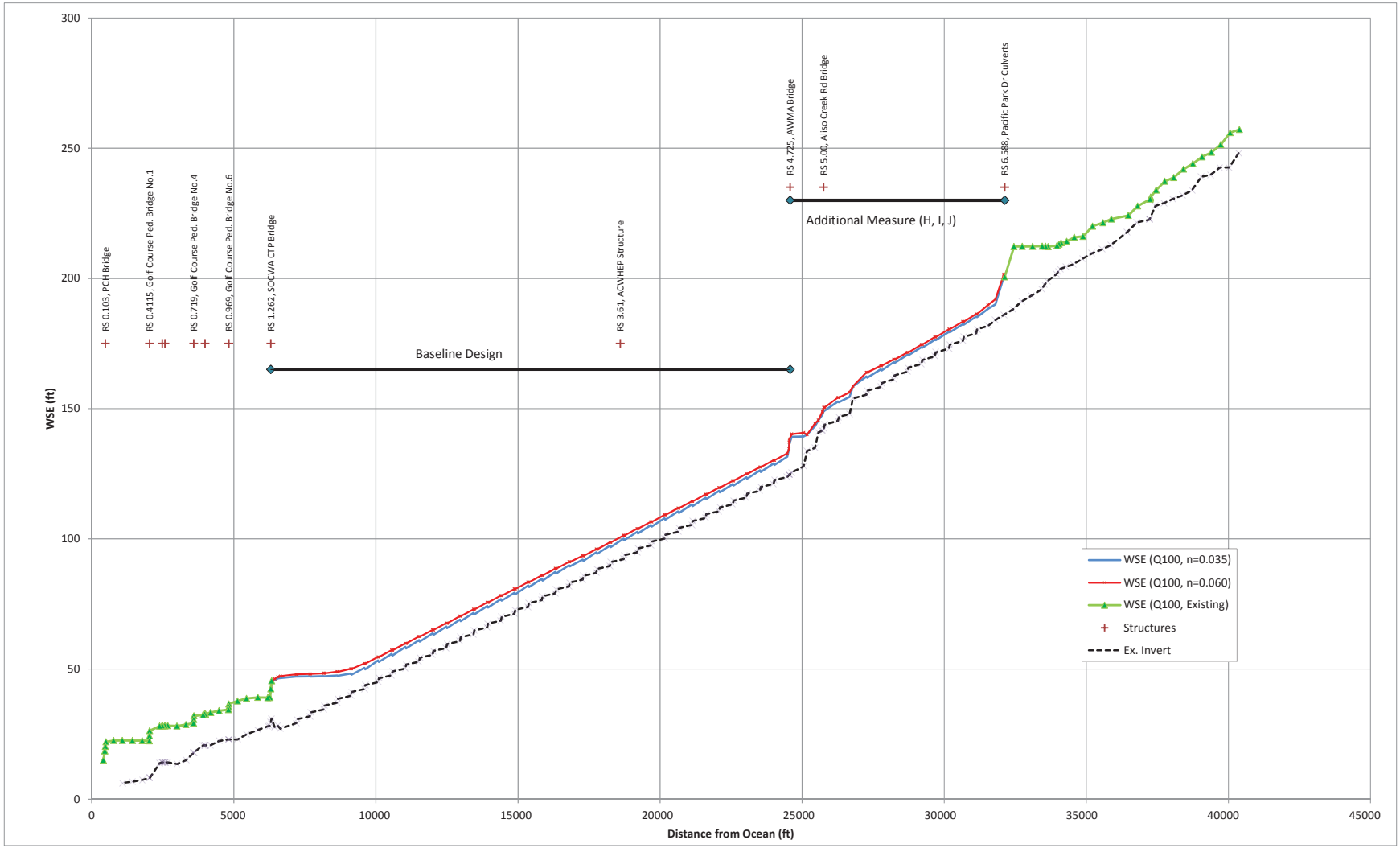

Figure 5-5 – Aliso Creek 100-Year Water Surface Profile – Alternative 4

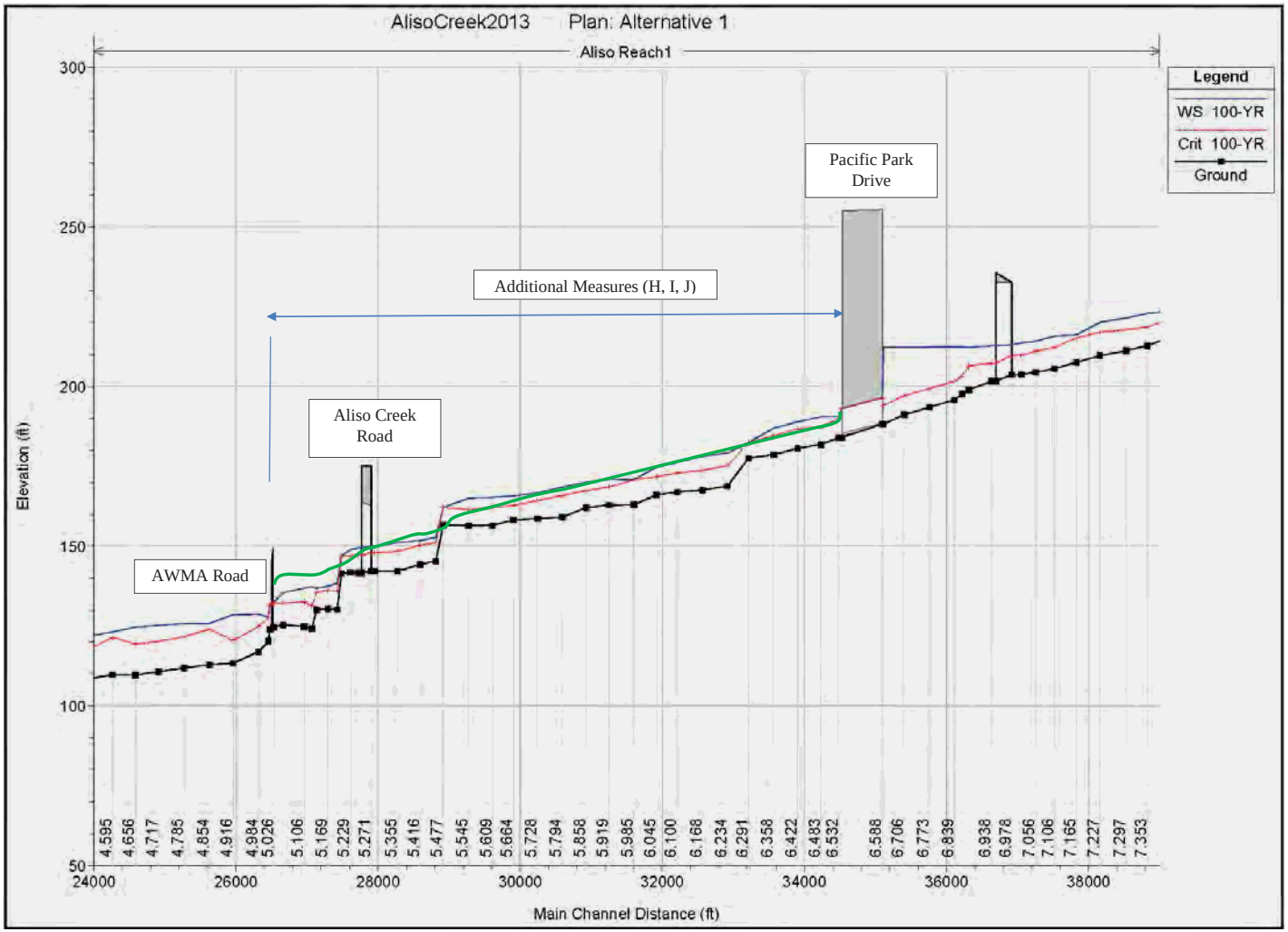

Figure 5-6 – Aliso Creek 100-Year Water Surface Profile – Alternative 1 (blue line) and Additional Measures H, I, J (green line)

5.7.3 Floodplain Inundation

One of the goals of the channel improvements in Alternatives 3 and 4 is to create a wider flood inundation area that would improve connection to the historic floodplain. For the baseline design between the SOCWA CTP Bridge (RM 1.262) and ACWHEP structure (RM 3.613), Alternative 2 (which incorporates a single-trapezoidal channel template similar to the existing channel at the current thalweg elevations) creates a floodplain of the size similar to the existing floodplain. However, for Alternatives 3 and 4, a compound channel template with a wider top width replaced the currently incised channel geometry (the new channel template in Alternatives 3 and 4 is designed to convey the 10-year flow with a 200-foot width). As shown in Figure 5-7, during the 10-year flow, the targeted floodplain width is approximately 200 feet, while the existing floodplain is on average about 100 feet wide. There are two areas where existing floodplains (Alternative 1) are wider than the proposed floodplains: immediately upstream of the oxbow area (near RM 2.6) for Alternative 4 and upstream of ACWHEP structure (RM 3.61) for Alternatives 3 and 4. The area upstream of the oxbow is a localized low ground between the low flow channel and east bank. However, the use of continuous design template and the need to place fill to construct a stable side slope (3H:1V) in order to protect the infrastructure, results in a proposed floodplain that is narrower than the existing one in this area. For the area upstream of ACWHEP structure, this existing drop structure creates a flat streambed slope in Alternative 1, slowing down the velocities, thus allowing the 10-year flow to break out of the existing low-flow channel and spread over the adjacent floodplain. Because of this, the floodplain immediately upstream of ACWHEP structure in Alternative 1 is the widest among all the alternatives. In Alternatives 3 and 4, when the ACWHEP structure is removed, a steeper and uniform streambed is created (through the removed ACWHEP location) and the flow is efficiently conveyed in this reach without channel breakouts.

For the baseline design (RM 1.262 to RM 4.725), Alternatives 3 and 4 produce almost identical floodplain widths for the 10-year flow (since the channels were designed to contain up to the 10-year flow without breakouts). As the flow is mostly contained within the designed channel, no improved connection to the historic floodplain is observed for the 10-year flow. For the baseline design, there is no design improvement proposed in the reach upstream of the AWMA Road Bridge, and the resulting hydraulic parameters are the same in this reach among all the alternatives. Alternative 2 generates a floodplain width that is very similar to that of Alternative 1 as the design channel geometry is contained within the existing incised banks. Alternative 2 also removed a breakout observed near RM 2.5 in Alternative 1, because the narrow segment of the existing channel was replaced with the uniform width of the design geometry.

For the additional measures upstream of the AWMA Road Bridge (RM 4.725 to RM 6.588) in Alternatives 2 through 4, the 10-year floodplain width immediately dips down to a width of 55 feet as it is constricted by the bridge opening at the AWMA Road Bridge. Upstream of the bridge, the floodplain is confined by different design templates that have an average top width of 100 feet through the previously improved reach in vicinity of the Aliso Creek Road. Upstream of the previously improved reach, the channel is designed with the same template (200 feet wide at the top) as the baseline design. However, because the streambed is steeper in this upper reach, the 10-year flow moves in and out between a 100 feet wide Q_2 channel and 200 feet wide Q_{10} channel of the compound template as its velocity increases over the riffle structures. This drastic change in the floodplain width for this reach is reflected in Figure 5-7 as a zigzag pattern.

The comparisons of floodplain widths for the 10-year and 100-year flows are shown in Figures 5-7 and 5-8, respectively.

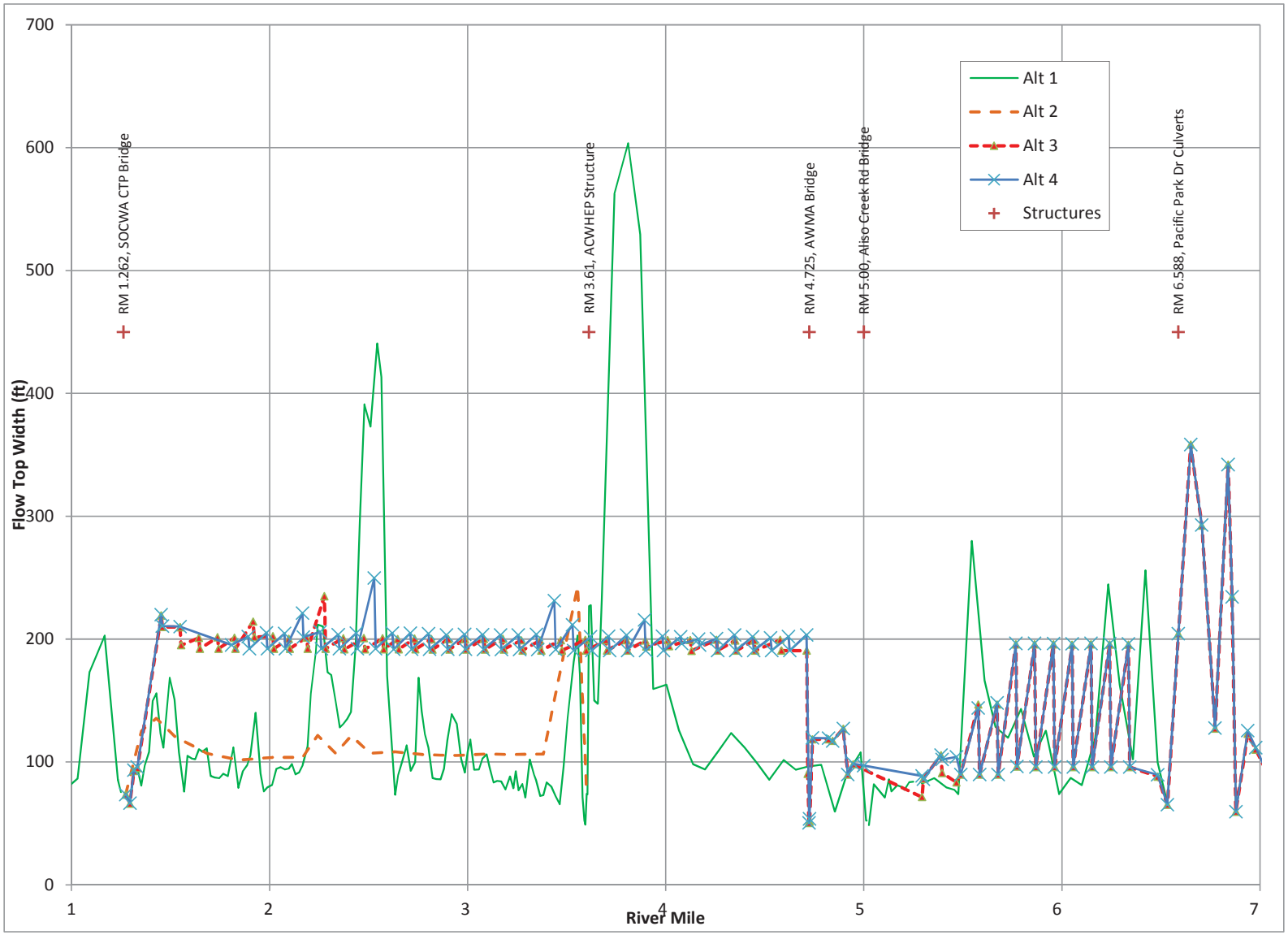

Figure 5-7 – Comparison of Floodplain Widths during 10-Year Flow Event

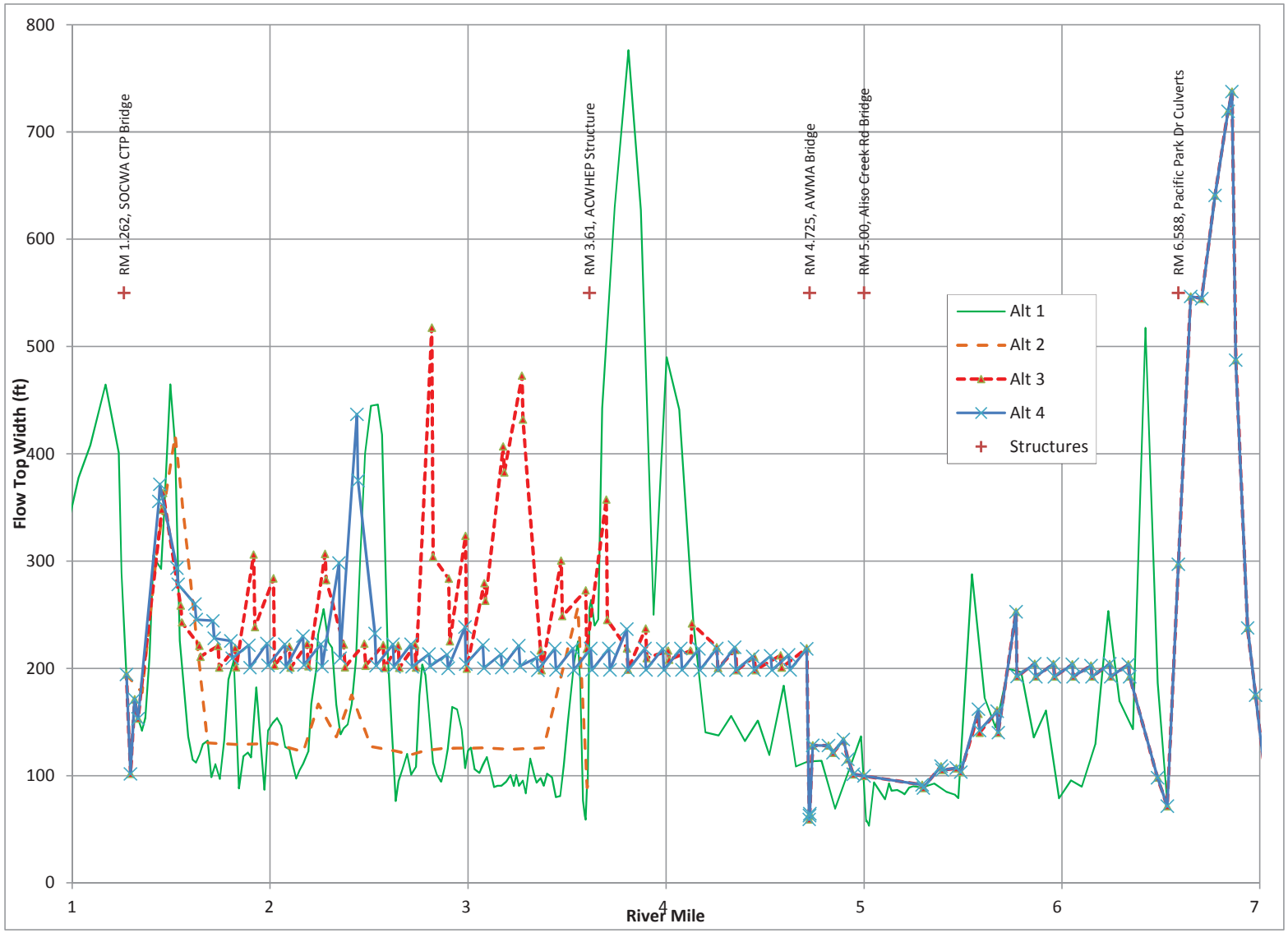

Figure 5-8 – Comparison of Floodplain Widths during 100-year Flow Event

As shown in Figure 5-8, during the 100-year flow event, the flow breaks out of the 200 feet wide Q_{10} channel in few localized areas and connects to the historic floodplain there. The improved connection to the historic floodplain takes place mostly along 3,300-foot long reach immediately downstream of the ACWHEP structure as the channel invert is raised significantly above the existing thalweg in Alternatives 3 and 4. It should be noted that the increase in flow from the 10-year frequency (Figure 5-7) to the 100-year frequency (Figure 5-8) results in only a minor increase in the floodplain width with only localized channel breakouts (shown as large spikes in Figure 5-8). This is because, generally, along an incised channel with steep side slopes, the increase in flow does not necessarily produce a wider floodplain until the flow is large enough (larger than 100-year flow in many areas) to create channel breakouts. For Alternatives 3 and 4, the 100-year flow is still contained within the incised portion of the channel, with no significant improvement in connecting to historic floodplains.

A typical channel cross section along Aliso Creek for Alternatives 3 and 4 downstream of the AWMA Road Bridge is shown in Figure 5-9. In most areas, both the 10-year and 100-year flows are contained within the new channel.

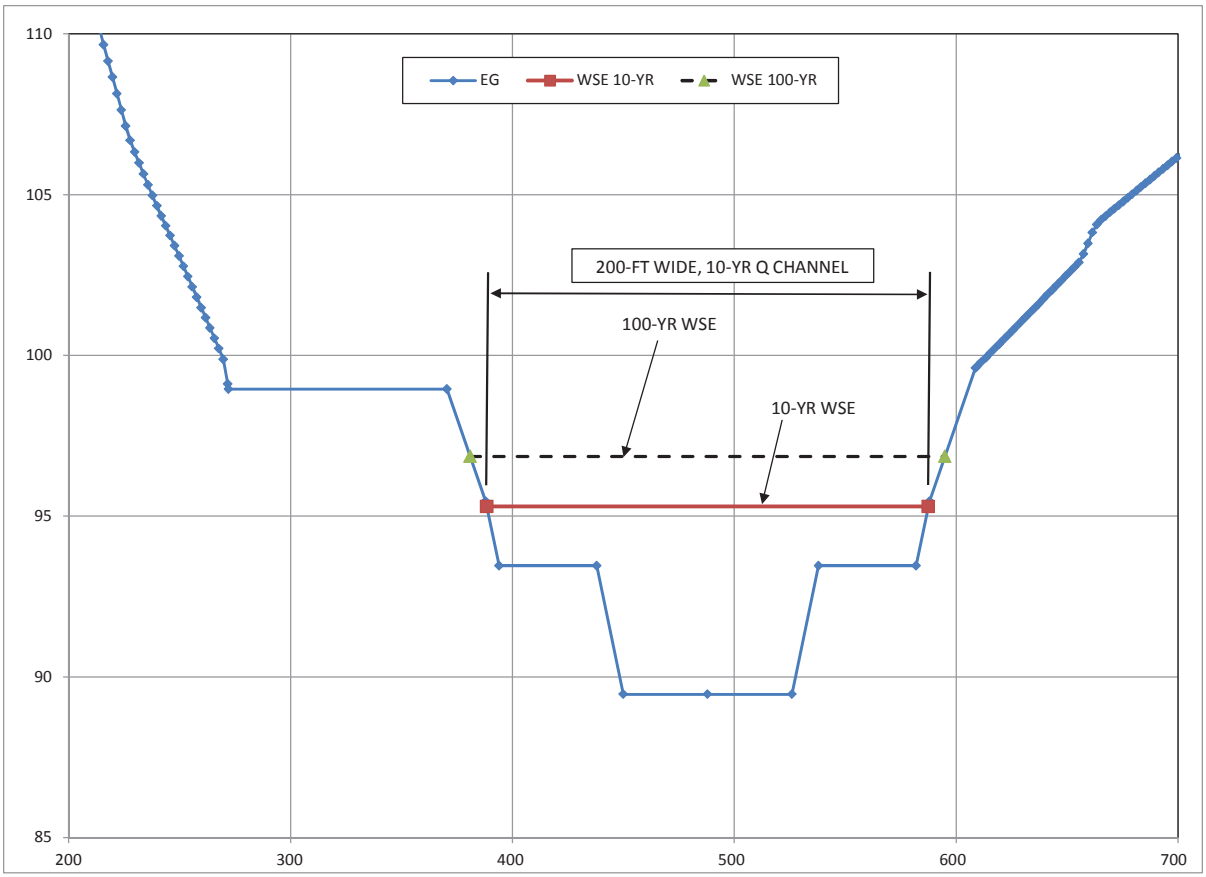

Figure 5-9 – Typical Cross Section Showing 10-Year and 100-Year Water Surface Elevations (Alternatives 3 and 4)

Unlike the reaches downstream of the AWMA Road Bridge, it is desirable for the flow to be contained within the channel banks upstream of the AWMA Road Bridge to avoid flooding of existing infrastructure when additional measures are in place. In this reach, a portion of the streambed is raised when the vertical drop structure is replaced with a constant slope. The effects of the raised streambed are somewhat offset by limited widening of the channel using a sheet pile wall along the east bank (Figure 5-10). Based on the hydraulic results, the existing west overbank (where the current

access road is located between Alicia Parkway and the channel), is at least 5 feet (Alternative 1) and 6.5 feet (Alternatives 2 through 4 for additional measures) above the 100-year water surface profile.

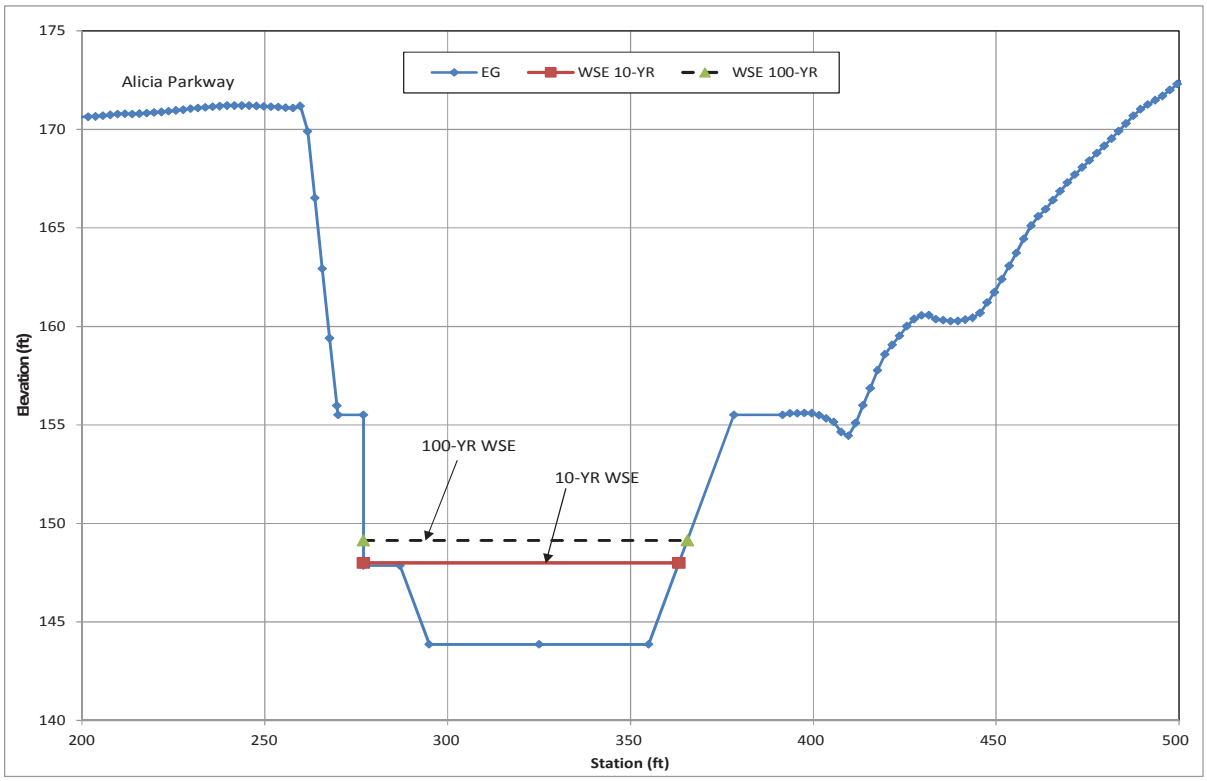

Figure 5-10 – Typical Channel Section along Previously Improved Reach

The floodplains for all the alternatives, assuming ultimate channel vegetation (n = 0.06), are delineated for the baseline condition downstream of the AWMA Road Bridge and additional measures upstream of the Bridge (Attachment B). The combined floodplain acreages for the baseline and additional measure conditions are presented in Table 5.6. Compared to the existing floodplain (Alternative 1), Alternative 2 results in a slight decrease in floodplain area (the channel geometry in Alternative 2 is slightly narrower than in Alternative 1). Both Alternatives 3 and 4 result in wider floodplains for the 10-year (or lower) flood event because the 200 feet wide proposed channel replaced a narrower existing channel. However for the 100-year flood, Alternative 3 results in a larger increase in the overall floodplain area than Alternative 4 (22.3 acres increase in Alternative 3 vs. 9.7 acres increase in Alternative 4), because Alternative 3 has higher invert profile and more chance for the flow to break out, flooding adjacent areas.

It should be noted that any channel breakouts for both Alternatives 3 and 4 are localized and mostly contained within the steep banks of the incised channel. Consequently, the increase in floodplain size does not significantly improve connection with historic floodplains for the proposed alternatives with the raised bed. This is the result of multiple project constraints that were imposed on the design alternatives to achieve geomorphic channel stability and aquatic wildlife connectivity within the project limits: 1) regime channel template with limited top width of 200 feet; 2) maximum riffle height of 18 inches; 3) minimum spacing between riffles of 5-7 channel widths; 4) equilibrium channel slope between riffles. Within the project limits, there are several areas where some flow breakouts occur, with an opportunity to do additional grading in the overbank (lowering the terrain) to pull out the 10-year floodplain fringe farther and increase the size of the floodplain. The isolated grading in those areas will be done in the post-TSP phase.

Table 5-6. Floodplain Area Comparison

Alternative	Flood Event	Area [Acre]	+/- Change [Acre], *Compared to Alt 1*
1	2-yr	55.6	
	10-yr	77.9	
	100-yr	106.3	
2	2-yr	52.9	-2.7
	10-yr	75.0	-2.8
	100-yr	103.7	-2.6
3	2-yr	58.0	2.4
	10-yr	98.5	20.6
	100-yr	128.5	22.3
4	2-yr	58.8	3.2
	10-yr	98.0	20.1
	100-yr	116.0	9.7

For Alternative 3, where the streambed is raised significantly just downstream of ACWHEP, the baseline 100-year floodplain (see Attachment B) extends beyond the current access road on the east bank and AWMA Road on the west bank. The flooding of the east bank access road is also observed near the SOCWA CTP for Alternatives 3 & 4. This flooding of the access roads can be mitigated by implementing the additional measure A (East Bank Access Road Construction) and additional measure B (Repurposing of AWMA Road). As part of these additional measures, the existing access road used by SOCWA (east bank) and AWMA Road (west bank) will be realigned to accommodate the widened channel geometry and raised in elevations as needed to keep the road above the design water surface elevation. The detailed design of the road realignment would be done in the construction-level phase.

5.7.4 Geomorphic Comparison of Alternatives

The majority of stream restoration projects located in alluvial valleys and perennial streams include the goal of improving connection to a floodplain. This goal can be accomplished by raising the stream bed, lowering the floodplain or creating a bankfull bench. The degree of success is often determined by assessing the difference in pre- and post-restoration incision, which can easily be represented by the geomorphic parameters such as entrenchment ratio and width-to-depth ratio (EPA 2012).

The entrenchment ratio (ER) is a measure of channel incision. Specifically, it is the floodprone width divided by the bankfull width (Figure 5-11). The floodprone width is measured at the elevation of twice the maximum depth at bankfull. Lower entrenchment ratios (< 1.4) indicate channel incision. Large entrenchment ratios (> 2.2) mean that there is a well-developed floodplain. A decreasing entrenchment ratio is generally an undesirable trend because it indicates that the valley is becoming more confined and floodplain processes are diminishing.

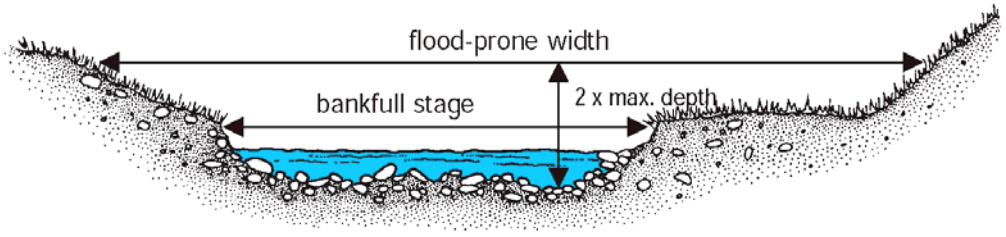

Figure 5-11. Entrenchment Ratio (ER) Definition

The width-to-depth ratio (WDR) is a measurement of the bankfull width divided by the mean bankfull depth (hydraulic depth). Channels with high WDR tend to be shallow and wide. Channels with low WDR tend to be narrow and deep. Wider channels generally have less sediment transport capacity (due to reduced depth and bed shear stress) and may be susceptible to aggradation. Narrower channels have larger sediment transport capacity and may experience degradation (incision).

The two geomorphic parameters for Aliso Creek are presented in Table 5-7 and Table 5-8. The bankfull flow parameters (top width and depth) were evaluated at a 2-year frequency (as bankfull discharge generally corresponds to a flood recurrence interval of approximately 1 to 2.5 years).

Table 5-7. Aliso Creek Width-to-Depth Ratio (WDR)

Reach	Alternative 1	Alternative 2	Alternative 3	Alternative 4
1	11.9	11.9	11.9	11.9
2	11.7	11.7	11.7	11.7
3 (SOCWA CTP)	16.4	16.4	16.4	16.4
4A	12.6	14.3	25.4	27.6
4B	14.8	17.5	35.8	34.7
5A	29.8	17.5	33.0	36.5
5B	15.2	17.9	34.2	35.4
5C	10.2	17.9	35.5	35.4
6 (ACWHEP)	15.7	17.9	36.8	35.7
7	23.0	23.0	32.0	35.7
8	11.1	11.1	29.0	30.8
9	12.0	12.0	31.2	31.2
10	18.6	18.6	28.6	28.6
11	18.5	18.5	32.6	32.6
12 (Pacific Park Dr.)	22.4	22.4	26.0	26.0
Reach Average	*16.3*	*17.0*	*28.0*	*28.7*
Cross Section Average	*16.2*	*17.4*	*27.7*	*28.6*

Table 5-8. Aliso Creek Entrenchment Ratio (ER)

Reach	Alternative 1	Alternative 2	Alternative 3	Alternative 4
1	1.4	1.4	1.4	1.4
2	5.9	5.9	5.9	5.9
3 (SOCWA CTP)	2.6	2.6	2.6	2.6
4A	2.0	1.6	1.9	1.7
4B	1.8	1.4	2.0	2.0

Reach	Alternative 1	Alternative 2	Alternative 3	Alternative 4
5A	1.5	1.3	2.0	1.8
5B	1.6	1.3	2.5	1.9
5C	1.4	1.3	2.8	1.9
6 (ACWHEP)	1.6	1.3	2.0	1.9
7	4.4	4.4	2.2	1.9
8	1.7	1.7	2.1	2.1
9	1.4	1.4	1.3	1.3
10	1.3	1.3	1.4	1.4
11	1.7	1.7	2.2	2.2
12 (Pacific Park Dr.)	3.9	3.9	1.8	1.8
Reach Average	*2.3*	*2.2*	*2.3*	*2.1*
Cross Section Average	*2.2*	*2.6*	*2.5*	*2.3*

Aliso Creek in existing conditions (Alternative 1) is an entrenched to moderately entrenched system (ER < 2.2). In these systems, the top-of-bank elevation is much higher than the 2-year flow elevation. Alternative 1 also features wide floodplain (ER > 4) at three locations: downstream of Pacific Park Drive (Reach 12), upstream of ACWHEP (Reach 7), and near Aliso Creek Golf Course (Reach 2). Alternative 2 exhibits somewhat lower entrenchment ratios than Alternative 1 downstream of ACWHEP structure (Reaches 4A-6) due to relatively narrow single trapezoidal channel template. Although the designed channel is slightly more entrenched than the existing one (Alternative 1), it has larger width-to-depth ratios, which is conducive to limiting bed degradation as confirmed by the sediment transport analysis (see Section 6.2).

Alternative 3 has the largest entrenchment ratios (in some reaches above 2.2) due to a compound channel template with relatively large width-to-depth ratios (> 30) that provide more developed floodplain and reduce potential bed degradation as confirmed by the sediment transport analysis (see Section 6.3). It is important to note that floodplain connectivity in Alternative 3 is mostly limited to the 2-year flow benches (see Figure 2-1) which are generally below the historical floodplain elevations. These benches are narrower than the fully developed historical floodplain; however, they do dissipate some flood energy and provide a flat depositional feature, which allows riparian vegetation to become established. By raising the channel profile, Alternative 3 will also raise the elevation of the groundwater giving more readily accessible water to the roots of the trees on the historical floodplain.

Alternative 4 has similar geomorphic parameters as Alternative 3 with slightly higher width-to-depth ratios. Floodplain connectivity is also similar to Alternative 3, mostly limited to the 2-year flow benches that are lower than those in Alternative 3, since the Alternative 4 invert is below the invert for Alternative 3.

The floodplain maps for the 100-year, 10-year, and 2-year flows are shown in Attachment B for all the alternatives. They pertain to an ultimately vegetated channel condition that would be represented with a Manning's roughness coefficient of 0.06. For those conditions, the 2-year flow breaks out of the low-flow channel and inundates the 2-year benches in the compound channel template (see Section 2.1), such that the 10-year floodplains and 2-year floodplains in Alternatives 3 and 4 are similar.

6. SEDIMENT TRANSPORT ANALYSIS

A mobile-bed sediment transport analysis was performed using the HEC-RAS 5.0 Beta software. The software improvements in this version are listed below:

- Inclusion of Bank-Stability and Toe-Erosion Model BSTEM (still under development)
- Exner 7 bed sorting algorithm available
- Computation times decreased relative to version 4.1
- Output data stored in .HDF files avoids 2GB array size limitation imposed in version 4.1
- General bug fixes

The sediment transport model requires geometric data (cross sections), quasi-unsteady flow data, and sediment data. Cross-section geometry was copied from the calibrated hydraulic model described above in Section 5. Some cross sections were eliminated (sediment transport models typically use fewer cross sections than hydraulic models for stability) and bridges were removed (to prevent computational issues and unreasonable deposition that frequently occurs around bridge structures). The quasi-unsteady hydrology was developed using a series of available daily flows for a period of 21 years which included the 100-year flood hydrograph (Figure 6-4). Flow values less than 100 cfs were eliminated from the record for computational stability and run efficiency, without significant impact on modeling results as sediment is primarily carried (and streambed adjusted) by large flows. The 21-year daily flow record was thus condensed to approximately 9 months and the flow series was arbitrarily assigned a starting date of mid-November 1990 (start of available flow record) such that it ends in August 1991 (Figure 6-4). The duration of this flow record was sufficient for the simulated channel bed to reach quasi-equilibrium with minor further changes in time.

No known measurements of bed material load are available for Aliso Creek. The bed material load rating curve (Figure 6-1) was developed by application of the Yang's bed material load transport function in the Aliso Creek F4 Geomorphic Assessment study (Tetra Tech 2014). As documented in the revised H&H Appendix (USACE 2009a), Yang's transport functions (1973, 1984) for sand and gravel were identified as the most appropriate for Aliso Creek.

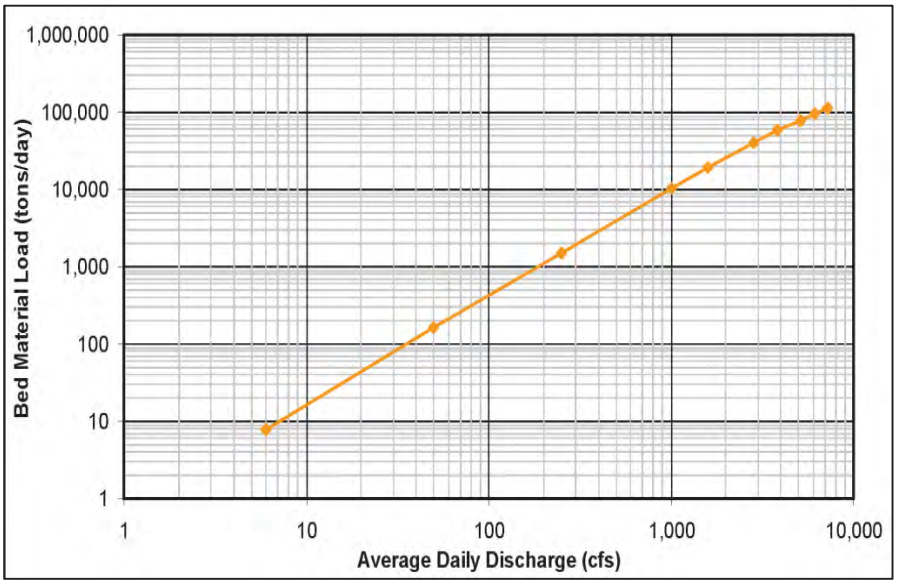

Figure 6-1 – Aliso Creek Sediment Load Rating Curve (Tetra Tech 2014)

The 2008 #10 sediment sample (Figure 6-2) was selected to represent bed material gradation upstream of ACWHEP structure (poorly graded sand with d_{50} = 0.75 mm; there is no significant deviation for other sediment samples). Downstream of ACWHEP structure, the 2009 #66 subsurface sediment sample was used to account for coarser bed material observed in the field (Tetra Tech 2014). These two samples were deemed representative enough for their respective reaches, given the purpose of the study (relative comparison of alternatives) and inherent uncertainty in sediment transport modeling. A map with the location of sediment samples is shown in Figure 6-3.

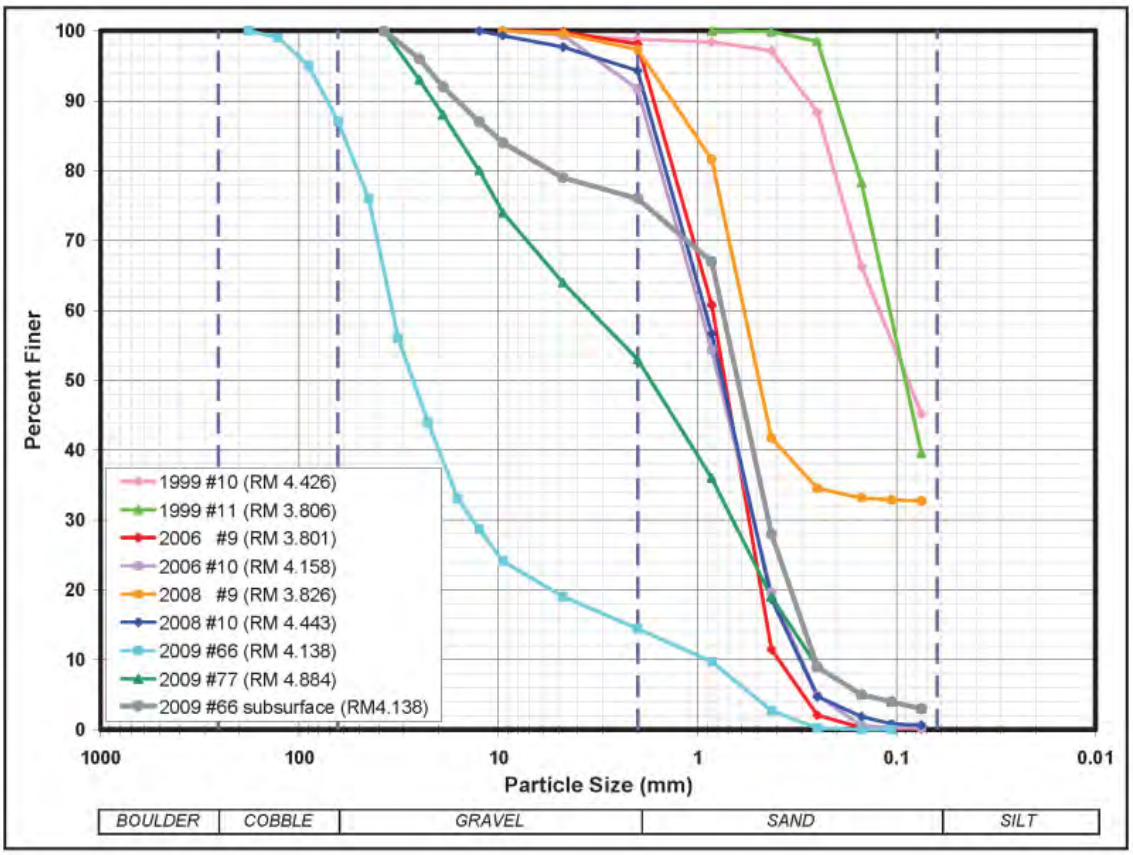

Figure 6-2 – Aliso Creek Bed Material Samples (Tetra Tech 2014)

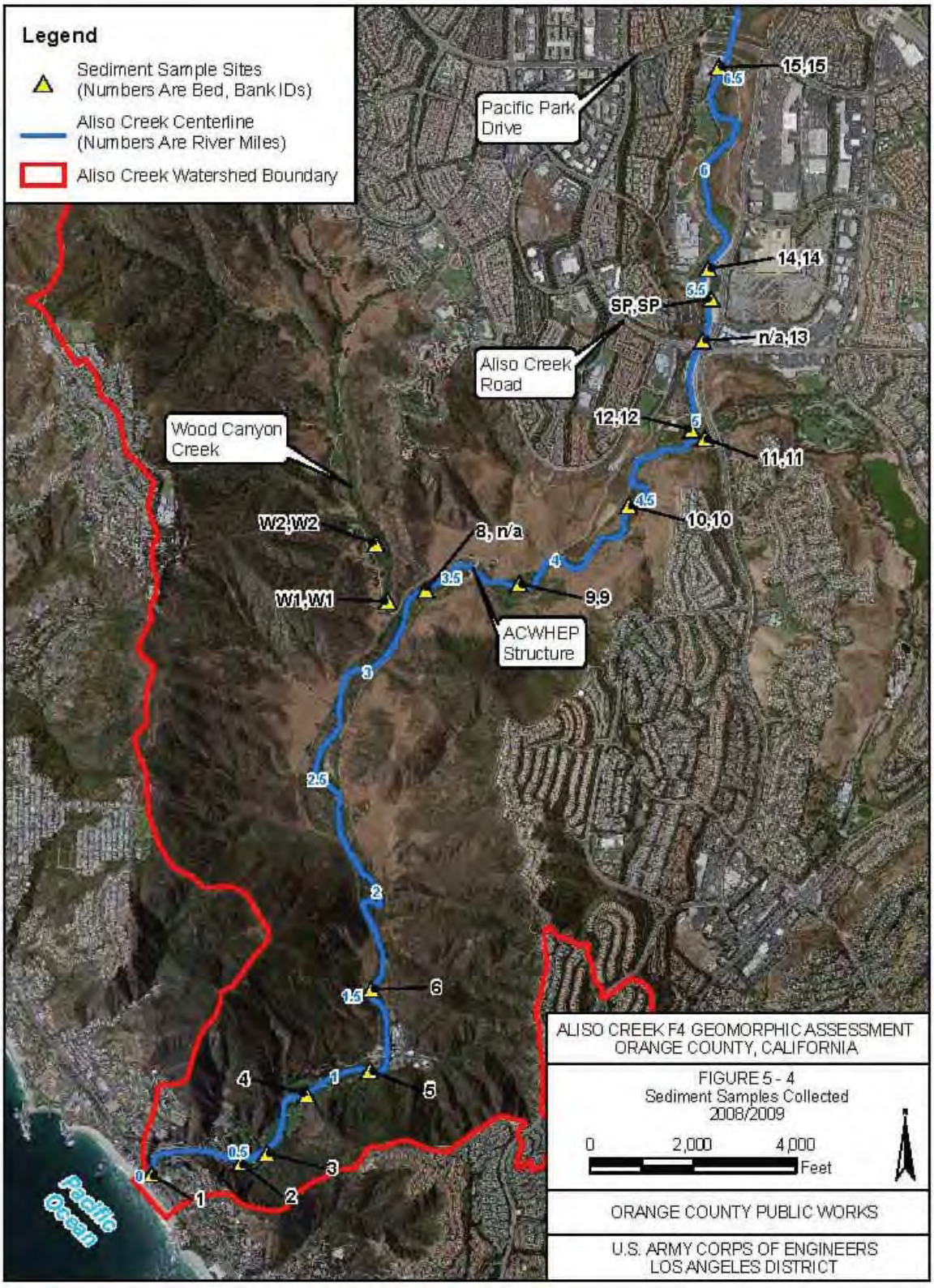

Figure 6-3 Location of Sediment Samples

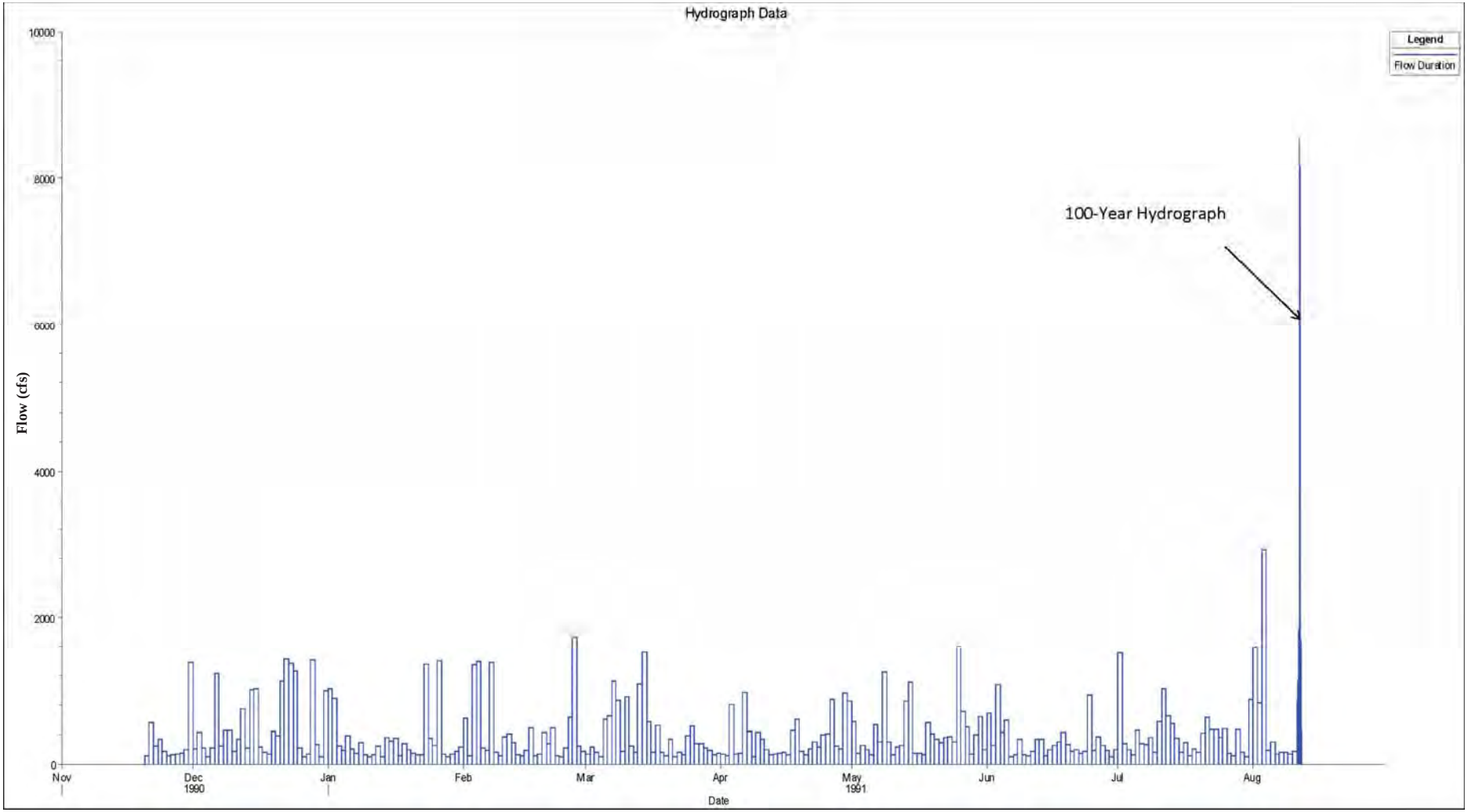

Figure 6-4 – Sediment Transport Daily Flow Series with 100-Year Hydrograph

6.1 Alternative 1

The sediment transport model was run with the flow record shown in Figure 6-4 for the existing geometry, including the existing grade control structures. The simulated thalweg profile at the end of the simulation period is shown in Figure 6-5 (red line). Based on the sediment transport analysis, upstream of ACWHEP structure to Aliso Creek Road, the channel grade is generally stable with some localized degradation (incision up to 4 feet). Downstream of ACWHEP structure, the simulated bed is not showing much incision (on the order of 1-4 feet, except downstream of SOCWA CTP bridge). The Aliso Creek F4 Geomorphic Assessment (Tetra Tech 2014) concludes that "future vertical adjustments to the bed profile are expected to be limited because the widened channel and decreased channel slope have decreased unit discharge and bed material transport capacity and the concentration of coarse pebbles in riffles and plugs has increased the critical flows needed to mobilize these materials. Two location of probable future bed degradation were identified were the channel bed is incising through clay exposures. At both locations, the maximum incision was calculated to be on the order of 3 to 4 feet, with the degradation occurring within approximately 10 years." These conclusions are fairly consistent with simulated trends in the sediment transport model.

Upstream of Pacific Park Drive, a potential headcut appears to propagate to the riprap drop structure at the pedestrian bridge near Aliso Viejo Middle School (the magnitude of the headcut is likely exaggerated since the sediment model currently does not simulate backwater effects upstream of the removed Pacific Park Drive culverts; this backwater area, which is beyond the project limits, will be addressed in the next phase of the project). The Geomorphic Assessment report discusses that "the headcut in this area is probably due to the cut-off of the horseshoe bend in the planform upstream of Pacific Park Drive, while upstream migration of the headcut is now prevented by the riprap drop structure at the pedestrian bridge." The simulated trends in the sediment transport model are consistent with these conclusions from the Geomorphic Assessment report. Alternative 1 supplies on average about 40,000 tons/year of sediment to the ocean, based only on the daily-flow sediment transport analysis of the vertical streambed adjustment. However, this amount does not include sediment sources from lateral bank erosion that HEC-RAS does not simulate. The total amount of sediment supplied to the ocean in existing conditions (Alternative 1) was estimated up to 60,000 tons/year on average (Tetra Tech 2014).

6.2 Alternative 2

The single-trapezoidal channel template (Figure 2-3) on a uniform bed slope of 0.4% was incorporated into the sediment transport model between SOCWA CTP Bridge and ACWHEP structure. The model was run with the flow record shown in Figure 6-4. The simulated thalweg profile at the end of the simulation period is shown in Figure 6-6 (red line). Upstream of ACWHEP structure and downstream of SOCWA Bridge, the predicted long-term bed adjustment is the same as Alternative 1. Downstream of ACWHEP structure, a self-sustained channel in equilibrium is established (i.e., no degradation or aggradation) all the way to SOCWA CTP. In reality, this uniform channel will see bedform perturbations after each flood event (it will be in a state of dynamic equilibrium such that oscillations in elevation will occur but not progressive changes). The Newbury riffles (see Section 6.5; Figure 6-15) can be constructed on the designed streambed at certain locations to impound shallow pools at desired heights between potential natural-forming riffles and to prevent migration of the channel planform (if sides are extended to a 10-year flow elevation). Alternative 2 supplies on average about 41,000 tons/year of sediment to the ocean, based on the daily-flow sediment transport analysis of the vertical streambed adjustment. No significant lateral bank erosion is expected in this alternative because channel side slopes are laid back to a stable configuration (3H:1V or flatter).

6.3 Alternative 3

The compound channel template (Figure 2-1) with raised bed elevations, along with 18" rock riffles and 6-foot grouted riffles, was incorporated into the sediment transport model between SOCWA CTP and Pacific Park Drive. The bed elevations at all the riffles, SOCWA CTP Bridge, AWMA Road Bridge, Aliso Creek Road Bridge, and Pacific Park Drive Culvert were kept fixed in the sediment model (i.e., no erosion was allowed). The sediment transport model was run with the flow record shown in Figure 6-4. It was found that the simulated thalweg profile over this cascaded series of riffles is sensitive to the selected value of the hydraulic weighting coefficient *w*. For the upper bound value (Figure 6-7, $w = 1.0$), the simulated thalweg is fairly stable, with an aggrading trend (max 1.5 feet) immediately downstream of each riffle (this predicted aggradational trend is unlikely as explained in Section 6.5 below). For the lower bound value (Figure 6-8, $w = 0.5$), shallow pools (on the order of 1-4 feet) are predicted between the riffles. The length and depth of these pools are exaggerated because they are very sensitive to the number of cross sections between the riffles and the hydraulic weighting factor *w* (see Section 6.5; low value of *w* will unrealistically propagate the high riffle velocity into the runs between the riffles and artificially increase bed scour). Alternative 3 supplies on average about 44,000 tons/year of sediment to the ocean, based on the daily-flow sediment transport analysis of the vertical streambed adjustment. This increased sediment transport capacity (compared to Alternative 2) results from the uniform channel template designed over a longer distance and riffle sequence that locally accelerates flow (and increases its transport capacity) over the cascaded bed. No significant lateral bank erosion is expected in this alternative because channel side slopes are laid back to a stable configuration (3H:1V or flatter) and designed rock riffles prevent migration of the channel planform.

6.4 Alternative 4

The compound channel template with uniformly raised bed elevations between SOCWA CTP and Pacific Park Drive was incorporated in the sediment transport model and ran with the same flow record (Figure 6-4). Similar conclusions can be drawn from the simulated thalweg profiles (Figure 6-9 and Figure 6-10) as in Alternative 3 (there is no significant difference in the vertical bed adjustment between Alternatives 3 and 4). Alternative 4 supplies on average about 41,000 tons/year of sediment to the ocean, based on the daily-flow sediment transport analysis of the vertical streambed adjustment. No significant lateral bank erosion is expected in this alternative because channel side slopes are laid back to a stable configuration (3H:1V or flatter) and designed rock riffles prevent migration of the channel planform.

6.5 Potential Scour Depths between Designed Rock Riffles

A sensitivity analysis on the maximum simulated scour depths between riffles (for Alternatives 3 & 4) was performed with respect to the number of cross sections (computational points) and the hydraulic weighting coefficient *w*. The resolution of simulated thalweg profiles (red lines in Figure 6-11 and Figure 6-12 show thalweg profiles after the long-term daily flow simulation) improves with the number of cross sections between rock riffles (i.e., computational accuracy increases with the number of cross sections; however, too many cross sections may cause numerical oscillations in the sediment transport runs). A relatively deeper portion of the bed tends to form just upstream of the riffle (due to accelerated velocity over the riffle crest drawdown), while the rest of the bed is generally stable. The predicted aggradational trend immediately downstream of rock riffles for the increased number (≥ 8) of computational points is not realistic due to model's inability to properly simulate local sediment entrainment by turbulent eddies just downstream of each riffle (a scour hole would typically develop in this zone). The maximum scour depth (predicted with 10 points) for $w = 0.5$ is on the order of 3 feet, while the maximum scour depth for $w = 1.0$ is on the order of 1 foot. The scour depth varies in

time with daily flows and corresponding sediment loads (Figure 6-13). The mean scour depths predicted by the sediment transport model are roughly in the range between 0.3 feet and 2 feet.

It is important to note that HEC-RAS does not simulate the complex dynamics of pool formation. Natural streams develop sequences of riffles and pools that maintain channel slope and stability. Riffles, typically made of gravel or larger rock particles, enter and exit meanders and control the stream bed elevation (although sand bed streams technically do not have riffles, the term is often used to describe the crossover reach between pools). Pools, carved by three-dimensional helicoidal flows in bends, are typically located on the outside (concave) bends of meanders between riffles (HEC-20 2001). A singular pool and riffle span one half of a meander wavelength (Figure 6-14) and the mean spacing between pools (or riffles) is approximately 5 to 7 times the channel width for streams with drainage areas larger than 10 square miles (Table 6-1; EPA 2012). Functioning pools typically experience mean depths (averaged over space and time) on the order of 1.2-1.5 times the mean riffle depth (Table 6-1). The mean (supercritical) riffle depth for Alternatives 3 & 4 is about 1.6 feet for the 2-year flow and 2.5 feet for the 5-year flow. Consequently, the potential range of mean pool depths for Alternatives 3 & 4 could be between 2.0 feet and 3.7 feet. These estimates from the literature should be revised with actual field measurements in later stages of the design.

Table 6-1. Pool & Riffle Performance Parameters (EPA 2012)

MEASUREMENT METHOD	FUNCTIONING	FUNCTIONING-AT-RISK	NOT FUNCTIONING
Perennial Streams in Alluvial Valleys (C, E)			
Percent Riffle	60 to 70	70 to 80 40 to 60	> 80 < 40
Pool-to-Pool Spacing Ratio (Watersheds < 10 mi²)	4 to 5	3 to 4 and 5 to 7	< 3 and > 7
Pool-to-Pool Spacing Ratio (Watersheds > 10 mi²)	5-7	3.5-5.0 and 7 to 8	< 3.5 and > 8
Depth Variability – Gravel Bed Streams (Pool Max Depth Ratio)	> 1.5	1.2 to 1.5	< 1.2
Depth Variability – Sand Bed Streams (Pool Max Depth Ratio)[1]	> 1.2	1.1 to 1.2	< 1.1
Moderate Gradient Perennial Streams in Colluvial Valleys			
Pool-to-Pool Spacing Ratio (Slope between 3 and 5%)	0.5 to 4	4 to 6	>6
Depth Variability (Pool Max Depth Ratio)	> 1.5	1.2 to 1.5	< 1.2

[1] Pool Max Depth Ratio = Mean Pool Depth/Mean Riffle Depth

Pool formation can be promoted by incorporating the Newbury riffle design (Newbury & Gaboury 1993) to a height that would impound shallow pools. These backwater constructed riffles typically have crests elevated from the bed high enough (1-2 feet) to create pools extending to the midpoint of upstream riffle slope. In some cases, pairs of riffles are used in order to create swirling eddies and deeper pools. The upstream member of the pair has a V-notch crest which concentrates flow toward the center of the channel increasing scour at that location. Figure 6-15 gives example designs of a pair of such riffles.

6.6 Conclusions

It is important to note that the one-dimensional movable bed model (HEC-RAS) used in the sediment transport analysis does not account for lateral channel migration and additional sediment load from lateral bank erosion. Therefore, the total sediment delivery estimate to the ocean in Alternative 1 needs to include material from future bank erosion before comparing average annual sediment loads (other alternatives have stabilized bank slopes and riffles that are expected to minimize lateral bank erosion). The following table compares the trends identified in the above discussion.

Table 6-2. Sediment Transport Comparison of Alternatives

Alternative	Sand Delivery to Ocean (tons/year)	Reach Stability Characteristics		
		CTP - ACWHEP	ACWHEP – Aliso Creek Rd	Aliso Creek Rd – Pacific Park Drive
Alternative 1	40,000 – 60,000	Some Degradation/ Aggradation	Some Degradation	Some Degradation
Alternative 2	41,000	Stable	Some Degradation	Some Degradation
Alternative 3	44,000	Stable	Stable	Stable
Alternative 4	41,000	Stable	Stable	Stable

Downstream of the SOCWA CTP Bridge and upstream of Pacific Park Drive (these are the two boundary areas beyond project limits), all the alternatives predict similar degradational (incision) trend. The channel upstream of Pacific Park Drive (RS 6.65) is incised (narrow) with relatively high hydraulic depths and shear stresses which results in increased sediment transport capacity and scour potential. However, the magnitude of degradation predicted in this area is likely exaggerated since the sediment model currently does not simulate backwater effects upstream of the removed Pacific Park Drive culverts. The historical headcut in this area, evident from the 1971 channel profile (just above the current SR-73 crossing), was due to the cut-off of the horseshoe bend in the planform upstream of Pacific Park Drive as documented in Aliso Creek F4 Geomorphic Assessment (Tetra Tech 2014). Upstream migration of this headcut is now prevented by the riprap drop structure at the pedestrian bridge for Aliso Viejo Middle School.

Downstream of the SOCWA CTP Bridge (RS 1.249), the channel also shows increased scour potential for all the alternatives. This area is immediately downstream of the concrete sill under the SOCWA Bridge, experiencing flows with relatively high energy gradients and increased sediment transport capacity. The historical degradation in this area is evident from streambed profiles between 1998 and 2006 (Tetra Tech 2014), however more recent observations are limited.

The ranking of alternatives based on Table 6-2 is not conclusive because the differences between alternatives are not significant and fall within the confidence limits of one-dimensional movable bed modeling. Other parameters also need to be analyzed when selecting the optimal ecosystem restoration alternative.

Results for sediment transport analysis are provided for each alternative in Attachment C. The sediment transport models are provided on the submitted project CD.

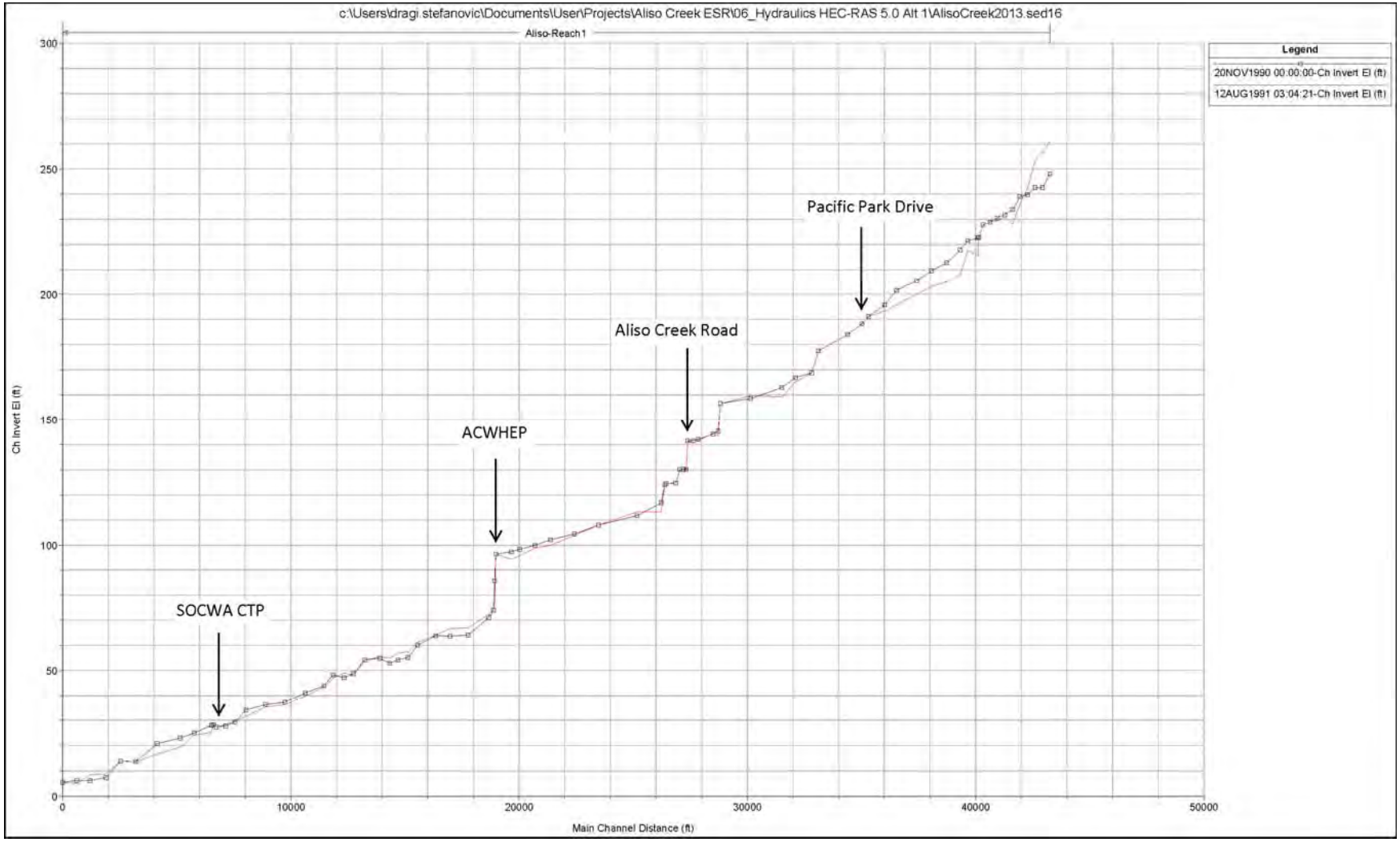

Figure 6-5 – Simulated Thalweg Profile for Alternative 1

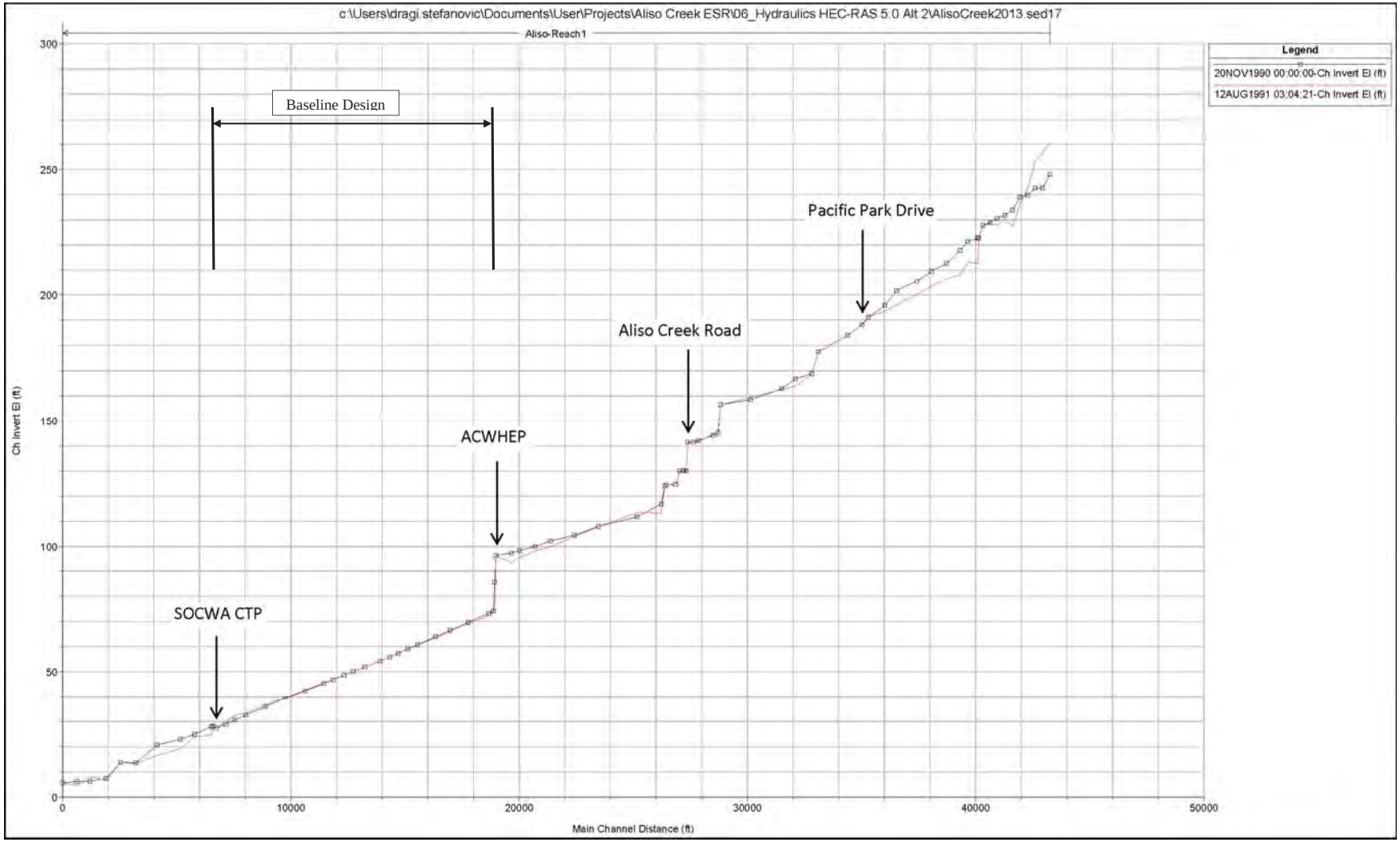

Figure 6-6 – Simulated Thalweg Profile for Alternative 2

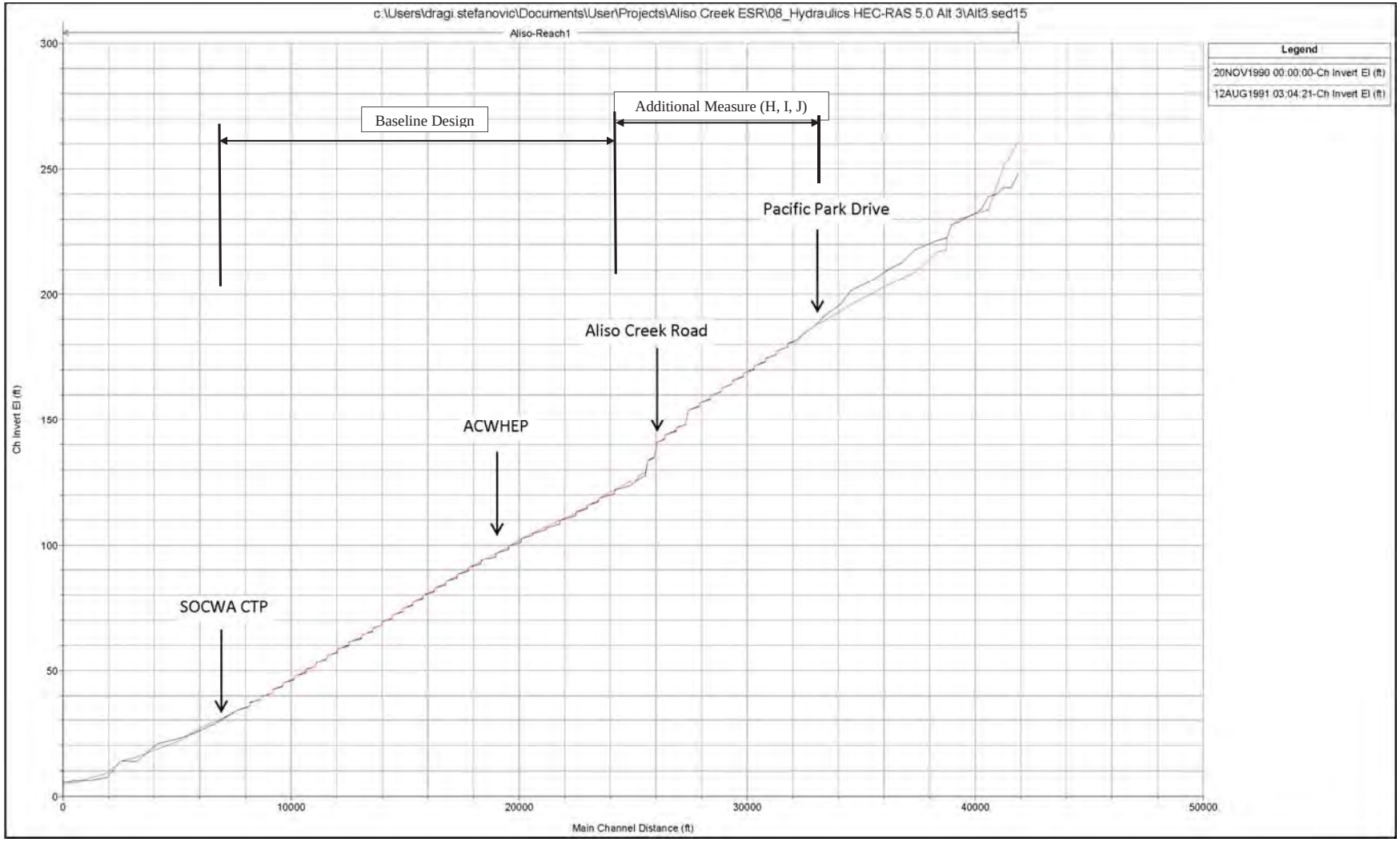

Figure 6-7 – Simulated Thalweg Profile for Alternative 3 *w* = 1.0

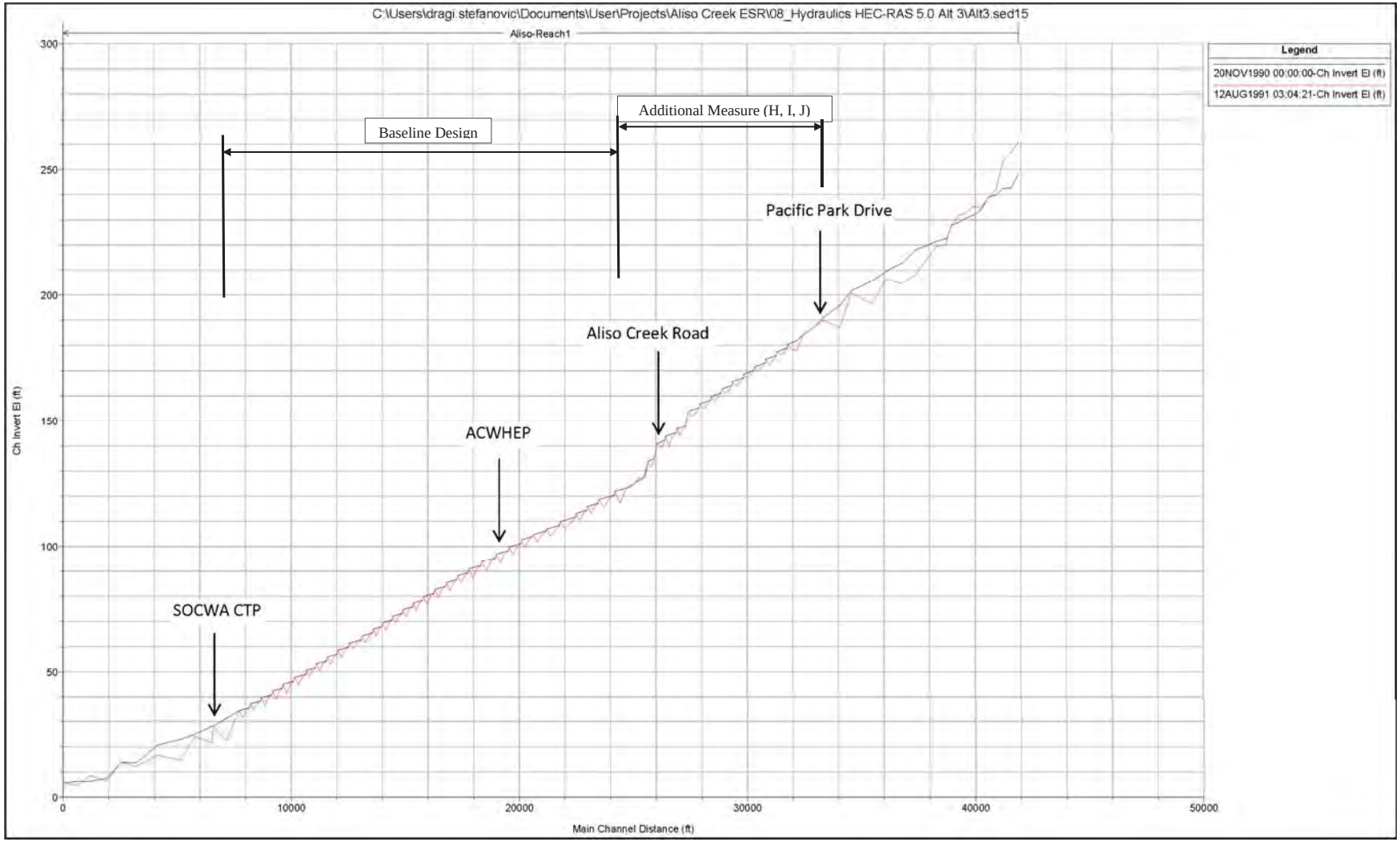

Figure 6-8 – Simulated Thalweg Profile for Alternative 3 *w* = 0.5

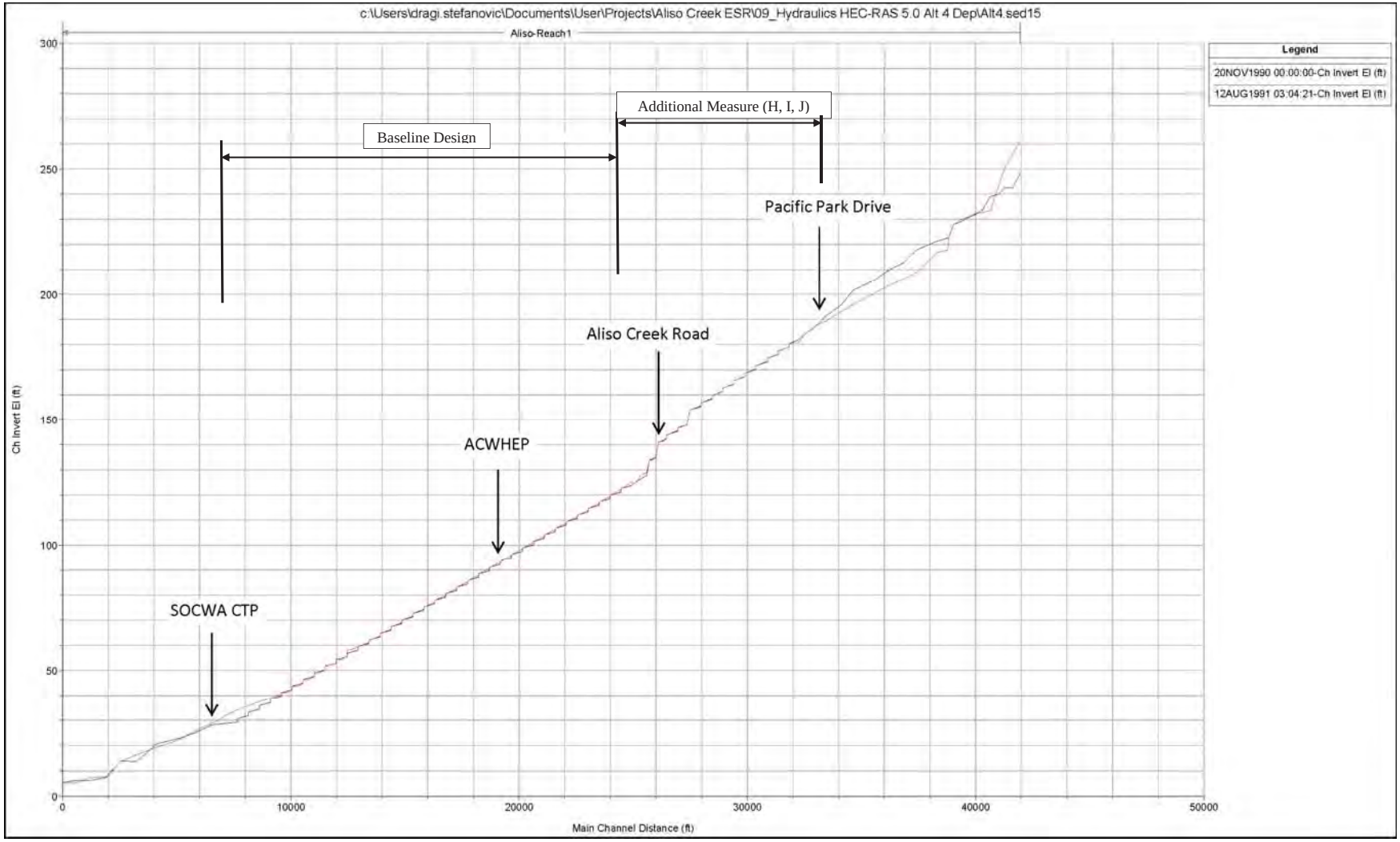

Figure 6-9 – Simulated Thalweg Profile for Alternative 4 *w* = 1.0

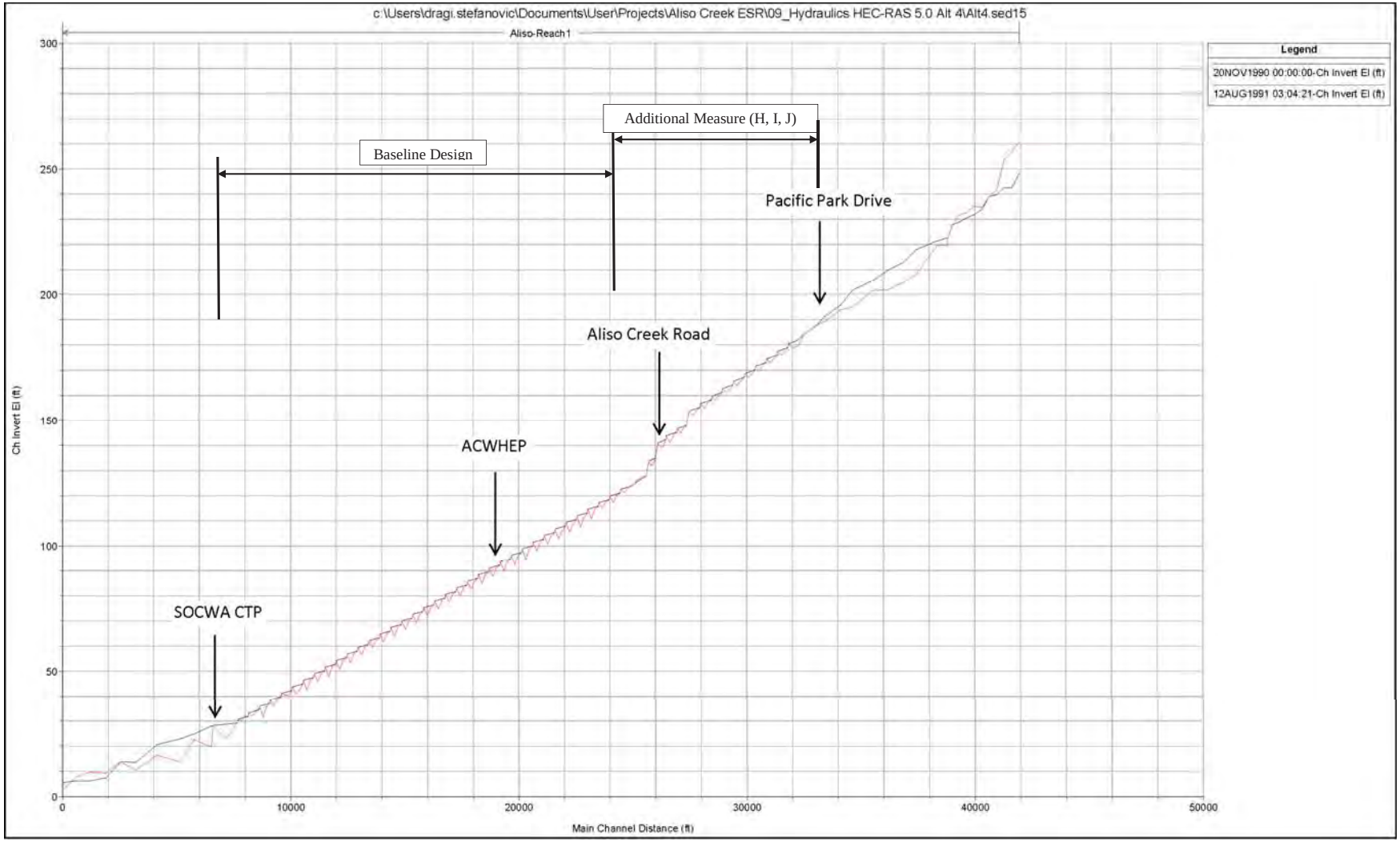

Figure 6-10 – Simulated Thalweg Profile for Alternative 4 *w* = 0.5

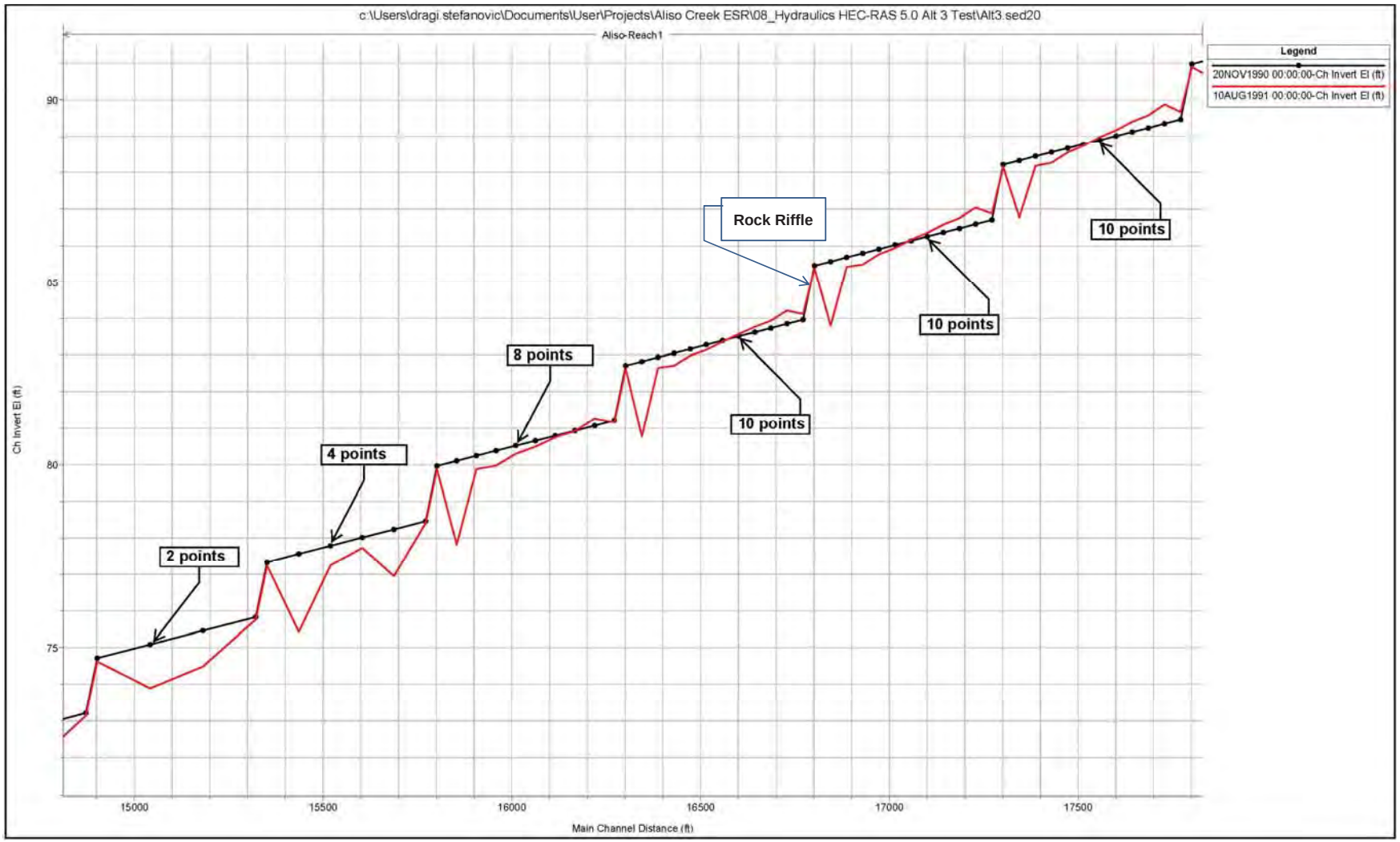

Figure 6-11 – Simulated Scour Profile between Riffles $w = 0.5$

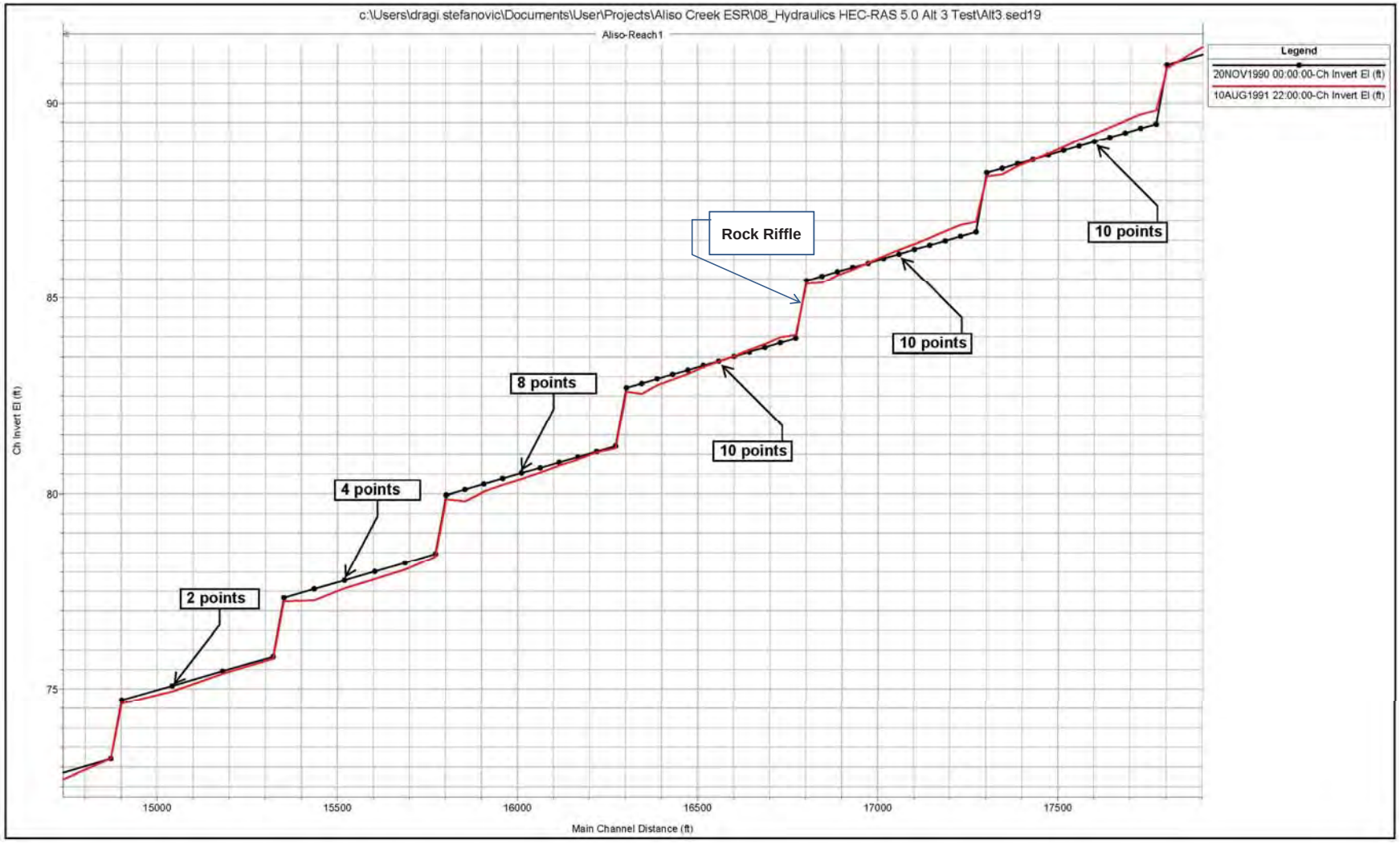

Figure 6-12 – Simulated Scour Profile between Riffles w = 1.0

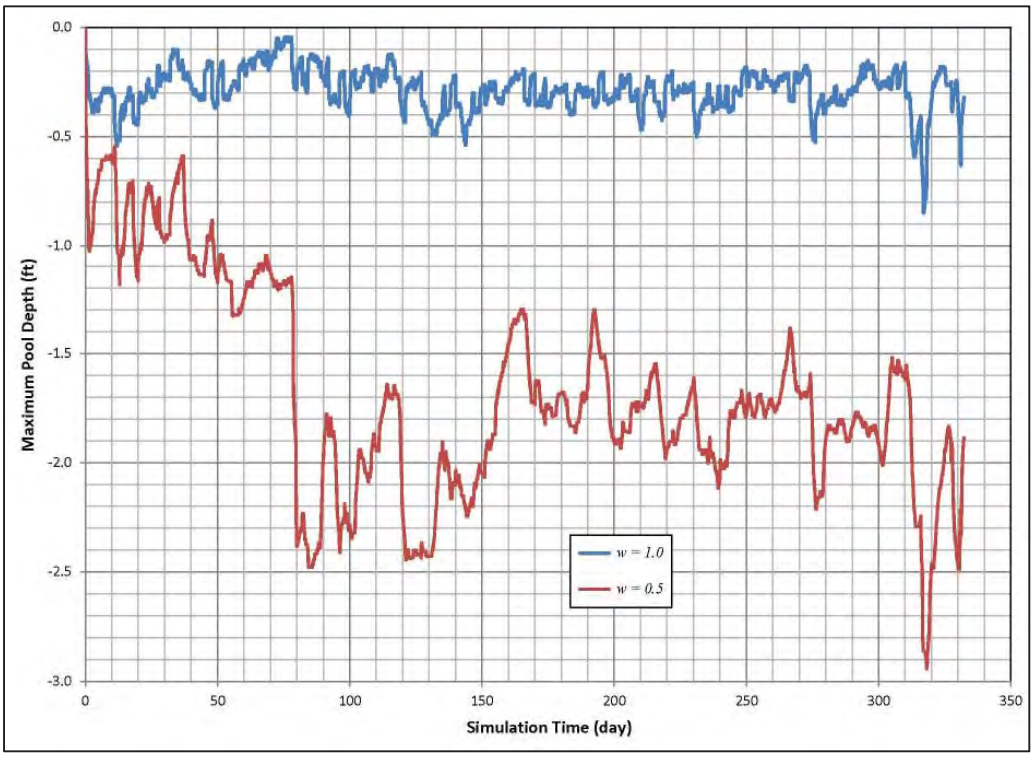

Figure 6-13 – Maximum Simulated Scour Depth between Riffles (Alternatives 3 & 4)

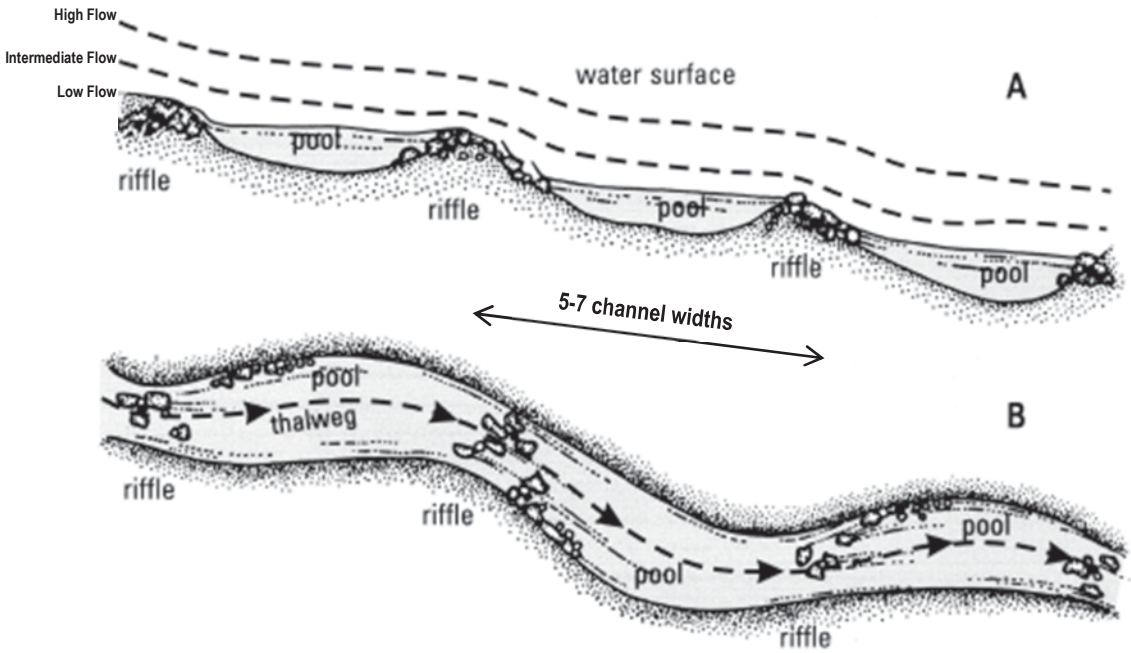

Figure 6-14 – Pool and Riffle Sequence in Natural Streams

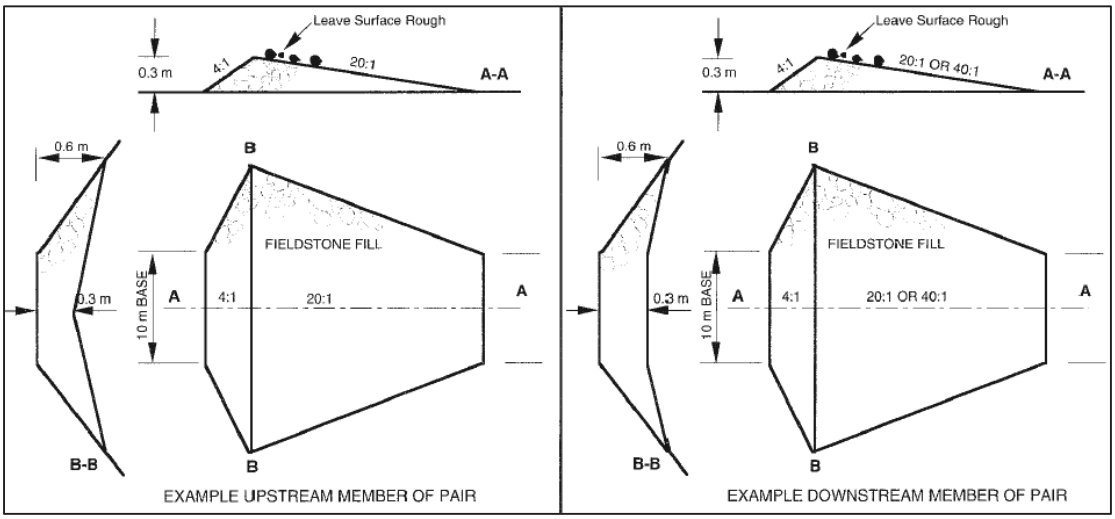

Figure 6-15 – Newbury Riffle Schematic (Newbury & Gaboury 1993)

7. SCOUR ANALYSIS

Various empirical equations and streambed hydraulics were used to estimate total potential scour in this study. The total potential scour is normally computed as the sum of general scour, anti-dune, local scour (e.g., drop structure, bridge pier and abutment scour), and bend scour. The results of the scour analysis were used as the guidelines in designing the toe down depth for the reach that required slope protection.

7.1 Methodology

General scour is a localized and temporary form of channel bed degradation that occurs during a series of small flood events or from a single large flood event. It can be caused by differential sediment transport with changing discharge over time, or by contractions or changes in the hydraulic characteristics of a stream. In this study, general scour was estimated using the HEC-RAS sediment transport model described in Section 6 of this report.

Dune-like bed forms are a second form of temporary scour that can occur primarily in sand-bed channels during a flood event. They are called anti-dunes and it is customary to consider one half of the anti-dune height, from crest to trough, as the bed-form scour component. Based on this relationship, an equation was developed (Simons, Li & Associates, 1982):

$$Z_a = \frac{1}{2}(0.14)\frac{2\pi V^2}{g} = 0.0137V^2$$

Where:

V = *Average velocity of flow, in feet per second*
g = *Gravitational acceleration, in feet per second square*

A restriction on the above equation is that the anti-dune trough depth, Z_a, can never exceed one-half the depth of flow.

Bend scour normally occurs along the outside of bends, and is caused by spiral, transverse currents which form within the flow as the water moves around the bend. Presently, there is no single procedure which will consistently and accurately predict bend scour over a wide range of hydraulic conditions. However, a relationship was developed by Zeller (1981) for estimating bend scour in sand-bed channels based upon the assumption of the maintenance of constant stream power within the channel bend. This relationship is as follows:

$$Z_{bs} = \frac{0.0685 Y_{max} V_m^{0.8}}{Y_h^{0.4} S_e^{0.3}} \left[2.1 \left(\frac{\sin^2(\alpha/2)}{\cos\alpha} \right)^{0.2} - 1 \right]$$

Where:

Z_{bs} = *Bend-scour component of total scour depth, in feet;*
V_m = *Maximum velocity of flow immediately upstream of bend, in feet per second;*
Y_{max} = *Maximum depth of flow immediately upstream of bend, in feet;*
Y_h = *Maximum Hydraulic depth of flow immediately upstream of bend, in feet; and,*
S_e = *Maximum Energy slope immediately upstream of bend (or bed slope for uniform-flow conditions), in feet per foot.*
α = *Angle formed by the projection of the channel centerline from the point of curvature to a point which meets a line tangent to the outer bank of the channel, in degrees.*

Note: The bend scour should be assumed to be zero for bends with angles up to 17.8°.

Local scour is observed whenever an abrupt change in the direction of flow occurs. Abrupt changes in flow direction can be caused by obstructions to flow, such as bridge piers, abrupt constrictions at bridge abutments, or grade control structures. It will be addressed individually if encountered in any proposed alternatives. Several structures (from upstream to downstream) are located within the study reach: Pacific Park Drive Culvert, grouted riprap drop structure, concrete drop structure with stilling basin, Aliso Creek Road Bridge, concrete drop structure with stilling basin, AWMA Road Bridge, grouted riprap drop structure, ACWHEP structure, and CTP Bridge. Aliso Creek Road, AWMA Road, and CTP bridges are single span without pier, therefore, local bridge pier scour is not applicable. Bridge abutment scour (if any) will be calculated by HEC-RAS bridge scour module.

The undermining of revetment toe protection has been identified as one of the primary mechanisms of riprap revetment failure. In the design of erosion protection, estimates of the total depth of scour are needed so that the protective layer is placed sufficiently low in the streambed to prevent undermining. The ultimate depth of scour must consider channel degradation as well as natural scour and fill processes. The following relationship presented in HEC-11 (FHWA 1989) can be used to estimate the probable maximum scour depth d_s at the riprap revetment toe due to natural scour and fill phenomenon in straight channels and in channels having mild bends:

$$d_s = \begin{cases} 12\,\text{ft} \ \text{ for } \mathrm{D_{50}} < 0.005\,\text{ft}\,(1.5\,\text{mm}) \\ 6.43\,\mathrm{D_{50}^{-0.11}} \ \text{ for } \mathrm{D_{50}} > 0.005\,\text{ft}\,(1.5\,\text{mm}) \end{cases}$$

Where:

d_s = *Probable maximum depth of scour at the revetment toe, in feet*
$\mathrm{D_{50}}$ = *Median bed sediment size, in feet*

Local scour depth downstream of a grade control structure can be estimated from the equation developed by the Bureau of Reclamation (Pemberton and Lara, 1984) as follows:

$$d_{ls} = \begin{cases} K_u H_t^{0.225} q^{0.54} - \mathrm{d_m} \ \text{ for } \mathrm{h/Y_u} \geq 1 \\ 0.581 q^{0.667} (h/Y_u)^{0.411} [1-(h/Y_u)]^{-0.118} \ \text{ for } \mathrm{h/Y_u} < 1 \end{cases}$$

Where:

d_{ls} = *Local scour depth for a free overfall, in feet*
K_u = *Coefficient (1.32 for imperial units)*
$\mathrm{H_t}$ = *Total drop in energy head, in feet*
q = *Discharge per unit width, in cubic feet per second*
d_m = *Tailwater flow depth, in feet*
h = *Vertical drop, in feet*
Y_u = *Upstream flow depth, in feet*

7.2 Scour Depths for Alternative 1 (Existing Conditions)

Channel hydraulics of the 100-year flood event from the existing conditions HEC-RAS model are used in computing the total scour depths from SOCWA CTP to Pacific Park Drive. Maximum computed total scour depths at selected HEC-RAS stations are listed in Table 7-1 for four sub-reaches located between SOCWA CTP, ACWHEP structure, AWMA Road, Aliso Creek Road, and Pacific Park Drive. Detailed scour computations for the entire study reach are presented in Attachment D and provided on the project CD.

Table 7-1. Computed Total Potential Scour for Existing Conditions

Selected HEC-RAS Station	Q_{100} (cfs)	General Scour[1] Z_{gs} (ft)	Bedform Scour Z_a (ft)	Bend Scour Z_{bs} (ft)	Total Potential Scour (ft)
1.843	8,400	1.7	1.2	10.2 (LB)[2]	13.1
4.595	7,240	0.0	1.4	6.2 (RB)[3]	7.6
5.205	4,560	0.1	2.0	1.9 (RB)[3]	4.0
5.985	4,450	0.9	2.9	2.4 (RB)[2]	6.2

1. Estimated from HEC-RAS Sediment Transport Model including both general scour and long term degradation.
2. Bend scour applies to left bank only.
3. Bend scour applies to right bank only.

The existing Aliso Creek profile is stabilized by the existing grade control structures, therefore, no local scour is computed for these structures.

7.3 Scour Depths for Alternative 2

Channel hydraulics of the 100-year flood event from the Alternative 2 HEC-RAS model are used in computing the total scour depths from SOCWA CTP to Pacific Park Drive. Maximum computed total scour depths for selected HEC-RAS stations are listed in Table 7-2. Detailed scour computations for the entire study reach are presented in Attachment D and provided on the project CD.

Table 7-2. Computed Total Potential Scour for Alternative 2

Selected HEC-RAS Station	Q_{100} (cfs)	General Scour[1] Z_{gs} (ft)	Bedform Scour Z_a (ft)	Bend Scour Z_{bs} (ft)	Total Potential Scour (ft)
1.52[2]	8,400	0.0	0.6	10.3 (LB)[3]	10.9
3.81[2]	7,240	2.7	0.6	4.3 (RB)[4]	7.6
5.205	4,560	0.1	2.0	1.9 (RB)[4]	4.0
6.291[2]	4,450	0.1	1.2	4.3 (LB)[3]	5.7

1. Estimated from HEC-RAS Sediment Transport Model including both general scour and long term degradation.
2. Due to different channel alignment, Alternative 2 HEC-RAS model station is slightly different than the existing HEC-RAS model station.
3. Bend scour applies to left bank only.
4. Bend scour applies to right bank only.

Alternative 2 improvements consist of a uniform bed slope of 0.4% between the SOCWA CTP Bridge and ACWHEP structure. The maximum computed total potential scour for the unimproved reach (upstream of ACWHEP structure) is the same as that for the existing conditions.

7.4 Scour Depths for Alternative 3

Channel hydraulics of the 100-year flood event from the Alternative 3 HEC-RAS model are used in computing the total scour depths from SOCWA CTP to Pacific Park Drive. Maximum computed total scour depths for selected HEC-RAS stations are listed in Table 7-3. Detailed scour computations for the entire study reach are presented in Attachment D and provided on the project CD.

Table 7-3. Computed Total Potential Scour for Alternative 3

Selected HEC-RAS Station	Q_{100} (cfs)	General Scour[1] Z_{gs} (ft)	Bedform Scour Z_a (ft)	Bend Scour Z_{bs} (ft)	Total Potential Scour (ft)
1.828[2]	8,400	0.1	1.7	4.9 (RB)[3]	6.7
4.357[2]	7,240	0.1	1.5	4.6 (RB)[3]	6.2
4.843[2]	4,560	0.1	2.4	0.4 (RB)[3]	2.9
6.247[2]	4,450	0.1	1.1	4.0 (RB)[3]	5.2

1. Estimated from HEC-RAS Sediment Transport Model including both general scour and long term degradation.
2. Due to the channel alignment, Alternative 3 HEC-RAS model station is slightly different than the existing HEC-RAS model station.
3. Bend scour applies to right bank only.

The computed total scour depths at the selected sections are less than total scour depths computed for the existing conditions (Table 7-1). It should be noted that the proposed alternative channel alignment is different from the Alternative 1 alignment and HEC-RAS cross sections are located differently. Therefore, it is not possible to precisely quantify the scour changes at the same location between alternatives. The main difference in the computed total potential scour is that general scour is reduced to a minimum of 0.1 feet in Alternative 3. Computed local scour depths for grade control structures are summarized in Table 7-4. Detailed local scour computations for the entire study reach are presented in Attachment D and provided on the project CD.

Table 7-4. Computed Local Scour for Alternative 3

From	To	Q_{100} (cfs)	Grade Control Structure Local Scour (feet)		
			Maximum[1]	Minimum[2]	Average[3]
SOCWA CTP	Wood Canyon Confluence	8,120 to 8,400	4.1	3.0	3.8
Wood Canyon Confluence	AWMA Road	7,240 to 8,120	6.7	2.2	3.7
AWMA Road	Aliso Creek Road	4,560 to 7,240	5.1	4.4	4.8
Aliso Creek Road	Pacific Park Drive	4,450 to 4,560	5.0	3.1	3.6

1. Maximum local scour depth within a reach.
2. Minimum local scour depth within a reach.
3. Average local scour depth within a reach.

Generally, the computed local scour depth of 4 feet is predicted from SOCWA CTP to AWMA Road (with one exception of 6.7 feet located immediately downstream of AWMA Road). The average scour depth of 4.8 feet from AWMA Road to Aliso Creek Road and 3.6 feet from Aliso Creek Road to Pacific Park Drive is predicted.

7.5 Scour Depths for Alternative 4

Channel hydraulics of the 100-year flood event from the Alternative 4 HEC-RAS model are used in computing the total scour depths from SOCWA CTP to Pacific Park Drive. Maximum computed total scour depths for selected HEC-RAS stations are listed in Table 7-5. Detailed scour computations for the entire study reach are presented in Attachment D and provided on the project CD.

Table 7-5. Computed Total Potential Scour for Alternative 4

Selected HEC-RAS Station	Q_{100} (cfs)	General Scour[1] Z_{gs} (ft)	Bedform Scour Z_a (ft)	Bend Scour Z_{bs} (ft)	Total Potential Scour (ft)
2.899[2]	8,400	0.1	1.7	4.9 (LB)[3]	6.7
4.353[2]	7,240	0.1	1.5	4.6 (RB)[4]	6.2
4.843[2]	4,560	0.1	2.4	0.4 (RB)[4]	2.9
6.247[2]	4,450	0.1	1.1	4.0 (RB)[4]	5.2

1. Estimated from HEC-RAS Sediment Transport Model including both general scour and long term degradation.
2. Due to different channel alignment, Alternative 4 HEC-RAS model station is slightly different than the existing HEC-RAS model station.
3. Bend scour applies to left bank only.
4. Bend scour applies to right bank only.

The computed total scour depths at the selected sections are less than computed scour depths for the existing conditions (Table 7-1). It should be noted that the proposed alternative channel alignment is different from the Alternative 1 alignment and HEC-RAS cross sections are located differently. Therefore, it is not possible to precisely quantify the scour changes at the same location between alternatives. The main difference in the computed total potential scour is that the general scour is reduced to a minimum of 0.1 feet in Alternative 4. Computed local scour depths for grade control structures are summarized in Table 7-6. Detailed local scour computations for the entire study reach are presented in Attachment D and provided on the project CD.

Table 7-6. Computed Local Scour for Alternative 4

From	To	Q_{100} (cfs)	Grade Control Structure Local Scour (feet)		
			Maximum[1]	Minimum[2]	Average[3]
SOCWA CTP	Wood Canyon Confluence	4,170 to 4,400	4.1	2.7	3.9
Wood Canyon Confluence	AWMA Road	3,810	6.7	3.8	4.0
AWMA Road	Aliso Creek Road	2,900 to 3,810	5.1	4.4	4.8
Aliso Creek Road	Pacific Park Drive	2,830 to 2,900	5.0	3.1	3.6

1. Maximum local scour depth within a reach.
2. Minimum local scour depth within a reach.
3. Average local scour depth within a reach.

Generally a computed local scour depth of 4 feet is predicted from SOCWA CTP to AWMA Road (with one exception of 6.7 feet located immediately downstream of AWMA Road). The average scour depth of 4.8 feet from AWMA Road to Aliso Creek Road and 3.6 feet from Aliso Creek Road to Pacific Park Drive is predicted.

7.6 Scour Protection

Based on the total scour depths determined for each alternative, the rock riffles and other protection features will be designed to provide protection against potential scour along the channel. The toe of the revetment will be buried below the streambed to a depth that extends below the total scour depth such that the revetment is not undermined during the design storm event. Detailed discussion of the scour protection features is included in the *Draft TSP Design Appendix* (Tetra Tech 2015).

7.7 Riffle Rock Sizing

The flow regime over the rock riffles is mixed (Figure 7-1; blue line depicts water surface, red line is critical depth). It is subcritical upstream of the rock riffle, supercritical over the riffle, then transitions through a hydraulic jump back to subcritical regime in the pool. The max (supercritical) velocity occurs on the riffle slope for the 100-year flow, before the hydraulic jump is submerged by the downstream tailwater. The necessary rock size to withstand erosive flow forces was determined by the USACE methodology in EM 1110-2-1601, Hydraulic Design of Flood Control Channels (USACE 1994), assuming angular rock with specific weight of 160 lbs/ft3, channel bank placement on a 3H:1V side slope, and a safety factor of 30% (this safety factor may need to be increased in the final design due to highly turbulent flow transition over rock riffles).

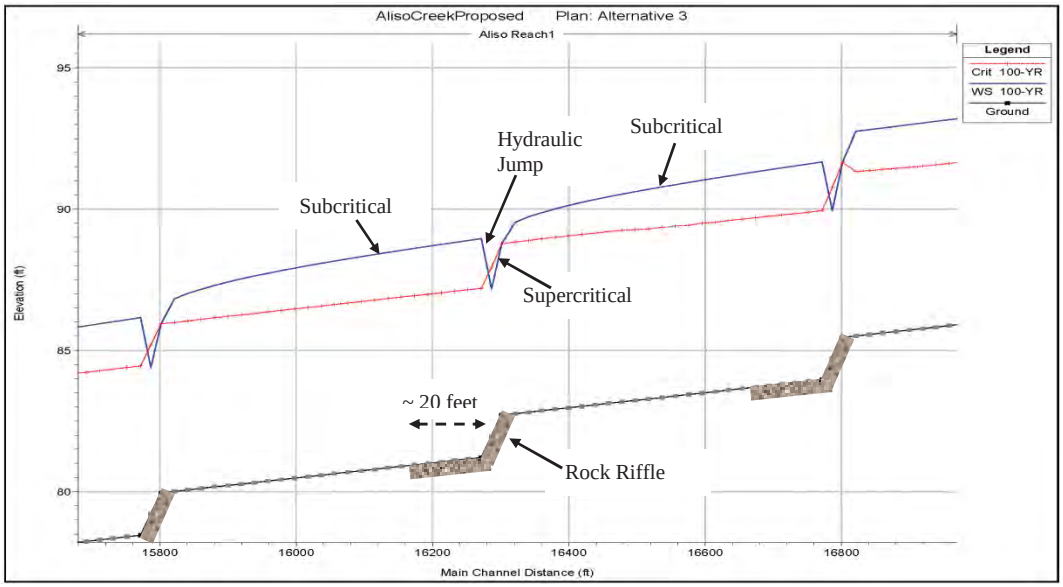

Figure 7-1 – 100-Year Water Surface Profile over Rock Riffles

The maximum (supercritical) 100-year channel velocity over the 18" rock riffles is 14.0 ft/s. The 100-year subcritical velocity immediately downstream of the 18" riffle is 7.5 ft/s. The channel bottom should be protected from high turbulence for a distance of about 20 feet downstream of each rock riffle. The loose rock sizes are shown in Table 7-7.

The maximum (supercritical) 100-year channel velocity over the 6-foot rock riffles is 18.1 ft/s. The required loose rock size is greater than the largest USACE stone gradation, such that the rock riffle slope would need to be grouted (Table 7-7).

Table 7-7. Riffle Rock Size

Location	Flow Depth (ft)	Max Flow Velocity (ft/s)	D_{30} (ft)	D_{90} (ft)	Layer Thickness D_{100} (ft)	Stone Gradation[1]		
						W_{100} (lbs)	W_{50} (lbs)	W_{15} (lbs)
18" Rock Riffle								
Slope	5.2	14.0	1.34	1.94	2.75	697-1742	348-516	109-258
Downstream	7.7	7.5	0.37	0.53	1.125	14-35	7-10	2-5
6-ft Rock Riffle								
Slope	3.1	18.1	N/A	N/A	2.3[2]	N/A	N/A	N/A
Downstream	6.5	7.7	0.37	0.53	1.125	14-35	7-10	2-5

1. Gradation expressed in limits (min – max) of stone weight W_x for percent "x" of stone lighter than W_x
2. Grouted rock per HEC-11 (FHWA 1989)

In order to keep the proposed channel geometry in place during an emergency when the riffle structures are damaged or washed away and could not hold the earthen channel immediately upstream, the channel can be supplemented with sheet piles embedded across the top of the riffle structures. The sheet piles would hold the channel in place during the storm and until the riffle structures are repaired and maintained after the storm.

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8. RISK AND UNCERTAINTY

8.1 Overview

As described in USACE ER 1105-2-101, Risk Analysis for Flood Damage Reduction Studies (January 2006), the probability of capacity exceedance and uncertainty analysis is required by the Corps of Engineers for all new flood reduction studies. The analysis procedures are described in EM 1110-2-1619, Risk-Based Analysis for Flood Damage Reduction Studies (August 1996). The engineering manual and planning regulation discuss uncertainties associated with various elements, such as discharge-probability, stage-discharge, stage-damage, structural and geotechnical performance, as well as methodologies to determine them. Only discharge-probability and stage-discharge functions are included in this risk and uncertainty analysis.

8.2 Methodology

Per EC 1110-2-6067 (August 2010), for an incised channel or levee system to meet National Flood Insurance Program (NFIP) evaluation requirements, it must provide at least 90-percent assurance of containing the 1% annual chance exceedance flood (i.e., 100-year flood) event for all reaches and be in accordance with the 'freeboard" guidance provided in EM 1110-2-1601, Hydraulic Design of Flood Control Channels (June 1994). The assurance of flood containment, or Conditional Non-exceedance Probability (CNP), of the incised channel system can be estimated by risk and uncertainty (R&U) analysis. The R&U analysis explicitly and analytically estimates the uncertainties of key hydrologic and hydraulic elements in terms of probability distributions, rather than single-point best estimates or average values.

The following are the sources of uncertainty used in the Lower Aliso Creek risk and uncertainty analysis.

8.2.1 Discharge-Probability Function

For a flood or storm event with a given probability of occurrence, there is uncertainty regarding what the resulting discharge will be at a specific location along the stream or river. The reliability of discharge-probability estimates is directly related to the historical record of stream gauge data available. In cases where records are short or incomplete, the associated uncertainty increases. To address this uncertainty, an analytical or graphical discharge-frequency method is typically used to determine statistical distributions of discharge for a range of probabilities at locations throughout the channel system.

For this study, the adopted discharges for the Lower Aliso Creek were obtained from the H&H Appendix (USACE, 2009a). As described in the Appendix, the rainfall-runoff model peak discharges for N-year storm events under existing conditions were plotted against the adjusted streamflow record (e.g., adjusted to account for different levels of imperviousness over time) from the Aliso Creek gage, and against peak discharge estimates from the 1993 FEMA Flood Insurance Study (FIS), and a smooth curve with negative skew (i.e., -0.2) similar to regional skew was drawn through the results. This curve resulted in adopted peak flow values greater than the modeled values for the 2-year and 5-year events, but similar adopted and modeled values for the 10-year through 500-year floods. Due to limited future development potential particularly in the study area portion of the watershed, the existing condition results are the same as under future conditions.

Because the adopted discharges were mainly computed using a rainfall-runoff model and its results were comparable to the analytical results based on flood record of 67 years, an equivalent record length of 30 years was selected based on the guidance in Table 4-5 of EM 1110-2-1619.

8.3 Stage-Probability Function

Stage-Discharge: For a given discharge, there is uncertainty regarding what the resulting water surface elevation will be at a given location. Factors contributing to this uncertainty include bed forms, water temperatures, debris or other obstructions, unsteady flow effects, variation in hydraulic roughness with season, sediment transport, channel scour or deposition, changes in channel shape during or as a result of flood events, as well as other factors.

Given the difficulty in estimating the uncertainty in the stage-probability function in a natural watercourse such as the Lower Aliso Creek, the determination of stage uncertainty was based on the generalized procedures described in Chapter 5 of EM 1110-2-1619. Results are compared and analyzed to make an engineering judgment of the best estimate of stage uncertainty in the form of the standard deviation of error in the stage.

Figure 5-3 in EM 1110-2-1619 presents a relationship between channel slope and standard deviation of stage based on the Gamma distribution that provides an upper bound for uncertainty. Using the average channel slopes at four index locations (Figure 8-1) based on the HEC-RAS channel thalweg profile, the upper bound of the natural stage uncertainty was estimated and presented in Table 8-1.

Table 8-1. Stage Uncertainty in Ungaged Reach

Index Location	HEC-RAS River Station	Average Slope (feet/feet)	Upper Bound (feet)
1	1.464	0.00319	1.25
2	3.741	0.00235	1.30
3	5.229	0.00093	1.60
4	6.422	0.00573	1.05

Since mathematical modeling of water surface profiles introduces uncertainties associated with estimating model parameters such as Manning's n-value, as well as topographic accuracy and multi-dimensional flow effects, the variability of stage due to modeling must be accounted for. Table 5-2 in EM 1110-2-1619 enables estimating the minimum standard deviation of error in stage. Using Table 5-2 for this study yields a minimum modeling standard deviation for stage of 1.5 feet based on a Manning's n-value reliability of "poor" (i.e., no model calibration was performed), and cross sections from topographic maps with 2-5 foot contours.

The modeling uncertainty was also evaluated using sensitivity analysis by computing water surface profiles for the channel reach that use estimates of the lower and upper limits of Manning's n-values per Table 8-2. It was assumed that Manning's *n*-values used in the HEC-RAS model (see Hydraulic Analysis) are the normal values. The lower and upper limits of the Manning's *n*-values were estimated by mapping the HEC-RAS Manning's *n* values to Table 3-1 of HEC-RAS Hydraulic Reference Manual (USACE, 2010). Identical or equivalent Manning's normal *n*-values in Table 3-1 (USACE 2010) were assigned to the HEC-RAS *n*-values as shown in Table 8-2 and the adopted lower and upper bounds of Manning's *n*-values are presented in Table 8-3.

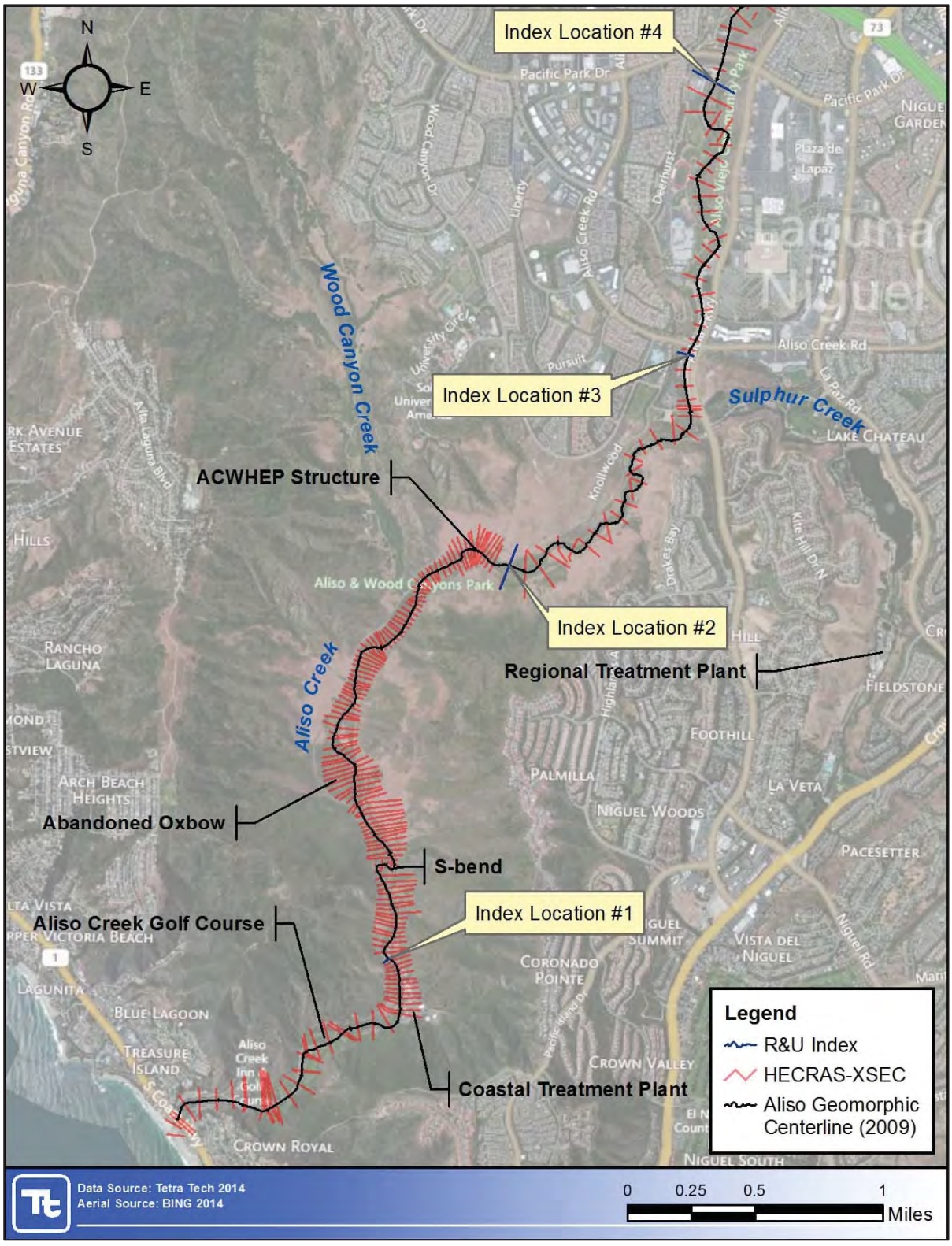

Figure 8-1 – Index Locations along Lower Aliso Creek

Table 8-2. HEC-RAS Manning's *n*-values and Equivalent Land Use/Cover Types

Channel/Land Cover Type	HEC-RAS Manning's n	Equivalent Land Use/Cover Type[1]			
		Land Use/Cover Type	Minimum	Normal[2]	Maximum
Concrete	0.013	B. *Lined or Built-Up Channel* 1. **Concrete** a. Trowel finish	0.011	0.013	0.015
Road (Asphalt)	0.015 0.020 0.025	B. *Lined or Built-Up Channel* 1. **Asphalt**	0.013 0.016	0.013 0.016	
Low Flow Channel	0.030	A. *Natural Streams* 1. **Main Channels** a. Clean, Straight, full, no rifts or deep pools	0.025	0.030	0.033
Low Flow Channel	0.033 0.035	A. *Natural Streams* 1. **Main Channels** b. same as "a" but more stones and weeds	0.030	0.035	0.040
Medium Vegetation	0.050 0.051 0.054	A. *Natural Streams* 2. **Flood Plains** c. Brush 1.Scattered brush, heavy weeds	0.035	0.050	0.070
Dense Vegetation	0.070 0.072	A. *Natural Streams* 2. **Flood Plains** c. Brush 4. Medium to dense brush	0.045	0.070	0.110

1. Table 3-1 of HEC-RAS Hydraulic Reference Manual (USACE 2010).
2. Equivalent land use/cover type was selected based on the normal Manning's n-value in Table 3-1 of HEC-RAS Hydraulic Reference Manual (USACE 2010).

Table 8-3. Adopted Manning's *n*-values used in Risk and Uncertainty Analysis

Cover Type	Lower[1]	Normal[2]	Upper[3]
Concrete	0.011	0.013	0.015
Road (Asphalt)[4]	0.015 0.020 0.025	0.015 0.020 0.025	0.015 0.020 0.025
Low Flow Channel	0.025 0.030	0.030 0.033	0.033 0.040

Cover Type	Lower[1]	Normal[2]	Upper[3]
	0.030	0.035	0.040
Medium Vegetation	0.035	0.050	0.070
	0.035	0.051	0.070
	0.035	0.054	0.070
Dense Vegetation	0.045	0.070	0.110
	0.045	0.072	0.110

1. Adopted minimum value listed in Table 8-2.
2. Manning's n-values used in the HEC RAS model.
3. Adopted maximum value listed in Table 8-2.
4. Assumed no variation.

The lower and upper Manning's *n*-values were then used in the HEC-RAS model to compute the lower and upper stages along the existing Lower Aliso Creek for the N-year flood events (i.e., 1.1-, 2-, 5-, 10-, 20-, 50-, 100-, 200-, and 500-year events). The computed stage ranges between the lower and upper Manning's *n*-values varied from 0.38 to 6.56 feet, and the stage standard deviations varied from 0.10 to 1.64 feet for discharges which ranged from 210 to 11,500 cfs. The minimum standard deviation error in stage of 1.5 feet, estimated based on Table 5-2 of EM 1110-2-1619, is within the computed ranges by the HEC-RAS model. Therefore, the stage standard deviations for each frequency flood at each cross section computed from the HEC-RAS model, with the constraint of the minimum standard deviation error in stage of 1.5 feet, were adopted and used in the risk and uncertainty analysis.

Uncertainty due to natural variation computed in Table 8-1 needs to be combined with the values from the modeling uncertainty discussed above per equation 5-6 of EM 1110-2-1619 as follows to determine total uncertainty:

$$S_t = \sqrt{S_{natural}^2 + S_{model}^2}$$

Where S_t is the standard deviation of the total uncertainty, $S_{natural}$ is natural uncertainty, and S_{model} is modeling uncertainty. The adopted total stage uncertainties of four index locations are listed in Table 8-4.

Table 8-4. Adopted Stage Total Uncertainty

Index Location	HEC-RAS River Station	$S_{natural}$ (feet)	S_{model} (feet)	S_{total} (feet)
1	1.464	1.25	1.50	1.95
2	3.741	1.30	1.50	1.98
3	5.229	1.60	1.50	2.19
4	6.422	1.05	1.50	1.83

8.4 HEC-FDA Computer Program

The Corps of Engineers Hydrologic Engineering Center has developed software specifically designed for conducting the R&U analysis, referred to as the Flood Damage Analysis program or HEC-FDA (Version 1.2.5a used for this analysis). This program applies a Monte Carlo simulation process, whereby the expected value of damages is determined explicitly through a numerical integration technique accounting for uncertainty in discharge-probability and stage-discharge function as well as damage-stage functions (if economic damage data is available).

Data requirements for the program consist of: hydrologic and hydraulic data, including water surface profiles, discharge-frequency relationships, and stage-discharge relationships. For this study, water surface profiles were developed using the HEC-RAS program. These functions were manually entered into the HEC-FDA program. Hydrologic and hydraulic uncertainty parameters, as described in detail previously, were also entered into the program.

HEC-FDA reports flood risk in terms of project performance considering hydrologic and hydraulic factors. Three statistical measures are provided by running HEC-FDA that describe project performance and risk in probabilistic terms. These include annual exceedance probability, long-term risk, and conditional non-exceedance probability (CNP) by events, and are defined as follows:

- Annual exceedance probability (AEP) is the probability that a specified magnitude event will be exceeded in any year.
- Long-term risk is the probability of capacity exceedance over a specified period of time.
- CNP indicates the probability of capacity exceedance given the occurrence of a specified event.

8.5 Index Locations

The index location along a channel could be the section with least amount of freeboard, or the section near aboveground or underground utilities, or the representative section for a uniform reach. In the existing conditions analysis, critical channel sections were selected along the Lower Aliso Creek at the following locations (Figure 8-1):

- HEC-RAS River Station 1.464 located upstream of SOCWA Coastal Treatment Plant; overflow onto the left overbank could be a flood hazard to the plant.
- HEC-RAS River Station 3.741 located upstream of ACWHEP structure; overflow onto the right overbank could be a flood hazard to the access road.
- HEC-RAS River Station 5.229 located downstream of Aliso Creek Road; overflow onto the right overbank could be a flood hazard to the access road.
- HEC-RAS River Station 6.422 located downstream of Pacific Park Drive; overflow onto the right overbank could be a flood hazard to the private charter school.

8.6 R&U Results of Existing Conditions for 100-year Flood Event

The annual exceedance probability (AEP) and long-term risk under existing top of channel elevations are shown in Table 8-5. Based on these results, there is 21.6-percent chance of flooding in a given year due to overtopping of the channel at index location #2 where no buildings exist. There is 2.7- and 4.9-percent chance of flooding in a given year due to overtopping of the channel at index locations #1 and #4, respectively.

Table 8-5. Existing Top of Channel Elevations Performance

Index Location	Existing Top of Channel Elevation (feet)	Annual Exceedance Probability		Long-Term Risk (Probability of Exceedance over Indicated Time Period)		
		Median	Expected	10 years	30 years	50 years
#1 - STA 1.464	46.57	0.0198	0.0269	0.2388	0.5589	0.7444
#2 - STA 3.741	105.26	0.1208	0.2162	0.9125	0.9993	1.0000
#3 - STA 5.229	154.30	0.0001	0.0006	0.0056	0.0168	0.0278
#4 - STA 6.422	189.50	0.0025	0.0485	0.3918	0.7751	0.9168

Table 8-6 shows the conditional non-exceedance probability (CNP), indicating the probability of the channel successfully containing a given flood frequency event without exceeding channel capacity. The FDA program analysis found that CNPs for a 100-year flood event (i.e., a 0.01-exceedance probability event) at three index locations along the Lower Aliso Creek did not meet the minimum requirement of 90 percent.

Table 8-6. Existing Top of Channel Elevations Conditional Non-Exceedance Probability

Index Location	Conditional Non-Exceedance Probability by Events					
	10%	4%	2%	1%	.4%	.2%
#1 - STA 1.464	0.9526	0.7506	0.5792	0.4485	0.3714	0.2846
#2 - STA 3.741	0.4410	0.2543	0.1699	0.1106	0.0726	0.0476
#3 - STA 5.229	0.9989	0.9971	0.9948	0.9920	0.9900	0.9882
#4 - STA 6.422	0.8667	0.7741	0.6951	0.6280	0.5827	0.5522
Note: red highlighted values are CNP values less than 90% for 1% AEP flood.						

8.7 R&U Results for Alternative 2

The annual exceedance probability (AEP) and long-term risk under existing top of channel elevations are shown in Table 8-7. Based on these results, there is 23.5-percent chance of flooding in a given year due to overtopping of the channel at index location #2 where no buildings exist. There is 1.1- and 4.7-percent chance of flooding in a given year due to overtopping of the channel at index locations #1 and #4, respectively.

Table 8-7. Existing Top of Channel Elevations Performance for Alternative 2

Index Location	Existing Top of Channel Elevation (feet)	Annual Exceedance Probability		Long-Term Risk (Probability of Exceedance over Indicated Time Period)		
		Median	Expected	10 years	30 years	50 years
#1 - STA 1.465[1]	46.28	0.0049	0.0111	0.1059	0.2853	0.4287

#2 - STA 3.741	105.26	0.1401	0.2346	0.9310	0.9997	1.0000
#3 - STA 5.229	154.30	0.0001	0.0005	0.0052	0.0154	0.0256
#4 - STA 6.422	189.50	0.0044	0.0471	0.3829	0.7650	0.9105

1. Stationing is slightly different than the existing conditions model due to Alternative 2 proposed improvement reach in the RAS model.

Table 8-8 shows the conditional non-exceedance probability (CNP), indicating the probability of the channel successfully containing a given flood frequency event without exceeding channel capacity. The FDA program analysis found that CNPs for a 100-year flood event (i.e., a 0.01-exceedance probability event) at three index locations along the Lower Aliso Creek did not meet the minimum requirement of 90 percent. In general, R&U analysis results indicate that Alternative 2 is similar to the existing conditions.

Table 8-8. Existing Top of Channel Elevations Conditional Non-Exceedance Probability for Alternative 2

Index Location	Conditional Non-Exceedance Probability by Events					
	10%	4%	2%	1%	.4%	.2%
#1 - STA 1.465[1]	0.9932	0.9314	0.8226	0.6786	0.5507	0.4429
#2 - STA 3.741	0.3931	0.2169	0.1445	0.0940	0.0613	0.0400
#3 - STA 5.229	0.9990	0.9975	0.9953	0.9930	0.9909	0.9894
#4 - STA 6.422	0.8774	0.7653	0.6727	0.5976	0.5465	0.5133

1. Stationing is slightly different than the existing conditions model due to Alternative 2 proposed improvement reach in the RAS model.

Note: red highlighted values are CNP values less than 90% for 1% AEP flood.

8.8 R&U Results for Alternative 3

8.8.1 100-year Flood Event

The annual exceedance probability (AEP) and long-term risk under existing top of channel elevations are shown in Table 8-9. Based on these results, there is 40.5-percent chance of flooding in a given year due to overtopping of the channel at index location #3. There is 2.9, 12.1, and 0.1-percent chance of flooding in a given year due to overtopping of the channel at index locations #1, #2, and #4, respectively.

Table 8-9. Existing Top of Channel Elevations Performance for Alternative 3

Index Location[1]	Existing Top of Channel Elevation (feet)	Annual Exceedance Probability		Long-Term Risk (Probability of Exceedance over Indicated Time Period)		
		Median	Expected	10 years	30 years	50 years
#1 - STA 1.459	46.26	0.0212	0.0289	0.2545	0.5857	0.7697

#2 - STA 3.577	102.11	0.0247	0.1207	0.7238	0.9789	0.9984
#3 - STA 4.933	145.21	0.2261	0.4051	0.9944	1.0000	1.0000
#4 - STA 6.483	191.87	0.0001	0.0014	0.0138	0.0409	0.0673

1. Locations are in the vicinity of existing conditions index locations but different due to Alternative 3 proposed improvement reach in the RAS model.

Table 8-10 shows the conditional non-exceedance probability (CNP), indicating the probability of the channel successfully containing a given flood frequency event without exceeding channel capacity. The FDA program analysis found that CNPs for a 100-year flood event (i.e., a 0.01-exceedance probability event) at three index locations along the Lower Aliso Creek did not meet the minimum requirement of 90 percent.

Table 8-10. Existing Top of Channel Elevations Conditional Non-Exceedance Probability for Alternative 3

Index Location[1]	Conditional Non-Exceedance Probability by Events					
	10%	4%	2%	1%	.4%	.2%
#1 - STA 1.459	0.9467	0.7301	0.5518	0.4195	0.3434	0.2574
#2 - STA 3.577	0.6814	0.5543	0.4683	0.3909	0.3332	0.2875
#3 - STA 4.933	0.3961	0.3029	0.2512	0.2129	0.1884	0.1691
#4 - STA 6.483	0.9968	0.9934	0.9912	0.9881	0.9862	0.9850

1. Locations are in the vicinity of existing conditions index locations but different due to Alternative 3 proposed improvement reach in the RAS model.

Note: red highlighted values are CNP values less than 90% for 1% AEP flood.

8.8.2 10-year Flood Event

Four additional index locations were selected in the R&U analysis to be representative of the proposed Alternative 3 improvements between SOCWA CTP, Wood Canyon Confluence, AWMA Road, Aliso Creek Road, and Pacific Park Drive. The AEP and long-term risk under the proposed top of channel elevations (to contain 10-year flow) are shown in Table 8-11. Based on these results the chance of overtopping the proposed top of channel in a given year is between 12.2 and 37.3 percent.

Table 8-11. Proposed Alternative 3 Top of Channel Elevations Performance

Index Location	Proposed Alternative 3 Top of Channel Elevation (feet)	Annual Exceedance Probability		Long-Term Risk (Probability of Exceedance over Indicated Time Period)		
		Median	Expected	10 years	30 years	50 years
STA 2.319	65.08	0.0950	0.1999	0.8925	0.9988	1.0000
STA 3.956	111.45	0.0721	0.1949	0.8855	0.9985	1.0000
STA 4.773	132.43	0.2730	0.3725	0.9905	1.0000	1.0000
STA 5.904	172.29	0.0049	0.1222	0.7283	0.9799	0.9985

Table 8-12 shows the CNPs for the proposed Alternative 3 improvement top of channel elevations. The CNPs for a 10-year flood event (i.e., a 0.1-exceedance probability event) are estimated to be approximately 51- to 54-, 16-, and 71- percent for reaches from SOCWA CTP to AWMA Road, from AWMA Road to Aliso Creek Road, and from Aliso Creek Road to Pacific Park Drive, respectively.

Table 8-12. Proposed Alternative 3 Top of Channel Elevations Conditional Non-Exceedance Probability

Index Location	Conditional Non-Exceedance Probability by Events					
	10%	4%	2%	1%	.4%	.2%
STA 2.319	0.5138	0.3662	0.2917	0.2390	0.2042	0.1683
STA 3.956	0.5440	0.4122	0.3341	0.2662	0.2200	0.1797
STA 4.773	0.1647	0.0573	0.0284	0.0137	0.0076	0.0044
STA 5.904	0.7149	0.6394	0.5857	0.5415	0.5125	0.4912

8.9 R&U Results for Alternative 4

8.9.1 100-year Flood Event

The annual exceedance probability (AEP) and long-term risk under existing top of channel elevations are shown in Table 8-13. Based on these results, there is 41.7-percent chance of flooding in a given year due to overtopping of the channel at index location #3. There are 2.9 and 0.4-percent chance of flooding in a given year due to overtopping of the channel at index locations #1and #2, respectively.

Table 8-13. Existing Top of Channel Elevations Performance for Alternative 4

Index Location[1]	Existing Top of Channel Elevation (feet)	Annual Exceedance Probability		Long-Term Risk (Probability of Exceedance over Indicated Time Period)		
		Median	Expected	10 years	30 years	50 years
#1 - STA 1.444	46.23	0.0214	0.0291	0.2560	0.5881	0.7720
#2 - STA 3.586	102.35	0.0001	0.0039	0.0387	0.1115	0.1789
#3 - STA 4.933	145.21	0.2467	0.4165	0.9954	1.0000	1.0000
#4 - STA 6.483	191.87	0.0001	0.0019	0.0183	0.0540	0.0883

1. Locations are in the vicinity of existing conditions index locations but different due to Alternative 4 proposed improvement reach in the RAS model.

Table 8-14 shows the conditional non-exceedance probability (CNP), indicating the probability of the channel successfully containing a given flood frequency event without exceeding channel capacity. The FDA program analysis found that CNPs for a 100-year flood event (i.e., a 0.01-exceedance probability event) at two index locations along the Lower Aliso Creek did not meet the minimum requirement of 90 percent.

Table 8-14. Existing Top of Channel Elevations Conditional Non-Exceedance Probability for Alternative 4

Index Location[1]	Conditional Non-Exceedance Probability by Events					
	10%	4%	2%	1%	.4%	.2%
#1 - STA 1.444	0.9467	0.7274	0.5462	0.4136	0.3364	0.2491
#2 - STA 3.586	0.9908	0.9755	0.9599	0.9387	0.9180	0.9010
#3 - STA 4.933	0.3812	0.2892	0.2398	0.2010	0.1782	0.1590
#4 - STA 6.483	0.9957	0.9908	0.9862	0.9811	0.9781	0.9758

1. Locations are in the vicinity of existing conditions index locations but different due to Alternative 4 proposed improvement reach in the RAS model.

Note: red highlighted values are CNP values less than 90% for 1% AEP flood.

8.9.2 10-year Flood Event

Four additional index locations were selected in the R&U analysis to be representative of the proposed Alternative 4 improvements between SOCWA CTP, Wood Canyon Confluence, AWMA Road, Aliso Creek Road, and Pacific Park Drive. The AEP and long-term risk under the proposed top of channel elevations (to contain 10-year flow) are shown in Table 8-15. Based on these results the chance of overtopping the proposed top of channel in a given year is between 13.0 and 37.5 percent.

Table 8-15. Proposed Alternative 4 Top of Channel Elevations Performance

Index Location	Proposed Alternative 4 Top of Channel Elevation (feet)	Annual Exceedance Probability		Long-Term Risk (Probability of Exceedance over Indicated Time Period)		
		Median	Expected	10 years	30 years	50 years
STA 2.313	61.01	0.1064	0.2211	0.9066	0.9992	1.0000
STA 3.956	108.26	0.0741	0.1970	0.8885	0.9986	1.0000
STA 4.773	132.43	0.2750	0.3749	0.9909	1.0000	1.0000
STA 5.904	172.29	0.0072	0.1298	0.7511	0.9846	0.9990

Table 8-16 shows the CNPs for the proposed Alternative 4 improvement top of channel elevations. The CNPs for a 10-year flood event (i.e., a 0.1-exceedance probability event) are estimated to be approximately 49- to 54-, 16-, and 70- percent for reaches from SOCWA CTP to AWMA Road, from AWMA Road to Aliso Creek Road, and from Aliso Creek Road to Pacific Park Drive, respectively.

Table 8-16. Proposed Alternative 4 Top of Channel Elevations Conditional Non-Exceedance Probability

Index Location	Conditional Non-Exceedance Probability by Events					
	10%	4%	2%	1%	.4%	.2%
STA 2.313	0.4918	0.3411	0.2644	0.2076	0.1710	0.1330
STA 3.956	0.5407	0.4094	0.3325	0.2658	0.2208	0.1812

Index Location	Conditional Non-Exceedance Probability by Events					
	10%	4%	2%	1%	.4%	.2%
STA 4.773	0.1627	0.00565	0.0280	0.0134	0.0074	0.0043
STA 5.904	0.7019	0.6234	0.5681	0.5223	0.4920	0.4727

8.10 Conclusions

The proposed alternative channel alignments are different from each other and only a few index locations are remained unchanged. Therefore, it is not possible to precisely quantify the flood risk changes at the same index location among the various alternatives. Overall, the R&U results indicate potential channel overtopping at various locations for all alternatives with respect to the existing top of channel elevation. This does not satisfy NFIP criteria of providing 90% assurance of containing the 1% annual chance event for all reaches with necessary freeboard for a flood control project. However this is an ecosystem restoration project, the risk and uncertainty analysis is conducted as part of the study and is for information only. Furthermore, the potential inundated areas, where no infrastructure is threatened, are actually one of the project goals to reestablish the natural wetland areas.

The R&U analysis can also help in identifying alternative performance related to reestablishing the connection of the creek to its historic floodplain, i.e., to get Lower Aliso Creek to exceed proposed improved channel top of bank and spread out into the natural/uninhabited floodplain.

9. EROSION RATES

A required input to the economic analysis is the expected future lateral erosion rates along the project reach. This section documents the analysis of lateral erosion rates and the procedure used to develop the erosion rates.

As part of previous work performed by Tetra Tech for the USACE in the Aliso Creek F4 Geomorphic Assessment (January 2014), historical lateral erosion was investigated for the period in which historical topographic information was available. This period covered 1967 through 2006. Lateral erosion seen in the earlier part of the period was, in general, larger than seen in the latter part of the period when hydraulically driven incision was a primary driver. Figure 9-1 shows a representative cross section displaying this trend. It was concluded that as the invert of the channel stabilizes, the rate of lateral erosion has decreased, shifting from hydraulic incision to more geotechnical bank failings due to the steep bank slopes. Therefore, to predict future lateral erosion, the most recent historical rate of erosion (i.e. 1998 – 2006) would be the most representative and likely somewhat conservative as future potential is considered.

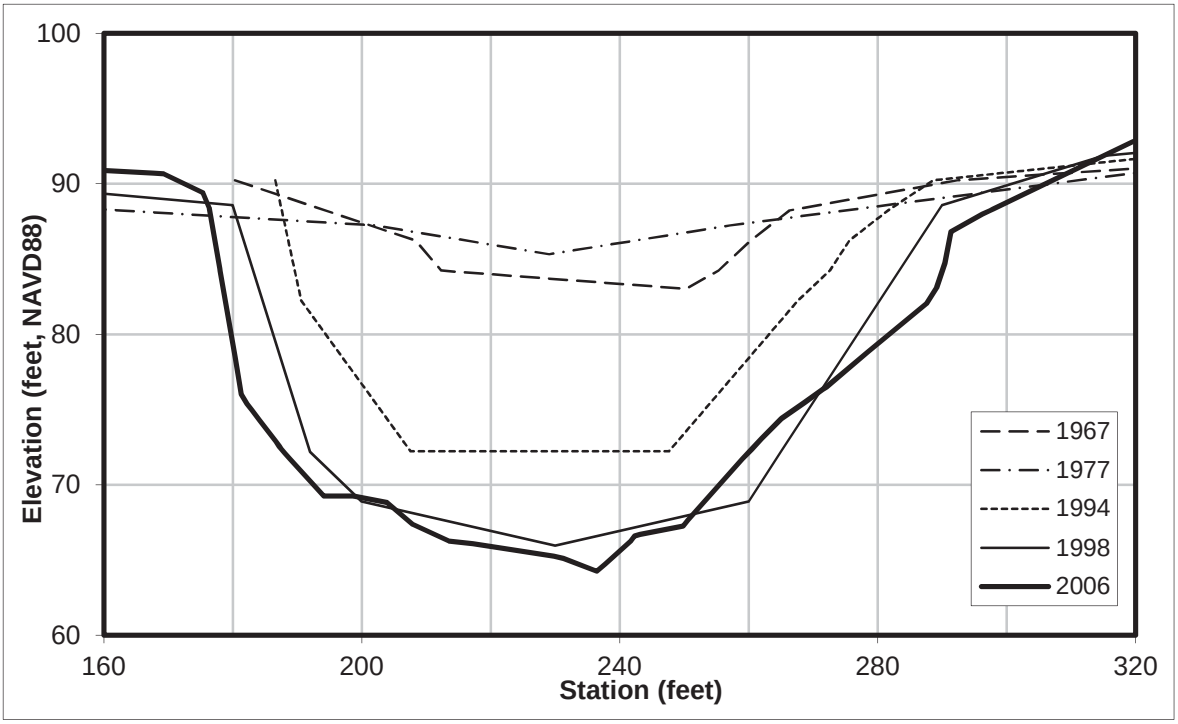

Figure 9-1 – Historical Representative Cross Section (Upstream of Wood Canyon Confluence)

An evaluation of the erosion rates indicates that more significant erosion has occurred on the west bank as compared to the east bank. Based on the hillside constraints on the east bank and the general curvature of the river to the west, difference in erosion rates for each bank are appropriate and will recommended for use in the economic analysis.

As part of work performed for South Orange County Wastewater Authority (SOCWA) in the report Lower Aliso Creek Erosion Assessment (Tetra Tech, April 2012), the potential for erosion risk to the proposed pipeline was assessed downstream of AWMA road. The potential was categorized as high (H), medium (M), or low (L) based on the bank energy index (BEI) which considers channel hydraulics and radii of curvature in channel bends.

The BEI is based on the concept of total energy (*E*) applied to the banks. Energy is defined as the product of the stream power expended on the banks and the incremental time over which it is applied (Equation 1). Bank stream power is the product of the average main channel velocity (V_{ch}) and the shear stress applied on the bank (τ_b) (Equation 2).

$$E = \int_0^t (V_{ch} * \tau_b)\ dt \quad (1)$$

where

E = total energy applied at a specific bank location

V_{ch} = average main channel velocity

τ_b = shear stress applied on the bank

dt = incremental time for discretizing the flood event hydrograph

$$\tau_b = K_b * \gamma * d_h * S_f \quad (2)$$

where

τ_b = shear stress applied on the bank at a specific location

K_b = factor that accounts for the effect of channel curvature on the shear stress acting on the outside of a channel bend

γ = unit weight of the water-sediment mixture flowing in the channel (62.4 lbs/ft3)

d_h = hydraulic depth in the channel

S_f = slope of the energy grade line

Equation (1) and Equation (2) were solved for a given flood event by discretizing flood hydrographs into a series of five-minute times-steps, calculating hydraulics for each time-step, and integrating the resulting energies at each time step over the duration of the flood hydrograph. The BEI was calculated for a flood event by normalizing the total energy applied at specific bank locations by the median energy applied at all cross sections.

After normalizing the calculated energies for each flood event at each cross section, the resulting BEI values were categorized using quartiles. The BEI values in the first quartile (Q1) represent the locations along the channel where the lowest relative energy is applied to the banks; the BEI values in the fourth quartile (Q4) represent the greatest relative energy applied to the banks. The BEI values were calculated as an indication of the relative potential for fluvial processes to initiate/maintain bank erosion. The quartile rankings were compared to observations made during the field reconnaissance as an informal check of the rankings. In general, the locations categorized in Q4 or Q3 were either 1) locations where active bank erosion was observed during the field reconnaissance, 2) locations where mass wasted bank materials were not being retained along the toe of the bank, 3) locations along the outside of bends, or 4) were locations where existing bank protection measures were observed. This indicates the BEI is a reasonable indicator of locations where fluvial processes contribute to bank erosion, or where these processes historically presented such a risk that bank protection measures were installed (commonly on an emergency basis in response to erosion that posed a threat to infrastructure). Locations categorized in Q1 tended to be cross sections that exhibited some combination of graded banks, relatively wider channels, large radii of curvature or straight reaches, inset floodplains, and hydraulically-connected overbank areas. Consequently, the categorization of the fluvial erosion potential by quartile produced results that were in general agreement with observations of existing conditions. The BEI quartiles and risk categories (H=High, M=Medium, L=Low) are provided in Attachment E along the east (left) and west (right) banks.

The erosion rates determined in each cross section from the historical topographic information were averaged on each bank for each level of risk (H, M, L) to determine average rates of erosion at these previously identified locations. The following process was used to determine the erosion rates for each cross section:

1. 108 cross sections from the 1998 and 2006 topographic mapping were used.

2. These cross sections were compared to determine the extent of erosion that has been experienced at each location in the evaluation period.

3. An average annual erosion distance was developed for each cross section group for the west and east bank. Table 9-1 provides the average annual erosion rates and the annual minimum/maximum rates over the analyzed time frame for each cross section group.

Table 9-1. Average Annual Erosion Rates

Cross Section Group*	Bank	Minimum feet/year	Mean feet/year	Maximum feet/year
E_H	East	0.00	0.25	1.25
E_M	East	0.00	0.16	1.25
E_L	East	0.00	0.18	2.50
W_H	West	0.00	2.66	12.50
W_M	West	0.00	1.63	10.00
W_L	West	0.00	1.09	9.38

Note (*) – E indicates the east bank and W indicates the west bank. Subscripts H, M, L indicate the groups identified as High, Medium, or Low risk or erosion. The very minimal erosion seen on the East bank results in rates that had very little variability and could not be distinguished between the various groups. A single rate of erosion may be considered along the east bank for the economic analysis.

4. The estimated erosion rates were plotted to determine the most adequate distribution to be applied to the data. A simple triangular distribution, using the minimum, maximum, and mean, does not necessarily reflect the data accurately, as this distribution will push the mean disproportionally higher than what would be expected. Therefore, it was determined that a lognormal distribution is the most appropriate for this data. Lognormal distributions are generally used in situations where values are positively skewed, and most of the values occur near the minimum value. For example, Figure 9-2 illustrates the data for the cross sections in group W_L and how the data tends to reflect these lognormal parameters.

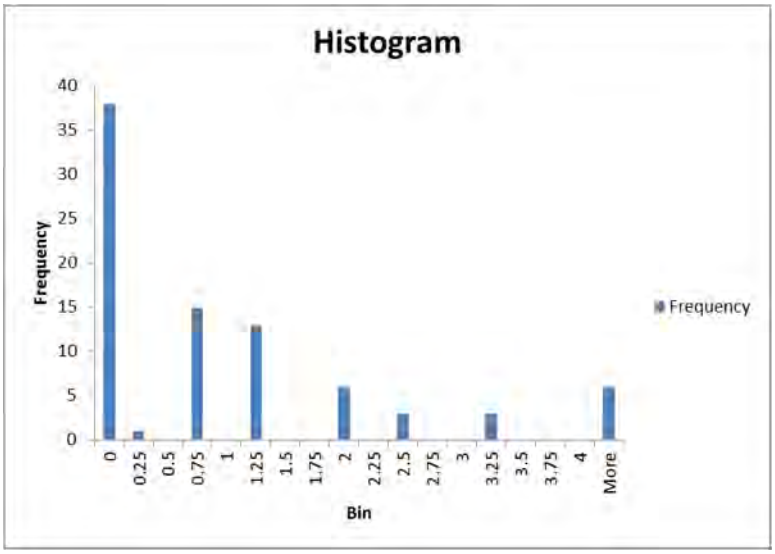

Figure 9-2 – Cross Section Group W_L Histogram

In order to develop the lognormal distributions, several pieces of information are required. These items are the location, mean, and standard deviation of the data. Table 9-2 provides all three necessary data inputs for each cross sectional group. A sample distribution graph calculated from the input parameters for W3 is shown in Figure 9-3.

Table 9-2. Distribution Parameters by Cross Section Group

Group	Location	Mean (ft/year)	Standard Deviation
E_H	0.00	0.25	0.53
E_M	0.00	0.16	0.43
E_L	0.00	0.18	0.49
W_H	0.00	2.66	4.16
W_M	0.00	1.63	2.56
W_L	0.00	1.09	1.76

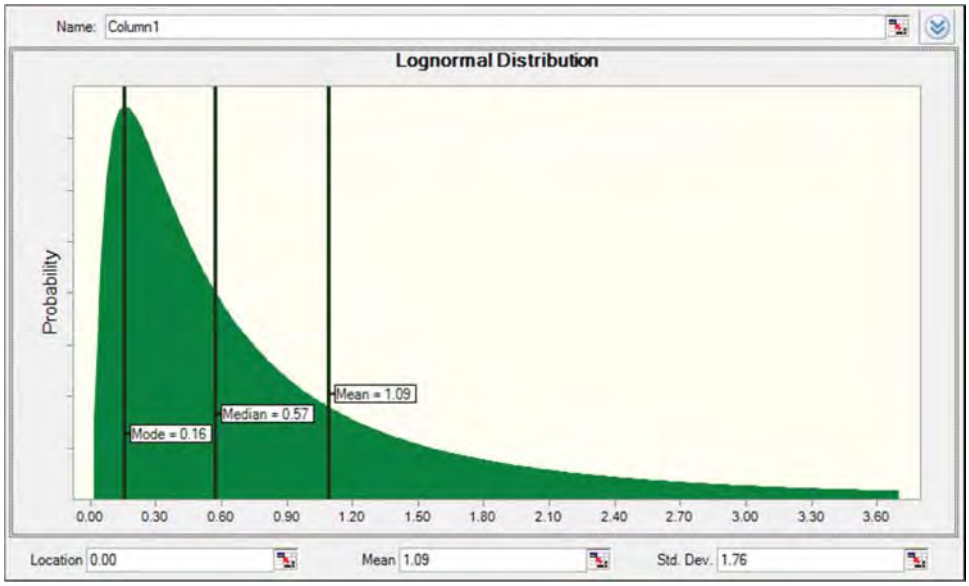

Figure 9-3 – Calculated Distribution Graph for W3

As stated previously, to predict future lateral erosion the most recent historical rate of erosion (i.e. 1998 – 2006) would be the most representative and likely somewhat conservative as future potential is considered. The erosion rates identified in Table 9-1 and 9-2 can be used for Alternative 1 – No Action Plan. For Alternatives 2 through 4 the erosion rates would be expected to be similar to Alternative 1 (the No Action Plan) in all locations except where riprap bank protection has been recommended for those alternatives. It should be noted that this includes all of the "High" and some of the "Medium" risk of erosion groups.

The erosion rates from AWMA Road to Pacific Park Drive will be developed for the 100% submittal. Provided on the project CD are the GIS files to support the results. The GIS files include delineation of the areas of high, medium, and low erosion potential for the east and west bank. Also included is a GIS file delineating the proposed alignments of the SOCWA force mains which can be used to approximate the west bank paved road and east bank dirt road.

The latest beta version of HEC-RAS includes a lateral erosion module based on the USDA Bank Stability and Toe Erosion Model (BSTEM). Ongoing modeling efforts are being made to calibrate the results of that model with recent erosion rates discussed above. Available geotechnical boring data in the banks was used to develop bank material layers that are reflective of field conditions. The model and results have been provided to HEC and the program is currently undergoing some program coding improvements. The updated RAS model including the BSTEM modeling will be incorporated once program updates are complete.

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10. HYDRAULIC EFFECTS OF STREAM LENGTHENING

10.1 Stream Lengthening

As part of the additional measures, potential sites for stream lengthening were investigated and the hydraulic effects of the lengthening were analyzed. Stream lengthening would be achieved by zigzagging a channel alignment in open fields. However, because the existing channel is located along the narrow valley between high hills, potential areas to meander a 200 feet wide proposed channel (wider than the existing channel) are somewhat limited. Additionally, because the proposed channel follows the existing channel alignment, which already meanders through floodplains between the valleys, the stream lengthening can only be achieved in open fields where the existing channel currently extends in an approximately straight line. In the areas where space is available, the relocation of the existing access road on the west bank (AWMA Road) will be considered and incorporated into the alternative design layout as necessary to accommodate the channel grading. With the limitations described above, below are four potential locations to lengthen the current channel alignment:

1. Abandoned oxbow – as part of a design measure C which reconnects the abandoned oxbow to the active flow stream, various historical thalweg lines were studied. Based on the Geomorphic Assessment Report (Tetra Tech 2014), the 1939 thalweg formed an S-curve type low flow line in the oxbow area which would lengthen the current alignment by approximately 630’ (the 1959 thalweg formed even wider S-curve that would lengthen it by almost 1,400’).

2. Downstream of Wood Canyon Creek confluence – There is an open space immediately downstream of the confluence with Wood Canyon Creek. The maximizing the open space would add approximately 60’.

3. Near Skate Park – This lengthening needs to be considered in conjunction with another design measure: Skate Park relocation. Once the surface features on the park are relocated, the dirt below can be removed and excavated to allow additional riparian habitat or channel lengthening. The maximizing the open space would add approximately 120’.

4. Between Pacific Park Drive and previously improved reach – There is an open space immediately downstream of the Pacific Park Drive Bridge. The channel already meanders in this area and maximizing the open space would add about 40’ to the channel length.

5. Adding more sinuosity to low-flow channel at places – This option is not limited to specific areas. The overall channel length could be increased by adding more sinuosity to the low flow channel (the 100-foot wide, 2-year channel) within the limits of the 200-foot, 10-year channel at the areas where the low-flow channel is relatively straight.

The hydraulic effects of stream lengthening would be relatively significant only for the abandoned oxbow area where the lengthening of 630 feet between three rock riffles (for Alternatives 3 & 4) would flatten the bed slope and cause potential sedimentation effects.

A sensitivity analysis to stream lengthening (slope flattening) in the area of the abandoned oxbow was conducted by the sediment transport model run with the daily flow series shown in Figure 6-4. The simulated thalweg profile (red line in Figure 10-1) illustrates potential sedimentation on a flatter slope (< 0.2%) between riffles. The maximum predicted deposition is on the order of 1.7 feet (Figure 10-2) downstream of the affected rock riffles. The designed channel template in this area should be narrower to increase flow velocity and offset the loss of sediment transport capacity by slope flattening when additional measure C is implemented (reconnection of abandoned oxbow).

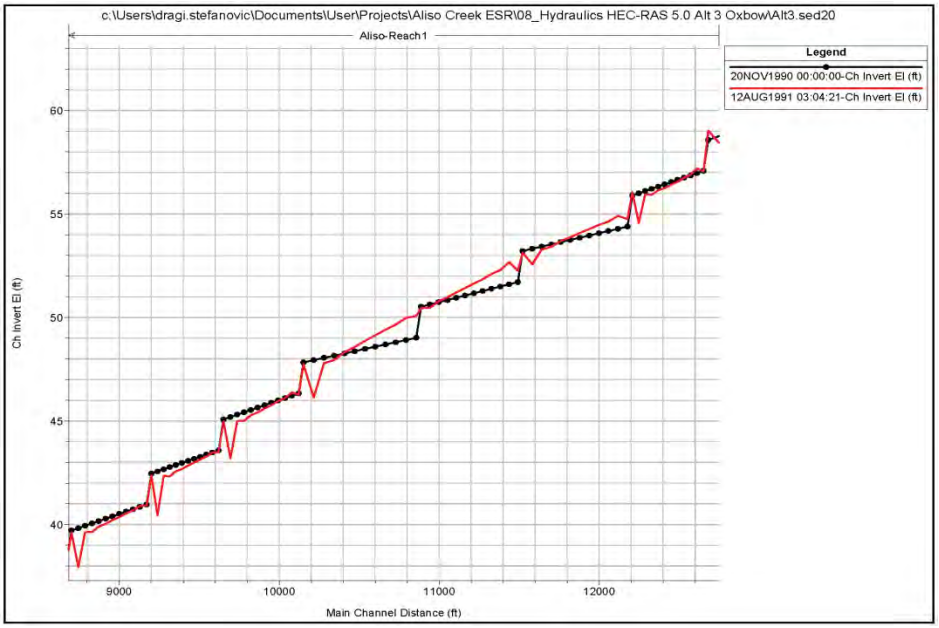

Figure 10-1 – Simulated Thalweg Profile in Abandoned Oxbow Area (Red Line)

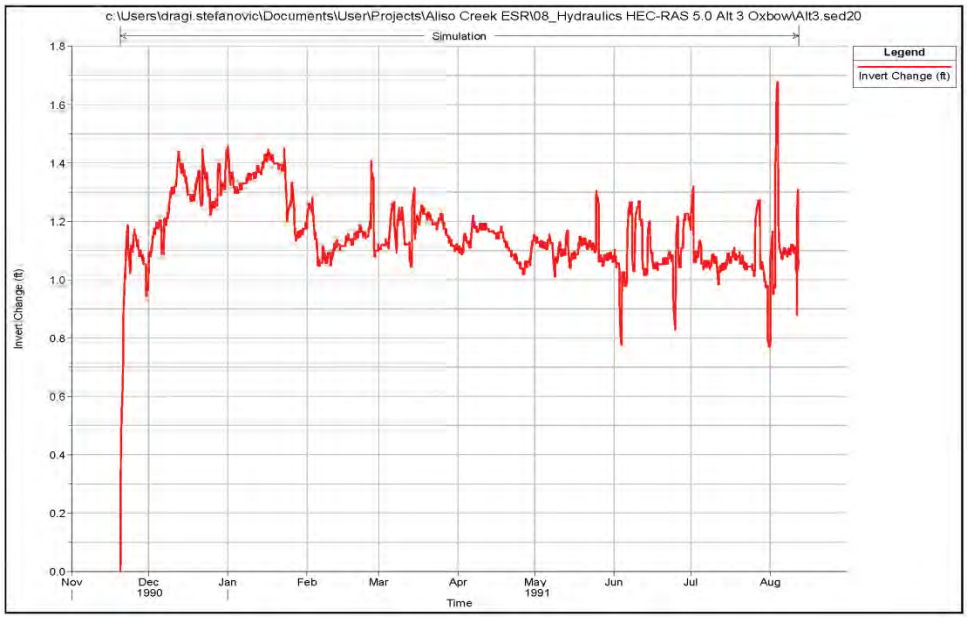

Figure 10-2 – Potential Sediment Deposition Downstream of Rock Riffles for Flattened Channel Slope in Abandoned Oxbow Area

Hydraulic effects of added sinuosity in other areas would not be significant because the channel lengthening is less than 10 percent of the original stream length (see Tables 3-5 and 3-6 in the *Draft TSP Design Appendix*, Tetra Tech 2015), resulting in minor increase in friction loss and comparable loss of sediment transport capacity due to slope flattening.

11. DISCUSSION OF ALTERNATIVES

As described in Section 1.2, the project implements the baseline design and additional measures to meet the improvement purpose of each alternative. This appendix report summarizes the findings of the hydrologic and hydraulics analysis, sediment transport and scour analysis, risk and uncertainty analysis, and other pertinent analyses that would be helpful in sizing and laying out the design components to be included in each alternative and in predicting how those design components would perform in real life settings. Some of the hydraulic model geometry such as streambed profiles and locations of riffle structures are adjusted and finalized through a repetitive refining process between running the initial hydraulic models and designing it on the CADD platform to ensure the design constraints and requirements are met.

11.1 Alternative 1

This alternative is a No-Action plan and reflects the existing conditions along Aliso Creek. No design improvement is planned for this alternative, and it would serve as a basis for alternative comparison and selection. The existing channel is deeply incised (i.e., top-of- bank elevation is much higher than the 10-year flow elevation) and would not experience any flow breakout for the 10-year flow event except in few localized areas. One of these is the area immediately upstream of ACWHEP structure, where the existing drop structure (ACWHEP) creates very flat streambed slope (~0.25%) and a relatively shallow low-flow channel. It appears that even for the 10-year flow, the resulting floodplain is approximately 600 feet wide which is six-times larger than the average floodplain width (100 feet wide). Based on the limited number of breakouts seen in the HEC-RAS cross sections for the 10-year flow, there is not significant connection between the active channel and historic floodplains in Alternative 1. For the 100-year flow, the existing channel would see a slight increase in the number of channel breakouts and size of the floodplain, but the breakouts are very isolated and not continuous along the creek.

Based on the sediment transport analysis, upstream of ACWHEP structure to Aliso Creek Road, the channel grade is generally stable with some localized incision (up to 4 feet). Downstream of ACWHEP structure, the simulated bed is not showing much incision (on the order of 1-4 feet, except downstream of SOCWA CTP bridge). The Aliso Creek F4 Geomorphic Assessment (Tetra Tech 2014) concludes that “future vertical adjustments to the bed profile are expected to be limited because the widened channel and decreased channel slope have decreased unit discharge and bed material transport capacity and the concentration of coarse pebbles in riffles and plugs has increased the critical flows needed to mobilize these materials. Two location of probable future bed degradation were identified were the channel bed is incising through clay exposures. At both locations, the maximum incision was calculated to be on the order of 3 to 4 feet, with the degradation occurring within approximately 10 years.” These findings are fairly consistent with simulated trends in the sediment transport model. The total amount of sediment supplied to the ocean in existing conditions (Alternative 1) is estimated between 40,000 and 60,000 tons/year on average.

11.2 Alternative 2

This alternative incorporates a single trapezoidal channel template on a constant bed slope of 0.4% that represents a stable slope observed in the geomorphic reach downstream of ACWHEP structure. Alternative 2 exhibits somewhat lower entrenchment ratios than Alternative 1 but has larger width-to-depth ratios, which is conducive to limiting bed degradation as confirmed by the sediment transport analysis. Because of slightly lower entrenchment ratios, no reconnection to the historic floodplain is

achieved for either the 10-year and 100-year flows with the exceptions of the very few localized areas observed in Alternative 1.

Downstream of the ACWHEP structure, a self-sustained channel in equilibrium is established (i.e., no degradation or aggradation) all the way to SOCWA CTP. Although grade control stabilizers are not needed here to prevent vertical bed adjustment, the Newbury riffles can be constructed on the designed streambed at certain locations to impound shallow pools (if environmentally desirable) at desired depths between the riffles and to limit lateral migration of the channel planform (if sides are extended to a 10-year flow elevation). Alternative 2 supplies on average 41,000 tons/year of sediment to the ocean, based on the daily-flow sediment transport analysis of the vertical streambed adjustment. No significant lateral bank erosion is expected in this alternative because channel side slopes are laid back to a stable configuration (3H:1V or flatter).

11.3 Alternative 3

This alternative incorporates a compound channel template that includes a 100 feet wide, 2-year flow channel and a 200 feet wide, 10-year flow channel. The designed rock riffles along the proposed channel, between SOCWA CTP Bridge and AWMA Road, allow for a stable streambed slope of 0.25% between the riffles. By strategically placing riffles to satisfy the recommended environmental constraints (for riffle height and spacing), the streambed elevation is raised as much as possible while meeting other design criteria such as maximum ramp slope, maximum riffle velocity (for stone sizing), and balancing of the earthwork quantities.

For the 10-year flow, the resulting floodplain is approximately 200 feet wide, which is twice as wide as the average width of the existing channel. As part of this alternative the ACWHEP structure is removed and replaced with a proposed channel which efficiently conveys the flow through this area, eliminating the wide floodplain observed in this area for Alternative 1. For the 100-year flow, a limited increase in the number of localized channel breakouts is observed, resulting in slightly improved reconnection to historic floodplain. However, Alternative 3 has the largest entrenchment ratios (in some reaches above 2.2) due to a compound channel template with relatively large width-to-depth ratios (> 30) that provide more developed 10-year floodplain and reduce potential bed degradation as confirmed by the sediment transport analysis. Although floodplain connectivity in Alternative 3 is limited to the 2-year flow benches, these benches dissipate some flood energy and provide a flat depositional feature, which allows riparian vegetation to become established. By raising the channel profile, Alternative 3 will also raise the elevation of the groundwater giving more readily accessible water to the roots of the trees on the historic floodplain.

Based on the sediment transport analysis, the proposed channel grade between rock riffles is stable with localized scour just upstream of the riffles. In order to promote deeper scour depths between riffles (if desirable from the environmental perspective), a somewhat narrower compound template with lower width-to-depth ratio can be designed to increase local scour velocities. Alternative 3 supplies on average about 44,000 tons/year of sediment to the ocean, based on the daily-flow sediment transport analysis of the vertical streambed adjustment. No significant lateral bank erosion is expected in this alternative because channel side slopes are laid back to a stable configuration (3H:1V or flatter) and designed rock riffles prevent lateral migration of the channel planform.

11.4 Alternative 4

This alternative also incorporates a compound channel template that includes a 100 feet wide, 2-year flow channel and 200 feet wide, 10-year flow channel. However, the design target in this alternative

is to raise the streambed to intermediate elevation between the current streambed and the historic pre-incised streambed. Therefore, the channel invert in Alternative 4 is below that in Alternative 3 (about 5 feet lower at ACWHEP structure location). Alternative 4 requires fish connectivity through the main channel, as such the invert elevations have to be closer to Alternative 3 (which also requires fish connectivity) than that of Alternative 2 which basically halts fish connectivity at ACWHEP structure. If Alternative 4 was lower (say half way between Alternative 2 and Alternative 3 at ACWHEP structure), it would require more grade stabilizers upstream of ACWHEP to cover larger elevation difference. This would also increase the overall erosion potential upstream of ACWHEP structure as the reach-averaged flow velocities would increase.

For the 10-year flow, the resulting floodplain is approximately 200 feet wide, which is twice as wide as the average width of the existing channel. The floodplain characteristics are similar to Alternative 3, with slightly smaller 10-yr and 100-yr floodplains. Alternative 4 has slightly higher width-to-depth ratios than Alternative 3. Floodplain connectivity is also similar to Alternative 3, limited to the 2-year flow benches that are lower than those in Alternative 3. Consequently, Alternative 4 would not raise the elevation of the groundwater as much as Alternative 3.

It should be noted that any channel breakouts for both Alternatives 3 and 4 are localized and mostly contained within the steep banks of the incised channel. Consequently, the increase in floodplain size does not significantly improve connection with historic floodplains for the proposed alternatives with the raised bed. This is the result of multiple project constraints that were imposed on the design alternatives to achieve geomorphic channel stability and aquatic wildlife connectivity within the project limits: 1) regime channel template with limited top width of 200 feet; 2) maximum riffle height of 18 inches; 3) minimum spacing between riffles of 5-7 channel widths; 4) equilibrium channel slope between riffles. Within the project limits, there are several areas where some flow breakouts occur, with an opportunity to do additional grading (lowering the terrain) in the overbank to pull out the 10-year floodplain fringe farther and increase the size of the floodplain. The isolated grading in those areas will be done in the post-TSP phase.

There is no significant difference in the vertical bed adjustment between Alternatives 3 and 4. The proposed channel grade between rock riffles is stable with localized scour just upstream of the riffles. Alternative 4 supplies on average about 41,000 tons/year of sediment to the ocean, based on the daily-flow sediment transport analysis of the vertical streambed adjustment. No significant lateral bank erosion is expected in this alternative because channel side slopes are laid back to a stable configuration (3H:1V or flatter) and designed rock riffles prevent lateral migration of the channel planform.

11.5 Additional Design Considerations for Future Study

It is recommended that the future phases of the study include the following items for additional analysis:

- Localized and strategic grading (lowering the terrain) in the overbanks to pull out the 10-year floodplain fringe farther and increase the overall size of the floodplain
- Potential backwater inundation areas
- Fail-safe measures to be implemented within riffle structures
- Variations in the channel template along the project reach based on the variation in discharge

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Attachments

LIST OF ATTACHMENTS

A. Field Investigation Photo Log with Field Notes

B. Hydraulic Tables & Floodplain Maps

C. Sediment Transport Data and Results

D. Scour Analysis Tables

E. Bank Energy Index (BEI) Results

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Attachment A

Field Investigation Photo Log
with Field Notes

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Photo 1 – D/S Face of RCB Culvert under Pacific Park Drive

Photo 2 – Looking D/S along Aliso Creek from Pacific Park Drive Culvert

Photo 3 – Grouted Riprap across Streambed Possibly for Utility Crossing (approximately 180' D/S of Pacific Park Drive Culvert D/S Face)

Photo 4 – Skate Park / Soccer Field to be Relocated (on East Bank)

Photo 5 – Access Road along East Bank of Aliso Creek near Skate Park/Soccer Field

Photo 6 – Drop Structure to be Removed, Located U/S of Aliso Creek Road Bridge

Photo 7 – Drop Structure to be Removed, Located U/S of Aliso Creek Road Bridge (Close-up)

Photo 8 – Looking D/S along Aliso Creek at Aliso Creek Road Bridge from Drop Structure to be Removed

Photo 9 – Looking at U/S Face of Aliso Creek Road Bridge

Photo 10 – Looking U/S along Aliso Creek from Aliso Creek Road Bridge

Photo 11 – Looking U/S at SD outlet on West Bank (Aliso Creek Road Bridge to the Right of Photo)

Photo 12 – Drop Structure to be Removed, Located D/S of Aliso Creek Road Bridge

Photo 13 – Grouted Riprap Drop Structure to be Removed, Located D/S of Aliso Creek Road

Photo 14 – D/S Face of AWMA Road Bridge

Photo 15 – Grouted Riprap Drop Structure Immediately D/S of AWMA Road Bridge

Photo 16 – Looking U/S along Aliso Creek from AWMA Road Bridge

Photo 17 – Existing RCB Culvert along Sulphur Creek underneath Alicia Parkway

Photo 18 – Looking D/S along Sulphur Creek between Aliso Creek Confluence and Ex. RCB underneath Alicia Parkway

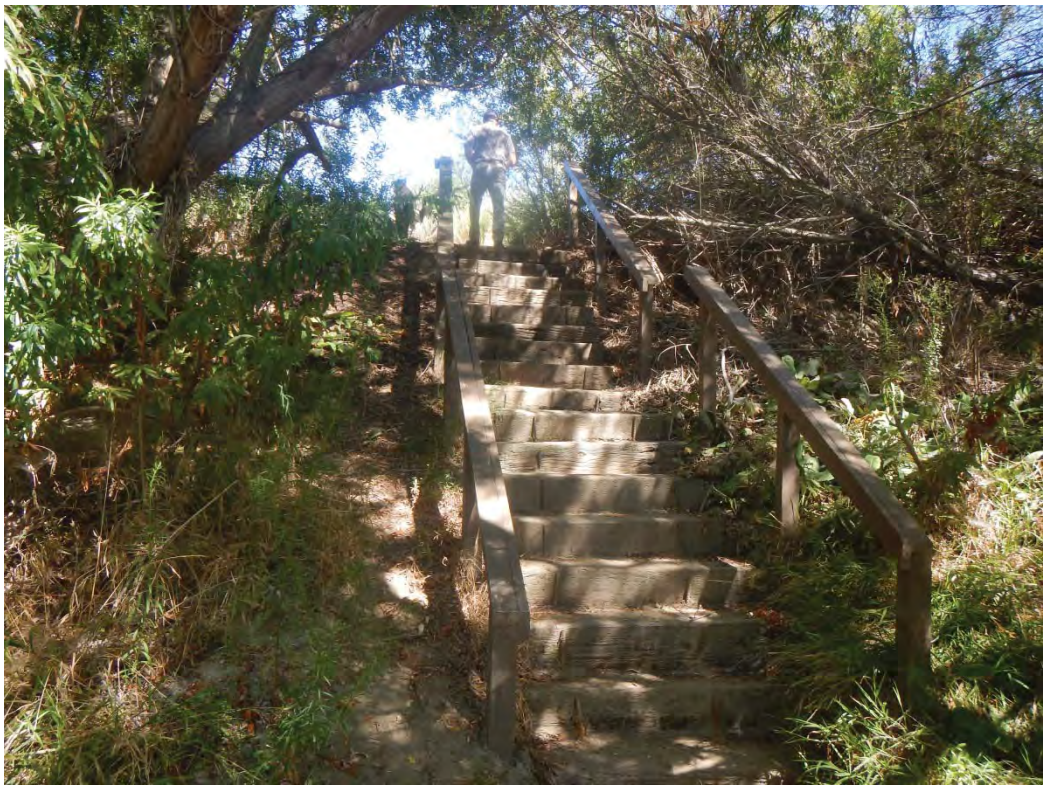


Photo 19 – Pedestrian Streambed Access Point to be Replaced (Approximately 650' D/S of Sulphur Creek Confluence)

Photo 20 – Looking D/S from Top of ACWHEP Structure

Photo 21 – Looking U/S at D/S End of Outlet Pipe through ACWHEP Structure

Photo 22 – D/S End of Wood Canyon Creek Culverts under Paved Trail at Aliso Creek Confluence ((3) 42”(W) x 30”(H) Elliptical CMPs)

Photo 23 – Looking D/S at Aliso Creek Confluence from Wood Canyon Creek Culverts

Photo 24 – Abandoned Oxbow (Looking from the West Bank)

Photo 25 – Looking U/S along Aliso Creek from SOCWA Coastal Treatment Plant Bridge

Photo 26 – Looking at D/S Face of SOCWA Coastal Treatment Plant Bridge

Photo 27 – Looking U/S along Aliso Creek Low Flow Channel underneath SOCWA Coastal Treatment Plant Bridge

Photo 28 – U/S Limit of Grouted Riprap underneath SOCWA Coastal Treatment Plant Bridge

Photo 29 – D/S Limit of Grouted Riprap underneath SOCWA Coastal Treatment Plant Bridge

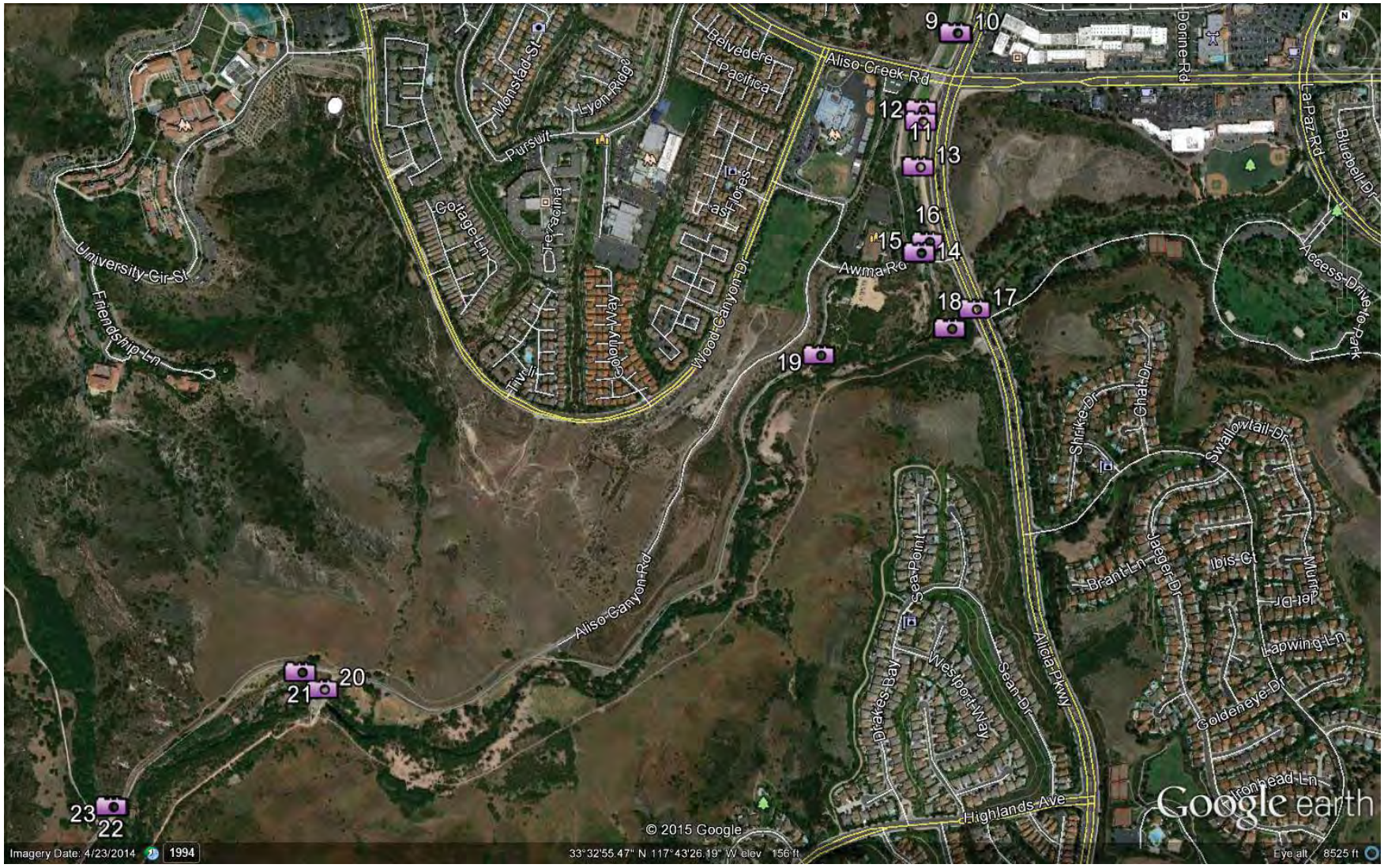
Photo 30 – Typical View of Un-used Parking Lot across Alicia Parkway for Skate Park/Soccer Field Relocation

Aliso Creek Photo Location

TETRA TECH

Aliso Creek Photo Location

TETRA TECH



Aliso Creek Photo Location

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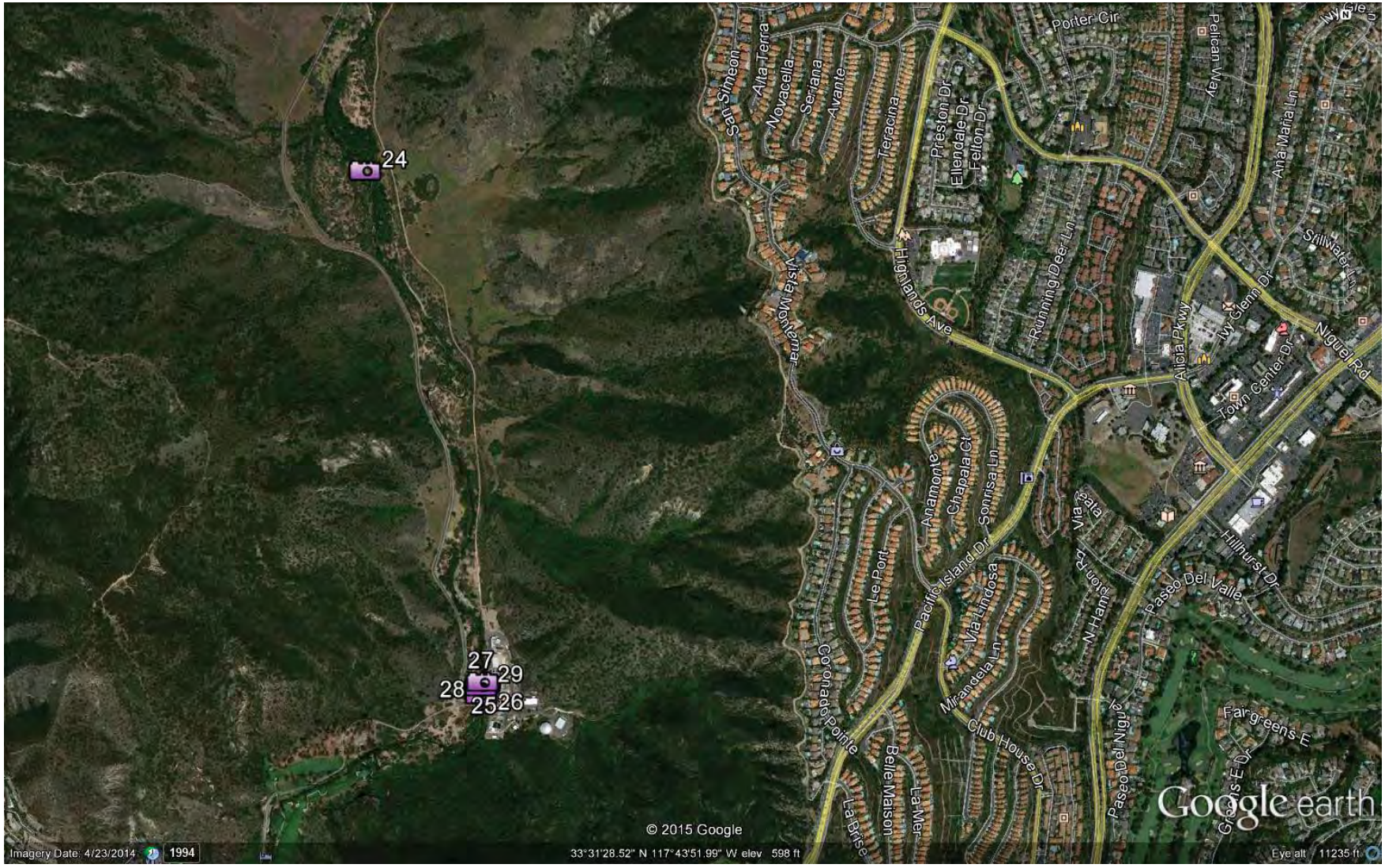

Aliso Creek Field Notes August 27, 2014

Photo	Title	Note
1	D/S Face of RCB Culvert under Pacific Park Drive	An approximately 270' long reach immediately downstream of the Pacific Park Drive was grouted and will be protected in place in the design. This is the most u/s reach 12 of the study area. Approximately 250 feet of the channel immediately below the culvert outlets is engineered and the banks are lined with riprap. Bank heights in this reach are no greater than 10 ft. More coarse gravel plugs observed in this reach. Sands and fine gravels observed in the bed between the coarser controls.
2	Looking D/S along Aliso Creek from Pacific Park Drive Culvert	
3	Grouted Riprap across Streambed Possibly for Utility Crossing (approximately 180' D/S of Pacific Park Drive Culvert D/S Face)	
4	Skate Park / Soccer Field to be Relocated (on East Bank)	This area belongs to reach 11 across the Aliso Niguel High School. Riprap observed at various places. Bank heights range from 10 to 20 feet. Outcrops of clay observed in the bed and in the toe of the banks through this reach. Coarse gravel plugs also spaced along the reach and sandy deposition observed in the pools between plugs. Relatively sinuous reach.
5	Access Road along East Bank of Aliso Creek near Skate Park/Soccer Field	
6	Drop Structure to be Removed, Located U/S of Aliso Creek Road Bridge	Reach 10 existing drop structure will be removed. The structure is 10 feet high (installed in 1969) and controls the incision associated with the channel straightening. Bed material here primarily sand and fine gravels, throughout reach 10.
7	Drop Structure to be Removed, Located U/S of Aliso Creek Road Bridge	
8	Looking D/S along Aliso Creek at Aliso Creek Road Bridge from Drop Structure to be Removed	A segment between Aliso Creek Road Bridge and upstream 10-ft-high drop structure appears to be lined with soil cement. Existing storm drains on the east bank need to be modified to accommodate the channel widening. Reach 10 bank heights between 10 and 15 feet.
9	Looking at U/S Face of Aliso Creek Road Bridge	Space between the bridge and top of bank may not be high enough for heavy construction vehicles. (high enough for passenger vehicles). Reach 10.
10	Looking U/S along Aliso Creek from Aliso Creek Road Bridge	Reach 10. Bed material primarily sand and fine gravel.
11	Looking U/S at SD outlet on West Bank (Aliso Creek Road Bridge to the Right of Photo)	
12	Drop Structure to be Removed, Located D/S of Aliso Creek Road Bridge	Existing drop structure will be removed. Reach 10.
13	Grouted Riprap Drop Structure to be Removed, Located D/S of Aliso Creek Road	Reach 10.
14	D/S Face of AWMA Road Bridge	This bridge will behave as constriction of flow if the upstream reach is widened. Channel transition may be required. This is u/s end of reach 9.
15	Grouted Riprap Drop Structure Immediately D/S of AWMA Road Bridge	
16	Looking U/S along Aliso Creek from AWMA Road Bridge	Existing vegetation upstream of the AWMA Road Bridge is well established. Reach 9.
17	Existing RCB Culvert along Sulphur Creek underneath Alicia Parkway	This short segment of Sulphur Creek has steep banks. The channel invert immediately downstream of the culvert was eroded and created 3 to 4' drop. Reach 9 has narrower bottom width. Bed is coarser comprised primarily of gravels and cobbles.
18	Looking D/S along Sulphur Creek between Aliso Creek Confluence and Ex. RCB underneath Alicia Parkway	

Photo	Title	Note
19	Pedestrian Streambed Access Point to be Replaced (Approximately 650' D/S of Sulphur Creek Confluence)	This is reach 8 area (confluence of Sulphur Creek is the u/s end of reach 8). Bank height are ~ 30 feet. Near the confluence a thick layer of clay observed. Bed material reflects series of coarse gravel and cobble plugs between long sand storage reaches. Sinuous reach.
20	Looking D/S from Top of ACWHEP Structure	ACWHEP structure is about 25 feet high, made of grouted riprap and located at the d/s end of reach 7. Reach 7 us of the structure is stabilized and serves as a sediment sink, storing bed material transported from the u/s watershed. Bank heights in reach 7 are relatively low (4-10 feet). Bed material primarily depositional sand and fine gravels (some cobble plugs still present). D/s of the structure is reach 6, coarse riffles observed on the bed with presence of sands and fine gravels. Scoured area d/s of the structure is wide (~150 feet).
21	Looking U/S at D/S End of Outlet Pipe through ACWHEP Structure	
22	D/S End of Wood Canyon Creek Culverts under Paved Trail at Aliso Creek Confluence ((3) 42"(W) x 30"(H) Elliptical CMPs)	This is reach 5C with abundance of sand stored in the bed. Confluence of Wood Canyon Creek. Some localized bank erosion expected to continue where the active channel impinges on the toe of the terrace.
23	Looking D/S at Aliso Creek Confluence from Wood Canyon Creek Culverts	
24	Abandoned Oxbow (Looking from the West Bank)	This is u/s end of reach 4B (S-bend is at the d/s end). Due to historical landslides, degradation of the channel exposed coarse gravel and cobble plugs as well as clay and sandstone outcrops. Some sandy bed deposits also present but the bed profile is controlled by the coarser material.
25	Looking U/S along Aliso Creek from SOCWA Coastal Treatment Plant Bridge	This is reach 4A, older riprap bank protection observed at places. A few natural grade controls in the reach (coarse gravel, cobble plugs/riffles). Sandy material in the pools u/s of the coarse gravel and plugs.
26	Looking at D/S Face of SOCWA Coastal Treatment Plant Bridge	The SOCWA CTP Bridge area appears to be well stabilized with concrete sills and grouted riprap. D/s of SOCWA CTP Bridge is reach 3. The overbanks are well vegetated. The reach is located in a narrow portion of the canyon that separates the Aliso and Wood Canyons Wilderness Park from the Aliso Creek Golf Course. Bank heights are fairly consistent (~ 9 feet). No sediment deposition was observed u/s of the concrete sill. Bed material mostly sand.
27	Looking U/S along Aliso Creek Low Flow Channel underneath SOCWA Coastal Treatment Plant Bridge	
28	U/S Limit of Grouted Riprap underneath SOCWA Coastal Treatment Plant Bridge	
29	D/S Limit of Grouted Riprap underneath SOCWA Coastal Treatment Plant Bridge	
30	Typical View of Un-used Parking Lot across Alicia Parkway for Skate Park/Soccer Field Relocation	East of drop structure to be removed, located u/s of Aliso Creek Road Bridge in reach 10.

