APPENDIX 3A

RIPARIAN VEGETATION STUDY—
HYDROLOGIC ANALYSIS METHODOLOGY

Riparian Vegetation Study - Hydrologic Analysis Methodology

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Project Description

A study of impacts to riparian vegetation from operations of the Klamath Hydroelectric Project (KHP) is required to complete application for Federal Energy Regulatory Commission (FERC) relicensing of the facilities. A collaborative work group including federal and state resource agency staff, non-governmental organizations, local stakeholders, PacifiCorp (current KHP owner/operator) and consultants and contractors for the relicensing effort, including CH2M HILL, were responsible for developing a work plan for the study. The project, located in the Klamath River basin of southern Oregon and northern California, includes powerhouses on Lake Ewauna, J.C. Boyle reservoir, Fall Creek, and Copco No. 2 reservoir. Distinct reaches to be addressed are comprised of Link River, Keno Canyon, J.C. Boyle bypass, J.C. Boyle peaking, Fall Creek, Copco, and Iron Gate reaches, located below Iron Gate dam. Each reservoir is operated under different constraints. For example, Keno is operated to maintain a fixed level in the reservoir for irrigation, while J.C. Boyle is operated to maximize hydropower generation as a peaking facility. Different operational characteristics result in significantly varied flow regimes in the downstream reaches and high volatility, sometimes only apparent at small, even hourly, timesteps.

Transects were established by EDAW to assess riparian vegetation in each reach. Fifty-seven transects were located between river mile 184.3 to 254.1 on the Klamath River. Along each transect, plots were established and later classified into a vegetation type. These plots varied in elevation from approximately the mean low water line to beyond the 100-year floodplain in some cases. An average of 13 plots were established along each transect.

Due to the variety of operational behaviors within the project bounds, frequency and duration of inundation were believed to be key components to understanding the effects KHP may already have on the riparian vegetation, or might be expected to have in the future. It was determined that a detrended correspondance analysis (DCA) should be performed relating vegetation types to inundation frequency and inundation duration at each plot. To complete this task, duration and frequency would need to be determined from the available river discharge records within each reach.

This memorandum discusses the methods and results of the hydrologic analysis performed to create the duration and frequency data for inclusion in the DCA. Performance of the DCA

and conclusions drawn from that analysis are to be completed by EDAW for completion of the study as required by FERC and the work group. CH2M HILL provided hydrologic analysis as described below.

Methods

Definitions

Several hydrologic terms are used frequently in this paper. They are defined below, as they are used in this analysis.

Discharge – volumetric flow rate past a transect, measured in cubic feet per second

Elevation – vertical distance relative to a fixed datum that may vary between transects

Inundation duration (ID)– fraction of time during the period of record that a plot is inundated, unitless value expressed as a percentage

Inundation frequency (IF)– median number of days between the end of a single inundation event and the beginning of the next event

Non-parametric statistics – calculated values of variance and central tendency that are not dependent on data following an underlying mathematical distribution

Return frequency (RF)– inverse of annual probability of occurrence, commonly reported in years, calculated from series of annual peak discharges for period of record

Peaking –variance in discharge magnitude over a short, regular cycle, such as 24 hours. It is a result of reservoir operations intended to maximize power production at times of peak demand by storing volume for release through turbines at capacity when the incoming average flow is less than turbine capacity

Period of record – total period of time used to calculate statistics, may include data gaps

Plot – surveyed point located along a transect, has been assigned a single elevation, inundation duration, inundation frequency, and vegetation type

Stage – depth of inundation measured from channel thalweg

Thalweg – longitudinal thread of the stream that follows the deepest point of each cross section

Time step – period elapsed between measurements used in the analysis, commonly hours or days

Time frame – that portion of each annual series used in analysis, typically may be growing season only or full year

Transect – cross section surveyed perpendicular to direction of flow incorporating riparian vegetation zones

Varial zone – range of stages resulting from the range of typical reservoir operations, such that flood stages experienced in this zone regularly occur at a greater frequency and duration than expected in a natural system with similar hydrology.

Model

The basis for the model used in this analysis (with some significant exceptions) is from work by Auble et al. (1994) and Chapin et al. (2002). These authors related streamflow to riparian vegetation communities, using inundation duration and return frequency, respectively, as hydrologic variables. In the current study, measures of both duration and frequency are necessary, even at lower flows within the varial zone, to capture the essential elements of peaking operations. Primary available time series data is in the form of discharge, as measured at United States Geological Survey (USGS) gaging stations located in Link River, Keno, Fall Creek, JC Boyle peaking, and Iron Gate reaches. By relating discharge data to stage at each transect, a time series data set of inundation elevation can be constructed. This data can be analyzed for inundation duration and frequency characteristics specific to the elevation assigned to each plot. The resulting matrix – duration, frequency, elevation, and vegetation type – can then be evaluated for empirical relationships.

The hydrologic portion of the model assumes that a stage-discharge relationship can be found for each studied transect, and that the relationship is valid over the range of observed flows. Further, it assumes that discharge data collected at one point in a reach is reasonably applied to all transects located within that reach. The model assumes that the available period of record that can be readily analyzed for each transect represents a sufficient sample to estimate the hydrologic parameters. Implicit with this model is the assumption that frequency and duration either captures the effects of event magnitude or those effects are ignored. This is because inundation is defined in a binary sense only, either a plot is under water or it is not. Depth of inundation and hydraulic conditions are not separately evaluated. Across a transect, plot elevations will vary, giving some measure of the relative magnitudes needed to reach different plots, but for the time period that two plots are inundated, they are classified the same for that particular event, regardless of elevation.

Transect and Plot Construction

All transects and plots were identified and constructed by EDAW staff. Plot elevations and transect river mile locations were provided to CH2M HILL staff. Transect locations were selected based on vegetation patterns at transects used in the instream flow modeling and geomorphology studies or at transects established by EDAW. A list of transects and included plots, with river mile and elevations are listed in Appendix A.

Stage-Discharge Relationships

A key element of the analysis model, stage-discharge relationships - sometimes called rating curves - are unique graphical or mathematical relationships of discharge to the water surface elevation (WSEL) expected at each transect in the reach. Physically, this relationship is very complex, encompassing shifting bedforms, changing vegetation, seasonality, and downstream conditions (Kennedy, 1984). For a given discharge, the expected WSEL may vary depending on whether the measurement was taken on the rising or receding limb of the event hydrograph, a phenomenon called hysteresis. A highly varied flow regime can result in even wider variety of elevations that correspond to a given discharge magnitude, resulting from changes in water surface slope due to complex storage and constraint relationships with upstream and downstream conditions (Bedient and Huber, 1992). USGS typically does not measure flow directly at the thousands of sites where the agency collects streamflow data. Instead, most often stage is measured and related to flow by a stage-discharge relationship developed for each specific site. This makes USGS perhaps the

leading national authority on establishment of stage-discharge relationships. Standard practice typically requires collection of a significant number of stage-discharge data pairs across a range of flow events. These are used to create relationships that are often piecewise in nature, using different mathematical models for low flow, bankfull, and flood conditions. In some streams, more complex relationships are developed with multiple independent variables, including rate of change in stage or fall in a reach between gages (Kennedy, 1984). In practice, data is seldom available to create such a comprehensive relationship. Some sites, particularly those with frequently shifting bedforms, cannot adequately be described by a stage-discharge relationship at all. For this reason, USGS locates gaging stations at carefully selected sites expected to remain stable over a variety of flow conditions. Unfortunately, desirable locations for evaluating vegetation do not always correspond to desirable locations for establishing accurate stage-discharge relationships. It is necessary to modify more rigorous methods to be applicable at the sites where analysis is best performed with respect to vegetation patterns.

For this study, three water surface elevation measurements were taken at each transect during different seasons and flow events. These measurements were paired to preliminary average daily discharge measured at a USGS gaging station located in the same reach on the day of the measurement. In the Keno and J.C. Boyle reaches, these data pairs were used to calibrate a PHABSIM model constructed by TRPA, Inc. Stage-discharge relationships were provided by TRPA for transects in those reaches. For the remaining transects, CH2M HILL determined stage-discharge relationships in two ways. The assumed mathematical model was of the form:

$$Y = aQ^b$$

Where:

Q = discharge (cfs)

Y = stage (ft)

a, b = constants

This is consistent with PHABSIM and USGS methodology (Waddle, 2001; Kennedy, 1984). This form was assumed to hold over the range of flows evaluated for this study. Since plot elevations were reported as elevation (not stage) and in metric units, the following form was used for conversion:

$$E = (aQ^b + c)/3.2808$$

Where:

E = water surface elevation (meters)

Q, a, b as previously defined

c = channel thalweg (ft)

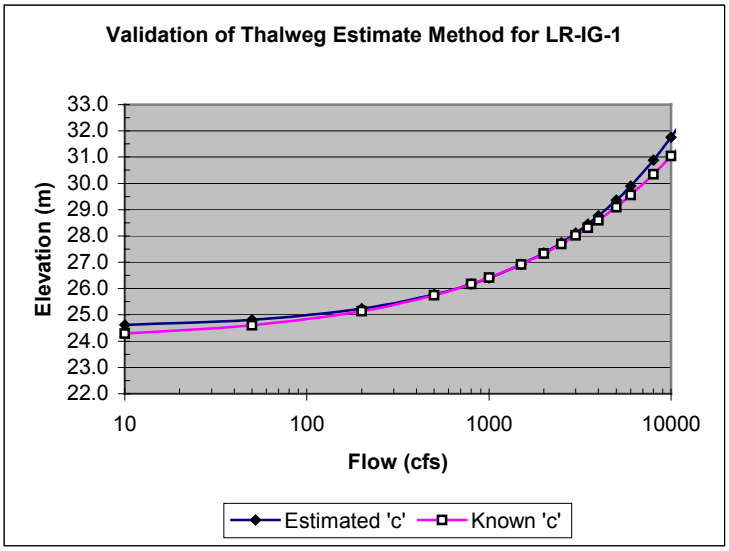
For instances when the channel thalweg was known, the constants a and b were found by spreadsheet curve fit to the power function directly. When thalweg was not known, c was also estimated using a log-log linear regression using the following form:

$$Log(Y) = log(a) + b \log (Q)$$

Where:

Y = E – c (ft)

A line was best fit to the measured data with log(a) as y-intercept and b as slope. The c-value was varied until the r^2 value for each transect was a maximum, given expected physical conditions in the channel, particularly testing for reasonable stages at low and extremely low flow conditions. This linear regression technique was applied to five transects below Iron Gate dam where thalweg data was not available. A "blind" validation step was performed to compare between the results of the curve fit when c was known and the results when c was estimated from the log-log regression above. The results are shown in the graph below.



Error for these calculations is difficult to quantify, but USGS states that 4% error in calculated stage depth is expected for USGS gage sites over the range of expected discharges. It is reasonable to assume that techniques for constructing rating curves for this study introduce additional errors related to basic model assumptions and data collection capabilities. Best available flow data may be located several miles away, reported as an average daily flow rather than an instantaneous value. Collected flow magnitudes are typically in the range of 500-3000 cfs. Results calculated outside this range may also suffer from reduced accuracy. It is estimated that actual stage for a given discharge experienced at a transect may vary 10-15% or more from the calculated value, depending on magnitude of the event and time of measurement. Constants used for rating curve calculations, measured water surface elevations and other notes are provided for all transects in Appendix A.

Discharge Data

Discharge data used for this analysis were collected by USGS at gaging stations located within each study reach, with two exceptions. J.C. Boyle bypass reach flows were developed by combining dam spillway data collected by PacifiCorp with estimated springflows within

the reach. Copco bypass flows were developed in a similar manner. Remaining reaches used data from stations as shown in Table 1.

TABLE 1.
Discharge data associated with study reaches

Reach	USGS Gage#	River Mile	Period of Record	Time Step	Growing Season
Link River	11507500	253.5	1961-2001	Daily	April 30 – Sept 30
Keno	11509500	232	1997-2001	Hourly	April 30 – Sept 30
J.C. Boyle Bypass	na	225	1996-2001	Hourly	April 15 – Oct 15
Fall Creek	11512000	na	1933-1959	Daily	April 15 – Oct 15
J.C. Boyle Peaking	11510700	219.6	1997-2001	Hourly	April 15 – Oct 15
Copco Bypass	na	198	na	Hourly	April 1 – Oct 31
Iron Gate-Shasta	11516530	189.5	1960-2001	Daily	April 1 – Oct 31

For some analyses, only growing season conditions were considered. EDAW provided start and end dates of the growing season as shown in Table 1. Time series data sets were constructed for each reach with both growing season only and full-year conditions. No additional quality control actions were taken to evaluate the integrity of the discharge data.

As stated above, discharge data for each reach was assumed to be constant within the reach, and therefore applicable to all reach transects, even if located some distance away. Accretions and attenuation were assumed to be negligible, except in J.C. Boyle bypass reach, which is known to have significant spring flows.

Inundation Duration

Inundation duration is a variation on the classic flow duration curve, described by Searcy (1959) as a cumulative frequency curve showing percent of time that discharges, throughout the range of recorded magnitudes, were equaled or exceeded during a given period, without respect to sequence of occurrence. The flow duration curve is not calculated from a probabilistic distribution, and so technically is only a characterization of actual flows measured during the period of record. In practice, if the period of record is sufficiently large, the resulting duration curve is often used as a predictive measure for future events. The curve is an aggregation of all factors affecting basin runoff upstream of the gaged location, including climate, topography, geology, and storage. Inundation duration is then the percent of time that a particular plot elevation is inundated.

To calculate inundation duration, the flow data assigned to each transect is converted to stage data via the stage-discharge equation, unique to that transect. This data is then ranked in descending order, largest magnitude first. Based on the total number of observations, the rank is assigned a percentage following the equation below:

$$e = r/n$$

Where:

e = exceedence (expressed as percentage)

r = assigned rank of stage compared to full data set

n = number of observations in data set

For cases where multiple observations hold the same rank, exceedance is identical for all like values and then skips to the next appropriate spaces to the next rank, e.g., three values all hold the same rank of six, the next value will hold the rank of nine. Plot elevation is then compared to the ranked flow-elevation data to determine where on the duration curve each plot lies. The resulting percentage value is then assigned to the plot as its inundation duration.

Inundation Frequency

For very high frequency flooding events, the duration of the event itself becomes more important compared to the time between events. The very short time interval between inundation events approximates higher inundation duration values for riparian plants because the substrate does not dry out between inundation events. There is also the potential for greater scouring A time series analysis is necessary to determine the rate at which inundation events occur. This is represented as the median number of days between the end of a single inundation event and the beginning of the next event. Inundation frequency was determined for three transects in each the Keno Canyon and J.C. Boyle bypass reach and twenty-five transects in the J.C. Boyle peaking reach.

For each plot within a transect, inundation frequency was determined by converting flow data from a five-year (1997-2001) hourly period of record to water surface elevation (WSEL). WSEL, reported in meters, was then compared to the established plot elevations to determine when the plot was inundated. A flag was recorded for each occurrence that the WSEL was less than the plot elevation, i.e. when the plot was not inundated. A tally of these flags was then made to determine the sum of consecutive timesteps the plot was not flooded during each event. A median of this count was taken and is reported as the final value for each plot.

A probabilistic approach to determining central tendency was explored. Because the statistics were to be calculated for the data set consisting of numbers of days between flooding events, this set of counts cannot be considered independent random variables. Some adjustment would need to be made to show fit to a distribution, in this case that would likely be a zero-truncated Poisson distribution (Keim and Cruise, 1998). Instead, non-parametric methods were used. This approach is more symmetrical to the results determined for inundation duration, in that the result is most accurately described as a characterization of collected data over a specific time period, not a predictive analysis based on probability distribution.

Return Frequency

Return frequency is the average expected time period between events. This is a statistical value, represented mathematically as the inverse of the probability of occurrence. For flood events, this is typically represented in years. For example, for an event with a 50-year return frequency, the inverse is 0.02, which represents the probability that the event will occur in

any given year. Return frequency calculations may be used to estimate flows ranging from the annual flood up to 100-500 year recurrence interval, depending on available period of record.

For each transect, return frequency was calculated for flows needed to inundate each plot elevation. This calculation was performed using an annual peak series culled from the daily average discharge record for USGS gages in each reach, as described in Table 1. Data were fit to a log-Pearson III extreme event distribution, following U.S. Department of Interior guidelines (IACWD, 1982). A computer program, HEC-FFA was used to perform the calculations.

The resulting discharge-probability pairs were plotted on a logarithmic graph and fit to a function. The elevation of each plot was then used to solve for flow needed to inundate the plot by use of the stage-discharge relationship. Finally, that calculated flow was applied to the discharge-probability curve to calculate expected return frequency. The results were reported for all plots located at elevations representing events between the 1-year and 500-year flood. Regression graphs for all gages are provided in Appendix B.

Results

Inundation duration, inundation frequency, and return frequency were calculated for 730 plots, distributed across 57 unique transects. Results are reported in Appendix A.

Discussion

Application

Three different measures were taken of the hydrologic behavior of this highly regulated system. Each has unique characteristics and applicability that are complimentary. In practice, duration curves, sometimes called exceedance curves, well describe conditions that occur frequently and regularly. Flow rates that occur between 5-95% percent of the period of record are generally well defined by a duration curve. No explicit measure of sequence and spacing of inundation events is attempted; it is not a chronologically ordered measure. As a hydrologic calculation, duration curves are most often used to assist with determining firm yield, "typical" conditions, and other supply-related parameters. At the extreme tails of the curve it is difficult to define behavior well, because the number of data points becomes small. For large flows, minute differences in ranking can correspond to large changes in flow. One frequently cited limitation of a duration curve is that it cannot differentiate between flows that occur every other day and flows that occur six months on and six months off. In a highly regulated system, where both these behaviors can exist, a second measure was needed to examine these differences.

Inundation frequency is intended to provide a measure of the temporal spacing between flooding events. As determined for this study, it is not a typical hydrologic calculation. The result is only meaningful if there is a finite and significant period of time during and between events. For this reason, it is time series dependent, and requires complete flow records to be valid. Because the calculation counts time between events, the number of separate inundation events limits the accuracy of the results. Somewhat counter-intuitively, this limit can be due to a plot location that is rarely inundated or a plot that is nearly always inundated. It is the number of discrete events that is limiting. This makes the calculation

most stable and meaningful in reaches that are very volatile, creating large sample sizes of discrete events. Such is the case in the peaking reach over the operating range of the varial zone, approximately 1,000 to 3,000 cfs.

One difficulty with use of inundation frequency is a means of testing central tendency. The count of timesteps between inundation events is not a random variable and cannot directly be assumed to hold a mathematical distribution. For this study, the median of the data set containing numbers of days of each non-inundated period was used to describe central tendency. As with a calculated mean, this value does not capture variance. It was observed that in some cases plots showed both seasonal behavior, characterized by long periods of 90 days or more between flooding events, and very short periods of a matter of hours. The simple majority of events were of short duration, causing a very small median value. A mean calculation, were it statistically valid, would split the difference describing an "average" number of days that was not represented in the more modal data set.

Additionally, data requirements for calculation of inundation frequency are onerous. Within the peaking reach, discharge rates change rapidly, requiring hourly data to capture peak events. Due to computation speed and size limitations, no more than 5 years of data were analyzed for a single site, still requiring nearly 44,000 data points to be evaluated for each of the 377 plots within Keno and J.C. Boyle reaches that were assigned an IF value.

Given these constraints, one may be tempted to approach this analysis from a deterministic modeling approach, rather than from a data analysis perspective. As Romanowicz and Beven (2003) point out, the relationship between a continuous simulation hydraulic model calculating depth of flow and corresponding physical breadth of inundation is tenuous, even for sophisticated 2- or 3- dimensional methods. This is because model parameters required to accurately predict results for measured events vary by magnitude of event, and so cannot be consistently calibrated over the entire range of observed flow events. For common flood event predictions, this is often not too considerable a problem, given that focus is primarily on large magnitude events. For a riparian vegetation study, the entire range of flows is of interest, as is inundation of areas with little or no hydraulic function. These factors result in a daunting calibration task that may require resorting to a probabilistic solution, as was the case for Romanowicz and Beven. In addition, the parameters used for calibration are, by definition, tools for offsetting errors associated with collected data and computational limitations. This added complexity may not result in much increased confidence in riparian study results.

As one moves to plots located higher along the transect, above the varial zone, both the accuracy of inundation duration and frequency begin to decrease, due to reduced sample sizes. At the same time, relatively rare events are of extremely short duration compared to a period of record and can often be well characterized by magnitude only. For this reason, high-flow, low-frequency events were characterized using return frequency methodology. This provides a probability-based assessment of frequency where duration is assumed negligible and time between events is greater than one year. Small sample sizes for IF at plots lower down along the transect profiles make these estimates of IF nearly insignificant. At these lower plot elevations (particularly in non-peaking reaches) one can generally assume a seasonal pattern of inundation, and use the ID as a gage of that condition.

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Appendix A – Transect and Plot Location and Elevations and Results

Appendix A Transect and Plot Location and Elevations, Rating Curves, and Results

River Reach	Plot No.	River Mile	Project Segment	Plot ID	Plot Elev. Adj. (m)	Flow Required to Inundate Plot Elev. (cfs)	Gage # or flow data source	ID (%)	IF (hours)	Return Frequency (yrs)	WSEL	Date	Q	Q vs. Y Comments
Link River	1	254.1	LiR-run2755.1-rb	91R00vb	29.25	26	11507500	100.0	na	<1 year	29.67	10/9/02	684	From CH2MHill
	2	254.1	LiR-run2755.1-rb	91R05	29.30	48		100.0	na	<1 year	29.65	2/10/03	625	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	3	254.1	LiR-run2755.1-rb	91R14vb	29.51	290		92.7	na	<1 year	29.63	10/21/02	553	
	4	254.1	LiR-run2755.1-rb	91R24vb	29.63	579		71.9	na	<1 year				
	5	254.1	LiR-run2755.1-rb	91R25	29.75	1004		27.5	na	<1 year				
	6	254.1	LiR-run2755.1-rb	91R45	30.09	3293		1.6	na	1.9				
	7	254.1	LiR-run2755.1-rb	91R49vb	30.07	3067		2.2	na	1.7				
	8	254.1	LiR-run2755.1-rb	91R65	30.12	3530		0.9	na	2.1				
	9	254.1	LiR-run2755.1-rb	91R85	30.25	5045		0.1	na	4.6				
	10	254.1	LiR-run2755.1-rb	91R105	30.26	5083		0.1	na	4.7				
	11	254.1	LiR-run2755.1-rb	91R125	30.38	6756		0.0	na	11.1				
	12	254.1	LiR-run2755.1-rb	91R145	30.37	6616		0.0	na	10.3				
	13	254.1	LiR-run2755.1-rb	91R165	30.55	9816		0.0	na	52.5				
	14	254.1	LiR-run2755.1-rb	91R182vb	30.84	16875		0.0	na	>500 years				
	15	254.1	LiR-run2755.1-rb	91R185	30.91	18777		0.0	na	>500 years				
	16	254.1	LiR-run2755.1-rb	91R205	31.06	23877		0.0	na	>500 years				
	17	254.1	LiR-run2755.1-rb	91R225	31.39	38079		0.0	na	>500 years				
	18	254.1	LiR-run2755.1-rb	91R245	31.60	49335		0.0	na	>500 years				
	19	254.1	LiR-run2755.1-rb	91R265	31.76	59320		0.0	na	>500 years				
	20	254.1	LiR-run2755.1-rb	91R285	32.10	85546		0.0	na	>500 years				
	21	254.1	LiR-run2755.1-rb	91R305	32.39	113201		0.0	na	>500 years				
	22	254.1	LiR-run2755.1-rb	91R325	32.54	129396		0.0	na	>500 years				
	23	254.1	LiR-run2755.1-rb	91R345	32.70	147843		0.0	na	>500 years				
	24	254.1	LiR-run2755.1-rb	91R365	32.86	169227		0.0	na	>500 years				
Link River	25	254.1	LiR-run2755.2-rb	92R00vb	29.28	38	11507500	100.0	na	<1 year	29.67	10/9/02	684	From CH2MHill
	26	254.1	LiR-run2755.2-rb	92R05	29.33	65		100.0	na	<1 year	29.65	2/10/03	625	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	27	254.1	LiR-run2755.2-rb	92R11vb	29.49	252		94.6	na	<1 year	29.63	10/21/02	553	
	28	254.1	LiR-run2755.2-rb	92R15vb	29.55	363		89.6	na	<1 year				
	29	254.1	LiR-run2755.2-rb	92R25	29.82	1334		12.9	na	<1 year				
	30	254.1	LiR-run2755.2-rb	92R45	30.15	3811		0.6	na	2.5				
	31	254.1	LiR-run2755.2-rb	92R65	30.33	6031		0.1	na	7.6				
	32	254.1	LiR-run2755.2-rb	92R85	30.34	6163		0.1	na	8.2				
	33	254.1	LiR-run2755.2-rb	92R92vb	30.37	6616		0.0	na	10.3				
	34	254.1	LiR-run2755.2-rb	92R105	30.38	6898		0.0	na	11.9				
	35	254.1	LiR-run2755.2-rb	92R125	30.46	8110		0.0	na	22.0				
	36	254.1	LiR-run2755.2-rb	92R145	30.50	8878		0.0	na	32.6				
	37	254.1	LiR-run2755.2-rb	92R160vb	30.62	11343		0.0	na	114.2				
	38	254.1	LiR-run2755.2-rb	92R165	30.71	13320		0.0	na	312.3				
	39	254.1	LiR-run2755.2-rb	92R185	31.11	25688		0.0	na	>500 years				
	40	254.1	LiR-run2755.2-rb	92R205	31.36	36439		0.0	na	>500 years				
	41	254.1	LiR-run2755.2-rb	92R225	31.45	41028		0.0	na	>500 years				
	42	254.1	LiR-run2755.2-rb	92R245	31.74	58305		0.0	na	>500 years				
	43	254.1	LiR-run2755.2-rb	92R250vb	31.77	60140		0.0	na	>500 years				
	44	254.1	LiR-run2755.2-rb	92R265	32.13	88453		0.0	na	>500 years				
Link River	45	254	LiR-pool2602-rb	P260200vb	29.37	536	11507500	75.3	na	<1 year	29.51	10/9/02	684	From CH2MHill
	46	254	LiR-pool2602-rb	P260205	29.49	665		62.4	na	<1 year	29.45	2/10/03	625	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	47	254	LiR-pool2602-rb	P260225	29.51	693		59.1	na	<1 year	29.37	10/23/02	795	
	48	254	LiR-pool2602-rb	P260245	29.83	1132		18.9	na	<1 year	Two WSEL data points			
	49	254	LiR-pool2602-rb	P260265	30.01	1424		11.3	na	<1 year	Did not use 10/23 outlier			
	50	254	LiR-pool2602-rb	P260285	30.01	1429		11.3	na	<1 year				
	51	254	LiR-pool2602-rb	P2602105	30.14	1670		8.0	na	<1 year				
	52	254	LiR-pool2602-rb	P2602125	30.25	1895		6.4	na	<1 year				
	53	254	LiR-pool2602-rb	P2602145	30.50	2468		3.7	na	1.2				
	54	254	LiR-pool2602-rb	P2602165	30.44	2335		4.0	na	1.2				
	55	254	LiR-pool2602-rb	P2602185	31.03	4009		0.5	na	2.7				
	56	254	LiR-pool2602-rb	P2602205	30.97	3802		0.6	na	2.5				
	57	254	LiR-pool2602-rb	P2602225	31.06	4110		0.5	na	2.9				
	58	254	LiR-pool2602-rb	P2602245	31.20	4593		0.2	na	3.7				
	59	254	LiR-pool2602-rb	P2602265	31.39	5270		0.1	na	5.2				
	60	254	LiR-pool2602-rb	P2602285	31.47	5616		0.1	na	6.2				