Attachment B

Hydraulic Tables & Floodplain Maps
(Alternatives 1 through 4)

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Hydraulic Tables
Alternative 1

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Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
9.000	2-YR	248.10	252.55	4.45	263.98	262.98	0.0168	3.30			5.61			1,020	1,020	100.0	0.0	55.13	253.04	12.39					
9.000	5-YR	248.10	254.31	6.21	263.98	262.98	0.0168	4.64			5.98			1,700	1,700	100.0	0.0	61.22	254.86						
9.000	10-YR	248.10	255.16	7.06	263.98	262.98	0.0168	5.27			6.28			2,120	2,120	100.0	0.0	64.11	255.77						
9.000	25-YR	248.10	256.04	7.94	263.98	262.98	0.0168	5.89			6.71			2,650	2,650	100.0	0.0	67.07	256.74						
9.000	50-YR	248.10	256.62	8.52	263.98	262.98	0.0168	6.29			6.99			3,040	3,040	100.0	0.0	69.18	257.38						
9.000	100-YR	248.10	257.20	9.10	263.98	262.98	0.0168	6.68			7.27			3,460	3,460	100.0	0.0	71.28	258.02						
9.000	200-YR	248.10	257.62	9.52	263.98	262.98	0.0168	6.95			7.48			3,780	3,780	100.0	0.0	72.77	258.49						
9.000	500-YR	248.10	258.21	10.11	263.98	262.98	0.0168	7.33			7.77			4,270	4,270	100.0	0.0	74.89	259.15						
8.750	2-YR	242.60	251.25	8.65	260.00	261.96	0.0000	4.66			3.77			1,020	1,020	100.0	0.0	58.19	251.47	6.73					
8.750	5-YR	242.60	253.05	10.45	260.00	261.96	0.0000	5.27			4.38			1,700	1,700	100.0	0.0	73.58	253.35						
8.750	10-YR	242.60	253.92	11.32	260.00	261.96	0.0000	5.58			4.65			2,120	2,120	100.0	0.0	81.71	254.25						
8.750	25-YR	242.60	254.81	12.21	260.00	261.96	0.0000	6.12			4.99			2,650	2,650	100.0	0.0	86.71	255.20						
8.750	50-YR	242.60	255.40	12.80	260.00	261.96	0.0000	6.47			5.21			3,040	3,040	100.0	0.0	90.06	255.82						
8.750	100-YR	242.60	255.99	13.39	260.00	261.96	0.0000	6.81			5.43			3,460	3,460	100.0	0.0	93.58	256.45						
8.750	200-YR	242.60	256.41	13.81	260.00	261.96	0.0000	7.05			5.59			3,780	3,780	100.0	0.0	95.89	256.89						
8.750	500-YR	242.60	257.00	14.40	260.00	261.96	0.0000	7.41			5.81			4,270	4,270	100.0	0.0	99.12	257.53						
8.500	2-YR	242.60	247.76	5.16	260.71	261.96	0.0085	2.84			9.59			1,020	1,020	100.0	0.0	37.43	249.19	7.25					
8.500	5-YR	242.60	249.00	6.40	260.71	261.96	0.0085	3.58			10.85			1,700	1,700	100.0	0.0	43.80	250.82						
8.500	10-YR	242.60	249.65	7.05	260.71	261.96	0.0085	3.94			11.36			2,120	2,120	100.0	0.0	47.32	251.66						
8.500	25-YR	242.60	250.41	7.81	260.71	261.96	0.0085	4.28			11.81			2,650	2,650	100.0	0.0	52.39	252.58						
8.500	50-YR	242.60	250.91	8.31	260.71	261.96	0.0085	4.50			12.09			3,040	3,040	100.0	0.0	55.84	253.18						
8.500	100-YR	242.60	251.40	8.80	260.71	261.96	0.0085	4.72			12.37			3,460	3,460	100.0	0.0	59.22	253.78						
8.500	200-YR	242.60	251.74	9.14	260.71	261.96	0.0085	4.88			12.58			3,780	3,780	100.0	0.0	61.56	254.20						
8.500	500-YR	242.60	252.25	9.65	260.71	261.96	0.0085	5.10			12.85			4,270	4,270	100.0	0.0	65.09	254.81						
8.250	2-YR	239.80	245.20	5.40	255.76	257.68	0.0023	3.32			2.42			1,020	1,020	100.0	0.0	126.88	245.29	23.50					
8.250	5-YR	239.80	246.38	6.58	255.76	257.68	0.0023	3.83			2.84			1,700	1,700	100.0	0.0	156.44	246.51						
8.250	10-YR	239.80	246.93	7.13	255.76	257.68	0.0023	4.35			3.10			2,120	2,120	100.0	0.0	157.26	247.08						
8.250	25-YR	239.80	247.55	7.75	255.76	257.68	0.0023	4.95			3.38			2,650	2,650	100.0	0.0	158.11	247.73						
8.250	50-YR	239.80	247.98	8.18	255.76	257.68	0.0023	5.36			3.58			3,040	3,040	100.0	0.0	158.66	248.18						
8.250	100-YR	239.80	248.42	8.62	255.76	257.68	0.0023	5.78			3.76			3,460	3,460	100.0	0.0	159.31	248.64						
8.250	200-YR	239.80	248.75	8.95	255.76	257.68	0.0023	6.09			3.88			3,780	3,780	100.0	0.0	159.79	248.99						
8.250	500-YR	239.80	249.24	9.44	255.76	257.68	0.0023	6.55			4.06			4,270	4,270	100.0	0.0	160.50	249.49						
8.000	2-YR	239.03	243.09	4.06	253.00	256.73	0.0156	2.04			7.11			1,020	1,020	100.0	0.0	70.37	243.87	17.33					
8.000	5-YR	239.03	244.28	5.25	253.00	256.73	0.0156	2.63			7.11			1,700	1,700	100.0	0.0	91.06	245.06						
8.000	10-YR	239.03	244.92	5.89	253.00	256.73	0.0156	2.94			7.02			2,120	2,120	100.0	0.0	102.78	245.69						
8.000	25-YR	239.03	245.68	6.65	253.00	256.73	0.0156	3.40			6.89			2,650	2,650	100.0	0.0	113.22	246.42						
8.000	50-YR	239.03	246.16	7.13	253.00	256.73	0.0156	3.78			6.91			3,040	3,040	100.0	0.0	116.45	246.91						
8.000	100-YR	239.03	246.67	7.64	253.00	256.73	0.0156	4.14			6.92			3,460	3,460	100.0	0.0	120.79	247.42						
8.000	200-YR	239.03	247.05	8.02	253.00	256.73	0.0156	4.40			6.92			3,780	3,780	100.0	0.0	124.24	247.79						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
8.000	500-YR	239.03	247.59	8.56	253.00	256.73	0.0156	4.77			6.95			4,270	4,270	100.0	0.0	128.80	248.34						
7.900	2-YR	233.90	239.43	5.53	250.07	250.00	0.0061	3.80			5.37			1,020	1,020	100.0	0.0	49.97	239.88	9.04					
7.900	5-YR	233.90	241.10	7.20	250.07	250.00	0.0061	4.79			6.06			1,700	1,700	100.0	0.0	58.57	241.67						
7.900	10-YR	233.90	241.94	8.04	250.07	250.00	0.0061	5.28			6.39			2,120	2,120	100.0	0.0	62.88	242.58						
7.900	25-YR	233.90	243.17	9.27	250.07	250.00	0.0061	5.94			6.41			2,650	2,650	100.0	0.0	69.56	243.81						
7.900	50-YR	233.90	243.64	9.74	250.07	250.00	0.0061	6.20			6.81			3,040	3,040	100.0	0.0	72.06	244.36						
7.900	100-YR	233.90	244.12	10.22	250.07	250.00	0.0061	6.45			7.18			3,460	3,460	100.0	0.0	74.63	244.92						
7.900	200-YR	233.90	244.47	10.57	250.07	250.00	0.0061	6.64			7.44			3,780	3,780	100.0	0.0	76.58	245.33						
7.900	500-YR	233.90	244.98	11.08	250.07	250.00	0.0061	6.90			7.80			4,270	4,270	100.0	0.0	79.39	245.92						
7.838	2-YR	231.87	237.34	5.47	248.74	254.05	0.0040	4.18			5.28			1,020	1,020	100.0	0.0	46.13	237.78	8.43					
7.838	5-YR	231.87	238.91	7.04	248.74	254.05	0.0040	5.12			6.28			1,700	1,700	100.0	0.0	52.90	239.53						
7.838	10-YR	231.87	239.68	7.81	248.74	254.05	0.0040	5.52			6.79			2,120	2,120	100.0	0.0	56.57	240.39						
7.838	25-YR	231.87	240.93	9.06	248.74	254.05	0.0040	4.26			6.49			2,650	2,650	100.0	0.0	95.94	241.58						
7.838	50-YR	231.87	241.43	9.56	248.74	254.05	0.0040	4.68			6.64			3,040	3,040	100.0	0.0	97.80	242.12						
7.838	100-YR	231.87	241.94	10.07	248.74	254.05	0.0040	5.09			6.82			3,460	3,460	100.0	0.0	99.65	242.66						
7.838	200-YR	231.87	242.34	10.47	248.74	254.05	0.0040	5.41			6.91			3,780	3,780	100.0	0.0	101.09	243.08						
7.838	500-YR	231.87	242.88	11.01	248.74	254.05	0.0040	5.85			7.08			4,270	4,270	100.0	0.0	103.07	243.66						
7.774	2-YR	230.53	235.71	5.18	245.20	243.46	0.0051	4.09			4.52			1,020	1,020	100.0	0.0	55.14	236.02	10.64					
7.774	5-YR	230.53	237.01	6.48	245.20	243.46	0.0051	4.94			5.64			1,700	1,700	100.0	0.0	60.95	237.50						
7.774	10-YR	230.53	237.51	6.98	245.20	243.46	0.0051	5.26			6.38			2,120	2,120	100.0	0.0	63.17	238.14						
7.774	25-YR	230.53	238.05	7.52	245.20	243.46	0.0051	5.60			7.22			2,650	2,650	100.0	0.0	65.62	238.86						
7.774	50-YR	230.53	238.41	7.88	245.20	243.46	0.0051	5.81			7.78			3,040	3,040	100.0	0.0	67.27	239.35						
7.774	100-YR	230.53	238.76	8.23	245.20	243.46	0.0051	6.02			8.34			3,460	3,460	100.0	0.0	68.90	239.84						
7.774	200-YR	230.53	239.04	8.51	245.20	243.46	0.0051	6.03			8.70			3,780	3,780	100.0	0.0	72.09	240.22						
7.774	500-YR	230.53	239.42	8.89	245.20	243.46	0.0051	6.11			9.23			4,270	4,270	100.0	0.0	75.70	240.74						
7.714	2-YR	228.92	234.36	5.44	241.57	243.30	0.0035	2.76			3.65			1,020	1,020	100.0	0.0	101.41	234.56	18.64					
7.714	5-YR	228.92	235.53	6.61	241.57	243.30	0.0035	2.87			3.95			1,700	1,700	100.0	0.0	149.99	235.77						
7.714	10-YR	228.92	235.99	7.07	241.57	243.30	0.0035	3.28			4.24			2,120	2,120	100.0	0.0	152.35	236.27						
7.714	25-YR	228.92	236.52	7.60	241.57	243.30	0.0035	3.75			4.55			2,650	2,650	100.0	0.0	155.09	236.84						
7.714	50-YR	228.92	236.89	7.97	241.57	243.30	0.0035	4.08			4.75			3,040	3,040	100.0	0.0	157.00	237.24						
7.714	100-YR	228.92	237.27	8.35	241.57	243.30	0.0035	4.41			4.94			3,460	3,460	100.0	0.0	158.95	237.65						
7.714	200-YR	228.92	237.55	8.63	241.57	243.30	0.0035	4.65			5.07			3,780	3,780	100.0	0.0	160.37	237.95						
7.714	500-YR	228.92	237.95	9.03	241.57	243.30	0.0035	4.99			5.28			4,270	4,270	100.0	0.0	162.31	238.38						
7.656	2-YR	227.85	230.83	2.98	238.81	234.14	0.0254	2.10			7.39			1,020	1,020	100.0	0.0	65.69	231.67	22.04					
7.656	5-YR	227.85	231.87	4.02	238.81	234.14	0.0254	2.82			8.04			1,700	1,700	100.0	0.0	74.89	232.87						
7.656	10-YR	227.85	232.42	4.57	238.81	234.14	0.0254	3.19			8.36			2,120	2,120	100.0	0.0	79.55	233.50						
7.656	25-YR	227.85	233.05	5.20	238.81	234.14	0.0254	3.60			8.66			2,650	2,650	100.0	0.0	85.02	234.22						
7.656	50-YR	227.85	233.49	5.64	238.81	234.14	0.0254	3.87			8.84			3,040	3,040	100.0	0.0	88.74	234.70						
7.656	100-YR	227.85	233.93	6.08	238.81	234.14	0.0254	4.15			9.02			3,460	3,460	100.0	0.0	92.52	235.19						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
7.656	200-YR	227.85	234.24	6.39	238.81	234.14	0.0254	4.36		0.05	9.15		0.36	3,780	3,780	100.0	0.0	97.27	235.54						
7.656	500-YR	227.85	234.69	6.84	238.81	234.14	0.0254	4.74		0.29	9.37		1.10	4,266	4,270	99.9	0.1	108.63	236.05						
7.620	2-YR	222.90	227.96	5.06	236.08	234.43	0.0000	3.09			5.78			1,020	1,020	100.0	0.0	57.16	228.47	11.30					
7.620	5-YR	222.90	229.03	6.13	236.08	234.43	0.0000	3.90			7.08			1,700	1,700	100.0	0.0	61.58	229.81						
7.620	10-YR	222.90	229.62	6.72	236.08	234.43	0.0000	4.32			7.65			2,120	2,120	100.0	0.0	64.16	230.53						
7.620	25-YR	222.90	230.32	7.42	236.08	234.43	0.0000	4.73			8.19			2,650	2,650	100.0	0.0	68.41	231.36						
7.620	50-YR	222.90	230.80	7.90	236.08	234.43	0.0000	5.01			8.52			3,040	3,040	100.0	0.0	71.29	231.92						
7.620	100-YR	222.90	231.28	8.38	236.08	234.43	0.0000	5.28			8.83			3,460	3,460	100.0	0.0	74.18	232.49						
7.620	200-YR	222.90	231.62	8.72	236.08	234.43	0.0000	5.48			9.04			3,780	3,780	100.0	0.0	76.28	232.89						
7.620	500-YR	222.90	232.31	9.41	236.08	234.43	0.0000	5.93			9.06			4,270	4,270	100.0	0.0	79.41	233.58						
7.616		Bridge																							
7.612	2-YR	222.58	227.08	4.50	233.36	234.95	0.0026	3.41			5.03			1,020	1,020	100.0	0.0	59.40	227.47	13.20					
7.612	5-YR	222.58	228.27	5.69	233.36	234.95	0.0026	4.27			6.14			1,700	1,700	100.0	0.0	64.77	228.86						
7.612	10-YR	222.58	228.88	6.30	233.36	234.95	0.0026	4.69			6.69			2,120	2,120	100.0	0.0	67.49	229.57						
7.612	25-YR	222.58	229.60	7.02	233.36	234.95	0.0026	5.18			7.22			2,650	2,650	100.0	0.0	70.82	230.41						
7.612	50-YR	222.58	229.98	7.40	233.36	234.95	0.0026	5.43			7.72			3,040	3,040	100.0	0.0	72.51	230.90						
7.612	100-YR	222.58	230.44	7.86	233.36	234.95	0.0026	5.73			8.09			3,460	3,460	100.0	0.0	74.60	231.46						
7.612	200-YR	222.58	230.65	8.07	233.36	234.95	0.0026	5.87			8.52			3,780	3,780	100.0	0.0	75.57	231.78						
7.612	500-YR	222.58	230.63	8.05	233.36	234.95	0.0026	5.86			9.66			4,270	4,270	100.0	0.0	75.48	232.08						
7.528	2-YR	221.45	224.84	3.39	232.53	231.67	0.0108	2.54			3.35			1,020	1,020	100.0	0.0	119.64	225.02	35.29					
7.528	5-YR	221.45	225.84	4.39	232.53	231.67	0.0108	2.99			3.92			1,700	1,700	100.0	0.0	144.71	226.08						
7.528	10-YR	221.45	226.34	4.89	232.53	231.67	0.0108	3.14			4.15			2,120	2,120	100.0	0.0	162.47	226.61						
7.528	25-YR	221.45	226.98	5.53	232.53	231.67	0.0108	3.03			4.22			2,650	2,650	100.0	0.0	207.47	227.25						
7.528	50-YR	221.45	227.35	5.90	232.53	231.67	0.0108	3.17			4.29			3,040	3,040	100.0	0.0	223.69	227.63						
7.528	100-YR	221.45	227.80	6.35	232.53	231.67	0.0108	3.05			4.22			3,460	3,460	100.0	0.0	268.51	228.08						
7.528	200-YR	221.45	227.98	6.53	232.53	231.67	0.0108	3.22			4.35			3,780	3,780	100.0	0.0	269.56	228.28						
7.528	500-YR	221.45	229.60	8.15	232.53	231.67	0.0108	4.67			3.25			4,270	4,270	100.0	0.0	281.48	229.77						
7.466	2-YR	217.90	222.01	4.11	230.33	230.31	0.0087	1.98			5.57			1,020	1,020	100.0	0.0	92.21	222.49	22.44					
7.466	5-YR	217.90	222.95	5.05	230.33	230.31	0.0087	2.49			6.15			1,700	1,700	100.0	0.0	111.02	223.54						
7.466	10-YR	217.90	223.40	5.50	230.33	230.31	0.0087	2.64			6.44			2,120	2,120	100.0	0.0	124.75	224.04						
7.466	25-YR	217.90	223.85	5.95	230.33	230.31	0.0087	2.80			6.83			2,650	2,650	100.0	0.0	138.73	224.57						
7.466	50-YR	217.90	224.01	6.11	230.33	230.31	0.0087	2.86			7.39			3,040	3,040	100.0	0.0	143.98	224.86						
7.466	100-YR	217.90	224.17	6.27	230.33	230.31	0.0087	2.92			7.95			3,460	3,460	100.0	0.0	149.18	225.16						
7.466	200-YR	217.90	224.42	6.52	230.33	230.31	0.0087	3.01			7.99			3,780	3,780	100.0	0.0	157.36	225.41						
7.466	500-YR	217.90	229.26	11.36	230.33	230.31	0.0087	5.89			2.53			4,270	4,270	100.0	0.0	286.61	229.36						
7.353	2-YR	212.71	218.16	5.45	222.11	226.43	0.0052	3.03			3.44			1,020	1,020	100.0	0.0	98.11	218.35	18.00					
7.353	5-YR	212.71	219.50	6.79	222.11	226.43	0.0052	3.79			3.87			1,700	1,700	100.0	0.0	115.83	219.74						
7.353	10-YR	212.71	220.43	7.72	222.11	226.43	0.0052	4.14			3.81			2,120	2,120	100.0	0.0	134.33	220.66						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
7.353	25-YR	212.71	221.35	8.64	222.11	226.43	0.0052	4.84	0.28		3.83	1.59		2,617	2,650	98.8	1.2	214.56	221.57						
7.353	50-YR	212.71	222.07	9.36	222.11	226.43	0.0052	5.38	0.93		3.57	3.04		2,805	3,040	92.3	7.7	229.71	222.26						
7.353	100-YR	212.71	222.84	10.13	222.11	226.43	0.0052	6.02	1.66		3.24	3.78		2,918	3,460	84.3	15.7	235.69	223.01						
7.353	200-YR	212.71	223.52	10.81	222.11	226.43	0.0052	6.58	2.30		2.96	4.03		2,966	3,780	78.5	21.5	240.36	223.68						
7.353	500-YR	212.71	229.20	16.49	222.11	226.43	0.0052	11.66	7.22	2.24	1.16	2.26	0.53	2,228	4,270	52.2	47.8	565.98	229.25						
7.297	2-YR	211.16	216.81	5.65	226.89	223.31	0.0043	4.29			4.78			1,410	1,410	100.0	0.0	68.73	217.16	12.16					
7.297	5-YR	211.16	218.12	6.96	226.89	223.31	0.0043	5.36			5.47			2,120	2,120	100.0	0.0	72.36	218.58						
7.297	10-YR	211.16	219.17	8.01	226.89	223.31	0.0043	6.18			5.59			2,600	2,600	100.0	0.0	75.25	219.66						
7.297	25-YR	211.16	219.99	8.83	226.89	223.31	0.0043	6.81			6.25			3,300	3,300	100.0	0.0	77.52	220.60						
7.297	50-YR	211.16	220.66	9.50	226.89	223.31	0.0043	7.31			6.75			3,920	3,920	100.0	0.0	79.36	221.37						
7.297	100-YR	211.16	221.41	10.25	226.89	223.31	0.0043	7.87			7.28			4,660	4,660	100.0	0.0	81.42	222.23						
7.297	200-YR	211.16	222.18	11.02	226.89	223.31	0.0043	8.43			7.36			5,180	5,180	100.0	0.0	83.55	223.02						
7.297	500-YR	211.16	229.01	17.85	226.89	223.31	0.0043	14.58	1.06	3.45	3.67	0.47	1.06	4,789	5,900	81.2	18.8	399.44	229.18						
7.227	2-YR	209.59	215.16	5.57	223.64	223.26	0.0063	4.22			5.02			1,410	1,410	100.0	0.0	66.52	215.55	11.94					
7.227	5-YR	209.59	216.50	6.91	223.64	223.26	0.0063	5.17			5.66			2,120	2,120	100.0	0.0	72.44	217.00						
7.227	10-YR	209.59	217.62	8.03	223.64	223.26	0.0063	4.22			5.37			2,600	2,600	100.0	0.0	114.60	218.07						
7.227	25-YR	209.59	218.50	8.91	223.64	223.26	0.0063	5.00			5.63			3,300	3,300	100.0	0.0	117.32	219.00						
7.227	50-YR	209.59	219.23	9.64	223.64	223.26	0.0063	5.62			5.83			3,920	3,920	100.0	0.0	119.56	219.76						
7.227	100-YR	209.59	220.05	10.46	223.64	223.26	0.0063	6.31			6.04			4,660	4,660	100.0	0.0	122.09	220.61						
7.227	200-YR	209.59	221.12	11.53	223.64	223.26	0.0063	7.21			5.73			5,180	5,180	100.0	0.0	125.41	221.63						
7.227	500-YR	209.59	228.98	19.39	223.64	223.26	0.0063	14.55	3.17	4.24	2.25	0.59	0.73	4,370	5,900	74.1	25.9	649.42	229.04						
7.165	2-YR	207.53	212.65	5.12	215.01	216.71	0.0065	4.00			6.97			1,410	1,410	100.0	0.0	50.55	213.40	9.87					
7.165	5-YR	207.53	213.97	6.44	215.01	216.71	0.0065	4.90			7.78			2,120	2,120	100.0	0.0	55.64	214.91						
7.165	10-YR	207.53	214.66	7.13	215.01	216.71	0.0065	5.36			8.34			2,600	2,600	100.0	0.0	58.15	215.74						
7.165	25-YR	207.53	215.26	7.73	215.01	216.71	0.0065	5.79	0.12		9.50	0.27		3,300	3,300	100.0	0.0	60.06	216.66						
7.165	50-YR	207.53	215.66	8.13	215.01	216.71	0.0065	6.10	0.32		10.56	0.54		3,920	3,920	100.0	0.0	61.10	217.39						
7.165	100-YR	207.53	216.17	8.64	215.01	216.71	0.0065	6.50	0.58		11.57	0.84		4,660	4,660	100.0	0.0	62.44	218.25						
7.165	200-YR	207.53	219.28	11.75	215.01	216.71	0.0065	9.48	2.13	1.70	8.47	1.14	1.98	5,076	5,180	98.0	2.0	94.49	220.37						
7.165	500-YR	207.53	228.92	21.39	215.01	216.71	0.0065	19.12	5.31	5.98	2.66	0.58	0.90	3,214	5,900	54.5	45.5	566.02	228.98						
7.106	2-YR	205.51	211.05	5.54	216.92	218.58	0.0041	3.73			4.50			1,410	1,410	100.0	0.0	83.99	211.36	15.16					
7.106	5-YR	205.51	212.42	6.91	216.92	218.58	0.0041	3.73			4.68			2,120	2,120	100.0	0.0	121.68	212.76						
7.106	10-YR	205.51	213.20	7.69	216.92	218.58	0.0041	3.69			4.63			2,600	2,600	100.0	0.0	152.14	213.54						
7.106	25-YR	205.51	214.11	8.60	216.92	218.58	0.0041	4.23			4.66			3,300	3,300	100.0	0.0	167.64	214.44						
7.106	50-YR	205.51	214.79	9.28	216.92	218.58	0.0041	4.83			4.75			3,920	3,920	100.0	0.0	170.89	215.14						
7.106	100-YR	205.51	215.80	10.29	216.92	218.58	0.0041	5.69			4.67			4,660	4,660	100.0	0.0	175.63	216.13						
7.106	200-YR	205.51	219.53	14.02	216.92	218.58	0.0041	9.04	1.31	0.48	3.08	0.56	0.31	5,175	5,180	99.9	0.1	201.36	219.68						
7.106	500-YR	205.51	228.93	23.42	216.92	218.58	0.0041	18.43	6.00	6.13	1.31	0.41	0.45	4,477	5,900	75.9	24.1	704.66	228.95						
7.056	2-YR	204.43	209.73	5.30	216.73	216.38	0.0039	4.11			5.14			1,410	1,410	100.0	0.0	66.76	210.14	12.60					
7.056	5-YR	204.43	210.87	6.44	216.73	216.38	0.0039	4.94			6.01			2,120	2,120	100.0	0.0	71.42	211.43						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
7.056	10-YR	204.43	211.54	7.11	216.73	216.38	0.0039	5.41			6.47			2,600	2,600	100.0	0.0	74.19	212.19						
7.056	25-YR	204.43	212.39	7.96	216.73	216.38	0.0039	6.00			7.07			3,300	3,300	100.0	0.0	77.73	213.17						
7.056	50-YR	204.43	213.04	8.61	216.73	216.38	0.0039	6.43			7.58			3,920	3,920	100.0	0.0	80.39	213.93						
7.056	100-YR	204.43	214.27	9.84	216.73	216.38	0.0039	7.29			7.52			4,660	4,660	100.0	0.0	85.03	215.15						
7.056	200-YR	204.43	219.24	14.81	216.73	216.38	0.0039	11.51	2.29	1.47	4.19	1.05	0.78	4,499	5,180	86.9	13.1	609.99	219.48						
7.056	500-YR	204.43	228.92	24.49	216.73	216.38	0.0039	21.19	9.68	11.05	1.20	0.52	0.57	2,376	5,900	40.3	59.7	676.75	228.93						
7.018	2-YR	203.64	208.90	5.26	215.21	216.13	0.0000	3.67			4.32			1,410	1,410	100.0	0.0	88.91	209.19	16.90					
7.018	5-YR	203.64	210.07	6.43	215.21	216.13	0.0000	4.58			4.89			2,120	2,120	100.0	0.0	94.56	210.44						
7.018	10-YR	203.64	210.75	7.11	215.21	216.13	0.0000	5.10			5.21			2,600	2,600	100.0	0.0	97.87	211.17						
7.018	25-YR	203.64	211.61	7.97	215.21	216.13	0.0000	5.73			5.64			3,300	3,300	100.0	0.0	102.03	212.11						
7.018	50-YR	203.64	212.24	8.60	215.21	216.13	0.0000	6.19			6.03			3,920	3,920	100.0	0.0	105.06	212.80						
7.018	100-YR	203.64	213.69	10.05	215.21	216.13	0.0000	7.21			5.77			4,660	4,660	100.0	0.0	112.12	214.21						
7.018	200-YR	203.64	219.18	15.54	215.21	216.13	0.0000	11.99	3.34	3.01	3.07	0.95	0.87	4,509	5,180	87.1	13.0	358.53	219.31						
7.018	500-YR	203.64	228.90	25.26	215.21	216.13	0.0000	21.71	8.15	12.74	1.44	0.54	0.69	3,819	5,900	64.7	35.3	455.58	228.92						
6.978		Bridge																							
6.938	2-YR	201.59	206.65	5.06	214.20	212.60	0.0084	3.83			4.07			1,410	1,410	100.0	0.0	90.43	206.91	17.87					
6.938	5-YR	201.59	207.99	6.40	214.20	212.60	0.0084	4.68			4.46			2,120	2,120	100.0	0.0	101.50	208.30						
6.938	10-YR	201.59	208.85	7.26	214.20	212.60	0.0084	4.58			4.52			2,600	2,600	100.0	0.0	125.47	209.17						
6.938	25-YR	201.59	209.78	8.19	214.20	212.60	0.0084	5.04			4.73			3,300	3,300	100.0	0.0	138.35	210.13						
6.938	50-YR	201.59	210.33	8.74	214.20	212.60	0.0084	5.43			5.06			3,920	3,920	100.0	0.0	142.83	210.73						
6.938	100-YR	201.59	212.66	11.07	214.20	212.60	0.0084	6.99		0.43	4.11		0.46	4,645	4,660	99.7	0.3	237.79	212.92						
6.938	200-YR	201.59	219.07	17.48	214.20	212.60	0.0084	12.83	4.00	6.64	1.93	0.64	0.85	4,325	5,180	83.5	16.5	387.19	219.12						
6.938	500-YR	201.59	228.89	27.30	214.20	212.60	0.0084	22.65	7.20	16.45	1.09	0.36	0.57	4,288	5,900	72.7	27.3	533.93	228.90						
6.878	2-YR	198.92	203.11	4.19	212.74	207.37	0.0140	3.06			9.03			1,410	1,410	100.0	0.0	51.10	204.37	12.20					
6.878	5-YR	198.92	203.90	4.98	212.74	207.37	0.0140	3.54			10.69			2,120	2,120	100.0	0.0	56.04	205.67						
6.878	10-YR	198.92	204.48	5.56	212.74	207.37	0.0140	3.89			11.20			2,600	2,600	100.0	0.0	59.70	206.43						
6.878	25-YR	198.92	205.24	6.32	212.74	207.37	0.0140	4.33			11.83			3,300	3,300	100.0	0.0	64.41	207.41						
6.878	50-YR	198.92	206.39	7.47	212.74	207.37	0.0140	4.99			10.96			3,920	3,920	100.0	0.0	71.65	208.26						
6.878	100-YR	198.92	212.21	13.29	212.74	207.37	0.0140	9.61	0.74	2.46	4.54	0.60	1.34	3,756	4,660	80.6	19.4	487.26	212.48						
6.878	200-YR	198.92	219.05	20.13	212.74	207.37	0.0140	16.34	6.31	8.62	1.63	0.63	0.78	2,315	5,180	44.7	55.3	609.66	219.07						
6.878	500-YR	198.92	228.89	29.97	212.74	207.37	0.0140	26.18	16.15	17.55	0.81	0.42	0.45	1,846	5,900	31.3	68.7	637.83	228.89						
6.859	2-YR	197.56	201.36	3.80	208.26	204.02	0.0170	1.75			6.35			1,640	1,640	100.0	0.0	147.98	201.98	38.94					
6.859	5-YR	197.56	202.27	4.71	208.26	204.02	0.0170	2.59			6.45			2,550	2,550	100.0	0.0	152.72	202.91						
6.859	10-YR	197.56	203.12	5.56	208.26	204.02	0.0170	3.35			5.88			3,110	3,110	100.0	0.0	157.93	203.66						
6.859	25-YR	197.56	204.49	6.93	208.26	204.02	0.0170	4.52		0.47	5.29		0.86	3,972	3,990	99.5	0.5	212.42	204.92						
6.859	50-YR	197.56	207.36	9.80	208.26	204.02	0.0170	7.22		1.82	3.38		0.98	4,172	4,640	89.9	10.1	432.56	207.52						
6.859	100-YR	197.56	212.35	14.79	208.26	204.02	0.0170	12.14	4.04	5.11	1.73	0.60	0.70	3,634	5,450	66.7	33.3	737.71	212.38						
6.859	200-YR	197.56	219.06	21.50	208.26	204.02	0.0170	18.85	10.01	11.12	0.97	0.45	0.49	3,145	6,330	49.7	50.3	792.78	219.07						
6.859	500-YR	197.56	228.89	31.33	208.26	204.02	0.0170	28.68	19.44	20.47	0.61	0.33	0.34	3,021	7,430	40.7	59.3	817.20	228.89						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
6.839	2-YR	195.76	200.26	4.50	210.68	212.20	0.0067	3.03			5.12			1,640	1,640	100.0	0.0	105.59	200.66	23.46					
6.839	5-YR	195.76	201.41	5.65	210.68	212.20	0.0067	3.99			5.72			2,550	2,550	100.0	0.0	111.68	201.92						
6.839	10-YR	195.76	202.58	6.82	210.68	212.20	0.0067	4.92			5.36			3,110	3,110	100.0	0.0	117.90	203.03						
6.839	25-YR	195.76	204.11	8.35	210.68	212.20	0.0067	6.07			5.20			3,990	3,990	100.0	0.0	126.32	204.53						
6.839	50-YR	195.76	207.20	11.44	210.68	212.20	0.0067	6.29			3.55			4,640	4,640	100.0	0.0	207.96	207.40						
6.839	100-YR	195.76	212.35	16.59	210.68	212.20	0.0067	10.79	8.59	0.49	1.14	0.70	0.10	2,785	5,450	51.1	48.9	719.25	212.37						
6.839	200-YR	195.76	219.06	23.30	210.68	212.20	0.0067	17.50	15.01	5.18	0.75	0.48	0.24	2,943	6,330	46.5	53.5	780.04	219.06						
6.839	500-YR	195.76	228.89	33.13	210.68	212.20	0.0067	27.33	24.84	14.04	0.52	0.34	0.23	3,196	7,430	43.0	57.0	799.76	228.89						
6.773	2-YR	193.45	197.86	4.41	203.58	205.12	0.0065	3.47			5.31			1,640	1,640	100.0	0.0	89.13	198.30	20.21					
6.773	5-YR	193.45	199.77	6.32	203.58	205.12	0.0065	4.95			5.23			2,550	2,550	100.0	0.0	98.59	200.20						
6.773	10-YR	193.45	201.65	8.20	203.58	205.12	0.0065	6.25	0.26		4.55	0.39		3,108	3,110	99.9	0.1	127.42	201.97						
6.773	25-YR	193.45	203.45	10.00	203.58	205.12	0.0065	7.44	1.34		4.41	1.01		3,922	3,990	98.3	1.7	170.14	203.74						
6.773	50-YR	193.45	207.00	13.55	203.58	205.12	0.0065	10.74	2.72	1.36	3.03	0.87	0.55	4,004	4,640	86.3	13.7	427.85	207.12						
6.773	100-YR	193.45	212.31	18.86	203.58	205.12	0.0065	16.05	6.66	5.20	1.68	0.67	0.57	3,316	5,450	60.8	39.2	640.80	212.34						
6.773	200-YR	193.45	219.05	25.60	203.58	205.12	0.0065	22.79	13.16	9.17	1.04	0.51	0.42	2,909	6,330	46.0	54.0	700.30	219.06						
6.773	500-YR	193.45	228.89	35.44	203.58	205.12	0.0065	32.63	23.00	17.84	0.68	0.38	0.32	2,753	7,430	37.1	62.9	723.49	228.89						
6.706	2-YR	191.12	196.24	5.12	201.68	202.53	0.0101	3.74			4.26			1,640	1,640	100.0	0.0	102.75	196.52	20.07					
6.706	5-YR	191.12	199.08	7.96	201.68	202.53	0.0101	4.67			3.28			2,550	2,550	100.0	0.0	166.24	199.25						
6.706	10-YR	191.12	201.36	10.24	201.68	202.53	0.0101	5.53	0.92		2.55	0.56		3,072	3,110	98.8	1.2	292.63	201.46						
6.706	25-YR	191.12	203.32	12.20	201.68	202.53	0.0101	6.89	1.93	0.86	2.26	0.71	0.40	3,772	3,990	94.5	5.5	425.01	203.39						
6.706	50-YR	191.12	206.98	15.86	201.68	202.53	0.0101	10.56	5.05	3.34	1.53	0.66	0.50	3,907	4,640	84.2	15.8	487.94	207.02						
6.706	100-YR	191.12	212.30	21.18	201.68	202.53	0.0101	15.88	9.34	6.84	1.07	0.53	0.43	4,106	5,450	75.3	24.7	544.72	212.32						
6.706	200-YR	191.12	219.04	27.92	201.68	202.53	0.0101	22.62	15.16	9.82	0.79	0.42	0.32	4,325	6,330	68.3	31.7	622.55	219.05						
6.706	500-YR	191.12	228.88	37.76	201.68	202.53	0.0101	32.46	25.00	19.25	0.59	0.34	0.28	4,603	7,430	61.9	38.1	628.14	228.89						
6.650	2-YR	188.19	196.14	7.95	195.86	195.80	0.0067	5.66	0.28	0.17	2.34	0.15	0.10	1,640	1,640	100.0	0.0	126.52	196.22	15.91					
6.650	5-YR	188.19	199.00	10.81	195.86	195.80	0.0067	8.52	3.15	1.52	2.40	0.57	0.35	2,536	2,550	99.4	0.6	150.67	199.09						
6.650	10-YR	188.19	201.30	13.11	195.86	195.80	0.0067	10.82	5.44	2.55	2.28	0.67	0.40	3,058	3,110	98.3	1.7	174.50	201.38						
6.650	25-YR	188.19	203.24	15.05	195.86	195.80	0.0067	12.76	7.38	3.23	2.45	0.79	0.45	3,874	3,990	97.1	2.9	202.74	203.33						
6.650	50-YR	188.19	206.92	18.73	195.86	195.80	0.0067	16.43	11.06	5.26	2.14	0.76	0.46	4,358	4,640	93.9	6.1	239.25	206.98						
6.650	100-YR	188.19	212.25	24.06	195.86	195.80	0.0067	21.77	16.39	10.56	1.79	0.69	0.51	4,823	5,450	88.5	11.5	240.00	212.30						
6.650	200-YR	188.19	219.01	30.82	195.86	195.80	0.0067	28.53	23.15	17.32	1.51	0.61	0.50	5,324	6,330	84.1	15.9	240.00	219.04						
6.650	500-YR	188.19	228.88	40.69	195.86	195.80	0.0067	38.40	17.70	24.50	0.86	0.25	0.28	4,106	7,430	55.3	44.7	786.35	228.89						
6.588		Culvert																							
6.532	2-YR	184.00	187.14	3.14	196.17	195.84	0.0084	2.77			9.49			1,560	1,560	100.0	0.0	59.33	188.54	18.89	12	22.36	72.92	1.23	3.94
6.532	5-YR	184.00	188.31	4.31	196.17	195.84	0.0084	3.68			9.98			2,360	2,360	100.0	0.0	64.29	189.86						
6.532	10-YR	184.00	188.88	4.88	196.17	195.84	0.0084	4.10			10.33			2,830	2,830	100.0	0.0	66.73	190.54						
6.532	25-YR	184.00	189.56	5.56	196.17	195.84	0.0084	4.60			10.80			3,460	3,460	100.0	0.0	69.63	191.37						
6.532	50-YR	184.00	190.05	6.05	196.17	195.84	0.0084	4.94			11.14			3,950	3,950	100.0	0.0	71.82	191.97						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
6.532	100-YR	184.00	190.49	6.49	196.17	195.84	0.0084	5.23			11.51			4,450	4,450	100.0	0.0	73.90	192.54						
6.532	200-YR	184.00	190.83	6.83	196.17	195.84	0.0084	5.46			11.88			4,900	4,900	100.0	0.0	75.56	193.02						
6.532	500-YR	184.00	191.14	7.14	196.17	195.84	0.0084	5.66			12.24			5,330	5,330	100.0	0.0	77.02	193.46						
6.483	2-YR	181.85	186.73	4.88	191.87	192.64	0.0041	3.91			4.66			1,560	1,560	100.0	0.0	85.59	187.07	17.54	12		355.3	4.15	
6.483	5-YR	181.85	188.01	6.16	191.87	192.64	0.0041	4.73			5.24			2,360	2,360	100.0	0.0	95.24	188.44						
6.483	10-YR	181.85	188.63	6.78	191.87	192.64	0.0041	5.13			5.54			2,830	2,830	100.0	0.0	99.63	189.10						
6.483	25-YR	181.85	189.37	7.52	191.87	192.64	0.0041	5.64			5.90			3,460	3,460	100.0	0.0	103.92	189.91						
6.483	50-YR	181.85	189.90	8.05	191.87	192.64	0.0041	6.00	0.13	0.17	6.15	0.41	0.48	3,948	3,950	100.0	0.0	137.89	190.48						
6.483	100-YR	181.85	190.38	8.53	191.87	192.64	0.0041	6.33	0.41	0.38	6.37	0.85	0.81	4,424	4,450	99.4	0.6	186.57	191.01						
6.483	200-YR	181.85	190.79	8.94	191.87	192.64	0.0041	6.60	0.60	0.42	6.52	1.11	1.02	4,821	4,900	98.4	1.6	246.42	191.44						
6.483	500-YR	181.85	191.16	9.31	191.87	192.64	0.0041	6.82	0.66	0.69	6.62	1.17	1.20	5,170	5,330	97.0	3.0	318.32	191.82						
6.422	2-YR	180.53	185.61	5.08	189.50	188.52	0.0057	3.99			5.53			1,560	1,560	100.0	0.0	70.72	186.09	13.92	12		593.5	8.39	
6.422	5-YR	180.53	186.83	6.30	189.50	188.52	0.0057	4.82			6.33			2,360	2,360	100.0	0.0	77.26	187.46						
6.422	10-YR	180.53	187.38	6.85	189.50	188.52	0.0057	5.24			6.81			2,830	2,830	100.0	0.0	79.37	188.10						
6.422	25-YR	180.53	188.04	7.51	189.50	188.52	0.0057	5.72			7.38			3,460	3,460	100.0	0.0	81.89	188.88						
6.422	50-YR	180.53	188.50	7.97	189.50	188.52	0.0057	6.06		0.09	7.79		0.34	3,949	3,950	100.0	0.0	114.14	189.44						
6.422	100-YR	180.53	188.92	8.39	189.50	188.52	0.0057	6.40		0.47	8.16		1.03	4,429	4,450	99.5	0.5	128.06	189.95						
6.422	200-YR	180.53	189.28	8.75	189.50	188.52	0.0057	6.69		0.81	8.46		1.50	4,847	4,900	98.9	1.1	129.81	190.38						
6.422	500-YR	180.53	189.59	9.06	189.50	188.52	0.0057	6.97	0.17	1.11	8.73	0.53	1.85	5,237	5,330	98.3	1.7	139.08	190.76						
6.358	2-YR	178.60	184.10	5.50	185.21	190.87	0.0030	4.11			4.60			1,560	1,560	100.0	0.0	82.46	184.43	14.99	12		378.2	4.59	
6.358	5-YR	178.60	185.15	6.55	185.21	190.87	0.0030	4.70			5.49			2,360	2,360	100.0	0.0	91.45	185.62						
6.358	10-YR	178.60	185.61	7.01	185.21	190.87	0.0030	5.12	0.20		5.99	0.50		2,829	2,830	100.0	0.0	102.17	186.17						
6.358	25-YR	178.60	186.16	7.56	185.21	190.87	0.0030	5.62	0.47		6.60	0.92		3,450	3,460	99.7	0.3	115.92	186.83						
6.358	50-YR	178.60	186.53	7.93	185.21	190.87	0.0030	5.98	0.64		7.03	1.15		3,925	3,950	99.4	0.6	127.20	187.30						
6.358	100-YR	178.60	186.90	8.30	185.21	190.87	0.0030	6.31	0.73		7.43	1.28		4,403	4,450	99.0	1.0	143.39	187.75						
6.358	200-YR	178.60	187.19	8.59	185.21	190.87	0.0030	6.58	0.83		7.78	1.42		4,825	4,900	98.5	1.5	158.23	188.12						
6.358	500-YR	178.60	187.46	8.86	185.21	190.87	0.0030	6.83	0.93		8.08	1.56		5,218	5,330	97.9	2.1	171.99	188.46						
6.291	2-YR	177.54	180.85	3.31	187.29	187.71	0.0295	1.47			6.90			1,560	1,560	100.0	0.0	153.79	181.59	46.46	12		207.97	1.35	
6.291	5-YR	177.54	181.33	3.79	187.29	187.71	0.0295	1.89			7.81			2,360	2,360	100.0	0.0	160.10	182.28						
6.291	10-YR	177.54	181.59	4.05	187.29	187.71	0.0295	2.10			8.25			2,830	2,830	100.0	0.0	163.04	182.64						
6.291	25-YR	177.54	181.90	4.36	187.29	187.71	0.0295	2.38			8.76			3,460	3,460	100.0	0.0	166.22	183.09						
6.291	50-YR	177.54	182.13	4.59	187.29	187.71	0.0295	2.58			9.13			3,950	3,950	100.0	0.0	167.68	183.42						
6.291	100-YR	177.54	182.34	4.80	187.29	187.71	0.0295	2.77			9.50			4,450	4,450	100.0	0.0	169.05	183.74						
6.291	200-YR	177.54	182.54	5.00	187.29	187.71	0.0295	2.95			9.75			4,900	4,900	100.0	0.0	170.35	184.02						
6.291	500-YR	177.54	182.71	5.17	187.29	187.71	0.0295	3.10			10.02			5,330	5,330	100.0	0.0	171.46	184.27						
6.234	2-YR	168.79	175.38	6.59	185.56	182.83	0.0035	2.81			2.91			1,560	1,560	100.0	0.0	190.92	175.51	28.97	11	18.52	266.22	1.39	1.71
6.234	5-YR	168.79	176.62	7.83	185.56	182.83	0.0035	3.36			2.96			2,360	2,360	100.0	0.0	237.07	176.75						
6.234	10-YR	168.79	177.23	8.44	185.56	182.83	0.0035	3.87			2.99			2,830	2,830	100.0	0.0	244.64	177.37						
6.234	25-YR	168.79	178.01	9.22	185.56	182.83	0.0035	4.59			3.04			3,460	3,460	100.0	0.0	248.19	178.16						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
6.234	50-YR	168.79	178.60	9.81	185.56	182.83	0.0035	5.12			3.08			3,950	3,950	100.0	0.0	250.86	178.75						
6.234	100-YR	168.79	179.17	10.38	185.56	182.83	0.0035	5.63			3.12			4,450	4,450	100.0	0.0	253.46	179.32						
6.234	200-YR	168.79	179.67	10.88	185.56	182.83	0.0035	6.08			3.15			4,900	4,900	100.0	0.0	255.72	179.82						
6.234	500-YR	168.79	180.12	11.33	185.56	182.83	0.0035	6.48			3.19			5,330	5,330	100.0	0.0	257.81	180.28						
6.168	2-YR	167.55	173.99	6.44	185.92	182.63	0.0019	3.93			3.58			1,560	1,560	100.0	0.0	110.74	174.19	17.20	11		139.41	1.26	
6.168	5-YR	167.55	175.33	7.78	185.92	182.63	0.0019	5.03			4.02			2,360	2,360	100.0	0.0	116.70	175.58						
6.168	10-YR	167.55	176.03	8.48	185.92	182.63	0.0019	5.59			4.23			2,830	2,830	100.0	0.0	119.80	176.30						
6.168	25-YR	167.55	176.89	9.34	185.92	182.63	0.0019	6.27			4.46			3,460	3,460	100.0	0.0	123.66	177.20						
6.168	50-YR	167.55	177.53	9.98	185.92	182.63	0.0019	6.76			4.62			3,950	3,950	100.0	0.0	126.48	177.86						
6.168	100-YR	167.55	178.13	10.58	185.92	182.63	0.0019	7.21			4.78			4,450	4,450	100.0	0.0	129.16	178.48						
6.168	200-YR	167.55	178.65	11.10	185.92	182.63	0.0019	7.60			4.91			4,900	4,900	100.0	0.0	131.46	179.02						
6.168	500-YR	167.55	179.12	11.57	185.92	182.63	0.0019	7.95			5.02			5,330	5,330	100.0	0.0	133.56	179.51						
6.100	2-YR	166.88	172.28	5.40	181.73	180.84	0.0030	4.36			4.89			1,560	1,560	100.0	0.0	73.22	172.65	13.56	11		95.6	1.31	
6.100	5-YR	166.88	173.53	6.65	181.73	180.84	0.0030	5.28			5.69			2,360	2,360	100.0	0.0	78.49	174.04						
6.100	10-YR	166.88	174.19	7.31	181.73	180.84	0.0030	5.75			6.06			2,830	2,830	100.0	0.0	81.27	174.76						
6.100	25-YR	166.88	175.03	8.15	181.73	180.84	0.0030	6.33			6.45			3,460	3,460	100.0	0.0	84.76	175.67						
6.100	50-YR	166.88	175.65	8.77	181.73	180.84	0.0030	6.75			6.70			3,950	3,950	100.0	0.0	87.38	176.34						
6.100	100-YR	166.88	176.22	9.34	181.73	180.84	0.0030	7.14			6.94			4,450	4,450	100.0	0.0	89.80	176.97						
6.100	200-YR	166.88	176.72	9.84	181.73	180.84	0.0030	7.47			7.14			4,900	4,900	100.0	0.0	91.78	177.51						
6.100	500-YR	166.88	177.17	10.29	181.73	180.84	0.0030	7.78			7.32			5,330	5,330	100.0	0.0	93.58	178.00						
6.045	2-YR	166.02	170.51	4.49	168.26	169.58	0.0099	3.95	1.35	0.46	5.75	1.95	1.30	1,535	1,560	98.4	1.6	78.56	171.01	17.50	11		96.89	1.23	
6.045	5-YR	166.02	171.83	5.81	168.26	169.58	0.0099	5.28	2.21	1.13	6.40	2.47	2.15	2,285	2,360	96.8	3.2	84.07	172.45						
6.045	10-YR	166.02	172.54	6.52	168.26	169.58	0.0099	5.98	2.63	1.48	6.71	2.66	2.49	2,715	2,830	95.9	4.1	86.99	173.21						
6.045	25-YR	166.02	173.44	7.42	168.26	169.58	0.0099	6.88	3.16	1.93	7.05	2.86	2.84	3,280	3,460	94.8	5.2	90.71	174.18						
6.045	50-YR	166.02	174.13	8.11	168.26	169.58	0.0099	7.57	3.54	2.30	7.25	2.98	3.08	3,710	3,950	93.9	6.1	93.43	174.90						
6.045	100-YR	166.02	174.71	8.69	168.26	169.58	0.0099	8.15	3.87	2.61	7.52	3.11	3.31	4,148	4,450	93.2	6.8	95.73	175.54						
6.045	200-YR	166.02	175.21	9.19	168.26	169.58	0.0099	8.65	4.14	2.87	7.75	3.22	3.49	4,537	4,900	92.6	7.4	97.72	176.09						
6.045	500-YR	166.02	175.66	9.64	168.26	169.58	0.0099	9.11	4.38	3.11	7.97	3.32	3.65	4,906	5,330	92.0	8.0	99.55	176.58						
5.985	2-YR	162.91	168.30	5.39	165.73	165.67	0.0004	4.76	1.62	1.32	8.25	1.89	2.59	1,464	1,560	93.8	6.2	68.37	169.30	12.68	11		91.76	1.34	
5.985	5-YR	162.91	169.19	6.28	165.73	165.67	0.0004	5.65	2.30	1.76	10.20	2.64	3.46	2,147	2,360	91.0	9.0	72.23	170.67						
5.985	10-YR	162.91	169.60	6.69	165.73	165.67	0.0004	6.06	2.60	1.96	11.26	3.02	3.93	2,542	2,830	89.8	10.2	74.00	171.38						
5.985	25-YR	162.91	170.03	7.12	165.73	165.67	0.0004	6.49	2.91	2.18	12.69	3.49	4.53	3,068	3,460	88.7	11.3	75.86	172.27						
5.985	50-YR	162.91	170.28	7.37	165.73	165.67	0.0004	6.74	3.09	2.30	13.86	3.87	5.01	3,478	3,950	88.0	12.0	76.94	172.93						
5.985	100-YR	162.91	170.74	7.83	165.73	165.67	0.0004	7.20	3.40	2.53	14.43	4.11	5.32	3,869	4,450	86.9	13.1	78.93	173.59						
5.985	200-YR	162.91	171.13	8.22	165.73	165.67	0.0004	7.59	3.67	2.73	14.92	4.31	5.58	4,217	4,900	86.1	13.9	80.63	174.15						
5.985	500-YR	162.91	171.52	8.61	165.73	165.67	0.0004	7.98	3.92	2.92	15.29	4.46	5.79	4,543	5,330	85.2	14.8	82.31	174.66						
5.919	2-YR	162.77	167.73	4.96	165.61	166.95	0.0023	3.98	1.06	0.40	5.00	1.98	1.08	1,544	1,560	99.0	1.0	95.69	168.12	19.29	11		178.01	1.86	
5.919	5-YR	162.77	168.82	6.05	165.61	166.95	0.0023	5.07	1.60	0.96	5.79	2.57	1.92	2,274	2,360	96.4	3.6	114.55	169.32						
5.919	10-YR	162.77	169.37	6.60	165.61	166.95	0.0023	5.62	1.88	1.20	6.15	2.83	2.21	2,678	2,830	94.6	5.4	125.44	169.93						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
5.919	25-YR	162.77	170.02	7.25	165.61	166.95	0.0023	6.28	2.21	1.46	6.57	3.13	2.50	3,195	3,460	92.3	7.7	140.60	170.65						
5.919	50-YR	162.77	170.47	7.70	165.61	166.95	0.0023	6.73	2.47	1.65	6.86	3.36	2.71	3,577	3,950	90.6	9.4	150.95	171.15						
5.919	100-YR	162.77	170.90	8.13	165.61	166.95	0.0023	7.16	2.72	1.84	7.12	3.56	2.90	3,951	4,450	88.8	11.2	160.82	171.62						
5.919	200-YR	162.77	171.25	8.48	165.61	166.95	0.0023	7.50	2.92	2.02	7.35	3.73	3.08	4,275	4,900	87.3	12.7	167.99	172.00						
5.919	500-YR	162.77	171.60	8.83	165.61	166.95	0.0023	7.85	3.12	2.27	7.48	3.84	3.30	4,556	5,330	85.5	14.5	172.70	172.37						
5.858	2-YR	162.04	166.80	4.76	168.12	169.86	0.0089	3.68			4.69			1,560	1,560	100.0	0.0	90.23	167.14	18.96	11		180.69	2.00	
5.858	5-YR	162.04	167.89	5.85	168.12	169.86	0.0089	4.50			5.43			2,360	2,360	100.0	0.0	96.67	168.35						
5.858	10-YR	162.04	168.45	6.41	168.12	169.86	0.0089	4.98	0.17		5.78	0.63		2,829	2,830	100.0	0.0	104.53	168.97						
5.858	25-YR	162.04	169.11	7.07	168.12	169.86	0.0089	5.61	0.49		6.22	1.41		3,447	3,460	99.6	0.4	117.85	169.71						
5.858	50-YR	162.04	169.54	7.50	168.12	169.86	0.0089	6.02	0.70		6.56	1.70		3,917	3,950	99.2	0.8	126.71	170.20						
5.858	100-YR	162.04	169.95	7.91	168.12	169.86	0.0089	6.42	0.89	0.05	6.88	1.92	0.13	4,388	4,450	98.6	1.4	135.59	170.68						
5.858	200-YR	162.04	170.26	8.22	168.12	169.86	0.0089	6.72	1.02	0.20	7.19	2.07	0.36	4,807	4,900	98.1	1.9	143.25	171.05						
5.858	500-YR	162.04	170.60	8.56	168.12	169.86	0.0089	7.07	1.17	0.37	7.39	2.19	0.54	5,196	5,330	97.5	2.5	152.09	171.43						
5.794	2-YR	159.05	165.16	6.11	166.59	168.40	0.0014	3.08			4.52			1,590	1,590	100.0	0.0	114.40	165.48	18.72	11		290.15	2.54	
5.794	5-YR	159.05	166.30	7.25	166.59	168.40	0.0014	3.98			4.93			2,400	2,400	100.0	0.0	122.33	166.68						
5.794	10-YR	159.05	166.89	7.84	166.59	168.40	0.0014	4.49	0.15		5.17	0.40		2,899	2,900	100.0	0.0	143.23	167.31						
5.794	25-YR	159.05	167.58	8.53	166.59	168.40	0.0014	5.13	0.57		5.48	0.95		3,545	3,570	99.3	0.7	171.32	168.04						
5.794	50-YR	159.05	168.03	8.98	166.59	168.40	0.0014	5.54	0.85		5.69	1.23		3,999	4,060	98.5	1.5	184.88	168.52						
5.794	100-YR	159.05	168.46	9.41	166.59	168.40	0.0014	5.95	1.11	0.03	5.87	1.47	0.17	4,447	4,560	97.5	2.5	196.44	168.98						
5.794	200-YR	159.05	168.77	9.72	166.59	168.40	0.0014	6.26	1.24	0.19	6.04	1.58	0.58	4,822	4,980	96.8	3.2	208.46	169.32						
5.794	500-YR	159.05	169.14	10.09	166.59	168.40	0.0014	6.63	1.36	0.37	6.22	1.67	0.91	5,258	5,480	95.9	4.1	226.21	169.72						
5.728	2-YR	158.55	163.35	4.80	165.11	169.92	0.0011	3.87	0.63		5.05	1.07		1,581	1,590	99.4	0.6	94.85	163.74	19.76	11		233.31	2.46	
5.728	5-YR	158.55	164.39	5.84	165.11	169.92	0.0011	4.63	1.16		5.88	1.65		2,352	2,400	98.0	2.0	111.48	164.92						
5.728	10-YR	158.55	164.96	6.41	165.11	169.92	0.0011	5.03	1.48		6.25	1.96		2,812	2,900	97.0	3.0	119.74	165.55						
5.728	25-YR	158.55	165.65	7.10	165.11	169.92	0.0011	5.64	1.08		6.65	2.03		3,407	3,570	95.4	4.6	165.65	166.31						
5.728	50-YR	158.55	166.13	7.58	165.11	169.92	0.0011	6.07	1.25		6.85	2.04		3,812	4,060	93.9	6.1	189.00	166.82						
5.728	100-YR	158.55	166.60	8.05	165.11	169.92	0.0011	6.48	1.59		7.05	1.98		4,223	4,560	92.6	7.4	199.72	167.32						
5.728	200-YR	158.55	166.98	8.43	165.11	169.92	0.0011	6.83	1.96		7.11	2.22		4,510	4,980	90.6	9.4	201.18	167.70						
5.728	500-YR	158.55	167.42	8.87	165.11	169.92	0.0011	7.22	2.28		7.19	2.39		4,858	5,480	88.6	11.4	208.03	168.14						
5.664	2-YR	158.17	162.24	4.07	162.04	161.31	0.0059	3.48	0.10	0.46	4.34	0.44	0.62	1,588	1,590	99.9	0.1	112.84	162.53	27.72	10	18.64	151.38	1.34	1.25
5.664	5-YR	158.17	163.32	5.15	162.04	161.31	0.0059	4.56	0.64	1.00	4.96	1.48	1.01	2,382	2,400	99.3	0.7	123.08	163.70						
5.664	10-YR	158.17	163.92	5.75	162.04	161.31	0.0059	5.15	0.94	1.30	5.28	1.88	1.18	2,863	2,900	98.7	1.3	128.72	164.34						
5.664	25-YR	158.17	164.65	6.48	162.04	161.31	0.0059	5.89	1.31	1.67	5.64	2.30	1.37	3,497	3,570	98.0	2.0	135.68	165.14						
5.664	50-YR	158.17	165.16	6.99	162.04	161.31	0.0059	6.39	1.56	1.92	5.87	2.56	1.49	3,953	4,060	97.4	2.6	140.45	165.68						
5.664	100-YR	158.17	165.64	7.47	162.04	161.31	0.0059	6.88	1.80	2.17	6.09	2.79	1.60	4,413	4,560	96.8	3.2	145.07	166.20						
5.664	200-YR	158.17	166.04	7.87	162.04	161.31	0.0059	7.28	2.00	2.36	6.26	2.97	1.68	4,794	4,980	96.3	3.7	148.81	166.63						
5.664	500-YR	158.17	166.49	8.32	162.04	161.31	0.0059	7.73	2.22	2.59	6.44	3.16	1.77	5,243	5,480	95.7	4.3	153.08	167.11						
5.609	2-YR	156.44	161.76	5.32	158.71	158.65	0.0004	4.83	1.52	2.26	4.46	4.16	1.24	1,291	1,590	81.2	18.8	159.92	162.02	30.06	10		185.83	1.16	
5.609	5-YR	156.44	162.87	6.43	158.71	158.65	0.0004	5.94	2.08	3.31	5.09	5.09	1.59	1,814	2,400	75.6	24.4	164.10	163.20						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
5.609	10-YR	156.44	163.49	7.05	158.71	158.65	0.0004	6.56	2.39	3.88	5.40	5.55	1.75	2,123	2,900	73.2	26.8	166.40	163.85						
5.609	25-YR	156.44	164.24	7.80	158.71	158.65	0.0004	7.31	2.77	4.57	5.77	6.07	1.94	2,527	3,570	70.8	29.2	169.20	164.65						
5.609	50-YR	156.44	164.76	8.32	158.71	158.65	0.0004	7.83	3.02	5.04	6.00	6.41	2.05	2,815	4,060	69.3	30.7	171.12	165.20						
5.609	100-YR	156.44	165.26	8.82	158.71	158.65	0.0004	8.33	3.27	5.49	6.22	6.72	2.16	3,105	4,560	68.1	31.9	172.97	165.72						
5.609	200-YR	156.44	165.66	9.22	158.71	158.65	0.0004	8.73	3.47	5.85	6.39	6.96	2.24	3,345	4,980	67.2	32.8	174.47	166.15						
5.609	500-YR	156.44	166.12	9.68	158.71	158.65	0.0004	9.19	3.70	6.25	6.59	7.24	2.33	3,627	5,480	66.2	33.8	176.17	166.64						
5.545	2-YR	156.31	161.44	5.13	157.82	158.04	-0.0008	4.51	2.91	2.92	3.83	2.85	1.32	1,058	1,590	66.5	33.5	136.15	161.63	26.54	10		146.57	1.08	
5.545	5-YR	156.31	162.57	6.26	157.82	158.04	-0.0008	5.64	3.91	4.05	4.38	3.41	1.61	1,511	2,400	62.9	37.1	138.28	162.81						
5.545	10-YR	156.31	163.19	6.88	157.82	158.04	-0.0008	6.26	4.44	4.67	4.66	3.68	1.76	1,785	2,900	61.5	38.5	139.45	163.47						
5.545	25-YR	156.31	163.95	7.64	157.82	158.04	-0.0008	7.03	5.09	5.43	5.00	4.00	1.94	2,148	3,570	60.2	39.8	140.90	164.27						
5.545	50-YR	156.31	164.47	8.16	157.82	158.04	-0.0008	7.55	5.52	5.95	5.23	4.20	2.05	2,411	4,060	59.4	40.6	141.88	164.82						
5.545	100-YR	156.31	164.98	8.67	157.82	158.04	-0.0008	8.05	5.94	6.45	5.44	4.39	2.16	2,678	4,560	58.7	41.3	142.83	165.35						
5.545	200-YR	156.31	165.38	9.07	157.82	158.04	-0.0008	8.46	6.25	6.86	5.61	4.54	2.24	2,902	4,980	58.3	41.7	143.72	165.78						
5.545	500-YR	156.31	165.84	9.53	157.82	158.04	-0.0008	8.92	6.60	7.32	5.81	4.69	2.34	3,168	5,480	57.8	42.2	144.83	166.27						
5.477	2-YR	156.61	159.41	2.80	168.76	168.56	0.1097	2.55			9.05			1,590	1,590	100.0	0.0	68.90	160.68	24.61	10		79.76	1.16	
5.477	5-YR	156.61	160.24	3.63	168.76	168.56	0.1097	3.25			10.22			2,400	2,400	100.0	0.0	72.14	161.87						
5.477	10-YR	156.61	160.70	4.09	168.76	168.56	0.1097	3.63			10.82			2,900	2,900	100.0	0.0	73.90	162.52						
5.477	25-YR	156.61	161.27	4.66	168.76	168.56	0.1097	4.09			11.48			3,570	3,570	100.0	0.0	76.13	163.32						
5.477	50-YR	156.61	161.66	5.05	168.76	168.56	0.1097	4.39			11.91			4,060	4,060	100.0	0.0	77.62	163.86						
5.477	100-YR	156.61	162.05	5.44	168.76	168.56	0.1097	4.69			12.28			4,560	4,560	100.0	0.0	79.12	164.39						
5.477	200-YR	156.61	162.35	5.74	168.76	168.56	0.1097	4.92			12.59			4,980	4,980	100.0	0.0	80.30	164.81						
5.477	500-YR	156.61	162.70	6.09	168.76	168.56	0.1097	5.19			12.93			5,480	5,480	100.0	0.0	81.65	165.30						
5.457	2-YR	145.30	149.57	4.27	163.31	163.65	0.0048	3.64			6.04			1,590	1,590	100.0	0.0	72.38	150.13	16.95	10		86.25	1.19	
5.457	5-YR	145.30	150.58	5.28	163.31	163.65	0.0048	4.48			7.09			2,400	2,400	100.0	0.0	75.65	151.36						
5.457	10-YR	145.30	151.14	5.84	163.31	163.65	0.0048	4.92			7.61			2,900	2,900	100.0	0.0	77.44	152.04						
5.457	25-YR	145.30	151.82	6.52	163.31	163.65	0.0048	5.46			8.22			3,570	3,570	100.0	0.0	79.60	152.87						
5.457	50-YR	145.30	152.28	6.98	163.31	163.65	0.0048	5.82			8.61			4,060	4,060	100.0	0.0	81.10	153.43						
5.457	100-YR	145.30	152.73	7.43	163.31	163.65	0.0048	6.16			8.97			4,560	4,560	100.0	0.0	82.61	153.98						
5.457	200-YR	145.30	153.09	7.79	163.31	163.65	0.0048	6.43			9.25			4,980	4,980	100.0	0.0	83.82	154.42						
5.457	500-YR	145.30	153.50	8.20	163.31	163.65	0.0048	6.73			9.56			5,480	5,480	100.0	0.0	85.14	154.92						
5.416	2-YR	144.24	148.35	4.11	160.91	157.88	0.0066	3.04			7.21			1,590	1,590	100.0	0.0	72.52	149.16	17.64	10		87.53	1.21	
5.416	5-YR	144.24	149.44	5.20	160.91	157.88	0.0066	3.92			7.93			2,400	2,400	100.0	0.0	77.09	150.42						
5.416	10-YR	144.24	150.04	5.80	160.91	157.88	0.0066	4.39			8.30			2,900	2,900	100.0	0.0	79.51	151.11						
5.416	25-YR	144.24	150.77	6.53	160.91	157.88	0.0066	4.98			8.75			3,570	3,570	100.0	0.0	81.94	151.96						
5.416	50-YR	144.24	151.27	7.03	160.91	157.88	0.0066	5.37			9.04			4,060	4,060	100.0	0.0	83.58	152.53						
5.416	100-YR	144.24	151.74	7.50	160.91	157.88	0.0066	5.75			9.32			4,560	4,560	100.0	0.0	85.16	153.09						
5.416	200-YR	144.24	152.12	7.88	160.91	157.88	0.0066	6.04			9.54			4,980	4,980	100.0	0.0	86.42	153.54						
5.416	500-YR	144.24	152.55	8.31	160.91	157.88	0.0066	6.36			9.81			5,480	5,480	100.0	0.0	87.81	154.04						
5.355	2-YR	142.12	147.62	5.50	157.74	156.49	0.0000	3.95			4.96			1,590	1,590	100.0	0.0	81.10	148.00	14.75	10		100.02	1.23	

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
5.355	5-YR	142.12	148.79	6.67	157.74	156.49	0.0000	4.91			5.75			2,400	2,400	100.0	0.0	85.03	149.30						
5.355	10-YR	142.12	149.41	7.29	157.74	156.49	0.0000	5.41			6.15			2,900	2,900	100.0	0.0	87.14	150.00						
5.355	25-YR	142.12	150.17	8.05	157.74	156.49	0.0000	6.00			6.63			3,570	3,570	100.0	0.0	89.69	150.85						
5.355	50-YR	142.12	150.68	8.56	157.74	156.49	0.0000	6.40			6.94			4,060	4,060	100.0	0.0	91.43	151.43						
5.355	100-YR	142.12	151.18	9.06	157.74	156.49	0.0000	6.77			7.24			4,560	4,560	100.0	0.0	93.13	151.99						
5.355	200-YR	142.12	151.57	9.45	157.74	156.49	0.0000	7.05			7.47			4,980	4,980	100.0	0.0	94.53	152.43						
5.355	500-YR	142.12	151.99	9.87	157.74	156.49	0.0000	7.36			7.75			5,480	5,480	100.0	0.0	96.07	152.92						
5.293	2-YR	142.13	146.77	4.64	150.33	151.40	0.0000	3.83			5.48			1,590	1,590	100.0	0.0	75.65	147.24	16.30	10		117.07	1.55	
5.293	5-YR	142.13	147.87	5.74	150.33	151.40	0.0000	4.68			6.39			2,400	2,400	100.0	0.0	80.30	148.50						
5.293	10-YR	142.13	148.46	6.33	150.33	151.40	0.0000	5.12			6.85			2,900	2,900	100.0	0.0	82.68	149.19						
5.293	25-YR	142.13	149.17	7.04	150.33	151.40	0.0000	5.65			7.38			3,570	3,570	100.0	0.0	85.53	150.02						
5.293	50-YR	142.13	149.65	7.52	150.33	151.40	0.0000	6.00			7.73			4,060	4,060	100.0	0.0	87.45	150.58						
5.293	100-YR	142.13	150.12	7.99	150.33	151.40	0.0000	6.34			8.06			4,560	4,560	100.0	0.0	89.30	151.12						
5.293	200-YR	142.13	150.49	8.36	150.33	151.40	0.0000	6.63	0.05		8.31	0.73		4,980	4,980	100.0	0.0	96.96	151.56						
5.293	500-YR	142.13	150.93	8.80	150.33	151.40	0.0000	7.00	0.37		8.53	2.72		5,457	5,480	99.6	0.4	114.17	152.05						
5.271		Bridge																							
5.249	2-YR	141.59	146.15	4.56	154.24	154.38	-0.0005	3.87			5.30			1,590	1,590	100.0	0.0	77.66	146.59	17.03	10		95.87	1.23	
5.249	5-YR	141.59	147.19	5.60	154.24	154.38	-0.0005	4.68			6.27			2,400	2,400	100.0	0.0	81.78	147.80						
5.249	10-YR	141.59	147.74	6.15	154.24	154.38	-0.0005	5.10			6.76			2,900	2,900	100.0	0.0	84.10	148.45						
5.249	25-YR	141.59	148.42	6.83	154.24	154.38	-0.0005	5.61			7.33			3,570	3,570	100.0	0.0	86.90	149.26						
5.249	50-YR	141.59	148.88	7.29	154.24	154.38	-0.0005	5.95			7.70			4,060	4,060	100.0	0.0	88.70	149.80						
5.249	100-YR	141.59	149.33	7.74	154.24	154.38	-0.0005	6.27			8.04			4,560	4,560	100.0	0.0	90.45	150.33						
5.249	200-YR	141.59	149.68	8.09	154.24	154.38	-0.0005	6.53			8.31			4,980	4,980	100.0	0.0	91.85	150.75						
5.249	500-YR	141.59	150.09	8.50	154.24	154.38	-0.0005	6.82			8.60			5,480	5,480	100.0	0.0	93.45	151.24						
5.229	2-YR	141.64	145.81	4.17	155.33	149.84	0.0012	3.64			5.61			1,590	1,590	100.0	0.0	77.77	146.30	18.65	10		93.09	1.20	
5.229	5-YR	141.64	146.80	5.16	155.33	149.84	0.0012	4.44			6.63			2,400	2,400	100.0	0.0	81.61	147.48						
5.229	10-YR	141.64	147.33	5.69	155.33	149.84	0.0012	4.86			7.14			2,900	2,900	100.0	0.0	83.60	148.12						
5.229	25-YR	141.64	147.98	6.34	155.33	149.84	0.0012	5.36			7.74			3,570	3,570	100.0	0.0	86.02	148.91						
5.229	50-YR	141.64	148.42	6.78	155.33	149.84	0.0012	5.70			8.13			4,060	4,060	100.0	0.0	87.57	149.45						
5.229	100-YR	141.64	148.84	7.20	155.33	149.84	0.0012	6.03			8.49			4,560	4,560	100.0	0.0	89.07	149.96						
5.229	200-YR	141.64	149.18	7.54	155.33	149.84	0.0012	6.29			8.78			4,980	4,980	100.0	0.0	90.27	150.38						
5.229	500-YR	141.64	149.57	7.93	155.33	149.84	0.0012	6.58			9.09			5,480	5,480	100.0	0.0	91.65	150.86						
5.205	2-YR	141.49	144.31	2.82	154.60	153.40	0.1910	2.46			8.95			1,590	1,590	100.0	0.0	72.22	145.56	25.61	10		83.77	1.16	
5.205	5-YR	141.49	145.12	3.63	154.60	153.40	0.1910	3.14			10.12			2,400	2,400	100.0	0.0	75.52	146.71						
5.205	10-YR	141.49	145.58	4.09	154.60	153.40	0.1910	3.52			10.65			2,900	2,900	100.0	0.0	77.41	147.34						
5.205	25-YR	141.49	146.14	4.65	154.60	153.40	0.1910	3.96			11.30			3,570	3,570	100.0	0.0	79.69	148.12						
5.205	50-YR	141.49	146.51	5.02	154.60	153.40	0.1910	4.26			11.72			4,060	4,060	100.0	0.0	81.24	148.65						
5.205	100-YR	141.49	146.88	5.39	154.60	153.40	0.1910	4.55			12.11			4,560	4,560	100.0	0.0	82.75	149.16						
5.205	200-YR	141.49	147.18	5.69	154.60	153.40	0.1910	4.78			12.41			4,980	4,980	100.0	0.0	83.97	149.57						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
5.205	500-YR	141.49	147.52	6.03	154.60	153.40	0.1910	5.04			12.74			5,480	5,480	100.0	0.0	85.36	150.04						
5.194	2-YR	130.09	135.17	5.08	152.53	152.00	-0.0013	4.20			5.07			1,590	1,590	100.0	0.0	74.78	135.57	14.72	10		89.99	1.20	
5.194	5-YR	130.09	136.21	6.12	152.53	152.00	-0.0013	5.05			6.10			2,400	2,400	100.0	0.0	77.89	136.79						
5.194	10-YR	130.09	136.77	6.68	152.53	152.00	-0.0013	5.49			6.64			2,900	2,900	100.0	0.0	79.56	137.45						
5.194	25-YR	130.09	137.38	7.29	152.53	152.00	-0.0013	5.97			7.34			3,570	3,570	100.0	0.0	81.39	138.22						
5.194	50-YR	130.09	137.83	7.74	152.53	152.00	-0.0013	6.32			7.76			4,060	4,060	100.0	0.0	82.75	138.77						
5.194	100-YR	130.09	138.31	8.22	152.53	152.00	-0.0013	6.69			8.09			4,560	4,560	100.0	0.0	84.19	139.33						
5.194	200-YR	130.09	138.74	8.65	152.53	152.00	-0.0013	7.01			8.31			4,980	4,980	100.0	0.0	85.45	139.81						
5.194	500-YR	130.09	139.24	9.15	152.53	152.00	-0.0013	7.39			8.53			5,480	5,480	100.0	0.0	86.97	140.37						
5.169	2-YR	130.26	134.56	4.30	148.34	149.09	0.0014	3.35			6.35			1,590	1,590	100.0	0.0	74.80	135.19	17.40	10		91.93	1.23	
5.169	5-YR	130.26	135.51	5.25	148.34	149.09	0.0014	4.10			7.43			2,400	2,400	100.0	0.0	78.78	136.37						
5.169	10-YR	130.26	136.02	5.76	148.34	149.09	0.0014	4.49			7.97			2,900	2,900	100.0	0.0	81.05	137.01						
5.169	25-YR	130.26	136.51	6.25	148.34	149.09	0.0014	4.87			8.83			3,570	3,570	100.0	0.0	82.99	137.72						
5.169	50-YR	130.26	136.94	6.68	148.34	149.09	0.0014	5.20			9.23			4,060	4,060	100.0	0.0	84.61	138.26						
5.169	100-YR	130.26	137.46	7.20	148.34	149.09	0.0014	5.60			9.41			4,560	4,560	100.0	0.0	86.59	138.83						
5.169	200-YR	130.26	137.95	7.69	148.34	149.09	0.0014	5.96			9.44			4,980	4,980	100.0	0.0	88.46	139.33						
5.169	500-YR	130.26	138.54	8.28	148.34	149.09	0.0014	6.40			9.45			5,480	5,480	100.0	0.0	90.69	139.92						
5.139	2-YR	130.03	132.83	2.80	146.84	154.56	0.0915	2.48			8.99			1,590	1,590	100.0	0.0	71.36	134.08	25.49	10		82.01	1.15	
5.139	5-YR	130.03	133.64	3.61	146.84	154.56	0.0915	3.17			10.16			2,400	2,400	100.0	0.0	74.44	135.24						
5.139	10-YR	130.03	134.09	4.06	146.84	154.56	0.0915	3.55			10.73			2,900	2,900	100.0	0.0	76.16	135.88						
5.139	25-YR	130.03	135.08	5.05	146.84	154.56	0.0915	4.35			10.27			3,570	3,570	100.0	0.0	79.91	136.72						
5.139	50-YR	130.03	135.93	5.90	146.84	154.56	0.0915	5.01			9.74			4,060	4,060	100.0	0.0	83.17	137.41						
5.139	100-YR	130.03	136.70	6.67	146.84	154.56	0.0915	5.59			9.46			4,560	4,560	100.0	0.0	86.15	138.09						
5.139	200-YR	130.03	137.31	7.28	146.84	154.56	0.0915	6.04			9.31			4,980	4,980	100.0	0.0	88.50	138.65						
5.139	500-YR	130.03	137.99	7.96	146.84	154.56	0.0915	6.54			9.20			5,480	5,480	100.0	0.0	91.13	139.30						
5.127	2-YR	124.19	132.35	8.16	145.86	152.76	-0.0050	5.70			3.58			1,590	1,590	100.0	0.0	78.03	132.54	9.56	10		103.13	1.32	
5.127	5-YR	124.19	133.96	9.77	145.86	152.76	-0.0050	6.89			4.18			2,400	2,400	100.0	0.0	83.46	134.23						
5.127	10-YR	124.19	134.82	10.63	145.86	152.76	-0.0050	7.54			4.48			2,900	2,900	100.0	0.0	85.96	135.13						
5.127	25-YR	124.19	135.87	11.68	145.86	152.76	-0.0050	8.31			4.83			3,570	3,570	100.0	0.0	88.99	136.23						
5.127	50-YR	124.19	136.58	12.39	145.86	152.76	-0.0050	8.83			5.05			4,060	4,060	100.0	0.0	91.07	136.98						
5.127	100-YR	124.19	137.28	13.09	145.86	152.76	-0.0050	9.33			5.25			4,560	4,560	100.0	0.0	93.04	137.70						
5.127	200-YR	124.19	137.84	13.65	145.86	152.76	-0.0050	9.72			5.41			4,980	4,980	100.0	0.0	94.66	138.29						
5.127	500-YR	124.19	138.48	14.29	145.86	152.76	-0.0050	10.16			5.58			5,480	5,480	100.0	0.0	96.58	138.96						
5.106	2-YR	124.73	132.00	7.27	144.91	151.75	-0.0020	5.01			5.05			1,590	1,590	100.0	0.0	62.85	132.39	8.65	10		90.83	1.45	
5.106	5-YR	124.73	133.54	8.81	144.91	151.75	-0.0020	6.10			5.77			2,400	2,400	100.0	0.0	68.22	134.06						
5.106	10-YR	124.73	134.38	9.65	144.91	151.75	-0.0020	6.67			6.12			2,900	2,900	100.0	0.0	71.12	134.96						
5.106	25-YR	124.73	135.39	10.66	144.91	151.75	-0.0020	7.39			6.52			3,570	3,570	100.0	0.0	74.12	136.05						
5.106	50-YR	124.73	136.08	11.35	144.91	151.75	-0.0020	7.87			6.77			4,060	4,060	100.0	0.0	76.15	136.79						
5.106	100-YR	124.73	136.76	12.03	144.91	151.75	-0.0020	8.34			7.00			4,560	4,560	100.0	0.0	78.14	137.52						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
5.106	200-YR	124.73	137.30	12.57	144.91	151.75	-0.0020	8.71			7.17			4,980	4,980	100.0	0.0	79.75	138.10						
5.106	500-YR	124.73	137.93	13.20	144.91	151.75	-0.0020	9.13			7.35			5,480	5,480	100.0	0.0	81.58	138.77						
5.051	2-YR	125.31	130.21	4.90	149.04	147.32	0.0059	3.52			6.79			1,590	1,590	100.0	0.0	66.50	130.93	13.57	10		92.25	1.39	
5.051	5-YR	125.31	131.94	6.63	149.04	147.32	0.0059	4.64			6.71			2,400	2,400	100.0	0.0	77.04	132.64						
5.051	10-YR	125.31	132.86	7.55	149.04	147.32	0.0059	5.26			6.73			2,900	2,900	100.0	0.0	81.88	133.56						
5.051	25-YR	125.31	133.97	8.66	149.04	147.32	0.0059	6.06			6.81			3,570	3,570	100.0	0.0	86.60	134.69						
5.051	50-YR	125.31	134.72	9.41	149.04	147.32	0.0059	6.54			6.87			4,060	4,060	100.0	0.0	90.31	135.45						
5.051	100-YR	125.31	135.44	10.13	149.04	147.32	0.0059	7.00			6.94			4,560	4,560	100.0	0.0	93.87	136.19						
5.051	200-YR	125.31	136.01	10.70	149.04	147.32	0.0059	7.36			6.99			4,980	4,980	100.0	0.0	96.71	136.77						
5.051	500-YR	125.31	136.67	11.36	149.04	147.32	0.0059	7.75			7.06			5,480	5,480	100.0	0.0	100.11	137.44						
5.026	2-YR	124.55	128.80	4.25	145.27	145.83	0.0000	3.67			9.85			1,590	1,590	100.0	0.0	43.99	130.31	10.35	10		54.99	1.25	
5.026	5-YR	124.55	129.99	5.44	145.27	145.83	0.0000	4.58			11.15			2,400	2,400	100.0	0.0	46.98	131.92						
5.026	10-YR	124.55	130.63	6.08	145.27	145.83	0.0000	5.06			11.79			2,900	2,900	100.0	0.0	48.61	132.79						
5.026	25-YR	124.55	131.42	6.87	145.27	145.83	0.0000	5.64			12.51			3,570	3,570	100.0	0.0	50.61	133.85						
5.026	50-YR	124.55	131.96	7.41	145.27	145.83	0.0000	6.03			12.97			4,060	4,060	100.0	0.0	51.96	134.58						
5.026	100-YR	124.55	132.49	7.94	145.27	145.83	0.0000	6.38			13.38			4,560	4,560	100.0	0.0	53.39	135.27						
5.026	200-YR	124.55	132.91	8.36	145.27	145.83	0.0000	6.66			13.70			4,980	4,980	100.0	0.0	54.59	135.83						
5.026	500-YR	124.55	133.39	8.84	145.27	145.83	0.0000	6.97			14.05			5,480	5,480	100.0	0.0	55.97	136.46						
5.020		Bridge																							
5.014	2-YR	123.98	128.09	4.11	141.89	141.54	0.2234	3.30			10.37			1,590	1,590	100.0	0.0	46.43	129.76	11.30	9	12.00	59.98	1.29	1.36
5.014	5-YR	123.98	129.21	5.23	141.89	141.54	0.2234	4.12			11.58			2,400	2,400	100.0	0.0	50.32	131.29						
5.014	10-YR	123.98	129.81	5.83	141.89	141.54	0.2234	4.55			12.18			2,900	2,900	100.0	0.0	52.34	132.11						
5.014	25-YR	123.98	130.56	6.58	141.89	141.54	0.2234	5.08			12.82			3,570	3,570	100.0	0.0	54.76	133.12						
5.014	50-YR	123.98	131.05	7.07	141.89	141.54	0.2234	5.42			13.30			4,060	4,060	100.0	0.0	56.31	133.79						
5.014	100-YR	123.98	131.54	7.56	141.89	141.54	0.2234	5.76			13.66			4,560	4,560	100.0	0.0	57.89	134.44						
5.014	200-YR	123.98	131.93	7.95	141.89	141.54	0.2234	6.03			13.97			4,980	4,980	100.0	0.0	59.13	134.96						
5.014	500-YR	123.98	132.38	8.40	141.89	141.54	0.2234	6.33			14.31			5,480	5,480	100.0	0.0	60.54	135.56						
5.011	2-YR	120.25	124.30	4.05	137.32	141.03	0.0238	3.28			10.28			1,590	1,590	100.0	0.0	47.14	125.94	11.64	9		59.43	1.26	
5.011	5-YR	120.25	125.40	5.15	137.32	141.03	0.0238	4.12			11.52			2,400	2,400	100.0	0.0	50.63	127.46						
5.011	10-YR	120.25	126.00	5.75	137.32	141.03	0.0238	4.56			12.12			2,900	2,900	100.0	0.0	52.52	128.28						
5.011	25-YR	120.25	126.71	6.46	137.32	141.03	0.0238	5.08			12.87			3,570	3,570	100.0	0.0	54.60	129.28						
5.011	50-YR	120.25	127.23	6.98	137.32	141.03	0.0238	5.46			13.26			4,060	4,060	100.0	0.0	56.13	129.96						
5.011	100-YR	120.25	127.71	7.46	137.32	141.03	0.0238	5.80			13.67			4,560	4,560	100.0	0.0	57.54	130.61						
5.011	200-YR	120.25	128.43	8.18	137.32	141.03	0.0238	6.30			13.25			4,980	4,980	100.0	0.0	59.66	131.16						
5.011	500-YR	120.25	130.22	9.97	137.32	141.03	0.0238	7.41			11.24			5,480	5,480	100.0	0.0	65.79	132.18						
4.984	2-YR	116.88	122.54	5.66	143.93	139.56	0.0100	2.23			8.49			1,590	1,590	100.0	0.0	84.04	123.66	14.85	9		133.71	1.59	
4.984	5-YR	116.88	123.30	6.42	143.93	139.56	0.0100	2.67			9.34			2,400	2,400	100.0	0.0	96.30	124.65						
4.984	10-YR	116.88	124.67	7.79	143.93	139.56	0.0100	3.68			7.30			2,900	2,900	100.0	0.0	107.85	125.50						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
4.984	25-YR	116.88	126.39	9.51	143.93	139.56	0.0100	4.93			6.02			3,570	3,570	100.0	0.0	120.34	126.95						
4.984	50-YR	116.88	127.49	10.61	143.93	139.56	0.0100	5.68			5.56			4,060	4,060	100.0	0.0	128.43	127.97						
4.984	100-YR	116.88	128.65	11.77	143.93	139.56	0.0100	6.47			5.16			4,560	4,560	100.0	0.0	136.64	129.06						
4.984	200-YR	116.88	129.80	12.92	143.93	139.56	0.0100	7.32			4.77			4,980	4,980	100.0	0.0	142.62	130.15						
4.984	500-YR	116.88	131.18	14.30	143.93	139.56	0.0100	8.48			4.40			5,480	5,480	100.0	0.0	146.82	131.48						
4.916	2-YR	113.27	120.80	7.53	141.83	139.86	0.0014	5.20			3.98			1,590	1,590	100.0	0.0	76.98	121.05	10.22	9		100.97	1.31	
4.916	5-YR	113.27	123.09	9.82	141.83	139.86	0.0014	6.86			4.10			2,400	2,400	100.0	0.0	85.43	123.35						
4.916	10-YR	113.27	124.57	11.30	141.83	139.86	0.0014	7.90			4.05			2,900	2,900	100.0	0.0	90.70	124.83						
4.916	25-YR	113.27	126.24	12.97	141.83	139.86	0.0014	9.11			4.10			3,570	3,570	100.0	0.0	95.67	126.50						
4.916	50-YR	113.27	127.33	14.06	141.83	139.86	0.0014	9.90			4.15			4,060	4,060	100.0	0.0	98.81	127.60						
4.916	100-YR	113.27	128.49	15.22	141.83	139.86	0.0014	10.79			4.17			4,560	4,560	100.0	0.0	101.36	128.76						
4.916	200-YR	113.27	129.65	16.38	141.83	139.86	0.0014	11.66			4.11			4,980	4,980	100.0	0.0	104.05	129.91						
4.916	500-YR	113.27	131.05	17.78	141.83	139.86	0.0014	12.73			4.03			5,480	5,480	100.0	0.0	106.88	131.30						
4.854	2-YR	112.80	119.67	6.87	142.86	141.21	0.0027	4.74			6.95			1,590	1,590	100.0	0.0	48.30	120.42	7.03	8	11.13	72.23	1.50	1.73
4.854	5-YR	112.80	121.58	8.78	142.86	141.21	0.0027	5.91			8.62			2,830	2,830	100.0	0.0	55.56	122.74						
4.854	10-YR	112.80	122.79	9.99	142.86	141.21	0.0027	6.67			9.58			3,810	3,810	100.0	0.0	59.66	124.22						
4.854	25-YR	112.80	124.09	11.29	142.86	141.21	0.0027	7.47			10.70			5,120	5,120	100.0	0.0	64.07	125.87						
4.854	50-YR	112.80	124.89	12.09	142.86	141.21	0.0027	7.95			11.49			6,100	6,100	100.0	0.0	66.74	126.94						
4.854	100-YR	112.80	125.72	12.92	142.86	141.21	0.0027	8.46			12.33			7,240	7,240	100.0	0.0	69.40	128.08						
4.854	200-YR	112.80	126.49	13.69	142.86	141.21	0.0027	8.91			13.22			8,480	8,480	100.0	0.0	72.02	129.21						
4.854	500-YR	112.80	127.42	14.62	142.86	141.21	0.0027	9.30			14.23			10,100	10,100	100.0	0.0	76.38	130.56						
4.785	2-YR	111.82	118.61	6.79	139.27	138.18	0.0032	3.74			5.67			1,590	1,590	100.0	0.0	75.05	119.11	11.05	8		112.65	1.50	
4.785	5-YR	111.82	120.90	9.08	139.27	138.18	0.0032	5.21			5.98			2,830	2,830	100.0	0.0	90.83	121.45						
4.785	10-YR	111.82	122.31	10.49	139.27	138.18	0.0032	6.21			6.27			3,810	3,810	100.0	0.0	97.80	122.93						
4.785	25-YR	111.82	123.79	11.97	139.27	138.18	0.0032	7.23			6.77			5,120	5,120	100.0	0.0	104.60	124.50						
4.785	50-YR	111.82	124.69	12.87	139.27	138.18	0.0032	7.83			7.15			6,100	6,100	100.0	0.0	108.95	125.49						
4.785	100-YR	111.82	125.64	13.82	139.27	138.18	0.0032	8.42			7.55			7,240	7,240	100.0	0.0	113.91	126.53						
4.785	200-YR	111.82	126.53	14.71	139.27	138.18	0.0032	8.98			7.98			8,480	8,480	100.0	0.0	118.32	127.52						
4.785	500-YR	111.82	127.62	15.80	139.27	138.18	0.0032	9.67			8.47			10,100	10,100	100.0	0.0	123.33	128.73						
4.717	2-YR	110.68	117.98	7.30	135.33	136.90	0.0034	4.75			4.54			1,590	1,590	100.0	0.0	73.69	118.30	10.09	8		114.32	1.55	
4.717	5-YR	110.68	120.36	9.68	135.33	136.90	0.0034	6.12			5.20			2,830	2,830	100.0	0.0	89.00	120.78						
4.717	10-YR	110.68	121.81	11.13	135.33	136.90	0.0034	7.04			5.61			3,810	3,810	100.0	0.0	96.47	122.30						
4.717	25-YR	110.68	123.28	12.60	135.33	136.90	0.0034	7.96			6.19			5,120	5,120	100.0	0.0	103.92	123.88						
4.717	50-YR	110.68	124.17	13.49	135.33	136.90	0.0034	8.52			6.63			6,100	6,100	100.0	0.0	108.11	124.85						
4.717	100-YR	110.68	125.09	14.41	135.33	136.90	0.0034	9.03			7.08			7,240	7,240	100.0	0.0	113.20	125.87						
4.717	200-YR	110.68	125.95	15.27	135.33	136.90	0.0034	9.45			7.56			8,480	8,480	100.0	0.0	118.74	126.83						
4.717	500-YR	110.68	127.00	16.32	135.33	136.90	0.0034	9.92			8.08			10,100	10,100	100.0	0.0	125.98	128.01						
4.656	2-YR	109.59	117.60	8.01	132.95	136.26	-0.0004	5.25			4.16			1,590	1,590	100.0	0.0	72.78	117.87	9.09	8		113.23	1.56	
4.656	5-YR	109.59	119.97	10.38	132.95	136.26	-0.0004	6.58			4.96			2,830	2,830	100.0	0.0	86.64	120.35						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
4.656	10-YR	109.59	121.43	11.84	132.95	136.26	-0.0004	7.48			5.43			3,810	3,810	100.0	0.0	93.87	121.88						
4.656	25-YR	109.59	122.86	13.27	132.95	136.26	-0.0004	8.36			6.08			5,120	5,120	100.0	0.0	100.68	123.44						
4.656	50-YR	109.59	123.71	14.12	132.95	136.26	-0.0004	8.89			6.57			6,100	6,100	100.0	0.0	104.57	124.38						
4.656	100-YR	109.59	124.60	15.01	132.95	136.26	-0.0004	9.42			7.08			7,240	7,240	100.0	0.0	108.60	125.37						
4.656	200-YR	109.59	125.39	15.80	132.95	136.26	-0.0004	9.90			7.63			8,480	8,480	100.0	0.0	112.24	126.30						
4.656	500-YR	109.59	126.36	16.77	132.95	136.26	-0.0004	10.34			8.26			10,100	10,100	100.0	0.0	118.23	127.42						
4.595	2-YR	109.73	116.01	6.28	119.03	136.70	0.0041	4.12			7.90			1,590	1,590	100.0	0.0	48.86	116.98	7.78	8		163.53	3.35	
4.595	5-YR	109.73	118.13	8.40	119.03	136.70	0.0041	5.53			9.04			2,830	2,830	100.0	0.0	56.63	119.40						
4.595	10-YR	109.73	119.45	9.72	119.03	136.70	0.0041	6.50	0.34		9.70	1.05		3,795	3,810	99.6	0.4	101.76	120.91						
4.595	25-YR	109.73	121.09	11.36	119.03	136.70	0.0041	8.04	1.49		9.77	2.51		4,789	5,120	93.5	6.5	149.50	122.48						
4.595	50-YR	109.73	122.12	12.39	119.03	136.70	0.0041	9.00	2.29		9.74	3.12		5,386	6,100	88.3	11.7	161.49	123.43						
4.595	100-YR	109.73	123.09	13.36	119.03	136.70	0.0041	9.90	2.75		9.95	3.42		6,094	7,240	84.2	15.8	183.91	124.41						
4.595	200-YR	109.73	124.07	14.34	119.03	136.70	0.0041	10.81	3.64		9.92	3.92		6,688	8,480	78.9	21.1	188.08	125.33						
4.595	500-YR	109.73	125.23	15.50	119.03	136.70	0.0041	11.87	4.68		9.94	4.41		7,427	10,100	73.5	26.5	192.42	126.44						
4.522	2-YR	108.13	114.97	6.84	134.01	120.20	0.0003	4.58			4.59			1,590	1,590	100.0	0.0	75.61	115.29	11.05	8		140.18	1.85	
4.522	5-YR	108.13	116.89	8.76	134.01	120.20	0.0003	6.09			5.68			2,830	2,830	100.0	0.0	81.76	117.39						
4.522	10-YR	108.13	118.11	9.98	134.01	120.20	0.0003	7.00			6.35			3,810	3,810	100.0	0.0	85.64	118.73						
4.522	25-YR	108.13	119.65	11.52	134.01	120.20	0.0003	8.08			6.96			5,120	5,120	100.0	0.0	91.07	120.40						
4.522	50-YR	108.13	120.58	12.45	134.01	120.20	0.0003	8.78		0.19	7.42		0.39	6,100	6,100	100.0	0.0	98.22	121.43						
4.522	100-YR	108.13	121.43	13.30	134.01	120.20	0.0003	9.56		0.42	8.02		0.82	7,231	7,240	99.9	0.1	119.27	122.43						
4.522	200-YR	108.13	122.32	14.19	134.01	120.20	0.0003	10.37		0.95	8.54		1.21	8,419	8,480	99.3	0.7	147.97	123.45						
4.522	500-YR	108.13	123.39	15.26	134.01	120.20	0.0003	11.35		1.75	9.09		1.83	9,892	10,100	97.9	2.1	160.81	124.64						
4.464	2-YR	108.03	112.45	4.42	128.78	118.23	0.0060	2.91			9.70			1,590	1,590	100.0	0.0	56.23	113.91	12.72	8		101.21	1.80	
4.464	5-YR	108.03	114.61	6.58	128.78	118.23	0.0060	3.68			8.83			2,830	2,830	100.0	0.0	87.06	115.82						
4.464	10-YR	108.03	116.28	8.25	128.78	118.23	0.0060	4.85			7.99			3,810	3,810	100.0	0.0	98.42	117.27						
4.464	25-YR	108.03	118.12	10.09	128.78	118.23	0.0060	6.22			7.69			5,120	5,120	100.0	0.0	107.13	119.04						
4.464	50-YR	108.03	119.17	11.14	128.78	118.23	0.0060	7.22		0.52	7.81		1.01	6,085	6,100	99.8	0.2	135.98	120.11						
4.464	100-YR	108.03	120.08	12.05	128.78	118.23	0.0060	8.10		1.09	8.17		1.61	7,164	7,240	99.0	1.0	151.38	121.10						
4.464	200-YR	108.03	121.05	13.02	128.78	118.23	0.0060	9.05		1.73	8.43		2.11	8,281	8,480	97.6	2.4	163.44	122.13						
4.464	500-YR	108.03	122.17	14.14	128.78	118.23	0.0060	10.13		2.24	8.77		2.44	9,691	10,100	95.9	4.1	183.71	123.32						
4.398	2-YR	105.93	112.36	6.43	119.59	125.00	0.0032	5.14			3.16			1,590	1,590	100.0	0.0	98.06	112.51	15.25	8		119.22	1.22	
4.398	5-YR	105.93	114.70	8.77	119.59	125.00	0.0032	6.96			3.80			2,830	2,830	100.0	0.0	106.81	114.93						
4.398	10-YR	105.93	116.21	10.28	119.59	125.00	0.0032	8.13			4.19			3,810	3,810	100.0	0.0	111.77	116.48						
4.398	25-YR	105.93	117.98	12.05	119.59	125.00	0.0032	9.50			4.61			5,120	5,120	100.0	0.0	116.97	118.31						
4.398	50-YR	105.93	119.01	13.08	119.59	125.00	0.0032	10.29			4.95			6,100	6,100	100.0	0.0	119.84	119.39						
4.398	100-YR	105.93	119.88	13.95	119.59	125.00	0.0032	10.99	0.39		5.41	0.31		7,239	7,240	100.0	0.0	132.24	120.34						
4.398	200-YR	105.93	120.82	14.89	119.59	125.00	0.0032	11.85	0.99		5.83	0.61		8,470	8,480	99.9	0.1	139.84	121.35						
4.398	500-YR	105.93	121.90	15.97	119.59	125.00	0.0032	12.85	1.58		6.35	0.87		10,065	10,100	99.7	0.3	148.66	122.52						
4.330	2-YR	104.78	111.98	7.20	125.86	122.06	0.0007	4.45			3.67			1,590	1,590	100.0	0.0	97.15	112.19	13.49	8		154.2	1.59	

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
4.330	5-YR	104.78	114.33	9.55	125.86	122.06	0.0007	6.14			4.19			2,830	2,830	100.0	0.0	110.03	114.60						
4.330	10-YR	104.78	115.81	11.03	125.86	122.06	0.0007	6.84			4.50			3,810	3,810	100.0	0.0	123.69	116.13						
4.330	25-YR	104.78	117.59	12.81	125.86	122.06	0.0007	7.52			4.69			5,120	5,120	100.0	0.0	145.17	117.93						
4.330	50-YR	104.78	118.62	13.84	125.86	122.06	0.0007	8.23			4.91			6,100	6,100	100.0	0.0	151.01	118.99						
4.330	100-YR	104.78	119.46	14.68	125.86	122.06	0.0007	8.81			5.28			7,240	7,240	100.0	0.0	155.78	119.89						
4.330	200-YR	104.78	120.37	15.59	125.86	122.06	0.0007	9.27			5.58			8,480	8,480	100.0	0.0	163.82	120.86						
4.330	500-YR	104.78	121.42	16.64	125.86	122.06	0.0007	9.72			5.96			10,100	10,100	100.0	0.0	174.48	121.97						
4.266	2-YR	104.54	111.36	6.82	119.86	121.35	0.0033	3.85			4.41			1,590	1,590	100.0	0.0	93.66	111.67	13.73	8		130.06	1.39	
4.266	5-YR	104.54	113.75	9.21	119.86	121.35	0.0033	5.77			4.76			2,830	2,830	100.0	0.0	103.09	114.10						
4.266	10-YR	104.54	115.19	10.65	119.86	121.35	0.0033	6.87			5.10			3,810	3,810	100.0	0.0	108.78	115.59						
4.266	25-YR	104.54	116.91	12.37	119.86	121.35	0.0033	8.13			5.45			5,120	5,120	100.0	0.0	115.58	117.37						
4.266	50-YR	104.54	117.88	13.34	119.86	121.35	0.0033	8.42			5.78			6,100	6,100	100.0	0.0	125.44	118.40						
4.266	100-YR	104.54	118.61	14.07	119.86	121.35	0.0033	8.38			6.29			7,240	7,240	100.0	0.0	137.49	119.23						
4.266	200-YR	104.54	119.44	14.90	119.86	121.35	0.0033	8.29	0.02		6.67	0.07		8,480	8,480	100.0	0.0	156.38	120.13						
4.266	500-YR	104.54	120.41	15.87	119.86	121.35	0.0033	8.60	0.55		7.02	0.68		10,035	10,100	99.4	0.6	339.12	121.18						
4.199	2-YR	103.37	110.76	7.39	115.52	118.98	0.0011	4.98			4.11			1,590	1,590	100.0	0.0	77.64	111.02	10.51	7	23.00	165	2.13	4.42
4.199	5-YR	103.37	113.11	9.74	115.52	118.98	0.0011	6.60			4.86			2,830	2,830	100.0	0.0	88.18	113.48						
4.199	10-YR	103.37	114.49	11.12	115.52	118.98	0.0011	7.53			5.38			3,810	3,810	100.0	0.0	94.01	114.94						
4.199	25-YR	103.37	116.16	12.79	115.52	118.98	0.0011	8.38	0.32		5.87	0.48		5,119	5,120	100.0	0.0	110.99	116.69						
4.199	50-YR	103.37	117.05	13.68	115.52	118.98	0.0011	8.85	0.74		6.29	0.90		6,089	6,100	99.8	0.2	126.08	117.67						
4.199	100-YR	103.37	117.59	14.22	115.52	118.98	0.0011	9.13	0.86		7.02	1.10		7,214	7,240	99.6	0.4	140.43	118.35						
4.199	200-YR	103.37	118.24	14.87	115.52	118.98	0.0011	9.47	0.94		7.64	1.26		8,419	8,480	99.3	0.7	168.59	119.14						
4.199	500-YR	103.37	119.02	15.65	115.52	118.98	0.0011	9.84	1.05	0.02	8.32	1.46	0.10	9,940	10,100	98.4	1.6	227.07	120.07						
4.138	2-YR	103.02	109.85	6.83	115.09	112.16	0.0020	4.41			5.43			1,590	1,590	100.0	0.0	66.46	110.30	9.73	7		256.7	3.86	
4.138	5-YR	103.02	112.01	8.99	115.09	112.16	0.0020	5.92		0.06	6.34		0.18	2,830	2,830	100.0	0.0	79.96	112.63						
4.138	10-YR	103.02	113.24	10.22	115.09	112.16	0.0020	6.77		0.99	6.99		1.24	3,788	3,810	99.4	0.6	98.26	114.00						
4.138	25-YR	103.02	114.79	11.77	115.09	112.16	0.0020	7.21		1.20	7.34		1.55	4,949	5,120	96.7	3.3	185.79	115.60						
4.138	50-YR	103.02	115.80	12.78	115.09	112.16	0.0020	7.92	0.36	2.15	7.31	0.67	2.18	5,642	6,100	92.5	7.5	239.21	116.57						
4.138	100-YR	103.02	115.92	12.90	115.09	112.16	0.0020	8.04	0.46	2.26	8.50	0.90	2.59	6,658	7,240	92.0	8.0	241.63	116.96						
4.138	200-YR	103.02	116.37	13.35	115.09	112.16	0.0020	8.49	0.83	2.68	9.22	1.40	3.03	7,628	8,480	90.0	10.0	248.98	117.57						
4.138	500-YR	103.02	116.89	13.87	115.09	112.16	0.0020	9.01	1.14	3.15	10.08	1.81	3.55	8,856	10,100	87.7	12.3	263.44	118.30						
4.067	2-YR	102.26	108.01	5.75	113.00	109.30	0.0033	3.97			7.43			1,590	1,590	100.0	0.0	53.86	108.87	9.37	7		450.05	8.36	
4.067	5-YR	102.26	109.53	7.27	113.00	109.30	0.0033	5.01		0.19	9.39		0.54	2,827	2,830	99.9	0.1	86.82	110.90						
4.067	10-YR	102.26	110.40	8.14	113.00	109.30	0.0033	5.78		0.77	10.58		1.38	3,742	3,810	98.2	1.8	125.78	112.11						
4.067	25-YR	102.26	111.25	8.99	113.00	109.30	0.0033	6.56		1.45	12.03		2.22	4,879	5,120	95.3	4.7	136.77	113.39						
4.067	50-YR	102.26	111.61	9.35	113.00	109.30	0.0033	6.89		1.45	13.47		2.41	5,769	6,100	94.6	5.4	156.73	114.28						
4.067	100-YR	102.26	113.31	11.05	113.00	109.30	0.0033	8.38	0.77	2.18	11.42	1.19	2.36	6,106	7,240	84.3	15.7	441.40	115.02						
4.067	200-YR	102.26	113.81	11.55	113.00	109.30	0.0033	8.88	1.24	2.65	11.87	1.63	2.70	6,731	8,480	79.4	20.6	450.24	115.57						
4.067	500-YR	102.26	114.34	12.08	113.00	109.30	0.0033	9.42	1.78	3.16	12.51	2.09	3.07	7,520	10,100	74.5	25.5	452.30	116.18						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
4.003	2-YR	101.15	107.43	6.28	110.21	113.80	0.0032	3.69			4.30			1,590	1,590	100.0	0.0	100.28	107.72	15.97	7		502.58	5.01	
4.003	5-YR	101.15	109.16	8.01	110.21	113.80	0.0032	4.70			5.08			2,830	2,830	100.0	0.0	118.59	109.56						
4.003	10-YR	101.15	110.14	8.99	110.21	113.80	0.0032	5.20	0.08		5.61	0.18		3,810	3,810	100.0	0.0	163.03	110.63						
4.003	25-YR	101.15	111.18	10.03	110.21	113.80	0.0032	5.95	0.56		6.16	0.63		5,048	5,120	98.6	1.4	343.89	111.76						
4.003	50-YR	101.15	111.84	10.69	110.21	113.80	0.0032	6.41	0.90		6.43	0.85		5,858	6,100	96.0	4.0	458.93	112.45						
4.003	100-YR	101.15	112.46	11.31	110.21	113.80	0.0032	6.85	1.44		6.66	1.16		6,668	7,240	92.1	7.9	490.02	113.10						
4.003	200-YR	101.15	112.95	11.80	110.21	113.80	0.0032	7.20	1.91		7.02	1.42		7,535	8,480	88.9	11.1	497.98	113.63						
4.003	500-YR	101.15	113.52	12.37	110.21	113.80	0.0032	7.60	2.47		7.43	1.73		8,614	10,100	85.3	14.7	501.40	114.25						
3.937	2-YR	100.04	105.75	5.71	107.90	110.55	0.0034	3.71			7.76			1,590	1,590	100.0	0.0	55.20	106.68	9.67	7		473.5	8.58	
3.937	5-YR	100.04	107.32	7.28	107.90	110.55	0.0034	3.35			8.56			2,830	2,830	100.0	0.0	98.66	108.46						
3.937	10-YR	100.04	108.06	8.02	107.90	110.55	0.0034	3.76	0.19		9.32	0.54		3,805	3,810	99.9	0.1	159.47	109.41						
3.937	25-YR	100.04	108.64	8.60	107.90	110.55	0.0034	4.19	0.65		10.72	1.40		5,059	5,120	98.8	1.2	180.05	110.40						
3.937	50-YR	100.04	109.09	9.05	107.90	110.55	0.0034	4.52	0.94		11.38	1.88		5,955	6,100	97.6	2.4	197.90	111.05						
3.937	100-YR	100.04	109.73	9.69	107.90	110.55	0.0034	4.97	1.14		11.55	2.12		6,927	7,240	95.7	4.3	250.02	111.72						
3.937	200-YR	100.04	110.58	10.54	107.90	110.55	0.0034	5.37	1.32	0.02	11.00	2.18	0.11	7,778	8,480	91.7	8.3	374.73	112.31						
3.937	500-YR	100.04	111.22	11.18	107.90	110.55	0.0034	6.01	1.77	0.26	11.15	2.62	0.73	8,818	10,100	87.3	12.7	449.69	112.92						
3.872	2-YR	98.88	105.38	6.50	107.39	104.48	0.0014	4.69		0.76	4.35		0.65	1,561	1,590	98.2	1.8	134.42	105.67	20.68	7		804.57	5.99	
3.872	5-YR	98.88	106.80	7.92	107.39	104.48	0.0014	5.98		0.85	5.69		0.80	2,673	2,830	94.5	5.5	312.14	107.28						
3.872	10-YR	98.88	107.62	8.74	107.39	104.48	0.0014	6.73	0.55	1.63	6.13	0.59	1.19	3,273	3,810	85.9	14.1	529.38	108.13						
3.872	25-YR	98.88	107.80	8.92	107.39	104.48	0.0014	6.91	0.66	1.80	7.82	0.83	1.60	4,291	5,120	83.8	16.2	555.76	108.60						
3.872	50-YR	98.88	108.31	9.43	107.39	104.48	0.0014	7.42	1.09	2.29	8.07	1.12	1.85	4,749	6,100	77.8	22.2	580.51	109.11						
3.872	100-YR	98.88	108.88	10.00	107.39	104.48	0.0014	7.99	1.53	2.65	8.27	1.38	1.99	5,243	7,240	72.4	27.6	627.38	109.66						
3.872	200-YR	98.88	109.53	10.65	107.39	104.48	0.0014	8.64	2.04	3.19	8.20	1.57	2.12	5,623	8,480	66.3	33.7	663.60	110.24						
3.872	500-YR	98.88	110.28	11.40	107.39	104.48	0.0014	9.39	2.67	3.81	8.20	1.78	2.25	6,104	10,100	60.4	39.6	688.75	110.93						
3.810	2-YR	98.41	104.16	5.75	103.20	104.07	0.0026	4.48	0.42	0.43	6.98	0.72	0.73	1,560	1,590	98.1	1.9	146.02	104.90	25.39	7		814.56	5.58	
3.810	5-YR	98.41	105.54	7.13	103.20	104.07	0.0026	5.86	0.96	1.05	8.19	1.23	1.44	2,393	2,830	84.6	15.4	362.59	106.42						
3.810	10-YR	98.41	105.79	7.38	103.20	104.07	0.0026	6.11	1.03	1.07	10.18	1.56	1.84	3,103	3,810	81.4	18.6	431.31	107.11						
3.810	25-YR	98.41	107.10	8.69	103.20	104.07	0.0026	7.42	1.75	2.30	7.89	1.51	1.81	2,920	5,120	57.0	43.0	722.55	107.67						
3.810	50-YR	98.41	107.85	9.44	103.20	104.07	0.0026	8.17	2.35	3.03	7.21	1.58	1.86	2,940	6,100	48.2	51.8	756.57	108.26						
3.810	100-YR	98.41	108.56	10.15	103.20	104.07	0.0026	8.88	3.02	3.57	6.86	1.68	1.92	3,036	7,240	41.9	58.1	776.24	108.89						
3.810	200-YR	98.41	109.26	10.85	103.20	104.07	0.0026	9.58	3.71	3.92	6.74	1.79	1.86	3,221	8,480	38.0	62.0	809.32	109.56						
3.810	500-YR	98.41	110.06	11.65	103.20	104.07	0.0026	10.38	4.48	4.67	6.60	1.89	1.94	3,418	10,100	33.8	66.2	815.79	110.33						
3.741	2-YR	97.46	102.96	5.50	101.52	102.65	0.0026	4.52	0.77	0.07	6.43	0.99	0.19	1,507	1,590	94.8	5.2	161.71	103.57	29.40	7		631.34	3.90	
3.741	5-YR	97.46	104.48	7.02	101.52	102.65	0.0026	6.04	2.03	0.79	7.35	1.78	0.95	2,300	2,830	81.3	18.7	264.55	105.17						
3.741	10-YR	97.46	105.56	8.10	101.52	102.65	0.0026	7.12	2.52	1.56	5.84	1.46	1.06	2,154	3,810	56.5	43.5	562.47	105.87						
3.741	25-YR	97.46	106.76	9.30	101.52	102.65	0.0026	8.32	3.68	2.26	5.50	1.59	1.15	2,368	5,120	46.2	53.8	600.16	107.00						
3.741	50-YR	97.46	107.53	10.07	101.52	102.65	0.0026	9.09	4.44	2.72	5.41	1.67	1.21	2,546	6,100	41.7	58.3	620.49	107.74						
3.741	100-YR	97.46	108.25	10.79	101.52	102.65	0.0026	9.81	5.14	3.30	5.47	1.77	1.32	2,777	7,240	38.4	61.6	629.79	108.45						
3.741	200-YR	97.46	108.96	11.50	101.52	102.65	0.0026	10.53	5.84	3.94	5.55	1.87	1.44	3,025	8,480	35.7	64.3	634.99	109.17						
3.741	500-YR	97.46	109.77	12.31	101.52	102.65	0.0026	11.33	6.62	4.55	5.73	2.00	1.58	3,362	10,100	33.3	66.7	644.52	109.98						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
3.677	2-YR	96.59	102.31	5.72	101.27	101.60	-0.0012	3.87	0.79	0.41	3.93	0.84	0.55	1,575	1,590	99.0	1.0	133.97	102.55	23.42	7		452.56	3.38	
3.677	5-YR	96.59	103.89	7.30	101.27	101.60	-0.0012	5.44	1.75	1.05	4.80	1.40	0.99	2,706	2,830	95.6	4.4	178.53	104.23						
3.677	10-YR	96.59	104.87	8.28	101.27	101.60	-0.0012	6.43	2.32	1.61	5.31	1.67	1.31	3,533	3,810	92.7	7.3	201.10	105.28						
3.677	25-YR	96.59	106.01	9.42	101.27	101.60	-0.0012	7.57	2.93	1.76	5.84	1.92	1.37	4,579	5,120	89.4	10.6	262.98	106.49						
3.677	50-YR	96.59	106.75	10.16	101.27	101.60	-0.0012	8.30	3.33	1.85	6.18	2.08	1.41	5,316	6,100	87.2	12.8	313.17	107.27						
3.677	100-YR	96.59	107.56	10.97	101.27	101.60	-0.0012	9.11	3.79	2.32	6.13	2.11	1.51	5,784	7,240	79.9	20.1	442.48	108.03						
3.677	200-YR	96.59	108.30	11.71	101.27	101.60	-0.0012	9.85	4.34	2.96	6.26	2.24	1.72	6,391	8,480	75.4	24.6	456.82	108.77						
3.677	500-YR	96.59	109.10	12.51	101.27	101.60	-0.0012	10.66	4.89	3.67	6.50	2.39	1.96	7,178	10,100	71.1	28.9	468.69	109.59						
3.657	2-YR	96.72	101.62	4.90	100.68	100.23	-0.0038	4.14	0.78	0.71	6.27	1.02	0.95	1,559	1,590	98.0	2.0	101.87	102.22	20.79	7		295.37	2.90	
3.657	5-YR	96.72	102.86	6.14	100.68	100.23	-0.0038	5.38	1.71	1.22	8.23	1.89	1.51	2,661	2,830	94.0	6.0	129.10	103.85						
3.657	10-YR	96.72	103.56	6.84	100.68	100.23	-0.0038	6.08	2.19	1.49	9.55	2.38	1.85	3,487	3,810	91.5	8.5	147.34	104.86						
3.657	25-YR	96.72	104.31	7.59	100.68	100.23	-0.0038	6.83	2.67	1.42	11.10	2.92	1.93	4,557	5,120	89.0	11.0	196.38	106.02						
3.657	50-YR	96.72	104.66	7.94	100.68	100.23	-0.0038	7.18	2.88	1.50	12.38	3.32	2.16	5,338	6,100	87.5	12.5	217.79	106.75						
3.657	100-YR	96.72	105.27	8.55	100.68	100.23	-0.0038	7.79	3.26	1.81	13.05	3.59	2.44	6,110	7,240	84.4	15.6	245.79	107.52						
3.657	200-YR	96.72	105.84	9.12	100.68	100.23	-0.0038	8.37	3.60	2.13	13.74	3.85	2.73	6,904	8,480	81.4	18.6	268.09	108.26						
3.657	500-YR	96.72	106.70	9.98	100.68	100.23	-0.0038	9.22	4.09	2.63	14.03	4.01	3.01	7,776	10,100	77.0	23.0	299.71	109.10						
3.639	2-YR	97.08	100.63	3.55	100.39	99.62	0.0001	2.96	0.44	0.56	8.27	1.13	1.34	1,561	1,590	98.2	1.8	113.59	101.67	32.00	7		228.64	2.01	
3.639	5-YR	97.08	101.65	4.57	100.39	99.62	0.0001	3.98	1.33	1.12	10.38	2.45	2.19	2,635	2,830	93.1	6.9	131.31	103.22						
3.639	10-YR	97.08	102.42	5.34	100.39	99.62	0.0001	4.74	1.94	1.39	11.29	3.04	2.45	3,416	3,810	89.7	10.3	150.24	104.20						
3.639	25-YR	97.08	103.24	6.16	100.39	99.62	0.0001	5.56	2.55	1.62	12.44	3.61	2.68	4,417	5,120	86.3	13.7	176.72	105.33						
3.639	50-YR	97.08	104.09	7.01	100.39	99.62	0.0001	6.42	3.16	1.69	12.33	3.75	2.49	5,050	6,100	82.8	17.2	226.49	106.07						
3.639	100-YR	97.08	104.64	7.56	100.39	99.62	0.0001	6.97	3.53	2.07	13.01	4.03	2.84	5,783	7,240	79.9	20.1	240.14	106.78						
3.639	200-YR	97.08	105.20	8.12	100.39	99.62	0.0001	7.52	3.90	2.44	13.63	4.28	3.15	6,542	8,480	77.1	22.9	253.63	107.47						
3.639	500-YR	97.08	105.85	8.77	100.39	99.62	0.0001	8.18	4.32	2.86	14.36	4.57	3.49	7,497	10,100	74.2	25.8	269.56	108.29						
3.621	2-YR	97.07	99.82	2.75	98.77	99.32	0.0146	2.42	0.49	0.92	7.73	1.29	1.97	1,487	1,590	93.5	6.5	189.84	100.69	69.03	7		259.3	1.37	
3.621	5-YR	97.07	100.69	3.62	98.77	99.32	0.0146	3.30	1.22	1.44	9.22	2.31	2.58	2,414	2,830	85.3	14.7	215.01	101.83						
3.621	10-YR	97.07	101.25	4.18	98.77	99.32	0.0146	3.85	1.69	1.73	10.11	2.84	2.88	3,090	3,810	81.1	18.9	227.68	102.56						
3.621	25-YR	97.07	101.82	4.75	98.77	99.32	0.0146	4.43	2.18	2.01	11.30	3.43	3.25	3,969	5,120	77.5	22.5	239.75	103.40						
3.621	50-YR	97.07	102.29	5.22	98.77	99.32	0.0146	4.90	2.50	2.23	11.81	3.68	3.39	4,593	6,100	75.3	24.7	253.76	103.97						
3.621	100-YR	97.07	102.71	5.64	98.77	99.32	0.0146	5.31	2.84	2.38	12.60	4.05	3.59	5,313	7,240	73.4	26.6	263.73	104.58						
3.621	200-YR	97.07	103.20	6.13	98.77	99.32	0.0146	5.80	3.23	2.59	13.14	4.33	3.73	6,051	8,480	71.4	28.6	275.98	105.19						
3.621	500-YR	97.07	103.78	6.71	98.77	99.32	0.0146	6.39	3.70	2.93	13.76	4.66	3.98	6,973	10,100	69.0	31.0	286.78	105.91						
3.613	2-YR	96.48	98.71	2.23	98.96	101.04	0.2193	1.59			7.20			1,590	1,590	100.0	0.0	138.65	99.51	62.17	6	15.67	241.96	1.75	1.59
3.613	5-YR	96.48	99.51	3.03	98.96	101.04	0.2193	2.23	0.35		8.38	0.45		2,821	2,830	99.7	0.3	210.25	100.59						
3.613	10-YR	96.48	100.03	3.55	98.96	101.04	0.2193	2.65	0.80		9.02	0.74		3,769	3,810	98.9	1.1	227.02	101.28						
3.613	25-YR	96.48	100.59	4.11	98.96	101.04	0.2193	3.10	1.30		9.87	1.00		5,024	5,120	98.1	1.9	237.76	102.08						
3.613	50-YR	96.48	100.99	4.51	98.96	101.04	0.2193	3.46	1.63		10.39	1.14		5,958	6,100	97.7	2.3	242.51	102.62						
3.613	100-YR	96.48	101.39	4.91	98.96	101.04	0.2193	3.85	1.95	0.14	11.01	1.26	0.22	7,042	7,240	97.3	2.7	256.52	103.22						
3.613	200-YR	96.48	101.79	5.31	98.96	101.04	0.2193	4.25	2.25	0.44	11.63	1.37	0.46	8,217	8,480	96.9	3.1	265.00	103.82						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
3.613	500-YR	96.48	102.30	5.82	98.96	101.04	0.2193	4.77	2.63	0.76	12.29	1.49	0.65	9,741	10,100	96.4	3.6	275.26	104.57						
3.604	2-YR	85.56	89.27	3.71	101.42	103.61	0.0375	2.81			9.52			1,590	1,590	100.0	0.0	59.44	90.67	16.02	6		82.79	1.39	
3.604	5-YR	85.56	90.67	5.11	101.42	103.61	0.0375	3.77			11.03			2,830	2,830	100.0	0.0	68.13	92.56						
3.604	10-YR	85.56	91.58	6.02	101.42	103.61	0.0375	4.36			11.86			3,810	3,810	100.0	0.0	73.76	93.77						
3.604	25-YR	85.56	92.64	7.08	101.42	103.61	0.0375	5.00			12.73			5,120	5,120	100.0	0.0	80.42	95.15						
3.604	50-YR	85.56	93.34	7.78	101.42	103.61	0.0375	5.40			13.23			6,100	6,100	100.0	0.0	85.30	96.06						
3.604	100-YR	85.56	94.09	8.53	101.42	103.61	0.0375	5.83			13.74			7,240	7,240	100.0	0.0	90.37	97.03						
3.604	200-YR	85.56	94.84	9.28	101.42	103.61	0.0375	6.25			14.23			8,480	8,480	100.0	0.0	95.33	97.98						
3.604	500-YR	85.56	95.72	10.16	101.42	103.61	0.0375	6.74			14.79			10,100	10,100	100.0	0.0	101.24	99.12						
3.601	2-YR	84.90	88.85	3.95	99.91	102.84	0.2928	2.83			9.63			1,590	1,590	100.0	0.0	58.30	90.29	14.76	6		82.86	1.42	
3.601	5-YR	84.90	90.30	5.40	99.91	102.84	0.2928	3.78			11.06			2,830	2,830	100.0	0.0	67.63	92.20						
3.601	10-YR	84.90	91.23	6.33	99.91	102.84	0.2928	4.34			11.83			3,810	3,810	100.0	0.0	74.14	93.40						
3.601	25-YR	84.90	92.24	7.34	99.91	102.84	0.2928	5.01			12.80			5,120	5,120	100.0	0.0	79.80	94.79						
3.601	50-YR	84.90	92.94	8.04	99.91	102.84	0.2928	5.46			13.35			6,100	6,100	100.0	0.0	83.62	95.71						
3.601	100-YR	84.90	93.73	8.83	99.91	102.84	0.2928	5.91			13.80			7,240	7,240	100.0	0.0	88.80	96.68						
3.601	200-YR	84.90	94.46	9.56	99.91	102.84	0.2928	6.36			14.33			8,480	8,480	100.0	0.0	93.10	97.65						
3.601	500-YR	84.90	95.34	10.44	99.91	102.84	0.2928	6.90			14.96			10,100	10,100	100.0	0.0	97.89	98.81						
3.594	2-YR	73.95	77.91	3.96	98.71	101.36	0.0265	3.49			10.60			1,590	1,590	100.0	0.0	43.01	79.66	10.86	6		52.18	1.21	
3.594	5-YR	73.95	79.60	5.65	98.71	101.36	0.0265	4.92			12.59			2,830	2,830	100.0	0.0	45.71	82.06						
3.594	10-YR	73.95	80.78	6.83	98.71	101.36	0.0265	5.72			13.59			3,810	3,810	100.0	0.0	48.99	83.64						
3.594	25-YR	73.95	82.15	8.20	98.71	101.36	0.0265	6.61			14.60			5,120	5,120	100.0	0.0	53.01	85.46						
3.594	50-YR	73.95	83.08	9.13	98.71	101.36	0.0265	7.18			15.21			6,100	6,100	100.0	0.0	55.90	86.67						
3.594	100-YR	73.95	84.07	10.12	98.71	101.36	0.0265	7.75			15.80			7,240	7,240	100.0	0.0	59.15	87.95						
3.594	200-YR	73.95	85.07	11.12	98.71	101.36	0.0265	8.29			16.35			8,480	8,480	100.0	0.0	62.57	89.22						
3.594	500-YR	73.95	86.26	12.31	98.71	101.36	0.0265	8.90			16.94			10,100	10,100	100.0	0.0	66.99	90.72						
3.589	2-YR	73.41	77.19	3.78	98.01	101.53	0.0010	3.37			10.10			1,590	1,590	100.0	0.0	46.70	78.77	12.35	6		56.1	1.20	
3.589	5-YR	73.41	78.71	5.30	98.01	101.53	0.0010	4.61			12.26			2,830	2,830	100.0	0.0	50.06	81.04						
3.589	10-YR	73.41	79.78	6.37	98.01	101.53	0.0010	5.44			13.31			3,810	3,810	100.0	0.0	52.67	82.53						
3.589	25-YR	73.41	81.10	7.69	98.01	101.53	0.0010	6.33			14.30			5,120	5,120	100.0	0.0	56.55	84.28						
3.589	50-YR	73.41	81.99	8.58	98.01	101.53	0.0010	6.88			14.90			6,100	6,100	100.0	0.0	59.52	85.44						
3.589	100-YR	73.41	82.93	9.52	98.01	101.53	0.0010	7.44			15.49			7,240	7,240	100.0	0.0	62.82	86.66						
3.589	200-YR	73.41	83.87	10.46	98.01	101.53	0.0010	8.01			16.08			8,480	8,480	100.0	0.0	65.87	87.88						
3.589	500-YR	73.41	85.00	11.59	98.01	101.53	0.0010	8.67			16.73			10,100	10,100	100.0	0.0	69.64	89.34						
3.580	2-YR	73.36	76.98	3.62	98.63	101.06	0.0199	2.89			8.47			1,590	1,590	100.0	0.0	64.88	78.09	17.92	6		75.41	1.16	
3.580	5-YR	73.36	78.01	4.65	98.63	101.06	0.0199	3.77			11.03			2,830	2,830	100.0	0.0	68.07	79.90						
3.580	10-YR	73.36	78.88	5.52	98.63	101.06	0.0199	4.43			12.02			3,810	3,810	100.0	0.0	71.48	81.12						
3.580	25-YR	73.36	79.90	6.54	98.63	101.06	0.0199	5.29			13.07			5,120	5,120	100.0	0.0	74.09	82.55						
3.580	50-YR	73.36	80.59	7.23	98.63	101.06	0.0199	5.88			13.77			6,100	6,100	100.0	0.0	75.39	83.53						
3.580	100-YR	73.36	81.32	7.96	98.63	101.06	0.0199	6.49			14.52			7,240	7,240	100.0	0.0	76.85	84.59						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
3.580	200-YR	73.36	82.09	8.73	98.63	101.06	0.0199	7.12			15.19			8,480	8,480	100.0	0.0	78.41	85.67						
3.580	500-YR	73.36	83.41	10.05	98.63	101.06	0.0199	8.17			15.22			10,100	10,100	100.0	0.0	81.29	87.00						
3.567	2-YR	72.06	76.95	4.89	95.12	101.14	0.0131	2.23			5.45			1,590	1,590	100.0	0.0	130.71	77.41	26.73	6		182.95	1.40	
3.567	5-YR	72.06	78.31	6.25	95.12	101.14	0.0131	2.94			5.74			2,830	2,830	100.0	0.0	167.66	78.82						
3.567	10-YR	72.06	79.30	7.24	95.12	101.14	0.0131	3.86			5.76			3,810	3,810	100.0	0.0	171.17	79.82						
3.567	25-YR	72.06	80.61	8.55	95.12	101.14	0.0131	5.00			5.76			5,120	5,120	100.0	0.0	177.90	81.12						
3.567	50-YR	72.06	81.74	9.68	95.12	101.14	0.0131	5.99			5.58			6,100	6,100	100.0	0.0	182.52	82.22						
3.567	100-YR	72.06	82.86	10.80	95.12	101.14	0.0131	6.96			5.57			7,240	7,240	100.0	0.0	187.01	83.34						
3.567	200-YR	72.06	84.03	11.97	95.12	101.14	0.0131	7.95			5.57			8,480	8,480	100.0	0.0	191.47	84.51						
3.567	500-YR	72.06	85.44	13.38	95.12	101.14	0.0131	9.09			5.63			10,100	10,100	100.0	0.0	197.45	85.93						
3.555	2-YR	71.13	75.70	4.57	78.27	100.94	0.0007	3.31	0.54		8.70	2.95		1,544	1,590	97.1	2.9	82.67	76.84	18.09	6		210.65	2.55	
3.555	5-YR	71.13	77.39	6.26	78.27	100.94	0.0007	4.51	1.57		8.65	4.35		2,375	2,830	83.9	16.1	127.50	78.41						
3.555	10-YR	71.13	78.78	7.65	78.27	100.94	0.0007	5.54	1.55		7.69	4.76		2,795	3,810	73.3	26.7	203.06	79.55						
3.555	25-YR	71.13	80.41	9.28	78.27	100.94	0.0007	6.77	3.10		6.66	4.48		3,149	5,120	61.5	38.5	211.57	80.95						
3.555	50-YR	71.13	81.64	10.51	78.27	100.94	0.0007	7.68	4.23		5.97	4.45		3,352	6,100	55.0	45.0	219.28	82.09						
3.555	100-YR	71.13	82.81	11.68	78.27	100.94	0.0007	8.54	5.30		5.64	4.53		3,658	7,240	50.5	49.5	225.10	83.22						
3.555	200-YR	71.13	84.01	12.88	78.27	100.94	0.0007	9.50	6.38		5.43	4.60		4,019	8,480	47.4	52.6	230.21	84.40						
3.555	500-YR	71.13	85.44	14.31	78.27	100.94	0.0007	10.71	7.73		5.29	4.69		4,515	10,100	44.7	55.3	233.75	85.82						
3.535	2-YR	71.06	74.90	3.84	94.25	99.25	0.0157	2.11			7.23			1,590	1,590	100.0	0.0	104.33	75.71	27.17	6		181.39	1.74	
3.535	5-YR	71.06	77.30	6.24	94.25	99.25	0.0157	3.36			4.84			2,830	2,830	100.0	0.0	174.20	77.66						
3.535	10-YR	71.06	78.77	7.71	94.25	99.25	0.0157	4.66			4.50			3,810	3,810	100.0	0.0	181.65	79.09						
3.535	25-YR	71.06	80.35	9.29	94.25	99.25	0.0157	5.91			4.48			5,120	5,120	100.0	0.0	193.13	80.66						
3.535	50-YR	71.06	81.57	10.51	94.25	99.25	0.0157	6.92			4.41			6,100	6,100	100.0	0.0	199.98	81.87						
3.535	100-YR	71.06	82.74	11.68	94.25	99.25	0.0157	7.94			4.47			7,240	7,240	100.0	0.0	203.86	83.05						
3.535	200-YR	71.06	83.93	12.87	94.25	99.25	0.0157	8.97			4.55			8,480	8,480	100.0	0.0	207.83	84.25						
3.535	500-YR	71.06	85.37	14.31	94.25	99.25	0.0157	10.13			4.66			10,100	10,100	100.0	0.0	213.92	85.70						
3.505	2-YR	68.57	74.41	5.84	94.67	94.25	0.0018	3.49			5.07			1,590	1,590	100.0	0.0	89.76	74.81	15.37	6		142.54	1.59	
3.505	5-YR	68.57	76.87	8.30	94.67	94.25	0.0018	4.58			4.84			2,830	2,830	100.0	0.0	127.67	77.23						
3.505	10-YR	68.57	78.45	9.88	94.67	94.25	0.0018	5.84			4.81			3,810	3,810	100.0	0.0	135.71	78.81						
3.505	25-YR	68.57	80.04	11.47	94.67	94.25	0.0018	7.15			5.05			5,120	5,120	100.0	0.0	141.74	80.43						
3.505	50-YR	68.57	81.28	12.71	94.67	94.25	0.0018	8.13			5.12			6,100	6,100	100.0	0.0	146.72	81.69						
3.505	100-YR	68.57	82.44	13.87	94.67	94.25	0.0018	9.02			5.30			7,240	7,240	100.0	0.0	151.30	82.87						
3.505	200-YR	68.57	83.63	15.06	94.67	94.25	0.0018	9.91			5.48			8,480	8,480	100.0	0.0	156.24	84.09						
3.505	500-YR	68.57	85.05	16.48	94.67	94.25	0.0018	10.88			5.69			10,100	10,100	100.0	0.0	163.15	85.55						
3.484	2-YR	68.37	73.85	5.48	93.53	93.03	0.0533	3.84			6.11			1,590	1,590	100.0	0.0	67.83	74.43	12.38	6		102.47	1.51	
3.484	5-YR	68.37	76.27	7.90	93.53	93.03	0.0533	5.52			6.49			2,830	2,830	100.0	0.0	78.91	76.93						
3.484	10-YR	68.37	77.86	9.49	93.53	93.03	0.0533	6.00			6.61			3,810	3,810	100.0	0.0	96.09	78.54						
3.484	25-YR	68.37	79.43	11.06	93.53	93.03	0.0533	7.12			6.99			5,120	5,120	100.0	0.0	102.87	80.19						
3.484	50-YR	68.37	80.69	12.32	93.53	93.03	0.0533	8.05			7.04			6,100	6,100	100.0	0.0	107.51	81.46						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
3.484	100-YR	68.37	81.83	13.46	93.53	93.03	0.0533	9.03			7.32			7,240	7,240	100.0	0.0	109.59	82.66						
3.484	200-YR	68.37	82.99	14.62	93.53	93.03	0.0533	10.02			7.59			8,480	8,480	100.0	0.0	111.50	83.88						
3.484	500-YR	68.37	84.36	15.99	93.53	93.03	0.0533	11.19			7.94			10,100	10,100	100.0	0.0	113.76	85.34						
3.465	2-YR	63.24	73.75	10.51	93.70	92.61	-0.0261	6.24			5.13			1,590	1,590	100.0	0.0	49.71	74.16	4.73	6		93.33	1.88	
3.465	5-YR	63.24	75.99	12.75	93.70	92.61	-0.0261	7.60			6.62			2,830	2,830	100.0	0.0	56.24	76.67						
3.465	10-YR	63.24	77.35	14.11	93.70	92.61	-0.0261	7.78			7.45			3,810	3,810	100.0	0.0	65.72	78.21						
3.465	25-YR	63.24	78.71	15.47	93.70	92.61	-0.0261	8.35			8.46			5,120	5,120	100.0	0.0	72.50	79.82						
3.465	50-YR	63.24	79.91	16.67	93.70	92.61	-0.0261	8.99			8.76			6,100	6,100	100.0	0.0	77.48	81.11						
3.465	100-YR	63.24	80.95	17.71	93.70	92.61	-0.0261	9.60			9.30			7,240	7,240	100.0	0.0	81.13	82.29						
3.465	200-YR	63.24	82.03	18.79	93.70	92.61	-0.0261	10.19			9.76			8,480	8,480	100.0	0.0	85.22	83.51						
3.465	500-YR	63.24	83.32	20.08	93.70	92.61	-0.0261	10.79			10.29			10,100	10,100	100.0	0.0	90.94	84.96						
3.444	2-YR	66.24	73.22	6.98	94.00	93.27	0.0180	4.87			6.54			1,590	1,590	100.0	0.0	49.92	73.89	7.15	6		79.15	1.59	
3.444	5-YR	66.24	75.53	9.29	94.00	93.27	0.0180	5.63			7.35			2,830	2,830	100.0	0.0	68.49	76.36						
3.444	10-YR	66.24	76.93	10.69	94.00	93.27	0.0180	6.71			7.87			3,810	3,810	100.0	0.0	72.22	77.89						
3.444	25-YR	66.24	78.27	12.03	94.00	93.27	0.0180	7.80			8.79			5,120	5,120	100.0	0.0	74.71	79.47						
3.444	50-YR	66.24	79.53	13.29	94.00	93.27	0.0180	8.74			8.99			6,100	6,100	100.0	0.0	77.64	80.78						
3.444	100-YR	66.24	80.55	14.31	94.00	93.27	0.0180	9.48			9.54			7,240	7,240	100.0	0.0	80.05	81.96						
3.444	200-YR	66.24	81.61	15.37	94.00	93.27	0.0180	9.85			10.01			8,480	8,480	100.0	0.0	86.01	83.17						
3.444	500-YR	66.24	82.89	16.65	94.00	93.27	0.0180	10.90			10.53			10,100	10,100	100.0	0.0	87.98	84.61						
3.423	2-YR	64.24	72.99	8.75	93.88	93.02	-0.0097	5.27			5.98			1,590	1,590	100.0	0.0	50.50	73.55	5.77	6		104.33	2.07	
3.423	5-YR	64.24	75.21	10.97	93.88	93.02	-0.0097	5.87			7.13			2,830	2,830	100.0	0.0	67.66	76.00						
3.423	10-YR	64.24	76.65	12.41	93.88	93.02	-0.0097	6.31			7.56			3,810	3,810	100.0	0.0	79.86	77.53						
3.423	25-YR	64.24	78.02	13.78	93.88	93.02	-0.0097	7.30			8.30			5,120	5,120	100.0	0.0	84.52	79.09						
3.423	50-YR	64.24	79.35	15.11	93.88	93.02	-0.0097	7.87			8.29			6,100	6,100	100.0	0.0	93.50	80.42						
3.423	100-YR	64.24	80.42	16.18	93.88	93.02	-0.0097	8.50			8.64			7,240	7,240	100.0	0.0	98.57	81.58						
3.423	200-YR	64.24	81.52	17.28	93.88	93.02	-0.0097	9.19			8.93			8,480	8,480	100.0	0.0	103.39	82.76						
3.423	500-YR	64.24	82.87	18.63	93.88	93.02	-0.0097	10.07			9.25			10,100	10,100	100.0	0.0	108.44	84.19						
3.399	2-YR	65.47	72.75	7.28	93.80	93.35	0.0162	4.72			5.52			1,590	1,590	100.0	0.0	61.04	73.22	8.38	6		101.14	1.66	
3.399	5-YR	65.47	74.98	9.51	93.80	93.35	0.0162	5.97			6.47			2,830	2,830	100.0	0.0	73.28	75.63						
3.399	10-YR	65.47	76.41	10.94	93.80	93.35	0.0162	6.59			6.93			3,810	3,810	100.0	0.0	83.42	77.16						
3.399	25-YR	65.47	77.79	12.32	93.80	93.35	0.0162	7.29			7.63			5,120	5,120	100.0	0.0	92.01	78.70						
3.399	50-YR	65.47	79.17	13.70	93.80	93.35	0.0162	8.20			7.61			6,100	6,100	100.0	0.0	97.75	80.07						
3.399	100-YR	65.47	80.25	14.78	93.80	93.35	0.0162	8.93			7.96			7,240	7,240	100.0	0.0	101.86	81.23						
3.399	200-YR	65.47	81.36	15.89	93.80	93.35	0.0162	9.73			8.27			8,480	8,480	100.0	0.0	105.34	82.43						
3.399	500-YR	65.47	82.71	17.24	93.80	93.35	0.0162	10.74			8.64			10,100	10,100	100.0	0.0	108.91	83.87						
3.382	2-YR	64.07	72.59	8.52	93.27	92.56	-0.0059	5.34			5.38			1,590	1,590	100.0	0.0	55.39	73.04	6.50	6		96.31	1.74	
3.382	5-YR	64.07	74.76	10.69	93.27	92.56	-0.0059	6.46			6.62			2,830	2,830	100.0	0.0	66.17	75.44						
3.382	10-YR	64.07	76.13	12.06	93.27	92.56	-0.0059	7.17			7.29			3,810	3,810	100.0	0.0	72.95	76.95						
3.382	25-YR	64.07	77.40	13.33	93.27	92.56	-0.0059	7.82			8.26			5,120	5,120	100.0	0.0	79.20	78.46						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
3.382	50-YR	64.07	78.78	14.71	93.27	92.56	-0.0059	8.53			8.31			6,100	6,100	100.0	0.0	85.97	79.86						
3.382	100-YR	64.07	79.82	15.75	93.27	92.56	-0.0059	9.10			8.77			7,240	7,240	100.0	0.0	90.72	81.02						
3.382	200-YR	64.07	80.91	16.84	93.27	92.56	-0.0059	9.71			9.15			8,480	8,480	100.0	0.0	95.45	82.21						
3.382	500-YR	64.07	82.24	18.17	93.27	92.56	-0.0059	10.46			9.55			10,100	10,100	100.0	0.0	101.14	83.66						
3.366	2-YR	64.57	72.35	7.78	92.24	92.15	-0.0118	4.95			5.74			1,590	1,590	100.0	0.0	56.03	72.86	7.20	6		101.27	1.81	
3.366	5-YR	64.57	74.45	9.88	92.24	92.15	-0.0118	6.29			7.05			2,830	2,830	100.0	0.0	63.81	75.23						
3.366	10-YR	64.57	75.80	11.23	92.24	92.15	-0.0118	6.81			7.72			3,810	3,810	100.0	0.0	72.47	76.73						
3.366	25-YR	64.57	77.02	12.45	92.24	92.15	-0.0118	7.41			8.74			5,120	5,120	100.0	0.0	79.00	78.20						
3.366	50-YR	64.57	78.47	13.90	92.24	92.15	-0.0118	7.91			8.62			6,100	6,100	100.0	0.0	89.52	79.63						
3.366	100-YR	64.57	79.54	14.97	92.24	92.15	-0.0118	8.27			8.97			7,240	7,240	100.0	0.0	97.69	80.79						
3.366	200-YR	64.57	80.68	16.11	92.24	92.15	-0.0118	8.87			9.19			8,480	8,480	100.0	0.0	104.08	81.99						
3.366	500-YR	64.57	82.06	17.49	92.24	92.15	-0.0118	9.69			9.43			10,100	10,100	100.0	0.0	110.47	83.44						
3.346	2-YR	65.84	72.15	6.31	91.24	91.54	-0.0068	4.39			5.29			1,590	1,590	100.0	0.0	68.49	72.59	10.85	6		91.58	1.34	
3.346	5-YR	65.84	74.34	8.50	91.24	91.54	-0.0068	5.80			6.12			2,830	2,830	100.0	0.0	79.73	74.92						
3.346	10-YR	65.84	75.72	9.88	91.24	91.54	-0.0068	6.76			6.60			3,810	3,810	100.0	0.0	85.51	76.40						
3.346	25-YR	65.84	76.96	11.12	91.24	91.54	-0.0068	7.74			7.47			5,120	5,120	100.0	0.0	88.49	77.82						
3.346	50-YR	65.84	78.43	12.59	91.24	91.54	-0.0068	8.94			7.46			6,100	6,100	100.0	0.0	91.53	79.30						
3.346	100-YR	65.84	79.49	13.65	91.24	91.54	-0.0068	9.77			7.91			7,240	7,240	100.0	0.0	93.68	80.46						
3.346	200-YR	65.84	80.61	14.77	91.24	91.54	-0.0068	10.65			8.30			8,480	8,480	100.0	0.0	95.97	81.68						
3.346	500-YR	65.84	81.96	16.12	91.24	91.54	-0.0068	11.65			8.76			10,100	10,100	100.0	0.0	99.00	83.15						
3.335	2-YR	66.24	72.06	5.82	90.56	91.55	0.0187	4.15			4.93			1,590	1,590	100.0	0.0	77.63	72.44	13.34	6		95.77	1.23	
3.335	5-YR	66.24	74.29	8.05	90.56	91.55	0.0187	5.93			5.63			2,830	2,830	100.0	0.0	84.75	74.78						
3.335	10-YR	66.24	75.68	9.44	90.56	91.55	0.0187	6.98			6.10			3,810	3,810	100.0	0.0	89.59	76.26						
3.335	25-YR	66.24	76.92	10.68	90.56	91.55	0.0187	7.93			6.93			5,120	5,120	100.0	0.0	93.13	77.67						
3.335	50-YR	66.24	78.42	12.18	90.56	91.55	0.0187	9.05			6.93			6,100	6,100	100.0	0.0	97.28	79.16						
3.335	100-YR	66.24	79.48	13.24	90.56	91.55	0.0187	9.83			7.35			7,240	7,240	100.0	0.0	100.25	80.32						
3.335	200-YR	66.24	80.61	14.37	90.56	91.55	0.0187	10.65			7.70			8,480	8,480	100.0	0.0	103.38	81.53						
3.335	500-YR	66.24	81.98	15.74	90.56	91.55	0.0187	11.61			8.12			10,100	10,100	100.0	0.0	107.19	83.00						
3.314	2-YR	64.24	71.95	7.71	90.40	91.24	0.0051	4.68			4.27			1,590	1,590	100.0	0.0	79.55	72.23	10.32	5C	10.24	116.99	1.47	1.38
3.314	5-YR	64.24	74.20	9.96	90.40	91.24	0.0051	6.09			5.01			2,830	2,830	100.0	0.0	92.67	74.59						
3.314	10-YR	64.24	75.61	11.37	90.40	91.24	0.0051	6.89			5.42			3,810	3,810	100.0	0.0	102.02	76.07						
3.314	25-YR	64.24	76.87	12.63	90.40	91.24	0.0051	7.92			6.14			5,120	5,120	100.0	0.0	105.20	77.45						
3.314	50-YR	64.24	78.39	14.15	90.40	91.24	0.0051	9.05			6.12			6,100	6,100	100.0	0.0	110.06	78.97						
3.314	100-YR	64.24	79.46	15.22	90.40	91.24	0.0051	9.64			6.48			7,240	7,240	100.0	0.0	115.92	80.11						
3.314	200-YR	64.24	80.61	16.37	90.40	91.24	0.0051	10.44			6.76			8,480	8,480	100.0	0.0	120.10	81.32						
3.314	500-YR	64.24	82.00	17.76	90.40	91.24	0.0051	11.53			7.10			10,100	10,100	100.0	0.0	123.36	82.78						
3.291	2-YR	63.61	71.75	8.14	91.61	93.51	-0.0062	5.76			4.52			1,590	1,590	100.0	0.0	61.06	72.07	7.50	5C		87.77	1.44	
3.291	5-YR	63.61	73.88	10.27	91.61	93.51	-0.0062	7.25			5.79			2,830	2,830	100.0	0.0	67.34	74.40						
3.291	10-YR	63.61	75.19	11.58	91.61	93.51	-0.0062	8.13			6.58			3,810	3,810	100.0	0.0	71.25	75.86						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
3.291	25-YR	63.61	76.26	12.65	91.61	93.51	-0.0062	8.84			7.79			5,120	5,120	100.0	0.0	74.32	77.20						
3.291	50-YR	63.61	77.78	14.17	91.61	93.51	-0.0062	9.72			7.88			6,100	6,100	100.0	0.0	79.59	78.75						
3.291	100-YR	63.61	78.75	15.14	91.61	93.51	-0.0062	10.21			8.49			7,240	7,240	100.0	0.0	83.56	79.87						
3.291	200-YR	63.61	79.81	16.20	91.61	93.51	-0.0062	10.79			8.99			8,480	8,480	100.0	0.0	87.47	81.06						
3.291	500-YR	63.61	81.10	17.49	91.61	93.51	-0.0062	11.47			9.53			10,100	10,100	100.0	0.0	92.41	82.51						
3.276	2-YR	64.10	71.64	7.54	90.49	89.73	0.0245	4.93			4.54			1,590	1,590	100.0	0.0	71.03	71.96	9.42	5C		96.37	1.36	
3.276	5-YR	64.10	73.78	9.68	90.49	89.73	0.0245	6.59			5.56			2,830	2,830	100.0	0.0	77.22	74.27						
3.276	10-YR	64.10	75.11	11.01	90.49	89.73	0.0245	7.48			6.20			3,810	3,810	100.0	0.0	82.22	75.71						
3.276	25-YR	64.10	76.18	12.08	90.49	89.73	0.0245	8.19			7.27			5,120	5,120	100.0	0.0	86.06	77.00						
3.276	50-YR	64.10	77.74	13.64	90.49	89.73	0.0245	9.15			7.23			6,100	6,100	100.0	0.0	92.23	78.56						
3.276	100-YR	64.10	78.73	14.63	90.49	89.73	0.0245	9.82			7.73			7,240	7,240	100.0	0.0	95.37	79.66						
3.276	200-YR	64.10	79.81	15.71	90.49	89.73	0.0245	10.67			8.15			8,480	8,480	100.0	0.0	97.54	80.84						
3.276	500-YR	64.10	81.12	17.02	90.49	89.73	0.0245	11.71			8.63			10,100	10,100	100.0	0.0	99.85	82.28						
3.257	2-YR	61.69	71.45	9.76	90.24	89.49	-0.0275	5.21			4.79			1,620	1,620	100.0	0.0	64.82	71.81	6.64	5C		97.97	1.51	
3.257	5-YR	61.69	73.44	11.75	90.24	89.49	-0.0275	6.53			6.39			3,040	3,040	100.0	0.0	72.85	74.08						
3.257	10-YR	61.69	74.65	12.96	90.24	89.49	-0.0275	7.35			7.36			4,170	4,170	100.0	0.0	77.00	75.49						
3.257	25-YR	61.69	75.75	14.06	90.24	89.49	-0.0275	7.75			8.09			5,300	5,300	100.0	0.0	84.63	76.76						
3.257	50-YR	61.69	77.05	15.36	90.24	89.49	-0.0275	8.73			8.97			6,890	6,890	100.0	0.0	88.00	78.30						
3.257	100-YR	61.69	77.97	16.28	90.24	89.49	-0.0275	9.41			9.55			8,120	8,120	100.0	0.0	90.39	79.39						
3.257	200-YR	61.69	78.97	17.28	90.24	89.49	-0.0275	10.13			10.13			9,540	9,540	100.0	0.0	92.95	80.56						
3.257	500-YR	61.69	80.17	18.48	90.24	89.49	-0.0275	11.00			10.80			11,400	11,400	100.0	0.0	95.90	81.98						
3.243	2-YR	63.82	71.21	7.39	88.39	89.24	0.0008	4.42			5.35			1,620	1,620	100.0	0.0	68.45	71.66	9.26	5C		102.83	1.50	
3.243	5-YR	63.82	73.19	9.37	88.39	89.24	0.0008	5.28			6.68			3,040	3,040	100.0	0.0	86.20	73.88						
3.243	10-YR	63.82	74.46	10.64	88.39	89.24	0.0008	6.16			7.31			4,170	4,170	100.0	0.0	92.60	75.29						
3.243	25-YR	63.82	75.58	11.76	88.39	89.24	0.0008	7.16			7.86			5,300	5,300	100.0	0.0	94.24	76.53						
3.243	50-YR	63.82	76.91	13.09	88.39	89.24	0.0008	8.18			8.59			6,890	6,890	100.0	0.0	98.05	78.05						
3.243	100-YR	63.82	77.85	14.03	88.39	89.24	0.0008	8.90			9.06			8,120	8,120	100.0	0.0	100.74	79.13						
3.243	200-YR	63.82	78.87	15.05	88.39	89.24	0.0008	9.66			9.53			9,540	9,540	100.0	0.0	103.53	80.28						
3.243	500-YR	63.82	80.11	16.29	88.39	89.24	0.0008	10.59			10.08			11,400	11,400	100.0	0.0	106.76	81.69						
3.231	2-YR	63.77	71.10	7.33	87.58	88.94	0.0017	4.88			5.13			1,620	1,620	100.0	0.0	64.61	71.51	8.81	5C		91.99	1.42	
3.231	5-YR	63.77	72.99	9.22	87.58	88.94	0.0017	6.03			6.78			3,040	3,040	100.0	0.0	74.29	73.71						
3.231	10-YR	63.77	74.16	10.39	87.58	88.94	0.0017	6.83			7.75			4,170	4,170	100.0	0.0	78.75	75.10						
3.231	25-YR	63.77	75.21	11.44	87.58	88.94	0.0017	7.52			8.52			5,300	5,300	100.0	0.0	82.67	76.33						
3.231	50-YR	63.77	76.44	12.67	87.58	88.94	0.0017	8.32			9.48			6,890	6,890	100.0	0.0	87.30	77.83						
3.231	100-YR	63.77	77.32	13.55	87.58	88.94	0.0017	8.90			10.09			8,120	8,120	100.0	0.0	90.40	78.90						
3.231	200-YR	63.77	78.27	14.50	87.58	88.94	0.0017	9.72			10.70			9,540	9,540	100.0	0.0	91.72	80.05						
3.231	500-YR	63.77	79.41	15.64	87.58	88.94	0.0017	10.71			11.43			11,400	11,400	100.0	0.0	93.14	81.44						
3.214	2-YR	63.62	70.97	7.35	87.96	88.82	-0.0011	4.56			4.86			1,620	1,620	100.0	0.0	73.10	71.33	9.95	5C		105.52	1.44	
3.214	5-YR	63.62	72.85	9.23	87.96	88.82	-0.0011	5.84			6.34			3,040	3,040	100.0	0.0	82.03	73.47						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
3.214	10-YR	63.62	74.02	10.40	87.96	88.82	-0.0011	6.56			7.20			4,170	4,170	100.0	0.0	88.29	74.83						
3.214	25-YR	63.62	75.08	11.46	87.96	88.82	-0.0011	7.18			7.84			5,300	5,300	100.0	0.0	94.15	76.04						
3.214	50-YR	63.62	76.34	12.72	87.96	88.82	-0.0011	8.15			8.64			6,890	6,890	100.0	0.0	97.85	77.50						
3.214	100-YR	63.62	77.25	13.63	87.96	88.82	-0.0011	8.83			9.16			8,120	8,120	100.0	0.0	100.46	78.55						
3.214	200-YR	63.62	78.23	14.61	87.96	88.82	-0.0011	9.38			9.66			9,540	9,540	100.0	0.0	105.30	79.68						
3.214	500-YR	63.62	79.42	15.80	87.96	88.82	-0.0011	10.33			10.22			11,400	11,400	100.0	0.0	107.95	81.05						
3.191	2-YR	63.75	70.76	7.01	87.40	88.24	-0.0003	4.89			4.84			1,620	1,620	100.0	0.0	68.49	71.12	9.77	5C		97.22	1.42	
3.191	5-YR	63.75	72.51	8.76	87.40	88.24	-0.0003	6.22			6.61			3,040	3,040	100.0	0.0	74.00	73.19						
3.191	10-YR	63.75	73.58	9.83	87.40	88.24	-0.0003	6.95			7.71			4,170	4,170	100.0	0.0	77.83	74.50						
3.191	25-YR	63.75	74.54	10.79	87.40	88.24	-0.0003	7.05			8.51			5,300	5,300	100.0	0.0	88.34	75.67						
3.191	50-YR	63.75	75.73	11.98	87.40	88.24	-0.0003	7.94			9.44			6,890	6,890	100.0	0.0	91.85	77.11						
3.191	100-YR	63.75	76.59	12.84	87.40	88.24	-0.0003	8.59			10.03			8,120	8,120	100.0	0.0	94.27	78.15						
3.191	200-YR	63.75	77.51	13.76	87.40	88.24	-0.0003	9.30			10.63			9,540	9,540	100.0	0.0	96.59	79.27						
3.191	500-YR	63.75	78.64	14.89	87.40	88.24	-0.0003	10.15			11.30			11,400	11,400	100.0	0.0	99.36	80.63						
3.169	2-YR	63.78	70.39	6.61	86.44	87.37	0.0068	4.14			5.51			1,620	1,620	100.0	0.0	71.00	70.86	10.74	5C		92.72	1.31	
3.169	5-YR	63.78	72.03	8.25	86.44	87.37	0.0068	5.20			7.25			3,040	3,040	100.0	0.0	80.69	72.85						
3.169	10-YR	63.78	73.04	9.26	86.44	87.37	0.0068	5.96			8.30			4,170	4,170	100.0	0.0	84.26	74.11						
3.169	25-YR	63.78	73.91	10.13	86.44	87.37	0.0068	6.65			9.18			5,300	5,300	100.0	0.0	86.80	75.22						
3.169	50-YR	63.78	75.02	11.24	86.44	87.37	0.0068	7.56			10.21			6,890	6,890	100.0	0.0	89.31	76.64						
3.169	100-YR	63.78	75.83	12.05	86.44	87.37	0.0068	8.24			10.86			8,120	8,120	100.0	0.0	90.70	77.66						
3.169	200-YR	63.78	76.70	12.92	86.44	87.37	0.0068	8.97			11.53			9,540	9,540	100.0	0.0	92.21	78.77						
3.169	500-YR	63.78	77.76	13.98	86.44	87.37	0.0068	9.84			12.31			11,400	11,400	100.0	0.0	94.04	80.11						
3.149	2-YR	63.07	70.23	7.16	86.90	87.34	-0.0029	4.46			4.84			1,620	1,620	100.0	0.0	74.98	70.60	10.47	5C		93.64	1.25	
3.149	5-YR	63.07	71.81	8.74	86.90	87.34	-0.0029	5.60			6.63			3,040	3,040	100.0	0.0	81.91	72.50						
3.149	10-YR	63.07	72.79	9.72	86.90	87.34	-0.0029	6.37			7.72			4,170	4,170	100.0	0.0	84.74	73.72						
3.149	25-YR	63.07	73.64	10.57	86.90	87.34	-0.0029	7.07			8.65			5,300	5,300	100.0	0.0	86.61	74.80						
3.149	50-YR	63.07	74.72	11.65	86.90	87.34	-0.0029	7.95			9.74			6,890	6,890	100.0	0.0	89.01	76.19						
3.149	100-YR	63.07	75.51	12.44	86.90	87.34	-0.0029	8.60			10.42			8,120	8,120	100.0	0.0	90.56	77.20						
3.149	200-YR	63.07	76.37	13.30	86.90	87.34	-0.0029	9.32			11.13			9,540	9,540	100.0	0.0	91.97	78.30						
3.149	500-YR	63.07	77.42	14.35	86.90	87.34	-0.0029	10.19			11.94			11,400	11,400	100.0	0.0	93.69	79.63						
3.131	2-YR	63.36	69.86	6.50	88.41	86.19	-0.0040	3.89			5.63			1,620	1,620	100.0	0.0	74.08	70.35	11.40	5C		95.02	1.28	
3.131	5-YR	63.36	71.21	7.85	88.41	86.19	-0.0040	4.90			7.75			3,040	3,040	100.0	0.0	80.13	72.14						
3.131	10-YR	63.36	72.00	8.64	88.41	86.19	-0.0040	5.48			9.12			4,170	4,170	100.0	0.0	83.38	73.30						
3.131	25-YR	63.36	72.66	9.30	88.41	86.19	-0.0040	5.99			10.34			5,300	5,300	100.0	0.0	85.58	74.32						
3.131	50-YR	63.36	73.46	10.10	88.41	86.19	-0.0040	6.64			11.84			6,890	6,890	100.0	0.0	87.67	75.64						
3.131	100-YR	63.36	74.14	10.78	88.41	86.19	-0.0040	7.18			12.65			8,120	8,120	100.0	0.0	89.42	76.62						
3.131	200-YR	63.36	74.89	11.53	88.41	86.19	-0.0040	7.78			13.43			9,540	9,540	100.0	0.0	91.33	77.69						
3.131	500-YR	63.36	75.86	12.50	88.41	86.19	-0.0040	8.53			14.25			11,400	11,400	100.0	0.0	93.79	79.02						
3.110	2-YR	63.80	68.54	4.74	86.81	85.66	-0.0007	2.18			8.44			1,620	1,620	100.0	0.0	88.11	69.65	18.59	5C		104.71	1.19	

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
3.110	5-YR	63.80	69.77	5.97	86.81	85.66	-0.0007	3.27			10.02			3,040	3,040	100.0	0.0	92.87	71.33						
3.110	10-YR	63.80	70.69	6.89	86.81	85.66	-0.0007	4.06			10.69			4,170	4,170	100.0	0.0	96.12	72.46						
3.110	25-YR	63.80	71.57	7.77	86.81	85.66	-0.0007	4.81			11.14			5,300	5,300	100.0	0.0	99.05	73.50						
3.110	50-YR	63.80	72.68	8.88	86.81	85.66	-0.0007	5.73			11.71			6,890	6,890	100.0	0.0	102.72	74.81						
3.110	100-YR	63.80	73.52	9.72	86.81	85.66	-0.0007	6.40			12.03			8,120	8,120	100.0	0.0	105.52	75.76						
3.110	200-YR	63.80	74.45	10.65	86.81	85.66	-0.0007	7.17			12.31			9,540	9,540	100.0	0.0	108.05	76.80						
3.110	500-YR	63.80	75.62	11.82	86.81	85.66	-0.0007	8.20			12.63			11,400	11,400	100.0	0.0	110.03	78.10						
3.095	2-YR	63.86	68.21	4.35	87.54	85.24	0.0159	2.75			6.10			1,620	1,620	100.0	0.0	96.64	68.78	22.22	5B	15.19	113.99	1.18	1.56
3.095	5-YR	63.86	69.71	5.85	87.54	85.24	0.0159	4.06			7.32			3,040	3,040	100.0	0.0	102.47	70.54						
3.095	10-YR	63.86	70.72	6.86	87.54	85.24	0.0159	4.90			8.01			4,170	4,170	100.0	0.0	106.35	71.71						
3.095	25-YR	63.86	71.66	7.80	87.54	85.24	0.0159	5.65			8.51			5,300	5,300	100.0	0.0	110.17	72.79						
3.095	50-YR	63.86	72.84	8.98	87.54	85.24	0.0159	6.57			9.12			6,890	6,890	100.0	0.0	114.93	74.13						
3.095	100-YR	63.86	73.71	9.85	87.54	85.24	0.0159	7.30			9.48			8,120	8,120	100.0	0.0	117.35	75.11						
3.095	200-YR	63.86	74.67	10.81	87.54	85.24	0.0159	8.09			9.83			9,540	9,540	100.0	0.0	119.98	76.17						
3.095	500-YR	63.86	75.88	12.02	87.54	85.24	0.0159	9.07			10.20			11,400	11,400	100.0	0.0	123.23	77.50						
3.074	2-YR	62.13	67.56	5.43	86.98	84.89	0.0123	2.87			6.32			1,620	1,620	100.0	0.0	89.24	68.18	16.43	5B		109.3	1.22	
3.074	5-YR	62.13	69.14	7.01	86.98	84.89	0.0123	4.07			7.49			3,040	3,040	100.0	0.0	99.66	70.01						
3.074	10-YR	62.13	70.21	8.08	86.98	84.89	0.0123	5.01			8.12			4,170	4,170	100.0	0.0	102.60	71.23						
3.074	25-YR	62.13	71.18	9.05	86.98	84.89	0.0123	5.86			8.62			5,300	5,300	100.0	0.0	104.90	72.33						
3.074	50-YR	62.13	72.35	10.22	86.98	84.89	0.0123	6.86			9.33			6,890	6,890	100.0	0.0	107.68	73.70						
3.074	100-YR	62.13	73.22	11.09	86.98	84.89	0.0123	7.59			9.74			8,120	8,120	100.0	0.0	109.82	74.69						
3.074	200-YR	62.13	74.18	12.05	86.98	84.89	0.0123	8.40			10.15			9,540	9,540	100.0	0.0	111.92	75.78						
3.074	500-YR	62.13	75.38	13.25	86.98	84.89	0.0123	9.41			10.59			11,400	11,400	100.0	0.0	114.40	77.12						
3.057	2-YR	61.01	67.14	6.13	85.34	84.24	-0.0089	3.23			6.08			1,620	1,620	100.0	0.0	82.39	67.72	13.44	5B		103.61	1.26	
3.057	5-YR	61.01	68.68	7.67	85.34	84.24	-0.0089	4.43			7.62			3,040	3,040	100.0	0.0	89.97	69.58						
3.057	10-YR	61.01	69.71	8.70	85.34	84.24	-0.0089	5.25			8.45			4,170	4,170	100.0	0.0	94.07	70.81						
3.057	25-YR	61.01	70.67	9.66	85.34	84.24	-0.0089	6.00			9.05			5,300	5,300	100.0	0.0	97.67	71.94						
3.057	50-YR	61.01	71.79	10.78	85.34	84.24	-0.0089	6.92			9.88			6,890	6,890	100.0	0.0	100.86	73.31						
3.057	100-YR	61.01	72.64	11.63	85.34	84.24	-0.0089	7.65			10.35			8,120	8,120	100.0	0.0	102.50	74.31						
3.057	200-YR	61.01	73.59	12.58	85.34	84.24	-0.0089	8.46			10.82			9,540	9,540	100.0	0.0	104.17	75.40						
3.057	500-YR	61.01	74.78	13.77	85.34	84.24	-0.0089	9.47			11.32			11,400	11,400	100.0	0.0	106.28	76.77						
3.033	2-YR	62.13	66.33	4.20	88.24	85.38	-0.0004	2.93			6.78			1,620	1,620	100.0	0.0	81.69	67.05	19.45	5B		99.83	1.22	
3.033	5-YR	62.13	67.89	5.76	88.24	85.38	-0.0004	4.18			8.16			3,040	3,040	100.0	0.0	88.99	68.93						
3.033	10-YR	62.13	68.98	6.85	88.24	85.38	-0.0004	5.03			8.83			4,170	4,170	100.0	0.0	93.82	70.19						
3.033	25-YR	62.13	70.03	7.90	88.24	85.38	-0.0004	5.84			9.25			5,300	5,300	100.0	0.0	98.06	71.36						
3.033	50-YR	62.13	71.19	9.06	88.24	85.38	-0.0004	6.74			10.01			6,890	6,890	100.0	0.0	102.06	72.74						
3.033	100-YR	62.13	72.10	9.97	88.24	85.38	-0.0004	7.40			10.37			8,120	8,120	100.0	0.0	105.88	73.77						
3.033	200-YR	62.13	73.09	10.96	88.24	85.38	-0.0004	7.82			10.68			9,540	9,540	100.0	0.0	114.27	74.87						
3.033	500-YR	62.13	74.39	12.26	88.24	85.38	-0.0004	8.77			10.91			11,400	11,400	100.0	0.0	119.16	76.24						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
3.014	2-YR	62.17	65.86	3.69	86.24	83.71	0.0284	2.60			5.99			1,620	1,620	100.0	0.0	104.03	66.42	28.19	5B		119.87	1.15	
3.014	5-YR	62.17	67.76	5.59	86.24	83.71	0.0284	4.17			6.33			3,040	3,040	100.0	0.0	115.06	68.38						
3.014	10-YR	62.17	68.97	6.80	86.24	83.71	0.0284	5.26			6.70			4,170	4,170	100.0	0.0	118.36	69.67						
3.014	25-YR	62.17	70.10	7.93	86.24	83.71	0.0284	6.24			7.00			5,300	5,300	100.0	0.0	121.29	70.86						
3.014	50-YR	62.17	71.33	9.16	86.24	83.71	0.0284	7.32			7.58			6,890	6,890	100.0	0.0	124.07	72.23						
3.014	100-YR	62.17	72.29	10.12	86.24	83.71	0.0284	8.14			7.90			8,120	8,120	100.0	0.0	126.22	73.26						
3.014	200-YR	62.17	73.30	11.13	86.24	83.71	0.0284	9.05			8.25			9,540	9,540	100.0	0.0	127.78	74.36						
3.014	500-YR	62.17	74.61	12.44	86.24	83.71	0.0284	10.21			8.60			11,400	11,400	100.0	0.0	129.77	75.76						
3.000	2-YR	60.09	65.37	5.28	82.44	83.55	0.0096	2.76			6.31			1,620	1,620	100.0	0.0	93.01	65.99	17.62	5B		119.81	1.29	
3.000	5-YR	60.09	67.44	7.35	82.44	83.55	0.0096	4.51			6.64			3,040	3,040	100.0	0.0	101.59	68.12						
3.000	10-YR	60.09	68.66	8.57	82.44	83.55	0.0096	5.41			7.12			4,170	4,170	100.0	0.0	108.27	69.44						
3.000	25-YR	60.09	69.80	9.71	82.44	83.55	0.0096	6.16			7.42			5,300	5,300	100.0	0.0	115.89	70.66						
3.000	50-YR	60.09	71.03	10.94	82.44	83.55	0.0096	7.09			8.01			6,890	6,890	100.0	0.0	121.28	72.03						
3.000	100-YR	60.09	72.00	11.91	82.44	83.55	0.0096	7.93			8.29			8,120	8,120	100.0	0.0	123.52	73.07						
3.000	200-YR	60.09	73.03	12.94	82.44	83.55	0.0096	8.84			8.62			9,540	9,540	100.0	0.0	125.17	74.18						
3.000	500-YR	60.09	74.35	14.26	82.44	83.55	0.0096	10.01			8.95			11,400	11,400	100.0	0.0	127.24	75.59						
2.985	2-YR	59.31	65.39	6.08	81.87	82.25	0.0110	4.59			4.29			1,620	1,620	100.0	0.0	82.31	65.68	13.54	5B		105.16	1.28	
2.985	5-YR	59.31	67.40	8.09	81.87	82.25	0.0110	6.21			5.54			3,040	3,040	100.0	0.0	88.27	67.87						
2.985	10-YR	59.31	68.58	9.27	81.87	82.25	0.0110	7.15			6.37			4,170	4,170	100.0	0.0	91.50	69.21						
2.985	25-YR	59.31	69.68	10.37	81.87	82.25	0.0110	8.02			7.00			5,300	5,300	100.0	0.0	94.45	70.44						
2.985	50-YR	59.31	70.85	11.54	81.87	82.25	0.0110	9.00		0.39	7.93		0.48	6,889	6,890	100.0	0.0	101.28	71.83						
2.985	100-YR	59.31	71.76	12.45	81.87	82.25	0.0110	9.77		0.91	8.47		0.84	8,113	8,120	99.9	0.1	107.01	72.87						
2.985	200-YR	59.31	72.71	13.40	81.87	82.25	0.0110	10.56		1.37	9.06		1.13	9,518	9,540	99.8	0.2	113.50	73.98						
2.985	500-YR	59.31	73.95	14.64	81.87	82.25	0.0110	11.58		1.98	9.64		1.46	11,341	11,400	99.5	0.5	122.08	75.39						
2.967	2-YR	58.24	65.24	7.00	81.24	83.20	-0.0161	4.97			4.45			1,620	1,620	100.0	0.0	73.25	65.54	10.46	5B		158.06	2.16	
2.967	5-YR	58.24	67.16	8.92	81.24	83.20	-0.0161	6.24			5.91			3,040	3,040	100.0	0.0	82.38	67.70						
2.967	10-YR	58.24	68.31	10.07	81.24	83.20	-0.0161	6.06			6.70			4,170	4,170	100.0	0.0	102.69	69.00						
2.967	25-YR	58.24	69.46	11.22	81.24	83.20	-0.0161	6.48			7.09			5,300	5,300	100.0	0.0	115.40	70.24						
2.967	50-YR	58.24	70.67	12.43	81.24	83.20	-0.0161	7.07			7.70			6,890	6,890	100.0	0.0	126.59	71.59						
2.967	100-YR	58.24	71.62	13.38	81.24	83.20	-0.0161	7.14			7.94			8,120	8,120	100.0	0.0	143.09	72.60						
2.967	200-YR	58.24	72.65	14.41	81.24	83.20	-0.0161	7.14			8.08			9,540	9,540	100.0	0.0	165.36	73.66						
2.967	500-YR	58.24	74.02	15.78	81.24	83.20	-0.0161	7.68			8.03			11,400	11,400	100.0	0.0	184.84	75.03						
2.945	2-YR	60.10	64.97	4.87	81.43	83.78	0.0186	3.34			4.82			1,620	1,620	100.0	0.0	100.57	65.33	20.65	5B		157.53	1.57	
2.945	5-YR	60.10	67.00	6.90	81.43	83.78	0.0186	4.52			5.36			3,040	3,040	100.0	0.0	125.46	67.45						
2.945	10-YR	60.10	68.18	8.08	81.43	83.78	0.0186	5.47			5.81			4,170	4,170	100.0	0.0	131.25	68.70						
2.945	25-YR	60.10	69.37	9.27	81.43	83.78	0.0186	5.74			5.90			5,300	5,300	100.0	0.0	156.45	69.91						
2.945	50-YR	60.10	70.64	10.54	81.43	83.78	0.0186	6.89			6.27			6,890	6,890	100.0	0.0	159.44	71.25						
2.945	100-YR	60.10	71.62	11.52	81.43	83.78	0.0186	7.76			6.47			8,120	8,120	100.0	0.0	161.76	72.27						
2.945	200-YR	60.10	72.63	12.53	81.43	83.78	0.0186	8.65			6.72			9,540	9,540	100.0	0.0	164.18	73.33						
2.945	500-YR	60.10	73.99	13.89	81.43	83.78	0.0186	9.83			6.93			11,400	11,400	100.0	0.0	167.41	74.74						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
2.919	2-YR	57.58	64.66	7.08	82.31	82.43	0.0031	3.48			4.55			1,620	1,620	100.0	0.0	102.20	64.99	14.44	5B		164.53	1.61	
2.919	5-YR	57.58	66.74	9.16	82.31	82.43	0.0031	4.63			5.16			3,040	3,040	100.0	0.0	127.07	67.16						
2.919	10-YR	57.58	67.94	10.36	82.31	82.43	0.0031	5.39			5.57			4,170	4,170	100.0	0.0	138.96	68.42						
2.919	25-YR	57.58	69.15	11.57	82.31	82.43	0.0031	5.97			5.71			5,300	5,300	100.0	0.0	155.43	69.66						
2.919	50-YR	57.58	70.44	12.86	82.31	82.43	0.0031	6.99			6.07			6,890	6,890	100.0	0.0	162.33	71.02						
2.919	100-YR	57.58	71.44	13.86	82.31	82.43	0.0031	7.91			6.26			8,120	8,120	100.0	0.0	164.03	72.05						
2.919	200-YR	57.58	72.47	14.89	82.31	82.43	0.0031	8.85			6.50			9,540	9,540	100.0	0.0	165.77	73.13						
2.919	500-YR	57.58	73.85	16.27	82.31	82.43	0.0031	10.10			6.72			11,400	11,400	100.0	0.0	168.05	74.55						
2.898	2-YR	57.24	63.88	6.64	81.05	81.69	0.0079	3.47			6.79			1,620	1,620	100.0	0.0	68.79	64.59	10.36	5B		124.46	1.81	
2.898	5-YR	57.24	65.97	8.73	81.05	81.69	0.0079	4.05			7.29			3,040	3,040	100.0	0.0	102.91	66.79						
2.898	10-YR	57.24	67.21	9.97	81.05	81.69	0.0079	4.69			7.53			4,170	4,170	100.0	0.0	118.00	68.09						
2.898	25-YR	57.24	68.50	11.26	81.05	81.69	0.0079	5.87			7.49			5,300	5,300	100.0	0.0	120.47	69.37						
2.898	50-YR	57.24	69.75	12.51	81.05	81.69	0.0079	6.99			8.01			6,890	6,890	100.0	0.0	122.93	70.75						
2.898	100-YR	57.24	70.73	13.49	81.05	81.69	0.0079	7.86			8.27			8,120	8,120	100.0	0.0	124.89	71.80						
2.898	200-YR	57.24	71.73	14.49	81.05	81.69	0.0079	8.72			8.62			9,540	9,540	100.0	0.0	126.89	72.88						
2.898	500-YR	57.24	73.09	15.85	81.05	81.69	0.0079	9.89			8.89			11,400	11,400	100.0	0.0	129.63	74.32						
2.881	2-YR	56.51	63.55	7.04	80.19	82.78	0.0143	3.46			6.06			1,620	1,620	100.0	0.0	77.40	64.12	10.99	5B		107.71	1.39	
2.881	5-YR	56.51	65.71	9.20	80.19	82.78	0.0143	4.98			6.70			3,040	3,040	100.0	0.0	91.07	66.40						
2.881	10-YR	56.51	66.91	10.40	80.19	82.78	0.0143	5.97			7.38			4,170	4,170	100.0	0.0	94.76	67.75						
2.881	25-YR	56.51	68.18	11.67	80.19	82.78	0.0143	6.97			7.70			5,300	5,300	100.0	0.0	98.78	69.10						
2.881	50-YR	56.51	69.33	12.82	80.19	82.78	0.0143	7.83			8.57			6,890	6,890	100.0	0.0	102.68	70.47						
2.881	100-YR	56.51	70.27	13.76	80.19	82.78	0.0143	8.42			9.00			8,120	8,120	100.0	0.0	107.15	71.52						
2.881	200-YR	56.51	71.21	14.70	80.19	82.78	0.0143	9.23			9.50			9,540	9,540	100.0	0.0	108.86	72.61						
2.881	500-YR	56.51	72.54	16.03	80.19	82.78	0.0143	10.34			9.91			11,400	11,400	100.0	0.0	111.29	74.06						
2.864	2-YR	55.24	63.05	7.81	79.57	83.18	-0.0209	4.26			6.74			1,620	1,620	100.0	0.0	56.37	63.75	7.22	5B		99.76	1.77	
2.864	5-YR	55.24	65.02	9.78	79.57	83.18	-0.0209	4.63			8.04			3,040	3,040	100.0	0.0	81.66	66.03						
2.864	10-YR	55.24	66.21	10.97	79.57	83.18	-0.0209	5.57			8.71			4,170	4,170	100.0	0.0	85.91	67.39						
2.864	25-YR	55.24	67.56	12.32	79.57	83.18	-0.0209	6.67			8.89			5,300	5,300	100.0	0.0	89.48	68.78						
2.864	50-YR	55.24	68.56	13.32	79.57	83.18	-0.0209	7.46			10.02			6,890	6,890	100.0	0.0	92.21	70.12						
2.864	100-YR	55.24	69.45	14.21	79.57	83.18	-0.0209	8.16			10.54			8,120	8,120	100.0	0.0	94.35	71.17						
2.864	200-YR	55.24	70.30	15.06	79.57	83.18	-0.0209	8.73			11.19			9,540	9,540	100.0	0.0	97.68	72.25						
2.864	500-YR	55.24	71.64	16.40	79.57	83.18	-0.0209	9.28			11.55			11,400	11,400	100.0	0.0	106.40	73.71						
2.842	2-YR	57.67	62.62	4.95	79.28	82.84	0.0239	3.62			6.39			1,620	1,620	100.0	0.0	70.08	63.25	14.16	5B		95.77	1.37	
2.842	5-YR	57.67	64.59	6.92	79.28	82.84	0.0239	5.21			7.65			3,040	3,040	100.0	0.0	76.25	65.49						
2.842	10-YR	57.67	65.75	8.08	79.28	82.84	0.0239	5.72			8.45			4,170	4,170	100.0	0.0	86.23	66.86						
2.842	25-YR	57.67	67.21	9.54	79.28	82.84	0.0239	6.63			8.47			5,300	5,300	100.0	0.0	94.39	68.33						
2.842	50-YR	57.67	68.19	10.52	79.28	82.84	0.0239	7.35			9.58			6,890	6,890	100.0	0.0	97.81	69.61						
2.842	100-YR	57.67	69.10	11.43	79.28	82.84	0.0239	8.03			10.02			8,120	8,120	100.0	0.0	100.91	70.66						
2.842	200-YR	57.67	69.97	12.30	79.28	82.84	0.0239	8.56			10.62			9,540	9,540	100.0	0.0	104.99	71.72						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
2.842	500-YR	57.67	71.34	13.67	79.28	82.84	0.0239	8.94			10.86			11,400	11,400	100.0	0.0	117.40	73.17						
2.823	2-YR	55.24	62.36	7.12	78.26	80.51	0.0034	4.35			5.71			1,620	1,620	100.0	0.0	65.15	62.87	9.15	5B		119.58	1.84	
2.823	5-YR	55.24	64.30	9.06	78.26	80.51	0.0034	5.30			7.16			3,040	3,040	100.0	0.0	80.13	65.10						
2.823	10-YR	55.24	65.44	10.20	78.26	80.51	0.0034	5.97			8.02			4,170	4,170	100.0	0.0	87.14	66.44						
2.823	25-YR	55.24	66.97	11.73	78.26	80.51	0.0034	6.89			8.03			5,300	5,300	100.0	0.0	95.73	67.97						
2.823	50-YR	55.24	67.89	12.65	78.26	80.51	0.0034	7.31			9.17			6,890	6,890	100.0	0.0	102.84	69.20						
2.823	100-YR	55.24	68.83	13.59	78.26	80.51	0.0034	7.61			9.53			8,120	8,120	100.0	0.0	111.93	70.24						
2.823	200-YR	55.24	69.71	14.47	78.26	80.51	0.0034	7.81			9.99			9,540	9,540	100.0	0.0	122.27	71.26						
2.823	500-YR	55.24	71.16	15.92	78.26	80.51	0.0034	7.09			9.87			11,400	11,400	100.0	0.0	163.09	72.67						
2.802	2-YR	54.88	62.17	7.29	77.47	79.15	0.0066	4.10			5.06			1,620	1,620	100.0	0.0	78.04	62.57	10.71	5B		164.26	2.10	
2.802	5-YR	54.88	64.13	9.25	77.47	79.15	0.0066	5.00			6.18			3,040	3,040	100.0	0.0	98.37	64.72						
2.802	10-YR	54.88	65.31	10.43	77.47	79.15	0.0066	5.50			6.77			4,170	4,170	100.0	0.0	111.83	66.02						
2.802	25-YR	54.88	66.94	12.06	77.47	79.15	0.0066	6.21			6.52			5,300	5,300	100.0	0.0	131.03	67.60						
2.802	50-YR	54.88	67.92	13.04	77.47	79.15	0.0066	6.61			7.27			6,890	6,890	100.0	0.0	143.51	68.74						
2.802	100-YR	54.88	68.91	14.03	77.47	79.15	0.0066	6.99			7.40			8,120	8,120	100.0	0.0	156.95	69.76						
2.802	200-YR	54.88	69.83	14.95	77.47	79.15	0.0066	7.00			7.64			9,540	9,540	100.0	0.0	178.20	70.73						
2.802	500-YR	54.88	71.31	16.43	77.47	79.15	0.0066	7.64			7.41			11,400	11,400	100.0	0.0	201.37	72.16						
2.784	2-YR	54.24	62.04	7.80	77.34	79.22	-0.0125	3.96			4.39			1,620	1,620	100.0	0.0	93.17	62.34	11.94	5B		208.49	2.24	
2.784	5-YR	54.24	64.00	9.76	77.34	79.22	-0.0125	5.10			5.44			3,100	3,100	100.0	0.0	111.93	64.46						
2.784	10-YR	54.24	65.18	10.94	77.34	79.22	-0.0125	5.78			5.99			4,250	4,250	100.0	0.0	122.72	65.74						
2.784	25-YR	54.24	66.73	12.49	77.34	79.22	-0.0125	6.22			6.46			5,900	5,900	100.0	0.0	146.64	67.38						
2.784	50-YR	54.24	67.80	13.56	77.34	79.22	-0.0125	6.29			6.55			7,100	7,100	100.0	0.0	172.29	68.46						
2.784	100-YR	54.24	68.82	14.58	77.34	79.22	-0.0125	6.56			6.53			8,300	8,300	100.0	0.0	193.77	69.49						
2.784	200-YR	54.24	69.80	15.56	77.34	79.22	-0.0125	7.06			6.44			9,470	9,470	100.0	0.0	208.33	70.45						
2.784	500-YR	54.24	71.29	17.05	77.34	79.22	-0.0125	8.41			6.39			11,400	11,400	100.0	0.0	212.08	71.92						
2.768	2-YR	55.26	61.89	6.63	77.56	78.24	-0.0046	3.35			4.26			1,620	1,620	100.0	0.0	113.47	62.17	17.11	5B		202.95	1.79	
2.768	5-YR	55.26	63.90	8.64	77.56	78.24	-0.0046	4.81			4.96			3,100	3,100	100.0	0.0	130.10	64.28						
2.768	10-YR	55.26	65.10	9.84	77.56	78.24	-0.0046	5.57			5.40			4,250	4,250	100.0	0.0	141.33	65.56						
2.768	25-YR	55.26	66.68	11.42	77.56	78.24	-0.0046	5.97			5.70			5,900	5,900	100.0	0.0	173.36	67.18						
2.768	50-YR	55.26	67.75	12.49	77.56	78.24	-0.0046	6.36			5.76			7,100	7,100	100.0	0.0	193.82	68.27						
2.768	100-YR	55.26	68.79	13.53	77.56	78.24	-0.0046	7.08			5.76			8,300	8,300	100.0	0.0	203.61	69.31						
2.768	200-YR	55.26	69.77	14.51	77.56	78.24	-0.0046	7.98			5.76			9,470	9,470	100.0	0.0	206.00	70.29						
2.768	500-YR	55.26	71.27	16.01	77.56	78.24	-0.0046	9.31			5.84			11,400	11,400	100.0	0.0	209.73	71.80						
2.753	2-YR	55.64	61.92	6.28	77.53	77.42	0.0210	4.47			2.82			1,620	1,620	100.0	0.0	128.54	62.04	20.47	5B		174.29	1.36	
2.753	5-YR	55.64	63.93	8.29	77.53	77.42	0.0210	5.71			3.65			3,100	3,100	100.0	0.0	148.57	64.14						
2.753	10-YR	55.64	65.14	9.50	77.53	77.42	0.0210	6.18			4.08			4,250	4,250	100.0	0.0	168.59	65.40						
2.753	25-YR	55.64	66.72	11.08	77.53	77.42	0.0210	7.61			4.50			5,900	5,900	100.0	0.0	172.34	67.03						
2.753	50-YR	55.64	67.78	12.14	77.53	77.42	0.0210	8.60			4.75			7,100	7,100	100.0	0.0	173.81	68.13						
2.753	100-YR	55.64	68.80	13.16	77.53	77.42	0.0210	9.57			4.96			8,300	8,300	100.0	0.0	174.91	69.19						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
2.753	200-YR	55.64	69.77	14.13	77.53	77.42	0.0210	10.45			5.14			9,470	9,470	100.0	0.0	176.44	70.18						
2.753	500-YR	55.64	71.25	15.61	77.53	77.42	0.0210	11.77			5.41			11,400	11,400	100.0	0.0	179.04	71.71						
2.736	2-YR	53.80	61.78	7.98	73.41	76.24	0.0076	4.93			3.51			1,620	1,620	100.0	0.0	93.56	61.97	11.72	5A	29.82	111.66	1.19	1.54
2.736	5-YR	53.80	63.68	9.88	73.41	76.24	0.0076	6.58			4.82			3,100	3,100	100.0	0.0	97.77	64.04						
2.736	10-YR	53.80	64.79	10.99	73.41	76.24	0.0076	7.51			5.64			4,250	4,250	100.0	0.0	100.28	65.29						
2.736	25-YR	53.80	66.24	12.44	73.41	76.24	0.0076	8.70			6.55			5,900	5,900	100.0	0.0	103.57	66.90						
2.736	50-YR	53.80	67.22	13.42	73.41	76.24	0.0076	9.48			7.08			7,100	7,100	100.0	0.0	105.80	67.99						
2.736	100-YR	53.80	68.17	14.37	73.41	76.24	0.0076	10.24			7.51			8,300	8,300	100.0	0.0	107.93	69.05						
2.736	200-YR	53.80	69.08	15.28	73.41	76.24	0.0076	10.94			7.86			9,470	9,470	100.0	0.0	110.07	70.04						
2.736	500-YR	53.80	70.46	16.66	73.41	76.24	0.0076	11.99			8.39			11,400	11,400	100.0	0.0	113.31	71.56						
2.713	2-YR	52.87	61.41	8.54	74.24	76.24	0.0033	4.36			4.98			1,620	1,620	100.0	0.0	74.62	61.79	8.74	5A		107.41	1.44	
2.713	5-YR	52.87	63.12	10.25	74.24	76.24	0.0033	5.17			6.63			3,100	3,100	100.0	0.0	90.38	63.80						
2.713	10-YR	52.87	64.11	11.24	74.24	76.24	0.0033	6.01			7.61			4,250	4,250	100.0	0.0	92.85	65.01						
2.713	25-YR	52.87	65.44	12.57	74.24	76.24	0.0033	7.11			8.62			5,900	5,900	100.0	0.0	96.17	66.59						
2.713	50-YR	52.87	66.37	13.50	74.24	76.24	0.0033	7.87			9.16			7,100	7,100	100.0	0.0	98.50	67.68						
2.713	100-YR	52.87	67.30	14.43	74.24	76.24	0.0033	8.61			9.56			8,300	8,300	100.0	0.0	100.83	68.72						
2.713	200-YR	52.87	68.21	15.34	74.24	76.24	0.0033	9.32			9.86			9,470	9,470	100.0	0.0	103.09	69.72						
2.713	500-YR	52.87	69.58	16.71	74.24	76.24	0.0033	10.37			10.32			11,400	11,400	100.0	0.0	106.50	71.24						
2.692	2-YR	52.51	61.19	8.68	75.43	75.24	-0.0030	3.99			4.82			1,620	1,620	100.0	0.0	84.22	61.55	9.70	5A		124.88	1.48	
2.692	5-YR	52.51	62.88	10.37	75.43	75.24	-0.0030	4.64			6.04			3,100	3,100	100.0	0.0	110.55	63.45						
2.692	10-YR	52.51	63.91	11.40	75.43	75.24	-0.0030	5.53			6.76			4,250	4,250	100.0	0.0	113.53	64.62						
2.692	25-YR	52.51	65.32	12.81	75.43	75.24	-0.0030	6.77			7.46			5,900	5,900	100.0	0.0	116.91	66.19						
2.692	50-YR	52.51	66.31	13.80	75.43	75.24	-0.0030	7.64			7.83			7,100	7,100	100.0	0.0	118.72	67.26						
2.692	100-YR	52.51	67.29	14.78	75.43	75.24	-0.0030	8.51			8.10			8,300	8,300	100.0	0.0	120.44	68.31						
2.692	200-YR	52.51	68.24	15.73	75.43	75.24	-0.0030	9.33			8.31			9,470	9,470	100.0	0.0	122.06	69.31						
2.692	500-YR	52.51	69.66	17.15	75.43	75.24	-0.0030	10.56			8.67			11,400	11,400	100.0	0.0	124.52	70.83						
2.668	2-YR	52.88	61.03	8.15	73.75	74.75	-0.0017	4.68			4.26			1,620	1,620	100.0	0.0	81.34	61.32	9.98	5A		109.09	1.34	
2.668	5-YR	52.88	62.59	9.71	73.75	74.75	-0.0017	5.40			5.90			3,100	3,100	100.0	0.0	97.22	63.14						
2.668	10-YR	52.88	63.57	10.69	73.75	74.75	-0.0017	6.22			6.84			4,250	4,250	100.0	0.0	99.85	64.30						
2.668	25-YR	52.88	64.91	12.03	73.75	74.75	-0.0017	7.38			7.79			5,900	5,900	100.0	0.0	102.66	65.85						
2.668	50-YR	52.88	65.87	12.99	73.75	74.75	-0.0017	8.20			8.30			7,100	7,100	100.0	0.0	104.36	66.93						
2.668	100-YR	52.88	66.83	13.95	73.75	74.75	-0.0017	9.04			8.67			8,300	8,300	100.0	0.0	105.91	67.99						
2.668	200-YR	52.88	67.76	14.88	73.75	74.75	-0.0017	9.85			8.96			9,470	9,470	100.0	0.0	107.30	69.01						
2.668	500-YR	52.88	69.15	16.27	73.75	74.75	-0.0017	11.07			9.44			11,400	11,400	100.0	0.0	109.06	70.54						
2.649	2-YR	53.05	60.90	7.85	73.90	73.21	-0.0232	4.59			4.23			1,620	1,620	100.0	0.0	83.47	61.17	10.63	5A		100.05	1.20	
2.649	5-YR	53.05	62.33	9.28	73.90	73.21	-0.0232	5.78			6.13			3,100	3,100	100.0	0.0	87.45	62.91						
2.649	10-YR	53.05	63.20	10.15	73.90	73.21	-0.0232	6.52			7.28			4,250	4,250	100.0	0.0	89.47	64.03						
2.649	25-YR	53.05	64.44	11.39	73.90	73.21	-0.0232	7.56			8.48			5,900	5,900	100.0	0.0	92.00	65.55						
2.649	50-YR	53.05	65.34	12.29	73.90	73.21	-0.0232	8.32			9.11			7,100	7,100	100.0	0.0	93.64	66.63						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
2.649	100-YR	53.05	66.27	13.22	73.90	73.21	-0.0232	9.09			9.58			8,300	8,300	100.0	0.0	95.35	67.69						
2.649	200-YR	53.05	67.18	14.13	73.90	73.21	-0.0232	9.84			9.92			9,470	9,470	100.0	0.0	97.06	68.71						
2.649	500-YR	53.05	68.54	15.49	73.90	73.21	-0.0232	10.93			10.48			11,400	11,400	100.0	0.0	99.58	70.24						
2.634	2-YR	54.85	60.70	5.85	72.97	72.97	0.0171	4.91			4.75			1,620	1,620	100.0	0.0	69.44	61.05	11.87	5A		82.38	1.19	
2.634	5-YR	54.85	61.85	7.00	72.97	72.97	0.0171	5.86			7.34			3,100	3,100	100.0	0.0	72.06	62.69						
2.634	10-YR	54.85	62.41	7.56	72.97	72.97	0.0171	6.32			9.17			4,250	4,250	100.0	0.0	73.36	63.72						
2.634	25-YR	54.85	63.09	8.24	72.97	72.97	0.0171	6.85			11.49			5,900	5,900	100.0	0.0	74.94	65.14						
2.634	50-YR	54.85	63.49	8.64	72.97	72.97	0.0171	7.17			13.05			7,100	7,100	100.0	0.0	75.88	66.14						
2.634	100-YR	54.85	63.77	8.92	72.97	72.97	0.0171	7.39			14.70			8,300	8,300	100.0	0.0	76.46	67.12						
2.634	200-YR	54.85	64.22	9.37	72.97	72.97	0.0171	7.74			15.80			9,470	9,470	100.0	0.0	77.41	68.09						
2.634	500-YR	54.85	65.31	10.46	72.97	72.97	0.0171	8.60			16.64			11,400	11,400	100.0	0.0	79.69	69.61						
2.594	2-YR	51.24	60.38	9.14	70.88	74.91	-0.0127	3.21			4.08			1,620	1,620	100.0	0.0	123.92	60.64	13.56	5A		309.25	2.50	
2.594	5-YR	51.24	61.31	10.07	70.88	74.91	-0.0127	3.37			5.93			3,100	3,100	100.0	0.0	155.26	61.86						
2.594	10-YR	51.24	61.68	10.44	70.88	74.91	-0.0127	3.43			7.28			4,250	4,250	100.0	0.0	170.23	62.50						
2.594	25-YR	51.24	62.09	10.85	70.88	74.91	-0.0127	3.47			8.99			5,900	5,900	100.0	0.0	189.18	63.35						
2.594	50-YR	51.24	62.34	11.10	70.88	74.91	-0.0127	3.53			10.07			7,100	7,100	100.0	0.0	199.91	63.92						
2.594	100-YR	51.24	62.69	11.45	70.88	74.91	-0.0127	3.67			10.68			8,300	8,300	100.0	0.0	211.88	64.46						
2.594	200-YR	51.24	63.23	11.99	70.88	74.91	-0.0127	3.85			10.56			9,470	9,470	100.0	0.0	232.99	64.96						
2.594	500-YR	51.24	64.24	13.00	70.88	74.91	-0.0127	4.52			9.96			11,400	11,400	100.0	0.0	253.18	65.78						
2.565	2-YR	53.24	60.17	6.93	73.75	78.38	0.0000	1.95			2.80			1,620	1,620	100.0	0.0	296.47	60.29	42.78	5A		430.56	1.45	
2.565	5-YR	53.24	61.15	7.91	73.75	78.38	0.0000	2.32			3.25			3,100	3,100	100.0	0.0	411.78	61.32						
2.565	10-YR	53.24	61.60	8.36	73.75	78.38	0.0000	2.75			3.74			4,250	4,250	100.0	0.0	413.17	61.81						
2.565	25-YR	53.24	62.17	8.93	73.75	78.38	0.0000	3.31			4.29			5,900	5,900	100.0	0.0	414.98	62.46						
2.565	50-YR	53.24	62.58	9.34	73.75	78.38	0.0000	3.72			4.59			7,100	7,100	100.0	0.0	416.26	62.91						
2.565	100-YR	53.24	63.09	9.85	73.75	78.38	0.0000	4.21			4.72			8,300	8,300	100.0	0.0	417.89	63.44						
2.565	200-YR	53.24	63.68	10.44	73.75	78.38	0.0000	4.78			4.72			9,470	9,470	100.0	0.0	419.73	64.03						
2.565	500-YR	53.24	64.69	11.45	73.75	78.38	0.0000	5.75			4.69			11,400	11,400	100.0	0.0	422.90	65.03						
2.544	2-YR	53.24	60.01	6.77	73.32	71.38	-0.0053	2.05			2.62			1,620	1,620	100.0	0.0	301.21	60.12	44.49	5A		457.9	1.52	
2.544	5-YR	53.24	60.95	7.71	73.32	71.38	-0.0053	2.21			3.19			3,100	3,100	100.0	0.0	439.27	61.11						
2.544	10-YR	53.24	61.39	8.15	73.32	71.38	-0.0053	2.64			3.65			4,250	4,250	100.0	0.0	440.70	61.59						
2.544	25-YR	53.24	61.96	8.72	73.32	71.38	-0.0053	3.20			4.16			5,900	5,900	100.0	0.0	442.79	62.23						
2.544	50-YR	53.24	62.38	9.14	73.32	71.38	-0.0053	3.62			4.42			7,100	7,100	100.0	0.0	444.15	62.69						
2.544	100-YR	53.24	62.93	9.69	73.32	71.38	-0.0053	4.14			4.49			8,300	8,300	100.0	0.0	445.88	63.24						
2.544	200-YR	53.24	63.55	10.31	73.32	71.38	-0.0053	4.75			4.46			9,470	9,470	100.0	0.0	447.79	63.86						
2.544	500-YR	53.24	64.60	11.36	73.32	71.38	-0.0053	5.76			4.39			11,400	11,400	100.0	0.0	451.03	64.90						
2.509	2-YR	54.24	59.35	5.11	73.19	73.42	-0.0040	1.38			4.04			1,620	1,620	100.0	0.0	289.70	59.60	56.69	5A		449.81	1.55	
2.509	5-YR	54.24	60.20	5.96	73.19	73.42	-0.0040	1.90			4.61			3,100	3,100	100.0	0.0	354.02	60.53						
2.509	10-YR	54.24	60.45	6.21	73.19	73.42	-0.0040	2.05			5.57			4,250	4,250	100.0	0.0	372.95	60.93						
2.509	25-YR	54.24	61.00	6.76	73.19	73.42	-0.0040	2.26			5.98			5,900	5,900	100.0	0.0	435.99	61.56						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
2.509	50-YR	54.24	61.67	7.43	73.19	73.42	-0.0040	2.89			5.54			7,100	7,100	100.0	0.0	443.20	62.15						
2.509	100-YR	54.24	62.43	8.19	73.19	73.42	-0.0040	3.63			5.13			8,300	8,300	100.0	0.0	444.96	62.84						
2.509	200-YR	54.24	63.19	8.95	73.19	73.42	-0.0040	4.37			4.85			9,470	9,470	100.0	0.0	446.75	63.55						
2.509	500-YR	54.24	64.35	10.11	73.19	73.42	-0.0040	5.51			4.60			11,400	11,400	100.0	0.0	449.55	64.68						
2.479	2-YR	54.88	57.65	2.77	70.86	71.03	0.0138	1.59			6.33			1,620	1,620	100.0	0.0	160.46	58.28	57.93	5A		394.84	2.46	
2.479	5-YR	54.88	58.49	3.61	70.86	71.03	0.0138	1.41			6.72			3,100	3,100	100.0	0.0	328.15	59.19						
2.479	10-YR	54.88	59.21	4.33	70.86	71.03	0.0138	1.85			5.86			4,250	4,250	100.0	0.0	391.18	59.74						
2.479	25-YR	54.88	60.47	5.59	70.86	71.03	0.0138	3.10			4.82			5,900	5,900	100.0	0.0	395.01	60.84						
2.479	50-YR	54.88	61.37	6.49	70.86	71.03	0.0138	3.97			4.49			7,100	7,100	100.0	0.0	397.71	61.69						
2.479	100-YR	54.88	62.23	7.35	70.86	71.03	0.0138	4.80			4.32			8,300	8,300	100.0	0.0	400.27	62.52						
2.479	200-YR	54.88	63.04	8.16	70.86	71.03	0.0138	5.58			4.22			9,470	9,470	100.0	0.0	402.13	63.31						
2.479	500-YR	54.88	64.24	9.36	70.86	71.03	0.0138	6.75			4.17			11,400	11,400	100.0	0.0	404.91	64.51						
2.456	2-YR	53.25	56.45	3.20	67.94	68.24	0.0373	1.24			5.12			1,620	1,620	100.0	0.0	254.99	56.86	79.68	5A		298.06	1.17	
2.456	5-YR	53.25	57.99	4.74	67.94	68.24	0.0373	2.55			4.18			3,100	3,100	100.0	0.0	291.45	58.26						
2.456	10-YR	53.25	59.01	5.76	67.94	68.24	0.0373	3.52			4.08			4,250	4,250	100.0	0.0	295.87	59.27						
2.456	25-YR	53.25	60.34	7.09	67.94	68.24	0.0373	4.79			4.11			5,900	5,900	100.0	0.0	300.26	60.60						
2.456	50-YR	53.25	61.25	8.00	67.94	68.24	0.0373	5.66			4.14			7,100	7,100	100.0	0.0	302.84	61.52						
2.456	100-YR	53.25	62.12	8.87	67.94	68.24	0.0373	6.47			4.20			8,300	8,300	100.0	0.0	305.28	62.39						
2.456	200-YR	53.25	62.93	9.68	67.94	68.24	0.0373	7.24			4.26			9,470	9,470	100.0	0.0	307.46	63.21						
2.456	500-YR	53.25	64.13	10.88	67.94	68.24	0.0373	8.35			4.39			11,400	11,400	100.0	0.0	310.62	64.43						
2.434	2-YR	48.80	56.12	7.32	69.27	67.63	0.0003	2.57			3.59			1,620	1,620	100.0	0.0	175.29	56.32	23.95	4B	14.78	211.54	1.21	1.75
2.434	5-YR	48.80	57.75	8.95	69.27	67.63	0.0003	3.92			4.12			3,100	3,100	100.0	0.0	192.09	58.02						
2.434	10-YR	48.80	58.76	9.96	69.27	67.63	0.0003	4.87			4.48			4,250	4,250	100.0	0.0	194.86	59.08						
2.434	25-YR	48.80	60.07	11.27	69.27	67.63	0.0003	6.05			4.89			5,900	5,900	100.0	0.0	199.29	60.44						
2.434	50-YR	48.80	60.97	12.17	69.27	67.63	0.0003	6.75			5.11			7,100	7,100	100.0	0.0	205.94	61.38						
2.434	100-YR	48.80	61.83	13.03	69.27	67.63	0.0003	7.52			5.30			8,300	8,300	100.0	0.0	208.25	62.26						
2.434	200-YR	48.80	62.63	13.83	69.27	67.63	0.0003	8.26			5.46			9,470	9,470	100.0	0.0	209.90	63.09						
2.434	500-YR	48.80	63.80	15.00	69.27	67.63	0.0003	9.33			5.76			11,400	11,400	100.0	0.0	212.24	64.31						
2.412	2-YR	48.76	55.86	7.10	68.02	65.24	0.0143	3.17			3.85			1,620	1,620	100.0	0.0	132.66	56.09	18.68	4B		175.77	1.32	
2.412	5-YR	48.76	57.44	8.68	68.02	65.24	0.0143	4.61			4.89			3,100	3,100	100.0	0.0	137.63	57.81						
2.412	10-YR	48.76	58.40	9.64	68.02	65.24	0.0143	5.45			5.53			4,250	4,250	100.0	0.0	140.93	58.87						
2.412	25-YR	48.76	59.64	10.88	68.02	65.24	0.0143	5.98			6.21			5,900	5,900	100.0	0.0	158.94	60.24						
2.412	50-YR	48.76	60.52	11.76	68.02	65.24	0.0143	6.70			6.50			7,100	7,100	100.0	0.0	163.15	61.18						
2.412	100-YR	48.76	61.37	12.61	68.02	65.24	0.0143	7.37			6.74			8,300	8,300	100.0	0.0	167.23	62.07						
2.412	200-YR	48.76	62.16	13.40	68.02	65.24	0.0143	7.98			6.93			9,470	9,470	100.0	0.0	171.09	62.91						
2.412	500-YR	48.76	63.31	14.55	68.02	65.24	0.0143	8.80			7.28			11,400	11,400	100.0	0.0	177.98	64.13						
2.392	2-YR	47.24	55.72	8.48	66.26	65.63	-0.0084	3.82			3.56			1,620	1,620	100.0	0.0	119.11	55.92	14.05	4B		227.3	1.91	
2.392	5-YR	47.24	57.28	10.04	66.26	65.63	-0.0084	4.97			4.75			3,100	3,100	100.0	0.0	131.26	57.63						
2.392	10-YR	47.24	58.22	10.98	66.26	65.63	-0.0084	5.75			5.47			4,250	4,250	100.0	0.0	135.13	58.68						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
2.392	25-YR	47.24	59.42	12.18	66.26	65.63	-0.0084	6.71			6.25			5,900	5,900	100.0	0.0	140.52	60.03						
2.392	50-YR	47.24	60.29	13.05	66.26	65.63	-0.0084	7.37			6.65			7,100	7,100	100.0	0.0	144.76	60.98						
2.392	100-YR	47.24	61.11	13.87	66.26	65.63	-0.0084	8.04			6.99			8,300	8,300	100.0	0.0	147.82	61.87						
2.392	200-YR	47.24	61.89	14.65	66.26	65.63	-0.0084	8.73		0.01	7.26		0.03	9,470	9,470	100.0	0.0	156.38	62.71						
2.392	500-YR	47.24	63.02	15.78	66.26	65.63	-0.0084	9.76		0.95	7.71		0.82	11,356	11,400	99.6	0.4	208.04	63.94						
2.372	2-YR	48.11	55.43	7.32	66.47	67.53	0.0163	3.36			4.49			1,620	1,620	100.0	0.0	107.48	55.74	14.68	4B		176.92	1.65	
2.372	5-YR	48.11	56.85	8.74	66.47	67.53	0.0163	4.25			5.92			3,100	3,100	100.0	0.0	123.04	57.40						
2.372	10-YR	48.11	57.74	9.63	66.47	67.53	0.0163	4.86			6.68			4,250	4,250	100.0	0.0	130.91	58.43						
2.372	25-YR	48.11	58.91	10.80	66.47	67.53	0.0163	5.71			7.42			5,900	5,900	100.0	0.0	139.24	59.77						
2.372	50-YR	48.11	59.80	11.69	66.47	67.53	0.0163	6.46			7.71			7,100	7,100	100.0	0.0	142.51	60.72						
2.372	100-YR	48.11	60.64	12.53	66.47	67.53	0.0163	7.21			7.97			8,300	8,300	100.0	0.0	144.41	61.63						
2.372	200-YR	48.11	61.44	13.33	66.47	67.53	0.0163	7.89			8.18			9,470	9,470	100.0	0.0	146.57	62.48						
2.372	500-YR	48.11	62.56	14.45	66.47	67.53	0.0163	8.86		0.67	8.60		0.77	11,387	11,400	99.9	0.1	174.09	63.71						
2.355	2-YR	46.64	55.34	8.70	66.42	68.27	-0.0048	4.02			3.82			1,620	1,620	100.0	0.0	105.38	55.56	12.11	4B		183.1	1.74	
2.355	5-YR	46.64	56.71	10.07	66.42	68.27	-0.0048	4.68			5.30			3,100	3,100	100.0	0.0	124.98	57.14						
2.355	10-YR	46.64	57.58	10.94	66.42	68.27	-0.0048	5.42			6.12			4,250	4,250	100.0	0.0	128.21	58.16						
2.355	25-YR	46.64	58.74	12.10	66.42	68.27	-0.0048	6.37			6.97			5,900	5,900	100.0	0.0	132.88	59.49						
2.355	50-YR	46.64	59.63	12.99	66.42	68.27	-0.0048	7.06			7.35			7,100	7,100	100.0	0.0	136.88	60.47						
2.355	100-YR	46.64	60.47	13.83	66.42	68.27	-0.0048	7.81			7.66			8,300	8,300	100.0	0.0	138.64	61.39						
2.355	200-YR	46.64	61.27	14.63	66.42	68.27	-0.0048	8.54			7.93			9,470	9,470	100.0	0.0	139.78	62.25						
2.355	500-YR	46.64	62.39	15.75	66.42	68.27	-0.0048	9.55		0.41	8.44		0.52	11,397	11,400	100.0	0.0	157.07	63.49						
2.334	2-YR	47.16	55.10	7.94	67.89	68.93	-0.0118	3.22			4.21			1,620	1,620	100.0	0.0	119.64	55.37	15.07	4B		188.27	1.57	
2.334	5-YR	47.16	56.39	9.23	67.89	68.93	-0.0118	3.85			5.55			3,100	3,100	100.0	0.0	145.09	56.87						
2.334	10-YR	47.16	57.29	10.13	67.89	68.93	-0.0118	4.64			6.15			4,250	4,250	100.0	0.0	148.89	57.88						
2.334	25-YR	47.16	58.50	11.34	67.89	68.93	-0.0118	5.68			6.75			5,900	5,900	100.0	0.0	153.81	59.21						
2.334	50-YR	47.16	59.43	12.27	67.89	68.93	-0.0118	6.45			6.97			7,100	7,100	100.0	0.0	158.09	60.19						
2.334	100-YR	47.16	60.31	13.15	67.89	68.93	-0.0118	6.98			7.15			8,300	8,300	100.0	0.0	166.41	61.11						
2.334	200-YR	47.16	61.15	13.99	67.89	68.93	-0.0118	7.48			7.26			9,470	9,470	100.0	0.0	174.31	61.97						
2.334	500-YR	47.16	62.32	15.16	67.89	68.93	-0.0118	8.35			7.54			11,400	11,400	100.0	0.0	181.00	63.20						
2.312	2-YR	48.55	54.81	6.26	67.27	67.26	0.0083	2.62			4.20			1,620	1,620	100.0	0.0	146.89	55.09	23.46	4B		223.44	1.52	
2.312	5-YR	48.55	56.08	7.53	67.27	67.26	0.0083	3.57			5.26			3,100	3,100	100.0	0.0	165.32	56.51						
2.312	10-YR	48.55	57.03	8.48	67.27	67.26	0.0083	4.39			5.67			4,250	4,250	100.0	0.0	170.86	57.53						
2.312	25-YR	48.55	58.31	9.76	67.27	67.26	0.0083	5.45			6.07			5,900	5,900	100.0	0.0	178.38	58.88						
2.312	50-YR	48.55	59.28	10.73	67.27	67.26	0.0083	5.85			6.16			7,100	7,100	100.0	0.0	197.04	59.87						
2.312	100-YR	48.55	60.21	11.66	67.27	67.26	0.0083	6.14			6.16			8,300	8,300	100.0	0.0	219.46	60.80						
2.312	200-YR	48.55	61.09	12.54	67.27	67.26	0.0083	6.91			6.13			9,470	9,470	100.0	0.0	223.55	61.68						
2.312	500-YR	48.55	62.31	13.76	67.27	67.26	0.0083	7.95			6.26			11,400	11,400	100.0	0.0	228.93	62.92						
2.294	2-YR	47.76	54.40	6.64	67.94	66.29	-0.0038	2.55			4.87			1,640	1,640	100.0	0.0	132.04	54.76	19.89	4B		227.83	1.73	
2.294	5-YR	47.76	55.59	7.83	67.94	66.29	-0.0038	3.20			6.04			3,150	3,150	100.0	0.0	163.29	56.16						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
2.294	10-YR	47.76	56.60	8.84	67.94	66.29	-0.0038	4.00			6.36			4,400	4,400	100.0	0.0	172.92	57.23						
2.294	25-YR	47.76	58.02	10.26	67.94	66.29	-0.0038	5.10			6.34			6,000	6,000	100.0	0.0	185.61	58.64						
2.294	50-YR	47.76	59.05	11.29	67.94	66.29	-0.0038	5.38			6.27			7,200	7,200	100.0	0.0	213.36	59.66						
2.294	100-YR	47.76	60.02	12.26	67.94	66.29	-0.0038	6.08			6.16			8,400	8,400	100.0	0.0	224.55	60.61						
2.294	200-YR	47.76	60.94	13.18	67.94	66.29	-0.0038	6.91			6.11			9,610	9,610	100.0	0.0	227.55	61.52						
2.294	500-YR	47.76	62.19	14.43	67.94	66.29	-0.0038	8.04			6.19			11,500	11,500	100.0	0.0	231.09	62.78						
2.270	2-YR	48.24	53.85	5.61	67.80	66.85	-0.0004	2.00			4.73			1,640	1,640	100.0	0.0	173.86	54.20	30.99	4B		254.69	1.46	
2.270	5-YR	48.24	55.22	6.98	67.80	66.85	-0.0004	2.99			5.08			3,150	3,150	100.0	0.0	207.30	55.62						
2.270	10-YR	48.24	56.41	8.17	67.80	66.85	-0.0004	4.13			5.07			4,400	4,400	100.0	0.0	210.34	56.80						
2.270	25-YR	48.24	57.92	9.68	67.80	66.85	-0.0004	4.95			5.00			6,000	6,000	100.0	0.0	242.71	58.31						
2.270	50-YR	48.24	58.99	10.75	67.80	66.85	-0.0004	5.77			4.91			7,200	7,200	100.0	0.0	254.13	59.37						
2.270	100-YR	48.24	60.00	11.76	67.80	66.85	-0.0004	6.75			4.88			8,400	8,400	100.0	0.0	255.33	60.36						
2.270	200-YR	48.24	60.93	12.69	67.80	66.85	-0.0004	7.65			4.90			9,610	9,610	100.0	0.0	256.55	61.30						
2.270	500-YR	48.24	62.20	13.96	67.80	66.85	-0.0004	8.82			5.02			11,500	11,500	100.0	0.0	259.54	62.59						
2.243	2-YR	48.30	53.07	4.77	64.24	71.81	0.0201	2.06			4.99			1,640	1,640	100.0	0.0	159.75	53.45	33.49	4B		224.03	1.40	
2.243	5-YR	48.30	54.82	6.52	64.24	71.81	0.0201	3.24			4.75			3,150	3,150	100.0	0.0	205.14	55.17						
2.243	10-YR	48.30	56.18	7.88	64.24	71.81	0.0201	4.47			4.65			4,400	4,400	100.0	0.0	211.85	56.51						
2.243	25-YR	48.30	57.75	9.45	64.24	71.81	0.0201	5.77			4.66			6,000	6,000	100.0	0.0	223.16	58.09						
2.243	50-YR	48.30	58.85	10.55	64.24	71.81	0.0201	6.69			4.68			7,200	7,200	100.0	0.0	229.98	59.19						
2.243	100-YR	48.30	59.87	11.57	64.24	71.81	0.0201	7.64			4.74			8,400	8,400	100.0	0.0	232.15	60.22						
2.243	200-YR	48.30	60.82	12.52	64.24	71.81	0.0201	8.50			4.82			9,610	9,610	100.0	0.0	234.51	61.18						
2.243	500-YR	48.30	62.09	13.79	64.24	71.81	0.0201	9.65			5.01			11,500	11,500	100.0	0.0	237.83	62.48						
2.233	2-YR	47.24	52.85	5.61	64.16	69.04	0.0056	2.01			4.57			1,640	1,640	100.0	0.0	178.01	53.17	31.73	4B		195.75	1.10	
2.233	5-YR	47.24	54.73	7.49	64.16	69.04	0.0056	3.79			4.50			3,150	3,150	100.0	0.0	184.96	55.04						
2.233	10-YR	47.24	56.10	8.86	64.16	69.04	0.0056	5.06			4.60			4,400	4,400	100.0	0.0	189.22	56.43						
2.233	25-YR	47.24	57.67	10.43	64.16	69.04	0.0056	6.50			4.77			6,000	6,000	100.0	0.0	193.57	58.03						
2.233	50-YR	47.24	58.76	11.52	64.16	69.04	0.0056	7.48			4.90			7,200	7,200	100.0	0.0	196.57	59.14						
2.233	100-YR	47.24	59.78	12.54	64.16	69.04	0.0056	8.38			5.03			8,400	8,400	100.0	0.0	199.34	60.17						
2.233	200-YR	47.24	60.72	13.48	64.16	69.04	0.0056	9.23			5.17			9,610	9,610	100.0	0.0	201.56	61.13						
2.233	500-YR	47.24	61.98	14.74	64.16	69.04	0.0056	10.35			5.44			11,500	11,500	100.0	0.0	204.45	62.44						
2.208	2-YR	46.50	52.49	5.99	62.09	64.77	0.0157	2.95			4.04			1,640	1,640	100.0	0.0	137.49	52.74	22.95	4B		163.69	1.19	
2.208	5-YR	46.50	54.50	8.00	62.09	64.77	0.0157	4.59			4.51			3,150	3,150	100.0	0.0	152.07	54.82						
2.208	10-YR	46.50	55.89	9.39	62.09	64.77	0.0157	5.85			4.83			4,400	4,400	100.0	0.0	155.79	56.25						
2.208	25-YR	46.50	57.46	10.96	62.09	64.77	0.0157	7.24			5.17			6,000	6,000	100.0	0.0	160.34	57.88						
2.208	50-YR	46.50	58.55	12.05	62.09	64.77	0.0157	8.15			5.39			7,200	7,200	100.0	0.0	163.91	59.00						
2.208	100-YR	46.50	59.55	13.05	62.09	64.77	0.0157	9.00			5.59			8,400	8,400	100.0	0.0	166.97	60.04						
2.208	200-YR	46.50	60.49	13.99	62.09	64.77	0.0157	9.81			5.79			9,610	9,610	100.0	0.0	169.21	61.01						
2.208	500-YR	46.50	61.72	15.22	62.09	64.77	0.0157	10.39	0.18		6.14	0.20		11,499	11,500	100.0	0.0	204.77	62.31						
2.193	2-YR	45.24	52.22	6.98	61.34	63.02	0.0097	3.45			4.63			1,640	1,640	100.0	0.0	102.55	52.55	14.69	4B		122.94	1.20	