Appendix A Transect and Plot Location and Elevations, Rating Curves, and Results

River Reach	Plot No.	River Mile	Project Segment	Plot ID	Plot Elev. Adj. (m)	Flow Required to Inundate Plot Elev. (cfs)	Gage # or flow data source	ID (%)	IF (hours)	Return Frequency (yrs)	WSEL	Date	Q	Q vs. Y Comments
	61	254	LiR-pool2602-rb	P2602305	31.77	6858		0.0	na	11.6				
	62	254	LiR-pool2602-rb	P2602325	31.90	7490		0.0	na	16.1				
	63	254	LiR-pool2602-rb	P2602345	32.06	8231		0.0	na	23.4				
	64	254	LiR-pool2602-rb	P2602365	32.12	8554		0.0	na	27.6				
	65	254	LiR-pool2602-rb	P2602385	32.33	9652		0.0	na	48.3				
	66	254	LiR-pool2602-rb	P2602405	32.70	11798		0.0	na	144.0				
	67	254	LiR-pool2602-rb	P2602425	32.80	12447		0.0	na	200.3				
	68	254	LiR-pool2602-rb	P2602445	33.17	14945		0.0	na	>500 years				
	69	254	LiR-pool2602-rb	P2602465	33.90	20576		0.0	na	>500 years				
Keno Canyon	70	232.4	KRR-GEO-3-LB	KC3LB00vb	40.12	2039	11509500	12.0	5.0	1.1	39.32	8/9/02	366	From CH2MHill
	71	232.4	KRR-GEO-3-LB	KC3LB05	40.12	2019		12.0	299.5	1.1	39.39	11/11/02	na	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	72	232.4	KRR-GEO-3-LB	KC3LB25	39.72	963		43.3	106	<1 year	40.13	4/14/03	2060	
	73	232.4	KRR-GEO-3-LB	KC3LB45	39.57	689		70.1	37	<1 year	Two WSEL data points			
	74	232.4	KRR-GEO-3-LB	KC3LB65	39.30	344		99.4	37	<1 year	No discharge data from USGS for Nov, 2002			
	75	232.4	KRR-GEO-3-LB	KC3LB72vb	39.09	178		100.0	28	<1 year				
	76	232.4	KRR-GEO-3-LB	KC3LB82vb	39.00	132		100.0	28	<1 year				
	77	232.4	KRR-GEO-3-LB	KC3LB85	38.90	85		100.0	28	<1 year				
	78	232.4	KRR-GEO-3-LB	KC3LB105	38.68	28		100.0	28	<1 year				
	79	232.4	KRR-GEO-3-LB	KC3LB125	38.57	13		100.0	28	<1 year				
	80	232.4	KRR-GEO-3-LB	KC3LB145	38.37	2		100.0	28	<1 year				
	81	232.4	KRR-GEO-3-LB	KC3LB165	38.32	1		100.0	28	<1 year				
	82	232.4	KRR-GEO-3-LB	KC3LB172vb	38.33	1		100.0	28	<1 year				
	83	232.4	KRR-GEO-3-LB	KC3LB185	38.71	35		100.0	28	<1 year				
	84	232.4	KRR-GEO-3-LB	KC3LB205	38.69	30		100.0	28	<1 year				
Keno Canyon	85	232.4	KRR-GEO-3-RB	KC3RB-1vb	38.55	12	11509500	100.0	32	<1 year	39.3	8/9/02	366	From CH2MHill
	86	232.4	KRR-GEO-3-RB	KC3RB00vb	38.64	22		100.0	32	<1 year	39.39	11/11/02	na	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	87	232.4	KRR-GEO-3-RB	KC3RB05	38.73	37		100.0	32	<1 year	40.13	4/14/03	2060	
	88	232.4	KRR-GEO-3-RB	KC3RB10vb	38.83	64		100.0	32	<1 year	Two WSEL data points			
	89	232.4	KRR-GEO-3-RB	KC3RB25	38.85	70		100.0	32	<1 year	No discharge data from USGS for Nov, 2002			
	90	232.4	KRR-GEO-3-RB	KC3RB45	39.05	156		100.0	32	<1 year				
	91	232.4	KRR-GEO-3-RB	KC3RB65	39.24	290		99.7	12	<1 year				
	92	232.4	KRR-GEO-3-RB	KC3RB85	39.30	344		99.4	39	<1 year				
	93	232.4	KRR-GEO-3-RB	KC3RB105	39.51	605		86.3	19	<1 year				
	94	232.4	KRR-GEO-3-RB	KC3RB120vb	39.72	969		43.3	106	<1 year				
	95	232.4	KRR-GEO-3-RB	KC3RB125	39.88	1321		25.8	4	<1 year				
	96	232.4	KRR-GEO-3-RB	KC3RB145	40.16	2177		11.0	706.5	1.1				
	97	232.4	KRR-GEO-3-RB	KC3RB165	40.51	3665		5.6	398.5	1.9				
Keno Canyon	98	232.3	KRR-GEO-2-LB-IS.	KC200vb	36.79	6509	11509500	0.1	4.0	5.2	34.57	8/9/02	366	From CH2MHill
	99	232.3	KRR-GEO-2-LB-IS.	KC205	36.70	6110		0.9	101.0	4.5	35.11	11/11/02	na	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	100	232.3	KRR-GEO-2-LB-IS.	KC225	35.96	3209		6.1	7.0	1.6	35.42	4/14/03	2060	
	101	232.3	KRR-GEO-2-LB-IS.	KC235vb	35.59	2151		10.8	649	1.1	35.56	4/2/03	2310	
	102	232.3	KRR-GEO-2-LB-IS.	KC245	35.02	967		42.8	98	<1 year	36.26	3/28/03	3410	
	103	232.3	KRR-GEO-2-LB-IS.	KC265	35.20	1284		28.5	33	<1 year	No discharge data from USGS for Nov, 2002			
	104	232.3	KRR-GEO-2-LB-IS.	KC285	35.04	997		42.4	74	<1 year				
	105	232.3	KRR-GEO-2-LB-IS.	KC2105	35.26	1403		23.4	32	<1 year				
	106	232.3	KRR-GEO-2-LB-IS.	KC2125	34.91	803		56.7	38	<1 year				
	107	232.3	KRR-GEO-2-LB-IS.	KC2134	34.85	721		65.8	6	<1 year				
	108	232.3	KRR-GEO-2-LB-IS.	KC2145	35.20	1296		28.5	7	<1 year				
	109	232.3	KRR-GEO-2-LB-IS.	KC2165	35.18	1250		30.3	18	<1 year				
	110	232.3	KRR-GEO-2-LB-IS.	KC2185	35.26	1397		23.0	40	<1 year				
	111	232.3	KRR-GEO-2-LB-IS.	KC2205	35.12	1144		33.3	32	<1 year				
	112	232.3	KRR-GEO-2-LB-IS.	KC2363vb	35.03	982		42.8	59	<1 year				
	113	232.3	KRR-GEO-2-LB-IS.	KC2365	34.94	848		51.9	24	<1 year				
	114	232.3	KRR-GEO-2-LB-IS.	KC2385	34.54	360		99.4	32	<1 year				
	115	232.3	KRR-GEO-2-LB-IS.	KC2405	34.93	830		53.2	41	<1 year				
	116	232.3	KRR-GEO-2-LB-IS.	KC2425	34.70	532		90.2	26	<1 year				
	117	232.3	KRR-GEO-2-LB-IS.	KC2445	34.51	333		99.4	39	<1 year				
	118	232.3	KRR-GEO-2-LB-IS.	KC2465	34.31	182		100.0	32	<1 year				
	119	232.3	KRR-GEO-2-LB-IS.	KC2469vb	34.33	192		100.0	32	<1 year				
Keno Canyon	120	232.0	KRR-GEO-1	KC1LB00vb	27.57	966	11509500	43.50	98	<1 year	na	na	na	USGS gage station

Appendix A Transect and Plot Location and Elevations, Rating Curves, and Results

River Reach	Plot No.	River Mile	Project Segment	Plot ID	Plot Elev. Adj. (m)	Flow Required to Inundate Plot Elev. (cfs)	Gage # or flow data source	ID (%)	IF (hours)	Return Frequency (yrs)	WSEL	Date	Q	Q vs. Y Comments
	121	232.0	KRR-GEO-1	KC1LB05	27.78	1390		24.00	40	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	122	232.0	KRR-GEO-1	KC1LB18vb	28.12	2281		10.60	8.0	1.2				
	123	232.0	KRR-GEO-1	KC1LB25	28.29	2834		7.50	17.0	1.4				
	124	232.0	KRR-GEO-1	KC1LB26vb	28.62	4160		4.60	4.0	2.3				
	125	232.0	KRR-GEO-1	KC1LB45	28.81	5123		3.00	62.5	3.2				
	126	232.0	KRR-GEO-1	KC1LB65	29.16	7104		0.00	259.0	6.4				
	127	232.0	KRR-GEO-1	KC1LB85	29.30	8107		0.00	30.0	9.1				
	128	232.0	KRR-GEO-1	KC1LB105	29.39	8742		0.00	na	11.3				
	129	232.0	KRR-GEO-1	KC1LB125	29.44	9083		0.00	na	12.8				
	130	232.0	KRR-GEO-1	KC1LB145	29.45	9175		0.00	na	13.2				
	131	232.0	KRR-GEO-1	KC1LB165	29.46	9268		0.00	na	13.6				
	132	232.0	KRR-GEO-1	KC1LB185	29.40	8764		0.00	na	11.4				
	133	232.0	KRR-GEO-1	KC1LB205	29.33	8258		0.00	9177.0	9.5				
	134	232.0	KRR-GEO-1	KC1LB216vb	29.46	9244		0.00	na	13.5				
	135	232.0	KRR-GEO-1	KC1LB225	29.62	10506		0.00	na	21.1				
	136	232.0	KRR-GEO-1	KC1LB245	29.62	10481		0.00	na	20.9				
JC Boyle Bypass	137	221.00	BBR-run ls-55.2	55AR00vb	28.58	25	11510700 minus turbine	100.0	na	na				From TRPA
	138	221.00	BBR-run ls-55.2	55AR05	28.50	8		100.0	na	na				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	139	221.00	BBR-run ls-55.2	55AR25	28.53	14		100.0	na	na				
	140	221.00	BBR-run ls-55.2	55AR45	28.46	3		100.0	na	na				
	141	221.00	BBR-run ls-55.2	55AR65	29.00	341		100.0	na	na				
	142	221.00	BBR-run ls-55.2	55AR85	29.09	470		11.4	1046.0	na				
	143	221.00	BBR-run ls-55.2	55AR93vb	29.30	826		9.6	341.5	na				
	144	221.00	BBR-run ls-55.2	55AR105	29.85	2411		4.6	118.0	na				
	145	221.00	BBR-run ls-55.2	55AR116vb	29.72	1970		6.1	591.5	na				
	146	221.00	BBR-run ls-55.2	55AR125	29.75	2052		6.1	633.0	na				
	147	221.00	BBR-run ls-55.2	55AR145	29.75	2052		6.1	633.0	na				
	148	221.00	BBR-run ls-55.2	55AR152vb	29.96	2853		3.8	71.0	na				
	149	221.00	BBR-run ls-55.2	55AR165	31.48	13170		0.0	na	na				
	150	221.00	BBR-run ls-55.2	55AR185	31.82	16656		0.0	na	na				
JC Boyle Bypass	151	221.01	BBR-run ls-55.1	55BR00vb	28.79	95	11510700 minus turbine	100.0	na	na				From TRPA
	152	221.01	BBR-run ls-55.1	55BR05	28.86	136		100.0	na	na				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	153	221.01	BBR-run ls-55.1	55BR25	28.76	79		100.0	na	na				
	154	221.01	BBR-run ls-55.1	55BR45	29.10	337		100.0	na	na				
	155	221.01	BBR-run ls-55.1	55BR58vb	29.48	913		9.2	349.5	na				
	156	221.01	BBR-run ls-55.1	55BR65	29.74	1483		8.0	427.5	na				
	157	221.01	BBR-run ls-55.1	55BR85	29.98	2176		5.2	479.0	na				
	158	221.01	BBR-run ls-55.1	55BR105	31.46	9956		0.0	na	na				
	159	221.01	BBR-run ls-55.1	55BR125	31.44	9797		0.0	na	na				
	160	221.01	BBR-run ls-55.1	55BR145	31.25	8453		0.0	na	na				
JC Boyle Bypass	161	223.00	BBR-pool133.1	133AR00vb	28.71	129	11510700 minus turbine	100.0	na	na				From TRPA
	162	223.00	BBR-pool133.1	133AR05	28.73	138		100.0	na	na				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	163	223.00	BBR-pool133.1	133AR25	29.17	460		11.4	1046.0	na				
	164	223.00	BBR-pool133.1	133AR42vb	29.58	960		8.9	321.0	na				
	165	223.00	BBR-pool133.1	133AR45	29.66	1089		8.8	358.0	na				
	166	223.00	BBR-pool133.1	133AR65	30.23	2183		5.2	479.0	na				
	167	223.00	BBR-pool133.1	133AR85	30.66	3260		2.5	na	na				
	168	223.00	BBR-pool133.1	133AR105	30.73	3480		2.0	na	na				
JC Boyle Bypass	169	223.01	BBR-pool133.2	133BR00vb	28.10	#NUM!	11510700 minus turbine	100.0	na	na				From TRPA
	170	223.01	BBR-pool133.2	133BR05	29.27	469		11.4	1046.0	na				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	171	223.01	BBR-pool133.2	133BR20vb	29.74	1026		8.9	358.0	na				
	172	223.01	BBR-pool133.2	133BR25	29.89	1258		8.5	331.0	na				
	173	223.01	BBR-pool133.2	133BR31vb	30.04	1506		8.0	391.0	na				
	174	223.01	BBR-pool133.2	133BR45	30.63	2766		3.9	61.5	na				
	175	223.01	BBR-pool133.2	133BR65	31.24	4503		0.2	na	na				
	176	223.01	BBR-pool133.2	133BR85	32.37	9079		0.0	na	na				

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River Reach	Plot No.	River Mile	Project Segment	Plot ID	Plot Elev. Adj. (m)	Flow Required to Inundate Plot Elev. (cfs)	Gage # or flow data source	ID (%)	IF (hours)	Return Frequency (yrs)	WSEL	Date	Q	Q vs. Y Comments
	177	223.01	BBR-pool133.2	133BR105vb	33.07	12817		0.0	na	na				
JC Boyle Bypass	178	222.00	BBR-pow ms-183.1	183AR00vb	29.00	107	11510700 minus turbine	100.0	na	na				From TRPA
	179	222.00	BBR-pow ms-183.1	183AR05	29.40	619		11.4	700.5	na				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	180	222.00	BBR-pow ms-183.1	183AR25	29.35	517		11.4	1046.0	na				
	181	222.00	BBR-pow ms-183.1	183AR45	29.25	366		100.0	na	na				
	182	222.00	BBR-pow ms-183.1	183AR62vb	29.57	1043		8.8	358.0	na				
	183	222.00	BBR-pow ms-183.1	183AR65	29.61	1176		8.7	329.0	na				
	184	222.00	BBR-pow ms-183.1	183AR69vb	29.62	1226		8.6	307.5	na				
	185	222.00	BBR-pow ms-183.1	183AR79vb	29.78	1810		6.2	353.0	na				
	186	222.00	BBR-pow ms-183.1	183AR85	30.01	3037		3.5	55.0	na				
	187	222.00	BBR-pow ms-183.1	183AR91vb	30.09	3532		1.9	na	na				
	188	222.00	BBR-pow ms-183.1	183AR103vb	30.29	5097		0.0	na	na				
	189	222.00	BBR-pow ms-183.1	183AR105	30.42	6306		0.0	na	na				
JC Boyle Bypass	190	222.01	BBR-pow ms-183.2	183BR00vb	29.34	202	11510700 minus turbine	100.0	na	na				From TRPA
	191	222.00	BBR-pow ms-183.2	183BR05	29.77	1180		8.7	329.0	na				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	192	222.00	BBR-pow ms-183.2	183BR25	29.39	257		100.0	na	na				
	193	222.00	BBR-pow ms-183.2	183BR37vb	29.63	727		9.8	700.5	na				
	194	222.00	BBR-pow ms-183.2	183BR45	29.76	1134		8.7	329.0	na				
	195	222.00	BBR-pow ms-183.2	183BR65	30.03	2479		4.6	37.0	na				
	196	222.00	BBR-pow ms-183.2	183BR85	30.47	6550		0.0	na	na				
Fall Creek	197	n/a	FC-unit31-rb/lb	31BL50vb	31.46	2630	11512000	0.0	na	>500 years				From TRPA
	198	n/a	FC-unit31-rb/lb	31BL45	31.41	2437		0.0	na	>500 years				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	199	n/a	FC-unit31-rb/lb	31BL25	30.55	388		0.0	na	5.5				
	200	n/a	FC-unit31-rb/lb	31BL05	30.09	52		3.9	na	1.5				
	201	n/a	FC-unit31-rb/lb	31BL00vb	29.80	2		100.0	na	1.3				
	202	n/a	FC-unit31-rb/lb	31BR00vb	29.83	4		100.0	na	1.3				
	203	n/a	FC-unit31-rb/lb	31BR05	30.01	29		84.0	na	1.4				
	204	n/a	FC-unit31-rb/lb	31BR15vb	30.13	67		0.3	na	1.6				
	205	n/a	FC-unit31-rb/lb	31BR25	30.10	56		2.5	na	1.6				
	206	n/a	FC-unit31-rb/lb	31BR45	30.17	84		0.1	na	1.7				
	207	n/a	FC-unit31-rb/lb	31BR65	30.53	364		0.0	na	5.0				
	208	n/a	FC-unit31-rb/lb	31BR85	30.72	625		0.0	na	13.4				
	209	n/a	FC-unit31-rb/lb	31BR105	31.44	2552		0.0	na	>500 years				
	210	n/a	FC-unit31-rb/lb	31BR125	31.71	3739		0.0	na	>500 years				
Fall Creek	211	n/a	FC-unit33-rb/lb	33BR30vb	30.93	255	11512000	0.0	na	3.3				From TRPA
	212	n/a	FC-unit33-rb/lb	33BR25	30.79	198		0.0	na	2.7				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	213	n/a	FC-unit33-rb/lb	33BR05	29.98	12		100.0	na	1.3				
	214	n/a	FC-unit33-rb/lb	33BR00vb	29.82	2		100.0	na	1.3				
	215	n/a	FC-unit33-rb/lb	33BL00vb	29.82	2		100.0	na	1.3				
	216	n/a	FC-unit33-rb/lb	33BL05	30.05	19		100.0	na	1.4				
	217	n/a	FC-unit33-rb/lb	33BL20vb	30.05	19		100.0	na	1.4				
	218	n/a	FC-unit33-rb/lb	33BL25	30.06	20		100.0	na	1.4				
	219	n/a	FC-unit33-rb/lb	33BL45	30.07	21		100.0	na	1.4				
	220	n/a	FC-unit33-rb/lb	33BL65	30.08	22		100.0	na	1.4				
	221	n/a	FC-unit33-rb/lb	33BL85	29.72	0		100.0	na	1.3				
	222	n/a	FC-unit33-rb/lb	33BL90vb	30.10	25		99.4	na	1.4				
	223	n/a	FC-unit33-rb/lb	33BL105	30.29	55		2.8	na	1.6				
	224	n/a	FC-unit33-rb/lb	33BL125	30.59	129		0.0	na	2.1				
	225	n/a	FC-unit33-rb/lb	33BL145	31.07	320		0.0	na	4.2				
	226	n/a	FC-unit33-rb/lb	33BL165	31.45	538		0.0	na	9.6				
Fall Creek	227	n/a	FC-unit39-rb/lb	39CR45	31.28	2389	11512000	0.0	na	>500 years				From TRPA
	228	n/a	FC-unit39-rb/lb	39CR32vb	31.20	2033		0.0	na	>500 years				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	229	n/a	FC-unit39-rb/lb	39CR25	31.00	1302		0.0	na	171.3				
	230	n/a	FC-unit39-rb/lb	39CR05	30.20	60		1.0	na	1.6				
	231	n/a	FC-unit39-rb/lb	39CR00vb	29.89	2		100.0	na	1.3				
	232	n/a	FC-unit39-rb/lb	39CL00vb	29.89	2		100.0	na	1.3				
	233	n/a	FC-unit39-rb/lb	39CL05	30.00	10		100.0	na	1.3				