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
2.193	5-YR	45.24	54.16	8.92	61.34	63.02	0.0097	5.15			5.63			3,150	3,150	100.0	0.0	108.72	54.65						
2.193	10-YR	45.24	55.50	10.26	61.34	63.02	0.0097	6.28			6.22			4,400	4,400	100.0	0.0	112.61	56.10						
2.193	25-YR	45.24	57.01	11.77	61.34	63.02	0.0097	7.57			6.82			6,000	6,000	100.0	0.0	116.35	57.73						
2.193	50-YR	45.24	58.06	12.82	61.34	63.02	0.0097	8.40			7.17			7,200	7,200	100.0	0.0	119.44	58.85						
2.193	100-YR	45.24	59.03	13.79	61.34	63.02	0.0097	9.16			7.49			8,400	8,400	100.0	0.0	122.40	59.90						
2.193	200-YR	45.24	59.92	14.68	61.34	63.02	0.0097	9.84			7.81			9,610	9,610	100.0	0.0	125.14	60.86						
2.193	500-YR	45.24	61.09	15.85	61.34	63.02	0.0097	10.31	0.47		8.30	0.54		11,476	11,500	99.8	0.2	230.82	62.15						
2.167	2-YR	43.88	51.90	8.02	59.95	59.43	-0.0101	3.89			4.66			1,640	1,640	100.0	0.0	90.57	52.23	11.29	4B		180.14	1.99	
2.167	5-YR	43.88	53.79	9.91	59.95	59.43	-0.0101	5.57			5.96			3,150	3,150	100.0	0.0	94.86	54.35						
2.167	10-YR	43.88	55.09	11.21	59.95	59.43	-0.0101	6.68			6.74			4,400	4,400	100.0	0.0	97.72	55.79						
2.167	25-YR	43.88	56.55	12.67	59.95	59.43	-0.0101	7.93			7.52			6,000	6,000	100.0	0.0	100.52	57.43						
2.167	50-YR	43.88	57.55	13.67	59.95	59.43	-0.0101	8.62			8.00			7,200	7,200	100.0	0.0	104.39	58.55						
2.167	100-YR	43.88	58.50	14.62	59.95	59.43	-0.0101	9.01			8.39			8,400	8,400	100.0	0.0	111.15	59.59						
2.167	200-YR	43.88	59.37	15.49	59.95	59.43	-0.0101	9.30			8.73			9,610	9,610	100.0	0.0	118.41	60.55						
2.167	500-YR	43.88	60.52	16.64	59.95	59.43	-0.0101	10.06	0.48	0.71	9.21	0.63	0.81	11,449	11,500	99.6	0.4	266.98	61.83						
2.149	2-YR	44.84	51.60	6.76	58.83	59.55	0.0057	3.75			5.07			1,640	1,640	100.0	0.0	86.26	52.00	12.76	4B		107.01	1.24	
2.149	5-YR	44.84	53.46	8.62	58.83	59.55	0.0057	5.43			6.47			3,150	3,150	100.0	0.0	89.60	54.11						
2.149	10-YR	44.84	54.71	9.87	58.83	59.55	0.0057	6.56			7.33			4,400	4,400	100.0	0.0	91.59	55.55						
2.149	25-YR	44.84	56.14	11.30	58.83	59.55	0.0057	7.63			8.18			6,000	6,000	100.0	0.0	96.14	57.18						
2.149	50-YR	44.84	57.13	12.29	58.83	59.55	0.0057	8.29			8.67			7,200	7,200	100.0	0.0	100.19	58.29						
2.149	100-YR	44.84	58.05	13.21	58.83	59.55	0.0057	8.80			9.08			8,400	8,400	100.0	0.0	105.17	59.33						
2.149	200-YR	44.84	58.89	14.05	58.83	59.55	0.0057	9.11	0.03		9.46	0.11		9,610	9,610	100.0	0.0	113.10	60.28						
2.149	500-YR	44.84	60.02	15.18	58.83	59.55	0.0057	9.99	0.55	0.18	9.98	0.74	0.38	11,429	11,500	99.4	0.6	313.19	61.56						
2.131	2-YR	44.30	51.16	6.86	58.24	60.99	-0.0045	3.38			5.83			1,640	1,640	100.0	0.0	83.31	51.69	12.14	4B		98.57	1.18	
2.131	5-YR	44.30	53.00	8.70	58.24	60.99	-0.0045	5.02			7.19			3,150	3,150	100.0	0.0	87.29	53.80						
2.131	10-YR	44.30	54.24	9.94	58.24	60.99	-0.0045	6.09			8.02			4,400	4,400	100.0	0.0	90.03	55.24						
2.131	25-YR	44.30	55.65	11.35	58.24	60.99	-0.0045	7.24			8.85			6,000	6,000	100.0	0.0	93.55	56.87						
2.131	50-YR	44.30	56.63	12.33	58.24	60.99	-0.0045	8.05			9.35			7,200	7,200	100.0	0.0	95.67	57.99						
2.131	100-YR	44.30	57.52	13.22	58.24	60.99	-0.0045	8.79			9.81			8,400	8,400	100.0	0.0	97.42	59.01						
2.131	200-YR	44.30	58.32	14.02	58.24	60.99	-0.0045	9.43	0.08	0.05	10.28	0.27	0.17	9,609	9,610	100.0	0.0	147.48	59.96						
2.131	500-YR	44.30	59.48	15.18	58.24	60.99	-0.0045	10.35	0.96	0.69	10.77	1.15	0.91	11,314	11,500	98.4	1.6	292.55	61.25						
2.113	2-YR	44.71	50.98	6.27	57.24	58.71	0.0182	3.90			5.00			1,640	1,640	100.0	0.0	83.98	51.37	13.39	4B		108.88	1.30	
2.113	5-YR	44.71	52.84	8.13	57.24	58.71	0.0182	5.29			6.38			3,150	3,150	100.0	0.0	93.35	53.47						
2.113	10-YR	44.71	54.11	9.40	57.24	58.71	0.0182	6.25			7.15			4,400	4,400	100.0	0.0	98.39	54.90						
2.113	25-YR	44.71	55.56	10.85	57.24	58.71	0.0182	7.41			7.88			6,000	6,000	100.0	0.0	102.77	56.52						
2.113	50-YR	44.71	56.56	11.85	57.24	58.71	0.0182	8.25			8.31			7,200	7,200	100.0	0.0	104.93	57.64						
2.113	100-YR	44.71	57.48	12.77	57.24	58.71	0.0182	9.05	0.24		8.73	0.39		8,400	8,400	100.0	0.0	110.67	58.66						
2.113	200-YR	44.71	58.30	13.59	57.24	58.71	0.0182	9.86	0.53		9.12	0.66		9,584	9,610	99.7	0.3	180.90	59.59						
2.113	500-YR	44.71	59.49	14.78	57.24	58.71	0.0182	10.97	1.25	0.82	9.57	1.15	0.86	11,274	11,500	98.0	2.0	294.95	60.89						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
2.097	2-YR	43.13	50.58	7.45	56.51	58.16	-0.0046	3.96			5.88			1,640	1,640	100.0	0.0	70.36	51.11	9.44	4B		188.93	2.69	
2.097	5-YR	43.13	52.31	9.18	56.51	58.16	-0.0046	4.78			7.45			3,150	3,150	100.0	0.0	88.56	53.17						
2.097	10-YR	43.13	53.56	10.43	56.51	58.16	-0.0046	5.68			8.18			4,400	4,400	100.0	0.0	94.68	54.60						
2.097	25-YR	43.13	55.03	11.90	56.51	58.16	-0.0046	6.78			8.81			6,000	6,000	100.0	0.0	100.46	56.23						
2.097	50-YR	43.13	56.06	12.93	56.51	58.16	-0.0046	7.55			9.15			7,200	7,200	100.0	0.0	104.22	57.36						
2.097	100-YR	43.13	57.00	13.87	56.51	58.16	-0.0046	8.35	0.26		9.48	0.48		8,398	8,400	100.0	0.0	124.52	58.39						
2.097	200-YR	43.13	57.84	14.71	56.51	58.16	-0.0046	9.15	0.66	0.11	9.82	0.88	0.27	9,580	9,610	99.7	0.3	166.78	59.33						
2.097	500-YR	43.13	59.08	15.95	56.51	58.16	-0.0046	10.08	1.45	0.92	10.14	1.44	1.05	11,259	11,500	97.9	2.1	270.15	60.64						
2.076	2-YR	43.63	49.90	6.27	58.39	58.02	0.0108	2.96			6.73			1,640	1,640	100.0	0.0	82.36	50.60	13.14	4B		109.07	1.32	
2.076	5-YR	43.63	51.64	8.01	58.39	58.02	0.0108	4.42			8.01			3,150	3,150	100.0	0.0	88.98	52.64						
2.076	10-YR	43.63	53.01	9.38	58.39	58.02	0.0108	5.51			8.49			4,400	4,400	100.0	0.0	94.09	54.13						
2.076	25-YR	43.63	54.56	10.93	58.39	58.02	0.0108	6.77			8.99			6,000	6,000	100.0	0.0	98.58	55.81						
2.076	50-YR	43.63	55.63	12.00	58.39	58.02	0.0108	7.56			9.29			7,200	7,200	100.0	0.0	102.52	56.97						
2.076	100-YR	43.63	56.59	12.96	58.39	58.02	0.0108	7.56		0.17	9.55		0.39	8,399	8,400	100.0	0.0	126.94	58.01						
2.076	200-YR	43.63	57.51	13.88	58.39	58.02	0.0108	8.08	0.42	0.54	9.68	0.68	0.95	9,570	9,610	99.6	0.4	204.65	58.96						
2.076	500-YR	43.63	58.87	15.24	58.39	58.02	0.0108	8.90	1.07	1.51	9.60	1.18	1.49	11,176	11,500	97.2	2.8	287.52	60.27						
2.056	2-YR	42.49	48.99	6.50	59.37	58.59	0.0137	2.74			7.37			1,640	1,640	100.0	0.0	81.29	49.83	12.51	4B		114.18	1.40	
2.056	5-YR	42.49	51.18	8.69	59.37	58.59	0.0137	4.56			7.69			3,150	3,150	100.0	0.0	89.84	52.09						
2.056	10-YR	42.49	52.66	10.17	59.37	58.59	0.0137	5.71			8.04			4,400	4,400	100.0	0.0	95.85	53.66						
2.056	25-YR	42.49	54.28	11.79	59.37	58.59	0.0137	6.88			8.47			6,000	6,000	100.0	0.0	102.92	55.40						
2.056	50-YR	42.49	55.39	12.90	59.37	58.59	0.0137	7.28			8.69			7,200	7,200	100.0	0.0	113.84	56.56						
2.056	100-YR	42.49	56.37	13.88	59.37	58.59	0.0137	8.05		0.15	8.92		0.45	8,398	8,400	100.0	0.0	146.44	57.60						
2.056	200-YR	42.49	57.30	14.81	59.37	58.59	0.0137	8.61		0.61	9.09		0.93	9,561	9,610	99.5	0.5	209.53	58.57						
2.056	500-YR	42.49	58.69	16.20	59.37	58.59	0.0137	8.83		1.36	9.02		1.31	11,151	11,500	97.0	3.0	336.42	59.92						
2.035	2-YR	40.98	48.61	7.63	63.09	58.05	-0.0012	3.55			5.85			1,640	1,640	100.0	0.0	79.03	49.14	10.36	4B		155.47	1.97	
2.035	5-YR	40.98	50.96	9.98	63.09	58.05	-0.0012	5.39			6.61			3,150	3,150	100.0	0.0	88.44	51.63						
2.035	10-YR	40.98	52.47	11.49	63.09	58.05	-0.0012	6.51			7.16			4,400	4,400	100.0	0.0	94.52	53.26						
2.035	25-YR	40.98	54.10	13.12	63.09	58.05	-0.0012	7.65			7.74			6,000	6,000	100.0	0.0	101.26	55.03						
2.035	50-YR	40.98	55.20	14.22	63.09	58.05	-0.0012	8.49			8.11			7,200	7,200	100.0	0.0	104.61	56.22						
2.035	100-YR	40.98	56.16	15.18	63.09	58.05	-0.0012	9.22		0.37	8.47		0.51	8,391	8,400	99.9	0.1	153.74	57.28						
2.035	200-YR	40.98	57.09	16.11	63.09	58.05	-0.0012	9.34		0.77	8.71		0.87	9,533	9,610	99.2	0.8	231.51	58.26						
2.035	500-YR	40.98	58.50	17.52	63.09	58.05	-0.0012	9.99		1.42	8.68		1.20	11,001	11,500	95.7	4.3	417.97	59.62						
2.013	2-YR	41.12	48.25	7.13	65.24	59.77	0.0128	4.16			5.69			1,640	1,640	100.0	0.0	69.18	48.76	9.70	4B		142.45	2.06	
2.013	5-YR	41.12	50.58	9.46	65.24	59.77	0.0128	5.97			6.87			3,150	3,150	100.0	0.0	76.87	51.32						
2.013	10-YR	41.12	52.03	10.91	65.24	59.77	0.0128	7.04			7.67			4,400	4,400	100.0	0.0	81.45	52.95						
2.013	25-YR	41.12	53.58	12.46	65.24	59.77	0.0128	8.03			8.53			6,000	6,000	100.0	0.0	87.60	54.71						
2.013	50-YR	41.12	54.64	13.52	65.24	59.77	0.0128	8.44			9.01			7,200	7,200	100.0	0.0	94.78	55.90						
2.013	100-YR	41.12	55.58	14.46	65.24	59.77	0.0128	8.79		0.30	9.41		0.50	8,393	8,400	99.9	0.1	149.34	56.95						
2.013	200-YR	41.12	56.49	15.37	65.24	59.77	0.0128	9.15		0.72	9.65		1.08	9,531	9,610	99.2	0.8	208.32	57.92						
2.013	500-YR	41.12	57.98	16.86	65.24	59.77	0.0128	9.54		1.58	9.49		1.45	10,992	11,500	95.6	4.4	343.15	59.32						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
1.989	2-YR	39.51	47.94	8.43	61.91	54.38	0.0028	4.53			5.54			1,640	1,640	100.0	0.0	65.28	48.41	7.74	4B		228.25	3.50	
1.989	5-YR	39.51	50.26	10.75	61.91	54.38	0.0028	6.12			6.84			3,150	3,150	100.0	0.0	75.17	50.99						
1.989	10-YR	39.51	51.70	12.19	61.91	54.38	0.0028	7.19			7.71			4,400	4,400	100.0	0.0	79.38	52.62						
1.989	25-YR	39.51	53.20	13.69	61.91	54.38	0.0028	8.29			8.65			6,000	6,000	100.0	0.0	83.67	54.36						
1.989	50-YR	39.51	54.21	14.70	61.91	54.38	0.0028	9.04		0.38	9.24		0.57	7,198	7,200	100.0	0.0	96.76	55.53						
1.989	100-YR	39.51	55.09	15.58	61.91	54.38	0.0028	9.75		0.50	9.79		0.73	8,380	8,400	99.8	0.2	142.23	56.57						
1.989	200-YR	39.51	55.95	16.44	61.91	54.38	0.0028	10.44		0.89	10.19		1.03	9,501	9,610	98.9	1.1	207.64	57.54						
1.989	500-YR	39.51	57.29	17.78	61.91	54.38	0.0028	11.51		1.36	10.52		1.31	11,085	11,500	96.4	3.6	324.99	58.95						
1.971	2-YR	39.24	47.44	8.20	59.12	54.40	0.0000	4.21			6.54			1,640	1,640	100.0	0.0	59.54	48.11	7.26	4B		95.68	1.61	
1.971	5-YR	39.24	49.68	10.44	59.12	54.40	0.0000	5.70			8.00			3,150	3,150	100.0	0.0	69.08	50.67						
1.971	10-YR	39.24	51.04	11.80	59.12	54.40	0.0000	6.47			8.93			4,400	4,400	100.0	0.0	76.14	52.28						
1.971	25-YR	39.24	52.50	13.26	59.12	54.40	0.0000	7.46			9.86			6,000	6,000	100.0	0.0	81.59	54.01						
1.971	50-YR	39.24	53.48	14.24	59.12	54.40	0.0000	8.22			10.45			7,200	7,200	100.0	0.0	83.84	55.17						
1.971	100-YR	39.24	54.30	15.06	59.12	54.40	0.0000	8.86		0.15	11.06		0.33	8,400	8,400	100.0	0.0	86.86	56.20						
1.971	200-YR	39.24	55.05	15.81	59.12	54.40	0.0000	9.47		0.68	11.65		0.96	9,605	9,610	99.9	0.1	94.52	57.16						
1.971	500-YR	39.24	56.14	16.90	59.12	54.40	0.0000	10.32		1.77	12.47		1.70	11,478	11,500	99.8	0.2	96.59	58.55						
1.955	2-YR	39.24	47.29	8.05	57.52	54.91	0.0000	4.41			5.70			1,640	1,640	100.0	0.0	65.28	47.80	8.11	4B		130.95	2.01	
1.955	5-YR	39.24	49.58	10.34	57.52	54.91	0.0000	5.68			6.95			3,150	3,150	100.0	0.0	79.84	50.33						
1.955	10-YR	39.24	50.98	11.74	57.52	54.91	0.0000	6.31			7.69			4,400	4,400	100.0	0.0	90.69	51.90						
1.955	25-YR	39.24	52.51	13.27	57.52	54.91	0.0000	6.71			8.27			6,000	6,000	100.0	0.0	108.07	53.58						
1.955	50-YR	39.24	53.59	14.35	57.52	54.91	0.0000	7.14			8.49			7,200	7,200	100.0	0.0	118.69	54.71						
1.955	100-YR	39.24	54.51	15.27	57.52	54.91	0.0000	7.80			8.75			8,400	8,400	100.0	0.0	122.96	55.70						
1.955	200-YR	39.24	55.36	16.12	57.52	54.91	0.0000	8.49		0.27	9.02		0.44	9,609	9,610	100.0	0.0	130.99	56.63						
1.955	500-YR	39.24	56.60	17.36	57.52	54.91	0.0000	9.58		1.50	9.41		1.17	11,490	11,500	99.9	0.1	132.99	57.97						
1.930	2-YR	39.24	47.16	7.92	50.84	49.89	-0.0035	4.43			4.41			1,640	1,640	100.0	0.0	83.92	47.46	10.60	4B		163.38	1.95	
1.930	5-YR	39.24	49.51	10.27	50.84	49.89	-0.0035	5.28			5.21			3,150	3,150	100.0	0.0	114.58	49.93						
1.930	10-YR	39.24	50.99	11.75	50.84	49.89	-0.0035	6.56		0.83	5.63		0.70	4,389	4,400	99.8	0.2	137.42	51.48						
1.930	25-YR	39.24	52.58	13.34	50.84	49.89	-0.0035	8.15		1.92	6.13		1.16	5,940	6,000	99.0	1.0	145.58	53.16						
1.930	50-YR	39.24	53.67	14.43	50.84	49.89	-0.0035	9.23		2.54	6.46		1.35	7,087	7,200	98.4	1.6	151.67	54.30						
1.930	100-YR	39.24	54.60	15.36	50.84	49.89	-0.0035	10.17		2.89	6.81		1.46	8,228	8,400	98.0	2.0	159.75	55.31						
1.930	200-YR	39.24	55.47	16.23	50.84	49.89	-0.0035	11.03		3.49	7.13		1.63	9,356	9,610	97.4	2.6	163.52	56.24						
1.930	500-YR	39.24	56.72	17.48	50.84	49.89	-0.0035	12.29		4.74	7.59		1.95	11,088	11,500	96.4	3.6	163.52	57.58						
1.904	2-YR	39.71	46.56	6.85	53.37	47.43	0.0072	4.53		0.48	6.12		0.68	1,638	1,640	99.9	0.1	66.45	47.14	9.70	4B		117.73	1.77	
1.904	5-YR	39.71	48.64	8.93	53.37	47.43	0.0072	6.31		1.29	7.82		1.36	3,083	3,150	97.9	2.1	101.02	49.57						
1.904	10-YR	39.71	50.02	10.31	53.37	47.43	0.0072	7.58		2.50	8.68		2.09	4,180	4,400	95.0	5.0	105.75	51.14						
1.904	25-YR	39.71	51.48	11.77	53.37	47.43	0.0072	8.88		3.69	9.63		2.71	5,540	6,000	92.3	7.7	110.71	52.82						
1.904	50-YR	39.71	52.48	12.77	53.37	47.43	0.0072	9.77		4.47	10.20		3.07	6,534	7,200	90.8	9.2	114.14	53.96						
1.904	100-YR	39.71	53.31	13.60	53.37	47.43	0.0072	10.50		5.09	10.83		3.39	7,525	8,400	89.6	10.4	116.95	54.96						
1.904	200-YR	39.71	54.05	14.34	53.37	47.43	0.0072	11.22	0.41	5.63	11.46	0.65	3.67	8,523	9,610	88.7	11.3	123.53	55.88						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
1.904	500-YR	39.71	55.10	15.39	53.37	47.43	0.0072	12.28	0.92	6.37	12.37	1.13	4.05	10,060	11,500	87.5	12.5	131.96	57.21						
1.887	2-YR	39.08	46.66	7.58	52.40	55.51	0.0331	5.37			3.94			1,640	1,640	100.0	0.0	77.63	46.90	10.24	4B		136.08	1.75	
1.887	5-YR	39.08	48.81	9.73	52.40	55.51	0.0331	6.59			5.28			3,150	3,150	100.0	0.0	90.42	49.24						
1.887	10-YR	39.08	50.22	11.14	52.40	55.51	0.0331	7.49			6.03			4,400	4,400	100.0	0.0	97.45	50.79						
1.887	25-YR	39.08	51.72	12.64	52.40	55.51	0.0331	8.27			6.81			6,000	6,000	100.0	0.0	106.60	52.43						
1.887	50-YR	39.08	52.75	13.67	52.40	55.51	0.0331	8.99	0.16		7.24	0.25		7,200	7,200	100.0	0.0	112.99	53.57						
1.887	100-YR	39.08	53.62	14.54	52.40	55.51	0.0331	9.79	0.57		7.70	0.59		8,397	8,400	100.0	0.0	121.71	54.54						
1.887	200-YR	39.08	54.40	15.32	52.40	55.51	0.0331	10.54	0.83		8.14	0.76		9,594	9,610	99.8	0.2	136.54	55.43						
1.887	500-YR	39.08	55.53	16.45	52.40	55.51	0.0331	11.56	1.96	0.01	8.76	1.33	0.04	11,436	11,500	99.4	0.6	137.69	56.71						
1.865	2-YR	35.24	46.68	11.44	52.24	53.24	-0.0166	7.09			2.76			1,640	1,640	100.0	0.0	83.71	46.80	7.32	4B		163.81	1.96	
1.865	5-YR	35.24	48.84	13.60	52.24	53.24	-0.0166	8.75			4.04			3,150	3,150	100.0	0.0	89.10	49.09						
1.865	10-YR	35.24	50.25	15.01	52.24	53.24	-0.0166	9.80			4.85			4,400	4,400	100.0	0.0	92.65	50.61						
1.865	25-YR	35.24	51.73	16.49	52.24	53.24	-0.0166	10.86			5.73			6,000	6,000	100.0	0.0	96.47	52.24						
1.865	50-YR	35.24	52.75	17.51	52.24	53.24	-0.0166	11.64	0.25		6.27	0.25		7,200	7,200	100.0	0.0	101.31	53.36						
1.865	100-YR	35.24	53.60	18.36	52.24	53.24	-0.0166	12.42	0.44	0.18	6.82	0.38	0.21	8,397	8,400	100.0	0.0	118.17	54.32						
1.865	200-YR	35.24	54.38	19.14	52.24	53.24	-0.0166	13.19	1.04	0.58	7.33	0.69	0.46	9,591	9,610	99.8	0.2	128.91	55.21						
1.865	500-YR	35.24	55.49	20.25	52.24	53.24	-0.0166	14.31	2.15	0.52	8.06	1.13	0.64	11,430	11,500	99.4	0.6	146.97	56.49						
1.843	2-YR	37.18	46.47	9.29	53.08	56.06	-0.0028	6.04			4.07			1,640	1,640	100.0	0.0	66.75	46.73	7.19	4B		112.98	1.69	
1.843	5-YR	37.18	48.44	11.26	53.08	56.06	-0.0028	7.27			5.81			3,150	3,150	100.0	0.0	74.61	48.97						
1.843	10-YR	37.18	49.72	12.54	53.08	56.06	-0.0028	8.11			6.86			4,400	4,400	100.0	0.0	79.01	50.45						
1.843	25-YR	37.18	51.04	13.86	53.08	56.06	-0.0028	8.98			8.02			6,000	6,000	100.0	0.0	83.30	52.04						
1.843	50-YR	37.18	51.96	14.78	53.08	56.06	-0.0028	9.61			8.72			7,200	7,200	100.0	0.0	86.00	53.14						
1.843	100-YR	37.18	52.70	15.52	53.08	56.06	-0.0028	10.10			9.44			8,400	8,400	100.0	0.0	88.10	54.08						
1.843	200-YR	37.18	53.35	16.17	53.08	56.06	-0.0028	10.59	0.17		10.14	0.33		9,609	9,610	100.0	0.0	104.29	54.94						
1.843	500-YR	37.18	54.27	17.09	53.08	56.06	-0.0028	11.35	1.00		11.13	1.11		11,478	11,500	99.8	0.2	110.83	56.19						
1.817	2-YR	37.57	46.02	8.45	53.59	52.82	-0.0107	3.70			5.49			1,640	1,640	100.0	0.0	80.74	46.49	9.56	4B		308.74	3.82	
1.817	5-YR	37.57	47.94	10.37	53.59	52.82	-0.0107	5.01			6.80			3,150	3,150	100.0	0.0	92.49	48.66						
1.817	10-YR	37.57	49.27	11.70	53.59	52.82	-0.0107	5.36			7.34			4,400	4,400	100.0	0.0	111.86	50.11						
1.817	25-YR	37.57	50.72	13.15	53.59	52.82	-0.0107	6.40			7.80			6,000	6,000	100.0	0.0	120.22	51.67						
1.817	50-YR	37.57	51.72	14.15	53.59	52.82	-0.0107	7.16	0.25		8.07	0.44		7,197	7,200	100.0	0.0	148.95	52.74						
1.817	100-YR	37.57	52.53	14.96	53.59	52.82	-0.0107	7.76	0.64		8.42	0.80		8,359	8,400	99.5	0.5	207.80	53.62						
1.817	200-YR	37.57	53.27	15.70	53.59	52.82	-0.0107	8.20	1.19	0.22	8.69	1.21	0.39	9,468	9,610	98.5	1.5	234.08	54.43						
1.817	500-YR	37.57	54.39	16.82	53.59	52.82	-0.0107	9.18	1.59	0.84	8.95	1.54	0.90	11,101	11,500	96.5	3.5	306.07	55.59						
1.789	2-YR	39.15	45.25	6.10	51.59	53.16	0.0007	3.41			6.50			1,640	1,640	100.0	0.0	73.91	45.90	12.12	4A	12.61	177.94	2.41	1.95
1.789	5-YR	39.15	47.09	7.94	51.59	53.16	0.0007	4.78			7.93			3,150	3,150	100.0	0.0	83.14	48.06						
1.789	10-YR	39.15	48.29	9.14	51.59	53.16	0.0007	5.65			8.79			4,400	4,400	100.0	0.0	88.58	49.49						
1.789	25-YR	39.15	49.63	10.48	51.59	53.16	0.0007	6.33			9.61			6,000	6,000	100.0	0.0	98.56	51.06						
1.789	50-YR	39.15	50.66	11.51	51.59	53.16	0.0007	6.26	0.23		9.78	0.54		7,197	7,200	100.0	0.0	138.83	52.15						
1.789	100-YR	39.15	51.55	12.40	51.59	53.16	0.0007	6.78	0.66		9.89	1.05		8,355	8,400	99.5	0.5	189.74	53.07						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
1.789	200-YR	39.15	52.40	13.25	51.59	53.16	0.0007	7.52	1.34		9.92	1.58		9,442	9,610	98.2	1.8	206.33	53.91						
1.789	500-YR	39.15	53.65	14.50	51.59	53.16	0.0007	8.66	2.01	0.24	9.98	1.90	0.46	11,075	11,500	96.3	3.7	247.74	55.14						
1.767	2-YR	39.07	44.86	5.79	48.92	52.79	0.0256	3.57			5.75			1,640	1,640	100.0	0.0	79.90	45.38	13.80	4A		124.8	1.56	
1.767	5-YR	39.07	46.76	7.69	48.92	52.79	0.0256	5.12			7.12			3,150	3,150	100.0	0.0	86.42	47.54						
1.767	10-YR	39.07	47.96	8.89	48.92	52.79	0.0256	6.06			8.01			4,400	4,400	100.0	0.0	90.58	48.96						
1.767	25-YR	39.07	49.29	10.22	48.92	52.79	0.0256	7.03	0.19		8.91	0.41		6,000	6,000	100.0	0.0	102.10	50.52						
1.767	50-YR	39.07	50.29	11.22	48.92	52.79	0.0256	7.96	0.70		9.34	0.95		7,185	7,200	99.8	0.2	118.55	51.64						
1.767	100-YR	39.07	51.13	12.06	48.92	52.79	0.0256	8.74	1.10		9.82	1.28		8,349	8,400	99.4	0.6	133.03	52.61						
1.767	200-YR	39.07	51.83	12.76	48.92	52.79	0.0256	9.38	1.35		10.35	1.48		9,507	9,610	98.9	1.1	149.71	53.47						
1.767	500-YR	39.07	52.87	13.80	48.92	52.79	0.0256	10.34	1.82	0.13	11.02	1.81	0.31	11,255	11,500	97.9	2.1	179.42	54.71						
1.746	2-YR	36.24	44.73	8.49	51.66	52.44	-0.0100	4.56			4.59			1,640	1,640	100.0	0.0	78.39	45.05	9.23	4A		209.41	2.67	
1.746	5-YR	36.24	46.59	10.35	51.66	52.44	-0.0100	6.08			6.20			3,150	3,150	100.0	0.0	83.58	47.19						
1.746	10-YR	36.24	47.77	11.53	51.66	52.44	-0.0100	7.01			7.23			4,400	4,400	100.0	0.0	86.81	48.58						
1.746	25-YR	36.24	49.06	12.82	51.66	52.44	-0.0100	8.04			8.30			6,000	6,000	100.0	0.0	89.93	50.13						
1.746	50-YR	36.24	50.04	13.80	51.66	52.44	-0.0100	8.70			8.86			7,200	7,200	100.0	0.0	93.48	51.26						
1.746	100-YR	36.24	50.86	14.62	51.66	52.44	-0.0100	9.19			9.44			8,400	8,400	100.0	0.0	96.89	52.24						
1.746	200-YR	36.24	51.52	15.28	51.66	52.44	-0.0100	9.60			10.06			9,610	9,610	100.0	0.0	99.54	53.09						
1.746	500-YR	36.24	52.51	16.27	51.66	52.44	-0.0100	10.49	0.46	0.03	10.89	0.70	0.12	11,477	11,500	99.8	0.2	172.71	54.34						
1.723	2-YR	37.46	44.51	7.05	50.08	55.46	-0.0039	4.65			4.66			1,640	1,640	100.0	0.0	75.68	44.85	10.73	4A		156.64	2.07	
1.723	5-YR	37.46	46.28	8.82	50.08	55.46	-0.0039	5.87			6.38			3,150	3,150	100.0	0.0	84.10	46.92						
1.723	10-YR	37.46	47.41	9.95	50.08	55.46	-0.0039	6.75			7.46			4,400	4,400	100.0	0.0	87.38	48.27						
1.723	25-YR	37.46	48.64	11.18	50.08	55.46	-0.0039	7.63			8.57			6,000	6,000	100.0	0.0	91.77	49.78						
1.723	50-YR	37.46	49.63	12.17	50.08	55.46	-0.0039	8.21			9.08			7,200	7,200	100.0	0.0	96.53	50.91						
1.723	100-YR	37.46	50.42	12.96	50.08	55.46	-0.0039	8.62	0.11		9.63	0.27		8,400	8,400	100.0	0.0	111.00	51.86						
1.723	200-YR	37.46	51.07	13.61	50.08	55.46	-0.0039	9.20	0.47		10.24	0.71		9,600	9,610	99.9	0.1	132.99	52.69						
1.723	500-YR	37.46	52.08	14.62	50.08	55.46	-0.0039	10.08	0.69		10.98	0.93		11,431	11,500	99.4	0.6	210.98	53.94						
1.703	2-YR	37.87	44.22	6.35	49.91	55.23	0.0161	4.34			5.20			1,640	1,640	100.0	0.0	72.73	44.64	11.45	4A		118.52	1.63	
1.703	5-YR	37.87	45.82	7.95	49.91	55.23	0.0161	5.30			7.15			3,150	3,150	100.0	0.0	83.20	46.61						
1.703	10-YR	37.87	46.84	8.97	49.91	55.23	0.0161	5.96			8.32			4,400	4,400	100.0	0.0	88.72	47.92						
1.703	25-YR	37.87	48.00	10.13	49.91	55.23	0.0161	6.83			9.47			6,000	6,000	100.0	0.0	92.73	49.39						
1.703	50-YR	37.87	49.00	11.13	49.91	55.23	0.0161	7.58			9.88			7,200	7,200	100.0	0.0	96.10	50.52						
1.703	100-YR	37.87	49.75	11.88	49.91	55.23	0.0161	8.13			10.49			8,400	8,400	100.0	0.0	98.59	51.46						
1.703	200-YR	37.87	50.31	12.44	49.91	55.23	0.0161	8.60	0.29		11.22	0.59		9,607	9,610	100.0	0.0	115.99	52.26						
1.703	500-YR	37.87	51.22	13.35	49.91	55.23	0.0161	9.43	0.85		12.10	1.24		11,469	11,500	99.7	0.3	129.70	53.49						
1.684	2-YR	36.24	43.93	7.69	49.18	57.00	0.0017	3.13			5.24			1,640	1,640	100.0	0.0	99.86	44.36	12.99	4A		155.86	1.56	
1.684	5-YR	36.24	45.58	9.34	49.18	57.00	0.0017	4.54			6.50			3,150	3,150	100.0	0.0	106.75	46.24						
1.684	10-YR	36.24	46.66	10.42	49.18	57.00	0.0017	5.40			7.32			4,400	4,400	100.0	0.0	111.27	47.49						
1.684	25-YR	36.24	47.89	11.65	49.18	57.00	0.0017	6.32			8.09			6,000	6,000	100.0	0.0	117.35	48.90						
1.684	50-YR	36.24	48.99	12.75	49.18	57.00	0.0017	7.19			8.24			7,200	7,200	100.0	0.0	121.45	50.04						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
1.684	100-YR	36.24	49.79	13.55	49.18	57.00	0.0017	7.94	0.31		8.64	0.50		8,398	8,400	100.0	0.0	132.78	50.95						
1.684	200-YR	36.24	50.41	14.17	49.18	57.00	0.0017	8.55	0.68		9.17	0.86		9,600	9,610	99.9	0.1	139.77	51.71						
1.684	500-YR	36.24	51.41	15.17	49.18	57.00	0.0017	9.53	1.15		9.79	1.21		11,458	11,500	99.6	0.4	152.68	52.89						
1.661	2-YR	36.04	43.43	7.39	53.58	56.73	-0.0105	3.25			5.55			1,640	1,640	100.0	0.0	90.92	43.91	12.30	4A		139.22	1.53	
1.661	5-YR	36.04	45.01	8.97	53.58	56.73	-0.0105	4.41			7.06			3,150	3,150	100.0	0.0	101.22	45.79						
1.661	10-YR	36.04	46.04	10.00	53.58	56.73	-0.0105	5.11			7.94			4,400	4,400	100.0	0.0	108.49	47.02						
1.661	25-YR	36.04	47.29	11.25	53.58	56.73	-0.0105	5.94			8.64			6,000	6,000	100.0	0.0	117.05	48.44						
1.661	50-YR	36.04	48.53	12.49	53.58	56.73	-0.0105	6.75			8.51			7,200	7,200	100.0	0.0	125.29	49.66						
1.661	100-YR	36.04	49.38	13.34	53.58	56.73	-0.0105	7.36			8.81			8,400	8,400	100.0	0.0	129.62	50.58						
1.661	200-YR	36.04	49.99	13.95	53.58	56.73	-0.0105	7.79			9.29			9,610	9,610	100.0	0.0	132.83	51.33						
1.661	500-YR	36.04	51.04	15.00	53.58	56.73	-0.0105	8.46	0.17		9.78	0.35		11,500	11,500	100.0	0.0	143.49	52.52						
1.644	2-YR	36.94	43.13	6.19	51.38	55.31	0.0167	3.12			5.40			1,650	1,650	100.0	0.0	97.80	43.59	15.80	4A		120.45	1.23	
1.644	5-YR	36.94	44.71	7.77	51.38	55.31	0.0167	4.36			6.85			3,200	3,200	100.0	0.0	107.25	45.43						
1.644	10-YR	36.94	45.75	8.81	51.38	55.31	0.0167	5.25			7.66			4,450	4,450	100.0	0.0	110.51	46.66						
1.644	25-YR	36.94	47.01	10.07	51.38	55.31	0.0167	6.32			8.37			6,050	6,050	100.0	0.0	114.33	48.10						
1.644	50-YR	36.94	48.29	11.35	51.38	55.31	0.0167	7.38			8.38			7,300	7,300	100.0	0.0	118.04	49.38						
1.644	100-YR	36.94	49.11	12.17	51.38	55.31	0.0167	8.08			8.82			8,550	8,550	100.0	0.0	119.98	50.32						
1.644	200-YR	36.94	49.75	12.81	51.38	55.31	0.0167	8.61			9.20			9,620	9,620	100.0	0.0	121.43	51.06						
1.644	500-YR	36.94	50.75	13.81	51.38	55.31	0.0167	9.44			9.84			11,500	11,500	100.0	0.0	123.87	52.25						
1.625	2-YR	35.24	42.40	7.16	49.33	54.69	-0.0120	2.83			6.61			1,650	1,650	100.0	0.0	88.11	43.08	12.31	4A		119.21	1.35	
1.625	5-YR	35.24	43.87	8.63	49.33	54.69	-0.0120	3.93			8.19			3,200	3,200	100.0	0.0	99.38	44.91						
1.625	10-YR	35.24	44.89	9.65	49.33	54.69	-0.0120	4.83			9.01			4,450	4,450	100.0	0.0	102.23	46.16						
1.625	25-YR	35.24	46.21	10.97	49.33	54.69	-0.0120	5.96			9.58			6,050	6,050	100.0	0.0	105.87	47.64						
1.625	50-YR	35.24	47.71	12.47	49.33	54.69	-0.0120	7.21			9.21			7,300	7,300	100.0	0.0	110.01	49.03						
1.625	100-YR	35.24	48.51	13.27	49.33	54.69	-0.0120	7.86			9.70			8,550	8,550	100.0	0.0	112.21	49.97						
1.625	200-YR	35.24	49.11	13.87	49.33	54.69	-0.0120	8.34			10.13			9,620	9,620	100.0	0.0	113.87	50.71						
1.625	500-YR	35.24	50.06	14.82	49.33	54.69	-0.0120	9.12	0.36		10.86	0.65		11,497	11,500	100.0	0.0	127.22	51.89						
1.608	2-YR	36.33	41.68	5.35	49.32	50.09	0.0029	2.65			6.98			1,650	1,650	100.0	0.0	89.20	42.44	16.67	4A		111.05	1.24	
1.608	5-YR	36.33	43.18	6.85	49.32	50.09	0.0029	3.86			8.51			3,200	3,200	100.0	0.0	97.39	44.30						
1.608	10-YR	36.33	44.37	8.04	49.32	50.09	0.0029	4.82			8.99			4,450	4,450	100.0	0.0	102.79	45.62						
1.608	25-YR	36.33	45.82	9.49	49.32	50.09	0.0029	6.04			9.34			6,050	6,050	100.0	0.0	107.30	47.18						
1.608	50-YR	36.33	47.48	11.15	49.32	50.09	0.0029	7.38			8.80			7,300	7,300	100.0	0.0	112.43	48.68						
1.608	100-YR	36.33	48.28	11.95	49.32	50.09	0.0029	8.02			9.28			8,550	8,550	100.0	0.0	114.89	49.62						
1.608	200-YR	36.33	48.89	12.56	49.32	50.09	0.0029	8.49			9.70			9,620	9,620	100.0	0.0	116.79	50.35						
1.608	500-YR	36.33	49.84	13.51	49.32	50.09	0.0029	9.25	0.34		10.42	0.58		11,494	11,500	99.9	0.1	151.01	51.52						
1.586	2-YR	35.99	40.67	4.68	49.18	45.32	0.0210	2.51			7.18			1,650	1,650	100.0	0.0	91.36	41.48	19.52	4A		109.94	1.20	
1.586	5-YR	35.99	42.63	6.64	49.18	45.32	0.0210	4.18			7.69			3,200	3,200	100.0	0.0	99.49	43.55						
1.586	10-YR	35.99	43.98	7.99	49.18	45.32	0.0210	5.27			8.03			4,450	4,450	100.0	0.0	105.15	44.98						
1.586	25-YR	35.99	45.55	9.56	49.18	45.32	0.0210	6.58		0.12	8.36		0.28	6,050	6,050	100.0	0.0	111.83	46.64						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
1.586	50-YR	35.99	47.33	11.34	49.18	45.32	0.0210	8.12		0.93	7.90		0.92	7,287	7,300	99.8	0.2	128.44	48.30						
1.586	100-YR	35.99	48.14	12.15	49.18	45.32	0.0210	8.79		1.35	8.39		1.19	8,516	8,550	99.6	0.4	136.54	49.23						
1.586	200-YR	35.99	48.75	12.76	49.18	45.32	0.0210	9.25		1.66	8.80		1.39	9,561	9,620	99.4	0.6	142.98	49.95						
1.586	500-YR	35.99	49.72	13.73	49.18	45.32	0.0210	10.01	0.63	2.17	9.45	0.75	1.69	11,358	11,500	98.8	1.2	200.25	51.09						
1.569	2-YR	34.09	39.95	5.86	47.24	42.46	0.0064	3.34			7.41			1,650	1,650	100.0	0.0	66.69	40.80	11.38	4A		119.7	1.79	
1.569	5-YR	34.09	41.41	7.32	47.24	42.46	0.0064	4.51			9.87			3,200	3,200	100.0	0.0	71.83	42.93						
1.569	10-YR	34.09	42.59	8.50	47.24	42.46	0.0064	5.45		0.06	10.84		0.28	4,450	4,450	100.0	0.0	76.32	44.41						
1.569	25-YR	34.09	44.08	9.99	47.24	42.46	0.0064	6.79		0.71	11.52		1.30	6,035	6,050	99.7	0.3	93.83	46.13						
1.569	50-YR	34.09	46.48	12.39	47.24	42.46	0.0064	8.75		1.93	9.98		1.91	7,130	7,300	97.7	2.3	127.76	47.99						
1.569	100-YR	34.09	47.08	12.99	47.24	42.46	0.0064	9.25		1.39	10.93		1.63	8,345	8,550	97.6	2.4	172.98	48.89						
1.569	200-YR	34.09	47.64	13.55	47.24	42.46	0.0064	9.79	0.20	1.88	11.44	0.45	2.01	9,263	9,620	96.3	3.7	184.62	49.59						
1.569	500-YR	34.09	48.54	14.45	47.24	42.46	0.0064	10.70	0.56	2.61	12.21	0.91	2.52	10,808	11,500	94.0	6.0	225.60	50.73						
1.543	2-YR	33.24	39.58	6.34	47.24	43.95	-0.0072	3.18			5.48			1,650	1,650	100.0	0.0	94.52	40.05	14.91	4A		169.91	1.80	
1.543	5-YR	33.24	41.30	8.06	47.24	43.95	-0.0072	4.55			6.77			3,200	3,200	100.0	0.0	103.88	42.01						
1.543	10-YR	33.24	42.72	9.48	47.24	43.95	-0.0072	5.75			7.15			4,450	4,450	100.0	0.0	108.29	43.51						
1.543	25-YR	33.24	44.42	11.18	47.24	43.95	-0.0072	7.29		0.24	7.47		0.38	6,048	6,050	100.0	0.0	127.96	45.29						
1.543	50-YR	33.24	46.78	13.54	47.24	43.95	-0.0072	9.60		1.71	6.68		1.08	7,169	7,300	98.2	1.8	182.65	47.46						
1.543	100-YR	33.24	47.49	14.25	47.24	43.95	-0.0072	10.29	0.17	2.21	7.22	0.25	1.32	8,318	8,550	97.3	2.7	227.72	48.28						
1.543	200-YR	33.24	48.09	14.85	47.24	43.95	-0.0072	10.90	0.55	2.66	7.59	0.54	1.51	9,260	9,620	96.3	3.7	269.81	48.96						
1.543	500-YR	33.24	49.08	15.84	47.24	43.95	-0.0072	11.88	1.12	2.65	8.13	0.86	1.75	10,812	11,500	94.0	6.0	367.25	50.05						
1.520	2-YR	34.11	39.11	5.00	46.63	44.94	0.0082	2.30			5.11			1,650	1,650	100.0	0.0	140.39	39.52	28.08	4A		156.25	1.11	
1.520	5-YR	34.11	41.17	7.06	46.63	44.94	0.0082	4.23			5.17			3,200	3,200	100.0	0.0	146.16	41.59						
1.520	10-YR	34.11	42.72	8.61	46.63	44.94	0.0082	5.61			5.25			4,450	4,450	100.0	0.0	151.09	43.15						
1.520	25-YR	34.11	44.51	10.40	46.63	44.94	0.0082	7.14			5.38			6,050	6,050	100.0	0.0	157.67	44.96						
1.520	50-YR	34.11	46.90	12.79	46.63	44.94	0.0082	9.34	0.16	1.44	4.80	0.16	0.69	7,231	7,300	99.1	0.9	284.65	47.25						
1.520	100-YR	34.11	47.64	13.53	46.63	44.94	0.0082	10.09	0.54	2.09	5.15	0.37	0.90	8,380	8,550	98.0	2.0	409.87	48.05						
1.520	200-YR	34.11	48.28	14.17	46.63	44.94	0.0082	10.72	1.12	2.58	5.37	0.60	1.04	9,290	9,620	96.6	3.4	426.51	48.71						
1.520	500-YR	34.11	49.30	15.19	46.63	44.94	0.0082	11.74	2.05	2.39	5.71	0.90	0.99	10,830	11,500	94.2	5.8	490.05	49.78						
1.496	2-YR	33.06	38.66	5.60	46.16	46.39	0.0240	2.68			4.61			1,650	1,650	100.0	0.0	133.66	38.99	23.87	4A		176.84	1.32	
1.496	5-YR	33.06	41.00	7.94	46.16	46.39	0.0240	4.37			4.51			3,200	3,200	100.0	0.0	162.48	41.31						
1.496	10-YR	33.06	42.62	9.56	46.16	46.39	0.0240	5.79			4.55			4,450	4,450	100.0	0.0	168.96	42.94						
1.496	25-YR	33.06	44.45	11.39	46.16	46.39	0.0240	7.31			4.66			6,050	6,050	100.0	0.0	177.48	44.79						
1.496	50-YR	33.06	46.88	13.82	46.16	46.39	0.0240	9.61	0.36	0.26	4.21	0.24	0.20	7,284	7,300	99.8	0.2	364.26	47.15						
1.496	100-YR	33.06	47.63	14.57	46.16	46.39	0.0240	10.35	0.97	0.54	4.52	0.48	0.32	8,432	8,550	98.6	1.4	465.01	47.94						
1.496	200-YR	33.06	48.26	15.20	46.16	46.39	0.0240	10.99	1.56	1.14	4.71	0.66	0.53	9,338	9,620	97.1	2.9	476.28	48.60						
1.496	500-YR	33.06	49.30	16.24	46.16	46.39	0.0240	12.03	2.54	2.09	5.00	0.91	0.79	10,831	11,500	94.2	5.8	486.72	49.66						
1.464	2-YR	29.00	38.32	9.32	44.14	46.29	0.0059	3.93			4.13			1,650	1,650	100.0	0.0	101.45	38.59	10.89	4A		362.21	3.57	
1.464	5-YR	29.00	40.67	11.67	44.14	46.29	0.0059	5.96			4.96			3,200	3,200	100.0	0.0	108.20	41.05						
1.464	10-YR	29.00	42.26	13.26	44.14	46.29	0.0059	7.34			5.42			4,450	4,450	100.0	0.0	111.84	42.72						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
1.464	25-YR	29.00	44.05	15.05	44.14	46.29	0.0059	8.41			5.88			6,050	6,050	100.0	0.0	122.26	44.59						
1.464	50-YR	29.00	46.57	17.57	44.14	46.29	0.0059	10.62	0.42	0.16	5.42	0.36	0.17	7,271	7,300	99.6	0.4	321.51	47.03						
1.464	100-YR	29.00	47.27	18.27	44.14	46.29	0.0059	11.33	1.06	0.61	5.88	0.62	0.43	8,411	8,550	98.4	1.6	343.77	47.80						
1.464	200-YR	29.00	47.88	18.88	44.14	46.29	0.0059	11.93	1.54	0.96	6.19	0.81	0.59	9,326	9,620	96.9	3.1	369.02	48.46						
1.464	500-YR	29.00	48.87	19.87	44.14	46.29	0.0059	12.93	2.35	1.12	6.63	1.09	0.66	10,832	11,500	94.2	5.8	405.62	49.52						
1.449	2-YR	28.54	37.97	9.43	45.24	47.24	-0.0074	3.10			5.21			1,650	1,650	100.0	0.0	102.17	38.39	10.83	4A		295.84	2.90	
1.449	5-YR	28.54	40.47	11.93	45.24	47.24	-0.0074	5.06			5.36			3,200	3,200	100.0	0.0	117.81	40.92						
1.449	10-YR	28.54	42.12	13.58	45.24	47.24	-0.0074	6.44			5.59			4,450	4,450	100.0	0.0	123.68	42.61						
1.449	25-YR	28.54	43.95	15.41	45.24	47.24	-0.0074	7.82			5.88			6,050	6,050	100.0	0.0	131.59	44.49						
1.449	50-YR	28.54	46.53	17.99	45.24	47.24	-0.0074	9.58	0.40		5.23	0.33		7,283	7,300	99.8	0.2	272.99	46.96						
1.449	100-YR	28.54	47.23	18.69	45.24	47.24	-0.0074	10.18	1.03		5.66	0.62		8,456	8,550	98.9	1.1	293.07	47.73						
1.449	200-YR	28.54	47.84	19.30	45.24	47.24	-0.0074	10.79	1.58	0.29	5.95	0.84	0.27	9,417	9,620	97.9	2.1	303.51	48.38						
1.449	500-YR	28.54	48.83	20.29	45.24	47.24	-0.0074	11.77	2.44	0.78	6.39	1.13	0.53	11,044	11,500	96.0	4.0	320.99	49.44						
1.429	2-YR	29.33	37.71	8.38	42.79	49.24	0.0136	3.23			4.60			1,650	1,650	100.0	0.0	111.04	38.04	13.25	4A		250.14	2.25	
1.429	5-YR	29.33	40.38	11.05	42.79	49.24	0.0136	4.96			4.50			3,200	3,200	100.0	0.0	143.51	40.70						
1.429	10-YR	29.33	42.09	12.76	42.79	49.24	0.0136	6.33	0.19		4.62	0.21		4,450	4,450	100.0	0.0	157.89	42.42						
1.429	25-YR	29.33	43.97	14.64	42.79	49.24	0.0136	7.92	1.22		4.80	0.68		6,027	6,050	99.6	0.4	186.16	44.32						
1.429	50-YR	29.33	46.57	17.24	42.79	49.24	0.0136	10.27	1.82		4.28	0.67		7,178	7,300	98.3	1.7	263.06	46.85						
1.429	100-YR	29.33	47.27	17.94	42.79	49.24	0.0136	10.90	1.94		4.67	0.74		8,356	8,550	97.7	2.3	300.05	47.60						
1.429	200-YR	29.33	47.88	18.55	42.79	49.24	0.0136	11.44	1.97		4.94	0.76		9,340	9,620	97.1	2.9	351.26	48.25						
1.429	500-YR	29.33	48.88	19.55	42.79	49.24	0.0136	12.32	2.85	0.36	5.32	1.00	0.25	10,938	11,500	95.1	4.9	371.24	49.30						
1.410	2-YR	27.93	37.61	9.68	45.51	50.05	-0.0021	4.10			3.74			1,650	1,650	100.0	0.0	107.63	37.83	11.12	4A		313.64	2.91	
1.410	5-YR	27.93	40.30	12.37	45.51	50.05	-0.0021	5.60			4.10			3,200	3,200	100.0	0.0	139.44	40.56						
1.410	10-YR	27.93	42.03	14.10	45.51	50.05	-0.0021	6.86			4.32			4,450	4,450	100.0	0.0	150.23	42.31						
1.410	25-YR	27.93	43.91	15.98	45.51	50.05	-0.0021	7.42			4.54			6,050	6,050	100.0	0.0	179.73	44.23						
1.410	50-YR	27.93	46.54	18.61	45.51	50.05	-0.0021	9.53	0.53		3.99	0.29		7,288	7,300	99.8	0.2	269.13	46.79						
1.410	100-YR	27.93	47.25	19.32	45.51	50.05	-0.0021	10.17	0.90		4.33	0.47		8,502	8,550	99.4	0.6	308.06	47.54						
1.410	200-YR	27.93	47.86	19.93	45.51	50.05	-0.0021	10.71	1.32		4.58	0.56		9,516	9,620	98.9	1.1	333.61	48.18						
1.410	500-YR	27.93	48.86	20.93	45.51	50.05	-0.0021	11.59	2.22		4.94	0.82		11,230	11,500	97.7	2.3	344.75	49.23						
1.391	2-YR	28.14	37.40	9.26	45.64	43.44	0.0021	4.63			4.28			1,650	1,650	100.0	0.0	83.17	37.69	8.98	4A		203.48	2.45	
1.391	5-YR	28.14	40.02	11.88	45.64	43.44	0.0021	6.49			5.17			3,200	3,200	100.0	0.0	95.45	40.43						
1.391	10-YR	28.14	41.69	13.55	45.64	43.44	0.0021	7.45		0.20	5.65		0.25	4,450	4,450	100.0	0.0	110.01	42.19						
1.391	25-YR	28.14	43.53	15.39	45.64	43.44	0.0021	8.49		1.03	6.08		0.74	6,029	6,050	99.7	0.3	144.24	44.10						
1.391	50-YR	28.14	46.27	18.13	45.64	43.44	0.0021	10.67	0.42	3.28	5.41	0.31	1.21	7,158	7,300	98.1	1.9	194.29	46.71						
1.391	100-YR	28.14	46.92	18.78	45.64	43.44	0.0021	11.32	0.84	3.77	5.94	0.53	1.40	8,336	8,550	97.5	2.5	211.66	47.45						
1.391	200-YR	28.14	47.49	19.35	45.64	43.44	0.0021	11.89	1.04	4.18	6.33	0.62	1.55	9,327	9,620	96.9	3.1	238.61	48.09						
1.391	500-YR	28.14	48.41	20.27	45.64	43.44	0.0021	12.81	1.68	4.83	6.93	0.90	1.77	11,013	11,500	95.8	4.2	259.06	49.13						
1.370	2-YR	27.91	37.33	9.42	50.38	45.41	0.0021	5.72			3.79			1,650	1,650	100.0	0.0	76.11	37.55	8.08	4A		154.06	2.02	
1.370	5-YR	27.91	39.92	12.01	50.38	45.41	0.0021	7.52			4.96			3,200	3,200	100.0	0.0	85.71	40.30						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
1.370	10-YR	27.91	41.57	13.66	50.38	45.41	0.0021	8.62		0.28	5.62		0.29	4,449	4,450	100.0	0.0	98.62	42.06						
1.370	25-YR	27.91	43.36	15.45	50.38	45.41	0.0021	9.76		1.26	6.27		0.81	6,028	6,050	99.6	0.4	120.36	43.96						
1.370	50-YR	27.91	46.12	18.21	50.38	45.41	0.0021	11.64		2.79	5.74		1.12	7,162	7,300	98.1	1.9	151.26	46.62						
1.370	100-YR	27.91	46.74	18.83	50.38	45.41	0.0021	12.16		3.28	6.36		1.34	8,348	8,550	97.6	2.4	154.01	47.35						
1.370	200-YR	27.91	47.28	19.37	50.38	45.41	0.0021	12.60		3.70	6.82		1.52	9,352	9,620	97.2	2.8	156.40	47.98						
1.370	500-YR	27.91	48.14	20.23	50.38	45.41	0.0021	13.31		4.35	7.57		1.82	11,104	11,500	96.6	3.4	160.24	49.00						
1.353	2-YR	27.72	37.19	9.47	49.24	44.62	0.0057	6.04			4.24			1,650	1,650	100.0	0.0	64.43	37.46	6.80	4A		143.07	2.22	
1.353	5-YR	27.72	39.69	11.97	49.24	44.62	0.0057	7.48			5.66			3,200	3,200	100.0	0.0	75.53	40.18						
1.353	10-YR	27.72	41.29	13.57	49.24	44.62	0.0057	8.49			6.45			4,450	4,450	100.0	0.0	81.36	41.93						
1.353	25-YR	27.72	43.02	15.30	49.24	44.62	0.0057	9.54		0.80	7.21		0.70	6,037	6,050	99.8	0.2	111.58	43.82						
1.353	50-YR	27.72	45.89	18.17	49.24	44.62	0.0057	11.51		2.81	6.48		1.28	7,143	7,300	97.9	2.1	139.21	46.53						
1.353	100-YR	27.72	46.46	18.74	49.24	44.62	0.0057	11.96		3.25	7.19		1.53	8,324	8,550	97.4	2.6	142.03	47.24						
1.353	200-YR	27.72	46.95	19.23	49.24	44.62	0.0057	12.34		3.62	7.74		1.73	9,325	9,620	96.9	3.1	144.63	47.86						
1.353	500-YR	27.72	47.74	20.02	49.24	44.62	0.0057	12.94		4.18	8.63		2.06	11,071	11,500	96.3	3.7	148.84	48.86						
1.333	2-YR	27.11	37.16	10.05	54.24	42.36	-0.0121	6.59			3.55			1,650	1,650	100.0	0.0	70.59	37.36	7.02	4A		157.11	2.23	
1.333	5-YR	27.11	39.66	12.55	54.24	42.36	-0.0121	7.83			4.87			3,200	3,200	100.0	0.0	83.94	40.03						
1.333	10-YR	27.11	41.27	14.16	54.24	42.36	-0.0121	8.35			5.55			4,450	4,450	100.0	0.0	96.07	41.75						
1.333	25-YR	27.11	43.02	15.91	54.24	42.36	-0.0121	9.31		0.54	6.16		0.47	6,043	6,050	99.9	0.1	133.80	43.61						
1.333	50-YR	27.11	45.92	18.81	54.24	42.36	-0.0121	11.72		2.88	5.55		1.10	7,175	7,300	98.3	1.7	149.93	46.39						
1.333	100-YR	27.11	46.50	19.39	54.24	42.36	-0.0121	12.19		3.28	6.17		1.30	8,371	8,550	97.9	2.1	153.15	47.08						
1.333	200-YR	27.11	47.00	19.89	54.24	42.36	-0.0121	12.60		3.63	6.64		1.46	9,387	9,620	97.6	2.4	155.94	47.67						
1.333	500-YR	27.11	47.80	20.69	54.24	42.36	-0.0121	13.24		4.16	7.42		1.74	11,162	11,500	97.1	2.9	160.43	48.63						
1.315	2-YR	28.24	37.06	8.82	51.66	42.22	0.0059	6.15			3.86			1,650	1,650	100.0	0.0	69.54	37.29	7.88	4A		167.28	2.41	
1.315	5-YR	28.24	39.51	11.27	51.66	42.22	0.0059	7.32			5.20			3,200	3,200	100.0	0.0	84.08	39.93						
1.315	10-YR	28.24	41.09	12.85	51.66	42.22	0.0059	8.09			5.88			4,450	4,450	100.0	0.0	93.47	41.63						
1.315	25-YR	28.24	42.83	14.59	51.66	42.22	0.0059	9.16		0.31	6.52		0.35	6,047	6,050	99.9	0.1	131.10	43.49						
1.315	50-YR	28.24	45.82	17.58	51.66	42.22	0.0059	11.69		2.64	5.76		1.09	7,125	7,300	97.6	2.4	166.77	46.32						
1.315	100-YR	28.24	46.37	18.13	51.66	42.22	0.0059	12.15		3.03	6.41		1.29	8,297	8,550	97.0	3.0	171.29	46.99						
1.315	200-YR	28.24	46.86	18.62	51.66	42.22	0.0059	12.54		3.37	6.89		1.46	9,287	9,620	96.5	3.5	175.28	47.58						
1.315	500-YR	28.24	47.65	19.41	51.66	42.22	0.0059	13.17		3.89	7.69		1.73	11,008	11,500	95.7	4.3	181.66	48.53						
1.295	2-YR	27.61	36.98	9.37	50.86	44.32	-0.0309	7.27			3.87			1,650	1,650	100.0	0.0	58.60	37.21	6.25	4A		106.59	1.82	
1.295	5-YR	27.61	39.30	11.69	50.86	44.32	-0.0309	9.04			5.64			3,200	3,200	100.0	0.0	62.73	39.80						
1.295	10-YR	27.61	40.76	13.15	50.86	44.32	-0.0309	9.92			6.72			4,450	4,450	100.0	0.0	66.69	41.47						
1.295	25-YR	27.61	42.34	14.73	50.86	44.32	-0.0309	10.60			7.84			6,050	6,050	100.0	0.0	72.81	43.29						
1.295	50-YR	27.61	45.38	17.77	50.86	44.32	-0.0309	12.14		0.83	7.22		0.65	7,292	7,300	99.9	0.1	98.09	46.19						
1.295	100-YR	27.61	45.79	18.18	50.86	44.32	-0.0309	12.40		1.10	8.17		0.86	8,533	8,550	99.8	0.2	101.74	46.83						
1.295	200-YR	27.61	46.15	18.54	50.86	44.32	-0.0309	12.62		1.31	8.92		1.05	9,593	9,620	99.7	0.3	104.89	47.38						
1.295	500-YR	27.61	46.65	19.04	50.86	44.32	-0.0309	12.92		0.73	10.26		0.81	11,470	11,500	99.7	0.3	137.49	48.28						
1.274	2-YR	31.00	36.27	5.27	47.89	46.64	0.0000	4.14			6.51			1,650	1,650	100.0	0.0	61.30	36.93	11.63	4A		80.92	1.32	

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
1.274	5-YR	31.00	38.37	7.37	47.89	46.64	0.0000	5.69			8.22			3,200	3,200	100.0	0.0	68.49	39.42						
1.274	10-YR	31.00	39.74	8.74	47.89	46.64	0.0000	6.61			9.14			4,450	4,450	100.0	0.0	73.64	41.04						
1.274	25-YR	31.00	41.27	10.27	47.89	46.64	0.0000	7.58			10.01			6,050	6,050	100.0	0.0	79.75	42.83						
1.274	50-YR	31.00	45.08	14.08	47.89	46.64	0.0000	9.73		0.94	7.69		0.83	7,233	7,300	99.1	0.9	182.56	45.99						
1.274	100-YR	31.00	45.45	14.45	47.89	46.64	0.0000	9.93		1.19	8.63		1.08	8,427	8,550	98.6	1.4	194.40	46.59						
1.274	200-YR	31.00	45.80	14.80	47.89	46.64	0.0000	10.12		1.40	9.33		1.28	9,429	9,620	98.0	2.0	206.27	47.12						
1.274	500-YR	31.00	46.31	15.31	47.89	46.64	0.0000	10.40	0.23	1.70	10.50	0.42	1.62	11,164	11,500	97.1	2.9	228.15	47.98						
1.262		Bridge																							
1.249	2-YR	28.22	32.29	4.07	39.41	36.60	0.0025	3.58			7.28			1,650	1,650	100.0	0.0	63.33	33.11	15.56	3	16.38	77.68	1.23	2.61
1.249	5-YR	28.22	34.47	6.25	39.41	36.60	0.0025	5.26			8.57			3,200	3,200	100.0	0.0	71.03	35.62						
1.249	10-YR	28.22	35.86	7.64	39.41	36.60	0.0025	6.26			9.36			4,450	4,450	100.0	0.0	75.92	37.22						
1.249	25-YR	28.22	37.92	9.70	39.41	36.60	0.0025	7.82		0.83	9.31		1.08	5,940	6,050	98.2	1.8	205.55	39.24						
1.249	50-YR	28.22	38.71	10.49	39.41	36.60	0.0025	8.44		1.22	9.92		1.38	6,979	7,300	95.6	4.4	274.65	40.18						
1.249	100-YR	28.22	39.04	10.82	39.41	36.60	0.0025	8.69		1.43	11.02		1.68	8,052	8,550	94.2	5.8	291.50	40.82						
1.249	200-YR	28.22	39.63	11.41	39.41	36.60	0.0025	9.19	0.11	1.71	11.28	0.29	1.86	8,808	9,620	91.6	8.4	340.62	41.45						
1.249	500-YR	28.22	40.51	12.29	39.41	36.60	0.0025	10.08	0.55	2.46	11.64	0.82	2.30	9,960	11,500	86.6	13.4	360.52	42.35						
1.235	2-YR	28.03	32.09	4.06	37.47	37.61	0.0039	3.72			5.97			1,650	1,650	100.0	0.0	74.25	32.64	18.29	3		87.06	1.17	
1.235	5-YR	28.03	34.38	6.35	37.47	37.61	0.0039	5.58			7.04			3,200	3,200	100.0	0.0	81.47	35.14						
1.235	10-YR	28.03	35.80	7.77	37.47	37.61	0.0039	6.68			7.75			4,450	4,450	100.0	0.0	85.96	36.74						
1.235	25-YR	28.03	37.89	9.86	37.47	37.61	0.0039	8.31	0.21	0.43	7.91	0.29	0.56	6,010	6,050	99.3	0.7	257.16	38.85						
1.235	50-YR	28.03	38.69	10.66	37.47	37.61	0.0039	9.11	0.61	0.86	8.49	0.60	0.92	7,073	7,300	96.9	3.1	380.27	39.77						
1.235	100-YR	28.03	39.01	10.98	37.47	37.61	0.0039	9.43	0.77	1.11	9.45	0.76	1.15	8,152	8,550	95.3	4.7	402.53	40.34						
1.235	200-YR	28.03	39.64	11.61	37.47	37.61	0.0039	10.06	1.09	1.66	9.58	0.93	1.46	8,821	9,620	91.7	8.3	421.46	40.95						
1.235	500-YR	28.03	40.54	12.51	37.47	37.61	0.0039	10.96	1.54	2.44	9.90	1.15	1.84	9,926	11,500	86.3	13.7	443.08	41.86						
1.168	2-YR	26.65	31.46	4.81	33.07	36.52	0.0043	3.95			3.81			1,650	1,650	100.0	0.0	109.55	31.69	22.78	3		131.6	1.20	
1.168	5-YR	26.65	34.00	7.35	33.07	36.52	0.0043	6.04	0.47		4.41	0.81		3,200	3,200	100.0	0.0	121.27	34.30						
1.168	10-YR	26.65	35.52	8.87	33.07	36.52	0.0043	7.29	1.22		4.88	1.53		4,444	4,450	99.9	0.1	128.19	35.89						
1.168	25-YR	26.65	37.89	11.24	33.07	36.52	0.0043	9.46	2.41	1.85	4.55	1.92	0.92	5,522	6,050	91.3	8.7	427.94	38.18						
1.168	50-YR	26.65	38.76	12.11	33.07	36.52	0.0043	10.34	2.84	2.52	4.78	2.15	1.13	6,333	7,300	86.8	13.2	458.77	39.07						
1.168	100-YR	26.65	39.12	12.47	33.07	36.52	0.0043	10.70	3.02	2.83	5.29	2.43	1.33	7,255	8,550	84.9	15.1	465.34	39.49						
1.168	200-YR	26.65	39.76	13.11	33.07	36.52	0.0043	11.33	3.34	3.37	5.41	2.56	1.47	7,859	9,620	81.7	18.3	477.20	40.14						
1.168	500-YR	26.65	40.65	14.00	33.07	36.52	0.0043	12.23	3.79	4.06	5.70	2.81	1.68	8,945	11,500	77.8	22.2	497.69	41.06						
1.092	2-YR	24.93	31.06	6.13	33.75	32.59	0.0061	4.96			3.34			1,650	1,650	100.0	0.0	99.56	31.24	16.24	3		378.16	3.80	
1.092	5-YR	24.93	33.62	8.69	33.75	32.59	0.0061	7.11		0.52	4.20		0.36	3,199	3,200	100.0	0.0	114.77	33.90						
1.092	10-YR	24.93	35.13	10.20	33.75	32.59	0.0061	8.61	0.60	0.85	4.79	0.40	0.51	4,424	4,450	99.4	0.6	177.82	35.49						
1.092	25-YR	24.93	37.60	12.67	33.75	32.59	0.0061	11.08	1.97	3.13	4.68	0.74	0.99	5,556	6,050	91.8	8.2	385.74	37.92						
1.092	50-YR	24.93	38.44	13.51	33.75	32.59	0.0061	11.92	2.65	3.86	5.06	0.92	1.17	6,458	7,300	88.5	11.5	403.05	38.79						
1.092	100-YR	24.93	38.71	13.78	33.75	32.59	0.0061	12.19	2.86	4.09	5.72	1.08	1.36	7,476	8,550	87.4	12.6	409.21	39.16						
1.092	200-YR	24.93	39.33	14.40	33.75	32.59	0.0061	12.80	3.45	4.60	5.96	1.24	1.48	8,172	9,620	84.9	15.1	412.78	39.80						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
1.092	500-YR	24.93	40.17	15.24	33.75	32.59	0.0061	13.64	4.24	5.29	6.44	1.47	1.67	9,410	11,500	81.8	18.2	417.66	40.70						
1.032	2-YR	22.96	30.53	7.57	33.62	34.00	0.0001	5.11			4.78			1,670	1,670	100.0	0.0	68.37	30.88	9.03	3		386.88	5.66	
1.032	5-YR	22.96	32.90	9.94	33.62	34.00	0.0001	6.54			6.19			3,260	3,260	100.0	0.0	80.43	33.50						
1.032	10-YR	22.96	34.29	11.33	33.62	34.00	0.0001	7.57	0.26	0.14	7.09	0.38	0.25	4,550	4,550	100.0	0.0	90.72	35.07						
1.032	25-YR	22.96	36.88	13.92	33.62	34.00	0.0001	10.16	1.43	1.09	6.99	0.95	0.80	6,013	6,120	98.2	1.8	190.46	37.62						
1.032	50-YR	22.96	37.76	14.80	33.62	34.00	0.0001	11.05	1.94	1.79	7.19	1.14	1.08	6,733	7,360	91.5	8.5	379.61	38.50						
1.032	100-YR	22.96	37.76	14.80	33.62	34.00	0.0001	11.05	1.93	1.79	8.42	1.33	1.27	7,876	8,610	91.5	8.5	379.60	38.77						
1.032	200-YR	22.96	38.37	15.41	33.62	34.00	0.0001	11.65	2.46	2.28	8.69	1.56	1.48	8,582	9,720	88.3	11.7	392.63	39.41						
1.032	500-YR	22.96	39.19	16.23	33.62	34.00	0.0001	12.47	3.11	2.91	9.17	1.84	1.76	9,684	11,500	84.2	15.8	412.44	40.29						
0.976	2-YR	22.93	29.51	6.58	38.00	39.01	0.0000	4.32			6.39			1,670	1,670	100.0	0.0	60.55	30.14	9.20	2	11.74	113.57	1.88	5.85
0.976	5-YR	22.93	31.48	8.55	38.00	39.01	0.0000	5.30			8.29			3,260	3,260	100.0	0.0	74.17	32.55						
0.976	10-YR	22.93	32.54	9.61	38.00	39.01	0.0000	5.62			9.55			4,550	4,550	100.0	0.0	84.72	33.96						
0.976	25-YR	22.93	36.43	13.50	38.00	39.01	0.0000	7.85			6.80			6,120	6,120	100.0	0.0	114.55	37.15						
0.976	50-YR	22.93	37.11	14.18	38.00	39.01	0.0000	8.40			7.53			7,360	7,360	100.0	0.0	116.46	37.99						
0.976	100-YR	22.93	36.62	13.69	38.00	39.01	0.0000	8.01			9.34			8,610	8,610	100.0	0.0	115.09	37.99						
0.976	200-YR	22.93	36.89	13.96	38.00	39.01	0.0000	8.22			10.21			9,720	9,720	100.0	0.0	115.83	38.51						
0.976	500-YR	22.93	36.06	13.13	38.00	39.01	0.0000	7.55			13.42			11,500	11,500	100.0	0.0	113.48	38.86						
0.969		Bridge																							
0.962	2-YR	22.93	29.48	6.55	34.00	32.62	0.0017	5.23			4.56			1,670	1,670	100.0	0.0	70.09	29.80	10.70	2		358.71	5.12	
0.962	5-YR	22.93	31.40	8.47	34.00	32.62	0.0017	6.49			6.41			3,260	3,260	100.0	0.0	78.42	32.04						
0.962	10-YR	22.93	32.27	9.34	34.00	32.62	0.0017	7.05			7.86			4,550	4,550	100.0	0.0	82.14	33.23						
0.962	25-YR	22.93	33.17	10.24	34.00	32.62	0.0017	7.61		0.28	9.36		0.94	6,119	6,120	100.0	0.0	90.74	34.53						
0.962	50-YR	22.93	33.82	10.89	34.00	32.62	0.0017	7.90		0.44	10.34		1.36	7,347	7,360	99.8	0.2	112.29	35.47						
0.962	100-YR	22.93	34.43	11.50	34.00	32.62	0.0017	8.41	0.28	1.04	10.90	1.02	2.52	8,365	8,610	97.2	2.8	201.63	36.23						
0.962	200-YR	22.93	34.97	12.04	34.00	32.62	0.0017	8.95	0.58	1.47	11.30	1.66	3.18	9,219	9,720	94.8	5.2	225.78	36.86						
0.962	500-YR	22.93	35.42	12.49	34.00	32.62	0.0017	9.39	0.80	1.79	12.44	2.19	3.89	10,657	11,500	92.7	7.3	251.60	37.66						
0.899	2-YR	22.38	27.74	5.36	30.00	28.00	0.0055	3.29			7.96			1,670	1,670	100.0	0.0	63.84	28.72	11.91	2		268.54	4.21	
0.899	5-YR	22.38	29.92	7.54	30.00	28.00	0.0055	4.66		0.92	8.26		2.50	3,054	3,260	93.7	6.3	168.80	30.92						
0.899	10-YR	22.38	31.46	9.08	30.00	28.00	0.0055	6.18	0.86	2.22	7.49	1.80	3.37	3,687	4,550	81.0	19.0	231.85	32.20						
0.899	25-YR	22.38	32.47	10.09	30.00	28.00	0.0055	7.19	1.56	3.02	7.89	2.54	3.95	4,519	6,120	73.8	26.2	254.32	33.24						
0.899	50-YR	22.38	33.27	10.89	30.00	28.00	0.0055	7.99	2.10	3.59	8.01	2.93	4.19	5,092	7,360	69.2	30.8	271.76	34.03						
0.899	100-YR	22.38	33.99	11.61	30.00	28.00	0.0055	8.71	2.65	4.04	8.14	3.28	4.35	5,647	8,610	65.6	34.4	286.26	34.76						
0.899	200-YR	22.38	34.63	12.25	30.00	28.00	0.0055	9.35	3.11	4.45	8.20	3.50	4.45	6,102	9,720	62.8	37.2	298.32	35.39						
0.899	500-YR	22.38	35.04	12.66	30.00	28.00	0.0055	9.77	3.40	4.70	9.04	3.99	4.95	7,027	11,500	61.1	38.9	306.26	35.95						
0.843	2-YR	20.76	26.74	5.98	30.00	26.00	0.0004	4.48		0.37	6.06		1.02	1,665	1,670	99.7	0.3	75.30	27.31	12.59	2		343.21	4.56	
0.843	5-YR	20.76	29.18	8.42	30.00	26.00	0.0004	6.66		1.60	6.97		2.43	2,982	3,260	91.5	8.5	135.87	29.87						
0.843	10-YR	20.76	30.87	10.11	30.00	26.00	0.0004	8.25	0.44	2.59	7.01	0.89	2.94	3,771	4,550	82.9	17.1	178.72	31.53						
0.843	25-YR	20.76	31.71	10.95	30.00	26.00	0.0004	9.08	0.68	3.11	8.13	1.62	3.61	4,815	6,120	78.7	21.3	206.07	32.56						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
0.843	50-YR	20.76	32.46	11.70	30.00	26.00	0.0004	9.84	0.65	3.49	8.59	1.28	3.90	5,509	7,360	74.9	25.1	334.50	33.37						
0.843	100-YR	20.76	33.33	12.57	30.00	26.00	0.0004	10.71	1.48	3.89	8.52	2.06	3.93	5,947	8,610	69.1	30.9	358.91	34.17						
0.843	200-YR	20.76	34.08	13.32	30.00	26.00	0.0004	11.46	2.21	4.05	8.41	2.56	3.81	6,284	9,720	64.6	35.4	383.59	34.86						
0.843	500-YR	20.76	34.32	13.56	30.00	26.00	0.0004	11.70	2.44	4.02	9.57	3.07	4.26	7,301	11,500	63.5	36.5	395.86	35.31						
0.809	2-YR	20.68	26.45	5.77	31.40	29.74	0.0000	4.52			4.77			1,670	1,670	100.0	0.0	77.35	26.80	13.41	2		198.27	2.56	
0.809	5-YR	20.68	28.89	8.21	31.40	29.74	0.0000	6.08			5.89			3,260	3,260	100.0	0.0	91.02	29.43						
0.809	10-YR	20.68	30.60	9.92	31.40	29.74	0.0000	7.18		1.12	6.19		1.61	4,455	4,550	97.9	2.1	153.00	31.19						
0.809	25-YR	20.68	31.35	10.67	31.40	29.74	0.0000	7.84		1.63	7.40		2.33	5,882	6,120	96.1	3.9	164.30	32.17						
0.809	50-YR	20.68	32.02	11.34	31.40	29.74	0.0000	8.50	0.37	2.05	8.05	0.89	2.79	6,942	7,360	94.3	5.7	192.28	32.97						
0.809	100-YR	20.68	32.71	12.03	31.40	29.74	0.0000	9.19	0.78	2.59	8.50	1.47	3.27	7,923	8,610	92.0	8.0	209.60	33.75						
0.809	200-YR	20.68	33.95	13.27	31.40	29.74	0.0000	10.43	2.97	3.49	6.73	2.63	2.90	7,122	9,720	73.3	26.7	408.16	34.50						
0.809	500-YR	20.68	34.16	13.48	31.40	29.74	0.0000	10.64	3.17	3.63	7.65	3.09	3.35	8,267	11,500	71.9	28.1	410.56	34.86						
0.802		Bridge																							
0.794	2-YR	20.68	26.37	5.69	29.62	34.00	0.0000	4.48			3.91			1,670	1,670	100.0	0.0	95.21	26.61	16.73	2		337.93	3.55	
0.794	5-YR	20.68	28.84	8.16	29.62	34.00	0.0000	6.38			4.85			3,260	3,260	100.0	0.0	105.29	29.21						
0.794	10-YR	20.68	30.61	9.93	29.62	34.00	0.0000	7.80	1.53		4.72	1.44		4,082	4,550	89.7	10.3	323.77	30.93						
0.794	25-YR	20.68	31.38	10.70	29.62	34.00	0.0000	8.50	2.24		5.40	2.01		5,133	6,120	83.9	16.1	331.13	31.77						
0.794	50-YR	20.68	32.08	11.40	29.62	34.00	0.0000	9.09	2.87		5.66	2.38		5,825	7,360	79.1	20.9	338.12	32.49						
0.794	100-YR	20.68	32.77	12.09	29.62	34.00	0.0000	9.62	3.49		5.83	2.68		6,458	8,610	75.0	25.0	345.71	33.19						
0.794	200-YR	20.68	33.27	12.59	29.62	34.00	0.0000	10.01	3.93		6.02	2.93		7,020	9,720	72.2	27.8	350.93	33.72						
0.794	500-YR	20.68	34.16	13.48	29.62	34.00	0.0000	10.72	4.71	0.27	6.14	3.26	0.52	7,804	11,500	67.9	32.1	406.42	34.61						
0.783	2-YR	20.68	24.71	4.03	29.00	29.97	0.0082	2.80			9.49			1,670	1,670	100.0	0.0	62.91	26.11	15.61	2		78.32	1.24	
0.783	5-YR	20.68	27.75	7.07	29.00	29.97	0.0082	5.19			8.46			3,260	3,260	100.0	0.0	74.26	28.87						
0.783	10-YR	20.68	29.28	8.60	29.00	29.97	0.0082	6.29	0.13		9.04	0.62		4,550	4,550	100.0	0.0	84.36	30.55						
0.783	25-YR	20.68	30.80	10.12	29.00	29.97	0.0082	7.72	1.98	0.41	7.79	2.85	1.04	4,878	6,120	79.7	20.3	302.63	31.58						
0.783	50-YR	20.68	31.61	10.93	29.00	29.97	0.0082	8.53	2.72	0.82	7.71	3.28	1.51	5,335	7,360	72.5	27.5	310.85	32.32						
0.783	100-YR	20.68	32.38	11.70	29.00	29.97	0.0082	9.30	3.41	1.21	7.62	3.59	1.83	5,747	8,610	66.7	33.3	318.60	33.05						
0.783	200-YR	20.68	32.90	12.22	29.00	29.97	0.0082	9.82	3.86	1.47	7.75	3.84	2.04	6,176	9,720	63.5	36.5	323.85	33.58						
0.783	500-YR	20.68	33.83	13.15	29.00	29.97	0.0082	10.75	4.67	1.93	7.76	4.12	2.31	6,763	11,500	58.8	41.2	332.17	34.49						
0.721	2-YR	18.00	23.70	5.70	27.00	27.11	0.0000	4.55			5.39			1,670	1,670	100.0	0.0	68.14	24.15	11.95	2		220.25	3.23	
0.721	5-YR	18.00	27.40	9.40	27.00	27.11	0.0000	6.99	1.26	0.18	5.24	1.52	0.46	3,127	3,260	95.9	4.1	156.84	27.81						
0.721	10-YR	18.00	29.13	11.13	27.00	27.11	0.0000	8.72	2.42	0.80	5.42	2.09	1.10	4,037	4,550	88.7	11.3	214.21	29.54						
0.721	25-YR	18.00	30.50	12.50	27.00	27.11	0.0000	10.09	3.37	1.89	5.83	2.55	1.78	5,027	6,120	82.1	17.9	239.06	30.95						
0.721	50-YR	18.00	31.27	13.27	27.00	27.11	0.0000	10.86	3.87	2.59	6.24	2.85	2.22	5,792	7,360	78.7	21.3	248.97	31.77						
0.721	100-YR	18.00	32.03	14.03	27.00	27.11	0.0000	11.61	4.34	3.26	6.56	3.09	2.58	6,513	8,610	75.6	24.4	258.72	32.57						
0.721	200-YR	18.00	32.52	14.52	27.00	27.11	0.0000	12.11	4.64	3.69	6.93	3.32	2.87	7,174	9,720	73.8	26.2	265.19	33.11						
0.721	500-YR	18.00	33.44	15.44	27.00	27.11	0.0000	13.02	5.23	4.46	7.29	3.60	3.25	8,118	11,500	70.6	29.4	276.07	34.08						
0.719		Bridge																							

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
0.717	2-YR	17.83	23.40	5.57	25.21	27.00	0.0105	4.19			5.51			1,670	1,670	100.0	0.0	72.33	23.87	12.99	2		223.6	3.09	
0.717	5-YR	17.83	25.86	8.03	25.21	27.00	0.0105	6.03	0.14		6.60	0.49		3,259	3,260	100.0	0.0	101.37	26.53						
0.717	10-YR	17.83	26.98	9.15	25.21	27.00	0.0105	6.97	0.94		7.60	1.80		4,463	4,550	98.1	1.9	135.67	27.86						
0.717	25-YR	17.83	27.85	10.02	25.21	27.00	0.0105	7.84	1.54	0.43	8.85	2.69	1.15	5,847	6,120	95.5	4.5	165.47	29.02						
0.717	50-YR	17.83	28.33	10.50	25.21	27.00	0.0105	8.31	1.85	0.50	9.85	3.25	1.37	6,900	7,360	93.8	6.2	205.07	29.75						
0.717	100-YR	17.83	29.19	11.36	25.21	27.00	0.0105	9.18	2.40	1.20	9.97	3.67	2.32	7,716	8,610	89.6	10.4	227.92	30.59						
0.717	200-YR	17.83	29.59	11.76	25.21	27.00	0.0105	9.57	2.65	1.55	10.55	4.04	2.82	8,513	9,720	87.6	12.4	234.96	31.13						
0.717	500-YR	17.83	31.01	13.18	25.21	27.00	0.0105	11.00	3.57	2.58	10.01	4.25	3.42	9,277	11,500	80.7	19.3	262.81	32.31						
0.665	2-YR	14.97	22.16	7.19	27.46	24.00	0.0046	4.28			6.92			1,670	1,670	100.0	0.0	56.36	22.91	7.84	2		300.56	5.33	
0.665	5-YR	14.97	24.58	9.61	27.46	24.00	0.0046	5.55		0.29	8.13		1.04	3,247	3,260	99.6	0.4	113.93	25.61						
0.665	10-YR	14.97	25.65	10.68	27.46	24.00	0.0046	6.39		0.86	9.11		2.18	4,348	4,550	95.5	4.5	182.36	26.88						
0.665	25-YR	14.97	26.48	11.51	27.46	24.00	0.0046	7.05		1.38	10.17		3.11	5,498	6,120	89.8	10.2	221.52	27.94						
0.665	50-YR	14.97	27.41	12.44	27.46	24.00	0.0046	7.79		2.04	9.91		3.68	6,074	7,360	82.5	17.5	250.35	28.71						
0.665	100-YR	14.97	28.65	13.68	27.46	24.00	0.0046	9.02	0.51	3.04	8.94	1.19	3.92	6,347	8,610	73.7	26.3	285.61	29.63						
0.665	200-YR	14.97	29.05	14.08	27.46	24.00	0.0046	9.42	0.72	3.36	9.34	1.52	4.26	6,923	9,720	71.2	28.8	296.39	30.09						
0.665	500-YR	14.97	30.76	15.79	27.46	24.00	0.0046	11.13	2.01	4.75	8.18	2.36	4.20	7,164	11,500	62.3	37.7	320.62	31.51						
0.606	2-YR	13.53	21.39	7.86	28.00	21.00	-0.0020	5.63		0.20	5.95		0.58	1,670	1,670	100.0	0.0	51.63	21.94	6.57	2		402.22	7.79	
0.606	5-YR	13.53	23.69	10.16	28.00	21.00	-0.0020	7.48		0.85	7.75		1.69	3,099	3,260	95.1	4.9	166.09	24.58						
0.606	10-YR	13.53	24.84	11.31	28.00	21.00	-0.0020	8.38		1.72	8.37		2.71	3,870	4,550	85.1	14.9	200.36	25.79						
0.606	25-YR	13.53	25.37	11.84	28.00	21.00	-0.0020	8.78		2.18	9.99		3.67	4,912	6,120	80.3	19.7	207.16	26.66						
0.606	50-YR	13.53	26.67	13.14	28.00	21.00	-0.0020	9.70		3.15	9.16		4.03	5,182	7,360	70.4	29.6	229.74	27.66						
0.606	100-YR	13.53	28.10	14.57	28.00	21.00	-0.0020	10.68	0.10	3.68	8.43	0.34	3.86	5,492	8,610	63.8	36.2	308.97	28.89						
0.606	200-YR	13.53	28.47	14.94	28.00	21.00	-0.0020	11.04	0.31	4.02	8.86	0.76	4.20	5,971	9,720	61.4	38.6	340.42	29.33						
0.606	500-YR	13.53	30.52	16.99	28.00	21.00	-0.0020	13.09	1.97	5.77	7.23	1.92	3.90	5,773	11,500	50.2	49.8	415.35	31.03						
0.545	2-YR	14.17	20.60	6.43	22.00	23.00	0.0000	4.62			5.94			1,670	1,670	100.0	0.0	60.85	21.15	9.46	2		519.84	8.54	
0.545	5-YR	14.17	22.73	8.56	22.00	23.00	0.0000	6.24	0.46	0.07	7.76	1.23	0.37	3,245	3,260	99.5	0.5	136.42	23.66						
0.545	10-YR	14.17	23.28	9.11	22.00	23.00	0.0000	6.75	0.88	0.31	9.65	2.25	1.19	4,390	4,550	96.5	3.5	360.65	24.67						
0.545	25-YR	14.17	25.00	10.83	22.00	23.00	0.0000	8.47	2.19	1.84	7.50	2.75	2.45	4,289	6,120	70.1	29.9	459.22	25.65						
0.545	50-YR	14.17	26.71	12.54	22.00	23.00	0.0000	10.18	3.20	3.47	5.62	2.34	2.48	3,858	7,360	52.4	47.6	481.37	27.01						
0.545	100-YR	14.17	28.24	14.07	22.00	23.00	0.0000	11.71	2.44	3.77	4.75	1.51	2.02	3,749	8,610	43.5	56.5	833.40	28.43						
0.545	200-YR	14.17	28.66	14.49	22.00	23.00	0.0000	12.13	2.84	4.16	4.79	1.65	2.14	3,919	9,720	40.3	59.7	838.25	28.84						
0.545	500-YR	14.17	30.67	16.50	22.00	23.00	0.0000	14.14	4.71	6.09	3.63	1.60	1.89	3,460	11,500	30.1	69.9	856.96	30.77						
0.528	2-YR	14.17	20.15	5.98	21.00	23.00	0.0000	4.29			6.60			1,670	1,670	100.0	0.0	59.00	20.83	9.87	2		673.86	11.42	
0.528	5-YR	14.17	22.17	8.00	21.00	23.00	0.0000	5.81	0.74		8.49	1.94		3,223	3,260	98.9	1.1	90.84	23.28						
0.528	10-YR	14.17	23.53	9.36	21.00	23.00	0.0000	6.66	1.62	1.48	6.19	2.17	2.04	2,930	4,550	64.4	35.6	599.51	23.93						
0.528	25-YR	14.17	25.13	10.96	21.00	23.00	0.0000	8.26	3.14	2.87	4.60	2.15	2.04	2,700	6,120	44.1	55.9	646.21	25.31						
0.528	50-YR	14.17	26.76	12.59	21.00	23.00	0.0000	9.89	4.37	4.32	3.55	1.82	1.85	2,496	7,360	33.9	66.1	681.48	26.86						
0.528	100-YR	14.17	28.27	14.10	21.00	23.00	0.0000	11.40	3.08	5.74	2.96	1.11	1.70	2,399	8,610	27.9	72.1	844.41	28.34						
0.528	200-YR	14.17	28.68	14.51	21.00	23.00	0.0000	11.82	3.44	6.14	3.07	1.22	1.80	2,581	9,720	26.6	73.4	848.94	28.76						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
0.528	500-YR	14.17	30.68	16.51	21.00	23.00	0.0000	13.81	5.15	8.07	2.59	1.23	1.64	2,539	11,500	22.1	77.9	869.20	30.73						
0.524		Bridge																							
0.520	2-YR	14.17	19.91	5.74	21.48	23.00	0.0001	3.98			6.77			1,670	1,670	100.0	0.0	61.91	20.62	10.79	2		802.01	12.95	
0.520	5-YR	14.17	21.82	7.65	21.48	23.00	0.0001	5.17	0.46		8.56	1.55		3,219	3,260	98.7	1.3	129.80	22.94						
0.520	10-YR	14.17	23.45	9.28	21.48	23.00	0.0001	5.96	1.54	1.52	5.41	1.97	1.96	2,739	4,550	60.2	39.8	691.66	23.75						
0.520	25-YR	14.17	25.11	10.94	21.48	23.00	0.0001	7.62	2.65	2.93	3.84	1.72	1.83	2,483	6,120	40.6	59.4	787.27	25.23						
0.520	50-YR	14.17	26.76	12.59	21.48	23.00	0.0001	9.26	4.00	4.44	2.89	1.54	1.60	2,271	7,360	30.9	69.1	824.10	26.82						
0.520	100-YR	14.17	28.27	14.10	21.48	23.00	0.0001	10.78	5.31	5.84	2.45	1.41	1.48	2,239	8,610	26.0	74.0	845.00	28.32						
0.520	200-YR	14.17	28.68	14.51	21.48	23.00	0.0001	11.19	5.70	6.23	2.56	1.50	1.58	2,436	9,720	25.1	74.9	848.19	28.74						
0.520	500-YR	14.17	30.68	16.51	21.48	23.00	0.0001	13.19	7.53	8.12	2.23	1.39	1.47	2,501	11,500	21.7	78.3	860.59	30.72						
0.505	2-YR	14.16	19.67	5.51	20.72	22.35	0.0000	3.99			6.21			1,670	1,670	100.0	0.0	67.39	20.26	12.23	2		758.72	11.26	
0.505	5-YR	14.16	21.54	7.38	20.72	22.35	0.0000	5.32	0.45		8.03	1.38		3,248	3,260	99.6	0.4	95.21	22.54						
0.505	10-YR	14.16	23.36	9.20	20.72	22.35	0.0000	6.96	1.26	1.83	5.13	1.46	1.88	2,801	4,550	61.6	38.4	618.47	23.63						
0.505	25-YR	14.16	25.06	10.90	20.72	22.35	0.0000	8.66	2.40	3.06	3.89	1.52	1.76	2,643	6,120	43.2	56.8	756.42	25.19						
0.505	50-YR	14.16	26.73	12.57	20.72	22.35	0.0000	10.34	3.70	4.59	2.99	1.40	1.58	2,425	7,360	32.9	67.1	790.37	26.80						
0.505	100-YR	14.16	28.26	14.10	20.72	22.35	0.0000	11.86	4.73	5.95	2.57	1.30	1.47	2,396	8,610	27.8	72.2	823.54	28.31						
0.505	200-YR	14.16	28.67	14.51	20.72	22.35	0.0000	12.27	5.03	6.31	2.71	1.38	1.58	2,606	9,720	26.8	73.2	831.29	28.73						
0.505	500-YR	14.16	30.67	16.51	20.72	22.35	0.0000	14.27	6.26	8.11	2.38	1.26	1.47	2,663	11,500	23.2	76.8	867.70	30.71						
0.501		Bridge																							
0.497	2-YR	14.16	19.18	5.02	20.00	22.00	0.0038	3.60			7.36			1,670	1,670	100.0	0.0	63.10	20.02	12.57	2		692.61	10.98	
0.497	5-YR	14.16	21.06	6.90	20.00	22.00	0.0038	4.75	0.53		8.89	1.83		3,226	3,260	98.9	1.1	111.91	22.28						
0.497	10-YR	14.16	23.34	9.18	20.00	22.00	0.0038	6.88	2.32	2.09	4.44	1.91	1.79	2,400	4,550	52.7	47.3	643.48	23.53						
0.497	25-YR	14.16	25.04	10.88	20.00	22.00	0.0038	8.58	3.50	3.50	3.46	1.69	1.70	2,335	6,120	38.2	61.8	715.20	25.14						
0.497	50-YR	14.16	26.72	12.56	20.00	22.00	0.0038	10.25	4.64	5.06	2.77	1.45	1.56	2,233	7,360	30.3	69.7	740.07	26.78						
0.497	100-YR	14.16	28.25	14.09	20.00	22.00	0.0038	11.78	5.68	6.48	2.44	1.33	1.48	2,262	8,610	26.3	73.7	757.68	28.30						
0.497	200-YR	14.16	28.66	14.50	20.00	22.00	0.0038	12.19	5.93	6.87	2.58	1.41	1.59	2,475	9,720	25.5	74.5	762.32	28.71						
0.497	500-YR	14.16	30.66	16.50	20.00	22.00	0.0038	14.20	6.16	8.74	2.33	1.18	1.52	2,601	11,500	22.6	77.4	797.64	30.71						
0.480	2-YR	13.82	17.66	3.84	21.00	23.00	0.0162	2.90			9.66			1,620	1,620	100.0	0.0	57.92	19.11	15.08	2		97.76	1.69	
0.480	5-YR	13.82	19.34	5.52	21.00	23.00	0.0162	3.99			11.35			3,110	3,110	100.0	0.0	68.66	21.34						
0.480	10-YR	13.82	20.38	6.56	21.00	23.00	0.0162	4.66			12.23			4,270	4,270	100.0	0.0	74.98	22.70						
0.480	25-YR	13.82	21.97	8.15	21.00	23.00	0.0162	5.90	0.49		12.44	2.10		5,893	5,930	99.4	0.6	116.21	24.36						
0.480	50-YR	13.82	26.52	12.70	21.00	23.00	0.0162	10.28	4.37	5.62	4.34	2.26	2.59	3,676	7,130	51.6	48.4	335.91	26.72						
0.480	100-YR	13.82	28.07	14.25	21.00	23.00	0.0162	11.83	5.51	7.17	4.09	2.27	2.62	3,987	8,480	47.0	53.0	340.29	28.24						
0.480	200-YR	13.82	28.44	14.62	21.00	23.00	0.0162	12.20	5.75	7.55	4.46	2.49	2.89	4,481	9,710	46.2	53.8	341.67	28.65						
0.480	500-YR	13.82	30.66	16.84	21.00	23.00	0.0162	14.42	7.06	9.23	2.22	1.28	1.48	2,635	11,500	22.9	77.1	753.10	30.70						
0.415	2-YR	8.21	14.07	5.86	25.04	40.00	0.0000	4.87			7.53			1,620	1,620	100.0	0.0	44.15	14.95	7.53	1	11.88	56.9	1.29	1.36
0.415	5-YR	8.21	16.58	8.37	25.04	40.00	0.0000	6.66			9.30			3,110	3,110	100.0	0.0	50.16	17.92						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
0.415	10-YR	8.21	18.20	9.99	25.04	40.00	0.0000	7.83			10.20			4,270	4,270	100.0	0.0	53.41	19.82						
0.415	25-YR	8.21	20.32	12.11	25.04	40.00	0.0000	9.36			11.06			5,930	5,930	100.0	0.0	57.30	22.22						
0.415	50-YR	8.21	24.98	16.77	25.04	40.00	0.0000	12.47			8.63			7,130	7,130	100.0	0.0	66.22	26.14						
0.415	100-YR	8.21	26.33	18.12	25.04	40.00	0.0000	13.76	0.74		9.26	0.70		8,476	8,480	100.0	0.0	73.72	27.66						
0.415	200-YR	8.21	26.07	17.86	25.04	40.00	0.0000	13.50	0.55		10.81	0.68		9,708	9,710	100.0	0.0	73.03	27.89						
0.415	500-YR	8.21	28.20	19.99	25.04	40.00	0.0000	15.63	1.76		11.01	1.36		11,448	11,500	99.5	0.5	88.23	30.07						
0.412		Bridge																							
0.408	2-YR	8.21	13.48	5.27	23.97	23.00	0.0031	4.34			8.77			1,620	1,620	100.0	0.0	42.60	14.67	8.08	1		54.17	1.27	
0.408	5-YR	8.21	15.87	7.66	23.97	23.00	0.0031	6.12			10.62			3,110	3,110	100.0	0.0	47.87	17.62						
0.408	10-YR	8.21	17.50	9.29	23.97	23.00	0.0031	7.28			11.43			4,270	4,270	100.0	0.0	51.36	19.52						
0.408	25-YR	8.21	19.72	11.51	23.97	23.00	0.0031	8.76			12.01			5,930	5,930	100.0	0.0	56.36	21.96						
0.408	50-YR	8.21	21.26	13.05	23.97	23.00	0.0031	9.77			12.24			7,130	7,130	100.0	0.0	59.66	23.58						
0.408	100-YR	8.21	22.43	14.22	23.97	23.00	0.0031	10.29			12.95			8,480	8,480	100.0	0.0	63.66	25.04						
0.408	200-YR	8.21	23.17	14.96	23.97	23.00	0.0031	10.64		0.17	13.81		0.44	9,707	9,710	100.0	0.0	108.59	26.13						
0.408	500-YR	8.21	23.91	15.70	23.97	23.00	0.0031	11.25		0.91	15.22		1.42	11,445	11,500	99.5	0.5	109.37	27.49						
0.360	2-YR	7.43	12.92	5.49	20.08	20.00	0.0020	4.69			5.81			1,620	1,620	100.0	0.0	59.50	13.44	10.84	1		73.34	1.23	
0.360	5-YR	7.43	15.51	8.08	20.08	20.00	0.0020	6.68			7.04			3,110	3,110	100.0	0.0	66.11	16.28						
0.360	10-YR	7.43	17.26	9.83	20.08	20.00	0.0020	7.97			7.60			4,270	4,270	100.0	0.0	70.42	18.16						
0.360	25-YR	7.43	19.63	12.20	20.08	20.00	0.0020	9.60			8.06			5,930	5,930	100.0	0.0	76.58	20.64						
0.360	50-YR	7.43	21.27	13.84	20.08	20.00	0.0020	11.10	0.59	0.58	8.26	0.50	0.57	7,119	7,130	99.8	0.2	111.56	22.32						
0.360	100-YR	7.43	22.52	15.09	20.08	20.00	0.0020	12.35	1.20	1.70	8.76	0.80	1.14	8,401	8,480	99.1	0.9	120.22	23.70						
0.360	200-YR	7.43	23.32	15.89	20.08	20.00	0.0020	13.15	1.58	2.50	9.36	0.98	1.49	9,557	9,710	98.4	1.6	121.41	24.65						
0.360	500-YR	7.43	24.13	16.70	20.08	20.00	0.0020	13.96	1.91	3.32	10.36	1.20	1.88	11,241	11,500	97.8	2.2	122.87	25.76						
0.295	2-YR	6.73	12.47	5.74	18.00	21.00	0.0013	5.04			4.82			1,620	1,620	100.0	0.0	66.62	12.84	11.61	1		92.32	1.39	
0.295	5-YR	6.73	15.12	8.39	18.00	21.00	0.0013	6.90			5.93			3,110	3,110	100.0	0.0	75.98	15.67						
0.295	10-YR	6.73	16.94	10.21	18.00	21.00	0.0013	8.03			6.38			4,270	4,270	100.0	0.0	83.34	17.57						
0.295	25-YR	6.73	19.41	12.68	18.00	21.00	0.0013	9.75	0.70		6.68	0.50		5,921	5,930	99.9	0.1	115.25	20.10						
0.295	50-YR	6.73	21.18	14.45	18.00	21.00	0.0013	11.16	1.67	1.42	6.58	0.81	1.31	6,911	7,130	96.9	3.1	225.53	21.83						
0.295	100-YR	6.73	22.55	15.82	18.00	21.00	0.0013	12.53	2.54	2.74	6.69	1.01	1.89	7,882	8,480	92.9	7.1	241.28	23.19						
0.295	200-YR	6.73	23.43	16.70	18.00	21.00	0.0013	13.41	3.22	3.61	6.95	1.17	2.25	8,768	9,710	90.3	9.7	246.41	24.11						
0.295	500-YR	6.73	24.36	17.63	18.00	21.00	0.0013	14.34	4.02	4.53	7.47	1.39	2.69	10,074	11,500	87.6	12.4	249.20	25.13						
0.228	2-YR	6.28	12.32	6.04	20.00	20.00	0.0000	5.14			3.44			1,620	1,620	100.0	0.0	91.80	12.50	15.20	1		110.96	1.21	
0.228	5-YR	6.28	15.03	8.75	20.00	20.00	0.0000	7.33			4.26			3,110	3,110	100.0	0.0	99.69	15.31						
0.228	10-YR	6.28	16.88	10.60	20.00	20.00	0.0000	8.69			4.63			4,270	4,270	100.0	0.0	105.99	17.22						
0.228	25-YR	6.28	19.39	13.11	20.00	20.00	0.0000	10.41			4.95			5,930	5,930	100.0	0.0	115.15	19.77						
0.228	50-YR	6.28	21.18	14.90	20.00	20.00	0.0000	11.72	0.87	0.86	4.95	0.91	0.67	6,985	7,130	98.0	2.0	335.81	21.55						
0.228	100-YR	6.28	22.58	16.30	20.00	20.00	0.0000	13.12	1.77	2.21	4.95	1.35	1.18	7,821	8,480	92.2	7.8	384.98	22.94						
0.228	200-YR	6.28	23.50	17.22	20.00	20.00	0.0000	14.03	2.27	3.10	5.05	1.56	1.44	8,540	9,710	88.0	12.0	418.73	23.85						
0.228	500-YR	6.28	24.47	18.19	20.00	20.00	0.0000	15.01	3.01	4.04	5.28	1.88	1.72	9,545	11,500	83.0	17.0	437.18	24.84						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
0.169	2-YR	6.28	12.15	5.87	16.00	15.00	0.0000	4.90			3.39			1,620	1,620	100.0	0.0	97.57	12.32	16.62	1		151.38	1.55	
0.169	5-YR	6.28	14.88	8.60	16.00	15.00	0.0000	7.00			4.09			3,110	3,110	100.0	0.0	108.50	15.14						
0.169	10-YR	6.28	16.75	10.47	16.00	15.00	0.0000	8.53	0.37	0.88	4.40	0.56	0.79	4,267	4,270	99.9	0.1	124.59	17.05						
0.169	25-YR	6.28	19.31	13.03	16.00	15.00	0.0000	11.09	1.08	2.15	4.58	0.99	1.26	5,778	5,930	97.4	2.6	247.90	19.63						
0.169	50-YR	6.28	21.14	14.86	16.00	15.00	0.0000	12.92	2.18	3.04	4.44	1.39	1.40	6,526	7,130	91.5	8.5	310.26	21.42						
0.169	100-YR	6.28	22.55	16.27	16.00	15.00	0.0000	14.34	2.77	3.70	4.46	1.55	1.50	7,266	8,480	85.7	14.3	393.13	22.82						
0.169	200-YR	6.28	23.47	17.19	16.00	15.00	0.0000	15.25	3.45	4.14	4.56	1.73	1.59	7,897	9,710	81.3	18.7	416.48	23.74						
0.169	500-YR	6.28	24.44	18.16	16.00	15.00	0.0000	16.23	4.30	4.61	4.77	2.01	1.72	8,794	11,500	76.5	23.5	427.23	24.73						
0.118	2-YR	6.28	11.74	5.46	15.00	15.00	-0.0002	4.87			4.58			1,620	1,620	100.0	0.0	72.63	12.07	13.30	1		113.75	1.57	
0.118	5-YR	6.28	14.38	8.10	15.00	15.00	-0.0002	6.99			5.61			3,110	3,110	100.0	0.0	79.35	14.87						
0.118	10-YR	6.28	16.22	9.94	15.00	15.00	-0.0002	8.69	0.61	0.61	6.07	1.04	0.41	4,267	4,270	99.9	0.1	86.82	16.80						
0.118	25-YR	6.28	18.80	12.52	15.00	15.00	-0.0002	11.26	1.59	1.90	6.34	1.80	0.77	5,777	5,930	97.4	2.6	137.67	19.41						
0.118	50-YR	6.28	20.66	14.38	15.00	15.00	-0.0002	13.12	2.57	2.91	6.28	2.21	0.91	6,663	7,130	93.5	6.5	168.50	21.23						
0.118	100-YR	6.28	22.04	15.76	15.00	15.00	-0.0002	14.50	2.01	3.74	6.49	2.05	1.04	7,614	8,480	89.8	10.2	292.45	22.63						
0.118	200-YR	6.28	22.93	16.65	15.00	15.00	-0.0002	15.39	2.24	4.26	6.72	2.06	1.12	8,371	9,710	86.2	13.8	370.98	23.55						
0.118	500-YR	6.28	23.90	17.62	15.00	15.00	-0.0002	16.37	2.52	4.81	7.00	2.31	1.21	9,274	11,500	80.6	19.4	462.38	24.53						
0.103		Bridge																							
0.088	2-YR	6.61	10.74	4.13	15.00	20.78	0.0000	3.59			5.95			1,620	1,620	100.0	0.0	75.80	11.29	18.35					
0.088	5-YR	6.61	12.89	6.28	15.00	20.78	0.0000	5.50			7.07			3,110	3,110	100.0	0.0	80.02	13.66						
0.088	10-YR	6.61	14.24	7.63	15.00	20.78	0.0000	6.67			7.76			4,270	4,270	100.0	0.0	82.45	15.18						
0.088	25-YR	6.61	15.98	9.37	15.00	20.78	0.0000	8.27	0.93		8.45	2.07		5,879	5,930	99.1	0.9	110.43	17.08						
0.088	50-YR	6.61	17.20	10.59	15.00	20.78	0.0000	9.44	1.72		8.70	2.95		6,945	7,130	97.4	2.6	120.98	18.34						
0.088	100-YR	6.61	18.49	11.88	15.00	20.78	0.0000	10.68	1.37		8.89	3.28		8,069	8,480	95.2	4.8	176.05	19.67						
0.088	200-YR	6.61	19.74	13.13	15.00	20.78	0.0000	11.88	1.43		8.72	2.65		8,844	9,710	91.1	8.9	313.61	20.83						
0.088	500-YR	6.61	21.18	14.57	15.00	20.78	0.0000	13.27	2.42	0.20	8.31	2.88	0.26	9,450	11,500	82.2	17.8	379.61	22.08						
0.078	2-YR	6.61	9.99	3.38	15.00	17.00	0.0026	3.23			7.90			1,620	1,620	100.0	0.0	63.50	10.96	18.79					
0.078	5-YR	6.61	10.98	4.37	15.00	17.00	0.0026	4.12			11.56			3,110	3,110	100.0	0.0	65.36	13.06						
0.078	10-YR	6.61	11.98	5.37	15.00	17.00	0.0026	4.99			12.73			4,270	4,270	100.0	0.0	67.24	14.50						
0.078	25-YR	6.61	13.27	6.66	15.00	17.00	0.0026	6.08			14.00			5,930	5,930	100.0	0.0	69.67	16.31						
0.078	50-YR	6.61	14.11	7.50	15.00	17.00	0.0026	6.77			14.77			7,130	7,130	100.0	0.0	71.24	17.50						
0.078	100-YR	6.61	14.98	8.37	15.00	17.00	0.0026	7.48			15.55			8,480	8,480	100.0	0.0	72.88	18.73						
0.078	200-YR	6.61	15.72	9.11	15.00	17.00	0.0026	8.20	0.21		16.20	2.03		9,708	9,710	100.0	0.0	78.06	19.79						
0.078	500-YR	6.61	17.24	10.63	15.00	17.00	0.0026	9.69	1.08	0.12	15.87	4.00	0.36	11,287	11,500	98.1	1.9	122.99	21.09						
0.000	2-YR	5.56	8.13	2.57	6.58	8.00		2.27	0.79	0.10	6.03	3.00	0.74	1,378	1,620	85.1	14.9	221.94	8.63	86.36					
0.000	5-YR	5.56	8.93	3.37	6.58	8.00		3.08	1.36	0.68	7.38	4.29	2.70	2,290	3,110	73.6	26.4	270.95	9.63						
0.000	10-YR	5.56	9.42	3.86	6.58	8.00		3.56	1.54	1.00	8.15	4.68	3.49	2,928	4,270	68.6	31.4	314.01	10.23						
0.000	25-YR	5.56	9.97	4.41	6.58	8.00		4.11	1.97	1.36	8.96	5.51	4.31	3,709	5,930	62.6	37.4	333.32	10.91						
0.000	50-YR	5.56	10.32	4.76	6.58	8.00		4.46	2.17	1.69	9.46	5.88	4.97	4,254	7,130	59.7	40.3	347.24	11.35						

Aliso Creek - Alternative 1
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
0.000	100-YR	5.56	10.68	5.12	6.58	8.00		4.82	2.35	2.03	9.97	6.18	5.61	4,848	8,480	57.2	42.8	364.71	11.81						
0.000	200-YR	5.56	10.98	5.42	6.58	8.00		5.12	2.54	2.31	10.37	6.52	6.10	5,351	9,710	55.1	44.9	373.97	12.18						
0.000	500-YR	5.56	11.38	5.82	6.58	8.00		5.52	2.82	2.50	10.90	6.99	6.43	6,065	11,500	52.7	47.3	389.48	12.70						

Hydraulic Tables
Alternative 2

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Aliso Creek - Alternative 2
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
9.000	2-YR	248.10	252.55	4.45	263.98	262.98	0.0168	3.30			5.61			1,020	1,020	100.0	0.0	55.13	253.04	12.39					
9.000	5-YR	248.10	254.31	6.21	263.98	262.98	0.0168	4.64			5.98			1,700	1,700	100.0	0.0	61.22	254.86						
9.000	10-YR	248.10	255.16	7.06	263.98	262.98	0.0168	5.27			6.28			2,120	2,120	100.0	0.0	64.11	255.77						
9.000	25-YR	248.10	256.04	7.94	263.98	262.98	0.0168	5.89			6.71			2,650	2,650	100.0	0.0	67.07	256.74						
9.000	50-YR	248.10	256.62	8.52	263.98	262.98	0.0168	6.29			6.99			3,040	3,040	100.0	0.0	69.18	257.38						
9.000	100-YR	248.10	257.20	9.10	263.98	262.98	0.0168	6.68			7.27			3,460	3,460	100.0	0.0	71.28	258.02						
9.000	200-YR	248.10	257.62	9.52	263.98	262.98	0.0168	6.95			7.48			3,780	3,780	100.0	0.0	72.77	258.49						
9.000	500-YR	248.10	258.21	10.11	263.98	262.98	0.0168	7.33			7.77			4,270	4,270	100.0	0.0	74.89	259.15						
8.750	2-YR	242.60	251.25	8.65	260.00	261.96	0	4.66			3.77			1,020	1,020	100.0	0.0	58.19	251.47	6.73					
8.750	5-YR	242.60	253.05	10.45	260.00	261.96	0	5.27			4.38			1,700	1,700	100.0	0.0	73.58	253.35						
8.750	10-YR	242.60	253.92	11.32	260.00	261.96	0	5.58			4.65			2,120	2,120	100.0	0.0	81.71	254.25						
8.750	25-YR	242.60	254.81	12.21	260.00	261.96	0	6.12			4.99			2,650	2,650	100.0	0.0	86.71	255.20						
8.750	50-YR	242.60	255.40	12.80	260.00	261.96	0	6.47			5.21			3,040	3,040	100.0	0.0	90.06	255.82						
8.750	100-YR	242.60	255.99	13.39	260.00	261.96	0	6.81			5.43			3,460	3,460	100.0	0.0	93.58	256.45						
8.750	200-YR	242.60	256.41	13.81	260.00	261.96	0	7.05			5.59			3,780	3,780	100.0	0.0	95.89	256.89						
8.750	500-YR	242.60	257.00	14.40	260.00	261.96	0	7.41			5.81			4,270	4,270	100.0	0.0	99.12	257.53						
8.500	2-YR	242.60	247.76	5.16	260.71	261.96	0.0085	2.84			9.59			1,020	1,020	100.0	0.0	37.43	249.19	7.25					
8.500	5-YR	242.60	249.00	6.40	260.71	261.96	0.0085	3.58			10.85			1,700	1,700	100.0	0.0	43.80	250.82						
8.500	10-YR	242.60	249.65	7.05	260.71	261.96	0.0085	3.94			11.36			2,120	2,120	100.0	0.0	47.32	251.66						
8.500	25-YR	242.60	250.41	7.81	260.71	261.96	0.0085	4.28			11.81			2,650	2,650	100.0	0.0	52.39	252.58						
8.500	50-YR	242.60	250.91	8.31	260.71	261.96	0.0085	4.50			12.09			3,040	3,040	100.0	0.0	55.84	253.18						
8.500	100-YR	242.60	251.40	8.80	260.71	261.96	0.0085	4.72			12.37			3,460	3,460	100.0	0.0	59.22	253.78						
8.500	200-YR	242.60	251.74	9.14	260.71	261.96	0.0085	4.88			12.58			3,780	3,780	100.0	0.0	61.56	254.20						
8.500	500-YR	242.60	252.25	9.65	260.71	261.96	0.0085	5.10			12.85			4,270	4,270	100.0	0.0	65.09	254.81						
8.250	2-YR	239.80	245.20	5.40	255.76	257.68	0.0023	3.32			2.42			1,020	1,020	100.0	0.0	126.88	245.29	23.50					
8.250	5-YR	239.80	246.38	6.58	255.76	257.68	0.0023	3.83			2.84			1,700	1,700	100.0	0.0	156.44	246.51						
8.250	10-YR	239.80	246.93	7.13	255.76	257.68	0.0023	4.35			3.10			2,120	2,120	100.0	0.0	157.26	247.08						
8.250	25-YR	239.80	247.55	7.75	255.76	257.68	0.0023	4.95			3.38			2,650	2,650	100.0	0.0	158.11	247.73						
8.250	50-YR	239.80	247.98	8.18	255.76	257.68	0.0023	5.36			3.58			3,040	3,040	100.0	0.0	158.66	248.18						
8.250	100-YR	239.80	248.42	8.62	255.76	257.68	0.0023	5.78			3.76			3,460	3,460	100.0	0.0	159.31	248.64						
8.250	200-YR	239.80	248.75	8.95	255.76	257.68	0.0023	6.09			3.88			3,780	3,780	100.0	0.0	159.79	248.99						
8.250	500-YR	239.80	249.24	9.44	255.76	257.68	0.0023	6.55			4.06			4,270	4,270	100.0	0.0	160.50	249.49						
8.000	2-YR	239.03	243.09	4.06	253.00	256.73	0.0156	2.04			7.11			1,020	1,020	100.0	0.0	70.37	243.87	17.33					
8.000	5-YR	239.03	244.28	5.25	253.00	256.73	0.0156	2.63			7.11			1,700	1,700	100.0	0.0	91.06	245.06						
8.000	10-YR	239.03	244.92	5.89	253.00	256.73	0.0156	2.94			7.02			2,120	2,120	100.0	0.0	102.78	245.69						
8.000	25-YR	239.03	245.68	6.65	253.00	256.73	0.0156	3.40			6.89			2,650	2,650	100.0	0.0	113.22	246.42						
8.000	50-YR	239.03	246.16	7.13	253.00	256.73	0.0156	3.78			6.91			3,040	3,040	100.0	0.0	116.45	246.91						
8.000	100-YR	239.03	246.67	7.64	253.00	256.73	0.0156	4.14			6.92			3,460	3,460	100.0	0.0	120.79	247.42						
8.000	200-YR	239.03	247.05	8.02	253.00	256.73	0.0156	4.40			6.92			3,780	3,780	100.0	0.0	124.24	247.79						

Aliso Creek - Alternative 2
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
8.000	500-YR	239.03	247.59	8.56	253.00	256.73	0.0156	4.77			6.95			4,270	4,270	100.0	0.0	128.80	248.34						
7.900	2-YR	233.90	239.43	5.53	250.07	250.00	0.0061	3.80			5.37			1,020	1,020	100.0	0.0	49.97	239.88	9.04					
7.900	5-YR	233.90	241.10	7.20	250.07	250.00	0.0061	4.79			6.06			1,700	1,700	100.0	0.0	58.57	241.67						
7.900	10-YR	233.90	241.94	8.04	250.07	250.00	0.0061	5.28			6.39			2,120	2,120	100.0	0.0	62.88	242.58						
7.900	25-YR	233.90	243.17	9.27	250.07	250.00	0.0061	5.94			6.41			2,650	2,650	100.0	0.0	69.56	243.81						
7.900	50-YR	233.90	243.64	9.74	250.07	250.00	0.0061	6.20			6.81			3,040	3,040	100.0	0.0	72.06	244.36						
7.900	100-YR	233.90	244.12	10.22	250.07	250.00	0.0061	6.45			7.18			3,460	3,460	100.0	0.0	74.63	244.92						
7.900	200-YR	233.90	244.47	10.57	250.07	250.00	0.0061	6.64			7.44			3,780	3,780	100.0	0.0	76.58	245.33						
7.900	500-YR	233.90	244.98	11.08	250.07	250.00	0.0061	6.90			7.80			4,270	4,270	100.0	0.0	79.39	245.92						
7.838	2-YR	231.87	237.34	5.47	248.74	254.05	0.004	4.18			5.28			1,020	1,020	100.0	0.0	46.13	237.78	8.43					
7.838	5-YR	231.87	238.91	7.04	248.74	254.05	0.004	5.12			6.28			1,700	1,700	100.0	0.0	52.90	239.53						
7.838	10-YR	231.87	239.68	7.81	248.74	254.05	0.004	5.52			6.79			2,120	2,120	100.0	0.0	56.57	240.39						
7.838	25-YR	231.87	240.93	9.06	248.74	254.05	0.004	4.26			6.49			2,650	2,650	100.0	0.0	95.94	241.58						
7.838	50-YR	231.87	241.43	9.56	248.74	254.05	0.004	4.68			6.64			3,040	3,040	100.0	0.0	97.80	242.12						
7.838	100-YR	231.87	241.94	10.07	248.74	254.05	0.004	5.09			6.82			3,460	3,460	100.0	0.0	99.65	242.66						
7.838	200-YR	231.87	242.34	10.47	248.74	254.05	0.004	5.41			6.91			3,780	3,780	100.0	0.0	101.09	243.08						
7.838	500-YR	231.87	242.88	11.01	248.74	254.05	0.004	5.85			7.08			4,270	4,270	100.0	0.0	103.07	243.66						
7.774	2-YR	230.53	235.71	5.18	245.20	243.46	0.0051	4.09			4.52			1,020	1,020	100.0	0.0	55.14	236.02	10.64					
7.774	5-YR	230.53	237.01	6.48	245.20	243.46	0.0051	4.94			5.64			1,700	1,700	100.0	0.0	60.95	237.50						
7.774	10-YR	230.53	237.51	6.98	245.20	243.46	0.0051	5.26			6.38			2,120	2,120	100.0	0.0	63.17	238.14						
7.774	25-YR	230.53	238.05	7.52	245.20	243.46	0.0051	5.60			7.22			2,650	2,650	100.0	0.0	65.62	238.86						
7.774	50-YR	230.53	238.41	7.88	245.20	243.46	0.0051	5.81			7.78			3,040	3,040	100.0	0.0	67.27	239.35						
7.774	100-YR	230.53	238.76	8.23	245.20	243.46	0.0051	6.02			8.34			3,460	3,460	100.0	0.0	68.90	239.84						
7.774	200-YR	230.53	239.04	8.51	245.20	243.46	0.0051	6.03			8.70			3,780	3,780	100.0	0.0	72.09	240.22						
7.774	500-YR	230.53	239.42	8.89	245.20	243.46	0.0051	6.11			9.23			4,270	4,270	100.0	0.0	75.70	240.74						
7.714	2-YR	228.92	234.36	5.44	241.57	243.30	0.0035	2.76			3.65			1,020	1,020	100.0	0.0	101.41	234.56	18.64					
7.714	5-YR	228.92	235.53	6.61	241.57	243.30	0.0035	2.87			3.95			1,700	1,700	100.0	0.0	149.99	235.77						
7.714	10-YR	228.92	235.99	7.07	241.57	243.30	0.0035	3.28			4.24			2,120	2,120	100.0	0.0	152.35	236.27						
7.714	25-YR	228.92	236.52	7.60	241.57	243.30	0.0035	3.75			4.55			2,650	2,650	100.0	0.0	155.09	236.84						
7.714	50-YR	228.92	236.89	7.97	241.57	243.30	0.0035	4.08			4.75			3,040	3,040	100.0	0.0	157.00	237.24						
7.714	100-YR	228.92	237.27	8.35	241.57	243.30	0.0035	4.41			4.94			3,460	3,460	100.0	0.0	158.95	237.65						
7.714	200-YR	228.92	237.55	8.63	241.57	243.30	0.0035	4.65			5.07			3,780	3,780	100.0	0.0	160.37	237.95						
7.714	500-YR	228.92	237.95	9.03	241.57	243.30	0.0035	4.99			5.28			4,270	4,270	100.0	0.0	162.31	238.38						
7.656	2-YR	227.85	230.83	2.98	238.81	234.14	0.0254	2.10			7.39			1,020	1,020	100.0	0.0	65.69	231.67	22.04					
7.656	5-YR	227.85	231.87	4.02	238.81	234.14	0.0254	2.82			8.04			1,700	1,700	100.0	0.0	74.89	232.87						
7.656	10-YR	227.85	232.42	4.57	238.81	234.14	0.0254	3.19			8.36			2,120	2,120	100.0	0.0	79.55	233.50						
7.656	25-YR	227.85	233.05	5.20	238.81	234.14	0.0254	3.60			8.66			2,650	2,650	100.0	0.0	85.02	234.22						
7.656	50-YR	227.85	233.49	5.64	238.81	234.14	0.0254	3.87			8.84			3,040	3,040	100.0	0.0	88.74	234.70						
7.656	100-YR	227.85	233.93	6.08	238.81	234.14	0.0254	4.15			9.02			3,460	3,460	100.0	0.0	92.52	235.19						

Aliso Creek - Alternative 2
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
7.656	200-YR	227.85	234.24	6.39	238.81	234.14	0.0254	4.36		0.05	9.15		0.36	3,780	3,780	100.0	0.0	97.27	235.54						
7.656	500-YR	227.85	234.69	6.84	238.81	234.14	0.0254	4.74		0.29	9.37		1.10	4,266	4,270	99.9	0.1	108.63	236.05						
7.620	2-YR	222.90	227.96	5.06	236.08	234.43	0	3.09			5.78			1,020	1,020	100.0	0.0	57.16	228.47	11.30					
7.620	5-YR	222.90	229.03	6.13	236.08	234.43	0	3.90			7.08			1,700	1,700	100.0	0.0	61.58	229.81						
7.620	10-YR	222.90	229.62	6.72	236.08	234.43	0	4.32			7.65			2,120	2,120	100.0	0.0	64.16	230.53						
7.620	25-YR	222.90	230.32	7.42	236.08	234.43	0	4.73			8.19			2,650	2,650	100.0	0.0	68.41	231.36						
7.620	50-YR	222.90	230.80	7.90	236.08	234.43	0	5.01			8.52			3,040	3,040	100.0	0.0	71.29	231.92						
7.620	100-YR	222.90	231.28	8.38	236.08	234.43	0	5.28			8.83			3,460	3,460	100.0	0.0	74.18	232.49						
7.620	200-YR	222.90	231.62	8.72	236.08	234.43	0	5.48			9.04			3,780	3,780	100.0	0.0	76.28	232.89						
7.620	500-YR	222.90	232.31	9.41	236.08	234.43	0	5.93			9.06			4,270	4,270	100.0	0.0	79.41	233.58						
7.616		Bridge																							
7.612	2-YR	222.58	227.08	4.50	233.36	234.95	0.0026	3.41			5.03			1,020	1,020	100.0	0.0	59.40	227.47	13.20					
7.612	5-YR	222.58	228.27	5.69	233.36	234.95	0.0026	4.27			6.14			1,700	1,700	100.0	0.0	64.77	228.86						
7.612	10-YR	222.58	228.88	6.30	233.36	234.95	0.0026	4.69			6.69			2,120	2,120	100.0	0.0	67.49	229.57						
7.612	25-YR	222.58	229.60	7.02	233.36	234.95	0.0026	5.18			7.22			2,650	2,650	100.0	0.0	70.82	230.41						
7.612	50-YR	222.58	229.98	7.40	233.36	234.95	0.0026	5.43			7.72			3,040	3,040	100.0	0.0	72.51	230.90						
7.612	100-YR	222.58	230.44	7.86	233.36	234.95	0.0026	5.73			8.09			3,460	3,460	100.0	0.0	74.60	231.46						
7.612	200-YR	222.58	230.65	8.07	233.36	234.95	0.0026	5.87			8.52			3,780	3,780	100.0	0.0	75.57	231.78						
7.612	500-YR	222.58	230.63	8.05	233.36	234.95	0.0026	5.86			9.66			4,270	4,270	100.0	0.0	75.48	232.08						
7.528	2-YR	221.45	224.84	3.39	232.53	231.67	0.0108	2.54			3.35			1,020	1,020	100.0	0.0	119.64	225.02	35.29					
7.528	5-YR	221.45	225.84	4.39	232.53	231.67	0.0108	2.99			3.92			1,700	1,700	100.0	0.0	144.71	226.08						
7.528	10-YR	221.45	226.34	4.89	232.53	231.67	0.0108	3.14			4.15			2,120	2,120	100.0	0.0	162.47	226.61						
7.528	25-YR	221.45	226.98	5.53	232.53	231.67	0.0108	3.03			4.22			2,650	2,650	100.0	0.0	207.47	227.25						
7.528	50-YR	221.45	227.35	5.90	232.53	231.67	0.0108	3.17			4.29			3,040	3,040	100.0	0.0	223.69	227.63						
7.528	100-YR	221.45	227.80	6.35	232.53	231.67	0.0108	3.05			4.22			3,460	3,460	100.0	0.0	268.51	228.08						
7.528	200-YR	221.45	227.98	6.53	232.53	231.67	0.0108	3.22			4.35			3,780	3,780	100.0	0.0	269.56	228.28						
7.528	500-YR	221.45	229.60	8.15	232.53	231.67	0.0108	4.67			3.25			4,270	4,270	100.0	0.0	281.48	229.77						
7.466	2-YR	217.90	222.01	4.11	230.33	230.31	0.0087	1.98			5.57			1,020	1,020	100.0	0.0	92.21	222.49	22.44					
7.466	5-YR	217.90	222.95	5.05	230.33	230.31	0.0087	2.49			6.15			1,700	1,700	100.0	0.0	111.02	223.54						
7.466	10-YR	217.90	223.40	5.50	230.33	230.31	0.0087	2.64			6.44			2,120	2,120	100.0	0.0	124.75	224.04						
7.466	25-YR	217.90	223.85	5.95	230.33	230.31	0.0087	2.80			6.83			2,650	2,650	100.0	0.0	138.73	224.57						
7.466	50-YR	217.90	224.01	6.11	230.33	230.31	0.0087	2.86			7.39			3,040	3,040	100.0	0.0	143.98	224.86						
7.466	100-YR	217.90	224.17	6.27	230.33	230.31	0.0087	2.92			7.95			3,460	3,460	100.0	0.0	149.18	225.16						
7.466	200-YR	217.90	224.42	6.52	230.33	230.31	0.0087	3.01			7.99			3,780	3,780	100.0	0.0	157.36	225.41						
7.466	500-YR	217.90	229.26	11.36	230.33	230.31	0.0087	5.89			2.53			4,270	4,270	100.0	0.0	286.61	229.36						
7.353	2-YR	212.71	218.16	5.45	222.11	226.43	0.0052	3.03			3.44			1,020	1,020	100.0	0.0	98.11	218.35	18.00					
7.353	5-YR	212.71	219.50	6.79	222.11	226.43	0.0052	3.79			3.87			1,700	1,700	100.0	0.0	115.83	219.74						
7.353	10-YR	212.71	220.43	7.72	222.11	226.43	0.0052	4.14			3.81			2,120	2,120	100.0	0.0	134.33	220.66						

Aliso Creek - Alternative 2
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
7.353	25-YR	212.71	221.35	8.64	222.11	226.43	0.0052	4.84	0.28		3.83	1.59		2,617	2,650	98.8	1.2	214.56	221.57						
7.353	50-YR	212.71	222.07	9.36	222.11	226.43	0.0052	5.38	0.93		3.57	3.04		2,805	3,040	92.3	7.7	229.71	222.26						
7.353	100-YR	212.71	222.84	10.13	222.11	226.43	0.0052	6.02	1.66		3.24	3.78		2,918	3,460	84.3	15.7	235.69	223.01						
7.353	200-YR	212.71	223.52	10.81	222.11	226.43	0.0052	6.58	2.30		2.96	4.03		2,966	3,780	78.5	21.5	240.36	223.68						
7.353	500-YR	212.71	229.20	16.49	222.11	226.43	0.0052	11.66	7.22	2.24	1.16	2.26	0.53	2,228	4,270	52.2	47.8	565.98	229.25						
7.297	2-YR	211.16	216.81	5.65	226.89	223.31	0.0043	4.29			4.78			1,410	1,410	100.0	0.0	68.73	217.16	12.16					
7.297	5-YR	211.16	218.12	6.96	226.89	223.31	0.0043	5.36			5.47			2,120	2,120	100.0	0.0	72.36	218.58						
7.297	10-YR	211.16	219.17	8.01	226.89	223.31	0.0043	6.18			5.59			2,600	2,600	100.0	0.0	75.25	219.66						
7.297	25-YR	211.16	219.99	8.83	226.89	223.31	0.0043	6.81			6.25			3,300	3,300	100.0	0.0	77.52	220.60						
7.297	50-YR	211.16	220.66	9.50	226.89	223.31	0.0043	7.31			6.75			3,920	3,920	100.0	0.0	79.36	221.37						
7.297	100-YR	211.16	221.41	10.25	226.89	223.31	0.0043	7.87			7.28			4,660	4,660	100.0	0.0	81.42	222.23						
7.297	200-YR	211.16	222.18	11.02	226.89	223.31	0.0043	8.43			7.36			5,180	5,180	100.0	0.0	83.55	223.02						
7.297	500-YR	211.16	229.01	17.85	226.89	223.31	0.0043	14.58	1.06	3.45	3.67	0.47	1.06	4,789	5,900	81.2	18.8	399.44	229.18						
7.227	2-YR	209.59	215.16	5.57	223.64	223.26	0.0063	4.22			5.02			1,410	1,410	100.0	0.0	66.52	215.55	11.94					
7.227	5-YR	209.59	216.50	6.91	223.64	223.26	0.0063	5.17			5.66			2,120	2,120	100.0	0.0	72.44	217.00						
7.227	10-YR	209.59	217.62	8.03	223.64	223.26	0.0063	4.22			5.37			2,600	2,600	100.0	0.0	114.60	218.07						
7.227	25-YR	209.59	218.50	8.91	223.64	223.26	0.0063	5.00			5.63			3,300	3,300	100.0	0.0	117.32	219.00						
7.227	50-YR	209.59	219.23	9.64	223.64	223.26	0.0063	5.62			5.83			3,920	3,920	100.0	0.0	119.56	219.76						
7.227	100-YR	209.59	220.05	10.46	223.64	223.26	0.0063	6.31			6.04			4,660	4,660	100.0	0.0	122.09	220.61						
7.227	200-YR	209.59	221.12	11.53	223.64	223.26	0.0063	7.21			5.73			5,180	5,180	100.0	0.0	125.41	221.63						
7.227	500-YR	209.59	228.98	19.39	223.64	223.26	0.0063	14.55	3.17	4.24	2.25	0.59	0.73	4,370	5,900	74.1	25.9	649.42	229.04						
7.165	2-YR	207.53	212.65	5.12	215.01	216.71	0.0065	4.00			6.97			1,410	1,410	100.0	0.0	50.55	213.40	9.87					
7.165	5-YR	207.53	213.97	6.44	215.01	216.71	0.0065	4.90			7.78			2,120	2,120	100.0	0.0	55.64	214.91						
7.165	10-YR	207.53	214.66	7.13	215.01	216.71	0.0065	5.36			8.34			2,600	2,600	100.0	0.0	58.15	215.74						
7.165	25-YR	207.53	215.26	7.73	215.01	216.71	0.0065	5.79	0.12		9.50	0.27		3,300	3,300	100.0	0.0	60.06	216.66						
7.165	50-YR	207.53	215.66	8.13	215.01	216.71	0.0065	6.10	0.32		10.56	0.54		3,920	3,920	100.0	0.0	61.10	217.39						
7.165	100-YR	207.53	216.17	8.64	215.01	216.71	0.0065	6.50	0.58		11.57	0.84		4,660	4,660	100.0	0.0	62.44	218.25						
7.165	200-YR	207.53	219.28	11.75	215.01	216.71	0.0065	9.48	2.13	1.70	8.47	1.14	1.98	5,076	5,180	98.0	2.0	94.49	220.37						
7.165	500-YR	207.53	228.92	21.39	215.01	216.71	0.0065	19.12	5.31	5.98	2.66	0.58	0.90	3,214	5,900	54.5	45.5	566.02	228.98						
7.106	2-YR	205.51	211.05	5.54	216.92	218.58	0.0041	3.73			4.50			1,410	1,410	100.0	0.0	83.99	211.36	15.16					
7.106	5-YR	205.51	212.42	6.91	216.92	218.58	0.0041	3.73			4.68			2,120	2,120	100.0	0.0	121.68	212.76						
7.106	10-YR	205.51	213.20	7.69	216.92	218.58	0.0041	3.69			4.63			2,600	2,600	100.0	0.0	152.14	213.54						
7.106	25-YR	205.51	214.11	8.60	216.92	218.58	0.0041	4.23			4.66			3,300	3,300	100.0	0.0	167.64	214.44						
7.106	50-YR	205.51	214.79	9.28	216.92	218.58	0.0041	4.83			4.75			3,920	3,920	100.0	0.0	170.89	215.14						
7.106	100-YR	205.51	215.80	10.29	216.92	218.58	0.0041	5.69			4.67			4,660	4,660	100.0	0.0	175.63	216.13						
7.106	200-YR	205.51	219.53	14.02	216.92	218.58	0.0041	9.04	1.31	0.48	3.08	0.56	0.31	5,175	5,180	99.9	0.1	201.36	219.68						
7.106	500-YR	205.51	228.93	23.42	216.92	218.58	0.0041	18.43	6.00	6.13	1.31	0.41	0.45	4,477	5,900	75.9	24.1	704.66	228.95						
7.056	2-YR	204.43	209.73	5.30	216.73	216.38	0.0039	4.11			5.14			1,410	1,410	100.0	0.0	66.76	210.14	12.60					
7.056	5-YR	204.43	210.87	6.44	216.73	216.38	0.0039	4.94			6.01			2,120	2,120	100.0	0.0	71.42	211.43						

Aliso Creek - Alternative 2
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
7.056	10-YR	204.43	211.54	7.11	216.73	216.38	0.0039	5.41			6.47			2,600	2,600	100.0	0.0	74.19	212.19						
7.056	25-YR	204.43	212.39	7.96	216.73	216.38	0.0039	6.00			7.07			3,300	3,300	100.0	0.0	77.73	213.17						
7.056	50-YR	204.43	213.04	8.61	216.73	216.38	0.0039	6.43			7.58			3,920	3,920	100.0	0.0	80.39	213.93						
7.056	100-YR	204.43	214.27	9.84	216.73	216.38	0.0039	7.29			7.52			4,660	4,660	100.0	0.0	85.03	215.15						
7.056	200-YR	204.43	219.24	14.81	216.73	216.38	0.0039	11.51	2.29	1.47	4.19	1.05	0.78	4,499	5,180	86.9	13.1	609.99	219.48						
7.056	500-YR	204.43	228.92	24.49	216.73	216.38	0.0039	21.19	9.68	11.05	1.20	0.52	0.57	2,376	5,900	40.3	59.7	676.75	228.93						
7.018	2-YR	203.64	208.90	5.26	215.21	216.13	0	3.67			4.32			1,410	1,410	100.0	0.0	88.91	209.19	16.90					
7.018	5-YR	203.64	210.07	6.43	215.21	216.13	0	4.58			4.89			2,120	2,120	100.0	0.0	94.56	210.44						
7.018	10-YR	203.64	210.75	7.11	215.21	216.13	0	5.10			5.21			2,600	2,600	100.0	0.0	97.87	211.17						
7.018	25-YR	203.64	211.61	7.97	215.21	216.13	0	5.73			5.64			3,300	3,300	100.0	0.0	102.03	212.11						
7.018	50-YR	203.64	212.24	8.60	215.21	216.13	0	6.19			6.03			3,920	3,920	100.0	0.0	105.06	212.80						
7.018	100-YR	203.64	213.69	10.05	215.21	216.13	0	7.21			5.77			4,660	4,660	100.0	0.0	112.12	214.21						
7.018	200-YR	203.64	219.18	15.54	215.21	216.13	0	11.99	3.34	3.01	3.07	0.95	0.87	4,509	5,180	87.1	13.0	358.53	219.31						
7.018	500-YR	203.64	228.90	25.26	215.21	216.13	0	21.71	8.15	12.74	1.44	0.54	0.69	3,819	5,900	64.7	35.3	455.58	228.92						
6.978		Bridge																							
6.938	2-YR	201.59	206.65	5.06	214.20	212.60	0.0084	3.83			4.07			1,410	1,410	100.0	0.0	90.43	206.91	17.87					
6.938	5-YR	201.59	207.99	6.40	214.20	212.60	0.0084	4.68			4.46			2,120	2,120	100.0	0.0	101.50	208.30						
6.938	10-YR	201.59	208.85	7.26	214.20	212.60	0.0084	4.58			4.52			2,600	2,600	100.0	0.0	125.47	209.17						
6.938	25-YR	201.59	209.78	8.19	214.20	212.60	0.0084	5.04			4.73			3,300	3,300	100.0	0.0	138.35	210.13						
6.938	50-YR	201.59	210.33	8.74	214.20	212.60	0.0084	5.43			5.06			3,920	3,920	100.0	0.0	142.83	210.73						
6.938	100-YR	201.59	212.66	11.07	214.20	212.60	0.0084	6.99		0.43	4.11		0.46	4,645	4,660	99.7	0.3	237.79	212.92						
6.938	200-YR	201.59	219.07	17.48	214.20	212.60	0.0084	12.83	4.00	6.64	1.93	0.64	0.85	4,325	5,180	83.5	16.5	387.19	219.12						
6.938	500-YR	201.59	228.89	27.30	214.20	212.60	0.0084	22.65	7.20	16.45	1.09	0.36	0.57	4,288	5,900	72.7	27.3	533.93	228.90						
6.878	2-YR	198.92	203.11	4.19	212.74	207.37	0.014	3.06			9.03			1,410	1,410	100.0	0.0	51.10	204.37	12.20					
6.878	5-YR	198.92	203.90	4.98	212.74	207.37	0.014	3.54			10.69			2,120	2,120	100.0	0.0	56.04	205.67						
6.878	10-YR	198.92	204.48	5.56	212.74	207.37	0.014	3.89			11.20			2,600	2,600	100.0	0.0	59.70	206.43						
6.878	25-YR	198.92	205.24	6.32	212.74	207.37	0.014	4.33			11.83			3,300	3,300	100.0	0.0	64.41	207.41						
6.878	50-YR	198.92	206.39	7.47	212.74	207.37	0.014	4.99			10.96			3,920	3,920	100.0	0.0	71.65	208.26						
6.878	100-YR	198.92	212.21	13.29	212.74	207.37	0.014	9.61	0.74	2.46	4.54	0.60	1.34	3,756	4,660	80.6	19.4	487.26	212.48						
6.878	200-YR	198.92	219.05	20.13	212.74	207.37	0.014	16.34	6.31	8.62	1.63	0.63	0.78	2,315	5,180	44.7	55.3	609.66	219.07						
6.878	500-YR	198.92	228.89	29.97	212.74	207.37	0.014	26.18	16.15	17.55	0.81	0.42	0.45	1,846	5,900	31.3	68.7	637.83	228.89						
6.859	2-YR	197.56	201.36	3.80	208.26	204.02	0.017	1.75			6.35			1,640	1,640	100.0	0.0	147.98	201.98	38.94					
6.859	5-YR	197.56	202.27	4.71	208.26	204.02	0.017	2.59			6.45			2,550	2,550	100.0	0.0	152.72	202.91						
6.859	10-YR	197.56	203.12	5.56	208.26	204.02	0.017	3.35			5.88			3,110	3,110	100.0	0.0	157.93	203.66						
6.859	25-YR	197.56	204.49	6.93	208.26	204.02	0.017	4.52		0.47	5.29		0.86	3,972	3,990	99.5	0.5	212.42	204.92						
6.859	50-YR	197.56	207.36	9.80	208.26	204.02	0.017	7.22		1.82	3.38		0.98	4,172	4,640	89.9	10.1	432.56	207.52						
6.859	100-YR	197.56	212.35	14.79	208.26	204.02	0.017	12.14	4.04	5.11	1.73	0.60	0.70	3,634	5,450	66.7	33.3	737.71	212.38						
6.859	200-YR	197.56	219.06	21.50	208.26	204.02	0.017	18.85	10.01	11.12	0.97	0.45	0.49	3,145	6,330	49.7	50.3	792.78	219.07						
6.859	500-YR	197.56	228.89	31.33	208.26	204.02	0.017	28.68	19.44	20.47	0.61	0.33	0.34	3,021	7,430	40.7	59.3	817.20	228.89						

Aliso Creek - Alternative 2
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
6.839	2-YR	195.76	200.26	4.50	210.68	212.20	0.0067	3.03			5.12			1,640	1,640	100.0	0.0	105.59	200.66	23.46					
6.839	5-YR	195.76	201.41	5.65	210.68	212.20	0.0067	3.99			5.72			2,550	2,550	100.0	0.0	111.68	201.92						
6.839	10-YR	195.76	202.58	6.82	210.68	212.20	0.0067	4.92			5.36			3,110	3,110	100.0	0.0	117.90	203.03						
6.839	25-YR	195.76	204.11	8.35	210.68	212.20	0.0067	6.07			5.20			3,990	3,990	100.0	0.0	126.32	204.53						
6.839	50-YR	195.76	207.20	11.44	210.68	212.20	0.0067	6.29			3.55			4,640	4,640	100.0	0.0	207.96	207.40						
6.839	100-YR	195.76	212.35	16.59	210.68	212.20	0.0067	10.79	8.59	0.49	1.14	0.70	0.10	2,785	5,450	51.1	48.9	719.25	212.37						
6.839	200-YR	195.76	219.06	23.30	210.68	212.20	0.0067	17.50	15.01	5.18	0.75	0.48	0.24	2,943	6,330	46.5	53.5	780.04	219.06						
6.839	500-YR	195.76	228.89	33.13	210.68	212.20	0.0067	27.33	24.84	14.04	0.52	0.34	0.23	3,196	7,430	43.0	57.0	799.76	228.89						
6.773	2-YR	193.45	197.86	4.41	203.58	205.12	0.0065	3.47			5.31			1,640	1,640	100.0	0.0	89.13	198.30	20.21					
6.773	5-YR	193.45	199.77	6.32	203.58	205.12	0.0065	4.95			5.23			2,550	2,550	100.0	0.0	98.59	200.20						
6.773	10-YR	193.45	201.65	8.20	203.58	205.12	0.0065	6.25	0.26		4.55	0.39		3,108	3,110	99.9	0.1	127.42	201.97						
6.773	25-YR	193.45	203.45	10.00	203.58	205.12	0.0065	7.44	1.34		4.41	1.01		3,922	3,990	98.3	1.7	170.14	203.74						
6.773	50-YR	193.45	207.00	13.55	203.58	205.12	0.0065	10.74	2.72	1.36	3.03	0.87	0.55	4,004	4,640	86.3	13.7	427.85	207.12						
6.773	100-YR	193.45	212.31	18.86	203.58	205.12	0.0065	16.05	6.66	5.20	1.68	0.67	0.57	3,316	5,450	60.8	39.2	640.80	212.34						
6.773	200-YR	193.45	219.05	25.60	203.58	205.12	0.0065	22.79	13.16	9.17	1.04	0.51	0.42	2,909	6,330	46.0	54.0	700.30	219.06						
6.773	500-YR	193.45	228.89	35.44	203.58	205.12	0.0065	32.63	23.00	17.84	0.68	0.38	0.32	2,753	7,430	37.1	62.9	723.49	228.89						
6.706	2-YR	191.12	196.24	5.12	201.68	202.53	0.0101	3.74			4.26			1,640	1,640	100.0	0.0	102.75	196.52	20.07					
6.706	5-YR	191.12	199.08	7.96	201.68	202.53	0.0101	4.67			3.28			2,550	2,550	100.0	0.0	166.24	199.25						
6.706	10-YR	191.12	201.36	10.24	201.68	202.53	0.0101	5.53	0.92		2.55	0.56		3,072	3,110	98.8	1.2	292.63	201.46						
6.706	25-YR	191.12	203.32	12.20	201.68	202.53	0.0101	6.89	1.93	0.86	2.26	0.71	0.40	3,772	3,990	94.5	5.5	425.01	203.39						
6.706	50-YR	191.12	206.98	15.86	201.68	202.53	0.0101	10.56	5.05	3.34	1.53	0.66	0.50	3,907	4,640	84.2	15.8	487.94	207.02						
6.706	100-YR	191.12	212.30	21.18	201.68	202.53	0.0101	15.88	9.34	6.84	1.07	0.53	0.43	4,106	5,450	75.3	24.7	544.72	212.32						
6.706	200-YR	191.12	219.04	27.92	201.68	202.53	0.0101	22.62	15.16	9.82	0.79	0.42	0.32	4,325	6,330	68.3	31.7	622.55	219.05						
6.706	500-YR	191.12	228.88	37.76	201.68	202.53	0.0101	32.46	25.00	19.25	0.59	0.34	0.28	4,603	7,430	61.9	38.1	628.14	228.89						
6.650	2-YR	188.19	196.14	7.95	195.86	195.80	0.0067	5.66	0.28	0.17	2.34	0.15	0.10	1,640	1,640	100.0	0.0	126.52	196.22	15.91					
6.650	5-YR	188.19	199.00	10.81	195.86	195.80	0.0067	8.52	3.15	1.52	2.40	0.57	0.35	2,536	2,550	99.4	0.6	150.67	199.09						
6.650	10-YR	188.19	201.30	13.11	195.86	195.80	0.0067	10.82	5.44	2.55	2.28	0.67	0.40	3,058	3,110	98.3	1.7	174.50	201.38						
6.650	25-YR	188.19	203.24	15.05	195.86	195.80	0.0067	12.76	7.38	3.23	2.45	0.79	0.45	3,874	3,990	97.1	2.9	202.74	203.33						
6.650	50-YR	188.19	206.92	18.73	195.86	195.80	0.0067	16.43	11.06	5.26	2.14	0.76	0.46	4,358	4,640	93.9	6.1	239.25	206.98						
6.650	100-YR	188.19	212.25	24.06	195.86	195.80	0.0067	21.77	16.39	10.56	1.79	0.69	0.51	4,823	5,450	88.5	11.5	240.00	212.30						
6.650	200-YR	188.19	219.01	30.82	195.86	195.80	0.0067	28.53	23.15	17.32	1.51	0.61	0.50	5,324	6,330	84.1	15.9	240.00	219.04						
6.650	500-YR	188.19	228.88	40.69	195.86	195.80	0.0067	38.40	17.70	24.50	0.86	0.25	0.28	4,106	7,430	55.3	44.7	786.35	228.89						
6.588		Culvert																							
6.532	2-YR	184.00	187.14	3.14	196.17	195.84	0.0084	2.77			9.49			1,560	1,560	100.0	0.0	59.33	188.54	18.89	12	22.36	72.92	1.23	3.94
6.532	5-YR	184.00	188.31	4.31	196.17	195.84	0.0084	3.68			9.98			2,360	2,360	100.0	0.0	64.29	189.86						
6.532	10-YR	184.00	188.88	4.88	196.17	195.84	0.0084	4.10			10.33			2,830	2,830	100.0	0.0	66.73	190.54						
6.532	25-YR	184.00	189.56	5.56	196.17	195.84	0.0084	4.60			10.80			3,460	3,460	100.0	0.0	69.63	191.37						
6.532	50-YR	184.00	190.05	6.05	196.17	195.84	0.0084	4.94			11.13			3,950	3,950	100.0	0.0	71.82	191.97						

Aliso Creek - Alternative 2
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
6.532	100-YR	184.00	190.49	6.49	196.17	195.84	0.0084	5.23			11.51			4,450	4,450	100.0	0.0	73.90	192.54						
6.532	200-YR	184.00	190.83	6.83	196.17	195.84	0.0084	5.46			11.88			4,900	4,900	100.0	0.0	75.56	193.02						
6.532	500-YR	184.00	191.14	7.14	196.17	195.84	0.0084	5.66			12.24			5,330	5,330	100.0	0.0	77.02	193.46						
6.483	2-YR	181.85	186.73	4.88	191.87	192.64	0.0041	3.91			4.66			1,560	1,560	100.0	0.0	85.59	187.07	17.54	12		355.3	4.15	
6.483	5-YR	181.85	188.01	6.16	191.87	192.64	0.0041	4.73			5.24			2,360	2,360	100.0	0.0	95.24	188.44						
6.483	10-YR	181.85	188.63	6.78	191.87	192.64	0.0041	5.13			5.54			2,830	2,830	100.0	0.0	99.63	189.10						
6.483	25-YR	181.85	189.37	7.52	191.87	192.64	0.0041	5.64			5.90			3,460	3,460	100.0	0.0	103.92	189.91						
6.483	50-YR	181.85	189.90	8.05	191.87	192.64	0.0041	6.00	0.13	0.17	6.15	0.41	0.48	3,948	3,950	100.0	0.0	137.90	190.48						
6.483	100-YR	181.85	190.38	8.53	191.87	192.64	0.0041	6.33	0.41	0.38	6.37	0.85	0.81	4,424	4,450	99.4	0.6	186.57	191.01						
6.483	200-YR	181.85	190.79	8.94	191.87	192.64	0.0041	6.60	0.60	0.42	6.52	1.11	1.02	4,821	4,900	98.4	1.6	246.43	191.44						
6.483	500-YR	181.85	191.16	9.31	191.87	192.64	0.0041	6.82	0.66	0.69	6.62	1.17	1.20	5,170	5,330	97.0	3.0	318.32	191.82						
6.422	2-YR	180.53	185.61	5.08	189.50	188.52	0.0057	3.99			5.53			1,560	1,560	100.0	0.0	70.72	186.09	13.92	12		593.5	8.39	
6.422	5-YR	180.53	186.83	6.30	189.50	188.52	0.0057	4.82			6.33			2,360	2,360	100.0	0.0	77.26	187.46						
6.422	10-YR	180.53	187.38	6.85	189.50	188.52	0.0057	5.24			6.81			2,830	2,830	100.0	0.0	79.37	188.10						
6.422	25-YR	180.53	188.04	7.51	189.50	188.52	0.0057	5.72			7.38			3,460	3,460	100.0	0.0	81.89	188.88						
6.422	50-YR	180.53	188.50	7.97	189.50	188.52	0.0057	6.06		0.09	7.79		0.34	3,949	3,950	100.0	0.0	114.15	189.44						
6.422	100-YR	180.53	188.92	8.39	189.50	188.52	0.0057	6.40		0.47	8.16		1.03	4,429	4,450	99.5	0.5	128.06	189.95						
6.422	200-YR	180.53	189.28	8.75	189.50	188.52	0.0057	6.69		0.81	8.46		1.50	4,847	4,900	98.9	1.1	129.81	190.38						
6.422	500-YR	180.53	189.59	9.06	189.50	188.52	0.0057	6.97	0.17	1.11	8.73	0.53	1.85	5,237	5,330	98.3	1.7	139.08	190.76						
6.358	2-YR	178.60	184.10	5.50	185.21	190.87	0.003	4.11			4.60			1,560	1,560	100.0	0.0	82.46	184.43	14.99	12		378.2	4.59	
6.358	5-YR	178.60	185.15	6.55	185.21	190.87	0.003	4.70			5.49			2,360	2,360	100.0	0.0	91.45	185.62						
6.358	10-YR	178.60	185.61	7.01	185.21	190.87	0.003	5.12	0.20		5.99	0.50		2,829	2,830	100.0	0.0	102.17	186.17						
6.358	25-YR	178.60	186.16	7.56	185.21	190.87	0.003	5.62	0.47		6.60	0.92		3,450	3,460	99.7	0.3	115.92	186.83						
6.358	50-YR	178.60	186.53	7.93	185.21	190.87	0.003	5.98	0.64		7.03	1.15		3,925	3,950	99.4	0.6	127.20	187.30						
6.358	100-YR	178.60	186.90	8.30	185.21	190.87	0.003	6.31	0.73		7.43	1.28		4,403	4,450	99.0	1.0	143.39	187.75						
6.358	200-YR	178.60	187.19	8.59	185.21	190.87	0.003	6.58	0.83		7.78	1.42		4,825	4,900	98.5	1.5	158.23	188.12						
6.358	500-YR	178.60	187.46	8.86	185.21	190.87	0.003	6.83	0.93		8.08	1.56		5,218	5,330	97.9	2.1	171.99	188.46						
6.291	2-YR	177.54	180.85	3.31	187.29	187.71	0.0295	1.47			6.90			1,560	1,560	100.0	0.0	153.79	181.59	46.46	12		207.97	1.35	
6.291	5-YR	177.54	181.33	3.79	187.29	187.71	0.0295	1.89			7.81			2,360	2,360	100.0	0.0	160.10	182.28						
6.291	10-YR	177.54	181.59	4.05	187.29	187.71	0.0295	2.10			8.25			2,830	2,830	100.0	0.0	163.04	182.64						
6.291	25-YR	177.54	181.90	4.36	187.29	187.71	0.0295	2.38			8.76			3,460	3,460	100.0	0.0	166.22	183.09						
6.291	50-YR	177.54	182.13	4.59	187.29	187.71	0.0295	2.58			9.13			3,950	3,950	100.0	0.0	167.68	183.42						
6.291	100-YR	177.54	182.34	4.80	187.29	187.71	0.0295	2.77			9.50			4,450	4,450	100.0	0.0	169.05	183.74						
6.291	200-YR	177.54	182.54	5.00	187.29	187.71	0.0295	2.95			9.75			4,900	4,900	100.0	0.0	170.35	184.02						
6.291	500-YR	177.54	182.71	5.17	187.29	187.71	0.0295	3.10			10.02			5,330	5,330	100.0	0.0	171.46	184.27						
6.234	2-YR	168.79	175.38	6.59	185.56	182.83	0.0035	2.81			2.91			1,560	1,560	100.0	0.0	190.92	175.51	28.97	11	18.52	266.22	1.39	1.71
6.234	5-YR	168.79	176.62	7.83	185.56	182.83	0.0035	3.36			2.96			2,360	2,360	100.0	0.0	237.07	176.75						
6.234	10-YR	168.79	177.23	8.44	185.56	182.83	0.0035	3.87			2.99			2,830	2,830	100.0	0.0	244.64	177.37						
6.234	25-YR	168.79	178.01	9.22	185.56	182.83	0.0035	4.59			3.04			3,460	3,460	100.0	0.0	248.19	178.16						

Aliso Creek - Alternative 2
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
6.234	50-YR	168.79	178.60	9.81	185.56	182.83	0.0035	5.12			3.08			3,950	3,950	100.0	0.0	250.86	178.75						
6.234	100-YR	168.79	179.17	10.38	185.56	182.83	0.0035	5.63			3.12			4,450	4,450	100.0	0.0	253.46	179.32						
6.234	200-YR	168.79	179.67	10.88	185.56	182.83	0.0035	6.08			3.15			4,900	4,900	100.0	0.0	255.72	179.82						
6.234	500-YR	168.79	180.12	11.33	185.56	182.83	0.0035	6.48			3.19			5,330	5,330	100.0	0.0	257.81	180.28						
6.168	2-YR	167.55	173.99	6.44	185.92	182.63	0.0019	3.93			3.58			1,560	1,560	100.0	0.0	110.74	174.19	17.20	11		139.41	1.26	
6.168	5-YR	167.55	175.33	7.78	185.92	182.63	0.0019	5.03			4.02			2,360	2,360	100.0	0.0	116.70	175.58						
6.168	10-YR	167.55	176.03	8.48	185.92	182.63	0.0019	5.59			4.23			2,830	2,830	100.0	0.0	119.80	176.30						
6.168	25-YR	167.55	176.89	9.34	185.92	182.63	0.0019	6.27			4.46			3,460	3,460	100.0	0.0	123.66	177.20						
6.168	50-YR	167.55	177.53	9.98	185.92	182.63	0.0019	6.76			4.62			3,950	3,950	100.0	0.0	126.48	177.86						
6.168	100-YR	167.55	178.13	10.58	185.92	182.63	0.0019	7.21			4.78			4,450	4,450	100.0	0.0	129.16	178.48						
6.168	200-YR	167.55	178.65	11.10	185.92	182.63	0.0019	7.60			4.91			4,900	4,900	100.0	0.0	131.46	179.02						
6.168	500-YR	167.55	179.12	11.57	185.92	182.63	0.0019	7.95			5.02			5,330	5,330	100.0	0.0	133.56	179.51						
6.100	2-YR	166.88	172.28	5.40	181.73	180.84	0.003	4.36			4.89			1,560	1,560	100.0	0.0	73.22	172.65	13.56	11		95.6	1.31	
6.100	5-YR	166.88	173.53	6.65	181.73	180.84	0.003	5.28			5.69			2,360	2,360	100.0	0.0	78.49	174.04						
6.100	10-YR	166.88	174.19	7.31	181.73	180.84	0.003	5.75			6.06			2,830	2,830	100.0	0.0	81.27	174.76						
6.100	25-YR	166.88	175.03	8.15	181.73	180.84	0.003	6.33			6.45			3,460	3,460	100.0	0.0	84.76	175.67						
6.100	50-YR	166.88	175.65	8.77	181.73	180.84	0.003	6.75			6.70			3,950	3,950	100.0	0.0	87.38	176.34						
6.100	100-YR	166.88	176.22	9.34	181.73	180.84	0.003	7.14			6.94			4,450	4,450	100.0	0.0	89.79	176.97						
6.100	200-YR	166.88	176.72	9.84	181.73	180.84	0.003	7.47			7.14			4,900	4,900	100.0	0.0	91.78	177.51						
6.100	500-YR	166.88	177.17	10.29	181.73	180.84	0.003	7.78			7.32			5,330	5,330	100.0	0.0	93.57	178.00						
6.045	2-YR	166.02	170.51	4.49	168.26	169.58	0.0099	3.95	1.35	0.46	5.75	1.95	1.30	1,535	1,560	98.4	1.6	78.56	171.01	17.50	11		96.89	1.23	
6.045	5-YR	166.02	171.83	5.81	168.26	169.58	0.0099	5.28	2.21	1.13	6.40	2.47	2.15	2,285	2,360	96.8	3.2	84.07	172.45						
6.045	10-YR	166.02	172.54	6.52	168.26	169.58	0.0099	5.98	2.63	1.48	6.71	2.66	2.49	2,715	2,830	95.9	4.1	86.99	173.21						
6.045	25-YR	166.02	173.44	7.42	168.26	169.58	0.0099	6.88	3.16	1.93	7.05	2.86	2.84	3,280	3,460	94.8	5.2	90.71	174.18						
6.045	50-YR	166.02	174.13	8.11	168.26	169.58	0.0099	7.57	3.54	2.30	7.25	2.98	3.08	3,710	3,950	93.9	6.1	93.43	174.90						
6.045	100-YR	166.02	174.71	8.69	168.26	169.58	0.0099	8.15	3.87	2.61	7.53	3.11	3.31	4,148	4,450	93.2	6.8	95.73	175.54						
6.045	200-YR	166.02	175.21	9.19	168.26	169.58	0.0099	8.65	4.14	2.87	7.75	3.22	3.49	4,537	4,900	92.6	7.4	97.72	176.09						
6.045	500-YR	166.02	175.66	9.64	168.26	169.58	0.0099	9.11	4.38	3.11	7.97	3.32	3.65	4,906	5,330	92.0	8.0	99.55	176.58						
5.985	2-YR	162.91	168.30	5.39	165.73	165.67	0.0004	4.76	1.62	1.32	8.25	1.89	2.59	1,464	1,560	93.8	6.2	68.37	169.30	12.68	11		91.76	1.34	
5.985	5-YR	162.91	169.19	6.28	165.73	165.67	0.0004	5.65	2.30	1.76	10.20	2.64	3.46	2,147	2,360	91.0	9.0	72.23	170.67						
5.985	10-YR	162.91	169.60	6.69	165.73	165.67	0.0004	6.06	2.60	1.96	11.26	3.02	3.93	2,542	2,830	89.8	10.2	74.00	171.38						
5.985	25-YR	162.91	170.03	7.12	165.73	165.67	0.0004	6.49	2.91	2.18	12.69	3.49	4.53	3,068	3,460	88.7	11.3	75.86	172.27						
5.985	50-YR	162.91	170.28	7.37	165.73	165.67	0.0004	6.74	3.09	2.30	13.86	3.87	5.01	3,478	3,950	88.0	12.0	76.94	172.93						
5.985	100-YR	162.91	170.74	7.83	165.73	165.67	0.0004	7.20	3.40	2.53	14.43	4.11	5.32	3,869	4,450	86.9	13.1	78.93	173.59						
5.985	200-YR	162.91	171.13	8.22	165.73	165.67	0.0004	7.59	3.67	2.73	14.92	4.31	5.58	4,217	4,900	86.1	13.9	80.63	174.15						
5.985	500-YR	162.91	171.52	8.61	165.73	165.67	0.0004	7.98	3.92	2.92	15.29	4.46	5.79	4,543	5,330	85.2	14.8	82.31	174.66						
5.919	2-YR	162.77	167.73	4.96	165.61	166.95	0.0023	3.98	1.06	0.40	5.00	1.98	1.08	1,544	1,560	99.0	1.0	95.69	168.12	19.29	11		178.01	1.86	
5.919	5-YR	162.77	168.82	6.05	165.61	166.95	0.0023	5.07	1.60	0.96	5.79	2.57	1.92	2,274	2,360	96.4	3.6	114.55	169.32						
5.919	10-YR	162.77	169.37	6.60	165.61	166.95	0.0023	5.62	1.88	1.20	6.15	2.83	2.21	2,678	2,830	94.6	5.4	125.44	169.93						

Aliso Creek - Alternative 2
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
5.919	25-YR	162.77	170.02	7.25	165.61	166.95	0.0023	6.28	2.21	1.46	6.57	3.13	2.50	3,195	3,460	92.3	7.7	140.60	170.65						
5.919	50-YR	162.77	170.47	7.70	165.61	166.95	0.0023	6.73	2.47	1.65	6.86	3.36	2.71	3,577	3,950	90.6	9.4	150.95	171.15						
5.919	100-YR	162.77	170.90	8.13	165.61	166.95	0.0023	7.16	2.72	1.84	7.12	3.56	2.90	3,951	4,450	88.8	11.2	160.82	171.62						
5.919	200-YR	162.77	171.25	8.48	165.61	166.95	0.0023	7.50	2.92	2.02	7.35	3.73	3.08	4,275	4,900	87.3	12.7	167.99	172.00						
5.919	500-YR	162.77	171.60	8.83	165.61	166.95	0.0023	7.85	3.12	2.27	7.48	3.84	3.30	4,556	5,330	85.5	14.5	172.70	172.37						
5.858	2-YR	162.04	166.80	4.76	168.12	169.86	0.0089	3.68			4.69			1,560	1,560	100.0	0.0	90.23	167.14	18.96	11		180.69	2.00	
5.858	5-YR	162.04	167.89	5.85	168.12	169.86	0.0089	4.50			5.43			2,360	2,360	100.0	0.0	96.67	168.35						
5.858	10-YR	162.04	168.45	6.41	168.12	169.86	0.0089	4.98	0.17		5.78	0.63		2,829	2,830	100.0	0.0	104.53	168.97						
5.858	25-YR	162.04	169.11	7.07	168.12	169.86	0.0089	5.61	0.49		6.22	1.41		3,447	3,460	99.6	0.4	117.85	169.71						
5.858	50-YR	162.04	169.54	7.50	168.12	169.86	0.0089	6.02	0.70		6.56	1.70		3,917	3,950	99.2	0.8	126.70	170.20						
5.858	100-YR	162.04	169.95	7.91	168.12	169.86	0.0089	6.42	0.89	0.04	6.88	1.92	0.13	4,388	4,450	98.6	1.4	135.58	170.68						
5.858	200-YR	162.04	170.26	8.22	168.12	169.86	0.0089	6.72	1.02	0.20	7.19	2.07	0.36	4,807	4,900	98.1	1.9	143.25	171.05						
5.858	500-YR	162.04	170.60	8.56	168.12	169.86	0.0089	7.07	1.17	0.37	7.39	2.19	0.54	5,196	5,330	97.5	2.5	152.09	171.43						
5.794	2-YR	159.05	165.16	6.11	166.59	168.40	0.0014	3.08			4.52			1,590	1,590	100.0	0.0	114.40	165.48	18.72	11		290.15	2.54	
5.794	5-YR	159.05	166.30	7.25	166.59	168.40	0.0014	3.98			4.93			2,400	2,400	100.0	0.0	122.33	166.68						
5.794	10-YR	159.05	166.89	7.84	166.59	168.40	0.0014	4.49	0.15		5.17	0.40		2,899	2,900	100.0	0.0	143.23	167.31						
5.794	25-YR	159.05	167.58	8.53	166.59	168.40	0.0014	5.13	0.57		5.48	0.95		3,545	3,570	99.3	0.7	171.32	168.04						
5.794	50-YR	159.05	168.03	8.98	166.59	168.40	0.0014	5.54	0.85		5.69	1.23		3,999	4,060	98.5	1.5	184.88	168.52						
5.794	100-YR	159.05	168.46	9.41	166.59	168.40	0.0014	5.95	1.11	0.03	5.87	1.47	0.17	4,447	4,560	97.5	2.5	196.44	168.98						
5.794	200-YR	159.05	168.77	9.72	166.59	168.40	0.0014	6.26	1.24	0.19	6.04	1.58	0.58	4,822	4,980	96.8	3.2	208.46	169.32						
5.794	500-YR	159.05	169.14	10.09	166.59	168.40	0.0014	6.63	1.36	0.37	6.22	1.67	0.91	5,258	5,480	95.9	4.1	226.21	169.72						
5.728	2-YR	158.55	163.35	4.80	165.11	169.92	0.0011	3.87	0.63		5.05	1.07		1,581	1,590	99.4	0.6	94.85	163.74	19.76	11		233.31	2.46	
5.728	5-YR	158.55	164.39	5.84	165.11	169.92	0.0011	4.63	1.16		5.88	1.65		2,352	2,400	98.0	2.0	111.48	164.92						
5.728	10-YR	158.55	164.96	6.41	165.11	169.92	0.0011	5.03	1.48		6.25	1.96		2,812	2,900	97.0	3.0	119.74	165.55						
5.728	25-YR	158.55	165.65	7.10	165.11	169.92	0.0011	5.64	1.08		6.65	2.03		3,407	3,570	95.4	4.6	165.65	166.31						
5.728	50-YR	158.55	166.13	7.58	165.11	169.92	0.0011	6.07	1.25		6.85	2.04		3,812	4,060	93.9	6.1	189.00	166.82						
5.728	100-YR	158.55	166.60	8.05	165.11	169.92	0.0011	6.48	1.59		7.05	1.98		4,223	4,560	92.6	7.4	199.72	167.32						
5.728	200-YR	158.55	166.98	8.43	165.11	169.92	0.0011	6.83	1.96		7.11	2.22		4,510	4,980	90.6	9.4	201.18	167.70						
5.728	500-YR	158.55	167.42	8.87	165.11	169.92	0.0011	7.22	2.28		7.19	2.39		4,858	5,480	88.6	11.4	208.03	168.14						
5.664	2-YR	158.17	162.24	4.07	162.04	161.31	0.0059	3.48	0.10	0.46	4.34	0.44	0.62	1,588	1,590	99.9	0.1	112.84	162.53	27.72	10	18.64	151.38	1.34	1.25
5.664	5-YR	158.17	163.32	5.15	162.04	161.31	0.0059	4.56	0.64	1.00	4.96	1.48	1.01	2,382	2,400	99.3	0.7	123.08	163.70						
5.664	10-YR	158.17	163.92	5.75	162.04	161.31	0.0059	5.15	0.94	1.30	5.28	1.88	1.18	2,863	2,900	98.7	1.3	128.72	164.34						
5.664	25-YR	158.17	164.65	6.48	162.04	161.31	0.0059	5.89	1.31	1.67	5.64	2.30	1.37	3,497	3,570	98.0	2.0	135.68	165.14						
5.664	50-YR	158.17	165.16	6.99	162.04	161.31	0.0059	6.39	1.56	1.92	5.87	2.56	1.49	3,953	4,060	97.4	2.6	140.45	165.68						
5.664	100-YR	158.17	165.64	7.47	162.04	161.31	0.0059	6.88	1.80	2.17	6.09	2.79	1.60	4,413	4,560	96.8	3.2	145.07	166.20						
5.664	200-YR	158.17	166.04	7.87	162.04	161.31	0.0059	7.28	2.00	2.36	6.26	2.97	1.68	4,794	4,980	96.3	3.7	148.81	166.63						
5.664	500-YR	158.17	166.49	8.32	162.04	161.31	0.0059	7.73	2.22	2.59	6.44	3.16	1.77	5,243	5,480	95.7	4.3	153.08	167.11						
5.609	2-YR	156.44	161.76	5.32	158.71	158.65	0.0004	4.83	1.52	2.26	4.46	4.16	1.24	1,291	1,590	81.2	18.8	159.92	162.02	30.06	10		185.83	1.16	
5.609	5-YR	156.44	162.87	6.43	158.71	158.65	0.0004	5.94	2.08	3.31	5.09	5.09	1.59	1,814	2,400	75.6	24.4	164.10	163.20						

Aliso Creek - Alternative 2
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
5.609	10-YR	156.44	163.49	7.05	158.71	158.65	0.0004	6.56	2.39	3.88	5.40	5.55	1.75	2,123	2,900	73.2	26.8	166.40	163.85						
5.609	25-YR	156.44	164.24	7.80	158.71	158.65	0.0004	7.31	2.77	4.57	5.77	6.07	1.94	2,527	3,570	70.8	29.2	169.20	164.65						
5.609	50-YR	156.44	164.76	8.32	158.71	158.65	0.0004	7.83	3.02	5.04	6.00	6.41	2.05	2,815	4,060	69.3	30.7	171.12	165.20						
5.609	100-YR	156.44	165.26	8.82	158.71	158.65	0.0004	8.33	3.27	5.49	6.22	6.72	2.16	3,105	4,560	68.1	31.9	172.97	165.72						
5.609	200-YR	156.44	165.66	9.22	158.71	158.65	0.0004	8.73	3.47	5.85	6.39	6.96	2.24	3,345	4,980	67.2	32.8	174.47	166.15						
5.609	500-YR	156.44	166.12	9.68	158.71	158.65	0.0004	9.19	3.70	6.25	6.59	7.24	2.33	3,627	5,480	66.2	33.8	176.17	166.64						
5.545	2-YR	156.31	161.44	5.13	157.82	158.04	-0.0008	4.51	2.91	2.92	3.83	2.85	1.32	1,058	1,590	66.5	33.5	136.15	161.63	26.54	10		146.57	1.08	
5.545	5-YR	156.31	162.57	6.26	157.82	158.04	-0.0008	5.64	3.91	4.05	4.38	3.41	1.61	1,511	2,400	62.9	37.1	138.28	162.81						
5.545	10-YR	156.31	163.19	6.88	157.82	158.04	-0.0008	6.26	4.44	4.67	4.66	3.68	1.76	1,785	2,900	61.5	38.5	139.45	163.47						
5.545	25-YR	156.31	163.95	7.64	157.82	158.04	-0.0008	7.03	5.09	5.43	5.00	4.00	1.94	2,148	3,570	60.2	39.8	140.90	164.27						
5.545	50-YR	156.31	164.47	8.16	157.82	158.04	-0.0008	7.55	5.52	5.95	5.23	4.20	2.05	2,411	4,060	59.4	40.6	141.88	164.82						
5.545	100-YR	156.31	164.98	8.67	157.82	158.04	-0.0008	8.05	5.94	6.45	5.44	4.39	2.16	2,678	4,560	58.7	41.3	142.83	165.35						
5.545	200-YR	156.31	165.38	9.07	157.82	158.04	-0.0008	8.46	6.25	6.86	5.61	4.54	2.24	2,902	4,980	58.3	41.7	143.72	165.78						
5.545	500-YR	156.31	165.84	9.53	157.82	158.04	-0.0008	8.92	6.60	7.32	5.81	4.69	2.34	3,168	5,480	57.8	42.2	144.83	166.27						
5.477	2-YR	156.61	159.41	2.80	168.76	168.56	0.1097	2.55			9.05			1,590	1,590	100.0	0.0	68.90	160.68	24.61	10		79.76	1.16	
5.477	5-YR	156.61	160.24	3.63	168.76	168.56	0.1097	3.25			10.22			2,400	2,400	100.0	0.0	72.14	161.87						
5.477	10-YR	156.61	160.70	4.09	168.76	168.56	0.1097	3.63			10.82			2,900	2,900	100.0	0.0	73.90	162.52						
5.477	25-YR	156.61	161.27	4.66	168.76	168.56	0.1097	4.09			11.48			3,570	3,570	100.0	0.0	76.13	163.32						
5.477	50-YR	156.61	161.66	5.05	168.76	168.56	0.1097	4.39			11.91			4,060	4,060	100.0	0.0	77.62	163.86						
5.477	100-YR	156.61	162.05	5.44	168.76	168.56	0.1097	4.69			12.28			4,560	4,560	100.0	0.0	79.12	164.39						
5.477	200-YR	156.61	162.35	5.74	168.76	168.56	0.1097	4.92			12.59			4,980	4,980	100.0	0.0	80.30	164.81						
5.477	500-YR	156.61	162.70	6.09	168.76	168.56	0.1097	5.19			12.93			5,480	5,480	100.0	0.0	81.65	165.30						
5.457	2-YR	145.30	149.57	4.27	163.31	163.65	0.0048	3.64			6.04			1,590	1,590	100.0	0.0	72.38	150.13	16.95	10		86.25	1.19	
5.457	5-YR	145.30	150.58	5.28	163.31	163.65	0.0048	4.48			7.09			2,400	2,400	100.0	0.0	75.65	151.36						
5.457	10-YR	145.30	151.14	5.84	163.31	163.65	0.0048	4.92			7.61			2,900	2,900	100.0	0.0	77.44	152.04						
5.457	25-YR	145.30	151.82	6.52	163.31	163.65	0.0048	5.46			8.22			3,570	3,570	100.0	0.0	79.60	152.87						
5.457	50-YR	145.30	152.28	6.98	163.31	163.65	0.0048	5.82			8.61			4,060	4,060	100.0	0.0	81.10	153.43						
5.457	100-YR	145.30	152.73	7.43	163.31	163.65	0.0048	6.16			8.97			4,560	4,560	100.0	0.0	82.61	153.98						
5.457	200-YR	145.30	153.09	7.79	163.31	163.65	0.0048	6.43			9.25			4,980	4,980	100.0	0.0	83.82	154.42						
5.457	500-YR	145.30	153.50	8.20	163.31	163.65	0.0048	6.73			9.56			5,480	5,480	100.0	0.0	85.14	154.92						
5.416	2-YR	144.24	148.35	4.11	160.91	157.88	0.0066	3.04			7.21			1,590	1,590	100.0	0.0	72.52	149.16	17.64	10		87.53	1.21	
5.416	5-YR	144.24	149.44	5.20	160.91	157.88	0.0066	3.92			7.93			2,400	2,400	100.0	0.0	77.09	150.42						
5.416	10-YR	144.24	150.04	5.80	160.91	157.88	0.0066	4.39			8.30			2,900	2,900	100.0	0.0	79.51	151.11						
5.416	25-YR	144.24	150.77	6.53	160.91	157.88	0.0066	4.98			8.75			3,570	3,570	100.0	0.0	81.94	151.96						
5.416	50-YR	144.24	151.27	7.03	160.91	157.88	0.0066	5.37			9.04			4,060	4,060	100.0	0.0	83.58	152.53						
5.416	100-YR	144.24	151.74	7.50	160.91	157.88	0.0066	5.75			9.32			4,560	4,560	100.0	0.0	85.16	153.09						
5.416	200-YR	144.24	152.12	7.88	160.91	157.88	0.0066	6.04			9.54			4,980	4,980	100.0	0.0	86.42	153.54						
5.416	500-YR	144.24	152.55	8.31	160.91	157.88	0.0066	6.36			9.81			5,480	5,480	100.0	0.0	87.81	154.04						
5.355	2-YR	142.12	147.62	5.50	157.74	156.49	0	3.95			4.96			1,590	1,590	100.0	0.0	81.10	148.00	14.75	10		100.02	1.23	

Aliso Creek - Alternative 2
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
5.355	5-YR	142.12	148.79	6.67	157.74	156.49	0	4.91			5.75			2,400	2,400	100.0	0.0	85.03	149.30						
5.355	10-YR	142.12	149.41	7.29	157.74	156.49	0	5.41			6.15			2,900	2,900	100.0	0.0	87.14	150.00						
5.355	25-YR	142.12	150.17	8.05	157.74	156.49	0	6.00			6.63			3,570	3,570	100.0	0.0	89.69	150.85						
5.355	50-YR	142.12	150.68	8.56	157.74	156.49	0	6.40			6.94			4,060	4,060	100.0	0.0	91.43	151.43						
5.355	100-YR	142.12	151.18	9.06	157.74	156.49	0	6.77			7.24			4,560	4,560	100.0	0.0	93.13	151.99						
5.355	200-YR	142.12	151.57	9.45	157.74	156.49	0	7.05			7.47			4,980	4,980	100.0	0.0	94.53	152.43						
5.355	500-YR	142.12	151.99	9.87	157.74	156.49	0	7.36			7.75			5,480	5,480	100.0	0.0	96.07	152.92						
5.293	2-YR	142.13	146.77	4.64	150.33	151.40	0	3.83			5.48			1,590	1,590	100.0	0.0	75.65	147.24	16.30	10		117.07	1.55	
5.293	5-YR	142.13	147.87	5.74	150.33	151.40	0	4.68			6.39			2,400	2,400	100.0	0.0	80.30	148.50						
5.293	10-YR	142.13	148.46	6.33	150.33	151.40	0	5.12			6.85			2,900	2,900	100.0	0.0	82.68	149.19						
5.293	25-YR	142.13	149.17	7.04	150.33	151.40	0	5.65			7.38			3,570	3,570	100.0	0.0	85.53	150.02						
5.293	50-YR	142.13	149.65	7.52	150.33	151.40	0	6.00			7.73			4,060	4,060	100.0	0.0	87.45	150.58						
5.293	100-YR	142.13	150.12	7.99	150.33	151.40	0	6.34			8.06			4,560	4,560	100.0	0.0	89.30	151.12						
5.293	200-YR	142.13	150.49	8.36	150.33	151.40	0	6.63	0.05		8.31	0.73		4,980	4,980	100.0	0.0	96.96	151.56						
5.293	500-YR	142.13	150.93	8.80	150.33	151.40	0	7.00	0.37		8.53	2.72		5,457	5,480	99.6	0.4	114.17	152.05						
5.271		Bridge																							
5.249	2-YR	141.59	146.15	4.56	154.24	154.38	-0.0005	3.87			5.30			1,590	1,590	100.0	0.0	77.66	146.59	17.03	10		95.87	1.23	
5.249	5-YR	141.59	147.19	5.60	154.24	154.38	-0.0005	4.68			6.27			2,400	2,400	100.0	0.0	81.78	147.80						
5.249	10-YR	141.59	147.74	6.15	154.24	154.38	-0.0005	5.10			6.76			2,900	2,900	100.0	0.0	84.10	148.45						
5.249	25-YR	141.59	148.42	6.83	154.24	154.38	-0.0005	5.61			7.33			3,570	3,570	100.0	0.0	86.90	149.26						
5.249	50-YR	141.59	148.88	7.29	154.24	154.38	-0.0005	5.95			7.70			4,060	4,060	100.0	0.0	88.70	149.80						
5.249	100-YR	141.59	149.33	7.74	154.24	154.38	-0.0005	6.27			8.04			4,560	4,560	100.0	0.0	90.45	150.33						
5.249	200-YR	141.59	149.68	8.09	154.24	154.38	-0.0005	6.53			8.31			4,980	4,980	100.0	0.0	91.85	150.75						
5.249	500-YR	141.59	150.09	8.50	154.24	154.38	-0.0005	6.82			8.60			5,480	5,480	100.0	0.0	93.45	151.24						
5.229	2-YR	141.64	145.81	4.17	155.33	149.84	0.0012	3.64			5.61			1,590	1,590	100.0	0.0	77.77	146.30	18.65	10		93.09	1.20	
5.229	5-YR	141.64	146.80	5.16	155.33	149.84	0.0012	4.44			6.63			2,400	2,400	100.0	0.0	81.61	147.48						
5.229	10-YR	141.64	147.33	5.69	155.33	149.84	0.0012	4.86			7.14			2,900	2,900	100.0	0.0	83.60	148.12						
5.229	25-YR	141.64	147.98	6.34	155.33	149.84	0.0012	5.36			7.74			3,570	3,570	100.0	0.0	86.02	148.91						
5.229	50-YR	141.64	148.42	6.78	155.33	149.84	0.0012	5.70			8.13			4,060	4,060	100.0	0.0	87.57	149.45						
5.229	100-YR	141.64	148.84	7.20	155.33	149.84	0.0012	6.03			8.49			4,560	4,560	100.0	0.0	89.07	149.96						
5.229	200-YR	141.64	149.18	7.54	155.33	149.84	0.0012	6.29			8.78			4,980	4,980	100.0	0.0	90.27	150.38						
5.229	500-YR	141.64	149.57	7.93	155.33	149.84	0.0012	6.58			9.09			5,480	5,480	100.0	0.0	91.65	150.86						
5.205	2-YR	141.49	144.31	2.82	154.60	153.40	0.191	2.46			8.95			1,590	1,590	100.0	0.0	72.22	145.56	25.61	10		83.77	1.16	
5.205	5-YR	141.49	145.12	3.63	154.60	153.40	0.191	3.14			10.12			2,400	2,400	100.0	0.0	75.52	146.71						
5.205	10-YR	141.49	145.58	4.09	154.60	153.40	0.191	3.52			10.65			2,900	2,900	100.0	0.0	77.41	147.34						
5.205	25-YR	141.49	146.14	4.65	154.60	153.40	0.191	3.96			11.30			3,570	3,570	100.0	0.0	79.69	148.12						
5.205	50-YR	141.49	146.51	5.02	154.60	153.40	0.191	4.26			11.72			4,060	4,060	100.0	0.0	81.24	148.65						
5.205	100-YR	141.49	146.88	5.39	154.60	153.40	0.191	4.55			12.11			4,560	4,560	100.0	0.0	82.75	149.16						
5.205	200-YR	141.49	147.18	5.69	154.60	153.40	0.191	4.78			12.41			4,980	4,980	100.0	0.0	83.97	149.57						

Aliso Creek - Alternative 2
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
5.205	500-YR	141.49	147.52	6.03	154.60	153.40	0.191	5.04			12.74			5,480	5,480	100.0	0.0	85.36	150.04						
5.194	2-YR	130.09	135.17	5.08	152.53	152.00	-0.0013	4.20			5.07			1,590	1,590	100.0	0.0	74.78	135.57	14.72	10		89.99	1.20	
5.194	5-YR	130.09	136.21	6.12	152.53	152.00	-0.0013	5.05			6.10			2,400	2,400	100.0	0.0	77.89	136.79						
5.194	10-YR	130.09	136.77	6.68	152.53	152.00	-0.0013	5.49			6.64			2,900	2,900	100.0	0.0	79.56	137.45						
5.194	25-YR	130.09	137.38	7.29	152.53	152.00	-0.0013	5.97			7.34			3,570	3,570	100.0	0.0	81.39	138.22						
5.194	50-YR	130.09	137.83	7.74	152.53	152.00	-0.0013	6.32			7.76			4,060	4,060	100.0	0.0	82.75	138.77						
5.194	100-YR	130.09	138.31	8.22	152.53	152.00	-0.0013	6.69			8.09			4,560	4,560	100.0	0.0	84.19	139.33						
5.194	200-YR	130.09	138.74	8.65	152.53	152.00	-0.0013	7.01			8.31			4,980	4,980	100.0	0.0	85.45	139.81						
5.194	500-YR	130.09	139.24	9.15	152.53	152.00	-0.0013	7.39			8.53			5,480	5,480	100.0	0.0	86.97	140.37						
5.169	2-YR	130.26	134.56	4.30	148.34	149.09	0.0014	3.35			6.35			1,590	1,590	100.0	0.0	74.80	135.19	17.40	10		91.93	1.23	
5.169	5-YR	130.26	135.51	5.25	148.34	149.09	0.0014	4.10			7.43			2,400	2,400	100.0	0.0	78.78	136.37						
5.169	10-YR	130.26	136.02	5.76	148.34	149.09	0.0014	4.49			7.97			2,900	2,900	100.0	0.0	81.05	137.01						
5.169	25-YR	130.26	136.51	6.25	148.34	149.09	0.0014	4.87			8.83			3,570	3,570	100.0	0.0	82.99	137.72						
5.169	50-YR	130.26	136.94	6.68	148.34	149.09	0.0014	5.20			9.23			4,060	4,060	100.0	0.0	84.61	138.26						
5.169	100-YR	130.26	137.46	7.20	148.34	149.09	0.0014	5.60			9.41			4,560	4,560	100.0	0.0	86.59	138.83						
5.169	200-YR	130.26	137.95	7.69	148.34	149.09	0.0014	5.96			9.44			4,980	4,980	100.0	0.0	88.46	139.33						
5.169	500-YR	130.26	138.54	8.28	148.34	149.09	0.0014	6.40			9.45			5,480	5,480	100.0	0.0	90.69	139.92						
5.139	2-YR	130.03	132.83	2.80	146.84	154.56	0.0915	2.48			8.99			1,590	1,590	100.0	0.0	71.36	134.08	25.49	10		82.01	1.15	
5.139	5-YR	130.03	133.64	3.61	146.84	154.56	0.0915	3.17			10.16			2,400	2,400	100.0	0.0	74.44	135.24						
5.139	10-YR	130.03	134.09	4.06	146.84	154.56	0.0915	3.55			10.73			2,900	2,900	100.0	0.0	76.16	135.88						
5.139	25-YR	130.03	135.08	5.05	146.84	154.56	0.0915	4.35			10.27			3,570	3,570	100.0	0.0	79.91	136.72						
5.139	50-YR	130.03	135.93	5.90	146.84	154.56	0.0915	5.01			9.74			4,060	4,060	100.0	0.0	83.17	137.41						
5.139	100-YR	130.03	136.70	6.67	146.84	154.56	0.0915	5.59			9.46			4,560	4,560	100.0	0.0	86.15	138.09						
5.139	200-YR	130.03	137.31	7.28	146.84	154.56	0.0915	6.04			9.31			4,980	4,980	100.0	0.0	88.50	138.65						
5.139	500-YR	130.03	137.99	7.96	146.84	154.56	0.0915	6.54			9.20			5,480	5,480	100.0	0.0	91.13	139.30						
5.127	2-YR	124.19	132.35	8.16	145.86	152.76	-0.005	5.70			3.58			1,590	1,590	100.0	0.0	78.03	132.54	9.56	10		103.13	1.32	
5.127	5-YR	124.19	133.96	9.77	145.86	152.76	-0.005	6.89			4.18			2,400	2,400	100.0	0.0	83.46	134.23						
5.127	10-YR	124.19	134.82	10.63	145.86	152.76	-0.005	7.54			4.48			2,900	2,900	100.0	0.0	85.96	135.13						
5.127	25-YR	124.19	135.87	11.68	145.86	152.76	-0.005	8.31			4.83			3,570	3,570	100.0	0.0	88.99	136.23						
5.127	50-YR	124.19	136.58	12.39	145.86	152.76	-0.005	8.83			5.05			4,060	4,060	100.0	0.0	91.07	136.98						
5.127	100-YR	124.19	137.28	13.09	145.86	152.76	-0.005	9.33			5.25			4,560	4,560	100.0	0.0	93.04	137.70						
5.127	200-YR	124.19	137.84	13.65	145.86	152.76	-0.005	9.72			5.41			4,980	4,980	100.0	0.0	94.66	138.29						
5.127	500-YR	124.19	138.48	14.29	145.86	152.76	-0.005	10.16			5.58			5,480	5,480	100.0	0.0	96.58	138.96						
5.106	2-YR	124.73	132.00	7.27	144.91	151.75	-0.002	5.01			5.05			1,590	1,590	100.0	0.0	62.85	132.39	8.65	10		90.83	1.45	
5.106	5-YR	124.73	133.54	8.81	144.91	151.75	-0.002	6.10			5.77			2,400	2,400	100.0	0.0	68.22	134.06						
5.106	10-YR	124.73	134.38	9.65	144.91	151.75	-0.002	6.67			6.12			2,900	2,900	100.0	0.0	71.12	134.96						
5.106	25-YR	124.73	135.39	10.66	144.91	151.75	-0.002	7.39			6.52			3,570	3,570	100.0	0.0	74.12	136.05						
5.106	50-YR	124.73	136.08	11.35	144.91	151.75	-0.002	7.87			6.77			4,060	4,060	100.0	0.0	76.15	136.79						
5.106	100-YR	124.73	136.76	12.03	144.91	151.75	-0.002	8.34			7.00			4,560	4,560	100.0	0.0	78.14	137.52						

Aliso Creek - Alternative 2
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
5.106	200-YR	124.73	137.30	12.57	144.91	151.75	-0.002	8.71			7.17			4,980	4,980	100.0	0.0	79.75	138.10						
5.106	500-YR	124.73	137.93	13.20	144.91	151.75	-0.002	9.13			7.35			5,480	5,480	100.0	0.0	81.58	138.77						
5.051	2-YR	125.31	130.21	4.90	149.04	147.32	0.0059	3.52			6.79			1,590	1,590	100.0	0.0	66.50	130.93	13.57	10		92.25	1.39	
5.051	5-YR	125.31	131.94	6.63	149.04	147.32	0.0059	4.64			6.71			2,400	2,400	100.0	0.0	77.04	132.64						
5.051	10-YR	125.31	132.86	7.55	149.04	147.32	0.0059	5.26			6.73			2,900	2,900	100.0	0.0	81.88	133.56						
5.051	25-YR	125.31	133.97	8.66	149.04	147.32	0.0059	6.06			6.81			3,570	3,570	100.0	0.0	86.60	134.69						
5.051	50-YR	125.31	134.72	9.41	149.04	147.32	0.0059	6.54			6.87			4,060	4,060	100.0	0.0	90.31	135.45						
5.051	100-YR	125.31	135.44	10.13	149.04	147.32	0.0059	7.00			6.94			4,560	4,560	100.0	0.0	93.87	136.19						
5.051	200-YR	125.31	136.01	10.70	149.04	147.32	0.0059	7.36			6.99			4,980	4,980	100.0	0.0	96.71	136.77						
5.051	500-YR	125.31	136.67	11.36	149.04	147.32	0.0059	7.75			7.06			5,480	5,480	100.0	0.0	100.11	137.44						
5.026	2-YR	124.55	128.80	4.25	145.27	145.83	0	3.67			9.85			1,590	1,590	100.0	0.0	43.99	130.31	10.35	10		54.99	1.25	
5.026	5-YR	124.55	129.99	5.44	145.27	145.83	0	4.58			11.15			2,400	2,400	100.0	0.0	46.98	131.92						
5.026	10-YR	124.55	130.63	6.08	145.27	145.83	0	5.06			11.79			2,900	2,900	100.0	0.0	48.61	132.79						
5.026	25-YR	124.55	131.42	6.87	145.27	145.83	0	5.64			12.51			3,570	3,570	100.0	0.0	50.61	133.85						
5.026	50-YR	124.55	131.96	7.41	145.27	145.83	0	6.03			12.97			4,060	4,060	100.0	0.0	51.96	134.58						
5.026	100-YR	124.55	132.49	7.94	145.27	145.83	0	6.38			13.38			4,560	4,560	100.0	0.0	53.39	135.27						
5.026	200-YR	124.55	132.91	8.36	145.27	145.83	0	6.66			13.70			4,980	4,980	100.0	0.0	54.59	135.83						
5.026	500-YR	124.55	133.39	8.84	145.27	145.83	0	6.97			14.05			5,480	5,480	100.0	0.0	55.97	136.46						
5.020		Bridge																							
5.014	2-YR	123.98	128.09	4.11	141.89	141.54	0.2234	3.30			10.37			1,590	1,590	100.0	0.0	46.43	129.76	11.30	9	12.00	59.98	1.29	1.36
5.014	5-YR	123.98	129.21	5.23	141.89	141.54	0.2234	4.12			11.58			2,400	2,400	100.0	0.0	50.32	131.29						
5.014	10-YR	123.98	129.81	5.83	141.89	141.54	0.2234	4.55			12.18			2,900	2,900	100.0	0.0	52.34	132.11						
5.014	25-YR	123.98	130.56	6.58	141.89	141.54	0.2234	5.08			12.82			3,570	3,570	100.0	0.0	54.76	133.12						
5.014	50-YR	123.98	131.05	7.07	141.89	141.54	0.2234	5.42			13.30			4,060	4,060	100.0	0.0	56.31	133.79						
5.014	100-YR	123.98	131.54	7.56	141.89	141.54	0.2234	5.76			13.66			4,560	4,560	100.0	0.0	57.89	134.44						
5.014	200-YR	123.98	131.93	7.95	141.89	141.54	0.2234	6.03			13.97			4,980	4,980	100.0	0.0	59.13	134.96						
5.014	500-YR	123.98	132.38	8.40	141.89	141.54	0.2234	6.33			14.31			5,480	5,480	100.0	0.0	60.54	135.56						
5.011	2-YR	120.25	124.30	4.05	137.32	141.03	0.0238	3.28			10.28			1,590	1,590	100.0	0.0	47.14	125.94	11.64	9		59.43	1.26	
5.011	5-YR	120.25	125.40	5.15	137.32	141.03	0.0238	4.12			11.52			2,400	2,400	100.0	0.0	50.63	127.46						
5.011	10-YR	120.25	126.00	5.75	137.32	141.03	0.0238	4.56			12.12			2,900	2,900	100.0	0.0	52.52	128.28						
5.011	25-YR	120.25	126.71	6.46	137.32	141.03	0.0238	5.08			12.87			3,570	3,570	100.0	0.0	54.60	129.28						
5.011	50-YR	120.25	127.23	6.98	137.32	141.03	0.0238	5.46			13.26			4,060	4,060	100.0	0.0	56.13	129.96						
5.011	100-YR	120.25	127.71	7.46	137.32	141.03	0.0238	5.80			13.67			4,560	4,560	100.0	0.0	57.54	130.61						
5.011	200-YR	120.25	128.43	8.18	137.32	141.03	0.0238	6.30			13.25			4,980	4,980	100.0	0.0	59.66	131.16						
5.011	500-YR	120.25	130.22	9.97	137.32	141.03	0.0238	7.41			11.24			5,480	5,480	100.0	0.0	65.79	132.18						
4.984	2-YR	116.88	122.54	5.66	143.93	139.56	0.01	2.23			8.49			1,590	1,590	100.0	0.0	84.04	123.66	14.85	9		133.71	1.59	
4.984	5-YR	116.88	123.30	6.42	143.93	139.56	0.01	2.67			9.34			2,400	2,400	100.0	0.0	96.30	124.65						
4.984	10-YR	116.88	124.67	7.79	143.93	139.56	0.01	3.69			7.30			2,900	2,900	100.0	0.0	107.85	125.50						