Appendix A Transect and Plot Location and Elevations, Rating Curves, and Results

River Reach	Plot No.	River Mile	Project Segment	Plot ID	Plot Elev. Adj. (m)	Flow Required to Inundate Plot Elev. (cfs)	Gage # or flow data source	ID (%)	IF (hours)	Return Frequency (yrs)	WSEL	Date	Q	Q vs. Y Comments
	234	n/a	FC-unit39-rb/lb	39CL10vb	30.59	394		0.0	na	5.6				
	235	n/a	FC-unit39-rb/lb	39CL20vb	30.03	14		100.0	na	1.3				
	236	n/a	FC-unit39-rb/lb	39CL25	30.05	17		100.0	na	1.4				
	237	n/a	FC-unit39-rb/lb	39CL45	30.24	77		0.1	na	1.7				
	238	n/a	FC-unit39-rb/lb	39CL65	30.39	173		0.0	na	2.4				
	239	n/a	FC-unit39-rb/lb	39CL85	30.70	570		0.0	na	10.9				
	240	n/a	FC-unit39-rb/lb	39CL105	31.34	2682		0.0	na	>500 years				
JC Boyle Peaking	241	215.60	Peak Glide-71.1-RB	71AR00vb	28.60	212	11510700	100.0	0	<1 year				From TRPA
	242	215.60	Peak Glide-71.1-RB	71AR05	28.67	313		100.0	2	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	243	215.60	Peak Glide-71.1-RB	71AR19vb	29.01	1350		52.5	14	<1 year				
	244	215.60	Peak Glide-71.1-RB	71AR25	29.14	2033		28.6	16	<1 year				
	245	215.60	Peak Glide-71.1-RB	71AR34vb	29.37	3775		7.4	na	1.5				
	246	215.60	Peak Glide-71.1-RB	71AR45	29.60	6406		0.6	na	3.0				
	247	215.60	Peak Glide-71.1-RB	71AR65	29.82	9793		0.0	na	7.1				
	248	215.60	Peak Glide-71.1-RB	71AR85	30.01	13475		0.0	na	18.3				
	249	215.60	Peak Glide-71.1-RB	71AR105	30.03	14018		0.0	na	21.0				
	250	215.60	Peak Glide-71.1-RB	71AR125	30.12	16188		0.0	na	36.7				
	251	215.60	Peak Glide-71.1-RB	71AR145	30.23	18911		0.0	na	73.9				
	252	215.60	Peak Glide-71.1-RB	71AR165	30.29	20739		0.0	na	118.2				
	253	215.60	Peak Glide-71.1-RB	71AR185	30.37	23164		0.0	na	220.4				
	254	215.60	Peak Glide-71.1-RB	71AR195vb	30.39	23947		0.0	na	269.6				
	255	215.60	Peak Glide-71.1-RB	71AR205	30.47	26510		0.0	na	>500 years				
	256	215.60	Peak Glide-71.1-RB	71AR225vb	30.58	30518		0.0	na	>500 years				
	257	215.60	Peak Glide-71.1-RB	71AR245vb	30.65	33407		0.0	na	>500 years				
JC Boyle Peaking	258	215.61	Peak Glide-71.2-RB	71BR00vb	28.75	221	11510700	100.0	9	<1 year				From TRPA
	259	215.61	Peak Glide-71.2-RB	71BR05	28.85	378		82.9	11	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	260	215.61	Peak Glide-71.2-RB	71BR25	29.05	968		58.2	14	<1 year				
	261	215.61	Peak Glide-71.2-RB	71BR45	29.35	2642		22.1	17	1.1				
	262	215.61	Peak Glide-71.2-RB	71BR65	29.45	3506		8.0	12	1.4				
	263	215.61	Peak Glide-71.2-RB	71BR85	29.72	6845		0.1	na	3.3				
	264	215.61	Peak Glide-71.2-RB	71BR105	29.97	11417		0.0	na	10.8				
	265	215.61	Peak Glide-71.2-RB	71BR125	30.36	22088		0.0	na	167.2				
	266	215.62	Peak Glide-71.2-RB	71BR145	30.42	24260		0.0	na	292.1				
JC Boyle Peaking	267	215.62	Peak Glide-71.3-RB	71CR00vb	28.93	751	11510700	64.2	10	<1 year				From TRPA
	268	215.62	Peak Glide-71.3-RB	71CR05	29.03	1132		55.8	13	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	269	215.62	Peak Glide-71.3-RB	71CR12vb	29.08	1341		52.6	14	<1 year				
	270	215.62	Peak Glide-71.3-RB	71CR25	29.11	1485		49.8	14	<1 year				
	271	215.62	Peak Glide-71.3-RB	71CR45	29.01	1047		56.8	13	<1 year				
	272	215.62	Peak Glide-71.3-RB	71CR65	29.11	1470		50.0	14	<1 year				
	273	215.62	Peak Glide-71.3-RB	71CR85	29.21	2047		28.4	16	<1 year				
	274	215.62	Peak Glide-71.3-RB	71CR105	29.36	3081		11.2	12	1.3				
	275	215.62	Peak Glide-71.3-RB	71CR125	29.38	3228		8.9	14	1.3				
	276	215.62	Peak Glide-71.3-RB	71CR141vb	29.03	1132		55.8	13	<1 year				
	277	215.62	Peak Glide-71.3-RB	71CR145	28.88	618		67.7	10	<1 year				
	278	215.62	Peak Glide-71.3-RB	71CR165	28.91	696		65.9	10	<1 year				
	279	215.62	Peak Glide-71.3-RB	71CR172vb	28.97	902		59.6	12	<1 year				
	280	215.62	Peak Glide-71.3-RB	71CR185	29.49	4175		6.1	na	1.7				
	281	215.62	Peak Glide-71.3-RB	71CR188vb	29.53	4600		4.2	na	1.9				
	282	215.62	Peak Glide-71.3-RB	71CR205	29.88	9170		0.0	na	6.0				
	283	215.62	Peak Glide-71.3-RB	71CR225	30.11	13467		0.0	na	18.2				
	284	215.62	Peak Glide-71.3-RB	71CR245	30.57	25481		0.0	na	399.8				
JC Boyle Peaking	285	215.63	Peak Riffle-70.1-RB	70AR00vb	28.88	117	11510700	100.0	0	<1 year				From TRPA
	286	215.63	Peak Riffle-70.1-RB	70AR05	28.99	206		100.0	0	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	287	215.63	Peak Riffle-70.1-RB	70AR14vb	29.19	466		70.5	11	<1 year				
	288	215.63	Peak Riffle-70.1-RB	70AR25	29.70	2181		27.0	16	1.0				
	289	215.63	Peak Riffle-70.1-RB	70AR45	29.78	2638		21.9	17	1.1				
	290	215.63	Peak Riffle-70.1-RB	70AR65	30.00	4267		6.6	na	1.7				
	291	215.63	Peak Riffle-70.1-RB	70AR85	29.96	3955		6.1	na	1.6				
	292	215.63	Peak Riffle-70.1-RB	70AR96vb	29.99	4161		5.4	na	1.7				

Appendix A Transect and Plot Location and Elevations, Rating Curves, and Results

River Reach	Plot No.	River Mile	Project Segment	Plot ID	Plot Elev. Adj. (m)	Flow Required to Inundate Plot Elev. (cfs)	Gage # or flow data source	ID (%)	IF (hours)	Return Frequency (yrs)	WSEL	Date	Q	Q vs. Y Comments
	293	215.63	Peak Riffle-70.1-RB	70AR105	30.34	8064		0.0	na	4.6				
	294	215.63	Peak Riffle-70.1-RB	70AR125	30.87	18435		0.0	na	65.4				
JC Boyle Peaking	295	218.60	Peak Run ms-30.3-RB	30CR00vb	29.45	460	11510700	71.2	11	<1 year				From TRPA
	296	218.60	Peak Run ms-30.3-RB	30CR05	29.70	917		59.2	12	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	297	218.60	Peak Run ms-30.3-RB	30CR12vb	29.74	1004		57.6	13	<1 year				
	298	218.60	Peak Run ms-30.3-RB	30CR24vb	29.74	990		57.6	13	<1 year				
	299	218.60	Peak Run ms-30.3-RB	30CR25	29.82	1176		54.9	13	<1 year				
	300	218.60	Peak Run ms-30.3-RB	30CR35vb	29.82	1176		54.9	13	<1 year				
	301	218.60	Peak Run ms-30.3-RB	30CR45	29.85	1267		53.9	14	<1 year				
	302	218.60	Peak Run ms-30.3-RB	30CR65	30.18	2235		26.6	16	1.0				
	303	218.60	Peak Run ms-30.3-RB	30CR67vb	30.18	2256		26.6	17	1.0				
	304	218.60	Peak Run ms-30.3-RB	30CR83vb	30.22	2385		24.7	17	1.1				
	305	218.60	Peak Run ms-30.3-RB	30CR85	30.25	2507		23.7	17	1.1				
	306	218.60	Peak Run ms-30.3-RB	30CR105	30.22	2389		24.7	17	1.1				
	307	218.60	Peak Run ms-30.3-RB	30CR125	30.26	2541		23.4	17	1.1				
	308	218.60	Peak Run ms-30.3-RB	30CR128vb	30.20	2331		25.9	17	1.0				
	309	218.60	Peak Run ms-30.3-RB	30CR145	30.69	4420		7.6	na	1.8				
	310	218.60	Peak Run ms-30.3-RB	30CR165	30.63	4107		6.3	na	1.6				
	311	218.60	Peak Run ms-30.3-RB	30CR185	30.69	4405		5.1	na	1.8				
	312	218.60	Peak Run ms-30.3-RB	30CR205	30.75	4698		3.9	na	1.9				
	313	218.60	Peak Run ms-30.3-RB	30CR225	30.92	5623		1.8	na	2.4				
	314	218.60	Peak Run ms-30.3-RB	30CR245	31.01	6156		0.8	na	2.8				
JC Boyle Peaking	315	218.70	Peak Pool-29.1-RB	29AR00vb	29.42	584	11510700	68.2	11	<1 year				From TRPA
	316	218.70	Peak Pool-29.1-RB	29AR05	29.49	703		65.6	10	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	317	218.70	Peak Pool-29.1-RB	29AR25	29.42	589		68.2	11	<1 year				
	318	218.70	Peak Pool-29.1-RB	29AR36vb	29.59	871		59.8	12	<1 year				
	319	218.70	Peak Pool-29.1-RB	29AR42vb	29.69	1080		56.2	13	<1 year				
	320	218.70	Peak Pool-29.1-RB	29AR45	29.81	1379		51.7	14	<1 year				
	321	218.70	Peak Pool-29.1-RB	29AR65	30.00	1917		30.2	16	<1 year				
	322	218.70	Peak Pool-29.1-RB	29AR85	30.23	2714		19.4	17	1.2				
	323	218.70	Peak Pool-29.1-RB	29AR105	30.28	2918		14.0	17	1.2				
	324	218.70	Peak Pool-29.1-RB	29AR125	30.42	3529		7.8	na	1.4				
	325	218.70	Peak Pool-29.1-RB	29AR145	30.57	4211		5.7	na	1.7				
	326	218.70	Peak Pool-29.1-RB	29AR165	30.56	4196		6.0	na	1.7				
	327	218.70	Peak Pool-29.1-RB	29AR185	30.70	4899		3.6	na	2.0				
	328	218.70	Peak Pool-29.1-RB	29AR205	30.75	5171		2.9	na	2.2				
	329	218.70	Peak Pool-29.1-RB	29AR225	30.88	5927		1.2	na	2.6				
	330	218.70	Peak Pool-29.1-RB	29AR229vb	30.90	6059		1.0	na	2.7				
	331	218.70	Peak Pool-29.1-RB	29AR245	31.19	8028		0.0	na	4.5				
JC Boyle Peaking	332	218.71	Peak Pool-29.2-RB	29BR00vb	29.56	726	11510700	64.6	10	<1 year				From TRPA
	333	218.71	Peak Pool-29.2-RB	29BR05	29.62	831		61.1	12	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	334	218.71	Peak Pool-29.2-RB	29BR09vb	29.68	938		58.4	13	<1 year				
	335	218.71	Peak Pool-29.2-RB	29BR25	30.01	1695		35.1	15	<1 year				
	336	218.71	Peak Pool-29.2-RB	29BR45	30.34	2763		18.1	17	1.2				
	337	218.71	Peak Pool-29.2-RB	29BR61vb	30.49	3342		8.6	na	1.4				
	338	218.71	Peak Pool-29.2-RB	29BR65	30.51	3430		8.2	na	1.4				
	339	218.71	Peak Pool-29.2-RB	29BR77vb	30.64	3987		6.6	na	1.6				
	340	218.71	Peak Pool-29.2-RB	29BR81vb	30.69	4241		5.5	na	1.7				
	341	218.71	Peak Pool-29.2-RB	29BR85	30.79	4701		3.9	na	1.9				
	342	218.71	Peak Pool-29.2-RB	29BR105	31.23	7199		0.0	na	3.6				
	343	218.71	Peak Pool-29.2-RB	29BR125	31.60	9895		0.0	na	7.3				
JC Boyle Peaking	344	219.20	Peak Pool-18.1-RB	18AR00vb	29.56	681	11510700	66.2	10	<1 year				From TRPA
	345	219.20	Peak Pool-18.1-RB	18AR05	29.60	762		63.8	10	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	346	219.20	Peak Pool-18.1-RB	18AR08vb	29.64	843		61.1	12	<1 year				
	347	219.20	Peak Pool-18.1-RB	18AR13vb	29.73	1039		56.9	13	<1 year				