Aliso Creek - Alternative 2
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
4.984	25-YR	116.88	126.39	9.51	143.93	139.56	0.01	4.93			6.02			3,570	3,570	100.0	0.0	120.34	126.95						
4.984	50-YR	116.88	127.49	10.61	143.93	139.56	0.01	5.68			5.56			4,060	4,060	100.0	0.0	128.43	127.97						
4.984	100-YR	116.88	128.65	11.77	143.93	139.56	0.01	6.47			5.16			4,560	4,560	100.0	0.0	136.64	129.06						
4.984	200-YR	116.88	129.80	12.92	143.93	139.56	0.01	7.32			4.77			4,980	4,980	100.0	0.0	142.62	130.15						
4.984	500-YR	116.88	131.18	14.30	143.93	139.56	0.01	8.48			4.40			5,480	5,480	100.0	0.0	146.82	131.48						
4.916	2-YR	113.27	120.80	7.53	141.83	139.86	0.0014	5.20			3.98			1,590	1,590	100.0	0.0	76.98	121.05	10.22	9		100.97	1.31	
4.916	5-YR	113.27	123.09	9.82	141.83	139.86	0.0014	6.86			4.10			2,400	2,400	100.0	0.0	85.43	123.35						
4.916	10-YR	113.27	124.57	11.30	141.83	139.86	0.0014	7.90			4.05			2,900	2,900	100.0	0.0	90.70	124.83						
4.916	25-YR	113.27	126.24	12.97	141.83	139.86	0.0014	9.11			4.10			3,570	3,570	100.0	0.0	95.67	126.50						
4.916	50-YR	113.27	127.33	14.06	141.83	139.86	0.0014	9.90			4.15			4,060	4,060	100.0	0.0	98.81	127.60						
4.916	100-YR	113.27	128.49	15.22	141.83	139.86	0.0014	10.79			4.17			4,560	4,560	100.0	0.0	101.36	128.76						
4.916	200-YR	113.27	129.65	16.38	141.83	139.86	0.0014	11.66			4.11			4,980	4,980	100.0	0.0	104.05	129.91						
4.916	500-YR	113.27	131.05	17.78	141.83	139.86	0.0014	12.73			4.03			5,480	5,480	100.0	0.0	106.88	131.30						
4.854	2-YR	112.80	119.67	6.87	142.86	141.21	0.0027	4.74			6.95			1,590	1,590	100.0	0.0	48.30	120.42	7.03	8	11.13	72.23	1.50	1.73
4.854	5-YR	112.80	121.58	8.78	142.86	141.21	0.0027	5.91			8.62			2,830	2,830	100.0	0.0	55.56	122.74						
4.854	10-YR	112.80	122.79	9.99	142.86	141.21	0.0027	6.67			9.58			3,810	3,810	100.0	0.0	59.66	124.22						
4.854	25-YR	112.80	124.09	11.29	142.86	141.21	0.0027	7.47			10.70			5,120	5,120	100.0	0.0	64.07	125.87						
4.854	50-YR	112.80	124.89	12.09	142.86	141.21	0.0027	7.95			11.49			6,100	6,100	100.0	0.0	66.74	126.94						
4.854	100-YR	112.80	125.72	12.92	142.86	141.21	0.0027	8.46			12.33			7,240	7,240	100.0	0.0	69.40	128.08						
4.854	200-YR	112.80	126.49	13.69	142.86	141.21	0.0027	8.91			13.22			8,480	8,480	100.0	0.0	72.02	129.21						
4.854	500-YR	112.80	127.42	14.62	142.86	141.21	0.0027	9.30			14.23			10,100	10,100	100.0	0.0	76.38	130.56						
4.785	2-YR	111.82	118.61	6.79	139.27	138.18	0.0032	3.74			5.67			1,590	1,590	100.0	0.0	75.05	119.11	11.05	8		112.65	1.50	
4.785	5-YR	111.82	120.90	9.08	139.27	138.18	0.0032	5.21			5.98			2,830	2,830	100.0	0.0	90.83	121.45						
4.785	10-YR	111.82	122.31	10.49	139.27	138.18	0.0032	6.21			6.27			3,810	3,810	100.0	0.0	97.80	122.93						
4.785	25-YR	111.82	123.79	11.97	139.27	138.18	0.0032	7.23			6.77			5,120	5,120	100.0	0.0	104.60	124.50						
4.785	50-YR	111.82	124.69	12.87	139.27	138.18	0.0032	7.83			7.15			6,100	6,100	100.0	0.0	108.95	125.49						
4.785	100-YR	111.82	125.64	13.82	139.27	138.18	0.0032	8.42			7.55			7,240	7,240	100.0	0.0	113.91	126.53						
4.785	200-YR	111.82	126.53	14.71	139.27	138.18	0.0032	8.98			7.98			8,480	8,480	100.0	0.0	118.32	127.52						
4.785	500-YR	111.82	127.62	15.80	139.27	138.18	0.0032	9.67			8.47			10,100	10,100	100.0	0.0	123.33	128.73						
4.717	2-YR	110.68	117.98	7.30	135.33	136.90	0.0034	4.75			4.54			1,590	1,590	100.0	0.0	73.69	118.30	10.09	8		114.32	1.55	
4.717	5-YR	110.68	120.36	9.68	135.33	136.90	0.0034	6.12			5.20			2,830	2,830	100.0	0.0	89.00	120.78						
4.717	10-YR	110.68	121.81	11.13	135.33	136.90	0.0034	7.04			5.61			3,810	3,810	100.0	0.0	96.47	122.30						
4.717	25-YR	110.68	123.28	12.60	135.33	136.90	0.0034	7.96			6.19			5,120	5,120	100.0	0.0	103.92	123.88						
4.717	50-YR	110.68	124.17	13.49	135.33	136.90	0.0034	8.52			6.63			6,100	6,100	100.0	0.0	108.11	124.85						
4.717	100-YR	110.68	125.09	14.41	135.33	136.90	0.0034	9.03			7.08			7,240	7,240	100.0	0.0	113.20	125.87						
4.717	200-YR	110.68	125.95	15.27	135.33	136.90	0.0034	9.45			7.56			8,480	8,480	100.0	0.0	118.75	126.83						
4.717	500-YR	110.68	127.00	16.32	135.33	136.90	0.0034	9.92			8.08			10,100	10,100	100.0	0.0	125.98	128.01						
4.656	2-YR	109.59	117.60	8.01	132.95	136.26	-0.0004	5.25			4.16			1,590	1,590	100.0	0.0	72.78	117.87	9.09	8		113.23	1.56	
4.656	5-YR	109.59	119.97	10.38	132.95	136.26	-0.0004	6.58			4.96			2,830	2,830	100.0	0.0	86.64	120.35						

Aliso Creek - Alternative 2
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
4.656	10-YR	109.59	121.43	11.84	132.95	136.26	-0.0004	7.48			5.43			3,810	3,810	100.0	0.0	93.87	121.88						
4.656	25-YR	109.59	122.86	13.27	132.95	136.26	-0.0004	8.36			6.08			5,120	5,120	100.0	0.0	100.68	123.44						
4.656	50-YR	109.59	123.71	14.12	132.95	136.26	-0.0004	8.89			6.57			6,100	6,100	100.0	0.0	104.57	124.38						
4.656	100-YR	109.59	124.60	15.01	132.95	136.26	-0.0004	9.42			7.08			7,240	7,240	100.0	0.0	108.60	125.37						
4.656	200-YR	109.59	125.39	15.80	132.95	136.26	-0.0004	9.90			7.63			8,480	8,480	100.0	0.0	112.24	126.30						
4.656	500-YR	109.59	126.36	16.77	132.95	136.26	-0.0004	10.34			8.26			10,100	10,100	100.0	0.0	118.23	127.42						
4.595	2-YR	109.73	116.01	6.28	119.03	136.70	0.0041	4.12			7.90			1,590	1,590	100.0	0.0	48.86	116.98	7.78	8		163.53	3.35	
4.595	5-YR	109.73	118.13	8.40	119.03	136.70	0.0041	5.53			9.04			2,830	2,830	100.0	0.0	56.63	119.40						
4.595	10-YR	109.73	119.45	9.72	119.03	136.70	0.0041	6.50	0.34		9.70	1.05		3,795	3,810	99.6	0.4	101.76	120.91						
4.595	25-YR	109.73	121.09	11.36	119.03	136.70	0.0041	8.04	1.49		9.77	2.51		4,789	5,120	93.5	6.5	149.50	122.48						
4.595	50-YR	109.73	122.12	12.39	119.03	136.70	0.0041	9.00	2.29		9.74	3.12		5,386	6,100	88.3	11.7	161.49	123.43						
4.595	100-YR	109.73	123.09	13.36	119.03	136.70	0.0041	9.90	2.75		9.95	3.42		6,094	7,240	84.2	15.8	183.91	124.41						
4.595	200-YR	109.73	124.07	14.34	119.03	136.70	0.0041	10.81	3.64		9.92	3.92		6,688	8,480	78.9	21.1	188.08	125.33						
4.595	500-YR	109.73	125.23	15.50	119.03	136.70	0.0041	11.87	4.68		9.94	4.41		7,427	10,100	73.5	26.5	192.42	126.44						
4.522	2-YR	108.13	114.97	6.84	134.01	120.20	0.0003	4.58			4.59			1,590	1,590	100.0	0.0	75.61	115.29	11.05	8		140.18	1.85	
4.522	5-YR	108.13	116.89	8.76	134.01	120.20	0.0003	6.09			5.68			2,830	2,830	100.0	0.0	81.76	117.39						
4.522	10-YR	108.13	118.11	9.98	134.01	120.20	0.0003	7.00			6.35			3,810	3,810	100.0	0.0	85.64	118.73						
4.522	25-YR	108.13	119.65	11.52	134.01	120.20	0.0003	8.08			6.96			5,120	5,120	100.0	0.0	91.07	120.40						
4.522	50-YR	108.13	120.58	12.45	134.01	120.20	0.0003	8.78		0.19	7.42		0.39	6,100	6,100	100.0	0.0	98.22	121.43						
4.522	100-YR	108.13	121.43	13.30	134.01	120.20	0.0003	9.56		0.42	8.02		0.82	7,231	7,240	99.9	0.1	119.26	122.43						
4.522	200-YR	108.13	122.32	14.19	134.01	120.20	0.0003	10.37		0.95	8.54		1.21	8,419	8,480	99.3	0.7	147.97	123.45						
4.522	500-YR	108.13	123.39	15.26	134.01	120.20	0.0003	11.35		1.75	9.09		1.83	9,892	10,100	97.9	2.1	160.81	124.64						
4.464	2-YR	108.03	112.45	4.42	128.78	118.23	0.006	2.91			9.70			1,590	1,590	100.0	0.0	56.23	113.91	12.72	8		101.21	1.80	
4.464	5-YR	108.03	114.61	6.58	128.78	118.23	0.006	3.68			8.83			2,830	2,830	100.0	0.0	87.06	115.82						
4.464	10-YR	108.03	116.28	8.25	128.78	118.23	0.006	4.85			7.99			3,810	3,810	100.0	0.0	98.42	117.27						
4.464	25-YR	108.03	118.12	10.09	128.78	118.23	0.006	6.22			7.69			5,120	5,120	100.0	0.0	107.13	119.04						
4.464	50-YR	108.03	119.17	11.14	128.78	118.23	0.006	7.22		0.52	7.81		1.01	6,085	6,100	99.8	0.2	135.98	120.11						
4.464	100-YR	108.03	120.08	12.05	128.78	118.23	0.006	8.10		1.09	8.17		1.61	7,164	7,240	99.0	1.0	151.38	121.10						
4.464	200-YR	108.03	121.05	13.02	128.78	118.23	0.006	9.05		1.73	8.43		2.11	8,281	8,480	97.6	2.4	163.44	122.13						
4.464	500-YR	108.03	122.17	14.14	128.78	118.23	0.006	10.13		2.24	8.77		2.44	9,691	10,100	95.9	4.1	183.71	123.32						
4.398	2-YR	105.93	112.36	6.43	119.59	125.00	0.0032	5.14			3.16			1,590	1,590	100.0	0.0	98.06	112.51	15.25	8		119.22	1.22	
4.398	5-YR	105.93	114.70	8.77	119.59	125.00	0.0032	6.96			3.80			2,830	2,830	100.0	0.0	106.81	114.93						
4.398	10-YR	105.93	116.21	10.28	119.59	125.00	0.0032	8.13			4.19			3,810	3,810	100.0	0.0	111.77	116.48						
4.398	25-YR	105.93	117.98	12.05	119.59	125.00	0.0032	9.50			4.61			5,120	5,120	100.0	0.0	116.97	118.31						
4.398	50-YR	105.93	119.01	13.08	119.59	125.00	0.0032	10.29			4.95			6,100	6,100	100.0	0.0	119.84	119.39						
4.398	100-YR	105.93	119.88	13.95	119.59	125.00	0.0032	10.99	0.39		5.41	0.31		7,239	7,240	100.0	0.0	132.24	120.34						
4.398	200-YR	105.93	120.82	14.89	119.59	125.00	0.0032	11.85	0.99		5.83	0.61		8,470	8,480	99.9	0.1	139.84	121.35						
4.398	500-YR	105.93	121.90	15.97	119.59	125.00	0.0032	12.85	1.58		6.35	0.87		10,065	10,100	99.7	0.3	148.66	122.52						
4.330	2-YR	104.78	111.98	7.20	125.86	122.06	0.0007	4.45			3.67			1,590	1,590	100.0	0.0	97.15	112.19	13.49	8		154.2	1.59	

Aliso Creek - Alternative 2

Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
4.330	5-YR	104.78	114.33	9.55	125.86	122.06	0.0007	6.14			4.19			2,830	2,830	100.0	0.0	110.03	114.60						
4.330	10-YR	104.78	115.81	11.03	125.86	122.06	0.0007	6.84			4.50			3,810	3,810	100.0	0.0	123.69	116.13						
4.330	25-YR	104.78	117.59	12.81	125.86	122.06	0.0007	7.52			4.69			5,120	5,120	100.0	0.0	145.17	117.93						
4.330	50-YR	104.78	118.62	13.84	125.86	122.06	0.0007	8.23			4.91			6,100	6,100	100.0	0.0	151.01	118.99						
4.330	100-YR	104.78	119.46	14.68	125.86	122.06	0.0007	8.81			5.28			7,240	7,240	100.0	0.0	155.78	119.89						
4.330	200-YR	104.78	120.37	15.59	125.86	122.06	0.0007	9.27			5.58			8,480	8,480	100.0	0.0	163.82	120.86						
4.330	500-YR	104.78	121.42	16.64	125.86	122.06	0.0007	9.72			5.96			10,100	10,100	100.0	0.0	174.48	121.97						
4.266	2-YR	104.54	111.36	6.82	119.86	121.35	0.0033	3.85			4.41			1,590	1,590	100.0	0.0	93.66	111.67	13.73	8		130.06	1.39	
4.266	5-YR	104.54	113.75	9.21	119.86	121.35	0.0033	5.77			4.76			2,830	2,830	100.0	0.0	103.09	114.10						
4.266	10-YR	104.54	115.19	10.65	119.86	121.35	0.0033	6.87			5.10			3,810	3,810	100.0	0.0	108.78	115.59						
4.266	25-YR	104.54	116.91	12.37	119.86	121.35	0.0033	8.13			5.45			5,120	5,120	100.0	0.0	115.58	117.37						
4.266	50-YR	104.54	117.88	13.34	119.86	121.35	0.0033	8.42			5.78			6,100	6,100	100.0	0.0	125.44	118.40						
4.266	100-YR	104.54	118.61	14.07	119.86	121.35	0.0033	8.38			6.29			7,240	7,240	100.0	0.0	137.49	119.23						
4.266	200-YR	104.54	119.44	14.90	119.86	121.35	0.0033	8.29	0.02		6.67	0.07		8,480	8,480	100.0	0.0	156.38	120.13						
4.266	500-YR	104.54	120.41	15.87	119.86	121.35	0.0033	8.60	0.55		7.02	0.68		10,035	10,100	99.4	0.6	339.12	121.18						
4.199	2-YR	103.37	110.76	7.39	115.52	118.98	0.0011	4.98			4.11			1,590	1,590	100.0	0.0	77.64	111.02	10.51	7	23.00	165	2.13	4.42
4.199	5-YR	103.37	113.11	9.74	115.52	118.98	0.0011	6.60			4.86			2,830	2,830	100.0	0.0	88.18	113.48						
4.199	10-YR	103.37	114.49	11.12	115.52	118.98	0.0011	7.53			5.38			3,810	3,810	100.0	0.0	94.01	114.94						
4.199	25-YR	103.37	116.16	12.79	115.52	118.98	0.0011	8.38	0.32		5.87	0.48		5,119	5,120	100.0	0.0	110.99	116.69						
4.199	50-YR	103.37	117.05	13.68	115.52	118.98	0.0011	8.85	0.74		6.29	0.90		6,089	6,100	99.8	0.2	126.08	117.67						
4.199	100-YR	103.37	117.59	14.22	115.52	118.98	0.0011	9.13	0.86		7.02	1.10		7,214	7,240	99.6	0.4	140.43	118.35						
4.199	200-YR	103.37	118.24	14.87	115.52	118.98	0.0011	9.47	0.94		7.64	1.26		8,419	8,480	99.3	0.7	168.59	119.14						
4.199	500-YR	103.37	119.02	15.65	115.52	118.98	0.0011	9.84	1.05	0.02	8.32	1.46	0.10	9,940	10,100	98.4	1.6	227.07	120.07						
4.138	2-YR	103.02	109.85	6.83	115.09	112.16	0.002	4.41			5.43			1,590	1,590	100.0	0.0	66.46	110.30	9.73	7		256.7	3.86	
4.138	5-YR	103.02	112.01	8.99	115.09	112.16	0.002	5.92		0.06	6.34		0.18	2,830	2,830	100.0	0.0	79.96	112.63						
4.138	10-YR	103.02	113.24	10.22	115.09	112.16	0.002	6.77		0.99	6.99		1.24	3,788	3,810	99.4	0.6	98.26	114.00						
4.138	25-YR	103.02	114.79	11.77	115.09	112.16	0.002	7.21		1.20	7.34		1.55	4,949	5,120	96.7	3.3	185.79	115.60						
4.138	50-YR	103.02	115.80	12.78	115.09	112.16	0.002	7.92	0.36	2.15	7.31	0.67	2.18	5,642	6,100	92.5	7.5	239.21	116.57						
4.138	100-YR	103.02	115.92	12.90	115.09	112.16	0.002	8.04	0.46	2.26	8.50	0.90	2.59	6,658	7,240	92.0	8.0	241.63	116.96						
4.138	200-YR	103.02	116.37	13.35	115.09	112.16	0.002	8.49	0.83	2.68	9.22	1.40	3.03	7,628	8,480	90.0	10.0	248.98	117.57						
4.138	500-YR	103.02	116.89	13.87	115.09	112.16	0.002	9.01	1.14	3.15	10.08	1.81	3.55	8,856	10,100	87.7	12.3	263.44	118.30						
4.067	2-YR	102.26	108.01	5.75	113.00	109.30	0.0033	3.97			7.43			1,590	1,590	100.0	0.0	53.86	108.87	9.37	7		450.05	8.36	
4.067	5-YR	102.26	109.53	7.27	113.00	109.30	0.0033	5.01		0.19	9.39		0.54	2,827	2,830	99.9	0.1	86.82	110.90						
4.067	10-YR	102.26	110.40	8.14	113.00	109.30	0.0033	5.78		0.77	10.58		1.38	3,742	3,810	98.2	1.8	125.78	112.11						
4.067	25-YR	102.26	111.25	8.99	113.00	109.30	0.0033	6.56		1.45	12.03		2.22	4,879	5,120	95.3	4.7	136.77	113.39						
4.067	50-YR	102.26	111.61	9.35	113.00	109.30	0.0033	6.89		1.45	13.47		2.41	5,769	6,100	94.6	5.4	156.72	114.28						
4.067	100-YR	102.26	113.31	11.05	113.00	109.30	0.0033	8.38	0.77	2.18	11.42	1.19	2.36	6,106	7,240	84.3	15.7	441.40	115.02						
4.067	200-YR	102.26	113.81	11.55	113.00	109.30	0.0033	8.88	1.24	2.65	11.87	1.63	2.70	6,731	8,480	79.4	20.6	450.24	115.57						
4.067	500-YR	102.26	114.34	12.08	113.00	109.30	0.0033	9.42	1.78	3.16	12.51	2.09	3.07	7,520	10,100	74.5	25.5	452.30	116.18						

Aliso Creek - Alternative 2
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
4.003	2-YR	101.15	107.43	6.28	110.21	113.80	0.0032	3.69			4.30			1,590	1,590	100.0	0.0	100.28	107.72	15.97	7		502.58	5.01	
4.003	5-YR	101.15	109.16	8.01	110.21	113.80	0.0032	4.70			5.08			2,830	2,830	100.0	0.0	118.59	109.56						
4.003	10-YR	101.15	110.14	8.99	110.21	113.80	0.0032	5.20	0.08		5.61	0.18		3,810	3,810	100.0	0.0	163.04	110.63						
4.003	25-YR	101.15	111.18	10.03	110.21	113.80	0.0032	5.95	0.56		6.16	0.63		5,048	5,120	98.6	1.4	343.90	111.76						
4.003	50-YR	101.15	111.84	10.69	110.21	113.80	0.0032	6.41	0.90		6.43	0.85		5,858	6,100	96.0	4.0	458.94	112.45						
4.003	100-YR	101.15	112.46	11.31	110.21	113.80	0.0032	6.85	1.44		6.66	1.16		6,668	7,240	92.1	7.9	490.02	113.10						
4.003	200-YR	101.15	112.95	11.80	110.21	113.80	0.0032	7.20	1.91		7.02	1.42		7,535	8,480	88.9	11.1	497.98	113.63						
4.003	500-YR	101.15	113.52	12.37	110.21	113.80	0.0032	7.60	2.47		7.43	1.73		8,614	10,100	85.3	14.7	501.41	114.25						
3.937	2-YR	100.04	105.75	5.71	107.90	110.55	0.0034	3.71			7.76			1,590	1,590	100.0	0.0	55.20	106.68	9.67	7		473.5	8.58	
3.937	5-YR	100.04	107.32	7.28	107.90	110.55	0.0034	3.35			8.56			2,830	2,830	100.0	0.0	98.66	108.46						
3.937	10-YR	100.04	108.06	8.02	107.90	110.55	0.0034	3.76	0.19		9.32	0.54		3,805	3,810	99.9	0.1	159.47	109.41						
3.937	25-YR	100.04	108.64	8.60	107.90	110.55	0.0034	4.19	0.65		10.72	1.40		5,059	5,120	98.8	1.2	180.05	110.40						
3.937	50-YR	100.04	109.09	9.05	107.90	110.55	0.0034	4.52	0.94		11.38	1.88		5,955	6,100	97.6	2.4	197.90	111.05						
3.937	100-YR	100.04	109.73	9.69	107.90	110.55	0.0034	4.97	1.14		11.55	2.12		6,927	7,240	95.7	4.3	250.02	111.72						
3.937	200-YR	100.04	110.58	10.54	107.90	110.55	0.0034	5.37	1.32	0.02	11.00	2.18	0.11	7,778	8,480	91.7	8.3	374.73	112.31						
3.937	500-YR	100.04	111.22	11.18	107.90	110.55	0.0034	6.01	1.77	0.26	11.15	2.62	0.73	8,818	10,100	87.3	12.7	449.69	112.92						
3.872	2-YR	98.88	105.38	6.50	107.39	104.48	0.0014	4.69		0.76	4.35		0.65	1,561	1,590	98.2	1.8	134.42	105.67	20.68	7		804.57	5.99	
3.872	5-YR	98.88	106.80	7.92	107.39	104.48	0.0014	5.98		0.85	5.69		0.80	2,673	2,830	94.5	5.5	312.15	107.28						
3.872	10-YR	98.88	107.62	8.74	107.39	104.48	0.0014	6.73	0.55	1.63	6.13	0.59	1.19	3,273	3,810	85.9	14.1	529.53	108.13						
3.872	25-YR	98.88	107.80	8.92	107.39	104.48	0.0014	6.91	0.66	1.80	7.82	0.83	1.60	4,291	5,120	83.8	16.2	555.76	108.60						
3.872	50-YR	98.88	108.31	9.43	107.39	104.48	0.0014	7.42	1.09	2.29	8.07	1.12	1.85	4,749	6,100	77.8	22.2	580.51	109.11						
3.872	100-YR	98.88	108.88	10.00	107.39	104.48	0.0014	7.99	1.53	2.65	8.27	1.38	1.99	5,243	7,240	72.4	27.6	627.39	109.66						
3.872	200-YR	98.88	109.53	10.65	107.39	104.48	0.0014	8.64	2.04	3.19	8.20	1.57	2.12	5,623	8,480	66.3	33.7	663.60	110.24						
3.872	500-YR	98.88	110.28	11.40	107.39	104.48	0.0014	9.39	2.67	3.81	8.20	1.78	2.25	6,104	10,100	60.4	39.6	688.75	110.93						
3.810	2-YR	98.41	104.16	5.75	103.20	104.07	0.0026	4.48	0.42	0.43	6.98	0.72	0.73	1,560	1,590	98.1	1.9	146.02	104.90	25.39	7		814.56	5.58	
3.810	5-YR	98.41	105.54	7.13	103.20	104.07	0.0026	5.86	0.96	1.05	8.19	1.23	1.44	2,393	2,830	84.6	15.4	362.58	106.42						
3.810	10-YR	98.41	105.79	7.38	103.20	104.07	0.0026	6.11	1.03	1.07	10.18	1.56	1.84	3,103	3,810	81.4	18.6	431.30	107.11						
3.810	25-YR	98.41	107.10	8.69	103.20	104.07	0.0026	7.42	1.75	2.30	7.89	1.51	1.81	2,920	5,120	57.0	43.0	722.55	107.67						
3.810	50-YR	98.41	107.85	9.44	103.20	104.07	0.0026	8.17	2.35	3.03	7.21	1.58	1.86	2,940	6,100	48.2	51.8	756.57	108.26						
3.810	100-YR	98.41	108.56	10.15	103.20	104.07	0.0026	8.88	3.02	3.57	6.86	1.68	1.92	3,036	7,240	41.9	58.1	776.24	108.89						
3.810	200-YR	98.41	109.26	10.85	103.20	104.07	0.0026	9.58	3.71	3.92	6.74	1.79	1.86	3,221	8,480	38.0	62.0	809.32	109.56						
3.810	500-YR	98.41	110.06	11.65	103.20	104.07	0.0026	10.38	4.48	4.67	6.60	1.89	1.94	3,418	10,100	33.8	66.2	815.79	110.33						
3.741	2-YR	97.46	102.96	5.50	101.52	102.65	0.0026	4.52	0.77	0.07	6.43	0.99	0.19	1,507	1,590	94.8	5.2	161.71	103.57	29.40	7		631.34	3.90	
3.741	5-YR	97.46	104.48	7.02	101.52	102.65	0.0026	6.04	2.03	0.79	7.35	1.78	0.95	2,300	2,830	81.3	18.7	264.55	105.17						
3.741	10-YR	97.46	105.56	8.10	101.52	102.65	0.0026	7.12	2.52	1.56	5.84	1.46	1.06	2,154	3,810	56.5	43.5	562.47	105.87						
3.741	25-YR	97.46	106.76	9.30	101.52	102.65	0.0026	8.32	3.68	2.26	5.50	1.59	1.15	2,368	5,120	46.2	53.8	600.16	107.00						
3.741	50-YR	97.46	107.53	10.07	101.52	102.65	0.0026	9.09	4.44	2.72	5.41	1.67	1.21	2,546	6,100	41.7	58.3	620.49	107.74						
3.741	100-YR	97.46	108.25	10.79	101.52	102.65	0.0026	9.81	5.14	3.30	5.47	1.77	1.32	2,777	7,240	38.4	61.6	629.79	108.45						
3.741	200-YR	97.46	108.96	11.50	101.52	102.65	0.0026	10.53	5.84	3.94	5.55	1.87	1.44	3,025	8,480	35.7	64.3	634.99	109.17						
3.741	500-YR	97.46	109.77	12.31	101.52	102.65	0.0026	11.33	6.62	4.55	5.73	2.00	1.58	3,362	10,100	33.3	66.7	644.52	109.98						

Aliso Creek - Alternative 2

Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
3.677	2-YR	96.59	102.31	5.72	101.27	101.60	-0.0012	3.87	0.79	0.41	3.93	0.84	0.55	1,575	1,590	99.0	1.0	133.97	102.55	23.42	7		452.56	3.38	
3.677	5-YR	96.59	103.89	7.30	101.27	101.60	-0.0012	5.44	1.75	1.05	4.80	1.40	0.99	2,706	2,830	95.6	4.4	178.53	104.23						
3.677	10-YR	96.59	104.87	8.28	101.27	101.60	-0.0012	6.43	2.32	1.61	5.31	1.67	1.31	3,533	3,810	92.7	7.3	201.10	105.28						
3.677	25-YR	96.59	106.01	9.42	101.27	101.60	-0.0012	7.57	2.93	1.76	5.84	1.92	1.37	4,579	5,120	89.4	10.6	262.98	106.49						
3.677	50-YR	96.59	106.75	10.16	101.27	101.60	-0.0012	8.30	3.33	1.85	6.18	2.08	1.41	5,316	6,100	87.2	12.8	313.17	107.27						
3.677	100-YR	96.59	107.56	10.97	101.27	101.60	-0.0012	9.11	3.79	2.32	6.13	2.11	1.51	5,784	7,240	79.9	20.1	442.48	108.03						
3.677	200-YR	96.59	108.30	11.71	101.27	101.60	-0.0012	9.85	4.34	2.96	6.26	2.24	1.72	6,391	8,480	75.4	24.6	456.82	108.77						
3.677	500-YR	96.59	109.10	12.51	101.27	101.60	-0.0012	10.66	4.89	3.67	6.50	2.39	1.96	7,178	10,100	71.1	28.9	468.69	109.59						
3.657	2-YR	96.72	101.62	4.90	100.68	100.23	-0.0038	4.14	0.78	0.71	6.27	1.02	0.95	1,559	1,590	98.0	2.0	101.87	102.22	20.79	7		295.37	2.90	
3.657	5-YR	96.72	102.86	6.14	100.68	100.23	-0.0038	5.38	1.71	1.22	8.23	1.89	1.51	2,661	2,830	94.0	6.0	129.10	103.85						
3.657	10-YR	96.72	103.56	6.84	100.68	100.23	-0.0038	6.08	2.19	1.49	9.55	2.38	1.85	3,487	3,810	91.5	8.5	147.34	104.86						
3.657	25-YR	96.72	104.31	7.59	100.68	100.23	-0.0038	6.83	2.67	1.42	11.10	2.92	1.93	4,557	5,120	89.0	11.0	196.38	106.02						
3.657	50-YR	96.72	104.66	7.94	100.68	100.23	-0.0038	7.18	2.88	1.50	12.38	3.32	2.16	5,338	6,100	87.5	12.5	217.79	106.75						
3.657	100-YR	96.72	105.27	8.55	100.68	100.23	-0.0038	7.79	3.26	1.81	13.05	3.59	2.44	6,110	7,240	84.4	15.6	245.79	107.52						
3.657	200-YR	96.72	105.84	9.12	100.68	100.23	-0.0038	8.37	3.60	2.13	13.74	3.85	2.73	6,904	8,480	81.4	18.6	268.09	108.26						
3.657	500-YR	96.72	106.70	9.98	100.68	100.23	-0.0038	9.22	4.09	2.63	14.03	4.01	3.01	7,776	10,100	77.0	23.0	299.71	109.10						
3.639	2-YR	97.08	100.63	3.55	100.39	99.62	0.0001	2.96	0.44	0.56	8.27	1.13	1.34	1,561	1,590	98.2	1.8	113.59	101.67	32.00	7		228.64	2.01	
3.639	5-YR	97.08	101.65	4.57	100.39	99.62	0.0001	3.98	1.33	1.12	10.38	2.45	2.19	2,635	2,830	93.1	6.9	131.31	103.22						
3.639	10-YR	97.08	102.42	5.34	100.39	99.62	0.0001	4.74	1.94	1.39	11.29	3.04	2.45	3,416	3,810	89.7	10.3	150.24	104.20						
3.639	25-YR	97.08	103.24	6.16	100.39	99.62	0.0001	5.56	2.55	1.62	12.44	3.61	2.68	4,417	5,120	86.3	13.7	176.72	105.33						
3.639	50-YR	97.08	104.09	7.01	100.39	99.62	0.0001	6.42	3.16	1.69	12.33	3.75	2.49	5,050	6,100	82.8	17.2	226.49	106.07						
3.639	100-YR	97.08	104.64	7.56	100.39	99.62	0.0001	6.97	3.53	2.07	13.01	4.03	2.84	5,783	7,240	79.9	20.1	240.14	106.78						
3.639	200-YR	97.08	105.20	8.12	100.39	99.62	0.0001	7.52	3.90	2.44	13.63	4.28	3.15	6,542	8,480	77.1	22.9	253.63	107.47						
3.639	500-YR	97.08	105.85	8.77	100.39	99.62	0.0001	8.18	4.32	2.86	14.36	4.57	3.49	7,497	10,100	74.2	25.8	269.56	108.29						
3.621	2-YR	97.07	99.82	2.75	98.77	99.32	0.0146	2.42	0.49	0.92	7.73	1.29	1.97	1,487	1,590	93.5	6.5	189.84	100.69	69.03	7		259.3	1.37	
3.621	5-YR	97.07	100.69	3.62	98.77	99.32	0.0146	3.30	1.22	1.44	9.22	2.31	2.58	2,414	2,830	85.3	14.7	215.01	101.83						
3.621	10-YR	97.07	101.25	4.18	98.77	99.32	0.0146	3.85	1.69	1.73	10.11	2.84	2.88	3,090	3,810	81.1	18.9	227.68	102.56						
3.621	25-YR	97.07	101.82	4.75	98.77	99.32	0.0146	4.43	2.18	2.01	11.30	3.43	3.25	3,969	5,120	77.5	22.5	239.75	103.40						
3.621	50-YR	97.07	102.29	5.22	98.77	99.32	0.0146	4.90	2.50	2.23	11.81	3.68	3.39	4,593	6,100	75.3	24.7	253.76	103.97						
3.621	100-YR	97.07	102.71	5.64	98.77	99.32	0.0146	5.31	2.84	2.38	12.60	4.05	3.59	5,313	7,240	73.4	26.6	263.73	104.58						
3.621	200-YR	97.07	103.20	6.13	98.77	99.32	0.0146	5.80	3.23	2.59	13.14	4.33	3.73	6,051	8,480	71.4	28.6	275.98	105.19						
3.621	500-YR	97.07	103.78	6.71	98.77	99.32	0.0146	6.39	3.70	2.93	13.76	4.66	3.98	6,973	10,100	69.0	31.0	286.78	105.91						
3.613	2-YR	96.48	98.71	2.23	98.96	101.04	0.2193	1.59			7.20			1,590	1,590	100.0	0.0	138.65	99.51	62.17	6	24.44	241.96	1.75	1.45
3.613	5-YR	96.48	99.51	3.03	98.96	101.04	0.2193	2.23	0.35		8.38	0.45		2,821	2,830	99.7	0.3	210.25	100.59						
3.613	10-YR	96.48	100.03	3.55	98.96	101.04	0.2193	2.65	0.80		9.02	0.74		3,769	3,810	98.9	1.1	227.02	101.28						
3.613	25-YR	96.48	100.59	4.11	98.96	101.04	0.2193	3.10	1.30		9.87	1.00		5,024	5,120	98.1	1.9	237.76	102.08						
3.613	50-YR	96.48	100.99	4.51	98.96	101.04	0.2193	3.46	1.63		10.39	1.14		5,958	6,100	97.7	2.3	242.51	102.62						
3.613	100-YR	96.48	101.39	4.91	98.96	101.04	0.2193	3.85	1.95	0.14	11.01	1.26	0.22	7,042	7,240	97.3	2.7	256.52	103.22						
3.613	200-YR	96.48	101.79	5.31	98.96	101.04	0.2193	4.25	2.25	0.44	11.63	1.37	0.46	8,217	8,480	96.9	3.1	265.00	103.82						

Aliso Creek - Alternative 2
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
3.613	500-YR	96.48	102.30	5.82	98.96	101.04	0.2193	4.77	2.63	0.76	12.29	1.49	0.65	9,741	10,100	96.4	3.6	275.26	104.57						
3.604	2-YR	85.56	89.27	3.71	101.42	103.61	0.0375	2.81			9.52			1,590	1,590	100.0	0.0	59.44	90.67	16.02	6		82.79	1.39	
3.604	5-YR	85.56	90.67	5.11	101.42	103.61	0.0375	3.77			11.03			2,830	2,830	100.0	0.0	68.13	92.56						
3.604	10-YR	85.56	91.58	6.02	101.42	103.61	0.0375	4.36			11.86			3,810	3,810	100.0	0.0	73.76	93.77						
3.604	25-YR	85.56	92.64	7.08	101.42	103.61	0.0375	5.00			12.72			5,120	5,120	100.0	0.0	80.43	95.15						
3.604	50-YR	85.56	93.35	7.79	101.42	103.61	0.0375	5.41			13.23			6,100	6,100	100.0	0.0	85.30	96.06						
3.604	100-YR	85.56	94.09	8.53	101.42	103.61	0.0375	5.83			13.74			7,240	7,240	100.0	0.0	90.37	97.03						
3.604	200-YR	85.56	94.84	9.28	101.42	103.61	0.0375	6.25			14.23			8,480	8,480	100.0	0.0	95.32	97.98						
3.604	500-YR	85.56	95.72	10.16	101.42	103.61	0.0375	6.74			14.79			10,100	10,100	100.0	0.0	101.24	99.12						
3.601	2-YR	84.90	88.86	3.96	99.91	102.84	0.2888	2.83			9.62			1,590	1,590	100.0	0.0	58.31	90.29	14.72	6		82.97	1.42	
3.601	5-YR	84.90	90.30	5.40	99.91	102.84	0.2888	3.79			11.05			2,830	2,830	100.0	0.0	67.65	92.20						
3.601	10-YR	84.90	91.23	6.33	99.91	102.84	0.2888	4.34			11.83			3,810	3,810	100.0	0.0	74.14	93.40						
3.601	25-YR	84.90	92.27	7.37	99.91	102.84	0.2888	5.03			12.73			5,120	5,120	100.0	0.0	79.94	94.79						
3.601	50-YR	84.90	92.96	8.06	99.91	102.84	0.2888	5.48			13.29			6,100	6,100	100.0	0.0	83.76	95.71						
3.601	100-YR	84.90	93.72	8.82	99.91	102.84	0.2888	5.91			13.80			7,240	7,240	100.0	0.0	88.79	96.68						
3.601	200-YR	84.90	94.46	9.56	99.91	102.84	0.2888	6.36			14.34			8,480	8,480	100.0	0.0	93.07	97.65						
3.601	500-YR	84.90	95.34	10.44	99.91	102.84	0.2888	6.90			14.95			10,100	10,100	100.0	0.0	97.91	98.81						
3.594	2-YR	74.10	78.28	4.18	78.60	78.60	0.004	3.49			6.07			1,590	1,590	100.0	0.0	75.11	78.86	17.97	6		100.16	1.33	
3.594	5-YR	74.10	79.79	5.69	78.60	78.60	0.004	4.90	0.60	0.60	7.48	1.79	1.79	2,822	2,830	99.7	0.3	84.15	80.66						
3.594	10-YR	74.10	80.74	6.64	78.60	78.60	0.004	5.85	1.07	1.07	8.37	2.64	2.64	3,774	3,810	99.0	1.0	89.85	81.82						
3.594	25-YR	74.10	81.71	7.61	78.60	78.60	0.004	6.82	1.55	1.55	9.56	3.49	3.49	5,019	5,120	98.0	2.0	95.64	83.10						
3.594	50-YR	74.10	82.67	8.57	78.60	78.60	0.004	7.78	2.03	2.03	9.85	3.94	3.94	5,904	6,100	96.8	3.2	101.42	84.14						
3.594	100-YR	74.10	83.46	9.36	78.60	78.60	0.004	8.57	2.43	2.43	10.49	4.43	4.43	6,926	7,240	95.7	4.3	106.18	85.11						
3.594	200-YR	74.10	84.31	10.21	78.60	78.60	0.004	9.42	2.85	2.85	11.04	4.87	4.87	8,004	8,480	94.4	5.6	111.24	86.11						
3.594	500-YR	74.10	85.33	11.23	78.60	78.60	0.004	10.45	3.37	3.37	11.65	5.36	5.36	9,371	10,100	92.8	7.2	117.41	87.32						
3.555	2-YR	73.28	77.48	4.20	78.27	77.78	0.004	3.50			6.05			1,590	1,590	100.0	0.0	75.19	78.05	17.90	6		109.41	1.46	
3.555	5-YR	73.28	79.07	5.79	78.27	77.78	0.004	4.92	0.64	0.64	7.27	1.28	1.83	2,810	2,830	99.3	0.7	101.57	79.88						
3.555	10-YR	73.28	80.09	6.81	78.27	77.78	0.004	5.95	1.67	1.16	7.96	2.20	2.61	3,718	3,810	97.6	2.4	104.65	81.06						
3.555	25-YR	73.28	81.04	7.76	78.27	77.78	0.004	6.90	2.62	1.63	9.07	3.03	3.39	4,913	5,120	96.0	4.0	107.50	82.28						
3.555	50-YR	73.28	82.18	8.90	78.27	77.78	0.004	8.03	3.75	2.20	9.11	3.47	3.75	5,740	6,100	94.1	5.9	110.90	83.40						
3.555	100-YR	73.28	83.00	9.72	78.27	77.78	0.004	8.86	4.58	2.61	9.67	3.93	4.19	6,722	7,240	92.9	7.1	113.37	84.37						
3.555	200-YR	73.28	83.88	10.60	78.27	77.78	0.004	9.74	5.46	3.05	10.16	4.35	4.59	7,767	8,480	91.6	8.4	116.02	85.38						
3.555	500-YR	73.28	84.94	11.66	78.27	77.78	0.004	10.80	6.52	3.58	10.74	4.83	5.04	9,107	10,100	90.2	9.8	119.20	86.60						
3.382	2-YR	69.64	73.86	4.22	74.14	74.14	0.004	3.51			6.13			1,620	1,620	100.0	0.0	75.31	74.44	17.85	6		100.64	1.34	
3.382	5-YR	69.64	75.47	5.83	74.14	74.14	0.004	5.04	0.67	0.67	7.80	1.98	1.98	3,029	3,040	99.7	0.3	84.99	76.41						
3.382	10-YR	69.64	76.50	6.86	74.14	74.14	0.004	6.07	1.18	1.18	8.82	2.89	2.89	4,122	4,170	98.8	1.2	91.14	77.69						
3.382	25-YR	69.64	77.39	7.75	74.14	74.14	0.004	6.96	1.62	1.62	9.68	3.59	3.59	5,186	5,300	97.9	2.1	96.49	78.82						
3.382	50-YR	69.64	78.50	8.86	74.14	74.14	0.004	8.08	2.18	2.18	10.68	4.36	4.36	6,641	6,890	96.4	3.6	103.19	80.22						
3.382	100-YR	69.64	79.28	9.64	74.14	74.14	0.004	8.85	2.57	2.57	11.35	4.87	4.87	7,735	8,120	95.3	4.7	107.83	81.20						

Aliso Creek - Alternative 2
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
3.382	200-YR	69.64	80.10	10.46	74.14	74.14	0.004	9.67	2.98	2.98	12.04	5.37	5.37	8,968	9,540	94.0	6.0	112.76	82.24						
3.382	500-YR	69.64	81.09	11.45	74.14	74.14	0.004	10.66	3.47	3.47	12.84	5.95	5.95	10,539	11,400	92.5	7.5	118.67	83.50						
3.214	2-YR	66.48	70.69	4.21	70.98	70.98	0.004	3.51			6.14			1,620	1,620	100.0	0.0	75.28	71.28	17.88	5C	17.88	100.51	1.34	1.34
3.214	5-YR	66.48	72.31	5.83	70.98	70.98	0.004	5.04	0.67	0.67	7.80	1.98	1.98	3,029	3,040	99.7	0.3	84.99	73.25						
3.214	10-YR	66.48	73.33	6.85	70.98	70.98	0.004	6.06	1.18	1.18	8.83	2.89	2.89	4,122	4,170	98.8	1.2	91.11	74.53						
3.214	25-YR	66.48	74.23	7.75	70.98	70.98	0.004	6.96	1.63	1.63	9.67	3.59	3.59	5,186	5,300	97.9	2.1	96.51	75.66						
3.214	50-YR	66.48	75.34	8.86	70.98	70.98	0.004	8.08	2.18	2.19	10.68	4.36	4.37	6,641	6,890	96.4	3.6	103.13	77.06						
3.214	100-YR	66.48	76.12	9.64	70.98	70.98	0.004	8.85	2.57	2.61	11.35	4.87	4.91	7,734	8,120	95.2	4.8	107.54	78.04						
3.214	200-YR	66.48	76.94	10.46	70.98	70.98	0.004	9.67	2.98	3.04	12.04	5.37	5.43	8,967	9,540	94.0	6.0	112.22	79.08						
3.214	500-YR	66.48	77.92	11.44	70.98	70.98	0.004	10.66	3.47	3.56	12.85	5.95	6.03	10,541	11,400	92.5	7.5	117.83	80.34						
3.095	2-YR	63.95	68.17	4.22	68.45	68.45	0.004	3.51			6.12			1,620	1,620	100.0	0.0	75.34	68.75	17.85	5B	17.85	100.64	1.34	1.34
3.095	5-YR	63.95	69.78	5.83	68.45	68.45	0.004	5.04	0.67	0.67	7.80	1.98	1.98	3,029	3,040	99.7	0.3	84.99	70.72						
3.095	10-YR	63.95	70.81	6.86	68.45	68.45	0.004	6.07	1.18	1.18	8.82	2.89	2.89	4,122	4,170	98.8	1.2	91.15	72.00						
3.095	25-YR	63.95	71.69	7.74	68.45	68.45	0.004	6.96	1.62	1.62	9.68	3.59	3.59	5,187	5,300	97.9	2.1	96.47	73.12						
3.095	50-YR	63.95	72.82	8.87	68.45	68.45	0.004	8.08	2.18	2.18	10.68	4.36	4.36	6,640	6,890	96.4	3.6	103.20	74.53						
3.095	100-YR	63.95	73.59	9.64	68.45	68.45	0.004	8.85	2.57	2.57	11.34	4.86	4.86	7,734	8,120	95.2	4.8	107.86	75.51						
3.095	200-YR	63.95	74.42	10.47	68.45	68.45	0.004	9.68	2.98	2.98	12.03	5.37	5.37	8,966	9,540	94.0	6.0	112.81	76.56						
3.095	500-YR	63.95	75.40	11.45	68.45	68.45	0.004	10.66	3.48	3.48	12.84	5.94	5.94	10,539	11,400	92.4	7.6	118.70	77.81						
2.945	2-YR	60.79	65.01	4.22	65.29	65.29	0.004	3.51			6.13			1,620	1,620	100.0	0.0	75.30	65.59	17.84	5B		100.64	1.34	
2.945	5-YR	60.79	66.63	5.84	65.29	65.29	0.004	5.05	0.67	0.67	7.79	1.98	1.98	3,029	3,040	99.7	0.3	85.03	67.57						
2.945	10-YR	60.79	67.66	6.87	65.29	65.29	0.004	6.08	1.19	1.19	8.80	2.89	2.89	4,121	4,170	98.8	1.2	91.23	68.85						
2.945	25-YR	60.79	68.73	7.94	65.29	65.29	0.004	7.15	1.72	1.72	9.40	3.55	3.55	5,174	5,300	97.6	2.4	97.64	70.07						
2.945	50-YR	60.79	69.72	8.93	65.29	65.29	0.004	8.14	2.21	2.21	10.58	4.34	4.34	6,634	6,890	96.3	3.7	103.58	71.41						
2.945	100-YR	60.79	70.49	9.70	65.29	65.29	0.004	8.91	2.60	2.60	11.26	4.84	4.84	7,727	8,120	95.2	4.8	108.19	72.38						
2.945	200-YR	60.79	71.24	10.45	65.29	65.29	0.004	9.66	2.98	2.98	12.05	5.37	5.37	8,969	9,540	94.0	6.0	112.72	73.39						
2.945	500-YR	60.79	72.24	11.45	65.29	65.29	0.004	10.67	3.48	3.48	12.83	5.94	5.94	10,538	11,400	92.4	7.6	118.72	74.65						
2.864	2-YR	59.08	63.30	4.22	63.58	63.58	0.004	3.51			6.12			1,620	1,620	100.0	0.0	75.33	63.88	17.85	5B		100.64	1.34	
2.864	5-YR	59.08	64.98	5.90	63.58	63.58	0.004	5.11	0.70	0.70	7.69	2.00	2.00	3,028	3,040	99.6	0.4	85.40	65.90						
2.864	10-YR	59.08	66.02	6.94	63.58	63.58	0.004	6.15	1.22	1.22	8.69	2.89	2.89	4,118	4,170	98.8	1.2	91.66	67.18						
2.864	25-YR	59.08	67.44	8.36	63.58	63.58	0.004	7.58	1.93	1.93	8.82	3.47	3.47	5,145	5,300	97.1	2.9	100.18	68.62						
2.864	50-YR	59.08	68.16	9.08	63.58	63.58	0.004	8.30	2.29	2.29	10.36	4.30	4.30	6,619	6,890	96.1	3.9	104.50	69.78						
2.864	100-YR	59.08	68.91	9.83	63.58	63.58	0.004	9.04	2.66	2.66	11.08	4.80	4.80	7,712	8,120	95.0	5.0	108.96	70.74						
2.864	200-YR	59.08	69.51	10.43	63.58	63.58	0.004	9.64	2.97	2.97	12.08	5.38	5.38	8,972	9,540	94.0	6.0	112.59	71.67						
2.864	500-YR	59.08	70.55	11.47	63.58	63.58	0.004	10.68	3.49	3.49	12.81	5.93	5.93	10,535	11,400	92.4	7.6	118.83	72.95						
2.784	2-YR	57.39	61.61	4.22	61.89	61.89	0.004	3.51			6.13			1,620	1,620	100.0	0.0	75.31	62.19	17.85	5B		100.63	1.34	
2.784	5-YR	57.39	63.29	5.90	61.89	61.89	0.004	5.11	0.70	0.70	7.85	2.04	2.04	3,088	3,100	99.6	0.4	85.37	64.24						
2.784	10-YR	57.39	64.33	6.94	61.89	61.89	0.004	6.15	1.22	1.22	8.87	2.95	2.95	4,197	4,250	98.8	1.2	91.62	65.53						
2.784	25-YR	57.39	65.61	8.22	61.89	61.89	0.004	7.43	1.86	1.86	10.03	3.89	3.89	5,738	5,900	97.3	2.7	99.31	67.13						
2.784	50-YR	57.39	66.43	9.04	61.89	61.89	0.004	8.25	2.27	2.27	10.74	4.44	4.44	6,825	7,100	96.1	3.9	104.24	68.17						

Aliso Creek - Alternative 2
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
2.784	100-YR	57.39	67.19	9.80	61.89	61.89	0.004	9.01	2.65	2.65	11.37	4.92	4.92	7,887	8,300	95.0	5.0	108.77	69.11						
2.784	200-YR	57.39	67.87	10.48	61.89	61.89	0.004	9.69	3.00	2.99	11.93	5.33	5.32	8,899	9,470	94.0	6.0	112.83	69.97						
2.784	500-YR	57.39	68.91	11.52	61.89	61.89	0.004	10.73	3.53	3.51	12.74	5.93	5.91	10,526	11,400	92.3	7.7	118.95	71.28						
2.713	2-YR	55.89	60.12	4.23	60.39	60.39	0.004	3.52			6.11			1,620	1,620	100.0	0.0	75.39	60.70	17.82	5A	17.53	100.76	1.34	1.34
2.713	5-YR	55.89	61.82	5.93	60.39	60.39	0.004	5.14	0.72	0.72	7.80	2.05	2.05	3,087	3,100	99.6	0.4	85.60	62.76						
2.713	10-YR	55.89	62.88	6.99	60.39	60.39	0.004	6.20	1.25	1.25	8.79	2.95	2.95	4,195	4,250	98.7	1.3	91.94	64.07						
2.713	25-YR	55.89	64.18	8.29	60.39	60.39	0.004	7.50	1.89	1.89	9.93	3.88	3.88	5,733	5,900	97.2	2.8	99.74	65.67						
2.713	50-YR	55.89	65.01	9.12	60.39	60.39	0.004	8.33	2.31	2.31	10.62	4.42	4.42	6,817	7,100	96.0	4.0	104.73	66.71						
2.713	100-YR	55.89	65.77	9.88	60.39	60.39	0.004	9.10	2.69	2.69	11.24	4.88	4.88	7,875	8,300	94.9	5.1	109.31	67.66						
2.713	200-YR	55.89	66.47	10.58	60.39	60.39	0.004	9.79	3.04	3.04	11.79	5.28	5.28	8,885	9,470	93.8	6.2	113.45	68.52						
2.713	500-YR	55.89	67.51	11.62	60.39	60.39	0.004	10.84	3.56	3.56	12.59	5.86	5.86	10,507	11,400	92.2	7.8	119.75	69.83						
2.634	2-YR	54.23	58.64	4.41	58.73	58.73	0.0034	3.65			5.81			1,620	1,620	100.0	0.0	76.45	59.16	17.34	5A		102.92	1.35	
2.634	5-YR	54.23	60.36	6.13	58.73	58.73	0.0034	5.34	0.81	0.81	7.50	2.09	2.09	3,083	3,100	99.5	0.5	86.76	61.23						
2.634	10-YR	54.23	61.43	7.20	58.73	58.73	0.0034	6.41	1.35	1.35	8.48	2.93	2.93	4,186	4,250	98.5	1.5	93.20	62.53						
2.634	25-YR	54.23	62.75	8.52	58.73	58.73	0.0034	7.73	2.01	2.01	9.61	3.82	3.82	5,715	5,900	96.9	3.1	101.09	64.14						
2.634	50-YR	54.23	63.59	9.36	58.73	58.73	0.0034	8.57	2.43	2.43	10.30	4.34	4.34	6,793	7,100	95.7	4.3	106.13	65.17						
2.634	100-YR	54.23	64.35	10.12	58.73	58.73	0.0034	9.34	2.81	2.81	10.91	4.79	4.79	7,845	8,300	94.5	5.5	110.74	66.12						
2.634	200-YR	54.23	65.05	10.82	58.73	58.73	0.0034	10.03	3.16	3.16	11.46	5.19	5.19	8,849	9,470	93.4	6.6	114.92	66.98						
2.634	500-YR	54.23	66.11	11.88	58.73	58.73	0.0034	11.09	3.69	3.69	12.25	5.75	5.75	10,461	11,400	91.8	8.2	121.26	68.29						
2.509	2-YR	51.95	56.32	4.37	56.45	56.45	0.0035	3.62			5.87			1,620	1,620	100.0	0.0	76.24	56.86	17.45	5A		102.43	1.34	
2.509	5-YR	51.95	58.02	6.07	56.45	56.45	0.0035	5.28	0.79	0.79	7.58	2.08	2.08	3,085	3,100	99.5	0.5	86.43	58.91						
2.509	10-YR	51.95	59.06	7.11	56.45	56.45	0.0035	6.32	1.31	1.31	8.61	2.94	2.94	4,190	4,250	98.6	1.4	92.66	60.20						
2.509	25-YR	51.95	60.33	8.38	56.45	56.45	0.0035	7.59	1.94	1.94	9.79	3.86	3.86	5,726	5,900	97.0	3.0	100.29	61.78						
2.509	50-YR	51.95	61.14	9.19	56.45	56.45	0.0035	8.40	2.35	2.35	10.53	4.40	4.40	6,810	7,100	95.9	4.1	105.12	62.80						
2.509	100-YR	51.95	61.88	9.93	56.45	56.45	0.0035	9.14	2.72	2.73	11.18	4.87	4.89	7,869	8,300	94.8	5.2	109.43	63.74						
2.509	200-YR	51.95	62.56	10.61	56.45	56.45	0.0035	9.82	3.06	3.08	11.75	5.28	5.30	8,880	9,470	93.8	6.2	113.34	64.59						
2.509	500-YR	51.95	63.58	11.63	56.45	56.45	0.0035	10.84	3.58	3.61	12.58	5.87	5.90	10,505	11,400	92.2	7.8	119.29	65.89						
2.412	2-YR	50.14	54.45	4.31	54.64	54.64	0.0037	3.58			5.97			1,620	1,620	100.0	0.0	75.87	55.00	17.60	4B	17.51	113.51	1.50	1.38
2.412	5-YR	50.14	56.15	6.01	54.64	54.64	0.0037	5.22	0.76	0.76	7.66	2.12	2.06	3,079	3,100	99.3	0.7	90.38	57.06						
2.412	10-YR	50.14	57.21	7.07	54.64	54.64	0.0037	6.29	1.29	1.29	8.60	3.00	2.92	4,163	4,250	97.9	2.1	99.82	58.34						
2.412	25-YR	50.14	58.54	8.40	54.64	54.64	0.0037	7.61	1.95	1.95	9.62	3.89	3.79	5,640	5,900	95.6	4.4	111.57	59.93						
2.412	50-YR	50.14	59.41	9.27	54.64	54.64	0.0037	8.48	2.38	2.38	10.20	4.39	4.28	6,662	7,100	93.8	6.2	119.24	60.94						
2.412	100-YR	50.14	60.21	10.07	54.64	54.64	0.0037	9.28	2.79	2.79	10.69	4.81	4.69	7,644	8,300	92.1	7.9	126.38	61.88						
2.412	200-YR	50.14	60.95	10.81	54.64	54.64	0.0037	10.02	3.15	2.82	11.13	5.17	4.69	8,586	9,470	90.7	9.3	135.26	62.73						
2.412	500-YR	50.14	62.09	11.95	54.64	54.64	0.0037	11.16	3.73	2.66	11.71	5.65	4.47	10,069	11,400	88.3	11.7	155.28	64.02						
2.334	2-YR	48.63	52.93	4.30	53.13	53.13	0.0037	3.57			5.99			1,620	1,620	100.0	0.0	75.81	53.49	17.63	4B		101.61	1.34	
2.334	5-YR	48.63	54.63	6.00	53.13	53.13	0.0037	5.21	0.75	0.75	7.69	2.06	2.06	3,086	3,100	99.6	0.4	85.99	55.54						
2.334	10-YR	48.63	55.69	7.06	53.13	53.13	0.0037	6.27	1.28	1.28	8.69	2.94	2.94	4,192	4,250	98.6	1.4	92.34	56.84						
2.334	25-YR	48.63	56.98	8.35	53.13	53.13	0.0037	7.56	1.92	1.92	9.84	3.86	3.86	5,728	5,900	97.1	2.9	100.10	58.45						

Aliso Creek - Alternative 2

Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
2.334	50-YR	48.63	57.81	9.18	53.13	53.13	0.0037	8.39	2.34	2.34	10.54	4.40	4.40	6,811	7,100	95.9	4.1	105.09	59.48						
2.334	100-YR	48.63	58.57	9.94	53.13	53.13	0.0037	9.15	2.72	2.72	11.16	4.86	4.86	7,868	8,300	94.8	5.2	109.66	60.43						
2.334	200-YR	48.63	59.26	10.63	53.13	53.13	0.0037	9.85	3.00	3.07	11.71	5.19	5.26	8,880	9,470	93.8	6.2	114.26	61.29						
2.334	500-YR	48.63	60.32	11.69	53.13	53.13	0.0037	10.90	3.16	3.59	12.53	5.40	5.85	10,516	11,400	92.2	7.8	123.82	62.61						
2.243	2-YR	46.83	51.17	4.34	51.33	51.33	0.0036	3.60			5.93			1,620	1,620	100.0	0.0	76.03	51.71	17.52	4B		110.07	1.45	
2.243	5-YR	46.83	52.87	6.04	51.33	51.33	0.0036	5.26	0.77	0.77	7.62	2.08	2.08	3,085	3,100	99.5	0.5	86.27	53.77						
2.243	10-YR	46.83	53.94	7.11	51.33	51.33	0.0036	6.32	1.31	1.31	8.61	2.94	2.94	4,190	4,250	98.6	1.4	92.66	55.08						
2.243	25-YR	46.83	55.26	8.43	51.33	51.33	0.0036	7.65	1.45	1.97	9.70	3.80	3.84	5,710	5,900	96.8	3.2	107.03	56.69						
2.243	50-YR	46.83	56.13	9.30	51.33	51.33	0.0036	8.51	1.74	2.40	10.33	3.88	4.34	6,772	7,100	95.4	4.6	117.76	57.72						
2.243	100-YR	46.83	56.94	10.11	51.33	51.33	0.0036	9.32	2.06	2.80	10.87	3.92	4.77	7,800	8,300	94.0	6.0	127.74	58.68						
2.243	200-YR	46.83	57.68	10.85	51.33	51.33	0.0036	10.06	2.39	3.17	11.33	3.96	5.13	8,773	9,470	92.6	7.4	136.93	59.55						
2.243	500-YR	46.83	58.83	12.00	51.33	51.33	0.0036	11.21	2.92	3.75	11.96	4.03	5.63	10,317	11,400	90.5	9.5	151.15	60.87						
2.167	2-YR	45.36	49.68	4.32	49.86	49.98	0.0036	3.58			5.96			1,620	1,620	100.0	0.0	75.89	50.23	17.57	4B		98.6	1.30	
2.167	5-YR	45.36	51.39	6.03	49.86	49.98	0.0036	5.22	0.76	0.70	7.65	2.08	1.91	3,089	3,100	99.6	0.4	85.03	52.29						
2.167	10-YR	45.36	52.46	7.10	49.86	49.98	0.0036	6.29	1.30	1.24	8.63	2.95	2.78	4,201	4,250	98.9	1.1	90.59	53.60						
2.167	25-YR	45.36	53.77	8.41	49.86	49.98	0.0036	7.60	1.96	1.90	9.78	3.87	3.68	5,753	5,900	97.5	2.5	97.41	55.22						
2.167	50-YR	45.36	54.61	9.25	49.86	49.98	0.0036	8.45	2.38	2.32	10.48	4.40	4.21	6,852	7,100	96.5	3.5	101.79	56.27						
2.167	100-YR	45.36	55.39	10.03	49.86	49.98	0.0036	9.23	2.77	2.71	11.10	4.86	4.66	7,927	8,300	95.5	4.5	105.84	57.24						
2.167	200-YR	45.36	56.10	10.74	49.86	49.98	0.0036	9.94	3.12	3.06	11.65	5.26	5.05	8,954	9,470	94.6	5.4	109.53	58.12						
2.167	500-YR	45.36	57.19	11.83	49.86	49.98	0.0036	11.02	3.66	3.60	12.44	5.84	5.62	10,609	11,400	93.1	6.9	115.17	59.46						
2.013	2-YR	42.42	46.87	4.45	46.92	46.92	0.0034	3.67			5.75			1,620	1,620	100.0	0.0	76.68	47.38	17.23	4B		103.4	1.35	
2.013	5-YR	42.42	48.62	6.20	46.92	46.92	0.0034	5.41	0.85	0.85	7.40	2.11	2.11	3,082	3,100	99.4	0.6	87.19	49.46						
2.013	10-YR	42.42	49.72	7.30	46.92	46.92	0.0034	6.51	1.40	1.40	8.34	2.93	2.93	4,181	4,250	98.4	1.6	93.81	50.79						
2.013	25-YR	42.42	51.10	8.68	46.92	46.92	0.0034	7.89	2.09	2.09	9.38	3.78	3.78	5,702	5,900	96.6	3.4	102.08	52.43						
2.013	50-YR	42.42	51.97	9.55	46.92	46.92	0.0034	8.76	2.53	2.53	10.03	4.28	4.28	6,772	7,100	95.4	4.6	107.32	53.48						
2.013	100-YR	42.42	52.81	10.39	46.92	46.92	0.0034	9.60	2.95	2.95	10.56	4.70	4.70	7,811	8,300	94.1	5.9	112.36	54.46						
2.013	200-YR	42.42	53.59	11.17	46.92	46.92	0.0034	10.38	3.33	3.33	11.01	5.05	5.05	8,797	9,470	92.9	7.1	117.00	55.36						
2.013	500-YR	42.42	54.78	12.36	46.92	46.92	0.0034	11.57	3.93	3.93	11.65	5.54	5.54	10,374	11,400	91.0	9.0	124.14	56.74						
1.843	2-YR	39.39	43.74	4.35	43.89	43.89	0.004	3.60			5.91			1,620	1,620	100.0	0.0	76.10	44.28	17.49	4B		102.21	1.34	
1.843	5-YR	39.39	45.37	5.98	43.89	43.89	0.004	5.19	0.74	0.74	7.74	1.00	1.00	3,093	3,100	99.8	0.2	85.88	46.30						
1.843	10-YR	39.39	46.41	7.02	43.89	43.89	0.004	6.23	1.26	1.26	8.80	1.44	1.44	4,223	4,250	99.4	0.6	92.12	47.60						
1.843	25-YR	39.39	47.65	8.26	43.89	43.89	0.004	7.47	1.88	1.88	10.12	1.92	1.92	5,819	5,900	98.6	1.4	99.56	49.22						
1.843	50-YR	39.39	48.74	9.35	43.89	43.89	0.004	8.56	2.43	2.43	10.54	2.16	2.16	6,947	7,100	97.9	2.1	106.11	50.43						
1.843	100-YR	39.39	49.52	10.13	43.89	43.89	0.004	9.34	2.81	2.81	11.23	2.40	2.40	8,072	8,300	97.3	2.7	110.77	51.42						
1.843	200-YR	39.39	50.13	10.74	43.89	43.89	0.004	9.95	3.12	3.12	11.96	2.62	2.62	9,164	9,470	96.8	3.2	114.43	52.28						
1.843	500-YR	39.39	51.10	11.71	43.89	43.89	0.004	10.92	3.60	3.60	13.01	2.95	2.95	10,940	11,400	96.0	4.0	120.26	53.63						
1.684	2-YR	36.02	40.01	3.99	40.52	40.52	0.004	3.34			6.67			1,650	1,650	100.0	0.0	73.95	40.70	18.53	4A	14.25	97.58	1.32	1.56
1.684	5-YR	36.02	41.96	5.94	40.52	40.52	0.004	5.15	0.72	0.72	8.03	2.12	2.12	3,187	3,200	99.6	0.4	85.65	42.96						
1.684	10-YR	36.02	43.33	7.31	40.52	40.52	0.004	6.52	1.41	1.41	8.72	3.06	3.06	4,377	4,450	98.4	1.6	93.87	44.49						

Aliso Creek - Alternative 2

Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
1.684	25-YR	36.02	44.89	8.87	40.52	40.52	0.004	8.08	2.20	2.35	9.36	3.84	3.99	5,828	6,050	96.3	3.7	101.90	46.21						
1.684	50-YR	36.02	46.95	10.93	40.52	40.52	0.004	10.14	3.27	3.56	8.73	4.01	4.17	6,818	7,300	93.4	6.6	111.64	48.07						
1.684	100-YR	36.02	47.63	11.61	40.52	40.52	0.004	10.82	3.62	3.94	9.49	4.46	4.64	7,903	8,550	92.4	7.6	114.86	48.94						
1.684	200-YR	36.02	48.19	12.17	40.52	40.52	0.004	11.38	3.90	4.25	10.06	4.81	4.99	8,815	9,620	91.6	8.4	117.50	49.66						
1.684	500-YR	36.02	49.05	13.03	40.52	40.52	0.004	12.24	4.34	4.72	11.03	5.39	5.58	10,398	11,500	90.4	9.6	121.60	50.80						
1.520	2-YR	32.57	37.78	5.21	37.07	37.07	0.004	4.42	0.36	0.36	4.84	0.88	0.88	1,649	1,650	99.9	0.1	81.27	38.15	15.60	4A		119.28	1.47	
1.520	5-YR	32.57	40.30	7.73	37.07	37.07	0.004	6.94	1.62	1.62	5.86	2.17	2.17	3,132	3,200	97.9	2.1	96.39	40.82						
1.520	10-YR	32.57	41.92	9.35	37.07	37.07	0.004	8.56	2.22	2.43	6.47	2.58	2.73	4,262	4,450	95.8	4.2	107.50	42.55						
1.520	25-YR	32.57	43.68	11.11	37.07	37.07	0.004	10.32	2.53	3.31	7.08	2.75	3.24	5,628	6,050	93.0	7.0	126.87	44.41						
1.520	50-YR	32.57	46.36	13.79	37.07	37.07	0.004	13.01	4.26	2.00	6.32	2.97	2.06	6,326	7,300	86.7	13.3	226.45	46.92						
1.520	100-YR	32.57	47.04	14.47	37.07	37.07	0.004	13.68	1.87	2.61	6.82	3.14	2.26	7,187	8,550	84.1	15.9	308.42	47.67						
1.520	200-YR	32.57	47.64	15.07	37.07	37.07	0.004	14.28	1.49	3.13	7.14	2.77	2.43	7,852	9,620	81.6	18.4	409.74	48.30						
1.520	500-YR	32.57	48.61	16.04	37.07	37.07	0.004	15.25	2.32	3.50	7.57	2.49	2.65	8,888	11,500	77.3	22.7	448.79	49.32						
1.429	2-YR	30.64	37.40	6.76	35.14	35.14	0.004	5.97	1.13	1.13	3.55	1.14	1.14	1,632	1,650	98.9	1.1	90.58	37.60	13.40	4A		181.07	2.00	
1.429	5-YR	30.64	39.96	9.32	35.14	35.14	0.004	8.53	2.41	2.41	4.66	1.96	1.96	3,063	3,200	95.7	4.3	105.94	40.29						
1.429	10-YR	30.64	41.60	10.96	35.14	35.14	0.004	10.17	2.26	3.23	5.31	1.94	2.42	4,162	4,450	93.5	6.5	127.65	42.01						
1.429	25-YR	30.64	43.39	12.75	35.14	35.14	0.004	11.96	2.66	3.06	5.91	2.39	2.35	5,444	6,050	90.0	10.0	167.55	43.89						
1.429	50-YR	30.64	46.24	15.60	35.14	35.14	0.004	14.81	2.88	5.39	5.18	2.12	2.58	5,906	7,300	80.9	19.1	254.19	46.59						
1.429	100-YR	30.64	46.90	16.26	35.14	35.14	0.004	15.47	3.12	5.89	5.67	2.24	2.90	6,748	8,550	78.9	21.1	275.37	47.31						
1.429	200-YR	30.64	47.47	16.83	35.14	35.14	0.004	16.04	2.85	6.32	6.03	2.25	3.15	7,444	9,620	77.4	22.6	327.18	47.93						
1.429	500-YR	30.64	48.41	17.77	35.14	35.14	0.004	16.98	3.35	6.66	6.54	2.29	3.52	8,557	11,500	74.4	25.6	364.82	48.94						
1.353	2-YR	29.03	37.28	8.25	33.53	33.53	-0.0047	7.46	1.88	1.88	2.79	1.09	1.09	1,604	1,650	97.2	2.8	99.52	37.40	12.06	4A		168.96	1.70	
1.353	5-YR	29.03	39.83	10.80	33.53	33.53	-0.0047	10.01	3.15	3.15	3.88	1.76	1.76	2,991	3,200	93.5	6.5	114.78	40.05						
1.353	10-YR	29.03	41.46	12.43	33.53	33.53	-0.0047	11.64	3.97	3.97	4.51	2.15	2.15	4,044	4,450	90.9	9.1	124.59	41.75						
1.353	25-YR	29.03	43.25	14.22	33.53	33.53	-0.0047	13.43	4.86	3.37	5.12	2.54	2.38	5,299	6,050	87.6	12.4	154.91	43.62						
1.353	50-YR	29.03	46.13	17.10	33.53	33.53	-0.0047	16.31	6.30	5.49	4.77	2.47	2.26	5,993	7,300	82.1	17.9	172.65	46.43						
1.353	100-YR	29.03	46.76	17.73	33.53	33.53	-0.0047	16.94	6.61	5.91	5.31	2.77	2.53	6,927	8,550	81.0	19.0	176.64	47.13						
1.353	200-YR	29.03	47.31	18.28	33.53	33.53	-0.0047	17.49	6.89	6.27	5.72	3.01	2.73	7,706	9,620	80.1	19.9	180.21	47.74						
1.353	500-YR	29.03	48.19	19.16	33.53	33.53	-0.0047	18.37	7.33	6.83	6.40	3.39	3.06	9,048	11,500	78.7	21.3	186.00	48.73						
1.274	2-YR	31.00	36.27	5.27	47.89	46.64	0	4.14			6.51			1,650	1,650	100.0	0.0	61.30	36.93	11.63	4A		80.92	1.32	
1.274	5-YR	31.00	38.37	7.37	47.89	46.64	0	5.69			8.22			3,200	3,200	100.0	0.0	68.49	39.42						
1.274	10-YR	31.00	39.74	8.74	47.89	46.64	0	6.61			9.14			4,450	4,450	100.0	0.0	73.64	41.04						
1.274	25-YR	31.00	41.27	10.27	47.89	46.64	0	7.58			10.01			6,050	6,050	100.0	0.0	79.75	42.83						
1.274	50-YR	31.00	45.08	14.08	47.89	46.64	0	9.73		0.94	7.69		0.83	7,233	7,300	99.1	0.9	182.56	45.99						
1.274	100-YR	31.00	45.45	14.45	47.89	46.64	0	9.93		1.19	8.63		1.08	8,427	8,550	98.6	1.4	194.40	46.59						
1.274	200-YR	31.00	45.80	14.80	47.89	46.64	0	10.12		1.40	9.33		1.28	9,429	9,620	98.0	2.0	206.27	47.12						
1.274	500-YR	31.00	46.31	15.31	47.89	46.64	0	10.40	0.23	1.70	10.50	0.42	1.62	11,164	11,500	97.1	2.9	228.15	47.98						
1.262		Bridge																							

Aliso Creek - Alternative 2
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
1.249	2-YR	28.22	32.29	4.07	39.41	36.60	0.0025	3.58			7.28			1,650	1,650	100.0	0.0	63.33	33.11	15.56	3	16.38	77.68	1.23	2.61
1.249	5-YR	28.22	34.47	6.25	39.41	36.60	0.0025	5.26			8.57			3,200	3,200	100.0	0.0	71.03	35.62						
1.249	10-YR	28.22	35.86	7.64	39.41	36.60	0.0025	6.26			9.36			4,450	4,450	100.0	0.0	75.92	37.22						
1.249	25-YR	28.22	37.92	9.70	39.41	36.60	0.0025	7.82		0.83	9.31		1.08	5,940	6,050	98.2	1.8	205.55	39.24						
1.249	50-YR	28.22	38.71	10.49	39.41	36.60	0.0025	8.44		1.22	9.92		1.38	6,979	7,300	95.6	4.4	274.65	40.18						
1.249	100-YR	28.22	39.04	10.82	39.41	36.60	0.0025	8.69		1.43	11.02		1.68	8,052	8,550	94.2	5.8	291.50	40.82						
1.249	200-YR	28.22	39.63	11.41	39.41	36.60	0.0025	9.19	0.11	1.71	11.28	0.29	1.86	8,808	9,620	91.6	8.4	340.62	41.45						
1.249	500-YR	28.22	40.51	12.29	39.41	36.60	0.0025	10.08	0.55	2.46	11.64	0.82	2.30	9,960	11,500	86.6	13.4	360.52	42.35						
1.235	2-YR	28.03	32.09	4.06	37.47	37.61	0.0039	3.72			5.97			1,650	1,650	100.0	0.0	74.25	32.64	18.29	3		87.06	1.17	
1.235	5-YR	28.03	34.38	6.35	37.47	37.61	0.0039	5.58			7.04			3,200	3,200	100.0	0.0	81.47	35.14						
1.235	10-YR	28.03	35.80	7.77	37.47	37.61	0.0039	6.68			7.75			4,450	4,450	100.0	0.0	85.96	36.74						
1.235	25-YR	28.03	37.89	9.86	37.47	37.61	0.0039	8.31	0.21	0.43	7.91	0.29	0.56	6,010	6,050	99.3	0.7	257.16	38.85						
1.235	50-YR	28.03	38.69	10.66	37.47	37.61	0.0039	9.11	0.61	0.86	8.49	0.60	0.92	7,073	7,300	96.9	3.1	380.27	39.77						
1.235	100-YR	28.03	39.01	10.98	37.47	37.61	0.0039	9.43	0.77	1.11	9.45	0.76	1.15	8,152	8,550	95.3	4.7	402.53	40.34						
1.235	200-YR	28.03	39.64	11.61	37.47	37.61	0.0039	10.06	1.09	1.66	9.58	0.93	1.46	8,821	9,620	91.7	8.3	421.46	40.95						
1.235	500-YR	28.03	40.54	12.51	37.47	37.61	0.0039	10.96	1.54	2.44	9.90	1.15	1.84	9,926	11,500	86.3	13.7	443.08	41.86						
1.168	2-YR	26.65	31.46	4.81	33.07	36.52	0.0043	3.95			3.81			1,650	1,650	100.0	0.0	109.55	31.69	22.78	3		131.60	1.20	
1.168	5-YR	26.65	34.00	7.35	33.07	36.52	0.0043	6.04	0.47		4.41	0.81		3,200	3,200	100.0	0.0	121.27	34.30						
1.168	10-YR	26.65	35.52	8.87	33.07	36.52	0.0043	7.29	1.22		4.88	1.53		4,444	4,450	99.9	0.1	128.19	35.89						
1.168	25-YR	26.65	37.89	11.24	33.07	36.52	0.0043	9.46	2.41	1.85	4.55	1.92	0.92	5,522	6,050	91.3	8.7	427.94	38.18						
1.168	50-YR	26.65	38.76	12.11	33.07	36.52	0.0043	10.34	2.84	2.52	4.78	2.15	1.13	6,333	7,300	86.8	13.2	458.77	39.07						
1.168	100-YR	26.65	39.12	12.47	33.07	36.52	0.0043	10.70	3.02	2.83	5.29	2.43	1.33	7,255	8,550	84.9	15.1	465.34	39.49						
1.168	200-YR	26.65	39.76	13.11	33.07	36.52	0.0043	11.33	3.34	3.37	5.41	2.56	1.47	7,859	9,620	81.7	18.3	477.20	40.14						
1.168	500-YR	26.65	40.65	14.00	33.07	36.52	0.0043	12.23	3.79	4.06	5.70	2.81	1.68	8,945	11,500	77.8	22.2	497.69	41.06						
1.092	2-YR	24.93	31.06	6.13	33.75	32.59	0.0061	4.96			3.34			1,650	1,650	100.0	0.0	99.56	31.24	16.24	3		378.16	3.80	
1.092	5-YR	24.93	33.62	8.69	33.75	32.59	0.0061	7.11		0.52	4.20		0.36	3,199	3,200	100.0	0.0	114.77	33.90						
1.092	10-YR	24.93	35.13	10.20	33.75	32.59	0.0061	8.61	0.60	0.85	4.79	0.40	0.51	4,424	4,450	99.4	0.6	177.82	35.49						
1.092	25-YR	24.93	37.60	12.67	33.75	32.59	0.0061	11.08	1.97	3.13	4.68	0.74	0.99	5,556	6,050	91.8	8.2	385.74	37.92						
1.092	50-YR	24.93	38.44	13.51	33.75	32.59	0.0061	11.92	2.65	3.86	5.06	0.92	1.17	6,458	7,300	88.5	11.5	403.05	38.79						
1.092	100-YR	24.93	38.71	13.78	33.75	32.59	0.0061	12.19	2.86	4.09	5.72	1.08	1.36	7,476	8,550	87.4	12.6	409.21	39.16						
1.092	200-YR	24.93	39.33	14.40	33.75	32.59	0.0061	12.80	3.45	4.60	5.96	1.24	1.48	8,172	9,620	84.9	15.1	412.78	39.80						
1.092	500-YR	24.93	40.17	15.24	33.75	32.59	0.0061	13.64	4.24	5.29	6.44	1.47	1.67	9,410	11,500	81.8	18.2	417.66	40.70						
1.032	2-YR	22.96	30.53	7.57	33.62	34.00	0.0001	5.11			4.78			1,670	1,670	100.0	0.0	68.37	30.88	9.03	3		386.88	5.66	
1.032	5-YR	22.96	32.90	9.94	33.62	34.00	0.0001	6.54			6.19			3,260	3,260	100.0	0.0	80.43	33.50						
1.032	10-YR	22.96	34.29	11.33	33.62	34.00	0.0001	7.57	0.26	0.14	7.09	0.38	0.25	4,550	4,550	100.0	0.0	90.72	35.07						
1.032	25-YR	22.96	36.88	13.92	33.62	34.00	0.0001	10.16	1.43	1.09	6.99	0.95	0.80	6,013	6,120	98.2	1.8	190.46	37.62						
1.032	50-YR	22.96	37.76	14.80	33.62	34.00	0.0001	11.05	1.94	1.79	7.19	1.14	1.08	6,733	7,360	91.5	8.5	379.61	38.50						
1.032	100-YR	22.96	37.76	14.80	33.62	34.00	0.0001	11.05	1.93	1.79	8.42	1.33	1.27	7,876	8,610	91.5	8.5	379.60	38.77						
1.032	200-YR	22.96	38.37	15.41	33.62	34.00	0.0001	11.65	2.46	2.28	8.69	1.56	1.48	8,582	9,720	88.3	11.7	392.63	39.41						
1.032	500-YR	22.96	39.19	16.23	33.62	34.00	0.0001	12.47	3.11	2.91	9.17	1.84	1.76	9,684	11,500	84.2	15.8	412.44	40.29						

Aliso Creek - Alternative 2
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
0.976	2-YR	22.93	29.51	6.58	38.00	39.01	0	4.32			6.39			1,670	1,670	100.0	0.0	60.55	30.14	9.20	2	11.74	113.57	1.88	5.85
0.976	5-YR	22.93	31.48	8.55	38.00	39.01	0	5.30			8.29			3,260	3,260	100.0	0.0	74.17	32.55						
0.976	10-YR	22.93	32.54	9.61	38.00	39.01	0	5.62			9.55			4,550	4,550	100.0	0.0	84.72	33.96						
0.976	25-YR	22.93	36.43	13.50	38.00	39.01	0	7.85			6.80			6,120	6,120	100.0	0.0	114.55	37.15						
0.976	50-YR	22.93	37.11	14.18	38.00	39.01	0	8.40			7.53			7,360	7,360	100.0	0.0	116.46	37.99						
0.976	100-YR	22.93	36.62	13.69	38.00	39.01	0	8.01			9.34			8,610	8,610	100.0	0.0	115.09	37.99						
0.976	200-YR	22.93	36.89	13.96	38.00	39.01	0	8.22			10.21			9,720	9,720	100.0	0.0	115.83	38.51						
0.976	500-YR	22.93	36.06	13.13	38.00	39.01	0	7.55			13.42			11,500	11,500	100.0	0.0	113.48	38.86						
0.969		Bridge																							
0.962	2-YR	22.93	29.48	6.55	34.00	32.62	0.0017	5.23			4.56			1,670	1,670	100.0	0.0	70.09	29.80	10.70	2		358.71	5.12	
0.962	5-YR	22.93	31.40	8.47	34.00	32.62	0.0017	6.49			6.41			3,260	3,260	100.0	0.0	78.42	32.04						
0.962	10-YR	22.93	32.27	9.34	34.00	32.62	0.0017	7.05			7.86			4,550	4,550	100.0	0.0	82.14	33.23						
0.962	25-YR	22.93	33.17	10.24	34.00	32.62	0.0017	7.61		0.28	9.36		0.94	6,119	6,120	100.0	0.0	90.74	34.53						
0.962	50-YR	22.93	33.82	10.89	34.00	32.62	0.0017	7.90		0.44	10.34		1.36	7,347	7,360	99.8	0.2	112.29	35.47						
0.962	100-YR	22.93	34.43	11.50	34.00	32.62	0.0017	8.41	0.28	1.04	10.90	1.02	2.52	8,365	8,610	97.2	2.8	201.63	36.23						
0.962	200-YR	22.93	34.97	12.04	34.00	32.62	0.0017	8.95	0.58	1.47	11.30	1.66	3.18	9,219	9,720	94.8	5.2	225.78	36.86						
0.962	500-YR	22.93	35.42	12.49	34.00	32.62	0.0017	9.39	0.80	1.79	12.44	2.19	3.89	10,657	11,500	92.7	7.3	251.60	37.66						
0.899	2-YR	22.38	27.74	5.36	30.00	28.00	0.0055	3.29			7.96			1,670	1,670	100.0	0.0	63.84	28.72	11.91	2		268.54	4.21	
0.899	5-YR	22.38	29.92	7.54	30.00	28.00	0.0055	4.66		0.92	8.26		2.50	3,054	3,260	93.7	6.3	168.80	30.92						
0.899	10-YR	22.38	31.46	9.08	30.00	28.00	0.0055	6.18	0.86	2.22	7.49	1.80	3.37	3,687	4,550	81.0	19.0	231.85	32.20						
0.899	25-YR	22.38	32.47	10.09	30.00	28.00	0.0055	7.19	1.56	3.02	7.89	2.54	3.95	4,519	6,120	73.8	26.2	254.32	33.24						
0.899	50-YR	22.38	33.27	10.89	30.00	28.00	0.0055	7.99	2.10	3.59	8.01	2.93	4.19	5,092	7,360	69.2	30.8	271.76	34.03						
0.899	100-YR	22.38	33.99	11.61	30.00	28.00	0.0055	8.71	2.65	4.04	8.14	3.28	4.35	5,647	8,610	65.6	34.4	286.26	34.76						
0.899	200-YR	22.38	34.63	12.25	30.00	28.00	0.0055	9.35	3.11	4.45	8.20	3.50	4.45	6,102	9,720	62.8	37.2	298.32	35.39						
0.899	500-YR	22.38	35.04	12.66	30.00	28.00	0.0055	9.77	3.40	4.70	9.04	3.99	4.95	7,027	11,500	61.1	38.9	306.26	35.95						
0.843	2-YR	20.76	26.74	5.98	30.00	26.00	0.0004	4.48		0.37	6.06		1.02	1,665	1,670	99.7	0.3	75.30	27.31	12.59	2		343.21	4.56	
0.843	5-YR	20.76	29.18	8.42	30.00	26.00	0.0004	6.66		1.60	6.97		2.43	2,982	3,260	91.5	8.5	135.87	29.87						
0.843	10-YR	20.76	30.87	10.11	30.00	26.00	0.0004	8.25	0.44	2.59	7.01	0.89	2.94	3,771	4,550	82.9	17.1	178.72	31.53						
0.843	25-YR	20.76	31.71	10.95	30.00	26.00	0.0004	9.08	0.68	3.11	8.13	1.62	3.61	4,815	6,120	78.7	21.3	206.07	32.56						
0.843	50-YR	20.76	32.46	11.70	30.00	26.00	0.0004	9.84	0.65	3.49	8.59	1.28	3.90	5,509	7,360	74.9	25.1	334.50	33.37						
0.843	100-YR	20.76	33.33	12.57	30.00	26.00	0.0004	10.71	1.48	3.89	8.52	2.06	3.93	5,947	8,610	69.1	30.9	358.91	34.17						
0.843	200-YR	20.76	34.08	13.32	30.00	26.00	0.0004	11.46	2.21	4.05	8.41	2.56	3.81	6,284	9,720	64.6	35.4	383.59	34.86						
0.843	500-YR	20.76	34.32	13.56	30.00	26.00	0.0004	11.70	2.44	4.02	9.57	3.07	4.26	7,301	11,500	63.5	36.5	395.86	35.31						
0.809	2-YR	20.68	26.45	5.77	31.40	29.74	0	4.52			4.77			1,670	1,670	100.0	0.0	77.35	26.80	13.41	2		198.27	2.56	
0.809	5-YR	20.68	28.89	8.21	31.40	29.74	0	6.08			5.89			3,260	3,260	100.0	0.0	91.02	29.43						
0.809	10-YR	20.68	30.60	9.92	31.40	29.74	0	7.18		1.12	6.19		1.61	4,455	4,550	97.9	2.1	153.00	31.19						
0.809	25-YR	20.68	31.35	10.67	31.40	29.74	0	7.84		1.63	7.40		2.33	5,882	6,120	96.1	3.9	164.30	32.17						
0.809	50-YR	20.68	32.02	11.34	31.40	29.74	0	8.50	0.37	2.05	8.05	0.89	2.79	6,942	7,360	94.3	5.7	192.28	32.97						

Aliso Creek - Alternative 2
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
0.809	100-YR	20.68	32.71	12.03	31.40	29.74	0	9.19	0.78	2.59	8.50	1.47	3.27	7,923	8,610	92.0	8.0	209.60	33.75						
0.809	200-YR	20.68	33.95	13.27	31.40	29.74	0	10.43	2.97	3.49	6.73	2.63	2.90	7,122	9,720	73.3	26.7	408.16	34.50						
0.809	500-YR	20.68	34.16	13.48	31.40	29.74	0	10.64	3.17	3.63	7.65	3.09	3.35	8,267	11,500	71.9	28.1	410.56	34.86						
0.802		Bridge																							
0.794	2-YR	20.68	26.37	5.69	29.62	34.00	0	4.48			3.91			1,670	1,670	100.0	0.0	95.21	26.61	16.73	2		337.93	3.55	
0.794	5-YR	20.68	28.84	8.16	29.62	34.00	0	6.38			4.85			3,260	3,260	100.0	0.0	105.29	29.21						
0.794	10-YR	20.68	30.61	9.93	29.62	34.00	0	7.80	1.53		4.72	1.44		4,082	4,550	89.7	10.3	323.77	30.93						
0.794	25-YR	20.68	31.38	10.70	29.62	34.00	0	8.50	2.24		5.40	2.01		5,133	6,120	83.9	16.1	331.13	31.77						
0.794	50-YR	20.68	32.08	11.40	29.62	34.00	0	9.09	2.87		5.66	2.38		5,825	7,360	79.1	20.9	338.12	32.49						
0.794	100-YR	20.68	32.77	12.09	29.62	34.00	0	9.62	3.49		5.83	2.68		6,458	8,610	75.0	25.0	345.71	33.19						
0.794	200-YR	20.68	33.27	12.59	29.62	34.00	0	10.01	3.93		6.02	2.93		7,020	9,720	72.2	27.8	350.93	33.72						
0.794	500-YR	20.68	34.16	13.48	29.62	34.00	0	10.72	4.71	0.27	6.14	3.26	0.52	7,804	11,500	67.9	32.1	406.42	34.61						
0.783	2-YR	20.68	24.71	4.03	29.00	29.97	0.0082	2.80			9.49			1,670	1,670	100.0	0.0	62.91	26.11	15.61	2		78.32	1.24	
0.783	5-YR	20.68	27.75	7.07	29.00	29.97	0.0082	5.19			8.46			3,260	3,260	100.0	0.0	74.26	28.87						
0.783	10-YR	20.68	29.28	8.60	29.00	29.97	0.0082	6.29	0.13		9.04	0.62		4,550	4,550	100.0	0.0	84.36	30.55						
0.783	25-YR	20.68	30.80	10.12	29.00	29.97	0.0082	7.72	1.98	0.41	7.79	2.85	1.04	4,878	6,120	79.7	20.3	302.63	31.58						
0.783	50-YR	20.68	31.61	10.93	29.00	29.97	0.0082	8.53	2.72	0.82	7.71	3.28	1.51	5,335	7,360	72.5	27.5	310.85	32.32						
0.783	100-YR	20.68	32.38	11.70	29.00	29.97	0.0082	9.30	3.41	1.21	7.62	3.59	1.83	5,747	8,610	66.7	33.3	318.60	33.05						
0.783	200-YR	20.68	32.90	12.22	29.00	29.97	0.0082	9.82	3.86	1.47	7.75	3.84	2.04	6,176	9,720	63.5	36.5	323.85	33.58						
0.783	500-YR	20.68	33.83	13.15	29.00	29.97	0.0082	10.75	4.67	1.93	7.76	4.12	2.31	6,763	11,500	58.8	41.2	332.17	34.49						
0.721	2-YR	18.00	23.70	5.70	27.00	27.11	0	4.55			5.39			1,670	1,670	100.0	0.0	68.14	24.15	11.95	2		220.25	3.23	
0.721	5-YR	18.00	27.40	9.40	27.00	27.11	0	6.99	1.26	0.18	5.24	1.52	0.46	3,127	3,260	95.9	4.1	156.84	27.81						
0.721	10-YR	18.00	29.13	11.13	27.00	27.11	0	8.72	2.42	0.80	5.42	2.09	1.10	4,037	4,550	88.7	11.3	214.21	29.54						
0.721	25-YR	18.00	30.50	12.50	27.00	27.11	0	10.09	3.37	1.89	5.83	2.55	1.78	5,027	6,120	82.1	17.9	239.06	30.95						
0.721	50-YR	18.00	31.27	13.27	27.00	27.11	0	10.86	3.87	2.59	6.24	2.85	2.22	5,792	7,360	78.7	21.3	248.97	31.77						
0.721	100-YR	18.00	32.03	14.03	27.00	27.11	0	11.61	4.34	3.26	6.56	3.09	2.58	6,513	8,610	75.6	24.4	258.72	32.57						
0.721	200-YR	18.00	32.52	14.52	27.00	27.11	0	12.11	4.64	3.69	6.93	3.32	2.87	7,174	9,720	73.8	26.2	265.19	33.11						
0.721	500-YR	18.00	33.44	15.44	27.00	27.11	0	13.02	5.23	4.46	7.29	3.60	3.25	8,118	11,500	70.6	29.4	276.07	34.08						
0.719		Bridge																							
0.717	2-YR	17.83	23.40	5.57	25.21	27.00	0.0105	4.19			5.51			1,670	1,670	100.0	0.0	72.33	23.87	12.99	2		223.60	3.09	
0.717	5-YR	17.83	25.86	8.03	25.21	27.00	0.0105	6.03	0.14		6.60	0.49		3,259	3,260	100.0	0.0	101.37	26.53						
0.717	10-YR	17.83	26.98	9.15	25.21	27.00	0.0105	6.97	0.94		7.60	1.80		4,463	4,550	98.1	1.9	135.67	27.86						
0.717	25-YR	17.83	27.85	10.02	25.21	27.00	0.0105	7.84	1.54	0.43	8.85	2.69	1.15	5,847	6,120	95.5	4.5	165.47	29.02						
0.717	50-YR	17.83	28.33	10.50	25.21	27.00	0.0105	8.31	1.85	0.50	9.85	3.25	1.37	6,900	7,360	93.8	6.2	205.07	29.75						
0.717	100-YR	17.83	29.19	11.36	25.21	27.00	0.0105	9.18	2.40	1.20	9.97	3.67	2.32	7,716	8,610	89.6	10.4	227.92	30.59						
0.717	200-YR	17.83	29.59	11.76	25.21	27.00	0.0105	9.57	2.65	1.55	10.55	4.04	2.82	8,513	9,720	87.6	12.4	234.96	31.13						
0.717	500-YR	17.83	31.01	13.18	25.21	27.00	0.0105	11.00	3.57	2.58	10.01	4.25	3.42	9,277	11,500	80.7	19.3	262.81	32.31						

Aliso Creek - Alternative 2
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
0.665	2-YR	14.97	22.16	7.19	27.46	24.00	0.0046	4.28			6.92			1,670	1,670	100.0	0.0	56.36	22.91	7.84	2		300.56	5.33	
0.665	5-YR	14.97	24.58	9.61	27.46	24.00	0.0046	5.55		0.29	8.13		1.04	3,247	3,260	99.6	0.4	113.93	25.61						
0.665	10-YR	14.97	25.65	10.68	27.46	24.00	0.0046	6.39		0.86	9.11		2.18	4,348	4,550	95.5	4.5	182.36	26.88						
0.665	25-YR	14.97	26.48	11.51	27.46	24.00	0.0046	7.05		1.38	10.17		3.11	5,498	6,120	89.8	10.2	221.52	27.94						
0.665	50-YR	14.97	27.41	12.44	27.46	24.00	0.0046	7.79		2.04	9.91		3.68	6,074	7,360	82.5	17.5	250.35	28.71						
0.665	100-YR	14.97	28.65	13.68	27.46	24.00	0.0046	9.02	0.51	3.04	8.94	1.19	3.92	6,347	8,610	73.7	26.3	285.61	29.63						
0.665	200-YR	14.97	29.05	14.08	27.46	24.00	0.0046	9.42	0.72	3.36	9.34	1.52	4.26	6,923	9,720	71.2	28.8	296.39	30.09						
0.665	500-YR	14.97	30.76	15.79	27.46	24.00	0.0046	11.13	2.01	4.75	8.18	2.36	4.20	7,164	11,500	62.3	37.7	320.62	31.51						
0.606	2-YR	13.53	21.39	7.86	28.00	21.00	-0.002	5.63		0.20	5.95		0.58	1,670	1,670	100.0	0.0	51.63	21.94	6.57	2		402.22	7.79	
0.606	5-YR	13.53	23.69	10.16	28.00	21.00	-0.002	7.48		0.85	7.75		1.69	3,099	3,260	95.1	4.9	166.09	24.58						
0.606	10-YR	13.53	24.84	11.31	28.00	21.00	-0.002	8.38		1.72	8.37		2.71	3,870	4,550	85.1	14.9	200.36	25.79						
0.606	25-YR	13.53	25.37	11.84	28.00	21.00	-0.002	8.78		2.18	9.99		3.67	4,912	6,120	80.3	19.7	207.16	26.66						
0.606	50-YR	13.53	26.67	13.14	28.00	21.00	-0.002	9.70		3.15	9.16		4.03	5,182	7,360	70.4	29.6	229.74	27.66						
0.606	100-YR	13.53	28.10	14.57	28.00	21.00	-0.002	10.68	0.10	3.68	8.43	0.34	3.86	5,492	8,610	63.8	36.2	308.97	28.89						
0.606	200-YR	13.53	28.47	14.94	28.00	21.00	-0.002	11.04	0.31	4.02	8.86	0.76	4.20	5,971	9,720	61.4	38.6	340.42	29.33						
0.606	500-YR	13.53	30.52	16.99	28.00	21.00	-0.002	13.09	1.97	5.77	7.23	1.92	3.90	5,773	11,500	50.2	49.8	415.35	31.03						
0.545	2-YR	14.17	20.60	6.43	22.00	23.00	0	4.62			5.94			1,670	1,670	100.0	0.0	60.85	21.15	9.46	2		519.84	8.54	
0.545	5-YR	14.17	22.73	8.56	22.00	23.00	0	6.24	0.46	0.07	7.76	1.23	0.37	3,245	3,260	99.5	0.5	136.42	23.66						
0.545	10-YR	14.17	23.28	9.11	22.00	23.00	0	6.75	0.88	0.31	9.65	2.25	1.19	4,390	4,550	96.5	3.5	360.65	24.67						
0.545	25-YR	14.17	25.00	10.83	22.00	23.00	0	8.47	2.19	1.84	7.50	2.75	2.45	4,289	6,120	70.1	29.9	459.22	25.65						
0.545	50-YR	14.17	26.71	12.54	22.00	23.00	0	10.18	3.20	3.47	5.62	2.34	2.48	3,858	7,360	52.4	47.6	481.37	27.01						
0.545	100-YR	14.17	28.24	14.07	22.00	23.00	0	11.71	2.44	3.77	4.75	1.51	2.02	3,749	8,610	43.5	56.5	833.40	28.43						
0.545	200-YR	14.17	28.66	14.49	22.00	23.00	0	12.13	2.84	4.16	4.79	1.65	2.14	3,919	9,720	40.3	59.7	838.25	28.84						
0.545	500-YR	14.17	30.67	16.50	22.00	23.00	0	14.14	4.71	6.09	3.63	1.60	1.89	3,460	11,500	30.1	69.9	856.96	30.77						
0.528	2-YR	14.17	20.15	5.98	21.00	23.00	0	4.29			6.60			1,670	1,670	100.0	0.0	59.00	20.83	9.87	2		673.86	11.42	
0.528	5-YR	14.17	22.17	8.00	21.00	23.00	0	5.81	0.74		8.49	1.94		3,223	3,260	98.9	1.1	90.84	23.28						
0.528	10-YR	14.17	23.53	9.36	21.00	23.00	0	6.66	1.62	1.48	6.19	2.17	2.04	2,930	4,550	64.4	35.6	599.51	23.93						
0.528	25-YR	14.17	25.13	10.96	21.00	23.00	0	8.26	3.14	2.87	4.60	2.15	2.04	2,700	6,120	44.1	55.9	646.21	25.31						
0.528	50-YR	14.17	26.76	12.59	21.00	23.00	0	9.89	4.37	4.32	3.55	1.82	1.85	2,496	7,360	33.9	66.1	681.48	26.86						
0.528	100-YR	14.17	28.27	14.10	21.00	23.00	0	11.40	3.08	5.74	2.96	1.11	1.70	2,399	8,610	27.9	72.1	844.41	28.34						
0.528	200-YR	14.17	28.68	14.51	21.00	23.00	0	11.82	3.44	6.14	3.07	1.22	1.80	2,581	9,720	26.6	73.4	848.94	28.76						
0.528	500-YR	14.17	30.68	16.51	21.00	23.00	0	13.81	5.15	8.07	2.59	1.23	1.64	2,539	11,500	22.1	77.9	869.20	30.73						
0.524		Bridge																							
0.520	2-YR	14.17	19.91	5.74	21.48	23.00	0.0001	3.98			6.77			1,670	1,670	100.0	0.0	61.91	20.62	10.79	2		802.01	12.95	
0.520	5-YR	14.17	21.82	7.65	21.48	23.00	0.0001	5.17	0.46		8.56	1.55		3,219	3,260	98.7	1.3	129.80	22.94						
0.520	10-YR	14.17	23.45	9.28	21.48	23.00	0.0001	5.96	1.54	1.52	5.41	1.97	1.96	2,739	4,550	60.2	39.8	691.66	23.75						
0.520	25-YR	14.17	25.11	10.94	21.48	23.00	0.0001	7.62	2.65	2.93	3.84	1.72	1.83	2,483	6,120	40.6	59.4	787.27	25.23						
0.520	50-YR	14.17	26.76	12.59	21.48	23.00	0.0001	9.26	4.00	4.44	2.89	1.54	1.60	2,271	7,360	30.9	69.1	824.10	26.82						
0.520	100-YR	14.17	28.27	14.10	21.48	23.00	0.0001	10.78	5.31	5.84	2.45	1.41	1.48	2,239	8,610	26.0	74.0	845.00	28.32						

Aliso Creek - Alternative 2
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
0.520	200-YR	14.17	28.68	14.51	21.48	23.00	0.0001	11.19	5.70	6.23	2.56	1.50	1.58	2,436	9,720	25.1	74.9	848.19	28.74						
0.520	500-YR	14.17	30.68	16.51	21.48	23.00	0.0001	13.19	7.53	8.12	2.23	1.39	1.47	2,501	11,500	21.7	78.3	860.59	30.72						
0.505	2-YR	14.16	19.67	5.51	20.72	22.35	0	3.99			6.21			1,670	1,670	100.0	0.0	67.39	20.26	12.23	2		758.72	11.26	
0.505	5-YR	14.16	21.54	7.38	20.72	22.35	0	5.32	0.45		8.03	1.38		3,248	3,260	99.6	0.4	95.21	22.54						
0.505	10-YR	14.16	23.36	9.20	20.72	22.35	0	6.96	1.26	1.83	5.13	1.46	1.88	2,801	4,550	61.6	38.4	618.47	23.63						
0.505	25-YR	14.16	25.06	10.90	20.72	22.35	0	8.66	2.40	3.06	3.89	1.52	1.76	2,643	6,120	43.2	56.8	756.42	25.19						
0.505	50-YR	14.16	26.73	12.57	20.72	22.35	0	10.34	3.70	4.59	2.99	1.40	1.58	2,425	7,360	32.9	67.1	790.37	26.80						
0.505	100-YR	14.16	28.26	14.10	20.72	22.35	0	11.86	4.73	5.95	2.57	1.30	1.47	2,396	8,610	27.8	72.2	823.54	28.31						
0.505	200-YR	14.16	28.67	14.51	20.72	22.35	0	12.27	5.03	6.31	2.71	1.38	1.58	2,606	9,720	26.8	73.2	831.29	28.73						
0.505	500-YR	14.16	30.67	16.51	20.72	22.35	0	14.27	6.26	8.11	2.38	1.26	1.47	2,663	11,500	23.2	76.8	867.70	30.71						
0.501		Bridge																							
0.497	2-YR	14.16	19.18	5.02	20.00	22.00	0.0038	3.60			7.36			1,670	1,670	100.0	0.0	63.10	20.02	12.57	2		692.61	10.98	
0.497	5-YR	14.16	21.06	6.90	20.00	22.00	0.0038	4.75	0.53		8.89	1.83		3,226	3,260	98.9	1.1	111.91	22.28						
0.497	10-YR	14.16	23.34	9.18	20.00	22.00	0.0038	6.88	2.32	2.09	4.44	1.91	1.79	2,400	4,550	52.7	47.3	643.48	23.53						
0.497	25-YR	14.16	25.04	10.88	20.00	22.00	0.0038	8.58	3.50	3.50	3.46	1.69	1.70	2,335	6,120	38.2	61.8	715.20	25.14						
0.497	50-YR	14.16	26.72	12.56	20.00	22.00	0.0038	10.25	4.64	5.06	2.77	1.45	1.56	2,233	7,360	30.3	69.7	740.07	26.78						
0.497	100-YR	14.16	28.25	14.09	20.00	22.00	0.0038	11.78	5.68	6.48	2.44	1.33	1.48	2,262	8,610	26.3	73.7	757.68	28.30						
0.497	200-YR	14.16	28.66	14.50	20.00	22.00	0.0038	12.19	5.93	6.87	2.58	1.41	1.59	2,475	9,720	25.5	74.5	762.32	28.71						
0.497	500-YR	14.16	30.66	16.50	20.00	22.00	0.0038	14.20	6.16	8.74	2.33	1.18	1.52	2,601	11,500	22.6	77.4	797.64	30.71						
0.480	2-YR	13.82	17.66	3.84	21.00	23.00	0.0162	2.90			9.66			1,620	1,620	100.0	0.0	57.92	19.11	15.08	2		97.76	1.69	
0.480	5-YR	13.82	19.34	5.52	21.00	23.00	0.0162	3.99			11.35			3,110	3,110	100.0	0.0	68.66	21.34						
0.480	10-YR	13.82	20.38	6.56	21.00	23.00	0.0162	4.66			12.23			4,270	4,270	100.0	0.0	74.98	22.70						
0.480	25-YR	13.82	21.97	8.15	21.00	23.00	0.0162	5.90	0.49		12.44	2.10		5,893	5,930	99.4	0.6	116.21	24.36						
0.480	50-YR	13.82	26.52	12.70	21.00	23.00	0.0162	10.28	4.37	5.62	4.34	2.26	2.59	3,676	7,130	51.6	48.4	335.91	26.72						
0.480	100-YR	13.82	28.07	14.25	21.00	23.00	0.0162	11.83	5.51	7.17	4.09	2.27	2.62	3,987	8,480	47.0	53.0	340.29	28.24						
0.480	200-YR	13.82	28.44	14.62	21.00	23.00	0.0162	12.20	5.75	7.55	4.46	2.49	2.89	4,481	9,710	46.2	53.8	341.67	28.65						
0.480	500-YR	13.82	30.66	16.84	21.00	23.00	0.0162	14.42	7.06	9.23	2.22	1.28	1.48	2,635	11,500	22.9	77.1	753.10	30.70						
0.415	2-YR	8.21	14.07	5.86	25.04	40.00	0	4.87			7.53			1,620	1,620	100.0	0.0	44.15	14.95	7.53	1	11.88	56.90	1.29	1.36
0.415	5-YR	8.21	16.58	8.37	25.04	40.00	0	6.66			9.30			3,110	3,110	100.0	0.0	50.16	17.92						
0.415	10-YR	8.21	18.20	9.99	25.04	40.00	0	7.83			10.20			4,270	4,270	100.0	0.0	53.41	19.82						
0.415	25-YR	8.21	20.32	12.11	25.04	40.00	0	9.36			11.06			5,930	5,930	100.0	0.0	57.30	22.22						
0.415	50-YR	8.21	24.98	16.77	25.04	40.00	0	12.47			8.63			7,130	7,130	100.0	0.0	66.22	26.14						
0.415	100-YR	8.21	26.33	18.12	25.04	40.00	0	13.76	0.74		9.26	0.70		8,476	8,480	100.0	0.0	73.72	27.66						
0.415	200-YR	8.21	26.07	17.86	25.04	40.00	0	13.50	0.55		10.81	0.68		9,708	9,710	100.0	0.0	73.03	27.89						
0.415	500-YR	8.21	28.20	19.99	25.04	40.00	0	15.63	1.76		11.01	1.36		11,448	11,500	99.5	0.5	88.23	30.07						
0.412		Bridge																							
0.408	2-YR	8.21	13.48	5.27	23.97	23.00	0.0031	4.34			8.77			1,620	1,620	100.0	0.0	42.60	14.67	8.08	1		54.17	1.27	

Aliso Creek - Alternative 2

Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
0.408	5-YR	8.21	15.87	7.66	23.97	23.00	0.0031	6.12			10.62			3,110	3,110	100.0	0.0	47.87	17.62						
0.408	10-YR	8.21	17.50	9.29	23.97	23.00	0.0031	7.28			11.43			4,270	4,270	100.0	0.0	51.36	19.52						
0.408	25-YR	8.21	19.72	11.51	23.97	23.00	0.0031	8.76			12.01			5,930	5,930	100.0	0.0	56.36	21.96						
0.408	50-YR	8.21	21.26	13.05	23.97	23.00	0.0031	9.77			12.24			7,130	7,130	100.0	0.0	59.66	23.58						
0.408	100-YR	8.21	22.43	14.22	23.97	23.00	0.0031	10.29			12.95			8,480	8,480	100.0	0.0	63.66	25.04						
0.408	200-YR	8.21	23.17	14.96	23.97	23.00	0.0031	10.64		0.17	13.81		0.44	9,707	9,710	100.0	0.0	108.59	26.13						
0.408	500-YR	8.21	23.91	15.70	23.97	23.00	0.0031	11.25		0.91	15.22		1.42	11,445	11,500	99.5	0.5	109.37	27.49						
0.360	2-YR	7.43	12.92	5.49	20.08	20.00	0.002	4.69			5.81			1,620	1,620	100.0	0.0	59.50	13.44	10.84	1		73.34	1.23	
0.360	5-YR	7.43	15.51	8.08	20.08	20.00	0.002	6.68			7.04			3,110	3,110	100.0	0.0	66.11	16.28						
0.360	10-YR	7.43	17.26	9.83	20.08	20.00	0.002	7.97			7.60			4,270	4,270	100.0	0.0	70.42	18.16						
0.360	25-YR	7.43	19.63	12.20	20.08	20.00	0.002	9.60			8.06			5,930	5,930	100.0	0.0	76.58	20.64						
0.360	50-YR	7.43	21.27	13.84	20.08	20.00	0.002	11.10	0.59	0.58	8.26	0.50	0.57	7,119	7,130	99.8	0.2	111.56	22.32						
0.360	100-YR	7.43	22.52	15.09	20.08	20.00	0.002	12.35	1.20	1.70	8.76	0.80	1.14	8,401	8,480	99.1	0.9	120.22	23.70						
0.360	200-YR	7.43	23.32	15.89	20.08	20.00	0.002	13.15	1.58	2.50	9.36	0.98	1.49	9,557	9,710	98.4	1.6	121.41	24.65						
0.360	500-YR	7.43	24.13	16.70	20.08	20.00	0.002	13.96	1.91	3.32	10.36	1.20	1.88	11,241	11,500	97.8	2.2	122.87	25.76						
0.295	2-YR	6.73	12.47	5.74	18.00	21.00	0.0013	5.04			4.82			1,620	1,620	100.0	0.0	66.62	12.84	11.61	1		92.32	1.39	
0.295	5-YR	6.73	15.12	8.39	18.00	21.00	0.0013	6.90			5.93			3,110	3,110	100.0	0.0	75.98	15.67						
0.295	10-YR	6.73	16.94	10.21	18.00	21.00	0.0013	8.03			6.38			4,270	4,270	100.0	0.0	83.34	17.57						
0.295	25-YR	6.73	19.41	12.68	18.00	21.00	0.0013	9.75	0.70		6.68	0.50		5,921	5,930	99.9	0.1	115.25	20.10						
0.295	50-YR	6.73	21.18	14.45	18.00	21.00	0.0013	11.16	1.67	1.42	6.58	0.81	1.31	6,911	7,130	96.9	3.1	225.53	21.83						
0.295	100-YR	6.73	22.55	15.82	18.00	21.00	0.0013	12.53	2.54	2.74	6.69	1.01	1.89	7,882	8,480	92.9	7.1	241.28	23.19						
0.295	200-YR	6.73	23.43	16.70	18.00	21.00	0.0013	13.41	3.22	3.61	6.95	1.17	2.25	8,768	9,710	90.3	9.7	246.41	24.11						
0.295	500-YR	6.73	24.36	17.63	18.00	21.00	0.0013	14.34	4.02	4.53	7.47	1.39	2.69	10,074	11,500	87.6	12.4	249.20	25.13						
0.228	2-YR	6.28	12.32	6.04	20.00	20.00	0	5.14			3.44			1,620	1,620	100.0	0.0	91.80	12.50	15.20	1		110.96	1.21	
0.228	5-YR	6.28	15.03	8.75	20.00	20.00	0	7.33			4.26			3,110	3,110	100.0	0.0	99.69	15.31						
0.228	10-YR	6.28	16.88	10.60	20.00	20.00	0	8.69			4.63			4,270	4,270	100.0	0.0	105.99	17.22						
0.228	25-YR	6.28	19.39	13.11	20.00	20.00	0	10.41			4.95			5,930	5,930	100.0	0.0	115.15	19.77						
0.228	50-YR	6.28	21.18	14.90	20.00	20.00	0	11.72	0.87	0.86	4.95	0.91	0.67	6,985	7,130	98.0	2.0	335.81	21.55						
0.228	100-YR	6.28	22.58	16.30	20.00	20.00	0	13.12	1.77	2.21	4.95	1.35	1.18	7,821	8,480	92.2	7.8	384.98	22.94						
0.228	200-YR	6.28	23.50	17.22	20.00	20.00	0	14.03	2.27	3.10	5.05	1.56	1.44	8,540	9,710	88.0	12.0	418.73	23.85						
0.228	500-YR	6.28	24.47	18.19	20.00	20.00	0	15.01	3.01	4.04	5.28	1.88	1.72	9,545	11,500	83.0	17.0	437.18	24.84						
0.169	2-YR	6.28	12.15	5.87	16.00	15.00	0	4.90			3.39			1,620	1,620	100.0	0.0	97.57	12.32	16.62	1		151.38	1.55	
0.169	5-YR	6.28	14.88	8.60	16.00	15.00	0	7.00			4.09			3,110	3,110	100.0	0.0	108.50	15.14						
0.169	10-YR	6.28	16.75	10.47	16.00	15.00	0	8.53	0.37	0.88	4.40	0.56	0.79	4,267	4,270	99.9	0.1	124.59	17.05						
0.169	25-YR	6.28	19.31	13.03	16.00	15.00	0	11.09	1.08	2.15	4.58	0.99	1.26	5,778	5,930	97.4	2.6	247.90	19.63						
0.169	50-YR	6.28	21.14	14.86	16.00	15.00	0	12.92	2.18	3.04	4.44	1.39	1.40	6,526	7,130	91.5	8.5	310.26	21.42						
0.169	100-YR	6.28	22.55	16.27	16.00	15.00	0	14.34	2.77	3.70	4.46	1.55	1.50	7,266	8,480	85.7	14.3	393.13	22.82						
0.169	200-YR	6.28	23.47	17.19	16.00	15.00	0	15.25	3.45	4.14	4.56	1.73	1.59	7,897	9,710	81.3	18.7	416.48	23.74						
0.169	500-YR	6.28	24.44	18.16	16.00	15.00	0	16.23	4.30	4.61	4.77	2.01	1.72	8,794	11,500	76.5	23.5	427.23	24.73						

Aliso Creek - Alternative 2

Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
0.118	2-YR	6.28	11.74	5.46	15.00	15.00	-0.0002	4.87			4.58			1,620	1,620	100.0	0.0	72.63	12.07	13.30	1		113.75	1.57	
0.118	5-YR	6.28	14.38	8.10	15.00	15.00	-0.0002	6.99			5.61			3,110	3,110	100.0	0.0	79.35	14.87						
0.118	10-YR	6.28	16.22	9.94	15.00	15.00	-0.0002	8.69	0.61	0.61	6.07	1.04	0.41	4,267	4,270	99.9	0.1	86.82	16.80						
0.118	25-YR	6.28	18.80	12.52	15.00	15.00	-0.0002	11.26	1.59	1.90	6.34	1.80	0.77	5,777	5,930	97.4	2.6	137.67	19.41						
0.118	50-YR	6.28	20.66	14.38	15.00	15.00	-0.0002	13.12	2.57	2.91	6.28	2.21	0.91	6,663	7,130	93.5	6.5	168.50	21.23						
0.118	100-YR	6.28	22.04	15.76	15.00	15.00	-0.0002	14.50	2.01	3.74	6.49	2.05	1.04	7,614	8,480	89.8	10.2	292.45	22.63						
0.118	200-YR	6.28	22.93	16.65	15.00	15.00	-0.0002	15.39	2.24	4.26	6.72	2.06	1.12	8,371	9,710	86.2	13.8	370.98	23.55						
0.118	500-YR	6.28	23.90	17.62	15.00	15.00	-0.0002	16.37	2.52	4.81	7.00	2.31	1.21	9,274	11,500	80.6	19.4	462.38	24.53						
0.103		Bridge																							
0.088	2-YR	6.61	10.74	4.13	15.00	20.78	0	3.59			5.95			1,620	1,620	100.0	0.0	75.80	11.29	18.35					
0.088	5-YR	6.61	12.89	6.28	15.00	20.78	0	5.50			7.07			3,110	3,110	100.0	0.0	80.02	13.66						
0.088	10-YR	6.61	14.24	7.63	15.00	20.78	0	6.67			7.76			4,270	4,270	100.0	0.0	82.45	15.18						
0.088	25-YR	6.61	15.98	9.37	15.00	20.78	0	8.27	0.93		8.45	2.07		5,879	5,930	99.1	0.9	110.43	17.08						
0.088	50-YR	6.61	17.20	10.59	15.00	20.78	0	9.44	1.72		8.70	2.95		6,945	7,130	97.4	2.6	120.98	18.34						
0.088	100-YR	6.61	18.49	11.88	15.00	20.78	0	10.68	1.37		8.89	3.28		8,069	8,480	95.2	4.8	176.05	19.67						
0.088	200-YR	6.61	19.74	13.13	15.00	20.78	0	11.88	1.43		8.72	2.65		8,844	9,710	91.1	8.9	313.61	20.83						
0.088	500-YR	6.61	21.18	14.57	15.00	20.78	0	13.27	2.42	0.20	8.31	2.88	0.26	9,450	11,500	82.2	17.8	379.61	22.08						
0.078	2-YR	6.61	9.99	3.38	15.00	17.00	0.0026	3.23			7.90			1,620	1,620	100.0	0.0	63.50	10.96	18.79					
0.078	5-YR	6.61	10.98	4.37	15.00	17.00	0.0026	4.12			11.56			3,110	3,110	100.0	0.0	65.36	13.06						
0.078	10-YR	6.61	11.98	5.37	15.00	17.00	0.0026	4.99			12.73			4,270	4,270	100.0	0.0	67.24	14.50						
0.078	25-YR	6.61	13.27	6.66	15.00	17.00	0.0026	6.08			14.00			5,930	5,930	100.0	0.0	69.67	16.31						
0.078	50-YR	6.61	14.11	7.50	15.00	17.00	0.0026	6.77			14.77			7,130	7,130	100.0	0.0	71.24	17.50						
0.078	100-YR	6.61	14.98	8.37	15.00	17.00	0.0026	7.48			15.55			8,480	8,480	100.0	0.0	72.88	18.73						
0.078	200-YR	6.61	15.72	9.11	15.00	17.00	0.0026	8.20	0.21		16.20	2.03		9,708	9,710	100.0	0.0	78.06	19.79						
0.078	500-YR	6.61	17.24	10.63	15.00	17.00	0.0026	9.69	1.08	0.12	15.87	4.00	0.36	11,287	11,500	98.1	1.9	122.99	21.09						
0.000	2-YR	5.56	8.13	2.57	6.58	8.00		2.27	0.79	0.10	6.03	3.00	0.74	1,378	1,620	85.1	14.9	221.94	8.63	86.36					
0.000	5-YR	5.56	8.93	3.37	6.58	8.00		3.08	1.36	0.68	7.38	4.29	2.70	2,290	3,110	73.6	26.4	270.95	9.63						
0.000	10-YR	5.56	9.42	3.86	6.58	8.00		3.56	1.54	1.00	8.15	4.68	3.49	2,928	4,270	68.6	31.4	314.01	10.23						
0.000	25-YR	5.56	9.97	4.41	6.58	8.00		4.11	1.97	1.36	8.96	5.51	4.31	3,709	5,930	62.6	37.4	333.32	10.91						
0.000	50-YR	5.56	10.32	4.76	6.58	8.00		4.46	2.17	1.69	9.46	5.88	4.97	4,254	7,130	59.7	40.3	347.24	11.35						
0.000	100-YR	5.56	10.68	5.12	6.58	8.00		4.82	2.35	2.03	9.97	6.18	5.61	4,848	8,480	57.2	42.8	364.71	11.81						
0.000	200-YR	5.56	10.98	5.42	6.58	8.00		5.12	2.54	2.31	10.37	6.52	6.10	5,351	9,710	55.1	44.9	373.97	12.18						
0.000	500-YR	5.56	11.38	5.82	6.58	8.00		5.52	2.82	2.50	10.90	6.99	6.43	6,065	11,500	52.7	47.3	389.48	12.70						

Hydraulic Tables
Alternative 3

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Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
9.000	2-YR	248.10	252.55	4.45	263.98	262.98	0.0168	3.30			5.61			1,020	1,020	100.0	0.0	55.13	253.04	12.39					
9.000	5-YR	248.10	254.31	6.21	263.98	262.98	0.0168	4.64			5.98			1,700	1,700	100.0	0.0	61.22	254.86						
9.000	10-YR	248.10	255.16	7.06	263.98	262.98	0.0168	5.27			6.28			2,120	2,120	100.0	0.0	64.11	255.77						
9.000	25-YR	248.10	256.04	7.94	263.98	262.98	0.0168	5.89			6.71			2,650	2,650	100.0	0.0	67.07	256.74						
9.000	50-YR	248.10	256.62	8.52	263.98	262.98	0.0168	6.29			6.99			3,040	3,040	100.0	0.0	69.18	257.38						
9.000	100-YR	248.10	257.20	9.10	263.98	262.98	0.0168	6.68			7.27			3,460	3,460	100.0	0.0	71.28	258.02						
9.000	200-YR	248.10	257.62	9.52	263.98	262.98	0.0168	6.95			7.48			3,780	3,780	100.0	0.0	72.77	258.49						
9.000	500-YR	248.10	258.21	10.11	263.98	262.98	0.0168	7.33			7.77			4,270	4,270	100.0	0.0	74.89	259.15						
8.750	2-YR	242.60	251.25	8.65	260.00	261.96	0.0000	4.66			3.77			1,020	1,020	100.0	0.0	58.19	251.47	6.73					
8.750	5-YR	242.60	253.05	10.45	260.00	261.96	0.0000	5.27			4.38			1,700	1,700	100.0	0.0	73.58	253.35						
8.750	10-YR	242.60	253.92	11.32	260.00	261.96	0.0000	5.58			4.65			2,120	2,120	100.0	0.0	81.71	254.25						
8.750	25-YR	242.60	254.81	12.21	260.00	261.96	0.0000	6.12			4.99			2,650	2,650	100.0	0.0	86.71	255.20						
8.750	50-YR	242.60	255.40	12.80	260.00	261.96	0.0000	6.47			5.21			3,040	3,040	100.0	0.0	90.06	255.82						
8.750	100-YR	242.60	255.99	13.39	260.00	261.96	0.0000	6.81			5.43			3,460	3,460	100.0	0.0	93.58	256.45						
8.750	200-YR	242.60	256.41	13.81	260.00	261.96	0.0000	7.05			5.59			3,780	3,780	100.0	0.0	95.89	256.89						
8.750	500-YR	242.60	257.00	14.40	260.00	261.96	0.0000	7.41			5.81			4,270	4,270	100.0	0.0	99.12	257.53						
8.500	2-YR	242.60	247.76	5.16	260.71	261.96	0.0085	2.84			9.59			1,020	1,020	100.0	0.0	37.43	249.19	7.25					
8.500	5-YR	242.60	249.00	6.40	260.71	261.96	0.0085	3.58			10.85			1,700	1,700	100.0	0.0	43.80	250.82						
8.500	10-YR	242.60	249.65	7.05	260.71	261.96	0.0085	3.94			11.36			2,120	2,120	100.0	0.0	47.32	251.66						
8.500	25-YR	242.60	250.41	7.81	260.71	261.96	0.0085	4.28			11.81			2,650	2,650	100.0	0.0	52.39	252.58						
8.500	50-YR	242.60	250.91	8.31	260.71	261.96	0.0085	4.50			12.09			3,040	3,040	100.0	0.0	55.84	253.18						
8.500	100-YR	242.60	251.40	8.80	260.71	261.96	0.0085	4.72			12.37			3,460	3,460	100.0	0.0	59.22	253.78						
8.500	200-YR	242.60	251.74	9.14	260.71	261.96	0.0085	4.88			12.58			3,780	3,780	100.0	0.0	61.56	254.20						
8.500	500-YR	242.60	252.25	9.65	260.71	261.96	0.0085	5.10			12.85			4,270	4,270	100.0	0.0	65.09	254.81						
8.250	2-YR	239.80	245.20	5.40	255.76	257.68	0.0023	3.32			2.42			1,020	1,020	100.0	0.0	126.88	245.29	23.50					
8.250	5-YR	239.80	246.38	6.58	255.76	257.68	0.0023	3.83			2.84			1,700	1,700	100.0	0.0	156.44	246.51						
8.250	10-YR	239.80	246.93	7.13	255.76	257.68	0.0023	4.35			3.10			2,120	2,120	100.0	0.0	157.26	247.08						
8.250	25-YR	239.80	247.55	7.75	255.76	257.68	0.0023	4.95			3.38			2,650	2,650	100.0	0.0	158.11	247.73						
8.250	50-YR	239.80	247.98	8.18	255.76	257.68	0.0023	5.36			3.58			3,040	3,040	100.0	0.0	158.66	248.18						
8.250	100-YR	239.80	248.42	8.62	255.76	257.68	0.0023	5.78			3.76			3,460	3,460	100.0	0.0	159.31	248.64						
8.250	200-YR	239.80	248.75	8.95	255.76	257.68	0.0023	6.09			3.88			3,780	3,780	100.0	0.0	159.79	248.99						
8.250	500-YR	239.80	249.24	9.44	255.76	257.68	0.0023	6.55			4.06			4,270	4,270	100.0	0.0	160.50	249.49						
8.000	2-YR	239.03	243.09	4.06	253.00	256.73	0.0156	2.04			7.11			1,020	1,020	100.0	0.0	70.37	243.87	17.33					
8.000	5-YR	239.03	244.28	5.25	253.00	256.73	0.0156	2.63			7.11			1,700	1,700	100.0	0.0	91.06	245.06						
8.000	10-YR	239.03	244.92	5.89	253.00	256.73	0.0156	2.94			7.02			2,120	2,120	100.0	0.0	102.78	245.69						
8.000	25-YR	239.03	245.68	6.65	253.00	256.73	0.0156	3.40			6.89			2,650	2,650	100.0	0.0	113.22	246.42						
8.000	50-YR	239.03	246.16	7.13	253.00	256.73	0.0156	3.78			6.91			3,040	3,040	100.0	0.0	116.45	246.91						
8.000	100-YR	239.03	246.67	7.64	253.00	256.73	0.0156	4.14			6.92			3,460	3,460	100.0	0.0	120.79	247.42						
8.000	200-YR	239.03	247.05	8.02	253.00	256.73	0.0156	4.40			6.92			3,780	3,780	100.0	0.0	124.24	247.79						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
8.000	500-YR	239.03	247.59	8.56	253.00	256.73	0.0156	4.77			6.95			4,270	4,270	100.0	0.0	128.80	248.34						
7.900	2-YR	233.90	239.43	5.53	250.07	250.00	0.0061	3.80			5.37			1,020	1,020	100.0	0.0	49.97	239.88	9.04					
7.900	5-YR	233.90	241.10	7.20	250.07	250.00	0.0061	4.79			6.06			1,700	1,700	100.0	0.0	58.57	241.67						
7.900	10-YR	233.90	241.94	8.04	250.07	250.00	0.0061	5.28			6.39			2,120	2,120	100.0	0.0	62.88	242.58						
7.900	25-YR	233.90	243.17	9.27	250.07	250.00	0.0061	5.94			6.41			2,650	2,650	100.0	0.0	69.56	243.81						
7.900	50-YR	233.90	243.64	9.74	250.07	250.00	0.0061	6.20			6.81			3,040	3,040	100.0	0.0	72.06	244.36						
7.900	100-YR	233.90	244.12	10.22	250.07	250.00	0.0061	6.45			7.18			3,460	3,460	100.0	0.0	74.63	244.92						
7.900	200-YR	233.90	244.47	10.57	250.07	250.00	0.0061	6.64			7.44			3,780	3,780	100.0	0.0	76.58	245.33						
7.900	500-YR	233.90	244.98	11.08	250.07	250.00	0.0061	6.90			7.80			4,270	4,270	100.0	0.0	79.39	245.92						
7.838	2-YR	231.87	237.34	5.47	248.74	254.05	0.0040	4.18			5.28			1,020	1,020	100.0	0.0	46.13	237.78	8.43					
7.838	5-YR	231.87	238.91	7.04	248.74	254.05	0.0040	5.12			6.28			1,700	1,700	100.0	0.0	52.90	239.53						
7.838	10-YR	231.87	239.68	7.81	248.74	254.05	0.0040	5.52			6.79			2,120	2,120	100.0	0.0	56.57	240.39						
7.838	25-YR	231.87	240.93	9.06	248.74	254.05	0.0040	4.26			6.49			2,650	2,650	100.0	0.0	95.94	241.58						
7.838	50-YR	231.87	241.43	9.56	248.74	254.05	0.0040	4.68			6.64			3,040	3,040	100.0	0.0	97.80	242.12						
7.838	100-YR	231.87	241.94	10.07	248.74	254.05	0.0040	5.09			6.82			3,460	3,460	100.0	0.0	99.65	242.66						
7.838	200-YR	231.87	242.34	10.47	248.74	254.05	0.0040	5.41			6.91			3,780	3,780	100.0	0.0	101.09	243.08						
7.838	500-YR	231.87	242.88	11.01	248.74	254.05	0.0040	5.85			7.08			4,270	4,270	100.0	0.0	103.07	243.66						
7.774	2-YR	230.53	235.71	5.18	245.20	243.46	0.0051	4.09			4.52			1,020	1,020	100.0	0.0	55.14	236.02	10.64					
7.774	5-YR	230.53	237.01	6.48	245.20	243.46	0.0051	4.94			5.64			1,700	1,700	100.0	0.0	60.95	237.50						
7.774	10-YR	230.53	237.51	6.98	245.20	243.46	0.0051	5.26			6.38			2,120	2,120	100.0	0.0	63.17	238.14						
7.774	25-YR	230.53	238.05	7.52	245.20	243.46	0.0051	5.60			7.22			2,650	2,650	100.0	0.0	65.62	238.86						
7.774	50-YR	230.53	238.41	7.88	245.20	243.46	0.0051	5.81			7.78			3,040	3,040	100.0	0.0	67.27	239.35						
7.774	100-YR	230.53	238.76	8.23	245.20	243.46	0.0051	6.02			8.34			3,460	3,460	100.0	0.0	68.90	239.84						
7.774	200-YR	230.53	239.04	8.51	245.20	243.46	0.0051	6.03			8.70			3,780	3,780	100.0	0.0	72.09	240.22						
7.774	500-YR	230.53	239.42	8.89	245.20	243.46	0.0051	6.11			9.23			4,270	4,270	100.0	0.0	75.70	240.74						
7.714	2-YR	228.92	234.36	5.44	241.57	243.30	0.0035	2.76			3.65			1,020	1,020	100.0	0.0	101.41	234.56	18.64					
7.714	5-YR	228.92	235.53	6.61	241.57	243.30	0.0035	2.87			3.95			1,700	1,700	100.0	0.0	149.99	235.77						
7.714	10-YR	228.92	235.99	7.07	241.57	243.30	0.0035	3.28			4.24			2,120	2,120	100.0	0.0	152.35	236.27						
7.714	25-YR	228.92	236.52	7.60	241.57	243.30	0.0035	3.75			4.55			2,650	2,650	100.0	0.0	155.09	236.84						
7.714	50-YR	228.92	236.89	7.97	241.57	243.30	0.0035	4.08			4.75			3,040	3,040	100.0	0.0	157.00	237.24						
7.714	100-YR	228.92	237.27	8.35	241.57	243.30	0.0035	4.41			4.94			3,460	3,460	100.0	0.0	158.95	237.65						
7.714	200-YR	228.92	237.55	8.63	241.57	243.30	0.0035	4.65			5.07			3,780	3,780	100.0	0.0	160.37	237.95						
7.714	500-YR	228.92	237.95	9.03	241.57	243.30	0.0035	4.99			5.28			4,270	4,270	100.0	0.0	162.31	238.38						
7.656	2-YR	227.85	230.83	2.98	238.81	234.14	0.0254	2.10			7.39			1,020	1,020	100.0	0.0	65.69	231.67	22.04					
7.656	5-YR	227.85	231.87	4.02	238.81	234.14	0.0254	2.82			8.04			1,700	1,700	100.0	0.0	74.89	232.87						
7.656	10-YR	227.85	232.42	4.57	238.81	234.14	0.0254	3.19			8.36			2,120	2,120	100.0	0.0	79.55	233.50						
7.656	25-YR	227.85	233.05	5.20	238.81	234.14	0.0254	3.60			8.66			2,650	2,650	100.0	0.0	85.02	234.22						
7.656	50-YR	227.85	233.49	5.64	238.81	234.14	0.0254	3.87			8.84			3,040	3,040	100.0	0.0	88.74	234.70						
7.656	100-YR	227.85	233.93	6.08	238.81	234.14	0.0254	4.15			9.02			3,460	3,460	100.0	0.0	92.52	235.19						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
7.656	200-YR	227.85	234.24	6.39	238.81	234.14	0.0254	4.36		0.05	9.15		0.36	3,780	3,780	100.0	0.0	97.27	235.54						
7.656	500-YR	227.85	234.69	6.84	238.81	234.14	0.0254	4.74		0.29	9.37		1.10	4,266	4,270	99.9	0.1	108.63	236.05						
7.620	2-YR	222.90	227.96	5.06	236.08	234.43	0.0000	3.09			5.78			1,020	1,020	100.0	0.0	57.16	228.47	11.30					
7.620	5-YR	222.90	229.03	6.13	236.08	234.43	0.0000	3.90			7.08			1,700	1,700	100.0	0.0	61.58	229.81						
7.620	10-YR	222.90	229.62	6.72	236.08	234.43	0.0000	4.32			7.65			2,120	2,120	100.0	0.0	64.16	230.53						
7.620	25-YR	222.90	230.32	7.42	236.08	234.43	0.0000	4.73			8.19			2,650	2,650	100.0	0.0	68.41	231.36						
7.620	50-YR	222.90	230.80	7.90	236.08	234.43	0.0000	5.01			8.52			3,040	3,040	100.0	0.0	71.29	231.92						
7.620	100-YR	222.90	231.28	8.38	236.08	234.43	0.0000	5.28			8.83			3,460	3,460	100.0	0.0	74.18	232.49						
7.620	200-YR	222.90	231.62	8.72	236.08	234.43	0.0000	5.48			9.04			3,780	3,780	100.0	0.0	76.28	232.89						
7.620	500-YR	222.90	232.31	9.41	236.08	234.43	0.0000	5.93			9.06			4,270	4,270	100.0	0.0	79.41	233.58						
7.616		Bridge																							
7.612	2-YR	222.58	227.08	4.50	233.36	234.95	0.0026	3.41			5.03			1,020	1,020	100.0	0.0	59.40	227.47	13.20					
7.612	5-YR	222.58	228.27	5.69	233.36	234.95	0.0026	4.27			6.14			1,700	1,700	100.0	0.0	64.77	228.86						
7.612	10-YR	222.58	228.88	6.30	233.36	234.95	0.0026	4.69			6.69			2,120	2,120	100.0	0.0	67.49	229.57						
7.612	25-YR	222.58	229.60	7.02	233.36	234.95	0.0026	5.18			7.22			2,650	2,650	100.0	0.0	70.82	230.41						
7.612	50-YR	222.58	229.98	7.40	233.36	234.95	0.0026	5.43			7.72			3,040	3,040	100.0	0.0	72.51	230.90						
7.612	100-YR	222.58	230.44	7.86	233.36	234.95	0.0026	5.73			8.09			3,460	3,460	100.0	0.0	74.60	231.46						
7.612	200-YR	222.58	230.65	8.07	233.36	234.95	0.0026	5.87			8.52			3,780	3,780	100.0	0.0	75.57	231.78						
7.612	500-YR	222.58	230.63	8.05	233.36	234.95	0.0026	5.86			9.66			4,270	4,270	100.0	0.0	75.48	232.08						
7.528	2-YR	221.45	224.84	3.39	232.53	231.67	0.0108	2.54			3.35			1,020	1,020	100.0	0.0	119.64	225.02	35.29					
7.528	5-YR	221.45	225.84	4.39	232.53	231.67	0.0108	2.99			3.92			1,700	1,700	100.0	0.0	144.71	226.08						
7.528	10-YR	221.45	226.34	4.89	232.53	231.67	0.0108	3.14			4.15			2,120	2,120	100.0	0.0	162.47	226.61						
7.528	25-YR	221.45	226.98	5.53	232.53	231.67	0.0108	3.03			4.22			2,650	2,650	100.0	0.0	207.47	227.25						
7.528	50-YR	221.45	227.35	5.90	232.53	231.67	0.0108	3.17			4.29			3,040	3,040	100.0	0.0	223.69	227.63						
7.528	100-YR	221.45	227.80	6.35	232.53	231.67	0.0108	3.05			4.22			3,460	3,460	100.0	0.0	268.51	228.08						
7.528	200-YR	221.45	227.98	6.53	232.53	231.67	0.0108	3.22			4.35			3,780	3,780	100.0	0.0	269.56	228.28						
7.528	500-YR	221.45	229.60	8.15	232.53	231.67	0.0108	4.67			3.25			4,270	4,270	100.0	0.0	281.48	229.77						
7.466	2-YR	217.90	222.01	4.11	230.33	230.31	0.0087	1.98			5.57			1,020	1,020	100.0	0.0	92.21	222.49	22.44					
7.466	5-YR	217.90	222.95	5.05	230.33	230.31	0.0087	2.49			6.15			1,700	1,700	100.0	0.0	111.02	223.54						
7.466	10-YR	217.90	223.40	5.50	230.33	230.31	0.0087	2.64			6.44			2,120	2,120	100.0	0.0	124.75	224.04						
7.466	25-YR	217.90	223.85	5.95	230.33	230.31	0.0087	2.80			6.83			2,650	2,650	100.0	0.0	138.73	224.57						
7.466	50-YR	217.90	224.01	6.11	230.33	230.31	0.0087	2.86			7.39			3,040	3,040	100.0	0.0	143.98	224.86						
7.466	100-YR	217.90	224.17	6.27	230.33	230.31	0.0087	2.92			7.95			3,460	3,460	100.0	0.0	149.18	225.16						
7.466	200-YR	217.90	224.42	6.52	230.33	230.31	0.0087	3.01			7.99			3,780	3,780	100.0	0.0	157.36	225.41						
7.466	500-YR	217.90	229.26	11.36	230.33	230.31	0.0087	5.89			2.53			4,270	4,270	100.0	0.0	286.61	229.36						
7.353	2-YR	212.71	218.16	5.45	222.11	226.43	0.0052	3.03			3.44			1,020	1,020	100.0	0.0	98.11	218.35	18.00					
7.353	5-YR	212.71	219.50	6.79	222.11	226.43	0.0052	3.79			3.87			1,700	1,700	100.0	0.0	115.83	219.74						
7.353	10-YR	212.71	220.43	7.72	222.11	226.43	0.0052	4.14			3.81			2,120	2,120	100.0	0.0	134.33	220.66						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
7.353	25-YR	212.71	221.35	8.64	222.11	226.43	0.0052	4.84	0.28		3.83	1.59		2,617	2,650	98.8	1.2	214.56	221.57						
7.353	50-YR	212.71	222.07	9.36	222.11	226.43	0.0052	5.38	0.93		3.57	3.04		2,805	3,040	92.3	7.7	229.71	222.26						
7.353	100-YR	212.71	222.84	10.13	222.11	226.43	0.0052	6.02	1.66		3.24	3.78		2,918	3,460	84.3	15.7	235.69	223.01						
7.353	200-YR	212.71	223.52	10.81	222.11	226.43	0.0052	6.58	2.30		2.96	4.03		2,966	3,780	78.5	21.5	240.36	223.68						
7.353	500-YR	212.71	229.20	16.49	222.11	226.43	0.0052	11.66	7.22	2.24	1.16	2.26	0.53	2,228	4,270	52.2	47.8	565.98	229.25						
7.297	2-YR	211.16	216.81	5.65	226.89	223.31	0.0043	4.29			4.78			1,410	1,410	100.0	0.0	68.73	217.16	12.16					
7.297	5-YR	211.16	218.12	6.96	226.89	223.31	0.0043	5.36			5.47			2,120	2,120	100.0	0.0	72.36	218.58						
7.297	10-YR	211.16	219.17	8.01	226.89	223.31	0.0043	6.18			5.59			2,600	2,600	100.0	0.0	75.25	219.66						
7.297	25-YR	211.16	219.99	8.83	226.89	223.31	0.0043	6.81			6.25			3,300	3,300	100.0	0.0	77.52	220.60						
7.297	50-YR	211.16	220.66	9.50	226.89	223.31	0.0043	7.31			6.75			3,920	3,920	100.0	0.0	79.36	221.37						
7.297	100-YR	211.16	221.41	10.25	226.89	223.31	0.0043	7.87			7.28			4,660	4,660	100.0	0.0	81.42	222.23						
7.297	200-YR	211.16	222.18	11.02	226.89	223.31	0.0043	8.43			7.36			5,180	5,180	100.0	0.0	83.55	223.02						
7.297	500-YR	211.16	229.01	17.85	226.89	223.31	0.0043	14.58	1.06	3.45	3.67	0.47	1.06	4,789	5,900	81.2	18.8	399.44	229.18						
7.227	2-YR	209.59	215.16	5.57	223.64	223.26	0.0063	4.22			5.02			1,410	1,410	100.0	0.0	66.52	215.55	11.94					
7.227	5-YR	209.59	216.50	6.91	223.64	223.26	0.0063	5.17			5.66			2,120	2,120	100.0	0.0	72.44	217.00						
7.227	10-YR	209.59	217.62	8.03	223.64	223.26	0.0063	4.22			5.37			2,600	2,600	100.0	0.0	114.60	218.07						
7.227	25-YR	209.59	218.50	8.91	223.64	223.26	0.0063	5.00			5.63			3,300	3,300	100.0	0.0	117.32	219.00						
7.227	50-YR	209.59	219.23	9.64	223.64	223.26	0.0063	5.62			5.83			3,920	3,920	100.0	0.0	119.56	219.76						
7.227	100-YR	209.59	220.05	10.46	223.64	223.26	0.0063	6.31			6.04			4,660	4,660	100.0	0.0	122.09	220.61						
7.227	200-YR	209.59	221.12	11.53	223.64	223.26	0.0063	7.21			5.73			5,180	5,180	100.0	0.0	125.41	221.63						
7.227	500-YR	209.59	228.98	19.39	223.64	223.26	0.0063	14.55	3.17	4.24	2.25	0.59	0.73	4,370	5,900	74.1	25.9	649.42	229.04						
7.165	2-YR	207.53	212.65	5.12	215.01	216.71	0.0065	4.00			6.97			1,410	1,410	100.0	0.0	50.55	213.40	9.87					
7.165	5-YR	207.53	213.97	6.44	215.01	216.71	0.0065	4.90			7.78			2,120	2,120	100.0	0.0	55.64	214.91						
7.165	10-YR	207.53	214.66	7.13	215.01	216.71	0.0065	5.36			8.34			2,600	2,600	100.0	0.0	58.15	215.74						
7.165	25-YR	207.53	215.26	7.73	215.01	216.71	0.0065	5.79	0.12		9.50	0.27		3,300	3,300	100.0	0.0	60.06	216.66						
7.165	50-YR	207.53	215.66	8.13	215.01	216.71	0.0065	6.10	0.32		10.56	0.54		3,920	3,920	100.0	0.0	61.10	217.39						
7.165	100-YR	207.53	216.17	8.64	215.01	216.71	0.0065	6.50	0.58		11.57	0.84		4,660	4,660	100.0	0.0	62.44	218.25						
7.165	200-YR	207.53	219.28	11.75	215.01	216.71	0.0065	9.48	2.13	1.70	8.47	1.14	1.98	5,076	5,180	98.0	2.0	94.49	220.37						
7.165	500-YR	207.53	228.92	21.39	215.01	216.71	0.0065	19.12	5.31	5.98	2.66	0.58	0.90	3,214	5,900	54.5	45.5	566.02	228.98						
7.106	2-YR	205.51	211.05	5.54	216.92	218.58	0.0041	3.73			4.50			1,410	1,410	100.0	0.0	83.99	211.36	15.16					
7.106	5-YR	205.51	212.42	6.91	216.92	218.58	0.0041	3.73			4.68			2,120	2,120	100.0	0.0	121.68	212.76						
7.106	10-YR	205.51	213.20	7.69	216.92	218.58	0.0041	3.69			4.63			2,600	2,600	100.0	0.0	152.14	213.54						
7.106	25-YR	205.51	214.11	8.60	216.92	218.58	0.0041	4.23			4.66			3,300	3,300	100.0	0.0	167.64	214.44						
7.106	50-YR	205.51	214.79	9.28	216.92	218.58	0.0041	4.83			4.75			3,920	3,920	100.0	0.0	170.89	215.14						
7.106	100-YR	205.51	215.80	10.29	216.92	218.58	0.0041	5.69			4.67			4,660	4,660	100.0	0.0	175.63	216.13						
7.106	200-YR	205.51	219.53	14.02	216.92	218.58	0.0041	9.04	1.31	0.48	3.08	0.56	0.31	5,175	5,180	99.9	0.1	201.36	219.68						
7.106	500-YR	205.51	228.93	23.42	216.92	218.58	0.0041	18.43	6.00	6.13	1.31	0.41	0.45	4,477	5,900	75.9	24.1	704.66	228.95						
7.056	2-YR	204.43	209.73	5.30	216.73	216.38	0.0039	4.11			5.14			1,410	1,410	100.0	0.0	66.76	210.14	12.60					
7.056	5-YR	204.43	210.87	6.44	216.73	216.38	0.0039	4.94			6.01			2,120	2,120	100.0	0.0	71.42	211.43						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
7.056	10-YR	204.43	211.54	7.11	216.73	216.38	0.0039	5.41			6.47			2,600	2,600	100.0	0.0	74.19	212.19						
7.056	25-YR	204.43	212.39	7.96	216.73	216.38	0.0039	6.00			7.07			3,300	3,300	100.0	0.0	77.73	213.17						
7.056	50-YR	204.43	213.04	8.61	216.73	216.38	0.0039	6.43			7.58			3,920	3,920	100.0	0.0	80.39	213.93						
7.056	100-YR	204.43	214.27	9.84	216.73	216.38	0.0039	7.29			7.52			4,660	4,660	100.0	0.0	85.03	215.15						
7.056	200-YR	204.43	219.24	14.81	216.73	216.38	0.0039	11.51	2.29	1.47	4.19	1.05	0.78	4,499	5,180	86.9	13.1	609.99	219.48						
7.056	500-YR	204.43	228.92	24.49	216.73	216.38	0.0039	21.19	9.68	11.05	1.20	0.52	0.57	2,376	5,900	40.3	59.7	676.75	228.93						
7.018	2-YR	203.64	208.90	5.26	215.21	216.13	0.0000	3.67			4.32			1,410	1,410	100.0	0.0	88.91	209.19	16.90					
7.018	5-YR	203.64	210.07	6.43	215.21	216.13	0.0000	4.58			4.89			2,120	2,120	100.0	0.0	94.56	210.44						
7.018	10-YR	203.64	210.75	7.11	215.21	216.13	0.0000	5.10			5.21			2,600	2,600	100.0	0.0	97.87	211.17						
7.018	25-YR	203.64	211.61	7.97	215.21	216.13	0.0000	5.73			5.64			3,300	3,300	100.0	0.0	102.03	212.11						
7.018	50-YR	203.64	212.24	8.60	215.21	216.13	0.0000	6.18			6.03			3,920	3,920	100.0	0.0	105.06	212.80						
7.018	100-YR	203.64	213.69	10.05	215.21	216.13	0.0000	7.21			5.77			4,660	4,660	100.0	0.0	112.12	214.21						
7.018	200-YR	203.64	219.18	15.54	215.21	216.13	0.0000	11.99	3.34	3.01	3.07	0.95	0.87	4,509	5,180	87.1	13.0	358.53	219.31						
7.018	500-YR	203.64	228.90	25.26	215.21	216.13	0.0000	21.71	8.15	12.74	1.44	0.54	0.69	3,819	5,900	64.7	35.3	455.58	228.92						
6.978		Bridge																							
6.938	2-YR	201.59	206.65	5.06	214.20	212.60	0.0084	3.83			4.07			1,410	1,410	100.0	0.0	90.43	206.91	17.87					
6.938	5-YR	201.59	207.99	6.40	214.20	212.60	0.0084	4.68			4.46			2,120	2,120	100.0	0.0	101.50	208.30						
6.938	10-YR	201.59	208.85	7.26	214.20	212.60	0.0084	4.58			4.52			2,600	2,600	100.0	0.0	125.47	209.17						
6.938	25-YR	201.59	209.78	8.19	214.20	212.60	0.0084	5.04			4.73			3,300	3,300	100.0	0.0	138.35	210.13						
6.938	50-YR	201.59	210.33	8.74	214.20	212.60	0.0084	5.43			5.06			3,920	3,920	100.0	0.0	142.83	210.73						
6.938	100-YR	201.59	212.66	11.07	214.20	212.60	0.0084	6.99		0.43	4.11		0.46	4,645	4,660	99.7	0.3	237.80	212.92						
6.938	200-YR	201.59	219.07	17.48	214.20	212.60	0.0084	12.83	4.00	6.64	1.93	0.64	0.85	4,325	5,180	83.5	16.5	387.19	219.12						
6.938	500-YR	201.59	228.89	27.30	214.20	212.60	0.0084	22.65	7.20	16.45	1.09	0.36	0.57	4,288	5,900	72.7	27.3	533.93	228.90						
6.878	2-YR	198.92	203.11	4.19	212.74	207.37	0.0140	3.06			9.03			1,410	1,410	100.0	0.0	51.10	204.37	12.20					
6.878	5-YR	198.92	203.90	4.98	212.74	207.37	0.0140	3.54			10.69			2,120	2,120	100.0	0.0	56.04	205.67						
6.878	10-YR	198.92	204.48	5.56	212.74	207.37	0.0140	3.89			11.20			2,600	2,600	100.0	0.0	59.70	206.43						
6.878	25-YR	198.92	205.24	6.32	212.74	207.37	0.0140	4.33			11.83			3,300	3,300	100.0	0.0	64.41	207.41						
6.878	50-YR	198.92	206.40	7.48	212.74	207.37	0.0140	4.99			10.95			3,920	3,920	100.0	0.0	71.67	208.26						
6.878	100-YR	198.92	212.21	13.29	212.74	207.37	0.0140	9.61	0.74	2.46	4.54	0.60	1.34	3,756	4,660	80.6	19.4	487.27	212.48						
6.878	200-YR	198.92	219.05	20.13	212.74	207.37	0.0140	16.34	6.31	8.62	1.63	0.63	0.78	2,315	5,180	44.7	55.3	609.66	219.07						
6.878	500-YR	198.92	228.89	29.97	212.74	207.37	0.0140	26.18	16.15	17.55	0.81	0.42	0.45	1,846	5,900	31.3	68.7	637.83	228.89						
6.859	2-YR	197.56	201.36	3.80	208.26	204.02	0.0170	1.75			6.35			1,640	1,640	100.0	0.0	147.98	201.98	38.94					
6.859	5-YR	197.56	202.27	4.71	208.26	204.02	0.0170	2.59			6.45			2,550	2,550	100.0	0.0	152.72	202.91						
6.859	10-YR	197.56	203.13	5.57	208.26	204.02	0.0170	3.35			5.88			3,110	3,110	100.0	0.0	157.94	203.66						
6.859	25-YR	197.56	204.49	6.93	208.26	204.02	0.0170	4.52		0.47	5.29		0.86	3,971	3,990	99.5	0.5	212.50	204.92						
6.859	50-YR	197.56	207.36	9.80	208.26	204.02	0.0170	7.22		1.82	3.38		0.98	4,172	4,640	89.9	10.1	432.59	207.52						
6.859	100-YR	197.56	212.35	14.79	208.26	204.02	0.0170	12.14	4.04	5.11	1.73	0.60	0.70	3,634	5,450	66.7	33.3	737.72	212.38						
6.859	200-YR	197.56	219.06	21.50	208.26	204.02	0.0170	18.85	10.01	11.12	0.97	0.45	0.49	3,145	6,330	49.7	50.3	792.78	219.07						
6.859	500-YR	197.56	228.89	31.33	208.26	204.02	0.0170	28.68	19.44	20.47	0.61	0.33	0.34	3,021	7,430	40.7	59.3	817.20	228.89						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
6.839	2-YR	195.76	200.25	4.49	210.68	212.20	0.0067	3.03			5.12			1,640	1,640	100.0	0.0	105.59	200.66	23.52					
6.839	5-YR	195.76	201.41	5.65	210.68	212.20	0.0067	3.99			5.72			2,550	2,550	100.0	0.0	111.69	201.92						
6.839	10-YR	195.76	202.59	6.83	210.68	212.20	0.0067	4.92			5.36			3,110	3,110	100.0	0.0	117.92	203.03						
6.839	25-YR	195.76	204.11	8.35	210.68	212.20	0.0067	6.07			5.20			3,990	3,990	100.0	0.0	126.33	204.53						
6.839	50-YR	195.76	207.20	11.44	210.68	212.20	0.0067	6.29			3.55			4,640	4,640	100.0	0.0	207.96	207.40						
6.839	100-YR	195.76	212.35	16.59	210.68	212.20	0.0067	10.79	8.59	0.49	1.14	0.70	0.10	2,785	5,450	51.1	48.9	719.25	212.37						
6.839	200-YR	195.76	219.06	23.30	210.68	212.20	0.0067	17.50	15.01	5.18	0.75	0.48	0.24	2,943	6,330	46.5	53.5	780.04	219.06						
6.839	500-YR	195.76	228.89	33.13	210.68	212.20	0.0067	27.33	24.84	14.04	0.52	0.34	0.23	3,196	7,430	43.0	57.0	799.76	228.89						
6.773	2-YR	193.45	197.87	4.42	203.58	205.12	0.0065	3.47			5.30			1,640	1,640	100.0	0.0	89.15	198.30	20.17					
6.773	5-YR	193.45	199.78	6.33	203.58	205.12	0.0065	4.95			5.22			2,550	2,550	100.0	0.0	98.62	200.20						
6.773	10-YR	193.45	201.65	8.20	203.58	205.12	0.0065	6.26	0.26		4.55	0.40		3,108	3,110	99.9	0.1	127.59	201.97						
6.773	25-YR	193.45	203.45	10.00	203.58	205.12	0.0065	7.45	1.34		4.41	1.01		3,921	3,990	98.3	1.7	170.23	203.75						
6.773	50-YR	193.45	207.00	13.55	203.58	205.12	0.0065	10.74	2.72	1.36	3.03	0.87	0.55	4,003	4,640	86.3	13.7	427.99	207.12						
6.773	100-YR	193.45	212.31	18.86	203.58	205.12	0.0065	16.05	6.66	5.20	1.68	0.67	0.57	3,316	5,450	60.8	39.2	640.80	212.34						
6.773	200-YR	193.45	219.05	25.60	203.58	205.12	0.0065	22.79	13.16	9.17	1.04	0.51	0.42	2,909	6,330	46.0	54.0	700.30	219.06						
6.773	500-YR	193.45	228.89	35.44	203.58	205.12	0.0065	32.63	23.00	17.84	0.68	0.38	0.32	2,753	7,430	37.1	62.9	723.49	228.89						
6.706	2-YR	191.12	196.26	5.14	201.68	202.53	0.0101	3.75			4.24			1,640	1,640	100.0	0.0	103.17	196.54	20.07					
6.706	5-YR	191.12	199.09	7.97	201.68	202.53	0.0101	4.68			3.28			2,550	2,550	100.0	0.0	166.39	199.25						
6.706	10-YR	191.12	201.37	10.25	201.68	202.53	0.0101	5.53	0.92		2.54	0.56		3,071	3,110	98.8	1.2	292.98	201.47						
6.706	25-YR	191.12	203.32	12.20	201.68	202.53	0.0101	6.90	1.92	0.86	2.26	0.71	0.40	3,772	3,990	94.5	5.5	425.43	203.40						
6.706	50-YR	191.12	206.99	15.87	201.68	202.53	0.0101	10.56	5.05	3.34	1.53	0.66	0.50	3,907	4,640	84.2	15.8	487.95	207.02						
6.706	100-YR	191.12	212.30	21.18	201.68	202.53	0.0101	15.88	9.34	6.84	1.07	0.53	0.43	4,105	5,450	75.3	24.7	544.73	212.32						
6.706	200-YR	191.12	219.04	27.92	201.68	202.53	0.0101	22.62	15.16	9.82	0.79	0.42	0.32	4,325	6,330	68.3	31.7	622.55	219.05						
6.706	500-YR	191.12	228.88	37.76	201.68	202.53	0.0101	32.46	25.00	19.25	0.59	0.34	0.28	4,603	7,430	61.9	38.1	628.14	228.89						
6.650	2-YR	188.19	196.14	7.95	195.86	195.80	0.0067	5.66	0.28	0.17	2.34	0.15	0.11	1,640	1,640	100.0	0.0	126.52	196.22	15.91					
6.650	5-YR	188.19	199.00	10.81	195.86	195.80	0.0067	8.52	3.15	1.52	2.40	0.61	0.37	2,535	2,550	99.4	0.6	150.67	199.09						
6.650	10-YR	188.19	201.30	13.11	195.86	195.80	0.0067	10.82	5.44	2.55	2.28	0.71	0.43	3,055	3,110	98.2	1.8	174.50	201.38						
6.650	25-YR	188.19	203.24	15.05	195.86	195.80	0.0067	12.76	7.38	3.23	2.45	0.84	0.48	3,867	3,990	96.9	3.1	202.75	203.33						
6.650	50-YR	188.19	206.92	18.73	195.86	195.80	0.0067	16.44	11.06	5.26	2.13	0.81	0.49	4,342	4,640	93.6	6.4	239.26	206.98						
6.650	100-YR	188.19	212.25	24.06	195.86	195.80	0.0067	21.77	16.40	10.56	1.78	0.72	0.54	4,789	5,450	87.9	12.1	240.00	212.30						
6.650	200-YR	188.19	219.01	30.82	195.86	195.80	0.0067	28.53	23.15	17.32	1.49	0.64	0.53	5,273	6,330	83.3	16.7	240.00	219.04						
6.650	500-YR	188.19	228.88	40.69	195.86	195.80	0.0067	38.40	17.70	24.50	0.84	0.26	0.29	3,997	7,430	53.8	46.2	786.36	228.89						
6.588		Culvert																							
6.532	2-YR	184.00	187.14	3.14	196.17	195.84	0.0084	2.77			9.49			1,560	1,560	100.0	0.0	59.33	188.54	18.89	12	25.98	72.92	1.23	1.84
6.532	5-YR	184.00	188.07	4.07	196.17	195.84	0.0084	3.50			10.66			2,360	2,360	100.0	0.0	63.29	189.84						
6.532	10-YR	184.00	188.56	4.56	196.17	195.84	0.0084	3.87			11.20			2,830	2,830	100.0	0.0	65.35	190.51						
6.532	25-YR	184.00	189.16	5.16	196.17	195.84	0.0084	4.31			11.82			3,460	3,460	100.0	0.0	67.91	191.33						
6.532	50-YR	184.00	189.59	5.59	196.17	195.84	0.0084	4.62			12.25			3,950	3,950	100.0	0.0	69.76	191.92						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
6.532	100-YR	184.00	190.01	6.01	196.17	195.84	0.0084	4.91			12.64			4,450	4,450	100.0	0.0	71.64	192.49						
6.532	200-YR	184.00	190.37	6.37	196.17	195.84	0.0084	5.16			12.95			4,900	4,900	100.0	0.0	73.37	192.98						
6.532	500-YR	184.00	190.71	6.71	196.17	195.84	0.0084	5.38			13.23			5,330	5,330	100.0	0.0	74.95	193.42						
6.483	2-YR	181.85	185.91	4.06	191.87	192.64	0.0036	3.34			5.83			1,560	1,560	100.0	0.0	80.01	186.44	19.71	12		145.22	1.82	
6.483	5-YR	181.85	186.81	4.96	191.87	192.64	0.0036	3.97			6.90			2,360	2,360	100.0	0.0	86.24	187.55						
6.483	10-YR	181.85	187.27	5.42	191.87	192.64	0.0036	4.26			7.40			2,830	2,830	100.0	0.0	89.68	188.12						
6.483	25-YR	181.85	187.83	5.98	191.87	192.64	0.0036	4.62			7.98			3,460	3,460	100.0	0.0	93.87	188.82						
6.483	50-YR	181.85	188.12	6.27	191.87	192.64	0.0036	4.80			8.57			3,950	3,950	100.0	0.0	96.08	189.26						
6.483	100-YR	181.85	188.38	6.53	191.87	192.64	0.0036	4.96			9.14			4,450	4,450	100.0	0.0	98.17	189.68						
6.483	200-YR	181.85	188.61	6.76	191.87	192.64	0.0036	5.12			9.62			4,900	4,900	100.0	0.0	99.52	190.05						
6.483	500-YR	181.85	188.81	6.96	191.87	192.64	0.0036	5.26			10.07			5,330	5,330	100.0	0.0	100.68	190.38						
6.342	2-YR	180.46	182.74	2.28	186.46	186.46	0.0500	2.10			8.27			1,560	1,560	100.0	0.0	89.66	183.80	39.32	12		191.36	2.13	
6.342	5-YR	180.46	183.43	2.97	186.46	186.46	0.0500	2.69			9.35			2,360	2,360	100.0	0.0	93.83	184.79						
6.342	10-YR	180.46	183.80	3.34	186.46	186.46	0.0500	2.99			9.86			2,830	2,830	100.0	0.0	96.02	185.31						
6.342	25-YR	180.46	184.78	4.32	186.46	186.46	0.0500	2.17			8.40			3,460	3,460	100.0	0.0	189.91	185.87						
6.342	50-YR	180.46	184.98	4.52	186.46	186.46	0.0500	2.36			8.75			3,950	3,950	100.0	0.0	191.14	186.17						
6.342	100-YR	180.46	185.18	4.72	186.46	186.46	0.0500	2.55			9.09			4,450	4,450	100.0	0.0	192.34	186.47						
6.342	200-YR	180.46	185.36	4.90	186.46	186.46	0.0500	2.70			9.37			4,900	4,900	100.0	0.0	193.38	186.72						
6.342	500-YR	180.46	185.52	5.06	186.46	186.46	0.0500	2.85			9.62			5,330	5,330	100.0	0.0	194.35	186.95						
6.336	2-YR	178.96	182.76	3.80	184.96	184.96	0.0033	3.36			4.70			1,560	1,560	100.0	0.0	98.79	183.10	26.00	12		216.02	2.19	
6.336	5-YR	178.96	183.94	4.98	184.96	184.96	0.0033	2.78			4.37			2,360	2,360	100.0	0.0	193.89	184.24						
6.336	10-YR	178.96	184.33	5.37	184.96	184.96	0.0033	3.13			4.60			2,830	2,830	100.0	0.0	196.22	184.66						
6.336	25-YR	178.96	184.80	5.84	184.96	184.96	0.0033	3.56			4.89			3,460	3,460	100.0	0.0	199.04	185.17						
6.336	50-YR	178.96	185.07	6.11	184.96	184.96	0.0033	3.81	0.06	0.06	5.18	0.27	0.27	3,950	3,950	100.0	0.0	201.14	185.49						
6.336	100-YR	178.96	185.34	6.38	184.96	184.96	0.0033	4.08	0.19	0.19	5.46	0.61	0.61	4,450	4,450	100.0	0.0	203.76	185.80						
6.336	200-YR	178.96	185.56	6.60	184.96	184.96	0.0033	4.30	0.30	0.30	5.70	0.84	0.84	4,898	4,900	100.0	0.0	206.00	186.06						
6.336	500-YR	178.96	185.76	6.80	184.96	184.96	0.0033	4.50	0.40	0.40	5.91	1.03	1.03	5,327	5,330	99.9	0.1	208.05	186.31						
6.247	2-YR	177.51	179.79	2.28	183.51	183.51	0.0500	2.10			8.27			1,560	1,560	100.0	0.0	89.66	180.85	39.32	11	32.55	191.36	2.13	2.19
6.247	5-YR	177.51	180.48	2.97	183.51	183.51	0.0500	2.69			9.35			2,360	2,360	100.0	0.0	93.83	181.84						
6.247	10-YR	177.51	180.85	3.34	183.51	183.51	0.0500	2.99			9.86			2,830	2,830	100.0	0.0	96.02	182.36						
6.247	25-YR	177.51	181.83	4.32	183.51	183.51	0.0500	2.17			8.40			3,460	3,460	100.0	0.0	189.91	182.92						
6.247	50-YR	177.51	182.03	4.52	183.51	183.51	0.0500	2.36			8.75			3,950	3,950	100.0	0.0	191.14	183.22						
6.247	100-YR	177.51	182.23	4.72	183.51	183.51	0.0500	2.55			9.09			4,450	4,450	100.0	0.0	192.34	183.52						
6.247	200-YR	177.51	182.41	4.90	183.51	183.51	0.0500	2.70			9.37			4,900	4,900	100.0	0.0	193.38	183.77						
6.247	500-YR	177.51	182.57	5.06	183.51	183.51	0.0500	2.85			9.62			5,330	5,330	100.0	0.0	194.35	184.00						
6.241	2-YR	176.01	179.85	3.84	182.01	182.01	0.0032	3.39			4.65			1,560	1,560	100.0	0.0	99.02	180.18	25.79	11		216.80	2.19	
6.241	5-YR	176.01	181.02	5.01	182.01	182.01	0.0032	2.81			4.32			2,360	2,360	100.0	0.0	194.08	181.31						
6.241	10-YR	176.01	181.41	5.40	182.01	182.01	0.0032	3.17			4.55			2,830	2,830	100.0	0.0	196.43	181.74						
6.241	25-YR	176.01	181.89	5.88	182.01	182.01	0.0032	3.59			4.84			3,460	3,460	100.0	0.0	199.26	182.25						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
6.241	50-YR	176.01	182.16	6.15	182.01	182.01	0.0032	3.85	0.08	0.08	5.13	0.33	0.33	3,950	3,950	100.0	0.0	201.53	182.57						
6.241	100-YR	176.01	182.43	6.42	182.01	182.01	0.0032	4.12	0.21	0.21	5.40	0.64	0.64	4,449	4,450	100.0	0.0	204.16	182.88						
6.241	200-YR	176.01	182.65	6.64	182.01	182.01	0.0032	4.34	0.32	0.32	5.64	0.86	0.86	4,898	4,900	100.0	0.0	206.42	183.15						
6.241	500-YR	176.01	182.86	6.85	182.01	182.01	0.0032	4.55	0.42	0.42	5.86	1.05	1.05	5,326	5,330	99.9	0.1	208.48	183.39						
6.152	2-YR	174.56	176.84	2.28	180.56	180.56	0.0499	2.10			8.27			1,560	1,560	100.0	0.0	89.66	177.90	39.32	11		191.36	2.13	
6.152	5-YR	174.56	177.53	2.97	180.56	180.56	0.0499	2.69			9.35			2,360	2,360	100.0	0.0	93.83	178.89						
6.152	10-YR	174.56	177.90	3.34	180.56	180.56	0.0499	2.99			9.86			2,830	2,830	100.0	0.0	96.02	179.41						
6.152	25-YR	174.56	178.88	4.32	180.56	180.56	0.0499	2.17			8.40			3,460	3,460	100.0	0.0	189.91	179.97						
6.152	50-YR	174.56	179.08	4.52	180.56	180.56	0.0499	2.36			8.75			3,950	3,950	100.0	0.0	191.14	180.27						
6.152	100-YR	174.56	179.28	4.72	180.56	180.56	0.0499	2.55			9.09			4,450	4,450	100.0	0.0	192.34	180.57						
6.152	200-YR	174.56	179.46	4.90	180.56	180.56	0.0499	2.71			9.37			4,900	4,900	100.0	0.0	193.38	180.82						
6.152	500-YR	174.56	179.62	5.06	180.56	180.56	0.0499	2.85			9.62			5,330	5,330	100.0	0.0	194.35	181.05						
6.147	2-YR	173.06	176.91	3.85	179.06	179.06	0.0031	3.40			4.63			1,560	1,560	100.0	0.0	99.11	177.24	25.74	11		210.20	2.12	
6.147	5-YR	173.06	178.09	5.03	179.06	179.06	0.0031	2.82			4.31			2,360	2,360	100.0	0.0	194.16	178.37						
6.147	10-YR	173.06	178.48	5.42	179.06	179.06	0.0031	3.18			4.53			2,830	2,830	100.0	0.0	196.51	178.80						
6.147	25-YR	173.06	178.95	5.89	179.06	179.06	0.0031	3.60			4.82			3,460	3,460	100.0	0.0	199.34	179.31						
6.147	50-YR	173.06	179.23	6.17	179.06	179.06	0.0031	3.87	0.08	0.08	5.11	0.34	0.34	3,950	3,950	100.0	0.0	201.00	179.63						
6.147	100-YR	173.06	179.49	6.43	179.06	179.06	0.0031	4.13	0.22	0.22	5.39	0.64	0.64	4,450	4,450	100.0	0.0	202.59	179.94						
6.147	200-YR	173.06	179.72	6.66	179.06	179.06	0.0031	4.36	0.33	0.33	5.62	0.85	0.85	4,899	4,900	100.0	0.0	203.95	180.21						
6.147	500-YR	173.06	179.93	6.87	179.06	179.06	0.0031	4.57	0.43	0.43	5.84	1.03	1.03	5,328	5,330	100.0	0.0	205.19	180.45						
6.057	2-YR	171.61	173.89	2.28	177.61	177.61	0.0500	2.10			8.27			1,560	1,560	100.0	0.0	89.66	174.95	39.32	11		191.36	2.13	
6.057	5-YR	171.61	174.58	2.97	177.61	177.61	0.0500	2.69			9.35			2,360	2,360	100.0	0.0	93.83	175.94						
6.057	10-YR	171.61	174.95	3.34	177.61	177.61	0.0500	2.99			9.86			2,830	2,830	100.0	0.0	96.02	176.46						
6.057	25-YR	171.61	175.93	4.32	177.61	177.61	0.0500	2.17			8.40			3,460	3,460	100.0	0.0	189.91	177.02						
6.057	50-YR	171.61	176.13	4.52	177.61	177.61	0.0500	2.36			8.75			3,950	3,950	100.0	0.0	191.14	177.32						
6.057	100-YR	171.61	176.33	4.72	177.61	177.61	0.0500	2.55			9.09			4,450	4,450	100.0	0.0	192.34	177.62						
6.057	200-YR	171.61	176.51	4.90	177.61	177.61	0.0500	2.71			9.37			4,900	4,900	100.0	0.0	193.39	177.87						
6.057	500-YR	171.61	176.67	5.06	177.61	177.61	0.0500	2.85			9.61			5,330	5,330	100.0	0.0	194.35	178.10						
6.052	2-YR	170.11	173.91	3.80	176.11	176.11	0.0033	3.36			4.69			1,560	1,560	100.0	0.0	98.81	174.25	26.00	11		216.00	2.19	
6.052	5-YR	170.11	175.09	4.98	176.11	176.11	0.0033	2.78			4.37			2,360	2,360	100.0	0.0	193.90	175.39						
6.052	10-YR	170.11	175.48	5.37	176.11	176.11	0.0033	3.13			4.60			2,830	2,830	100.0	0.0	196.21	175.81						
6.052	25-YR	170.11	175.95	5.84	176.11	176.11	0.0033	3.56			4.88			3,460	3,460	100.0	0.0	199.05	176.32						
6.052	50-YR	170.11	176.23	6.12	176.11	176.11	0.0033	3.82	0.06	0.06	5.18	0.28	0.28	3,950	3,950	100.0	0.0	201.16	176.64						
6.052	100-YR	170.11	176.49	6.38	176.11	176.11	0.0033	4.08	0.19	0.19	5.46	0.61	0.61	4,450	4,450	100.0	0.0	203.78	176.95						
6.052	200-YR	170.11	176.71	6.60	176.11	176.11	0.0033	4.30	0.30	0.30	5.69	0.84	0.84	4,898	4,900	100.0	0.0	206.02	177.22						
6.052	500-YR	170.11	176.92	6.81	176.11	176.11	0.0033	4.51	0.40	0.40	5.91	1.03	1.03	5,327	5,330	99.9	0.1	208.07	177.46						
5.963	2-YR	168.66	170.94	2.28	174.66	174.66	0.0500	2.10			8.27			1,560	1,560	100.0	0.0	89.66	172.00	39.32	11		191.36	2.13	
5.963	5-YR	168.66	171.63	2.97	174.66	174.66	0.0500	2.69			9.36			2,360	2,360	100.0	0.0	93.83	172.99						
5.963	10-YR	168.66	172.00	3.34	174.66	174.66	0.0500	2.99			9.86			2,830	2,830	100.0	0.0	96.02	173.51						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
5.963	25-YR	168.66	172.98	4.32	174.66	174.66	0.0500	2.17			8.39			3,460	3,460	100.0	0.0	189.91	174.07						
5.963	50-YR	168.66	173.19	4.53	174.66	174.66	0.0500	2.36			8.75			3,950	3,950	100.0	0.0	191.15	174.37						
5.963	100-YR	168.66	173.38	4.72	174.66	174.66	0.0500	2.55			9.09			4,450	4,450	100.0	0.0	192.35	174.67						
5.963	200-YR	168.66	173.56	4.90	174.66	174.66	0.0500	2.71			9.36			4,900	4,900	100.0	0.0	193.39	174.92						
5.963	500-YR	168.66	173.72	5.06	174.66	174.66	0.0500	2.85			9.61			5,330	5,330	100.0	0.0	194.36	175.15						
5.957	2-YR	167.16	171.00	3.84	173.16	173.16	0.0031	3.40			4.64			1,560	1,560	100.0	0.0	99.06	171.34	25.80	11		216.81	2.19	
5.957	5-YR	167.16	172.18	5.02	173.16	173.16	0.0031	2.82			4.32			2,360	2,360	100.0	0.0	194.12	172.47						
5.957	10-YR	167.16	172.57	5.41	173.16	173.16	0.0031	3.17			4.54			2,830	2,830	100.0	0.0	196.47	172.89						
5.957	25-YR	167.16	173.04	5.88	173.16	173.16	0.0031	3.60			4.83			3,460	3,460	100.0	0.0	199.30	173.40						
5.957	50-YR	167.16	173.32	6.16	173.16	173.16	0.0031	3.86	0.08	0.08	5.12	0.33	0.33	3,950	3,950	100.0	0.0	201.58	173.72						
5.957	100-YR	167.16	173.58	6.42	173.16	173.16	0.0031	4.12	0.21	0.21	5.40	0.65	0.65	4,449	4,450	100.0	0.0	204.23	174.04						
5.957	200-YR	167.16	173.81	6.65	173.16	173.16	0.0031	4.35	0.32	0.32	5.63	0.87	0.87	4,898	4,900	100.0	0.0	206.49	174.30						
5.957	500-YR	167.16	174.01	6.85	173.16	173.16	0.0031	4.55	0.43	0.43	5.85	1.05	1.05	5,326	5,330	99.9	0.1	208.55	174.54						
5.868	2-YR	165.71	167.99	2.28	171.71	171.71	0.0500	2.10			8.28			1,560	1,560	100.0	0.0	89.65	169.05	39.32	11		191.36	2.13	
5.868	5-YR	165.71	168.68	2.97	171.71	171.71	0.0500	2.69			9.36			2,360	2,360	100.0	0.0	93.82	170.04						
5.868	10-YR	165.71	169.05	3.34	171.71	171.71	0.0500	2.99			9.87			2,830	2,830	100.0	0.0	96.01	170.56						
5.868	25-YR	165.71	170.03	4.32	171.71	171.71	0.0500	2.17			8.39			3,460	3,460	100.0	0.0	189.92	171.12						
5.868	50-YR	165.71	170.24	4.53	171.71	171.71	0.0500	2.37			8.74			3,950	3,950	100.0	0.0	191.17	171.42						
5.868	100-YR	165.71	170.44	4.73	171.71	171.71	0.0500	2.55			9.08			4,450	4,450	100.0	0.0	192.35	171.72						
5.868	200-YR	165.71	170.61	4.90	171.71	171.71	0.0500	2.71			9.36			4,900	4,900	100.0	0.0	193.40	171.97						
5.868	500-YR	165.71	170.77	5.06	171.71	171.71	0.0500	2.86			9.60			5,330	5,330	100.0	0.0	194.38	172.20						
5.862	2-YR	164.21	168.06	3.85	170.21	170.21	0.0032	3.40			4.63			1,560	1,560	100.0	0.0	99.10	168.39	25.74	11		217.00	2.19	
5.862	5-YR	164.21	169.24	5.03	170.21	170.21	0.0032	2.82			4.31			2,360	2,360	100.0	0.0	194.16	169.52						
5.862	10-YR	164.21	169.64	5.43	170.21	170.21	0.0032	3.19			4.51			2,830	2,830	100.0	0.0	196.61	169.96						
5.862	25-YR	164.21	170.13	5.92	170.21	170.21	0.0032	3.63			4.78			3,460	3,460	100.0	0.0	199.50	170.48						
5.862	50-YR	164.21	170.39	6.18	170.21	170.21	0.0032	3.88	0.09	0.09	5.09	0.36	0.36	3,950	3,950	100.0	0.0	201.83	170.79						
5.862	100-YR	164.21	170.66	6.45	170.21	170.21	0.0032	4.15	0.23	0.23	5.36	0.67	0.67	4,449	4,450	100.0	0.0	204.54	171.11						
5.862	200-YR	164.21	170.87	6.66	170.21	170.21	0.0032	4.36	0.33	0.33	5.62	0.87	0.87	4,898	4,900	100.0	0.0	206.60	171.36						
5.862	500-YR	164.21	171.10	6.89	170.21	170.21	0.0032	4.59	0.45	0.45	5.80	1.06	1.06	5,326	5,330	99.9	0.1	208.91	171.62						
5.773	2-YR	162.76	165.06	2.30	168.76	168.04	0.0500	2.13			8.32			1,590	1,590	100.0	0.0	89.82	166.14	39.05	11		191.60	2.13	
5.773	5-YR	162.76	165.76	3.00	168.76	168.04	0.0500	2.71			9.40			2,400	2,400	100.0	0.0	94.01	167.14						
5.773	10-YR	162.76	166.15	3.39	168.76	168.04	0.0500	3.03			9.93			2,900	2,900	100.0	0.0	96.33	167.68						
5.773	25-YR	162.76	167.11	4.35	168.76	168.04	0.0500	2.20			8.54			3,570	3,570	100.0	0.0	190.10	168.24						
5.773	50-YR	162.76	167.33	4.57	168.76	168.04	0.0500	2.40			8.83			4,060	4,060	100.0	0.0	191.41	168.54						
5.773	100-YR	162.76	167.51	4.75	168.76	168.04	0.0500	2.57			9.22			4,560	4,560	100.0	0.0	192.50	168.83						
5.773	200-YR	162.76	167.69	4.93	168.76	168.04	0.0500	2.73			9.42			4,980	4,980	100.0	0.0	193.56	169.06						
5.773	500-YR	162.76	167.86	5.10	168.76	168.04	0.0500	2.89			9.73			5,480	5,480	100.0	0.0	194.63	169.33						
5.768	2-YR	161.26	165.08	3.82	167.26	167.26	0.0034	3.38			4.75			1,590	1,590	100.0	0.0	98.94	165.43	25.90	11		260.22	2.63	
5.768	5-YR	161.26	166.27	5.01	167.26	167.26	0.0034	2.81			4.40			2,400	2,400	100.0	0.0	194.08	166.57						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
5.768	10-YR	161.26	166.70	5.44	167.26	167.26	0.0034	3.20			4.60			2,900	2,900	100.0	0.0	196.66	167.03						
5.768	25-YR	161.26	167.22	5.96	167.26	167.26	0.0034	3.66			4.88			3,570	3,570	100.0	0.0	199.74	167.59						
5.768	50-YR	161.26	167.53	6.27	167.26	167.26	0.0034	3.97	0.14	0.00	5.11	0.47	0.05	4,060	4,060	100.0	0.0	250.65	167.94						
5.768	100-YR	161.26	167.83	6.57	167.26	167.26	0.0034	4.27	0.28	0.30	5.32	0.76	0.80	4,547	4,560	99.7	0.3	252.72	168.27						
5.768	200-YR	161.26	168.07	6.81	167.26	167.26	0.0034	4.51	0.41	0.54	5.48	0.96	1.17	4,947	4,980	99.3	0.7	254.38	168.53						
5.768	500-YR	161.26	168.35	7.09	167.26	167.26	0.0034	4.79	0.55	0.81	5.65	1.15	1.52	5,414	5,480	98.8	1.2	256.37	168.84						
5.678	2-YR	159.81	162.14	2.33	172.28	171.29	0.0500	2.20			8.47			1,590	1,590	100.0	0.0	85.31	163.25	36.61	10	28.60	138.60	1.62	1.42
5.678	5-YR	159.81	162.86	3.05	172.28	171.29	0.0500	2.84			9.57			2,400	2,400	100.0	0.0	88.22	164.29						
5.678	10-YR	159.81	163.25	3.44	172.28	171.29	0.0500	3.18			10.17			2,900	2,900	100.0	0.0	89.77	164.86						
5.678	25-YR	159.81	164.11	4.30	172.28	171.29	0.0500	2.79			9.48			3,570	3,570	100.0	0.0	135.04	165.51						
5.678	50-YR	159.81	164.38	4.57	172.28	171.29	0.0500	3.00			9.83			4,060	4,060	100.0	0.0	137.71	165.88						
5.678	100-YR	159.81	164.64	4.83	172.28	171.29	0.0500	3.20			10.16			4,560	4,560	100.0	0.0	140.29	166.24						
5.678	200-YR	159.81	164.85	5.04	172.28	171.29	0.0500	3.36			10.41			4,980	4,980	100.0	0.0	142.37	166.53						
5.678	500-YR	159.81	165.07	5.26	172.28	171.29	0.0500	3.53			10.74			5,480	5,480	100.0	0.0	144.58	166.86						
5.673	2-YR	158.31	162.27	3.96	173.17	171.02	0.0030	3.62			4.78			1,590	1,590	100.0	0.0	91.85	162.63	23.19	10		171.21	1.86	
5.673	5-YR	158.31	163.44	5.13	173.17	171.02	0.0030	3.43			4.88			2,400	2,400	100.0	0.0	143.32	163.81						
5.673	10-YR	158.31	163.93	5.62	173.17	171.02	0.0030	3.80			5.15			2,900	2,900	100.0	0.0	148.20	164.34						
5.673	25-YR	158.31	164.51	6.20	173.17	171.02	0.0030	4.22			5.49			3,570	3,570	100.0	0.0	154.01	164.98						
5.673	50-YR	158.31	164.86	6.55	173.17	171.02	0.0030	4.48			5.76			4,060	4,060	100.0	0.0	157.50	165.37						
5.673	100-YR	158.31	165.12	6.81	173.17	171.02	0.0030	4.66			6.11			4,560	4,560	100.0	0.0	160.07	165.70						
5.673	200-YR	158.31	165.33	7.02	173.17	171.02	0.0030	4.81			6.38			4,980	4,980	100.0	0.0	162.24	165.96						
5.673	500-YR	158.31	165.59	7.28	173.17	171.02	0.0030	4.99			6.66			5,480	5,480	100.0	0.0	164.83	166.28						
5.584	2-YR	156.86	159.19	2.33	168.29	168.36	0.0500	2.20			8.47			1,590	1,590	100.0	0.0	85.31	160.30	36.61	10		138.60	1.62	
5.584	5-YR	156.86	159.91	3.05	168.29	168.36	0.0500	2.84			9.57			2,400	2,400	100.0	0.0	88.22	161.34						
5.584	10-YR	156.86	160.30	3.44	168.29	168.36	0.0500	3.18			10.17			2,900	2,900	100.0	0.0	89.77	161.91						
5.584	25-YR	156.86	161.16	4.30	168.29	168.36	0.0500	2.79			9.48			3,570	3,570	100.0	0.0	135.04	162.56						
5.584	50-YR	156.86	161.43	4.57	168.29	168.36	0.0500	3.00			9.83			4,060	4,060	100.0	0.0	137.71	162.93						
5.584	100-YR	156.86	161.87	5.01	168.29	168.36	0.0500	3.34			9.61			4,560	4,560	100.0	0.0	142.10	163.30						
5.584	200-YR	156.86	162.22	5.36	168.29	168.36	0.0500	3.60			9.49			4,980	4,980	100.0	0.0	145.60	163.62						
5.584	500-YR	156.86	162.61	5.75	168.29	168.36	0.0500	3.90			9.40			5,480	5,480	100.0	0.0	149.53	163.99						
5.578	2-YR	155.36	159.32	3.96	168.47	168.19	0.0031	3.62			4.78			1,590	1,590	100.0	0.0	91.84	159.68	23.19	10		171.20	1.86	
5.578	5-YR	155.36	160.49	5.13	168.47	168.19	0.0031	3.43			4.88			2,400	2,400	100.0	0.0	143.34	160.86						
5.578	10-YR	155.36	160.98	5.62	168.47	168.19	0.0031	3.80			5.16			2,900	2,900	100.0	0.0	148.17	161.39						
5.578	25-YR	155.36	161.58	6.22	168.47	168.19	0.0031	4.24			5.46			3,570	3,570	100.0	0.0	154.23	162.05						
5.578	50-YR	155.36	161.98	6.62	168.47	168.19	0.0031	4.53			5.67			4,060	4,060	100.0	0.0	158.19	162.48						
5.578	100-YR	155.36	162.37	7.01	168.47	168.19	0.0031	4.80			5.86			4,560	4,560	100.0	0.0	162.05	162.90						
5.578	200-YR	155.36	162.68	7.32	168.47	168.19	0.0031	5.02			6.01			4,980	4,980	100.0	0.0	165.18	163.24						
5.578	500-YR	155.36	163.04	7.68	168.47	168.19	0.0031	5.27			6.16			5,480	5,480	100.0	0.0	168.79	163.63						
5.489	2-YR	153.91	156.24	2.33	168.85	169.06	0.0500	2.20			8.47			1,590	1,590	100.0	0.0	85.31	157.35	36.61	10		103.32	1.21	