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	348	219.20	Peak Pool-18.1-RB	18AR25	30.18	2434		24.3	17	1.1				
	349	219.20	Peak Pool-18.1-RB	18AR31vb	30.15	2338		25.4	17	1.0				
	350	219.20	Peak Pool-18.1-RB	18AR45	30.21	2580		22.9	17	1.1				
	351	219.20	Peak Pool-18.1-RB	18AR65	30.50	3932		6.9	na	1.6				
	352	219.20	Peak Pool-18.1-RB	18AR85	31.28	9358		0.0	na	6.3				
JC Boyle Peaking	353	204.40	Peak-Run-207B-RB	207B00vb	28.88	85	11510700	100.0	0	<1 year				From TRPA
	354	204.40	Peak-Run-207B-RB	207B05	28.91	103		100.0	0	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	355	204.40	Peak-Run-207B-RB	207B20vb	29.21	351		92.8	10	<1 year				
	356	204.40	Peak-Run-207B-RB	207B25	29.38	568		68.6	11	<1 year				
	357	204.40	Peak-Run-207B-RB	207B35vb	29.48	731		64.5	10	<1 year				
	358	204.40	Peak-Run-207B-RB	207B45	29.70	1161		55.4	13	<1 year				
	359	204.40	Peak-Run-207B-RB	207B55vb	29.91	1708		34.8	15	<1 year				
	360	204.40	Peak-Run-207B-RB	207B65	29.98	1885		30.8	16	<1 year				
	361	204.40	Peak-Run-207B-RB	207B80vb	30.23	2740		18.5	17	1.2				
	362	204.40	Peak-Run-207B-RB	207B85	30.47	3716		7.3	na	1.5				
JC Boyle Peaking	363	204.50	Peak-Barn Pool A-RB	BPAR00vb	27.65	5	11510700	100.0	0	<1 year				From TRPA
	364	204.50	Peak-Barn Pool A-RB	BPAR05	27.88	72		100.0	0	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	365	204.50	Peak-Barn Pool A-RB	BPAR20vb	28.03	186		100.0	0	<1 year				
	366	204.50	Peak-Barn Pool A-RB	BPAR24vb	28.16	354		92.4	10	<1 year				
	367	204.50	Peak-Barn Pool A-RB	BPAR30vb	28.16	354		92.4	10	<1 year				
	368	204.50	Peak-Barn Pool A-RB	BPAR40vb	28.16	354		92.4	10	<1 year				
	369	204.50	Peak-Barn Pool A-RB	BPAR45	28.07	234		100.0	0	<1 year				
	370	204.50	Peak-Barn Pool A-RB	BPAR65	28.04	199		100.0	0	<1 year				
	371	204.50	Peak-Barn Pool A-RB	BPAR80vb	28.00	156		100.0	0	<1 year				
	372	204.50	Peak-Barn Pool A-RB	BPAR85	28.00	162		100.0	0	<1 year				
	373	204.50	Peak-Barn Pool A-RB	BPAR105	27.94	107		100.0	0	<1 year				
	374	204.50	Peak-Barn Pool A-RB	BPAR125	28.16	364		92.4	10	<1 year				
	375	204.50	Peak-Barn Pool A-RB	BPAR145	28.37	840		61.7	12	<1 year				
	376	204.50	Peak-Barn Pool A-RB	BPAR165	28.87	3254		8.9	na	1.3				
	377	204.50	Peak-Barn Pool A-RB	BPAR185	29.27	7142		0.0	na	3.6				
	378	204.50	Peak-Barn Pool A-RB	BPAR205	29.41	9017		0.0	na	5.8				
	379	204.50	Peak-Barn Pool A-RB	BPAR225	29.58	11613		0.0	na	11.3				
	380	204.50	Peak-Barn Pool A-RB	BPAR245	29.66	13026		0.0	na	16.3				
	381	204.50	Peak-Barn Pool A-RB	BPAR265	29.86	17266		0.0	na	48.4				
JC Boyle Peaking	382	204.50	Peak-Barn Pool A-LB	BPAL00vb	27.95	120	11510700	100.0	9	<1 year				From TRPA
	383	204.50	Peak-Barn Pool A-LB	BPAL05	27.97	135		100.0	9	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	384	204.50	Peak-Barn Pool A-LB	BPAL20vb	28.16	364		92.4	11	<1 year				
	385	204.50	Peak-Barn Pool A-LB	BPAL30vb	28.38	858		60.7	15	<1 year				
	386	204.50	Peak-Barn Pool A-LB	BPAL35	28.58	1568		44.7	17	<1 year				
	387	204.50	Peak-Barn Pool A-LB	BPAL45vb	28.77	2599		22.7	334	1.1				
	388	204.50	Peak-Barn Pool A-LB	BPAL55	28.97	4064		6.6	na	1.6				
	389	204.50	Peak-Barn Pool A-LB	BPAL75	29.51	10501		0.0	na	8.5				
	390	204.50	Peak-Barn Pool A-LB	BPAL95	29.98	20000		0.0	na	97.8				
JC Boyle Peaking	391	204.60	Peak-Riff-201.5B-LB	2015L00vb	28.24	64	11510700	100.0	0	<1 year				From TRPA
	392	204.60	Peak-Riff-201.5B-LB	2015L05	28.33	125		100.0	0	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	393	204.60	Peak-Riff-201.5B-LB	2015L20vb	28.59	465		71.1	11	<1 year				
	394	204.60	Peak-Riff-201.5B-LB	2015L25	28.66	613		67.8	11	<1 year				
	395	204.60	Peak-Riff-201.5B-LB	2015L45	29.26	2926		14.1	17	1.2				
	396	204.60	Peak-Riff-201.5B-LB	2015L65	29.91	8442		0.0	na	5.0				
	397	204.60	Peak-Riff-201.5B-LB	2015L76vb	30.38	15047		0.0	na	27.4				
	398	204.60	Peak-Riff-201.5B-LB	2015L80	30.43	15857		0.0	na	33.7				
	399	204.60	Peak-Riff-201.5B-LB	2015L85vb	30.48	16695		0.0	na	41.8				
	400	204.60	Peak-Riff-201.5B-LB	2015L105vb	30.64	19605		0.0	na	88.3				

Appendix A Transect and Plot Location and Elevations, Rating Curves, and Results

River Reach	Plot No.	River Mile	Project Segment	Plot ID	Plot Elev. Adj. (m)	Flow Required to Inundate Plot Elev. (cfs)	Gage # or flow data source	ID (%)	IF (hours)	Return Frequency (yrs)	WSEL	Date	Q	Q vs. Y Comments
	401	204.60	Peak-Riff-201.5B-LB	2015L125	30.90	24944		0.0	na	348.2				
	402	204.60	Peak-Riff-201.5B-LB	2015L145	31.34	36222		0.0	na	>500 years				
	403	204.60	Peak-Riff-201.5B-LB	2015L165	31.83	51643		0.0	na	>500 years				
	404	204.60	Peak-Riff-201.5B-LB	2015L185	32.56	82066		0.0	na	>500 years				
JC Boyle Peaking	405	204.60	Peak-Riff-201.5B-RB	2015R00vb	28.50	318	11510700	100.0	3	<1 year				From TRPA
	406	204.60	Peak-Riff-201.5B-RB	2015R05	28.49	301		100.0	0	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	407	204.60	Peak-Riff-201.5B-RB	2015R25vb	28.54	374		82.9	10	<1 year				
	408	204.60	Peak-Riff-201.5B-RB	2015R45vb	28.56	404		72.0	10	<1 year				
	409	204.60	Peak-Riff-201.5B-RB	2015R65vb	28.56	415		72.0	10	<1 year				
	410	204.60	Peak-Riff-201.5B-RB	2015R85vb	28.51	327		99.2	10	<1 year				
	411	204.60	Peak-Riff-201.5B-RB	2015R105	28.47	275		100.0	0	<1 year				
	412	204.60	Peak-Riff-201.5B-RB	2015R125	28.40	195		100.0	0	<1 year				
	413	204.60	Peak-Riff-201.5B-RB	2015R145	28.56	415		72.0	10	<1 year				
	414	204.60	Peak-Riff-201.5B-RB	2015R165	29.00	1641		39.4	14	<1 year				
	415	204.60	Peak-Riff-201.5B-RB	2015R185	29.39	3796		7.3	na	1.5				
	416	204.60	Peak-Riff-201.5B-RB	2015R205	29.26	2976		13.2	17	1.2				
	417	204.60	Peak-Riff-201.5B-RB	2015R225	29.63	5665		1.8	na	2.5				
	418	204.60	Peak-Riff-201.5B-RB	2015R245	29.88	8160		0.0	na	4.7				
	419	204.60	Peak-Riff-201.5B-RB	2015R265	29.90	8435		0.0	na	5.0				
	420	204.60	Peak-Riff-201.5B-RB	2015R285	29.90	8435		0.0	na	5.0				
	421	204.60	Peak-Riff-201.5B-RB	2015R305	29.91	8504		0.0	na	5.1				
	422	204.60	Peak-Riff-201.5B-RB	2015R325	30.00	9516		0.0	na	6.6				
	423	204.60	Peak-Riff-201.5B-RB	2015R345	29.94	8857		0.0	na	5.6				
	424	204.60	Peak-Riff-201.5B-RB	2015R365	29.94	8857		0.0	na	5.6				
	425	204.60	Peak-Riff-201.5B-RB	2015R385vb	29.94	8857		0.0	na	5.6				
	426	204.60	Peak-Riff-201.5B-RB	2015R405vb	30.01	9742		0.0	na	7.0				
	427	204.60	Peak-Riff-201.5B-RB	2015R425vb	29.92	8645		0.0	na	5.3				
	428	204.60	Peak-Riff-201.5B-RB	2015R445	29.67	6051		1.1	na	2.7				
	429	204.60	Peak-Riff-201.5B-RB	2015R465	29.67	6051		1.1	na	2.7				
	430	204.60	Peak-Riff-201.5B-RB	2015R485	29.79	7181		0.0	na	3.6				
	431	204.60	Peak-Riff-201.5B-RB	2015R505	29.67	5995		1.2	na	2.7				
	432	204.60	Peak-Riff-201.5B-RB	2015R515vb	29.70	6279		0.7	na	2.9				
	433	204.60	Peak-Riff-201.5B-RB	2015R525	29.65	5884		1.3	na	2.6				
	434	204.60	Peak-Riff-201.5B-RB	2015R545	29.67	6051		1.1	na	2.7				
	435	204.60	Peak-Riff-201.5B-RB	2015R565	29.90	8366		0.0	na	4.9				
	436	204.60	Peak-Riff-201.5B-RB	2015R575vb	30.19	12101		0.0	na	12.8				
JC Boyle Peaking	437	206.51	Peak-Run-177A-RB	177A00vb	29.84	776	11510700	63.1	10	<1 year				From TRPA
	438	206.51	Peak-Run-177A-RB	177A05	29.89	873		60.2	12	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	439	206.51	Peak-Run-177A-RB	177A25	29.87	838		61.3	12	<1 year				
	440	206.51	Peak-Run-177A-RB	177A45	29.90	896		59.6	12	<1 year				
	441	206.51	Peak-Run-177A-RB	177A65	30.03	1165		55.0	13	<1 year				
	442	206.51	Peak-Run-177A-RB	177A80vb	30.16	1511		49.0	13	<1 year				
	443	206.51	Peak-Run-177A-RB	177A85	30.20	1615		41.7	14	<1 year				
	444	206.51	Peak-Run-177A-RB	177A93vb	30.41	2268		26.2	16	1.0				
	445	206.51	Peak-Run-177A-RB	177A105	30.64	3157		9.0	na	1.3				
	446	206.51	Peak-Run-177A-RB	177A125	31.16	5927		1.3	na	2.6				
	447	206.51	Peak-Run-177A-RB	177A145	32.58	19617		0.0	na	88.6				
JC Boyle Peaking	448	206.50	Peak-Run-177B-RB	177B00vb	30.02	770	11510700	63.1	10	<1 year				From TRPA
	449	206.50	Peak-Run-177B-RB	177B05	30.04	823		62.0	11	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	450	206.50	Peak-Run-177B-RB	177B25	30.20	1175		55.3	13	<1 year				
	451	206.50	Peak-Run-177B-RB	177B30vb	30.39	1673		35.6	15	<1 year				
	452	206.50	Peak-Run-177B-RB	177B45	30.45	1885		30.9	16	<1 year				
	453	206.50	Peak-Run-177B-RB	177B55vb	30.68	2728		19.5	17	1.2				
	454	206.50	Peak-Run-177B-RB	177B65	30.87	3551		7.6	na	1.4				
	455	206.50	Peak-Run-177B-RB	177B85	31.54	7863		0.0	na	4.3				
	456	206.50	Peak-Run-177B-RB	177B105	32.45	17510		0.0	na	51.6				
JC Boyle Peaking	457	206.49	Peak-LGR-176A-RB	176A00vb	29.09	357	11510700	92.6	10	<1 year				From TRPA
	458	206.49	Peak-LGR-176A-RB	176A05	29.16	474		70.8	11	<1 year				Elev (m) = (a*Q(cfs)^b+
	459	206.49	Peak-LGR-176A-RB	176A25	29.22	597		68.3	11	<1 year				