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
5.489	5-YR	153.91	156.95	3.04	168.85	169.06	0.0500	2.83			9.60			2,400	2,400	100.0	0.0	88.18	158.39						
5.489	10-YR	153.91	157.35	3.44	168.85	169.06	0.0500	3.18			10.17			2,900	2,900	100.0	0.0	89.77	158.96						
5.489	25-YR	153.91	157.97	4.06	168.85	169.06	0.0500	3.35			10.45			3,570	3,570	100.0	0.0	102.11	159.66						
5.489	50-YR	153.91	158.27	4.36	168.85	169.06	0.0500	3.63			10.88			4,060	4,060	100.0	0.0	102.72	160.11						
5.489	100-YR	153.91	158.57	4.66	168.85	169.06	0.0500	3.91			11.29			4,560	4,560	100.0	0.0	103.32	160.55						
5.489	200-YR	153.91	158.81	4.90	168.85	169.06	0.0500	4.13			11.61			4,980	4,980	100.0	0.0	103.81	160.91						
5.489	500-YR	153.91	159.09	5.18	168.85	169.06	0.0500	4.39			11.96			5,480	5,480	100.0	0.0	104.37	161.32						
5.467	2-YR	147.91	151.81	3.90	164.65	164.75	0.0029	3.56			4.87			1,590	1,590	100.0	0.0	91.58	152.17	23.48	10		109.60	1.20	
5.467	5-YR	147.91	152.69	4.78	164.65	164.75	0.0029	4.02			5.77			2,400	2,400	100.0	0.0	103.56	153.21						
5.467	10-YR	147.91	153.21	5.30	164.65	164.75	0.0029	4.50			6.17			2,900	2,900	100.0	0.0	104.60	153.80						
5.467	25-YR	147.91	153.75	5.84	164.65	164.75	0.0029	4.99			6.78			3,570	3,570	100.0	0.0	105.68	154.46						
5.467	50-YR	147.91	154.12	6.21	164.65	164.75	0.0029	5.33			7.16			4,060	4,060	100.0	0.0	106.43	154.92						
5.467	100-YR	147.91	154.50	6.59	164.65	164.75	0.0029	5.66			7.51			4,560	4,560	100.0	0.0	107.18	155.38						
5.467	200-YR	147.91	154.81	6.90	164.65	164.75	0.0029	5.94			7.78			4,980	4,980	100.0	0.0	107.80	155.75						
5.467	500-YR	147.91	155.17	7.26	164.65	164.75	0.0029	6.26			8.07			5,480	5,480	100.0	0.0	108.51	156.18						
5.395	2-YR	146.81	149.16	2.35	158.35	158.35	0.0499	2.22			8.38			1,590	1,590	100.0	0.0	85.40	150.25	36.34	10		103.40	1.21	
5.395	5-YR	146.81	150.24	3.43	158.35	158.35	0.0499	3.17			8.43			2,400	2,400	100.0	0.0	89.74	151.35						
5.395	10-YR	146.81	150.84	4.03	158.35	158.35	0.0499	3.32			8.55			2,900	2,900	100.0	0.0	102.06	151.98						
5.395	25-YR	146.81	151.52	4.71	158.35	158.35	0.0499	3.96			8.72			3,570	3,570	100.0	0.0	103.43	152.70						
5.395	50-YR	146.81	152.00	5.19	158.35	158.35	0.0499	4.39			8.86			4,060	4,060	100.0	0.0	104.37	153.21						
5.395	100-YR	146.81	152.45	5.64	158.35	158.35	0.0499	4.80			9.02			4,560	4,560	100.0	0.0	105.27	153.71						
5.395	200-YR	146.81	152.82	6.01	158.35	158.35	0.0499	5.14			9.15			4,980	4,980	100.0	0.0	106.01	154.11						
5.395	500-YR	146.81	153.23	6.42	158.35	158.35	0.0499	5.51			9.31			5,480	5,480	100.0	0.0	106.84	154.58						
5.389	2-YR	145.31	149.59	4.28	158.01	157.99	0.0031	3.55			4.37			1,590	1,590	100.0	0.0	102.55	149.88	23.96	10		111.12	1.08	
5.389	5-YR	145.31	150.63	5.32	158.01	157.99	0.0031	4.51			5.09			2,400	2,400	100.0	0.0	104.63	151.03						
5.389	10-YR	145.31	151.20	5.89	158.01	157.99	0.0031	5.04			5.44			2,900	2,900	100.0	0.0	105.79	151.66						
5.389	25-YR	145.31	151.86	6.55	158.01	157.99	0.0031	5.63			5.92			3,570	3,570	100.0	0.0	107.11	152.41						
5.389	50-YR	145.31	152.32	7.01	158.01	157.99	0.0031	6.04			6.22			4,060	4,060	100.0	0.0	108.03	152.92						
5.389	100-YR	145.31	152.77	7.46	158.01	157.99	0.0031	6.43			6.51			4,560	4,560	100.0	0.0	108.92	153.43						
5.389	200-YR	145.31	153.13	7.82	158.01	157.99	0.0031	6.75			6.72			4,980	4,980	100.0	0.0	109.65	153.84						
5.389	500-YR	145.31	153.55	8.24	158.01	157.99	0.0031	7.11			6.97			5,480	5,480	100.0	0.0	110.47	154.30						
5.300	2-YR	143.86	146.56	2.70	155.51	155.51	0.0500	2.49			9.01			1,590	1,590	100.0	0.0	70.80	147.82	26.22	10		88.80	1.25	
5.300	5-YR	143.86	147.38	3.52	155.51	155.51	0.0500	3.18			10.18			2,400	2,400	100.0	0.0	74.07	148.99						
5.300	10-YR	143.86	147.97	4.11	155.51	155.51	0.0500	3.26			10.31			2,900	2,900	100.0	0.0	86.21	149.62						
5.300	25-YR	143.86	148.48	4.62	155.51	155.51	0.0500	3.73			10.96			3,570	3,570	100.0	0.0	87.24	150.35						
5.300	50-YR	143.86	148.82	4.96	155.51	155.51	0.0500	4.05			11.42			4,060	4,060	100.0	0.0	87.92	150.85						
5.300	100-YR	143.86	149.16	5.30	155.51	155.51	0.0500	4.35			11.84			4,560	4,560	100.0	0.0	88.59	151.33						
5.300	200-YR	143.86	149.41	5.55	155.51	155.51	0.0500	4.58			12.21			4,980	4,980	100.0	0.0	89.10	151.73						
5.300	500-YR	143.86	149.72	5.86	155.51	155.51	0.0500	4.86			12.58			5,480	5,480	100.0	0.0	89.73	152.18						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
5.294	2-YR	142.36	146.17	3.81	171.86	155.76	0.0000	3.42			6.18			1,590	1,590	100.0	0.0	75.22	146.76	19.74	10		93.24	1.24	
5.294	5-YR	142.36	147.25	4.89	171.86	155.76	0.0000	3.98			6.87			2,400	2,400	100.0	0.0	87.78	147.98						
5.294	10-YR	142.36	147.73	5.37	171.86	155.76	0.0000	4.41			7.40			2,900	2,900	100.0	0.0	88.74	148.58						
5.294	25-YR	142.36	148.33	5.97	171.86	155.76	0.0000	4.95			8.01			3,570	3,570	100.0	0.0	89.94	149.33						
5.294	50-YR	142.36	148.74	6.38	171.86	155.76	0.0000	5.32			8.41			4,060	4,060	100.0	0.0	90.76	149.84						
5.294	100-YR	142.36	149.14	6.78	171.86	155.76	0.0000	5.67			8.79			4,560	4,560	100.0	0.0	91.56	150.34						
5.294	200-YR	142.36	149.46	7.10	171.86	155.76	0.0000	5.95			9.08			4,980	4,980	100.0	0.0	92.20	150.74						
5.294	500-YR	142.36	149.83	7.47	171.86	155.76	0.0000	6.27			9.41			5,480	5,480	100.0	0.0	92.94	151.20						
5.000		Bridge																							
4.946	2-YR	141.49	144.99	3.50	145.49	145.49	0.0040	3.23			5.47			1,590	1,590	100.0	0.0	90.02	145.46	25.72	9	31.17	102.99	1.14	1.25
4.946	5-YR	141.49	145.88	4.39	145.49	145.49	0.0040	4.05	0.39	0.20	6.44	0.46	0.81	2,399	2,400	100.0	0.0	97.79	146.53						
4.946	10-YR	141.49	146.36	4.87	145.49	145.49	0.0040	4.52	0.87	0.43	6.96	0.74	1.37	2,896	2,900	99.9	0.1	98.74	147.11						
4.946	25-YR	141.49	146.94	5.45	145.49	145.49	0.0040	5.10	1.45	0.72	7.58	0.98	1.94	3,559	3,570	99.7	0.3	99.89	147.83						
4.946	50-YR	141.49	147.30	5.81	145.49	145.49	0.0040	5.47	1.81	0.91	8.04	1.11	2.28	4,042	4,060	99.6	0.4	100.62	148.30						
4.946	100-YR	141.49	147.65	6.16	145.49	145.49	0.0040	5.81	2.16	1.08	8.48	1.22	2.60	4,535	4,560	99.4	0.6	101.31	148.76						
4.946	200-YR	141.49	147.94	6.45	145.49	145.49	0.0040	6.11	2.45	1.23	8.81	1.30	2.84	4,947	4,980	99.3	0.7	101.90	149.14						
4.946	500-YR	141.49	148.27	6.78	145.49	145.49	0.0040	6.43	2.78	1.39	9.19	1.39	3.11	5,437	5,480	99.2	0.8	102.55	149.57						
4.919	2-YR	140.92	143.25	2.33	144.92	144.92	0.0500	2.20			8.47			1,590	1,590	100.0	0.0	85.31	144.36	36.61	9		115.32	1.35	
4.919	5-YR	140.92	143.96	3.04	144.92	144.92	0.0500	2.83			9.60			2,400	2,400	100.0	0.0	88.18	145.40						
4.919	10-YR	140.92	144.36	3.44	144.92	144.92	0.0500	3.18			10.17			2,900	2,900	100.0	0.0	89.77	145.97						
4.919	25-YR	140.92	144.86	3.94	144.92	144.92	0.0500	3.60			10.80			3,570	3,570	100.0	0.0	91.76	146.67						
4.919	50-YR	140.92	145.22	4.30	144.92	144.92	0.0500	3.95	0.30	0.15	11.15	0.71	1.19	4,055	4,060	99.9	0.1	114.60	147.15						
4.919	100-YR	140.92	145.56	4.64	144.92	144.92	0.0500	4.30	0.64	0.32	11.49	1.13	1.92	4,543	4,560	99.6	0.4	115.29	147.61						
4.919	200-YR	140.92	145.81	4.89	144.92	144.92	0.0500	4.55	0.89	0.45	11.84	1.38	2.37	4,951	4,980	99.4	0.6	115.79	147.98						
4.919	500-YR	140.92	146.11	5.19	144.92	144.92	0.0500	4.84	1.19	0.59	12.20	1.64	2.84	5,433	5,480	99.1	0.9	116.38	148.40						
4.896	2-YR	134.92	138.53	3.61	138.92	138.92	0.0040	3.32			5.30			1,590	1,590	100.0	0.0	90.43	138.96	25.05	8	28.99	131.44	1.45	1.68
4.896	5-YR	134.92	139.80	4.88	138.92	138.92	0.0040	4.53	0.88	0.44	5.71	0.67	1.13	2,380	2,400	99.2	0.8	126.76	140.30						
4.896	10-YR	134.92	140.67	5.75	138.92	138.92	0.0040	5.40	1.75	0.87	5.72	0.92	1.60	2,842	2,900	98.0	2.0	128.50	141.17						
4.896	25-YR	134.92	141.72	6.80	138.92	138.92	0.0040	6.45	2.80	1.40	5.81	1.12	1.98	3,451	3,570	96.7	3.3	130.60	142.23						
4.896	50-YR	134.92	142.46	7.54	138.92	138.92	0.0040	7.19	3.54	1.77	5.88	1.22	2.17	3,891	4,060	95.8	4.2	132.08	142.98						
4.896	100-YR	134.92	143.28	8.36	138.92	138.92	0.0040	8.02	4.36	2.18	5.87	1.28	2.32	4,332	4,560	95.0	5.0	133.73	143.79						
4.896	200-YR	134.92	144.15	9.23	138.92	138.92	0.0040	8.88	5.23	2.62	5.74	1.30	2.39	4,691	4,980	94.2	5.8	135.46	144.64						
4.896	500-YR	134.92	145.22	10.30	138.92	138.92	0.0040	9.95	6.30	3.15	5.59	1.30	2.44	5,113	5,480	93.3	6.7	137.60	145.67						
4.843	2-YR	133.80	136.13	2.33	137.80	137.80	0.0500	2.20			8.47			1,590	1,590	100.0	0.0	85.31	137.24	36.61	8		118.32	1.39	
4.843	5-YR	133.80	137.19	3.39	137.80	137.80	0.0500	3.13			10.09			2,830	2,830	100.0	0.0	89.55	138.77						
4.843	10-YR	133.80	137.93	4.13	137.80	137.80	0.0500	3.78	0.13	0.07	10.94	0.41	0.69	3,809	3,810	100.0	0.0	117.26	139.79						
4.843	25-YR	133.80	138.79	4.99	137.80	137.80	0.0500	4.64	0.99	0.49	11.90	1.47	2.52	5,081	5,120	99.2	0.8	118.98	140.97						
4.843	50-YR	133.80	139.36	5.56	137.80	137.80	0.0500	5.21	1.56	0.78	12.55	1.91	3.33	6,017	6,100	98.6	1.4	120.12	141.77						
4.843	100-YR	133.80	139.97	6.17	137.80	137.80	0.0500	5.82	2.17	1.08	13.26	2.30	4.07	7,096	7,240	98.0	2.0	121.33	142.64						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
4.843	200-YR	133.80	140.56	6.76	137.80	137.80	0.0500	6.41	2.76	1.38	14.00	2.64	4.73	8,261	8,480	97.4	2.6	122.52	143.53						
4.843	500-YR	133.80	141.33	7.53	137.80	137.80	0.0500	7.19	3.53	1.77	14.77	2.99	5.46	9,768	10,100	96.7	3.3	124.07	144.62						
4.821	2-YR	127.80	131.18	3.38	131.80	131.80	0.0055	3.13			5.68			1,590	1,590	100.0	0.0	89.54	131.68	26.49	8		118.52	1.32	
4.821	5-YR	127.80	133.48	5.68	131.80	131.80	0.0055	5.33	1.68	0.84	5.70	0.89	1.56	2,794	2,830	98.7	1.3	116.35	133.97						
4.821	10-YR	127.80	135.02	7.22	131.80	131.80	0.0055	6.87	3.22	1.61	5.87	1.14	2.10	3,711	3,810	97.4	2.6	119.44	135.54						
4.821	25-YR	127.80	136.83	9.03	131.80	131.80	0.0055	8.68	5.03	2.52	6.16	1.32	2.54	4,917	5,120	96.0	4.0	123.06	137.40						
4.821	50-YR	127.80	138.05	10.25	131.80	131.80	0.0055	9.90	6.25	3.12	6.38	1.40	2.78	5,808	6,100	95.2	4.8	125.49	138.65						
4.821	100-YR	127.80	139.33	11.53	131.80	131.80	0.0055	11.19	7.53	3.77	6.64	1.48	3.02	6,835	7,240	94.4	5.6	128.07	139.99						
4.821	200-YR	127.80	140.61	12.81	131.80	131.80	0.0055	12.47	8.81	4.41	6.92	1.54	3.26	7,941	8,480	93.6	6.4	130.63	141.32						
4.821	500-YR	127.80	142.14	14.34	131.80	131.80	0.0055	13.99	10.34	5.17	7.28	1.62	3.53	9,372	10,100	92.8	7.2	133.67	142.91						
4.741	2-YR	125.51	130.73	5.22	129.51	129.51	0.0110	4.87	1.22	0.61	3.52	0.47	0.83	1,579	1,590	99.3	0.7	111.44	130.92	21.35	8		121.88	1.09	
4.741	5-YR	125.51	133.20	7.69	129.51	129.51	0.0110	7.34	3.69	1.84	4.09	0.80	1.53	2,759	2,830	97.5	2.5	116.38	133.45						
4.741	10-YR	125.51	134.79	9.28	129.51	129.51	0.0110	8.93	5.28	2.64	4.47	0.93	1.87	3,674	3,810	96.4	3.6	119.57	135.09						
4.741	25-YR	125.51	136.63	11.12	129.51	129.51	0.0110	10.78	7.12	3.56	4.92	1.05	2.21	4,881	5,120	95.3	4.7	123.25	136.99						
4.741	50-YR	125.51	137.86	12.35	129.51	129.51	0.0110	12.01	8.35	4.18	5.23	1.12	2.43	5,772	6,100	94.6	5.4	125.71	138.27						
4.741	100-YR	125.51	139.16	13.65	129.51	129.51	0.0110	13.31	9.65	4.83	5.55	1.18	2.66	6,799	7,240	93.9	6.1	128.31	139.62						
4.741	200-YR	125.51	140.45	14.94	129.51	129.51	0.0110	14.59	10.94	5.47	5.89	1.24	2.88	7,905	8,480	93.2	6.8	130.88	140.96						
4.741	500-YR	125.51	141.98	16.47	129.51	129.51	0.0110	16.12	12.47	6.24	6.29	1.30	3.14	9,335	10,100	92.4	7.6	133.94	142.56						
4.726	2-YR	124.63	129.42	4.79	145.35	145.91	0.0000	4.09			8.58			1,590	1,590	100.0	0.0	45.34	130.56	9.47	8		58.07	1.28	
4.726	5-YR	124.63	131.42	6.79	145.35	145.91	0.0000	5.58			10.07			2,830	2,830	100.0	0.0	50.40	132.99						
4.726	10-YR	124.63	132.71	8.08	145.35	145.91	0.0000	6.47			10.95			3,810	3,810	100.0	0.0	53.78	134.57						
4.726	25-YR	124.63	134.23	9.60	145.35	145.91	0.0000	7.45			11.82			5,120	5,120	100.0	0.0	58.12	136.40						
4.726	50-YR	124.63	135.29	10.66	145.35	145.91	0.0000	8.12			12.29			6,100	6,100	100.0	0.0	61.16	137.63						
4.726	100-YR	124.63	136.41	11.78	145.35	145.91	0.0000	8.78			12.77			7,240	7,240	100.0	0.0	64.59	138.94						
4.726	200-YR	124.63	137.55	12.92	145.35	145.91	0.0000	9.29			13.19			8,480	8,480	100.0	0.0	69.26	140.25						
4.726	500-YR	124.63	139.01	14.38	145.35	145.91	0.0000	9.85			13.48			10,100	10,100	100.0	0.0	76.07	141.83						
4.725		Bridge																							
4.723	2-YR	124.55	128.54	3.99	145.27	145.83	0.0092	3.46			10.61			1,590	1,590	100.0	0.0	43.31	130.29	10.85	8		53.51	1.24	
4.723	5-YR	124.55	130.24	5.69	145.27	145.83	0.0092	4.77			12.45			2,830	2,830	100.0	0.0	47.62	132.65						
4.723	10-YR	124.55	131.38	6.83	145.27	145.83	0.0092	5.61			13.45			3,810	3,810	100.0	0.0	50.51	134.19						
4.723	25-YR	124.55	132.72	8.17	145.27	145.83	0.0092	6.53			14.51			5,120	5,120	100.0	0.0	54.04	135.98						
4.723	50-YR	124.55	133.61	9.06	145.27	145.83	0.0092	7.11			15.15			6,100	6,100	100.0	0.0	56.60	137.18						
4.723	100-YR	124.55	134.57	10.02	145.27	145.83	0.0092	7.72			15.81			7,240	7,240	100.0	0.0	59.33	138.45						
4.723	200-YR	124.55	135.53	10.98	145.27	145.83	0.0092	8.31			16.43			8,480	8,480	100.0	0.0	62.11	139.72						
4.723	500-YR	124.55	136.70	12.15	145.27	145.83	0.0092	8.97			17.08			10,100	10,100	100.0	0.0	65.92	141.23						
4.711	2-YR	123.70	127.66	3.96	129.70	129.70	0.0026	3.49			4.57			1,590	1,590	100.0	0.0	99.75	127.98	25.19	8		219.20	2.20	
4.711	5-YR	123.70	129.30	5.60	129.70	129.70	0.0026	3.34			4.29			2,830	2,830	100.0	0.0	197.57	129.58						
4.711	10-YR	123.70	130.05	6.35	129.70	129.70	0.0026	4.05	0.18	0.18	4.70	0.28	0.28	3,810	3,810	100.0	0.0	203.54	130.40						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
4.711	25-YR	123.70	130.71	7.01	129.70	129.70	0.0026	4.71	0.51	0.51	5.43	0.59	0.59	5,117	5,120	99.9	0.1	210.14	131.17						
4.711	50-YR	123.70	131.13	7.43	129.70	129.70	0.0026	5.13	0.72	0.72	5.93	0.77	0.77	6,092	6,100	99.9	0.1	214.33	131.68						
4.711	100-YR	123.70	131.60	7.90	129.70	129.70	0.0026	5.60	0.95	0.95	6.45	0.95	0.95	7,223	7,240	99.8	0.2	219.00	132.24						
4.711	200-YR	123.70	132.11	8.41	129.70	129.70	0.0026	6.11	1.20	1.20	6.92	1.13	1.13	8,447	8,480	99.6	0.4	224.06	132.85						
4.711	500-YR	123.70	132.70	9.00	129.70	129.70	0.0026	6.70	1.50	1.50	7.49	1.33	1.33	10,040	10,100	99.4	0.6	230.01	133.57						
4.584	2-YR	121.95	124.73	2.78	127.95	127.95	0.0499	2.53			6.77			1,590	1,590	100.0	0.0	92.70	125.45	33.35	8		197.36	2.13	
4.584	5-YR	121.95	125.49	3.54	127.95	127.95	0.0499	3.15			9.24			2,830	2,830	100.0	0.0	97.22	126.81						
4.584	10-YR	121.95	126.42	4.47	127.95	127.95	0.0499	2.31			8.66			3,810	3,810	100.0	0.0	190.79	127.58						
4.584	25-YR	121.95	127.05	5.10	127.95	127.95	0.0499	2.89			9.12			5,120	5,120	100.0	0.0	194.57	128.34						
4.584	50-YR	121.95	127.55	5.60	127.95	127.95	0.0499	3.34			9.24			6,100	6,100	100.0	0.0	197.59	128.87						
4.584	100-YR	121.95	128.06	6.11	127.95	127.95	0.0499	3.81	0.06	0.06	9.50	0.27	0.27	7,240	7,240	100.0	0.0	200.67	129.46						
4.584	200-YR	121.95	128.49	6.54	127.95	127.95	0.0499	4.24	0.27	0.27	10.01	0.75	0.75	8,479	8,480	100.0	0.0	203.22	130.04						
4.584	500-YR	121.95	129.05	7.10	127.95	127.95	0.0499	4.80	0.55	0.55	10.52	1.17	1.17	10,096	10,100	100.0	0.0	206.58	130.77						
4.578	2-YR	120.45	124.99	4.54	126.45	126.45	0.0026	2.37			3.51			1,590	1,590	100.0	0.0	191.22	125.18	42.12	8		218.48	1.14	
4.578	5-YR	120.45	126.11	5.66	126.45	126.45	0.0026	3.39			4.21			2,830	2,830	100.0	0.0	197.93	126.38						
4.578	10-YR	120.45	126.80	6.35	126.45	126.45	0.0026	4.05	0.18	0.18	4.70	0.27	0.27	3,810	3,810	100.0	0.0	202.11	127.14						
4.578	25-YR	120.45	127.51	7.06	126.45	126.45	0.0026	4.76	0.53	0.53	5.37	0.59	0.59	5,118	5,120	100.0	0.0	206.38	127.96						
4.578	50-YR	120.45	127.99	7.54	126.45	126.45	0.0026	5.24	0.77	0.77	5.81	0.77	0.77	6,095	6,100	99.9	0.1	209.25	128.52						
4.578	100-YR	120.45	128.50	8.05	126.45	126.45	0.0026	5.75	1.02	1.02	6.29	0.94	0.94	7,228	7,240	99.8	0.2	212.29	129.11						
4.578	200-YR	120.45	128.95	8.50	126.45	126.45	0.0026	6.20	1.25	1.25	6.82	1.11	1.11	8,459	8,480	99.8	0.2	215.01	129.67						
4.578	500-YR	120.45	129.54	9.09	126.45	126.45	0.0026	6.79	1.54	1.54	7.41	1.30	1.30	10,063	10,100	99.6	0.4	218.52	130.39						
4.452	2-YR	118.70	121.00	2.30	124.70	124.70	0.0500	2.13			8.32			1,590	1,590	100.0	0.0	89.83	122.08	39.06	8		191.60	2.13	
4.452	5-YR	118.70	122.04	3.34	124.70	124.70	0.0500	2.99			9.86			2,830	2,830	100.0	0.0	96.02	123.55						
4.452	10-YR	118.70	123.17	4.47	124.70	124.70	0.0500	2.31			8.65			3,810	3,810	100.0	0.0	190.79	124.33						
4.452	25-YR	118.70	123.68	4.98	124.70	124.70	0.0500	2.78			9.50			5,120	5,120	100.0	0.0	193.88	125.08						
4.452	50-YR	118.70	124.03	5.33	124.70	124.70	0.0500	3.10			10.03			6,100	6,100	100.0	0.0	196.01	125.60						
4.452	100-YR	118.70	124.44	5.74	124.70	124.70	0.0500	3.47			10.53			7,240	7,240	100.0	0.0	198.43	126.16						
4.452	200-YR	118.70	124.97	6.27	124.70	124.70	0.0500	3.97	0.14	0.14	10.67	0.53	1.09	8,480	8,480	100.0	0.0	201.63	126.74						
4.452	500-YR	118.70	125.56	6.86	124.70	124.70	0.0500	4.56	0.43	0.43	11.08	1.08	2.23	10,096	10,100	100.0	0.0	205.14	127.46						
4.446	2-YR	117.20	121.19	3.99	123.20	123.20	0.0027	3.52			4.52			1,590	1,590	100.0	0.0	99.97	121.51	25.06	8		211.88	2.12	
4.446	5-YR	117.20	122.71	5.51	123.20	123.20	0.0027	3.27			4.40			2,830	2,830	100.0	0.0	197.09	123.01						
4.446	10-YR	117.20	123.40	6.20	123.20	123.20	0.0027	3.90	0.10	0.10	4.89	0.20	0.20	3,810	3,810	100.0	0.0	201.17	123.77						
4.446	25-YR	117.20	124.08	6.88	123.20	123.20	0.0027	4.58	0.44	0.44	5.59	0.55	0.55	5,119	5,120	100.0	0.0	205.29	124.57						
4.446	50-YR	117.20	124.54	7.34	123.20	123.20	0.0027	5.04	0.67	0.67	6.04	0.74	0.74	6,096	6,100	99.9	0.1	208.06	125.11						
4.446	100-YR	117.20	125.04	7.84	123.20	123.20	0.0027	5.54	0.92	0.92	6.53	0.93	0.93	7,231	7,240	99.9	0.1	211.02	125.70						
4.446	200-YR	117.20	125.54	8.34	123.20	123.20	0.0027	6.04	1.17	1.17	7.00	1.11	1.11	8,462	8,480	99.8	0.2	214.06	126.30						
4.446	500-YR	117.20	126.13	8.93	123.20	123.20	0.0027	6.63	1.47	1.47	7.59	1.31	1.31	10,066	10,100	99.7	0.3	217.59	127.02						
4.357	2-YR	115.95	118.25	2.30	121.95	121.95	0.0500	2.13			8.32			1,590	1,590	100.0	0.0	89.83	119.33	39.06	8		191.60	2.13	
4.357	5-YR	115.95	119.29	3.34	121.95	121.95	0.0500	2.99			9.86			2,830	2,830	100.0	0.0	96.02	120.80						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
4.357	10-YR	115.95	120.42	4.47	121.95	121.95	0.0500	2.31			8.65			3,810	3,810	100.0	0.0	190.80	121.58						
4.357	25-YR	115.95	120.93	4.98	121.95	121.95	0.0500	2.78			9.49			5,120	5,120	100.0	0.0	193.89	122.33						
4.357	50-YR	115.95	121.29	5.34	121.95	121.95	0.0500	3.10			10.02			6,100	6,100	100.0	0.0	196.02	122.85						
4.357	100-YR	115.95	121.68	5.73	121.95	121.95	0.0500	3.46			10.56			7,240	7,240	100.0	0.0	198.37	123.41						
4.357	200-YR	115.95	122.06	6.11	121.95	121.95	0.0500	3.81	0.05	0.05	11.14	0.31	0.31	8,480	8,480	100.0	0.0	201.06	123.98						
4.357	500-YR	115.95	122.56	6.61	121.95	121.95	0.0500	4.31	0.31	0.31	11.71	0.97	0.97	10,098	10,100	100.0	0.0	206.13	124.69						
4.351	2-YR	114.45	118.27	3.82	120.45	120.45	0.0027	3.38			4.76			1,590	1,590	100.0	0.0	98.94	118.62	25.90	8		216.40	2.19	
4.351	5-YR	114.45	119.91	5.46	120.45	120.45	0.0027	3.21			4.48			2,830	2,830	100.0	0.0	196.73	120.22						
4.351	10-YR	114.45	120.64	6.19	120.45	120.45	0.0027	3.89	0.10	0.10	4.89	0.20	0.20	3,810	3,810	100.0	0.0	201.94	121.02						
4.351	25-YR	114.45	121.30	6.85	120.45	120.45	0.0027	4.55	0.43	0.43	5.62	0.56	0.56	5,118	5,120	100.0	0.0	208.52	121.79						
4.351	50-YR	114.45	121.72	7.27	120.45	120.45	0.0027	4.97	0.63	0.63	6.13	0.75	0.75	6,094	6,100	99.9	0.1	212.67	122.30						
4.351	100-YR	114.45	122.17	7.72	120.45	120.45	0.0027	5.42	0.86	0.86	6.66	0.94	0.94	7,226	7,240	99.8	0.2	217.21	122.86						
4.351	200-YR	114.45	122.65	8.20	120.45	120.45	0.0027	5.90	1.10	1.10	7.17	1.13	1.13	8,453	8,480	99.7	0.3	221.95	123.44						
4.351	500-YR	114.45	123.26	8.81	120.45	120.45	0.0027	6.51	1.40	1.40	7.72	1.34	1.34	10,047	10,100	99.5	0.5	228.07	124.18						
4.262	2-YR	113.20	115.99	2.79	119.20	119.20	0.0498	2.54			6.76			1,590	1,590	100.0	0.0	92.72	116.70	33.23	8		197.48	2.13	
4.262	5-YR	113.20	116.73	3.53	119.20	119.20	0.0498	3.15			9.24			2,830	2,830	100.0	0.0	97.21	118.06						
4.262	10-YR	113.20	117.67	4.47	119.20	119.20	0.0498	2.31			8.65			3,810	3,810	100.0	0.0	190.80	118.83						
4.262	25-YR	113.20	118.25	5.05	119.20	119.20	0.0498	2.85			9.25			5,120	5,120	100.0	0.0	194.32	119.58						
4.262	50-YR	113.20	118.72	5.52	119.20	119.20	0.0498	3.27			9.45			6,100	6,100	100.0	0.0	197.14	120.11						
4.262	100-YR	113.20	119.23	6.03	119.20	119.20	0.0498	3.73	0.02	0.02	9.70	0.12	0.12	7,240	7,240	100.0	0.0	200.32	120.69						
4.262	200-YR	113.20	119.69	6.49	119.20	119.20	0.0498	4.19	0.25	0.25	10.11	0.74	0.74	8,479	8,480	100.0	0.0	204.95	121.28						
4.262	500-YR	113.20	120.15	6.95	119.20	119.20	0.0498	4.65	0.48	0.48	10.84	1.15	1.15	10,095	10,100	99.9	0.1	209.55	121.98						
4.256	2-YR	111.70	116.24	4.54	117.70	117.70	0.0026	2.37			3.50			1,590	1,590	100.0	0.0	191.23	116.43	42.12	8		230.79	1.21	
4.256	5-YR	111.70	117.35	5.65	117.70	117.70	0.0026	3.39			4.22			2,830	2,830	100.0	0.0	197.93	117.63						
4.256	10-YR	111.70	118.05	6.35	117.70	117.70	0.0026	4.05	0.18	0.18	4.70	0.28	0.28	3,810	3,810	100.0	0.0	203.51	118.39						
4.256	25-YR	111.70	118.74	7.04	117.70	117.70	0.0026	4.74	0.52	0.52	5.40	0.60	0.60	5,117	5,120	99.9	0.1	210.40	119.19						
4.256	50-YR	111.70	119.20	7.50	117.70	117.70	0.0026	5.20	0.75	0.75	5.86	0.78	0.78	6,091	6,100	99.9	0.1	214.98	119.73						
4.256	100-YR	111.70	119.70	8.00	117.70	117.70	0.0026	5.70	1.00	1.00	6.34	0.96	0.96	7,221	7,240	99.7	0.3	219.99	120.32						
4.256	200-YR	111.70	120.18	8.48	117.70	117.70	0.0026	6.18	1.24	1.24	6.83	1.13	1.13	8,445	8,480	99.6	0.4	224.78	120.90						
4.256	500-YR	111.70	120.70	9.00	117.70	117.70	0.0026	6.70	1.50	1.50	7.50	1.33	1.33	10,040	10,100	99.4	0.6	229.97	121.57						
4.130	2-YR	109.95	112.25	2.30	114.73	115.95	0.0499	2.13			8.32			1,590	1,590	100.0	0.0	89.83	113.33	39.06	7	32.02	191.60	2.13	2.22
4.130	5-YR	109.95	113.29	3.34	114.73	115.95	0.0499	2.99			9.86			2,830	2,830	100.0	0.0	96.02	114.80						
4.130	10-YR	109.95	114.42	4.47	114.73	115.95	0.0499	2.31			8.65			3,810	3,810	100.0	0.0	190.81	115.58						
4.130	25-YR	109.95	114.97	5.02	114.73	115.95	0.0499	2.82	0.22		9.36	0.82		5,112	5,120	99.9	0.1	235.51	116.33						
4.130	50-YR	109.95	115.33	5.38	114.73	115.95	0.0499	3.17	0.56		9.84	1.51		6,063	6,100	99.4	0.6	238.65	116.82						
4.130	100-YR	109.95	115.69	5.74	114.73	115.95	0.0499	3.51	0.89		10.41	2.03		7,156	7,240	98.8	1.2	241.90	117.36						
4.130	200-YR	109.95	116.10	6.15	114.73	115.95	0.0499	3.90	1.25	0.07	10.87	2.48	0.37	8,331	8,480	98.2	1.8	245.50	117.90						
4.130	500-YR	109.95	116.71	6.76	114.73	115.95	0.0499	4.52	1.77	0.38	11.09	2.90	1.03	9,835	10,100	97.4	2.6	251.38	118.57						
4.124	2-YR	108.45	112.29	3.84	114.45	114.45	0.0026	3.39			4.74			1,590	1,590	100.0	0.0	99.01	112.63	25.78	7		216.80	2.19	

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
4.124	5-YR	108.45	113.91	5.46	114.45	114.45	0.0026	3.21			4.48			2,830	2,830	100.0	0.0	196.73	114.22						
4.124	10-YR	108.45	114.49	6.04	114.45	114.45	0.0026	3.74	0.02	0.02	5.09	0.08	0.08	3,810	3,810	100.0	0.0	200.44	114.90						
4.124	25-YR	108.45	115.17	6.72	114.45	114.45	0.0026	4.42	0.36	0.36	5.79	0.53	0.53	5,119	5,120	100.0	0.0	207.20	115.69						
4.124	50-YR	108.45	115.62	7.17	114.45	114.45	0.0026	4.87	0.59	0.59	6.25	0.74	0.74	6,095	6,100	99.9	0.1	211.74	116.23						
4.124	100-YR	108.45	116.11	7.66	114.45	114.45	0.0026	5.36	0.83	0.83	6.74	0.94	0.94	7,227	7,240	99.8	0.2	216.61	116.81						
4.124	200-YR	108.45	116.61	8.16	114.45	114.45	0.0026	5.86	1.08	1.08	7.21	1.13	1.13	8,454	8,480	99.7	0.3	221.62	117.42						
4.124	500-YR	108.45	117.22	8.77	114.45	114.45	0.0026	6.47	1.38	1.38	7.77	1.34	1.34	10,049	10,100	99.5	0.5	227.70	118.15						
4.016	2-YR	106.95	109.97	3.02	112.95	112.95	0.0250	2.73			6.20			1,590	1,590	100.0	0.0	94.10	110.56	31.16	7		200.40	2.13	
4.016	5-YR	106.95	111.57	4.62	112.95	112.95	0.0250	2.45			6.01			2,830	2,830	100.0	0.0	191.75	112.14						
4.016	10-YR	106.95	112.14	5.19	112.95	112.95	0.0250	2.97			6.58			3,810	3,810	100.0	0.0	195.12	112.81						
4.016	25-YR	106.95	112.81	5.86	112.95	112.95	0.0250	3.58			7.19			5,120	5,120	100.0	0.0	199.17	113.61						
4.016	50-YR	106.95	113.26	6.31	112.95	112.95	0.0250	4.01	0.16	0.16	7.60	0.42	0.42	6,100	6,100	100.0	0.0	203.14	114.16						
4.016	100-YR	106.95	113.76	6.81	112.95	112.95	0.0250	4.51	0.40	0.40	8.03	0.78	0.78	7,237	7,240	100.0	0.0	208.06	114.76						
4.016	200-YR	106.95	114.24	7.29	112.95	112.95	0.0250	4.99	0.65	0.65	8.48	1.05	1.05	8,471	8,480	99.9	0.1	212.92	115.36						
4.016	500-YR	106.95	114.82	7.87	112.95	112.95	0.0250	5.57	0.93	0.93	9.05	1.33	1.33	10,077	10,100	99.8	0.2	218.68	116.09						
4.010	2-YR	106.20	110.03	3.83	112.20	112.20	0.0026	3.39			4.74			1,590	1,590	100.0	0.0	98.98	110.38	25.84	7		216.60	2.19	
4.010	5-YR	106.20	111.64	5.44	112.20	112.20	0.0026	3.20			4.50			2,830	2,830	100.0	0.0	196.62	111.95						
4.010	10-YR	106.20	112.21	6.01	112.20	112.20	0.0026	3.71	0.00	0.00	5.14	0.03	0.03	3,810	3,810	100.0	0.0	200.09	112.62						
4.010	25-YR	106.20	112.90	6.70	112.20	112.20	0.0026	4.40	0.35	0.35	5.82	0.52	0.52	5,119	5,120	100.0	0.0	206.96	113.42						
4.010	50-YR	106.20	113.35	7.15	112.20	112.20	0.0026	4.85	0.58	0.58	6.28	0.73	0.73	6,095	6,100	99.9	0.1	211.54	113.97						
4.010	100-YR	106.20	113.86	7.66	112.20	112.20	0.0026	5.36	0.83	0.83	6.75	0.94	0.94	7,227	7,240	99.8	0.2	216.55	114.56						
4.010	200-YR	106.20	114.35	8.15	112.20	112.20	0.0026	5.85	1.08	1.08	7.22	1.13	1.13	8,454	8,480	99.7	0.3	221.51	115.16						
4.010	500-YR	106.20	114.94	8.74	112.20	112.20	0.0026	6.44	1.37	1.37	7.80	1.34	1.34	10,050	10,100	99.5	0.5	227.39	115.88						
3.902	2-YR	104.70	107.74	3.04	110.70	110.70	0.0249	2.75			6.15			1,590	1,590	100.0	0.0	94.24	108.33	31.00	7		200.80	2.13	
3.902	5-YR	104.70	109.40	4.70	110.70	110.70	0.0249	2.52			5.84			2,830	2,830	100.0	0.0	192.19	109.93						
3.902	10-YR	104.70	110.09	5.39	110.70	110.70	0.0249	3.15			6.16			3,810	3,810	100.0	0.0	196.32	110.68						
3.902	25-YR	104.70	110.76	6.06	110.70	110.70	0.0249	3.76	0.03	0.03	6.81	0.13	0.13	5,120	5,120	100.0	0.0	200.61	111.48						
3.902	50-YR	104.70	111.21	6.51	110.70	110.70	0.0249	4.21	0.26	0.26	7.24	0.54	0.54	6,099	6,100	100.0	0.0	205.10	112.02						
3.902	100-YR	104.70	111.65	6.95	110.70	110.70	0.0249	4.65	0.48	0.48	7.78	0.82	0.82	7,236	7,240	99.9	0.1	209.53	112.59						
3.902	200-YR	104.70	112.14	7.44	110.70	110.70	0.0249	5.14	0.54	0.29	8.23	0.89	0.80	8,459	8,480	99.8	0.2	258.02	113.19						
3.902	500-YR	104.70	112.77	8.07	110.70	110.70	0.0249	5.77	1.14	0.68	8.67	1.43	1.02	10,007	10,100	99.1	0.9	293.86	113.93						
3.897	2-YR	103.95	107.80	3.85	109.95	109.95	0.0027	3.40			4.71			1,590	1,590	100.0	0.0	99.11	108.15	25.74	7		233.93	2.36	
3.897	5-YR	103.95	109.46	5.51	109.95	109.95	0.0027	3.26			4.41			2,830	2,830	100.0	0.0	197.03	109.76						
3.897	10-YR	103.95	110.15	6.20	109.95	109.95	0.0027	3.90	0.10	0.10	4.89	0.20	0.20	3,810	3,810	100.0	0.0	201.96	110.52						
3.897	25-YR	103.95	110.83	6.88	109.95	109.95	0.0027	4.58	0.25	0.44	5.58	0.39	0.57	5,117	5,120	99.9	0.1	222.90	111.32						
3.897	50-YR	103.95	111.29	7.34	109.95	109.95	0.0027	5.04	0.69	0.67	6.04	0.78	0.76	6,086	6,100	99.8	0.2	225.93	111.86						
3.897	100-YR	103.95	111.75	7.80	109.95	109.95	0.0027	5.50	1.11	0.53	6.56	1.09	0.86	7,208	7,240	99.6	0.4	237.41	112.41						
3.897	200-YR	103.95	112.25	8.30	109.95	109.95	0.0027	6.00	1.54	0.39	7.02	1.36	0.64	8,420	8,480	99.3	0.7	286.24	113.01						
3.897	500-YR	103.95	112.88	8.93	109.95	109.95	0.0027	6.63	1.95	0.92	7.50	1.60	0.98	9,950	10,100	98.5	1.5	308.00	113.74						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
3.808	2-YR	102.70	105.38	2.68	108.70	108.70	0.0498	2.44			7.07			1,590	1,590	100.0	0.0	92.06	106.15	34.35	7		196.16	2.13	
3.808	5-YR	102.70	106.05	3.35	108.70	108.70	0.0498	3.00			9.81			2,830	2,830	100.0	0.0	96.11	107.55						
3.808	10-YR	102.70	107.17	4.47	108.70	108.70	0.0498	2.31			8.66			3,810	3,810	100.0	0.0	190.79	108.33						
3.808	25-YR	102.70	107.68	4.98	108.70	108.70	0.0498	2.78			9.49			5,120	5,120	100.0	0.0	193.89	109.08						
3.808	50-YR	102.70	108.04	5.34	108.70	108.70	0.0498	3.11			10.01			6,100	6,100	100.0	0.0	196.04	109.60						
3.808	100-YR	102.70	108.52	5.82	108.70	108.70	0.0498	3.54			10.29			7,240	7,240	100.0	0.0	198.90	110.16						
3.808	200-YR	102.70	108.91	6.21	108.70	108.70	0.0498	3.91	0.10	0.10	10.85	0.47	0.47	8,480	8,480	100.0	0.0	202.08	110.74						
3.808	500-YR	102.70	109.31	6.61	108.70	108.70	0.0498	4.31	0.30	0.30	11.72	0.97	0.97	10,098	10,100	100.0	0.0	206.09	111.44						
3.802	2-YR	101.20	105.65	4.45	107.20	107.20	0.0026	2.29			3.64			1,590	1,590	100.0	0.0	190.68	105.85	42.85	7		229.01	1.20	
3.802	5-YR	101.20	106.76	5.56	107.20	107.20	0.0026	3.31			4.34			2,830	2,830	100.0	0.0	197.35	107.05						
3.802	10-YR	101.20	107.44	6.24	107.20	107.20	0.0026	3.94	0.12	0.12	4.83	0.23	0.23	3,810	3,810	100.0	0.0	202.44	107.81						
3.802	25-YR	101.20	108.14	6.94	107.20	107.20	0.0026	4.64	0.47	0.47	5.52	0.58	0.58	5,117	5,120	100.0	0.0	209.36	108.61						
3.802	50-YR	101.20	108.60	7.40	107.20	107.20	0.0026	5.10	0.70	0.70	5.97	0.77	0.77	6,092	6,100	99.9	0.1	214.00	109.15						
3.802	100-YR	101.20	109.08	7.88	107.20	107.20	0.0026	5.58	0.94	0.94	6.48	0.95	0.95	7,223	7,240	99.8	0.2	218.77	109.73						
3.802	200-YR	101.20	109.51	8.31	107.20	107.20	0.0026	6.01	1.16	1.16	7.03	1.13	1.13	8,450	8,480	99.6	0.4	223.12	110.28						
3.802	500-YR	101.20	110.00	8.80	107.20	107.20	0.0026	6.50	1.40	1.40	7.73	1.34	1.34	10,047	10,100	99.5	0.5	227.99	110.92						
3.703	2-YR	99.83	102.13	2.30	105.83	105.02	0.0503	2.13			8.32			1,590	1,590	100.0	0.0	89.83	103.21	39.06	7		191.60	2.13	
3.703	5-YR	99.83	103.17	3.34	105.83	105.02	0.0503	2.99			9.86			2,830	2,830	100.0	0.0	96.02	104.68						
3.703	10-YR	99.83	104.30	4.47	105.83	105.02	0.0503	2.31			8.66			3,810	3,810	100.0	0.0	190.79	105.46						
3.703	25-YR	99.83	104.81	4.98	105.83	105.02	0.0503	2.78		0.06	9.48		0.37	5,120	5,120	100.0	0.0	196.54	106.21						
3.703	50-YR	99.83	105.18	5.35	105.83	105.02	0.0503	3.08		0.19	9.97		0.87	6,098	6,100	100.0	0.0	210.66	106.72						
3.703	100-YR	99.83	105.59	5.76	105.83	105.02	0.0503	3.47		0.28	10.42		1.04	7,227	7,240	99.8	0.2	245.33	107.27						
3.703	200-YR	99.83	106.06	6.23	105.83	105.02	0.0503	3.93	0.11	0.48	10.68	0.49	1.32	8,405	8,480	99.1	0.9	318.93	107.81						
3.703	500-YR	99.83	106.62	6.79	105.83	105.02	0.0503	4.49	0.20	0.92	10.95	0.69	1.85	9,856	10,100	97.6	2.4	381.57	108.44						
3.698	2-YR	98.32	102.24	3.92	104.32	104.32	0.0026	3.46			4.62			1,590	1,590	100.0	0.0	99.51	102.57	25.39	7		359.36	3.61	
3.698	5-YR	98.32	103.83	5.51	104.32	104.32	0.0026	3.27			4.40			2,830	2,830	100.0	0.0	197.08	104.13						
3.698	10-YR	98.32	104.57	6.25	104.32	104.32	0.0026	3.95	0.12	0.16	4.83	0.23	0.27	3,809	3,810	100.0	0.0	215.82	104.93						
3.698	25-YR	98.32	105.23	6.91	104.32	104.32	0.0026	4.61	0.45	0.31	5.54	0.57	0.60	5,107	5,120	99.7	0.3	269.07	105.71						
3.698	50-YR	98.32	105.64	7.32	104.32	104.32	0.0026	5.02	0.66	0.51	6.02	0.75	0.69	6,051	6,100	99.2	0.8	337.24	106.20						
3.698	100-YR	98.32	106.13	7.81	104.32	104.32	0.0026	5.51	0.90	0.90	6.45	0.93	0.95	7,105	7,240	98.1	1.9	357.33	106.76						
3.698	200-YR	98.32	106.62	8.30	104.32	104.32	0.0026	6.00	0.38	1.23	6.85	0.63	1.16	8,216	8,480	96.9	3.1	437.39	107.33						
3.698	500-YR	98.32	107.22	8.90	104.32	104.32	0.0026	6.60	0.64	1.57	7.26	0.75	1.36	9,586	10,100	94.9	5.1	544.85	108.00						
3.599	2-YR	96.95	99.55	2.60	102.73	102.95	0.0499	2.38			7.29			1,590	1,590	100.0	0.0	91.62	100.38	35.24	6	36.75	195.19	2.13	1.99
3.599	5-YR	96.95	100.43	3.48	102.73	102.95	0.0499	3.11			9.40			2,830	2,830	100.0	0.0	96.89	101.80						
3.599	10-YR	96.95	101.42	4.47	102.73	102.95	0.0499	2.31			8.65			3,810	3,810	100.0	0.0	190.79	102.58						
3.599	25-YR	96.95	101.99	5.04	102.73	102.95	0.0499	2.84			9.29			5,120	5,120	100.0	0.0	194.25	103.33						
3.599	50-YR	96.95	102.47	5.52	102.73	102.95	0.0499	3.27			9.46			6,100	6,100	100.0	0.0	197.11	103.86						
3.599	100-YR	96.95	102.89	5.94	102.73	102.95	0.0499	3.65	0.11		9.94	0.48		7,239	7,240	100.0	0.0	218.06	104.43						
3.599	200-YR	96.95	103.27	6.32	102.73	102.95	0.0499	4.03	0.33	0.16	10.52	1.00	0.60	8,466	8,480	99.8	0.2	241.70	104.99						
3.599	500-YR	96.95	103.72	6.77	102.73	102.95	0.0499	4.48	0.62	0.39	11.23	1.48	1.06	10,046	10,100	99.5	0.5	260.39	105.67						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
3.594	2-YR	95.45	99.84	4.39	101.45	101.45	0.0026	2.24			3.73			1,590	1,590	100.0	0.0	190.36	100.06	43.36	6		326.81	1.72	
3.594	5-YR	95.45	101.08	5.63	101.45	101.45	0.0026	3.37			4.25			2,830	2,830	100.0	0.0	197.75	101.36						
3.594	10-YR	95.45	101.77	6.32	101.45	101.45	0.0026	4.02	0.16	0.16	4.74	0.27	0.27	3,810	3,810	100.0	0.0	203.20	102.12						
3.594	25-YR	95.45	102.49	7.04	101.45	101.45	0.0026	4.74	0.23	0.52	5.40	0.42	0.60	5,117	5,120	99.9	0.1	220.69	102.94						
3.594	50-YR	95.45	102.95	7.50	101.45	101.45	0.0026	5.20	0.42	0.75	5.85	0.53	0.78	6,086	6,100	99.8	0.2	250.81	103.48						
3.594	100-YR	95.45	103.40	7.95	101.45	101.45	0.0026	5.65	0.67	0.98	6.37	0.75	0.95	7,199	7,240	99.4	0.6	272.88	104.03						
3.594	200-YR	95.45	103.83	8.38	101.45	101.45	0.0026	6.08	0.91	1.19	6.90	0.98	1.12	8,393	8,480	99.0	1.0	292.27	104.56						
3.594	500-YR	95.45	104.35	8.90	101.45	101.45	0.0026	6.60	1.01	1.45	7.53	1.12	1.32	9,933	10,100	98.3	1.7	337.55	105.21						
3.476	2-YR	93.83	96.51	2.68	99.66	99.83	0.0500	2.44			7.07			1,590	1,590	100.0	0.0	92.06	97.28	34.35	6		196.16	2.13	
3.476	5-YR	93.83	97.18	3.35	99.66	99.83	0.0500	3.00			9.83			2,830	2,830	100.0	0.0	96.09	98.68						
3.476	10-YR	93.83	98.30	4.47	99.66	99.83	0.0500	2.31			8.65			3,810	3,810	100.0	0.0	190.79	99.46						
3.476	25-YR	93.83	98.79	4.96	99.66	99.83	0.0500	2.76			9.56			5,120	5,120	100.0	0.0	193.78	100.21						
3.476	50-YR	93.83	99.17	5.34	99.66	99.83	0.0500	3.11			10.01			6,100	6,100	100.0	0.0	196.04	100.73						
3.476	100-YR	93.83	99.68	5.85	99.66	99.83	0.0500	3.57	0.03		10.19	0.22		7,240	7,240	100.0	0.0	248.75	101.29						
3.476	200-YR	93.83	100.22	6.39	99.66	99.83	0.0500	4.10	0.42	0.20	10.32	1.19	0.65	8,440	8,480	99.5	0.5	279.81	101.87						
3.476	500-YR	93.83	100.85	7.02	99.66	99.83	0.0500	4.73	0.97	0.51	10.53	1.80	1.15	9,937	10,100	98.4	1.6	296.22	102.55						
3.470	2-YR	92.33	96.78	4.45	98.33	98.33	0.0026	2.29			3.64			1,590	1,590	100.0	0.0	190.68	96.98	42.85	6		311.45	1.63	
3.470	5-YR	92.33	97.89	5.56	98.33	98.33	0.0026	3.30			4.34			2,830	2,830	100.0	0.0	197.34	98.18						
3.470	10-YR	92.33	98.57	6.24	98.33	98.33	0.0026	3.94	0.12	0.12	4.83	0.23	0.23	3,810	3,810	100.0	0.0	202.43	98.94						
3.470	25-YR	92.33	99.28	6.95	98.33	98.33	0.0026	4.65	0.47	0.47	5.51	0.58	0.58	5,117	5,120	99.9	0.1	209.46	99.75						
3.470	50-YR	92.33	99.73	7.40	98.33	98.33	0.0026	5.10	0.41	0.70	5.97	0.69	0.77	6,092	6,100	99.9	0.1	221.05	100.28						
3.470	100-YR	92.33	100.23	7.90	98.33	98.33	0.0026	5.60	0.39	0.95	6.44	0.53	0.95	7,212	7,240	99.6	0.4	300.54	100.87						
3.470	200-YR	92.33	100.74	8.41	98.33	98.33	0.0026	6.11	0.88	1.21	6.86	0.92	1.12	8,387	8,480	98.9	1.1	306.17	101.46						
3.470	500-YR	92.33	101.34	9.01	98.33	98.33	0.0026	6.71	1.44	1.50	7.37	1.29	1.31	9,890	10,100	97.9	2.1	312.57	102.16						
3.372	2-YR	90.96	93.26	2.30	96.96	96.96	0.0500	2.13			8.32			1,590	1,590	100.0	0.0	89.83	94.34	39.06	6		191.60	2.13	
3.372	5-YR	90.96	94.30	3.34	96.96	96.96	0.0500	2.99			9.86			2,830	2,830	100.0	0.0	96.02	95.81						
3.372	10-YR	90.96	95.43	4.47	96.96	96.96	0.0500	2.31			8.65			3,810	3,810	100.0	0.0	190.80	96.59						
3.372	25-YR	90.96	95.92	4.96	96.96	96.96	0.0500	2.76			9.56			5,120	5,120	100.0	0.0	193.77	97.34						
3.372	50-YR	90.96	96.30	5.34	96.96	96.96	0.0500	3.11			10.02			6,100	6,100	100.0	0.0	196.03	97.86						
3.372	100-YR	90.96	96.69	5.73	96.96	96.96	0.0500	3.46			10.56			7,240	7,240	100.0	0.0	198.37	98.42						
3.372	200-YR	90.96	97.07	6.11	96.96	96.96	0.0500	3.81	0.05	0.05	11.14	0.31	0.31	8,480	8,480	100.0	0.0	201.06	98.99						
3.372	500-YR	90.96	97.56	6.60	96.96	96.96	0.0500	4.30	0.30	0.30	11.74	0.96	0.96	10,098	10,100	100.0	0.0	205.99	99.70						
3.366	2-YR	89.46	93.33	3.87	95.46	95.46	0.0027	3.42			4.69			1,590	1,590	100.0	0.0	99.20	93.67	25.63	6		217.40	2.19	
3.366	5-YR	89.46	94.92	5.46	95.46	95.46	0.0027	3.22			4.47			2,830	2,830	100.0	0.0	196.77	95.23						
3.366	10-YR	89.46	95.65	6.19	95.46	95.46	0.0027	3.89	0.10	0.10	4.89	0.20	0.20	3,810	3,810	100.0	0.0	201.94	96.03						
3.366	25-YR	89.46	96.36	6.90	95.46	95.46	0.0027	4.60	0.45	0.45	5.57	0.57	0.57	5,118	5,120	100.0	0.0	208.97	96.84						
3.366	50-YR	89.46	96.67	7.21	95.46	95.46	0.0027	4.91	0.61	0.61	6.21	0.74	0.74	6,095	6,100	99.9	0.1	212.10	97.27						
3.366	100-YR	89.46	97.14	7.68	95.46	95.46	0.0027	5.38	0.84	0.84	6.72	0.94	0.94	7,227	7,240	99.8	0.2	216.77	97.84						
3.366	200-YR	89.46	97.47	8.01	95.46	95.46	0.0027	5.71	1.00	1.00	7.41	1.12	1.12	8,457	8,480	99.7	0.3	220.05	98.32						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
3.366	500-YR	89.46	97.79	8.33	95.46	95.46	0.0027	6.03	1.17	1.17	8.34	1.35	1.35	10,063	10,100	99.6	0.4	223.31	98.87						
3.277	2-YR	88.21	90.85	2.64	94.07	94.00	0.0500	2.41			7.17			1,590	1,590	100.0	0.0	91.85	91.65	34.79	5C	35.48	236.46	2.57	2.83
3.277	5-YR	88.21	91.72	3.51	94.07	94.00	0.0500	3.13			9.31			2,830	2,830	100.0	0.0	97.07	93.07						
3.277	10-YR	88.21	92.68	4.47	94.07	94.00	0.0500	2.31			8.65			3,810	3,810	100.0	0.0	190.80	93.84						
3.277	25-YR	88.21	93.16	4.95	94.07	94.00	0.0500	2.76			9.59			5,120	5,120	100.0	0.0	193.71	94.59						
3.277	50-YR	88.21	93.86	5.65	94.07	94.00	0.0500	3.39	0.32		9.06	0.91		6,074	6,100	99.6	0.4	287.98	95.13						
3.277	100-YR	88.21	94.21	6.00	94.07	94.00	0.0500	3.70	0.43	0.21	9.65	1.25	0.70	7,143	7,240	98.7	1.3	431.91	95.64						
3.277	200-YR	88.21	94.72	6.51	94.07	94.00	0.0500	4.22	0.84	0.71	9.65	1.61	1.44	8,132	8,480	95.9	4.1	474.43	96.11						
3.277	500-YR	88.21	95.36	7.15	94.07	94.00	0.0500	4.86	1.45	1.33	9.56	2.08	1.97	9,279	10,100	91.9	8.1	482.50	96.67						
3.272	2-YR	86.71	91.13	4.42	92.71	92.71	0.0027	2.27			3.68			1,590	1,590	100.0	0.0	190.54	91.34	43.11	5C		486.51	2.55	
3.272	5-YR	86.71	92.35	5.64	92.71	92.71	0.0027	3.38			4.23			2,830	2,830	100.0	0.0	197.85	92.63						
3.272	10-YR	86.71	93.05	6.34	92.71	92.71	0.0027	4.04	0.06	0.17	4.72	0.18	0.28	3,810	3,810	100.0	0.0	211.72	93.39						
3.272	25-YR	86.71	93.66	6.95	92.71	92.71	0.0027	4.65	0.36	0.47	5.50	0.49	0.58	5,106	5,120	99.7	0.3	278.08	94.12						
3.272	50-YR	86.71	94.29	7.58	92.71	92.71	0.0027	5.28	0.51	0.35	5.71	0.59	0.45	6,028	6,100	98.8	1.2	468.94	94.79						
3.272	100-YR	86.71	94.69	7.98	92.71	92.71	0.0027	5.68	0.91	0.74	6.19	0.89	0.78	7,034	7,240	97.2	2.8	472.88	95.27						
3.272	200-YR	86.71	95.13	8.42	92.71	92.71	0.0027	6.12	1.34	1.16	6.59	1.17	1.06	8,071	8,480	95.2	4.8	477.63	95.78						
3.272	500-YR	86.71	95.68	8.97	92.71	92.71	0.0027	6.67	1.85	1.59	7.03	1.46	1.32	9,368	10,100	92.8	7.2	487.75	96.39						
3.183	2-YR	85.46	87.79	2.33	90.77	91.46	0.0499	2.15			8.37			1,620	1,620	100.0	0.0	89.99	88.88	38.62	5C		191.96	2.13	
3.183	5-YR	85.46	88.95	3.49	90.77	91.46	0.0499	3.11			10.07			3,040	3,040	100.0	0.0	96.95	90.53						
3.183	10-YR	85.46	90.07	4.61	90.77	91.46	0.0499	2.44			8.90			4,170	4,170	100.0	0.0	191.68	91.30						
3.183	25-YR	85.46	90.51	5.05	90.77	91.46	0.0499	2.85	0.04		9.58	0.27		5,300	5,300	100.0	0.0	202.27	91.94						
3.183	50-YR	85.46	91.15	5.69	90.77	91.46	0.0499	3.44	0.28		10.13	0.95		6,861	6,890	99.6	0.4	305.88	92.73						
3.183	100-YR	85.46	91.66	6.20	90.77	91.46	0.0499	3.93	0.60	0.10	10.23	1.43	0.42	7,962	8,120	98.1	1.9	382.63	93.25						
3.183	200-YR	85.46	92.11	6.65	90.77	91.46	0.0499	4.38	0.99	0.32	10.57	1.92	0.90	9,162	9,540	96.0	4.0	399.30	93.77						
3.183	500-YR	85.46	92.58	7.12	90.77	91.46	0.0499	4.86	1.45	0.56	11.12	2.43	1.27	10,688	11,400	93.8	6.2	403.57	94.39						
3.177	2-YR	83.96	87.88	3.92	89.96	89.96	0.0027	3.45			4.71			1,620	1,620	100.0	0.0	99.50	88.22	25.38	5C		403.25	4.05	
3.177	5-YR	83.96	89.65	5.69	89.96	89.96	0.0027	3.42			4.49			3,040	3,040	100.0	0.0	198.12	89.96						
3.177	10-YR	83.96	90.35	6.39	89.96	89.96	0.0027	4.09	0.14	0.20	5.09	0.26	0.33	4,169	4,170	100.0	0.0	231.42	90.76						
3.177	25-YR	83.96	90.93	6.97	89.96	89.96	0.0027	4.67	0.37	0.49	5.64	0.51	0.60	5,271	5,300	99.5	0.5	350.54	91.42						
3.177	50-YR	83.96	91.59	7.63	89.96	89.96	0.0027	5.33	0.89	0.82	6.30	0.94	0.87	6,725	6,890	97.6	2.4	399.04	92.20						
3.177	100-YR	83.96	92.02	8.06	89.96	89.96	0.0027	5.76	1.29	1.03	6.77	1.22	1.04	7,801	8,120	96.1	3.9	406.96	92.70						
3.177	200-YR	83.96	92.51	8.55	89.96	89.96	0.0027	6.25	1.76	1.24	7.19	1.51	1.20	8,992	9,540	94.3	5.7	412.53	93.27						
3.177	500-YR	83.96	93.10	9.14	89.96	89.96	0.0027	6.84	2.32	1.12	7.68	1.83	1.29	10,507	11,400	92.2	7.8	426.69	93.95						
3.088	2-YR	82.71	85.35	2.64	88.00	88.71	0.0500	2.41			7.32			1,620	1,620	100.0	0.0	91.83	86.18	34.78	5B	34.17	195.68	2.13	2.52
3.088	5-YR	82.71	86.20	3.49	88.00	88.71	0.0500	3.11			10.07			3,040	3,040	100.0	0.0	96.95	87.78						
3.088	10-YR	82.71	87.32	4.61	88.00	88.71	0.0500	2.44			8.90			4,170	4,170	100.0	0.0	191.68	88.55						
3.088	25-YR	82.71	87.74	5.03	88.00	88.71	0.0500	2.83			9.64			5,300	5,300	100.0	0.0	194.20	89.19						
3.088	50-YR	82.71	88.38	5.67	88.00	88.71	0.0500	3.43	0.37		10.18	1.12		6,866	6,890	99.6	0.4	255.71	89.99						
3.088	100-YR	82.71	88.89	6.18	88.00	88.71	0.0500	3.91	0.82	0.09	10.36	1.79	0.40	8,026	8,120	98.8	1.2	263.05	90.54						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
3.088	200-YR	82.71	89.35	6.64	88.00	88.71	0.0500	4.38	1.21	0.32	10.80	2.24	0.91	9,352	9,540	98.0	2.0	270.19	91.13						
3.088	500-YR	82.71	89.94	7.23	88.00	88.71	0.0500	4.97	1.68	0.62	11.25	2.67	1.35	11,058	11,400	97.0	3.0	279.27	91.85						
3.082	2-YR	81.21	85.65	4.44	87.21	87.21	0.0027	2.28			3.73			1,620	1,620	100.0	0.0	190.61	85.86	42.93	5B		290.00	1.52	
3.082	5-YR	81.21	86.90	5.69	87.21	87.21	0.0027	3.42			4.49			3,040	3,040	100.0	0.0	198.12	87.21						
3.082	10-YR	81.21	87.60	6.39	87.21	87.21	0.0027	4.09	0.20	0.20	5.09	0.32	0.32	4,170	4,170	100.0	0.0	203.93	88.01						
3.082	25-YR	81.21	88.18	6.97	87.21	87.21	0.0027	4.67	0.48	0.48	5.67	0.61	0.61	5,297	5,300	99.9	0.1	209.70	88.68						
3.082	50-YR	81.21	88.90	7.69	87.21	87.21	0.0027	5.39	0.65	0.84	6.36	0.76	0.89	6,853	6,890	99.5	0.5	270.82	89.52						
3.082	100-YR	81.21	89.41	8.20	87.21	87.21	0.0027	5.90	1.08	1.10	6.80	1.07	1.07	8,027	8,120	98.9	1.1	279.47	90.12						
3.082	200-YR	81.21	89.88	8.67	87.21	87.21	0.0027	6.37	1.46	1.34	7.35	1.35	1.25	9,373	9,540	98.2	1.8	287.03	90.71						
3.082	500-YR	81.21	90.47	9.26	87.21	87.21	0.0027	6.96	1.94	0.89	7.98	1.66	1.19	11,113	11,400	97.5	2.5	310.74	91.44						
2.993	2-YR	79.96	82.29	2.33	85.96	86.00	0.0500	2.15			8.37			1,620	1,620	100.0	0.0	89.99	83.38	38.62	5B		191.96	2.13	
2.993	5-YR	79.96	83.45	3.49	85.96	86.00	0.0500	3.11			10.07			3,040	3,040	100.0	0.0	96.95	85.03						
2.993	10-YR	79.96	84.57	4.61	85.96	86.00	0.0500	2.44			8.90			4,170	4,170	100.0	0.0	191.68	85.80						
2.993	25-YR	79.96	85.01	5.05	85.96	86.00	0.0500	2.84			9.60			5,300	5,300	100.0	0.0	194.28	86.44						
2.993	50-YR	79.96	85.57	5.61	85.96	86.00	0.0500	3.35			10.40			6,890	6,890	100.0	0.0	197.66	87.25						
2.993	100-YR	79.96	85.94	5.98	85.96	86.00	0.0500	3.69			11.02			8,120	8,120	100.0	0.0	199.91	87.83						
2.993	200-YR	79.96	86.50	6.54	85.96	86.00	0.0500	4.24	0.27	0.40	11.21	0.88	1.13	9,508	9,540	99.7	0.3	298.42	88.44						
2.993	500-YR	79.96	87.05	7.09	85.96	86.00	0.0500	4.79	0.80	0.74	11.72	1.73	1.66	11,243	11,400	98.6	1.4	319.89	89.16						
2.987	2-YR	78.46	82.44	3.98	84.46	84.46	0.0027	3.50			4.63			1,620	1,620	100.0	0.0	99.87	82.77	25.09	5B		318.94	3.19	
2.987	5-YR	78.46	84.10	5.64	84.46	84.46	0.0027	3.38			4.55			3,040	3,040	100.0	0.0	197.83	84.42						
2.987	10-YR	78.46	84.80	6.34	84.46	84.46	0.0027	4.04	0.17	0.17	5.16	0.30	0.30	4,170	4,170	100.0	0.0	203.38	85.21						
2.987	25-YR	78.46	85.37	6.91	84.46	84.46	0.0027	4.61	0.45	0.45	5.75	0.59	0.59	5,298	5,300	100.0	0.0	209.09	85.88						
2.987	50-YR	78.46	86.08	7.62	84.46	84.46	0.0027	5.32	0.17	0.55	6.45	0.32	0.69	6,870	6,890	99.7	0.3	307.98	86.73						
2.987	100-YR	78.46	86.56	8.10	84.46	84.46	0.0027	5.80	0.65	0.82	6.93	0.78	0.92	8,043	8,120	99.1	0.9	323.47	87.30						
2.987	200-YR	78.46	87.09	8.63	84.46	84.46	0.0027	6.33	1.15	1.11	7.40	1.16	1.13	9,358	9,540	98.1	1.9	340.63	87.92						
2.987	500-YR	78.46	87.72	9.26	84.46	84.46	0.0027	6.96	1.75	1.14	7.93	1.54	1.28	11,026	11,400	96.7	3.3	396.24	88.66						
2.908	2-YR	77.33	79.66	2.33	83.06	83.33	0.0500	2.15			8.37			1,620	1,620	100.0	0.0	89.99	80.75	38.62	5B		191.96	2.13	
2.908	5-YR	77.33	80.82	3.49	83.06	83.33	0.0500	3.11			10.07			3,040	3,040	100.0	0.0	96.95	82.40						
2.908	10-YR	77.33	81.94	4.61	83.06	83.33	0.0500	2.44			8.90			4,170	4,170	100.0	0.0	191.69	83.17						
2.908	25-YR	77.33	82.38	5.05	83.06	83.33	0.0500	2.84			9.60			5,300	5,300	100.0	0.0	194.28	83.81						
2.908	50-YR	77.33	82.93	5.60	83.06	83.33	0.0500	3.34			10.44			6,890	6,890	100.0	0.0	197.59	84.62						
2.908	100-YR	77.33	83.36	6.03	83.06	83.33	0.0500	3.75	0.30	0.02	10.87	0.99	0.14	8,112	8,120	99.9	0.1	225.26	85.20						
2.908	200-YR	77.33	83.79	6.46	83.06	83.33	0.0500	4.18	0.72	0.23	11.43	1.72	0.80	9,507	9,540	99.7	0.3	227.99	85.81						
2.908	500-YR	77.33	84.33	7.00	83.06	83.33	0.0500	4.72	1.23	0.18	12.04	2.38	0.68	11,314	11,400	99.2	0.8	278.46	86.57						
2.902	2-YR	75.83	79.81	3.98	81.83	81.83	0.0027	3.51			4.62			1,620	1,620	100.0	0.0	99.90	80.15	25.10	5B		265.99	2.66	
2.902	5-YR	75.83	81.47	5.64	81.83	81.83	0.0027	3.38			4.54			3,040	3,040	100.0	0.0	197.86	81.79						
2.902	10-YR	75.83	82.17	6.34	81.83	81.83	0.0027	4.04	0.17	0.17	5.16	0.30	0.30	4,170	4,170	100.0	0.0	203.42	82.58						
2.902	25-YR	75.83	82.70	6.87	81.83	81.83	0.0027	4.57	0.43	0.43	5.80	0.58	0.58	5,298	5,300	100.0	0.0	208.66	83.22						
2.902	50-YR	75.83	83.43	7.60	81.83	81.83	0.0027	5.30	0.80	0.80	6.49	0.89	0.89	6,879	6,890	99.8	0.2	216.00	84.08						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
2.902	100-YR	75.83	83.90	8.07	81.83	81.83	0.0027	5.77	1.04	0.33	7.01	1.08	0.69	8,092	8,120	99.7	0.3	283.66	84.66						
2.902	200-YR	75.83	84.27	8.44	81.83	81.83	0.0027	6.14	0.76	0.57	7.72	0.93	0.78	9,479	9,540	99.4	0.6	324.06	85.19						
2.902	500-YR	75.83	84.64	8.81	81.83	81.83	0.0027	6.51	1.10	0.89	8.65	1.28	1.12	11,260	11,400	98.8	1.2	332.38	85.79						
2.823	2-YR	74.71	77.04	2.33	80.71	80.71	0.0499	2.15			8.37			1,620	1,620	100.0	0.0	89.99	78.13	38.62	5B		191.96	2.13	
2.823	5-YR	74.71	78.20	3.49	80.71	80.71	0.0499	3.11			10.07			3,040	3,040	100.0	0.0	96.95	79.78						
2.823	10-YR	74.71	79.33	4.62	80.71	80.71	0.0499	2.45			8.89			4,170	4,170	100.0	0.0	191.71	80.55						
2.823	25-YR	74.71	79.87	5.16	80.71	80.71	0.0499	2.95			9.23			5,300	5,300	100.0	0.0	194.97	81.19						
2.823	50-YR	74.71	80.36	5.65	80.71	80.71	0.0499	3.39	0.25		10.25	0.87		6,879	6,890	99.8	0.2	248.19	81.99						
2.823	100-YR	74.71	80.78	6.07	80.71	80.71	0.0499	3.77	0.41	0.03	10.71	1.20	0.22	8,069	8,120	99.4	0.6	304.08	82.55						
2.823	200-YR	74.71	81.40	6.69	80.71	80.71	0.0499	4.39	0.59	0.38	10.61	1.40	1.02	9,315	9,540	97.6	2.4	495.62	83.11						
2.823	500-YR	74.71	82.03	7.32	80.71	80.71	0.0499	5.02	1.05	0.95	10.64	1.83	1.71	10,687	11,400	93.7	6.3	578.48	83.68						
2.817	2-YR	73.21	77.19	3.98	79.21	79.21	0.0027	3.50			4.63			1,620	1,620	100.0	0.0	99.88	77.52	25.10	5B		466.57	4.67	
2.817	5-YR	73.21	78.89	5.68	79.21	79.21	0.0027	3.41			4.50			3,040	3,040	100.0	0.0	198.06	79.20						
2.817	10-YR	73.21	79.59	6.38	79.21	79.21	0.0027	4.08	0.19	0.19	5.11	0.32	0.32	4,170	4,170	100.0	0.0	203.80	80.00						
2.817	25-YR	73.21	80.35	7.14	79.21	79.21	0.0027	4.84	0.27	0.57	5.46	0.41	0.63	5,287	5,300	99.8	0.2	302.79	80.81						
2.817	50-YR	73.21	80.90	7.69	79.21	79.21	0.0027	5.39	0.55	0.85	6.32	0.68	0.89	6,817	6,890	98.9	1.1	388.57	81.52						
2.817	100-YR	73.21	81.39	8.18	79.21	79.21	0.0027	5.88	0.73	0.75	6.74	0.82	0.83	7,928	8,120	97.6	2.4	517.56	82.08						
2.817	200-YR	73.21	81.81	8.60	79.21	79.21	0.0027	6.30	1.00	1.10	7.25	1.04	1.10	9,138	9,540	95.8	4.2	580.04	82.59						
2.817	500-YR	73.21	82.47	9.26	79.21	79.21	0.0027	6.96	1.61	1.38	7.55	1.39	1.25	10,514	11,400	92.2	7.8	602.52	83.29						
2.737	2-YR	72.08	74.41	2.33	78.08	78.08	0.0499	2.15			8.37			1,620	1,620	100.0	0.0	89.99	75.50	38.62	5B		191.96	2.13	
2.737	5-YR	72.08	75.62	3.54	78.08	78.08	0.0499	3.15			10.12			3,100	3,100	100.0	0.0	97.21	77.21						
2.737	10-YR	72.08	76.71	4.63	78.08	78.08	0.0499	2.46			9.02			4,250	4,250	100.0	0.0	191.77	77.97						
2.737	25-YR	72.08	77.34	5.26	78.08	78.08	0.0499	3.04			9.93			5,900	5,900	100.0	0.0	195.58	78.87						
2.737	50-YR	72.08	77.76	5.68	78.08	78.08	0.0499	3.42			10.49			7,100	7,100	100.0	0.0	198.09	79.47						
2.737	100-YR	72.08	78.14	6.06	78.08	78.08	0.0499	3.76	0.03	0.03	11.03	0.22	0.22	8,300	8,300	100.0	0.0	200.63	80.03						
2.737	200-YR	72.08	78.57	6.49	78.08	78.08	0.0499	4.19	0.25	0.25	11.30	0.82	0.82	9,469	9,470	100.0	0.0	204.90	80.55						
2.737	500-YR	72.08	79.25	7.17	78.08	78.08	0.0499	4.87	0.58	0.35	11.71	1.37	0.98	11,392	11,400	99.9	0.1	215.65	81.37						
2.732	2-YR	70.58	74.56	3.98	76.58	76.58	0.0027	3.51			4.62			1,620	1,620	100.0	0.0	99.90	74.90	25.10	5A	33.04	219.60	2.20	2.03
2.732	5-YR	70.58	76.27	5.69	76.58	76.58	0.0027	3.42			4.57			3,100	3,100	100.0	0.0	198.13	76.59						
2.732	10-YR	70.58	76.97	6.39	76.58	76.58	0.0027	4.09	0.20	0.20	5.19	0.33	0.33	4,250	4,250	100.0	0.0	203.91	77.39						
2.732	25-YR	70.58	77.77	7.19	76.58	76.58	0.0027	4.89	0.60	0.60	6.03	0.71	0.71	5,895	5,900	99.9	0.1	211.90	78.33						
2.732	50-YR	70.58	78.29	7.71	76.58	76.58	0.0027	5.41	0.85	0.85	6.55	0.92	0.92	7,087	7,100	99.8	0.2	217.09	78.95						
2.732	100-YR	70.58	78.79	8.21	76.58	76.58	0.0027	5.91	1.10	1.10	7.00	1.11	1.11	8,273	8,300	99.7	0.3	222.05	79.54						
2.732	200-YR	70.58	79.21	8.63	76.58	76.58	0.0027	6.33	1.32	1.32	7.44	1.26	1.26	9,426	9,470	99.5	0.5	226.34	80.07						
2.732	500-YR	70.58	79.89	9.31	76.58	76.58	0.0027	7.01	1.66	1.66	8.07	1.49	1.49	11,318	11,400	99.3	0.7	233.11	80.90						
2.652	2-YR	69.46	71.79	2.33	75.46	75.46	0.0500	2.15			8.37			1,620	1,620	100.0	0.0	89.99	72.88	38.62	5A		191.96	2.13	
2.652	5-YR	69.46	73.00	3.54	75.46	75.46	0.0500	3.15			10.12			3,100	3,100	100.0	0.0	97.21	74.59						
2.652	10-YR	69.46	74.09	4.63	75.46	75.46	0.0500	2.46			9.02			4,250	4,250	100.0	0.0	191.77	75.35						
2.652	25-YR	69.46	74.72	5.26	75.46	75.46	0.0500	3.04			9.93			5,900	5,900	100.0	0.0	195.58	76.25						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
2.652	50-YR	69.46	75.14	5.68	75.46	75.46	0.0500	3.42			10.49			7,100	7,100	100.0	0.0	198.09	76.85						
2.652	100-YR	69.46	75.50	6.04	75.46	75.46	0.0500	3.74	0.02	0.02	11.10	0.16	0.16	8,300	8,300	100.0	0.0	200.40	77.41						
2.652	200-YR	69.46	75.87	6.41	75.46	75.46	0.0500	4.11	0.21	0.21	11.51	0.76	0.76	9,469	9,470	100.0	0.0	204.14	77.93						
2.652	500-YR	69.46	76.42	6.96	75.46	75.46	0.0500	4.66	0.48	0.48	12.22	1.30	1.30	11,394	11,400	99.9	0.1	209.60	78.74						
2.647	2-YR	67.96	71.77	3.81	73.96	73.96	0.0027	3.37			4.86			1,620	1,620	100.0	0.0	98.87	72.14	25.95	5A		216.20	2.19	
2.647	5-YR	67.96	73.60	5.64	73.96	73.96	0.0027	3.38			4.64			3,100	3,100	100.0	0.0	197.82	73.93						
2.647	10-YR	67.96	74.29	6.33	73.96	73.96	0.0027	4.03	0.17	0.17	5.27	0.30	0.30	4,250	4,250	100.0	0.0	203.31	74.72						
2.647	25-YR	67.96	75.08	7.12	73.96	73.96	0.0027	4.82	0.56	0.56	6.12	0.70	0.70	5,896	5,900	99.9	0.1	211.19	75.66						
2.647	50-YR	67.96	75.59	7.63	73.96	73.96	0.0027	5.33	0.82	0.82	6.65	0.92	0.92	7,088	7,100	99.8	0.2	216.32	76.28						
2.647	100-YR	67.96	76.08	8.12	73.96	73.96	0.0027	5.82	1.06	1.06	7.11	1.10	1.10	8,275	8,300	99.7	0.3	221.22	76.86						
2.647	200-YR	67.96	76.50	8.54	73.96	73.96	0.0027	6.24	1.27	1.27	7.55	1.26	1.26	9,429	9,470	99.6	0.4	225.42	77.38						
2.647	500-YR	67.96	77.16	9.20	73.96	73.96	0.0027	6.90	1.60	1.60	8.21	1.50	1.50	11,324	11,400	99.3	0.7	231.95	78.20						
2.576	2-YR	66.96	69.60	2.64	72.96	72.96	0.0500	2.41			7.32			1,620	1,620	100.0	0.0	91.83	70.43	34.78	5A		195.68	2.13	
2.576	5-YR	66.96	70.50	3.54	72.96	72.96	0.0500	3.15			10.12			3,100	3,100	100.0	0.0	97.21	72.09						
2.576	10-YR	66.96	71.59	4.63	72.96	72.96	0.0500	2.46			9.02			4,250	4,250	100.0	0.0	191.77	72.85						
2.576	25-YR	66.96	72.22	5.26	72.96	72.96	0.0500	3.04			9.93			5,900	5,900	100.0	0.0	195.58	73.75						
2.576	50-YR	66.96	72.64	5.68	72.96	72.96	0.0500	3.42			10.49			7,100	7,100	100.0	0.0	198.09	74.35						
2.576	100-YR	66.96	73.00	6.04	72.96	72.96	0.0500	3.74	0.02	0.02	11.10	0.16	0.16	8,300	8,300	100.0	0.0	200.40	74.91						
2.576	200-YR	66.96	73.38	6.42	72.96	72.96	0.0500	4.12	0.21	0.21	11.48	0.77	0.77	9,469	9,470	100.0	0.0	204.24	75.43						
2.576	500-YR	66.96	73.97	7.01	72.96	72.96	0.0500	4.71	0.51	0.51	12.09	1.32	1.32	11,393	11,400	99.9	0.1	210.11	76.24						
2.571	2-YR	65.46	69.90	4.44	71.46	71.46	0.0027	2.28			3.73			1,620	1,620	100.0	0.0	190.61	70.11	42.93	5A		228.80	1.20	
2.571	5-YR	65.46	71.20	5.74	71.46	71.46	0.0027	3.47			4.51			3,100	3,100	100.0	0.0	198.42	71.51						
2.571	10-YR	65.46	71.91	6.45	71.46	71.46	0.0027	4.15	0.22	0.22	5.12	0.35	0.35	4,250	4,250	100.0	0.0	204.46	72.31						
2.571	25-YR	65.46	72.71	7.25	71.46	71.46	0.0027	4.95	0.63	0.63	5.95	0.72	0.72	5,894	5,900	99.9	0.1	212.53	73.26						
2.571	50-YR	65.46	73.19	7.73	71.46	71.46	0.0027	5.43	0.87	0.87	6.52	0.93	0.93	7,086	7,100	99.8	0.2	217.33	73.85						
2.571	100-YR	65.46	73.65	8.19	71.46	71.46	0.0027	5.89	1.09	1.09	7.03	1.10	1.10	8,274	8,300	99.7	0.3	221.86	74.41						
2.571	200-YR	65.46	74.06	8.60	71.46	71.46	0.0027	6.30	1.30	1.30	7.49	1.26	1.26	9,427	9,470	99.6	0.4	225.97	74.92						
2.571	500-YR	65.46	74.69	9.23	71.46	71.46	0.0027	6.93	1.61	1.61	8.17	1.49	1.49	11,322	11,400	99.3	0.7	232.29	75.72						
2.482	2-YR	64.21	66.54	2.33	70.21	70.21	0.0500	2.15			8.37			1,620	1,620	100.0	0.0	89.99	67.63	38.62	5A		191.96	2.13	
2.482	5-YR	64.21	67.75	3.54	70.21	70.21	0.0500	3.15			10.12			3,100	3,100	100.0	0.0	97.21	69.34						
2.482	10-YR	64.21	68.84	4.63	70.21	70.21	0.0500	2.46			9.02			4,250	4,250	100.0	0.0	191.77	70.10						
2.482	25-YR	64.21	69.47	5.26	70.21	70.21	0.0500	3.04			9.92			5,900	5,900	100.0	0.0	195.59	71.00						
2.482	50-YR	64.21	70.00	5.79	70.21	70.21	0.0500	3.51			10.17			7,100	7,100	100.0	0.0	198.73	71.61						
2.482	100-YR	64.21	70.47	6.26	70.21	70.21	0.0500	3.96	0.13	0.13	10.49	0.52	0.52	8,300	8,300	100.0	0.0	202.57	72.17						
2.482	200-YR	64.21	70.91	6.70	70.21	70.21	0.0500	4.40	0.35	0.35	10.75	0.96	0.96	9,468	9,470	100.0	0.0	207.04	72.71						
2.482	500-YR	64.21	71.64	7.43	70.21	70.21	0.0500	5.13	0.71	0.71	11.10	1.44	1.44	11,385	11,400	99.9	0.1	214.28	73.55						
2.476	2-YR	62.71	66.66	3.95	68.71	68.71	0.0027	3.48			4.67			1,620	1,620	100.0	0.0	99.70	67.00	25.24	5A		219.00	2.20	
2.476	5-YR	62.71	68.49	5.78	68.71	68.71	0.0027	3.50			4.46			3,100	3,100	100.0	0.0	198.66	68.79						
2.476	10-YR	62.71	69.20	6.49	68.71	68.71	0.0027	4.19	0.25	0.25	5.07	0.37	0.37	4,250	4,250	100.0	0.0	204.91	69.60						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
2.476	25-YR	62.71	70.02	7.31	68.71	68.71	0.0027	5.01	0.65	0.65	5.89	0.73	0.73	5,894	5,900	99.9	0.1	213.06	70.55						
2.476	50-YR	62.71	70.55	7.84	68.71	68.71	0.0027	5.54	0.92	0.92	6.40	0.93	0.93	7,084	7,100	99.8	0.2	218.36	71.18						
2.476	100-YR	62.71	71.02	8.31	68.71	68.71	0.0027	6.01	1.15	1.15	6.88	1.11	1.11	8,271	8,300	99.6	0.4	223.07	71.75						
2.476	200-YR	62.71	71.46	8.75	68.71	68.71	0.0027	6.45	1.38	1.38	7.30	1.26	1.26	9,422	9,470	99.5	0.5	227.54	72.29						
2.476	500-YR	62.71	72.18	9.47	68.71	68.71	0.0027	7.17	1.74	1.74	7.89	1.48	1.48	11,311	11,400	99.2	0.8	234.71	73.14						
2.378	2-YR	61.33	63.98	2.65	67.33	67.33	0.0500	2.42			7.28			1,620	1,620	100.0	0.0	91.91	64.80	34.68	4B	35.84	195.80	2.13	2.00
2.378	5-YR	61.33	64.86	3.53	67.33	67.33	0.0500	3.15			10.13			3,100	3,100	100.0	0.0	97.21	66.46						
2.378	10-YR	61.33	65.96	4.63	67.33	67.33	0.0500	2.46			9.02			4,250	4,250	100.0	0.0	191.77	67.22						
2.378	25-YR	61.33	66.60	5.27	67.33	67.33	0.0500	3.04			9.92			5,900	5,900	100.0	0.0	195.60	68.12						
2.378	50-YR	61.33	67.01	5.68	67.33	67.33	0.0500	3.42			10.49			7,100	7,100	100.0	0.0	198.09	68.72						
2.378	100-YR	61.33	67.44	6.11	67.33	67.33	0.0500	3.81	0.06	0.06	10.88	0.32	0.32	8,300	8,300	100.0	0.0	201.14	69.28						
2.378	200-YR	61.33	67.80	6.47	67.33	67.33	0.0500	4.17	0.23	0.23	11.36	0.80	0.80	9,469	9,470	100.0	0.0	204.66	69.80						
2.378	500-YR	61.33	68.28	6.95	67.33	67.33	0.0500	4.65	0.48	0.48	12.25	1.29	1.29	11,394	11,400	99.9	0.1	209.51	70.61						
2.372	2-YR	59.83	64.28	4.45	65.83	65.83	0.0027	2.29			3.71			1,620	1,620	100.0	0.0	190.68	64.49	42.85	4B		228.99	1.20	
2.372	5-YR	59.83	65.60	5.77	65.83	65.83	0.0027	3.49			4.47			3,100	3,100	100.0	0.0	198.59	65.91						
2.372	10-YR	59.83	66.33	6.50	65.83	65.83	0.0027	4.20	0.25	0.25	5.06	0.37	0.37	4,250	4,250	100.0	0.0	204.95	66.72						
2.372	25-YR	59.83	67.12	7.29	65.83	65.83	0.0027	4.99	0.65	0.65	5.90	0.73	0.73	5,894	5,900	99.9	0.1	212.93	67.66						
2.372	50-YR	59.83	67.61	7.78	65.83	65.83	0.0027	5.48	0.89	0.89	6.47	0.93	0.93	7,085	7,100	99.8	0.2	217.75	68.25						
2.372	100-YR	59.83	68.06	8.23	65.83	65.83	0.0027	5.93	1.12	1.12	6.97	1.11	1.11	8,273	8,300	99.7	0.3	222.30	68.81						
2.372	200-YR	59.83	68.45	8.62	65.83	65.83	0.0027	6.32	1.31	1.31	7.46	1.26	1.26	9,427	9,470	99.5	0.5	226.21	69.31						
2.372	500-YR	59.83	68.99	9.16	65.83	65.83	0.0027	6.86	1.58	1.58	8.25	1.50	1.50	11,325	11,400	99.3	0.7	231.61	70.04						
2.283	2-YR	58.58	60.93	2.35	64.00	64.58	0.0500	2.17			8.40			1,640	1,640	100.0	0.0	90.11	62.03	38.34	4B		192.20	2.13	
2.283	5-YR	58.58	62.15	3.57	64.00	64.58	0.0500	3.18			10.17			3,150	3,150	100.0	0.0	97.43	63.76						
2.283	10-YR	58.58	63.28	4.70	64.00	64.58	0.0500	2.53			9.06			4,400	4,400	100.0	0.0	192.22	64.56						
2.283	25-YR	58.58	63.87	5.29	64.00	64.58	0.0500	3.06			10.00			6,000	6,000	100.0	0.0	195.75	65.43						
2.283	50-YR	58.58	64.35	5.77	64.00	64.58	0.0500	3.51	0.26	0.31	10.34	0.89	1.01	7,181	7,200	99.7	0.3	260.34	66.01						
2.283	100-YR	58.58	64.74	6.16	64.00	64.58	0.0500	3.89	0.43	0.57	10.80	1.20	1.48	8,330	8,400	99.2	0.8	282.54	66.54						
2.283	200-YR	58.58	65.16	6.58	64.00	64.58	0.0500	4.31	0.50	0.85	11.07	1.27	1.83	9,451	9,610	98.3	1.7	307.39	67.03						
2.283	500-YR	58.58	65.76	7.18	64.00	64.58	0.0500	4.91	0.73	1.38	11.42	1.57	2.39	11,130	11,500	96.8	3.2	324.73	67.73						
2.277	2-YR	57.08	61.00	3.92	63.08	63.08	0.0027	3.46			4.76			1,640	1,640	100.0	0.0	99.54	61.36	25.39	4B		295.19	2.97	
2.277	5-YR	57.08	62.83	5.75	63.08	63.08	0.0027	3.48		0.30	4.56		0.43	3,147	3,150	99.9	0.1	219.30	63.15						
2.277	10-YR	57.08	63.56	6.48	63.08	63.08	0.0027	4.18	0.24	0.65	5.23	0.38	0.75	4,377	4,400	99.5	0.5	249.77	63.99						
2.277	25-YR	57.08	64.34	7.26	63.08	63.08	0.0027	4.96	0.63	1.09	5.96	0.73	1.07	5,914	6,000	98.6	1.4	277.95	64.88						
2.277	50-YR	57.08	64.86	7.78	63.08	63.08	0.0027	5.48	0.89	1.40	6.43	0.92	1.27	7,042	7,200	97.8	2.2	293.31	65.48						
2.277	100-YR	57.08	65.30	8.22	63.08	63.08	0.0027	5.92	1.11	1.66	6.89	1.09	1.45	8,157	8,400	97.1	2.9	306.70	66.02						
2.277	200-YR	57.08	65.73	8.65	63.08	63.08	0.0027	6.35	1.33	1.86	7.30	1.24	1.57	9,270	9,610	96.5	3.5	321.98	66.53						
2.277	500-YR	57.08	66.37	9.29	63.08	63.08	0.0027	6.99	1.08	2.31	7.85	1.10	1.83	10,966	11,500	95.4	4.6	345.67	67.28						
2.193	2-YR	55.89	58.52	2.63	61.89	61.89	0.0500	2.40			7.45			1,640	1,640	100.0	0.0	91.76	59.38	34.89	4B		195.56	2.13	
2.193	5-YR	55.89	59.46	3.57	61.89	61.89	0.0500	3.18			10.17			3,150	3,150	100.0	0.0	97.43	61.07						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
2.193	10-YR	55.89	60.59	4.70	61.89	61.89	0.0500	2.53			9.06			4,400	4,400	100.0	0.0	192.23	61.87						
2.193	25-YR	55.89	61.19	5.30	61.89	61.89	0.0500	3.07			9.98			6,000	6,000	100.0	0.0	195.79	62.74						
2.193	50-YR	55.89	61.61	5.72	61.89	61.89	0.0500	3.45			10.54			7,200	7,200	100.0	0.0	198.29	63.33						
2.193	100-YR	55.89	62.08	6.19	61.89	61.89	0.0500	3.89	0.09	0.09	10.80	0.44	0.44	8,400	8,400	100.0	0.0	201.87	63.89						
2.193	200-YR	55.89	62.51	6.62	61.89	61.89	0.0500	4.32	0.31	0.31	11.11	0.93	0.93	9,608	9,610	100.0	0.0	206.23	64.43						
2.193	500-YR	55.89	63.19	7.30	61.89	61.89	0.0500	5.00	0.65	0.65	11.48	1.42	1.42	11,488	11,500	99.9	0.1	213.04	65.24						
2.187	2-YR	54.39	58.83	4.44	60.39	60.39	0.0027	2.28			3.77			1,640	1,640	100.0	0.0	190.62	59.05	42.93	4B		228.80	1.20	
2.187	5-YR	54.39	60.15	5.76	60.39	60.39	0.0027	3.48			4.56			3,150	3,150	100.0	0.0	198.53	60.47						
2.187	10-YR	54.39	60.88	6.49	60.39	60.39	0.0027	4.19	0.25	0.25	5.25	0.38	0.38	4,400	4,400	100.0	0.0	204.93	61.31						
2.187	25-YR	54.39	61.66	7.27	60.39	60.39	0.0027	4.97	0.64	0.64	6.03	0.74	0.74	5,994	6,000	99.9	0.1	212.71	62.22						
2.187	50-YR	54.39	62.18	7.79	60.39	60.39	0.0027	5.49	0.90	0.90	6.54	0.94	0.94	7,185	7,200	99.8	0.2	217.90	62.84						
2.187	100-YR	54.39	62.68	8.29	60.39	60.39	0.0027	5.99	1.14	1.14	6.99	1.12	1.12	8,371	8,400	99.7	0.3	222.86	63.43						
2.187	200-YR	54.39	63.12	8.73	60.39	60.39	0.0027	6.43	1.36	1.36	7.44	1.28	1.28	9,562	9,610	99.5	0.5	227.29	63.97						
2.187	500-YR	54.39	63.80	9.41	60.39	60.39	0.0027	7.11	1.70	1.70	8.03	1.50	1.50	11,413	11,500	99.2	0.8	234.06	64.79						
2.103	2-YR	53.21	55.56	2.35	59.21	59.21	0.0500	2.17			8.40			1,640	1,640	100.0	0.0	90.11	56.66	38.34	4B		192.20	2.13	
2.103	5-YR	53.21	56.78	3.57	59.21	59.21	0.0500	3.18			10.17			3,150	3,150	100.0	0.0	97.43	58.39						
2.103	10-YR	53.21	57.91	4.70	59.21	59.21	0.0500	2.53			9.05			4,400	4,400	100.0	0.0	192.23	59.19						
2.103	25-YR	53.21	58.51	5.30	59.21	59.21	0.0500	3.07			9.98			6,000	6,000	100.0	0.0	195.80	60.06						
2.103	50-YR	53.21	58.93	5.72	59.21	59.21	0.0500	3.45			10.54			7,200	7,200	100.0	0.0	198.29	60.65						
2.103	100-YR	53.21	59.28	6.07	59.21	59.21	0.0500	3.77	0.03	0.03	11.14	0.24	0.24	8,400	8,400	100.0	0.0	200.69	61.21						
2.103	200-YR	53.21	59.67	6.46	59.21	59.21	0.0500	4.16	0.23	0.23	11.56	0.81	0.81	9,609	9,610	100.0	0.0	204.56	61.74						
2.103	500-YR	53.21	60.17	6.96	59.21	59.21	0.0500	4.66	0.48	0.48	12.33	1.31	1.31	11,494	11,500	99.9	0.1	209.60	62.53						
2.097	2-YR	51.71	55.48	3.77	57.71	57.71	0.0030	3.34			4.98			1,640	1,640	100.0	0.0	98.63	55.87	26.16	4B		215.40	2.18	
2.097	5-YR	51.71	57.34	5.63	57.71	57.71	0.0030	3.37			4.72			3,150	3,150	100.0	0.0	197.80	57.69						
2.097	10-YR	51.71	58.07	6.36	57.71	57.71	0.0030	4.06	0.18	0.18	5.42	0.33	0.33	4,400	4,400	100.0	0.0	203.62	58.53						
2.097	25-YR	51.71	58.82	7.11	57.71	57.71	0.0030	4.81	0.55	0.55	6.23	0.71	0.71	5,996	6,000	99.9	0.1	211.08	59.42						
2.097	50-YR	51.71	59.28	7.57	57.71	57.71	0.0030	5.27	0.79	0.79	6.82	0.93	0.93	7,189	7,200	99.8	0.2	215.74	60.00						
2.097	100-YR	51.71	59.74	8.03	57.71	57.71	0.0030	5.73	1.02	1.02	7.31	1.11	1.11	8,377	8,400	99.7	0.3	220.30	60.57						
2.097	200-YR	51.71	60.18	8.47	57.71	57.71	0.0030	6.17	1.23	1.23	7.76	1.28	1.28	9,571	9,610	99.6	0.4	224.68	61.11						
2.097	500-YR	51.71	60.90	9.19	57.71	57.71	0.0030	6.89	0.89	1.60	8.29	1.03	1.51	11,424	11,500	99.3	0.7	257.35	61.96						
2.022	2-YR	50.52	53.25	2.73	56.52	56.52	0.0500	2.49			7.13			1,640	1,640	100.0	0.0	92.39	54.04	33.84	4B		196.76	2.13	
2.022	5-YR	50.52	54.10	3.58	56.52	56.52	0.0500	3.19			10.14			3,150	3,150	100.0	0.0	97.49	55.70						
2.022	10-YR	50.52	55.23	4.71	56.52	56.52	0.0500	2.53			9.05			4,400	4,400	100.0	0.0	192.23	56.50						
2.022	25-YR	50.52	55.86	5.34	56.52	56.52	0.0500	3.11			9.86			6,000	6,000	100.0	0.0	196.02	57.37						
2.022	50-YR	50.52	56.37	5.85	56.52	56.52	0.0500	3.57			10.13			7,200	7,200	100.0	0.0	199.12	57.97						
2.022	100-YR	50.52	56.79	6.27	56.52	56.52	0.0500	3.97	0.14	0.14	10.57	0.54	0.54	8,400	8,400	100.0	0.0	202.72	58.53						
2.022	200-YR	50.52	57.17	6.65	56.52	56.52	0.0500	4.35	0.33	0.33	11.03	0.95	0.95	9,608	9,610	100.0	0.0	206.55	59.06						
2.022	500-YR	50.52	57.53	7.01	56.52	56.52	0.0500	4.71	0.50	0.18	12.21	1.33	0.67	11,491	11,500	99.9	0.1	254.15	59.84						
2.017	2-YR	49.02	53.53	4.51	55.02	55.02	0.0024	2.35			3.65			1,640	1,640	100.0	0.0	191.08	53.74	42.37	4B		288.86	1.51	

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
2.017	5-YR	49.02	54.87	5.85	55.02	55.02	0.0024	3.57			4.43			3,150	3,150	100.0	0.0	199.12	55.18						
2.017	10-YR	49.02	55.62	6.60	55.02	55.02	0.0024	4.30	0.30	0.30	5.12	0.42	0.42	4,399	4,400	100.0	0.0	205.96	56.02						
2.017	25-YR	49.02	56.40	7.38	55.02	55.02	0.0024	5.08	0.69	0.34	5.90	0.75	0.56	5,991	6,000	99.9	0.1	234.99	56.94						
2.017	50-YR	49.02	56.91	7.89	55.02	55.02	0.0024	5.59	0.95	0.55	6.41	0.95	0.66	7,171	7,200	99.6	0.4	267.16	57.55						
2.017	100-YR	49.02	57.36	8.34	55.02	55.02	0.0024	6.04	1.17	0.86	6.89	1.11	0.92	8,328	8,400	99.1	0.9	283.92	58.09						
2.017	200-YR	49.02	57.79	8.77	55.02	55.02	0.0024	6.47	1.38	1.27	7.32	1.27	1.21	9,473	9,610	98.6	1.4	287.03	58.61						
2.017	500-YR	49.02	58.28	9.26	55.02	55.02	0.0024	6.96	1.46	1.74	8.09	1.38	1.56	11,261	11,500	97.9	2.1	292.55	59.28						
1.923	2-YR	47.83	50.18	2.35	53.83	53.83	0.0500	2.17			8.40			1,640	1,640	100.0	0.0	90.11	51.28	38.34	4B		201.69	2.24	
1.923	5-YR	47.83	51.40	3.57	53.83	53.83	0.0500	3.18			10.17			3,150	3,150	100.0	0.0	97.43	53.01						
1.923	10-YR	47.83	52.54	4.71	53.83	53.83	0.0500	2.53		0.40	9.03		1.28	4,395	4,400	99.9	0.1	201.79	53.80						
1.923	25-YR	47.83	53.13	5.30	53.83	53.83	0.0500	3.07		0.80	9.93		1.95	5,979	6,000	99.7	0.3	208.99	54.66						
1.923	50-YR	47.83	53.56	5.73	53.83	53.83	0.0500	3.46		1.04	10.43		2.25	7,162	7,200	99.5	0.5	214.60	55.24						
1.923	100-YR	47.83	54.03	6.20	53.83	53.83	0.0500	3.90	0.10	0.69	10.70	0.46	1.66	8,357	8,400	99.5	0.5	238.67	55.80						
1.923	200-YR	47.83	54.45	6.62	53.83	53.83	0.0500	4.32	0.31	0.58	11.04	0.92	1.41	9,532	9,610	99.2	0.8	298.16	56.32						
1.923	500-YR	47.83	55.26	7.43	53.83	53.83	0.0500	5.13	0.72	1.15	10.92	1.42	1.98	11,206	11,500	97.4	2.6	332.60	57.07						
1.917	2-YR	46.33	50.29	3.96	52.33	52.33	0.0027	3.49			4.72			1,640	1,640	100.0	0.0	99.74	50.63	25.19	4B		275.31	2.76	
1.917	5-YR	46.33	52.10	5.77	52.33	52.33	0.0027	3.50		0.09	4.53		0.19	3,150	3,150	100.0	0.0	206.84	52.42						
1.917	10-YR	46.33	52.84	6.51	52.33	52.33	0.0027	4.21	0.26	0.57	5.21	0.39	0.69	4,392	4,400	99.8	0.2	221.26	53.26						
1.917	25-YR	46.33	53.62	7.29	52.33	52.33	0.0027	4.99	0.65	0.99	5.97	0.74	1.00	5,967	6,000	99.5	0.5	236.40	54.18						
1.917	50-YR	46.33	54.15	7.82	52.33	52.33	0.0027	5.52	0.91	0.89	6.48	0.94	0.93	7,147	7,200	99.3	0.7	263.72	54.79						
1.917	100-YR	46.33	54.62	8.29	52.33	52.33	0.0027	5.99	1.15	0.91	6.93	1.11	0.96	8,302	8,400	98.8	1.2	306.21	55.36						
1.917	200-YR	46.33	55.05	8.72	52.33	52.33	0.0027	6.42	1.36	1.17	7.35	1.26	1.16	9,437	9,610	98.2	1.8	324.11	55.87						
1.917	500-YR	46.33	55.75	9.42	52.33	52.33	0.0027	7.12	1.71	1.41	7.84	1.46	1.30	11,168	11,500	97.1	2.9	375.74	56.68						
1.828	2-YR	45.08	47.68	2.60	51.08	51.08	0.0485	2.38			7.52			1,640	1,640	100.0	0.0	91.61	48.56	35.23	4B		195.20	2.13	
1.828	5-YR	45.08	48.65	3.57	51.08	51.08	0.0485	3.18			10.17			3,150	3,150	100.0	0.0	97.43	50.26						
1.828	10-YR	45.08	49.79	4.71	51.08	51.08	0.0485	2.53			9.05			4,400	4,400	100.0	0.0	192.23	51.06						
1.828	25-YR	45.08	50.38	5.30	51.08	51.08	0.0485	3.07			9.98			6,000	6,000	100.0	0.0	195.79	51.93						
1.828	50-YR	45.08	50.80	5.72	51.08	51.08	0.0485	3.45			10.54			7,200	7,200	100.0	0.0	198.29	52.52						
1.828	100-YR	45.08	51.20	6.12	51.08	51.08	0.0485	3.82	0.06	0.06	11.00	0.33	0.33	8,400	8,400	100.0	0.0	201.18	53.08						
1.828	200-YR	45.08	51.63	6.55	51.08	51.08	0.0485	4.25	0.28	0.28	11.29	0.88	0.88	9,609	9,610	100.0	0.0	205.56	53.61						
1.828	500-YR	45.08	52.08	7.00	51.08	51.08	0.0485	4.70	0.50	0.50	12.22	1.33	1.33	11,493	11,500	99.9	0.1	210.06	54.40						
1.823	2-YR	43.58	47.99	4.41	49.58	49.58	0.0027	2.26			3.81			1,640	1,640	100.0	0.0	190.47	48.22	43.19	4B		221.93	1.17	
1.823	5-YR	43.58	49.31	5.73	49.58	49.58	0.0027	3.46			4.59			3,150	3,150	100.0	0.0	198.39	49.64						
1.823	10-YR	43.58	50.04	6.46	49.58	49.58	0.0027	4.16	0.23	0.23	5.28	0.37	0.37	4,400	4,400	100.0	0.0	204.63	50.48						
1.823	25-YR	43.58	50.82	7.24	49.58	49.58	0.0027	4.94	0.62	0.62	6.07	0.73	0.73	5,994	6,000	99.9	0.1	212.40	51.39						
1.823	50-YR	43.58	51.33	7.75	49.58	49.58	0.0027	5.45	0.88	0.97	6.59	0.94	0.99	7,185	7,200	99.8	0.2	216.59	52.01						
1.823	100-YR	43.58	51.83	8.25	49.58	49.58	0.0027	5.95	1.12	1.47	7.04	1.12	1.27	8,371	8,400	99.7	0.3	219.06	52.59						
1.823	200-YR	43.58	52.27	8.69	49.58	49.58	0.0027	6.39	1.34	1.91	7.49	1.28	1.48	9,565	9,610	99.5	0.5	221.26	53.13						
1.823	500-YR	43.58	52.82	9.24	49.58	49.58	0.0027	6.94	1.83	2.46	8.24	1.60	1.75	11,425	11,500	99.3	0.7	221.93	53.86						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
1.743	2-YR	42.46	44.81	2.35	48.46	48.46	0.0500	2.17			8.40			1,640	1,640	100.0	0.0	90.11	45.91	38.34	4A	25.42	192.20	2.13	1.91
1.743	5-YR	42.46	46.03	3.57	48.46	48.46	0.0500	3.18			10.17			3,150	3,150	100.0	0.0	97.43	47.64						
1.743	10-YR	42.46	47.17	4.71	48.46	48.46	0.0500	2.53			9.04			4,400	4,400	100.0	0.0	192.25	48.44						
1.743	25-YR	42.46	47.76	5.30	48.46	48.46	0.0500	3.07			9.98			6,000	6,000	100.0	0.0	195.79	49.31						
1.743	50-YR	42.46	48.18	5.72	48.46	48.46	0.0500	3.45			10.54			7,200	7,200	100.0	0.0	198.29	49.90						
1.743	100-YR	42.46	48.53	6.07	48.46	48.46	0.0500	3.77	0.03	0.03	11.14	0.24	0.24	8,400	8,400	100.0	0.0	200.69	50.46						
1.743	200-YR	42.46	48.92	6.46	48.46	48.46	0.0500	4.16	0.23	0.23	11.56	0.81	0.81	9,609	9,610	100.0	0.0	204.56	50.99						
1.743	500-YR	42.46	49.74	7.28	48.46	48.46	0.0500	4.98	0.64	0.64	11.52	1.42	1.42	11,488	11,500	99.9	0.1	212.85	51.80						
1.737	2-YR	40.96	44.90	3.94	46.96	46.96	0.0027	3.47			4.74			1,640	1,640	100.0	0.0	99.64	45.25	25.29	4A		218.81	2.20	
1.737	5-YR	40.96	46.74	5.78	46.96	46.96	0.0027	3.50			4.53			3,150	3,150	100.0	0.0	198.65	47.05						
1.737	10-YR	40.96	47.47	6.51	46.96	46.96	0.0027	4.21	0.25	0.25	5.23	0.39	0.39	4,399	4,400	100.0	0.0	205.10	47.89						
1.737	25-YR	40.96	48.26	7.30	46.96	46.96	0.0027	5.00	0.65	0.65	6.00	0.74	0.74	5,994	6,000	99.9	0.1	212.97	48.82						
1.737	50-YR	40.96	48.54	7.58	46.96	46.96	0.0027	5.28	0.79	0.79	6.81	0.93	0.93	7,189	7,200	99.8	0.2	215.76	49.26						
1.737	100-YR	40.96	49.06	8.10	46.96	46.96	0.0027	5.80	1.05	1.05	7.22	1.12	1.12	8,375	8,400	99.7	0.3	221.04	49.87						
1.737	200-YR	40.96	49.56	8.60	46.96	46.96	0.0027	6.30	1.30	1.30	7.59	1.28	1.28	9,567	9,610	99.5	0.5	226.04	50.45						
1.737	500-YR	40.96	50.35	9.39	46.96	46.96	0.0027	7.09	1.70	1.70	8.04	1.50	1.50	11,414	11,500	99.3	0.8	233.95	51.35						
1.648	2-YR	39.71	42.36	2.65	45.71	45.71	0.0503	2.42			7.36			1,640	1,640	100.0	0.0	91.92	43.21	34.69	4A		195.80	2.13	
1.648	5-YR	39.71	43.29	3.58	45.71	45.71	0.0503	3.18			10.16			3,150	3,150	100.0	0.0	97.45	44.89						
1.648	10-YR	39.71	44.43	4.72	45.71	45.71	0.0503	2.54			9.02			4,400	4,400	100.0	0.0	192.29	45.69						
1.648	25-YR	39.71	45.01	5.30	45.71	45.71	0.0503	3.07			9.98			6,000	6,000	100.0	0.0	195.80	46.56						
1.648	50-YR	39.71	46.84	7.13	45.71	45.71	0.0503	4.83	0.56	0.56	7.45	0.84	0.84	7,197	7,200	100.0	0.0	206.77	47.70						
1.648	100-YR	39.71	47.54	7.83	45.71	45.71	0.0503	5.53	0.91	0.91	7.59	1.08	1.08	8,389	8,400	99.9	0.1	210.97	48.43						
1.648	200-YR	39.71	48.10	8.39	45.71	45.71	0.0503	6.09	1.20	1.20	7.87	1.26	1.26	9,588	9,610	99.8	0.2	214.36	49.06						
1.648	500-YR	39.71	49.06	9.35	45.71	45.71	0.0503	7.05	1.67	1.67	8.13	1.47	1.47	11,451	11,500	99.6	0.4	220.08	50.08						
1.643	2-YR	38.20	42.67	4.47	44.20	44.20	0.0026	2.31			3.75			1,650	1,650	100.0	0.0	190.80	42.89	42.68	4A		217.64	1.14	
1.643	5-YR	38.20	44.02	5.82	44.20	44.20	0.0026	3.54			4.55			3,200	3,200	100.0	0.0	198.92	44.34						
1.643	10-YR	38.20	44.58	6.38	44.20	44.20	0.0026	4.08	0.19	0.19	5.46	0.33	0.33	4,450	4,450	100.0	0.0	202.25	45.04						
1.643	25-YR	38.20	45.33	7.13	44.20	44.20	0.0026	4.83	0.56	0.56	6.26	0.71	0.71	6,047	6,050	100.0	0.0	206.78	45.94						
1.643	50-YR	38.20	47.04	8.84	44.20	44.20	0.0026	6.54	1.42	1.42	5.56	0.95	0.95	7,277	7,300	99.7	0.3	217.04	47.52						
1.643	100-YR	38.20	47.73	9.53	44.20	44.20	0.0026	7.23	1.76	1.76	5.89	1.09	1.09	8,509	8,550	99.5	0.5	221.16	48.26						
1.643	200-YR	38.20	48.31	10.11	44.20	44.20	0.0026	7.81	2.06	2.06	6.12	1.19	1.19	9,560	9,620	99.4	0.6	224.66	48.89						
1.643	500-YR	38.20	49.26	11.06	44.20	44.20	0.0026	8.76	1.27	2.53	6.50	0.87	1.34	11,394	11,500	99.1	0.9	264.56	49.91						
1.554	2-YR	36.96	39.32	2.36	42.96	42.96	0.0499	2.17			8.41			1,650	1,650	100.0	0.0	90.16	40.42	38.20	4A		192.32	2.13	
1.554	5-YR	36.96	40.57	3.61	42.96	42.96	0.0499	3.21			10.22			3,200	3,200	100.0	0.0	97.65	42.19						
1.554	10-YR	36.96	42.19	5.23	42.96	42.96	0.0499	3.01			7.57			4,450	4,450	100.0	0.0	195.39	43.08						
1.554	25-YR	36.96	43.99	7.03	42.96	42.96	0.0499	4.73	0.51	0.51	6.40	0.70	0.70	6,046	6,050	99.9	0.1	210.27	44.62						
1.554	50-YR	36.96	46.56	9.60	42.96	42.96	0.0499	7.30	1.80	1.80	4.96	0.94	0.94	7,239	7,300	99.2	0.8	236.01	46.94						
1.554	100-YR	36.96	47.26	10.30	42.96	42.96	0.0499	8.00	2.15	2.15	5.28	1.06	1.06	8,452	8,550	98.9	1.1	242.96	47.69						
1.554	200-YR	36.96	47.85	10.89	42.96	42.96	0.0499	8.59	2.45	2.45	5.52	1.15	1.15	9,482	9,620	98.6	1.4	248.92	48.32						
1.554	500-YR	36.96	48.81	11.85	42.96	42.96	0.0499	9.55	2.13	2.93	5.91	1.05	1.30	11,297	11,500	98.2	1.8	270.43	49.35						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
1.548	2-YR	35.46	39.28	3.82	41.46	41.46	0.0027	3.38			4.94			1,650	1,650	100.0	0.0	98.92	39.66	25.90	4A		216.41	2.19	
1.548	5-YR	35.46	41.18	5.72	41.46	41.46	0.0027	3.45			4.68			3,200	3,200	100.0	0.0	198.32	41.52						
1.548	10-YR	35.46	42.49	7.03	41.46	41.46	0.0027	4.73	0.51	0.51	4.71	0.52	0.52	4,447	4,450	99.9	0.1	210.26	42.83						
1.548	25-YR	35.46	44.14	8.68	41.46	41.46	0.0027	6.38	1.34	1.34	4.72	0.81	0.81	6,021	6,050	99.5	0.5	226.82	44.48						
1.548	50-YR	35.46	46.63	11.17	41.46	41.46	0.0027	8.87	2.58	2.58	4.05	0.86	0.86	7,185	7,300	98.4	1.6	251.73	46.88						
1.548	100-YR	35.46	47.33	11.87	41.46	41.46	0.0027	9.57	2.94	2.94	4.38	0.96	0.96	8,384	8,550	98.1	1.9	258.73	47.62						
1.548	200-YR	35.46	47.93	12.47	41.46	41.46	0.0027	10.17	3.23	3.23	4.62	1.04	1.04	9,402	9,620	97.7	2.3	264.72	48.25						
1.548	500-YR	35.46	48.90	13.44	41.46	41.46	0.0027	11.14	2.43	3.72	5.03	0.89	1.17	11,205	11,500	97.4	2.6	298.97	49.28						
1.459	2-YR	34.21	37.57	3.36	40.21	40.21	0.0500	3.01			5.70			1,650	1,650	100.0	0.0	96.16	38.08	28.62	4A		204.32	2.12	
1.459	5-YR	34.21	40.28	6.07	40.21	40.21	0.0500	3.77	0.04	0.04	4.24	0.09	0.09	3,200	3,200	100.0	0.0	200.42	40.56						
1.459	10-YR	34.21	41.98	7.77	40.21	40.21	0.0500	5.47	0.88	0.88	4.07	0.57	0.57	4,445	4,450	99.9	0.1	210.60	42.23						
1.459	25-YR	34.21	43.80	9.59	40.21	40.21	0.0500	7.29	1.80	1.80	4.13	0.77	0.77	6,020	6,050	99.5	0.5	221.57	44.07						
1.459	50-YR	34.21	46.47	12.26	40.21	40.21	0.0500	9.96	0.82	3.13	3.63	0.33	0.79	7,226	7,300	99.0	1.0	316.81	46.67						
1.459	100-YR	34.21	47.16	12.95	40.21	40.21	0.0500	10.65	1.15	3.47	3.95	0.44	0.88	8,415	8,550	98.4	1.6	363.45	47.40						
1.459	200-YR	34.21	47.76	13.55	40.21	40.21	0.0500	11.25	1.43	3.77	4.18	0.52	0.95	9,404	9,620	97.8	2.2	404.15	48.02						
1.459	500-YR	34.21	48.72	14.51	40.21	40.21	0.0500	12.21	2.15	4.26	4.53	0.69	1.06	11,066	11,500	96.2	3.8	438.52	49.03						
1.453	2-YR	32.71	37.76	5.05	38.71	38.71	0.0088	2.85			2.98			1,650	1,650	100.0	0.0	194.33	37.90	38.48	4A		224.61	1.16	
1.453	5-YR	32.71	40.35	7.64	38.71	38.71	0.0088	5.34	0.82	0.82	2.99	0.41	0.41	3,197	3,200	99.9	0.1	209.85	40.49						
1.453	10-YR	32.71	42.03	9.32	38.71	38.71	0.0088	7.02	1.66	1.66	3.16	0.57	0.57	4,431	4,450	99.6	0.4	219.92	42.18						
1.453	25-YR	32.71	43.85	11.14	38.71	38.71	0.0088	8.84	2.57	2.57	3.39	0.70	0.70	5,994	6,050	99.1	0.9	230.85	44.03						
1.453	50-YR	32.71	46.50	13.79	38.71	38.71	0.0088	11.49	1.26	3.89	3.13	0.35	0.72	7,195	7,300	98.6	1.4	312.95	46.65						
1.453	100-YR	32.71	47.19	14.48	38.71	38.71	0.0088	12.18	1.52	4.24	3.44	0.42	0.80	8,386	8,550	98.1	1.9	348.02	47.37						
1.453	200-YR	32.71	47.79	15.08	38.71	38.71	0.0088	12.78	1.58	4.54	3.67	0.44	0.87	9,391	9,620	97.6	2.4	400.12	47.99						
1.453	500-YR	32.71	48.76	16.05	38.71	38.71	0.0088	13.75	2.26	5.02	4.03	0.59	0.97	11,080	11,500	96.4	3.6	434.01	49.00						
1.333	2-YR	27.11	37.16	10.05	54.24	42.36	-0.0121	6.59			3.55			1,650	1,650	100.0	0.0	70.59	37.36	7.02	4A		157.11	2.23	
1.333	5-YR	27.11	39.66	12.55	54.24	42.36	-0.0121	7.83			4.87			3,200	3,200	100.0	0.0	83.94	40.03						
1.333	10-YR	27.11	41.27	14.16	54.24	42.36	-0.0121	8.35			5.55			4,450	4,450	100.0	0.0	96.07	41.75						
1.333	25-YR	27.11	43.02	15.91	54.24	42.36	-0.0121	9.31		0.54	6.16		0.47	6,043	6,050	99.9	0.1	133.80	43.61						
1.333	50-YR	27.11	45.92	18.81	54.24	42.36	-0.0121	11.72		2.88	5.55		1.10	7,175	7,300	98.3	1.7	149.93	46.39						
1.333	100-YR	27.11	46.50	19.39	54.24	42.36	-0.0121	12.19		3.28	6.17		1.30	8,371	8,550	97.9	2.1	153.15	47.08						
1.333	200-YR	27.11	47.00	19.89	54.24	42.36	-0.0121	12.60		3.63	6.64		1.46	9,387	9,620	97.6	2.4	155.94	47.67						
1.333	500-YR	27.11	47.80	20.69	54.24	42.36	-0.0121	13.24		4.16	7.42		1.74	11,162	11,500	97.1	2.9	160.43	48.63						
1.315	2-YR	28.24	37.06	8.82	51.66	42.22	0.0059	6.15			3.86			1,650	1,650	100.0	0.0	69.54	37.29	7.88	4A		167.28	2.41	
1.315	5-YR	28.24	39.51	11.27	51.66	42.22	0.0059	7.32			5.20			3,200	3,200	100.0	0.0	84.08	39.93						
1.315	10-YR	28.24	41.09	12.85	51.66	42.22	0.0059	8.09			5.88			4,450	4,450	100.0	0.0	93.47	41.63						
1.315	25-YR	28.24	42.83	14.59	51.66	42.22	0.0059	9.16		0.31	6.52		0.35	6,047	6,050	99.9	0.1	131.10	43.49						
1.315	50-YR	28.24	45.82	17.58	51.66	42.22	0.0059	11.69		2.64	5.76		1.09	7,125	7,300	97.6	2.4	166.77	46.32						
1.315	100-YR	28.24	46.37	18.13	51.66	42.22	0.0059	12.15		3.03	6.41		1.29	8,297	8,550	97.0	3.0	171.29	46.99						
1.315	200-YR	28.24	46.86	18.62	51.66	42.22	0.0059	12.54		3.37	6.89		1.46	9,287	9,620	96.5	3.5	175.28	47.58						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
1.315	500-YR	28.24	47.65	19.41	51.66	42.22	0.0059	13.17		3.89	7.69		1.73	11,008	11,500	95.7	4.3	181.66	48.53						
1.295	2-YR	27.61	36.98	9.37	50.86	44.32	-0.0309	7.27			3.87			1,650	1,650	100.0	0.0	58.60	37.21	6.25	4A		106.59	1.82	
1.295	5-YR	27.61	39.30	11.69	50.86	44.32	-0.0309	9.04			5.64			3,200	3,200	100.0	0.0	62.73	39.80						
1.295	10-YR	27.61	40.76	13.15	50.86	44.32	-0.0309	9.92			6.72			4,450	4,450	100.0	0.0	66.69	41.47						
1.295	25-YR	27.61	42.34	14.73	50.86	44.32	-0.0309	10.60			7.84			6,050	6,050	100.0	0.0	72.81	43.29						
1.295	50-YR	27.61	45.38	17.77	50.86	44.32	-0.0309	12.14		0.83	7.22		0.65	7,292	7,300	99.9	0.1	98.09	46.19						
1.295	100-YR	27.61	45.79	18.18	50.86	44.32	-0.0309	12.40		1.10	8.17		0.86	8,533	8,550	99.8	0.2	101.74	46.83						
1.295	200-YR	27.61	46.15	18.54	50.86	44.32	-0.0309	12.62		1.31	8.92		1.05	9,593	9,620	99.7	0.3	104.89	47.38						
1.295	500-YR	27.61	46.65	19.04	50.86	44.32	-0.0309	12.92		0.73	10.26		0.81	11,470	11,500	99.7	0.3	137.49	48.28						
1.274	2-YR	31.00	36.27	5.27	47.89	46.64	0.0000	4.14			6.51			1,650	1,650	100.0	0.0	61.30	36.93	11.63	4A		80.92	1.32	
1.274	5-YR	31.00	38.37	7.37	47.89	46.64	0.0000	5.69			8.22			3,200	3,200	100.0	0.0	68.49	39.42						
1.274	10-YR	31.00	39.74	8.74	47.89	46.64	0.0000	6.61			9.14			4,450	4,450	100.0	0.0	73.64	41.04						
1.274	25-YR	31.00	41.27	10.27	47.89	46.64	0.0000	7.58			10.01			6,050	6,050	100.0	0.0	79.75	42.83						
1.274	50-YR	31.00	45.08	14.08	47.89	46.64	0.0000	9.73		0.94	7.69		0.83	7,233	7,300	99.1	0.9	182.56	45.99						
1.274	100-YR	31.00	45.45	14.45	47.89	46.64	0.0000	9.93		1.19	8.63		1.08	8,427	8,550	98.6	1.4	194.40	46.59						
1.274	200-YR	31.00	45.80	14.80	47.89	46.64	0.0000	10.12		1.40	9.33		1.28	9,429	9,620	98.0	2.0	206.27	47.12						
1.274	500-YR	31.00	46.31	15.31	47.89	46.64	0.0000	10.40	0.23	1.70	10.50	0.42	1.62	11,164	11,500	97.1	2.9	228.15	47.98						
1.262		Bridge																							
1.249	2-YR	28.22	32.29	4.07	39.41	36.60	0.0025	3.58			7.28			1,650	1,650	100.0	0.0	63.33	33.11	15.56	3	16.38	77.68	1.23	2.61
1.249	5-YR	28.22	34.47	6.25	39.41	36.60	0.0025	5.26			8.57			3,200	3,200	100.0	0.0	71.03	35.62						
1.249	10-YR	28.22	35.86	7.64	39.41	36.60	0.0025	6.26			9.36			4,450	4,450	100.0	0.0	75.92	37.22						
1.249	25-YR	28.22	37.92	9.70	39.41	36.60	0.0025	7.82		0.83	9.31		1.08	5,940	6,050	98.2	1.8	205.55	39.24						
1.249	50-YR	28.22	38.71	10.49	39.41	36.60	0.0025	8.44		1.22	9.92		1.38	6,979	7,300	95.6	4.4	274.65	40.18						
1.249	100-YR	28.22	39.04	10.82	39.41	36.60	0.0025	8.69		1.43	11.02		1.68	8,052	8,550	94.2	5.8	291.50	40.82						
1.249	200-YR	28.22	39.63	11.41	39.41	36.60	0.0025	9.19	0.11	1.71	11.28	0.29	1.86	8,808	9,620	91.6	8.4	340.62	41.45						
1.249	500-YR	28.22	40.51	12.29	39.41	36.60	0.0025	10.08	0.55	2.46	11.64	0.82	2.30	9,960	11,500	86.6	13.4	360.52	42.35						
1.235	2-YR	28.03	32.09	4.06	37.47	37.61	0.0039	3.72			5.97			1,650	1,650	100.0	0.0	74.25	32.64	18.29	3		87.06	1.17	
1.235	5-YR	28.03	34.38	6.35	37.47	37.61	0.0039	5.58			7.04			3,200	3,200	100.0	0.0	81.47	35.14						
1.235	10-YR	28.03	35.80	7.77	37.47	37.61	0.0039	6.68			7.75			4,450	4,450	100.0	0.0	85.96	36.74						
1.235	25-YR	28.03	37.89	9.86	37.47	37.61	0.0039	8.31	0.21	0.43	7.91	0.29	0.56	6,010	6,050	99.3	0.7	257.16	38.85						
1.235	50-YR	28.03	38.69	10.66	37.47	37.61	0.0039	9.11	0.61	0.86	8.49	0.60	0.92	7,073	7,300	96.9	3.1	380.27	39.77						
1.235	100-YR	28.03	39.01	10.98	37.47	37.61	0.0039	9.43	0.77	1.11	9.45	0.76	1.15	8,152	8,550	95.3	4.7	402.53	40.34						
1.235	200-YR	28.03	39.64	11.61	37.47	37.61	0.0039	10.06	1.09	1.66	9.58	0.93	1.46	8,821	9,620	91.7	8.3	421.46	40.95						
1.235	500-YR	28.03	40.54	12.51	37.47	37.61	0.0039	10.96	1.54	2.44	9.90	1.15	1.84	9,926	11,500	86.3	13.7	443.08	41.86						
1.168	2-YR	26.65	31.46	4.81	33.07	36.52	0.0043	3.95			3.81			1,650	1,650	100.0	0.0	109.55	31.69	22.78	3		131.60	1.20	
1.168	5-YR	26.65	34.00	7.35	33.07	36.52	0.0043	6.04	0.47		4.41	0.81		3,200	3,200	100.0	0.0	121.27	34.30						
1.168	10-YR	26.65	35.52	8.87	33.07	36.52	0.0043	7.29	1.22		4.88	1.53		4,444	4,450	99.9	0.1	128.19	35.89						
1.168	25-YR	26.65	37.89	11.24	33.07	36.52	0.0043	9.46	2.41	1.85	4.55	1.92	0.92	5,522	6,050	91.3	8.7	427.94	38.18						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
1.168	50-YR	26.65	38.76	12.11	33.07	36.52	0.0043	10.34	2.84	2.52	4.78	2.15	1.13	6,333	7,300	86.8	13.2	458.77	39.07						
1.168	100-YR	26.65	39.12	12.47	33.07	36.52	0.0043	10.70	3.02	2.83	5.29	2.43	1.33	7,255	8,550	84.9	15.1	465.34	39.49						
1.168	200-YR	26.65	39.76	13.11	33.07	36.52	0.0043	11.33	3.34	3.37	5.41	2.56	1.47	7,859	9,620	81.7	18.3	477.20	40.14						
1.168	500-YR	26.65	40.65	14.00	33.07	36.52	0.0043	12.23	3.79	4.06	5.70	2.81	1.68	8,945	11,500	77.8	22.2	497.69	41.06						
1.092	2-YR	24.93	31.06	6.13	33.75	32.59	0.0061	4.96			3.34			1,650	1,650	100.0	0.0	99.56	31.24	16.24	3		378.16	3.80	
1.092	5-YR	24.93	33.62	8.69	33.75	32.59	0.0061	7.11		0.52	4.20		0.36	3,199	3,200	100.0	0.0	114.77	33.90						
1.092	10-YR	24.93	35.13	10.20	33.75	32.59	0.0061	8.61	0.60	0.85	4.79	0.40	0.51	4,424	4,450	99.4	0.6	177.82	35.49						
1.092	25-YR	24.93	37.60	12.67	33.75	32.59	0.0061	11.08	1.97	3.13	4.68	0.74	0.99	5,556	6,050	91.8	8.2	385.74	37.92						
1.092	50-YR	24.93	38.44	13.51	33.75	32.59	0.0061	11.92	2.65	3.86	5.06	0.92	1.17	6,458	7,300	88.5	11.5	403.05	38.79						
1.092	100-YR	24.93	38.71	13.78	33.75	32.59	0.0061	12.19	2.86	4.09	5.72	1.08	1.36	7,476	8,550	87.4	12.6	409.21	39.16						
1.092	200-YR	24.93	39.33	14.40	33.75	32.59	0.0061	12.80	3.45	4.60	5.96	1.24	1.48	8,172	9,620	84.9	15.1	412.78	39.80						
1.092	500-YR	24.93	40.17	15.24	33.75	32.59	0.0061	13.64	4.24	5.29	6.44	1.47	1.67	9,410	11,500	81.8	18.2	417.66	40.70						
1.032	2-YR	22.96	30.53	7.57	33.62	34.00	0.0001	5.11			4.78			1,670	1,670	100.0	0.0	68.37	30.88	9.03	3		386.88	5.66	
1.032	5-YR	22.96	32.90	9.94	33.62	34.00	0.0001	6.54			6.19			3,260	3,260	100.0	0.0	80.43	33.50						
1.032	10-YR	22.96	34.29	11.33	33.62	34.00	0.0001	7.57	0.26	0.14	7.09	0.38	0.25	4,550	4,550	100.0	0.0	90.72	35.07						
1.032	25-YR	22.96	36.88	13.92	33.62	34.00	0.0001	10.16	1.43	1.09	6.99	0.95	0.80	6,013	6,120	98.2	1.8	190.46	37.62						
1.032	50-YR	22.96	37.76	14.80	33.62	34.00	0.0001	11.05	1.94	1.79	7.19	1.14	1.08	6,733	7,360	91.5	8.5	379.61	38.50						
1.032	100-YR	22.96	37.76	14.80	33.62	34.00	0.0001	11.05	1.93	1.79	8.42	1.33	1.27	7,876	8,610	91.5	8.5	379.60	38.77						
1.032	200-YR	22.96	38.37	15.41	33.62	34.00	0.0001	11.65	2.46	2.28	8.69	1.56	1.48	8,582	9,720	88.3	11.7	392.63	39.41						
1.032	500-YR	22.96	39.19	16.23	33.62	34.00	0.0001	12.47	3.11	2.91	9.17	1.84	1.76	9,684	11,500	84.2	15.8	412.44	40.29						
0.976	2-YR	22.93	29.51	6.58	38.00	39.01	0.0000	4.32			6.39			1,670	1,670	100.0	0.0	60.55	30.14	9.20	2	11.74	113.57	1.88	5.85
0.976	5-YR	22.93	31.48	8.55	38.00	39.01	0.0000	5.30			8.29			3,260	3,260	100.0	0.0	74.17	32.55						
0.976	10-YR	22.93	32.54	9.61	38.00	39.01	0.0000	5.62			9.55			4,550	4,550	100.0	0.0	84.72	33.96						
0.976	25-YR	22.93	36.43	13.50	38.00	39.01	0.0000	7.85			6.80			6,120	6,120	100.0	0.0	114.55	37.15						
0.976	50-YR	22.93	37.11	14.18	38.00	39.01	0.0000	8.40			7.53			7,360	7,360	100.0	0.0	116.46	37.99						
0.976	100-YR	22.93	36.62	13.69	38.00	39.01	0.0000	8.01			9.34			8,610	8,610	100.0	0.0	115.09	37.99						
0.976	200-YR	22.93	36.89	13.96	38.00	39.01	0.0000	8.22			10.21			9,720	9,720	100.0	0.0	115.83	38.51						
0.976	500-YR	22.93	36.06	13.13	38.00	39.01	0.0000	7.55			13.42			11,500	11,500	100.0	0.0	113.48	38.86						
0.969		Bridge																							
0.962	2-YR	22.93	29.48	6.55	34.00	32.62	0.0017	5.23			4.56			1,670	1,670	100.0	0.0	70.09	29.80	10.70	2		358.71	5.12	
0.962	5-YR	22.93	31.40	8.47	34.00	32.62	0.0017	6.49			6.41			3,260	3,260	100.0	0.0	78.42	32.04						
0.962	10-YR	22.93	32.27	9.34	34.00	32.62	0.0017	7.05			7.86			4,550	4,550	100.0	0.0	82.14	33.23						
0.962	25-YR	22.93	33.17	10.24	34.00	32.62	0.0017	7.61		0.28	9.36		0.94	6,119	6,120	100.0	0.0	90.74	34.53						
0.962	50-YR	22.93	33.82	10.89	34.00	32.62	0.0017	7.90		0.44	10.34		1.36	7,347	7,360	99.8	0.2	112.29	35.47						
0.962	100-YR	22.93	34.43	11.50	34.00	32.62	0.0017	8.41	0.28	1.04	10.90	1.02	2.52	8,365	8,610	97.2	2.8	201.63	36.23						
0.962	200-YR	22.93	34.97	12.04	34.00	32.62	0.0017	8.95	0.58	1.47	11.30	1.66	3.18	9,219	9,720	94.8	5.2	225.78	36.86						
0.962	500-YR	22.93	35.42	12.49	34.00	32.62	0.0017	9.39	0.80	1.79	12.44	2.19	3.89	10,657	11,500	92.7	7.3	251.60	37.66						
0.899	2-YR	22.38	27.74	5.36	30.00	28.00	0.0055	3.29			7.96			1,670	1,670	100.0	0.0	63.84	28.72	11.91	2		268.54	4.21	

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
0.899	5-YR	22.38	29.92	7.54	30.00	28.00	0.0055	4.66		0.92	8.26		2.50	3,054	3,260	93.7	6.3	168.80	30.92						
0.899	10-YR	22.38	31.46	9.08	30.00	28.00	0.0055	6.18	0.86	2.22	7.49	1.80	3.37	3,687	4,550	81.0	19.0	231.85	32.20						
0.899	25-YR	22.38	32.47	10.09	30.00	28.00	0.0055	7.19	1.56	3.02	7.89	2.54	3.95	4,519	6,120	73.8	26.2	254.32	33.24						
0.899	50-YR	22.38	33.27	10.89	30.00	28.00	0.0055	7.99	2.10	3.59	8.01	2.93	4.19	5,092	7,360	69.2	30.8	271.76	34.03						
0.899	100-YR	22.38	33.99	11.61	30.00	28.00	0.0055	8.71	2.65	4.04	8.14	3.28	4.35	5,647	8,610	65.6	34.4	286.26	34.76						
0.899	200-YR	22.38	34.63	12.25	30.00	28.00	0.0055	9.35	3.11	4.45	8.20	3.50	4.45	6,102	9,720	62.8	37.2	298.32	35.39						
0.899	500-YR	22.38	35.04	12.66	30.00	28.00	0.0055	9.77	3.40	4.70	9.04	3.99	4.95	7,027	11,500	61.1	38.9	306.26	35.95						
0.843	2-YR	20.76	26.74	5.98	30.00	26.00	0.0004	4.48		0.37	6.06		1.02	1,665	1,670	99.7	0.3	75.30	27.31	12.59	2		343.21	4.56	
0.843	5-YR	20.76	29.18	8.42	30.00	26.00	0.0004	6.66		1.60	6.97		2.43	2,982	3,260	91.5	8.5	135.87	29.87						
0.843	10-YR	20.76	30.87	10.11	30.00	26.00	0.0004	8.25	0.44	2.59	7.01	0.89	2.94	3,771	4,550	82.9	17.1	178.72	31.53						
0.843	25-YR	20.76	31.71	10.95	30.00	26.00	0.0004	9.08	0.68	3.11	8.13	1.62	3.61	4,815	6,120	78.7	21.3	206.07	32.56						
0.843	50-YR	20.76	32.46	11.70	30.00	26.00	0.0004	9.84	0.65	3.49	8.59	1.28	3.90	5,509	7,360	74.9	25.1	334.50	33.37						
0.843	100-YR	20.76	33.33	12.57	30.00	26.00	0.0004	10.71	1.48	3.89	8.52	2.06	3.93	5,947	8,610	69.1	30.9	358.91	34.17						
0.843	200-YR	20.76	34.08	13.32	30.00	26.00	0.0004	11.46	2.21	4.05	8.41	2.56	3.81	6,284	9,720	64.6	35.4	383.59	34.86						
0.843	500-YR	20.76	34.32	13.56	30.00	26.00	0.0004	11.70	2.44	4.02	9.57	3.07	4.26	7,301	11,500	63.5	36.5	395.86	35.31						
0.809	2-YR	20.68	26.45	5.77	31.40	29.74	0.0000	4.52			4.77			1,670	1,670	100.0	0.0	77.35	26.80	13.41	2		198.27	2.56	
0.809	5-YR	20.68	28.89	8.21	31.40	29.74	0.0000	6.08			5.89			3,260	3,260	100.0	0.0	91.02	29.43						
0.809	10-YR	20.68	30.60	9.92	31.40	29.74	0.0000	7.18		1.12	6.19		1.61	4,455	4,550	97.9	2.1	153.00	31.19						
0.809	25-YR	20.68	31.35	10.67	31.40	29.74	0.0000	7.84		1.63	7.40		2.33	5,882	6,120	96.1	3.9	164.30	32.17						
0.809	50-YR	20.68	32.02	11.34	31.40	29.74	0.0000	8.50	0.37	2.05	8.05	0.89	2.79	6,942	7,360	94.3	5.7	192.28	32.97						
0.809	100-YR	20.68	32.71	12.03	31.40	29.74	0.0000	9.19	0.78	2.59	8.50	1.47	3.27	7,923	8,610	92.0	8.0	209.60	33.75						
0.809	200-YR	20.68	33.95	13.27	31.40	29.74	0.0000	10.43	2.97	3.49	6.73	2.63	2.90	7,122	9,720	73.3	26.7	408.16	34.50						
0.809	500-YR	20.68	34.16	13.48	31.40	29.74	0.0000	10.64	3.17	3.63	7.65	3.09	3.35	8,267	11,500	71.9	28.1	410.56	34.86						
0.802		Bridge																							
0.794	2-YR	20.68	26.37	5.69	29.62	34.00	0.0000	4.48			3.91			1,670	1,670	100.0	0.0	95.21	26.61	16.73	2		337.93	3.55	
0.794	5-YR	20.68	28.84	8.16	29.62	34.00	0.0000	6.38			4.85			3,260	3,260	100.0	0.0	105.29	29.21						
0.794	10-YR	20.68	30.61	9.93	29.62	34.00	0.0000	7.80	1.53		4.72	1.44		4,082	4,550	89.7	10.3	323.77	30.93						
0.794	25-YR	20.68	31.38	10.70	29.62	34.00	0.0000	8.50	2.24		5.40	2.01		5,133	6,120	83.9	16.1	331.13	31.77						
0.794	50-YR	20.68	32.08	11.40	29.62	34.00	0.0000	9.09	2.87		5.66	2.38		5,825	7,360	79.1	20.9	338.12	32.49						
0.794	100-YR	20.68	32.77	12.09	29.62	34.00	0.0000	9.62	3.49		5.83	2.68		6,458	8,610	75.0	25.0	345.71	33.19						
0.794	200-YR	20.68	33.27	12.59	29.62	34.00	0.0000	10.01	3.93		6.02	2.93		7,020	9,720	72.2	27.8	350.93	33.72						
0.794	500-YR	20.68	34.16	13.48	29.62	34.00	0.0000	10.72	4.71	0.27	6.14	3.26	0.52	7,804	11,500	67.9	32.1	406.42	34.61						
0.783	2-YR	20.68	24.71	4.03	29.00	29.97	0.0082	2.80			9.49			1,670	1,670	100.0	0.0	62.91	26.11	15.61	2		78.32	1.24	
0.783	5-YR	20.68	27.75	7.07	29.00	29.97	0.0082	5.19			8.46			3,260	3,260	100.0	0.0	74.26	28.87						
0.783	10-YR	20.68	29.28	8.60	29.00	29.97	0.0082	6.29	0.13		9.04	0.62		4,550	4,550	100.0	0.0	84.36	30.55						
0.783	25-YR	20.68	30.80	10.12	29.00	29.97	0.0082	7.72	1.98	0.41	7.79	2.85	1.04	4,878	6,120	79.7	20.3	302.63	31.58						
0.783	50-YR	20.68	31.61	10.93	29.00	29.97	0.0082	8.53	2.72	0.82	7.71	3.28	1.51	5,335	7,360	72.5	27.5	310.85	32.32						
0.783	100-YR	20.68	32.38	11.70	29.00	29.97	0.0082	9.30	3.41	1.21	7.62	3.59	1.83	5,747	8,610	66.7	33.3	318.60	33.05						
0.783	200-YR	20.68	32.90	12.22	29.00	29.97	0.0082	9.82	3.86	1.47	7.75	3.84	2.04	6,176	9,720	63.5	36.5	323.85	33.58						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
0.783	500-YR	20.68	33.83	13.15	29.00	29.97	0.0082	10.75	4.67	1.93	7.76	4.12	2.31	6,763	11,500	58.8	41.2	332.17	34.49						
0.721	2-YR	18.00	23.70	5.70	27.00	27.11	0.0000	4.55			5.39			1,670	1,670	100.0	0.0	68.14	24.15	11.95	2		220.25	3.23	
0.721	5-YR	18.00	27.40	9.40	27.00	27.11	0.0000	6.99	1.26	0.18	5.24	1.52	0.46	3,127	3,260	95.9	4.1	156.84	27.81						
0.721	10-YR	18.00	29.13	11.13	27.00	27.11	0.0000	8.72	2.42	0.80	5.42	2.09	1.10	4,037	4,550	88.7	11.3	214.21	29.54						
0.721	25-YR	18.00	30.50	12.50	27.00	27.11	0.0000	10.09	3.37	1.89	5.83	2.55	1.78	5,027	6,120	82.1	17.9	239.06	30.95						
0.721	50-YR	18.00	31.27	13.27	27.00	27.11	0.0000	10.86	3.87	2.59	6.24	2.85	2.22	5,792	7,360	78.7	21.3	248.97	31.77						
0.721	100-YR	18.00	32.03	14.03	27.00	27.11	0.0000	11.61	4.34	3.26	6.56	3.09	2.58	6,513	8,610	75.6	24.4	258.72	32.57						
0.721	200-YR	18.00	32.52	14.52	27.00	27.11	0.0000	12.11	4.64	3.69	6.93	3.32	2.87	7,174	9,720	73.8	26.2	265.19	33.11						
0.721	500-YR	18.00	33.44	15.44	27.00	27.11	0.0000	13.02	5.23	4.46	7.29	3.60	3.25	8,118	11,500	70.6	29.4	276.07	34.08						
0.719		Bridge																							
0.717	2-YR	17.83	23.40	5.57	25.21	27.00	0.0105	4.19			5.51			1,670	1,670	100.0	0.0	72.33	23.87	12.99	2		223.60	3.09	
0.717	5-YR	17.83	25.86	8.03	25.21	27.00	0.0105	6.03	0.14		6.60	0.49		3,259	3,260	100.0	0.0	101.37	26.53						
0.717	10-YR	17.83	26.98	9.15	25.21	27.00	0.0105	6.97	0.94		7.60	1.80		4,463	4,550	98.1	1.9	135.67	27.86						
0.717	25-YR	17.83	27.85	10.02	25.21	27.00	0.0105	7.84	1.54	0.43	8.85	2.69	1.15	5,847	6,120	95.5	4.5	165.47	29.02						
0.717	50-YR	17.83	28.33	10.50	25.21	27.00	0.0105	8.31	1.85	0.50	9.85	3.25	1.37	6,900	7,360	93.8	6.2	205.07	29.75						
0.717	100-YR	17.83	29.19	11.36	25.21	27.00	0.0105	9.18	2.40	1.20	9.97	3.67	2.32	7,716	8,610	89.6	10.4	227.92	30.59						
0.717	200-YR	17.83	29.59	11.76	25.21	27.00	0.0105	9.57	2.65	1.55	10.55	4.04	2.82	8,513	9,720	87.6	12.4	234.96	31.13						
0.717	500-YR	17.83	31.01	13.18	25.21	27.00	0.0105	11.00	3.57	2.58	10.01	4.25	3.42	9,277	11,500	80.7	19.3	262.81	32.31						
0.665	2-YR	14.97	22.16	7.19	27.46	24.00	0.0046	4.28			6.92			1,670	1,670	100.0	0.0	56.36	22.91	7.84	2		300.56	5.33	
0.665	5-YR	14.97	24.58	9.61	27.46	24.00	0.0046	5.55		0.29	8.13		1.04	3,247	3,260	99.6	0.4	113.93	25.61						
0.665	10-YR	14.97	25.65	10.68	27.46	24.00	0.0046	6.39		0.86	9.11		2.18	4,348	4,550	95.5	4.5	182.36	26.88						
0.665	25-YR	14.97	26.48	11.51	27.46	24.00	0.0046	7.05		1.38	10.17		3.11	5,498	6,120	89.8	10.2	221.52	27.94						
0.665	50-YR	14.97	27.41	12.44	27.46	24.00	0.0046	7.79		2.04	9.91		3.68	6,074	7,360	82.5	17.5	250.35	28.71						
0.665	100-YR	14.97	28.65	13.68	27.46	24.00	0.0046	9.02	0.51	3.04	8.94	1.19	3.92	6,347	8,610	73.7	26.3	285.61	29.63						
0.665	200-YR	14.97	29.05	14.08	27.46	24.00	0.0046	9.42	0.72	3.36	9.34	1.52	4.26	6,923	9,720	71.2	28.8	296.39	30.09						
0.665	500-YR	14.97	30.76	15.79	27.46	24.00	0.0046	11.13	2.01	4.75	8.18	2.36	4.20	7,164	11,500	62.3	37.7	320.62	31.51						
0.606	2-YR	13.53	21.39	7.86	28.00	21.00	-0.0020	5.63		0.20	5.95		0.58	1,670	1,670	100.0	0.0	51.63	21.94	6.57	2		402.22	7.79	
0.606	5-YR	13.53	23.69	10.16	28.00	21.00	-0.0020	7.48		0.85	7.75		1.69	3,099	3,260	95.1	4.9	166.09	24.58						
0.606	10-YR	13.53	24.84	11.31	28.00	21.00	-0.0020	8.38		1.72	8.37		2.71	3,870	4,550	85.1	14.9	200.36	25.79						
0.606	25-YR	13.53	25.37	11.84	28.00	21.00	-0.0020	8.78		2.18	9.99		3.67	4,912	6,120	80.3	19.7	207.16	26.66						
0.606	50-YR	13.53	26.67	13.14	28.00	21.00	-0.0020	9.70		3.15	9.16		4.03	5,182	7,360	70.4	29.6	229.74	27.66						
0.606	100-YR	13.53	28.10	14.57	28.00	21.00	-0.0020	10.68	0.10	3.68	8.43	0.34	3.86	5,492	8,610	63.8	36.2	308.97	28.89						
0.606	200-YR	13.53	28.47	14.94	28.00	21.00	-0.0020	11.04	0.31	4.02	8.86	0.76	4.20	5,971	9,720	61.4	38.6	340.42	29.33						
0.606	500-YR	13.53	30.52	16.99	28.00	21.00	-0.0020	13.09	1.97	5.77	7.23	1.92	3.90	5,773	11,500	50.2	49.8	415.35	31.03						
0.545	2-YR	14.17	20.60	6.43	22.00	23.00	0.0000	4.62			5.94			1,670	1,670	100.0	0.0	60.85	21.15	9.46	2		519.84	8.54	
0.545	5-YR	14.17	22.73	8.56	22.00	23.00	0.0000	6.24	0.46	0.07	7.76	1.23	0.37	3,245	3,260	99.5	0.5	136.42	23.66						
0.545	10-YR	14.17	23.28	9.11	22.00	23.00	0.0000	6.75	0.88	0.31	9.65	2.25	1.19	4,390	4,550	96.5	3.5	360.65	24.67						
0.545	25-YR	14.17	25.00	10.83	22.00	23.00	0.0000	8.47	2.19	1.84	7.50	2.75	2.45	4,289	6,120	70.1	29.9	459.22	25.65						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
0.545	50-YR	14.17	26.71	12.54	22.00	23.00	0.0000	10.18	3.20	3.47	5.62	2.34	2.48	3,858	7,360	52.4	47.6	481.37	27.01						
0.545	100-YR	14.17	28.24	14.07	22.00	23.00	0.0000	11.71	2.44	3.77	4.75	1.51	2.02	3,749	8,610	43.5	56.5	833.40	28.43						
0.545	200-YR	14.17	28.66	14.49	22.00	23.00	0.0000	12.13	2.84	4.16	4.79	1.65	2.14	3,919	9,720	40.3	59.7	838.25	28.84						
0.545	500-YR	14.17	30.67	16.50	22.00	23.00	0.0000	14.14	4.71	6.09	3.63	1.60	1.89	3,460	11,500	30.1	69.9	856.96	30.77						
0.528	2-YR	14.17	20.15	5.98	21.00	23.00	0.0000	4.29			6.60			1,670	1,670	100.0	0.0	59.00	20.83	9.87	2		673.86	11.42	
0.528	5-YR	14.17	22.17	8.00	21.00	23.00	0.0000	5.81	0.74		8.49	1.94		3,223	3,260	98.9	1.1	90.84	23.28						
0.528	10-YR	14.17	23.53	9.36	21.00	23.00	0.0000	6.66	1.62	1.48	6.19	2.17	2.04	2,930	4,550	64.4	35.6	599.51	23.93						
0.528	25-YR	14.17	25.13	10.96	21.00	23.00	0.0000	8.26	3.14	2.87	4.60	2.15	2.04	2,700	6,120	44.1	55.9	646.21	25.31						
0.528	50-YR	14.17	26.76	12.59	21.00	23.00	0.0000	9.89	4.37	4.32	3.55	1.82	1.85	2,496	7,360	33.9	66.1	681.48	26.86						
0.528	100-YR	14.17	28.27	14.10	21.00	23.00	0.0000	11.40	3.08	5.74	2.96	1.11	1.70	2,399	8,610	27.9	72.1	844.41	28.34						
0.528	200-YR	14.17	28.68	14.51	21.00	23.00	0.0000	11.82	3.44	6.14	3.07	1.22	1.80	2,581	9,720	26.6	73.4	848.94	28.76						
0.528	500-YR	14.17	30.68	16.51	21.00	23.00	0.0000	13.81	5.15	8.07	2.59	1.23	1.64	2,539	11,500	22.1	77.9	869.20	30.73						
0.524		Bridge																							
0.520	2-YR	14.17	19.91	5.74	21.48	23.00	0.0001	3.98			6.77			1,670	1,670	100.0	0.0	61.91	20.62	10.79	2		802.01	12.95	
0.520	5-YR	14.17	21.82	7.65	21.48	23.00	0.0001	5.17	0.46		8.56	1.55		3,219	3,260	98.7	1.3	129.80	22.94						
0.520	10-YR	14.17	23.45	9.28	21.48	23.00	0.0001	5.96	1.54	1.52	5.41	1.97	1.96	2,739	4,550	60.2	39.8	691.66	23.75						
0.520	25-YR	14.17	25.11	10.94	21.48	23.00	0.0001	7.62	2.65	2.93	3.84	1.72	1.83	2,483	6,120	40.6	59.4	787.27	25.23						
0.520	50-YR	14.17	26.76	12.59	21.48	23.00	0.0001	9.26	4.00	4.44	2.89	1.54	1.60	2,271	7,360	30.9	69.1	824.10	26.82						
0.520	100-YR	14.17	28.27	14.10	21.48	23.00	0.0001	10.78	5.31	5.84	2.45	1.41	1.48	2,239	8,610	26.0	74.0	845.00	28.32						
0.520	200-YR	14.17	28.68	14.51	21.48	23.00	0.0001	11.19	5.70	6.23	2.56	1.50	1.58	2,436	9,720	25.1	74.9	848.19	28.74						
0.520	500-YR	14.17	30.68	16.51	21.48	23.00	0.0001	13.19	7.53	8.12	2.23	1.39	1.47	2,501	11,500	21.7	78.3	860.59	30.72						
0.505	2-YR	14.16	19.67	5.51	20.72	22.35	0.0000	3.99			6.21			1,670	1,670	100.0	0.0	67.39	20.26	12.23	2		758.72	11.26	
0.505	5-YR	14.16	21.54	7.38	20.72	22.35	0.0000	5.32	0.45		8.03	1.38		3,248	3,260	99.6	0.4	95.21	22.54						
0.505	10-YR	14.16	23.36	9.20	20.72	22.35	0.0000	6.96	1.26	1.83	5.13	1.46	1.88	2,801	4,550	61.6	38.4	618.47	23.63						
0.505	25-YR	14.16	25.06	10.90	20.72	22.35	0.0000	8.66	2.40	3.06	3.89	1.52	1.76	2,643	6,120	43.2	56.8	756.42	25.19						
0.505	50-YR	14.16	26.73	12.57	20.72	22.35	0.0000	10.34	3.70	4.59	2.99	1.40	1.58	2,425	7,360	32.9	67.1	790.37	26.80						
0.505	100-YR	14.16	28.26	14.10	20.72	22.35	0.0000	11.86	4.73	5.95	2.57	1.30	1.47	2,396	8,610	27.8	72.2	823.54	28.31						
0.505	200-YR	14.16	28.67	14.51	20.72	22.35	0.0000	12.27	5.03	6.31	2.71	1.38	1.58	2,606	9,720	26.8	73.2	831.29	28.73						
0.505	500-YR	14.16	30.67	16.51	20.72	22.35	0.0000	14.27	6.26	8.11	2.38	1.26	1.47	2,663	11,500	23.2	76.8	867.70	30.71						
0.501		Bridge																							
0.497	2-YR	14.16	19.18	5.02	20.00	22.00	0.0038	3.60			7.36			1,670	1,670	100.0	0.0	63.10	20.02	12.57	2		692.61	10.98	
0.497	5-YR	14.16	21.06	6.90	20.00	22.00	0.0038	4.75	0.53		8.89	1.83		3,226	3,260	98.9	1.1	111.91	22.28						
0.497	10-YR	14.16	23.34	9.18	20.00	22.00	0.0038	6.88	2.32	2.09	4.44	1.91	1.79	2,400	4,550	52.7	47.3	643.48	23.53						
0.497	25-YR	14.16	25.04	10.88	20.00	22.00	0.0038	8.58	3.50	3.50	3.46	1.69	1.70	2,335	6,120	38.2	61.8	715.20	25.14						
0.497	50-YR	14.16	26.72	12.56	20.00	22.00	0.0038	10.25	4.64	5.06	2.77	1.45	1.56	2,233	7,360	30.3	69.7	740.07	26.78						
0.497	100-YR	14.16	28.25	14.09	20.00	22.00	0.0038	11.78	5.68	6.48	2.44	1.33	1.48	2,262	8,610	26.3	73.7	757.68	28.30						
0.497	200-YR	14.16	28.66	14.50	20.00	22.00	0.0038	12.19	5.93	6.87	2.58	1.41	1.59	2,475	9,720	25.5	74.5	762.32	28.71						
0.497	500-YR	14.16	30.66	16.50	20.00	22.00	0.0038	14.20	6.16	8.74	2.33	1.18	1.52	2,601	11,500	22.6	77.4	797.64	30.71						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
0.480	2-YR	13.82	17.66	3.84	21.00	23.00	0.0162	2.90			9.66			1,620	1,620	100.0	0.0	57.92	19.11	15.08	2		97.76	1.69	
0.480	5-YR	13.82	19.34	5.52	21.00	23.00	0.0162	3.99			11.35			3,110	3,110	100.0	0.0	68.66	21.34						
0.480	10-YR	13.82	20.38	6.56	21.00	23.00	0.0162	4.66			12.23			4,270	4,270	100.0	0.0	74.98	22.70						
0.480	25-YR	13.82	21.97	8.15	21.00	23.00	0.0162	5.90	0.49		12.44	2.10		5,893	5,930	99.4	0.6	116.21	24.36						
0.480	50-YR	13.82	26.52	12.70	21.00	23.00	0.0162	10.28	4.37	5.62	4.34	2.26	2.59	3,676	7,130	51.6	48.4	335.91	26.72						
0.480	100-YR	13.82	28.07	14.25	21.00	23.00	0.0162	11.83	5.51	7.17	4.09	2.27	2.62	3,987	8,480	47.0	53.0	340.29	28.24						
0.480	200-YR	13.82	28.44	14.62	21.00	23.00	0.0162	12.20	5.75	7.55	4.46	2.49	2.89	4,481	9,710	46.2	53.8	341.67	28.65						
0.480	500-YR	13.82	30.66	16.84	21.00	23.00	0.0162	14.42	7.06	9.23	2.22	1.28	1.48	2,635	11,500	22.9	77.1	753.10	30.70						
0.415	2-YR	8.21	14.07	5.86	25.04	40.00	0.0000	4.87			7.53			1,620	1,620	100.0	0.0	44.15	14.95	7.53	1	11.88	56.90	1.29	1.36
0.415	5-YR	8.21	16.58	8.37	25.04	40.00	0.0000	6.66			9.30			3,110	3,110	100.0	0.0	50.16	17.92						
0.415	10-YR	8.21	18.20	9.99	25.04	40.00	0.0000	7.83			10.20			4,270	4,270	100.0	0.0	53.41	19.82						
0.415	25-YR	8.21	20.32	12.11	25.04	40.00	0.0000	9.36			11.06			5,930	5,930	100.0	0.0	57.30	22.22						
0.415	50-YR	8.21	24.98	16.77	25.04	40.00	0.0000	12.47			8.63			7,130	7,130	100.0	0.0	66.22	26.14						
0.415	100-YR	8.21	26.33	18.12	25.04	40.00	0.0000	13.76	0.74		9.26	0.70		8,476	8,480	100.0	0.0	73.72	27.66						
0.415	200-YR	8.21	26.07	17.86	25.04	40.00	0.0000	13.50	0.55		10.81	0.68		9,708	9,710	100.0	0.0	73.03	27.89						
0.415	500-YR	8.21	28.20	19.99	25.04	40.00	0.0000	15.63	1.76		11.01	1.36		11,448	11,500	99.5	0.5	88.23	30.07						
0.412		Bridge																							
0.408	2-YR	8.21	13.48	5.27	23.97	23.00	0.0031	4.34			8.77			1,620	1,620	100.0	0.0	42.60	14.67	8.08	1		54.17	1.27	
0.408	5-YR	8.21	15.87	7.66	23.97	23.00	0.0031	6.12			10.62			3,110	3,110	100.0	0.0	47.87	17.62						
0.408	10-YR	8.21	17.50	9.29	23.97	23.00	0.0031	7.28			11.43			4,270	4,270	100.0	0.0	51.36	19.52						
0.408	25-YR	8.21	19.72	11.51	23.97	23.00	0.0031	8.76			12.01			5,930	5,930	100.0	0.0	56.36	21.96						
0.408	50-YR	8.21	21.26	13.05	23.97	23.00	0.0031	9.77			12.24			7,130	7,130	100.0	0.0	59.66	23.58						
0.408	100-YR	8.21	22.43	14.22	23.97	23.00	0.0031	10.29			12.95			8,480	8,480	100.0	0.0	63.66	25.04						
0.408	200-YR	8.21	23.17	14.96	23.97	23.00	0.0031	10.64		0.17	13.81		0.44	9,707	9,710	100.0	0.0	108.59	26.13						
0.408	500-YR	8.21	23.91	15.70	23.97	23.00	0.0031	11.25		0.91	15.22		1.42	11,445	11,500	99.5	0.5	109.37	27.49						
0.360	2-YR	7.43	12.92	5.49	20.08	20.00	0.0020	4.69			5.81			1,620	1,620	100.0	0.0	59.50	13.44	10.84	1		73.34	1.23	
0.360	5-YR	7.43	15.51	8.08	20.08	20.00	0.0020	6.68			7.04			3,110	3,110	100.0	0.0	66.11	16.28						
0.360	10-YR	7.43	17.26	9.83	20.08	20.00	0.0020	7.97			7.60			4,270	4,270	100.0	0.0	70.42	18.16						
0.360	25-YR	7.43	19.63	12.20	20.08	20.00	0.0020	9.60			8.06			5,930	5,930	100.0	0.0	76.58	20.64						
0.360	50-YR	7.43	21.27	13.84	20.08	20.00	0.0020	11.10	0.59	0.58	8.26	0.50	0.57	7,119	7,130	99.8	0.2	111.56	22.32						
0.360	100-YR	7.43	22.52	15.09	20.08	20.00	0.0020	12.35	1.20	1.70	8.76	0.80	1.14	8,401	8,480	99.1	0.9	120.22	23.70						
0.360	200-YR	7.43	23.32	15.89	20.08	20.00	0.0020	13.15	1.58	2.50	9.36	0.98	1.49	9,557	9,710	98.4	1.6	121.41	24.65						
0.360	500-YR	7.43	24.13	16.70	20.08	20.00	0.0020	13.96	1.91	3.32	10.36	1.20	1.88	11,241	11,500	97.8	2.2	122.87	25.76						
0.295	2-YR	6.73	12.47	5.74	18.00	21.00	0.0013	5.04			4.82			1,620	1,620	100.0	0.0	66.62	12.84	11.61	1		92.32	1.39	
0.295	5-YR	6.73	15.12	8.39	18.00	21.00	0.0013	6.90			5.93			3,110	3,110	100.0	0.0	75.98	15.67						
0.295	10-YR	6.73	16.94	10.21	18.00	21.00	0.0013	8.03			6.38			4,270	4,270	100.0	0.0	83.34	17.57						
0.295	25-YR	6.73	19.41	12.68	18.00	21.00	0.0013	9.75	0.70		6.68	0.50		5,921	5,930	99.9	0.1	115.25	20.10						
0.295	50-YR	6.73	21.18	14.45	18.00	21.00	0.0013	11.16	1.67	1.42	6.58	0.81	1.31	6,911	7,130	96.9	3.1	225.53	21.83						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
0.295	100-YR	6.73	22.55	15.82	18.00	21.00	0.0013	12.53	2.54	2.74	6.69	1.01	1.89	7,882	8,480	92.9	7.1	241.28	23.19						
0.295	200-YR	6.73	23.43	16.70	18.00	21.00	0.0013	13.41	3.22	3.61	6.95	1.17	2.25	8,768	9,710	90.3	9.7	246.41	24.11						
0.295	500-YR	6.73	24.36	17.63	18.00	21.00	0.0013	14.34	4.02	4.53	7.47	1.39	2.69	10,074	11,500	87.6	12.4	249.20	25.13						
0.228	2-YR	6.28	12.32	6.04	20.00	20.00	0.0000	5.14			3.44			1,620	1,620	100.0	0.0	91.80	12.50	15.20	1		110.96	1.21	
0.228	5-YR	6.28	15.03	8.75	20.00	20.00	0.0000	7.33			4.26			3,110	3,110	100.0	0.0	99.69	15.31						
0.228	10-YR	6.28	16.88	10.60	20.00	20.00	0.0000	8.69			4.63			4,270	4,270	100.0	0.0	105.99	17.22						
0.228	25-YR	6.28	19.39	13.11	20.00	20.00	0.0000	10.41			4.95			5,930	5,930	100.0	0.0	115.15	19.77						
0.228	50-YR	6.28	21.18	14.90	20.00	20.00	0.0000	11.72	0.87	0.86	4.95	0.91	0.67	6,985	7,130	98.0	2.0	335.81	21.55						
0.228	100-YR	6.28	22.58	16.30	20.00	20.00	0.0000	13.12	1.77	2.21	4.95	1.35	1.18	7,821	8,480	92.2	7.8	384.98	22.94						
0.228	200-YR	6.28	23.50	17.22	20.00	20.00	0.0000	14.03	2.27	3.10	5.05	1.56	1.44	8,540	9,710	88.0	12.0	418.73	23.85						
0.228	500-YR	6.28	24.47	18.19	20.00	20.00	0.0000	15.01	3.01	4.04	5.28	1.88	1.72	9,545	11,500	83.0	17.0	437.18	24.84						
0.169	2-YR	6.28	12.15	5.87	16.00	15.00	0.0000	4.90			3.39			1,620	1,620	100.0	0.0	97.57	12.32	16.62	1		151.38	1.55	
0.169	5-YR	6.28	14.88	8.60	16.00	15.00	0.0000	7.00			4.09			3,110	3,110	100.0	0.0	108.50	15.14						
0.169	10-YR	6.28	16.75	10.47	16.00	15.00	0.0000	8.53	0.37	0.88	4.40	0.56	0.79	4,267	4,270	99.9	0.1	124.59	17.05						
0.169	25-YR	6.28	19.31	13.03	16.00	15.00	0.0000	11.09	1.08	2.15	4.58	0.99	1.26	5,778	5,930	97.4	2.6	247.90	19.63						
0.169	50-YR	6.28	21.14	14.86	16.00	15.00	0.0000	12.92	2.18	3.04	4.44	1.39	1.40	6,526	7,130	91.5	8.5	310.26	21.42						
0.169	100-YR	6.28	22.55	16.27	16.00	15.00	0.0000	14.34	2.77	3.70	4.46	1.55	1.50	7,266	8,480	85.7	14.3	393.13	22.82						
0.169	200-YR	6.28	23.47	17.19	16.00	15.00	0.0000	15.25	3.45	4.14	4.56	1.73	1.59	7,897	9,710	81.3	18.7	416.48	23.74						
0.169	500-YR	6.28	24.44	18.16	16.00	15.00	0.0000	16.23	4.30	4.61	4.77	2.01	1.72	8,794	11,500	76.5	23.5	427.23	24.73						
0.118	2-YR	6.28	11.74	5.46	15.00	15.00	-0.0002	4.87			4.58			1,620	1,620	100.0	0.0	72.63	12.07	13.30	1		113.75	1.57	
0.118	5-YR	6.28	14.38	8.10	15.00	15.00	-0.0002	6.99			5.61			3,110	3,110	100.0	0.0	79.35	14.87						
0.118	10-YR	6.28	16.22	9.94	15.00	15.00	-0.0002	8.69	0.61	0.61	6.07	1.04	0.41	4,267	4,270	99.9	0.1	86.82	16.80						
0.118	25-YR	6.28	18.80	12.52	15.00	15.00	-0.0002	11.26	1.59	1.90	6.34	1.80	0.77	5,777	5,930	97.4	2.6	137.67	19.41						
0.118	50-YR	6.28	20.66	14.38	15.00	15.00	-0.0002	13.12	2.57	2.91	6.28	2.21	0.91	6,663	7,130	93.5	6.5	168.50	21.23						
0.118	100-YR	6.28	22.04	15.76	15.00	15.00	-0.0002	14.50	2.01	3.74	6.49	2.05	1.04	7,614	8,480	89.8	10.2	292.45	22.63						
0.118	200-YR	6.28	22.93	16.65	15.00	15.00	-0.0002	15.39	2.24	4.26	6.72	2.06	1.12	8,371	9,710	86.2	13.8	370.98	23.55						
0.118	500-YR	6.28	23.90	17.62	15.00	15.00	-0.0002	16.37	2.52	4.81	7.00	2.31	1.21	9,274	11,500	80.6	19.4	462.38	24.53						
0.103		Bridge																							
0.088	2-YR	6.61	10.74	4.13	15.00	20.78	0.0000	3.59			5.95			1,620	1,620	100.0	0.0	75.80	11.29	18.35					
0.088	5-YR	6.61	12.89	6.28	15.00	20.78	0.0000	5.50			7.07			3,110	3,110	100.0	0.0	80.02	13.66						
0.088	10-YR	6.61	14.24	7.63	15.00	20.78	0.0000	6.67			7.76			4,270	4,270	100.0	0.0	82.45	15.18						
0.088	25-YR	6.61	15.98	9.37	15.00	20.78	0.0000	8.27	0.93		8.45	2.07		5,879	5,930	99.1	0.9	110.43	17.08						
0.088	50-YR	6.61	17.20	10.59	15.00	20.78	0.0000	9.44	1.72		8.70	2.95		6,945	7,130	97.4	2.6	120.98	18.34						
0.088	100-YR	6.61	18.49	11.88	15.00	20.78	0.0000	10.68	1.37		8.89	3.28		8,069	8,480	95.2	4.8	176.05	19.67						
0.088	200-YR	6.61	19.74	13.13	15.00	20.78	0.0000	11.88	1.43		8.72	2.65		8,844	9,710	91.1	8.9	313.61	20.83						
0.088	500-YR	6.61	21.18	14.57	15.00	20.78	0.0000	13.27	2.42	0.20	8.31	2.88	0.26	9,450	11,500	82.2	17.8	379.61	22.08						
0.078	2-YR	6.61	9.99	3.38	15.00	17.00	0.0026	3.23			7.90			1,620	1,620	100.0	0.0	63.50	10.96	18.79					
0.078	5-YR	6.61	10.98	4.37	15.00	17.00	0.0026	4.12			11.56			3,110	3,110	100.0	0.0	65.36	13.06						

Aliso Creek - Alternative 3
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
0.078	10-YR	6.61	11.98	5.37	15.00	17.00	0.0026	4.99			12.73			4,270	4,270	100.0	0.0	67.24	14.50						
0.078	25-YR	6.61	13.27	6.66	15.00	17.00	0.0026	6.08			14.00			5,930	5,930	100.0	0.0	69.67	16.31						
0.078	50-YR	6.61	14.11	7.50	15.00	17.00	0.0026	6.77			14.77			7,130	7,130	100.0	0.0	71.24	17.50						
0.078	100-YR	6.61	14.98	8.37	15.00	17.00	0.0026	7.48			15.55			8,480	8,480	100.0	0.0	72.88	18.73						
0.078	200-YR	6.61	15.72	9.11	15.00	17.00	0.0026	8.20	0.21		16.20	2.03		9,708	9,710	100.0	0.0	78.06	19.79						
0.078	500-YR	6.61	17.24	10.63	15.00	17.00	0.0026	9.69	1.08	0.12	15.87	4.00	0.36	11,287	11,500	98.1	1.9	122.99	21.09						
0.000	2-YR	5.56	8.13	2.57	6.58	8.00		2.27	0.79	0.10	6.03	3.00	0.74	1,378	1,620	85.1	14.9	221.94	8.63	86.36					
0.000	5-YR	5.56	8.93	3.37	6.58	8.00		3.08	1.36	0.68	7.38	4.29	2.70	2,290	3,110	73.6	26.4	270.95	9.63						
0.000	10-YR	5.56	9.42	3.86	6.58	8.00		3.56	1.54	1.00	8.15	4.68	3.49	2,928	4,270	68.6	31.4	314.01	10.23						
0.000	25-YR	5.56	9.97	4.41	6.58	8.00		4.11	1.97	1.36	8.96	5.51	4.31	3,709	5,930	62.6	37.4	333.32	10.91						
0.000	50-YR	5.56	10.32	4.76	6.58	8.00		4.46	2.17	1.69	9.46	5.88	4.97	4,254	7,130	59.7	40.3	347.24	11.35						
0.000	100-YR	5.56	10.68	5.12	6.58	8.00		4.82	2.35	2.03	9.97	6.18	5.61	4,848	8,480	57.2	42.8	364.71	11.81						
0.000	200-YR	5.56	10.98	5.42	6.58	8.00		5.12	2.54	2.31	10.37	6.52	6.10	5,351	9,710	55.1	44.9	373.97	12.18						
0.000	500-YR	5.56	11.38	5.82	6.58	8.00		5.52	2.82	2.50	10.90	6.99	6.43	6,065	11,500	52.7	47.3	389.48	12.70						

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Hydraulic Tables
Alternative 4

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Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
9.000	2-YR	248.10	252.55	4.45	263.98	262.98	0.0168	3.30			5.61			1020	1020	100.0	0.0	55.13	253.04	12.39					
9.000	5-YR	248.10	254.31	6.21	263.98	262.98	0.0168	4.64			5.98			1700	1700	100.0	0.0	61.22	254.86						
9.000	10-YR	248.10	255.16	7.06	263.98	262.98	0.0168	5.27			6.28			2120	2120	100.0	0.0	64.11	255.77						
9.000	25-YR	248.10	256.04	7.94	263.98	262.98	0.0168	5.89			6.71			2650	2650	100.0	0.0	67.07	256.74						
9.000	50-YR	248.10	256.62	8.52	263.98	262.98	0.0168	6.29			6.99			3040	3040	100.0	0.0	69.18	257.38						
9.000	100-YR	248.10	257.20	9.10	263.98	262.98	0.0168	6.68			7.27			3460	3460	100.0	0.0	71.28	258.02						
9.000	200-YR	248.10	257.62	9.52	263.98	262.98	0.0168	6.95			7.48			3780	3780	100.0	0.0	72.77	258.49						
9.000	500-YR	248.10	258.21	10.11	263.98	262.98	0.0168	7.33			7.77			4270	4270	100.0	0.0	74.89	259.15						
8.750	2-YR	242.60	251.25	8.65	260.00	261.96	0.0000	4.66			3.77			1020	1020	100.0	0.0	58.19	251.47	6.73					
8.750	5-YR	242.60	253.05	10.45	260.00	261.96	0.0000	5.27			4.38			1700	1700	100.0	0.0	73.58	253.35						
8.750	10-YR	242.60	253.92	11.32	260.00	261.96	0.0000	5.58			4.65			2120	2120	100.0	0.0	81.71	254.25						
8.750	25-YR	242.60	254.81	12.21	260.00	261.96	0.0000	6.12			4.99			2650	2650	100.0	0.0	86.71	255.20						
8.750	50-YR	242.60	255.40	12.80	260.00	261.96	0.0000	6.47			5.21			3040	3040	100.0	0.0	90.06	255.82						
8.750	100-YR	242.60	255.99	13.39	260.00	261.96	0.0000	6.81			5.43			3460	3460	100.0	0.0	93.58	256.45						
8.750	200-YR	242.60	256.41	13.81	260.00	261.96	0.0000	7.05			5.59			3780	3780	100.0	0.0	95.89	256.89						
8.750	500-YR	242.60	257.00	14.40	260.00	261.96	0.0000	7.41			5.81			4270	4270	100.0	0.0	99.12	257.53						
8.500	2-YR	242.60	247.76	5.16	260.71	261.96	0.0085	2.84			9.59			1020	1020	100.0	0.0	37.43	249.19	7.25					
8.500	5-YR	242.60	249.00	6.40	260.71	261.96	0.0085	3.58			10.85			1700	1700	100.0	0.0	43.80	250.82						
8.500	10-YR	242.60	249.65	7.05	260.71	261.96	0.0085	3.94			11.36			2120	2120	100.0	0.0	47.32	251.66						
8.500	25-YR	242.60	250.41	7.81	260.71	261.96	0.0085	4.28			11.81			2650	2650	100.0	0.0	52.39	252.58						
8.500	50-YR	242.60	250.91	8.31	260.71	261.96	0.0085	4.50			12.09			3040	3040	100.0	0.0	55.84	253.18						
8.500	100-YR	242.60	251.40	8.80	260.71	261.96	0.0085	4.72			12.37			3460	3460	100.0	0.0	59.22	253.78						
8.500	200-YR	242.60	251.74	9.14	260.71	261.96	0.0085	4.88			12.58			3780	3780	100.0	0.0	61.56	254.20						
8.500	500-YR	242.60	252.25	9.65	260.71	261.96	0.0085	5.10			12.85			4270	4270	100.0	0.0	65.09	254.81						
8.250	2-YR	239.80	245.20	5.40	255.76	257.68	0.0023	3.32			2.42			1020	1020	100.0	0.0	126.88	245.29	23.50					
8.250	5-YR	239.80	246.38	6.58	255.76	257.68	0.0023	3.83			2.84			1700	1700	100.0	0.0	156.44	246.51						
8.250	10-YR	239.80	246.93	7.13	255.76	257.68	0.0023	4.35			3.10			2120	2120	100.0	0.0	157.26	247.08						
8.250	25-YR	239.80	247.55	7.75	255.76	257.68	0.0023	4.95			3.38			2650	2650	100.0	0.0	158.11	247.73						
8.250	50-YR	239.80	247.98	8.18	255.76	257.68	0.0023	5.36			3.58			3040	3040	100.0	0.0	158.66	248.18						
8.250	100-YR	239.80	248.42	8.62	255.76	257.68	0.0023	5.78			3.76			3460	3460	100.0	0.0	159.31	248.64						
8.250	200-YR	239.80	248.75	8.95	255.76	257.68	0.0023	6.09			3.88			3780	3780	100.0	0.0	159.79	248.99						
8.250	500-YR	239.80	249.24	9.44	255.76	257.68	0.0023	6.55			4.06			4270	4270	100.0	0.0	160.50	249.49						
8.000	2-YR	239.03	243.09	4.06	253.00	256.73	0.0156	2.04			7.11			1020	1020	100.0	0.0	70.37	243.87	17.33					
8.000	5-YR	239.03	244.28	5.25	253.00	256.73	0.0156	2.63			7.11			1700	1700	100.0	0.0	91.06	245.06						
8.000	10-YR	239.03	244.92	5.89	253.00	256.73	0.0156	2.94			7.02			2120	2120	100.0	0.0	102.78	245.69						
8.000	25-YR	239.03	245.68	6.65	253.00	256.73	0.0156	3.40			6.89			2650	2650	100.0	0.0	113.22	246.42						
8.000	50-YR	239.03	246.16	7.13	253.00	256.73	0.0156	3.78			6.91			3040	3040	100.0	0.0	116.45	246.91						
8.000	100-YR	239.03	246.67	7.64	253.00	256.73	0.0156	4.14			6.92			3460	3460	100.0	0.0	120.79	247.42						
8.000	200-YR	239.03	247.05	8.02	253.00	256.73	0.0156	4.40			6.92			3780	3780	100.0	0.0	124.24	247.79						

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
8.000	500-YR	239.03	247.59	8.56	253.00	256.73	0.0156	4.77			6.95			4270	4270	100.0	0.0	128.80	248.34						
7.900	2-YR	233.90	239.43	5.53	250.07	250.00	0.0061	3.80			5.37			1020	1020	100.0	0.0	49.97	239.88	9.04					
7.900	5-YR	233.90	241.10	7.20	250.07	250.00	0.0061	4.79			6.06			1700	1700	100.0	0.0	58.57	241.67						
7.900	10-YR	233.90	241.94	8.04	250.07	250.00	0.0061	5.28			6.39			2120	2120	100.0	0.0	62.88	242.58						
7.900	25-YR	233.90	243.17	9.27	250.07	250.00	0.0061	5.94			6.41			2650	2650	100.0	0.0	69.56	243.81						
7.900	50-YR	233.90	243.64	9.74	250.07	250.00	0.0061	6.20			6.81			3040	3040	100.0	0.0	72.06	244.36						
7.900	100-YR	233.90	244.12	10.22	250.07	250.00	0.0061	6.45			7.18			3460	3460	100.0	0.0	74.63	244.92						
7.900	200-YR	233.90	244.47	10.57	250.07	250.00	0.0061	6.64			7.44			3780	3780	100.0	0.0	76.58	245.33						
7.900	500-YR	233.90	244.98	11.08	250.07	250.00	0.0061	6.90			7.80			4270	4270	100.0	0.0	79.39	245.92						
7.838	2-YR	231.87	237.34	5.47	248.74	254.05	0.0040	4.18			5.28			1020	1020	100.0	0.0	46.13	237.78	8.43					
7.838	5-YR	231.87	238.91	7.04	248.74	254.05	0.0040	5.12			6.28			1700	1700	100.0	0.0	52.90	239.53						
7.838	10-YR	231.87	239.68	7.81	248.74	254.05	0.0040	5.52			6.79			2120	2120	100.0	0.0	56.57	240.39						
7.838	25-YR	231.87	240.93	9.06	248.74	254.05	0.0040	4.26			6.49			2650	2650	100.0	0.0	95.94	241.58						
7.838	50-YR	231.87	241.43	9.56	248.74	254.05	0.0040	4.68			6.64			3040	3040	100.0	0.0	97.80	242.12						
7.838	100-YR	231.87	241.94	10.07	248.74	254.05	0.0040	5.09			6.82			3460	3460	100.0	0.0	99.65	242.66						
7.838	200-YR	231.87	242.34	10.47	248.74	254.05	0.0040	5.41			6.91			3780	3780	100.0	0.0	101.09	243.08						
7.838	500-YR	231.87	242.88	11.01	248.74	254.05	0.0040	5.85			7.08			4270	4270	100.0	0.0	103.07	243.66						
7.774	2-YR	230.53	235.71	5.18	245.20	243.46	0.0051	4.09			4.52			1020	1020	100.0	0.0	55.14	236.02	10.64					
7.774	5-YR	230.53	237.01	6.48	245.20	243.46	0.0051	4.94			5.64			1700	1700	100.0	0.0	60.95	237.50						
7.774	10-YR	230.53	237.51	6.98	245.20	243.46	0.0051	5.26			6.38			2120	2120	100.0	0.0	63.17	238.14						
7.774	25-YR	230.53	238.05	7.52	245.20	243.46	0.0051	5.60			7.22			2650	2650	100.0	0.0	65.62	238.86						
7.774	50-YR	230.53	238.41	7.88	245.20	243.46	0.0051	5.81			7.78			3040	3040	100.0	0.0	67.27	239.35						
7.774	100-YR	230.53	238.76	8.23	245.20	243.46	0.0051	6.02			8.34			3460	3460	100.0	0.0	68.90	239.84						
7.774	200-YR	230.53	239.04	8.51	245.20	243.46	0.0051	6.03			8.70			3780	3780	100.0	0.0	72.09	240.22						
7.774	500-YR	230.53	239.42	8.89	245.20	243.46	0.0051	6.11			9.23			4270	4270	100.0	0.0	75.70	240.74						
7.714	2-YR	228.92	234.36	5.44	241.57	243.30	0.0035	2.76			3.65			1020	1020	100.0	0.0	101.41	234.56	18.64					
7.714	5-YR	228.92	235.53	6.61	241.57	243.30	0.0035	2.87			3.95			1700	1700	100.0	0.0	149.99	235.77						
7.714	10-YR	228.92	235.99	7.07	241.57	243.30	0.0035	3.28			4.24			2120	2120	100.0	0.0	152.35	236.27						
7.714	25-YR	228.92	236.52	7.60	241.57	243.30	0.0035	3.75			4.55			2650	2650	100.0	0.0	155.09	236.84						
7.714	50-YR	228.92	236.89	7.97	241.57	243.30	0.0035	4.08			4.75			3040	3040	100.0	0.0	157.00	237.24						
7.714	100-YR	228.92	237.27	8.35	241.57	243.30	0.0035	4.41			4.94			3460	3460	100.0	0.0	158.95	237.65						
7.714	200-YR	228.92	237.55	8.63	241.57	243.30	0.0035	4.65			5.07			3780	3780	100.0	0.0	160.37	237.95						
7.714	500-YR	228.92	237.95	9.03	241.57	243.30	0.0035	4.99			5.28			4270	4270	100.0	0.0	162.31	238.38						
7.656	2-YR	227.85	230.83	2.98	238.81	234.14	0.0254	2.10			7.39			1020	1020	100.0	0.0	65.69	231.67	22.04					
7.656	5-YR	227.85	231.87	4.02	238.81	234.14	0.0254	2.82			8.04			1700	1700	100.0	0.0	74.89	232.87						
7.656	10-YR	227.85	232.42	4.57	238.81	234.14	0.0254	3.19			8.36			2120	2120	100.0	0.0	79.55	233.50						
7.656	25-YR	227.85	233.05	5.20	238.81	234.14	0.0254	3.60			8.66			2650	2650	100.0	0.0	85.02	234.22						
7.656	50-YR	227.85	233.49	5.64	238.81	234.14	0.0254	3.87			8.84			3040	3040	100.0	0.0	88.74	234.70						
7.656	100-YR	227.85	233.93	6.08	238.81	234.14	0.0254	4.15			9.02			3460	3460	100.0	0.0	92.52	235.19						

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
7.656	200-YR	227.85	234.24	6.39	238.81	234.14	0.0254	4.36		0.05	9.15		0.36	3780	3780	100.0	0.0	97.27	235.54						
7.656	500-YR	227.85	234.69	6.84	238.81	234.14	0.0254	4.74		0.29	9.37		1.10	4266	4270	99.9	0.1	108.63	236.05						
7.620	2-YR	222.90	227.96	5.06	236.08	234.43	0.0000	3.09			5.78			1020	1020	100.0	0.0	57.16	228.47	11.30					
7.620	5-YR	222.90	229.03	6.13	236.08	234.43	0.0000	3.90			7.08			1700	1700	100.0	0.0	61.58	229.81						
7.620	10-YR	222.90	229.62	6.72	236.08	234.43	0.0000	4.32			7.65			2120	2120	100.0	0.0	64.16	230.53						
7.620	25-YR	222.90	230.32	7.42	236.08	234.43	0.0000	4.73			8.19			2650	2650	100.0	0.0	68.41	231.36						
7.620	50-YR	222.90	230.80	7.90	236.08	234.43	0.0000	5.01			8.52			3040	3040	100.0	0.0	71.29	231.92						
7.620	100-YR	222.90	231.28	8.38	236.08	234.43	0.0000	5.28			8.83			3460	3460	100.0	0.0	74.18	232.49						
7.620	200-YR	222.90	231.62	8.72	236.08	234.43	0.0000	5.48			9.04			3780	3780	100.0	0.0	76.28	232.89						
7.620	500-YR	222.90	232.31	9.41	236.08	234.43	0.0000	5.93			9.06			4270	4270	100.0	0.0	79.41	233.58						
7.616		Bridge																							
7.612	2-YR	222.58	227.08	4.50	233.36	234.95	0.0026	3.41			5.03			1020	1020	100.0	0.0	59.40	227.47	13.20					
7.612	5-YR	222.58	228.27	5.69	233.36	234.95	0.0026	4.27			6.14			1700	1700	100.0	0.0	64.77	228.86						
7.612	10-YR	222.58	228.88	6.30	233.36	234.95	0.0026	4.69			6.69			2120	2120	100.0	0.0	67.49	229.57						
7.612	25-YR	222.58	229.60	7.02	233.36	234.95	0.0026	5.18			7.22			2650	2650	100.0	0.0	70.82	230.41						
7.612	50-YR	222.58	229.98	7.40	233.36	234.95	0.0026	5.43			7.72			3040	3040	100.0	0.0	72.51	230.90						
7.612	100-YR	222.58	230.44	7.86	233.36	234.95	0.0026	5.73			8.09			3460	3460	100.0	0.0	74.60	231.46						
7.612	200-YR	222.58	230.65	8.07	233.36	234.95	0.0026	5.87			8.52			3780	3780	100.0	0.0	75.57	231.78						
7.612	500-YR	222.58	230.63	8.05	233.36	234.95	0.0026	5.86			9.66			4270	4270	100.0	0.0	75.48	232.08						
7.528	2-YR	221.45	224.84	3.39	232.53	231.67	0.0108	2.54			3.35			1020	1020	100.0	0.0	119.64	225.02	35.29					
7.528	5-YR	221.45	225.84	4.39	232.53	231.67	0.0108	2.99			3.92			1700	1700	100.0	0.0	144.71	226.08						
7.528	10-YR	221.45	226.34	4.89	232.53	231.67	0.0108	3.14			4.15			2120	2120	100.0	0.0	162.47	226.61						
7.528	25-YR	221.45	226.98	5.53	232.53	231.67	0.0108	3.03			4.22			2650	2650	100.0	0.0	207.47	227.25						
7.528	50-YR	221.45	227.35	5.90	232.53	231.67	0.0108	3.17			4.29			3040	3040	100.0	0.0	223.69	227.63						
7.528	100-YR	221.45	227.80	6.35	232.53	231.67	0.0108	3.05			4.22			3460	3460	100.0	0.0	268.51	228.08						
7.528	200-YR	221.45	227.98	6.53	232.53	231.67	0.0108	3.22			4.35			3780	3780	100.0	0.0	269.56	228.28						
7.528	500-YR	221.45	229.60	8.15	232.53	231.67	0.0108	4.67			3.25			4270	4270	100.0	0.0	281.48	229.77						
7.466	2-YR	217.90	222.01	4.11	230.33	230.31	0.0087	1.98			5.57			1020	1020	100.0	0.0	92.21	222.49	22.44					
7.466	5-YR	217.90	222.95	5.05	230.33	230.31	0.0087	2.49			6.15			1700	1700	100.0	0.0	111.02	223.54						
7.466	10-YR	217.90	223.40	5.50	230.33	230.31	0.0087	2.64			6.44			2120	2120	100.0	0.0	124.75	224.04						
7.466	25-YR	217.90	223.85	5.95	230.33	230.31	0.0087	2.80			6.83			2650	2650	100.0	0.0	138.73	224.57						
7.466	50-YR	217.90	224.01	6.11	230.33	230.31	0.0087	2.86			7.39			3040	3040	100.0	0.0	143.98	224.86						
7.466	100-YR	217.90	224.17	6.27	230.33	230.31	0.0087	2.92			7.95			3460	3460	100.0	0.0	149.18	225.16						
7.466	200-YR	217.90	224.42	6.52	230.33	230.31	0.0087	3.01			7.99			3780	3780	100.0	0.0	157.36	225.41						
7.466	500-YR	217.90	229.26	11.36	230.33	230.31	0.0087	5.89			2.53			4270	4270	100.0	0.0	286.61	229.36						
7.353	2-YR	212.71	218.16	5.45	222.11	226.43	0.0052	3.03			3.44			1020	1020	100.0	0.0	98.11	218.35	18.00					
7.353	5-YR	212.71	219.50	6.79	222.11	226.43	0.0052	3.79			3.87			1700	1700	100.0	0.0	115.83	219.74						
7.353	10-YR	212.71	220.43	7.72	222.11	226.43	0.0052	4.14			3.81			2120	2120	100.0	0.0	134.33	220.66						

Aliso Creek - Alternative 4

Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
7.353	25-YR	212.71	221.35	8.64	222.11	226.43	0.0052	4.84	0.28		3.83	1.59		2617	2650	98.8	1.2	214.56	221.57						
7.353	50-YR	212.71	222.07	9.36	222.11	226.43	0.0052	5.38	0.93		3.57	3.04		2805	3040	92.3	7.7	229.71	222.26						
7.353	100-YR	212.71	222.84	10.13	222.11	226.43	0.0052	6.02	1.66		3.24	3.78		2918	3460	84.3	15.7	235.69	223.01						
7.353	200-YR	212.71	223.52	10.81	222.11	226.43	0.0052	6.58	2.30		2.96	4.03		2966	3780	78.5	21.5	240.36	223.68						
7.353	500-YR	212.71	229.20	16.49	222.11	226.43	0.0052	11.66	7.22	2.24	1.16	2.26	0.53	2228	4270	52.2	47.8	565.98	229.25						
7.297	2-YR	211.16	216.81	5.65	226.89	223.31	0.0043	4.29			4.78			1410	1410	100.0	0.0	68.73	217.16	12.16					
7.297	5-YR	211.16	218.12	6.96	226.89	223.31	0.0043	5.36			5.47			2120	2120	100.0	0.0	72.36	218.58						
7.297	10-YR	211.16	219.17	8.01	226.89	223.31	0.0043	6.18			5.59			2600	2600	100.0	0.0	75.25	219.66						
7.297	25-YR	211.16	219.99	8.83	226.89	223.31	0.0043	6.81			6.25			3300	3300	100.0	0.0	77.52	220.60						
7.297	50-YR	211.16	220.66	9.50	226.89	223.31	0.0043	7.31			6.75			3920	3920	100.0	0.0	79.36	221.37						
7.297	100-YR	211.16	221.41	10.25	226.89	223.31	0.0043	7.87			7.28			4660	4660	100.0	0.0	81.42	222.23						
7.297	200-YR	211.16	222.18	11.02	226.89	223.31	0.0043	8.43			7.36			5180	5180	100.0	0.0	83.55	223.02						
7.297	500-YR	211.16	229.01	17.85	226.89	223.31	0.0043	14.58	1.06	3.45	3.67	0.47	1.06	4789	5900	81.2	18.8	399.44	229.18						
7.227	2-YR	209.59	215.16	5.57	223.64	223.26	0.0063	4.22			5.02			1410	1410	100.0	0.0	66.52	215.55	11.94					
7.227	5-YR	209.59	216.50	6.91	223.64	223.26	0.0063	5.17			5.66			2120	2120	100.0	0.0	72.44	217.00						
7.227	10-YR	209.59	217.62	8.03	223.64	223.26	0.0063	4.22			5.37			2600	2600	100.0	0.0	114.60	218.07						
7.227	25-YR	209.59	218.50	8.91	223.64	223.26	0.0063	5.00			5.63			3300	3300	100.0	0.0	117.32	219.00						
7.227	50-YR	209.59	219.23	9.64	223.64	223.26	0.0063	5.62			5.83			3920	3920	100.0	0.0	119.56	219.76						
7.227	100-YR	209.59	220.05	10.46	223.64	223.26	0.0063	6.31			6.04			4660	4660	100.0	0.0	122.09	220.61						
7.227	200-YR	209.59	221.12	11.53	223.64	223.26	0.0063	7.21			5.73			5180	5180	100.0	0.0	125.41	221.63						
7.227	500-YR	209.59	228.98	19.39	223.64	223.26	0.0063	14.55	3.17	4.24	2.25	0.59	0.73	4370	5900	74.1	25.9	649.42	229.04						
7.165	2-YR	207.53	212.65	5.12	215.01	216.71	0.0065	4.00			6.97			1410	1410	100.0	0.0	50.55	213.40	9.87					
7.165	5-YR	207.53	213.97	6.44	215.01	216.71	0.0065	4.90			7.78			2120	2120	100.0	0.0	55.64	214.91						
7.165	10-YR	207.53	214.66	7.13	215.01	216.71	0.0065	5.36			8.34			2600	2600	100.0	0.0	58.15	215.74						
7.165	25-YR	207.53	215.26	7.73	215.01	216.71	0.0065	5.79	0.12		9.50	0.27		3300	3300	100.0	0.0	60.06	216.66						
7.165	50-YR	207.53	215.66	8.13	215.01	216.71	0.0065	6.10	0.32		10.56	0.54		3920	3920	100.0	0.0	61.10	217.39						
7.165	100-YR	207.53	216.17	8.64	215.01	216.71	0.0065	6.50	0.58		11.57	0.84		4660	4660	100.0	0.0	62.44	218.25						
7.165	200-YR	207.53	219.28	11.75	215.01	216.71	0.0065	9.48	2.13	1.70	8.47	1.14	1.98	5076	5180	98.0	2.0	94.49	220.37						
7.165	500-YR	207.53	228.92	21.39	215.01	216.71	0.0065	19.12	5.31	5.98	2.66	0.58	0.90	3214	5900	54.5	45.5	566.02	228.98						
7.106	2-YR	205.51	211.05	5.54	216.92	218.58	0.0041	3.73			4.50			1410	1410	100.0	0.0	83.99	211.36	15.16					
7.106	5-YR	205.51	212.42	6.91	216.92	218.58	0.0041	3.73			4.68			2120	2120	100.0	0.0	121.68	212.76						
7.106	10-YR	205.51	213.20	7.69	216.92	218.58	0.0041	3.69			4.63			2600	2600	100.0	0.0	152.14	213.54						
7.106	25-YR	205.51	214.11	8.60	216.92	218.58	0.0041	4.23			4.66			3300	3300	100.0	0.0	167.64	214.44						
7.106	50-YR	205.51	214.79	9.28	216.92	218.58	0.0041	4.83			4.75			3920	3920	100.0	0.0	170.89	215.14						
7.106	100-YR	205.51	215.80	10.29	216.92	218.58	0.0041	5.69			4.67			4660	4660	100.0	0.0	175.63	216.13						
7.106	200-YR	205.51	219.53	14.02	216.92	218.58	0.0041	9.04	1.31	0.48	3.08	0.56	0.31	5175	5180	99.9	0.1	201.36	219.68						
7.106	500-YR	205.51	228.93	23.42	216.92	218.58	0.0041	18.43	6.00	6.13	1.31	0.41	0.45	4477	5900	75.9	24.1	704.66	228.95						
7.056	2-YR	204.43	209.73	5.30	216.73	216.38	0.0039	4.11			5.14			1410	1410	100.0	0.0	66.76	210.14	12.60					
7.056	5-YR	204.43	210.87	6.44	216.73	216.38	0.0039	4.94			6.01			2120	2120	100.0	0.0	71.42	211.43						

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
7.056	10-YR	204.43	211.54	7.11	216.73	216.38	0.0039	5.41			6.47			2600	2600	100.0	0.0	74.19	212.19						
7.056	25-YR	204.43	212.39	7.96	216.73	216.38	0.0039	6.00			7.07			3300	3300	100.0	0.0	77.73	213.17						
7.056	50-YR	204.43	213.04	8.61	216.73	216.38	0.0039	6.43			7.58			3920	3920	100.0	0.0	80.39	213.93						
7.056	100-YR	204.43	214.27	9.84	216.73	216.38	0.0039	7.29			7.52			4660	4660	100.0	0.0	85.03	215.15						
7.056	200-YR	204.43	219.24	14.81	216.73	216.38	0.0039	11.51	2.29	1.47	4.19	1.05	0.78	4499	5180	86.9	13.1	609.99	219.48						
7.056	500-YR	204.43	228.92	24.49	216.73	216.38	0.0039	21.19	9.68	11.05	1.20	0.52	0.57	2376	5900	40.3	59.7	676.75	228.93						
7.018	2-YR	203.64	208.90	5.26	215.21	216.13	0.0000	3.67			4.32			1410	1410	100.0	0.0	88.91	209.19	16.90					
7.018	5-YR	203.64	210.07	6.43	215.21	216.13	0.0000	4.58			4.89			2120	2120	100.0	0.0	94.56	210.44						
7.018	10-YR	203.64	210.75	7.11	215.21	216.13	0.0000	5.10			5.21			2600	2600	100.0	0.0	97.87	211.17						
7.018	25-YR	203.64	211.61	7.97	215.21	216.13	0.0000	5.73			5.64			3300	3300	100.0	0.0	102.03	212.11						
7.018	50-YR	203.64	212.24	8.60	215.21	216.13	0.0000	6.18			6.03			3920	3920	100.0	0.0	105.06	212.80						
7.018	100-YR	203.64	213.69	10.05	215.21	216.13	0.0000	7.21			5.77			4660	4660	100.0	0.0	112.12	214.21						
7.018	200-YR	203.64	219.18	15.54	215.21	216.13	0.0000	11.99	3.34	3.01	3.07	0.95	0.87	4509	5180	87.1	13.0	358.53	219.31						
7.018	500-YR	203.64	228.90	25.26	215.21	216.13	0.0000	21.71	8.15	12.74	1.44	0.54	0.69	3819	5900	64.7	35.3	455.58	228.92						
6.978		Bridge																							
6.938	2-YR	201.59	206.65	5.06	214.20	212.60	0.0084	3.83			4.07			1410	1410	100.0	0.0	90.43	206.91	17.87					
6.938	5-YR	201.59	207.99	6.40	214.20	212.60	0.0084	4.68			4.46			2120	2120	100.0	0.0	101.50	208.30						
6.938	10-YR	201.59	208.85	7.26	214.20	212.60	0.0084	4.58			4.52			2600	2600	100.0	0.0	125.47	209.17						
6.938	25-YR	201.59	209.78	8.19	214.20	212.60	0.0084	5.04			4.73			3300	3300	100.0	0.0	138.35	210.13						
6.938	50-YR	201.59	210.33	8.74	214.20	212.60	0.0084	5.43			5.06			3920	3920	100.0	0.0	142.83	210.73						
6.938	100-YR	201.59	212.66	11.07	214.20	212.60	0.0084	6.99		0.43	4.11		0.46	4645	4660	99.7	0.3	237.80	212.92						
6.938	200-YR	201.59	219.07	17.48	214.20	212.60	0.0084	12.83	4.00	6.64	1.93	0.64	0.85	4325	5180	83.5	16.5	387.19	219.12						
6.938	500-YR	201.59	228.89	27.30	214.20	212.60	0.0084	22.65	7.20	16.45	1.09	0.36	0.57	4288	5900	72.7	27.3	533.93	228.90						
6.878	2-YR	198.92	203.11	4.19	212.74	207.37	0.0140	3.06			9.03			1410	1410	100.0	0.0	51.10	204.37	12.20					
6.878	5-YR	198.92	203.90	4.98	212.74	207.37	0.0140	3.54			10.69			2120	2120	100.0	0.0	56.04	205.67						
6.878	10-YR	198.92	204.48	5.56	212.74	207.37	0.0140	3.89			11.20			2600	2600	100.0	0.0	59.70	206.43						
6.878	25-YR	198.92	205.24	6.32	212.74	207.37	0.0140	4.33			11.83			3300	3300	100.0	0.0	64.41	207.41						
6.878	50-YR	198.92	206.40	7.48	212.74	207.37	0.0140	4.99			10.95			3920	3920	100.0	0.0	71.67	208.26						
6.878	100-YR	198.92	212.21	13.29	212.74	207.37	0.0140	9.61	0.74	2.46	4.54	0.60	1.34	3756	4660	80.6	19.4	487.27	212.48						
6.878	200-YR	198.92	219.05	20.13	212.74	207.37	0.0140	16.34	6.31	8.62	1.63	0.63	0.78	2315	5180	44.7	55.3	609.66	219.07						
6.878	500-YR	198.92	228.89	29.97	212.74	207.37	0.0140	26.18	16.15	17.55	0.81	0.42	0.45	1846	5900	31.3	68.7	637.83	228.89						
6.859	2-YR	197.56	201.36	3.80	208.26	204.02	0.0170	1.75			6.35			1640	1640	100.0	0.0	147.98	201.98	38.94					
6.859	5-YR	197.56	202.27	4.71	208.26	204.02	0.0170	2.59			6.45			2550	2550	100.0	0.0	152.72	202.91						
6.859	10-YR	197.56	203.13	5.57	208.26	204.02	0.0170	3.35			5.88			3110	3110	100.0	0.0	157.94	203.66						
6.859	25-YR	197.56	204.49	6.93	208.26	204.02	0.0170	4.52		0.47	5.29		0.86	3971	3990	99.5	0.5	212.50	204.92						
6.859	50-YR	197.56	207.36	9.80	208.26	204.02	0.0170	7.22		1.82	3.38		0.98	4172	4640	89.9	10.1	432.59	207.52						
6.859	100-YR	197.56	212.35	14.79	208.26	204.02	0.0170	12.14	4.04	5.11	1.73	0.60	0.70	3634	5450	66.7	33.3	737.72	212.38						
6.859	200-YR	197.56	219.06	21.50	208.26	204.02	0.0170	18.85	10.01	11.12	0.97	0.45	0.49	3145	6330	49.7	50.3	792.78	219.07						
6.859	500-YR	197.56	228.89	31.33	208.26	204.02	0.0170	28.68	19.44	20.47	0.61	0.33	0.34	3021	7430	40.7	59.3	817.20	228.89						

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
6.839	2-YR	195.76	200.25	4.49	210.68	212.20	0.0067	3.03			5.12			1640	1640	100.0	0.0	105.59	200.66	23.52					
6.839	5-YR	195.76	201.41	5.65	210.68	212.20	0.0067	3.99			5.72			2550	2550	100.0	0.0	111.69	201.92						
6.839	10-YR	195.76	202.59	6.83	210.68	212.20	0.0067	4.92			5.36			3110	3110	100.0	0.0	117.92	203.03						
6.839	25-YR	195.76	204.11	8.35	210.68	212.20	0.0067	6.07			5.20			3990	3990	100.0	0.0	126.33	204.53						
6.839	50-YR	195.76	207.20	11.44	210.68	212.20	0.0067	6.29			3.55			4640	4640	100.0	0.0	207.96	207.40						
6.839	100-YR	195.76	212.35	16.59	210.68	212.20	0.0067	10.79	8.59	0.49	1.14	0.70	0.10	2785	5450	51.1	48.9	719.25	212.37						
6.839	200-YR	195.76	219.06	23.30	210.68	212.20	0.0067	17.50	15.01	5.18	0.75	0.48	0.24	2943	6330	46.5	53.5	780.04	219.06						
6.839	500-YR	195.76	228.89	33.13	210.68	212.20	0.0067	27.33	24.84	14.04	0.52	0.34	0.23	3196	7430	43.0	57.0	799.76	228.89						
6.773	2-YR	193.45	197.87	4.42	203.58	205.12	0.0065	3.47			5.30			1640	1640	100.0	0.0	89.15	198.30	20.17					
6.773	5-YR	193.45	199.78	6.33	203.58	205.12	0.0065	4.95			5.22			2550	2550	100.0	0.0	98.62	200.20						
6.773	10-YR	193.45	201.65	8.20	203.58	205.12	0.0065	6.26	0.26		4.55	0.40		3108	3110	99.9	0.1	127.59	201.97						
6.773	25-YR	193.45	203.45	10.00	203.58	205.12	0.0065	7.45	1.34		4.41	1.01		3921	3990	98.3	1.7	170.23	203.75						
6.773	50-YR	193.45	207.00	13.55	203.58	205.12	0.0065	10.74	2.72	1.36	3.03	0.87	0.55	4003	4640	86.3	13.7	427.99	207.12						
6.773	100-YR	193.45	212.31	18.86	203.58	205.12	0.0065	16.05	6.66	5.20	1.68	0.67	0.57	3316	5450	60.8	39.2	640.80	212.34						
6.773	200-YR	193.45	219.05	25.60	203.58	205.12	0.0065	22.79	13.16	9.17	1.04	0.51	0.42	2909	6330	46.0	54.0	700.30	219.06						
6.773	500-YR	193.45	228.89	35.44	203.58	205.12	0.0065	32.63	23.00	17.84	0.68	0.38	0.32	2753	7430	37.1	62.9	723.49	228.89						
6.706	2-YR	191.12	196.26	5.14	201.68	202.53	0.0101	3.75			4.24			1640	1640	100.0	0.0	103.17	196.54	20.07					
6.706	5-YR	191.12	199.09	7.97	201.68	202.53	0.0101	4.68			3.28			2550	2550	100.0	0.0	166.39	199.25						
6.706	10-YR	191.12	201.37	10.25	201.68	202.53	0.0101	5.53	0.92		2.54	0.56		3071	3110	98.8	1.2	292.98	201.47						
6.706	25-YR	191.12	203.32	12.20	201.68	202.53	0.0101	6.90	1.92	0.86	2.26	0.71	0.40	3772	3990	94.5	5.5	425.43	203.40						
6.706	50-YR	191.12	206.99	15.87	201.68	202.53	0.0101	10.56	5.05	3.34	1.53	0.66	0.50	3907	4640	84.2	15.8	487.95	207.02						
6.706	100-YR	191.12	212.30	21.18	201.68	202.53	0.0101	15.88	9.34	6.84	1.07	0.53	0.43	4105	5450	75.3	24.7	544.73	212.32						
6.706	200-YR	191.12	219.04	27.92	201.68	202.53	0.0101	22.62	15.16	9.82	0.79	0.42	0.32	4325	6330	68.3	31.7	622.55	219.05						
6.706	500-YR	191.12	228.88	37.76	201.68	202.53	0.0101	32.46	25.00	19.25	0.59	0.34	0.28	4603	7430	61.9	38.1	628.14	228.89						
6.650	2-YR	188.19	196.14	7.95	195.86	195.80	0.0067	5.66	0.28	0.17	2.34	0.15	0.11	1640	1640	100.0	0.0	126.52	196.22	15.91					
6.650	5-YR	188.19	199.00	10.81	195.86	195.80	0.0067	8.52	3.15	1.52	2.40	0.61	0.37	2535	2550	99.4	0.6	150.67	199.09						
6.650	10-YR	188.19	201.30	13.11	195.86	195.80	0.0067	10.82	5.44	2.55	2.28	0.71	0.43	3055	3110	98.2	1.8	174.50	201.38						
6.650	25-YR	188.19	203.24	15.05	195.86	195.80	0.0067	12.76	7.38	3.23	2.45	0.84	0.48	3867	3990	96.9	3.1	202.75	203.33						
6.650	50-YR	188.19	206.92	18.73	195.86	195.80	0.0067	16.44	11.06	5.26	2.13	0.81	0.49	4342	4640	93.6	6.4	239.26	206.98						
6.650	100-YR	188.19	212.25	24.06	195.86	195.80	0.0067	21.77	16.40	10.56	1.78	0.72	0.54	4789	5450	87.9	12.1	240.00	212.30						
6.650	200-YR	188.19	219.01	30.82	195.86	195.80	0.0067	28.53	23.15	17.32	1.49	0.64	0.53	5273	6330	83.3	16.7	240.00	219.04						
6.650	500-YR	188.19	228.88	40.69	195.86	195.80	0.0067	38.40	17.70	24.50	0.84	0.26	0.29	3997	7430	53.8	46.2	786.36	228.89						
6.588		Culvert																							
6.532	2-YR	184.00	187.14	3.14	196.17	195.84	0.0084	2.77			9.49			1560	1560	100.0	0.0	59.33	188.54	18.89	12	25.98	72.92	1.23	1.84
6.532	5-YR	184.00	188.07	4.07	196.17	195.84	0.0084	3.50			10.66			2360	2360	100.0	0.0	63.29	189.84						
6.532	10-YR	184.00	188.56	4.56	196.17	195.84	0.0084	3.87			11.20			2830	2830	100.0	0.0	65.35	190.51						
6.532	25-YR	184.00	189.16	5.16	196.17	195.84	0.0084	4.31			11.82			3460	3460	100.0	0.0	67.91	191.33						
6.532	50-YR	184.00	189.59	5.59	196.17	195.84	0.0084	4.62			12.25			3950	3950	100.0	0.0	69.76	191.92						

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
6.532	100-YR	184.00	190.01	6.01	196.17	195.84	0.0084	4.91			12.64			4450	4450	100.0	0.0	71.64	192.49						
6.532	200-YR	184.00	190.37	6.37	196.17	195.84	0.0084	5.16			12.95			4900	4900	100.0	0.0	73.37	192.98						
6.532	500-YR	184.00	190.71	6.71	196.17	195.84	0.0084	5.38			13.23			5330	5330	100.0	0.0	74.95	193.42						
6.483	2-YR	181.85	185.91	4.06	191.87	192.64	0.0036	3.34			5.83			1560	1560	100.0	0.0	80.01	186.44	19.71	12		145.22	1.82	
6.483	5-YR	181.85	186.81	4.96	191.87	192.64	0.0036	3.97			6.90			2360	2360	100.0	0.0	86.24	187.55						
6.483	10-YR	181.85	187.27	5.42	191.87	192.64	0.0036	4.26			7.40			2830	2830	100.0	0.0	89.68	188.12						
6.483	25-YR	181.85	187.83	5.98	191.87	192.64	0.0036	4.62			7.98			3460	3460	100.0	0.0	93.87	188.82						
6.483	50-YR	181.85	188.12	6.27	191.87	192.64	0.0036	4.80			8.57			3950	3950	100.0	0.0	96.08	189.26						
6.483	100-YR	181.85	188.38	6.53	191.87	192.64	0.0036	4.96			9.14			4450	4450	100.0	0.0	98.17	189.68						
6.483	200-YR	181.85	188.61	6.76	191.87	192.64	0.0036	5.12			9.62			4900	4900	100.0	0.0	99.52	190.05						
6.483	500-YR	181.85	188.81	6.96	191.87	192.64	0.0036	5.26			10.07			5330	5330	100.0	0.0	100.68	190.38						
6.342	2-YR	180.46	182.74	2.28	186.46	186.46	0.0500	2.10			8.27			1560	1560	100.0	0.0	89.66	183.80	39.32	12		191.36	2.13	
6.342	5-YR	180.46	183.43	2.97	186.46	186.46	0.0500	2.69			9.35			2360	2360	100.0	0.0	93.83	184.79						
6.342	10-YR	180.46	183.80	3.34	186.46	186.46	0.0500	2.99			9.86			2830	2830	100.0	0.0	96.02	185.31						
6.342	25-YR	180.46	184.78	4.32	186.46	186.46	0.0500	2.17			8.40			3460	3460	100.0	0.0	189.91	185.87						
6.342	50-YR	180.46	184.98	4.52	186.46	186.46	0.0500	2.36			8.75			3950	3950	100.0	0.0	191.14	186.17						
6.342	100-YR	180.46	185.18	4.72	186.46	186.46	0.0500	2.55			9.09			4450	4450	100.0	0.0	192.34	186.47						
6.342	200-YR	180.46	185.36	4.90	186.46	186.46	0.0500	2.70			9.37			4900	4900	100.0	0.0	193.38	186.72						
6.342	500-YR	180.46	185.52	5.06	186.46	186.46	0.0500	2.85			9.62			5330	5330	100.0	0.0	194.35	186.95						
6.336	2-YR	178.96	182.76	3.80	184.96	184.96	0.0033	3.36			4.70			1560	1560	100.0	0.0	98.79	183.10	26.00	12		216.02	2.19	
6.336	5-YR	178.96	183.94	4.98	184.96	184.96	0.0033	2.78			4.37			2360	2360	100.0	0.0	193.89	184.24						
6.336	10-YR	178.96	184.33	5.37	184.96	184.96	0.0033	3.13			4.60			2830	2830	100.0	0.0	196.22	184.66						
6.336	25-YR	178.96	184.80	5.84	184.96	184.96	0.0033	3.56			4.89			3460	3460	100.0	0.0	199.04	185.17						
6.336	50-YR	178.96	185.07	6.11	184.96	184.96	0.0033	3.81	0.06	0.06	5.18	0.27	0.27	3950	3950	100.0	0.0	201.14	185.49						
6.336	100-YR	178.96	185.34	6.38	184.96	184.96	0.0033	4.08	0.19	0.19	5.46	0.61	0.61	4450	4450	100.0	0.0	203.76	185.80						
6.336	200-YR	178.96	185.56	6.60	184.96	184.96	0.0033	4.30	0.30	0.30	5.70	0.84	0.84	4898	4900	100.0	0.0	206.00	186.06						
6.336	500-YR	178.96	185.76	6.80	184.96	184.96	0.0033	4.50	0.40	0.40	5.91	1.03	1.03	5327	5330	99.9	0.1	208.05	186.31						
6.247	2-YR	177.51	179.79	2.28	183.51	183.51	0.0500	2.10			8.27			1560	1560	100.0	0.0	89.66	180.85	39.32	11	32.55	191.36	2.13	2.19
6.247	5-YR	177.51	180.48	2.97	183.51	183.51	0.0500	2.69			9.35			2360	2360	100.0	0.0	93.83	181.84						
6.247	10-YR	177.51	180.85	3.34	183.51	183.51	0.0500	2.99			9.86			2830	2830	100.0	0.0	96.02	182.36						
6.247	25-YR	177.51	181.83	4.32	183.51	183.51	0.0500	2.17			8.40			3460	3460	100.0	0.0	189.91	182.92						
6.247	50-YR	177.51	182.03	4.52	183.51	183.51	0.0500	2.36			8.75			3950	3950	100.0	0.0	191.14	183.22						
6.247	100-YR	177.51	182.23	4.72	183.51	183.51	0.0500	2.55			9.09			4450	4450	100.0	0.0	192.34	183.52						
6.247	200-YR	177.51	182.41	4.90	183.51	183.51	0.0500	2.70			9.37			4900	4900	100.0	0.0	193.38	183.77						
6.247	500-YR	177.51	182.57	5.06	183.51	183.51	0.0500	2.85			9.62			5330	5330	100.0	0.0	194.35	184.00						
6.241	2-YR	176.01	179.85	3.84	182.01	182.01	0.0032	3.39			4.65			1560	1560	100.0	0.0	99.02	180.18	25.79	11		216.80	2.19	
6.241	5-YR	176.01	181.02	5.01	182.01	182.01	0.0032	2.81			4.32			2360	2360	100.0	0.0	194.08	181.31						
6.241	10-YR	176.01	181.41	5.40	182.01	182.01	0.0032	3.17			4.55			2830	2830	100.0	0.0	196.43	181.74						
6.241	25-YR	176.01	181.89	5.88	182.01	182.01	0.0032	3.59			4.84			3460	3460	100.0	0.0	199.26	182.25						

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
6.241	50-YR	176.01	182.16	6.15	182.01	182.01	0.0032	3.85	0.08	0.08	5.13	0.33	0.33	3950	3950	100.0	0.0	201.53	182.57						
6.241	100-YR	176.01	182.43	6.42	182.01	182.01	0.0032	4.12	0.21	0.21	5.40	0.64	0.64	4449	4450	100.0	0.0	204.16	182.88						
6.241	200-YR	176.01	182.65	6.64	182.01	182.01	0.0032	4.34	0.32	0.32	5.64	0.86	0.86	4898	4900	100.0	0.0	206.42	183.15						
6.241	500-YR	176.01	182.86	6.85	182.01	182.01	0.0032	4.55	0.42	0.42	5.86	1.05	1.05	5326	5330	99.9	0.1	208.48	183.39						
6.152	2-YR	174.56	176.84	2.28	180.56	180.56	0.0499	2.10			8.27			1560	1560	100.0	0.0	89.66	177.90	39.32	11		191.36	2.13	
6.152	5-YR	174.56	177.53	2.97	180.56	180.56	0.0499	2.69			9.35			2360	2360	100.0	0.0	93.83	178.89						
6.152	10-YR	174.56	177.90	3.34	180.56	180.56	0.0499	2.99			9.86			2830	2830	100.0	0.0	96.02	179.41						
6.152	25-YR	174.56	178.88	4.32	180.56	180.56	0.0499	2.17			8.40			3460	3460	100.0	0.0	189.91	179.97						
6.152	50-YR	174.56	179.08	4.52	180.56	180.56	0.0499	2.36			8.75			3950	3950	100.0	0.0	191.14	180.27						
6.152	100-YR	174.56	179.28	4.72	180.56	180.56	0.0499	2.55			9.09			4450	4450	100.0	0.0	192.34	180.57						
6.152	200-YR	174.56	179.46	4.90	180.56	180.56	0.0499	2.71			9.37			4900	4900	100.0	0.0	193.38	180.82						
6.152	500-YR	174.56	179.62	5.06	180.56	180.56	0.0499	2.85			9.62			5330	5330	100.0	0.0	194.35	181.05						
6.147	2-YR	173.06	176.91	3.85	179.06	179.06	0.0031	3.40			4.63			1560	1560	100.0	0.0	99.11	177.24	25.74	11		210.20	2.12	
6.147	5-YR	173.06	178.09	5.03	179.06	179.06	0.0031	2.82			4.31			2360	2360	100.0	0.0	194.16	178.37						
6.147	10-YR	173.06	178.48	5.42	179.06	179.06	0.0031	3.18			4.53			2830	2830	100.0	0.0	196.51	178.80						
6.147	25-YR	173.06	178.95	5.89	179.06	179.06	0.0031	3.60			4.82			3460	3460	100.0	0.0	199.34	179.31						
6.147	50-YR	173.06	179.23	6.17	179.06	179.06	0.0031	3.87	0.08	0.08	5.11	0.34	0.34	3950	3950	100.0	0.0	201.00	179.63						
6.147	100-YR	173.06	179.49	6.43	179.06	179.06	0.0031	4.13	0.22	0.22	5.39	0.64	0.64	4450	4450	100.0	0.0	202.59	179.94						
6.147	200-YR	173.06	179.72	6.66	179.06	179.06	0.0031	4.36	0.33	0.33	5.62	0.85	0.85	4899	4900	100.0	0.0	203.95	180.21						
6.147	500-YR	173.06	179.93	6.87	179.06	179.06	0.0031	4.57	0.43	0.43	5.84	1.03	1.03	5328	5330	100.0	0.0	205.19	180.45						
6.057	2-YR	171.61	173.89	2.28	177.61	177.61	0.0500	2.10			8.27			1560	1560	100.0	0.0	89.66	174.95	39.32	11		191.36	2.13	
6.057	5-YR	171.61	174.58	2.97	177.61	177.61	0.0500	2.69			9.35			2360	2360	100.0	0.0	93.83	175.94						
6.057	10-YR	171.61	174.95	3.34	177.61	177.61	0.0500	2.99			9.86			2830	2830	100.0	0.0	96.02	176.46						
6.057	25-YR	171.61	175.93	4.32	177.61	177.61	0.0500	2.17			8.40			3460	3460	100.0	0.0	189.91	177.02						
6.057	50-YR	171.61	176.13	4.52	177.61	177.61	0.0500	2.36			8.75			3950	3950	100.0	0.0	191.14	177.32						
6.057	100-YR	171.61	176.33	4.72	177.61	177.61	0.0500	2.55			9.09			4450	4450	100.0	0.0	192.34	177.62						
6.057	200-YR	171.61	176.51	4.90	177.61	177.61	0.0500	2.71			9.37			4900	4900	100.0	0.0	193.39	177.87						
6.057	500-YR	171.61	176.67	5.06	177.61	177.61	0.0500	2.85			9.61			5330	5330	100.0	0.0	194.35	178.10						
6.052	2-YR	170.11	173.91	3.80	176.11	176.11	0.0033	3.36			4.69			1560	1560	100.0	0.0	98.81	174.25	26.00	11		216.00	2.19	
6.052	5-YR	170.11	175.09	4.98	176.11	176.11	0.0033	2.78			4.37			2360	2360	100.0	0.0	193.90	175.39						
6.052	10-YR	170.11	175.48	5.37	176.11	176.11	0.0033	3.13			4.60			2830	2830	100.0	0.0	196.21	175.81						
6.052	25-YR	170.11	175.95	5.84	176.11	176.11	0.0033	3.56			4.88			3460	3460	100.0	0.0	199.05	176.32						
6.052	50-YR	170.11	176.23	6.12	176.11	176.11	0.0033	3.82	0.06	0.06	5.18	0.28	0.28	3950	3950	100.0	0.0	201.16	176.64						
6.052	100-YR	170.11	176.49	6.38	176.11	176.11	0.0033	4.08	0.19	0.19	5.46	0.61	0.61	4450	4450	100.0	0.0	203.78	176.95						
6.052	200-YR	170.11	176.71	6.60	176.11	176.11	0.0033	4.30	0.30	0.30	5.69	0.84	0.84	4898	4900	100.0	0.0	206.02	177.22						
6.052	500-YR	170.11	176.92	6.81	176.11	176.11	0.0033	4.51	0.40	0.40	5.91	1.03	1.03	5327	5330	99.9	0.1	208.07	177.46						
5.963	2-YR	168.66	170.94	2.28	174.66	174.66	0.0500	2.10			8.27			1560	1560	100.0	0.0	89.66	172.00	39.32	11		191.36	2.13	
5.963	5-YR	168.66	171.63	2.97	174.66	174.66	0.0500	2.69			9.36			2360	2360	100.0	0.0	93.83	172.99						
5.963	10-YR	168.66	172.00	3.34	174.66	174.66	0.0500	2.99			9.86			2830	2830	100.0	0.0	96.02	173.51						

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
5.963	25-YR	168.66	172.98	4.32	174.66	174.66	0.0500	2.17			8.39			3460	3460	100.0	0.0	189.91	174.07						
5.963	50-YR	168.66	173.19	4.53	174.66	174.66	0.0500	2.36			8.75			3950	3950	100.0	0.0	191.15	174.37						
5.963	100-YR	168.66	173.38	4.72	174.66	174.66	0.0500	2.55			9.09			4450	4450	100.0	0.0	192.35	174.67						
5.963	200-YR	168.66	173.56	4.90	174.66	174.66	0.0500	2.71			9.36			4900	4900	100.0	0.0	193.39	174.92						
5.963	500-YR	168.66	173.72	5.06	174.66	174.66	0.0500	2.85			9.61			5330	5330	100.0	0.0	194.36	175.15						
5.957	2-YR	167.16	171.00	3.84	173.16	173.16	0.0031	3.40			4.64			1560	1560	100.0	0.0	99.06	171.34	25.80	11		216.81	2.19	
5.957	5-YR	167.16	172.18	5.02	173.16	173.16	0.0031	2.82			4.32			2360	2360	100.0	0.0	194.12	172.47						
5.957	10-YR	167.16	172.57	5.41	173.16	173.16	0.0031	3.17			4.54			2830	2830	100.0	0.0	196.47	172.89						
5.957	25-YR	167.16	173.04	5.88	173.16	173.16	0.0031	3.60			4.83			3460	3460	100.0	0.0	199.30	173.40						
5.957	50-YR	167.16	173.32	6.16	173.16	173.16	0.0031	3.86	0.08	0.08	5.12	0.33	0.33	3950	3950	100.0	0.0	201.58	173.72						
5.957	100-YR	167.16	173.58	6.42	173.16	173.16	0.0031	4.12	0.21	0.21	5.40	0.65	0.65	4449	4450	100.0	0.0	204.23	174.04						
5.957	200-YR	167.16	173.81	6.65	173.16	173.16	0.0031	4.35	0.32	0.32	5.63	0.87	0.87	4898	4900	100.0	0.0	206.49	174.30						
5.957	500-YR	167.16	174.01	6.85	173.16	173.16	0.0031	4.55	0.43	0.43	5.85	1.05	1.05	5326	5330	99.9	0.1	208.55	174.54						
5.868	2-YR	165.71	167.99	2.28	171.71	171.71	0.0500	2.10			8.28			1560	1560	100.0	0.0	89.65	169.05	39.32	11		191.36	2.13	
5.868	5-YR	165.71	168.68	2.97	171.71	171.71	0.0500	2.69			9.36			2360	2360	100.0	0.0	93.82	170.04						
5.868	10-YR	165.71	169.05	3.34	171.71	171.71	0.0500	2.99			9.87			2830	2830	100.0	0.0	96.01	170.56						
5.868	25-YR	165.71	170.03	4.32	171.71	171.71	0.0500	2.17			8.39			3460	3460	100.0	0.0	189.92	171.12						
5.868	50-YR	165.71	170.24	4.53	171.71	171.71	0.0500	2.37			8.74			3950	3950	100.0	0.0	191.17	171.42						
5.868	100-YR	165.71	170.44	4.73	171.71	171.71	0.0500	2.55			9.08			4450	4450	100.0	0.0	192.35	171.72						
5.868	200-YR	165.71	170.61	4.90	171.71	171.71	0.0500	2.71			9.36			4900	4900	100.0	0.0	193.40	171.97						
5.868	500-YR	165.71	170.77	5.06	171.71	171.71	0.0500	2.86			9.60			5330	5330	100.0	0.0	194.38	172.20						
5.862	2-YR	164.21	168.06	3.85	170.21	170.21	0.0032	3.40			4.63			1560	1560	100.0	0.0	99.10	168.39	25.74	11		217.00	2.19	
5.862	5-YR	164.21	169.24	5.03	170.21	170.21	0.0032	2.82			4.31			2360	2360	100.0	0.0	194.16	169.52						
5.862	10-YR	164.21	169.64	5.43	170.21	170.21	0.0032	3.19			4.51			2830	2830	100.0	0.0	196.61	169.96						
5.862	25-YR	164.21	170.13	5.92	170.21	170.21	0.0032	3.63			4.78			3460	3460	100.0	0.0	199.50	170.48						
5.862	50-YR	164.21	170.39	6.18	170.21	170.21	0.0032	3.88	0.09	0.09	5.09	0.36	0.36	3950	3950	100.0	0.0	201.83	170.79						
5.862	100-YR	164.21	170.66	6.45	170.21	170.21	0.0032	4.15	0.23	0.23	5.36	0.67	0.67	4449	4450	100.0	0.0	204.54	171.11						
5.862	200-YR	164.21	170.87	6.66	170.21	170.21	0.0032	4.36	0.33	0.33	5.62	0.87	0.87	4898	4900	100.0	0.0	206.60	171.36						
5.862	500-YR	164.21	171.10	6.89	170.21	170.21	0.0032	4.59	0.45	0.45	5.80	1.06	1.06	5326	5330	99.9	0.1	208.91	171.62						
5.773	2-YR	162.76	165.06	2.30	168.76	168.04	0.0500	2.13			8.32			1590	1590	100.0	0.0	89.82	166.14	39.05	11		191.60	2.13	
5.773	5-YR	162.76	165.76	3.00	168.76	168.04	0.0500	2.71			9.40			2400	2400	100.0	0.0	94.01	167.14						
5.773	10-YR	162.76	166.15	3.39	168.76	168.04	0.0500	3.03			9.93			2900	2900	100.0	0.0	96.33	167.68						
5.773	25-YR	162.76	167.11	4.35	168.76	168.04	0.0500	2.20			8.54			3570	3570	100.0	0.0	190.10	168.24						
5.773	50-YR	162.76	167.33	4.57	168.76	168.04	0.0500	2.40			8.83			4060	4060	100.0	0.0	191.41	168.54						
5.773	100-YR	162.76	167.51	4.75	168.76	168.04	0.0500	2.57			9.22			4560	4560	100.0	0.0	192.50	168.83						
5.773	200-YR	162.76	167.69	4.93	168.76	168.04	0.0500	2.73			9.42			4980	4980	100.0	0.0	193.56	169.06						
5.773	500-YR	162.76	167.86	5.10	168.76	168.04	0.0500	2.89			9.73			5480	5480	100.0	0.0	194.63	169.33						
5.768	2-YR	161.26	165.08	3.82	167.26	167.26	0.0034	3.38			4.75			1590	1590	100.0	0.0	98.94	165.43	25.90	11		260.22	2.63	
5.768	5-YR	161.26	166.27	5.01	167.26	167.26	0.0034	2.81			4.40			2400	2400	100.0	0.0	194.08	166.57						

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
5.768	10-YR	161.26	166.70	5.44	167.26	167.26	0.0034	3.20			4.60			2900	2900	100.0	0.0	196.66	167.03						
5.768	25-YR	161.26	167.22	5.96	167.26	167.26	0.0034	3.66			4.88			3570	3570	100.0	0.0	199.74	167.59						
5.768	50-YR	161.26	167.53	6.27	167.26	167.26	0.0034	3.97	0.14	0.00	5.11	0.47	0.05	4060	4060	100.0	0.0	250.65	167.94						
5.768	100-YR	161.26	167.83	6.57	167.26	167.26	0.0034	4.27	0.28	0.30	5.32	0.76	0.80	4547	4560	99.7	0.3	252.72	168.27						
5.768	200-YR	161.26	168.07	6.81	167.26	167.26	0.0034	4.51	0.41	0.54	5.48	0.96	1.17	4947	4980	99.3	0.7	254.38	168.53						
5.768	500-YR	161.26	168.35	7.09	167.26	167.26	0.0034	4.79	0.55	0.81	5.65	1.15	1.52	5414	5480	98.8	1.2	256.37	168.84						
5.678	2-YR	159.81	162.14	2.33	172.28	171.29	0.0500	2.20			8.47			1590	1590	100.0	0.0	85.31	163.25	36.61	10	28.60	138.60	1.62	1.42
5.678	5-YR	159.81	162.86	3.05	172.28	171.29	0.0500	2.84			9.57			2400	2400	100.0	0.0	88.22	164.29						
5.678	10-YR	159.81	163.25	3.44	172.28	171.29	0.0500	3.18			10.17			2900	2900	100.0	0.0	89.77	164.86						
5.678	25-YR	159.81	164.11	4.30	172.28	171.29	0.0500	2.79			9.48			3570	3570	100.0	0.0	135.04	165.51						
5.678	50-YR	159.81	164.38	4.57	172.28	171.29	0.0500	3.00			9.83			4060	4060	100.0	0.0	137.71	165.88						
5.678	100-YR	159.81	164.64	4.83	172.28	171.29	0.0500	3.20			10.16			4560	4560	100.0	0.0	140.29	166.24						
5.678	200-YR	159.81	164.85	5.04	172.28	171.29	0.0500	3.36			10.41			4980	4980	100.0	0.0	142.37	166.53						
5.678	500-YR	159.81	165.07	5.26	172.28	171.29	0.0500	3.53			10.74			5480	5480	100.0	0.0	144.58	166.86						
5.673	2-YR	158.31	162.27	3.96	173.17	171.02	0.0030	3.62			4.78			1590	1590	100.0	0.0	91.85	162.63	23.19	10		171.21	1.86	
5.673	5-YR	158.31	163.44	5.13	173.17	171.02	0.0030	3.43			4.88			2400	2400	100.0	0.0	143.32	163.81						
5.673	10-YR	158.31	163.93	5.62	173.17	171.02	0.0030	3.80			5.15			2900	2900	100.0	0.0	148.20	164.34						
5.673	25-YR	158.31	164.51	6.20	173.17	171.02	0.0030	4.22			5.49			3570	3570	100.0	0.0	154.01	164.98						
5.673	50-YR	158.31	164.86	6.55	173.17	171.02	0.0030	4.48			5.76			4060	4060	100.0	0.0	157.50	165.37						
5.673	100-YR	158.31	165.12	6.81	173.17	171.02	0.0030	4.66			6.11			4560	4560	100.0	0.0	160.07	165.70						
5.673	200-YR	158.31	165.33	7.02	173.17	171.02	0.0030	4.81			6.38			4980	4980	100.0	0.0	162.24	165.96						
5.673	500-YR	158.31	165.59	7.28	173.17	171.02	0.0030	4.99			6.66			5480	5480	100.0	0.0	164.83	166.28						
5.584	2-YR	156.86	159.19	2.33	168.29	168.36	0.0500	2.20			8.47			1590	1590	100.0	0.0	85.31	160.30	36.61	10		138.60	1.62	
5.584	5-YR	156.86	159.91	3.05	168.29	168.36	0.0500	2.84			9.57			2400	2400	100.0	0.0	88.22	161.34						
5.584	10-YR	156.86	160.30	3.44	168.29	168.36	0.0500	3.18			10.17			2900	2900	100.0	0.0	89.77	161.91						
5.584	25-YR	156.86	161.16	4.30	168.29	168.36	0.0500	2.79			9.48			3570	3570	100.0	0.0	135.04	162.56						
5.584	50-YR	156.86	161.43	4.57	168.29	168.36	0.0500	3.00			9.83			4060	4060	100.0	0.0	137.71	162.93						
5.584	100-YR	156.86	161.87	5.01	168.29	168.36	0.0500	3.34			9.61			4560	4560	100.0	0.0	142.10	163.30						
5.584	200-YR	156.86	162.22	5.36	168.29	168.36	0.0500	3.60			9.49			4980	4980	100.0	0.0	145.60	163.62						
5.584	500-YR	156.86	162.61	5.75	168.29	168.36	0.0500	3.90			9.40			5480	5480	100.0	0.0	149.53	163.99						
5.578	2-YR	155.36	159.32	3.96	168.47	168.19	0.0031	3.62			4.78			1590	1590	100.0	0.0	91.84	159.68	23.19	10		171.20	1.86	
5.578	5-YR	155.36	160.49	5.13	168.47	168.19	0.0031	3.43			4.88			2400	2400	100.0	0.0	143.34	160.86						
5.578	10-YR	155.36	160.98	5.62	168.47	168.19	0.0031	3.80			5.16			2900	2900	100.0	0.0	148.17	161.39						
5.578	25-YR	155.36	161.58	6.22	168.47	168.19	0.0031	4.24			5.46			3570	3570	100.0	0.0	154.23	162.05						
5.578	50-YR	155.36	161.98	6.62	168.47	168.19	0.0031	4.53			5.67			4060	4060	100.0	0.0	158.19	162.48						
5.578	100-YR	155.36	162.37	7.01	168.47	168.19	0.0031	4.80			5.86			4560	4560	100.0	0.0	162.05	162.90						
5.578	200-YR	155.36	162.68	7.32	168.47	168.19	0.0031	5.02			6.01			4980	4980	100.0	0.0	165.18	163.24						
5.578	500-YR	155.36	163.04	7.68	168.47	168.19	0.0031	5.27			6.16			5480	5480	100.0	0.0	168.79	163.63						
5.489	2-YR	153.91	156.24	2.33	168.85	169.06	0.0500	2.20			8.47			1590	1590	100.0	0.0	85.31	157.35	36.61	10		103.32	1.21	

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
5.489	5-YR	153.91	156.95	3.04	168.85	169.06	0.0500	2.83			9.60			2400	2400	100.0	0.0	88.18	158.39						
5.489	10-YR	153.91	157.35	3.44	168.85	169.06	0.0500	3.18			10.17			2900	2900	100.0	0.0	89.77	158.96						
5.489	25-YR	153.91	157.97	4.06	168.85	169.06	0.0500	3.35			10.45			3570	3570	100.0	0.0	102.11	159.66						
5.489	50-YR	153.91	158.27	4.36	168.85	169.06	0.0500	3.63			10.88			4060	4060	100.0	0.0	102.72	160.11						
5.489	100-YR	153.91	158.57	4.66	168.85	169.06	0.0500	3.91			11.29			4560	4560	100.0	0.0	103.32	160.55						
5.489	200-YR	153.91	158.81	4.90	168.85	169.06	0.0500	4.13			11.61			4980	4980	100.0	0.0	103.81	160.91						
5.489	500-YR	153.91	159.09	5.18	168.85	169.06	0.0500	4.39			11.96			5480	5480	100.0	0.0	104.37	161.32						
5.467	2-YR	147.91	151.81	3.90	164.65	164.75	0.0029	3.56			4.87			1590	1590	100.0	0.0	91.58	152.17	23.48	10		109.60	1.20	
5.467	5-YR	147.91	152.69	4.78	164.65	164.75	0.0029	4.02			5.77			2400	2400	100.0	0.0	103.56	153.21						
5.467	10-YR	147.91	153.21	5.30	164.65	164.75	0.0029	4.50			6.17			2900	2900	100.0	0.0	104.60	153.80						
5.467	25-YR	147.91	153.75	5.84	164.65	164.75	0.0029	4.99			6.78			3570	3570	100.0	0.0	105.68	154.46						
5.467	50-YR	147.91	154.12	6.21	164.65	164.75	0.0029	5.33			7.16			4060	4060	100.0	0.0	106.43	154.92						
5.467	100-YR	147.91	154.50	6.59	164.65	164.75	0.0029	5.66			7.51			4560	4560	100.0	0.0	107.18	155.38						
5.467	200-YR	147.91	154.81	6.90	164.65	164.75	0.0029	5.94			7.78			4980	4980	100.0	0.0	107.80	155.75						
5.467	500-YR	147.91	155.17	7.26	164.65	164.75	0.0029	6.26			8.07			5480	5480	100.0	0.0	108.51	156.18						
5.395	2-YR	146.81	149.16	2.35	158.35	158.35	0.0499	2.22			8.38			1590	1590	100.0	0.0	85.40	150.25	36.34	10		103.40	1.21	
5.395	5-YR	146.81	150.24	3.43	158.35	158.35	0.0499	3.17			8.43			2400	2400	100.0	0.0	89.74	151.35						
5.395	10-YR	146.81	150.84	4.03	158.35	158.35	0.0499	3.32			8.55			2900	2900	100.0	0.0	102.06	151.98						
5.395	25-YR	146.81	151.52	4.71	158.35	158.35	0.0499	3.96			8.72			3570	3570	100.0	0.0	103.43	152.70						
5.395	50-YR	146.81	152.00	5.19	158.35	158.35	0.0499	4.39			8.86			4060	4060	100.0	0.0	104.37	153.21						
5.395	100-YR	146.81	152.45	5.64	158.35	158.35	0.0499	4.80			9.02			4560	4560	100.0	0.0	105.27	153.71						
5.395	200-YR	146.81	152.82	6.01	158.35	158.35	0.0499	5.14			9.15			4980	4980	100.0	0.0	106.01	154.11						
5.395	500-YR	146.81	153.23	6.42	158.35	158.35	0.0499	5.51			9.31			5480	5480	100.0	0.0	106.84	154.58						
5.389	2-YR	145.31	149.59	4.28	158.01	157.99	0.0031	3.55			4.37			1590	1590	100.0	0.0	102.55	149.88	23.96	10		111.12	1.08	
5.389	5-YR	145.31	150.63	5.32	158.01	157.99	0.0031	4.51			5.09			2400	2400	100.0	0.0	104.63	151.03						
5.389	10-YR	145.31	151.20	5.89	158.01	157.99	0.0031	5.04			5.44			2900	2900	100.0	0.0	105.79	151.66						
5.389	25-YR	145.31	151.86	6.55	158.01	157.99	0.0031	5.63			5.92			3570	3570	100.0	0.0	107.11	152.41						
5.389	50-YR	145.31	152.32	7.01	158.01	157.99	0.0031	6.04			6.22			4060	4060	100.0	0.0	108.03	152.92						
5.389	100-YR	145.31	152.77	7.46	158.01	157.99	0.0031	6.43			6.51			4560	4560	100.0	0.0	108.92	153.43						
5.389	200-YR	145.31	153.13	7.82	158.01	157.99	0.0031	6.75			6.72			4980	4980	100.0	0.0	109.65	153.84						
5.389	500-YR	145.31	153.55	8.24	158.01	157.99	0.0031	7.11			6.97			5480	5480	100.0	0.0	110.47	154.30						
5.300	2-YR	143.86	146.56	2.70	155.51	155.51	0.0500	2.49			9.01			1590	1590	100.0	0.0	70.80	147.82	26.22	10		88.80	1.25	
5.300	5-YR	143.86	147.38	3.52	155.51	155.51	0.0500	3.18			10.18			2400	2400	100.0	0.0	74.07	148.99						
5.300	10-YR	143.86	147.97	4.11	155.51	155.51	0.0500	3.26			10.31			2900	2900	100.0	0.0	86.21	149.62						
5.300	25-YR	143.86	148.48	4.62	155.51	155.51	0.0500	3.73			10.96			3570	3570	100.0	0.0	87.24	150.35						
5.300	50-YR	143.86	148.82	4.96	155.51	155.51	0.0500	4.05			11.42			4060	4060	100.0	0.0	87.92	150.85						
5.300	100-YR	143.86	149.16	5.30	155.51	155.51	0.0500	4.35			11.84			4560	4560	100.0	0.0	88.59	151.33						
5.300	200-YR	143.86	149.41	5.55	155.51	155.51	0.0500	4.58			12.21			4980	4980	100.0	0.0	89.10	151.73						
5.300	500-YR	143.86	149.72	5.86	155.51	155.51	0.0500	4.86			12.58			5480	5480	100.0	0.0	89.73	152.18						

Aliso Creek - Alternative 4

Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
5.294	2-YR	142.36	146.17	3.81	171.86	155.76	0.0000	3.42			6.18			1590	1590	100.0	0.0	75.22	146.76	19.74	10		93.24	1.24	
5.294	5-YR	142.36	147.25	4.89	171.86	155.76	0.0000	3.98			6.87			2400	2400	100.0	0.0	87.78	147.98						
5.294	10-YR	142.36	147.73	5.37	171.86	155.76	0.0000	4.41			7.40			2900	2900	100.0	0.0	88.74	148.58						
5.294	25-YR	142.36	148.33	5.97	171.86	155.76	0.0000	4.95			8.01			3570	3570	100.0	0.0	89.94	149.33						
5.294	50-YR	142.36	148.74	6.38	171.86	155.76	0.0000	5.32			8.41			4060	4060	100.0	0.0	90.76	149.84						
5.294	100-YR	142.36	149.14	6.78	171.86	155.76	0.0000	5.67			8.79			4560	4560	100.0	0.0	91.56	150.34						
5.294	200-YR	142.36	149.46	7.10	171.86	155.76	0.0000	5.95			9.08			4980	4980	100.0	0.0	92.20	150.74						
5.294	500-YR	142.36	149.83	7.47	171.86	155.76	0.0000	6.27			9.41			5480	5480	100.0	0.0	92.94	151.20						
5.000		Bridge																							
4.946	2-YR	141.49	144.99	3.50	145.49	145.49	0.0040	3.23			5.47			1590	1590	100.0	0.0	90.02	145.46	25.72	9	31.17	102.99	1.14	1.25
4.946	5-YR	141.49	145.88	4.39	145.49	145.49	0.0040	4.05	0.39	0.20	6.44	0.46	0.81	2399	2400	100.0	0.0	97.79	146.53						
4.946	10-YR	141.49	146.36	4.87	145.49	145.49	0.0040	4.52	0.87	0.43	6.96	0.74	1.37	2896	2900	99.9	0.1	98.74	147.11						
4.946	25-YR	141.49	146.94	5.45	145.49	145.49	0.0040	5.10	1.45	0.72	7.58	0.98	1.94	3559	3570	99.7	0.3	99.89	147.83						
4.946	50-YR	141.49	147.30	5.81	145.49	145.49	0.0040	5.47	1.81	0.91	8.04	1.11	2.28	4042	4060	99.6	0.4	100.62	148.30						
4.946	100-YR	141.49	147.65	6.16	145.49	145.49	0.0040	5.81	2.16	1.08	8.48	1.22	2.60	4535	4560	99.4	0.6	101.31	148.76						
4.946	200-YR	141.49	147.94	6.45	145.49	145.49	0.0040	6.11	2.45	1.23	8.81	1.30	2.84	4947	4980	99.3	0.7	101.90	149.14						
4.946	500-YR	141.49	148.27	6.78	145.49	145.49	0.0040	6.43	2.78	1.39	9.19	1.39	3.11	5437	5480	99.2	0.8	102.55	149.57						
4.919	2-YR	140.92	143.25	2.33	144.92	144.92	0.0500	2.20			8.47			1590	1590	100.0	0.0	85.31	144.36	36.61	9		115.32	1.35	
4.919	5-YR	140.92	143.96	3.04	144.92	144.92	0.0500	2.83			9.60			2400	2400	100.0	0.0	88.18	145.40						
4.919	10-YR	140.92	144.36	3.44	144.92	144.92	0.0500	3.18			10.17			2900	2900	100.0	0.0	89.77	145.97						
4.919	25-YR	140.92	144.86	3.94	144.92	144.92	0.0500	3.60			10.80			3570	3570	100.0	0.0	91.76	146.67						
4.919	50-YR	140.92	145.22	4.30	144.92	144.92	0.0500	3.95	0.30	0.15	11.15	0.71	1.19	4055	4060	99.9	0.1	114.60	147.15						
4.919	100-YR	140.92	145.56	4.64	144.92	144.92	0.0500	4.30	0.64	0.32	11.49	1.13	1.92	4543	4560	99.6	0.4	115.29	147.61						
4.919	200-YR	140.92	145.81	4.89	144.92	144.92	0.0500	4.55	0.89	0.45	11.84	1.38	2.37	4951	4980	99.4	0.6	115.79	147.98						
4.919	500-YR	140.92	146.11	5.19	144.92	144.92	0.0500	4.84	1.19	0.59	12.20	1.64	2.84	5433	5480	99.1	0.9	116.38	148.40						
4.896	2-YR	134.92	138.53	3.61	138.92	138.92	0.0040	3.32			5.30			1590	1590	100.0	0.0	90.43	138.96	25.05	8	30.76	131.44	1.45	1.67
4.896	5-YR	134.92	139.80	4.88	138.92	138.92	0.0040	4.53	0.88	0.44	5.71	0.67	1.13	2380	2400	99.2	0.8	126.76	140.30						
4.896	10-YR	134.92	140.67	5.75	138.92	138.92	0.0040	5.40	1.75	0.87	5.72	0.92	1.60	2842	2900	98.0	2.0	128.50	141.17						
4.896	25-YR	134.92	141.72	6.80	138.92	138.92	0.0040	6.45	2.80	1.40	5.81	1.12	1.98	3451	3570	96.7	3.3	130.60	142.23						
4.896	50-YR	134.92	142.46	7.54	138.92	138.92	0.0040	7.19	3.54	1.77	5.88	1.22	2.17	3891	4060	95.8	4.2	132.08	142.98						
4.896	100-YR	134.92	143.28	8.36	138.92	138.92	0.0040	8.02	4.36	2.18	5.87	1.28	2.32	4332	4560	95.0	5.0	133.73	143.79						
4.896	200-YR	134.92	144.15	9.23	138.92	138.92	0.0040	8.88	5.23	2.62	5.74	1.30	2.39	4691	4980	94.2	5.8	135.46	144.64						
4.896	500-YR	134.92	145.22	10.30	138.92	138.92	0.0040	9.95	6.30	3.15	5.59	1.30	2.44	5113	5480	93.3	6.7	137.60	145.67						
4.843	2-YR	133.80	136.13	2.33	137.80	137.80	0.0500	2.20			8.47			1590	1590	100.0	0.0	85.31	137.24	36.61	8		118.32	1.39	
4.843	5-YR	133.80	137.19	3.39	137.80	137.80	0.0500	3.13			10.09			2830	2830	100.0	0.0	89.55	138.77						
4.843	10-YR	133.80	137.93	4.13	137.80	137.80	0.0500	3.78	0.13	0.07	10.94	0.41	0.69	3809	3810	100.0	0.0	117.26	139.79						
4.843	25-YR	133.80	138.79	4.99	137.80	137.80	0.0500	4.64	0.99	0.49	11.90	1.47	2.52	5081	5120	99.2	0.8	118.98	140.97						
4.843	50-YR	133.80	139.36	5.56	137.80	137.80	0.0500	5.21	1.56	0.78	12.55	1.91	3.33	6017	6100	98.6	1.4	120.12	141.77						
4.843	100-YR	133.80	139.97	6.17	137.80	137.80	0.0500	5.82	2.17	1.08	13.26	2.30	4.07	7096	7240	98.0	2.0	121.33	142.64						

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
4.843	200-YR	133.80	140.56	6.76	137.80	137.80	0.0500	6.41	2.76	1.38	14.00	2.64	4.73	8261	8480	97.4	2.6	122.52	143.53						
4.843	500-YR	133.80	141.33	7.53	137.80	137.80	0.0500	7.19	3.53	1.77	14.77	2.99	5.46	9768	10100	96.7	3.3	124.07	144.62						
4.821	2-YR	127.80	131.18	3.38	131.80	131.80	0.0055	3.13			5.68			1590	1590	100.0	0.0	89.54	131.68	26.49	8		118.52	1.32	
4.821	5-YR	127.80	133.48	5.68	131.80	131.80	0.0055	5.33	1.68	0.84	5.70	0.89	1.56	2794	2830	98.7	1.3	116.35	133.97						
4.821	10-YR	127.80	135.02	7.22	131.80	131.80	0.0055	6.87	3.22	1.61	5.87	1.14	2.10	3711	3810	97.4	2.6	119.44	135.54						
4.821	25-YR	127.80	136.83	9.03	131.80	131.80	0.0055	8.68	5.03	2.52	6.16	1.32	2.54	4917	5120	96.0	4.0	123.06	137.40						
4.821	50-YR	127.80	138.05	10.25	131.80	131.80	0.0055	9.90	6.25	3.12	6.38	1.40	2.78	5808	6100	95.2	4.8	125.49	138.65						
4.821	100-YR	127.80	139.33	11.53	131.80	131.80	0.0055	11.19	7.53	3.77	6.64	1.48	3.02	6835	7240	94.4	5.6	128.07	139.99						
4.821	200-YR	127.80	140.61	12.81	131.80	131.80	0.0055	12.47	8.81	4.41	6.92	1.54	3.26	7941	8480	93.6	6.4	130.63	141.32						
4.821	500-YR	127.80	142.14	14.34	131.80	131.80	0.0055	13.99	10.34	5.17	7.28	1.62	3.53	9372	10100	92.8	7.2	133.67	142.91						
4.741	2-YR	125.51	130.73	5.22	129.51	129.51	0.0110	4.87	1.22	0.61	3.52	0.47	0.83	1579	1590	99.3	0.7	111.44	130.92	21.35	8		121.88	1.09	
4.741	5-YR	125.51	133.20	7.69	129.51	129.51	0.0110	7.34	3.69	1.84	4.09	0.80	1.53	2759	2830	97.5	2.5	116.38	133.45						
4.741	10-YR	125.51	134.79	9.28	129.51	129.51	0.0110	8.93	5.28	2.64	4.47	0.93	1.87	3674	3810	96.4	3.6	119.57	135.09						
4.741	25-YR	125.51	136.63	11.12	129.51	129.51	0.0110	10.78	7.12	3.56	4.92	1.05	2.21	4881	5120	95.3	4.7	123.25	136.99						
4.741	50-YR	125.51	137.86	12.35	129.51	129.51	0.0110	12.01	8.35	4.18	5.23	1.12	2.43	5772	6100	94.6	5.4	125.71	138.27						
4.741	100-YR	125.51	139.16	13.65	129.51	129.51	0.0110	13.31	9.65	4.83	5.55	1.18	2.66	6799	7240	93.9	6.1	128.31	139.62						
4.741	200-YR	125.51	140.45	14.94	129.51	129.51	0.0110	14.59	10.94	5.47	5.89	1.24	2.88	7905	8480	93.2	6.8	130.88	140.96						
4.741	500-YR	125.51	141.98	16.47	129.51	129.51	0.0110	16.12	12.47	6.24	6.29	1.30	3.14	9335	10100	92.4	7.6	133.94	142.56						
4.726	2-YR	124.63	129.42	4.79	145.35	145.91	0.0000	4.09			8.58			1590	1590	100.0	0.0	45.34	130.56	9.47	8		58.07	1.28	
4.726	5-YR	124.63	131.42	6.79	145.35	145.91	0.0000	5.58			10.07			2830	2830	100.0	0.0	50.40	132.99						
4.726	10-YR	124.63	132.71	8.08	145.35	145.91	0.0000	6.47			10.95			3810	3810	100.0	0.0	53.78	134.57						
4.726	25-YR	124.63	134.23	9.60	145.35	145.91	0.0000	7.45			11.82			5120	5120	100.0	0.0	58.12	136.40						
4.726	50-YR	124.63	135.29	10.66	145.35	145.91	0.0000	8.12			12.29			6100	6100	100.0	0.0	61.16	137.63						
4.726	100-YR	124.63	136.41	11.78	145.35	145.91	0.0000	8.78			12.77			7240	7240	100.0	0.0	64.59	138.94						
4.726	200-YR	124.63	137.55	12.92	145.35	145.91	0.0000	9.29			13.19			8480	8480	100.0	0.0	69.26	140.25						
4.726	500-YR	124.63	139.01	14.38	145.35	145.91	0.0000	9.85			13.48			10100	10100	100.0	0.0	76.07	141.83						
4.725		Bridge																							
4.723	2-YR	124.55	128.54	3.99	145.27	145.83	0.0135	3.46			10.61			1590	1590	100.0	0.0	43.31	130.29	10.85	8		53.51	1.24	
4.723	5-YR	124.55	130.24	5.69	145.27	145.83	0.0135	4.77			12.45			2830	2830	100.0	0.0	47.62	132.65						
4.723	10-YR	124.55	131.38	6.83	145.27	145.83	0.0135	5.61			13.45			3810	3810	100.0	0.0	50.51	134.19						
4.723	25-YR	124.55	132.72	8.17	145.27	145.83	0.0135	6.53			14.51			5120	5120	100.0	0.0	54.04	135.98						
4.723	50-YR	124.55	133.61	9.06	145.27	145.83	0.0135	7.11			15.15			6100	6100	100.0	0.0	56.60	137.18						
4.723	100-YR	124.55	134.57	10.02	145.27	145.83	0.0135	7.72			15.81			7240	7240	100.0	0.0	59.33	138.45						
4.723	200-YR	124.55	135.53	10.98	145.27	145.83	0.0135	8.31			16.43			8480	8480	100.0	0.0	62.11	139.72						
4.723	500-YR	124.55	136.70	12.15	145.27	145.83	0.0135	8.97			17.08			10100	10100	100.0	0.0	65.92	141.23						
4.711	2-YR	123.71	128.12	4.41	129.71	129.71	0.0025	2.26			3.70			1590	1590	100.0	0.0	190.47	128.33	43.19	8		228.20	1.20	
4.711	5-YR	123.71	129.24	5.53	129.71	129.71	0.0025	3.28			4.38			2830	2830	100.0	0.0	197.18	129.54						
4.711	10-YR	123.71	129.92	6.21	129.71	129.71	0.0025	3.91	0.11	0.11	4.87	0.21	0.21	3810	3810	100.0	0.0	202.11	130.29						

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
4.711	25-YR	123.71	130.62	6.91	129.71	129.71	0.0025	4.61	0.45	0.45	5.55	0.57	0.57	5118	5120	100.0	0.0	209.07	131.10						
4.711	50-YR	123.71	131.08	7.37	129.71	129.71	0.0025	5.07	0.68	0.68	6.01	0.76	0.76	6093	6100	99.9	0.1	213.69	131.64						
4.711	100-YR	123.71	131.54	7.83	129.71	129.71	0.0025	5.53	0.92	0.92	6.53	0.95	0.95	7224	7240	99.8	0.2	218.33	132.20						
4.711	200-YR	123.71	132.01	8.30	129.71	129.71	0.0025	6.00	1.15	1.15	7.04	1.13	1.13	8450	8480	99.6	0.4	223.00	132.78						
4.711	500-YR	123.71	132.59	8.88	129.71	129.71	0.0025	6.58	1.44	1.44	7.63	1.34	1.34	10045	10100	99.5	0.5	228.78	133.49						
4.626	2-YR	122.58	124.88	2.30	128.58	128.58	0.0500	2.13			8.32			1590	1590	100.0	0.0	89.83	125.96	39.06	8		191.60	2.13	
4.626	5-YR	122.58	125.92	3.34	128.58	128.58	0.0500	2.99			9.86			2830	2830	100.0	0.0	96.02	127.43						
4.626	10-YR	122.58	127.05	4.47	128.58	128.58	0.0500	2.31			8.66			3810	3810	100.0	0.0	190.79	128.21						
4.626	25-YR	122.58	127.54	4.96	128.58	128.58	0.0500	2.77			9.56			5120	5120	100.0	0.0	193.78	128.96						
4.626	50-YR	122.58	127.90	5.32	128.58	128.58	0.0500	3.09			10.09			6100	6100	100.0	0.0	195.90	129.48						
4.626	100-YR	122.58	128.36	5.78	128.58	128.58	0.0500	3.50			10.41			7240	7240	100.0	0.0	198.66	130.04						
4.626	200-YR	122.58	128.83	6.25	128.58	128.58	0.0500	3.95	0.12	0.12	10.74	0.51	0.50	8480	8480	100.0	0.0	201.75	130.62						
4.626	500-YR	122.58	129.38	6.80	128.58	128.58	0.0500	4.50	0.40	0.40	11.22	1.07	1.06	10098	10100	100.0	0.0	205.66	131.33						
4.620	2-YR	121.08	124.97	3.89	127.08	127.08	0.0025	3.44			4.66			1590	1590	100.0	0.0	99.36	125.31	25.54	8		212.05	2.13	
4.620	5-YR	121.08	126.61	5.53	127.08	127.08	0.0025	3.28			4.37			2830	2830	100.0	0.0	197.20	126.91						
4.620	10-YR	121.08	127.30	6.22	127.08	127.08	0.0025	3.92	0.11	0.11	4.86	0.21	0.21	3810	3810	100.0	0.0	201.46	127.66						
4.620	25-YR	121.08	127.99	6.91	127.08	127.08	0.0025	4.61	0.46	0.46	5.55	0.57	0.56	5118	5120	100.0	0.0	206.18	128.47						
4.620	50-YR	121.08	128.45	7.37	127.08	127.08	0.0025	5.07	0.69	0.69	6.01	0.76	0.75	6095	6100	99.9	0.1	209.31	129.01						
4.620	100-YR	121.08	128.94	7.86	127.08	127.08	0.0025	5.56	0.93	0.93	6.51	0.94	0.93	7229	7240	99.8	0.2	212.57	129.59						
4.620	200-YR	121.08	129.41	8.33	127.08	127.08	0.0025	6.03	1.16	1.16	7.01	1.12	1.11	8460	8480	99.8	0.2	215.78	130.17						
4.620	500-YR	121.08	129.98	8.90	127.08	127.08	0.0025	6.60	1.45	1.45	7.62	1.33	1.31	10062	10100	99.6	0.4	219.65	130.88						
4.535	2-YR	119.96	122.59	2.63	125.96	125.96	0.0500	2.40			7.22			1590	1590	100.0	0.0	91.76	123.40	34.89	8		195.56	2.13	
4.535	5-YR	119.96	123.30	3.34	125.96	125.96	0.0500	2.99			9.86			2830	2830	100.0	0.0	96.02	124.81						
4.535	10-YR	119.96	124.43	4.47	125.96	125.96	0.0500	2.31			8.66			3810	3810	100.0	0.0	190.79	125.59						
4.535	25-YR	119.96	124.92	4.96	125.96	125.96	0.0500	2.77			9.56			5120	5120	100.0	0.0	193.78	126.34						
4.535	50-YR	119.96	125.28	5.32	125.96	125.96	0.0500	3.09			10.09			6100	6100	100.0	0.0	195.90	126.86						
4.535	100-YR	119.96	125.70	5.74	125.96	125.96	0.0500	3.47			10.53			7240	7240	100.0	0.0	198.43	127.42						
4.535	200-YR	119.96	126.15	6.19	125.96	125.96	0.0500	3.89	0.10	0.10	10.90	0.44	0.43	8480	8480	100.0	0.0	201.32	127.99						
4.535	500-YR	119.96	126.72	6.76	125.96	125.96	0.0500	4.46	0.38	0.38	11.33	1.05	1.03	10098	10100	100.0	0.0	205.22	128.71						
4.529	2-YR	118.46	122.87	4.41	124.46	124.46	0.0025	2.26			3.70			1590	1590	100.0	0.0	190.47	123.08	43.19	8		218.29	1.15	
4.529	5-YR	118.46	123.99	5.53	124.46	124.46	0.0025	3.28			4.38			2830	2830	100.0	0.0	197.18	124.29						
4.529	10-YR	118.46	124.67	6.21	124.46	124.46	0.0025	3.91	0.11	0.11	4.87	0.21	0.21	3810	3810	100.0	0.0	201.37	125.04						
4.529	25-YR	118.46	125.37	6.91	124.46	124.46	0.0025	4.61	0.45	0.45	5.56	0.56	0.56	5119	5120	100.0	0.0	205.88	125.85						
4.529	50-YR	118.46	125.83	7.37	124.46	124.46	0.0025	5.07	0.68	0.68	6.01	0.75	0.75	6095	6100	99.9	0.1	208.88	126.39						
4.529	100-YR	118.46	126.29	7.83	124.46	124.46	0.0025	5.53	0.92	0.92	6.53	0.94	0.93	7230	7240	99.9	0.1	211.89	126.95						
4.529	200-YR	118.46	126.76	8.30	124.46	124.46	0.0025	6.00	1.15	1.15	7.05	1.12	1.11	8461	8480	99.8	0.2	214.92	127.53						
4.529	500-YR	118.46	127.34	8.88	124.46	124.46	0.0025	6.58	1.44	1.44	7.65	1.32	1.31	10065	10100	99.6	0.4	218.65	128.24						
4.444	2-YR	117.33	119.63	2.30	123.33	123.33	0.0500	2.13			8.32			1590	1590	100.0	0.0	89.83	120.71	39.06	8		191.60	2.13	
4.444	5-YR	117.33	120.67	3.34	123.33	123.33	0.0500	2.99			9.86			2830	2830	100.0	0.0	96.02	122.18						

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
4.444	10-YR	117.33	121.80	4.47	123.33	123.33	0.0500	2.31			8.66			3810	3810	100.0	0.0	190.79	122.96						
4.444	25-YR	117.33	122.29	4.96	123.33	123.33	0.0500	2.77			9.56			5120	5120	100.0	0.0	193.78	123.71						
4.444	50-YR	117.33	122.65	5.32	123.33	123.33	0.0500	3.09			10.09			6100	6100	100.0	0.0	195.90	124.23						
4.444	100-YR	117.33	123.11	5.78	123.33	123.33	0.0500	3.50			10.41			7240	7240	100.0	0.0	198.67	124.79						
4.444	200-YR	117.33	123.58	6.25	123.33	123.33	0.0500	3.95	0.12	0.12	10.74	0.52	0.51	8480	8480	100.0	0.0	202.29	125.37						
4.444	500-YR	117.33	124.13	6.80	123.33	123.33	0.0500	4.50	0.40	0.40	11.21	1.09	1.06	10097	10100	100.0	0.0	207.38	126.08						
4.438	2-YR	115.83	119.72	3.89	121.83	121.83	0.0025	3.44			4.66			1590	1590	100.0	0.0	99.36	120.06	25.54	8		210.68	2.12	
4.438	5-YR	115.83	121.36	5.53	121.83	121.83	0.0025	3.28			4.37			2830	2830	100.0	0.0	197.20	121.66						
4.438	10-YR	115.83	122.05	6.22	121.83	121.83	0.0025	3.92	0.11	0.11	4.86	0.21	0.21	3810	3810	100.0	0.0	201.29	122.41						
4.438	25-YR	115.83	122.74	6.91	121.83	121.83	0.0025	4.61	0.46	0.46	5.55	0.56	0.56	5119	5120	100.0	0.0	205.47	123.22						
4.438	50-YR	115.83	123.20	7.37	121.83	121.83	0.0025	5.07	0.69	0.69	6.01	0.75	0.75	6096	6100	99.9	0.1	208.25	123.76						
4.438	100-YR	115.83	123.69	7.86	121.83	121.83	0.0025	5.56	0.93	0.93	6.51	0.93	0.93	7230	7240	99.9	0.1	211.13	124.34						
4.438	200-YR	115.83	124.16	8.33	121.83	121.83	0.0025	6.03	1.16	1.16	7.02	1.11	1.11	8462	8480	99.8	0.2	213.98	124.92						
4.438	500-YR	115.83	124.73	8.90	121.83	121.83	0.0025	6.60	1.45	1.45	7.62	1.31	1.31	10067	10100	99.7	0.3	217.40	125.63						
4.353	2-YR	114.71	117.34	2.63	120.71	120.71	0.0500	2.40			7.22			1590	1590	100.0	0.0	91.76	118.15	34.89	8		195.56	2.13	
4.353	5-YR	114.71	118.05	3.34	120.71	120.71	0.0500	2.99			9.86			2830	2830	100.0	0.0	96.02	119.56						
4.353	10-YR	114.71	119.18	4.47	120.71	120.71	0.0500	2.31			8.66			3810	3810	100.0	0.0	190.79	120.34						
4.353	25-YR	114.71	119.67	4.96	120.71	120.71	0.0500	2.77			9.56			5120	5120	100.0	0.0	193.78	121.09						
4.353	50-YR	114.71	120.03	5.32	120.71	120.71	0.0500	3.09			10.09			6100	6100	100.0	0.0	195.90	121.61						
4.353	100-YR	114.71	120.45	5.74	120.71	120.71	0.0500	3.47			10.53			7240	7240	100.0	0.0	198.43	122.17						
4.353	200-YR	114.71	120.90	6.19	120.71	120.71	0.0500	3.89	0.10	0.10	10.90	0.45	0.44	8480	8480	100.0	0.0	202.13	122.74						
4.353	500-YR	114.71	121.46	6.75	120.71	120.71	0.0500	4.45	0.38	0.38	11.34	1.06	1.05	10097	10100	100.0	0.0	208.39	123.46						
4.347	2-YR	113.21	117.62	4.41	119.21	119.21	0.0025	2.26			3.70			1590	1590	100.0	0.0	190.47	117.83	43.19	8		230.32	1.21	
4.347	5-YR	113.21	118.74	5.53	119.21	119.21	0.0025	3.28			4.38			2830	2830	100.0	0.0	197.18	119.04						
4.347	10-YR	113.21	119.42	6.21	119.21	119.21	0.0025	3.91	0.11	0.11	4.87	0.21	0.21	3810	3810	100.0	0.0	202.27	119.79						
4.347	25-YR	113.21	120.12	6.91	119.21	119.21	0.0025	4.61	0.45	0.45	5.55	0.57	0.57	5117	5120	100.0	0.0	209.74	120.60						
4.347	50-YR	113.21	120.58	7.37	119.21	119.21	0.0025	5.07	0.68	0.68	6.01	0.77	0.76	6092	6100	99.9	0.1	214.71	121.14						
4.347	100-YR	113.21	121.04	7.83	119.21	119.21	0.0025	5.53	0.92	0.92	6.53	0.95	0.95	7223	7240	99.8	0.2	219.72	121.70						
4.347	200-YR	113.21	121.51	8.30	119.21	119.21	0.0025	6.00	1.15	1.15	7.04	1.13	1.13	8448	8480	99.6	0.4	224.77	122.28						
4.347	500-YR	113.21	122.09	8.88	119.21	119.21	0.0025	6.58	1.44	1.44	7.63	1.34	1.34	10040	10100	99.4	0.6	230.96	122.99						
4.262	2-YR	112.08	114.38	2.30	118.08	118.08	0.0500	2.13			8.32			1590	1590	100.0	0.0	89.83	115.46	39.06	8		191.60	2.13	
4.262	5-YR	112.08	115.42	3.34	118.08	118.08	0.0500	2.99			9.86			2830	2830	100.0	0.0	96.02	116.93						
4.262	10-YR	112.08	116.55	4.47	118.08	118.08	0.0500	2.31			8.66			3810	3810	100.0	0.0	190.79	117.71						
4.262	25-YR	112.08	117.04	4.96	118.08	118.08	0.0500	2.77			9.56			5120	5120	100.0	0.0	193.78	118.46						
4.262	50-YR	112.08	117.40	5.32	118.08	118.08	0.0500	3.09			10.09			6100	6100	100.0	0.0	195.90	118.98						
4.262	100-YR	112.08	117.85	5.77	118.08	118.08	0.0500	3.50			10.42			7240	7240	100.0	0.0	198.64	119.54						
4.262	200-YR	112.08	118.32	6.24	118.08	118.08	0.0500	3.94	0.12	0.12	10.77	0.51	0.51	8480	8480	100.0	0.0	202.63	120.12						
4.262	500-YR	112.08	118.87	6.79	118.08	118.08	0.0500	4.49	0.40	0.40	11.24	1.07	1.08	10096	10100	100.0	0.0	208.74	120.83						
4.256	2-YR	110.58	114.47	3.89	116.58	116.58	0.0025	3.44			4.66			1590	1590	100.0	0.0	99.36	114.81	25.54	8		217.80	2.19	

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
4.256	5-YR	110.58	116.11	5.53	116.58	116.58	0.0025	3.28			4.37			2830	2830	100.0	0.0	197.20	116.41						
4.256	10-YR	110.58	116.80	6.22	116.58	116.58	0.0025	3.92	0.11	0.11	4.86	0.21	0.21	3810	3810	100.0	0.0	202.16	117.16						
4.256	25-YR	110.58	117.49	6.91	116.58	116.58	0.0025	4.61	0.46	0.46	5.55	0.57	0.57	5118	5120	100.0	0.0	209.12	117.97						
4.256	50-YR	110.58	117.95	7.37	116.58	116.58	0.0025	5.07	0.69	0.69	6.00	0.76	0.76	6093	6100	99.9	0.1	213.74	118.51						
4.256	100-YR	110.58	118.44	7.86	116.58	116.58	0.0025	5.56	0.93	0.93	6.50	0.95	0.95	7224	7240	99.8	0.2	218.55	119.09						
4.256	200-YR	110.58	118.91	8.33	116.58	116.58	0.0025	6.03	1.16	1.16	7.01	1.13	1.13	8449	8480	99.6	0.4	223.27	119.67						
4.256	500-YR	110.58	119.48	8.90	116.58	116.58	0.0025	6.60	1.45	1.45	7.61	1.34	1.34	10044	10100	99.4	0.6	229.00	120.37						
4.171	2-YR	109.46	112.09	2.63	115.46	115.46	0.0500	2.40			7.22			1590	1590	100.0	0.0	91.76	112.90	34.89	7	35.67	195.56	2.13	1.93
4.171	5-YR	109.46	112.80	3.34	115.46	115.46	0.0500	2.99			9.86			2830	2830	100.0	0.0	96.02	114.31						
4.171	10-YR	109.46	113.93	4.47	115.46	115.46	0.0500	2.31			8.66			3810	3810	100.0	0.0	190.79	115.09						
4.171	25-YR	109.46	114.42	4.96	115.46	115.46	0.0500	2.77			9.56			5120	5120	100.0	0.0	193.78	115.84						
4.171	50-YR	109.46	114.78	5.32	115.46	115.46	0.0500	3.09			10.09			6100	6100	100.0	0.0	195.90	116.36						
4.171	100-YR	109.46	115.20	5.74	115.46	115.46	0.0500	3.47			10.53			7240	7240	100.0	0.0	198.43	116.92						
4.171	200-YR	109.46	115.66	6.20	115.46	115.46	0.0500	3.90	0.10	0.10	10.88	0.45	0.45	8480	8480	100.0	0.0	202.46	117.50						
4.171	500-YR	109.46	116.21	6.75	115.46	115.46	0.0500	4.45	0.38	0.38	11.33	1.06	1.06	10096	10100	100.0	0.0	209.48	118.21						
4.166	2-YR	107.96	112.37	4.41	113.96	113.96	0.0025	2.26			3.70			1590	1590	100.0	0.0	190.47	112.58	43.19	7		228.20	1.20	
4.166	5-YR	107.96	113.49	5.53	113.96	113.96	0.0025	3.28			4.38			2830	2830	100.0	0.0	197.18	113.79						
4.166	10-YR	107.96	114.17	6.21	113.96	113.96	0.0025	3.91	0.11	0.11	4.87	0.21	0.21	3810	3810	100.0	0.0	202.11	114.54						
4.166	25-YR	107.96	114.87	6.91	113.96	113.96	0.0025	4.61	0.45	0.45	5.55	0.57	0.57	5118	5120	100.0	0.0	209.06	115.35						
4.166	50-YR	107.96	115.33	7.37	113.96	113.96	0.0025	5.07	0.68	0.68	6.01	0.76	0.76	6093	6100	99.9	0.1	213.68	115.89						
4.166	100-YR	107.96	115.79	7.83	113.96	113.96	0.0025	5.53	0.92	0.92	6.53	0.95	0.95	7224	7240	99.8	0.2	218.34	116.45						
4.166	200-YR	107.96	116.27	8.31	113.96	113.96	0.0025	6.01	1.15	1.15	7.04	1.13	1.13	8450	8480	99.6	0.4	223.05	117.03						
4.166	500-YR	107.96	116.84	8.88	113.96	113.96	0.0025	6.58	1.44	1.44	7.63	1.34	1.34	10045	10100	99.5	0.5	228.80	117.74						
4.080	2-YR	106.83	109.13	2.30	112.83	112.83	0.0500	2.13			8.32			1590	1590	100.0	0.0	89.83	110.21	39.06	7		191.60	2.13	
4.080	5-YR	106.83	110.17	3.34	112.83	112.83	0.0500	2.99			9.86			2830	2830	100.0	0.0	96.02	111.68						
4.080	10-YR	106.83	111.30	4.47	112.83	112.83	0.0500	2.31			8.66			3810	3810	100.0	0.0	190.79	112.46						
4.080	25-YR	106.83	111.79	4.96	112.83	112.83	0.0500	2.77			9.56			5120	5120	100.0	0.0	193.78	113.21						
4.080	50-YR	106.83	112.15	5.32	112.83	112.83	0.0500	3.09			10.09			6100	6100	100.0	0.0	195.90	113.73						
4.080	100-YR	106.83	112.60	5.77	112.83	112.83	0.0500	3.50			10.42			7240	7240	100.0	0.0	198.64	114.29						
4.080	200-YR	106.83	113.06	6.23	112.83	112.83	0.0500	3.93	0.12	0.12	10.78	0.50	0.50	8480	8480	100.0	0.0	202.35	114.87						
4.080	500-YR	106.83	113.62	6.79	112.83	112.83	0.0500	4.49	0.40	0.40	11.24	1.08	1.08	10097	10100	100.0	0.0	207.93	115.58						
4.075	2-YR	105.33	109.22	3.89	111.33	111.33	0.0025	3.44			4.66			1590	1590	100.0	0.0	99.36	109.56	25.54	7		217.80	2.19	
4.075	5-YR	105.33	110.86	5.53	111.33	111.33	0.0025	3.28			4.37			2830	2830	100.0	0.0	197.20	111.16						
4.075	10-YR	105.33	111.55	6.22	111.33	111.33	0.0025	3.92	0.11	0.11	4.86	0.21	0.21	3810	3810	100.0	0.0	202.16	111.91						
4.075	25-YR	105.33	112.24	6.91	111.33	111.33	0.0025	4.61	0.46	0.46	5.55	0.57	0.57	5118	5120	100.0	0.0	209.12	112.72						
4.075	50-YR	105.33	112.70	7.37	111.33	111.33	0.0025	5.07	0.69	0.69	6.00	0.76	0.76	6093	6100	99.9	0.1	213.74	113.26						
4.075	100-YR	105.33	113.19	7.86	111.33	111.33	0.0025	5.56	0.93	0.93	6.50	0.95	0.95	7224	7240	99.8	0.2	218.56	113.84						
4.075	200-YR	105.33	113.66	8.33	111.33	111.33	0.0025	6.03	1.16	1.16	7.01	1.13	1.13	8449	8480	99.6	0.4	223.26	114.42						
4.075	500-YR	105.33	114.23	8.90	111.33	111.33	0.0025	6.60	1.45	1.45	7.61	1.34	1.34	10044	10100	99.4	0.6	229.02	115.13						

Aliso Creek - Alternative 4

Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
3.989	2-YR	104.21	106.84	2.63	110.21	110.21	0.0500	2.40			7.22			1590	1590	100.0	0.0	91.76	107.65	34.89	7		195.56	2.13	
3.989	5-YR	104.21	107.55	3.34	110.21	110.21	0.0500	2.99			9.86			2830	2830	100.0	0.0	96.02	109.06						
3.989	10-YR	104.21	108.68	4.47	110.21	110.21	0.0500	2.31			8.66			3810	3810	100.0	0.0	190.79	109.84						
3.989	25-YR	104.21	109.17	4.96	110.21	110.21	0.0500	2.77			9.56			5120	5120	100.0	0.0	193.78	110.59						
3.989	50-YR	104.21	109.53	5.32	110.21	110.21	0.0500	3.09			10.09			6100	6100	100.0	0.0	195.90	111.11						
3.989	100-YR	104.21	109.95	5.74	110.21	110.21	0.0500	3.47			10.53			7240	7240	100.0	0.0	198.43	111.67						
3.989	200-YR	104.21	110.41	6.20	110.21	110.21	0.0500	3.90	0.10	0.10	10.87	0.46	0.46	8480	8480	100.0	0.0	202.00	112.25						
3.989	500-YR	104.21	110.96	6.75	110.21	110.21	0.0500	4.45	0.38	0.38	11.34	1.05	1.05	10097	10100	100.0	0.0	207.52	112.96						
3.984	2-YR	102.71	107.12	4.41	108.71	108.71	0.0025	2.26			3.70			1590	1590	100.0	0.0	190.47	107.33	43.19	7		228.20	1.20	
3.984	5-YR	102.71	108.24	5.53	108.71	108.71	0.0025	3.28			4.38			2830	2830	100.0	0.0	197.18	108.54						
3.984	10-YR	102.71	108.92	6.21	108.71	108.71	0.0025	3.91	0.11	0.11	4.87	0.21	0.21	3810	3810	100.0	0.0	202.11	109.29						
3.984	25-YR	102.71	109.62	6.91	108.71	108.71	0.0025	4.61	0.45	0.45	5.55	0.57	0.57	5118	5120	100.0	0.0	209.06	110.10						
3.984	50-YR	102.71	110.08	7.37	108.71	108.71	0.0025	5.07	0.68	0.68	6.01	0.76	0.76	6093	6100	99.9	0.1	213.68	110.64						
3.984	100-YR	102.71	110.54	7.83	108.71	108.71	0.0025	5.53	0.92	0.92	6.53	0.95	0.95	7224	7240	99.8	0.2	218.34	111.20						
3.984	200-YR	102.71	111.02	8.31	108.71	108.71	0.0025	6.01	1.15	1.15	7.03	1.13	1.13	8450	8480	99.6	0.4	223.08	111.78						
3.984	500-YR	102.71	111.59	8.88	108.71	108.71	0.0025	6.58	1.44	1.44	7.63	1.34	1.34	10045	10100	99.5	0.5	228.79	112.49						
3.899	2-YR	101.58	103.88	2.30	107.58	107.58	0.0500	2.13			8.32			1590	1590	100.0	0.0	89.83	104.96	39.06	7		191.60	2.13	
3.899	5-YR	101.58	104.92	3.34	107.58	107.58	0.0500	2.99			9.86			2830	2830	100.0	0.0	96.02	106.43						
3.899	10-YR	101.58	106.05	4.47	107.58	107.58	0.0500	2.31			8.66			3810	3810	100.0	0.0	190.79	107.21						
3.899	25-YR	101.58	106.54	4.96	107.58	107.58	0.0500	2.77			9.56			5120	5120	100.0	0.0	193.78	107.96						
3.899	50-YR	101.58	106.90	5.32	107.58	107.58	0.0500	3.09			10.09			6100	6100	100.0	0.0	195.90	108.48						
3.899	100-YR	101.58	107.35	5.77	107.58	107.58	0.0500	3.50			10.42			7240	7240	100.0	0.0	198.64	109.04						
3.899	200-YR	101.58	107.81	6.23	107.58	107.58	0.0500	3.93	0.11	0.11	10.79	0.49	0.49	8480	8480	100.0	0.0	202.30	109.62						
3.899	500-YR	101.58	108.37	6.79	107.58	107.58	0.0500	4.49	0.40	0.40	11.23	1.08	1.08	10097	10100	100.0	0.0	208.01	110.33						
3.893	2-YR	100.08	103.97	3.89	106.08	106.08	0.0025	3.44			4.66			1590	1590	100.0	0.0	99.36	104.31	25.54	7		217.80	2.19	
3.893	5-YR	100.08	105.61	5.53	106.08	106.08	0.0025	3.28			4.37			2830	2830	100.0	0.0	197.20	105.91						
3.893	10-YR	100.08	106.30	6.22	106.08	106.08	0.0025	3.92	0.11	0.11	4.86	0.21	0.21	3810	3810	100.0	0.0	202.16	106.66						
3.893	25-YR	100.08	106.99	6.91	106.08	106.08	0.0025	4.61	0.46	0.46	5.55	0.57	0.57	5118	5120	100.0	0.0	209.12	107.47						
3.893	50-YR	100.08	107.45	7.37	106.08	106.08	0.0025	5.07	0.69	0.69	6.00	0.76	0.76	6093	6100	99.9	0.1	213.74	108.01						
3.893	100-YR	100.08	107.94	7.86	106.08	106.08	0.0025	5.56	0.93	0.93	6.50	0.95	0.95	7224	7240	99.8	0.2	218.55	108.59						
3.893	200-YR	100.08	108.40	8.32	106.08	106.08	0.0025	6.02	1.16	1.16	7.01	1.13	1.13	8450	8480	99.6	0.4	223.22	109.16						
3.893	500-YR	100.08	108.98	8.90	106.08	106.08	0.0025	6.60	1.45	1.45	7.61	1.34	1.34	10044	10100	99.4	0.6	229.02	109.88						
3.808	2-YR	98.96	101.59	2.63	104.96	104.96	0.0500	2.40			7.22			1590	1590	100.0	0.0	91.76	102.40	34.89	7		195.56	2.13	
3.808	5-YR	98.96	102.30	3.34	104.96	104.96	0.0500	2.99			9.86			2830	2830	100.0	0.0	96.02	103.81						
3.808	10-YR	98.96	103.43	4.47	104.96	104.96	0.0500	2.31			8.66			3810	3810	100.0	0.0	190.79	104.59						
3.808	25-YR	98.96	103.92	4.96	104.96	104.96	0.0500	2.77			9.56			5120	5120	100.0	0.0	193.78	105.34						
3.808	50-YR	98.96	104.28	5.32	104.96	104.96	0.0500	3.09			10.09			6100	6100	100.0	0.0	195.90	105.86						
3.808	100-YR	98.96	104.70	5.74	104.96	104.96	0.0500	3.47			10.53			7240	7240	100.0	0.0	198.43	106.42						
3.808	200-YR	98.96	105.17	6.21	104.96	104.96	0.0500	3.91	0.10	0.10	10.85	0.47	0.47	8480	8480	100.0	0.0	202.08	107.00						
3.808	500-YR	98.96	105.71	6.75	104.96	104.96	0.0500	4.45	0.37	0.37	11.35	1.05	1.05	10097	10100	100.0	0.0	207.50	107.71						

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
3.802	2-YR	97.46	101.87	4.41	103.46	103.46	0.0025	2.26			3.70			1590	1590	100.0	0.0	190.47	102.08	43.19	7		256.36	1.35	
3.802	5-YR	97.46	102.99	5.53	103.46	103.46	0.0025	3.28			4.38			2830	2830	100.0	0.0	197.18	103.29						
3.802	10-YR	97.46	103.67	6.21	103.46	103.46	0.0025	3.91	0.11	0.11	4.87	0.21	0.21	3810	3810	100.0	0.0	204.21	104.04						
3.802	25-YR	97.46	104.37	6.91	103.46	103.46	0.0025	4.61	0.45	0.45	5.55	0.58	0.57	5115	5120	99.9	0.1	218.11	104.84						
3.802	50-YR	97.46	104.83	7.37	103.46	103.46	0.0025	5.07	0.68	0.68	6.00	0.77	0.76	6086	6100	99.8	0.2	227.33	105.39						
3.802	100-YR	97.46	105.30	7.84	103.46	103.46	0.0025	5.54	0.92	0.92	6.51	0.96	0.95	7208	7240	99.6	0.4	236.75	105.95						
3.802	200-YR	97.46	105.78	8.32	103.46	103.46	0.0025	6.02	1.16	1.16	6.99	1.14	1.13	8419	8480	99.3	0.7	246.37	106.53						
3.802	500-YR	97.46	106.35	8.89	103.46	103.46	0.0025	6.59	1.45	1.45	7.57	1.35	1.33	9988	10100	98.9	1.1	257.81	107.23						
3.717	2-YR	96.33	98.63	2.30	102.33	102.33	0.0500	2.13			8.32			1590	1590	100.0	0.0	89.83	99.71	39.06	7		191.60	2.13	
3.717	5-YR	96.33	99.67	3.34	102.33	102.33	0.0500	2.99			9.86			2830	2830	100.0	0.0	96.02	101.18						
3.717	10-YR	96.33	100.80	4.47	102.33	102.33	0.0500	2.31			8.66			3810	3810	100.0	0.0	190.79	101.96						
3.717	25-YR	96.33	101.29	4.96	102.33	102.33	0.0500	2.77			9.56			5120	5120	100.0	0.0	193.78	102.71						
3.717	50-YR	96.33	101.65	5.32	102.33	102.33	0.0500	3.09			10.09			6100	6100	100.0	0.0	195.90	103.23						
3.717	100-YR	96.33	102.09	5.76	102.33	102.33	0.0500	3.49			10.46			7240	7240	100.0	0.0	198.56	103.79						
3.717	200-YR	96.33	102.53	6.20	102.33	102.33	0.0500	3.90	0.10	0.10	10.88	0.45	0.45	8480	8480	100.0	0.0	201.96	104.37						
3.717	500-YR	96.33	103.09	6.76	102.33	102.33	0.0500	4.46	0.38	0.38	11.32	1.06	1.06	10097	10100	100.0	0.0	207.59	105.08						
3.711	2-YR	94.83	98.72	3.89	100.83	100.83	0.0025	3.44			4.66			1590	1590	100.0	0.0	99.36	99.06	25.54	7		217.80	2.19	
3.711	5-YR	94.83	100.36	5.53	100.83	100.83	0.0025	3.28			4.37			2830	2830	100.0	0.0	197.20	100.66						
3.711	10-YR	94.83	101.05	6.22	100.83	100.83	0.0025	3.92	0.11	0.11	4.86	0.21	0.21	3810	3810	100.0	0.0	202.16	101.41						
3.711	25-YR	94.83	101.74	6.91	100.83	100.83	0.0025	4.61	0.46	0.46	5.55	0.57	0.57	5118	5120	100.0	0.0	209.12	102.22						
3.711	50-YR	94.83	102.20	7.37	100.83	100.83	0.0025	5.07	0.69	0.69	6.00	0.76	0.76	6093	6100	99.9	0.1	213.74	102.76						
3.711	100-YR	94.83	102.68	7.85	100.83	100.83	0.0025	5.55	0.92	0.92	6.51	0.95	0.95	7224	7240	99.8	0.2	218.49	103.34						
3.711	200-YR	94.83	103.14	8.31	100.83	100.83	0.0025	6.01	1.15	1.15	7.04	1.13	1.13	8450	8480	99.6	0.4	223.06	103.90						
3.711	500-YR	94.83	103.71	8.88	100.83	100.83	0.0025	6.58	1.44	1.44	7.63	1.34	1.34	10044	10100	99.4	0.6	228.83	104.61						
3.626	2-YR	93.71	96.34	2.63	99.71	99.71	0.0500	2.40			7.22			1590	1590	100.0	0.0	91.76	97.15	34.89	6	35.67	195.56	2.13	1.90
3.626	5-YR	93.71	97.05	3.34	99.71	99.71	0.0500	2.99			9.86			2830	2830	100.0	0.0	96.02	98.56						
3.626	10-YR	93.71	98.18	4.47	99.71	99.71	0.0500	2.31			8.66			3810	3810	100.0	0.0	190.79	99.34						
3.626	25-YR	93.71	98.67	4.96	99.71	99.71	0.0500	2.77			9.56			5120	5120	100.0	0.0	193.78	100.09						
3.626	50-YR	93.71	99.03	5.32	99.71	99.71	0.0500	3.09			10.09			6100	6100	100.0	0.0	195.90	100.61						
3.626	100-YR	93.71	99.46	5.75	99.71	99.71	0.0500	3.48			10.48			7240	7240	100.0	0.0	198.52	101.17						
3.626	200-YR	93.71	99.96	6.25	99.71	99.71	0.0500	3.95	0.13	0.13	10.73	0.52	0.52	8480	8480	100.0	0.0	202.52	101.75						
3.626	500-YR	93.71	100.51	6.80	99.71	99.71	0.0500	4.50	0.40	0.40	11.21	1.08	1.08	10097	10100	100.0	0.0	208.04	102.46						
3.620	2-YR	92.21	96.62	4.41	98.21	98.21	0.0025	2.26			3.70			1590	1590	100.0	0.0	190.47	96.83	43.19	6		228.20	1.20	
3.620	5-YR	92.21	97.74	5.53	98.21	98.21	0.0025	3.28			4.38			2830	2830	100.0	0.0	197.18	98.04						
3.620	10-YR	92.21	98.42	6.21	98.21	98.21	0.0025	3.91	0.11	0.11	4.87	0.21	0.21	3810	3810	100.0	0.0	202.11	98.79						
3.620	25-YR	92.21	99.12	6.91	98.21	98.21	0.0025	4.61	0.45	0.45	5.55	0.57	0.57	5118	5120	100.0	0.0	209.06	99.60						
3.620	50-YR	92.21	99.58	7.37	98.21	98.21	0.0025	5.07	0.68	0.68	6.01	0.76	0.76	6093	6100	99.9	0.1	213.68	100.14						
3.620	100-YR	92.21	100.06	7.85	98.21	98.21	0.0025	5.55	0.92	0.92	6.51	0.95	0.95	7224	7240	99.8	0.2	218.45	100.71						
3.620	200-YR	92.21	100.54	8.33	98.21	98.21	0.0025	6.03	1.17	1.17	7.00	1.13	1.13	8449	8480	99.6	0.4	223.35	101.30						

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
3.620	500-YR	92.21	101.12	8.91	98.21	98.21	0.0025	6.61	1.45	1.45	7.60	1.34	1.34	10043	10100	99.4	0.6	229.08	102.01						
3.535	2-YR	91.08	93.38	2.30	97.08	97.08	0.0500	2.13			8.32			1590	1590	100.0	0.0	89.83	94.46	39.06	6		191.60	2.13	
3.535	5-YR	91.08	94.42	3.34	97.08	97.08	0.0500	2.99			9.86			2830	2830	100.0	0.0	96.02	95.93						
3.535	10-YR	91.08	95.55	4.47	97.08	97.08	0.0500	2.31			8.66			3810	3810	100.0	0.0	190.79	96.71						
3.535	25-YR	91.08	96.04	4.96	97.08	97.08	0.0500	2.77			9.56			5120	5120	100.0	0.0	193.78	97.46						
3.535	50-YR	91.08	96.40	5.32	97.08	97.08	0.0500	3.09			10.09			6100	6100	100.0	0.0	195.90	97.98						
3.535	100-YR	91.08	96.83	5.75	97.08	97.08	0.0500	3.47			10.50			7240	7240	100.0	0.0	198.48	98.54						
3.535	200-YR	91.08	97.24	6.16	97.08	97.08	0.0500	3.86	0.08	0.08	10.98	0.40	0.40	8480	8480	100.0	0.0	201.63	99.11						
3.535	500-YR	91.08	97.80	6.72	97.08	97.08	0.0500	4.42	0.36	0.36	11.43	1.03	1.03	10097	10100	100.0	0.0	207.17	99.83						
3.529	2-YR	89.58	93.47	3.89	95.58	95.58	0.0025	3.44			4.66			1590	1590	100.0	0.0	99.36	93.81	25.54	6		217.80	2.19	
3.529	5-YR	89.58	95.11	5.53	95.58	95.58	0.0025	3.28			4.37			2830	2830	100.0	0.0	197.20	95.41						
3.529	10-YR	89.58	95.80	6.22	95.58	95.58	0.0025	3.92	0.11	0.11	4.87	0.21	0.21	3810	3810	100.0	0.0	202.16	96.16						
3.529	25-YR	89.58	96.49	6.91	95.58	95.58	0.0025	4.61	0.46	0.46	5.55	0.57	0.57	5118	5120	100.0	0.0	209.12	96.97						
3.529	50-YR	89.58	96.95	7.37	95.58	95.58	0.0025	5.07	0.69	0.69	6.00	0.76	0.76	6093	6100	99.9	0.1	213.74	97.51						
3.529	100-YR	89.58	97.42	7.84	95.58	95.58	0.0025	5.54	0.92	0.92	6.52	0.95	0.95	7224	7240	99.8	0.2	218.43	98.08						
3.529	200-YR	89.58	97.87	8.29	95.58	95.58	0.0025	5.99	1.14	1.14	7.06	1.13	1.13	8450	8480	99.7	0.3	222.89	98.64						
3.529	500-YR	89.58	98.44	8.86	95.58	95.58	0.0025	6.56	1.43	1.43	7.66	1.34	1.34	10045	10100	99.5	0.5	228.60	99.35						
3.444	2-YR	88.46	91.09	2.63	94.46	94.46	0.0500	2.40			7.22			1590	1590	100.0	0.0	91.76	91.90	34.89	6		195.56	2.13	
3.444	5-YR	88.46	91.80	3.34	94.46	94.46	0.0500	2.99			9.86			2830	2830	100.0	0.0	96.02	93.31						
3.444	10-YR	88.46	92.93	4.47	94.46	94.46	0.0500	2.31			8.65			3810	3810	100.0	0.0	190.79	94.09						
3.444	25-YR	88.46	93.42	4.96	94.46	94.46	0.0500	2.77			9.56			5120	5120	100.0	0.0	193.78	94.84						
3.444	50-YR	88.46	93.78	5.32	94.46	94.46	0.0500	3.09			10.09			6100	6100	100.0	0.0	195.90	95.36						
3.444	100-YR	88.46	94.23	5.77	94.46	94.46	0.0500	3.49			10.43			7240	7240	100.0	0.0	198.61	95.92						
3.444	200-YR	88.46	94.76	6.30	94.46	94.46	0.0500	4.00	0.15	0.15	10.61	0.57	0.57	8480	8480	100.0	0.0	202.96	96.50						
3.444	500-YR	88.46	95.33	6.87	94.46	94.46	0.0500	4.57	0.44	0.44	11.04	1.11	1.11	10096	10100	100.0	0.0	208.72	97.22						
3.438	2-YR	86.96	91.37	4.41	92.96	92.96	0.0025	2.26			3.70			1590	1590	100.0	0.0	190.47	91.58	43.19	6		228.20	1.20	
3.438	5-YR	86.96	92.49	5.53	92.96	92.96	0.0025	3.28			4.38			2830	2830	100.0	0.0	197.17	92.79						
3.438	10-YR	86.96	93.17	6.21	92.96	92.96	0.0025	3.91	0.11	0.11	4.87	0.21	0.21	3810	3810	100.0	0.0	202.11	93.54						
3.438	25-YR	86.96	93.87	6.91	92.96	92.96	0.0025	4.61	0.45	0.45	5.56	0.57	0.57	5118	5120	100.0	0.0	209.06	94.35						
3.438	50-YR	86.96	94.33	7.37	92.96	92.96	0.0025	5.07	0.68	0.68	6.01	0.76	0.76	6093	6100	99.9	0.1	213.67	94.89						
3.438	100-YR	86.96	94.81	7.85	92.96	92.96	0.0025	5.55	0.93	0.93	6.50	0.95	0.95	7224	7240	99.8	0.2	218.53	95.47						
3.438	200-YR	86.96	95.32	8.36	92.96	92.96	0.0025	6.06	1.18	1.18	6.97	1.13	1.13	8449	8480	99.6	0.4	223.59	96.07						
3.438	500-YR	86.96	95.91	8.95	92.96	92.96	0.0025	6.65	1.47	1.47	7.55	1.34	1.34	10042	10100	99.4	0.6	229.48	96.79						
3.353	2-YR	85.83	88.13	2.30	91.83	91.83	0.0500	2.13			8.32			1590	1590	100.0	0.0	89.83	89.21	39.06	6		191.60	2.13	
3.353	5-YR	85.83	89.17	3.34	91.83	91.83	0.0500	2.99			9.86			2830	2830	100.0	0.0	96.02	90.68						
3.353	10-YR	85.83	90.30	4.47	91.83	91.83	0.0500	2.31			8.65			3810	3810	100.0	0.0	190.80	91.46						
3.353	25-YR	85.83	90.79	4.96	91.83	91.83	0.0500	2.77			9.56			5120	5120	100.0	0.0	193.78	92.21						
3.353	50-YR	85.83	91.15	5.32	91.83	91.83	0.0500	3.09			10.09			6100	6100	100.0	0.0	195.90	92.73						
3.353	100-YR	85.83	91.56	5.73	91.83	91.83	0.0500	3.46			10.56			7240	7240	100.0	0.0	198.37	93.29						

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
3.353	200-YR	85.83	91.94	6.11	91.83	91.83	0.0500	3.81	0.05	0.05	11.14	0.32	0.31	8480	8480	100.0	0.0	203.80	93.86						
3.353	500-YR	85.83	92.44	6.61	91.83	91.83	0.0500	4.31	0.31	0.31	11.70	0.98	0.95	10093	10100	99.9	0.1	221.71	94.57						
3.347	2-YR	84.33	88.22	3.89	90.33	90.33	0.0025	3.43			4.66			1590	1590	100.0	0.0	99.33	88.56	25.53	6		210.68	2.12	
3.347	5-YR	84.33	89.80	5.47	90.33	90.33	0.0025	3.23			4.45			2830	2830	100.0	0.0	196.84	90.11						
3.347	10-YR	84.33	90.55	6.22	90.33	90.33	0.0025	3.92	0.11	0.11	4.86	0.21	0.21	3810	3810	100.0	0.0	201.31	90.92						
3.347	25-YR	84.33	91.24	6.91	90.33	90.33	0.0025	4.61	0.46	0.46	5.55	0.56	0.56	5119	5120	100.0	0.0	205.48	91.72						
3.347	50-YR	84.33	91.55	7.22	90.33	90.33	0.0025	4.92	0.61	0.61	6.20	0.73	0.73	6097	6100	99.9	0.1	207.32	92.15						
3.347	100-YR	84.33	92.03	7.70	90.33	90.33	0.0025	5.40	0.85	0.85	6.70	0.92	0.92	7232	7240	99.9	0.1	210.19	92.72						
3.347	200-YR	84.33	92.49	8.16	90.33	90.33	0.0025	5.86	1.08	1.08	7.22	1.10	1.10	8465	8480	99.8	0.2	212.97	93.30						
3.347	500-YR	84.33	93.07	8.74	90.33	90.33	0.0025	6.44	1.37	1.37	7.82	1.32	1.32	10070	10100	99.7	0.3	216.44	94.02						
3.262	2-YR	83.21	85.86	2.65	89.21	89.21	0.0500	2.42			7.15			1590	1590	100.0	0.0	91.90	86.65	34.68	5C	35.40	195.80	2.13	1.90
3.262	5-YR	83.21	86.75	3.54	89.21	89.21	0.0500	3.16			9.22			2830	2830	100.0	0.0	97.26	88.07						
3.262	10-YR	83.21	87.68	4.47	89.21	89.21	0.0500	2.31			8.65			3810	3810	100.0	0.0	190.80	88.84						
3.262	25-YR	83.21	88.17	4.96	89.21	89.21	0.0500	2.77			9.55			5120	5120	100.0	0.0	193.78	89.59						
3.262	50-YR	83.21	88.98	5.77	89.21	89.21	0.0500	3.49			8.80			6100	6100	100.0	0.0	198.60	90.18						
3.262	100-YR	83.21	89.43	6.22	89.21	89.21	0.0500	3.92	0.11	0.11	9.24	0.41	0.41	7240	7240	100.0	0.0	202.18	90.75						
3.262	200-YR	83.21	89.99	6.78	89.21	89.21	0.0500	4.48	0.39	0.39	9.47	0.90	0.90	8477	8480	100.0	0.0	207.75	91.38						
3.262	500-YR	83.21	90.64	7.43	89.21	89.21	0.0500	5.13	0.71	0.71	9.83	1.28	1.28	10087	10100	99.9	0.1	214.30	92.14						
3.256	2-YR	81.71	86.14	4.43	87.71	87.71	0.0025	2.27			3.67			1590	1590	100.0	0.0	190.58	86.35	43.02	5C		228.60	1.20	
3.256	5-YR	81.71	87.37	5.66	87.71	87.71	0.0025	3.40			4.21			2830	2830	100.0	0.0	197.96	87.64						
3.256	10-YR	81.71	88.07	6.36	87.71	87.71	0.0025	4.06	0.18	0.18	4.69	0.28	0.28	3810	3810	100.0	0.0	203.58	88.41						
3.256	25-YR	81.71	88.68	6.97	87.71	87.71	0.0025	4.67	0.48	0.48	5.48	0.58	0.58	5117	5120	99.9	0.1	209.68	89.14						
3.256	50-YR	81.71	89.36	7.65	87.71	87.71	0.0025	5.35	0.83	0.83	5.69	0.79	0.79	6089	6100	99.8	0.2	216.50	89.86						
3.256	100-YR	81.71	89.83	8.12	87.71	87.71	0.0025	5.82	1.06	1.06	6.20	0.96	0.96	7218	7240	99.7	0.3	221.21	90.43						
3.256	200-YR	81.71	90.38	8.67	87.71	87.71	0.0025	6.37	1.34	1.34	6.62	1.13	1.13	8440	8480	99.5	0.5	226.71	91.06						
3.256	500-YR	81.71	91.03	9.32	87.71	87.71	0.0025	7.02	1.66	1.66	7.14	1.32	1.32	10027	10100	99.3	0.7	233.24	91.82						
3.171	2-YR	80.58	82.91	2.33	86.58	86.58	0.0500	2.15			8.37			1620	1620	100.0	0.0	89.99	84.00	38.62	5C		191.96	2.13	
3.171	5-YR	80.58	84.07	3.49	86.58	86.58	0.0500	3.11			10.07			3040	3040	100.0	0.0	96.95	85.65						
3.171	10-YR	80.58	85.19	4.61	86.58	86.58	0.0500	2.44			8.90			4170	4170	100.0	0.0	191.68	86.42						
3.171	25-YR	80.58	85.63	5.05	86.58	86.58	0.0500	2.84			9.60			5300	5300	100.0	0.0	194.28	87.06						
3.171	50-YR	80.58	86.20	5.62	86.58	86.58	0.0500	3.36			10.37			6890	6890	100.0	0.0	197.73	87.87						
3.171	100-YR	80.58	86.73	6.15	86.58	86.58	0.0500	3.85	0.07	0.07	10.55	0.36	0.36	8120	8120	100.0	0.0	200.89	88.46						
3.171	200-YR	80.58	87.18	6.60	86.58	86.58	0.0500	4.30	0.30	0.30	11.10	0.89	0.88	9539	9540	100.0	0.0	203.57	89.09						
3.171	500-YR	80.58	87.80	7.22	86.58	86.58	0.0500	4.92	0.61	0.61	11.58	1.36	1.36	11394	11400	99.9	0.1	207.32	89.88						
3.166	2-YR	79.08	83.02	3.94	85.08	85.08	0.0025	3.47			4.69			1620	1620	100.0	0.0	99.62	83.36	25.28	5C		211.29	2.12	
3.166	5-YR	79.08	84.79	5.71	85.08	85.08	0.0025	3.44			4.46			3040	3040	100.0	0.0	198.24	85.10						
3.166	10-YR	79.08	85.49	6.41	85.08	85.08	0.0025	4.11	0.21	0.21	5.07	0.33	0.33	4170	4170	100.0	0.0	202.49	85.89						
3.166	25-YR	79.08	86.07	6.99	85.08	85.08	0.0025	4.69	0.50	0.50	5.65	0.60	0.60	5298	5300	100.0	0.0	205.95	86.57						
3.166	50-YR	79.08	86.79	7.71	85.08	85.08	0.0025	5.41	0.85	0.85	6.36	0.88	0.88	6882	6890	99.9	0.1	210.25	87.42						

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
3.166	100-YR	79.08	87.29	8.21	85.08	85.08	0.0025	5.91	1.11	1.11	6.85	1.06	1.06	8104	8120	99.8	0.2	213.28	88.02						
3.166	200-YR	79.08	87.78	8.70	85.08	85.08	0.0025	6.40	1.35	1.35	7.44	1.24	1.24	9513	9540	99.7	0.3	216.19	88.63						
3.166	500-YR	79.08	88.42	9.34	85.08	85.08	0.0025	7.04	1.67	1.67	8.07	1.46	1.46	11351	11400	99.6	0.4	220.02	89.42						
3.080	2-YR	77.96	80.61	2.65	83.96	83.96	0.0500	2.42			7.29			1620	1620	100.0	0.0	91.87	81.43	34.67	5B	35.38	195.80	2.13	1.92
3.080	5-YR	77.96	81.45	3.49	83.96	83.96	0.0500	3.11			10.07			3040	3040	100.0	0.0	96.95	83.03						
3.080	10-YR	77.96	82.57	4.61	83.96	83.96	0.0500	2.44			8.90			4170	4170	100.0	0.0	191.68	83.80						
3.080	25-YR	77.96	83.01	5.05	83.96	83.96	0.0500	2.84			9.60			5300	5300	100.0	0.0	194.28	84.44						
3.080	50-YR	77.96	83.58	5.62	83.96	83.96	0.0500	3.36			10.37			6890	6890	100.0	0.0	197.72	85.25						
3.080	100-YR	77.96	83.99	6.03	83.96	83.96	0.0500	3.73	0.01	0.01	10.90	0.12	0.12	8120	8120	100.0	0.0	200.31	85.83						
3.080	200-YR	77.96	84.55	6.59	83.96	83.96	0.0500	4.29	0.30	0.30	11.11	0.91	0.88	9538	9540	100.0	0.0	207.29	86.47						
3.080	500-YR	77.96	85.13	7.17	83.96	83.96	0.0500	4.87	0.59	0.59	11.69	1.39	1.34	11388	11400	99.9	0.1	214.44	87.25						
3.075	2-YR	76.46	80.90	4.44	82.46	82.46	0.0025	2.28			3.72			1620	1620	100.0	0.0	190.65	81.12	42.94	5B		229.14	1.20	
3.075	5-YR	76.46	82.16	5.70	82.46	82.46	0.0025	3.43			4.47			3040	3040	100.0	0.0	198.22	82.47						
3.075	10-YR	76.46	82.87	6.41	82.46	82.46	0.0025	4.11	0.20	0.20	5.07	0.33	0.32	4170	4170	100.0	0.0	204.14	83.27						
3.075	25-YR	76.46	83.45	6.99	82.46	82.46	0.0025	4.69	0.49	0.49	5.65	0.61	0.60	5297	5300	99.9	0.1	209.98	83.94						
3.075	50-YR	76.46	84.16	7.70	82.46	82.46	0.0025	5.40	0.85	0.85	6.36	0.90	0.88	6877	6890	99.8	0.2	217.23	84.79						
3.075	100-YR	76.46	84.61	8.15	82.46	82.46	0.0025	5.85	1.08	1.08	6.92	1.09	1.06	8095	8120	99.7	0.3	221.78	85.35						
3.075	200-YR	76.46	85.16	8.70	82.46	82.46	0.0025	6.40	1.35	1.35	7.42	1.28	1.24	9493	9540	99.5	0.5	227.31	86.01						
3.075	500-YR	76.46	85.77	9.31	82.46	82.46	0.0025	7.01	1.66	1.66	8.07	1.50	1.46	11317	11400	99.3	0.7	233.52	86.78						
2.989	2-YR	75.33	77.66	2.33	81.33	81.33	0.0500	2.15			8.37			1620	1620	100.0	0.0	89.99	78.75	38.62	5B		191.96	2.13	
2.989	5-YR	75.33	78.82	3.49	81.33	81.33	0.0500	3.11			10.07			3040	3040	100.0	0.0	96.95	80.40						
2.989	10-YR	75.33	79.94	4.61	81.33	81.33	0.0500	2.44			8.90			4170	4170	100.0	0.0	191.68	81.17						
2.989	25-YR	75.33	80.38	5.05	81.33	81.33	0.0500	2.84			9.60			5300	5300	100.0	0.0	194.28	81.81						
2.989	50-YR	75.33	80.95	5.62	81.33	81.33	0.0500	3.36			10.38			6890	6890	100.0	0.0	197.71	82.62						
2.989	100-YR	75.33	81.48	6.15	81.33	81.33	0.0500	3.85	0.08	0.08	10.53	0.38	0.37	8120	8120	100.0	0.0	203.96	83.21						
2.989	200-YR	75.33	81.89	6.56	81.33	81.33	0.0500	4.26	0.28	0.28	11.18	0.89	0.86	9536	9540	100.0	0.0	214.43	83.83						
2.989	500-YR	75.33	82.53	7.20	81.33	81.33	0.0500	4.90	0.60	0.60	11.62	1.40	1.35	11375	11400	99.8	0.2	230.59	84.62						
2.984	2-YR	73.83	77.77	3.94	79.83	79.83	0.0025	3.47			4.69			1620	1620	100.0	0.0	99.62	78.11	25.28	5B		232.61	2.33	
2.984	5-YR	73.83	79.54	5.71	79.83	79.83	0.0025	3.44			4.46			3040	3040	100.0	0.0	198.24	79.85						
2.984	10-YR	73.83	80.24	6.41	79.83	79.83	0.0025	4.11	0.21	0.21	5.07	0.34	0.33	4170	4170	100.0	0.0	207.17	80.64						
2.984	25-YR	73.83	80.82	6.99	79.83	79.83	0.0025	4.69	0.50	0.50	5.64	0.62	0.60	5295	5300	99.9	0.1	217.17	81.31						
2.984	50-YR	73.83	81.54	7.71	79.83	79.83	0.0025	5.41	0.86	0.86	6.35	0.91	0.88	6867	6890	99.7	0.3	229.67	82.16						
2.984	100-YR	73.83	82.05	8.22	79.83	79.83	0.0025	5.92	1.11	1.11	6.81	1.09	1.06	8073	8120	99.4	0.6	238.58	82.77						
2.984	200-YR	73.83	82.52	8.69	79.83	79.83	0.0025	6.39	1.35	1.35	7.40	1.28	1.24	9460	9540	99.2	0.8	246.74	83.37						
2.984	500-YR	73.83	83.17	9.34	79.83	79.83	0.0025	7.04	1.67	1.67	8.00	1.50	1.45	11256	11400	98.7	1.3	257.94	84.15						
2.899	2-YR	72.71	75.36	2.65	78.71	78.71	0.0500	2.42			7.29			1620	1620	100.0	0.0	91.87	76.18	34.67	5B		195.80	2.13	
2.899	5-YR	72.71	76.20	3.49	78.71	78.71	0.0500	3.11			10.07			3040	3040	100.0	0.0	96.95	77.78						
2.899	10-YR	72.71	77.32	4.61	78.71	78.71	0.0500	2.44			8.90			4170	4170	100.0	0.0	191.69	78.55						
2.899	25-YR	72.71	77.76	5.05	78.71	78.71	0.0500	2.84			9.60			5300	5300	100.0	0.0	194.28	79.19						

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
2.899	50-YR	72.71	78.32	5.61	78.71	78.71	0.0500	3.35			10.40			6890	6890	100.0	0.0	197.67	80.00						
2.899	100-YR	72.71	78.71	6.00	78.71	78.71	0.0500	3.70			10.98			8120	8120	100.0	0.0	199.98	80.58						
2.899	200-YR	72.71	79.31	6.60	78.71	78.71	0.0500	4.30	0.30	0.30	11.08	0.89	0.89	9539	9540	100.0	0.0	203.63	81.22						
2.899	500-YR	72.71	79.90	7.19	78.71	78.71	0.0500	4.89	0.59	0.59	11.65	1.35	1.35	11394	11400	99.9	0.1	207.13	82.01						
2.893	2-YR	71.21	75.65	4.44	77.21	77.21	0.0025	2.28			3.72			1620	1620	100.0	0.0	190.65	75.87	42.94	5B		217.28	1.14	
2.893	5-YR	71.21	76.91	5.70	77.21	77.21	0.0025	3.44			4.46			3040	3040	100.0	0.0	198.22	77.22						
2.893	10-YR	71.21	77.62	6.41	77.21	77.21	0.0025	4.11	0.20	0.20	5.08	0.32	0.32	4170	4170	100.0	0.0	202.45	78.02						
2.893	25-YR	71.21	78.10	6.89	77.21	77.21	0.0025	4.59	0.44	0.44	5.78	0.57	0.57	5299	5300	100.0	0.0	205.31	78.61						
2.893	50-YR	71.21	78.85	7.64	77.21	77.21	0.0025	5.34	0.82	0.82	6.44	0.87	0.87	6883	6890	99.9	0.1	209.85	79.50						
2.893	100-YR	71.21	79.34	8.13	77.21	77.21	0.0025	5.83	1.07	1.07	6.95	1.06	1.06	8106	8120	99.8	0.2	212.79	80.09						
2.893	200-YR	71.21	79.91	8.70	77.21	77.21	0.0025	6.40	1.35	1.35	7.43	1.24	1.24	9513	9540	99.7	0.3	216.22	80.77						
2.893	500-YR	71.21	80.53	9.32	77.21	77.21	0.0025	7.02	1.66	1.66	8.09	1.46	1.46	11352	11400	99.6	0.4	219.91	81.54						
2.808	2-YR	70.08	72.41	2.33	76.08	76.08	0.0500	2.15			8.37			1620	1620	100.0	0.0	89.99	73.50	38.62	5B		191.96	2.13	
2.808	5-YR	70.08	73.57	3.49	76.08	76.08	0.0500	3.11			10.07			3040	3040	100.0	0.0	96.95	75.15						
2.808	10-YR	70.08	74.70	4.62	76.08	76.08	0.0500	2.45			8.89			4170	4170	100.0	0.0	191.71	75.92						
2.808	25-YR	70.08	75.39	5.31	76.08	76.08	0.0500	3.08			8.78			5300	5300	100.0	0.0	195.87	76.59						
2.808	50-YR	70.08	75.85	5.77	76.08	76.08	0.0500	3.50			9.92			6890	6890	100.0	0.0	198.63	77.38						
2.808	100-YR	70.08	76.29	6.21	76.08	76.08	0.0500	3.91	0.11	0.11	10.38	0.45	0.45	8120	8120	100.0	0.0	202.11	77.96						
2.808	200-YR	70.08	76.64	6.56	76.08	76.08	0.0500	4.26	0.28	0.28	11.20	0.88	0.88	9539	9540	100.0	0.0	205.59	78.59						
2.808	500-YR	70.08	77.29	7.21	76.08	76.08	0.0500	4.91	0.61	0.61	11.59	1.39	1.39	11390	11400	99.9	0.1	212.12	79.38						
2.802	2-YR	68.58	72.52	3.94	74.58	74.58	0.0025	3.47			4.69			1620	1620	100.0	0.0	99.62	72.86	25.28	5B		211.28	2.12	
2.802	5-YR	68.58	74.32	5.74	74.58	74.58	0.0025	3.47			4.41			3040	3040	100.0	0.0	198.47	74.63						
2.802	10-YR	68.58	75.03	6.45	74.58	74.58	0.0025	4.15	0.23	0.23	5.02	0.34	0.34	4170	4170	100.0	0.0	202.73	75.43						
2.802	25-YR	68.58	75.80	7.22	74.58	74.58	0.0025	4.92	0.61	0.61	5.38	0.63	0.63	5297	5300	99.9	0.1	207.34	76.25						
2.802	50-YR	68.58	76.37	7.79	74.58	74.58	0.0025	5.49	0.89	0.89	6.27	0.88	0.88	6882	6890	99.9	0.1	210.72	76.98						
2.802	100-YR	68.58	76.83	8.25	74.58	74.58	0.0025	5.95	1.12	1.12	6.81	1.06	1.06	8104	8120	99.8	0.2	213.49	77.55						
2.802	200-YR	68.58	77.26	8.68	74.58	74.58	0.0025	6.38	1.34	1.34	7.46	1.24	1.24	9513	9540	99.7	0.3	216.07	78.12						
2.802	500-YR	68.58	77.91	9.33	74.58	74.58	0.0025	7.03	1.66	1.66	8.08	1.46	1.46	11351	11400	99.6	0.4	219.97	78.92						
2.717	2-YR	67.46	70.11	2.65	73.46	73.46	0.0500	2.42			7.29			1620	1620	100.0	0.0	91.87	70.93	34.67	5A	36.54	195.80	2.13	1.84
2.717	5-YR	67.46	71.00	3.54	73.46	73.46	0.0500	3.15			10.12			3100	3100	100.0	0.0	97.21	72.59						
2.717	10-YR	67.46	72.09	4.63	73.46	73.46	0.0500	2.46			9.02			4250	4250	100.0	0.0	191.77	73.35						
2.717	25-YR	67.46	72.72	5.26	73.46	73.46	0.0500	3.04			9.93			5900	5900	100.0	0.0	195.58	74.25						
2.717	50-YR	67.46	73.15	5.69	73.46	73.46	0.0500	3.42			10.47			7100	7100	100.0	0.0	198.14	74.85						
2.717	100-YR	67.46	73.61	6.15	73.46	73.46	0.0500	3.85	0.08	0.08	10.78	0.38	0.38	8300	8300	100.0	0.0	201.50	75.41						
2.717	200-YR	67.46	74.02	6.56	73.46	73.46	0.0500	4.26	0.28	0.28	11.12	0.87	0.87	9469	9470	100.0	0.0	205.58	75.94						
2.717	500-YR	67.46	74.65	7.19	73.46	73.46	0.0500	4.89	0.60	0.60	11.64	1.38	1.38	11390	11400	99.9	0.1	211.95	76.76						
2.711	2-YR	65.96	70.40	4.44	71.96	71.96	0.0025	2.28			3.72			1620	1620	100.0	0.0	190.65	70.62	42.94	5A		228.81	1.20	
2.711	5-YR	65.96	71.71	5.75	71.96	71.96	0.0025	3.48			4.49			3100	3100	100.0	0.0	198.51	72.02						
2.711	10-YR	65.96	72.42	6.46	71.96	71.96	0.0025	4.16	0.23	0.23	5.11	0.36	0.36	4250	4250	100.0	0.0	204.61	72.83						

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
2.711	25-YR	65.96	73.23	7.27	71.96	71.96	0.0025	4.97	0.63	0.63	5.93	0.73	0.73	5894	5900	99.9	0.1	212.70	73.77						
2.711	50-YR	65.96	73.75	7.79	71.96	71.96	0.0025	5.49	0.89	0.89	6.46	0.93	0.93	7085	7100	99.8	0.2	217.87	74.39						
2.711	100-YR	65.96	74.21	8.25	71.96	71.96	0.0025	5.95	1.12	1.12	6.95	1.11	1.11	8272	8300	99.7	0.3	222.50	74.96						
2.711	200-YR	65.96	74.63	8.67	71.96	71.96	0.0025	6.37	1.33	1.33	7.40	1.26	1.26	9425	9470	99.5	0.5	226.71	75.48						
2.711	500-YR	65.96	75.29	9.33	71.96	71.96	0.0025	7.03	1.66	1.66	8.05	1.49	1.49	11318	11400	99.3	0.7	233.29	76.29						
2.626	2-YR	64.83	67.16	2.33	70.83	70.83	0.0500	2.15			8.37			1620	1620	100.0	0.0	89.99	68.25	38.62	5A		191.96	2.13	
2.626	5-YR	64.83	68.37	3.54	70.83	70.83	0.0500	3.15			10.12			3100	3100	100.0	0.0	97.21	69.96						
2.626	10-YR	64.83	69.46	4.63	70.83	70.83	0.0500	2.46			9.02			4250	4250	100.0	0.0	191.77	70.72						
2.626	25-YR	64.83	70.09	5.26	70.83	70.83	0.0500	3.04			9.93			5900	5900	100.0	0.0	195.58	71.62						
2.626	50-YR	64.83	70.53	5.70	70.83	70.83	0.0500	3.43			10.43			7100	7100	100.0	0.0	198.21	72.22						
2.626	100-YR	64.83	70.98	6.15	70.83	70.83	0.0500	3.85	0.07	0.07	10.79	0.37	0.37	8300	8300	100.0	0.0	201.45	72.78						
2.626	200-YR	64.83	71.39	6.56	70.83	70.83	0.0500	4.26	0.28	0.28	11.12	0.87	0.87	9469	9470	100.0	0.0	205.56	73.31						
2.626	500-YR	64.83	72.01	7.18	70.83	70.83	0.0500	4.88	0.59	0.59	11.67	1.38	1.38	11390	11400	99.9	0.1	211.79	74.12						
2.620	2-YR	63.33	67.27	3.94	69.33	69.33	0.0025	3.47			4.68			1620	1620	100.0	0.0	99.63	67.61	25.29	5A		218.80	2.20	
2.620	5-YR	63.33	69.09	5.76	69.33	69.33	0.0025	3.48			4.48			3100	3100	100.0	0.0	198.54	69.40						
2.620	10-YR	63.33	69.80	6.47	69.33	69.33	0.0025	4.17	0.23	0.23	5.10	0.36	0.36	4250	4250	100.0	0.0	204.65	70.20						
2.620	25-YR	63.33	70.60	7.27	69.33	69.33	0.0025	4.97	0.64	0.64	5.92	0.73	0.73	5894	5900	99.9	0.1	212.75	71.15						
2.620	50-YR	63.33	71.12	7.79	69.33	69.33	0.0025	5.49	0.90	0.90	6.45	0.93	0.93	7085	7100	99.8	0.2	217.92	71.77						
2.620	100-YR	63.33	71.58	8.25	69.33	69.33	0.0025	5.95	1.12	1.12	6.96	1.11	1.11	8272	8300	99.7	0.3	222.47	72.33						
2.620	200-YR	63.33	72.00	8.67	69.33	69.33	0.0025	6.37	1.33	1.33	7.40	1.26	1.26	9425	9470	99.5	0.5	226.69	72.85						
2.620	500-YR	63.33	72.65	9.32	69.33	69.33	0.0025	7.02	1.66	1.66	8.06	1.49	1.49	11318	11400	99.3	0.7	233.19	73.65						
2.535	2-YR	62.21	64.85	2.64	68.21	68.21	0.0500	2.41			7.30			1620	1620	100.0	0.0	91.86	65.68	34.80	5A		195.68	2.13	
2.535	5-YR	62.21	65.75	3.54	68.21	68.21	0.0500	3.15			10.12			3100	3100	100.0	0.0	97.22	67.34						
2.535	10-YR	62.21	66.84	4.63	68.21	68.21	0.0500	2.46			9.02			4250	4250	100.0	0.0	191.77	68.10						
2.535	25-YR	62.21	67.47	5.26	68.21	68.21	0.0500	3.04			9.92			5900	5900	100.0	0.0	195.59	69.00						
2.535	50-YR	62.21	67.91	5.70	68.21	68.21	0.0500	3.43			10.43			7100	7100	100.0	0.0	198.22	69.60						
2.535	100-YR	62.21	68.38	6.17	68.21	68.21	0.0500	3.87	0.08	0.08	10.73	0.41	0.40	8300	8300	100.0	0.0	202.69	70.17						
2.535	200-YR	62.21	68.79	6.58	68.21	68.21	0.0500	4.28	0.29	0.29	11.07	0.89	0.88	9468	9470	100.0	0.0	209.22	70.69						
2.535	500-YR	62.21	69.43	7.22	68.21	68.21	0.0500	4.92	0.61	0.61	11.58	1.40	1.39	11383	11400	99.9	0.1	219.48	71.50						
2.529	2-YR	60.71	65.15	4.44	66.71	66.71	0.0025	2.28			3.72			1620	1620	100.0	0.0	190.63	65.36	42.93	5A		241.28	1.27	
2.529	5-YR	60.71	66.46	5.75	66.71	66.71	0.0025	3.48			4.49			3100	3100	100.0	0.0	198.49	66.77						
2.529	10-YR	60.71	67.16	6.45	66.71	66.71	0.0025	4.15	0.23	0.23	5.12	0.36	0.35	4249	4250	100.0	0.0	206.46	67.57						
2.529	25-YR	60.71	67.98	7.27	66.71	66.71	0.0025	4.97	0.63	0.63	5.93	0.73	0.73	5892	5900	99.9	0.1	218.16	68.52						
2.529	50-YR	60.71	68.50	7.79	66.71	66.71	0.0025	5.49	0.90	0.90	6.44	0.94	0.93	7078	7100	99.7	0.3	225.72	69.15						
2.529	100-YR	60.71	68.97	8.26	66.71	66.71	0.0025	5.96	1.13	1.13	6.93	1.11	1.10	8259	8300	99.5	0.5	232.42	69.71						
2.529	200-YR	60.71	69.39	8.68	66.71	66.71	0.0025	6.38	1.34	1.34	7.37	1.27	1.26	9405	9470	99.3	0.7	238.48	70.23						
2.529	500-YR	60.71	70.06	9.35	66.71	66.71	0.0025	7.05	1.67	1.67	8.00	1.50	1.48	11280	11400	99.0	1.0	247.97	71.04						
2.444	2-YR	59.58	61.92	2.34	65.52	65.58	0.0500	2.16			8.34			1620	1620	100.0	0.0	90.03	63.00	38.47	4B	34.74	192.08	2.13	1.99
2.444	5-YR	59.58	63.13	3.55	65.52	65.58	0.0500	3.16			10.09			3100	3100	100.0	0.0	97.28	64.71						

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
2.444	10-YR	59.58	64.23	4.65	65.52	65.58	0.0500	2.48			8.94			4250	4250	100.0	0.0	191.90	65.47						
2.444	25-YR	59.58	64.85	5.27	65.52	65.58	0.0500	3.04			9.91			5900	5900	100.0	0.0	195.61	66.37						
2.444	50-YR	59.58	65.26	5.68	65.52	65.58	0.0500	3.42			10.49			7100	7100	100.0	0.0	198.09	66.97						
2.444	100-YR	59.58	65.69	6.11	65.52	65.58	0.0500	3.82		0.06	10.88		0.32	8300	8300	100.0	0.0	200.39	67.53						
2.444	200-YR	59.58	66.10	6.52	65.52	65.58	0.0500	4.22		0.26	11.22		0.84	9469	9470	100.0	0.0	202.42	68.05						
2.444	500-YR	59.58	66.72	7.14	65.52	65.58	0.0500	4.84		0.57	11.78		1.36	11396	11400	100.0	0.0	205.50	68.87						
2.438	2-YR	58.08	62.01	3.93	62.73	64.08	0.0025	3.47			4.69			1620	1620	100.0	0.0	99.60	62.36	25.34	4B		215.25	2.16	
2.438	5-YR	58.08	63.82	5.74	62.73	64.08	0.0025	3.52	1.09		4.50	1.01		3089	3100	99.6	0.4	205.18	64.14						
2.438	10-YR	58.08	64.53	6.45	62.73	64.08	0.0025	4.21	1.80	0.23	5.12	1.42	0.35	4224	4250	99.4	0.6	208.21	64.94						
2.438	25-YR	58.08	65.34	7.26	62.73	64.08	0.0025	5.02	2.61	0.63	5.94	1.88	0.72	5848	5900	99.1	0.9	212.25	65.88						
2.438	50-YR	58.08	65.86	7.78	62.73	64.08	0.0025	5.54	3.13	0.89	6.47	2.16	0.92	7025	7100	98.9	1.1	214.82	66.50						
2.438	100-YR	58.08	66.32	8.24	62.73	64.08	0.0025	6.00	3.59	1.12	6.98	2.42	1.10	8199	8300	98.8	1.2	217.13	67.06						
2.438	200-YR	58.08	66.73	8.65	62.73	64.08	0.0025	6.42	4.00	1.33	7.43	2.65	1.25	9342	9470	98.6	1.4	219.22	67.58						
2.438	500-YR	58.08	67.38	9.30	62.73	64.08	0.0025	7.06	4.65	1.65	8.11	3.00	1.48	11220	11400	98.4	1.6	222.45	68.39						
2.353	2-YR	56.96	59.62	2.66	62.96	62.96	0.0500	2.43			7.25			1620	1620	100.0	0.0	91.97	60.44	34.58	4B		195.92	2.13	
2.353	5-YR	56.96	60.49	3.53	62.96	62.96	0.0500	3.15			10.13			3100	3100	100.0	0.0	97.21	62.09						
2.353	10-YR	56.96	61.59	4.63	62.96	62.96	0.0500	2.46			9.02			4250	4250	100.0	0.0	191.77	62.85						
2.353	25-YR	56.96	62.23	5.27	62.96	62.96	0.0500	3.04			9.91			5900	5900	100.0	0.0	195.60	63.75						
2.353	50-YR	56.96	62.68	5.72	62.96	62.96	0.0500	3.45			10.39			7100	7100	100.0	0.0	198.30	64.35						
2.353	100-YR	56.96	63.13	6.17	62.96	62.96	0.0500	3.87	0.09	0.09	10.72	0.42	0.41	8300	8300	100.0	0.0	209.53	64.92						
2.353	200-YR	56.96	63.55	6.59	62.96	62.96	0.0500	4.29	0.29	0.29	11.04	0.90	0.89	9461	9470	99.9	0.1	232.35	65.44						
2.353	500-YR	56.96	64.15	7.19	62.96	62.96	0.0500	4.89	0.59	0.59	11.60	1.39	1.38	11346	11400	99.5	0.5	265.71	66.23						
2.347	2-YR	55.46	59.91	4.45	61.46	61.46	0.0025	2.30			3.70			1620	1620	100.0	0.0	190.72	60.13	42.86	4B		324.46	1.70	
2.347	5-YR	55.46	61.24	5.78	61.46	61.46	0.0025	3.51			4.45			3100	3100	100.0	0.0	198.69	61.55						
2.347	10-YR	55.46	61.97	6.51	61.46	61.46	0.0025	4.21	0.26	0.26	5.04	0.38	0.38	4248	4250	99.9	0.1	221.97	62.37						
2.347	25-YR	55.46	62.76	7.30	61.46	61.46	0.0025	5.00	0.65	0.65	5.87	0.74	0.73	5873	5900	99.5	0.5	255.99	63.30						
2.347	50-YR	55.46	63.27	7.81	61.46	61.46	0.0025	5.51	0.91	0.91	6.38	0.94	0.92	7034	7100	99.1	0.9	277.82	63.90						
2.347	100-YR	55.46	63.75	8.29	61.46	61.46	0.0025	5.99	1.14	1.14	6.83	1.11	1.09	8176	8300	98.5	1.5	298.11	64.46						
2.347	200-YR	55.46	64.18	8.72	61.46	61.46	0.0025	6.42	1.36	1.36	7.22	1.26	1.24	9271	9470	97.9	2.1	316.77	64.97						
2.347	500-YR	55.46	64.83	9.37	61.46	61.46	0.0025	7.07	1.69	1.69	7.81	1.47	1.45	11042	11400	96.9	3.1	344.68	65.75						
2.262	2-YR	54.33	56.68	2.35	60.33	60.33	0.0500	2.17			8.40			1640	1640	100.0	0.0	90.11	57.78	38.34	4B		192.20	2.13	
2.262	5-YR	54.33	57.90	3.57	60.33	60.33	0.0500	3.18			10.17			3150	3150	100.0	0.0	97.43	59.51						
2.262	10-YR	54.33	59.03	4.70	60.33	60.33	0.0500	2.53			9.06			4400	4400	100.0	0.0	192.22	60.31						
2.262	25-YR	54.33	59.63	5.30	60.33	60.33	0.0500	3.07			9.98			6000	6000	100.0	0.0	195.79	61.18						
2.262	50-YR	54.33	60.08	5.75	60.33	60.33	0.0500	3.48			10.43			7200	7200	100.0	0.0	198.49	61.77						
2.262	100-YR	54.33	60.50	6.17	60.33	60.33	0.0500	3.87	0.08	0.08	10.86	0.40	0.40	8400	8400	100.0	0.0	201.66	62.33						
2.262	200-YR	54.33	60.92	6.59	60.33	60.33	0.0500	4.29	0.30	0.30	11.19	0.91	0.91	9608	9610	100.0	0.0	205.93	62.87						
2.262	500-YR	54.33	61.54	7.21	60.33	60.33	0.0500	4.91	0.60	0.60	11.70	1.40	1.40	11490	11500	99.9	0.1	212.08	63.66						
2.256	2-YR	52.83	56.80	3.97	58.83	58.83	0.0025	3.49			4.70			1640	1640	100.0	0.0	99.80	57.14	25.14	4B		219.41	2.20	

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
2.256	5-YR	52.83	58.63	5.80	58.83	58.83	0.0025	3.52			4.50			3150	3150	100.0	0.0	198.78	58.94						
2.256	10-YR	52.83	59.37	6.54	58.83	58.83	0.0025	4.24	0.27	0.27	5.19	0.40	0.40	4399	4400	100.0	0.0	205.37	59.79						
2.256	25-YR	52.83	60.15	7.32	58.83	58.83	0.0025	5.02	0.66	0.66	5.97	0.75	0.75	5994	6000	99.9	0.1	213.21	60.70						
2.256	50-YR	52.83	60.67	7.84	58.83	58.83	0.0025	5.54	0.92	0.92	6.49	0.95	0.95	7184	7200	99.8	0.2	218.36	61.32						
2.256	100-YR	52.83	61.11	8.28	58.83	58.83	0.0025	5.98	1.14	1.14	7.00	1.12	1.12	8371	8400	99.7	0.3	222.76	61.86						
2.256	200-YR	52.83	61.54	8.71	58.83	58.83	0.0025	6.41	1.36	1.36	7.46	1.28	1.28	9563	9610	99.5	0.5	227.13	62.40						
2.256	500-YR	52.83	62.18	9.35	58.83	58.83	0.0025	7.05	1.67	1.67	8.10	1.50	1.50	11416	11500	99.3	0.7	233.51	63.19						
2.171	2-YR	51.71	54.37	2.66	57.71	57.71	0.0500	2.43			7.35			1640	1640	100.0	0.0	91.95	55.21	34.57	4B		195.92	2.13	
2.171	5-YR	51.71	55.28	3.57	57.71	57.71	0.0500	3.18			10.17			3150	3150	100.0	0.0	97.43	56.89						
2.171	10-YR	51.71	56.41	4.70	57.71	57.71	0.0500	2.53			9.06			4400	4400	100.0	0.0	192.22	57.69						
2.171	25-YR	51.71	57.01	5.30	57.71	57.71	0.0500	3.07			9.98			6000	6000	100.0	0.0	195.79	58.56						
2.171	50-YR	51.71	57.44	5.73	57.71	57.71	0.0500	3.46			10.48			7200	7200	100.0	0.0	198.39	59.15						
2.171	100-YR	51.71	57.93	6.22	57.71	57.71	0.0500	3.92	0.11	0.11	10.70	0.49	0.48	8400	8400	100.0	0.0	203.19	59.71						
2.171	200-YR	51.71	58.35	6.64	57.71	57.71	0.0500	4.34	0.32	0.32	11.07	0.95	0.94	9607	9610	100.0	0.0	209.09	60.25						
2.171	500-YR	51.71	58.97	7.26	57.71	57.71	0.0500	4.96	0.63	0.63	11.57	1.43	1.41	11484	11500	99.9	0.1	217.94	61.05						
2.166	2-YR	50.21	54.67	4.46	56.21	56.21	0.0025	2.30			3.73			1640	1640	100.0	0.0	190.77	54.89	42.77	4B		238.16	1.25	
2.166	5-YR	50.21	56.00	5.79	56.21	56.21	0.0025	3.51			4.51			3150	3150	100.0	0.0	198.75	56.32						
2.166	10-YR	50.21	56.74	6.53	56.21	56.21	0.0025	4.23	0.27	0.27	5.20	0.40	0.40	4399	4400	100.0	0.0	206.95	57.16						
2.166	25-YR	50.21	57.52	7.31	56.21	56.21	0.0025	5.01	0.66	0.66	5.97	0.75	0.74	5992	6000	99.9	0.1	217.18	58.08						
2.166	50-YR	50.21	58.04	7.83	56.21	56.21	0.0025	5.53	0.91	0.91	6.49	0.95	0.94	7179	7200	99.7	0.3	223.90	58.69						
2.166	100-YR	50.21	58.52	8.31	56.21	56.21	0.0025	6.01	1.15	1.15	6.96	1.13	1.12	8361	8400	99.5	0.5	230.16	59.27						
2.166	200-YR	50.21	58.95	8.74	56.21	56.21	0.0025	6.44	1.37	1.37	7.41	1.29	1.28	9547	9610	99.3	0.7	235.82	59.80						
2.166	500-YR	50.21	59.60	9.39	56.21	56.21	0.0025	7.09	1.69	1.69	8.04	1.51	1.49	11388	11500	99.0	1.0	244.24	60.59						
2.080	2-YR	49.08	51.43	2.35	55.08	55.08	0.0500	2.17			8.40			1640	1640	100.0	0.0	90.11	52.53	38.34	4B		192.20	2.13	
2.080	5-YR	49.08	52.65	3.57	55.08	55.08	0.0500	3.18			10.17			3150	3150	100.0	0.0	97.43	54.26						
2.080	10-YR	49.08	53.78	4.70	55.08	55.08	0.0500	2.53			9.06			4400	4400	100.0	0.0	192.22	55.06						
2.080	25-YR	49.08	54.38	5.30	55.08	55.08	0.0500	3.07			9.98			6000	6000	100.0	0.0	195.79	55.93						
2.080	50-YR	49.08	54.81	5.73	55.08	55.08	0.0500	3.46			10.48			7200	7200	100.0	0.0	198.40	56.52						
2.080	100-YR	49.08	55.21	6.13	55.08	55.08	0.0500	3.83	0.06	0.06	10.97	0.34	0.34	8400	8400	100.0	0.0	201.27	57.08						
2.080	200-YR	49.08	55.63	6.55	55.08	55.08	0.0500	4.25	0.27	0.27	11.31	0.88	0.88	9609	9610	100.0	0.0	205.47	57.61						
2.080	500-YR	49.08	56.22	7.14	55.08	55.08	0.0500	4.84	0.57	0.57	11.86	1.38	1.38	11491	11500	99.9	0.1	211.43	58.41						
2.075	2-YR	47.58	51.55	3.97	53.58	53.58	0.0025	3.49			4.70			1640	1640	100.0	0.0	99.79	51.89	25.14	4B		219.40	2.20	
2.075	5-YR	47.58	53.38	5.80	53.58	53.58	0.0025	3.52			4.50			3150	3150	100.0	0.0	198.78	53.69						
2.075	10-YR	47.58	54.12	6.54	53.58	53.58	0.0025	4.24	0.27	0.27	5.19	0.40	0.40	4399	4400	100.0	0.0	205.37	54.54						
2.075	25-YR	47.58	54.90	7.32	53.58	53.58	0.0025	5.02	0.66	0.66	5.97	0.75	0.75	5994	6000	99.9	0.1	213.21	55.45						
2.075	50-YR	47.58	55.41	7.83	53.58	53.58	0.0025	5.53	0.91	0.91	6.50	0.95	0.95	7184	7200	99.8	0.2	218.28	56.06						
2.075	100-YR	47.58	55.84	8.26	53.58	53.58	0.0025	5.96	1.13	1.13	7.03	1.12	1.12	8372	8400	99.7	0.3	222.56	56.60						
2.075	200-YR	47.58	56.27	8.69	53.58	53.58	0.0025	6.39	1.34	1.34	7.49	1.28	1.28	9564	9610	99.5	0.5	226.88	57.13						
2.075	500-YR	47.58	56.89	9.31	53.58	53.58	0.0025	7.01	1.66	1.66	8.14	1.50	1.50	11418	11500	99.3	0.7	233.13	57.91						

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
1.989	2-YR	46.46	49.12	2.66	52.46	52.46	0.0500	2.43			7.35			1640	1640	100.0	0.0	91.95	49.96	34.57	4B		195.92	2.13	
1.989	5-YR	46.46	50.03	3.57	52.46	52.46	0.0500	3.18			10.17			3150	3150	100.0	0.0	97.43	51.64						
1.989	10-YR	46.46	51.16	4.70	52.46	52.46	0.0500	2.53			9.06			4400	4400	100.0	0.0	192.23	52.44						
1.989	25-YR	46.46	51.76	5.30	52.46	52.46	0.0500	3.07			9.98			6000	6000	100.0	0.0	195.79	53.31						
1.989	50-YR	46.46	52.21	5.75	52.46	52.46	0.0500	3.48			10.43			7200	7200	100.0	0.0	198.51	53.90						
1.989	100-YR	46.46	52.74	6.28	52.46	52.46	0.0500	3.98	0.14	0.14	10.56	0.54	0.54	8400	8400	100.0	0.0	202.76	54.47						
1.989	200-YR	46.46	53.17	6.71	52.46	52.46	0.0500	4.41	0.36	0.36	10.89	0.98	0.98	9608	9610	100.0	0.0	207.13	55.01						
1.989	500-YR	46.46	53.85	7.39	52.46	52.46	0.0500	5.09	0.69	0.69	11.29	1.44	1.44	11486	11500	99.9	0.1	213.89	55.82						
1.984	2-YR	44.96	49.42	4.46	50.96	50.96	0.0025	2.30			3.73			1640	1640	100.0	0.0	190.77	49.64	42.77	4B		229.21	1.20	
1.984	5-YR	44.96	50.75	5.79	50.96	50.96	0.0025	3.51			4.51			3150	3150	100.0	0.0	198.75	51.07						
1.984	10-YR	44.96	51.49	6.53	50.96	50.96	0.0025	4.23	0.27	0.27	5.20	0.40	0.40	4399	4400	100.0	0.0	205.32	51.91						
1.984	25-YR	44.96	52.27	7.31	50.96	50.96	0.0025	5.01	0.66	0.66	5.98	0.74	0.74	5994	6000	99.9	0.1	213.15	52.83						
1.984	50-YR	44.96	52.80	7.84	50.96	50.96	0.0025	5.54	0.92	0.92	6.49	0.95	0.95	7184	7200	99.8	0.2	218.37	53.45						
1.984	100-YR	44.96	53.29	8.33	50.96	50.96	0.0025	6.03	1.17	1.17	6.93	1.12	1.12	8369	8400	99.6	0.4	223.35	54.04						
1.984	200-YR	44.96	53.74	8.78	50.96	50.96	0.0025	6.48	1.39	1.39	7.38	1.28	1.28	9561	9610	99.5	0.5	227.81	54.58						
1.984	500-YR	44.96	54.42	9.46	50.96	50.96	0.0025	7.16	1.73	1.73	7.97	1.49	1.49	11411	11500	99.2	0.8	234.59	55.40						
1.898	2-YR	43.83	46.18	2.35	49.83	49.83	0.0500	2.17			8.40			1640	1640	100.0	0.0	90.11	47.28	38.34	4B		192.20	2.13	
1.898	5-YR	43.83	47.40	3.57	49.83	49.83	0.0500	3.18			10.17			3150	3150	100.0	0.0	97.43	49.01						
1.898	10-YR	43.83	48.53	4.70	49.83	49.83	0.0500	2.53			9.05			4400	4400	100.0	0.0	192.23	49.81						
1.898	25-YR	43.83	49.13	5.30	49.83	49.83	0.0500	3.07			9.98			6000	6000	100.0	0.0	195.79	50.68						
1.898	50-YR	43.83	49.55	5.72	49.83	49.83	0.0500	3.45			10.54			7200	7200	100.0	0.0	198.29	51.27						
1.898	100-YR	43.83	49.90	6.07	49.83	49.83	0.0500	3.77	0.03	0.03	11.14	0.24	0.24	8400	8400	100.0	0.0	200.69	51.83						
1.898	200-YR	43.83	50.29	6.46	49.83	49.83	0.0500	4.16	0.23	0.23	11.56	0.81	0.81	9609	9610	100.0	0.0	204.56	52.36						
1.898	500-YR	43.83	50.79	6.96	49.83	49.83	0.0500	4.66	0.48	0.48	12.32	1.31	1.31	11494	11500	99.9	0.1	209.64	53.15						
1.893	2-YR	42.33	46.30	3.97	48.33	48.33	0.0025	3.49			4.70			1640	1640	100.0	0.0	99.79	46.64	25.14	4B		219.40	2.20	
1.893	5-YR	42.33	48.13	5.80	48.33	48.33	0.0025	3.52			4.50			3150	3150	100.0	0.0	198.78	48.44						
1.893	10-YR	42.33	48.87	6.54	48.33	48.33	0.0025	4.24	0.27	0.27	5.19	0.40	0.40	4399	4400	100.0	0.0	205.36	49.28						
1.893	25-YR	42.33	49.65	7.32	48.33	48.33	0.0025	5.02	0.66	0.66	5.97	0.75	0.75	5994	6000	99.9	0.1	213.20	50.20						
1.893	50-YR	42.33	50.09	7.76	48.33	48.33	0.0025	5.46	0.88	0.88	6.58	0.94	0.94	7185	7200	99.8	0.2	217.63	50.76						
1.893	100-YR	42.33	50.48	8.15	48.33	48.33	0.0025	5.85	1.08	1.08	7.15	1.12	1.12	8374	8400	99.7	0.3	221.53	51.28						
1.893	200-YR	42.33	50.90	8.57	48.33	48.33	0.0025	6.27	1.28	1.28	7.63	1.28	1.28	9568	9610	99.6	0.4	225.67	51.80						
1.893	500-YR	42.33	51.53	9.20	48.33	48.33	0.0025	6.90	1.60	1.60	8.28	1.51	1.51	11423	11500	99.3	0.7	232.02	52.59						
1.808	2-YR	41.21	43.87	2.66	47.21	47.21	0.0500	2.43			7.35			1640	1640	100.0	0.0	91.95	44.71	34.57	4A	27.57	195.92	2.13	1.69
1.808	5-YR	41.21	44.78	3.57	47.21	47.21	0.0500	3.18			10.17			3150	3150	100.0	0.0	97.43	46.39						
1.808	10-YR	41.21	45.92	4.71	47.21	47.21	0.0500	2.53			9.05			4400	4400	100.0	0.0	192.24	47.19						
1.808	25-YR	41.21	46.51	5.30	47.21	47.21	0.0500	3.07			9.98			6000	6000	100.0	0.0	195.79	48.06						
1.808	50-YR	41.21	47.13	5.92	47.21	47.21	0.0500	3.63			9.94			7200	7200	100.0	0.0	199.54	48.67						
1.808	100-YR	41.21	47.85	6.64	47.21	47.21	0.0500	4.34	0.32	0.32	9.69	0.83	0.82	8398	8400	100.0	0.0	209.57	49.30						
1.808	200-YR	41.21	48.44	7.23	47.21	47.21	0.0500	4.93	0.62	0.62	9.72	1.19	1.17	9596	9610	99.9	0.1	218.60	49.91						
1.808	500-YR	41.21	49.39	8.18	47.21	47.21	0.0500	5.88	1.09	1.09	9.73	1.54	1.53	11445	11500	99.5	0.5	232.86	50.85						

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
1.802	2-YR	39.71	44.17	4.46	45.71	45.71	0.0025	2.30			3.73			1640	1640	100.0	0.0	190.77	44.39	42.77	4A		229.21	1.20	
1.802	5-YR	39.71	45.50	5.79	45.71	45.71	0.0025	3.51			4.51			3150	3150	100.0	0.0	198.75	45.82						
1.802	10-YR	39.71	46.24	6.53	45.71	45.71	0.0025	4.23	0.26	0.26	5.20	0.40	0.40	4399	4400	100.0	0.0	205.28	46.66						
1.802	25-YR	39.71	46.90	7.19	45.71	45.71	0.0025	4.89	0.59	0.59	6.13	0.73	0.73	5995	6000	99.9	0.1	211.88	47.48						
1.802	50-YR	39.71	47.64	7.93	45.71	45.71	0.0025	5.63	0.96	0.96	6.38	0.95	0.95	7182	7200	99.8	0.2	219.29	48.27						
1.802	100-YR	39.71	48.27	8.56	45.71	45.71	0.0025	6.26	1.28	1.28	6.68	1.12	1.12	8363	8400	99.6	0.4	225.62	48.96						
1.802	200-YR	39.71	48.84	9.13	45.71	45.71	0.0025	6.83	1.56	1.56	6.99	1.26	1.26	9548	9610	99.4	0.6	231.28	49.59						
1.802	500-YR	39.71	49.74	10.03	45.71	45.71	0.0025	7.73	2.01	1.22	7.37	1.45	1.05	11389	11500	99.0	1.0	260.61	50.57						
1.717	2-YR	38.58	40.93	2.35	44.58	44.58	0.0500	2.17			8.40			1640	1640	100.0	0.0	90.10	42.03	38.34	4A		192.20	2.13	
1.717	5-YR	38.58	42.15	3.57	44.58	44.58	0.0500	3.18			10.17			3150	3150	100.0	0.0	97.43	43.76						
1.717	10-YR	38.58	43.29	4.71	44.58	44.58	0.0500	2.53			9.03			4400	4400	100.0	0.0	192.26	44.56						
1.717	25-YR	38.58	44.23	5.65	44.58	44.58	0.0500	3.39			8.94			6000	6000	100.0	0.0	197.92	45.48						
1.717	50-YR	38.58	46.69	8.11	44.58	44.58	0.0500	5.81	1.06	1.06	6.17	0.96	0.96	7179	7200	99.7	0.3	221.13	47.28						
1.717	100-YR	38.58	47.40	8.82	44.58	44.58	0.0500	6.52	1.41	1.41	6.41	1.11	1.11	8356	8400	99.5	0.5	228.17	48.03						
1.717	200-YR	38.58	47.99	9.41	44.58	44.58	0.0500	7.11	1.70	1.70	6.71	1.25	1.25	9537	9610	99.2	0.8	234.08	48.68						
1.717	500-YR	38.58	48.96	10.38	44.58	44.58	0.0500	8.08	2.19	2.19	7.03	1.42	1.42	11364	11500	98.8	1.2	243.80	49.72						
1.711	2-YR	37.08	41.04	3.96	43.08	43.08	0.0025	3.49			4.72			1640	1640	100.0	0.0	99.74	41.38	25.19	4A		219.20	2.20	
1.711	5-YR	37.08	42.87	5.79	43.08	43.08	0.0025	3.51			4.52			3150	3150	100.0	0.0	198.71	43.18						
1.711	10-YR	37.08	43.43	6.35	43.08	43.08	0.0025	4.05	0.18	0.18	5.43	0.33	0.33	4400	4400	100.0	0.0	203.55	43.89						
1.711	25-YR	37.08	44.64	7.56	43.08	43.08	0.0025	5.26	0.78	0.78	5.69	0.77	0.77	5991	6000	99.8	0.2	215.61	45.14						
1.711	50-YR	37.08	46.82	9.74	43.08	43.08	0.0025	7.44	1.87	1.87	4.80	0.92	0.92	7136	7200	99.1	0.9	237.39	47.17						
1.711	100-YR	37.08	47.53	10.45	43.08	43.08	0.0025	8.15	2.22	2.22	5.09	1.03	1.03	8298	8400	98.8	1.2	244.46	47.92						
1.711	200-YR	37.08	48.12	11.04	43.08	43.08	0.0025	8.74	2.52	2.52	5.41	1.14	1.14	9465	9610	98.5	1.5	250.42	48.57						
1.711	500-YR	37.08	49.10	12.02	43.08	43.08	0.0025	9.72	3.01	3.01	5.80	1.28	1.28	11268	11500	98.0	2.0	260.17	49.61						
1.626	2-YR	35.96	38.68	2.72	41.96	41.96	0.0500	2.48			7.22			1650	1650	100.0	0.0	92.30	39.49	33.93	4A		196.64	2.13	
1.626	5-YR	35.96	40.30	4.34	41.96	41.96	0.0500	2.19			7.68			3200	3200	100.0	0.0	190.05	41.22						
1.626	10-YR	35.96	42.05	6.09	41.96	41.96	0.0500	3.79	0.04	0.04	5.88	0.14	0.14	4450	4450	100.0	0.0	200.75	42.58						
1.626	25-YR	35.96	43.87	7.91	41.96	41.96	0.0500	5.61	0.95	0.95	5.38	0.80	0.78	6038	6050	99.8	0.2	216.49	44.32						
1.626	50-YR	35.96	46.52	10.56	41.96	41.96	0.0500	8.26	2.28	2.28	4.37	0.90	0.87	7220	7300	98.9	1.1	239.44	46.82						
1.626	100-YR	35.96	47.22	11.26	41.96	41.96	0.0500	8.96	2.63	2.63	4.70	1.01	0.98	8431	8550	98.6	1.4	245.47	47.56						
1.626	200-YR	35.96	47.82	11.86	41.96	41.96	0.0500	9.56	2.93	2.93	4.95	1.09	1.06	9460	9620	98.3	1.7	250.65	48.20						
1.626	500-YR	35.96	48.80	12.84	41.96	41.96	0.0500	10.54	3.42	3.42	5.34	1.22	1.19	11256	11500	97.9	2.1	259.05	49.23						
1.620	2-YR	34.46	38.97	4.51	40.46	40.46	0.0025	2.35			3.68			1650	1650	100.0	0.0	191.06	39.18	42.36	4A		226.62	1.19	
1.620	5-YR	34.46	40.66	6.20	40.46	40.46	0.0025	3.90	0.10	0.10	4.10	0.17	0.17	3200	3200	100.0	0.0	201.75	40.92						
1.620	10-YR	34.46	42.19	7.73	40.46	40.46	0.0025	5.43	0.87	0.87	4.09	0.58	0.57	4442	4450	99.8	0.2	215.26	42.45						
1.620	25-YR	34.46	43.96	9.50	40.46	40.46	0.0025	7.20	1.75	1.75	4.17	0.79	0.77	6008	6050	99.3	0.7	230.89	44.23						
1.620	50-YR	34.46	46.57	12.11	40.46	40.46	0.0025	9.81	3.06	3.06	3.65	0.81	0.79	7167	7300	98.2	1.8	253.89	46.78						
1.620	100-YR	34.46	47.28	12.82	40.46	40.46	0.0025	10.52	3.41	3.41	3.98	0.91	0.89	8365	8550	97.8	2.2	260.08	47.52						
1.620	200-YR	34.46	47.88	13.42	40.46	40.46	0.0025	11.12	3.71	3.71	4.22	0.98	0.96	9383	9620	97.5	2.5	265.39	48.15						

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
1.620	500-YR	34.46	48.86	14.40	40.46	40.46	0.0025	12.10	4.20	4.20	4.61	1.10	1.08	11160	11500	97.0	3.0	274.01	49.18						
1.535	2-YR	33.33	37.49	4.16	39.33	39.33	0.0500	2.02			4.32			1650	1650	100.0	0.0	188.96	37.78	45.42	4A		223.20	1.18	
1.535	5-YR	33.33	40.18	6.85	39.33	39.33	0.0500	4.55	0.42	0.42	3.52	0.35	0.35	3199	3200	100.0	0.0	208.50	40.37						
1.535	10-YR	33.33	41.89	8.56	39.33	39.33	0.0500	6.26	1.28	1.28	3.54	0.59	0.59	4431	4450	99.6	0.4	225.64	42.09						
1.535	25-YR	33.33	43.75	10.42	39.33	39.33	0.0500	8.12	2.21	2.21	3.68	0.75	0.75	5977	6050	98.8	1.2	244.22	43.96						
1.535	50-YR	33.33	46.47	13.14	39.33	39.33	0.0500	10.84	3.57	3.57	3.28	0.76	0.76	7108	7300	97.4	2.6	271.38	46.63						
1.535	100-YR	33.33	47.16	13.83	39.33	39.33	0.0500	11.53	3.92	3.92	3.59	0.84	0.84	8291	8550	97.0	3.0	278.31	47.36						
1.535	200-YR	33.33	47.76	14.43	39.33	39.33	0.0500	12.13	4.21	4.21	3.83	0.91	0.91	9295	9620	96.6	3.4	284.29	47.98						
1.535	500-YR	33.33	48.73	15.40	39.33	39.33	0.0500	13.10	4.70	4.70	4.22	1.03	1.03	11046	11500	96.1	3.9	293.99	49.00						
1.529	2-YR	31.83	37.59	5.76	37.83	37.83	0.0025	3.49			2.38			1650	1650	100.0	0.0	198.58	37.68	34.48	4A		255.19	1.29	
1.529	5-YR	31.83	40.22	8.39	37.83	37.83	0.0025	6.09	1.20	1.20	2.62	0.43	0.43	3188	3200	99.6	0.4	223.93	40.33						
1.529	10-YR	31.83	41.93	10.10	37.83	37.83	0.0025	7.80	2.05	2.05	2.82	0.56	0.56	4403	4450	98.9	1.1	241.00	42.05						
1.529	25-YR	31.83	43.79	11.96	37.83	37.83	0.0025	9.66	2.98	2.98	3.07	0.68	0.68	5930	6050	98.0	2.0	259.55	43.93						
1.529	50-YR	31.83	46.49	14.66	37.83	37.83	0.0025	12.36	4.33	4.33	2.85	0.68	0.68	7044	7300	96.5	3.5	286.59	46.61						
1.529	100-YR	31.83	47.19	15.36	37.83	37.83	0.0025	13.06	4.68	4.68	3.15	0.77	0.77	8215	8550	96.1	3.9	293.56	47.34						
1.529	200-YR	31.83	47.79	15.96	37.83	37.83	0.0025	13.66	4.98	4.98	3.37	0.83	0.83	9208	9620	95.7	4.3	299.56	47.96						
1.529	500-YR	31.83	48.76	16.93	37.83	37.83	0.0025	14.63	5.09	5.47	3.74	0.89	0.94	10952	11500	95.2	4.8	313.43	48.97						
1.444	2-YR	30.70	37.44	6.74	36.70	36.70	0.0500	4.44	0.37	0.37	1.86	0.17	0.17	1650	1650	100.0	0.0	204.47	37.50	30.34	4A		244.88	1.20	
1.444	5-YR	30.70	40.13	9.43	36.70	36.70	0.0500	7.13	1.71	1.71	2.24	0.41	0.41	3186	3200	99.6	0.4	220.55	40.20						
1.444	10-YR	30.70	41.85	11.15	36.70	36.70	0.0500	8.85	2.57	2.57	2.49	0.52	0.52	4409	4450	99.1	0.9	230.87	41.94						
1.444	25-YR	30.70	43.71	13.01	36.70	36.70	0.0500	10.71	3.50	3.50	2.78	0.62	0.62	5958	6050	98.5	1.5	242.04	43.83						
1.444	50-YR	30.70	46.44	15.74	36.70	36.70	0.0500	13.44	1.67	4.87	2.66	0.32	0.64	7158	7300	98.1	1.9	325.04	46.54						
1.444	100-YR	30.70	47.13	16.43	36.70	36.70	0.0500	14.13	1.72	5.21	2.95	0.35	0.72	8348	8550	97.6	2.4	371.62	47.26						
1.444	200-YR	30.70	47.72	17.02	36.70	36.70	0.0500	14.72	1.88	5.51	3.17	0.39	0.78	9347	9620	97.2	2.8	412.32	47.87						
1.444	500-YR	30.70	48.69	17.99	36.70	36.70	0.0500	15.69	2.51	5.99	3.52	0.50	0.88	11042	11500	96.0	4.0	448.65	48.87						
1.438	2-YR	29.20	37.46	8.26	35.20	35.20	0.0038	5.96	1.13	1.13	1.38	0.22	0.22	1647	1650	99.8	0.2	213.54	37.49	25.85	4A		263.12	1.23	
1.438	5-YR	29.20	40.14	10.94	35.20	35.20	0.0038	8.64	2.47	2.47	1.84	0.38	0.38	3172	3200	99.1	0.9	229.64	40.19						
1.438	10-YR	29.20	41.86	12.66	35.20	35.20	0.0038	10.36	3.33	3.33	2.12	0.47	0.47	4388	4450	98.6	1.4	239.96	41.93						
1.438	25-YR	29.20	43.72	14.52	35.20	35.20	0.0038	12.22	4.26	4.26	2.42	0.57	0.57	5926	6050	98.0	2.0	251.14	43.81						
1.438	50-YR	29.20	46.45	17.25	35.20	35.20	0.0038	14.95	2.34	5.62	2.38	0.33	0.59	7121	7300	97.5	2.5	321.15	46.54						
1.438	100-YR	29.20	47.14	17.94	35.20	35.20	0.0038	15.64	2.30	5.97	2.66	0.36	0.66	8310	8550	97.2	2.8	355.75	47.25						
1.438	200-YR	29.20	47.74	18.54	35.20	35.20	0.0038	16.24	2.15	6.27	2.87	0.36	0.72	9320	9620	96.9	3.1	405.73	47.86						
1.438	500-YR	29.20	48.71	19.51	35.20	35.20	0.0038	17.21	2.70	6.75	3.21	0.45	0.81	11030	11500	95.9	4.1	443.35	48.86						
1.333	2-YR	27.11	37.16	10.05	54.24	42.36	-0.0121	6.59			3.55			1650	1650	100.0	0.0	70.59	37.36	7.02	4A		157.11	2.23	
1.333	5-YR	27.11	39.66	12.55	54.24	42.36	-0.0121	7.83			4.87			3200	3200	100.0	0.0	83.94	40.03						
1.333	10-YR	27.11	41.27	14.16	54.24	42.36	-0.0121	8.35			5.55			4450	4450	100.0	0.0	96.07	41.75						
1.333	25-YR	27.11	43.02	15.91	54.24	42.36	-0.0121	9.31		0.54	6.16		0.47	6043	6050	99.9	0.1	133.80	43.61						
1.333	50-YR	27.11	45.92	18.81	54.24	42.36	-0.0121	11.72		2.88	5.55		1.10	7175	7300	98.3	1.7	149.93	46.39						
1.333	100-YR	27.11	46.50	19.39	54.24	42.36	-0.0121	12.19		3.28	6.17		1.30	8371	8550	97.9	2.1	153.15	47.08						

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
1.333	200-YR	27.11	47.00	19.89	54.24	42.36	-0.0121	12.60		3.63	6.64		1.46	9387	9620	97.6	2.4	155.94	47.67						
1.333	500-YR	27.11	47.80	20.69	54.24	42.36	-0.0121	13.24		4.16	7.42		1.74	11162	11500	97.1	2.9	160.43	48.63						
1.315	2-YR	28.24	37.06	8.82	51.66	42.22	0.0059	6.15			3.86			1650	1650	100.0	0.0	69.54	37.29	7.88	4A		167.28	2.41	
1.315	5-YR	28.24	39.51	11.27	51.66	42.22	0.0059	7.32			5.20			3200	3200	100.0	0.0	84.08	39.93						
1.315	10-YR	28.24	41.09	12.85	51.66	42.22	0.0059	8.09			5.88			4450	4450	100.0	0.0	93.47	41.63						
1.315	25-YR	28.24	42.83	14.59	51.66	42.22	0.0059	9.16		0.31	6.52		0.35	6047	6050	99.9	0.1	131.10	43.49						
1.315	50-YR	28.24	45.82	17.58	51.66	42.22	0.0059	11.69		2.64	5.76		1.09	7125	7300	97.6	2.4	166.77	46.32						
1.315	100-YR	28.24	46.37	18.13	51.66	42.22	0.0059	12.15		3.03	6.41		1.29	8297	8550	97.0	3.0	171.29	46.99						
1.315	200-YR	28.24	46.86	18.62	51.66	42.22	0.0059	12.54		3.37	6.89		1.46	9287	9620	96.5	3.5	175.28	47.58						
1.315	500-YR	28.24	47.65	19.41	51.66	42.22	0.0059	13.17		3.89	7.69		1.73	11008	11500	95.7	4.3	181.66	48.53						
1.295	2-YR	27.61	36.98	9.37	50.86	44.32	-0.0309	7.27			3.87			1650	1650	100.0	0.0	58.60	37.21	6.25	4A		106.59	1.82	
1.295	5-YR	27.61	39.30	11.69	50.86	44.32	-0.0309	9.04			5.64			3200	3200	100.0	0.0	62.73	39.80						
1.295	10-YR	27.61	40.76	13.15	50.86	44.32	-0.0309	9.92			6.72			4450	4450	100.0	0.0	66.69	41.47						
1.295	25-YR	27.61	42.34	14.73	50.86	44.32	-0.0309	10.60			7.84			6050	6050	100.0	0.0	72.81	43.29						
1.295	50-YR	27.61	45.38	17.77	50.86	44.32	-0.0309	12.14		0.83	7.22		0.65	7292	7300	99.9	0.1	98.09	46.19						
1.295	100-YR	27.61	45.79	18.18	50.86	44.32	-0.0309	12.40		1.10	8.17		0.86	8533	8550	99.8	0.2	101.74	46.83						
1.295	200-YR	27.61	46.15	18.54	50.86	44.32	-0.0309	12.62		1.31	8.92		1.05	9593	9620	99.7	0.3	104.89	47.38						
1.295	500-YR	27.61	46.65	19.04	50.86	44.32	-0.0309	12.92		0.73	10.26		0.81	11470	11500	99.7	0.3	137.49	48.28						
1.274	2-YR	31.00	36.27	5.27	47.89	46.64	0.0000	4.14			6.51			1650	1650	100.0	0.0	61.30	36.93	11.63	4A		80.92	1.32	
1.274	5-YR	31.00	38.37	7.37	47.89	46.64	0.0000	5.69			8.22			3200	3200	100.0	0.0	68.49	39.42						
1.274	10-YR	31.00	39.74	8.74	47.89	46.64	0.0000	6.61			9.14			4450	4450	100.0	0.0	73.64	41.04						
1.274	25-YR	31.00	41.27	10.27	47.89	46.64	0.0000	7.58			10.01			6050	6050	100.0	0.0	79.75	42.83						
1.274	50-YR	31.00	45.08	14.08	47.89	46.64	0.0000	9.73		0.94	7.69		0.83	7233	7300	99.1	0.9	182.56	45.99						
1.274	100-YR	31.00	45.45	14.45	47.89	46.64	0.0000	9.93		1.19	8.63		1.08	8427	8550	98.6	1.4	194.40	46.59						
1.274	200-YR	31.00	45.80	14.80	47.89	46.64	0.0000	10.12		1.40	9.33		1.28	9429	9620	98.0	2.0	206.27	47.12						
1.274	500-YR	31.00	46.31	15.31	47.89	46.64	0.0000	10.40	0.23	1.70	10.50	0.42	1.62	11164	11500	97.1	2.9	228.15	47.98						
1.262		Bridge																							
1.249	2-YR	28.22	32.29	4.07	39.41	36.60	0.0025	3.58			7.28			1650	1650	100.0	0.0	63.33	33.11	15.56	3	16.38	77.68	1.23	2.61
1.249	5-YR	28.22	34.47	6.25	39.41	36.60	0.0025	5.26			8.57			3200	3200	100.0	0.0	71.03	35.62						
1.249	10-YR	28.22	35.86	7.64	39.41	36.60	0.0025	6.26			9.36			4450	4450	100.0	0.0	75.92	37.22						
1.249	25-YR	28.22	37.92	9.70	39.41	36.60	0.0025	7.82		0.83	9.31		1.08	5940	6050	98.2	1.8	205.55	39.24						
1.249	50-YR	28.22	38.71	10.49	39.41	36.60	0.0025	8.44		1.22	9.92		1.38	6979	7300	95.6	4.4	274.65	40.18						
1.249	100-YR	28.22	39.04	10.82	39.41	36.60	0.0025	8.69		1.43	11.02		1.68	8052	8550	94.2	5.8	291.50	40.82						
1.249	200-YR	28.22	39.63	11.41	39.41	36.60	0.0025	9.19	0.11	1.71	11.28	0.29	1.86	8808	9620	91.6	8.4	340.62	41.45						
1.249	500-YR	28.22	40.51	12.29	39.41	36.60	0.0025	10.08	0.55	2.46	11.64	0.82	2.30	9960	11500	86.6	13.4	360.52	42.35						
1.235	2-YR	28.03	32.09	4.06	37.47	37.61	0.0039	3.72			5.97			1650	1650	100.0	0.0	74.25	32.64	18.29	3		87.06	1.17	
1.235	5-YR	28.03	34.38	6.35	37.47	37.61	0.0039	5.58			7.04			3200	3200	100.0	0.0	81.47	35.14						
1.235	10-YR	28.03	35.80	7.77	37.47	37.61	0.0039	6.68			7.75			4450	4450	100.0	0.0	85.96	36.74						

Aliso Creek - Alternative 4

Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
1.235	25-YR	28.03	37.89	9.86	37.47	37.61	0.0039	8.31	0.21	0.43	7.91	0.29	0.56	6010	6050	99.3	0.7	257.16	38.85						
1.235	50-YR	28.03	38.69	10.66	37.47	37.61	0.0039	9.11	0.61	0.86	8.49	0.60	0.92	7073	7300	96.9	3.1	380.27	39.77						
1.235	100-YR	28.03	39.01	10.98	37.47	37.61	0.0039	9.43	0.77	1.11	9.45	0.76	1.15	8152	8550	95.3	4.7	402.53	40.34						
1.235	200-YR	28.03	39.64	11.61	37.47	37.61	0.0039	10.06	1.09	1.66	9.58	0.93	1.46	8821	9620	91.7	8.3	421.46	40.95						
1.235	500-YR	28.03	40.54	12.51	37.47	37.61	0.0039	10.96	1.54	2.44	9.90	1.15	1.84	9926	11500	86.3	13.7	443.08	41.86						
1.168	2-YR	26.65	31.46	4.81	33.07	36.52	0.0043	3.95			3.81			1650	1650	100.0	0.0	109.55	31.69	22.78	3		131.60	1.20	
1.168	5-YR	26.65	34.00	7.35	33.07	36.52	0.0043	6.04	0.47		4.41	0.81		3200	3200	100.0	0.0	121.27	34.30						
1.168	10-YR	26.65	35.52	8.87	33.07	36.52	0.0043	7.29	1.22		4.88	1.53		4444	4450	99.9	0.1	128.19	35.89						
1.168	25-YR	26.65	37.89	11.24	33.07	36.52	0.0043	9.46	2.41	1.85	4.55	1.92	0.92	5522	6050	91.3	8.7	427.94	38.18						
1.168	50-YR	26.65	38.76	12.11	33.07	36.52	0.0043	10.34	2.84	2.52	4.78	2.15	1.13	6333	7300	86.8	13.2	458.77	39.07						
1.168	100-YR	26.65	39.12	12.47	33.07	36.52	0.0043	10.70	3.02	2.83	5.29	2.43	1.33	7255	8550	84.9	15.1	465.34	39.49						
1.168	200-YR	26.65	39.76	13.11	33.07	36.52	0.0043	11.33	3.34	3.37	5.41	2.56	1.47	7859	9620	81.7	18.3	477.20	40.14						
1.168	500-YR	26.65	40.65	14.00	33.07	36.52	0.0043	12.23	3.79	4.06	5.70	2.81	1.68	8945	11500	77.8	22.2	497.69	41.06						
1.092	2-YR	24.93	31.06	6.13	33.75	32.59	0.0061	4.96			3.34			1650	1650	100.0	0.0	99.56	31.24	16.24	3		378.16	3.80	
1.092	5-YR	24.93	33.62	8.69	33.75	32.59	0.0061	7.11		0.52	4.20		0.36	3199	3200	100.0	0.0	114.77	33.90						
1.092	10-YR	24.93	35.13	10.20	33.75	32.59	0.0061	8.61	0.60	0.85	4.79	0.40	0.51	4424	4450	99.4	0.6	177.82	35.49						
1.092	25-YR	24.93	37.60	12.67	33.75	32.59	0.0061	11.08	1.97	3.13	4.68	0.74	0.99	5556	6050	91.8	8.2	385.74	37.92						
1.092	50-YR	24.93	38.44	13.51	33.75	32.59	0.0061	11.92	2.65	3.86	5.06	0.92	1.17	6458	7300	88.5	11.5	403.05	38.79						
1.092	100-YR	24.93	38.71	13.78	33.75	32.59	0.0061	12.19	2.86	4.09	5.72	1.08	1.36	7476	8550	87.4	12.6	409.21	39.16						
1.092	200-YR	24.93	39.33	14.40	33.75	32.59	0.0061	12.80	3.45	4.60	5.96	1.24	1.48	8172	9620	84.9	15.1	412.78	39.80						
1.092	500-YR	24.93	40.17	15.24	33.75	32.59	0.0061	13.64	4.24	5.29	6.44	1.47	1.67	9410	11500	81.8	18.2	417.66	40.70						
1.032	2-YR	22.96	30.53	7.57	33.62	34.00	0.0001	5.11			4.78			1670	1670	100.0	0.0	68.37	30.88	9.03	3		386.88	5.66	
1.032	5-YR	22.96	32.90	9.94	33.62	34.00	0.0001	6.54			6.19			3260	3260	100.0	0.0	80.43	33.50						
1.032	10-YR	22.96	34.29	11.33	33.62	34.00	0.0001	7.57	0.26	0.14	7.09	0.38	0.25	4550	4550	100.0	0.0	90.72	35.07						
1.032	25-YR	22.96	36.88	13.92	33.62	34.00	0.0001	10.16	1.43	1.09	6.99	0.95	0.80	6013	6120	98.2	1.8	190.46	37.62						
1.032	50-YR	22.96	37.76	14.80	33.62	34.00	0.0001	11.05	1.94	1.79	7.19	1.14	1.08	6733	7360	91.5	8.5	379.61	38.50						
1.032	100-YR	22.96	37.76	14.80	33.62	34.00	0.0001	11.05	1.93	1.79	8.42	1.33	1.27	7876	8610	91.5	8.5	379.60	38.77						
1.032	200-YR	22.96	38.37	15.41	33.62	34.00	0.0001	11.65	2.46	2.28	8.69	1.56	1.48	8582	9720	88.3	11.7	392.63	39.41						
1.032	500-YR	22.96	39.19	16.23	33.62	34.00	0.0001	12.47	3.11	2.91	9.17	1.84	1.76	9684	11500	84.2	15.8	412.44	40.29						
0.976	2-YR	22.93	29.51	6.58	38.00	39.01	0.0000	4.32			6.39			1670	1670	100.0	0.0	60.55	30.14	9.20	2	11.74	113.57	1.88	5.85
0.976	5-YR	22.93	31.48	8.55	38.00	39.01	0.0000	5.30			8.29			3260	3260	100.0	0.0	74.17	32.55						
0.976	10-YR	22.93	32.54	9.61	38.00	39.01	0.0000	5.62			9.55			4550	4550	100.0	0.0	84.72	33.96						
0.976	25-YR	22.93	36.43	13.50	38.00	39.01	0.0000	7.85			6.80			6120	6120	100.0	0.0	114.55	37.15						
0.976	50-YR	22.93	37.11	14.18	38.00	39.01	0.0000	8.40			7.53			7360	7360	100.0	0.0	116.46	37.99						
0.976	100-YR	22.93	36.62	13.69	38.00	39.01	0.0000	8.01			9.34			8610	8610	100.0	0.0	115.09	37.99						
0.976	200-YR	22.93	36.89	13.96	38.00	39.01	0.0000	8.22			10.21			9720	9720	100.0	0.0	115.83	38.51						
0.976	500-YR	22.93	36.06	13.13	38.00	39.01	0.0000	7.55			13.42			11500	11500	100.0	0.0	113.48	38.86						
0.969		Bridge																							

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
0.962	2-YR	22.93	29.48	6.55	34.00	32.62	0.0017	5.23			4.56			1670	1670	100.0	0.0	70.09	29.80	10.70	2		358.71	5.12	
0.962	5-YR	22.93	31.40	8.47	34.00	32.62	0.0017	6.49			6.41			3260	3260	100.0	0.0	78.42	32.04						
0.962	10-YR	22.93	32.27	9.34	34.00	32.62	0.0017	7.05			7.86			4550	4550	100.0	0.0	82.14	33.23						
0.962	25-YR	22.93	33.17	10.24	34.00	32.62	0.0017	7.61		0.28	9.36		0.94	6119	6120	100.0	0.0	90.74	34.53						
0.962	50-YR	22.93	33.82	10.89	34.00	32.62	0.0017	7.90		0.44	10.34		1.36	7347	7360	99.8	0.2	112.29	35.47						
0.962	100-YR	22.93	34.43	11.50	34.00	32.62	0.0017	8.41	0.28	1.04	10.90	1.02	2.52	8365	8610	97.2	2.8	201.63	36.23						
0.962	200-YR	22.93	34.97	12.04	34.00	32.62	0.0017	8.95	0.58	1.47	11.30	1.66	3.18	9219	9720	94.8	5.2	225.78	36.86						
0.962	500-YR	22.93	35.42	12.49	34.00	32.62	0.0017	9.39	0.80	1.79	12.44	2.19	3.89	10657	11500	92.7	7.3	251.60	37.66						
0.899	2-YR	22.38	27.74	5.36	30.00	28.00	0.0055	3.29			7.96			1670	1670	100.0	0.0	63.84	28.72	11.91	2		268.54	4.21	
0.899	5-YR	22.38	29.92	7.54	30.00	28.00	0.0055	4.66		0.92	8.26		2.50	3054	3260	93.7	6.3	168.80	30.92						
0.899	10-YR	22.38	31.46	9.08	30.00	28.00	0.0055	6.18	0.86	2.22	7.49	1.80	3.37	3687	4550	81.0	19.0	231.85	32.20						
0.899	25-YR	22.38	32.47	10.09	30.00	28.00	0.0055	7.19	1.56	3.02	7.89	2.54	3.95	4519	6120	73.8	26.2	254.32	33.24						
0.899	50-YR	22.38	33.27	10.89	30.00	28.00	0.0055	7.99	2.10	3.59	8.01	2.93	4.19	5092	7360	69.2	30.8	271.76	34.03						
0.899	100-YR	22.38	33.99	11.61	30.00	28.00	0.0055	8.71	2.65	4.04	8.14	3.28	4.35	5647	8610	65.6	34.4	286.26	34.76						
0.899	200-YR	22.38	34.63	12.25	30.00	28.00	0.0055	9.35	3.11	4.45	8.20	3.50	4.45	6102	9720	62.8	37.2	298.32	35.39						
0.899	500-YR	22.38	35.04	12.66	30.00	28.00	0.0055	9.77	3.40	4.70	9.04	3.99	4.95	7027	11500	61.1	38.9	306.26	35.95						
0.843	2-YR	20.76	26.74	5.98	30.00	26.00	0.0004	4.48		0.37	6.06		1.02	1665	1670	99.7	0.3	75.30	27.31	12.59	2		343.21	4.56	
0.843	5-YR	20.76	29.18	8.42	30.00	26.00	0.0004	6.66		1.60	6.97		2.43	2982	3260	91.5	8.5	135.87	29.87						
0.843	10-YR	20.76	30.87	10.11	30.00	26.00	0.0004	8.25	0.44	2.59	7.01	0.89	2.94	3771	4550	82.9	17.1	178.72	31.53						
0.843	25-YR	20.76	31.71	10.95	30.00	26.00	0.0004	9.08	0.68	3.11	8.13	1.62	3.61	4815	6120	78.7	21.3	206.07	32.56						
0.843	50-YR	20.76	32.46	11.70	30.00	26.00	0.0004	9.84	0.65	3.49	8.59	1.28	3.90	5509	7360	74.9	25.1	334.50	33.37						
0.843	100-YR	20.76	33.33	12.57	30.00	26.00	0.0004	10.71	1.48	3.89	8.52	2.06	3.93	5947	8610	69.1	30.9	358.91	34.17						
0.843	200-YR	20.76	34.08	13.32	30.00	26.00	0.0004	11.46	2.21	4.05	8.41	2.56	3.81	6284	9720	64.6	35.4	383.59	34.86						
0.843	500-YR	20.76	34.32	13.56	30.00	26.00	0.0004	11.70	2.44	4.02	9.57	3.07	4.26	7301	11500	63.5	36.5	395.86	35.31						
0.809	2-YR	20.68	26.45	5.77	31.40	29.74	0.0000	4.52			4.77			1670	1670	100.0	0.0	77.35	26.80	13.41	2		198.27	2.56	
0.809	5-YR	20.68	28.89	8.21	31.40	29.74	0.0000	6.08			5.89			3260	3260	100.0	0.0	91.02	29.43						
0.809	10-YR	20.68	30.60	9.92	31.40	29.74	0.0000	7.18		1.12	6.19		1.61	4455	4550	97.9	2.1	153.00	31.19						
0.809	25-YR	20.68	31.35	10.67	31.40	29.74	0.0000	7.84		1.63	7.40		2.33	5882	6120	96.1	3.9	164.30	32.17						
0.809	50-YR	20.68	32.02	11.34	31.40	29.74	0.0000	8.50	0.37	2.05	8.05	0.89	2.79	6942	7360	94.3	5.7	192.28	32.97						
0.809	100-YR	20.68	32.71	12.03	31.40	29.74	0.0000	9.19	0.78	2.59	8.50	1.47	3.27	7923	8610	92.0	8.0	209.60	33.75						
0.809	200-YR	20.68	33.95	13.27	31.40	29.74	0.0000	10.43	2.97	3.49	6.73	2.63	2.90	7122	9720	73.3	26.7	408.16	34.50						
0.809	500-YR	20.68	34.16	13.48	31.40	29.74	0.0000	10.64	3.17	3.63	7.65	3.09	3.35	8267	11500	71.9	28.1	410.56	34.86						
0.802		Bridge																							
0.794	2-YR	20.68	26.37	5.69	29.62	34.00	0.0000	4.48			3.91			1670	1670	100.0	0.0	95.21	26.61	16.73	2		337.93	3.55	
0.794	5-YR	20.68	28.84	8.16	29.62	34.00	0.0000	6.38			4.85			3260	3260	100.0	0.0	105.29	29.21						
0.794	10-YR	20.68	30.61	9.93	29.62	34.00	0.0000	7.80	1.53		4.72	1.44		4082	4550	89.7	10.3	323.77	30.93						
0.794	25-YR	20.68	31.38	10.70	29.62	34.00	0.0000	8.50	2.24		5.40	2.01		5133	6120	83.9	16.1	331.13	31.77						
0.794	50-YR	20.68	32.08	11.40	29.62	34.00	0.0000	9.09	2.87		5.66	2.38		5825	7360	79.1	20.9	338.12	32.49						
0.794	100-YR	20.68	32.77	12.09	29.62	34.00	0.0000	9.62	3.49		5.83	2.68		6458	8610	75.0	25.0	345.71	33.19						

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
0.794	200-YR	20.68	33.27	12.59	29.62	34.00	0.0000	10.01	3.93		6.02	2.93		7020	9720	72.2	27.8	350.93	33.72						
0.794	500-YR	20.68	34.16	13.48	29.62	34.00	0.0000	10.72	4.71	0.27	6.14	3.26	0.52	7804	11500	67.9	32.1	406.42	34.61						
0.783	2-YR	20.68	24.71	4.03	29.00	29.97	0.0082	2.80			9.49			1670	1670	100.0	0.0	62.91	26.11	15.61	2		78.32	1.24	
0.783	5-YR	20.68	27.75	7.07	29.00	29.97	0.0082	5.19			8.46			3260	3260	100.0	0.0	74.26	28.87						
0.783	10-YR	20.68	29.28	8.60	29.00	29.97	0.0082	6.29	0.13		9.04	0.62		4550	4550	100.0	0.0	84.36	30.55						
0.783	25-YR	20.68	30.80	10.12	29.00	29.97	0.0082	7.72	1.98	0.41	7.79	2.85	1.04	4878	6120	79.7	20.3	302.63	31.58						
0.783	50-YR	20.68	31.61	10.93	29.00	29.97	0.0082	8.53	2.72	0.82	7.71	3.28	1.51	5335	7360	72.5	27.5	310.85	32.32						
0.783	100-YR	20.68	32.38	11.70	29.00	29.97	0.0082	9.30	3.41	1.21	7.62	3.59	1.83	5747	8610	66.7	33.3	318.60	33.05						
0.783	200-YR	20.68	32.90	12.22	29.00	29.97	0.0082	9.82	3.86	1.47	7.75	3.84	2.04	6176	9720	63.5	36.5	323.85	33.58						
0.783	500-YR	20.68	33.83	13.15	29.00	29.97	0.0082	10.75	4.67	1.93	7.76	4.12	2.31	6763	11500	58.8	41.2	332.17	34.49						
0.721	2-YR	18.00	23.70	5.70	27.00	27.11	0.0000	4.55			5.39			1670	1670	100.0	0.0	68.14	24.15	11.95	2		220.25	3.23	
0.721	5-YR	18.00	27.40	9.40	27.00	27.11	0.0000	6.99	1.26	0.18	5.24	1.52	0.46	3127	3260	95.9	4.1	156.84	27.81						
0.721	10-YR	18.00	29.13	11.13	27.00	27.11	0.0000	8.72	2.42	0.80	5.42	2.09	1.10	4037	4550	88.7	11.3	214.21	29.54						
0.721	25-YR	18.00	30.50	12.50	27.00	27.11	0.0000	10.09	3.37	1.89	5.83	2.55	1.78	5027	6120	82.1	17.9	239.06	30.95						
0.721	50-YR	18.00	31.27	13.27	27.00	27.11	0.0000	10.86	3.87	2.59	6.24	2.85	2.22	5792	7360	78.7	21.3	248.97	31.77						
0.721	100-YR	18.00	32.03	14.03	27.00	27.11	0.0000	11.61	4.34	3.26	6.56	3.09	2.58	6513	8610	75.6	24.4	258.72	32.57						
0.721	200-YR	18.00	32.52	14.52	27.00	27.11	0.0000	12.11	4.64	3.69	6.93	3.32	2.87	7174	9720	73.8	26.2	265.19	33.11						
0.721	500-YR	18.00	33.44	15.44	27.00	27.11	0.0000	13.02	5.23	4.46	7.29	3.60	3.25	8118	11500	70.6	29.4	276.07	34.08						
0.719		Bridge																							
0.717	2-YR	17.83	23.40	5.57	25.21	27.00	0.0105	4.19			5.51			1670	1670	100.0	0.0	72.33	23.87	12.99	2		223.60	3.09	
0.717	5-YR	17.83	25.86	8.03	25.21	27.00	0.0105	6.03	0.14		6.60	0.49		3259	3260	100.0	0.0	101.37	26.53						
0.717	10-YR	17.83	26.98	9.15	25.21	27.00	0.0105	6.97	0.94		7.60	1.80		4463	4550	98.1	1.9	135.67	27.86						
0.717	25-YR	17.83	27.85	10.02	25.21	27.00	0.0105	7.84	1.54	0.43	8.85	2.69	1.15	5847	6120	95.5	4.5	165.47	29.02						
0.717	50-YR	17.83	28.33	10.50	25.21	27.00	0.0105	8.31	1.85	0.50	9.85	3.25	1.37	6900	7360	93.8	6.2	205.07	29.75						
0.717	100-YR	17.83	29.19	11.36	25.21	27.00	0.0105	9.18	2.40	1.20	9.97	3.67	2.32	7716	8610	89.6	10.4	227.92	30.59						
0.717	200-YR	17.83	29.59	11.76	25.21	27.00	0.0105	9.57	2.65	1.55	10.55	4.04	2.82	8513	9720	87.6	12.4	234.96	31.13						
0.717	500-YR	17.83	31.01	13.18	25.21	27.00	0.0105	11.00	3.57	2.58	10.01	4.25	3.42	9277	11500	80.7	19.3	262.81	32.31						
0.665	2-YR	14.97	22.16	7.19	27.46	24.00	0.0046	4.28			6.92			1670	1670	100.0	0.0	56.36	22.91	7.84	2		300.56	5.33	
0.665	5-YR	14.97	24.58	9.61	27.46	24.00	0.0046	5.55		0.29	8.13		1.04	3247	3260	99.6	0.4	113.93	25.61						
0.665	10-YR	14.97	25.65	10.68	27.46	24.00	0.0046	6.39		0.86	9.11		2.18	4348	4550	95.5	4.5	182.36	26.88						
0.665	25-YR	14.97	26.48	11.51	27.46	24.00	0.0046	7.05		1.38	10.17		3.11	5498	6120	89.8	10.2	221.52	27.94						
0.665	50-YR	14.97	27.41	12.44	27.46	24.00	0.0046	7.79		2.04	9.91		3.68	6074	7360	82.5	17.5	250.35	28.71						
0.665	100-YR	14.97	28.65	13.68	27.46	24.00	0.0046	9.02	0.51	3.04	8.94	1.19	3.92	6347	8610	73.7	26.3	285.61	29.63						
0.665	200-YR	14.97	29.05	14.08	27.46	24.00	0.0046	9.42	0.72	3.36	9.34	1.52	4.26	6923	9720	71.2	28.8	296.39	30.09						
0.665	500-YR	14.97	30.76	15.79	27.46	24.00	0.0046	11.13	2.01	4.75	8.18	2.36	4.20	7164	11500	62.3	37.7	320.62	31.51						
0.606	2-YR	13.53	21.39	7.86	28.00	21.00	-0.0020	5.63		0.20	5.95		0.58	1670	1670	100.0	0.0	51.63	21.94	6.57	2		402.22	7.79	
0.606	5-YR	13.53	23.69	10.16	28.00	21.00	-0.0020	7.48		0.85	7.75		1.69	3099	3260	95.1	4.9	166.09	24.58						
0.606	10-YR	13.53	24.84	11.31	28.00	21.00	-0.0020	8.38		1.72	8.37		2.71	3870	4550	85.1	14.9	200.36	25.79						

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
0.606	25-YR	13.53	25.37	11.84	28.00	21.00	-0.0020	8.78		2.18	9.99		3.67	4912	6120	80.3	19.7	207.16	26.66						
0.606	50-YR	13.53	26.67	13.14	28.00	21.00	-0.0020	9.70		3.15	9.16		4.03	5182	7360	70.4	29.6	229.74	27.66						
0.606	100-YR	13.53	28.10	14.57	28.00	21.00	-0.0020	10.68	0.10	3.68	8.43	0.34	3.86	5492	8610	63.8	36.2	308.97	28.89						
0.606	200-YR	13.53	28.47	14.94	28.00	21.00	-0.0020	11.04	0.31	4.02	8.86	0.76	4.20	5971	9720	61.4	38.6	340.42	29.33						
0.606	500-YR	13.53	30.52	16.99	28.00	21.00	-0.0020	13.09	1.97	5.77	7.23	1.92	3.90	5773	11500	50.2	49.8	415.35	31.03						
0.545	2-YR	14.17	20.60	6.43	22.00	23.00	0.0000	4.62			5.94			1670	1670	100.0	0.0	60.85	21.15	9.46	2		519.84	8.54	
0.545	5-YR	14.17	22.73	8.56	22.00	23.00	0.0000	6.24	0.46	0.07	7.76	1.23	0.37	3245	3260	99.5	0.5	136.42	23.66						
0.545	10-YR	14.17	23.28	9.11	22.00	23.00	0.0000	6.75	0.88	0.31	9.65	2.25	1.19	4390	4550	96.5	3.5	360.65	24.67						
0.545	25-YR	14.17	25.00	10.83	22.00	23.00	0.0000	8.47	2.19	1.84	7.50	2.75	2.45	4289	6120	70.1	29.9	459.22	25.65						
0.545	50-YR	14.17	26.71	12.54	22.00	23.00	0.0000	10.18	3.20	3.47	5.62	2.34	2.48	3858	7360	52.4	47.6	481.37	27.01						
0.545	100-YR	14.17	28.24	14.07	22.00	23.00	0.0000	11.71	2.44	3.77	4.75	1.51	2.02	3749	8610	43.5	56.5	833.40	28.43						
0.545	200-YR	14.17	28.66	14.49	22.00	23.00	0.0000	12.13	2.84	4.16	4.79	1.65	2.14	3919	9720	40.3	59.7	838.25	28.84						
0.545	500-YR	14.17	30.67	16.50	22.00	23.00	0.0000	14.14	4.71	6.09	3.63	1.60	1.89	3460	11500	30.1	69.9	856.96	30.77						
0.528	2-YR	14.17	20.15	5.98	21.00	23.00	0.0000	4.29			6.60			1670	1670	100.0	0.0	59.00	20.83	9.87	2		673.86	11.42	
0.528	5-YR	14.17	22.17	8.00	21.00	23.00	0.0000	5.81	0.74		8.49	1.94		3223	3260	98.9	1.1	90.84	23.28						
0.528	10-YR	14.17	23.53	9.36	21.00	23.00	0.0000	6.66	1.62	1.48	6.19	2.17	2.04	2930	4550	64.4	35.6	599.51	23.93						
0.528	25-YR	14.17	25.13	10.96	21.00	23.00	0.0000	8.26	3.14	2.87	4.60	2.15	2.04	2700	6120	44.1	55.9	646.21	25.31						
0.528	50-YR	14.17	26.76	12.59	21.00	23.00	0.0000	9.89	4.37	4.32	3.55	1.82	1.85	2496	7360	33.9	66.1	681.48	26.86						
0.528	100-YR	14.17	28.27	14.10	21.00	23.00	0.0000	11.40	3.08	5.74	2.96	1.11	1.70	2399	8610	27.9	72.1	844.41	28.34						
0.528	200-YR	14.17	28.68	14.51	21.00	23.00	0.0000	11.82	3.44	6.14	3.07	1.22	1.80	2581	9720	26.6	73.4	848.94	28.76						
0.528	500-YR	14.17	30.68	16.51	21.00	23.00	0.0000	13.81	5.15	8.07	2.59	1.23	1.64	2539	11500	22.1	77.9	869.20	30.73						
0.524		Bridge																							
0.520	2-YR	14.17	19.91	5.74	21.48	23.00	0.0001	3.98			6.77			1670	1670	100.0	0.0	61.91	20.62	10.79	2		802.01	12.95	
0.520	5-YR	14.17	21.82	7.65	21.48	23.00	0.0001	5.17	0.46		8.56	1.55		3219	3260	98.7	1.3	129.80	22.94						
0.520	10-YR	14.17	23.45	9.28	21.48	23.00	0.0001	5.96	1.54	1.52	5.41	1.97	1.96	2739	4550	60.2	39.8	691.66	23.75						
0.520	25-YR	14.17	25.11	10.94	21.48	23.00	0.0001	7.62	2.65	2.93	3.84	1.72	1.83	2483	6120	40.6	59.4	787.27	25.23						
0.520	50-YR	14.17	26.76	12.59	21.48	23.00	0.0001	9.26	4.00	4.44	2.89	1.54	1.60	2271	7360	30.9	69.1	824.10	26.82						
0.520	100-YR	14.17	28.27	14.10	21.48	23.00	0.0001	10.78	5.31	5.84	2.45	1.41	1.48	2239	8610	26.0	74.0	845.00	28.32						
0.520	200-YR	14.17	28.68	14.51	21.48	23.00	0.0001	11.19	5.70	6.23	2.56	1.50	1.58	2436	9720	25.1	74.9	848.19	28.74						
0.520	500-YR	14.17	30.68	16.51	21.48	23.00	0.0001	13.19	7.53	8.12	2.23	1.39	1.47	2501	11500	21.7	78.3	860.59	30.72						
0.505	2-YR	14.16	19.67	5.51	20.72	22.35	0.0000	3.99			6.21			1670	1670	100.0	0.0	67.39	20.26	12.23	2		758.72	11.26	
0.505	5-YR	14.16	21.54	7.38	20.72	22.35	0.0000	5.32	0.45		8.03	1.38		3248	3260	99.6	0.4	95.21	22.54						
0.505	10-YR	14.16	23.36	9.20	20.72	22.35	0.0000	6.96	1.26	1.83	5.13	1.46	1.88	2801	4550	61.6	38.4	618.47	23.63						
0.505	25-YR	14.16	25.06	10.90	20.72	22.35	0.0000	8.66	2.40	3.06	3.89	1.52	1.76	2643	6120	43.2	56.8	756.42	25.19						
0.505	50-YR	14.16	26.73	12.57	20.72	22.35	0.0000	10.34	3.70	4.59	2.99	1.40	1.58	2425	7360	32.9	67.1	790.37	26.80						
0.505	100-YR	14.16	28.26	14.10	20.72	22.35	0.0000	11.86	4.73	5.95	2.57	1.30	1.47	2396	8610	27.8	72.2	823.54	28.31						
0.505	200-YR	14.16	28.67	14.51	20.72	22.35	0.0000	12.27	5.03	6.31	2.71	1.38	1.58	2606	9720	26.8	73.2	831.29	28.73						
0.505	500-YR	14.16	30.67	16.51	20.72	22.35	0.0000	14.27	6.26	8.11	2.38	1.26	1.47	2663	11500	23.2	76.8	867.70	30.71						

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
0.501		Bridge																							
0.497	2-YR	14.16	19.18	5.02	20.00	22.00	0.0038	3.60			7.36			1670	1670	100.0	0.0	63.10	20.02	12.57	2		692.61	10.98	
0.497	5-YR	14.16	21.06	6.90	20.00	22.00	0.0038	4.75	0.53		8.89	1.83		3226	3260	98.9	1.1	111.91	22.28						
0.497	10-YR	14.16	23.34	9.18	20.00	22.00	0.0038	6.88	2.32	2.09	4.44	1.91	1.79	2400	4550	52.7	47.3	643.48	23.53						
0.497	25-YR	14.16	25.04	10.88	20.00	22.00	0.0038	8.58	3.50	3.50	3.46	1.69	1.70	2335	6120	38.2	61.8	715.20	25.14						
0.497	50-YR	14.16	26.72	12.56	20.00	22.00	0.0038	10.25	4.64	5.06	2.77	1.45	1.56	2233	7360	30.3	69.7	740.07	26.78						
0.497	100-YR	14.16	28.25	14.09	20.00	22.00	0.0038	11.78	5.68	6.48	2.44	1.33	1.48	2262	8610	26.3	73.7	757.68	28.30						
0.497	200-YR	14.16	28.66	14.50	20.00	22.00	0.0038	12.19	5.93	6.87	2.58	1.41	1.59	2475	9720	25.5	74.5	762.32	28.71						
0.497	500-YR	14.16	30.66	16.50	20.00	22.00	0.0038	14.20	6.16	8.74	2.33	1.18	1.52	2601	11500	22.6	77.4	797.64	30.71						
0.480	2-YR	13.82	17.66	3.84	21.00	23.00	0.0162	2.90			9.66			1620	1620	100.0	0.0	57.92	19.11	15.08	2		97.76	1.69	
0.480	5-YR	13.82	19.34	5.52	21.00	23.00	0.0162	3.99			11.35			3110	3110	100.0	0.0	68.66	21.34						
0.480	10-YR	13.82	20.38	6.56	21.00	23.00	0.0162	4.66			12.23			4270	4270	100.0	0.0	74.98	22.70						
0.480	25-YR	13.82	21.97	8.15	21.00	23.00	0.0162	5.90	0.49		12.44	2.10		5893	5930	99.4	0.6	116.21	24.36						
0.480	50-YR	13.82	26.52	12.70	21.00	23.00	0.0162	10.28	4.37	5.62	4.34	2.26	2.59	3676	7130	51.6	48.4	335.91	26.72						
0.480	100-YR	13.82	28.07	14.25	21.00	23.00	0.0162	11.83	5.51	7.17	4.09	2.27	2.62	3987	8480	47.0	53.0	340.29	28.24						
0.480	200-YR	13.82	28.44	14.62	21.00	23.00	0.0162	12.20	5.75	7.55	4.46	2.49	2.89	4481	9710	46.2	53.8	341.67	28.65						
0.480	500-YR	13.82	30.66	16.84	21.00	23.00	0.0162	14.42	7.06	9.23	2.22	1.28	1.48	2635	11500	22.9	77.1	753.10	30.70						
0.415	2-YR	8.21	14.07	5.86	25.04	40.00	0.0000	4.87			7.53			1620	1620	100.0	0.0	44.15	14.95	7.53	1	11.88	56.90	1.29	1.36
0.415	5-YR	8.21	16.58	8.37	25.04	40.00	0.0000	6.66			9.30			3110	3110	100.0	0.0	50.16	17.92						
0.415	10-YR	8.21	18.20	9.99	25.04	40.00	0.0000	7.83			10.20			4270	4270	100.0	0.0	53.41	19.82						
0.415	25-YR	8.21	20.32	12.11	25.04	40.00	0.0000	9.36			11.06			5930	5930	100.0	0.0	57.30	22.22						
0.415	50-YR	8.21	24.98	16.77	25.04	40.00	0.0000	12.47			8.63			7130	7130	100.0	0.0	66.22	26.14						
0.415	100-YR	8.21	26.33	18.12	25.04	40.00	0.0000	13.76	0.74		9.26	0.70		8476	8480	100.0	0.0	73.72	27.66						
0.415	200-YR	8.21	26.07	17.86	25.04	40.00	0.0000	13.50	0.55		10.81	0.68		9708	9710	100.0	0.0	73.03	27.89						
0.415	500-YR	8.21	28.20	19.99	25.04	40.00	0.0000	15.63	1.76		11.01	1.36		11448	11500	99.5	0.5	88.23	30.07						
0.412		Bridge																							
0.408	2-YR	8.21	13.48	5.27	23.97	23.00	0.0031	4.34			8.77			1620	1620	100.0	0.0	42.60	14.67	8.08	1		54.17	1.27	
0.408	5-YR	8.21	15.87	7.66	23.97	23.00	0.0031	6.12			10.62			3110	3110	100.0	0.0	47.87	17.62						
0.408	10-YR	8.21	17.50	9.29	23.97	23.00	0.0031	7.28			11.43			4270	4270	100.0	0.0	51.36	19.52						
0.408	25-YR	8.21	19.72	11.51	23.97	23.00	0.0031	8.76			12.01			5930	5930	100.0	0.0	56.36	21.96						
0.408	50-YR	8.21	21.26	13.05	23.97	23.00	0.0031	9.77			12.24			7130	7130	100.0	0.0	59.66	23.58						
0.408	100-YR	8.21	22.43	14.22	23.97	23.00	0.0031	10.29			12.95			8480	8480	100.0	0.0	63.66	25.04						
0.408	200-YR	8.21	23.17	14.96	23.97	23.00	0.0031	10.64		0.17	13.81		0.44	9707	9710	100.0	0.0	108.59	26.13						
0.408	500-YR	8.21	23.91	15.70	23.97	23.00	0.0031	11.25		0.91	15.22		1.42	11445	11500	99.5	0.5	109.37	27.49						
0.360	2-YR	7.43	12.92	5.49	20.08	20.00	0.0020	4.69			5.81			1620	1620	100.0	0.0	59.50	13.44	10.84	1		73.34	1.23	
0.360	5-YR	7.43	15.51	8.08	20.08	20.00	0.0020	6.68			7.04			3110	3110	100.0	0.0	66.11	16.28						
0.360	10-YR	7.43	17.26	9.83	20.08	20.00	0.0020	7.97			7.60			4270	4270	100.0	0.0	70.42	18.16						
0.360	25-YR	7.43	19.63	12.20	20.08	20.00	0.0020	9.60			8.06			5930	5930	100.0	0.0	76.58	20.64						

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
0.360	50-YR	7.43	21.27	13.84	20.08	20.00	0.0020	11.10	0.59	0.58	8.26	0.50	0.57	7119	7130	99.8	0.2	111.56	22.32						
0.360	100-YR	7.43	22.52	15.09	20.08	20.00	0.0020	12.35	1.20	1.70	8.76	0.80	1.14	8401	8480	99.1	0.9	120.22	23.70						
0.360	200-YR	7.43	23.32	15.89	20.08	20.00	0.0020	13.15	1.58	2.50	9.36	0.98	1.49	9557	9710	98.4	1.6	121.41	24.65						
0.360	500-YR	7.43	24.13	16.70	20.08	20.00	0.0020	13.96	1.91	3.32	10.36	1.20	1.88	11241	11500	97.8	2.2	122.87	25.76						
0.295	2-YR	6.73	12.47	5.74	18.00	21.00	0.0013	5.04			4.82			1620	1620	100.0	0.0	66.62	12.84	11.61	1		92.32	1.39	
0.295	5-YR	6.73	15.12	8.39	18.00	21.00	0.0013	6.90			5.93			3110	3110	100.0	0.0	75.98	15.67						
0.295	10-YR	6.73	16.94	10.21	18.00	21.00	0.0013	8.03			6.38			4270	4270	100.0	0.0	83.34	17.57						
0.295	25-YR	6.73	19.41	12.68	18.00	21.00	0.0013	9.75	0.70		6.68	0.50		5921	5930	99.9	0.1	115.25	20.10						
0.295	50-YR	6.73	21.18	14.45	18.00	21.00	0.0013	11.16	1.67	1.42	6.58	0.81	1.31	6911	7130	96.9	3.1	225.53	21.83						
0.295	100-YR	6.73	22.55	15.82	18.00	21.00	0.0013	12.53	2.54	2.74	6.69	1.01	1.89	7882	8480	92.9	7.1	241.28	23.19						
0.295	200-YR	6.73	23.43	16.70	18.00	21.00	0.0013	13.41	3.22	3.61	6.95	1.17	2.25	8768	9710	90.3	9.7	246.41	24.11						
0.295	500-YR	6.73	24.36	17.63	18.00	21.00	0.0013	14.34	4.02	4.53	7.47	1.39	2.69	10074	11500	87.6	12.4	249.20	25.13						
0.228	2-YR	6.28	12.32	6.04	20.00	20.00	0.0000	5.14			3.44			1620	1620	100.0	0.0	91.80	12.50	15.20	1		110.96	1.21	
0.228	5-YR	6.28	15.03	8.75	20.00	20.00	0.0000	7.33			4.26			3110	3110	100.0	0.0	99.69	15.31						
0.228	10-YR	6.28	16.88	10.60	20.00	20.00	0.0000	8.69			4.63			4270	4270	100.0	0.0	105.99	17.22						
0.228	25-YR	6.28	19.39	13.11	20.00	20.00	0.0000	10.41			4.95			5930	5930	100.0	0.0	115.15	19.77						
0.228	50-YR	6.28	21.18	14.90	20.00	20.00	0.0000	11.72	0.87	0.86	4.95	0.91	0.67	6985	7130	98.0	2.0	335.81	21.55						
0.228	100-YR	6.28	22.58	16.30	20.00	20.00	0.0000	13.12	1.77	2.21	4.95	1.35	1.18	7821	8480	92.2	7.8	384.98	22.94						
0.228	200-YR	6.28	23.50	17.22	20.00	20.00	0.0000	14.03	2.27	3.10	5.05	1.56	1.44	8540	9710	88.0	12.0	418.73	23.85						
0.228	500-YR	6.28	24.47	18.19	20.00	20.00	0.0000	15.01	3.01	4.04	5.28	1.88	1.72	9545	11500	83.0	17.0	437.18	24.84						
0.169	2-YR	6.28	12.15	5.87	16.00	15.00	0.0000	4.90			3.39			1620	1620	100.0	0.0	97.57	12.32	16.62	1		151.38	1.55	
0.169	5-YR	6.28	14.88	8.60	16.00	15.00	0.0000	7.00			4.09			3110	3110	100.0	0.0	108.50	15.14						
0.169	10-YR	6.28	16.75	10.47	16.00	15.00	0.0000	8.53	0.37	0.88	4.40	0.56	0.79	4267	4270	99.9	0.1	124.59	17.05						
0.169	25-YR	6.28	19.31	13.03	16.00	15.00	0.0000	11.09	1.08	2.15	4.58	0.99	1.26	5778	5930	97.4	2.6	247.90	19.63						
0.169	50-YR	6.28	21.14	14.86	16.00	15.00	0.0000	12.92	2.18	3.04	4.44	1.39	1.40	6526	7130	91.5	8.5	310.26	21.42						
0.169	100-YR	6.28	22.55	16.27	16.00	15.00	0.0000	14.34	2.77	3.70	4.46	1.55	1.50	7266	8480	85.7	14.3	393.13	22.82						
0.169	200-YR	6.28	23.47	17.19	16.00	15.00	0.0000	15.25	3.45	4.14	4.56	1.73	1.59	7897	9710	81.3	18.7	416.48	23.74						
0.169	500-YR	6.28	24.44	18.16	16.00	15.00	0.0000	16.23	4.30	4.61	4.77	2.01	1.72	8794	11500	76.5	23.5	427.23	24.73						
0.118	2-YR	6.28	11.74	5.46	15.00	15.00	-0.0002	4.87			4.58			1620	1620	100.0	0.0	72.63	12.07	13.30	1		113.75	1.57	
0.118	5-YR	6.28	14.38	8.10	15.00	15.00	-0.0002	6.99			5.61			3110	3110	100.0	0.0	79.35	14.87						
0.118	10-YR	6.28	16.22	9.94	15.00	15.00	-0.0002	8.69	0.61	0.61	6.07	1.04	0.41	4267	4270	99.9	0.1	86.82	16.80						
0.118	25-YR	6.28	18.80	12.52	15.00	15.00	-0.0002	11.26	1.59	1.90	6.34	1.80	0.77	5777	5930	97.4	2.6	137.67	19.41						
0.118	50-YR	6.28	20.66	14.38	15.00	15.00	-0.0002	13.12	2.57	2.91	6.28	2.21	0.91	6663	7130	93.5	6.5	168.50	21.23						
0.118	100-YR	6.28	22.04	15.76	15.00	15.00	-0.0002	14.50	2.01	3.74	6.49	2.05	1.04	7614	8480	89.8	10.2	292.45	22.63						
0.118	200-YR	6.28	22.93	16.65	15.00	15.00	-0.0002	15.39	2.24	4.26	6.72	2.06	1.12	8371	9710	86.2	13.8	370.98	23.55						
0.118	500-YR	6.28	23.90	17.62	15.00	15.00	-0.0002	16.37	2.52	4.81	7.00	2.31	1.21	9274	11500	80.6	19.4	462.38	24.53						
0.103		Bridge																							
0.088	2-YR	6.61	10.74	4.13	15.00	20.78	0.0000	3.59			5.95			1620	1620	100.0	0.0	75.80	11.29	18.35					

Aliso Creek - Alternative 4
Hydraulic Results Summary

XS (RS)	Return Period	Inv Elev (feet)	WSE (feet)	Depth (feet)	LB Elev (feet)	RB Elev (feet)	Slope (ft/ft)	Ch HD (feet)	LF HD (feet)	RF HD (feet)	Ch Vel (fps)	LF Vel (fps)	RF Vel (fps)	Ch Q (cfs)	Total Q (cfs)	Ch Q (%)	Fp Q (%)	TFW (feet)	EGL (feet)	W/D (ft/ft)	Reach	Reach W/D (ft/ft)	Fprone W (feet)	ER (ft/ft)	Reach ER (ft/ft)
0.088	5-YR	6.61	12.89	6.28	15.00	20.78	0.0000	5.50			7.07			3110	3110	100.0	0.0	80.02	13.66						
0.088	10-YR	6.61	14.24	7.63	15.00	20.78	0.0000	6.67			7.76			4270	4270	100.0	0.0	82.45	15.18						
0.088	25-YR	6.61	15.98	9.37	15.00	20.78	0.0000	8.27	0.93		8.45	2.07		5879	5930	99.1	0.9	110.43	17.08						
0.088	50-YR	6.61	17.20	10.59	15.00	20.78	0.0000	9.44	1.72		8.70	2.95		6945	7130	97.4	2.6	120.98	18.34						
0.088	100-YR	6.61	18.49	11.88	15.00	20.78	0.0000	10.68	1.37		8.89	3.28		8069	8480	95.2	4.8	176.05	19.67						
0.088	200-YR	6.61	19.74	13.13	15.00	20.78	0.0000	11.88	1.43		8.72	2.65		8844	9710	91.1	8.9	313.61	20.83						
0.088	500-YR	6.61	21.18	14.57	15.00	20.78	0.0000	13.27	2.42	0.20	8.31	2.88	0.26	9450	11500	82.2	17.8	379.61	22.08						
0.078	2-YR	6.61	9.99	3.38	15.00	17.00	0.0026	3.23			7.90			1620	1620	100.0	0.0	63.50	10.96	18.79					
0.078	5-YR	6.61	10.98	4.37	15.00	17.00	0.0026	4.12			11.56			3110	3110	100.0	0.0	65.36	13.06						
0.078	10-YR	6.61	11.98	5.37	15.00	17.00	0.0026	4.99			12.73			4270	4270	100.0	0.0	67.24	14.50						
0.078	25-YR	6.61	13.27	6.66	15.00	17.00	0.0026	6.08			14.00			5930	5930	100.0	0.0	69.67	16.31						
0.078	50-YR	6.61	14.11	7.50	15.00	17.00	0.0026	6.77			14.77			7130	7130	100.0	0.0	71.24	17.50						
0.078	100-YR	6.61	14.98	8.37	15.00	17.00	0.0026	7.48			15.55			8480	8480	100.0	0.0	72.88	18.73						
0.078	200-YR	6.61	15.72	9.11	15.00	17.00	0.0026	8.20	0.21		16.20	2.03		9708	9710	100.0	0.0	78.06	19.79						
0.078	500-YR	6.61	17.24	10.63	15.00	17.00	0.0026	9.69	1.08	0.12	15.87	4.00	0.36	11287	11500	98.1	1.9	122.99	21.09						
0.000	2-YR	5.56	8.13	2.57	6.58	8.00		2.27	0.79	0.10	6.03	3.00	0.74	1378	1620	85.1	14.9	221.94	8.63	86.36					
0.000	5-YR	5.56	8.93	3.37	6.58	8.00		3.08	1.36	0.68	7.38	4.29	2.70	2290	3110	73.6	26.4	270.95	9.63						
0.000	10-YR	5.56	9.42	3.86	6.58	8.00		3.56	1.54	1.00	8.15	4.68	3.49	2928	4270	68.6	31.4	314.01	10.23						
0.000	25-YR	5.56	9.97	4.41	6.58	8.00		4.11	1.97	1.36	8.96	5.51	4.31	3709	5930	62.6	37.4	333.32	10.91						
0.000	50-YR	5.56	10.32	4.76	6.58	8.00		4.46	2.17	1.69	9.46	5.88	4.97	4254	7130	59.7	40.3	347.24	11.35						
0.000	100-YR	5.56	10.68	5.12	6.58	8.00		4.82	2.35	2.03	9.97	6.18	5.61	4848	8480	57.2	42.8	364.71	11.81						
0.000	200-YR	5.56	10.98	5.42	6.58	8.00		5.12	2.54	2.31	10.37	6.52	6.10	5351	9710	55.1	44.9	373.97	12.18						
0.000	500-YR	5.56	11.38	5.82	6.58	8.00		5.52	2.82	2.50	10.90	6.99	6.43	6065	11500	52.7	47.3	389.48	12.70						

Floodplain Maps
Alternative 1

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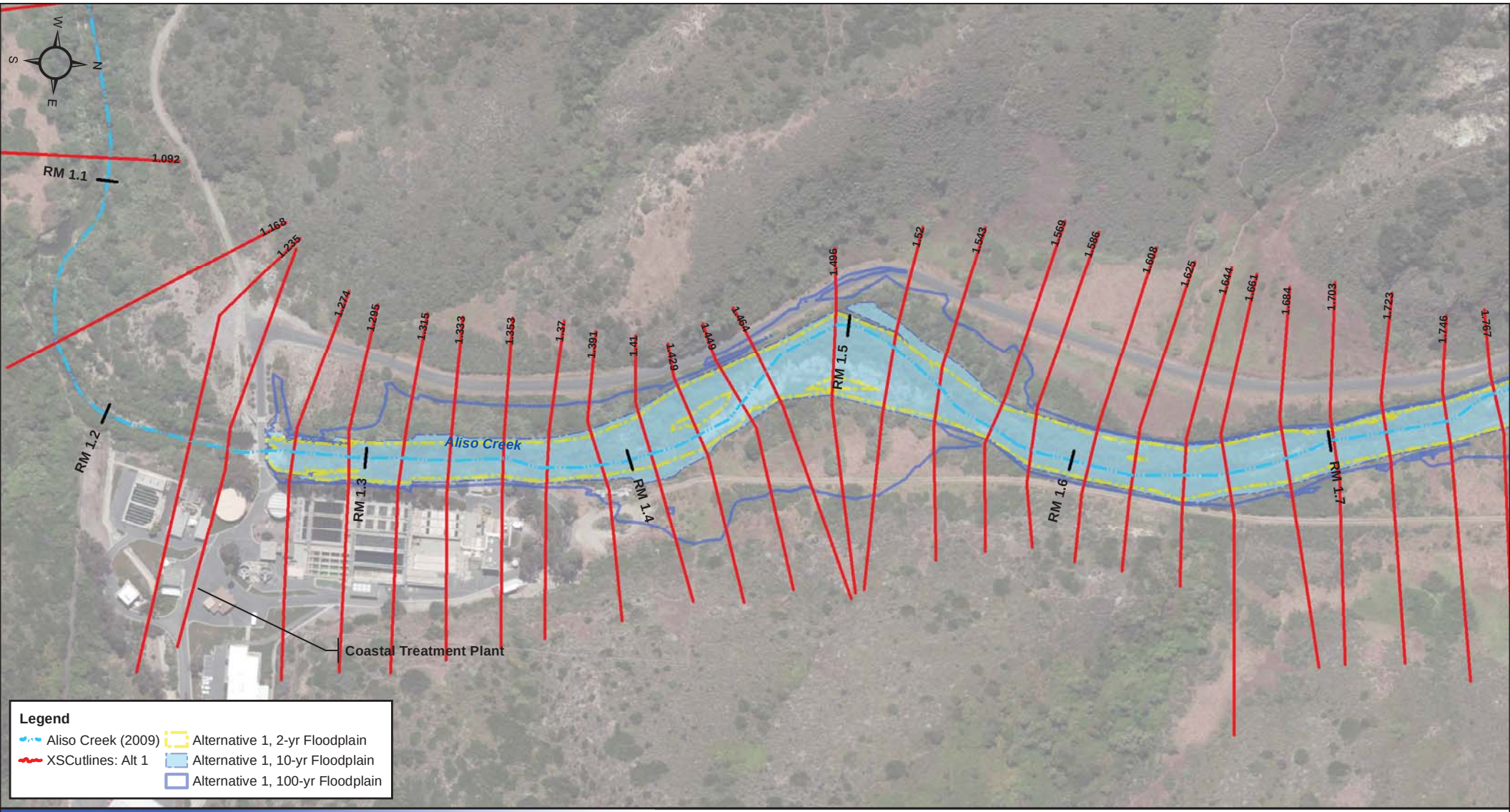

Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

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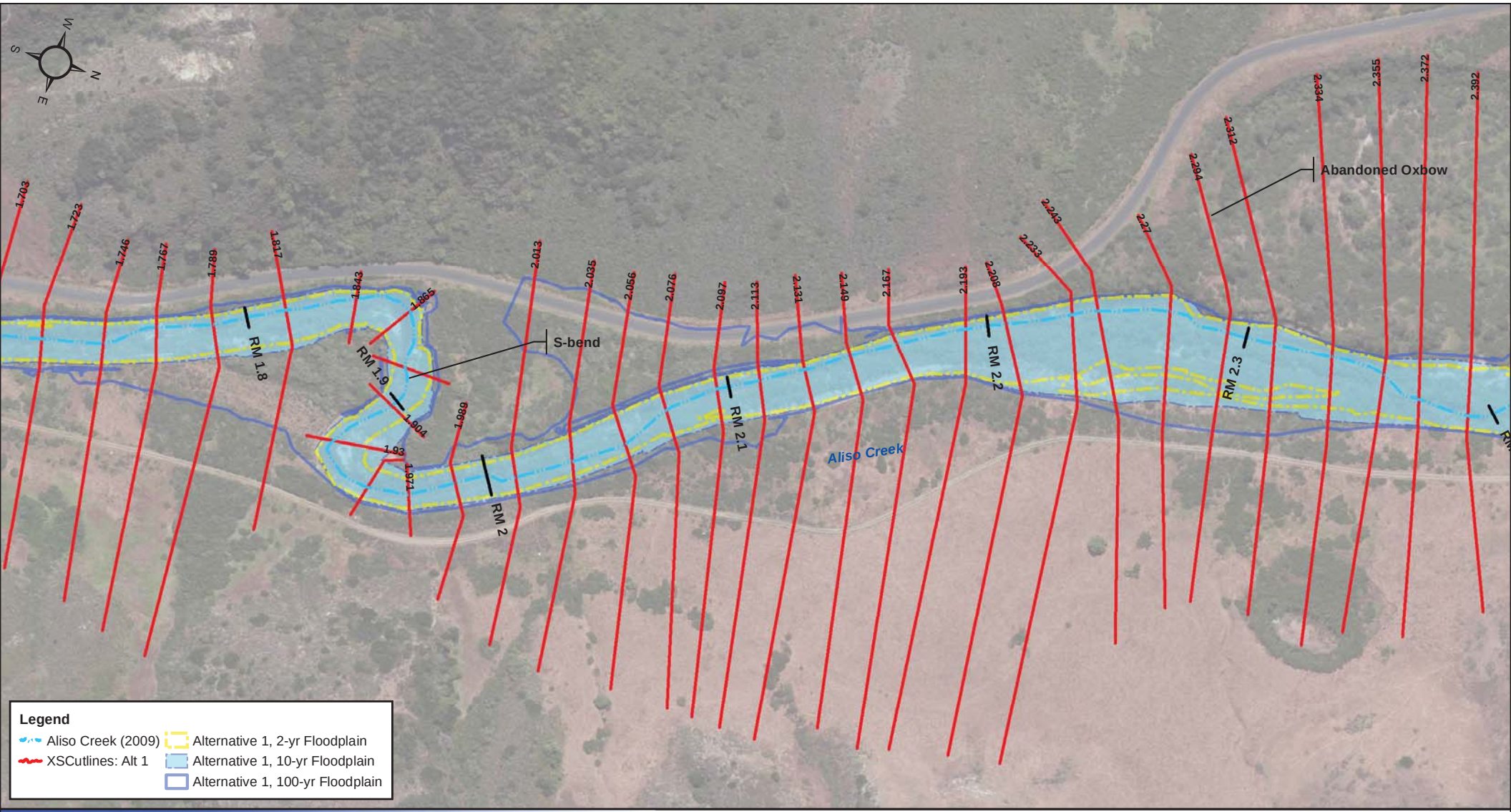