Appendix A Transect and Plot Location and Elevations, Rating Curves, and Results

River Reach	Plot No.	River Mile	Project Segment	Plot ID	Plot Elev. Adj. (m)	Flow Required to Inundate Plot Elev. (cfs)	Gage # or flow data source	ID (%)	IF (hours)	Return Frequency (yrs)	WSEL	Date	Q	Q vs. Y Comments
	460	206.49	Peak-LGR-176A-RB	176A45	29.34	921		59.2	12	<1 year				c)/3.281
	461	206.49	Peak-LGR-176A-RB	176A65	29.48	1386		52.0	14	<1 year				
	462	206.49	Peak-LGR-176A-RB	176A85	29.36	968		58.2	13	<1 year				
	463	206.49	Peak-LGR-176A-RB	176A91vb	29.52	1597		43.7	14	<1 year				
	464	206.49	Peak-LGR-176A-RB	176A95vb	29.55	1711		34.6	15	<1 year				
	465	206.49	Peak-LGR-176A-RB	176A105	29.56	1755		33.4	15	<1 year				
	466	206.49	Peak-LGR-176A-RB	176A125	29.79	3188		9.0	na	1.3				
	467	206.49	Peak-LGR-176A-RB	176A130vb	29.87	3862		6.9	na	1.5				
	468	206.49	Peak-LGR-176A-RB	176A145	29.98	4855		3.8	na	2.0				
	469	206.49	Peak-LGR-176A-RB	176A165	30.04	5521		2.2	na	2.4				
	470	206.49	Peak-LGR-176A-RB	176A245vb	30.51	13297		0.0	na	17.5				
JC Boyle Peaking	471	208.50	Peak-Run-150A-LB	150A00vb	29.39	801	11510700	62.4	11	<1 year				From TRPA
	472	208.50	Peak-Run-150A-LB	150A05	29.53	1096		56.2	13	<1 year				Elev (m) =
	473	208.50	Peak-Run-150A-LB	150A13vb	29.62	1334		52.8	14	<1 year				(a*Q(cfs)^b+
	474	208.50	Peak-Run-150A-LB	150A25	29.79	1820		31.5	15	<1 year				c)/3.281
	475	208.50	Peak-Run-150A-LB	150A45	30.02	2637		22.1	17	1.1				
	476	208.50	Peak-Run-150A-LB	150A65	30.10	2925		14.1	17	1.2				
	477	208.50	Peak-Run-150A-LB	150A85	30.46	4597		4.2	na	1.9				
	478	208.50	Peak-Run-150A-LB	150A105	30.66	5701		1.7	na	2.5				
JC Boyle Peaking	479	208.51	Peak-Run-150B-LB	150B00vb	29.43	704	11510700	65.5	10	<1 year				From TRPA
	480	208.51	Peak-Run-150B-LB	150B05	29.45	740		64.6	10	<1 year				Elev (m) =
	481	208.51	Peak-Run-150B-LB	150B25	29.78	1476		49.8	14	<1 year				(a*Q(cfs)^b+
	482	208.51	Peak-Run-150B-LB	150B45	30.18	2773		17.9	17	1.2				c)/3.281
	483	208.51	Peak-Run-150B-LB	150B65	30.30	3218		8.9	na	1.3				
	484	208.51	Peak-Run-150B-LB	150B85	30.45	3905		6.9	na	1.6				
	485	208.51	Peak-Run-150B-LB	150B105	30.77	5490		2.4	na	2.3				
	486	208.51	Peak-Run-150B-LB	150B125	31.06	7241		0.0	na	3.7				
JC Boyle Peaking	487	208.60	Peak-Pool-147.1-RB	147PC00vb	29.58	1077	11510700	56.4	13	<1 year				From TRPA
	488	208.60	Peak-Pool-147.1-RB	147PC05	29.85	1576		45.4	14	<1 year				Elev (m) =
	489	208.60	Peak-Pool-147.1-RB	147PC13vb	30.16	2262		26.5	17	1.0				(a*Q(cfs)^b+
	490	208.60	Peak-Pool-147.1-RB	147PC25	30.37	2791		17.6	17	1.2				c)/3.281
	491	208.60	Peak-Pool-147.1-RB	147PC40vb	30.58	3383		8.6	na	1.4				
	492	208.60	Peak-Pool-147.1-RB	147PC45	30.64	3556		7.7	na	1.4				
	493	208.60	Peak-Pool-147.1-RB	147PC65	31.08	5024		3.2	na	2.1				
Iron Gate-Shasta	494	189.41	LR-IG-2-RB	434100vb	26.42	3150	11516530	10.1	na	1.4	25.90	8/2/02	660	USGS gage station
	495	189.41	LR-IG-2-RB	434105	26.44	3233		9.6	na	1.4	26.45	11/8/02	895	Elev (m) =
	496	189.41	LR-IG-2-RB	434115vb	26.47	3360		8.7	na	1.4	27.10	4/15/02	1790	(a*Q(cfs)^b+
	497	189.41	LR-IG-2-RB	434125	26.52	3576		7.3	na	1.5				c)/3.281
	498	189.41	LR-IG-2-RB	434140vb	26.67	4265		5.1	na	1.6				
	499	189.41	LR-IG-2-RB	434145	26.72	4508		4.5	na	1.6				
	500	189.41	LR-IG-2-RB	434165	26.82	5015		3.3	na	1.7				
	501	189.41	LR-IG-2-RB	434185	27.02	6108		1.7	na	2.0				
	502	189.41	LR-IG-2-RB	4341105	27.32	7950		0.4	na	2.5				
	503	189.41	LR-IG-2-RB	4341125	27.52	9312		0.1	na	2.9				
	504	189.41	LR-IG-2-RB	4341145	27.62	10033		0.0	na	3.1				
Iron Gate-Shasta	505	189.41	LR-IG-2-LB	434265	29.01	22827	11516530	0.0	na	13.9	25.90	8/2/02	660	USGS gage station
	506	189.41	LR-IG-2-LB	434245	28.36	16201		0.0	na	6.4	26.45	11/8/02	895	Elev (m) =
	507	189.41	LR-IG-2-LB	434235vb	28.09	13781		0.0	na	4.8	27.10	4/15/02	1790	(a*Q(cfs)^b+
	508	189.41	LR-IG-2-LB	434225	27.47	8961		0.2	na	2.8				c)/3.281
	509	189.41	LR-IG-2-LB	434218vb	27.05	6282		1.6	na	2.0				
	510	189.41	LR-IG-2-LB	434209vb	26.66	4217		5.3	na	1.6				
	511	189.41	LR-IG-2-LB	434205	26.46	3317		9.0	na	1.4				
	512	189.41	LR-IG-2-LB	434200vb	26.41	3109		10.2	na	1.4				
Iron Gate-Shasta	513	189.40	LR-IG-1-LB	GS1LB00vb	26.07	723	11516530	89.8	na	1.1	25.90	8/2/02	660	From CH2MHill
	514	189.40	LR-IG-1-LB	GS1LB05	26.09	732		86.1	na	1.1	26.45	11/8/02	895	Elev (m) =
	515	189.40	LR-IG-1-LB	GS1LB25	25.87	576		96.8	na	1.0	27.10	4/15/02	1790	(a*Q(cfs)^b+

Appendix A Transect and Plot Location and Elevations, Rating Curves, and Results

River Reach	Plot No.	River Mile	Project Segment	Plot ID	Plot Elev. Adj. (m)	Flow Required to Inundate Plot Elev. (cfs)	Gage # or flow data source	ID (%)	IF (hours)	Return Frequency (yrs)	WSEL	Date	Q	Q vs. Y Comments
	516	189.40	LR-IG-1-LB	GS1LB45	26.28	882		72.6	na	1.1				c)/3.281
	517	189.40	LR-IG-1-LB	GS1LB50vb	26.41	997		69.4	na	1.1				
	518	189.40	LR-IG-1-LB	GS1LB65	26.80	1378		33.6	na	1.1				
	519	189.40	LR-IG-1-LB	GS1LB85	27.57	2321		14.9	na	1.3				
	520	189.40	LR-IG-1-LB	GS1LB105	27.62	2390		14.5	na	1.3				
	521	189.40	LR-IG-1-LB	GS1LB125	28.64	4074		5.8	na	1.6				
	522	189.40	LR-IG-1-LB	GS1LB145	30.68	8937		0.2	na	2.8				
Iron Gate-Shasta	523	189.40	LR-IG-1-RB	GS1RB365	27.98	2934	11516530	11.5	na	1.4	25.90	8/2/02	660	From CH2MHill
	524	189.40	LR-IG-1-RB	GS1RB345	27.54	2282		15.1	na	1.3	26.45	11/8/02	895	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	525	189.40	LR-IG-1-RB	GS1RB325	26.91	1499		30.0	na	1.2	27.10	4/15/02	1790	
	526	189.40	LR-IG-1-RB	GS1RB305	27.05	1651		26.8	na	1.2				
	527	189.40	LR-IG-1-RB	GS1RB285	27.10	1716		24.8	na	1.2				
	528	189.40	LR-IG-1-RB	GS1RB265	27.13	1753		23.7	na	1.2				
	529	189.40	LR-IG-1-RB	GS1RB245	27.17	1797		21.7	na	1.2				
	530	189.40	LR-IG-1-RB	GS1RB225	27.24	1887		18.5	na	1.2				
	531	189.40	LR-IG-1-RB	GS1RB205	27.33	1996		17.4	na	1.2				
	532	189.40	LR-IG-1-RB	GS1RB185	27.26	1910		18.2	na	1.2				
	533	189.40	LR-IG-1-RB	GS1RB165	26.99	1588		28.1	na	1.2				
	534	189.40	LR-IG-1-RB	GS1RB145	26.99	1581		28.0	na	1.2				
	535	189.40	LR-IG-1-RB	GS1RB125	26.95	1540		28.9	na	1.2				
	536	189.40	LR-IG-1-RB	GS1RB120vb	26.90	1486		30.1	na	1.2				
	537	189.40	LR-IG-1-RB	GS1RB105	26.83	1413		30.9	na	1.1				
	538	189.40	LR-IG-1-RB	GS1RB85	26.77	1342		37.0	na	1.1				
	539	189.40	LR-IG-1-RB	GS1RB65	26.64	1218		48.5	na	1.1				
	540	189.40	LR-IG-1-RB	GS1RB45	26.53	1111		51.0	na	1.1				
	541	189.40	LR-IG-1-RB	GS1RB30vb	26.47	1055		54.4	na	1.1				
	542	189.40	LR-IG-1-RB	GS1RB25	26.37	962		70.0	na	1.1				
	543	189.40	LR-IG-1-RB	GS1RB05	26.01	675		95.5	na	1.1				
	544	189.40	LR-IG-1-RB	GS1RB00vb	25.91	602			na	1.0				
Iron Gate-Shasta	545	189.60	LR-IG-4-RB	GS4RB00vb	26.08	219	11516530	100.0	na	1.0	26.70	8/2/02	660	From CH2MHill
	546	189.60	LR-IG-4-RB	GS4RB05	26.18	279		100.0	na	1.0	26.80	11/8/02	895	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	547	189.60	LR-IG-4-RB	GS4RB25	26.59	601		96.3	na	1.0	27.60	4/15/03	1790	
	548	189.60	LR-IG-4-RB	GS4RB36vb	26.80	812		75.6	na	1.1				
	549	189.60	LR-IG-4-RB	GS4RB45	27.14	1200		48.8	na	1.1				
	550	189.60	LR-IG-4-RB	GS4RB65	27.67	1951		18.0	na	1.2				
	551	189.60	LR-IG-4-RB	GS4RB85	28.59	3630		7.1	na	1.5				
	552	189.60	LR-IG-4-RB	GS4RB90	29.05	4648		4.1	na	1.7				
Iron Gate-Shasta	553	189.60	LR-IG-4-LB	GS4LB00vb	26.38	428	11516530	99.3	na	1.0	26.70	8/2/02	660	From CH2MHill
	554	189.60	LR-IG-4-LB	GS4LB05	26.44	472		98.9	na	1.0	26.80	11/8/02	895	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	555	189.60	LR-IG-4-LB	GS4LB20vb	26.80	817		75.6	na	1.1	27.60	4/15/03	1790	
	556	189.60	LR-IG-4-LB	GS4LB25	26.95	976		69.8	na	1.1				
	557	189.60	LR-IG-4-LB	GS4LB45	27.03	1069		53.0	na	1.1				
	558	189.60	LR-IG-4-LB	GS4LB65	27.16	1234		48.3	na	1.1				
	559	189.60	LR-IG-4-LB	GS4LB85	27.36	1503		29.7	na	1.2				
	560	189.60	LR-IG-4-LB	GS4LB105	27.70	2012		17.3	na	1.2				
	561	189.60	LR-IG-4-LB	GS4LB125	27.91	2344		14.8	na	1.3				
	562	189.60	LR-IG-4-LB	GS4LB145	28.37	3192		9.9	na	1.4				
Iron Gate-Shasta	563	186.60	LR-R Ranch-1-LB	RR1LB190vb	29.39	27959	11516530	0.0	na	25.3	26.9	8/12/02	663	From CH2MHill
	564	186.60	LR-R Ranch-1-LB	RR1LB185	29.35	26652		0.0	na	21.7	27.0	11/2/02	887	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	565	186.60	LR-R Ranch-1-LB	RR1LB165	29.05	18790		0.0	na	8.7	27.2	9/12/03	1190	
	566	186.60	LR-R Ranch-1-LB	RR1LB145	28.81	14165		0.0	na	5.1				
	567	186.60	LR-R Ranch-1-LB	RR1LB125	28.72	12526		0.0	na	4.2				
	568	186.60	LR-R Ranch-1-LB	RR1LB105	28.62	11005		0.0	na	3.5				
	569	186.60	LR-R Ranch-1-LB	RR1LB85	28.35	7685		0.5	na	2.4				
	570	186.60	LR-R Ranch-1-LB	RR1LB72vb	28.20	6205		1.6	na	2.0				
	571	186.60	LR-R Ranch-1-LB	RR1LB65	28.14	5709		2.2	na	1.9				
	572	186.60	LR-R Ranch-1-LB	RR1LB45	27.78	3314		9.0	na	1.4				
	573	186.60	LR-R Ranch-1-LB	RR1LB25	27.53	2214		15.7	na	1.3				
	574	186.60	LR-R Ranch-1-LB	RR1LB20vb	27.44	1893		18.5	na	1.2				
	575	186.60	LR-R Ranch-1-LB	RR1LB05	27.15	1128		50.4	na	1.1				