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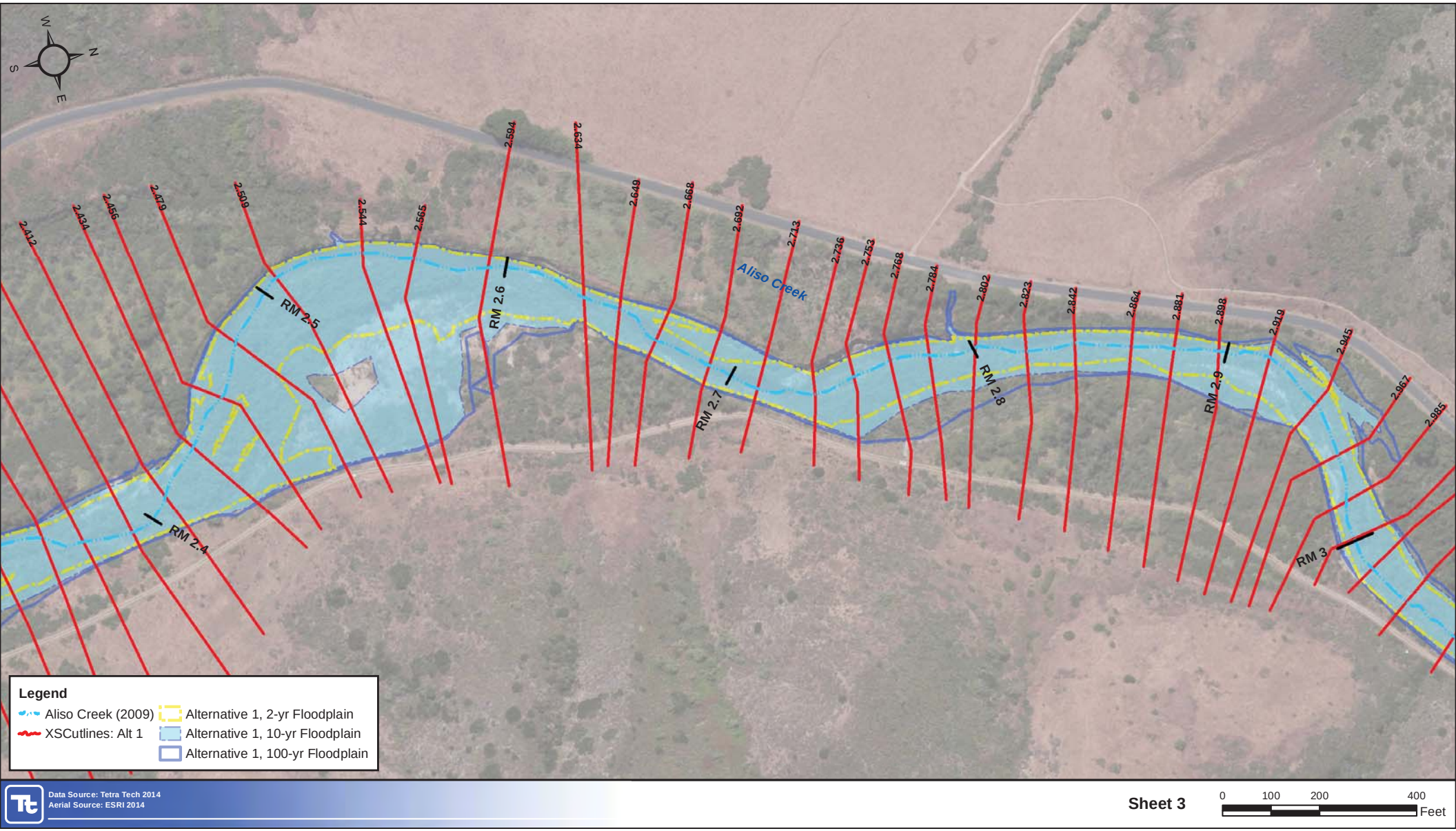

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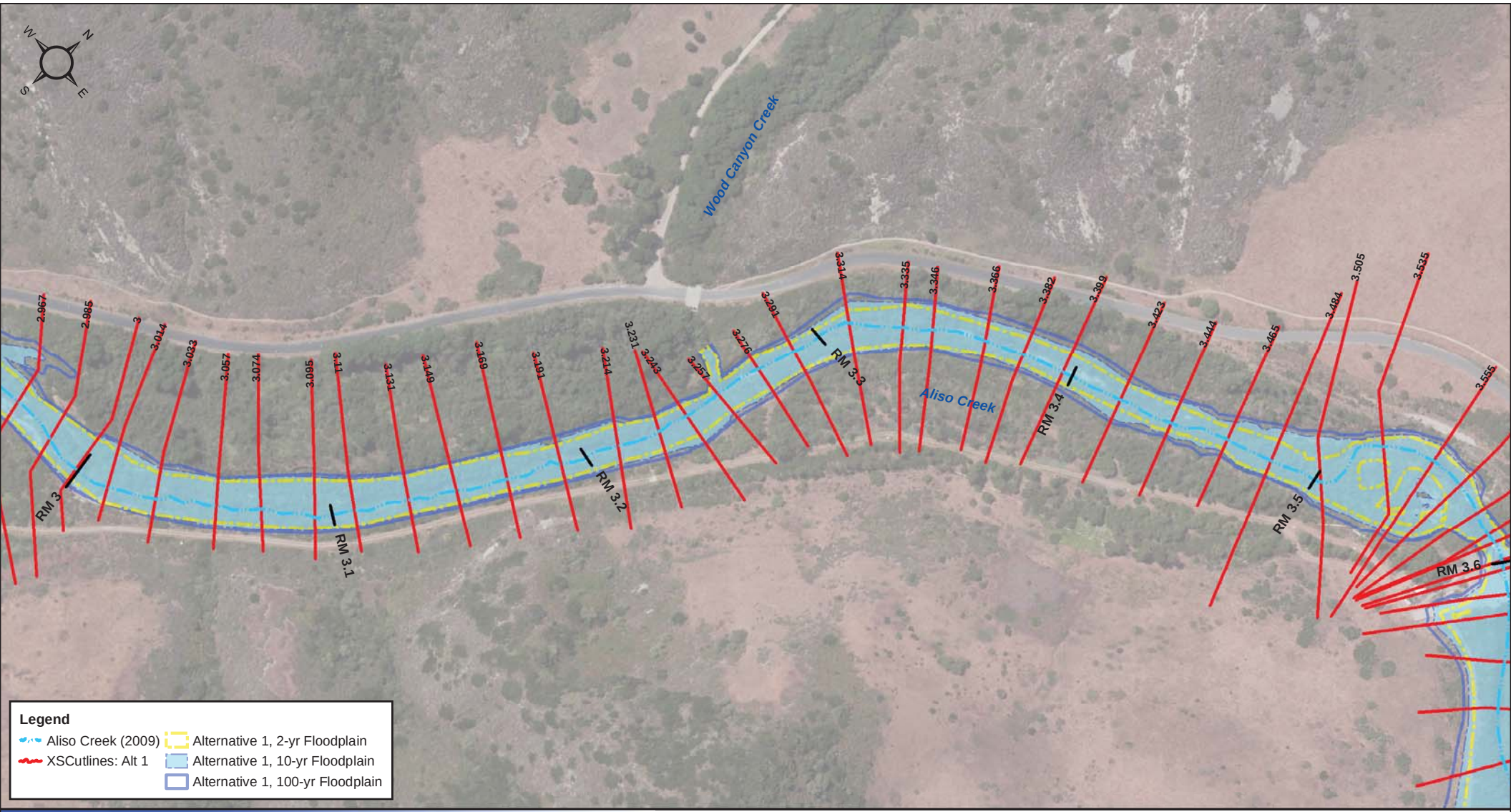
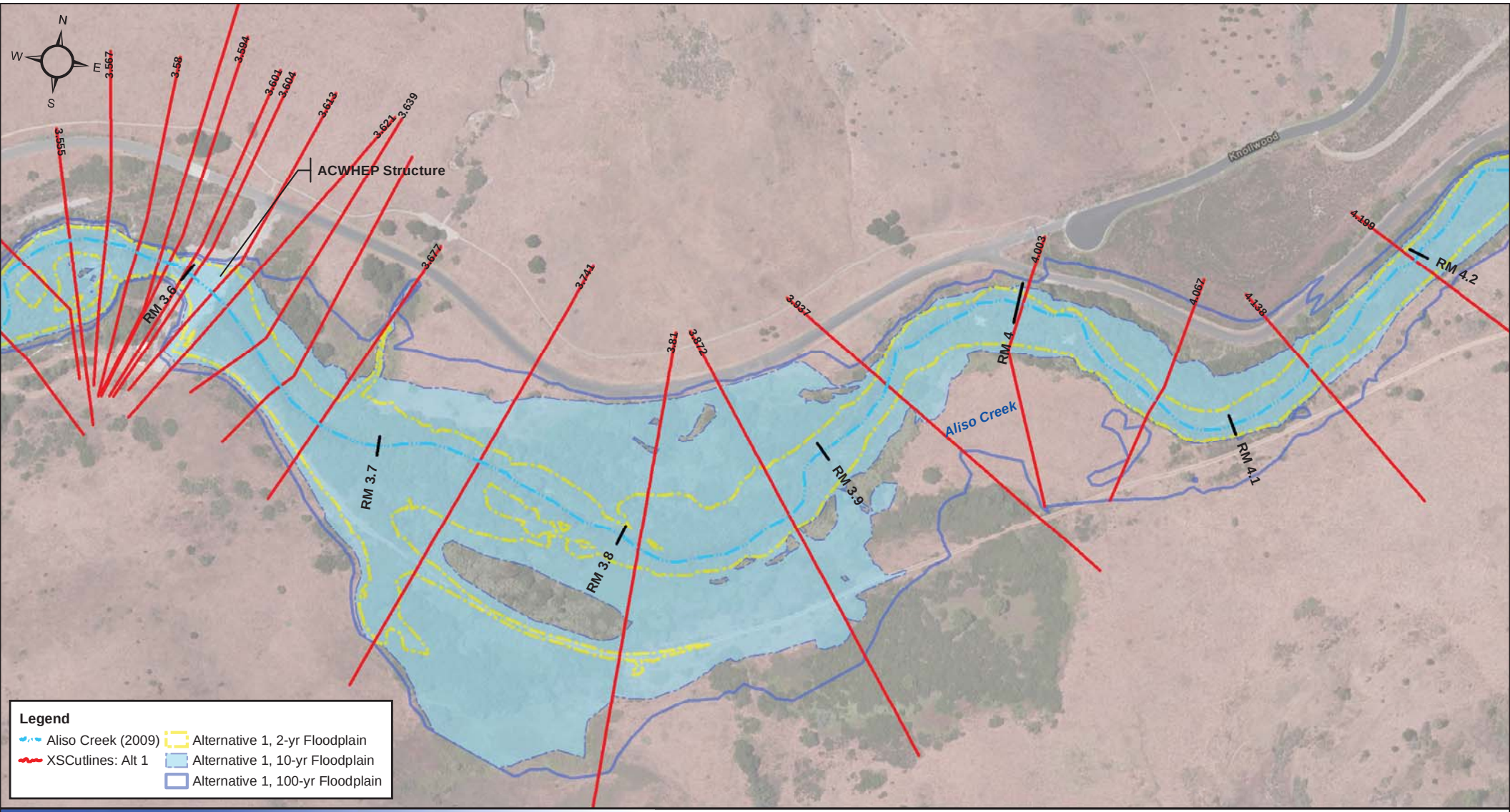

Wood Canyon Creek
Aliso Creek
RM 3
RM 3.1
RM 3.2
RM 3.3
RM 3.4
RM 3.5
RM 3.6
2.967
2.985
3
3.014
3.033
3.050
3.074
3.095
3.11
3.131
3.149
3.169
3.191
3.214
3.231
3.243
3.257
3.276
3.291
3.314
3.335
3.346
3.366
3.382
3.399
3.423
3.444
3.465
3.484
3.505
3.525
3.556
Legend
Aliso Creek (2009)
XSCutlines: Alt 1
Alternative 1, 2-yr Floodplain
Alternative 1, 10-yr Floodplain
Alternative 1, 100-yr Floodplain
Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014
Sheet 4
0
100
200
400
Feet



Data Source: Tetra Tech 2014
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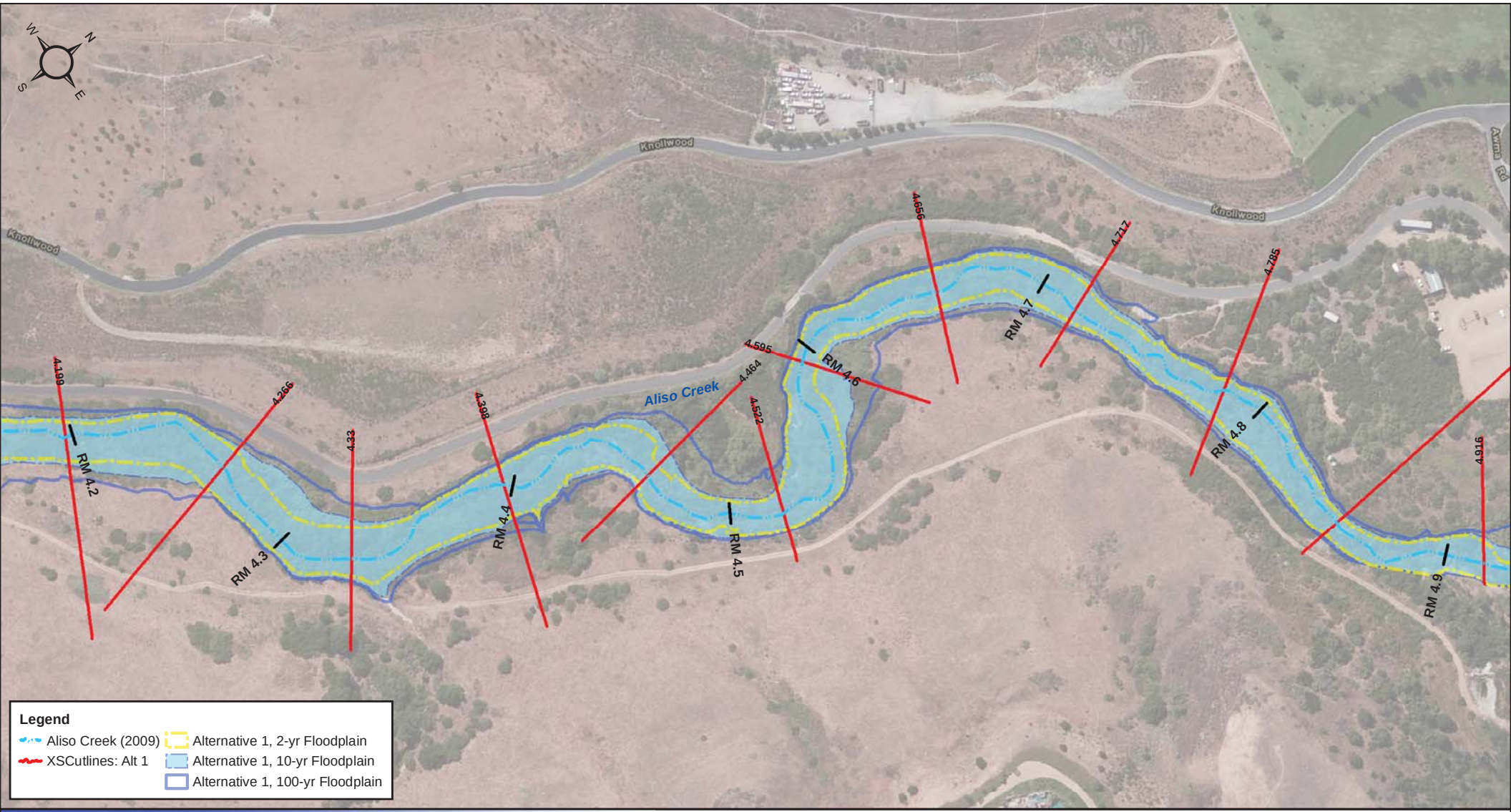

Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

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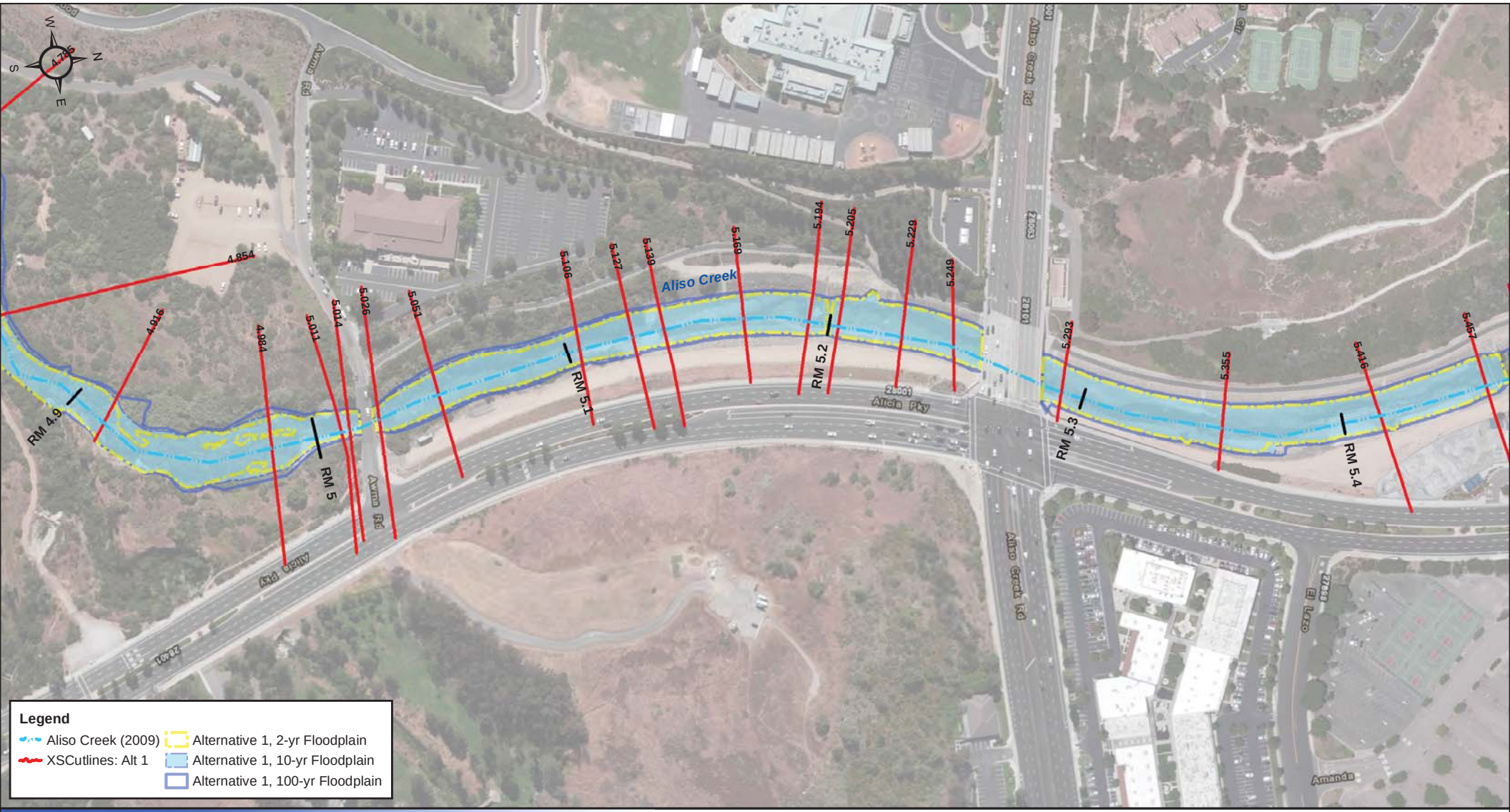

Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

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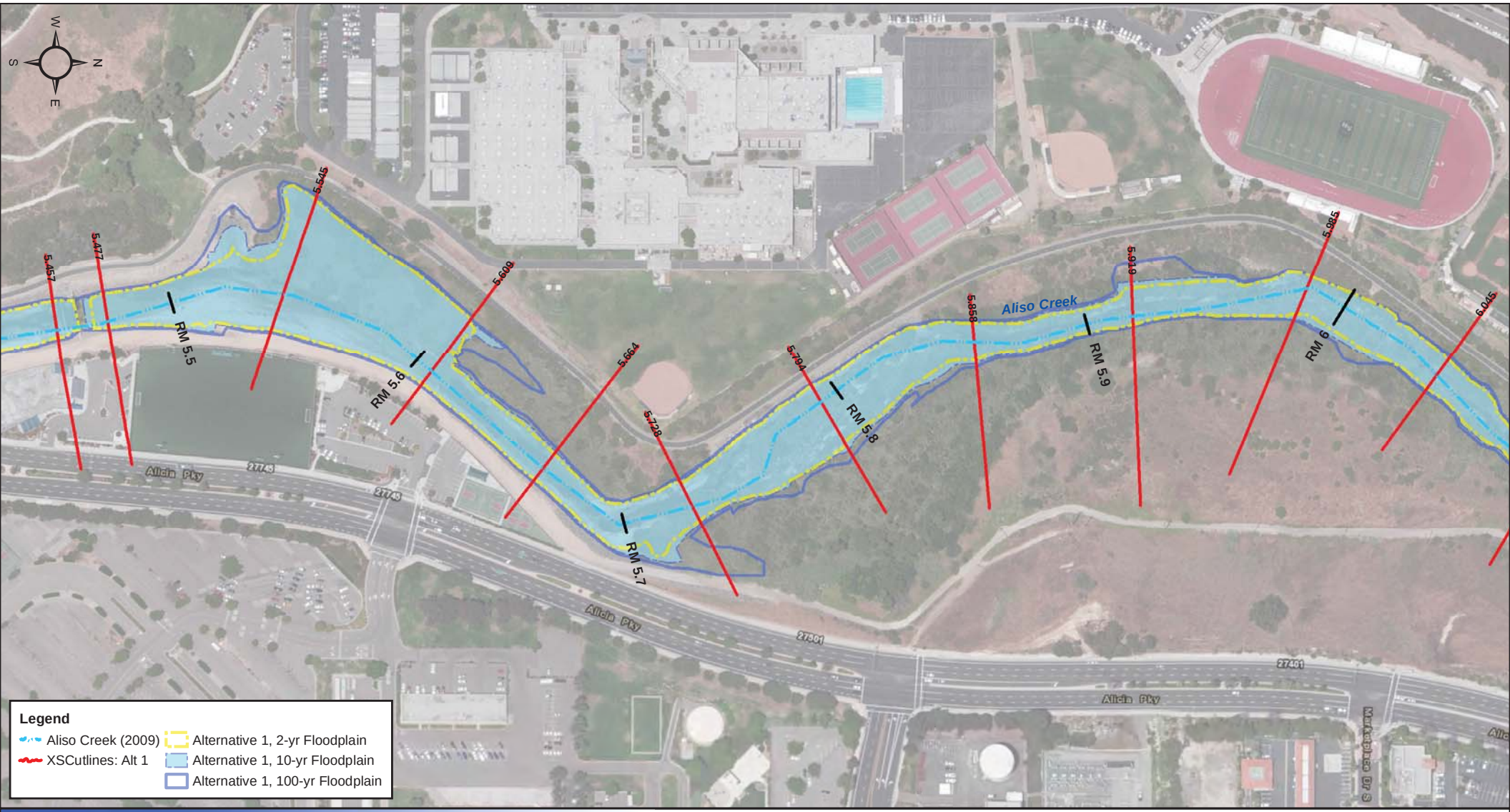

Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

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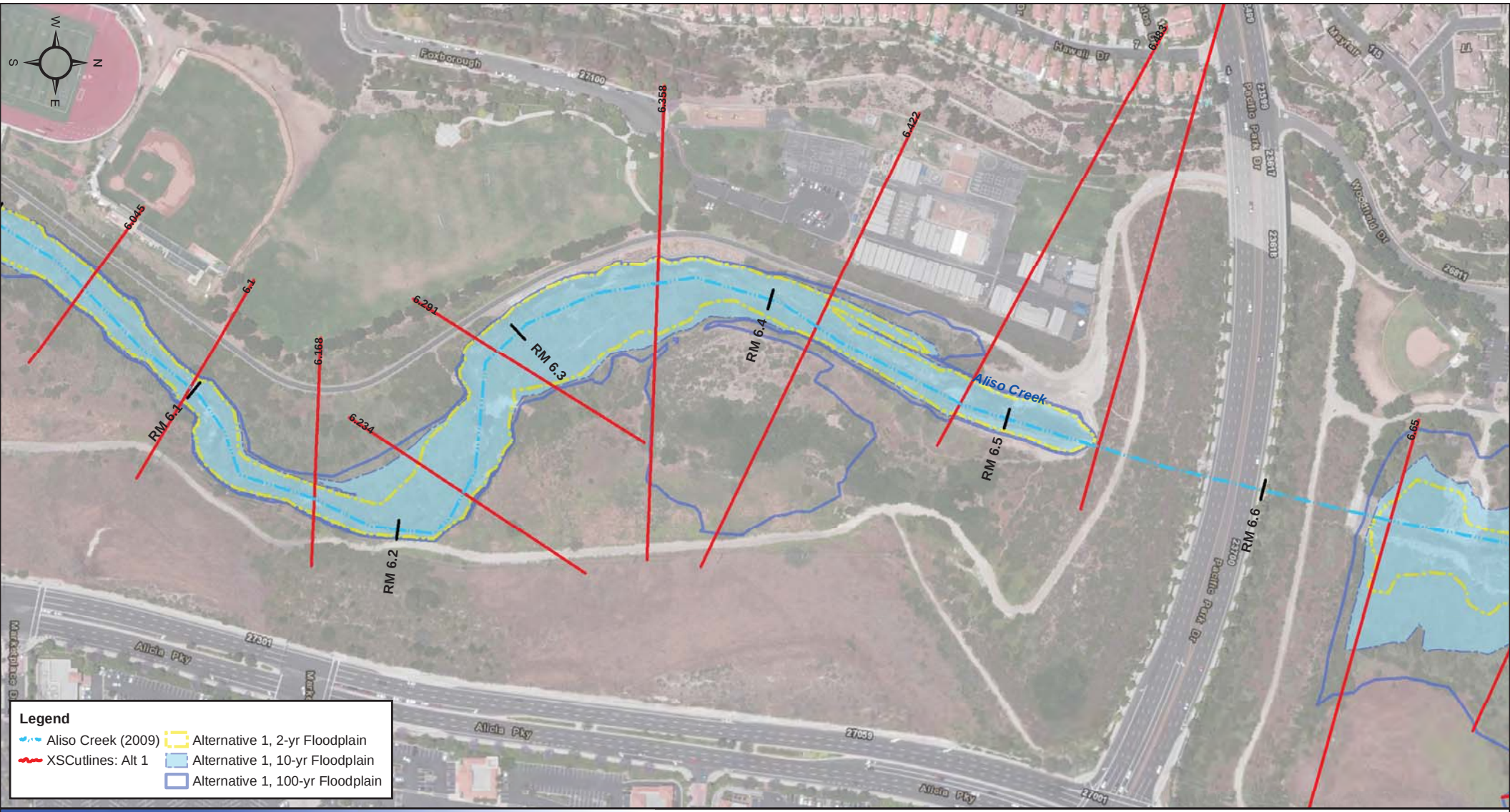

Data Source: Tetra Tech 2014
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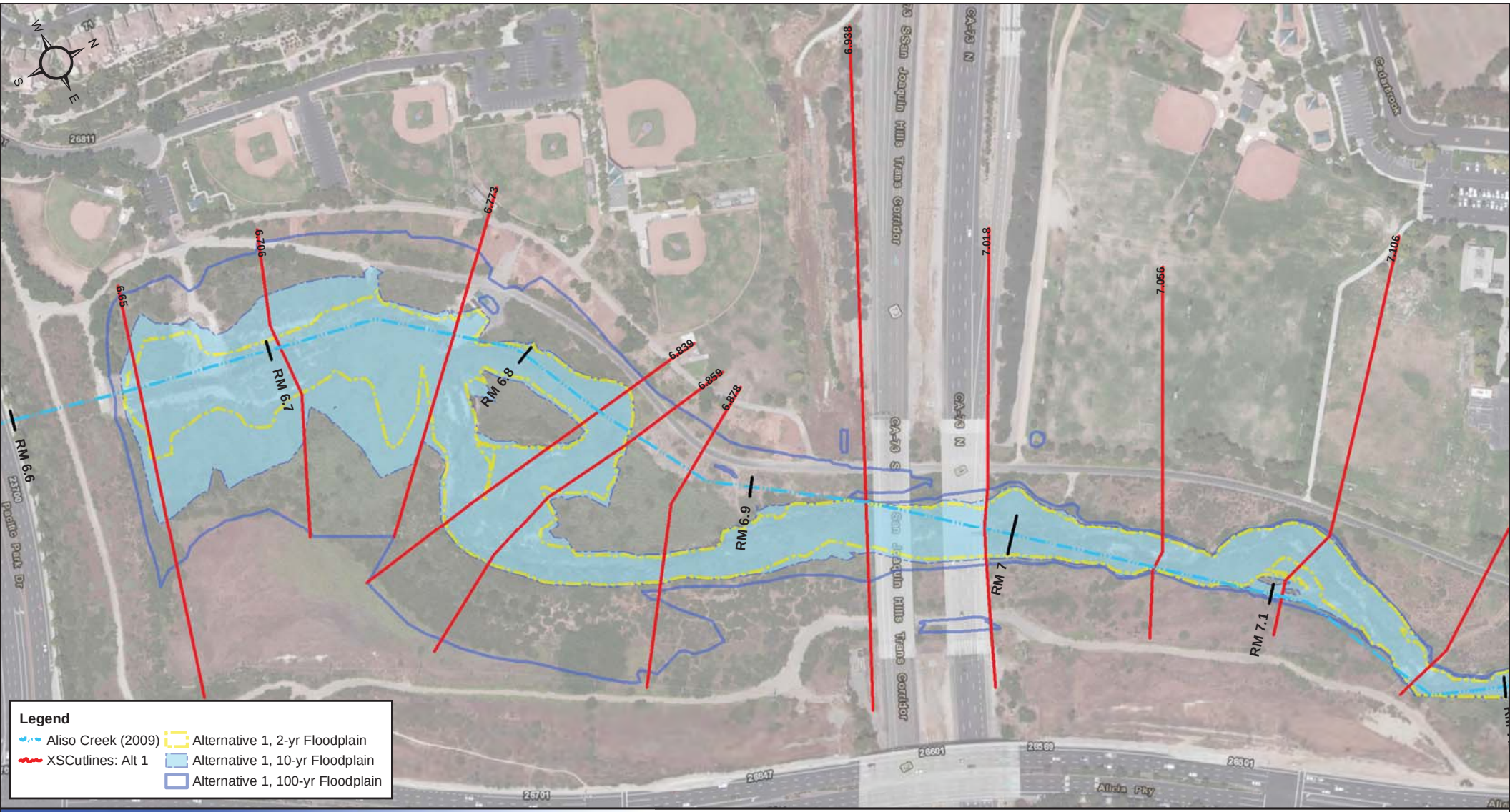

Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

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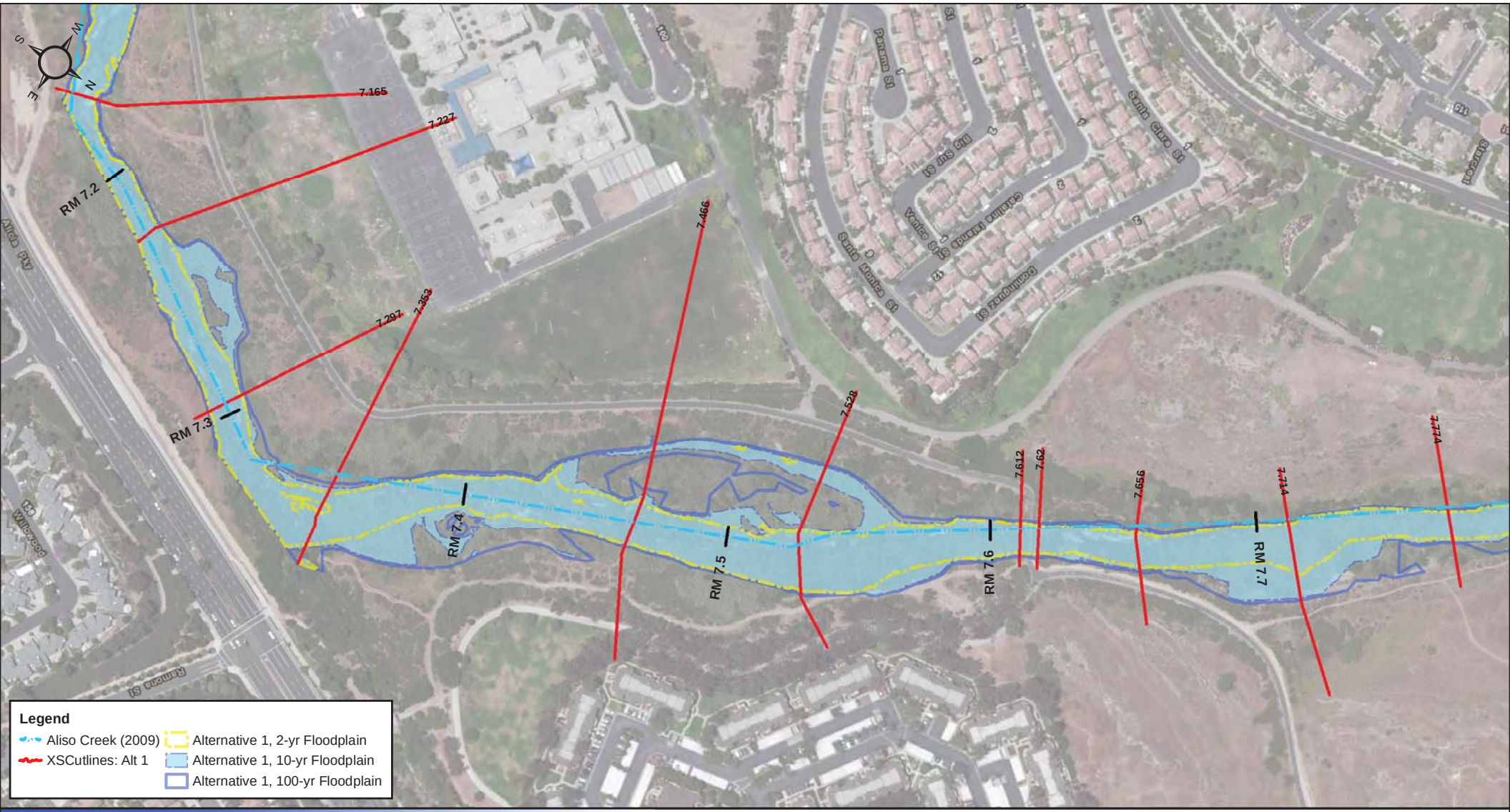

Data Source: Tetra Tech 2014
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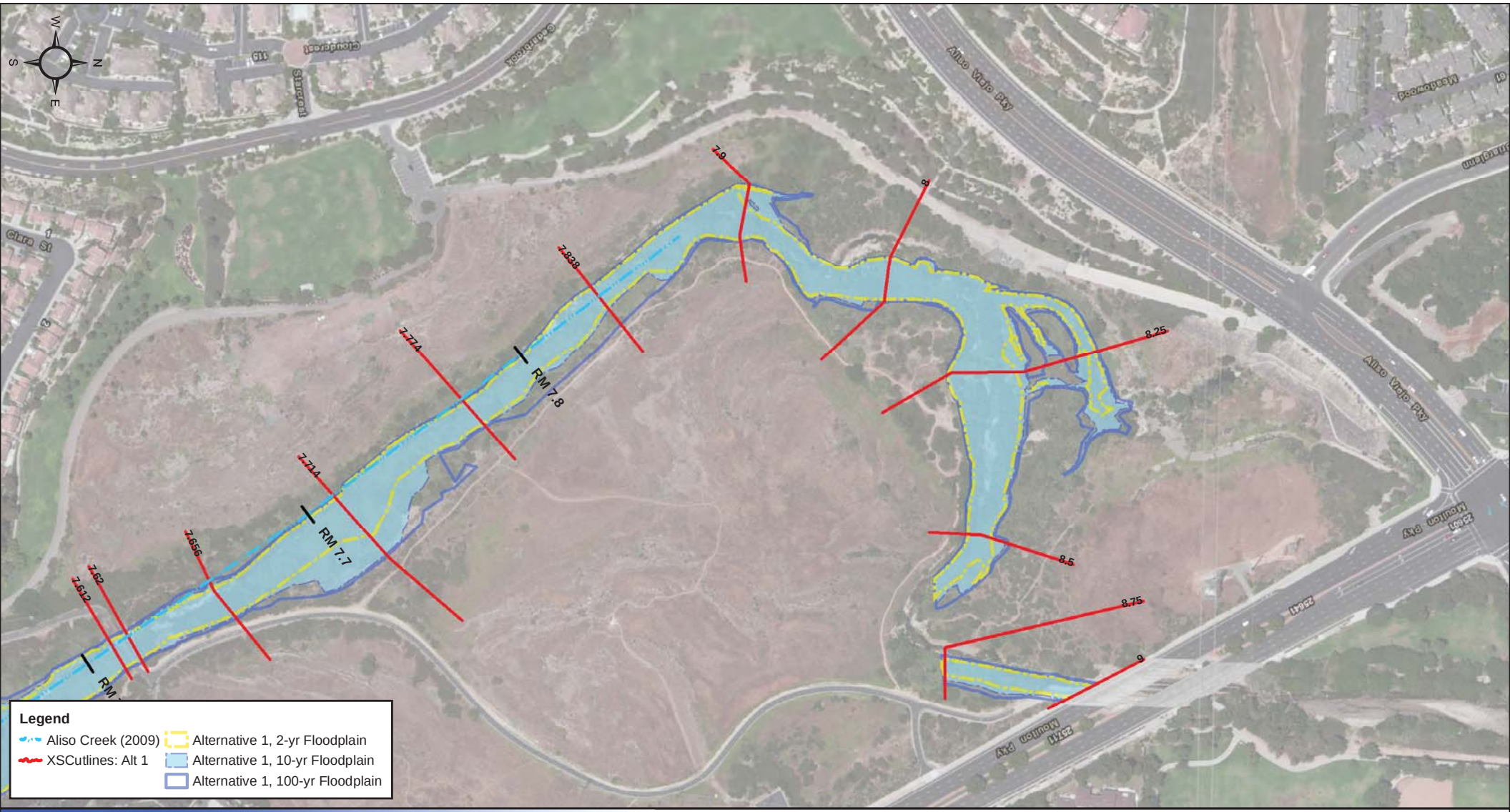

Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

Sheet 12

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Floodplain Maps for *n* = 0.06
Alternative 2

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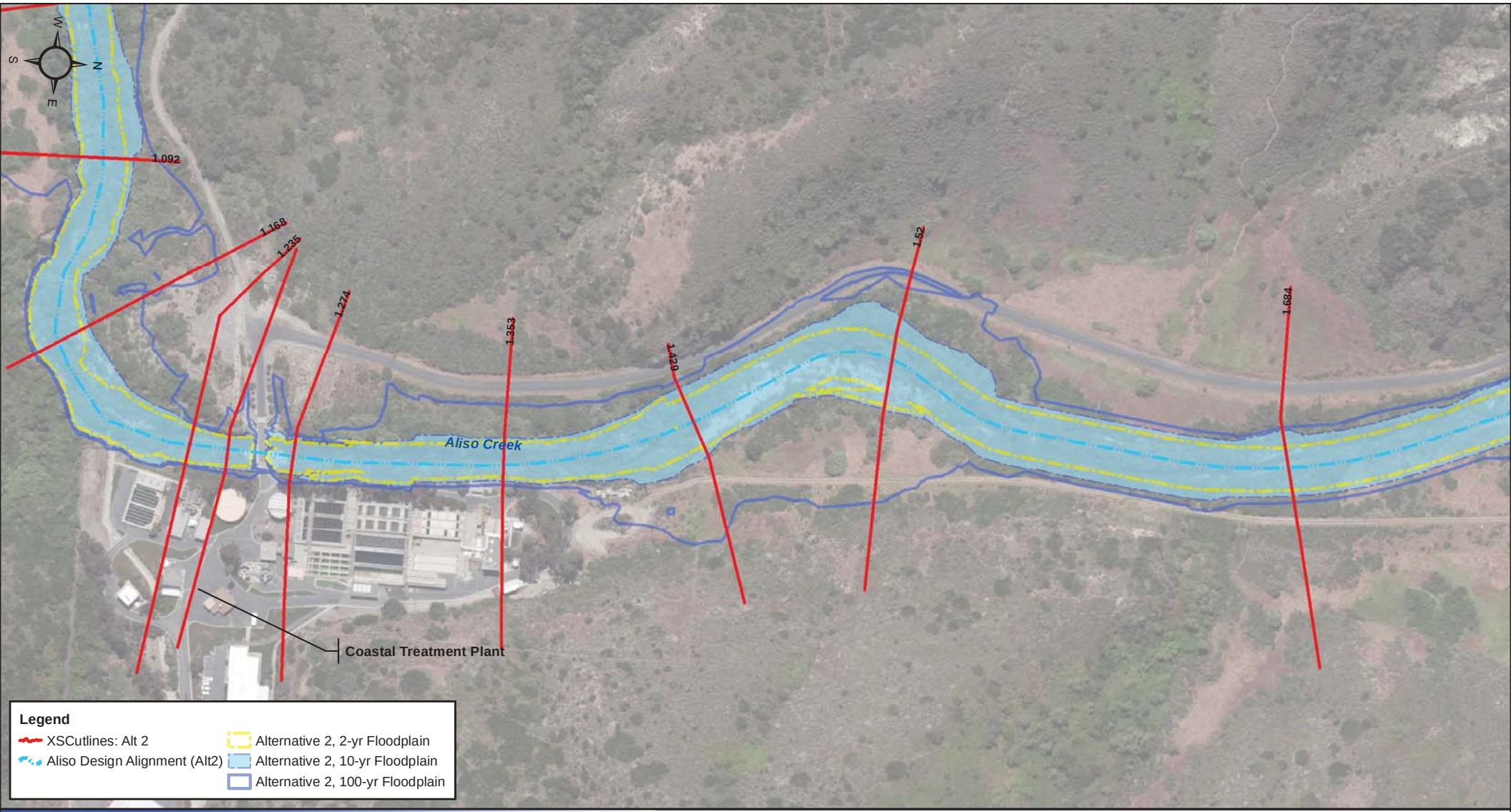

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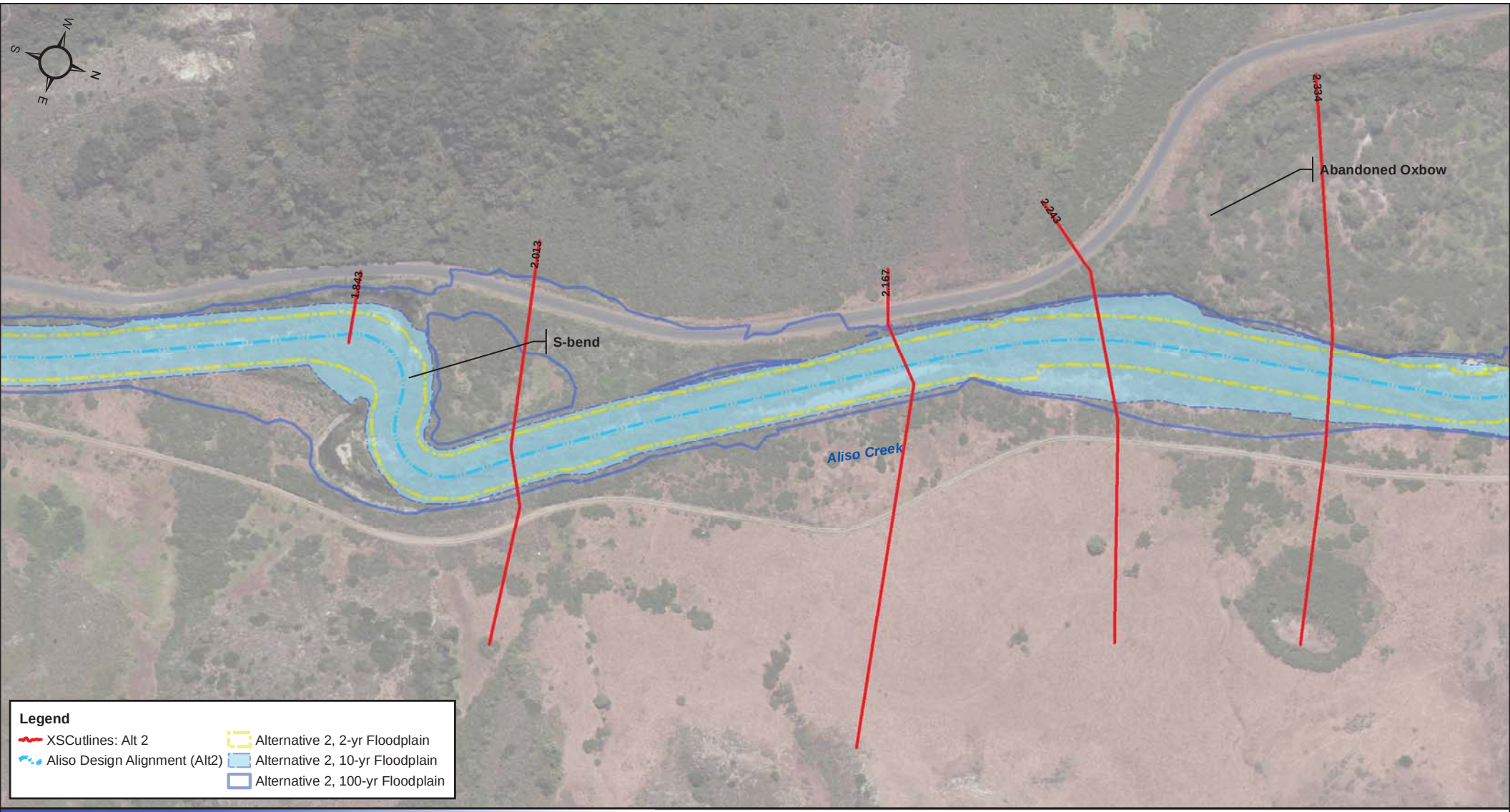

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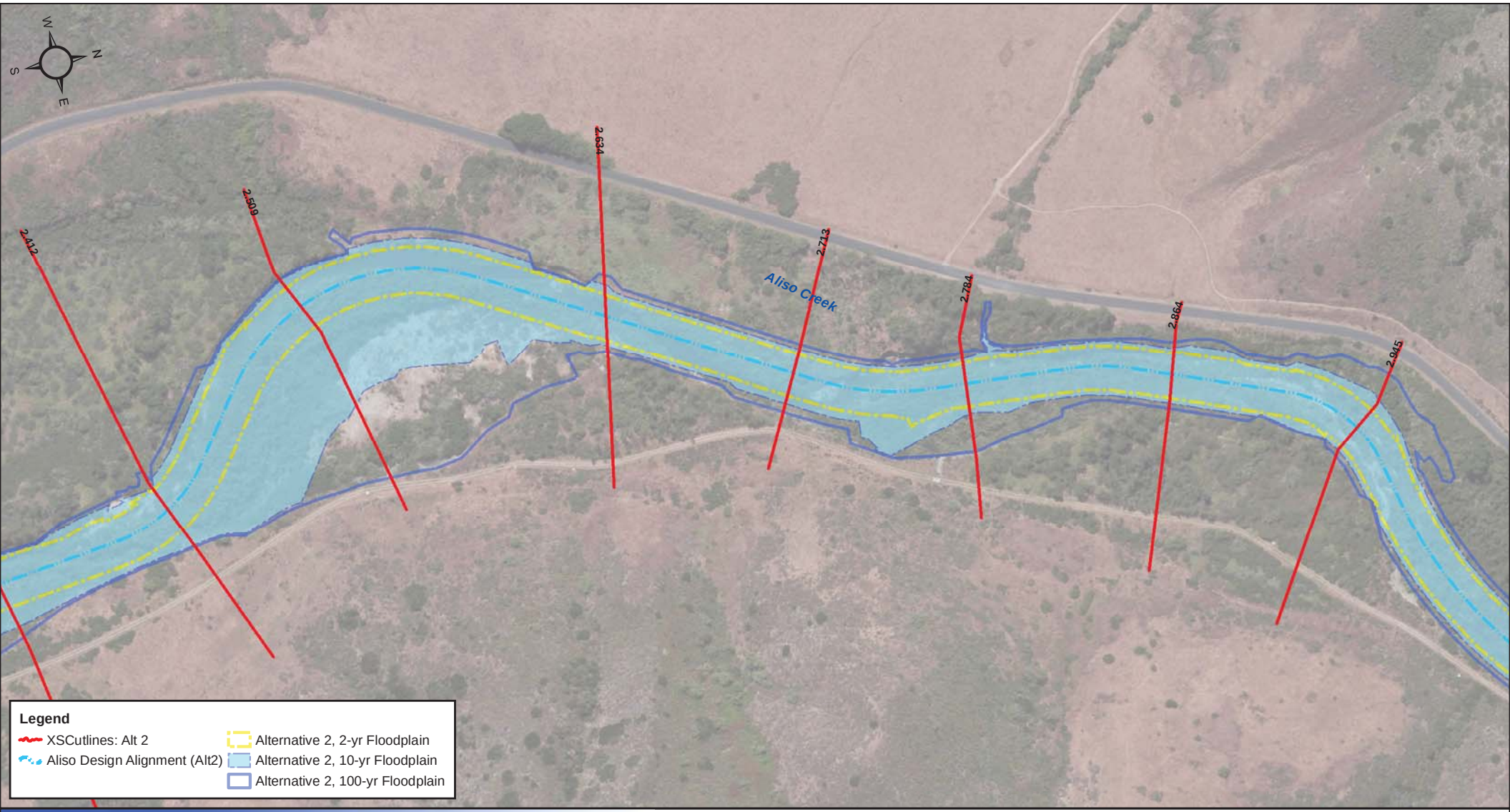

Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

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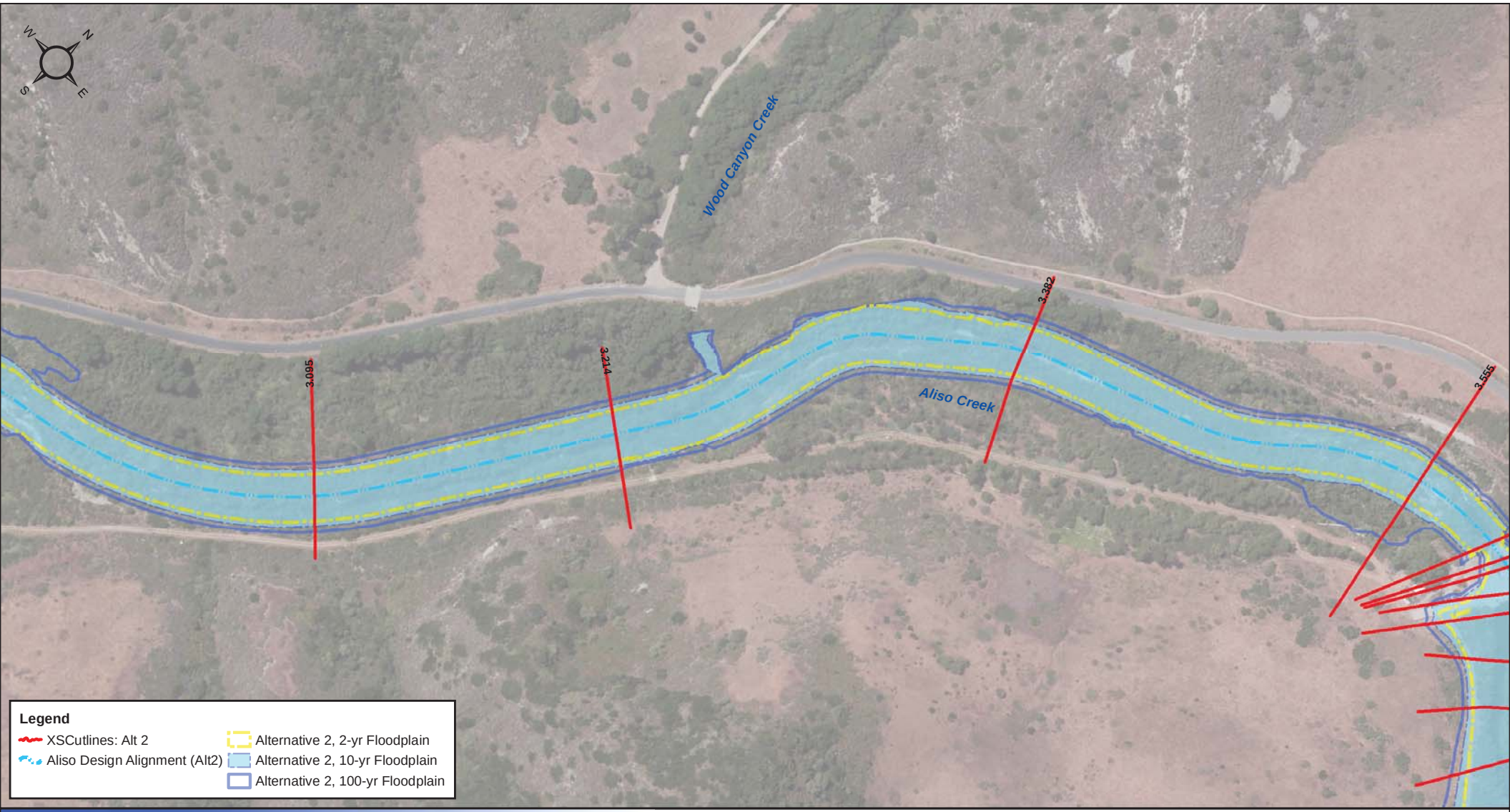

Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

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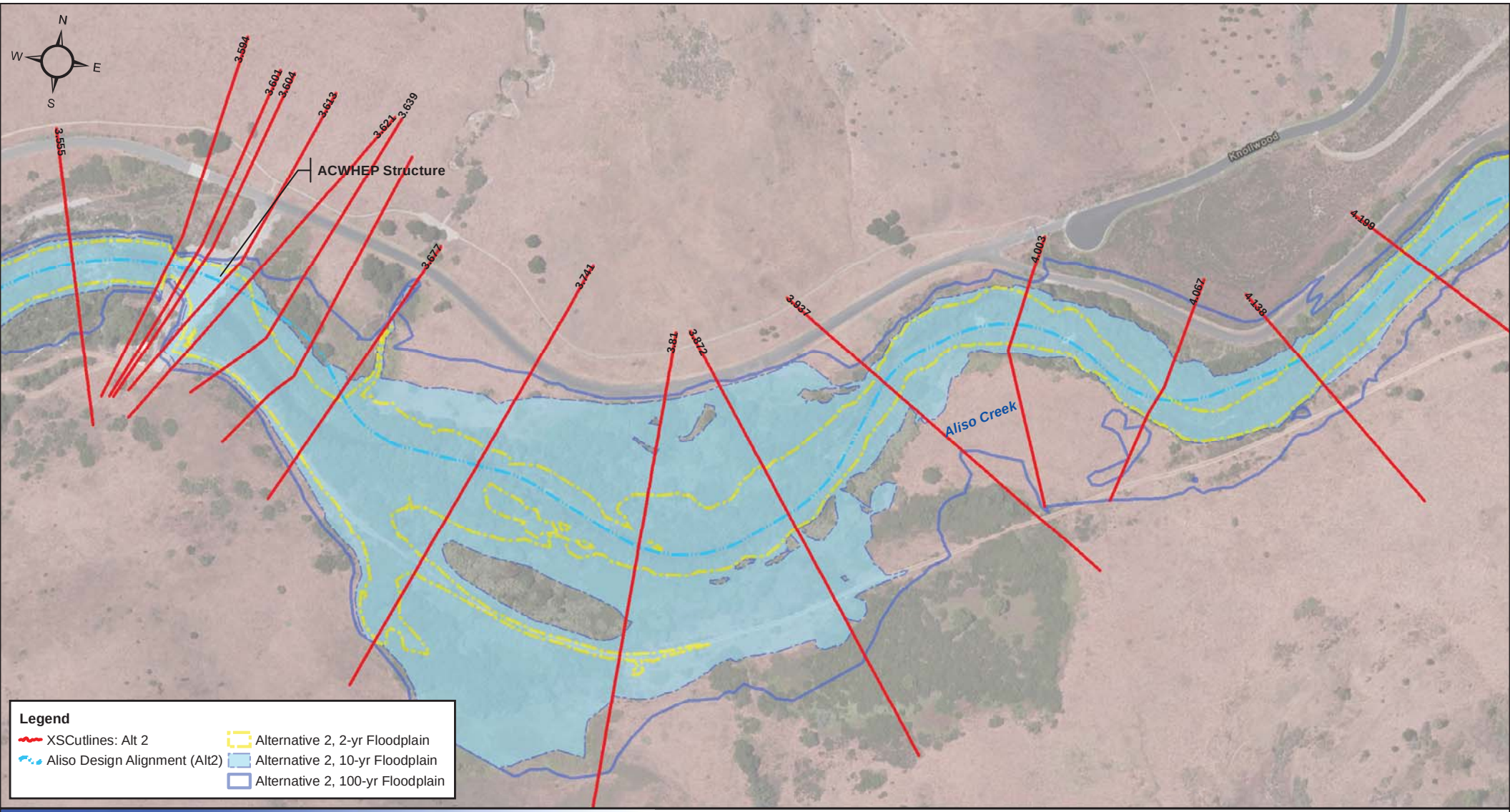

Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

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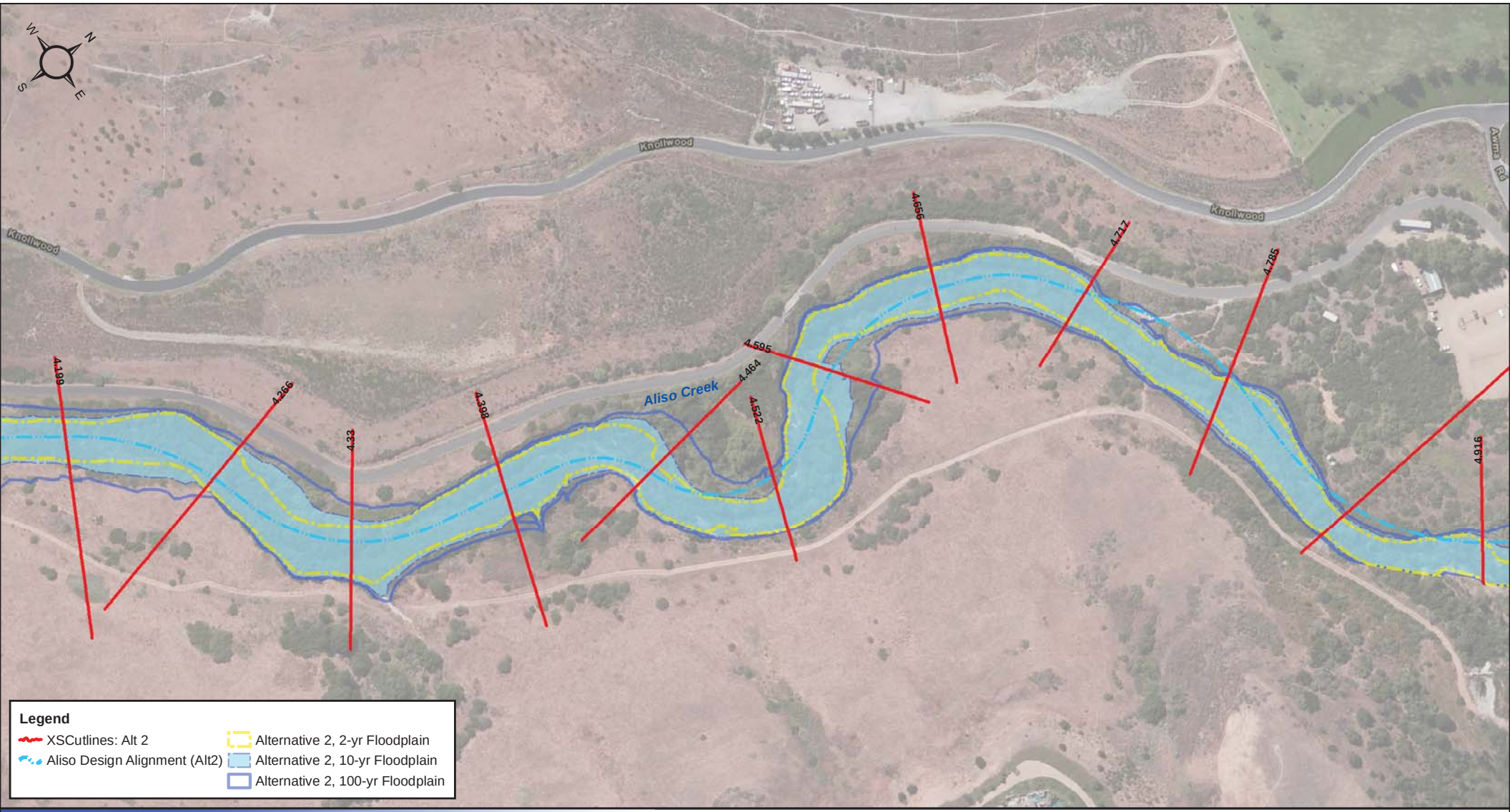

Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

Sheet 6

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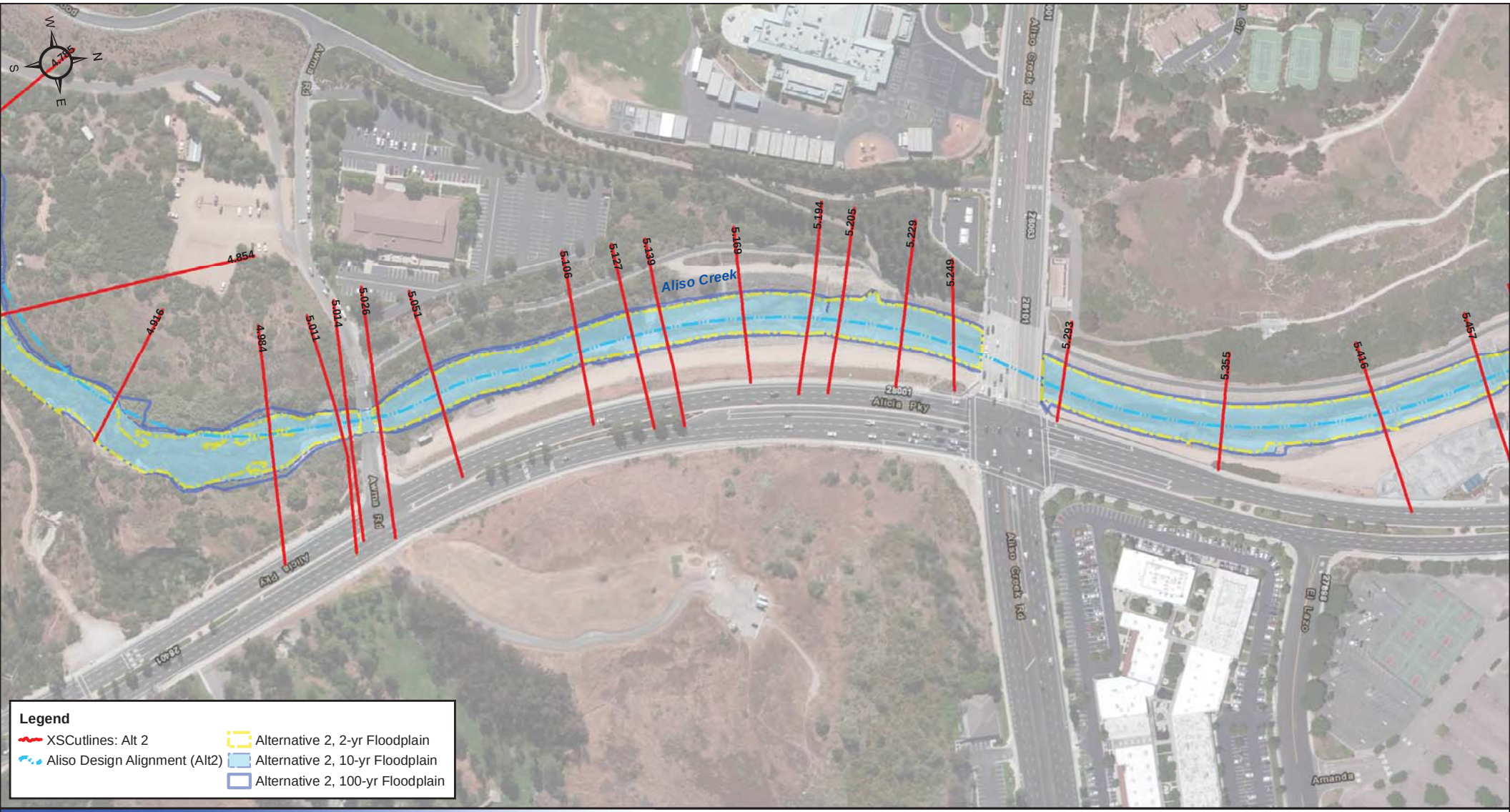


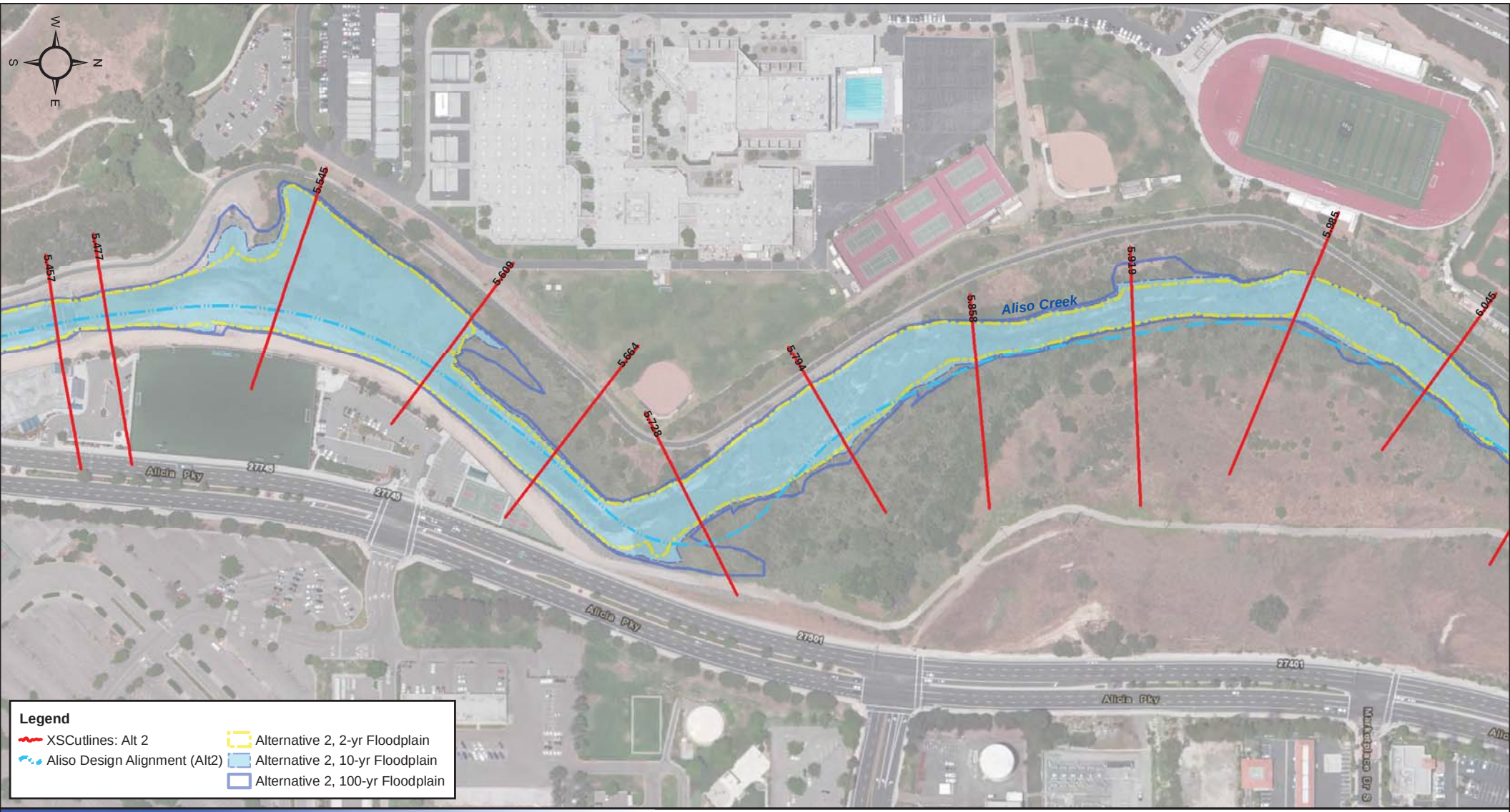
Legend

- XSCutlines: Alt 2
- Aliso Design Alignment (Alt2)
- Alternative 2, 2-yr Floodplain
- Alternative 2, 10-yr Floodplain
- Alternative 2, 100-yr Floodplain

Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

Sheet 7

0 100 200 400 Feet



Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

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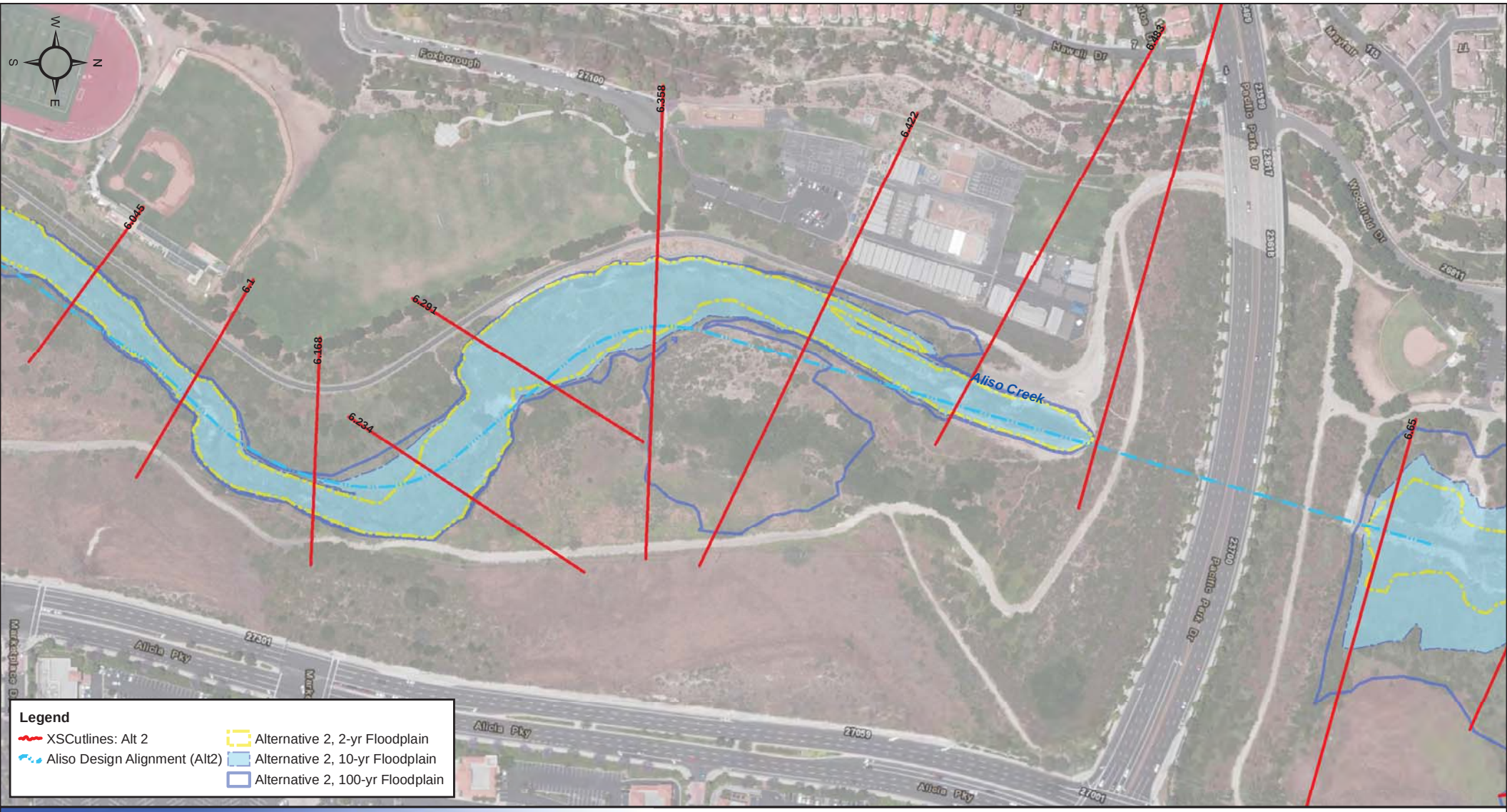

Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

Sheet 9

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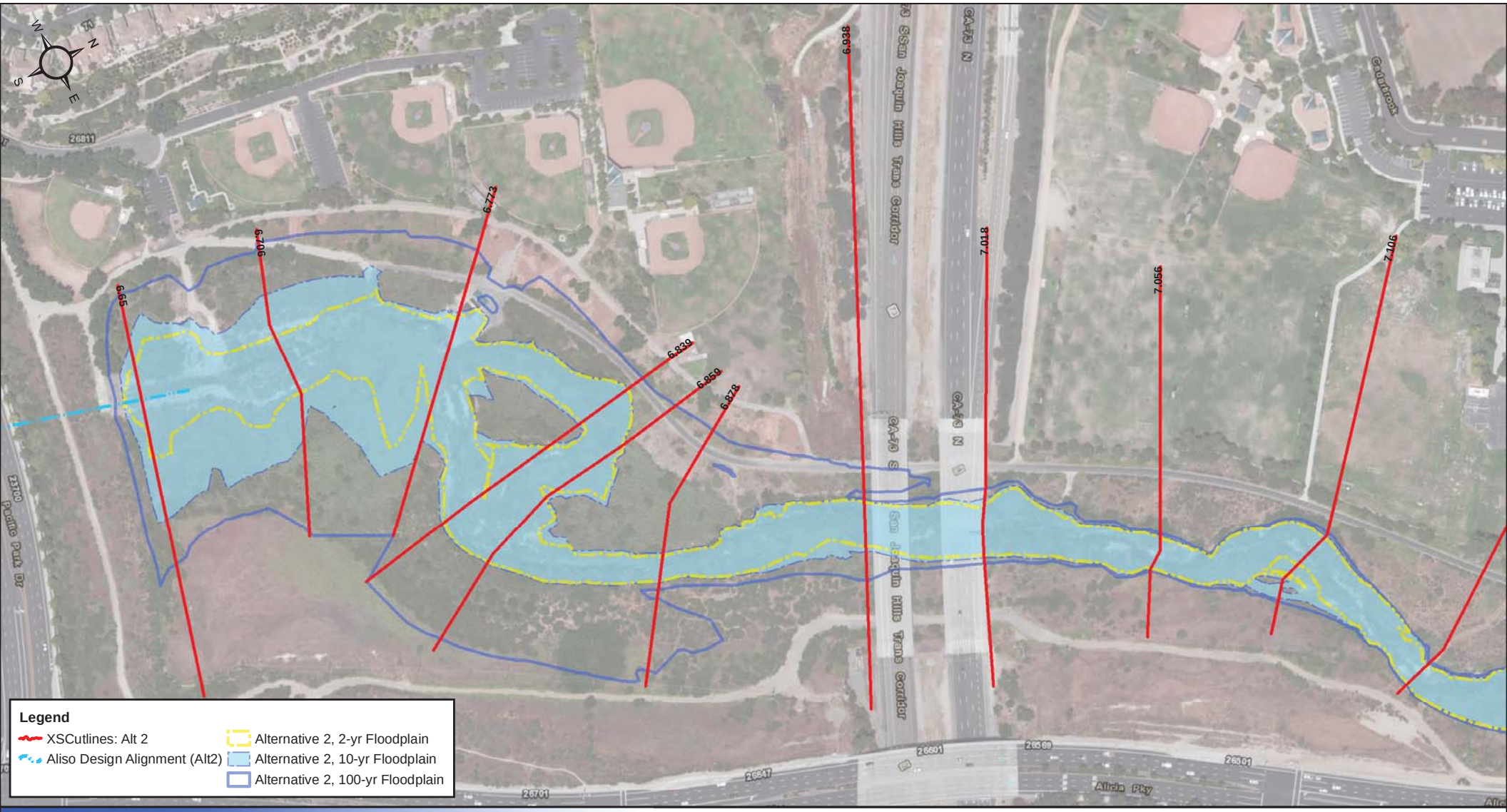


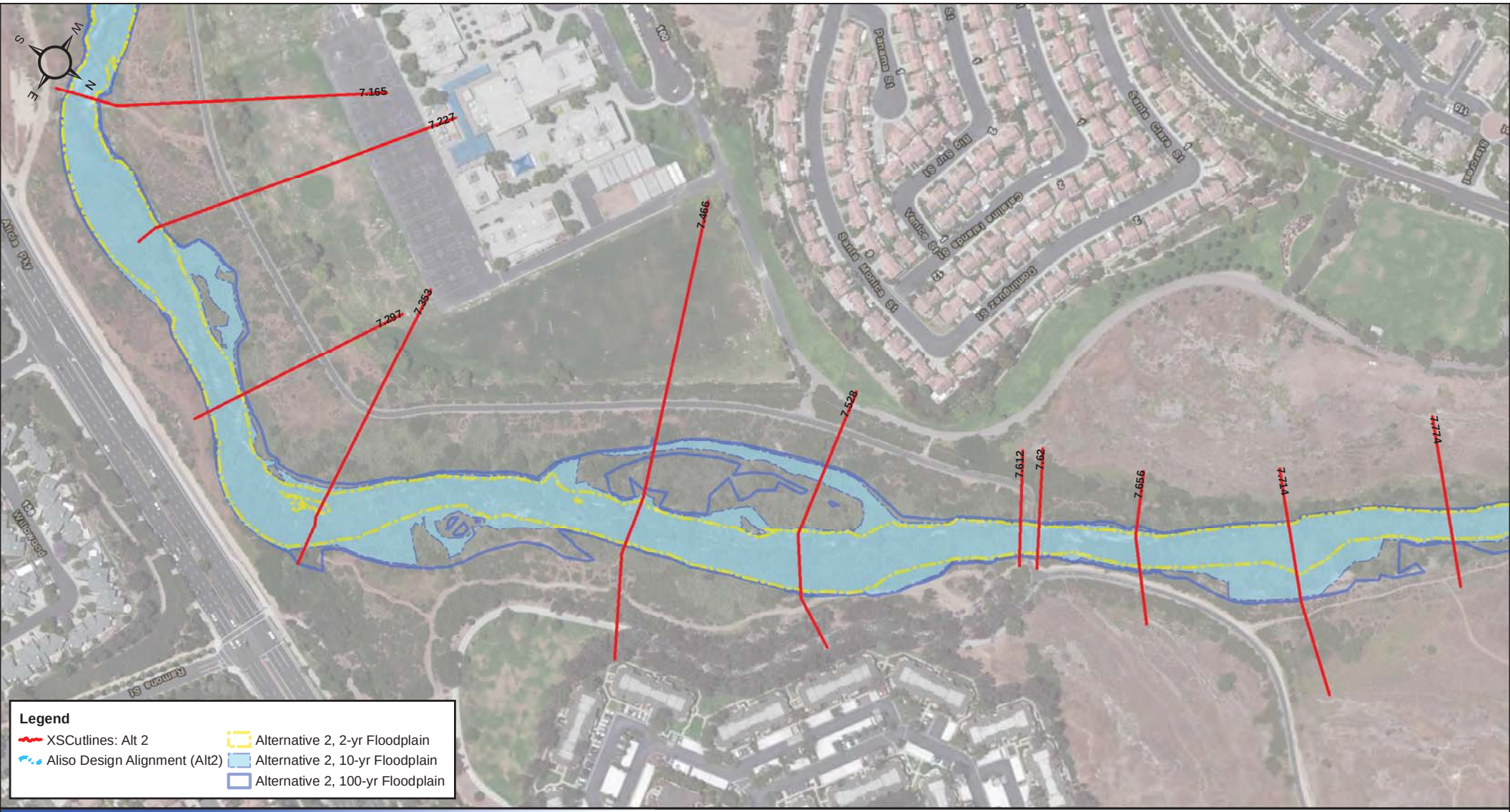
Legend

- XSCutlines: Alt 2
- Aliso Design Alignment (Alt2)
- Alternative 2, 2-yr Floodplain
- Alternative 2, 10-yr Floodplain
- Alternative 2, 100-yr Floodplain

Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

Sheet 10

0 100 200 400 Feet



Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

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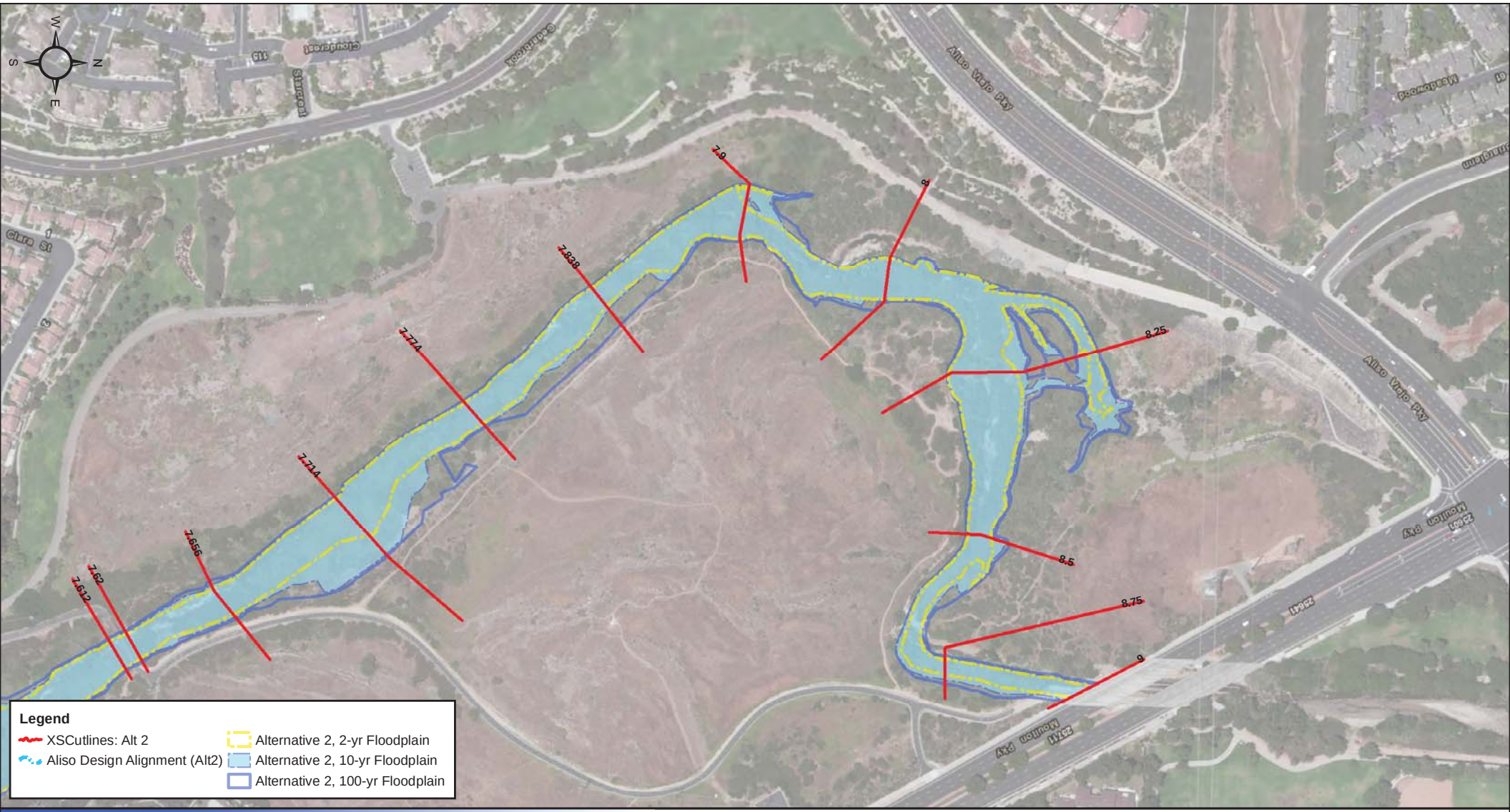

Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

Sheet 12

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Feet

Floodplain Maps for n = 0.06
Alternative 3

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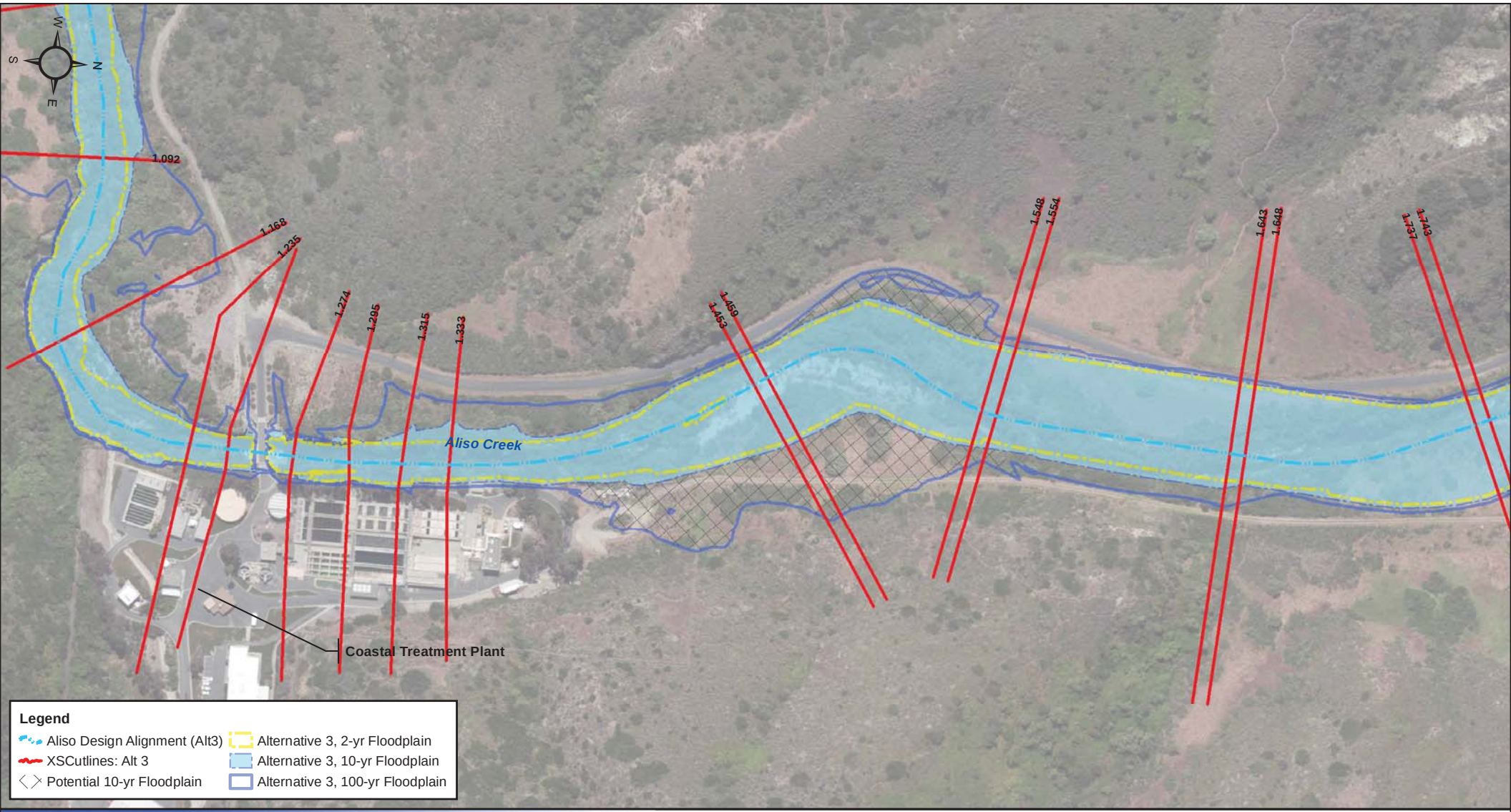

Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

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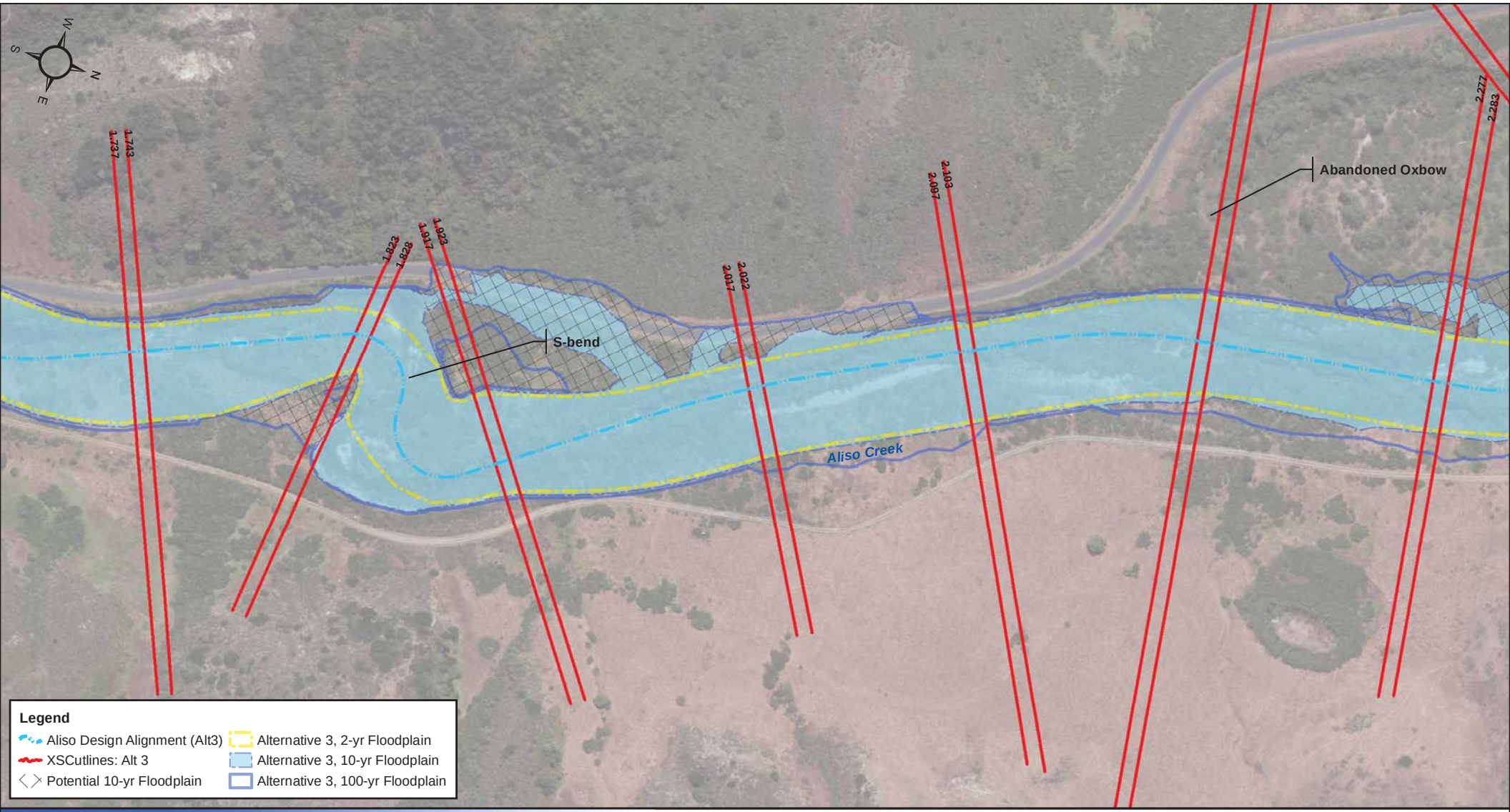

Data Source: Tetra Tech 2014
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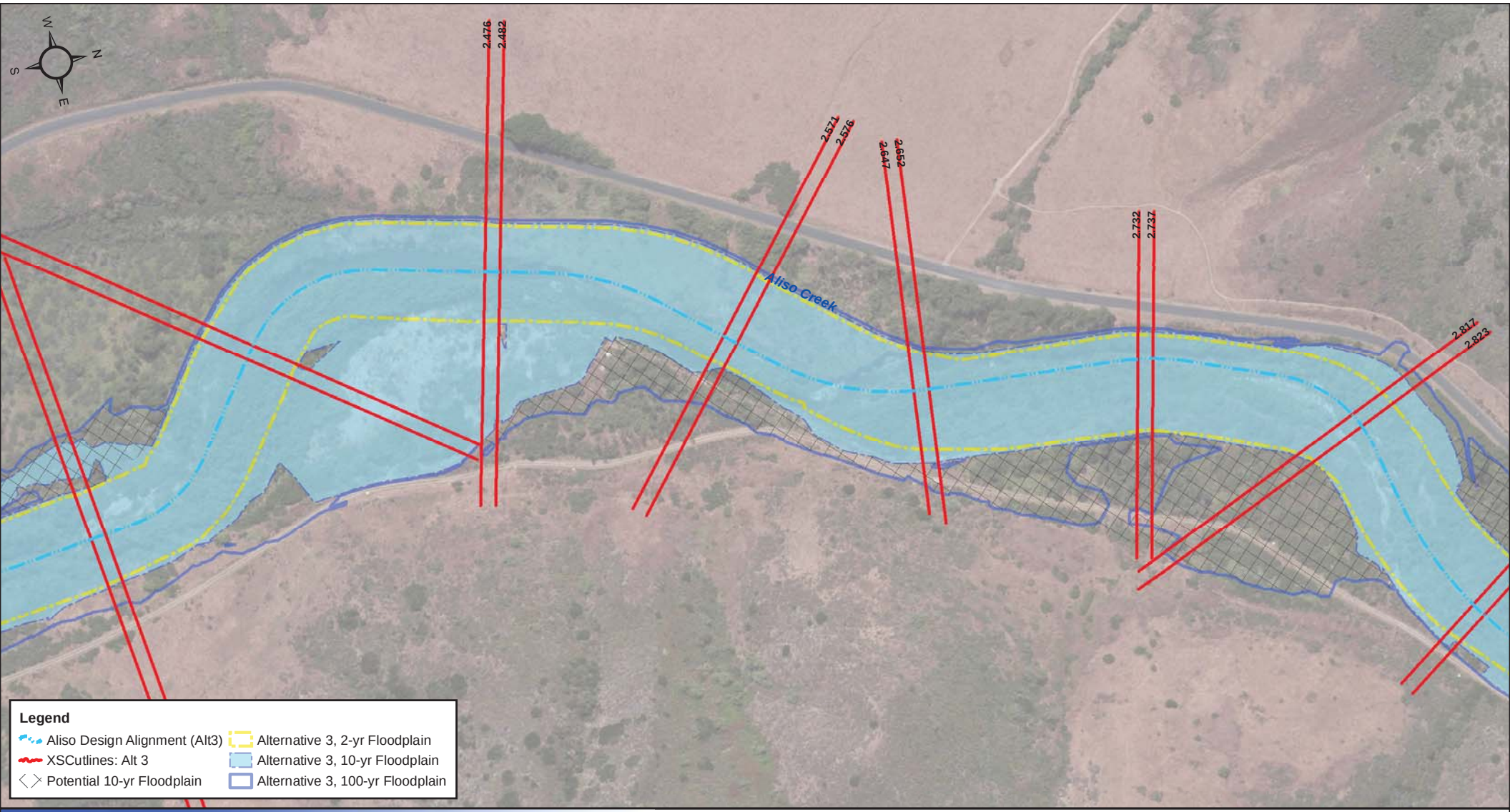

Data Source: Tetra Tech 2014
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Sheet 3

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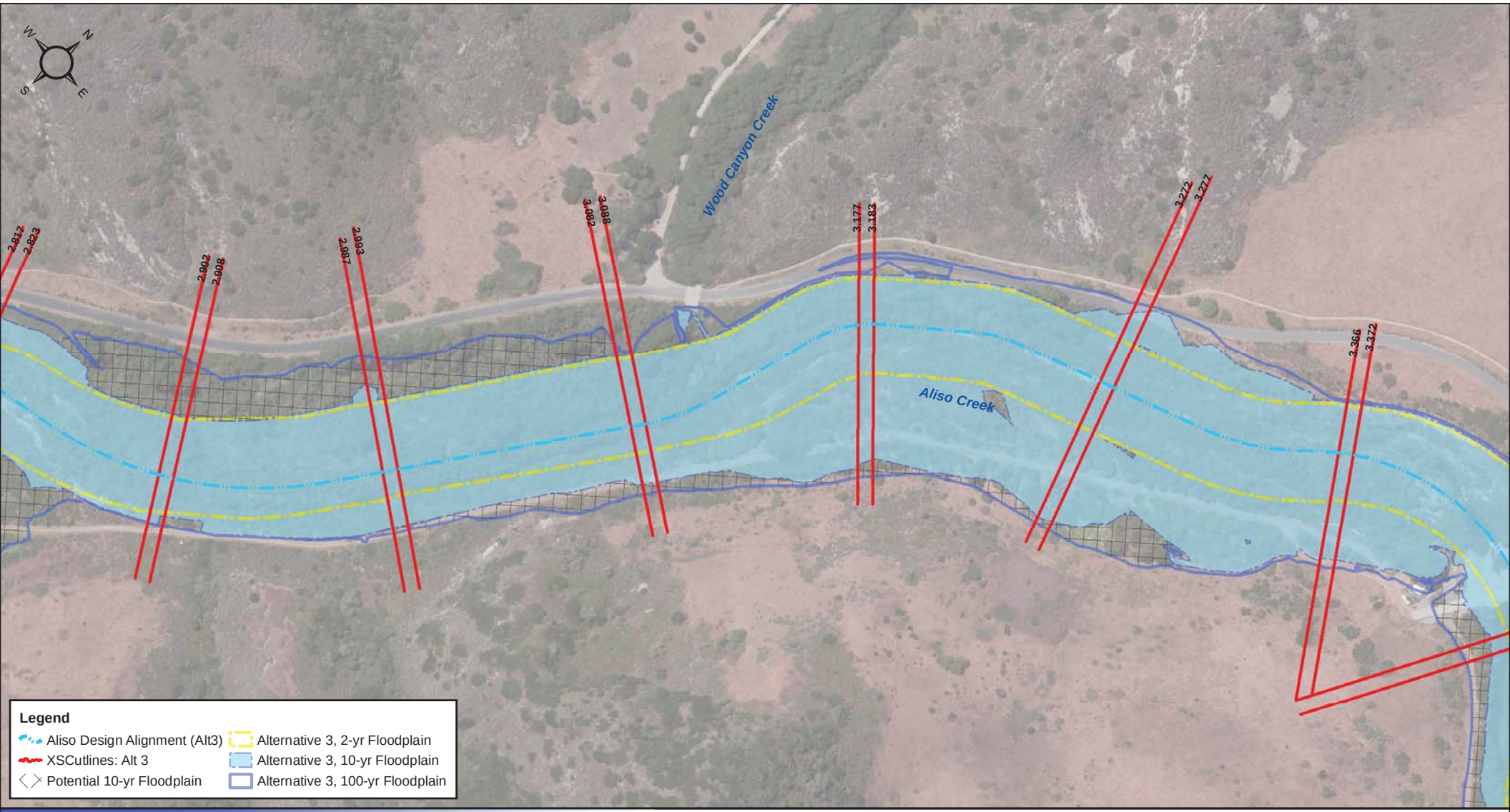

Data Source: Tetra Tech 2014
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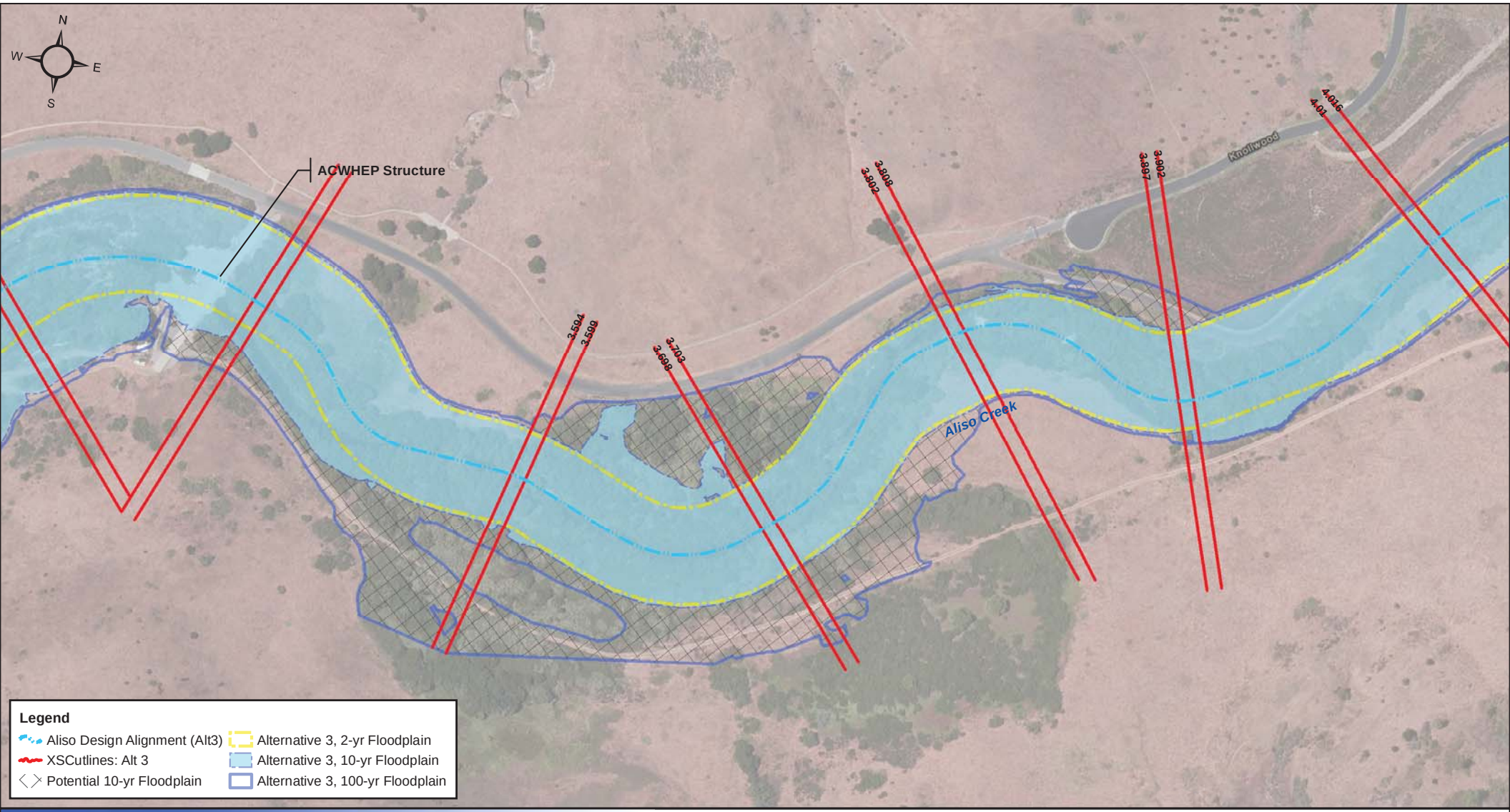

Data Source: Tetra Tech 2014
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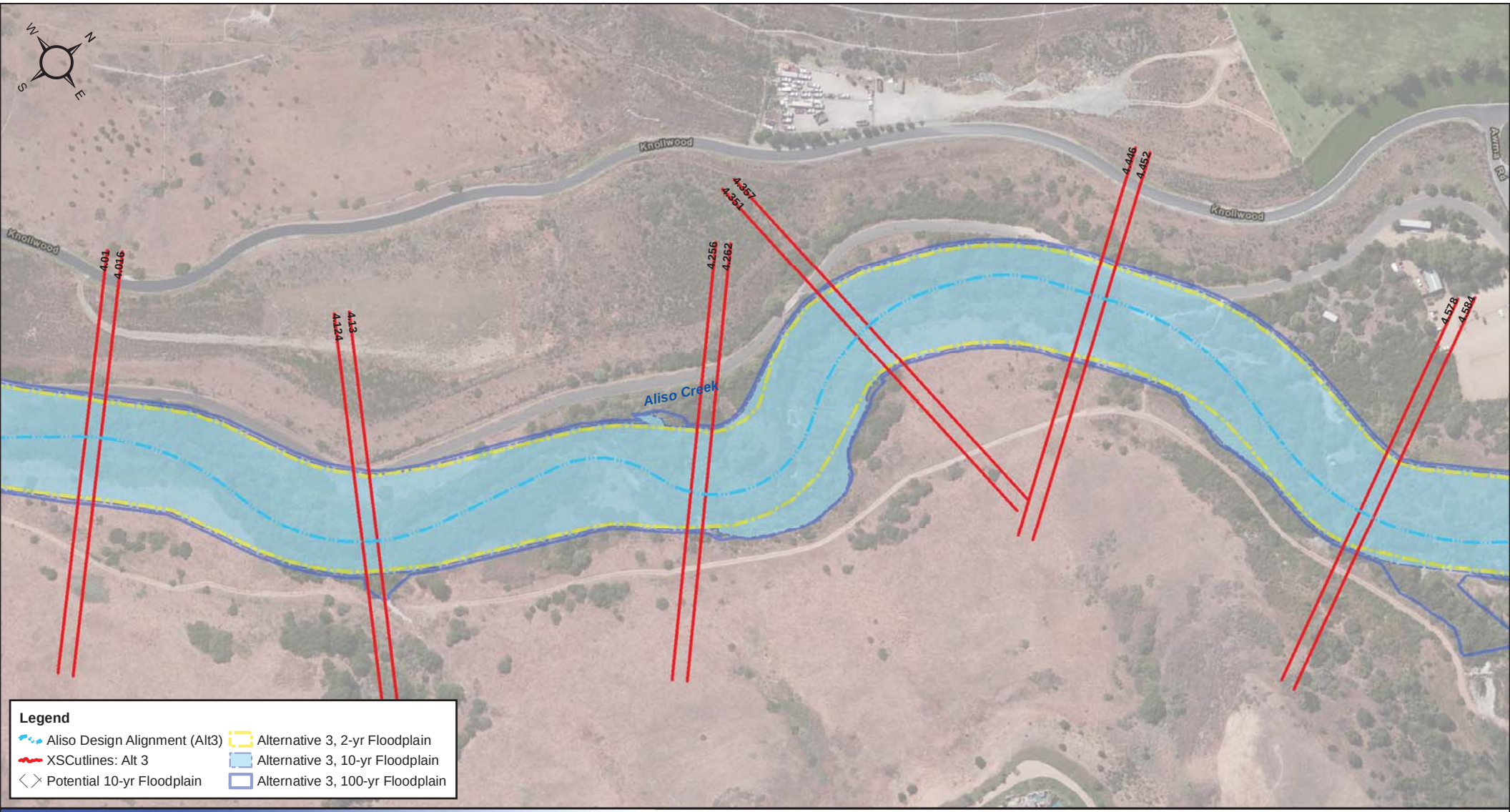

Data Source: Tetra Tech 2014
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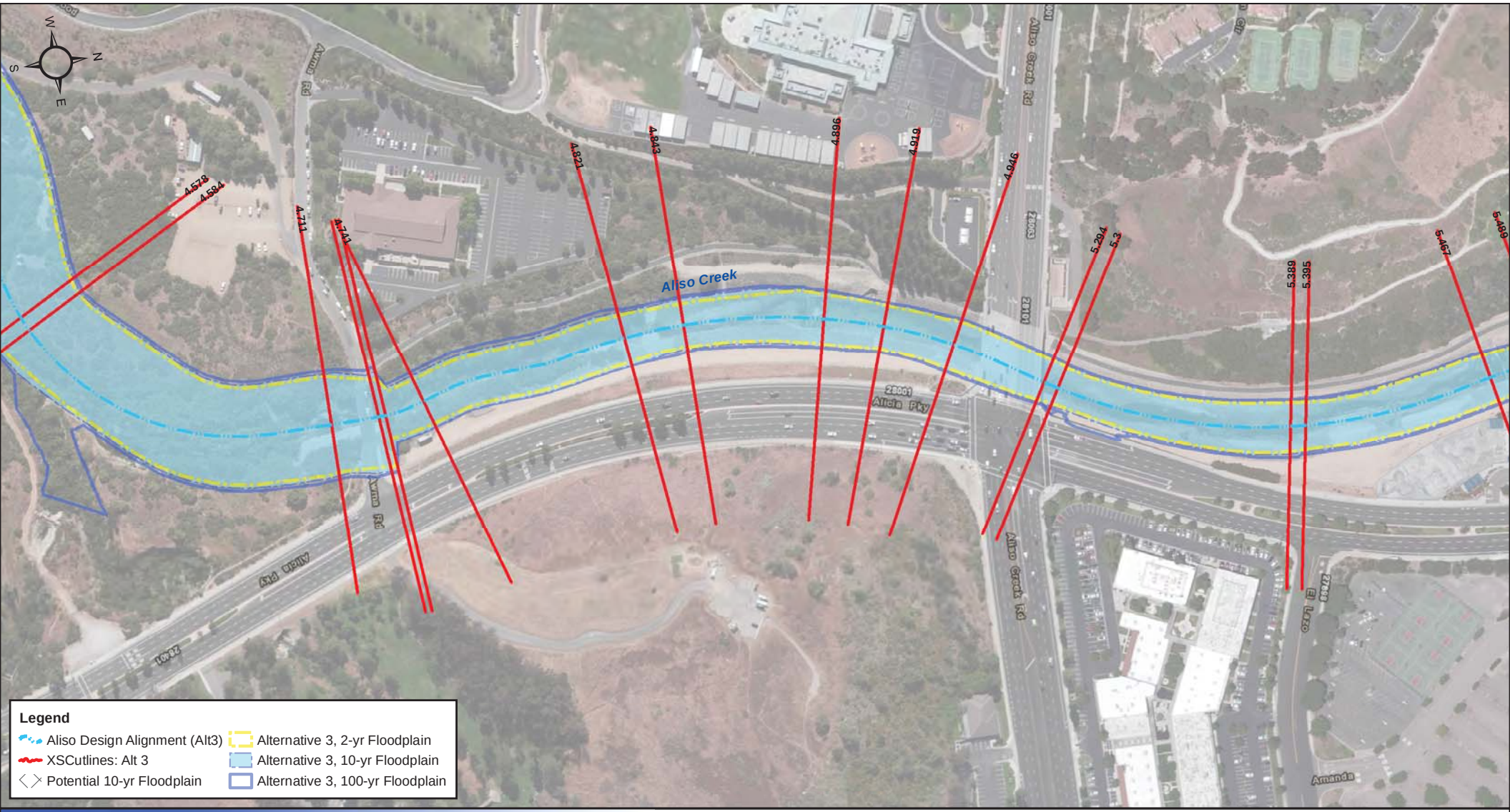

Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

Sheet 7

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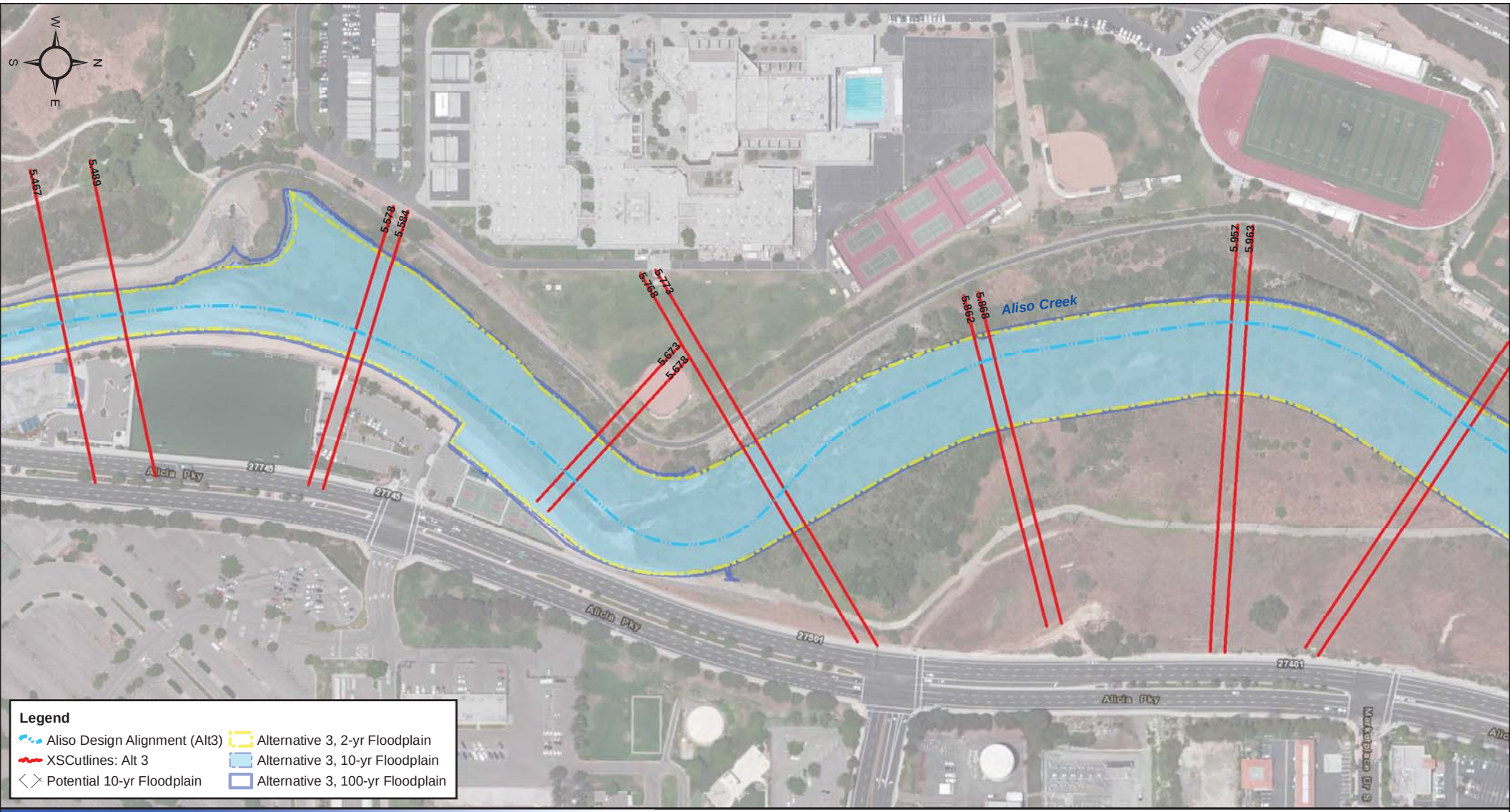

Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

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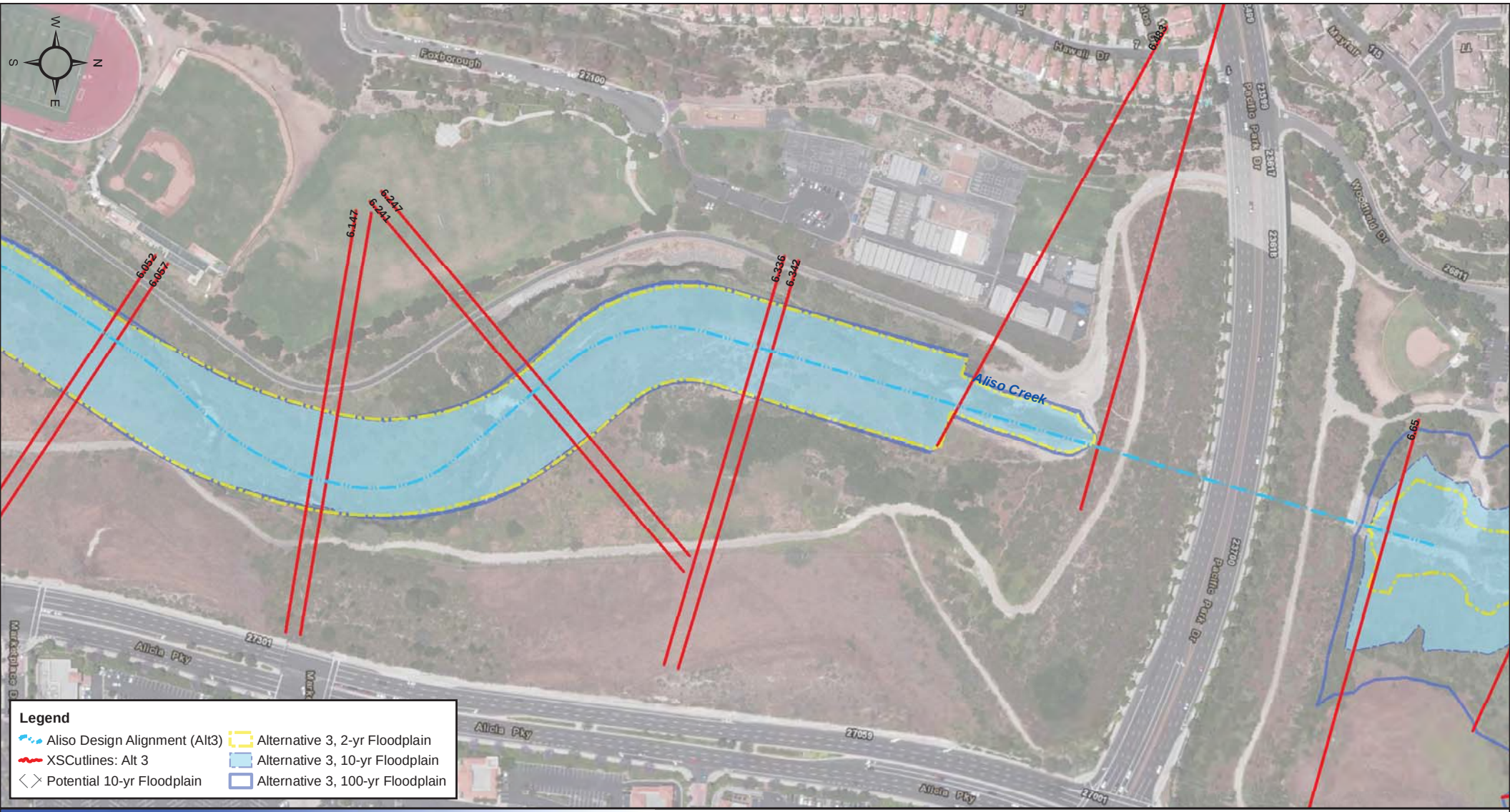

Data Source: Tetra Tech 2014
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Sheet 9

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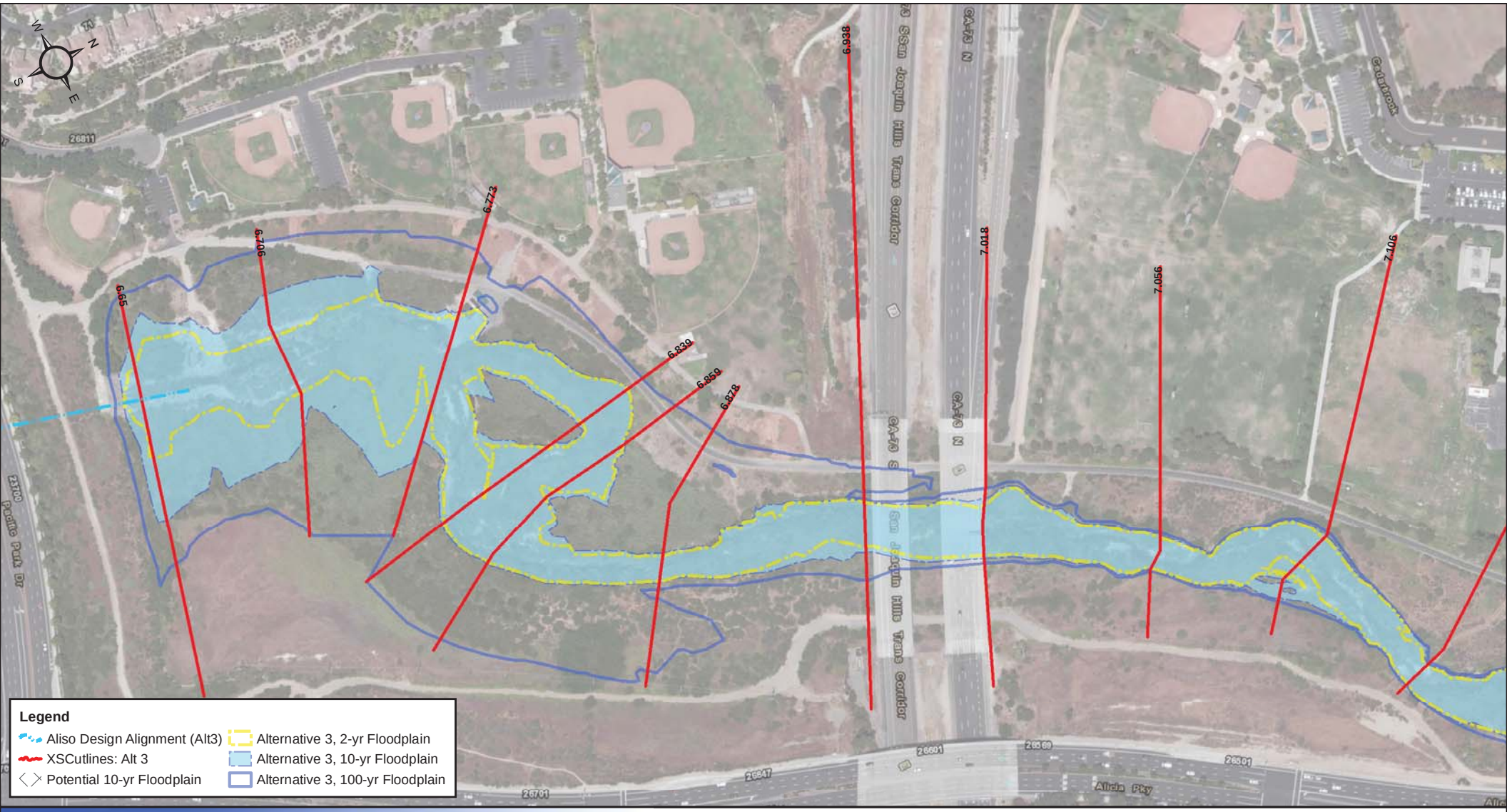

Data Source: Tetra Tech 2014
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Sheet 10

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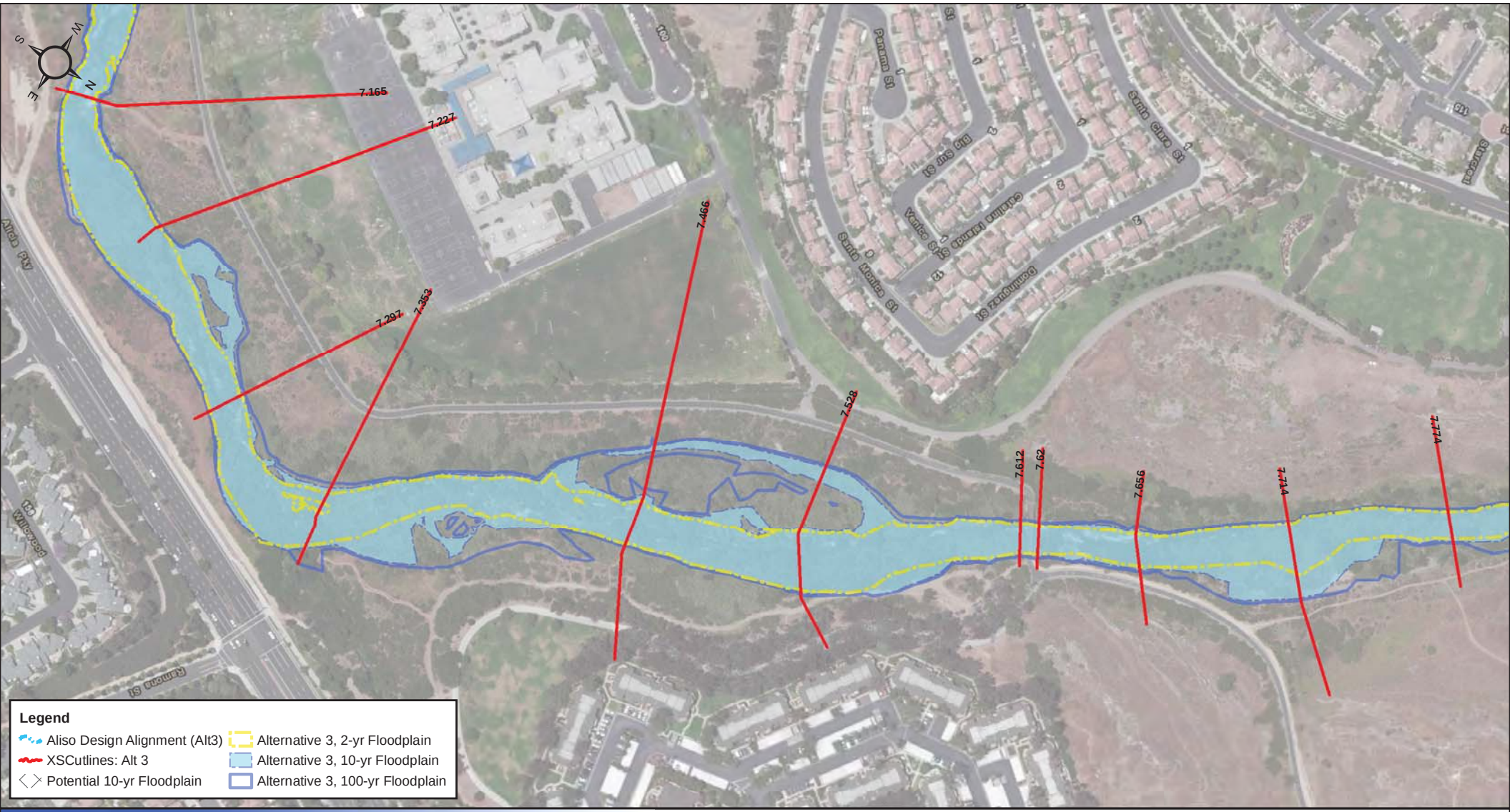

Data Source: Tetra Tech 2014
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Sheet 11

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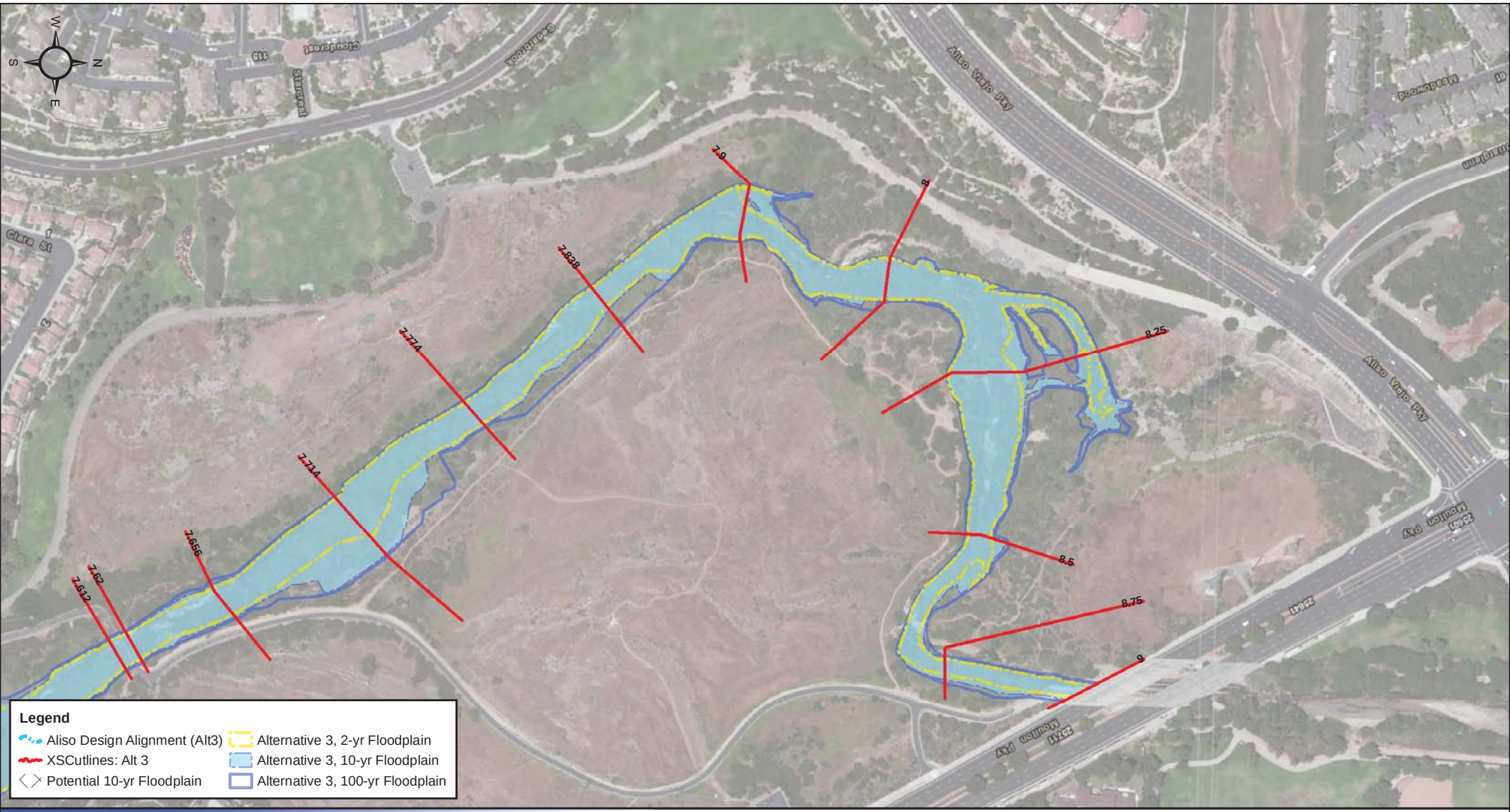

Legend

- Aliso Design Alignment (Alt3)
- XSCutlines: Alt 3
- Potential 10-yr Floodplain
- Alternative 3, 2-yr Floodplain
- Alternative 3, 10-yr Floodplain
- Alternative 3, 100-yr Floodplain

Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

Sheet 12

0 100 200 400 Feet

Floodplain Maps for *n* = 0.06
Alternative 4

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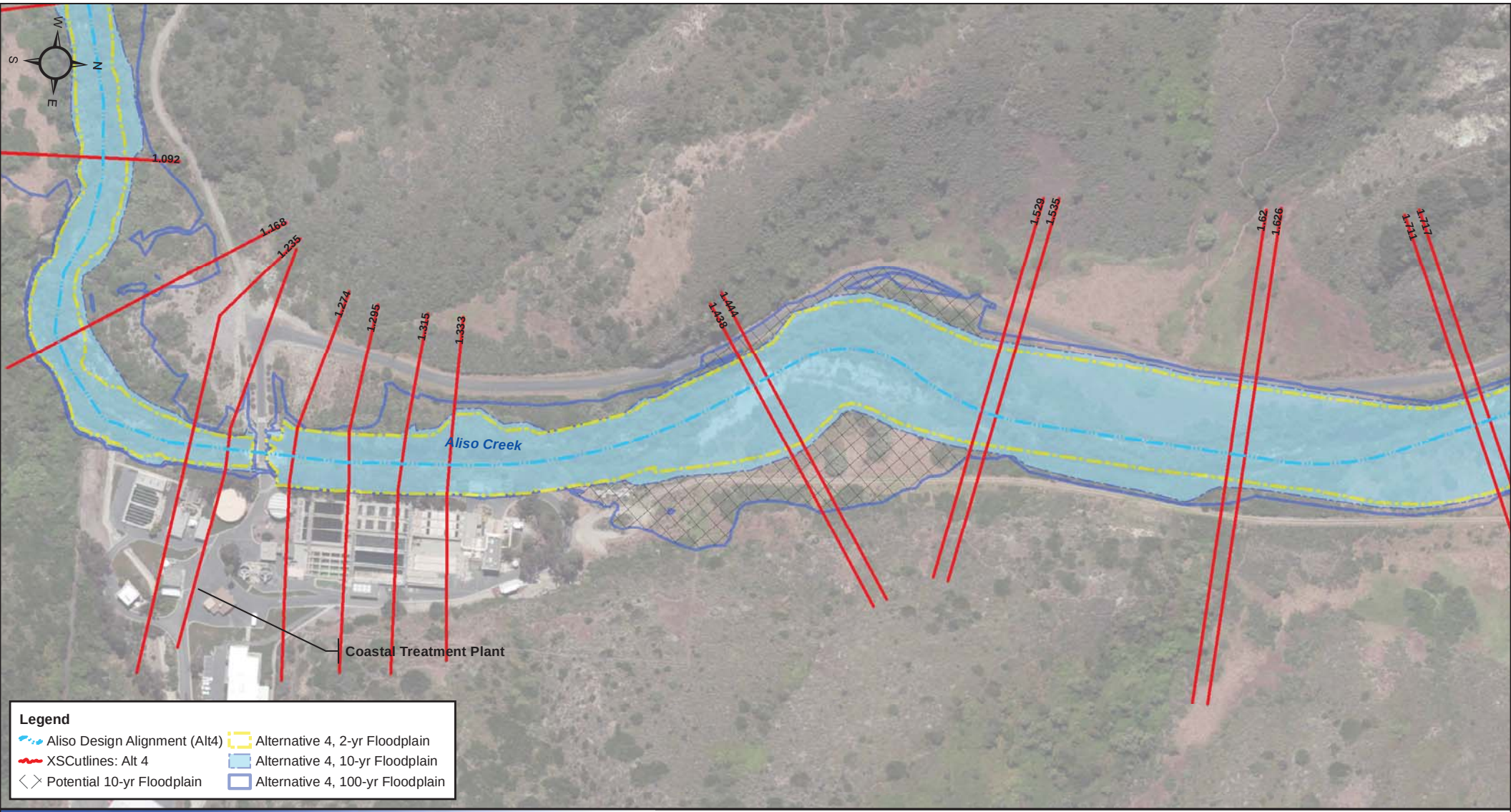
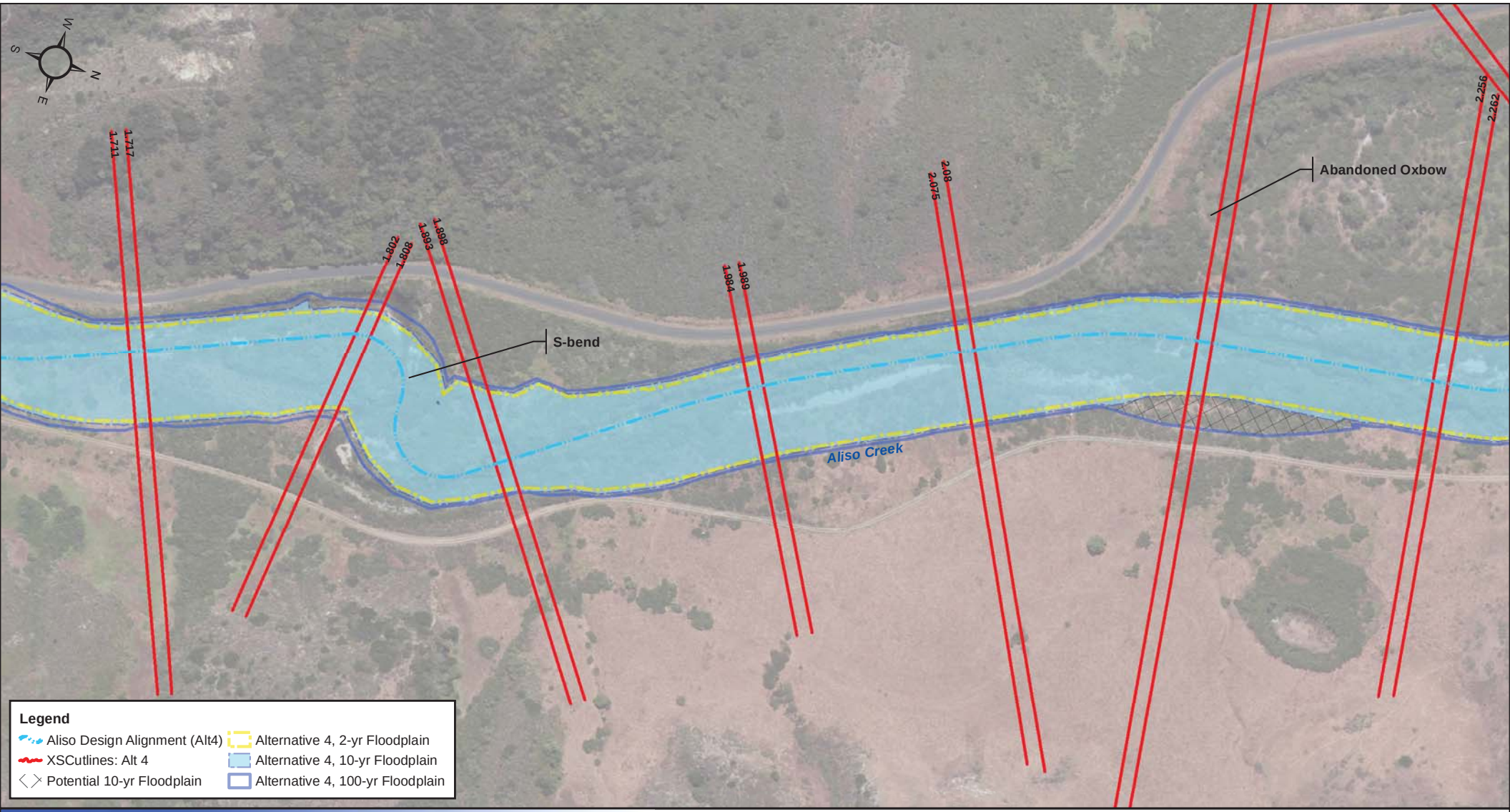
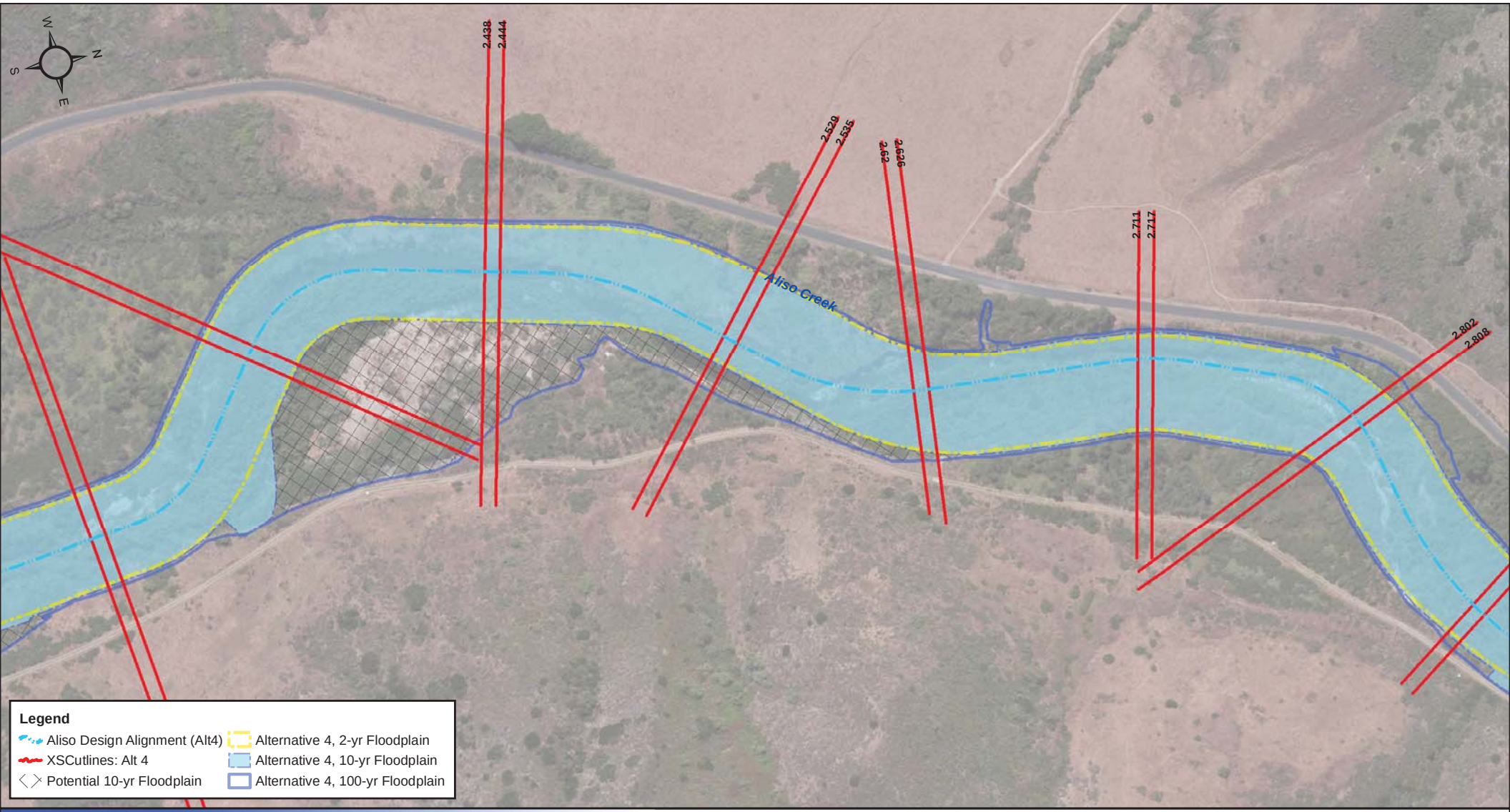

W
S
N
E
1.092
1.168
1.235
1.274
1.295
1.315
1.333
1.444
1.498
1.529
1.535
1.62
1.626
1.711
1.717
Aliso Creek
Coastal Treatment Plant
Legend
Aliso Design Alignment (Alt4)
XSCutlines: Alt 4
Potential 10-yr Floodplain
Alternative 4, 2-yr Floodplain
Alternative 4, 10-yr Floodplain
Alternative 4, 100-yr Floodplain
Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014
Sheet 1
0
100
200
400
Feet



Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

Sheet 2

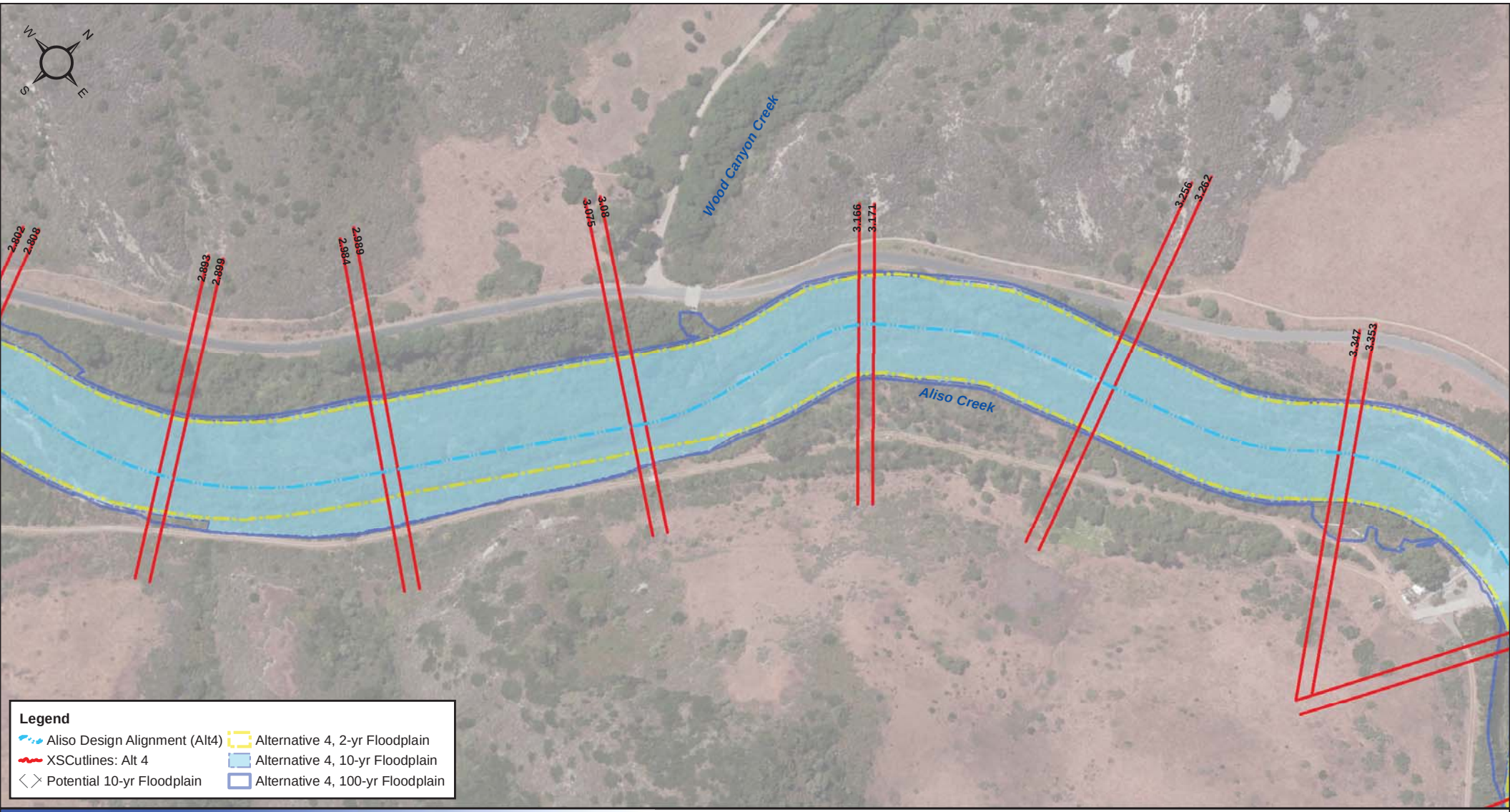
0 100 200 400
Feet



Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

Sheet 3

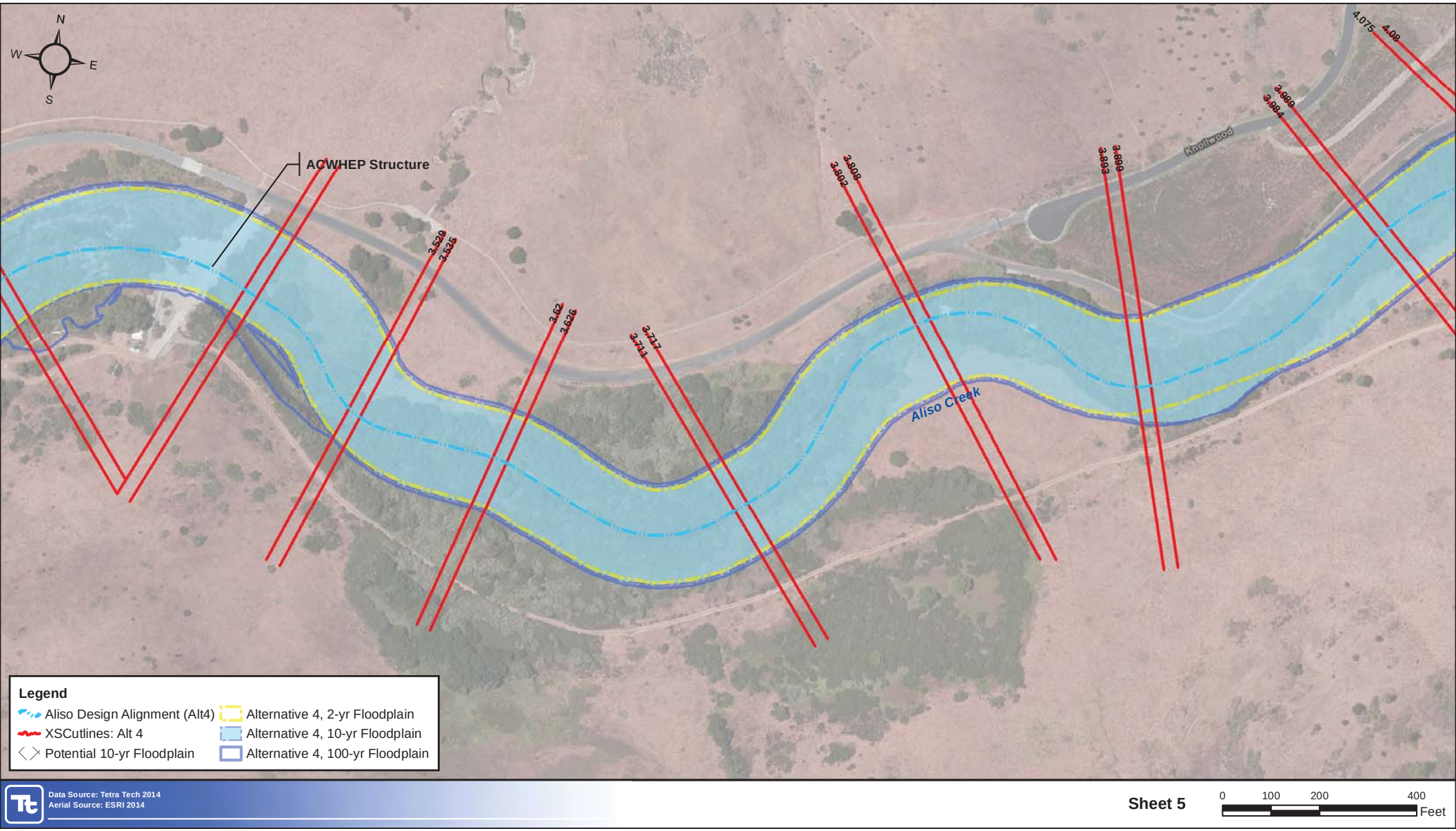
0 100 200 400
Feet

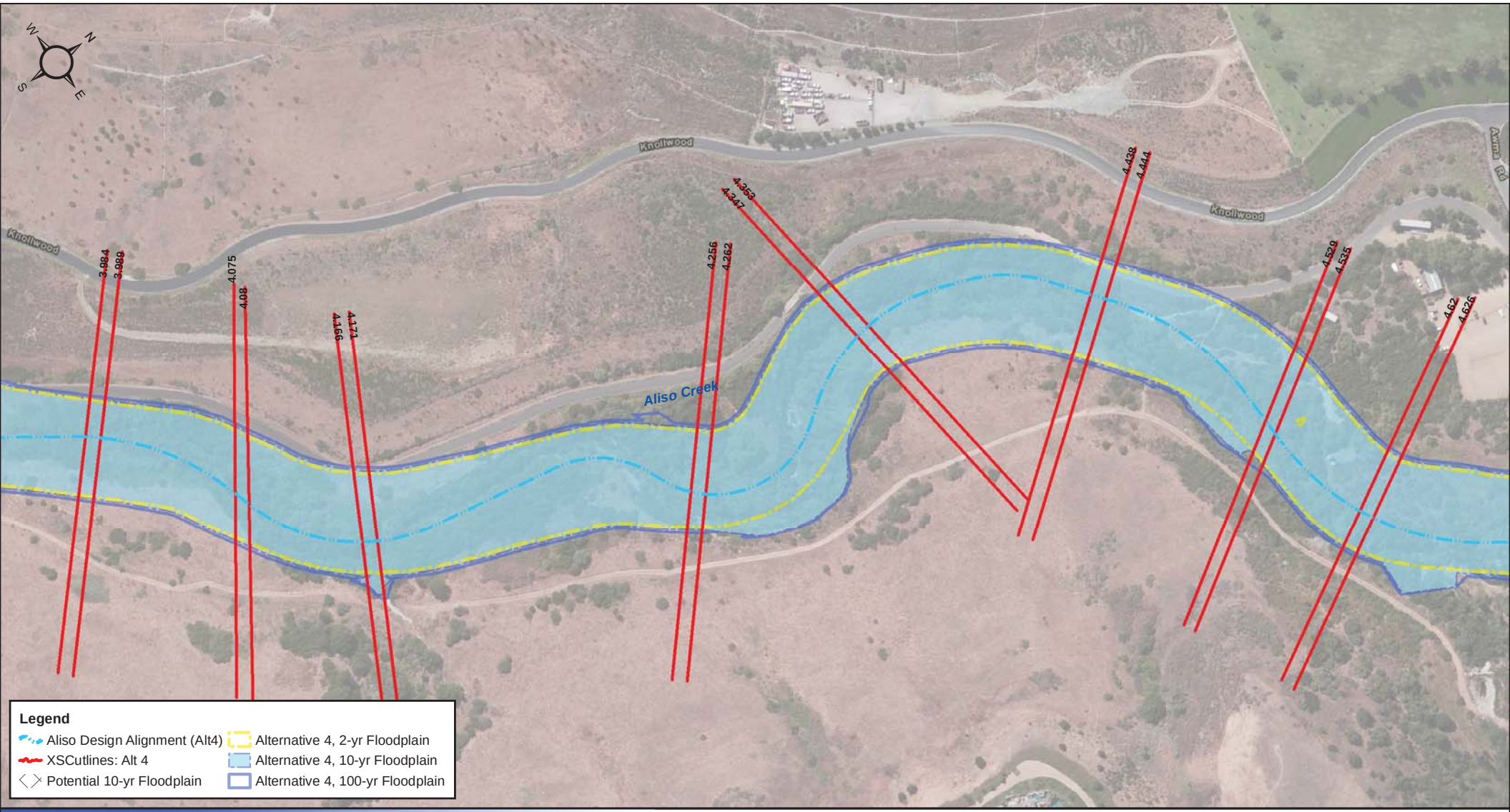


Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

Sheet 4

0 100 200 400
Feet

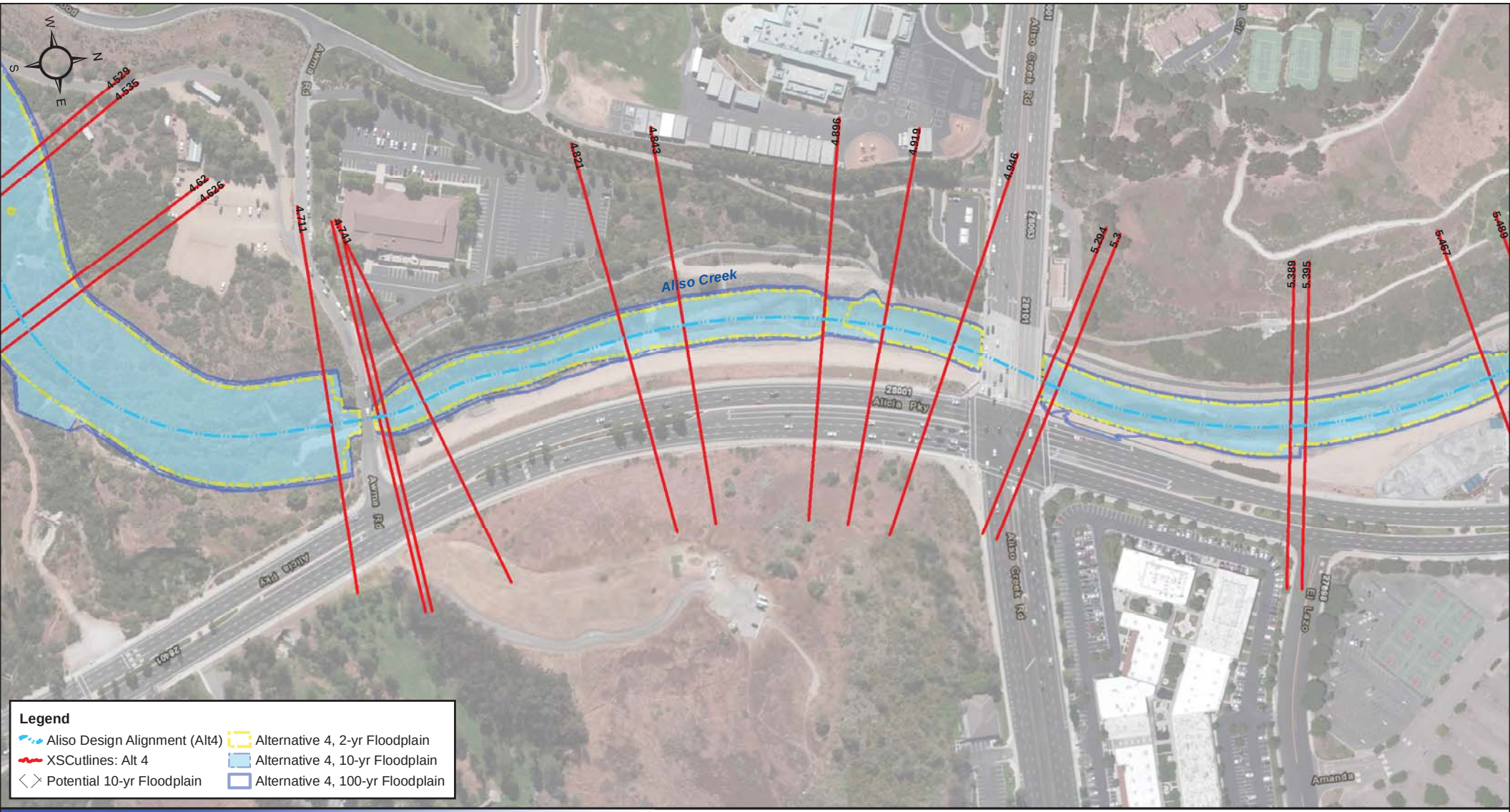

N
W
E
S
ACWHEP Structure
3.529
3.535
3.62
3.626
3.717
3.711
3.902
3.908
3.893
3.899
3.984
3.990
4.075
4.08
Knollwood
Aliso Creek
Legend
Aliso Design Alignment (Alt4)
XSCutlines: Alt 4
Potential 10-yr Floodplain
Alternative 4, 2-yr Floodplain
Alternative 4, 10-yr Floodplain
Alternative 4, 100-yr Floodplain
Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014
Sheet 5
0
100
200
400
Feet



Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

Sheet 6

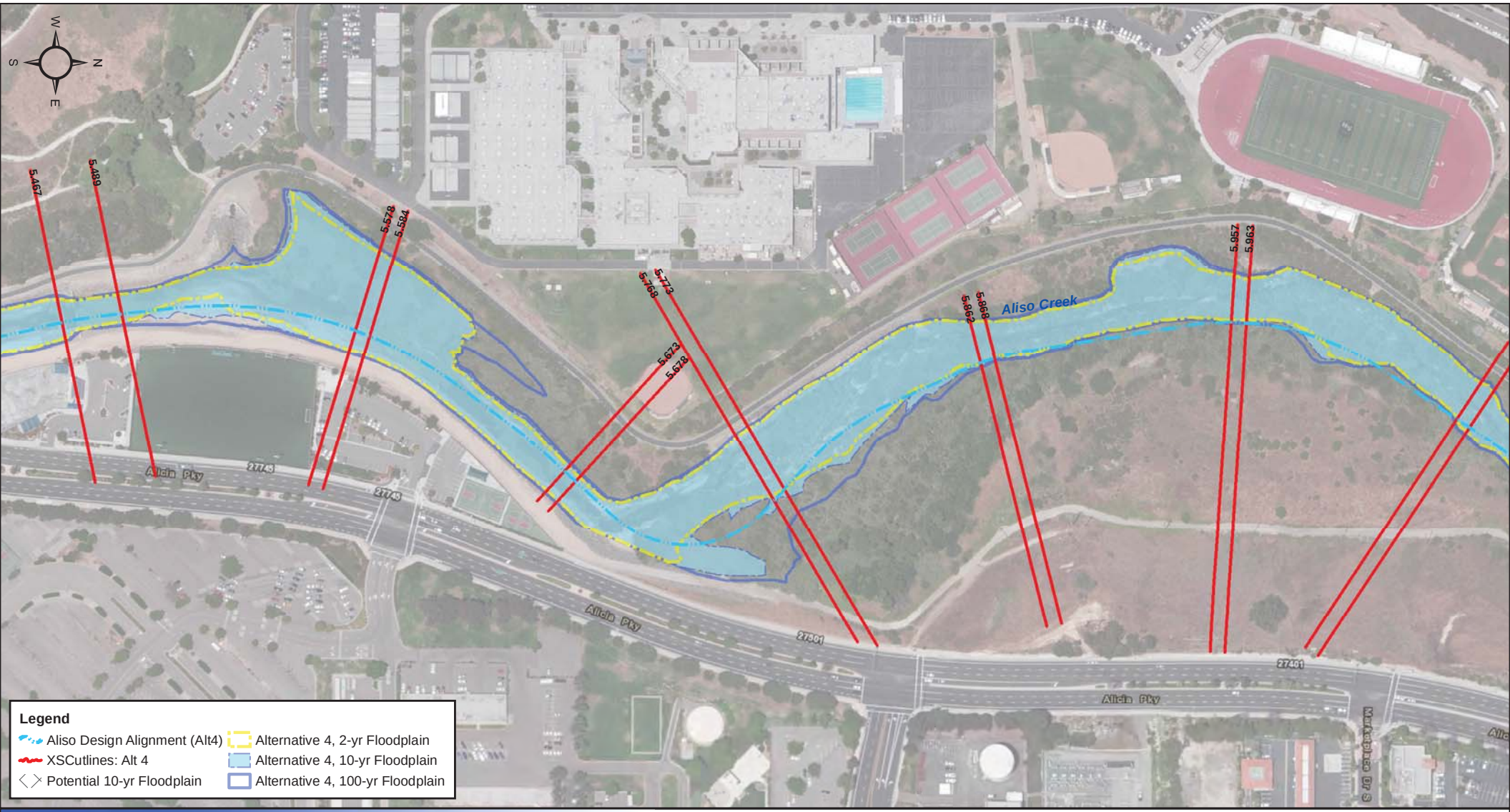
0 100 200 400
Feet



Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

Sheet 7

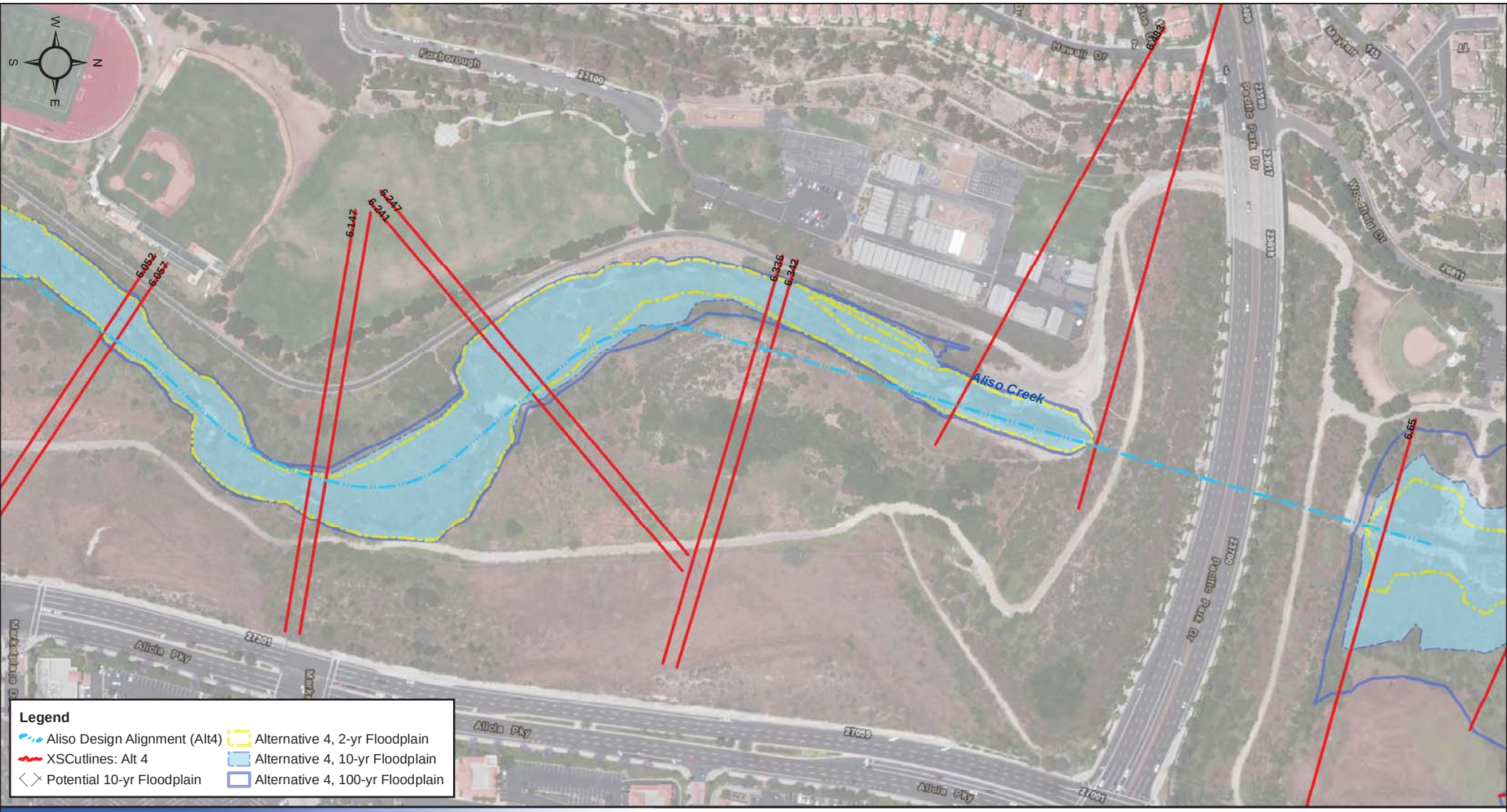
0 100 200 400 Feet



Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

Sheet 8

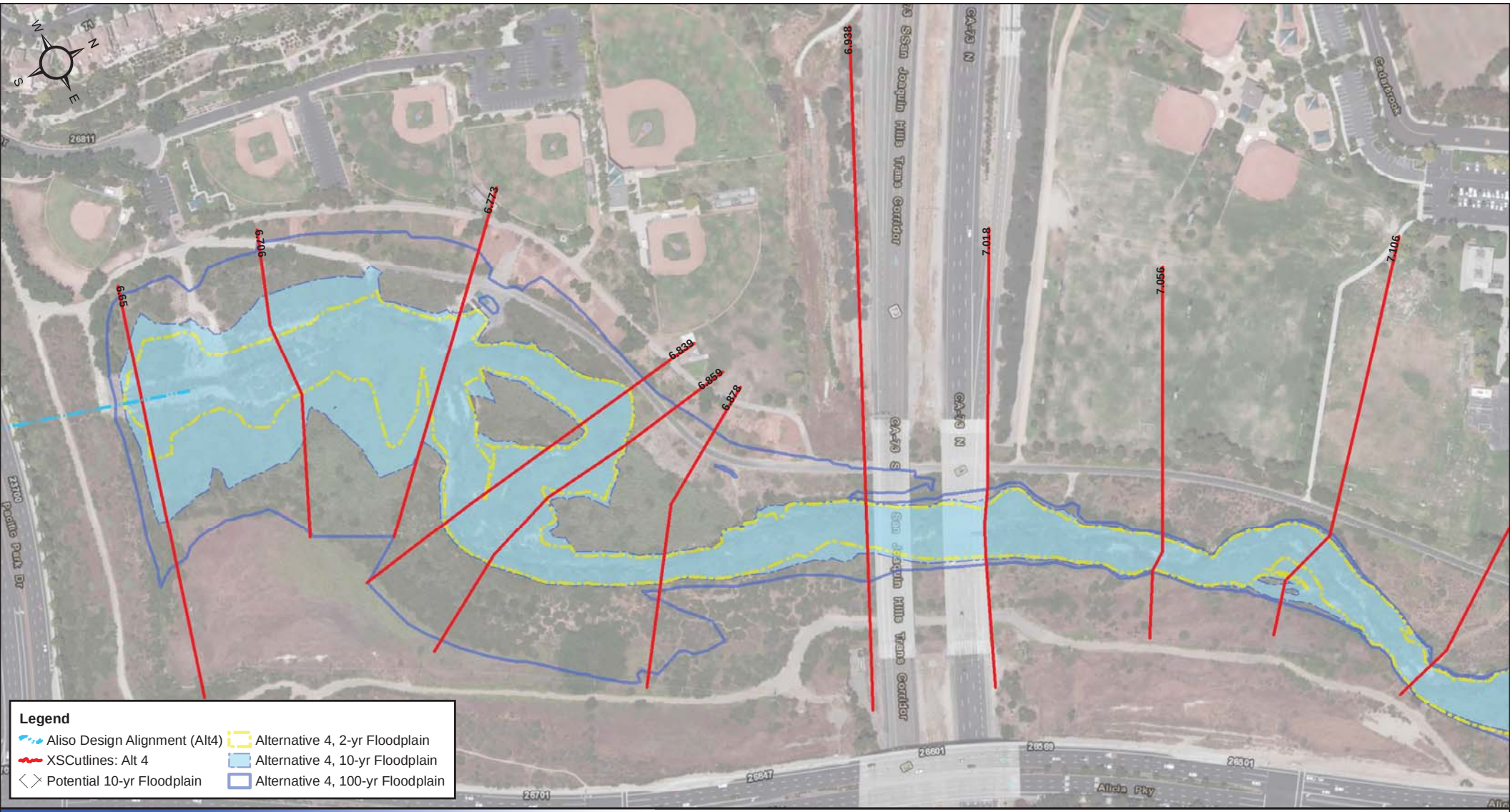
0 100 200 400 Feet



Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

Sheet 9

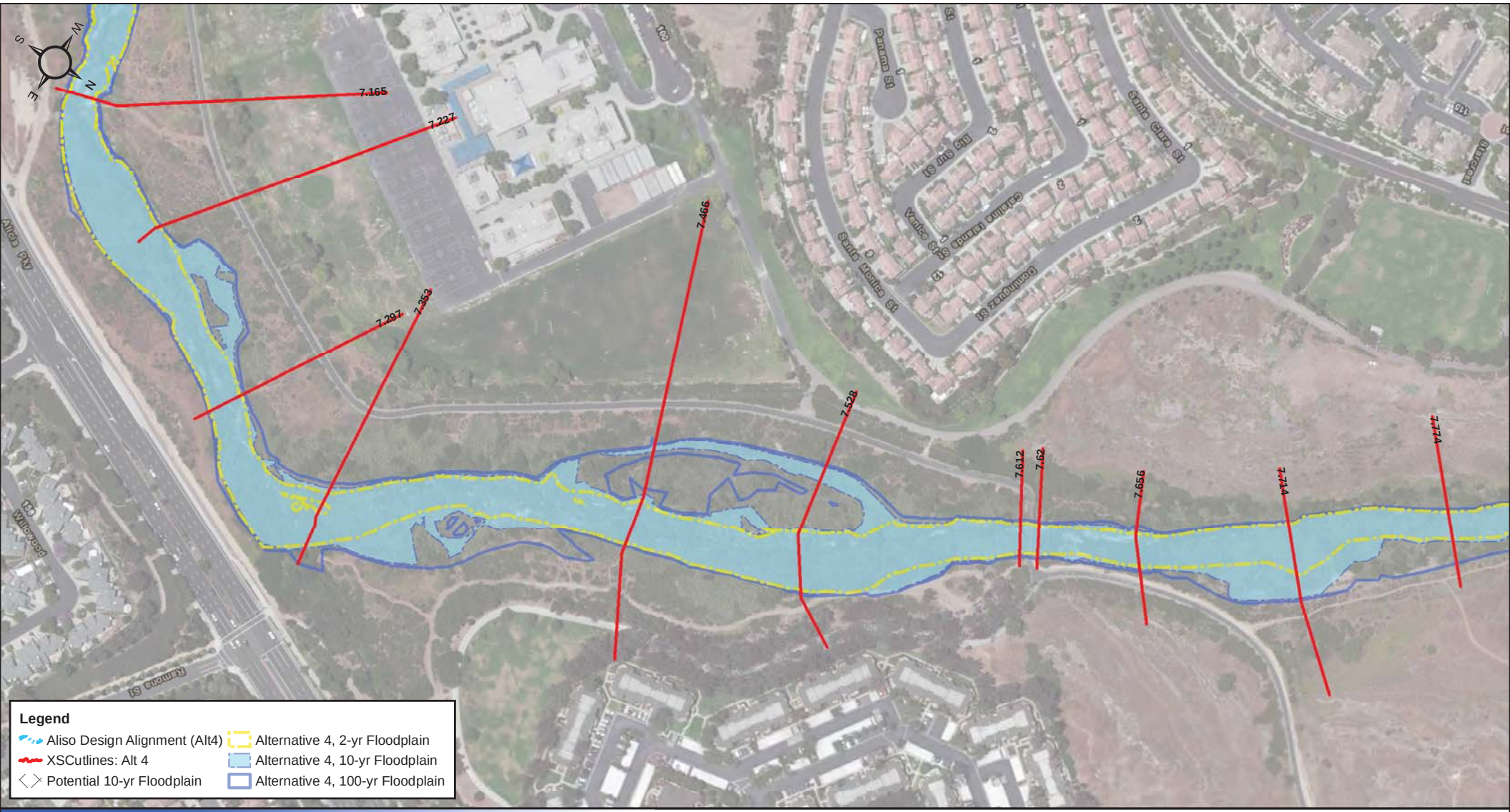
0 100 200 400
Feet



Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

Sheet 10

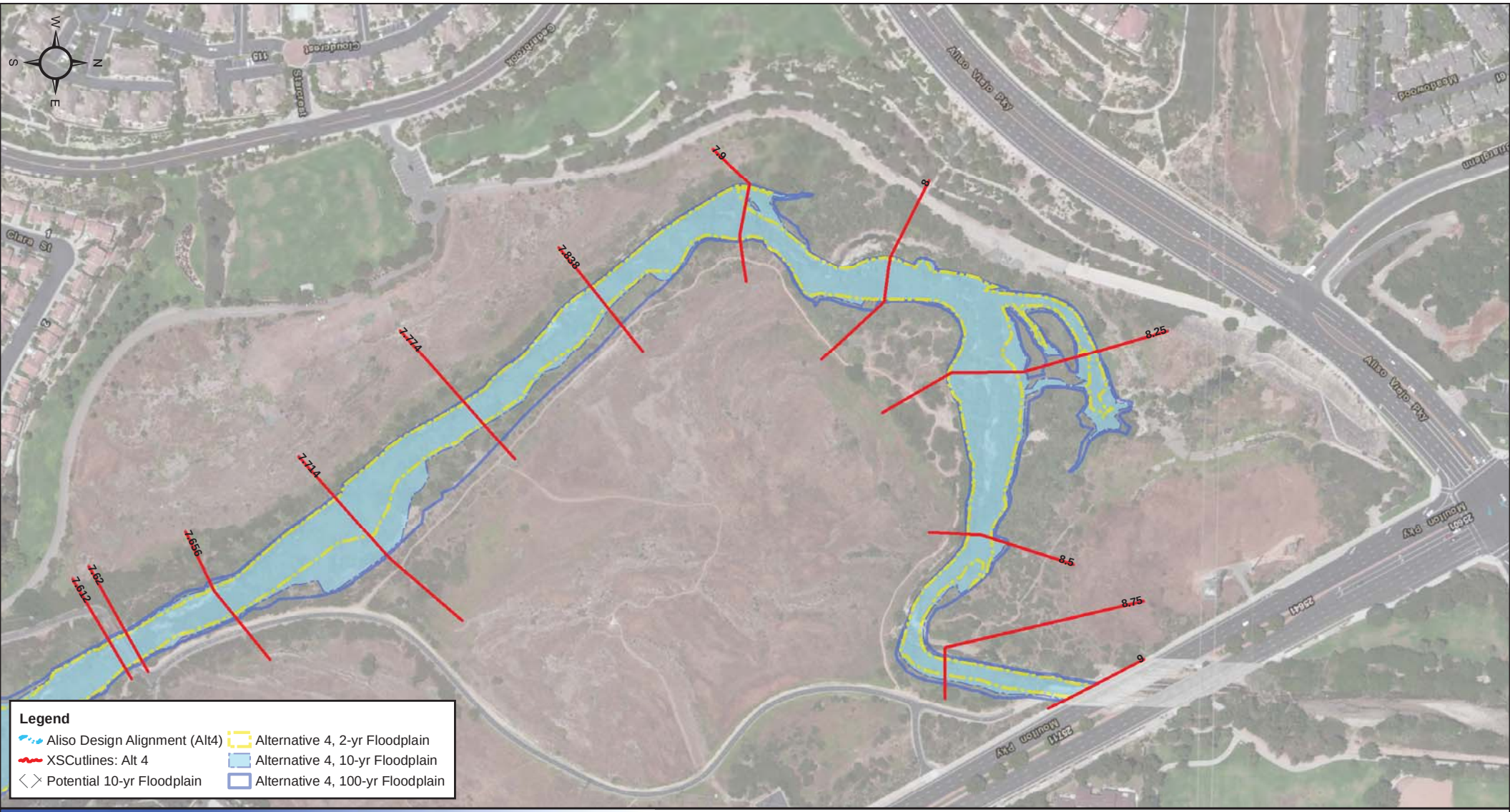
0 100 200 400 Feet



Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

Sheet 11

0 100 200 400 Feet



Data Source: Tetra Tech 2014
Aerial Source: ESRI 2014

Sheet 12

0 100 200 400 Feet

Attachment C

Sediment Transport Data and Results

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Sediment Transport Data

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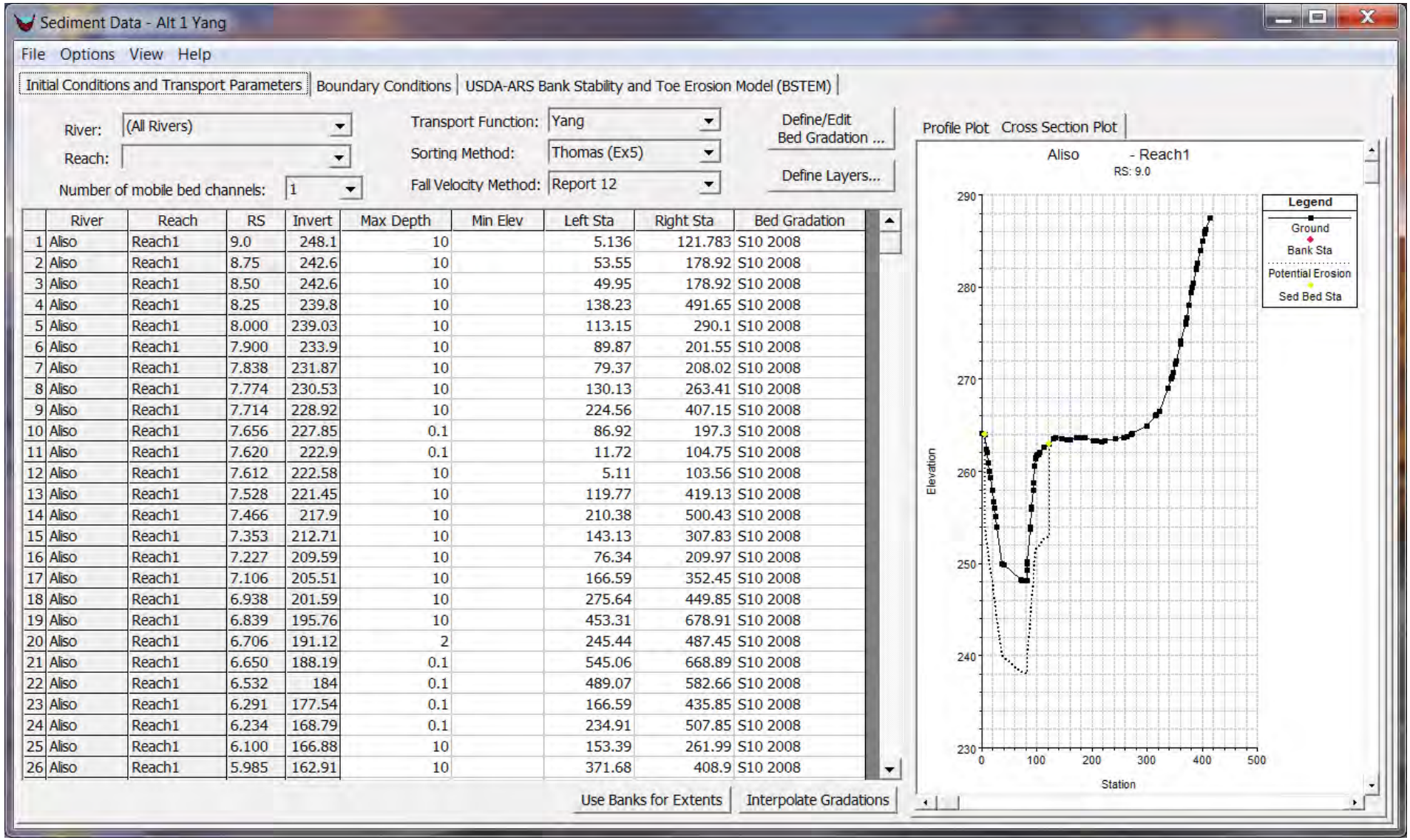


	River	Reach	RS	Invert	Max Depth	Min Elev	Left Sta	Right Sta	Bed Gradation
1	Aliso	Reach1	9.0	248.1	10		5.136	121.783	S10 2008
2	Aliso	Reach1	8.75	242.6	10		53.55	178.92	S10 2008
3	Aliso	Reach1	8.50	242.6	10		49.95	178.92	S10 2008
4	Aliso	Reach1	8.25	239.8	10		138.23	491.65	S10 2008
5	Aliso	Reach1	8.000	239.03	10		113.15	290.1	S10 2008
6	Aliso	Reach1	7.900	233.9	10		89.87	201.55	S10 2008
7	Aliso	Reach1	7.838	231.87	10		79.37	208.02	S10 2008
8	Aliso	Reach1	7.774	230.53	10		130.13	263.41	S10 2008
9	Aliso	Reach1	7.714	228.92	10		224.56	407.15	S10 2008
10	Aliso	Reach1	7.656	227.85	0.1		86.92	197.3	S10 2008
11	Aliso	Reach1	7.620	222.9	0.1		11.72	104.75	S10 2008
12	Aliso	Reach1	7.612	222.58	10		5.11	103.56	S10 2008
13	Aliso	Reach1	7.528	221.45	10		119.77	419.13	S10 2008
14	Aliso	Reach1	7.466	217.9	10		210.38	500.43	S10 2008
15	Aliso	Reach1	7.353	212.71	10		143.13	307.83	S10 2008
16	Aliso	Reach1	7.227	209.59	10		76.34	209.97	S10 2008
17	Aliso	Reach1	7.106	205.51	10		166.59	352.45	S10 2008
18	Aliso	Reach1	6.938	201.59	10		275.64	449.85	S10 2008
19	Aliso	Reach1	6.839	195.76	10		453.31	678.91	S10 2008
20	Aliso	Reach1	6.706	191.12	2		245.44	487.45	S10 2008
21	Aliso	Reach1	6.650	188.19	0.1		545.06	668.89	S10 2008
22	Aliso	Reach1	6.532	184	0.1		489.07	582.66	S10 2008
23	Aliso	Reach1	6.291	177.54	0.1		166.59	435.85	S10 2008
24	Aliso	Reach1	6.234	168.79	0.1		234.91	507.85	S10 2008
25	Aliso	Reach1	6.100	166.88	10		153.39	261.99	S10 2008
26	Aliso	Reach1	5.985	162.91	10		371.68	408.9	S10 2008

HEC-RAS Sediment Data Window

Load Specification for Aliso Reach1 9.0

Number of flow-load points: 8 sets

	Flow (cfs)	6	50	260	1000	1800	2900	5000	7000
	Total Load (tons/day)	8	180	1600	10000	20000	40000	80000	100000
1	Clay								
2	VFM								
3	FM								
4	MM								
5	CM	1	1	1	1	1	1	1	1
6	VFS	1	1	1	1	1	1	1	1
7	FS	3	3	3	3	3	3	3	3
8	MS	23	23	23	23	23	23	23	23
9	CS	36	36	36	36	36	36	36	36
10	VCS	30	30	30	30	30	30	30	30
11	VFG	3	3	3	3	3	3	3	3
12	FG	2	2	2	2	2	2	2	2
13	MG	1	1	1	1	1	1	1	1
14	CG								
15	VCG								
16	SC								

Define Diversion Load | Plot ... | OK | Cancel

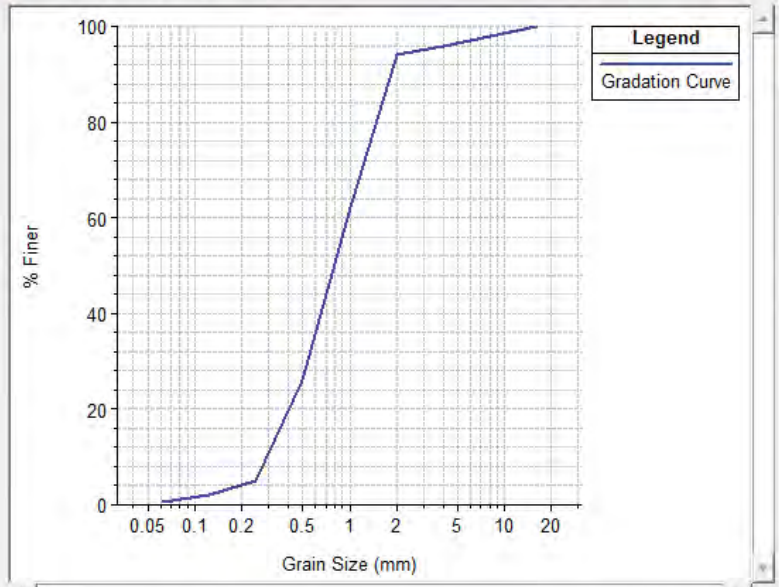
HEC-RAS Inflowing Load Window

Bed Gradation

View

Bed Gradation Template: S10 2008

	Class	diam (mm)	% Finer
1	Clay	0.002-0.004	
2	VFM	0.004-0.008	
3	FM	0.008-0.016	
4	MM	0.016-0.032	
5	CM	0.032-0.0625	0.7
6	VFS	0.0625-0.125	2
7	FS	0.125-0.25	5
8	MS	0.25-0.5	26
9	CS	0.5-1	62
10	VCS	1-2	94
11	VFG	2-4	96
12	FG	4-8	98
13	MG	8-16	100
14	CG	16-32	
15	VCG	32-64	
16	SC	64-128	
17	LC	128-256	
18	SB	256-512	
19	MB	512-1024	
20	LB	1024-2048	



% Finer | Grain Class Fractions/Weight | Set Sample Specific Cohesive Parameters | OK | Close

HEC-RAS Bed Gradation Window

Sediment Transport Results

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Alternative 1

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Alternative 1

Invert Changes at the End of a 100-year Event

River	Reach	River Station	Channel Distance (ft)	Invert Change (ft)
Aliso	Reach1	8.25	328.08	-1.63
Aliso	Reach1	8.00	328.08	-3.99
Aliso	Reach1	7.90	331.10	-1.46
Aliso	Reach1	7.84	338.00	-0.23
Aliso	Reach1	7.77	317.10	-0.22
Aliso	Reach1	7.71	302.60	-0.18
Aliso	Reach1	7.66	194.50	-0.07
Aliso	Reach1	7.62	39.00	-0.09
Aliso	Reach1	7.61	442.10	-6.96
Aliso	Reach1	7.53	329.20	0.86
Aliso	Reach1	7.47	595.10	-0.62
Aliso	Reach1	7.35	666.20	0.75
Aliso	Reach1	7.23	642.00	-0.29
Aliso	Reach1	7.11	884.90	-0.50
Aliso	Reach1	6.94	521.70	-2.47
Aliso	Reach1	6.84	706.00	-0.28
Aliso	Reach1	6.71	291.50	-1.13
Aliso	Reach1	6.65	626.60	-0.06
Aliso	Reach1	6.53	1272.30	-0.05
Aliso	Reach1	6.29	297.10	-0.06
Aliso	Reach1	6.23	710.60	0.55
Aliso	Reach1	6.10	604.60	1.73
Aliso	Reach1	5.99	1358.70	-0.20
Aliso	Reach1	5.73	1326.80	0.40
Aliso	Reach1	5.48	103.10	-0.05
Aliso	Reach1	5.46	218.80	-0.29
Aliso	Reach1	5.42	647.30	0.80
Aliso	Reach1	5.29	231.70	-0.14
Aliso	Reach1	5.25	232.90	-0.99
Aliso	Reach1	5.21	59.70	-0.07
Aliso	Reach1	5.19	130.00	0.05
Aliso	Reach1	5.17	159.90	-0.72
Aliso	Reach1	5.14	172.20	-0.07
Aliso	Reach1	5.11	422.40	-0.06
Aliso	Reach1	5.03	62.80	0.00
Aliso	Reach1	5.01	158.10	0.00
Aliso	Reach1	4.98	1050.70	-1.14
Aliso	Reach1	4.79	1696.80	0.99
Aliso	Reach1	4.46	1047.50	0.02
Aliso	Reach1	4.27	1048.90	0.03
Aliso	Reach1	4.07	686.60	-1.47
Aliso	Reach1	3.94	671.90	-1.15
Aliso	Reach1	3.81	364.30	-1.82
Aliso	Reach1	3.74	224.60	-0.44

Alternative 1

Invert Changes at the End of a 100-year Event

River	Reach	River Station	Channel Distance (ft)	Invert Change (ft)
Aliso	Reach1	3.70	224.60	-0.76
Aliso	Reach1	3.66	224.60	-0.18
Aliso	Reach1	3.61	49.80	-0.05
Aliso	Reach1	3.60	55.00	-0.05
Aliso	Reach1	3.59	205.20	0.00
Aliso	Reach1	3.56	909.51	0.46
Aliso	Reach1	3.38	789.17	1.13
Aliso	Reach1	3.21	631.83	-0.42
Aliso	Reach1	3.10	790.94	0.10
Aliso	Reach1	2.95	426.91	-0.53
Aliso	Reach1	2.86	422.77	0.23
Aliso	Reach1	2.78	374.07	0.62
Aliso	Reach1	2.71	414.75	0.48
Aliso	Reach1	2.63	663.08	-1.99
Aliso	Reach1	2.51	512.84	-0.06
Aliso	Reach1	2.41	407.52	0.09
Aliso	Reach1	2.33	481.02	1.13
Aliso	Reach1	2.24	405.79	0.07
Aliso	Reach1	2.17	810.46	0.13
Aliso	Reach1	2.01	896.96	-0.05
Aliso	Reach1	1.84	841.92	-0.29
Aliso	Reach1	1.68	861.76	-0.76
Aliso	Reach1	1.52	481.97	0.08
Aliso	Reach1	1.43	402.07	-1.55
Aliso	Reach1	1.35	416.39	-0.72
Aliso	Reach1	1.27	132.00	-0.03
Aliso	Reach1	1.25	76.90	-0.06
Aliso	Reach1	1.24	751.10	0.01
Aliso	Reach1	1.09	616.40	0.51
Aliso	Reach1	0.98	1015.40	-1.68
Aliso	Reach1	0.78	934.40	-2.43
Aliso	Reach1	0.61	665.80	-0.57
Aliso	Reach1	0.48	636.60	-0.05
Aliso	Reach1	0.36	697.20	-0.84
Aliso	Reach1	0.23	580.70	0.93
Aliso	Reach1	0.12	621.30	-1.44
Aliso	Reach1	0.00	0.00	-0.12

Alternative 2

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Alternative 2

Invert Changes at the End of a 100-year Event

River	Reach	River Station	Channel Distance (ft)	Invert Change (ft)
Aliso	Reach1	8.25	328.08	-1.01
Aliso	Reach1	8.00	328.08	-5.22
Aliso	Reach1	7.90	331.10	-4.16
Aliso	Reach1	7.84	338.00	-1.55
Aliso	Reach1	7.77	317.10	-1.63
Aliso	Reach1	7.71	302.60	-0.69
Aliso	Reach1	7.66	194.50	-0.07
Aliso	Reach1	7.62	39.00	-0.08
Aliso	Reach1	7.61	442.10	-9.97
Aliso	Reach1	7.53	329.20	0.72
Aliso	Reach1	7.47	595.10	-0.65
Aliso	Reach1	7.35	666.20	0.83
Aliso	Reach1	7.23	642.00	-0.90
Aliso	Reach1	7.11	884.90	-0.98
Aliso	Reach1	6.94	521.70	-2.88
Aliso	Reach1	6.84	706.00	-0.29
Aliso	Reach1	6.71	291.50	-1.40
Aliso	Reach1	6.65	626.60	-0.06
Aliso	Reach1	6.53	1272.30	-0.05
Aliso	Reach1	6.29	297.10	-0.06
Aliso	Reach1	6.23	710.60	0.82
Aliso	Reach1	6.10	604.60	1.10
Aliso	Reach1	5.99	1358.70	-0.03
Aliso	Reach1	5.73	1326.80	0.66
Aliso	Reach1	5.48	103.10	-0.05
Aliso	Reach1	5.46	218.80	-0.79
Aliso	Reach1	5.42	647.30	0.58
Aliso	Reach1	5.29	231.70	-0.23
Aliso	Reach1	5.25	232.90	-1.28
Aliso	Reach1	5.21	59.70	-0.07
Aliso	Reach1	5.19	130.00	-0.12
Aliso	Reach1	5.17	159.90	-0.85
Aliso	Reach1	5.14	172.20	-0.06
Aliso	Reach1	5.11	422.40	-0.06
Aliso	Reach1	5.03	62.80	0.00
Aliso	Reach1	5.01	158.10	0.00
Aliso	Reach1	4.98	1050.70	0.07
Aliso	Reach1	4.79	1696.80	1.78
Aliso	Reach1	4.46	1047.50	0.21
Aliso	Reach1	4.27	1048.90	0.17
Aliso	Reach1	4.07	686.60	-1.47
Aliso	Reach1	3.94	671.90	-0.92
Aliso	Reach1	3.81	364.30	-1.65
Aliso	Reach1	3.74	673.80	-0.72

Alternative 2

Invert Changes at the End of a 100-year Event

River	Reach	River Station	Channel Distance (ft)	Invert Change (ft)
Aliso	Reach1	3.61	49.80	-0.07
Aliso	Reach1	3.60	55.00	0.00
Aliso	Reach1	3.59	205.20	1.24
Aliso	Reach1	3.56	909.51	0.46
Aliso	Reach1	3.38	789.17	0.24
Aliso	Reach1	3.21	631.83	0.01
Aliso	Reach1	3.10	790.94	-0.03
Aliso	Reach1	2.95	426.91	-0.05
Aliso	Reach1	2.86	422.77	-0.04
Aliso	Reach1	2.78	374.07	-0.02
Aliso	Reach1	2.71	414.75	0.02
Aliso	Reach1	2.63	663.08	0.07
Aliso	Reach1	2.51	512.84	-0.01
Aliso	Reach1	2.41	407.52	-0.04
Aliso	Reach1	2.33	481.02	-0.05
Aliso	Reach1	2.24	405.79	-0.02
Aliso	Reach1	2.17	810.46	0.00
Aliso	Reach1	2.01	896.96	0.00
Aliso	Reach1	1.84	841.92	-0.06
Aliso	Reach1	1.68	861.76	-0.01
Aliso	Reach1	1.52	481.97	0.35
Aliso	Reach1	1.43	402.07	0.81
Aliso	Reach1	1.35	416.39	0.62
Aliso	Reach1	1.27	132.00	-0.05
Aliso	Reach1	1.25	76.90	-0.08
Aliso	Reach1	1.24	751.10	-0.79
Aliso	Reach1	1.09	616.40	0.77
Aliso	Reach1	0.98	1015.40	-1.83
Aliso	Reach1	0.78	934.40	-2.36
Aliso	Reach1	0.61	665.80	-0.42
Aliso	Reach1	0.48	636.60	-0.05
Aliso	Reach1	0.36	697.20	-1.17
Aliso	Reach1	0.23	580.70	1.11
Aliso	Reach1	0.12	621.30	-1.55
Aliso	Reach1	0.00	0.00	0.01

Alternative 3

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Alternative 3

Invert Changes at the End of a 100-year Event

River	Reach	River Station	Channel Distance (ft)	Invert Change (ft)
Aliso	Reach1	8.25	328.08	-0.51
Aliso	Reach1	8.00	328.08	-5.17
Aliso	Reach1	7.90	331.10	-1.90
Aliso	Reach1	7.84	338.00	-1.14
Aliso	Reach1	7.77	317.10	-0.72
Aliso	Reach1	7.71	302.60	-0.20
Aliso	Reach1	7.66	194.50	-0.08
Aliso	Reach1	7.62	39.00	-0.10
Aliso	Reach1	7.61	442.10	-0.41
Aliso	Reach1	7.53	924.30	1.43
Aliso	Reach1	7.47	595.10	-2.30
Aliso	Reach1	7.35	666.20	-1.01
Aliso	Reach1	7.23	642.00	-1.89
Aliso	Reach1	7.11	884.90	-1.51
Aliso	Reach1	6.94	521.70	-3.21
Aliso	Reach1	6.84	706.00	-0.47
Aliso	Reach1	6.71	291.50	-0.56
Aliso	Reach1	6.65	626.60	0.92
Aliso	Reach1	6.53	254.90	-0.04
Aliso	Reach1	6.48	194.00	0.26
Aliso	Reach1	6.4125*	194.00	-0.15
Aliso	Reach1	6.34	30.00	-0.06
Aliso	Reach1	6.34	147.38	0.75
Aliso	Reach1	6.3063*	147.38	0.55
Aliso	Reach1	6.2767*	147.38	0.32
Aliso	Reach1	6.25	30.00	-0.08
Aliso	Reach1	6.24	152.93	0.96
Aliso	Reach1	6.2113*	152.93	0.70
Aliso	Reach1	6.1817*	152.93	0.36
Aliso	Reach1	6.15	30.09	-0.06
Aliso	Reach1	6.15	155.22	1.17
Aliso	Reach1	6.1170*	155.22	0.78
Aliso	Reach1	6.0870*	155.22	0.46
Aliso	Reach1	6.06	30.00	-0.08
Aliso	Reach1	6.05	147.77	0.95
Aliso	Reach1	6.0223*	147.77	0.68
Aliso	Reach1	5.9927*	147.77	0.35
Aliso	Reach1	5.96	30.02	-0.06
Aliso	Reach1	5.96	153.97	1.16
Aliso	Reach1	5.9273*	153.97	0.78
Aliso	Reach1	5.8977*	153.97	0.37
Aliso	Reach1	5.87	30.00	-0.04
Aliso	Reach1	5.86	151.12	1.29
Aliso	Reach1	5.8323*	151.12	0.89

Alternative 3

Invert Changes at the End of a 100-year Event

River	Reach	River Station	Channel Distance (ft)	Invert Change (ft)
Aliso	Reach1	5.8027*	151.12	0.58
Aliso	Reach1	5.77	30.00	-0.07
Aliso	Reach1	5.77	141.25	0.73
Aliso	Reach1	5.7380*	141.25	0.53
Aliso	Reach1	5.7080*	141.25	0.29
Aliso	Reach1	5.68	30.00	-0.07
Aliso	Reach1	5.67	158.48	1.06
Aliso	Reach1	5.6433*	158.48	0.76
Aliso	Reach1	5.6137*	158.48	0.48
Aliso	Reach1	5.58	30.00	-0.08
Aliso	Reach1	5.58	158.20	0.72
Aliso	Reach1	5.5483*	158.20	0.54
Aliso	Reach1	5.5187*	158.20	0.31
Aliso	Reach1	5.49	120.06	-0.06
Aliso	Reach1	5.47	126.15	0.26
Aliso	Reach1	5.4430*	126.15	0.21
Aliso	Reach1	5.4190*	126.15	0.04
Aliso	Reach1	5.40	30.05	-0.07
Aliso	Reach1	5.39	156.13	0.46
Aliso	Reach1	5.3593*	156.13	0.35
Aliso	Reach1	5.3297*	156.13	0.13
Aliso	Reach1	5.30	30.00	-0.08
Aliso	Reach1	5.29	98.50	-0.08
Aliso	Reach1	5.1200*	98.50	-0.32
Aliso	Reach1	4.95	143.00	-0.14
Aliso	Reach1	4.92	120.00	-0.07
Aliso	Reach1	4.90	93.33	-0.05
Aliso	Reach1	4.8783*	93.33	-0.40
Aliso	Reach1	4.8607*	93.33	-0.35
Aliso	Reach1	4.84	120.00	-0.08
Aliso	Reach1	4.82	140.00	0.54
Aliso	Reach1	4.7943*	140.00	0.88
Aliso	Reach1	4.7677*	140.00	0.80
Aliso	Reach1	4.74	80.00	0.42
Aliso	Reach1	4.73	62.80	0.00
Aliso	Reach1	4.72	92.80	0.00
Aliso	Reach1	4.71	223.37	2.10
Aliso	Reach1	4.6687*	223.37	1.24
Aliso	Reach1	4.6263*	223.37	0.75
Aliso	Reach1	4.58	30.04	-0.06
Aliso	Reach1	4.58	223.28	0.76
Aliso	Reach1	4.5360*	223.28	0.51
Aliso	Reach1	4.4940*	223.28	0.23
Aliso	Reach1	4.45	30.00	-0.07

Alternative 3

Invert Changes at the End of a 100-year Event

River	Reach	River Station	Channel Distance (ft)	Invert Change (ft)
Aliso	Reach1	4.45	156.63	-0.05
Aliso	Reach1	4.4163*	156.63	-0.05
Aliso	Reach1	4.3867*	156.63	-0.20
Aliso	Reach1	4.36	30.02	-0.08
Aliso	Reach1	4.35	156.63	-0.06
Aliso	Reach1	4.3213*	156.63	-0.20
Aliso	Reach1	4.2917*	156.63	-0.30
Aliso	Reach1	4.26	30.10	-0.08
Aliso	Reach1	4.26	223.28	0.02
Aliso	Reach1	4.2140*	223.28	0.12
Aliso	Reach1	4.1720*	223.28	-0.03
Aliso	Reach1	4.13	30.06	-0.07
Aliso	Reach1	4.12	189.94	-0.03
Aliso	Reach1	4.0880*	189.94	0.07
Aliso	Reach1	4.0520*	189.94	-0.05
Aliso	Reach1	4.02	30.04	-0.05
Aliso	Reach1	4.01	189.94	0.08
Aliso	Reach1	3.9740*	189.94	0.08
Aliso	Reach1	3.9380*	189.94	-0.06
Aliso	Reach1	3.90	30.10	-0.06
Aliso	Reach1	3.90	156.57	-0.05
Aliso	Reach1	3.8673*	156.57	-0.03
Aliso	Reach1	3.8377*	156.57	-0.18
Aliso	Reach1	3.81	30.14	-0.08
Aliso	Reach1	3.80	173.34	-0.03
Aliso	Reach1	3.7690*	173.34	0.05
Aliso	Reach1	3.7360*	173.34	-0.11
Aliso	Reach1	3.70	30.00	-0.08
Aliso	Reach1	3.70	173.34	0.00
Aliso	Reach1	3.6650*	173.34	0.07
Aliso	Reach1	3.6320*	173.34	-0.09
Aliso	Reach1	3.60	30.04	-0.08
Aliso	Reach1	3.59	206.67	0.18
Aliso	Reach1	3.5547*	206.67	0.23
Aliso	Reach1	3.5153*	206.67	0.05
Aliso	Reach1	3.48	30.00	-0.07
Aliso	Reach1	3.47	173.34	0.04
Aliso	Reach1	3.4373*	173.34	0.11
Aliso	Reach1	3.4047*	173.34	-0.04
Aliso	Reach1	3.37	30.02	-0.08
Aliso	Reach1	3.37	156.63	-0.05
Aliso	Reach1	3.3363*	156.63	0.01
Aliso	Reach1	3.3067*	156.63	-0.14
Aliso	Reach1	3.28	30.00	-0.08

Alternative 3

Invert Changes at the End of a 100-year Event

River	Reach	River Station	Channel Distance (ft)	Invert Change (ft)
Aliso	Reach1	3.27	156.63	-0.05
Aliso	Reach1	3.2423*	156.63	0.01
Aliso	Reach1	3.2127*	156.63	-0.13
Aliso	Reach1	3.18	30.06	-0.08
Aliso	Reach1	3.18	156.63	-0.03
Aliso	Reach1	3.1473*	156.63	0.04
Aliso	Reach1	3.1177*	156.63	-0.12
Aliso	Reach1	3.09	30.00	-0.08
Aliso	Reach1	3.08	156.63	0.00
Aliso	Reach1	3.0523*	156.63	0.07
Aliso	Reach1	3.0227*	156.63	-0.09
Aliso	Reach1	2.99	30.00	-0.08
Aliso	Reach1	2.99	140.00	-0.05
Aliso	Reach1	2.9607*	140.00	0.00
Aliso	Reach1	2.9343*	140.00	-0.14
Aliso	Reach1	2.91	30.02	-0.09
Aliso	Reach1	2.90	140.00	-0.04
Aliso	Reach1	2.8757*	140.00	0.01
Aliso	Reach1	2.8493*	140.00	-0.13
Aliso	Reach1	2.82	30.06	-0.09
Aliso	Reach1	2.82	140.22	-0.05
Aliso	Reach1	2.7903*	140.22	-0.02
Aliso	Reach1	2.7637*	140.22	-0.15
Aliso	Reach1	2.74	30.04	-0.09
Aliso	Reach1	2.73	139.72	-0.05
Aliso	Reach1	2.7053*	139.72	-0.01
Aliso	Reach1	2.6787*	139.72	-0.14
Aliso	Reach1	2.65	30.02	-0.09
Aliso	Reach1	2.65	123.31	-0.05
Aliso	Reach1	2.6233*	123.31	-0.07
Aliso	Reach1	2.5997*	123.31	-0.18
Aliso	Reach1	2.58	30.00	-0.07
Aliso	Reach1	2.57	156.63	0.07
Aliso	Reach1	2.5413*	156.63	0.12
Aliso	Reach1	2.5117*	156.63	-0.05
Aliso	Reach1	2.48	30.00	-0.08
Aliso	Reach1	2.48	173.34	0.20
Aliso	Reach1	2.4433*	173.34	0.23
Aliso	Reach1	2.4107*	173.34	0.05
Aliso	Reach1	2.38	30.00	-0.08
Aliso	Reach1	2.37	156.63	0.12
Aliso	Reach1	2.3423*	156.63	0.15
Aliso	Reach1	2.3127*	156.63	-0.02
Aliso	Reach1	2.28	30.00	-0.08

Alternative 3

Invert Changes at the End of a 100-year Event

River	Reach	River Station	Channel Distance (ft)	Invert Change (ft)
Aliso	Reach1	2.28	148.35	0.07
Aliso	Reach1	2.2490*	148.35	0.11
Aliso	Reach1	2.2210*	148.35	-0.05
Aliso	Reach1	2.19	30.00	-0.09
Aliso	Reach1	2.19	148.35	0.09
Aliso	Reach1	2.1590*	148.35	0.12
Aliso	Reach1	2.1310*	148.35	-0.04
Aliso	Reach1	2.10	30.00	-0.09
Aliso	Reach1	2.10	131.73	-0.05
Aliso	Reach1	2.0720*	131.73	-0.06
Aliso	Reach1	2.0470*	131.73	-0.15
Aliso	Reach1	2.02	30.02	-0.09
Aliso	Reach1	2.02	164.92	0.30
Aliso	Reach1	1.9857*	164.92	0.28
Aliso	Reach1	1.9543*	164.92	0.06
Aliso	Reach1	1.92	30.00	-0.08
Aliso	Reach1	1.92	156.57	0.12
Aliso	Reach1	1.8873*	156.57	0.15
Aliso	Reach1	1.8577*	156.57	-0.02
Aliso	Reach1	1.83	30.90	-0.08
Aliso	Reach1	1.82	139.87	0.03
Aliso	Reach1	1.7963*	139.87	0.07
Aliso	Reach1	1.7697*	139.87	-0.08
Aliso	Reach1	1.74	30.00	-0.09
Aliso	Reach1	1.74	156.63	0.11
Aliso	Reach1	1.7073*	156.63	0.14
Aliso	Reach1	1.6777*	156.63	-0.03
Aliso	Reach1	1.65	30.00	-0.08
Aliso	Reach1	1.64	156.63	0.11
Aliso	Reach1	1.6133*	156.63	0.14
Aliso	Reach1	1.5837*	156.63	-0.02
Aliso	Reach1	1.55	30.04	-0.08
Aliso	Reach1	1.55	156.63	0.41
Aliso	Reach1	1.5183*	156.63	0.44
Aliso	Reach1	1.4887*	156.63	0.27
Aliso	Reach1	1.46	553.10	0.10
Aliso	Reach1	1.35	553.10	0.57
Aliso	Reach1	1.25	76.90	0.59
Aliso	Reach1	1.24	751.10	0.63
Aliso	Reach1	1.09	616.40	0.52
Aliso	Reach1	0.98	1015.40	-1.07
Aliso	Reach1	0.78	934.40	-2.27
Aliso	Reach1	0.61	665.80	0.92
Aliso	Reach1	0.48	636.60	-0.08

Alternative 3

Invert Changes at the End of a 100-year Event

River	Reach	River Station	Channel Distance (ft)	Invert Change (ft)
Aliso	Reach1	0.36	697.20	-1.25
Aliso	Reach1	0.23	580.70	-0.02
Aliso	Reach1	0.12	621.30	-2.01
Aliso	Reach1	0.00	0.00	-0.38

Alternative 4

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Alternative 4

Invert Changes at the End of a 100-year Event

River	Reach	River Station	Channel Distance (ft)	Invert Change (ft)
Aliso	Reach1	8.25	328.08	-0.51
Aliso	Reach1	8.00	328.08	-5.17
Aliso	Reach1	7.90	331.10	-1.92
Aliso	Reach1	7.84	338.00	-1.16
Aliso	Reach1	7.77	317.10	-0.74
Aliso	Reach1	7.71	302.60	-0.23
Aliso	Reach1	7.66	194.50	-0.08
Aliso	Reach1	7.62	39.00	-0.10
Aliso	Reach1	7.61	442.10	-0.39
Aliso	Reach1	7.53	924.30	1.44
Aliso	Reach1	7.47	595.10	-2.30
Aliso	Reach1	7.35	666.20	-1.01
Aliso	Reach1	7.23	642.00	-1.86
Aliso	Reach1	7.11	884.90	-1.42
Aliso	Reach1	6.94	521.70	-3.22
Aliso	Reach1	6.84	706.00	-0.51
Aliso	Reach1	6.71	291.50	-0.59
Aliso	Reach1	6.65	626.60	0.88
Aliso	Reach1	6.53	254.90	-0.04
Aliso	Reach1	6.48	194.00	0.28
Aliso	Reach1	6.4125*	194.00	-0.12
Aliso	Reach1	6.34	30.00	-0.07
Aliso	Reach1	6.34	147.38	0.70
Aliso	Reach1	6.3063*	147.38	0.52
Aliso	Reach1	6.2767*	147.38	0.30
Aliso	Reach1	6.25	30.00	-0.08
Aliso	Reach1	6.24	152.93	0.90
Aliso	Reach1	6.2113*	152.93	0.67
Aliso	Reach1	6.1817*	152.93	0.37
Aliso	Reach1	6.15	30.09	-0.05
Aliso	Reach1	6.15	155.22	1.11
Aliso	Reach1	6.1170*	155.22	0.76
Aliso	Reach1	6.0870*	155.22	0.45
Aliso	Reach1	6.06	30.00	-0.08
Aliso	Reach1	6.05	147.77	0.95
Aliso	Reach1	6.0223*	147.77	0.69
Aliso	Reach1	5.9927*	147.77	0.34
Aliso	Reach1	5.96	30.02	-0.06
Aliso	Reach1	5.96	153.97	1.21
Aliso	Reach1	5.9273*	153.97	0.81
Aliso	Reach1	5.8977*	153.97	0.40
Aliso	Reach1	5.87	30.00	-0.02
Aliso	Reach1	5.86	151.12	1.31
Aliso	Reach1	5.8323*	151.12	0.91

Alternative 4

Invert Changes at the End of a 100-year Event

River	Reach	River Station	Channel Distance (ft)	Invert Change (ft)
Aliso	Reach1	5.8027*	151.12	0.59
Aliso	Reach1	5.77	30.00	-0.07
Aliso	Reach1	5.77	141.25	0.75
Aliso	Reach1	5.7380*	141.25	0.54
Aliso	Reach1	5.7080*	141.25	0.29
Aliso	Reach1	5.68	30.00	-0.08
Aliso	Reach1	5.67	158.48	1.05
Aliso	Reach1	5.6433*	158.48	0.75
Aliso	Reach1	5.6137*	158.48	0.46
Aliso	Reach1	5.58	30.00	-0.08
Aliso	Reach1	5.58	158.20	0.73
Aliso	Reach1	5.5483*	158.20	0.55
Aliso	Reach1	5.5187*	158.20	0.32
Aliso	Reach1	5.49	120.06	-0.06
Aliso	Reach1	5.47	126.15	0.27
Aliso	Reach1	5.4430*	126.15	0.21
Aliso	Reach1	5.4190*	126.15	0.05
Aliso	Reach1	5.40	30.05	-0.07
Aliso	Reach1	5.39	156.13	0.47
Aliso	Reach1	5.3593*	156.13	0.36
Aliso	Reach1	5.3297*	156.13	0.14
Aliso	Reach1	5.30	30.00	-0.08
Aliso	Reach1	5.29	98.50	-0.08
Aliso	Reach1	5.1200*	98.50	-0.30
Aliso	Reach1	4.95	143.00	-0.13
Aliso	Reach1	4.92	120.00	-0.07
Aliso	Reach1	4.90	93.33	-0.05
Aliso	Reach1	4.8783*	93.33	-0.39
Aliso	Reach1	4.8607*	93.33	-0.35
Aliso	Reach1	4.84	120.00	-0.08
Aliso	Reach1	4.82	140.00	0.63
Aliso	Reach1	4.7943*	140.00	0.92
Aliso	Reach1	4.7677*	140.00	0.77
Aliso	Reach1	4.74	80.00	0.19
Aliso	Reach1	4.73	62.80	0.00
Aliso	Reach1	4.72	92.80	0.00
Aliso	Reach1	4.71	150.00	1.83
Aliso	Reach1	4.6827*	150.00	1.06
Aliso	Reach1	4.6543*	150.00	0.49
Aliso	Reach1	4.63	30.00	-0.07
Aliso	Reach1	4.62	150.00	1.20
Aliso	Reach1	4.5917*	150.00	0.76
Aliso	Reach1	4.5633*	150.00	0.43
Aliso	Reach1	4.54	30.00	-0.08

Alternative 4

Invert Changes at the End of a 100-year Event

River	Reach	River Station	Channel Distance (ft)	Invert Change (ft)
Aliso	Reach1	4.53	150.00	0.54
Aliso	Reach1	4.5007*	150.00	0.38
Aliso	Reach1	4.4723*	150.00	0.13
Aliso	Reach1	4.44	30.00	-0.08
Aliso	Reach1	4.44	150.00	0.10
Aliso	Reach1	4.4097*	150.00	0.08
Aliso	Reach1	4.3813*	150.00	-0.10
Aliso	Reach1	4.35	30.00	-0.08
Aliso	Reach1	4.35	150.00	-0.05
Aliso	Reach1	4.3187*	150.00	-0.04
Aliso	Reach1	4.2903*	150.00	-0.21
Aliso	Reach1	4.26	30.00	-0.08
Aliso	Reach1	4.26	150.00	-0.05
Aliso	Reach1	4.2277*	150.00	-0.08
Aliso	Reach1	4.1993*	150.00	-0.22
Aliso	Reach1	4.17	30.00	-0.08
Aliso	Reach1	4.17	150.00	-0.05
Aliso	Reach1	4.1373*	150.00	-0.10
Aliso	Reach1	4.1087*	150.00	-0.24
Aliso	Reach1	4.08	30.00	-0.08
Aliso	Reach1	4.08	150.00	-0.05
Aliso	Reach1	4.0463*	150.00	-0.03
Aliso	Reach1	4.0177*	150.00	-0.17
Aliso	Reach1	3.99	30.00	-0.08
Aliso	Reach1	3.98	150.00	-0.01
Aliso	Reach1	3.9557*	150.00	0.06
Aliso	Reach1	3.9273*	150.00	-0.11
Aliso	Reach1	3.90	30.00	-0.08
Aliso	Reach1	3.89	150.00	0.08
Aliso	Reach1	3.8647*	150.00	0.12
Aliso	Reach1	3.8363*	150.00	-0.03
Aliso	Reach1	3.81	30.00	-0.08
Aliso	Reach1	3.80	150.00	0.11
Aliso	Reach1	3.7737*	150.00	0.14
Aliso	Reach1	3.7453*	150.00	-0.04
Aliso	Reach1	3.72	30.00	-0.08
Aliso	Reach1	3.71	150.00	0.15
Aliso	Reach1	3.6827*	150.00	0.17
Aliso	Reach1	3.6543*	150.00	0.01
Aliso	Reach1	3.63	30.00	-0.08
Aliso	Reach1	3.62	150.00	0.15
Aliso	Reach1	3.5917*	150.00	0.18
Aliso	Reach1	3.5633*	150.00	0.00
Aliso	Reach1	3.54	30.00	-0.08

Alternative 4

Invert Changes at the End of a 100-year Event

River	Reach	River Station	Channel Distance (ft)	Invert Change (ft)
Aliso	Reach1	3.53	150.00	0.16
Aliso	Reach1	3.5007*	150.00	0.17
Aliso	Reach1	3.4723*	150.00	0.00
Aliso	Reach1	3.44	30.00	-0.08
Aliso	Reach1	3.44	150.00	0.13
Aliso	Reach1	3.4097*	150.00	0.15
Aliso	Reach1	3.3813*	150.00	-0.03
Aliso	Reach1	3.35	30.00	-0.08
Aliso	Reach1	3.35	150.00	0.12
Aliso	Reach1	3.3187*	150.00	0.14
Aliso	Reach1	3.2903*	150.00	-0.03
Aliso	Reach1	3.26	30.00	-0.08
Aliso	Reach1	3.26	150.00	0.11
Aliso	Reach1	3.2277*	150.00	0.14
Aliso	Reach1	3.1993*	150.00	-0.04
Aliso	Reach1	3.17	30.00	-0.08
Aliso	Reach1	3.17	150.00	0.12
Aliso	Reach1	3.1373*	150.00	0.13
Aliso	Reach1	3.1087*	150.00	-0.04
Aliso	Reach1	3.08	30.00	-0.08
Aliso	Reach1	3.08	150.00	0.11
Aliso	Reach1	3.0463*	150.00	0.14
Aliso	Reach1	3.0177*	150.00	-0.04
Aliso	Reach1	2.99	30.00	-0.08
Aliso	Reach1	2.98	150.00	0.13
Aliso	Reach1	2.9557*	150.00	0.14
Aliso	Reach1	2.9273*	150.00	-0.03
Aliso	Reach1	2.90	30.00	-0.08
Aliso	Reach1	2.89	150.00	0.11
Aliso	Reach1	2.8647*	150.00	0.14
Aliso	Reach1	2.8363*	150.00	-0.05
Aliso	Reach1	2.81	30.00	-0.08
Aliso	Reach1	2.80	150.00	0.12
Aliso	Reach1	2.7737*	150.00	0.14
Aliso	Reach1	2.7453*	150.00	-0.03
Aliso	Reach1	2.72	30.00	-0.08
Aliso	Reach1	2.71	150.00	0.10
Aliso	Reach1	2.6827*	150.00	0.13
Aliso	Reach1	2.6543*	150.00	-0.05
Aliso	Reach1	2.63	30.00	-0.08
Aliso	Reach1	2.62	150.00	0.11
Aliso	Reach1	2.5917*	150.00	0.13
Aliso	Reach1	2.5633*	150.00	-0.04
Aliso	Reach1	2.54	30.00	-0.08

Alternative 4

Invert Changes at the End of a 100-year Event

River	Reach	River Station	Channel Distance (ft)	Invert Change (ft)
Aliso	Reach1	2.53	150.00	0.11
Aliso	Reach1	2.5007*	150.00	0.14
Aliso	Reach1	2.4723*	150.00	-0.05
Aliso	Reach1	2.44	30.00	-0.09
Aliso	Reach1	2.44	150.00	0.11
Aliso	Reach1	2.4097*	150.00	0.13
Aliso	Reach1	2.3813*	150.00	-0.05
Aliso	Reach1	2.35	30.00	-0.08
Aliso	Reach1	2.35	150.00	0.09
Aliso	Reach1	2.3187*	150.00	0.13
Aliso	Reach1	2.2903*	150.00	-0.05
Aliso	Reach1	2.26	30.00	-0.08
Aliso	Reach1	2.26	150.00	0.12
Aliso	Reach1	2.2277*	150.00	0.14
Aliso	Reach1	2.1993*	150.00	-0.03
Aliso	Reach1	2.17	30.00	-0.08
Aliso	Reach1	2.17	150.00	0.07
Aliso	Reach1	2.1373*	150.00	0.10
Aliso	Reach1	2.1087*	150.00	-0.08
Aliso	Reach1	2.08	30.00	-0.08
Aliso	Reach1	2.08	150.00	0.03
Aliso	Reach1	2.0463*	150.00	0.06
Aliso	Reach1	2.0177*	150.00	-0.10
Aliso	Reach1	1.99	30.00	-0.08
Aliso	Reach1	1.98	150.00	0.00
Aliso	Reach1	1.9553*	150.00	0.05
Aliso	Reach1	1.9267*	150.00	-0.13
Aliso	Reach1	1.90	30.00	-0.08
Aliso	Reach1	1.89	150.00	0.03
Aliso	Reach1	1.8647*	150.00	0.07
Aliso	Reach1	1.8363*	150.00	-0.09
Aliso	Reach1	1.81	30.00	-0.08
Aliso	Reach1	1.80	150.00	0.04
Aliso	Reach1	1.7737*	150.00	0.09
Aliso	Reach1	1.7453*	150.00	-0.08
Aliso	Reach1	1.72	30.00	-0.08
Aliso	Reach1	1.71	150.00	0.15
Aliso	Reach1	1.6827*	150.00	0.19
Aliso	Reach1	1.6543*	150.00	0.05
Aliso	Reach1	1.63	30.00	-0.06
Aliso	Reach1	1.62	150.00	1.05
Aliso	Reach1	1.5917*	150.00	0.95
Aliso	Reach1	1.5633*	150.00	0.76
Aliso	Reach1	1.54	30.00	0.59

Alternative 4

Invert Changes at the End of a 100-year Event

River	Reach	River Station	Channel Distance (ft)	Invert Change (ft)
Aliso	Reach1	1.53	150.00	1.98
Aliso	Reach1	1.5007*	150.00	1.80
Aliso	Reach1	1.4723*	150.00	1.59
Aliso	Reach1	1.44	30.00	1.35
Aliso	Reach1	1.44	500.00	2.75
Aliso	Reach1	1.35	553.10	1.59
Aliso	Reach1	1.25	76.90	-0.07
Aliso	Reach1	1.24	751.10	-3.02
Aliso	Reach1	1.09	616.40	-0.68
Aliso	Reach1	0.98	1015.40	-2.64
Aliso	Reach1	0.78	934.40	-2.88
Aliso	Reach1	0.61	665.80	0.65
Aliso	Reach1	0.48	636.60	-0.08
Aliso	Reach1	0.36	697.20	-1.48
Aliso	Reach1	0.23	580.70	-0.01
Aliso	Reach1	0.12	621.30	-1.83
Aliso	Reach1	0.00	0.00	-0.45

Attachment D

Scour Analysis Tables

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Alternative 1

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Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # C	Hydr Dept	Max Chl Dpth		General	Antidunes	Bend	angle		
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		(ft)	(ft)		z_{gs}	z_a	z_b	α	z_t	
Reach1	9	100-YR	3460	248.1	257.2	254.29	258.02	0.006131	7.27	475.83	71.28	0.5	6.68	9.1							
Reach1	8.75	100-YR	3460	242.6	255.99	251.4	256.45	0.00341	5.43	636.92	93.58	0.37	6.81	13.39							
Reach1	8.5	100-YR	3460	242.6	251.4	251.4	253.78	0.028803	12.37	279.7	59.22	1	4.72	8.8							
Reach1	8.25	100-YR	3460	239.8	248.42	244.66	248.64	0.001839	3.76	920.94	315.93	0.28	5.78	8.62							
Reach1	8	100-YR	3460	239.03	246.67	245.32	247.42	0.009766	6.92	500.21	120.79	0.6	4.14	7.64							
Reach1	7.9	100-YR	3460	233.9	244.12	241.07	244.92	0.00605	7.18	481.6	74.63	0.5	6.45	10.22							
Reach1	7.838	100-YR	3460	231.87	241.94	238.88	242.66	0.007598	6.82	507.31	99.65	0.53	5.09	10.07							
Reach1	7.774	100-YR	3460	230.53	238.76	236.65	239.84	0.008981	8.34	415.06	68.9	0.6	6.02	8.23							
Reach1	7.714	100-YR	3460	228.92	237.27	235.13	237.65	0.004592	4.94	700.28	158.95	0.41	4.41	8.35							
Reach1	7.656	100-YR	3460	227.85	233.93	233.19	235.19	0.016411	9.02	383.71	92.52	0.78	4.15	6.08							
Reach1	7.62	100-YR	3460	222.9	231.28	229.81	232.49	0.011735	8.83	391.83	74.18	0.68	5.28	8.38							
Reach1	7.616		Bridge																		
Reach1	7.612	100-YR	3460	222.58	230.44	228.48	231.46	0.008875	8.09	427.59	74.6	0.6	5.73	7.86							
Reach1	7.528	100-YR	3460	221.45	227.8	225.3	228.08	0.00538	4.22	819.3	268.51	0.43	3.05	6.35							
Reach1	7.466	100-YR	3460	217.9	224.17	223.68	225.16	0.016296	7.95	435.17	149.18	0.82	2.92	6.27							
Reach1	7.353	100-YR	3460	212.71	222.84	218.56	223.01	0.001316	3.24	1043.67	235.69	0.23	6.02	10.13							
Reach1	7.297	100-YR	4660	211.16	221.41	217.76	222.23	0.004453	7.28	640.53	81.42	0.46	7.87	10.25							
Reach1	7.227	100-YR	4660	209.59	220.05	216.98	220.61	0.003913	6.04	770.96	122.09	0.42	6.31	10.46							
Reach1	7.165	100-YR	4660	207.53	216.17	215.17	218.25	0.014103	11.57	403.16	62.44	0.8	6.5	8.64							
Reach1	7.106	100-YR	4660	205.51	215.8	212.16	216.13	0.0026	4.67	998.7	175.63	0.34	5.69	10.29							
Reach1	7.056	100-YR	4660	204.43	214.27	211.04	215.15	0.00506	7.52	619.59	85.03	0.49	7.29	9.84							
Reach1	7.018	100-YR	4660	203.64	213.69	209.67	214.21	0.002934	5.77	808.02	112.12	0.38	7.21	10.05							
Reach1	6.978		Bridge												CA 73						
Reach1	6.938	100-YR	4660	201.59	212.66	207.22	212.92	0.001556	4.11	1162.21	237.79	0.27	6.99	11.07							
Reach1	6.878	100-YR	4660	198.92	212.21	206.47	212.48	0.001271	4.54	1563.97	487.26	0.26	9.61	13.29							
Reach1	6.859	100-YR	5450	197.56	212.35	203.09	212.38	0.00013	1.73	4801.36	737.71	0.09	12.14	14.79							
Reach1	6.839	100-YR	5450	195.76	212.35	201.63	212.37	0.000067	1.14	6251.49	719.25	0.06	10.79	16.59							
Reach1	6.773	100-YR	5450	193.45	212.31	199.32	212.34	0.000085	1.68	5252.71	640.8	0.07	16.05	18.86							
Reach1	6.706	100-YR	5450	191.12	212.3	197.1	212.32	0.000034	1.07	6475.53	544.72	0.05	15.88	21.18							
Reach1	6.65	100-YR	5450	188.19	212.25	194.05	212.3	0.000027	1.79	3923.58	546.76	0.07	21.77	24.06							
Reach1	6.588		Culvert												Pacific Park Drive						
Reach1	6.532	100-YR	4450	184	190.49	190.01	192.54	0.007558	11.51	386.61	73.9	0.89	5.23	6.49		0.06	1.81	0.00		1.88	
Reach1	6.291	100-YR	4450	177.54	182.34	182.34	183.74	0.029011	9.5	468.45	169.05	1.01	2.77	4.8		0.09	1.24	4.32	53	5.65	Right bank
Reach1	6.234	100-YR	4450	168.79	179.17	175.08	179.32	0.001845	3.12	1428.17	253.46	0.23	5.63	10.38		0.06	0.13	0.77	27	0.96	Left bank
Reach1	6.1	100-YR	4450	166.88	176.22	172.82	176.97	0.005998	6.94	640.87	89.8	0.46	7.14	9.34		0.68	0.66	0.00		1.34	
Reach1	6.045	100-YR	4450	166.02	174.71	171.66	175.54	0.004123	7.52	646.63	95.73	0.46	8.15	8.69		0.80	0.77	0.00		0.77	
Reach1	**5.985**	100-YR	4450	162.91	170.74	170.74	173.59	0.007882	14.43	406.61	78.93	0.95	7.2	7.83		0.94	2.85	2.36	35	**6.15**	Right bank
Reach1	5.919	100-YR	4450	162.77	170.9	168.54	171.62	0.00184	7.12	719.12	160.82	0.47	7.16	8.13		0.70	0.69	0.00		0.69	
Reach1	5.858	100-YR	4450	162.04	169.95	167.36	170.68	0.005371	6.88	670.03	135.59	0.48	6.42	7.91		0.47	0.65	0.00		0.65	
Reach1	5.794	100-YR	4560	159.05	168.46	165.78	168.98	0.004399	5.87	834.89	196.44	0.42	5.95	9.41		0.24	0.47	0.00		0.47	
Reach1	5.728	100-YR	4560	158.55	166.6	164.24	167.32	0.005041	7.05	769.58	199.72	0.49	6.48	8.05		0.00	0.68	0.00		0.68	
Reach1	5.664	100-YR	4560	158.17	165.64	162.66	166.2	0.002157	6.09	808.61	145.07	0.41	6.88	7.47		0.02	0.51	0.00		0.51	
Reach1	5.609	100-YR	4560	156.44	165.26	162.06	165.72	0.001148	6.22	1094.5	172.97	0.38	8.33	8.82		0.04	0.53	0.00		0.53	
Reach1	5.545	100-YR	4560	156.31	164.98	161.3	165.35	0.000912	5.44	987.67	287.72	0.34	8.05	8.67		0.06	0.41	0.00		0.41	
Reach1	5.477	100-YR	4560	156.61	162.05	162.05	164.39	0.009884	12.28	371.22	79.12	1	4.69	5.44		0.08	2.07	0.00		2.14	
Reach1	5.457	100-YR	4560	145.3	152.73	150.96	153.98	0.003716	8.97	508.57	82.61	0.64	6.16	7.43		1.61	1.10	0.00		2.71	
Reach1	5.416	100-YR	4560	144.24	151.74	150.32	153.09	0.004352	9.32	489.45	85.16	0.68	5.75	7.5		0.00	1.19	0.00		1.19	
Reach1	5.355	100-YR	4560	142.12	151.18	148.29	151.99	0.002131	7.24	630.17	93.13	0.49	6.77	9.06		0.34	0.72	0.00		0.72	
Reach1	5.293	100-YR	4560	142.13	150.12	147.83	151.12	0.002865	8.06	566.04	89.3	0.56	6.34	7.99		0.69	0.89	0.00		1.58	
Reach1	5.271		Bridge												Aliso Creek Road						
Reach1	5.249	100-YR	4560	141.59	149.33	147.08	150.33	0.002909	8.04	567.21	90.45	0.57	6.27	7.74		1.63	0.89	0.00		2.51	
Reach1	**5.205**	100-YR	4560	141.49	146.88	146.88	149.16	0.009949	12.11	376.55	82.75	1	4.55	5.39		0.08	2.01	1.89	30	**3.98**	Right bank
Reach1	5.194	100-YR	4560	130.09	138.31	135.86	139.33	0.002818	8.09	563.37	84.19	0.55	6.69	8.22		0.64	0.90	0.59	22	2.12	Right bank

Notes: 1. Values of Zgs were obtained from RAS Sediment Transport model at the end of long term simulation period of invert change.
2. Positive invert changes (i.e., aggradation) were set to ZERO.
3. Zgs values in red are interpolated between adjacent computed values.

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # C	Hydr Dept	Max Chl Dpth		General	Antidunes	Bend	angle		
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		(ft)	(ft)		z_{gs}	z_a	z_b	α	z_t	
Reach1	5.169	100-YR	4560	130.26	137.46	136.14	138.83	0.004597	9.41	484.54	86.59	0.7	5.6	7.2		1.45	1.21	0.81	22	3.47	Right bank
Reach1	5.139	100-YR	4560	130.03	136.7	135.41	138.09	0.004656	9.46	481.94	86.15	0.7	5.59	6.67		0.08	1.23	0.74	22	2.04	Right bank
Reach1	5.127	100-YR	4560	124.19	137.28	131.23	137.7	0.000754	5.25	867.8	93.04	0.3	9.33	13.09		0.08	0.38	0.00		0.38	
Reach1	5.106	100-YR	4560	124.73	136.76	132.49	137.52	0.003755	7	651.67	78.14	0.43	8.34	12.03		0.08	0.67	0.00		0.75	
Reach1	5.051	100-YR	4560	125.31	135.44	132.09	136.19	0.005517	6.94	657.28	93.87	0.46	7	10.13		0.03	0.66	0.00		0.66	
Reach1	5.026	100-YR	4560	124.55	132.49	132.14	135.27	0.00132	13.38	340.74	53.39	0.93	6.38	7.94		0.00	2.45	0.00		2.45	
Reach1	5.02		Bridge												Awma Road						
Reach1	5.014	100-YR	4560	123.98	131.54	131.54	134.44	0.001504	13.66	333.72	57.89	1	5.76	7.56		0.00	2.56	0.00		2.56	
Reach1	5.011	100-YR	4560	120.25	127.71	127.71	130.61	0.009778	13.67	333.49	57.54	1	5.8	7.46		0.06	2.56	0.00		2.56	
Reach1	4.984	100-YR	4560	116.88	128.65	124.79	129.06	0.001276	5.16	883.86	136.64	0.36	6.47	11.77		0.62	0.36	0.00		0.99	
Reach1	4.916	100-YR	4560	113.27	128.49	120.34	128.76	0.000454	4.17	1093.9	101.36	0.22	10.79	15.22		0.41	0.24	6.96	52	7.20	Left bank
Reach1	4.854	100-YR	7240	112.8	125.72	123.93	128.08	0.005475	12.33	587.25	69.4	0.75	8.46	12.92		0.22	2.08	0.00		2.08	
Reach1	4.785	100-YR	7240	111.82	125.64	121.55	126.53	0.001963	7.55	958.61	113.91	0.46	8.42	13.82		0.00	0.78	0.00		0.78	
Reach1	4.717	100-YR	7240	110.68	125.09	120.09	125.87	0.001561	7.08	1022.44	113.2	0.42	9.03	14.41		0.00	0.69	0.00		0.69	
Reach1	4.656	100-YR	7240	109.59	124.6	119.27	125.37	0.001508	7.08	1023.12	108.6	0.41	9.42	15.01		0.00	0.69	0.00		0.69	
Reach1	**4.595**	100-YR	7240	109.73	123.09	121.33	124.41	0.007123	9.95	948.22	183.91	0.56	9.9	13.36		0.00	1.36	6.23	40	**7.59**	right bank
Reach1	4.522	100-YR	7240	108.13	121.43	117.06	122.43	0.00353	8.02	912.35	119.27	0.46	9.56	13.3		0.00	0.88	4.48	40	5.36	Left bank
Reach1	4.464	100-YR	7240	108.03	120.08	116.97	121.1	0.005416	8.17	924.25	151.38	0.51	8.1	12.05		0.00	0.91	0.00		0.91	
Reach1	4.398	100-YR	7240	105.93	119.88	112.78	120.34	0.000824	5.41	1342.42	132.24	0.29	10.99	13.95		0.00	0.40	0.00		0.40	
Reach1	4.33	100-YR	7240	104.78	119.46	113.16	119.89	0.002012	5.28	1372.12	155.78	0.31	8.81	14.68		0.00	0.38	5.26	40	5.64	Left bank
Reach1	4.266	100-YR	7240	104.54	118.61	113.28	119.23	0.00179	6.29	1151.68	137.49	0.38	8.38	14.07		0.00	0.54	0.00		0.54	
Reach1	4.199	100-YR	7240	103.37	117.59	112.36	118.35	0.003495	7.02	1051.64	140.43	0.41	9.13	14.22		0.48	0.68	0.00		0.68	
Reach1	4.138	100-YR	7240	103.02	115.92	112.84	116.96	0.005351	8.5	1022.95	241.63	0.53	8.04	12.9		0.92	0.99	0.00		0.99	
Reach1	4.067	100-YR	7240	102.26	113.31	113.31	115.02	0.004654	11.42	1088.48	441.4	0.69	8.38	11.05		1.43	1.79	0.00		3.21	
Reach1	4.003	100-YR	7240	101.15	112.46	109.33	113.1	0.001934	6.66	1496.38	490.02	0.45	6.85	11.31		1.04	0.61	0.00		0.61	
Reach1	3.937	100-YR	7240	100.04	109.73	109.73	111.72	0.008891	11.55	747.1	250.02	0.91	4.97	9.69		0.65	1.83	0.00		2.47	
Reach1	3.872	100-YR	7240	98.88	108.88	106.76	109.66	0.002532	8.27	1770.8	627.38	0.52	7.99	10		1.09	0.94	4.51	40	5.45	Left bank
Reach1	3.81	100-YR	7240	98.41	108.56	107.18	108.89	0.00151	6.86	2800.74	776.24	0.41	8.88	10.15		1.52	0.64	4.30	40	6.46	Right bank
Reach1	3.741	100-YR	7240	97.46	108.25	105.52	108.45	0.000837	5.47	3165.98	629.79	0.31	9.81	10.79		2.70	0.41	0.00		3.11	
Reach1	3.677	100-YR	7240	96.59	107.56	103.93	108.03	0.001793	6.13	1817.85	442.48	0.36	9.11	10.97		1.39	0.51	0.00		0.51	
Reach1	3.657	100-YR	7240	96.72	105.27	105.27	107.52	0.006341	13.05	865.96	245.79	0.82	7.79	8.55		0.98	2.33	0.00		2.33	
Reach1	3.639	100-YR	7240	97.08	104.64	104.64	106.78	0.007195	13.01	883.1	240.14	0.87	6.97	7.56		0.62	2.32	0.00		2.32	
Reach1	3.621	100-YR	7240	97.07	102.71	102.71	104.58	0.009561	12.6	915.54	263.73	0.96	5.31	5.64		0.25	2.18	0.00		2.18	
Reach1	3.613	100-YR	7240	96.48	101.39	101.39	103.22	0.001545	11.01	797.48	256.52	0.99	3.85	4.91	ACWHEP	0.08	0.00	0.00		0.08	
Reach1	3.604	100-YR	7240	85.56	94.09	94.09	97.03	0.00921	13.74	526.84	90.37	1	5.83	8.53		0.07	2.59	1.69	26	4.35	right bank
Reach1	3.601	100-YR	7240	84.9	93.73	93.73	96.68	0.009124	13.8	524.7	88.8	1	5.91	8.83		0.05	2.61	1.74	26	4.35	right bank
Reach1	3.594	100-YR	7240	73.95	84.07	84.07	87.95	0.009477	15.8	458.18	59.15	1	7.75	10.12		0.00	3.42	1.80	26	5.22	right bank
Reach1	3.589	100-YR	7240	73.41	82.93	82.93	86.66	0.010557	15.49	467.35	62.82	1	7.44	9.52		0.30	3.29	0.00		3.29	
Reach1	3.58	100-YR	7240	73.36	81.32	81.32	84.59	0.010573	14.52	498.59	76.85	1	6.49	7.96		0.83	2.89	0.00		2.89	
Reach1	3.567	100-YR	7240	72.06	82.86	79.24	83.34	0.001333	5.57	1300.79	187.01	0.37	6.96	10.8		1.60	0.43	0.00		0.43	
Reach1	3.555	100-YR	7240	71.13	82.81	79.52	83.22	0.001543	5.64	1438.87	225.1	0.34	8.54	11.68		2.30	0.44	1.78	26	4.52	right bank
Reach1	3.535	100-YR	7240	71.06	82.74	77.72	83.05	0.001206	4.47	1618.76	203.86	0.28	7.94	11.68		2.04	0.27	0.00		0.27	
Reach1	3.505	100-YR	7240	68.57	82.44	76.93	82.87	0.000867	5.3	1364.98	151.3	0.31	9.02	13.87		1.64	0.38	0.00		0.38	
Reach1	3.484	100-YR	7240	68.37	81.83	77.36	82.66	0.003831	7.32	989.21	109.59	0.43	9.03	13.46		1.36	0.73	0.00		0.73	
Reach1	3.465	100-YR	7240	63.24	80.95	76.61	82.29	0.002791	9.3	778.76	81.13	0.53	9.6	17.71		1.11	1.18	0.00		1.18	
Reach1	3.444	100-YR	7240	66.24	80.55	76.99	81.96	0.002898	9.54	758.86	80.05	0.55	9.48	14.31		0.83	1.25	0.00		1.25	
Reach1	3.423	100-YR	7240	64.24	80.42	76.65	81.58	0.002655	8.64	838.14	98.57	0.52	8.5	16.18		0.55	1.02	0.00		1.02	
Reach1	3.399	100-YR	7240	65.47	80.25	75.88	81.23	0.002037	7.96	909.26	101.86	0.47	8.93	14.78		0.23	0.87	0.00		0.87	
Reach1	3.382	100-YR	7240	64.07	79.82	75.59	81.02	0.00246	8.77	825.6	90.72	0.51	9.1	15.75		0.00	1.05	0.00		1.05	
Reach1	3.366	100-YR	7240	64.57	79.54	75.75	80.79	0.002921	8.97	807.57	97.69	0.55	8.27	14.97		0.00	1.10	7.62	43	8.73	right bank
Reach1	3.346	100-YR	7240	65.84	79.49	74.94	80.46	0.00184	7.91	915.43	93.68	0.45	9.77	13.65		0.00	0.86	0.00		0.86	
Reach1	3.335	100-YR	7240	66.24	79.48	74.46	80.32	0.001552	7.35	985.4	100.25	0.41	9.83	13.24		0.00	0.74	0.00		0.74	
Reach1	3.314	100-YR	7240	64.24	79.46	73.77	80.11	0.001247	6.48	1117.8	115.92	0.37	9.64	15.22		0.00	0.58	6.20	43	6.77	Left bank

Notes: 1. Values of Zgs were obtained from RAS Sediment Transport model at the end of long term simulation period of invert change.
2. Positive invert changes (i.e., aggradation) were set to ZERO.
3. Zgs values in red are interpolated between adjacent computed values.

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # C	Hydr Dept	Max Chl Dpth		General	Antidunes	Bend	angle		
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		(ft)	(ft)		z_{gs}	z_a	z_b	α	z_t	
Reach1	3.291	100-YR	7240	63.61	78.75	73.71	79.87	0.002111	8.49	852.91	83.56	0.47	10.21	15.14		0.00	0.99	0.00		0.99	
Reach1	3.276	100-YR	7240	64.1	78.73	73.64	79.66	0.001769	7.73	936.44	95.37	0.43	9.82	14.63		0.00	0.82	0.00		0.82	
Reach1	3.257	100-YR	8120	61.69	77.97	74.28	79.39	0.002878	9.55	850.37	90.39	0.55	9.41	16.28		0.00	1.25	0.00		1.25	
Reach1	3.243	100-YR	8120	63.82	77.85	74.49	79.13	0.002789	9.06	896.37	100.74	0.54	8.9	14.03		0.00	1.12	0.00		1.12	
Reach1	3.231	100-YR	8120	63.77	77.32	74.25	78.9	0.003411	10.09	804.97	90.4	0.6	8.9	13.55		0.00	1.39	0.00		1.39	
Reach1	3.214	100-YR	8120	63.62	77.25	73.83	78.55	0.002777	9.16	886.7	100.46	0.54	8.83	13.63		0.00	1.15	0.00		1.15	
Reach1	3.191	100-YR	8120	63.75	76.59	73.72	78.15	0.003509	10.03	809.53	94.27	0.6	8.59	12.84		0.12	1.38	0.00		1.38	
Reach1	3.169	100-YR	8120	63.78	75.83	73.69	77.66	0.004315	10.86	747.69	90.7	0.67	8.24	12.05		0.23	1.62	0.00		1.62	
Reach1	3.149	100-YR	8120	63.07	75.51	72.97	77.2	0.003797	10.42	779.09	90.56	0.63	8.6	12.44		0.33	1.49	0.00		1.49	
Reach1	3.131	100-YR	8120	63.36	74.14	73.21	76.62	0.007077	12.65	642.09	89.42	0.83	7.18	10.78		0.43	2.19	0.00		2.19	
Reach1	3.11	100-YR	8120	63.8	73.52	72.74	75.76	0.007146	12.03	674.94	105.52	0.84	6.4	9.72		0.54	1.98	0.00		1.98	
Reach1	3.095	100-YR	8120	63.86	73.71	71.52	75.11	0.003697	9.48	856.63	117.35	0.62	7.3	9.85		0.61	1.23	0.00		1.84	
Reach1	3.074	100-YR	8120	62.13	73.22	71.02	74.69	0.003751	9.74	833.51	109.82	0.62	7.59	11.09		0.53	1.30	0.00		1.30	
Reach1	3.057	100-YR	8120	61.01	72.64	70.64	74.31	0.004217	10.35	784.33	102.5	0.66	7.65	11.63		0.46	1.47	0.00		1.47	
Reach1	3.033	100-YR	8120	62.13	72.1	70.17	73.77	0.004359	10.37	783.04	105.88	0.67	7.4	9.97		0.36	1.47	0.00		1.47	
Reach1	3.014	100-YR	8120	62.17	72.29	68.98	73.26	0.002261	7.9	1028.02	126.22	0.49	8.14	10.12		0.28	0.86	0.00		0.86	
Reach1	3	100-YR	8120	60.09	72	68.86	73.07	0.002592	8.29	979.03	123.52	0.52	7.93	11.91		0.22	0.94	0.00		0.94	
Reach1	2.985	100-YR	8120	59.31	71.76	67.6	72.87	0.002098	8.47	965.62	107.01	0.48	9.77	12.45		0.16	0.98	0.00		0.98	
Reach1	2.967	100-YR	8120	58.24	71.62	67.93	72.6	0.002727	7.94	1022.39	143.09	0.52	7.14	13.38		0.09	0.86	0.00		0.86	
Reach1	2.945	100-YR	8120	60.1	71.62	67.57	72.27	0.001599	6.47	1255.16	161.76	0.41	7.76	11.52		0.00	0.57	7.33	47	7.91	Right bank
Reach1	2.919	100-YR	8120	57.58	71.44	67.17	72.05	0.001435	6.26	1297.06	164.03	0.39	7.91	13.86		0.00	0.54	6.08	47	6.62	Right bank
Reach1	2.898	100-YR	8120	57.24	70.73	67.77	71.8	0.002615	8.27	981.84	124.89	0.52	7.86	13.49		0.00	0.94	7.31	47	8.25	Right bank
Reach1	2.881	100-YR	8120	56.51	70.27	67.04	71.52	0.002844	9	902.57	107.15	0.55	8.42	13.76		0.00	1.11	0.00		1.11	
Reach1	2.864	100-YR	8120	55.24	69.45	67.16	71.17	0.004153	10.54	770.29	94.35	0.65	8.16	14.21		0.00	1.52	0.00		1.52	
Reach1	2.842	100-YR	8120	57.67	69.1	66.65	70.66	0.003777	10.02	810.21	100.91	0.62	8.03	11.43		0.00	1.38	0.00		1.38	
Reach1	2.823	100-YR	8120	55.24	68.83	65.99	70.24	0.003663	9.53	851.75	111.93	0.61	7.61	13.59		0.00	1.24	0.00		1.24	
Reach1	2.802	100-YR	8120	54.88	68.91	65.24	69.76	0.002394	7.4	1096.7	156.95	0.49	6.99	14.03		0.00	0.75	0.00		0.75	
Reach1	2.784	100-YR	8300	54.24	68.82	64.5	69.49	0.002038	6.53	1271.76	193.77	0.45	6.56	14.58		0.00	0.58	0.00		0.58	
Reach1	2.768	100-YR	8300	55.26	68.79	64.11	69.31	0.001401	5.76	1441.85	203.61	0.38	7.08	13.53		0.00	0.45	0.00		0.45	
Reach1	2.753	100-YR	8300	55.64	68.8	62.55	69.19	0.000718	4.96	1673.29	174.91	0.28	9.57	13.16		0.00	0.34	6.35	44	6.69	Left bank
Reach1	2.736	100-YR	8300	53.8	68.17	63.13	69.05	0.001598	7.51	1105.05	107.93	0.41	10.24	14.37		0.00	0.77	5.94	44	6.71	Left bank
Reach1	2.713	100-YR	8300	52.87	67.3	64.37	68.72	0.003162	9.56	867.83	100.83	0.57	8.61	14.43		0.00	1.25	6.92	44	8.17	Left bank
Reach1	2.692	100-YR	8300	52.51	67.29	63.83	68.31	0.00232	8.1	1024.35	120.44	0.49	8.51	14.78		0.36	0.90	0.00		0.90	
Reach1	2.668	100-YR	8300	52.88	66.83	63.3	67.99	0.002464	8.67	956.87	105.91	0.51	9.04	13.95		0.78	1.03	0.00		1.03	
Reach1	2.649	100-YR	8300	53.05	66.27	63.11	67.69	0.003015	9.58	866.67	95.35	0.56	9.09	13.22		1.11	1.26	0.00		1.26	
Reach1	2.634	100-YR	8300	54.85	63.77	63.51	67.12	0.009184	14.7	564.67	76.46	0.95	7.39	8.92		1.37	2.96	0.00		2.96	
Reach1	2.594	100-YR	8300	51.24	62.69	62.63	64.46	0.011659	10.68	777.28	211.88	0.98	3.67	11.45		0.95	1.56	0.00		1.56	
Reach1	2.565	100-YR	8300	53.24	63.09	61.13	63.44	0.001848	4.72	1759.49	417.89	0.41	4.21	9.85		0.64	0.31	9.01	57	9.31	right bank
Reach1	2.544	100-YR	8300	53.24	62.93	60.93	63.24	0.001703	4.49	1848.12	445.88	0.39	4.14	9.69		0.42	0.28	6.63	57	6.91	right bank
Reach1	2.509	100-YR	8300	54.24	62.43	60.97	62.84	0.00265	5.13	1616.56	444.96	0.47	3.63	8.19		0.05	0.36	6.47	57	6.88	right bank
Reach1	2.479	100-YR	8300	54.88	62.23	59.76	62.52	0.001291	4.32	1920.93	400.27	0.35	4.8	7.35		0.24	0.26	0.00		0.26	
Reach1	2.456	100-YR	8300	53.25	62.12	58.38	62.39	0.000826	4.2	1975.72	305.28	0.29	6.47	8.87		0.39	0.24	1.77	31	2.01	Left bank
Reach1	2.434	100-YR	8300	48.8	61.83	57.68	62.26	0.001098	5.3	1566.06	208.25	0.34	7.52	13.03		0.52	0.38	2.12	31	2.50	Left bank
Reach1	2.412	100-YR	8300	48.76	61.37	57.65	62.07	0.001864	6.74	1231.74	167.23	0.44	7.37	12.61		0.66	0.62	3.24	31	4.53	Left bank
Reach1	2.392	100-YR	8300	47.24	61.11	57.27	61.87	0.001781	6.99	1187.89	147.82	0.43	8.04	13.87		0.49	0.67	0.00		0.67	
Reach1	2.372	100-YR	8300	48.11	60.64	57.86	61.63	0.002642	7.97	1041.24	144.41	0.52	7.21	12.53		0.32	0.87	0.00		0.87	
Reach1	2.355	100-YR	8300	46.64	60.47	57.18	61.39	0.002261	7.66	1082.98	138.64	0.48	7.81	13.83		0.18	0.80	0.00		0.80	
Reach1	2.334	100-YR	8300	47.16	60.31	57.21	61.11	0.002244	7.15	1161.37	166.41	0.48	6.98	13.15		0.00	0.70	0.00		0.70	
Reach1	2.312	100-YR	8300	48.55	60.21	56.8	60.8	0.001956	6.16	1348.15	219.46	0.44	6.14	11.66		0.30	0.52	0.00		0.52	
Reach1	2.294	100-YR	8400	47.76	60.02	56.78	60.61	0.001973	6.16	1364.54	224.55	0.44	6.08	12.26		0.55	0.52	0.00		0.52	
Reach1	2.27	100-YR	8400	48.24	60	55.9	60.36	0.001092	4.88	1722.64	255.33	0.33	6.75	11.76		0.88	0.33	0.00		0.33	
Reach1	2.243	100-YR	8400	48.3	59.87	55.33	60.22	0.000857	4.74	1773.72	232.15	0.3	7.64	11.57		1.26	0.31	0.00		1.56	
Reach1	2.233	100-YR	8400	47.24	59.78	54.94	60.17	0.000861	5.03	1671.35	199.34	0.31	8.38	12.54		1.20	0.35	0.00		0.35	

Notes: 1. Values of Zgs were obtained from RAS Sediment Transport model at the end of long term simulation period of invert change.

2. Positive invert changes (i.e., aggradation) were set to ZERO.

3. Zgs values in red are interpolated between adjacent computed values.

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # C	Hydr Dept	Max Chl Dpth		General	Antidunes	Bend	angle		
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		(ft)	(ft)		z_{gs}	z_a	z_b	α	z_t	
Reach1	2.208	100-YR	8400	46.5	59.55	54.45	60.04	0.000972	5.59	1503.28	166.97	0.33	9	13.05		1.05	0.43	0.00		0.43	
Reach1	2.193	100-YR	8400	45.24	59.03	54.72	59.9	0.001791	7.49	1120.87	122.4	0.44	9.16	13.79		0.97	0.77	0.00		0.77	
Reach1	2.167	100-YR	8400	43.88	58.5	54.45	59.59	0.002352	8.39	1001.58	111.15	0.49	9.01	14.62		0.82	0.96	0.00		1.78	
Reach1	2.149	100-YR	8400	44.84	58.05	54.53	59.33	0.002795	9.08	924.98	105.17	0.54	8.8	13.21		0.80	1.13	0.00		1.13	
Reach1	2.131	100-YR	8400	44.3	57.52	54.61	59.01	0.003357	9.81	856.15	97.42	0.58	8.79	13.22		0.78	1.32	0.00		1.32	
Reach1	2.113	100-YR	8400	44.71	57.48	53.92	58.66	0.002438	8.73	963.69	110.67	0.51	9.05	12.77		0.76	1.04	0.00		1.04	
Reach1	2.097	100-YR	8400	43.13	57	54.16	58.39	0.003305	9.48	890.55	124.52	0.58	8.35	13.87		0.74	1.23	0.00		1.23	
Reach1	2.076	100-YR	8400	43.63	56.59	53.8	58.01	0.003724	9.55	881.21	126.94	0.61	7.56	12.96		0.71	1.25	0.00		1.25	
Reach1	2.056	100-YR	8400	42.49	56.37	53.17	57.6	0.002986	8.92	945.95	146.44	0.55	8.05	13.88		0.69	1.09	0.00		1.09	
Reach1	2.035	100-YR	8400	40.98	56.16	52.17	57.28	0.002269	8.47	1007.67	153.74	0.49	9.22	15.18		0.67	0.98	0.00		0.98	
Reach1	2.013	100-YR	8400	41.12	55.58	51.89	56.95	0.002942	9.41	906.39	149.34	0.56	8.79	14.46		0.61	1.21	0.00		1.83	
Reach1	1.989	100-YR	8400	39.51	55.09	51.5	56.57	0.00289	9.79	882.96	142.23	0.55	9.75	15.58		0.76	1.31	0.00		1.31	
Reach1	1.971	100-YR	8400	39.24	54.3	51.87	56.2	0.004147	11.06	759.39	86.86	0.66	8.86	15.06		0.87	1.68	9.33	49	11.01	Left bank
Reach1	1.955	100-YR	8400	39.24	54.51	51.14	55.7	0.002959	8.75	959.55	122.96	0.55	7.8	15.27		0.97	1.05	9.27	49	10.32	left bank
Reach1	1.93	100-YR	8400	39.24	54.6	49.77	55.31	0.001228	6.81	1326.68	182.23	0.38	10.17	15.36		1.12	0.64	9.08	49	9.71	Left bank
Reach1	1.904	100-YR	8400	39.71	53.31	50.65	54.96	0.003254	10.83	953.34	116.95	0.59	10.5	13.6		1.28	1.61	0.00		1.61	
Reach1	1.887	100-YR	8400	39.08	53.62	48.63	54.54	0.001731	7.7	1096.79	121.71	0.43	9.79	14.54		1.39	0.81	8.27	49	9.09	Right bank
Reach1	1.865	100-YR	8400	35.24	53.6	46.33	54.32	0.001022	6.82	1239.73	118.17	0.34	12.42	18.36		1.52	0.64	8.37	49	9.00	Right bank
Reach1	**1.843**	100-YR	8400	37.18	52.7	48.5	54.08	0.002514	9.44	889.99	88.1	0.52	10.1	15.52		1.66	1.22	10.21	49	**13.09**	Right bank
Reach1	1.817	100-YR	8400	37.57	52.53	49.56	53.62	0.002751	8.42	1044.09	207.8	0.53	7.76	14.96		1.93	0.97	0.00		0.97	
Reach1	1.789	100-YR	8400	39.15	51.55	49.26	53.07	0.004559	9.89	887.4	189.74	0.67	6.78	12.4		2.23	1.34	0.00		1.34	
Reach1	1.767	100-YR	8400	39.07	51.13	48.38	52.61	0.003397	9.82	889.9	133.03	0.59	8.74	12.06		2.46	1.32	0.00		1.32	
Reach1	1.746	100-YR	8400	36.24	50.86	47.33	52.24	0.002877	9.44	889.97	96.89	0.55	9.19	14.62		2.68	1.22	0.00		1.22	
Reach1	1.723	100-YR	8400	37.46	50.42	47.23	51.86	0.00317	9.63	873.26	111	0.58	8.62	12.96		2.93	1.27	0.00		1.27	
Reach1	1.703	100-YR	8400	37.87	49.75	47.44	51.46	0.004067	10.49	801.02	98.59	0.65	8.13	11.88		3.14	1.51	0.00		1.51	
Reach1	1.684	100-YR	8400	36.24	49.79	46.86	50.95	0.002812	8.64	975.23	132.78	0.54	7.94	13.55		3.34	1.02	0.00		4.36	
Reach1	1.661	100-YR	8400	36.04	49.38	46.69	50.58	0.003215	8.81	953.91	129.62	0.57	7.36	13.34		3.30	1.06	0.00		1.06	
Reach1	1.644	100-YR	8550	36.94	49.11	46.21	50.32	0.002835	8.82	969.27	119.98	0.55	8.08	12.17		3.27	1.07	0.00		1.07	
Reach1	1.625	100-YR	8550	35.24	48.51	46.1	49.97	0.003656	9.7	881.53	112.21	0.61	7.86	13.27		3.24	1.29	1.19	22	2.48	Left bank
Reach1	1.608	100-YR	8550	36.33	48.28	45.58	49.62	0.003195	9.28	921.4	114.89	0.58	8.02	11.95		3.21	1.18	1.31	22	2.49	Left bank
Reach1	1.586	100-YR	8550	35.99	48.14	44.63	49.23	0.002281	8.39	1043.58	136.54	0.5	8.79	12.15		3.17	0.96	1.17	22	2.14	Left bank
Reach1	1.569	100-YR	8550	34.09	47.08	44.68	48.89	0.004053	10.93	889.33	172.98	0.63	9.25	12.99		3.14	1.64	0.00		1.64	
Reach1	1.543	100-YR	8550	33.24	47.49	42.75	48.28	0.001428	7.22	1332.77	227.72	0.4	10.29	14.25		3.10	0.71	0.00		0.71	
Reach1	1.52	100-YR	8550	34.11	47.64	41.69	48.05	0.000719	5.15	1872.94	409.87	0.29	10.09	13.53		3.06	0.36	9.64	55	13.06	right bank
Reach1	1.496	100-YR	8550	33.06	47.63	41.04	47.94	0.000556	4.52	2121.99	465.01	0.25	10.35	14.57		2.61	0.28	8.65	55	8.93	right bank
Reach1	1.464	100-YR	8550	29	47.27	40.49	47.8	0.000836	5.88	1656.48	343.77	0.31	11.33	18.27		2.02	0.47	8.97	55	9.44	right bank
Reach1	1.449	100-YR	8550	28.54	47.23	40.88	47.73	0.000877	5.66	1645.22	293.07	0.31	10.18	18.69		1.74	0.44	0.00		0.44	
Reach1	1.429	100-YR	8550	29.33	47.27	40.22	47.6	0.00053	4.67	2054.79	300.05	0.25	10.9	17.94		1.37	0.30	0.00		1.67	
Reach1	1.41	100-YR	8550	27.93	47.25	39.52	47.54	0.000495	4.33	2064.56	308.06	0.24	10.17	19.32		1.14	0.26	3.43	28	3.69	Left bank
Reach1	1.391	100-YR	8550	28.14	46.92	39.78	47.45	0.000822	5.94	1583.62	211.66	0.31	11.32	18.78		0.91	0.48	3.65	28	4.14	Left bank
Reach1	1.37	100-YR	8550	27.91	46.74	39.04	47.35	0.000898	6.36	1464.31	154.01	0.32	12.16	18.83		0.65	0.55	3.76	28	4.32	Left bank
Reach1	1.353	100-YR	8550	27.72	46.46	39.53	47.24	0.001176	7.19	1304.22	142.03	0.37	11.96	18.74		0.44	0.71	0.00		1.15	
Reach1	1.333	100-YR	8550	27.11	46.5	38.42	47.08	0.000827	6.17	1494.81	153.15	0.31	12.19	19.39		0.35	0.52	0.00		0.52	
Reach1	1.315	100-YR	8550	28.24	46.37	38.89	46.99	0.000897	6.41	1491.41	171.29	0.32	12.15	18.13		0.27	0.56	0.00		0.56	
Reach1	1.295	100-YR	8550	27.61	45.79	38.49	46.83	0.001569	8.17	1063.92	101.74	0.41	12.4	18.18		0.17	0.91	0.00		0.91	
Reach1	1.274	100-YR	8550	31	45.45	40.71	46.59	0.002172	8.63	1090.85	194.4	0.48	9.93	14.45		0.07	1.02	0.00		1.09	
Reach1	1.262		Bridge												SOCWA CTP						
Reach1	1.249	100-YR	8550	28.22	39.04	37.37	40.82	0.004088	11.02	1027.65	291.5	0.66	8.69	10.82							
Reach1	1.235	100-YR	8550	28.03	39.01	35.85	40.34	0.002701	9.45	1208.98	402.53	0.54	9.43	10.98							
Reach1	1.168	100-YR	8550	26.65	39.12	33.32	39.49	0.001033	5.29	2328.66	465.34	0.28	10.7	12.47							
Reach1	1.092	100-YR	8550	24.93	38.71	32.29	39.16	0.00068	5.72	2239.36	409.21	0.29	12.19	13.78							
Reach1	1.032	100-YR	8610	22.96	37.76	33.52	38.77	0.001736	8.42	1494.04	379.6	0.45	11.05	14.8							
Reach1	0.976	100-YR	8610	22.93	36.62	34.04	37.99	0.003269	9.34	921.45	331.34	0.58	8.01	13.69							

Notes: 1. Values of Zgs were obtained from RAS Sediment Transport model at the end of long term simulation period of invert change.
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3. Zgs values in red are interpolated between adjacent computed values.

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # C	Hydr Dept	Max Chl Dpth		General	Antidunes	Bend	angle		
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		(ft)	(ft)		z_{gs}	z_a	z_b	α	z_t	
Reach1	0.969		Bridge																		
Reach1	0.962	100-YR	8610	22.93	34.43	32.21	36.23	0.004154	10.9	867.56	207.86	0.66	8.41	11.5							
Reach1	0.899	100-YR	8610	22.38	33.99	32.03	34.76	0.002134	8.14	1424.08	286.26	0.49	8.71	11.61							
Reach1	0.843	100-YR	8610	20.76	33.33	30.79	34.17	0.001833	8.52	1480.55	358.91	0.46	10.71	12.57							
Reach1	0.809	100-YR	8610	20.68	32.71	29.66	33.75	0.002192	8.5	1155.84	333.78	0.49	9.19	12.03							
Reach1	0.8015		Bridge																		
Reach1	0.794	100-YR	8610	20.68	32.77	28.31	33.19	0.000986	5.83	1911.83	345.71	0.33	9.62	12.09							
Reach1	0.783	100-YR	8610	20.68	32.38	30.66	33.05	0.001763	7.62	1555.02	318.6	0.44	9.3	11.7							
Reach1	0.721	100-YR	8610	18	32.03	27.67	32.57	0.000981	6.56	1695.97	258.72	0.34	11.61	14.03							
Reach1	0.719		Bridge																		
Reach1	0.717	100-YR	8610	17.83	29.19	27.29	30.59	0.003045	9.97	1044.71	227.92	0.58	9.18	11.36							
Reach1	0.665	100-YR	8610	14.97	28.65	27.22	29.63	0.002536	8.94	1293.5	285.61	0.52	9.02	13.68							
Reach1	0.606	100-YR	8610	13.53	28.1	25.74	28.89	0.001906	8.43	1461.95	308.97	0.45	10.68	14.57							
Reach1	0.545	100-YR	8610	14.17	28.24	24.99	28.43	0.000503	4.75	3348.22	833.4	0.24	11.71	14.07							
Reach1	0.528	100-YR	8610	14.17	28.27	23.88	28.34	0.0002	2.96	4686.36	844.41	0.15	11.4	14.1							
Reach1	0.524		Bridge																		
Reach1	0.52	100-YR	8610	14.17	28.27	23.49	28.32	0.000148	2.45	5258.38	845	0.13	10.78	14.1							
Reach1	0.505	100-YR	8610	14.16	28.26	23.3	28.31	0.000142	2.57	5215.05	823.54	0.13	11.86	14.1							
Reach1	0.501		Bridge																		
Reach1	0.497	100-YR	8610	14.16	28.25	23.06	28.3	0.000128	2.44	5267.03	757.68	0.13	11.78	14.09							
Reach1	0.48	100-YR	8480	13.82	28.07	22.98	28.24	0.000359	4.09	2732.54	724.08	0.21	11.83	14.25							
Reach1	0.415	100-YR	8480	8.21	26.33	19.68	27.66	0.001764	9.26	920.48	73.72	0.44	13.76	18.12							
Reach1	0.4115		Bridge																		
Reach1	0.408	100-YR	8480	8.21	22.43	19.87	25.04	0.004493	12.95	654.75	63.66	0.71	10.29	14.22							
Reach1	0.36	100-YR	8480	7.43	22.52	16.9	23.7	0.001546	8.76	1030.11	120.22	0.44	12.35	15.09							
Reach1	0.295	100-YR	8480	6.73	22.55	15.56	23.19	0.000691	6.69	1569.47	241.28	0.33	12.53	15.82							
Reach1	0.228	100-YR	8480	6.28	22.58	13.66	22.94	0.000349	4.95	2102.61	384.98	0.24	13.12	16.3							
Reach1	0.169	100-YR	8480	6.28	22.55	13.48	22.82	0.000243	4.46	2410.96	393.13	0.21	14.34	16.27							
Reach1	0.118	100-YR	8480	6.28	22.04	14.48	22.63	0.000533	6.49	1618.2	292.45	0.3	14.5	15.76							
Reach1	0.103		Bridge																		
Reach1	0.088	100-YR	8480	6.61	18.49	14.48	19.67	0.001556	8.89	1032.73	176.05	0.48	10.68	11.88							
Reach1	0.078	100-YR	8480	6.61	14.98	14.98	18.73	0.007835	15.55	545.42	72.88	1	7.48	8.37							
Reach1	0	100-YR	8480	5.56	10.68	10.44	11.81	0.005005	9.97	1085.49	364.71	0.8	4.82	5.12							

Notes: 1. Values of Zgs were obtained from RAS Sediment Transport model at the end of long term simulation period of invert change.
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3. Zgs values in red are interpolated between adjacent computed values.

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Alternative 2

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Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # C	Hydr Dept	Max Chl Dpth		General	Antidunes	Bend	angle		
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		(ft)	(ft)		z_{gs}	z_a	z_b	α	z_t	
Reach1	9	100-YR	3460	248.1	257.2	254.29	258.02	0.006131	7.27	475.83	71.28	0.5	6.68	9.1							
Reach1	8.75	100-YR	3460	242.6	255.99	251.4	256.45	0.00341	5.43	636.92	93.58	0.37	6.81	13.39							
Reach1	8.5	100-YR	3460	242.6	251.4	251.4	253.78	0.028803	12.37	279.7	59.22	1	4.72	8.8							
Reach1	8.25	100-YR	3460	239.8	248.42	244.66	248.64	0.001839	3.76	920.94	315.93	0.28	5.78	8.62							
Reach1	8	100-YR	3460	239.03	246.67	245.32	247.42	0.009766	6.92	500.21	120.79	0.6	4.14	7.64							
Reach1	7.9	100-YR	3460	233.9	244.12	241.07	244.92	0.00605	7.18	481.6	74.63	0.5	6.45	10.22							
Reach1	7.838	100-YR	3460	231.87	241.94	238.88	242.66	0.007598	6.82	507.31	99.65	0.53	5.09	10.07							
Reach1	7.774	100-YR	3460	230.53	238.76	236.65	239.84	0.008981	8.34	415.06	68.9	0.6	6.02	8.23							
Reach1	7.714	100-YR	3460	228.92	237.27	235.13	237.65	0.004592	4.94	700.28	158.95	0.41	4.41	8.35							
Reach1	7.656	100-YR	3460	227.85	233.93	233.19	235.19	0.016411	9.02	383.71	92.52	0.78	4.15	6.08							
Reach1	7.62	100-YR	3460	222.9	231.28	229.81	232.49	0.011735	8.83	391.83	74.18	0.68	5.28	8.38							
Reach1	7.616		Bridge																		
Reach1	7.612	100-YR	3460	222.58	230.44	228.48	231.46	0.008875	8.09	427.59	74.6	0.6	5.73	7.86							
Reach1	7.528	100-YR	3460	221.45	227.8	225.3	228.08	0.00538	4.22	819.3	268.51	0.43	3.05	6.35							
Reach1	7.466	100-YR	3460	217.9	224.17	223.68	225.16	0.016296	7.95	435.17	149.18	0.82	2.92	6.27							
Reach1	7.353	100-YR	3460	212.71	222.84	218.56	223.01	0.001316	3.24	1043.67	235.69	0.23	6.02	10.13							
Reach1	7.297	100-YR	4660	211.16	221.41	217.76	222.23	0.004453	7.28	640.53	81.42	0.46	7.87	10.25							
Reach1	7.227	100-YR	4660	209.59	220.05	216.98	220.61	0.003913	6.04	770.96	122.09	0.42	6.31	10.46							
Reach1	7.165	100-YR	4660	207.53	216.17	215.17	218.25	0.014103	11.57	403.16	62.44	0.8	6.5	8.64							
Reach1	7.106	100-YR	4660	205.51	215.8	212.16	216.13	0.0026	4.67	998.7	175.63	0.34	5.69	10.29							
Reach1	7.056	100-YR	4660	204.43	214.27	211.04	215.15	0.00506	7.52	619.59	85.03	0.49	7.29	9.84							
Reach1	7.018	100-YR	4660	203.64	213.69	209.67	214.21	0.002934	5.77	808.02	112.12	0.38	7.21	10.05							
Reach1	6.978		Bridge												CA 73						
Reach1	6.938	100-YR	4660	201.59	212.66	207.22	212.92	0.001556	4.11	1162.21	237.79	0.27	6.99	11.07							
Reach1	6.878	100-YR	4660	198.92	212.21	206.47	212.48	0.001271	4.54	1563.97	487.26	0.26	9.61	13.29							
Reach1	6.859	100-YR	5450	197.56	212.35	203.09	212.38	0.00013	1.73	4801.36	737.71	0.09	12.14	14.79							
Reach1	6.839	100-YR	5450	195.76	212.35	201.63	212.37	0.000067	1.14	6251.49	719.25	0.06	10.79	16.59							
Reach1	6.773	100-YR	5450	193.45	212.31	199.32	212.34	0.000085	1.68	5252.71	640.8	0.07	16.05	18.86							
Reach1	6.706	100-YR	5450	191.12	212.3	197.1	212.32	0.000034	1.07	6475.53	544.72	0.05	15.88	21.18							
Reach1	6.65	100-YR	5450	188.19	212.25	194.05	212.3	0.000027	1.79	3923.58	546.76	0.07	21.77	24.06							
Reach1	6.588		Culvert												Pacific Park Drive						
Reach1	6.532	100-YR	4450	184	190.49	190.01	192.54	0.007557	11.51	386.62	73.9	0.89	5.23	6.49		0.06	1.81	0.00		1.87	
Reach1	6.483	100-YR	4450	181.85	190.38	187.23	191.01	0.001763	6.37	725.36	186.57	0.45	6.33	8.53		0.06	0.56	0.00		0.56	
Reach1	6.422	100-YR	4450	180.53	188.92	186.69	189.95	0.006935	8.16	562.71	517.54	0.57	6.4	8.39		0.07	0.91	0.00		0.91	
Reach1	6.358	100-YR	4450	178.6	186.9	184.54	187.75	0.005865	7.43	628.61	143.39	0.52	6.31	8.3		0.08	0.76	0.00		0.76	
Reach1	**6.291**	100-YR	4450	177.54	182.34	182.34	183.74	0.029011	9.5	468.45	169.05	1.01	2.77	4.8		0.09	1.24	4.32	53	**5.65**	Right bank
Reach1	6.234	100-YR	4450	168.79	179.17	175.08	179.32	0.001845	3.12	1428.17	253.46	0.23	5.63	10.38		0.07	0.13	0.77	27	0.97	Left bank
Reach1	6.168	100-YR	4450	167.55	178.13	173.73	178.48	0.002994	4.78	931.48	129.16	0.31	7.21	10.58		1.48	0.31	3.33	47	3.64	Left bank
Reach1	6.1	100-YR	4450	166.88	176.22	172.82	176.97	0.005999	6.94	640.86	89.79	0.46	7.14	9.34		2.94	0.66	0.00		3.60	
Reach1	6.045	100-YR	4450	166.02	174.71	171.66	175.54	0.004123	7.53	646.62	95.73	0.46	8.15	8.69		1.67	0.78	0.00		0.78	
Reach1	5.985	100-YR	4450	162.91	170.74	170.74	173.59	0.007882	14.43	406.61	78.93	0.95	7.2	7.83		0.28	2.85	2.36	35	5.50	Right bank
Reach1	5.919	100-YR	4450	162.77	170.9	168.54	171.62	0.00184	7.12	719.12	160.82	0.47	7.16	8.13		0.21	0.69	0.00		0.69	
Reach1	5.858	100-YR	4450	162.04	169.95	167.36	170.68	0.005371	6.88	670.02	135.58	0.48	6.42	7.91		0.14	0.65	0.00		0.65	
Reach1	5.794	100-YR	4560	159.05	168.46	165.78	168.98	0.004398	5.87	834.89	196.44	0.42	5.95	9.41		0.07	0.47	0.00		0.47	
Reach1	5.728	100-YR	4560	158.55	166.6	164.24	167.32	0.005041	7.05	769.57	199.72	0.49	6.48	8.05		0.00	0.68	0.00		0.68	
Reach1	5.664	100-YR	4560	158.17	165.64	162.66	166.2	0.002157	6.09	808.62	145.07	0.41	6.88	7.47		0.02	0.51	0.00		0.51	
Reach1	5.609	100-YR	4560	156.44	165.26	162.06	165.72	0.001148	6.22	1094.5	172.97	0.38	8.33	8.82		0.04	0.53	0.00		0.53	
Reach1	5.545	100-YR	4560	156.31	164.98	161.3	165.35	0.000912	5.44	987.67	287.72	0.34	8.05	8.67		0.06	0.41	0.00		0.41	
Reach1	5.477	100-YR	4560	156.61	162.05	162.05	164.39	0.009884	12.28	371.22	79.12	1	4.69	5.44		0.09	2.07	0.00		2.15	
Reach1	5.457	100-YR	4560	145.3	152.73	150.96	153.98	0.003716	8.97	508.56	82.61	0.64	6.16	7.43		1.61	1.10	0.00		2.71	
Reach1	5.416	100-YR	4560	144.24	151.74	150.32	153.09	0.004352	9.32	489.44	85.16	0.68	5.75	7.5		0.00	1.19	0.00		1.19	
Reach1	5.355	100-YR	4560	142.12	151.18	148.29	151.99	0.002131	7.24	630.17	93.13	0.49	6.77	9.06		0.17	0.72	0.00		0.72	
Reach1	5.293	100-YR	4560	142.13	150.12	147.83	151.12	0.002865	8.06	566.04	89.3	0.56	6.34	7.99		0.34	0.89	0.00		1.23	

Notes: 1. Values of Zgs were obtained from RAS Sediment Transport model at the end of long term simulation period of invert change.
2. Positive invert changes (i.e., aggradation) were set to ZERO.
3. Zgs values in red are interpolated between adjacent computed values.

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # C	Hydr Dept	Max Chl Dpth		General	Antidunes	Bend	angle		
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		(ft)	(ft)		z_{gs}	z_a	z_b	α	z_t	
Reach1	5.271		Bridge												Aliso Creek Road						
Reach1	5.249	100-YR	4560	141.59	149.33	147.08	150.33	0.002909	8.04	567.21	90.45	0.57	6.27	7.74		0.93	0.89	0.00		1.82	
Reach1	5.229	100-YR	4560	141.64	148.84	146.95	149.96	0.003412	8.49	537.06	89.07	0.61	6.03	7.2		0.54	0.99	2.01	30	3.00	right bank
Reach1	**5.205**	100-YR	4560	141.49	146.88	146.88	149.16	0.009949	12.11	376.55	82.75	1	4.55	5.39		0.07	2.01	1.89	30	**3.97**	
Reach1	5.194	100-YR	4560	130.09	138.31	135.86	139.33	0.002818	8.09	563.37	84.19	0.55	6.69	8.22		0.43	0.90	0.59	22	1.92	
Reach1	5.169	100-YR	4560	130.26	137.46	136.14	138.83	0.004597	9.41	484.54	86.59	0.7	5.6	7.2		1.18	1.21	0.81	22	3.20	
Reach1	5.139	100-YR	4560	130.03	136.7	135.41	138.09	0.004656	9.46	481.94	86.15	0.7	5.59	6.67		0.07	1.23	0.74	22	2.04	
Reach1	5.127	100-YR	4560	124.19	137.28	131.23	137.7	0.000754	5.25	867.8	93.04	0.3	9.33	13.09		0.08	0.38	0.00		0.38	
Reach1	5.106	100-YR	4560	124.73	136.76	132.49	137.52	0.003755	7	651.67	78.14	0.43	8.34	12.03		0.09	0.67	0.00		0.76	
Reach1	5.051	100-YR	4560	125.31	135.44	132.09	136.19	0.005517	6.94	657.28	93.87	0.46	7	10.13		0.03	0.66	0.00		0.66	
Reach1	5.026	100-YR	4560	124.55	132.49	132.14	135.27	0.00132	13.38	340.74	53.39	0.93	6.38	7.94		0.00	2.45	0.00		2.45	
Reach1	5.02		Bridge												Awma Road						
Reach1	5.014	100-YR	4560	123.98	131.54	131.54	134.44	0.001504	13.66	333.72	57.89	1	5.76	7.56		0.00	2.56	0.00		2.56	
Reach1	5.011	100-YR	4560	120.25	127.71	127.71	130.61	0.009778	13.67	333.49	57.54	1	5.8	7.46		0.35	2.56	0.00		2.56	
Reach1	4.984	100-YR	4560	116.88	128.65	124.79	129.06	0.001276	5.16	883.86	136.64	0.36	6.47	11.77		3.53	0.36	0.00		3.90	
Reach1	4.916	100-YR	4560	113.27	128.49	120.34	128.76	0.000454	4.17	1093.9	101.36	0.22	10.79	15.22		2.33	0.24	6.96	52	7.20	Left bank
Reach1	4.854	100-YR	7240	112.8	125.72	123.93	128.08	0.005475	12.33	587.25	69.4	0.75	8.46	12.92		1.23	2.08	0.00		2.08	
Reach1	4.785	100-YR	7240	111.82	125.64	121.55	126.53	0.001963	7.55	958.62	113.91	0.46	8.42	13.82		0.00	0.78	0.00		0.78	
Reach1	4.717	100-YR	7240	110.68	125.09	120.09	125.87	0.001561	7.08	1022.44	113.2	0.42	9.03	14.41		0.00	0.69	0.00		0.69	
Reach1	4.656	100-YR	7240	109.59	124.6	119.27	125.37	0.001508	7.08	1023.13	108.6	0.41	9.42	15.01		0.01	0.69	0.00		0.69	
Reach1	4.595	100-YR	7240	109.73	123.09	121.33	124.41	0.007123	9.95	948.22	183.91	0.56	9.9	13.36		0.01	1.36	6.23	40	7.59	right bank
Reach1	4.522	100-YR	7240	108.13	121.43	117.06	122.43	0.00353	8.02	912.34	119.26	0.46	9.56	13.3		0.02	0.88	4.48	40	5.36	Left bank
Reach1	4.464	100-YR	7240	108.03	120.08	116.97	121.1	0.005416	8.17	924.25	151.38	0.51	8.1	12.05		0.02	0.91	0.00		0.94	
Reach1	4.398	100-YR	7240	105.93	119.88	112.78	120.34	0.000824	5.41	1342.42	132.24	0.29	10.99	13.95		0.20	0.40	0.00		0.40	
Reach1	4.33	100-YR	7240	104.78	119.46	113.16	119.89	0.002012	5.28	1372.12	155.78	0.31	8.81	14.68		0.39	0.38	5.26	40	5.64	Left bank
Reach1	4.266	100-YR	7240	104.54	118.61	113.28	119.23	0.00179	6.29	1151.67	137.49	0.38	8.38	14.07		0.57	0.54	0.00		1.11	
Reach1	4.199	100-YR	7240	103.37	117.59	112.36	118.35	0.003495	7.02	1051.64	140.43	0.41	9.13	14.22		1.15	0.68	0.00		0.68	
Reach1	4.138	100-YR	7240	103.02	115.92	112.84	116.96	0.005351	8.5	1022.95	241.63	0.53	8.04	12.9		1.67	0.99	0.00		0.99	
Reach1	4.067	100-YR	7240	102.26	113.31	113.31	115.02	0.004654	11.42	1088.48	441.4	0.69	8.38	11.05		2.29	1.79	0.00		4.08	
Reach1	4.003	100-YR	7240	101.15	112.46	109.33	113.1	0.001934	6.66	1496.4	490.02	0.45	6.85	11.31		2.01	0.61	0.00		0.61	
Reach1	3.937	100-YR	7240	100.04	109.73	109.73	111.72	0.008891	11.55	747.1	250.02	0.91	4.97	9.69		1.73	1.83	0.00		3.55	
Reach1	3.872	100-YR	7240	98.88	108.88	106.76	109.66	0.002532	8.27	1770.83	627.39	0.52	7.99	10		2.24	0.94	4.51	40	5.45	Left bank
Reach1	**3.81**	100-YR	7240	98.41	108.56	107.18	108.89	0.00151	6.86	2800.74	776.24	0.41	8.88	10.15		2.73	0.64	4.30	40	**7.67**	Right bank
Reach1	3.741	100-YR	7240	97.46	108.25	105.52	108.45	0.000837	5.47	3165.98	629.79	0.31	9.81	10.79		4.15	0.41	0.00		4.56	
Reach1	3.677	100-YR	7240	96.59	107.56	103.93	108.03	0.001793	6.13	1817.85	442.48	0.36	9.11	10.97		2.07	0.51	0.00		0.51	
Reach1	3.657	100-YR	7240	96.72	105.27	105.27	107.52	0.006341	13.05	865.96	245.79	0.82	7.79	8.55		1.43	2.33	0.00		2.33	
Reach1	3.639	100-YR	7240	97.08	104.64	104.64	106.78	0.007195	13.01	883.1	240.14	0.87	6.97	7.56		0.84	2.32	0.00		2.32	
Reach1	3.621	100-YR	7240	97.07	102.71	102.71	104.58	0.009561	12.6	915.54	263.73	0.96	5.31	5.64		0.26	2.18	0.00		2.18	
Reach1	3.613	100-YR	7240	96.48	101.39	101.39	103.22	0.001545	11.01	797.48	256.52	0.99	3.85	4.91	ACWHEP	0.00	0.00	0.00		0.00	
Reach1	3.604	100-YR	7240	85.56	94.09	94.09	97.03	0.01036	13.74	526.83	90.37	1	5.83	8.53		0.00	2.59	1.69	26	4.27	right bank
Reach1	3.601	100-YR	7240	84.9	93.72	93.72	96.68	0.01027	13.8	524.57	88.79	1	5.91	8.82		0.19	2.61	1.68	26	4.29	right bank
Reach1	3.594	100-YR	7240	74.1	83.46	81.48	85.11	0.003567	10.49	731.18	106.18	0.63	8.57	9.36		0.63	1.51	1.73	26	3.88	right bank
Reach1	3.555	100-YR	7240	73.28	83	80.67	84.37	0.002905	9.67	824.08	248.52	0.57	8.86	9.72		1.01	1.28	1.75	26	4.04	right bank
Reach1	3.382	100-YR	8120	69.64	79.28	77.56	81.2	0.004005	11.35	760.58	107.83	0.67	8.85	9.64	Wood Can	0.47	1.76	0.00		2.23	
Reach1	3.214	100-YR	8120	66.48	76.12	74.4	78.04	0.004003	11.35	760.46	107.54	0.67	8.85	9.64		0.47	1.76	0.00		2.23	
Reach1	3.095	100-YR	8120	63.95	73.59	71.87	75.51	0.003998	11.34	761.06	107.86	0.67	8.85	9.64		0.46	1.76	0.00		2.23	
Reach1	2.945	100-YR	8120	60.79	70.49	68.71	72.38	0.003909	11.26	767.03	108.19	0.67	8.91	9.7		0.12	1.74	3.92	37	5.78	right bank
Reach1	2.864	100-YR	8120	59.08	68.91	67	70.74	0.00371	11.08	781.07	108.96	0.65	9.04	9.83		0.05	1.68	0.00		1.74	
Reach1	2.784	100-YR	8300	57.39	67.19	65.42	69.11	0.003926	11.37	777.64	108.77	0.67	9.01	9.8		0.04	1.77	0.00		1.81	
Reach1	2.713	100-YR	8300	55.89	65.77	63.92	67.66	0.003788	11.24	787.37	109.31	0.66	9.1	9.88		0.00	1.73	0.34	19	2.07	Left bank
Reach1	2.634	100-YR	8300	54.23	64.35	62.26	66.12	0.003447	10.91	813.73	110.74	0.63	9.34	10.12		0.00	1.63	0.00		1.63	
Reach1	2.509	100-YR	8300	51.95	61.88	59.98	63.74	0.00372	11.18	792.25	109.43	0.65	9.14	9.93		0.00	1.71	3.11	32	4.83	right bank
Reach1	2.412	100-YR	8300	50.14	60.21	58.21	61.88	0.003334	10.69	852.4	126.38	0.62	9.28	10.07		0.00	1.57	1.88	26	3.44	Left bank

Notes: 1. Values of Zgs were obtained from RAS Sediment Transport model at the end of long term simulation period of invert change.
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3. Zgs values in red are interpolated between adjacent computed values.

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # C	Hydr Dept	Max Chl Dpth		General	Antidunes	Bend	angle		
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		(ft)	(ft)		z_{gs}	z_a	z_b	α	z_t	
Reach1	2.334	100-YR	8300	48.63	58.57	56.66	60.43	0.003702	11.16	793.7	109.66	0.65	9.15	9.94		0.00	1.71	0.00		1.71	
Reach1	2.243	100-YR	8300	46.83	56.94	54.89	58.68	0.00343	10.87	834.66	127.74	0.63	9.32	10.11		0.00	1.62	0.00		1.62	
Reach1	2.167	100-YR	8300	45.36	55.39	53.37	57.24	0.003625	11.1	791.91	105.84	0.64	9.23	10.03		0.00	1.69	0.00		1.69	
Reach1	2.013	100-YR	8300	42.42	52.81	50.45	54.46	0.003109	10.56	843.69	112.36	0.6	9.6	10.39		0.00	1.53	0.00		1.53	
Reach1	1.843	100-YR	8300	39.39	49.52	47.36	51.42	0.003647	11.23	813.95	110.77	0.65	9.34	10.13		0.00	1.73	0.00		1.73	
Reach1	1.684	100-YR	8550	36.02	47.63	44.2	48.94	0.002139	9.49	975.58	114.86	0.51	10.82	11.61		0.00	1.23	0.00		1.23	
Reach1	**1.52**	100-YR	8550	32.57	47.04	40.74	47.67	0.000809	6.82	1568.03	308.42	0.32	13.68	14.47		0.00	0.64	10.25	62	**10.89**	right bank
Reach1	1.429	100-YR	8550	30.64	46.9	38.81	47.31	0.000474	5.67	1924.32	275.37	0.25	15.47	16.26		0.00	0.44	0.00		0.44	
Reach1	1.353	100-YR	8550	29.03	46.76	37.21	47.13	0.000369	5.31	1921.09	176.64	0.23	16.94	17.73		0.00	0.39	0.00		0.39	
Reach1	1.274	100-YR	8550	31	45.45	40.71	46.59	0.002172	8.63	1090.85	194.4	0.48	9.93	14.45		0.04	1.02	0.00		1.06	
Reach1	1.262		Bridge																		
Reach1	1.249	100-YR	8550	28.22	39.04	37.37	40.82	0.004088	11.02	1027.65	291.5	0.66	8.69	10.82							
Reach1	1.235	100-YR	8550	28.03	39.01	35.85	40.34	0.002701	9.45	1208.98	402.53	0.54	9.43	10.98							
Reach1	1.168	100-YR	8550	26.65	39.12	33.32	39.49	0.001033	5.29	2328.66	465.34	0.28	10.7	12.47							
Reach1	1.092	100-YR	8550	24.93	38.71	32.29	39.16	0.00068	5.72	2239.36	409.21	0.29	12.19	13.78							
Reach1	1.032	100-YR	8610	22.96	37.76	33.52	38.77	0.001736	8.42	1494.04	379.6	0.45	11.05	14.8							
Reach1	0.976	100-YR	8610	22.93	36.62	34.04	37.99	0.003269	9.34	921.45	331.34	0.58	8.01	13.69							
Reach1	0.969		Bridge																		
Reach1	0.962	100-YR	8610	22.93	34.43	32.21	36.23	0.004154	10.9	867.56	207.86	0.66	8.41	11.5							
Reach1	0.899	100-YR	8610	22.38	33.99	32.03	34.76	0.002134	8.14	1424.08	286.26	0.49	8.71	11.61							
Reach1	0.843	100-YR	8610	20.76	33.33	30.79	34.17	0.001833	8.52	1480.55	358.91	0.46	10.71	12.57							
Reach1	0.809	100-YR	8610	20.68	32.71	29.66	33.75	0.002192	8.5	1155.84	333.78	0.49	9.19	12.03							
Reach1	0.8015		Bridge																		
Reach1	0.794	100-YR	8610	20.68	32.77	28.31	33.19	0.000986	5.83	1911.83	345.71	0.33	9.62	12.09							
Reach1	0.783	100-YR	8610	20.68	32.38	30.66	33.05	0.001763	7.62	1555.02	318.6	0.44	9.3	11.7							
Reach1	0.721	100-YR	8610	18	32.03	27.67	32.57	0.000981	6.56	1695.97	258.72	0.34	11.61	14.03							
Reach1	0.719		Bridge																		
Reach1	0.717	100-YR	8610	17.83	29.19	27.29	30.59	0.003045	9.97	1044.71	227.92	0.58	9.18	11.36							
Reach1	0.665	100-YR	8610	14.97	28.65	27.22	29.63	0.002536	8.94	1293.5	285.61	0.52	9.02	13.68							
Reach1	0.606	100-YR	8610	13.53	28.1	25.74	28.89	0.001906	8.43	1461.95	308.97	0.45	10.68	14.57							
Reach1	0.545	100-YR	8610	14.17	28.24	24.99	28.43	0.000503	4.75	3348.22	833.4	0.24	11.71	14.07							
Reach1	0.528	100-YR	8610	14.17	28.27	23.88	28.34	0.0002	2.96	4686.36	844.41	0.15	11.4	14.1							
Reach1	0.524		Bridge																		
Reach1	0.52	100-YR	8610	14.17	28.27	23.49	28.32	0.000148	2.45	5258.38	845	0.13	10.78	14.1							
Reach1	0.505	100-YR	8610	14.16	28.26	23.3	28.31	0.000142	2.57	5215.05	823.54	0.13	11.86	14.1							
Reach1	0.501		Bridge																		
Reach1	0.497	100-YR	8610	14.16	28.25	23.06	28.3	0.000128	2.44	5267.03	757.68	0.13	11.78	14.09							
Reach1	0.48	100-YR	8480	13.82	28.07	22.98	28.24	0.000359	4.09	2732.54	724.08	0.21	11.83	14.25							
Reach1	0.415	100-YR	8480	8.21	26.33	19.68	27.66	0.001764	9.26	920.48	73.72	0.44	13.76	18.12							
Reach1	0.4115		Bridge																		
Reach1	0.408	100-YR	8480	8.21	22.43	19.87	25.04	0.004493	12.95	654.75	63.66	0.71	10.29	14.22							
Reach1	0.36	100-YR	8480	7.43	22.52	16.9	23.7	0.001546	8.76	1030.11	120.22	0.44	12.35	15.09							
Reach1	0.295	100-YR	8480	6.73	22.55	15.56	23.19	0.000691	6.69	1569.47	241.28	0.33	12.53	15.82							
Reach1	0.228	100-YR	8480	6.28	22.58	13.66	22.94	0.000349	4.95	2102.61	384.98	0.24	13.12	16.3							
Reach1	0.169	100-YR	8480	6.28	22.55	13.48	22.82	0.000243	4.46	2410.96	393.13	0.21	14.34	16.27							
Reach1	0.118	100-YR	8480	6.28	22.04	14.48	22.63	0.000533	6.49	1618.2	292.45	0.3	14.5	15.76							
Reach1	0.103		Bridge																		
Reach1	0.088	100-YR	8480	6.61	18.49	14.48	19.67	0.001556	8.89	1032.73	176.05	0.48	10.68	11.88							
Reach1	0.078	100-YR	8480	6.61	14.98	14.98	18.73	0.007835	15.55	545.42	72.88	1	7.48	8.37							
Reach1	0	100-YR	8480	5.56	10.68	10.44	11.81	0.005005	9.97	1085.49	364.71	0.8	4.82	5.12							

Notes: 1. Values of Zgs were obtained from RAS Sediment Transport model at the end of long term simulation period of invert change.
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3. Zgs values in red are interpolated between adjacent computed values.

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Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # C	Hydr Dept	Max Chl Dpth		General	Antidunes	Bend	angle		
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		(ft)	(ft)		z_{gs}	z_a	z_b	α	z_t	
Reach1	9	100-YR	3460	248.1	257.2	254.29	258.02	0.006131	7.27	475.83	71.28	0.5	6.68	9.1							
Reach1	8.75	100-YR	3460	242.6	255.99	251.4	256.45	0.00341	5.43	636.92	93.58	0.37	6.81	13.39							
Reach1	8.5	100-YR	3460	242.6	251.4	251.4	253.78	0.028803	12.37	279.7	59.22	1	4.72	8.8							
Reach1	8.25	100-YR	3460	239.8	248.42	244.66	248.64	0.001839	3.76	920.94	315.93	0.28	5.78	8.62							
Reach1	8	100-YR	3460	239.03	246.67	245.32	247.42	0.009766	6.92	500.21	120.79	0.6	4.14	7.64							
Reach1	7.9	100-YR	3460	233.9	244.12	241.07	244.92	0.00605	7.18	481.6	74.63	0.5	6.45	10.22							
Reach1	7.838	100-YR	3460	231.87	241.94	238.88	242.66	0.007598	6.82	507.31	99.65	0.53	5.09	10.07							
Reach1	7.774	100-YR	3460	230.53	238.76	236.65	239.84	0.008981	8.34	415.06	68.9	0.6	6.02	8.23							
Reach1	7.714	100-YR	3460	228.92	237.27	235.13	237.65	0.004592	4.94	700.28	158.95	0.41	4.41	8.35							
Reach1	7.656	100-YR	3460	227.85	233.93	233.19	235.19	0.016411	9.02	383.71	92.52	0.78	4.15	6.08							
Reach1	7.62	100-YR	3460	222.9	231.28	229.81	232.49	0.011735	8.83	391.83	74.18	0.68	5.28	8.38							
Reach1	7.616		Bridge																		
Reach1	7.612	100-YR	3460	222.58	230.44	228.48	231.46	0.008875	8.09	427.59	74.6	0.6	5.73	7.86							
Reach1	7.528	100-YR	3460	221.45	227.8	225.3	228.08	0.00538	4.22	819.3	268.51	0.43	3.05	6.35							
Reach1	7.466	100-YR	3460	217.9	224.17	223.68	225.16	0.016296	7.95	435.17	149.18	0.82	2.92	6.27							
Reach1	7.353	100-YR	3460	212.71	222.84	218.56	223.01	0.001316	3.24	1043.67	235.69	0.23	6.02	10.13							
Reach1	7.297	100-YR	4660	211.16	221.41	217.76	222.23	0.004453	7.28	640.53	81.42	0.46	7.87	10.25							
Reach1	7.227	100-YR	4660	209.59	220.05	216.98	220.61	0.003913	6.04	770.96	122.09	0.42	6.31	10.46							
Reach1	7.165	100-YR	4660	207.53	216.17	215.17	218.25	0.014103	11.57	403.16	62.44	0.8	6.5	8.64							
Reach1	7.106	100-YR	4660	205.51	215.8	212.16	216.13	0.0026	4.67	998.7	175.63	0.34	5.69	10.29							
Reach1	7.056	100-YR	4660	204.43	214.27	211.04	215.15	0.00506	7.52	619.59	85.03	0.49	7.29	9.84							
Reach1	7.018	100-YR	4660	203.64	213.69	209.67	214.21	0.002934	5.77	808.02	112.12	0.38	7.21	10.05							
Reach1	6.978		Bridge												CA 73						
Reach1	6.938	100-YR	4660	201.59	212.66	207.22	212.92	0.001556	4.11	1162.25	237.8	0.27	6.99	11.07							
Reach1	6.878	100-YR	4660	198.92	212.21	206.47	212.48	0.001271	4.54	1564.06	487.27	0.26	9.61	13.29							
Reach1	6.859	100-YR	5450	197.56	212.35	203.09	212.38	0.00013	1.73	4801.5	737.72	0.09	12.14	14.79							
Reach1	6.839	100-YR	5450	195.76	212.35	201.63	212.37	0.000067	1.14	6251.64	719.25	0.06	10.79	16.59							
Reach1	6.773	100-YR	5450	193.45	212.31	199.32	212.34	0.000085	1.68	5252.85	640.8	0.07	16.05	18.86							
Reach1	6.706	100-YR	5450	191.12	212.3	197.1	212.32	0.000034	1.07	6475.65	544.73	0.05	15.88	21.18							
Reach1	6.65	100-YR	5450	188.19	212.25	194.05	212.3	0.00003	1.78	3923.78	546.77	0.07	21.77	24.06							
Reach1	6.588		Culvert												Pacific Park Drive						
Reach1	6.532	100-YR	4450	184	190.01	190.01	192.49	0.011125	12.64	352.02	71.64	1	4.91	6.01		0.07	2.19	0.00		2.26	
Reach1	6.483	100-YR	4450	181.85	188.38	187.23	189.68	0.00563	9.14	486.75	98.17	0.72	4.96	6.53		0.91	1.14	0.00		2.05	
Reach1	6.342	100-YR	4450	180.46	185.18	185.18	186.47	0.013325	9.09	489.63	192.34	1	2.55	4.72		0.06	1.13	0.00		1.13	
Reach1	6.336	100-YR	4450	178.96	185.34	183.68	185.8	0.002572	5.46	815.83	203.76	0.48	4.08	6.38		0.04	0.41	0.00		0.45	
Reach1	**6.247**	100-YR	4450	177.51	182.23	182.23	183.52	0.013325	9.09	489.63	192.34	1	2.55	4.72		0.05	1.13	3.96	53	**5.14**	right bank
Reach1	6.241	100-YR	4450	176.01	182.43	180.73	182.88	0.002489	5.4	824.08	204.16	0.47	4.12	6.42		0.00	0.40	3.24	53	3.64	right bank
Reach1	6.152	100-YR	4450	174.56	179.28	179.28	180.57	0.013324	9.09	489.64	192.34	1	2.55	4.72		0.07	1.13	0.00		1.13	
Reach1	6.147	100-YR	4450	173.06	179.49	177.78	179.94	0.002458	5.39	826.85	202.59	0.47	4.13	6.43		0.00	0.40	0.00		0.40	
Reach1	6.057	100-YR	4450	171.61	176.33	176.33	177.62	0.013322	9.09	489.67	192.34	1	2.55	4.72		0.09	1.13	0.00		1.22	
Reach1	6.052	100-YR	4450	170.11	176.49	174.83	176.95	0.002567	5.46	816.38	203.78	0.48	4.08	6.38		0.00	0.41	0.00		0.41	
Reach1	5.963	100-YR	4450	168.66	173.38	173.38	174.67	0.013315	9.09	489.74	192.35	1	2.55	4.72		0.07	1.13	2.04	35	3.17	right bank
Reach1	5.957	100-YR	4450	167.16	173.58	171.88	174.04	0.002475	5.4	825.52	204.23	0.47	4.12	6.42		0.00	0.40	1.67	35	2.07	right bank
Reach1	5.868	100-YR	4450	165.71	170.44	170.44	171.72	0.013295	9.08	489.97	192.35	1	2.55	4.73		0.10	1.13	0.00		1.23	
Reach1	5.862	100-YR	4450	164.21	170.66	168.94	171.11	0.002413	5.36	831.89	204.54	0.46	4.15	6.45		0.00	0.39	0.00		0.39	
Reach1	5.773	100-YR	4560	162.76	167.51	167.51	168.83	0.013528	9.22	494.78	192.5	1.01	2.57	4.75		0.09	1.16	0.00		1.16	
Reach1	5.768	100-YR	4560	161.26	167.83	166.01	168.27	0.002301	5.32	869.84	252.72	0.45	4.27	6.57		0.00	0.39	0.00		0.39	
Reach1	5.678	100-YR	4560	159.81	164.64	164.64	166.24	0.012459	10.16	448.92	140.29	1	3.2	4.83		0.07	1.41	0.00		1.48	
Reach1	5.673	100-YR	4560	158.31	165.12	163.14	165.7	0.002773	6.11	745.82	160.07	0.5	4.66	6.81		0.00	0.51	0.00		0.51	
Reach1	5.584	100-YR	4560	156.86	161.87	161.69	163.3	0.010553	9.61	474.48	142.1	0.93	3.34	5.01		0.09	1.27	0.00		1.27	
Reach1	5.578	100-YR	4560	155.36	162.37	160.19	162.9	0.002453	5.86	777.83	162.05	0.47	4.8	7.01		0.00	0.47	0.00		0.47	
Reach1	5.489	100-YR	4560	153.91	158.57	158.57	160.55	0.011884	11.29	403.92	103.32	1.01	3.91	4.66		0.09	1.75	0.00		1.83	
Reach1	5.467	100-YR	4560	147.91	154.5	152.57	155.38	0.0033	7.51	606.97	107.18	0.56	5.66	6.59		0.03	0.77	0.00		0.77	

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Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # C	Hydr Dept	Max Chl Dpth		General	Antidunes	Bend	angle		
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		(ft)	(ft)		z_{gs}	z_a	z_b	α	z_t	
Reach1	5.395	100-YR	4560	146.81	152.45	151.47	153.71	0.005851	9.02	505.49	105.27	0.73	4.8	5.64		0.07	1.11	0.00		1.11	
Reach1	5.389	100-YR	4560	145.31	152.77	149.97	153.43	0.002113	6.51	700.71	108.92	0.45	6.43	7.46		0.00	0.58	0.00		0.58	
Reach1	5.3	100-YR	4560	143.86	149.16	149.16	151.33	0.011531	11.84	385.25	88.59	1	4.35	5.3		0.10	1.92	0.00		2.02	
Reach1	5.294	100-YR	4560	142.36	149.14	147.64	150.34	0.004575	8.79	518.82	91.56	0.65	5.67	6.78		0.08	1.06	0.00		1.06	
Reach1	5		Bridge												Aliso Creek Road						
Reach1	4.946	100-YR	4560	141.49	147.65	146.09	148.76	0.003924	8.48	550.16	101.31	0.62	5.81	6.16		0.10	0.99	0.00		1.09	
Reach1	4.919	100-YR	4560	140.92	145.56	145.56	147.61	0.010777	11.49	409.93	115.29	0.98	4.3	4.64		0.09	1.81	0.00		1.90	
Reach1	4.896	100-YR	4560	134.92	143.28	139.58	143.79	0.001226	5.87	900.47	133.73	0.37	8.02	8.36		0.07	0.47	0.00		0.47	
Reach1	**4.843**	100-YR	7240	133.8	139.97	139.97	142.64	0.009579	13.26	594.02	121.33	0.97	5.82	6.17		0.08	2.41	0.43	20	**2.83**	right bank
Reach1	4.821	100-YR	7240	127.8	139.33	133.96	139.99	0.001005	6.64	1244.14	128.07	0.35	11.19	11.53		0.00	0.60	0.37	20	0.97	right bank
Reach1	4.741	100-YR	7240	125.51	139.16	131.67	139.62	0.000558	5.55	1481.49	128.31	0.27	13.31	13.65		0.00	0.42	0.00		0.42	
Reach1	4.726	100-YR	7240	124.63	136.41	134.65	138.94	0.000805	12.77	566.83	64.59	0.76	8.78	11.78		0.00	2.23	0.00		2.23	
Reach1	4.725		Bridge												Awma Road						
Reach1	4.723	100-YR	7240	124.55	134.57	134.57	138.45	0.001452	15.81	457.86	59.33	1	7.72	10.02		0.00	3.42	0.00		3.42	
Reach1	4.711	100-YR	7240	123.7	131.6	129.43	132.24	0.00235	6.45	1138.18	219	0.48	5.6	7.9		0.00	0.57	0.00		0.57	
Reach1	4.584	100-YR	7240	121.95	128.06	127.68	129.46	0.00851	9.5	762.48	200.67	0.86	3.81	6.11		0.00	1.24	1.92	30	3.16	Left bank
Reach1	4.578	100-YR	7240	120.45	128.5	126.18	129.11	0.002158	6.29	1162.2	212.29	0.46	5.75	8.05		0.00	0.54	1.60	30	2.15	Left bank
Reach1	4.452	100-YR	7240	118.7	124.44	124.43	126.16	0.011864	10.53	687.84	198.43	1	3.47	5.74		0.05	1.52	0.00		1.57	
Reach1	4.446	100-YR	7240	117.2	125.04	122.93	125.7	0.002447	6.53	1117.41	211.02	0.49	5.54	7.84		0.00	0.58	0.00		0.58	
Reach1	**4.357**	100-YR	7240	115.95	121.68	121.68	123.41	0.011976	10.56	685.8	198.37	1	3.46	5.73		0.05	1.53	4.61	50	**6.14**	right bank
Reach1	4.351	100-YR	7240	114.45	122.17	120.18	122.86	0.002621	6.66	1099.06	217.21	0.5	5.42	7.72		0.00	0.61	3.71	50	4.32	right bank
Reach1	4.262	100-YR	7240	113.2	119.23	118.93	120.69	0.009132	9.7	746.46	200.32	0.88	3.73	6.03		0.00	1.29	4.56	50	5.85	right bank
Reach1	4.256	100-YR	7240	111.7	119.7	117.43	120.32	0.002216	6.34	1159.81	219.99	0.47	5.7	8		0.00	0.55	3.84	50	4.39	Left bank
Reach1	4.13	100-YR	7240	109.95	115.69	115.69	117.36	0.011396	10.41	728.31	241.9	0.98	3.51	5.74		0.00	1.48	1.94	30	3.42	Left bank
Reach1	4.124	100-YR	7240	108.45	116.11	114.18	116.81	0.002722	6.74	1085.89	216.61	0.51	5.36	7.66		0.00	0.62	1.54	30	2.16	Left bank
Reach1	4.016	100-YR	7240	106.95	113.76	112.68	114.76	0.004871	8.03	904.41	208.06	0.67	4.51	6.81		0.00	0.88	0.00		0.88	Left bank
Reach1	4.01	100-YR	7240	106.2	113.86	111.93	114.56	0.002732	6.75	1084.7	216.55	0.51	5.36	7.66		0.00	0.62	0.00		0.62	
Reach1	3.902	100-YR	7240	104.7	111.65	110.43	112.59	0.004375	7.78	935.12	209.53	0.64	4.65	6.95		0.00	0.83	1.88	30	2.71	Left bank
Reach1	3.897	100-YR	7240	103.95	111.75	109.68	112.41	0.00249	6.56	1130.77	237.41	0.49	5.5	7.8		0.00	0.59	1.75	30	2.34	Left bank
Reach1	3.808	100-YR	7240	102.7	108.52	108.43	110.16	0.011047	10.29	703.4	198.9	0.96	3.54	5.82		0.08	1.45	4.60	50	6.13	right bank
Reach1	3.802	100-YR	7240	101.2	109.08	106.93	109.73	0.002384	6.48	1132.88	218.77	0.48	5.58	7.88		0.00	0.58	3.75	50	4.33	right bank
Reach1	3.703	100-YR	7240	99.83	105.59	105.59	107.27	0.011587	10.42	706.14	245.33	0.99	3.47	5.76		0.05	1.49	0.00		1.49	
Reach1	3.698	100-YR	7240	98.32	106.13	104.05	106.76	0.002408	6.45	1243.19	357.33	0.48	5.51	7.81		0.00	0.57	0.00		0.57	
Reach1	3.599	100-YR	7240	96.95	102.89	102.66	104.43	0.009869	9.94	730.23	218.06	0.92	3.65	5.94		0.05	1.35	0.00		1.41	
Reach1	3.594	100-YR	7240	95.45	103.4	101.18	104.03	0.002266	6.37	1182.11	272.88	0.47	5.65	7.95		0.00	0.56	0.00		0.56	
Reach1	3.476	100-YR	7240	93.83	99.68	99.53	101.29	0.01068	10.19	712.17	248.75	0.95	3.57	5.85		0.07	1.42	1.93	30	3.35	right bank
Reach1	3.47	100-YR	7240	92.33	100.23	98.06	100.87	0.002344	6.44	1164.66	300.54	0.48	5.6	7.9		0.00	0.57	1.56	30	2.13	right bank
Reach1	3.372	100-YR	7240	90.96	96.69	96.69	98.42	0.011976	10.56	685.8	198.37	1	3.46	5.73		0.10	1.53	1.92	30	3.54	right bank
Reach1	3.366	100-YR	7240	89.46	97.14	95.19	97.84	0.002694	6.72	1089.44	216.77	0.51	5.38	7.68		0.00	0.62	1.54	30	2.15	right bank
Reach1	3.277	100-YR	7240	88.21	94.21	94.07	95.64	0.009125	9.65	824.72	431.91	0.88	3.7	6		0.10	1.28	0.00		1.28	
Reach1	3.272	100-YR	7240	86.71	94.69	92.44	95.27	0.002125	6.19	1373.01	472.88	0.46	5.68	7.98		0.00	0.52	0.00		0.52	
Reach1	3.183	100-YR	8120	85.46	91.66	91.66	93.25	0.009469	10.23	888.73	382.63	0.91	3.93	6.2	Wood Cay	0.06	1.43	1.92	30	3.42	right bank
Reach1	3.177	100-YR	8120	83.96	92.02	89.95	92.7	0.002497	6.77	1415.37	406.96	0.5	5.76	8.06		0.00	0.63	1.65	30	2.28	right bank
Reach1	3.088	100-YR	8120	82.71	88.89	88.78	90.54	0.009772	10.36	827.42	263.05	0.92	3.91	6.18		0.06	1.47	0.00		1.47	
Reach1	3.082	100-YR	8120	81.21	89.41	87.2	90.12	0.002435	6.8	1267.07	279.47	0.49	5.9	8.2		0.00	0.63	0.00		0.63	
Reach1	2.993	100-YR	8120	79.96	85.94	85.94	87.83	0.011985	11.02	736.87	199.91	1.01	3.69	5.98		0.09	1.66	0.00		1.75	
Reach1	2.987	100-YR	8120	78.46	86.56	84.45	87.3	0.002591	6.93	1250.08	323.47	0.51	5.8	8.1		0.00	0.66	0.00		0.66	
Reach1	2.908	100-YR	8120	77.33	83.36	83.36	85.2	0.011399	10.87	754.3	225.26	0.99	3.75	6.03		0.09	1.62	4.83	50	6.44	Left bank
Reach1	2.902	100-YR	8120	75.83	83.9	81.82	84.66	0.002669	7.01	1188.97	283.66	0.51	5.77	8.07		0.00	0.67	3.93	50	4.60	Left bank
Reach1	2.823	100-YR	8120	74.71	80.78	80.77	82.55	0.011	10.71	795.97	304.08	0.97	3.77	6.07		0.09	1.57	4.82	50	6.48	right bank
Reach1	2.817	100-YR	8120	73.21	81.39	79.2	82.08	0.002403	6.74	1409.93	517.56	0.49	5.88	8.18		0.00	0.62	3.94	50	4.57	right bank
Reach1	2.737	100-YR	8300	72.08	78.14	78.12	80.03	0.01168	11.03	752.59	200.63	1	3.76	6.06		0.08	1.67	0.00		1.67	
Reach1	2.732	100-YR	8300	70.58	78.79	76.62	79.54	0.002584	7	1205.39	222.05	0.51	5.91	8.21		0.00	0.67	0.00		0.67	

Notes: 1. Values of Zgs were obtained from RAS Sediment Transport model at the end of long term simulation period of invert change.
2. Positive invert changes (i.e., aggradation) were set to ZERO.
3. Zgs values in red are interpolated between adjacent computed values.

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # C	Hydr Dept	Max Chl Dpth		General	Antidunes	Bend	angle		
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		(ft)	(ft)		z_{gs}	z_a	z_b	α	z_t	
Reach1	2.652	100-YR	8300	69.46	75.5	75.5	77.41	0.011925	11.1	747.91	200.4	1.01	3.74	6.04		0.09	1.69	0.00		1.78	
Reach1	2.647	100-YR	8300	67.96	76.08	74	76.86	0.00271	7.11	1187.01	221.22	0.52	5.82	8.12		0.00	0.69	0.00		0.69	
Reach1	2.576	100-YR	8300	66.96	73	73	74.91	0.011925	11.1	747.91	200.4	1.01	3.74	6.04		0.09	1.69	0.00		1.69	
Reach1	2.571	100-YR	8300	65.46	73.65	71.5	74.41	0.002612	7.03	1201.12	221.86	0.51	5.89	8.19		0.00	0.68	0.00		0.68	
Reach1	2.482	100-YR	8300	64.21	70.47	70.25	72.17	0.009876	10.49	791.75	202.57	0.93	3.96	6.26		0.09	1.51	0.00		1.60	
Reach1	2.476	100-YR	8300	62.71	71.02	68.75	71.75	0.002439	6.88	1228.01	223.07	0.49	6.01	8.31		0.00	0.65	0.00		0.65	
Reach1	2.378	100-YR	8300	61.33	67.44	67.37	69.28	0.011172	10.88	762.76	201.14	0.98	3.81	6.11		0.08	1.62	4.94	50	6.56	right bank
Reach1	2.372	100-YR	8300	59.83	68.06	65.87	68.81	0.002547	6.97	1210.91	222.3	0.5	5.93	8.23		0.00	0.67	3.99	50	4.65	right bank
Reach1	2.283	100-YR	8400	58.58	64.74	64.74	66.54	0.010697	10.8	819.17	282.54	0.96	3.89	6.16		0.09	1.60	0.00		1.69	
Reach1	2.277	100-YR	8400	57.08	65.3	63.18	66.02	0.002488	6.89	1355.11	306.7	0.5	5.92	8.22		0.00	0.65	0.00		0.65	
Reach1	2.193	100-YR	8400	55.89	62.08	61.96	63.89	0.010734	10.8	777.62	201.87	0.97	3.89	6.19		0.08	1.60	0.00		1.60	
Reach1	2.187	100-YR	8400	54.39	62.68	60.46	63.43	0.002527	6.99	1223.42	222.86	0.5	5.99	8.29		0.00	0.67	0.00		0.67	
Reach1	2.103	100-YR	8400	53.21	59.28	59.28	61.21	0.011899	11.14	753.82	200.69	1.01	3.77	6.07		0.09	1.70	0.00		1.79	
Reach1	2.097	100-YR	8400	51.71	59.74	57.78	60.57	0.002929	7.31	1166.65	220.3	0.54	5.73	8.03		0.05	0.73	0.00		0.73	
Reach1	2.022	100-YR	8400	50.52	56.79	56.59	58.53	0.009991	10.57	794.73	202.72	0.94	3.97	6.27		0.07	1.53	0.00		1.53	
Reach1	2.017	100-YR	8400	49.02	57.36	55.09	58.09	0.002424	6.89	1284.6	283.92	0.49	6.04	8.34		0.00	0.65	0.00		0.65	
Reach1	1.923	100-YR	8400	47.83	54.03	53.85	55.8	0.010467	10.7	807.13	238.67	0.95	3.9	6.2		0.06	1.57	0.00		1.63	
Reach1	1.917	100-YR	8400	46.33	54.62	52.41	55.36	0.002479	6.93	1297.61	306.21	0.5	5.99	8.29		0.00	0.66	0.00		0.66	
Reach1	**1.828**	100-YR	8400	45.08	51.2	51.15	53.08	0.011404	11	763.53	201.18	0.99	3.82	6.12		0.06	1.66	4.94	50	**6.60**	right bank
Reach1	1.823	100-YR	8400	43.58	51.83	49.65	52.59	0.002586	7.04	1213.22	219.06	0.51	5.95	8.25		0.00	0.68	4.00	50	4.68	right bank
Reach1	1.743	100-YR	8400	42.46	48.53	48.53	50.46	0.011899	11.14	753.82	200.69	1.01	3.77	6.07		0.00	1.70	0.00		1.70	
Reach1	1.737	100-YR	8400	40.96	49.06	47.03	49.87	0.002806	7.22	1182.81	221.04	0.53	5.8	8.1		0.00	0.71	0.00		0.71	
Reach1	1.648	100-YR	8400	39.71	47.54	45.78	48.43	0.003309	7.59	1115.83	210.97	0.57	5.53	7.83		0.00	0.79	0.00		0.79	
Reach1	1.643	100-YR	8550	38.2	47.73	44.33	48.26	0.001394	5.89	1482.76	221.16	0.39	7.23	9.53		0.03	0.48	0.00		0.51	
Reach1	1.554	100-YR	8550	36.96	47.26	43.09	47.69	0.000982	5.28	1691.59	242.96	0.33	8	10.3		0.00	0.38	0.00		0.38	
Reach1	1.548	100-YR	8550	35.46	47.33	41.59	47.62	0.000531	4.38	2086.41	258.73	0.25	9.57	11.87		0.05	0.26	0.00		0.26	
Reach1	1.459	100-YR	8550	34.21	47.16	40.34	47.4	0.000374	3.95	2366.19	363.45	0.21	10.65	12.95		0.06	0.21	0.00		0.21	
Reach1	1.453	100-YR	8550	32.71	47.19	38.84	47.37	0.000238	3.44	2730.29	348.02	0.17	12.18	14.48		0.06	0.16	0.00		0.22	
Reach1	1.333	100-YR	8550	27.11	46.5	38.42	47.08	0.000827	6.17	1494.81	153.15	0.31	12.19	19.39		0.06	0.52	0.00		0.58	
Reach1	1.315	100-YR	8550	28.24	46.37	38.89	46.99	0.000897	6.41	1491.41	171.29	0.32	12.15	18.13		0.06	0.56	0.00		0.56	
Reach1	1.295	100-YR	8550	27.61	45.79	38.49	46.83	0.001569	8.17	1063.92	101.74	0.41	12.4	18.18		0.06	0.91	0.00		0.91	
Reach1	1.274	100-YR	8550	31	45.45	40.71	46.59	0.002172	8.63	1090.85	194.4	0.48	9.93	14.45		0.06	1.02	0.00		1.08	
Reach1	1.262		Bridge												SOCWA CTP						
Reach1	1.249	100-YR	8550	28.22	39.04	37.37	40.82	0.004088	11.02	1027.65	291.5	0.66	8.69	10.82							
Reach1	1.235	100-YR	8550	28.03	39.01	35.85	40.34	0.002701	9.45	1208.98	402.53	0.54	9.43	10.98							
Reach1	1.168	100-YR	8550	26.65	39.12	33.32	39.49	0.001033	5.29	2328.66	465.34	0.28	10.7	12.47							
Reach1	1.092	100-YR	8550	24.93	38.71	32.29	39.16	0.00068	5.72	2239.36	409.21	0.29	12.19	13.78							
Reach1	1.032	100-YR	8610	22.96	37.76	33.52	38.77	0.001736	8.42	1494.04	379.6	0.45	11.05	14.8							
Reach1	0.976	100-YR	8610	22.93	36.62	34.04	37.99	0.003269	9.34	921.45	331.34	0.58	8.01	13.69							
Reach1	0.969		Bridge																		
Reach1	0.962	100-YR	8610	22.93	34.43	32.21	36.23	0.004154	10.9	867.56	207.86	0.66	8.41	11.5							
Reach1	0.899	100-YR	8610	22.38	33.99	32.03	34.76	0.002134	8.14	1424.08	286.26	0.49	8.71	11.61							
Reach1	0.843	100-YR	8610	20.76	33.33	30.79	34.17	0.001833	8.52	1480.55	358.91	0.46	10.71	12.57							
Reach1	0.809	100-YR	8610	20.68	32.71	29.66	33.75	0.002192	8.5	1155.84	333.78	0.49	9.19	12.03							
Reach1	0.8015		Bridge																		
Reach1	0.794	100-YR	8610	20.68	32.77	28.31	33.19	0.000986	5.83	1911.83	345.71	0.33	9.62	12.09							
Reach1	0.783	100-YR	8610	20.68	32.38	30.66	33.05	0.001763	7.62	1555.02	318.6	0.44	9.3	11.7							
Reach1	0.721	100-YR	8610	18	32.03	27.67	32.57	0.000981	6.56	1695.97	258.72	0.34	11.61	14.03							
Reach1	0.719		Bridge																		
Reach1	0.717	100-YR	8610	17.83	29.19	27.29	30.59	0.003045	9.97	1044.71	227.92	0.58	9.18	11.36							
Reach1	0.665	100-YR	8610	14.97	28.65	27.22	29.63	0.002536	8.94	1293.5	285.61	0.52	9.02	13.68							
Reach1	0.606	100-YR	8610	13.53	28.1	25.74	28.89	0.001906	8.43	1461.95	308.97	0.45	10.68	14.57							
Reach1	0.545	100-YR	8610	14.17	28.24	24.99	28.43	0.000503	4.75	3348.22	833.4	0.24	11.71	14.07							

Notes: 1. Values of Zgs were obtained from RAS Sediment Transport model at the end of long term simulation period of invert change.
2. Positive invert changes (i.e., aggradation) were set to ZERO.
3. Zgs values in red are interpolated between adjacent computed values.

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # C	Hydr Dept	Max Chl Dpth		General	Antidunes	Bend	angle		
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		(ft)	(ft)		z_{gs}	z_a	z_b	α	z_t	
Reach1	0.528	100-YR	8610	14.17	28.27	23.88	28.34	0.0002	2.96	4686.36	844.41	0.15	11.4	14.1							
Reach1	0.524		Bridge																		
Reach1	0.52	100-YR	8610	14.17	28.27	23.49	28.32	0.000148	2.45	5258.38	845	0.13	10.78	14.1							
Reach1	0.505	100-YR	8610	14.16	28.26	23.3	28.31	0.000142	2.57	5215.05	823.54	0.13	11.86	14.1							
Reach1	0.501		Bridge																		
Reach1	0.497	100-YR	8610	14.16	28.25	23.06	28.3	0.000128	2.44	5267.03	757.68	0.13	11.78	14.09							
Reach1	0.48	100-YR	8480	13.82	28.07	22.98	28.24	0.000359	4.09	2732.54	724.08	0.21	11.83	14.25							
Reach1	0.415	100-YR	8480	8.21	26.33	19.68	27.66	0.001764	9.26	920.48	73.72	0.44	13.76	18.12							
Reach1	0.4115		Bridge																		
Reach1	0.408	100-YR	8480	8.21	22.43	19.87	25.04	0.004493	12.95	654.75	63.66	0.71	10.29	14.22							
Reach1	0.36	100-YR	8480	7.43	22.52	16.9	23.7	0.001546	8.76	1030.11	120.22	0.44	12.35	15.09							
Reach1	0.295	100-YR	8480	6.73	22.55	15.56	23.19	0.000691	6.69	1569.47	241.28	0.33	12.53	15.82							
Reach1	0.228	100-YR	8480	6.28	22.58	13.66	22.94	0.000349	4.95	2102.61	384.98	0.24	13.12	16.3							
Reach1	0.169	100-YR	8480	6.28	22.55	13.48	22.82	0.000243	4.46	2410.96	393.13	0.21	14.34	16.27							
Reach1	0.118	100-YR	8480	6.28	22.04	14.48	22.63	0.000533	6.49	1618.2	292.45	0.3	14.5	15.76							
Reach1	0.103		Bridge																		
Reach1	0.088	100-YR	8480	6.61	18.49	14.48	19.67	0.001556	8.89	1032.73	176.05	0.48	10.68	11.88							
Reach1	0.078	100-YR	8480	6.61	14.98	14.98	18.73	0.007835	15.55	545.42	72.88	1	7.48	8.37							
Reach1	0	100-YR	8480	5.56	10.68	10.44	11.81	0.005005	9.97	1085.49	364.71	0.8	4.82	5.12							

Notes: 1. Values of Zgs were obtained from RAS Sediment Transport model at the end of long term simulation period of invert change.
2. Positive invert changes (i.e., aggradation) were set to ZERO.
3. Zgs values in red are interpolated between adjacent computed values.

Alternative 3 - Grade Control Local Scour																								
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl		K_u	H_t	q	d_m	h	Yu	h/Yu	d_s (h/Yu < 1)			
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)													
													Pacific Park Drive									Max	Min	Average
Reach1	6.532	100-YR	4450	184	190.01	190.01	192.49	0.011125	12.64	352.02	71.64	1												
Reach1	6.483	100-YR	4450	181.85	188.38	187.23	189.68	0.00563	9.14	486.75	98.17	0.72												
Reach1	6.342	100-YR	4450	180.46	185.18	185.18	186.47	0.013325	9.09	489.63	192.34	1		1.32	0.67	23.14	6.38	1.5	4.72	0.32	3.1	5.0	3.1	3.6
Reach1	6.336	100-YR	4450	178.96	185.34	183.68	185.8	0.002572	5.46	815.83	203.76	0.48												
Reach1	6.247	100-YR	4450	177.51	182.23	182.23	183.52	0.013325	9.09	489.63	192.34	1		1.32	0.64	23.14	6.42	1.5	4.72	0.32	3.1			
Reach1	6.241	100-YR	4450	176.01	182.43	180.73	182.88	0.002489	5.4	824.08	204.16	0.47												
Reach1	6.152	100-YR	4450	174.56	179.28	179.28	180.57	0.013324	9.09	489.64	192.34	1		1.32	0.63	23.14	6.43	1.5	4.72	0.32	3.1			
Reach1	6.147	100-YR	4450	173.06	179.49	177.78	179.94	0.002458	5.39	826.85	202.59	0.47												
Reach1	6.057	100-YR	4450	171.61	176.33	176.33	177.62	0.013322	9.09	489.67	192.34	1		1.32	0.67	23.14	6.38	1.5	4.72	0.32	3.1			
Reach1	6.052	100-YR	4450	170.11	176.49	174.83	176.95	0.002567	5.46	816.38	203.78	0.48												
Reach1	5.963	100-YR	4450	168.66	173.38	173.38	174.67	0.013315	9.09	489.74	192.35	1		1.32	0.63	23.13	6.42	1.5	4.72	0.32	3.1			
Reach1	5.957	100-YR	4450	167.16	173.58	171.88	174.04	0.002475	5.4	825.52	204.23	0.47												
Reach1	5.868	100-YR	4450	165.71	170.44	170.44	171.72	0.013295	9.08	489.97	192.35	1		1.32	0.61	23.13	6.45	1.5	4.73	0.32	3.1			
Reach1	5.862	100-YR	4450	164.21	170.66	168.94	171.11	0.002413	5.36	831.89	204.54	0.46												
Reach1	5.773	100-YR	4560	162.76	167.51	167.51	168.83	0.013528	9.22	494.78	192.5	1.01		1.32	0.56	23.69	6.57	1.5	4.75	0.32	3.1			
Reach1	5.768	100-YR	4560	161.26	167.83	166.01	168.27	0.002301	5.32	869.84	252.72	0.45												
Reach1	5.678	100-YR	4560	159.81	164.64	164.64	166.24	0.012459	10.16	448.92	140.29	1		1.32	0.54	32.50	6.81	1.5	4.83	0.31	3.8			
Reach1	5.673	100-YR	4560	158.31	165.12	163.14	165.7	0.002773	6.11	745.82	160.07	0.5												
Reach1	5.584	100-YR	4560	156.86	161.87	161.69	163.3	0.010553	9.61	474.48	142.1	0.93		1.32	0.4	32.09	7.01	1.5	5.01	0.30	3.7			
Reach1	5.578	100-YR	4560	155.36	162.37	160.19	162.9	0.002453	5.86	777.83	162.05	0.47												
Reach1	5.489	100-YR	4560	153.91	158.57	158.57	160.55	0.011884	11.29	403.92	103.32	1.01		1.32	5.17	44.13	6.59	1.5	4.66	0.32	4.8			
Reach1	5.467	100-YR	4560	147.91	154.5	152.57	155.38	0.0033	7.51	606.97	107.18	0.56												
Reach1	5.395	100-YR	4560	146.81	152.45	151.47	153.71	0.005851	9.02	505.49	105.27	0.73		1.32	0.28	43.32	7.46	1.5	5.64	0.27	4.3			
Reach1	5.389	100-YR	4560	145.31	152.77	149.97	153.43	0.002113	6.51	700.71	108.92	0.45												
Reach1	5.3	100-YR	4560	143.86	149.16	149.16	151.33	0.011531	11.84	385.25	88.59	1		1.32	0.99	51.47	6.78	1.5	5.3	0.28	5.0			
Reach1	5.294	100-YR	4560	142.36	149.14	147.64	150.34	0.004575	8.79	518.82	91.56	0.65												
Reach1	5		Bridge										Aliso Creek Road											
Reach1	4.946	100-YR	4560	141.49	147.65	146.09	148.76	0.003924	8.48	550.16	101.31	0.62										5.1	4.4	4.8
Reach1	4.919	100-YR	4560	140.92	145.56	145.56	147.61	0.010777	11.49	409.93	115.29	0.98		1.32	3.82	39.55	8.36	1.5	4.64	0.32	4.4			
Reach1	4.896	100-YR	4560	134.92	143.28	139.58	143.79	0.001226	5.87	900.47	133.73	0.37												
Reach1	4.843	100-YR	7240	133.8	139.97	139.97	142.64	0.009579	13.26	594.02	121.33	0.97		1.32	2.65	59.67	11.53	1.5	6.17	0.24	5.1			
Reach1	4.821	100-YR	7240	127.8	139.33	133.96	139.99	0.001005	6.64	1244.14	128.07	0.35												
Reach1	4.741	100-YR	7240	125.51	139.16	131.67	139.62	0.000558	5.55	1481.49	128.31	0.27												
Reach1	4.726	100-YR	7240	124.63	136.41	134.65	138.94	0.000805	12.77	566.83	64.59	0.76												
Reach1	4.725		Bridge										Awma Road											
Reach1	4.723	100-YR	7240	124.55	134.57	134.57	138.45	0.001452	15.81	457.86	59.33	1		1.32	6.21	122.03	7.9	1.5	10.02	0.15	6.7	6.7	2.2	3.7
Reach1	4.711	100-YR	7240	123.7	131.6	129.43	132.24	0.00235	6.45	1138.18	219	0.48												
Reach1	4.584	100-YR	7240	121.95	128.06	127.68	129.46	0.00851	9.5	762.48	200.67	0.86		1.32	0.35	36.08	8.05	1.5	6.11	0.25	3.7			
Reach1	4.578	100-YR	7240	120.45	128.5	126.18	129.11	0.002158	6.29	1162.2	212.29	0.46												
Reach1	4.452	100-YR	7240	118.7	124.44	124.43	126.16	0.011864	10.53	687.84	198.43	1		1.32	0.46	36.49	7.84	1.5	5.74	0.26	3.8			
Reach1	4.446	100-YR	7240	117.2	125.04	122.93	125.7	0.002447	6.53	1117.41	211.02	0.49												
Reach1	4.357	100-YR	7240	115.95	121.68	121.68	123.41	0.011976	10.56	685.8	198.37	1		1.32	0.55	36.50	7.72	1.5	5.73	0.26	3.8			
Reach1	4.351	100-YR	7240	114.45	122.17	120.18	122.86	0.002621	6.66	1099.06	217.21	0.5												
Reach1	4.262	100-YR	7240	113.2	119.23	118.93	120.69	0.009132	9.7	746.46	200.32	0.88		1.32	0.37	36.14	8	1.5	6.03	0.25	3.7			
Reach1	4.256	100-YR	7240	111.7	119.7	117.43	120.32	0.002216	6.34	1159.81	219.99	0.47												
Reach1	4.13	100-YR	7240	109.95	115.69	115.69	117.36	0.011396	10.41	728.31	241.9	0.98		1.32	0.55	29.93	7.66	1.5	5.74	0.26	3.3			
Reach1	4.124	100-YR	7240	108.45	116.11	114.18	116.81	0.002722	6.74	1085.89	216.61	0.51												
Reach1	4.016	100-YR	7240	106.95	113.76	112.68	114.76	0.004871	8.03	904.41	208.06	0.67												
Reach1	4.01	100-YR	7240	106.2	113.86	111.93	114.56	0.002732	6.75	1084.7	216.55	0.51												
Reach1	3.902	100-YR	7240	104.7	111.65	110.43	112.59	0.004375	7.78	935.12	209.53	0.64												
Reach1	3.897	100-YR	7240	103.95	111.75	109.68	112.41	0.00249	6.56	1130.77	237.41	0.49												
Reach1	3.808	100-YR	7240	102.7	108.52	108.43	110.16	0.011047	10.29	703.4	198.9	0.96		1.32	0.43	36.40	7.88	1.5	5.82	0.26	3.8			
Reach1	3.802	100-YR	7240	101.2	109.08	106.93	109.73	0.002384	6.48	1132.88	218.77	0.48												
Reach1	3.703	100-YR	7240	99.83	105.59	105.59	107.27	0.011587	10.42	706.14	245.33	0.99		1.32	0.51	29.51	7.81	1.5	5.76	0.26	3.3			
Reach1	3.698	100-YR	7240	98.32	106.13	104.05	106.76	0.002408	6.45	1243.19	357.33	0.48												
Reach1	3.599	100-YR	7240	96.95	102.89	102.66	104.43	0.009869	9.94	730.23	218.06	0.92		1.32	0.4	33.20	7.95	1.5	5.94	0.25	3.5			
Reach1	3.594	100-YR	7240	95.45	103.4	101.18	104.03	0.002266	6.37	1182.11	272.88	0.47												

Alternative 3 - Grade Control Local Scour																									
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl		K_u	H_t	q	d_m	h	Yu	h/Yu	d_s (h/Yu < 1)				
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)														
Reach1	3.476	100-YR	7240	93.83	99.68	99.53	101.29	0.01068	10.19	712.17	248.75	0.95		1.32	0.42	29.11	7.9	1.5	5.85	0.26	3.3				
Reach1	3.47	100-YR	7240	92.33	100.23	98.06	100.87	0.002344	6.44	1164.66	300.54	0.48													
Reach1	3.372	100-YR	7240	90.96	96.69	96.69	98.42	0.011976	10.56	685.8	198.37	1		1.32	0.58	36.50	7.68	1.5	5.73	0.26	3.8				
Reach1	3.366	100-YR	7240	89.46	97.14	95.19	97.84	0.002694	6.72	1089.44	216.77	0.51													
Reach1	3.277	100-YR	7240	88.21	94.21	94.07	95.64	0.009125	9.65	824.72	431.91	0.88		1.32	0.37	16.76	7.98	1.5	6	0.25	2.2				
Reach1	3.272	100-YR	7240	86.71	94.69	92.44	95.27	0.002125	6.19	1373.01	472.88	0.46													
Reach1	3.183	100-YR	8120	85.46	91.66	91.66	93.25	0.009469	10.23	888.73	382.63	0.91	Wood Can	1.32	0.55	21.22	8.06	1.5	6.2	0.24	2.6				
Reach1	3.177	100-YR	8120	83.96	92.02	89.95	92.7	0.002497	6.77	1415.37	406.96	0.5										4.1	3.0	3.8	
Reach1	3.088	100-YR	8120	82.71	88.89	88.78	90.54	0.009772	10.36	827.42	263.05	0.92		1.32	0.42	30.87	8.2	1.5	6.18	0.24	3.3				
Reach1	3.082	100-YR	8120	81.21	89.41	87.2	90.12	0.002435	6.8	1267.07	279.47	0.49													
Reach1	2.993	100-YR	8120	79.96	85.94	85.94	87.83	0.011985	11.02	736.87	199.91	1.01		1.32	0.53	40.62	8.1	1.5	5.98	0.25	4.0				
Reach1	2.987	100-YR	8120	78.46	86.56	84.45	87.3	0.002591	6.93	1250.08	323.47	0.51													
Reach1	2.908	100-YR	8120	77.33	83.36	83.36	85.2	0.011399	10.87	754.3	225.26	0.99		1.32	0.54	36.05	8.07	1.5	6.03	0.25	3.7				
Reach1	2.902	100-YR	8120	75.83	83.9	81.82	84.66	0.002669	7.01	1188.97	283.66	0.51													
Reach1	2.823	100-YR	8120	74.71	80.78	80.77	82.55	0.011	10.71	795.97	304.08	0.97		1.32	0.47	26.70	8.18	1.5	6.07	0.25	3.0				
Reach1	2.817	100-YR	8120	73.21	81.39	79.2	82.08	0.002403	6.74	1409.93	517.56	0.49													
Reach1	2.737	100-YR	8300	72.08	78.14	78.12	80.03	0.01168	11.03	752.59	200.63	1		1.32	0.49	41.37	8.21	1.5	6.06	0.25	4.1				
Reach1	2.732	100-YR	8300	70.58	78.79	76.62	79.54	0.002584	7	1205.39	222.05	0.51													
Reach1	2.652	100-YR	8300	69.46	75.5	75.5	77.41	0.011925	11.1	747.91	200.4	1.01		1.32	0.55	41.42	8.12	1.5	6.04	0.25	4.1				
Reach1	2.647	100-YR	8300	67.96	76.08	74	76.86	0.00271	7.11	1187.01	221.22	0.52													
Reach1	2.576	100-YR	8300	66.96	73	73	74.91	0.011925	11.1	747.91	200.4	1.01		1.32	0.5	41.42	8.19	1.5	6.04	0.25	4.1				
Reach1	2.571	100-YR	8300	65.46	73.65	71.5	74.41	0.002612	7.03	1201.12	221.86	0.51													
Reach1	2.482	100-YR	8300	64.21	70.47	70.25	72.17	0.009876	10.49	791.75	202.57	0.93		1.32	0.42	40.97	8.31	1.5	6.26	0.24	4.0				
Reach1	2.476	100-YR	8300	62.71	71.02	68.75	71.75	0.002439	6.88	1228.01	223.07	0.49													
Reach1	2.378	100-YR	8300	61.33	67.44	67.37	69.28	0.011172	10.88	762.76	201.14	0.98		1.32	0.47	41.26	8.23	1.5	6.11	0.25	4.0				
Reach1	2.372	100-YR	8300	59.83	68.06	65.87	68.81	0.002547	6.97	1210.91	222.3	0.5													
Reach1	2.283	100-YR	8400	58.58	64.74	64.74	66.54	0.010697	10.8	819.17	282.54	0.96		1.32	0.52	29.73	8.22	1.5	6.16	0.24	3.2				
Reach1	2.277	100-YR	8400	57.08	65.3	63.18	66.02	0.002488	6.89	1355.11	306.7	0.5													
Reach1	2.193	100-YR	8400	55.89	62.08	61.96	63.89	0.010734	10.8	777.62	201.87	0.97		1.32	0.46	41.61	8.29	1.5	6.19	0.24	4.0				
Reach1	2.187	100-YR	8400	54.39	62.68	60.46	63.43	0.002527	6.99	1223.42	222.86	0.5													
Reach1	2.103	100-YR	8400	53.21	59.28	59.28	61.21	0.011899	11.14	753.82	200.69	1.01		1.32	0.64	41.86	8.03	1.5	6.07	0.25	4.1				
Reach1	2.097	100-YR	8400	51.71	59.74	57.78	60.57	0.002929	7.31	1166.65	220.3	0.54													
Reach1	2.022	100-YR	8400	50.52	56.79	56.59	58.53	0.009991	10.57	794.73	202.72	0.94		1.32	0.44	41.44	8.34	1.5	6.27	0.24	4.0				
Reach1	2.017	100-YR	8400	49.02	57.36	55.09	58.09	0.002424	6.89	1284.6	283.92	0.49													
Reach1	1.923	100-YR	8400	47.83	54.03	53.85	55.8	0.010467	10.7	807.13	238.67	0.95		1.32	0.44	35.20	8.29	1.5	6.2	0.24	3.6				
Reach1	1.917	100-YR	8400	46.33	54.62	52.41	55.36	0.002479	6.93	1297.61	306.21	0.5													
Reach1	1.828	100-YR	8400	45.08	51.2	51.15	53.08	0.011404	11	763.53	201.18	0.99		1.32	0.49	41.75	8.25	1.5	6.12	0.25	4.1				
Reach1	1.823	100-YR	8400	43.58	51.83	49.65	52.59	0.002586	7.04	1213.22	219.06	0.51													
Reach1	1.743	100-YR	8400	42.46	48.53	48.53	50.46	0.011899	11.14	753.82	200.69	1.01		1.32	0.59	41.86	8.1	1.5	6.07	0.25	4.1				
Reach1	1.737	100-YR	8400	40.96	49.06	47.03	49.87	0.002806	7.22	1182.81	221.04	0.53													
Reach1	1.648	100-YR	8400	39.71	47.54	45.78	48.43	0.003309	7.59	1115.83	210.97	0.57		1.32	0.17	39.82	9.53	1.5	7.83	0.19	3.5				
Reach1	1.643	100-YR	8550	38.2	47.73	44.33	48.26	0.001394	5.89	1482.76	221.16	0.39													
Reach1	1.554	100-YR	8550	36.96	47.26	43.09	47.69	0.000982	5.28	1691.59	242.96	0.33													
Reach1	1.548	100-YR	8550	35.46	47.33	41.59	47.62	0.000531	4.38	2086.41	258.73	0.25													
Reach1	1.459	100-YR	8550	34.21	47.16	40.34	47.4	0.000374	3.95	2366.19	363.45	0.21													
Reach1	1.453	100-YR	8550	32.71	47.19	38.84	47.37	0.000238	3.44	2730.29	348.02	0.17													
Reach1	1.333	100-YR	8550	27.11	46.5	38.42	47.08	0.000827	6.17	1494.81	153.15	0.31													
Reach1	1.315	100-YR	8550	28.24	46.37	38.89	46.99	0.000897	6.41	1491.41	171.29	0.32													
Reach1	1.295	100-YR	8550	27.61	45.79	38.49	46.83	0.001569	8.17	1063.92	101.74	0.41													
Reach1	1.274	100-YR	8550	31	45.45	40.71	46.59	0.002172	8.63	1090.85	194.4	0.48													
Reach1	1.262		Bridge										SOCWA CTP												

Alternative 4

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Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # C	Hydr Dept	Max Chl Dpth		General	Antidunes	Bend	angle		
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		(ft)	(ft)		z_{gs}	z_a	z_b	α	z_t	
Reach1	9	100-YR	3460	248.1	257.2	254.29	258.02	0.006131	7.27	475.83	71.28	0.5	6.68	9.1							
Reach1	8.75	100-YR	3460	242.6	255.99	251.4	256.45	0.00341	5.43	636.92	93.58	0.37	6.81	13.39							
Reach1	8.5	100-YR	3460	242.6	251.4	251.4	253.78	0.028803	12.37	279.7	59.22	1	4.72	8.8							
Reach1	8.25	100-YR	3460	239.8	248.42	244.66	248.64	0.001839	3.76	920.94	315.93	0.28	5.78	8.62							
Reach1	8	100-YR	3460	239.03	246.67	245.32	247.42	0.009766	6.92	500.21	120.79	0.6	4.14	7.64							
Reach1	7.9	100-YR	3460	233.9	244.12	241.07	244.92	0.00605	7.18	481.6	74.63	0.5	6.45	10.22							
Reach1	7.838	100-YR	3460	231.87	241.94	238.88	242.66	0.007598	6.82	507.31	99.65	0.53	5.09	10.07							
Reach1	7.774	100-YR	3460	230.53	238.76	236.65	239.84	0.008981	8.34	415.06	68.9	0.6	6.02	8.23							
Reach1	7.714	100-YR	3460	228.92	237.27	235.13	237.65	0.004592	4.94	700.28	158.95	0.41	4.41	8.35							
Reach1	7.656	100-YR	3460	227.85	233.93	233.19	235.19	0.016411	9.02	383.71	92.52	0.78	4.15	6.08							
Reach1	7.62	100-YR	3460	222.9	231.28	229.81	232.49	0.011735	8.83	391.83	74.18	0.68	5.28	8.38							
Reach1	7.616		Bridge																		
Reach1	7.612	100-YR	3460	222.58	230.44	228.48	231.46	0.008875	8.09	427.59	74.6	0.6	5.73	7.86							
Reach1	7.528	100-YR	3460	221.45	227.8	225.3	228.08	0.00538	4.22	819.3	268.51	0.43	3.05	6.35							
Reach1	7.466	100-YR	3460	217.9	224.17	223.68	225.16	0.016296	7.95	435.17	149.18	0.82	2.92	6.27							
Reach1	7.353	100-YR	3460	212.71	222.84	218.56	223.01	0.001316	3.24	1043.67	235.69	0.23	6.02	10.13							
Reach1	7.297	100-YR	4660	211.16	221.41	217.76	222.23	0.004453	7.28	640.53	81.42	0.46	7.87	10.25							
Reach1	7.227	100-YR	4660	209.59	220.05	216.98	220.61	0.003913	6.04	770.96	122.09	0.42	6.31	10.46							
Reach1	7.165	100-YR	4660	207.53	216.17	215.17	218.25	0.014103	11.57	403.16	62.44	0.8	6.5	8.64							
Reach1	7.106	100-YR	4660	205.51	215.8	212.16	216.13	0.0026	4.67	998.7	175.63	0.34	5.69	10.29							
Reach1	7.056	100-YR	4660	204.43	214.27	211.04	215.15	0.00506	7.52	619.59	85.03	0.49	7.29	9.84							
Reach1	7.018	100-YR	4660	203.64	213.69	209.67	214.21	0.002934	5.77	808.02	112.12	0.38	7.21	10.05							
Reach1	6.978		Bridge												CA 73						
Reach1	6.938	100-YR	4660	201.59	212.66	207.22	212.92	0.001556	4.11	1162.25	237.8	0.27	6.99	11.07							
Reach1	6.878	100-YR	4660	198.92	212.21	206.47	212.48	0.001271	4.54	1564.06	487.27	0.26	9.61	13.29							
Reach1	6.859	100-YR	5450	197.56	212.35	203.09	212.38	0.00013	1.73	4801.5	737.72	0.09	12.14	14.79							
Reach1	6.839	100-YR	5450	195.76	212.35	201.63	212.37	0.000067	1.14	6251.64	719.25	0.06	10.79	16.59							
Reach1	6.773	100-YR	5450	193.45	212.31	199.32	212.34	0.000085	1.68	5252.85	640.8	0.07	16.05	18.86							
Reach1	6.706	100-YR	5450	191.12	212.3	197.1	212.32	0.000034	1.07	6475.65	544.73	0.05	15.88	21.18							
Reach1	6.65	100-YR	5450	188.19	212.25	194.05	212.3	0.00003	1.78	3923.78	546.77	0.07	21.77	24.06							
Reach1	6.588		Culvert												Pacific Park Drive						
Reach1	6.532	100-YR	4450	184	190.01	190.01	192.49	0.011125	12.64	352.02	71.64	1	4.91	6.01		0.08	2.19	0.00		2.27	
Reach1	6.483	100-YR	4450	181.85	188.38	187.23	189.68	0.00563	9.14	486.75	98.17	0.72	4.96	6.53		1.13	1.14	0.00		2.28	
Reach1	6.342	100-YR	4450	180.46	185.18	185.18	186.47	0.013325	9.09	489.63	192.34	1	2.55	4.72		0.07	1.13	0.00		1.20	
Reach1	6.336	100-YR	4450	178.96	185.34	183.68	185.8	0.002572	5.46	815.83	203.76	0.48	4.08	6.38		0.05	0.41	0.00		0.46	
Reach1	**6.247**	100-YR	4450	177.51	182.23	182.23	183.52	0.013325	9.09	489.63	192.34	1	2.55	4.72		0.10	1.13	3.96	53	**5.19**	right bank
Reach1	6.241	100-YR	4450	176.01	182.43	180.73	182.88	0.002489	5.4	824.08	204.16	0.47	4.12	6.42		0.00	0.40	3.24	53	3.64	right bank
Reach1	6.152	100-YR	4450	174.56	179.28	179.28	180.57	0.013324	9.09	489.64	192.34	1	2.55	4.72		0.06	1.13	0.00		1.19	
Reach1	6.147	100-YR	4450	173.06	179.49	177.78	179.94	0.002458	5.39	826.85	202.59	0.47	4.13	6.43		0.00	0.40	0.00		0.40	
Reach1	6.057	100-YR	4450	171.61	176.33	176.33	177.62	0.013322	9.09	489.67	192.34	1	2.55	4.72		0.05	1.13	0.00		1.18	
Reach1	6.052	100-YR	4450	170.11	176.49	174.83	176.95	0.002567	5.46	816.38	203.78	0.48	4.08	6.38		0.00	0.41	0.00		0.41	
Reach1	5.963	100-YR	4450	168.66	173.38	173.38	174.67	0.013315	9.09	489.74	192.35	1	2.55	4.72		0.05	1.13	2.04	35	3.22	right bank
Reach1	5.957	100-YR	4450	167.16	173.58	171.88	174.04	0.002475	5.4	825.52	204.23	0.47	4.12	6.42		0.00	0.40	1.67	35	2.07	right bank
Reach1	5.868	100-YR	4450	165.71	170.44	170.44	171.72	0.013295	9.08	489.97	192.35	1	2.55	4.73		0.10	1.13	0.00		1.23	
Reach1	5.862	100-YR	4450	164.21	170.66	168.94	171.11	0.002413	5.36	831.89	204.54	0.46	4.15	6.45		0.00	0.39	0.00		0.39	
Reach1	5.773	100-YR	4560	162.76	167.51	167.51	168.83	0.013528	9.22	494.78	192.5	1.01	2.57	4.75		0.10	1.16	0.00		1.26	
Reach1	5.768	100-YR	4560	161.26	167.83	166.01	168.27	0.002301	5.32	869.84	252.72	0.45	4.27	6.57		0.00	0.39	0.00		0.39	
Reach1	5.678	100-YR	4560	159.81	164.64	164.64	166.24	0.012459	10.16	448.92	140.29	1	3.2	4.83		0.10	1.41	0.00		1.51	
Reach1	5.673	100-YR	4560	158.31	165.12	163.14	165.7	0.002773	6.11	745.82	160.07	0.5	4.66	6.81		0.00	0.51	0.00		0.51	
Reach1	5.584	100-YR	4560	156.86	161.87	161.69	163.3	0.010553	9.61	474.48	142.1	0.93	3.34	5.01		0.07	1.27	0.00		1.34	
Reach1	5.578	100-YR	4560	155.36	162.37	160.19	162.9	0.002453	5.86	777.83	162.05	0.47	4.8	7.01		0.07	0.47	0.00		0.54	
Reach1	5.489	100-YR	4560	153.91	158.57	158.57	160.55	0.011884	11.29	403.92	103.32	1.01	3.91	4.66		0.09	1.75	0.00		1.83	
Reach1	5.467	100-YR	4560	147.91	154.5	152.57	155.38	0.0033	7.51	606.97	107.18	0.56	5.66	6.59		0.08	0.77	0.00		0.86	

Notes: 1. Values of Zgs were obtained from RAS Sediment Transport model at the end of long term simulation period of invert change.
2. Positive invert changes (i.e., aggradation) were set to ZERO.
3. Zgs values in red are interpolated between adjacent computed values.

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # C	Hydr Dept	Max Chl Dpth		General	Antidunes	Bend	angle		
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		(ft)	(ft)		z_{gs}	z_a	z_b	α	z_t	
Reach1	5.395	100-YR	4560	146.81	152.45	151.47	153.71	0.005851	9.02	505.49	105.27	0.73	4.8	5.64		0.07	1.11	0.00		1.19	
Reach1	5.389	100-YR	4560	145.31	152.77	149.97	153.43	0.002113	6.51	700.71	108.92	0.45	6.43	7.46		0.07	0.58	0.00		0.65	
Reach1	5.3	100-YR	4560	143.86	149.16	149.16	151.33	0.011531	11.84	385.25	88.59	1	4.35	5.3		0.10	1.92	0.00		2.02	
Reach1	5.294	100-YR	4560	142.36	149.14	147.64	150.34	0.004575	8.79	518.82	91.56	0.65	5.67	6.78		0.05	1.06	0.00		1.11	
Reach1	5		Bridge												Aliso Creek Road						
Reach1	4.946	100-YR	4560	141.49	147.65	146.09	148.76	0.003924	8.48	550.16	101.31	0.62	5.81	6.16		0.15	0.99	0.00		1.13	
Reach1	4.919	100-YR	4560	140.92	145.56	145.56	147.61	0.010777	11.49	409.93	115.29	0.98	4.3	4.64		0.09	1.81	0.00		1.90	
Reach1	4.896	100-YR	4560	134.92	143.28	139.58	143.79	0.001226	5.87	900.47	133.73	0.37	8.02	8.36		0.07	0.47	0.00		0.54	
Reach1	**4.843**	100-YR	7240	133.8	139.97	139.97	142.64	0.009579	13.26	594.02	121.33	0.97	5.82	6.17		0.08	2.41	0.43	20	**2.91**	right bank
Reach1	4.821	100-YR	7240	127.8	139.33	133.96	139.99	0.001005	6.64	1244.14	128.07	0.35	11.19	11.53		0.00	0.60	0.37	20	0.97	right bank
Reach1	4.741	100-YR	7240	125.51	139.16	131.67	139.62	0.000558	5.55	1481.49	128.31	0.27	13.31	13.65		0.00	0.42	0.00		0.42	
Reach1	4.726	100-YR	7240	124.63	136.41	134.65	138.94	0.000805	12.77	566.83	64.59	0.76	8.78	11.78		0.00	2.23	0.00		2.23	
Reach1	4.725		Bridge												Awma Road						
Reach1	4.723	100-YR	7240	124.55	134.57	134.57	138.45	0.001452	15.81	457.86	59.33	1	7.72	10.02		0.00	3.42	0.00		3.42	
Reach1	4.711	100-YR	7240	123.71	131.54	129.44	132.2	0.002448	6.53	1123.32	218.33	0.49	5.53	7.83		0.00	0.58	0.00		0.58	
Reach1	4.626	100-YR	7240	122.58	128.36	128.31	130.04	0.011449	10.41	695.57	198.66	0.98	3.5	5.78		0.10	1.48	0.00		1.58	
Reach1	4.62	100-YR	7240	121.08	128.94	126.81	129.59	0.002418	6.51	1122.8	212.57	0.49	5.56	7.86		0.00	0.58	0.00		0.58	
Reach1	4.535	100-YR	7240	119.96	125.7	125.69	127.42	0.011866	10.53	687.8	198.43	1	3.47	5.74		0.10	1.52	0.00		1.62	
Reach1	4.529	100-YR	7240	118.46	126.29	124.19	126.95	0.002452	6.53	1117.4	211.89	0.49	5.53	7.83		0.00	0.58	0.00		0.58	
Reach1	4.444	100-YR	7240	117.33	123.11	123.06	124.79	0.011438	10.41	695.76	198.67	0.98	3.5	5.78		0.09	1.48	0.00		1.57	
Reach1	4.438	100-YR	7240	115.83	123.69	121.56	124.34	0.002418	6.51	1121.5	211.13	0.49	5.56	7.86		0.00	0.58	0.00		0.58	
Reach1	**4.353**	100-YR	7240	114.71	120.45	120.44	122.17	0.011867	10.53	687.78	198.43	1	3.47	5.74		0.07	1.52	4.63	50	**6.22**	right bank
Reach1	4.347	100-YR	7240	113.21	121.04	118.94	121.7	0.002445	6.53	1124.89	219.72	0.49	5.53	7.83		0.00	0.58	3.72	50	4.30	right bank
Reach1	4.262	100-YR	7240	112.08	117.85	117.81	119.54	0.011486	10.42	694.86	198.64	0.98	3.5	5.77		0.08	1.49	4.61	50	6.18	left bank
Reach1	4.256	100-YR	7240	110.58	118.44	116.31	119.09	0.002414	6.5	1128.3	218.55	0.49	5.56	7.86		0.00	0.58	3.73	50	4.31	left bank
Reach1	4.171	100-YR	7240	109.46	115.2	115.19	116.92	0.011867	10.53	687.78	198.43	1	3.47	5.74		0.06	1.52	1.91	30	3.49	left bank
Reach1	4.166	100-YR	7240	107.96	115.79	113.69	116.45	0.002446	6.53	1123.65	218.34	0.49	5.53	7.83		0.00	0.58	1.54	30	2.12	left bank
Reach1	4.08	100-YR	7240	106.83	112.6	112.56	114.29	0.011486	10.42	694.85	198.64	0.98	3.5	5.77		0.06	1.49	0.00		1.54	
Reach1	4.075	100-YR	7240	105.33	113.19	111.06	113.84	0.002414	6.5	1128.3	218.56	0.49	5.56	7.86		0.00	0.58	0.00		0.58	
Reach1	3.989	100-YR	7240	104.21	109.95	109.94	111.67	0.011866	10.53	687.79	198.43	1	3.47	5.74		0.07	1.52	0.00		1.59	
Reach1	3.984	100-YR	7240	102.71	110.54	108.44	111.2	0.002446	6.53	1123.64	218.34	0.49	5.53	7.83		0.00	0.58	0.00		0.58	
Reach1	3.899	100-YR	7240	101.58	107.35	107.31	109.04	0.011485	10.42	694.87	198.64	0.98	3.5	5.77		0.06	1.49	1.91	30	3.46	left bank
Reach1	3.893	100-YR	7240	100.08	107.94	105.81	108.59	0.002414	6.5	1128.31	218.55	0.49	5.56	7.86		0.00	0.58	1.54	30	2.12	left bank
Reach1	3.808	100-YR	7240	98.96	104.7	104.69	106.42	0.011866	10.53	687.79	198.43	1	3.47	5.74		0.05	1.52	1.91	30	3.48	right bank
Reach1	3.802	100-YR	7240	97.46	105.3	103.19	105.95	0.002428	6.51	1141.53	236.75	0.49	5.54	7.84		0.00	0.58	1.54	30	2.12	right bank
Reach1	3.717	100-YR	7240	96.33	102.09	102.06	103.79	0.011626	10.46	692.21	198.56	0.99	3.49	5.76		0.05	1.50	0.00		1.55	
Reach1	3.711	100-YR	7240	94.83	102.68	100.56	103.34	0.002424	6.51	1126.87	218.49	0.49	5.55	7.85		0.00	0.58	0.00		0.58	
Reach1	3.626	100-YR	7240	93.71	99.46	99.44	101.17	0.011701	10.48	690.83	198.52	0.99	3.48	5.75		0.06	1.50	0.00		1.56	
Reach1	3.62	100-YR	7240	92.21	100.06	97.94	100.71	0.002429	6.51	1126.13	218.45	0.49	5.55	7.85		0.00	0.58	0.00		0.58	
Reach1	3.535	100-YR	7240	91.08	96.83	96.81	98.54	0.011773	10.5	689.49	198.48	0.99	3.47	5.75		0.07	1.51	0.00		1.59	
Reach1	3.529	100-YR	7240	89.58	97.42	95.31	98.08	0.002434	6.52	1125.43	218.43	0.49	5.54	7.84		0.00	0.58	0.00		0.58	
Reach1	3.444	100-YR	7240	88.46	94.23	94.19	95.92	0.011534	10.43	693.95	198.61	0.98	3.49	5.77		0.05	1.49	1.91	30	3.45	right bank
Reach1	3.438	100-YR	7240	86.96	94.81	92.69	95.47	0.002418	6.5	1127.81	218.53	0.49	5.55	7.85		0.00	0.58	1.54	30	2.12	right bank
Reach1	3.353	100-YR	7240	85.83	91.56	91.56	93.29	0.01198	10.56	685.73	198.37	1	3.46	5.73		0.08	1.53	1.91	30	3.52	right bank
Reach1	3.347	100-YR	7240	84.33	92.03	90.06	92.72	0.002664	6.7	1088.14	210.19	0.51	5.4	7.7		0.00	0.61	1.54	30	2.15	right bank
Reach1	3.262	100-YR	7240	83.21	89.43	88.94	90.75	0.007765	9.24	783.92	202.18	0.82	3.92	6.22		0.06	1.17	0.00		1.23	
Reach1	3.256	100-YR	7240	81.71	89.83	87.44	90.43	0.002063	6.2	1186.78	221.21	0.45	5.82	8.12		0.00	0.53	0.00		0.53	
Reach1	3.171	100-YR	8120	80.58	86.73	86.57	88.46	0.010368	10.55	769.84	200.89	0.95	3.85	6.15	Wood Cay	0.07	1.52	1.96	30	3.55	right bank
Reach1	3.166	100-YR	8120	79.08	87.29	85.07	88.02	0.002469	6.85	1197.28	213.28	0.5	5.91	8.21		0.00	0.64	1.65	30	2.29	right bank
Reach1	3.08	100-YR	8120	77.96	83.99	83.95	85.83	0.011563	10.9	745	200.31	1	3.73	6.03		0.05	1.63	0.00		1.68	
Reach1	3.075	100-YR	8120	76.46	84.61	82.45	85.35	0.002549	6.92	1193.9	221.78	0.5	5.85	8.15		0.00	0.66	0.00		0.66	
Reach1	2.989	100-YR	8120	75.33	81.48	81.32	83.21	0.010314	10.53	771.29	203.96	0.95	3.85	6.15		0.10	1.52	0.00		1.62	
Reach1	2.984	100-YR	8120	73.83	82.05	79.82	82.77	0.002434	6.81	1227.8	238.58	0.49	5.92	8.22		0.00	0.64	0.00		0.64	

Notes: 1. Values of Zgs were obtained from RAS Sediment Transport model at the end of long term simulation period of invert change.

2. Positive invert changes (i.e., aggradation) were set to ZERO.

3. Zgs values in red are interpolated between adjacent computed values.

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # C	Hydr Dept	Max Chl Dpth		General	Antidunes	Bend	angle		
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		(ft)	(ft)		z_{gs}	z_a	z_b	α	z_t	
Reach1	**2.899**	100-YR	8120	72.71	78.71	78.7	80.58	0.011861	10.98	739.3	199.98	1.01	3.7	6		0.06	1.65	4.88	50	**6.59**	left bank
Reach1	2.893	100-YR	8120	71.21	79.34	77.2	80.09	0.002586	6.95	1179.98	212.79	0.51	5.83	8.13		0.00	0.66	3.92	50	4.58	left bank
Reach1	2.808	100-YR	8120	70.08	76.29	76.07	77.96	0.009826	10.38	782.48	202.11	0.92	3.91	6.21		0.06	1.48	4.85	50	6.38	right bank
Reach1	2.802	100-YR	8120	68.58	76.83	74.57	77.55	0.002421	6.81	1204.7	213.49	0.49	5.95	8.25		0.00	0.64	4.01	50	4.65	right bank
Reach1	2.717	100-YR	8300	67.46	73.61	73.5	75.41	0.010819	10.78	770.18	201.5	0.97	3.85	6.15		0.06	1.59	0.00		1.65	
Reach1	2.711	100-YR	8300	65.96	74.21	72	74.96	0.00252	6.95	1215.11	222.5	0.5	5.95	8.25		0.00	0.66	0.00		0.66	
Reach1	2.626	100-YR	8300	64.83	70.98	70.87	72.78	0.010868	10.79	769.13	201.45	0.97	3.85	6.15		0.09	1.60	0.00		1.68	
Reach1	2.62	100-YR	8300	63.33	71.58	69.37	72.33	0.002524	6.96	1214.49	222.47	0.5	5.95	8.25		0.00	0.66	0.00		0.66	
Reach1	2.535	100-YR	8300	62.21	68.38	68.25	70.17	0.010654	10.73	773.85	202.69	0.96	3.87	6.17		0.09	1.58	0.00		1.67	
Reach1	2.529	100-YR	8300	60.71	68.97	66.75	69.71	0.002495	6.93	1229	232.42	0.5	5.96	8.26		0.00	0.66	0.00		0.66	
Reach1	2.444	100-YR	8300	59.58	65.69	65.64	67.53	0.011162	10.88	762.64	375.2	0.98	3.82	6.11		0.07	1.62	0.00		1.69	
Reach1	2.438	100-YR	8300	58.08	66.32	64.14	67.06	0.002507	6.98	1223.66	436.91	0.5	6	8.24		0.00	0.67	0.00		0.67	
Reach1	2.353	100-YR	8300	56.96	63.13	63	64.92	0.010613	10.72	775.33	209.53	0.96	3.87	6.17		0.00	1.57	4.92	50	6.49	right bank
Reach1	2.347	100-YR	8300	55.46	63.75	61.5	64.46	0.002412	6.83	1309.32	298.11	0.49	5.99	8.29		0.00	0.64	4.01	50	4.65	right bank
Reach1	2.262	100-YR	8400	54.33	60.5	60.4	62.33	0.010934	10.86	773.3	201.66	0.97	3.87	6.17		0.00	1.62	0.00		1.62	
Reach1	2.256	100-YR	8400	52.83	61.11	58.9	61.86	0.002543	7	1220.97	222.76	0.5	5.98	8.28		0.06	0.67	0.00		0.73	
Reach1	2.171	100-YR	8400	51.71	57.93	57.78	59.71	0.010402	10.7	785.18	203.19	0.95	3.92	6.22		0.00	1.57	0.00		1.57	
Reach1	2.166	100-YR	8400	50.21	58.52	56.28	59.27	0.002491	6.96	1236.51	230.16	0.5	6.01	8.31		0.06	0.66	0.00		0.72	
Reach1	2.08	100-YR	8400	49.08	55.21	55.15	57.08	0.011309	10.97	765.46	201.27	0.99	3.83	6.13		0.00	1.65	0.00		1.65	
Reach1	2.075	100-YR	8400	47.58	55.84	53.65	56.6	0.002571	7.03	1216.62	222.56	0.51	5.96	8.26		0.00	0.68	0.00		0.68	
Reach1	1.989	100-YR	8400	46.46	52.74	52.53	54.47	0.009955	10.56	795.61	202.76	0.93	3.98	6.28		0.00	1.53	0.00		1.53	
Reach1	1.984	100-YR	8400	44.96	53.29	51.03	54.04	0.00246	6.93	1234.18	223.35	0.5	6.03	8.33		0.05	0.66	0.00		0.71	
Reach1	1.898	100-YR	8400	43.83	49.9	49.9	51.83	0.011899	11.14	753.82	200.69	1.01	3.77	6.07		0.00	1.70	0.00		1.70	
Reach1	1.893	100-YR	8400	42.33	50.48	48.4	51.28	0.002727	7.15	1193.78	221.53	0.52	5.85	8.15		0.00	0.70	0.00		0.70	
Reach1	1.808	100-YR	8400	41.21	47.85	47.28	49.3	0.007458	9.69	870.07	209.57	0.82	4.34	6.64		0.05	1.29	4.89	50	6.23	right bank
Reach1	1.802	100-YR	8400	39.71	48.27	45.78	48.96	0.002172	6.68	1285.13	225.62	0.47	6.26	8.56		0.00	0.61	4.23	50	4.84	right bank
Reach1	1.717	100-YR	8400	38.58	47.4	44.65	48.03	0.001897	6.41	1343.2	228.17	0.44	6.52	8.82		0.00	0.56	0.00		0.56	
Reach1	1.711	100-YR	8400	37.08	47.53	43.15	47.92	0.00089	5.09	1727.93	244.46	0.31	8.15	10.45		0.00	0.35	0.00		0.35	
Reach1	1.626	100-YR	8550	35.96	47.22	42.09	47.56	0.000668	4.7	1912.12	245.47	0.28	8.96	11.26		0.00	0.30	0.00		0.30	
Reach1	1.62	100-YR	8550	34.46	47.28	40.59	47.52	0.000386	3.98	2307.95	260.08	0.22	10.52	12.82		0.00	0.22	0.00		0.22	
Reach1	1.535	100-YR	8550	33.33	47.16	39.46	47.36	0.000279	3.59	2612.91	278.31	0.19	11.53	13.83		0.00	0.18	0.00		0.18	
Reach1	1.529	100-YR	8550	31.83	47.19	37.96	47.34	0.000181	3.15	3049.22	293.56	0.15	13.06	15.36		0.00	0.14	0.00		0.14	
Reach1	1.444	100-YR	8550	30.7	47.13	36.83	47.26	0.000144	2.95	3229.33	371.62	0.14	14.13	16.43		0.00	0.12	0.00		0.12	
Reach1	1.438	100-YR	8550	29.2	47.14	35.33	47.25	0.000101	2.66	3617.8	355.75	0.12	15.64	17.94		0.00	0.10	0.00		0.10	
Reach1	1.333	100-YR	8550	27.11	46.5	38.42	47.08	0.000827	6.17	1494.81	153.15	0.31	12.19	19.39		0.00	0.52	0.00		0.52	
Reach1	1.315	100-YR	8550	28.24	46.37	38.89	46.99	0.000897	6.41	1491.41	171.29	0.32	12.15	18.13		0.00	0.56	0.00		0.56	
Reach1	1.295	100-YR	8550	27.61	45.79	38.49	46.83	0.001569	8.17	1063.92	101.74	0.41	12.4	18.18		0.00	0.91	0.00		0.91	
Reach1	1.274	100-YR	8550	31	45.45	40.71	46.59	0.002172	8.63	1090.85	194.4	0.48	9.93	14.45		0.00	1.02	0.00		1.02	
Reach1	1.262		Bridge												SOCWA CTP						
Reach1	1.249	100-YR	8550	28.22	39.04	37.37	40.82	0.004088	11.02	1027.65	291.5	0.66	8.69	10.82							
Reach1	1.235	100-YR	8550	28.03	39.01	35.85	40.34	0.002701	9.45	1208.98	402.53	0.54	9.43	10.98							
Reach1	1.168	100-YR	8550	26.65	39.12	33.32	39.49	0.001033	5.29	2328.66	465.34	0.28	10.7	12.47							
Reach1	1.092	100-YR	8550	24.93	38.71	32.29	39.16	0.00068	5.72	2239.36	409.21	0.29	12.19	13.78							
Reach1	1.032	100-YR	8610	22.96	37.76	33.52	38.77	0.001736	8.42	1494.04	379.6	0.45	11.05	14.8							
Reach1	0.976	100-YR	8610	22.93	36.62	34.04	37.99	0.003269	9.34	921.45	331.34	0.58	8.01	13.69							
Reach1	0.969		Bridge																		
Reach1	0.962	100-YR	8610	22.93	34.43	32.21	36.23	0.004154	10.9	867.56	207.86	0.66	8.41	11.5							
Reach1	0.899	100-YR	8610	22.38	33.99	32.03	34.76	0.002134	8.14	1424.08	286.26	0.49	8.71	11.61							
Reach1	0.843	100-YR	8610	20.76	33.33	30.79	34.17	0.001833	8.52	1480.55	358.91	0.46	10.71	12.57							
Reach1	0.809	100-YR	8610	20.68	32.71	29.66	33.75	0.002192	8.5	1155.84	333.78	0.49	9.19	12.03							
Reach1	0.8015		Bridge																		
Reach1	0.794	100-YR	8610	20.68	32.77	28.31	33.19	0.000986	5.83	1911.83	345.71	0.33	9.62	12.09							
Reach1	0.783	100-YR	8610	20.68	32.38	30.66	33.05	0.001763	7.62	1555.02	318.6	0.44	9.3	11.7							

Notes: 1. Values of Zgs were obtained from RAS Sediment Transport model at the end of long term simulation period of invert change.

2. Positive invert changes (i.e., aggradation) were set to ZERO.

3. Zgs values in red are interpolated between adjacent computed values.

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # C	Hydr Dept	Max Chl Dpth		General	Antidunes	Bend	angle		
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		(ft)	(ft)		z_{gs}	z_a	z_b	α	z_t	
Reach1	0.721	100-YR	8610	18	32.03	27.67	32.57	0.000981	6.56	1695.97	258.72	0.34	11.61	14.03							
Reach1	0.719		Bridge																		
Reach1	0.717	100-YR	8610	17.83	29.19	27.29	30.59	0.003045	9.97	1044.71	227.92	0.58	9.18	11.36							
Reach1	0.665	100-YR	8610	14.97	28.65	27.22	29.63	0.002536	8.94	1293.5	285.61	0.52	9.02	13.68							
Reach1	0.606	100-YR	8610	13.53	28.1	25.74	28.89	0.001906	8.43	1461.95	308.97	0.45	10.68	14.57							
Reach1	0.545	100-YR	8610	14.17	28.24	24.99	28.43	0.000503	4.75	3348.22	833.4	0.24	11.71	14.07							
Reach1	0.528	100-YR	8610	14.17	28.27	23.88	28.34	0.0002	2.96	4686.36	844.41	0.15	11.4	14.1							
Reach1	0.524		Bridge																		
Reach1	0.52	100-YR	8610	14.17	28.27	23.49	28.32	0.000148	2.45	5258.38	845	0.13	10.78	14.1							
Reach1	0.505	100-YR	8610	14.16	28.26	23.3	28.31	0.000142	2.57	5215.05	823.54	0.13	11.86	14.1							
Reach1	0.501		Bridge																		
Reach1	0.497	100-YR	8610	14.16	28.25	23.06	28.3	0.000128	2.44	5267.03	757.68	0.13	11.78	14.09							
Reach1	0.48	100-YR	8480	13.82	28.07	22.98	28.24	0.000359	4.09	2732.54	724.08	0.21	11.83	14.25							
Reach1	0.415	100-YR	8480	8.21	26.33	19.68	27.66	0.001764	9.26	920.48	73.72	0.44	13.76	18.12							
Reach1	0.4115		Bridge																		
Reach1	0.408	100-YR	8480	8.21	22.43	19.87	25.04	0.004493	12.95	654.75	63.66	0.71	10.29	14.22							
Reach1	0.36	100-YR	8480	7.43	22.52	16.9	23.7	0.001546	8.76	1030.11	120.22	0.44	12.35	15.09							
Reach1	0.295	100-YR	8480	6.73	22.55	15.56	23.19	0.000691	6.69	1569.47	241.28	0.33	12.53	15.82							
Reach1	0.228	100-YR	8480	6.28	22.58	13.66	22.94	0.000349	4.95	2102.61	384.98	0.24	13.12	16.3							
Reach1	0.169	100-YR	8480	6.28	22.55	13.48	22.82	0.000243	4.46	2410.96	393.13	0.21	14.34	16.27							
Reach1	0.118	100-YR	8480	6.28	22.04	14.48	22.63	0.000533	6.49	1618.2	292.45	0.3	14.5	15.76							
Reach1	0.103		Bridge																		
Reach1	0.088	100-YR	8480	6.61	18.49	14.48	19.67	0.001556	8.89	1032.73	176.05	0.48	10.68	11.88							
Reach1	0.078	100-YR	8480	6.61	14.98	14.98	18.73	0.007835	15.55	545.42	72.88	1	7.48	8.37							
Reach1	0	100-YR	8480	5.56	10.68	10.44	11.81	0.005005	9.97	1085.49	364.71	0.8	4.82	5.12							

Notes: 1. Values of Zgs were obtained from RAS Sediment Transport model at the end of long term simulation period of invert change.
2. Positive invert changes (i.e., aggradation) were set to ZERO.
3. Zgs values in red are interpolated between adjacent computed values.

Alternative 4 - Grade Control Local Scour																								
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl		K_u	H_t	q	d_m	h	Yu	h/Yu	d_s (h/Yu < 1)			
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)													
													Pacific Park Drive									Max	Min	Average
Reach1	6.532	100-YR	4450	184	190.01	190.01	192.49	0.011125	12.64	352.02	71.64	1												
Reach1	6.483	100-YR	4450	181.85	188.38	187.23	189.68	0.00563	9.14	486.75	98.17	0.72												
Reach1	6.342	100-YR	4450	180.46	185.18	185.18	186.47	0.013325	9.09	489.63	192.34	1		1.32	0.67	23.14	6.38	1.5	4.72	0.32	3.1	5.0	3.1	3.6
Reach1	6.336	100-YR	4450	178.96	185.34	183.68	185.8	0.002572	5.46	815.83	203.76	0.48												
Reach1	6.247	100-YR	4450	177.51	182.23	182.23	183.52	0.013325	9.09	489.63	192.34	1		1.32	0.64	23.14	6.42	1.5	4.72	0.32	3.1			
Reach1	6.241	100-YR	4450	176.01	182.43	180.73	182.88	0.002489	5.4	824.08	204.16	0.47												
Reach1	6.152	100-YR	4450	174.56	179.28	179.28	180.57	0.013324	9.09	489.64	192.34	1		1.32	0.63	23.14	6.43	1.5	4.72	0.32	3.1			
Reach1	6.147	100-YR	4450	173.06	179.49	177.78	179.94	0.002458	5.39	826.85	202.59	0.47												
Reach1	6.057	100-YR	4450	171.61	176.33	176.33	177.62	0.013322	9.09	489.67	192.34	1		1.32	0.67	23.14	6.38	1.5	4.72	0.32	3.1			
Reach1	6.052	100-YR	4450	170.11	176.49	174.83	176.95	0.002567	5.46	816.38	203.78	0.48												
Reach1	5.963	100-YR	4450	168.66	173.38	173.38	174.67	0.013315	9.09	489.74	192.35	1		1.32	0.63	23.13	6.42	1.5	4.72	0.32	3.1			
Reach1	5.957	100-YR	4450	167.16	173.58	171.88	174.04	0.002475	5.4	825.52	204.23	0.47												
Reach1	5.868	100-YR	4450	165.71	170.44	170.44	171.72	0.013295	9.08	489.97	192.35	1		1.32	0.61	23.13	6.45	1.5	4.73	0.32	3.1			
Reach1	5.862	100-YR	4450	164.21	170.66	168.94	171.11	0.002413	5.36	831.89	204.54	0.46												
Reach1	5.773	100-YR	4560	162.76	167.51	167.51	168.83	0.013528	9.22	494.78	192.5	1.01		1.32	0.56	23.69	6.57	1.5	4.75	0.32	3.1			
Reach1	5.768	100-YR	4560	161.26	167.83	166.01	168.27	0.002301	5.32	869.84	252.72	0.45												
Reach1	5.678	100-YR	4560	159.81	164.64	164.64	166.24	0.012459	10.16	448.92	140.29	1		1.32	0.54	32.50	6.81	1.5	4.83	0.31	3.8			
Reach1	5.673	100-YR	4560	158.31	165.12	163.14	165.7	0.002773	6.11	745.82	160.07	0.5												
Reach1	5.584	100-YR	4560	156.86	161.87	161.69	163.3	0.010553	9.61	474.48	142.1	0.93		1.32	0.4	32.09	7.01	1.5	5.01	0.30	3.7			
Reach1	5.578	100-YR	4560	155.36	162.37	160.19	162.9	0.002453	5.86	777.83	162.05	0.47												
Reach1	5.489	100-YR	4560	153.91	158.57	158.57	160.55	0.011884	11.29	403.92	103.32	1.01		1.32	5.17	44.13	6.59	1.5	4.66	0.32	4.8			
Reach1	5.467	100-YR	4560	147.91	154.5	152.57	155.38	0.0033	7.51	606.97	107.18	0.56												
Reach1	5.395	100-YR	4560	146.81	152.45	151.47	153.71	0.005851	9.02	505.49	105.27	0.73		1.32	0.28	43.32	7.46	1.5	5.64	0.27	4.3			
Reach1	5.389	100-YR	4560	145.31	152.77	149.97	153.43	0.002113	6.51	700.71	108.92	0.45												
Reach1	5.3	100-YR	4560	143.86	149.16	149.16	151.33	0.011531	11.84	385.25	88.59	1		1.32	0.99	51.47	6.78	1.5	5.3	0.28	5.0			
Reach1	5.294	100-YR	4560	142.36	149.14	147.64	150.34	0.004575	8.79	518.82	91.56	0.65												
Reach1	5		Bridge										Aliso Creek Road											
Reach1	4.946	100-YR	4560	141.49	147.65	146.09	148.76	0.003924	8.48	550.16	101.31	0.62										5.1	4.4	4.8
Reach1	4.919	100-YR	4560	140.92	145.56	145.56	147.61	0.010777	11.49	409.93	115.29	0.98		1.32	3.82	39.55	8.36	1.5	4.64	0.32	4.4			
Reach1	4.896	100-YR	4560	134.92	143.28	139.58	143.79	0.001226	5.87	900.47	133.73	0.37												
Reach1	4.843	100-YR	7240	133.8	139.97	139.97	142.64	0.009579	13.26	594.02	121.33	0.97		1.32	2.65	59.67	11.53	1.5	6.17	0.24	5.1			
Reach1	4.821	100-YR	7240	127.8	139.33	133.96	139.99	0.001005	6.64	1244.14	128.07	0.35												
Reach1	4.741	100-YR	7240	125.51	139.16	131.67	139.62	0.000558	5.55	1481.49	128.31	0.27												
Reach1	4.726	100-YR	7240	124.63	136.41	134.65	138.94	0.000805	12.77	566.83	64.59	0.76												
Reach1	4.725		Bridge										Awma Road											
Reach1	4.723	100-YR	7240	124.55	134.57	134.57	138.45	0.001452	15.81	457.86	59.33	1		1.32	6.25	122.03	7.83	1.5	10.02	0.15	6.7	6.7	3.8	4.0
Reach1	4.711	100-YR	7240	123.71	131.54	129.44	132.2	0.002448	6.53	1123.32	218.33	0.49												
Reach1	4.626	100-YR	7240	122.58	128.36	128.31	130.04	0.011449	10.41	695.57	198.66	0.98		1.32	0.45	36.44	7.86	1.5	5.78	0.26	3.8			
Reach1	4.62	100-YR	7240	121.08	128.94	126.81	129.59	0.002418	6.51	1122.8	212.57	0.49												
Reach1	4.535	100-YR	7240	119.96	125.7	125.69	127.42	0.011866	10.53	687.8	198.43	1		1.32	0.47	36.49	7.83	1.5	5.74	0.26	3.8			
Reach1	4.529	100-YR	7240	118.46	126.29	124.19	126.95	0.002452	6.53	1117.4	211.89	0.49												
Reach1	4.444	100-YR	7240	117.33	123.11	123.06	124.79	0.011438	10.41	695.76	198.67	0.98		1.32	0.45	36.44	7.86	1.5	5.78	0.26	3.8			
Reach1	4.438	100-YR	7240	115.83	123.69	121.56	124.34	0.002418	6.51	1121.5	211.13	0.49												
Reach1	4.353	100-YR	7240	114.71	120.45	120.44	122.17	0.011867	10.53	687.78	198.43	1		1.32	0.47	36.49	7.83	1.5	5.74	0.26	3.8			
Reach1	4.347	100-YR	7240	113.21	121.04	118.94	121.7	0.002445	6.53	1124.89	219.72	0.49												
Reach1	4.262	100-YR	7240	112.08	117.85	117.81	119.54	0.011486	10.42	694.86	198.64	0.98		1.32	0.45	36.45	7.86	1.5	5.77	0.26	3.8			
Reach1	4.256	100-YR	7240	110.58	118.44	116.31	119.09	0.002414	6.5	1128.3	218.55	0.49												
Reach1	4.171	100-YR	7240	109.46	115.2	115.19	116.92	0.011867	10.53	687.78	198.43	1		1.32	0.47	36.49	7.83	1.5	5.74	0.26	3.8			
Reach1	4.166	100-YR	7240	107.96	115.79	113.69	116.45	0.002446	6.53	1123.65	218.34	0.49												
Reach1	4.08	100-YR	7240	106.83	112.6	112.56	114.29	0.011486	10.42	694.85	198.64	0.98		1.32	0.45	36.45	7.86	1.5	5.77	0.26	3.8			
Reach1	4.075	100-YR	7240	105.33	113.19	111.06	113.84	0.002414	6.5	1128.3	218.56	0.49												
Reach1	3.989	100-YR	7240	104.21	109.95	109.94	111.67	0.011866	10.53	687.79	198.43	1		1.32	0.47	36.49	7.83	1.5	5.74	0.26	3.8			
Reach1	3.984	100-YR	7240	102.71	110.54	108.44	111.2	0.002446	6.53	1123.64	218.34	0.49												
Reach1	3.899	100-YR	7240	101.58	107.35	107.31	109.04	0.011485	10.42	694.87	198.64	0.98		1.32	0.45	36.45	7.86	1.5	5.77	0.26	3.8			
Reach1	3.893	100-YR	7240	100.08	107.94	105.81	108.59	0.002414	6.5	1128.31	218.55	0.49												
Reach1	3.808	100-YR	7240	98.96	104.7	104.69	106.42	0.011866	10.53	687.79	198.43	1		1.32	0.47	36.49	7.84	1.5	5.74	0.26	3.8			
Reach1	3.802	100-YR	7240	97.46	105.3	103.19	105.95	0.002428	6.51	1141.53	236.75	0.49												

Alternative 4 - Grade Control Local Scour																								
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl		K_u	H_t	q	d_m	h	Yu	h/Yu	d_s (h/Yu < 1)			
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)													
Reach1	3.717	100-YR	7240	96.33	102.09	102.06	103.79	0.011626	10.46	692.21	198.56	0.99		1.32	0.45	36.46	7.85	1.5	5.76	0.26	3.8			
Reach1	3.711	100-YR	7240	94.83	102.68	100.56	103.34	0.002424	6.51	1126.87	218.49	0.49												
Reach1	3.626	100-YR	7240	93.71	99.46	99.44	101.17	0.011701	10.48	690.83	198.52	0.99		1.32	0.46	36.47	7.85	1.5	5.75	0.26	3.8			
Reach1	3.62	100-YR	7240	92.21	100.06	97.94	100.71	0.002429	6.51	1126.13	218.45	0.49												
Reach1	3.535	100-YR	7240	91.08	96.83	96.81	98.54	0.011773	10.5	689.49	198.48	0.99		1.32	0.46	36.48	7.84	1.5	5.75	0.26	3.8			
Reach1	3.529	100-YR	7240	89.58	97.42	95.31	98.08	0.002434	6.52	1125.43	218.43	0.49												
Reach1	3.444	100-YR	7240	88.46	94.23	94.19	95.92	0.011534	10.43	693.95	198.61	0.98		1.32	0.45	36.45	7.85	1.5	5.77	0.26	3.8			
Reach1	3.438	100-YR	7240	86.96	94.81	92.69	95.47	0.002418	6.5	1127.81	218.53	0.49										4.1	2.7	3.9
Reach1	3.353	100-YR	7240	85.83	91.56	91.56	93.29	0.01198	10.56	685.73	198.37	1		1.32	0.57	36.50	7.7	1.5	5.73	0.26	3.8			
Reach1	3.347	100-YR	7240	84.33	92.03	90.06	92.72	0.002664	6.7	1088.14	210.19	0.51												
Reach1	3.262	100-YR	7240	83.21	89.43	88.94	90.75	0.007765	9.24	783.92	202.18	0.82		1.32	0.32	35.81	8.12	1.5	6.22	0.24	3.6			
Reach1	3.256	100-YR	7240	81.71	89.83	87.44	90.43	0.002063	6.2	1186.78	221.21	0.45												
Reach1	3.171	100-YR	8120	80.58	86.73	86.57	88.46	0.010368	10.55	769.84	200.89	0.95	Wood Can	1.32	0.44	40.42	8.21	1.5	6.15	0.24	4.0			
Reach1	3.166	100-YR	8120	79.08	87.29	85.07	88.02	0.002469	6.85	1197.28	213.28	0.5												
Reach1	3.08	100-YR	8120	77.96	83.99	83.95	85.83	0.011563	10.9	745	200.31	1		1.32	0.48	40.54	8.15	1.5	6.03	0.25	4.0			
Reach1	3.075	100-YR	8120	76.46	84.61	82.45	85.35	0.002549	6.92	1193.9	221.78	0.5												
Reach1	2.989	100-YR	8120	75.33	81.48	81.32	83.21	0.010314	10.53	771.29	203.96	0.95		1.32	0.44	39.81	8.22	1.5	6.15	0.24	3.9			
Reach1	2.984	100-YR	8120	73.83	82.05	79.82	82.77	0.002434	6.81	1227.8	238.58	0.49												
Reach1	2.899	100-YR	8120	72.71	78.71	78.7	80.58	0.011861	10.98	739.3	199.98	1.01		1.32	0.49	40.60	8.13	1.5	6	0.25	4.0			
Reach1	2.893	100-YR	8120	71.21	79.34	77.2	80.09	0.002586	6.95	1179.98	212.79	0.51												
Reach1	2.808	100-YR	8120	70.08	76.29	76.07	77.96	0.009826	10.38	782.48	202.11	0.92		1.32	0.41	40.18	8.25	1.5	6.21	0.24	3.9			
Reach1	2.802	100-YR	8120	68.58	76.83	74.57	77.55	0.002421	6.81	1204.7	213.49	0.49												
Reach1	2.717	100-YR	8300	67.46	73.61	73.5	75.41	0.010819	10.78	770.18	201.5	0.97		1.32	0.45	41.19	8.25	1.5	6.15	0.24	4.0			
Reach1	2.711	100-YR	8300	65.96	74.21	72	74.96	0.00252	6.95	1215.11	222.5	0.5												
Reach1	2.626	100-YR	8300	64.83	70.98	70.87	72.78	0.010868	10.79	769.13	201.45	0.97		1.32	0.45	41.20	8.25	1.5	6.15	0.24	4.0			
Reach1	2.62	100-YR	8300	63.33	71.58	69.37	72.33	0.002524	6.96	1214.49	222.47	0.5												
Reach1	2.535	100-YR	8300	62.21	68.38	68.25	70.17	0.010654	10.73	773.85	202.69	0.96		1.32	0.46	40.95	8.26	1.5	6.17	0.24	4.0			
Reach1	2.529	100-YR	8300	60.71	68.97	66.75	69.71	0.002495	6.93	1229	232.42	0.5												
Reach1	2.444	100-YR	8300	59.58	65.69	65.64	67.53	0.011162	10.88	762.64	375.2	0.98		1.32	0.47	22.12	8.24	1.5	6.11	0.25	2.7			
Reach1	2.438	100-YR	8300	58.08	66.32	64.14	67.06	0.002507	6.98	1223.66	436.91	0.5												
Reach1	2.353	100-YR	8300	56.96	63.13	63	64.92	0.010613	10.72	775.33	209.53	0.96		1.32	0.46	39.61	8.29	1.5	6.17	0.24	3.9			
Reach1	2.347	100-YR	8300	55.46	63.75	61.5	64.46	0.002412	6.83	1309.32	298.11	0.49												
Reach1	2.262	100-YR	8400	54.33	60.5	60.4	62.33	0.010934	10.86	773.3	201.66	0.97		1.32	0.47	41.65	8.28	1.5	6.17	0.24	4.0			
Reach1	2.256	100-YR	8400	52.83	61.11	58.9	61.86	0.002543	7	1220.97	222.76	0.5												
Reach1	2.171	100-YR	8400	51.71	57.93	57.78	59.71	0.010402	10.7	785.18	203.19	0.95		1.32	0.44	41.34	8.31	1.5	6.22	0.24	4.0			
Reach1	2.166	100-YR	8400	50.21	58.52	56.28	59.27	0.002491	6.96	1236.51	230.16	0.5												
Reach1	2.08	100-YR	8400	49.08	55.21	55.15	57.08	0.011309	10.97	765.46	201.27	0.99		1.32	0.48	41.73	8.26	1.5	6.13	0.24	4.1			
Reach1	2.075	100-YR	8400	47.58	55.84	53.65	56.6	0.002571	7.03	1216.62	222.56	0.51												
Reach1	1.989	100-YR	8400	46.46	52.74	52.53	54.47	0.009955	10.56	795.61	202.76	0.93		1.32	0.43	41.43	8.33	1.5	6.28	0.24	4.0			
Reach1	1.984	100-YR	8400	44.96	53.29	51.03	54.04	0.00246	6.93	1234.18	223.35	0.5												
Reach1	1.898	100-YR	8400	43.83	49.9	49.9	51.83	0.011899	11.14	753.82	200.69	1.01		1.32	0.55	41.86	8.15	1.5	6.07	0.25	4.1			
Reach1	1.893	100-YR	8400	42.33	50.48	48.4	51.28	0.002727	7.15	1193.78	221.53	0.52												
Reach1	1.808	100-YR	8400	41.21	47.85	47.28	49.3	0.007458	9.69	870.07	209.57	0.82		1.32	0.34	40.08	8.56	1.5	6.64	0.23	3.8			
Reach1	1.802	100-YR	8400	39.71	48.27	45.78	48.96	0.002172	6.68	1285.13	225.62	0.47												
Reach1	1.717	100-YR	8400	38.58	47.4	44.65	48.03	0.001897	6.41	1343.2	228.17	0.44		1.32	0.11	36.81	10.45	1.5	8.82	0.17	3.2			
Reach1	1.711	100-YR	8400	37.08	47.53	43.15	47.92	0.00089	5.09	1727.93	244.46	0.31												
Reach1	1.626	100-YR	8550	35.96	47.22	42.09	47.56	0.000668	4.7	1912.12	245.47	0.28												
Reach1	1.62	100-YR	8550	34.46	47.28	40.59	47.52	0.000386	3.98	2307.95	260.08	0.22												
Reach1	1.535	100-YR	8550	33.33	47.16	39.46	47.36	0.000279	3.59	2612.91	278.31	0.19												
Reach1	1.529	100-YR	8550	31.83	47.19	37.96	47.34	0.000181	3.15	3049.22	293.56	0.15												
Reach1	1.444	100-YR	8550	30.7	47.13	36.83	47.26	0.000144	2.95	3229.33	371.62	0.14												
Reach1	1.438	100-YR	8550	29.2	47.14	35.33	47.25	0.000101	2.66	3617.8	355.75	0.12												
Reach1	1.333	100-YR	8550	27.11	46.5	38.42	47.08	0.000827	6.17	1494.81	153.15	0.31												
Reach1	1.315	100-YR	8550	28.24	46.37	38.89	46.99	0.000897	6.41	1491.41	171.29	0.32												
Reach1	1.295	100-YR	8550	27.61	45.79	38.49	46.83	0.001569	8.17	1063.92	101.74	0.41												
Reach1	1.274	100-YR	8550	31	45.45	40.71	46.59	0.002172	8.63	1090.85	194.4	0.48												
Reach1	1.262		Bridge										SOCWA CTP											

Attachment E

Bank Energy Index (BEI) Results

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Aliso Creek - Summary of Fluvial Erosion Potential along East (Left) Bank									
River Mile	Bank Along Outside of Bend	Bank Along Inside of Bend	BEI Quartile	Risk Category	Physical Factors Decreasing Fluvial Erosion Potential				Fluvial Erosion Potential
					Clay/ Bedrock in Toe	Depositional Berm At Toe	Woody Vegetation Along Toe	Existing Bank Protection in Good Condition	
Sulphur Creek									
0.120			3	Mod.					M
0.105	X		4	High					H
0.088	X		1	Low					L
0.067			4	High					H
0.036			4	High					H
0.023			3	Mod.					M
Aliso Creek									
4.854			3	Mod.				X	L
4.785			3	Mod.					M
4.717		X							L
4.656		X							L
4.595		X							L
4.522	X		3	Mod.					M
4.464		X							L
4.398			1	Low					L
4.330	X		2	Low		X	X		L
4.266		X							L
4.199			1	Low					L
4.138	X		3	Mod.		X	X		L
4.067			4	High					H
4.003		X							L
3.937			3	Mod.					M
3.872	X		2	Low			X		L
3.810			3	Mod.					M
3.741		X							L
3.677	X		2	Low	X		X		L
3.657			2	Low					L
3.639			3	Mod.					M
3.621			4	High					H
3.613			3	Mod.					M
3.604			4	High					H
3.601			4	High					H
3.594		X							L
3.589		X							L
3.580		X							L

Aliso Creek - Summary of Fluvial Erosion Potential along East (Left) Bank									
River Mile	Bank Along Outside of Bend	Bank Along Inside of Bend	BEI Quartile	Risk Category	Physical Factors Decreasing Fluvial Erosion Potential				Fluvial Erosion Potential
					Clay/ Bedrock in Toe	Depositional Berm At Toe	Woody Vegetation Along Toe	Existing Bank Protection in Good Condition	
3.567		X							L
3.555		X							L
3.535		X							L
3.505	X		3	Mod.		X	X		L
3.484			4	High					H
3.465			1	Low					L
3.444			3	Mod.					M
3.423			2	Low					L
3.399			2	Low					L
3.382			1	Low					L
3.366		X							L
3.346		X							L
3.335		X							L
3.314		X							L
3.291		X							L
3.276		X							L
3.257	X		1	Low			X		L
3.243	X		2	Low			X		L
3.231	X		1	Low			X		L
3.214	X		1	Low			X	X	L
3.191	X		1	Low		X	X		L
3.169	X		2	Low		X	X	X	L
3.149	X		1	Low		X	X	X	L
3.131	X		2	Low		X	X	X	L
3.110	X		4	High		X	X	X	M
3.095	X		4	High		X	X	X	M
3.074	X		3	Mod.					M
3.057	X		3	Mod.					M
3.033	X		3	Mod.	X				L
3.014	X		4	High					H
3.000	X		4	High					H
2.985	X		1	Low					L
2.967		X							L
2.945		X							L
2.919		X							L
2.898			4	High					H

Aliso Creek - Summary of Fluvial Erosion Potential along East (Left) Bank									
River Mile	Bank Along Outside of Bend	Bank Along Inside of Bend	BEI Quartile	Risk Category	Physical Factors Decreasing Fluvial Erosion Potential				Fluvial Erosion Potential
					Clay/ Bedrock in Toe	Depositional Berm At Toe	Woody Vegetation Along Toe	Existing Bank Protection in Good Condition	
2.881			3	Mod.					M
2.864			3	Mod.					M
2.842			4	High					H
2.823			2	Low					L
2.802			2	Low				X	L
2.784			1	Low				X	L
2.768	X		2	Low		X	X	X	L
2.753	X		2	Low		X	X	X	L
2.736	X		1	Low				X	L
2.713	X		2	Low					L
2.692	X		2	Low					L
2.668	X		1	Low					L
2.649			1	Low					L
2.634			2	Low					L
2.594			1	Low					L
2.565		X							L
2.544		X							L
2.509		X							L
2.479		X							L
2.456	X		4	High					H
2.434	X		2	Low					L
2.412	X		2	Low					L
2.392	X		1	Low					L
2.372	X		2	Low					L
2.355		X							L
2.334		X							L
2.312		X							L
2.294		X							L
2.270		X							L
2.243		X							L
2.233		X							L
2.208		X							L
2.193		X							L
2.167			2	Low					L
2.149			3	Mod.					M
2.131			3	Mod.					M

Aliso Creek - Summary of Fluvial Erosion Potential along East (Left) Bank									
River Mile	Bank Along Outside of Bend	Bank Along Inside of Bend	BEI Quartile	Risk Category	Physical Factors Decreasing Fluvial Erosion Potential				Fluvial Erosion Potential
					Clay/ Bedrock in Toe	Depositional Berm At Toe	Woody Vegetation Along Toe	Existing Bank Protection in Good Condition	
2.113			4	High					H
2.097			2	Low					L
2.076			3	Mod.					M
2.056			4	High					H
2.035			3	Mod.					M
2.013			4	High					H
1.989			3	Mod.				X	L
1.971	X		4	High				X	M
1.955	X		4	High	X				M
1.930	X		2	Low	X				L
1.904		X							L
1.887		X							L
1.865		X							L
1.843			1	Low					L
1.817			2	Low					L
1.789			3	Mod.					M
1.767			4	High					H
1.746			1	Low					L
1.723			1	Low					L
1.703	X		2	Low		X	X		L
1.684	X		3	Mod.	X	X	X		L
1.661	X		3	Mod.	X	X	X	X	L
1.644	X		3	Mod.				X	L
1.625	X		3	Mod.				X	L
1.608	X		4	High				X	M
1.586	X		4	High					H
1.569	X		3	Mod.					M
1.543	X		2	Low					L
1.520		X							L
1.496		X							L
1.464	X		2	Low		X			L
1.449	X		2	Low		X			L
1.429	X		2	Low		X			L
1.410	X		1	Low		X			L
1.391	X		1	Low					L
1.370	X		1	Low					L

Aliso Creek - Summary of Fluvial Erosion Potential along East (Left) Bank

River Mile	Bank Along Outside of Bend	Bank Along Inside of Bend	BEI Quartile	Risk Category	Physical Factors Decreasing Fluvial Erosion Potential				Fluvial Erosion Potential
					Clay/ Bedrock in Toe	Depositional Berm At Toe	Woody Vegetation Along Toe	Existing Bank Protection in Good Condition	
1.353			1	Low					L
1.333			1	Low					L
1.315			1	Low					L
1.295			1	Low					L
1.274			3	Mod.				X	L

Aliso Creek - Summary of Fluvial Erosion Potential along West (Right) Bank

River Mile	Bank Along Outside of Bend		Bank Along Inside of Bend	BEI Quartile	Risk Category	Physical Factors Decreasing Fluvial Erosion Potential				Fluvial Erosion Potential
						Clay/ Bedrock in Toe	Depositional Berm At Toe	Woody Vegetation Along Toe	Existing Bank Protection in Good Condition	
	Sulphur Creek									
	Not Applicable									
	Aliso Creek									
5.014			X							L
5.011			X							L
4.984			X							L
4.916			X							L
4.854			X							L
4.785				3	Mod.					M
4.717	X			3	Mod.	X		X		L
4.656	X			2	Low			X		L
4.595	X			4	High			X		M
4.522			X							L
4.464	X			4	High					H
4.398				1	Low					L
4.330			X							L
4.266	X			3	Mod.			X		L

Aliso Creek - Summary of Fluvial Erosion Potential along West (Right) Bank										
River Mile	Bank Along Outside of Bend		Bank Along Inside of Bend	BEI Quartile	Risk Category	Physical Factors Decreasing Fluvial Erosion Potential				Fluvial Erosion Potential
						Clay/ Bedrock in Toe	Depositional Berm At Toe	Woody Vegetation Along Toe	Existing Bank Protection in Good Condition	
4.199				1	Low					L
4.138			X							L
4.067				4	High					H
4.003	X			3	Mod.	X				L
3.937				3	Mod.					M
3.872			X							L
3.810				3	Mod.					M
3.741	X			4	High			X		M
3.677			X							L
3.657				2	Low					L
3.639				3	Mod.					M
3.621				4	High					H
3.613				3	Mod.					M
3.604				4	High					H
3.601				4	High					H
3.594	X			4	High	X				M
3.589	X			4	High	X				M
3.580	X			4	High					H
3.567	X			4	High					H
3.555	X			4	High					H
3.535	X			4	High					H
3.505			X							L
3.484				4	High					H
3.465				1	Low					L
3.444				3	Mod.					M
3.423				2	Low					L
3.399				2	Low					L
3.382				1	Low					L
3.366	X			2	Low		X	X		L
3.346	X			2	Low		X	X		L
3.335	X			3	Mod.		X	X		L
3.314	X			3	Mod.		X	X		L
3.291	X			1	Low		X	X		L
3.276	X			1	Low	X	X	X		L
3.257			X							L
3.243			X							L

Aliso Creek - Summary of Fluvial Erosion Potential along West (Right) Bank										
River Mile	Bank Along Outside of Bend		Bank Along Inside of Bend	BEI Quartile	Risk Category	Physical Factors Decreasing Fluvial Erosion Potential				Fluvial Erosion Potential
						Clay/ Bedrock in Toe	Depositional Berm At Toe	Woody Vegetation Along Toe	Existing Bank Protection in Good Condition	
3.231			X							L
3.214			X							L
3.191			X							L
3.169			X							L
3.149			X							L
3.131			X							L
3.110			X							L
3.095			X							L
3.074			X							L
3.057			X							L
3.033			X							L
3.014			X							L
3.000			X							L
2.985			X							L
2.967	X			1	Low					L
2.945	X			4	High				X	M
2.919	X			3	Mod.	X			X	L
2.898				4	High					H
2.881				3	Mod.					M
2.864				3	Mod.					M
2.842				4	High					H
2.823				2	Low					L
2.802				2	Low					L
2.784				1	Low					L
2.768			X							L
2.753			X							L
2.736			X							L
2.713			X							L
2.692			X							L
2.668			X							L
2.649				1	Low					L
2.634				2	Low					L
2.594				1	Low					L
2.565	X			1	Low					L
2.544	X			1	Low					L
2.509	X			3	Mod.					M

Aliso Creek - Summary of Fluvial Erosion Potential along West (Right) Bank

River Mile	Bank Along Outside of Bend		Bank Along Inside of Bend	BEI Quartile	Risk Category	Physical Factors Decreasing Fluvial Erosion Potential				Fluvial Erosion Potential
						Clay/ Bedrock in Toe	Depositional Berm At Toe	Woody Vegetation Along Toe	Existing Bank Protection in Good Condition	
2.479	X			4	High					H
2.456			X							L
2.434			X							L
2.412			X							L
2.392			X							L
2.372			X							L
2.355	X			1	Low					L
2.334	X			1	Low					L
2.312	X			1	Low					L
2.294	X			2	Low					L
2.270	X			3	Mod.					M
2.243	X			4	High	X				M
2.233	X			2	Low	X				L
2.208	X			4	High				X	M
2.193	X			2	Low				X	L
2.167				2	Low					L
2.149				3	Mod.					M
2.131				3	Mod.					M
2.113				4	High					H
2.097				2	Low					L
2.076				3	Mod.					M
2.056				4	High					H
2.035				3	Mod.					M
2.013				4	High					H
1.989				3	Mod.					M
1.971			X							L
1.955			X							L
1.930			X							L
1.904			X							L
1.887	X			2	Low					L
1.865	X			1	Low					L
1.843				1	Low				X	L
1.817				2	Low					L
1.789				3	Mod.					M
1.767				4	High					H
1.746				1	Low					L

Aliso Creek - Summary of Fluvial Erosion Potential along West (Right) Bank										
River Mile	Bank Along Outside of Bend		Bank Along Inside of Bend	BEI Quartile	Risk Category	Physical Factors Decreasing Fluvial Erosion Potential				Fluvial Erosion Potential
						Clay/ Bedrock in Toe	Depositional Berm At Toe	Woody Vegetation Along Toe	Existing Bank Protection in Good Condition	
1.723				1	Low					L
1.703			X							L
1.684			X							L
1.661			X							L
1.644			X							L
1.625			X							L
1.608			X							L
1.586			X							L
1.569			X							L
1.543			X							L
1.520	X			4	High					H
1.496	X			4	High	X				M
1.464				2	Low		X			L
1.449			X							L
1.429			X							L
1.410			X							L
1.391			X							L
1.370			X							L
1.353				1	Low					L
1.333				1	Low					L
1.315				1	Low					L
1.295				1	Low					L
1.274				3	Mod.				X	L

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