Appendix A Transect and Plot Location and Elevations, Rating Curves, and Results

River Reach	Plot No.	River Mile	Project Segment	Plot ID	Plot Elev. Adj. (m)	Flow Required to Inundate Plot Elev. (cfs)	Gage # or flow data source	ID (%)	IF (hours)	Return Frequency (yrs)	WSEL	Date	Q	Q vs. Y Comments
	576	186.60	LR-R Ranch-1-LB	RR1LB00vb	26.95	767		78.0	na	1.1				
Iron Gate-Shasta	577	186.60	LR-R Ranch-1-RB	RR1RB00	26.85	617	11516530	96.0	na	1.0	26.9	8/12/02	663	From CH2MHill
	578	186.60	LR-R Ranch-1-RB	RR1RB05	26.86	629		96.0	na	1.0	27.0	11/2/02	887	Elev (m) = (a*Q(cfs)^b+c)/3.281
	579	186.60	LR-R Ranch-1-RB	RR1RB20vb	27.38	1693		25.6	na	1.2	27.2	9/12/03	1190	
	580	186.60	LR-R Ranch-1-RB	RR1RB25	27.50	2102		16.7	na	1.2				
	581	186.60	LR-R Ranch-1-RB	RR1RB45	28.08	5261		3.0	na	1.8				
	582	186.60	LR-R Ranch-1-RB	RR1RB65	28.32	7355		0.6	na	2.3				
	583	186.60	LR-R Ranch-1-RB	RR1RB75vb	28.47	9093		0.2	na	2.8				
	584	186.60	LR-R Ranch-1-RB	RR1RB85	28.66	11658		0.0	na	3.8				
	585	186.60	LR-R Ranch-1-RB	RR1RB105	29.10	20024		0.0	na	10.0				
	586	186.60	LR-R Ranch-1-RB	RR1RB125	30.20	65002		0.0	na	>500 years				
Iron Gate-Shasta	587	179.00	LR-I5-3-RB	I53RB225	27.63	5506	11516530	2.7	na	1.9	26.4	8/12/02	663	From CH2MHill
	588	179.00	LR-I5-3-RB	I53RB205	27.50	4776		3.7	na	1.7	26.9	4/15/03	3010	Elev (m) = (a*Q(cfs)^b+c)/3.281
	589	179.00	LR-I5-3-RB	I53RB185	27.36	4055		5.8	na	1.6	26.425	9/12/03	1190	
	590	179.00	LR-I5-3-RB	I53RB165	27.37	4085		5.8	na	1.6				
	591	179.00	LR-I5-3-RB	I53RB150vb	27.35	3996		5.9	na	1.6				
	592	179.00	LR-I5-3-RB	I53RB145	27.34	3938		6.1	na	1.5				
	593	179.00	LR-I5-3-RB	I53RB125	27.32	3852		6.3	na	1.5				
	594	179.00	LR-I5-3-RB	I53RB105	27.34	3967		6.1	na	1.5				
	595	179.00	LR-I5-3-RB	I53RB85	27.35	4026		6.0	na	1.6				
	596	179.00	LR-I5-3-RB	I53RB77vb	27.39	4175		5.5	na	1.6				
	597	179.00	LR-I5-3-RB	I53RB65	27.47	4612		4.1	na	1.7				
	598	179.00	LR-I5-3-RB	I53RB45	27.33	3895		6.2	na	1.5				
	599	179.00	LR-I5-3-RB	I53RB31vb	26.12	555		97.8	na	1.0				
	600	179.00	LR-I5-3-RB	I53RB25	26.14	578		96.6	na	1.0				
	601	179.00	LR-I5-3-RB	I53RB05	25.92	339		100.0	na	1.0				
	602	179.00	LR-I5-3-RB	I53RB00vb	25.84	271		100.0	na	1.0				
Iron Gate-Shasta	603	179.00	LR-I5-3-LB	I53LB00vb	26.15	584	11516530	96.3	na	1.0	26.4	8/12/02	663	From CH2MHill
	604	179.00	LR-I5-3-LB	I53LB05	26.19	640		96.0	na	1.1	26.9	4/15/03	3010	Elev (m) = (a*Q(cfs)^b+c)/3.281
	605	179.00	LR-I5-3-LB	I53LB25	26.29	793		76.6	na	1.1	26.425	9/12/03	1190	
	606	179.00	LR-I5-3-LB	I53LB40vb	26.40	981		69.7	na	1.1				
	607	179.00	LR-I5-3-LB	I53LB45	26.46	1085		51.6	na	1.1				
	608	179.00	LR-I5-3-LB	I53LB65	26.46	1085		51.6	na	1.1				
	609	179.00	LR-I5-3-LB	I53LB85	26.76	1796		21.7	na	1.2				
	610	179.00	LR-I5-3-LB	I53LB105	27.19	3296		9.1	na	1.4				
	611	179.00	LR-I5-3-LB	I53LB125	27.88	7146		0.8	na	2.2				
	612	179.00	LR-I5-3-LB	I53LB145	27.96	7729		0.5	na	2.4				
	613	179.00	LR-I5-3-LB	I53LB165	28.24	10052		0.0	na	3.1				
	614	179.00	LR-I5-3-LB	I53LB185	28.35	11138		0.0	na	3.6				
	615	179.00	LR-I5-3-LB	I53LB205	28.49	12492		0.0	na	4.2				
	616	179.00	LR-I5-3-LB	I53LB225	28.53	12880		0.0	na	4.4				
	617	179.00	LR-I5-3-LB	I53LB245	28.66	14409		0.0	na	5.2				
	618	179.00	LR-I5-3-LB	I53LB255	28.76	15606		0.0	na	6.0				
Iron Gate-Shasta	619	179.4	LR-I5-2-LB	I52LB65	30.99	3128	11516530	10.2	na	1.4	30.34	11/7/02	889	From CH2MHill
	620	179.4	LR-I5-2-LB	I52LB45	30.75	2084		16.9	na	1.2	30.96	4/15/03	3010	Elev (m) = (a*Q(cfs)^b+c)/3.281
	621	179.4	LR-I5-2-LB	I52LB41vb	30.34	858		73.6	na	1.1	30.505	9/12/03	1190	
	622	179.4	LR-I5-2-LB	I52LB25	30.15	497		98.8	na	1.0				
	623	179.4	LR-I5-2-LB	I52LB05	29.99	292		100.0	na	1.0				
	624	179.4	LR-I5-2-LB	I52LB00vb	30.01	316		100.0	na	1.0				
Iron Gate-Shasta	625	179.4	LR-I5-2-RB	I52RB00vb	29.77	111	11516530	100.0	na	<1 year	30.34	11/7/02	889	From CH2MHill
	626	179.4	LR-I5-2-RB	I52RB05	29.76	101		100.0	na	<1 year	30.96	4/15/03	3010	Elev (m) = (a*Q(cfs)^b+c)/3.281
	627	179.4	LR-I5-2-RB	I52RB25	30.14	487		98.9	na	1.0	30.505	9/12/03	1190	
	628	179.4	LR-I5-2-RB	I52RB39vb	30.33	832		75.1	na	1.1				
	629	179.4	LR-I5-2-RB	I52RB45	30.44	1089		51.6	na	1.1				
	630	179.4	LR-I5-2-RB	I52RB50vb	30.49	1217		48.5	na	1.1				
	631	179.4	LR-I5-2-RB	I52RB65	30.51	1267		48.2	na	1.1				
	632	179.4	LR-I5-2-RB	I52RB85	30.64	1689		25.6	na	1.2				
	633	179.4	LR-I5-2-RB	I52RB105	30.61	1579		28.1	na	1.2				
	634	179.4	LR-I5-2-RB	I52RB125	30.55	1409		31.4	na	1.1				

Appendix A Transect and Plot Location and Elevations, Rating Curves, and Results

River Reach	Plot No.	River Mile	Project Segment	Plot ID	Plot Elev. Adj. (m)	Flow Required to Inundate Plot Elev. (cfs)	Gage # or flow data source	ID (%)	IF (hours)	Return Frequency (yrs)	WSEL	Date	Q	Q vs. Y Comments
	635	179.4	LR-I5-2-RB	I52RB145	30.61	1569		28.4	na	1.2				
	636	179.4	LR-I5-2-RB	I52RB165	30.75	2060		17.0	na	1.2				
	637	179.4	LR-I5-2-RB	I52RB185	30.95	2935		11.7	na	1.4				
	638	179.4	LR-I5-2-RB	I52RB205	31.00	3159		10.1	na	1.4				
	639	179.4	LR-I5-2-RB	I52RB211vb	31.35	5238		3.0	na	1.8				
	640	179.4	LR-I5-2-RB	I52RB225	31.89	9889		0.1	na	3.1				
Iron Gate-Shasta	641	179.3	LR-I5-1-RB	I51RB125	31.54	6562	11516530	1.2	na	2.1	30.0	11/6/02	890	From CH2MHill
	642	179.3	LR-I5-1-RB	I51RB105	31.10	4259		5.1	na	1.6	30.78	4/15/03	3010	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	643	179.3	LR-I5-1-RB	I51RB100vb	31.06	4095		5.7	na	1.6	30.23	9/12/03	1190	
	644	179.3	LR-I5-1-RB	I51RB85	30.96	3648		7.0	na	1.5				
	645	179.3	LR-I5-1-RB	I51RB65	30.78	2954		11.4	na	1.4				
	646	179.3	LR-I5-1-RB	I51RB45	30.66	2544		13.8	na	1.3				
	647	179.3	LR-I5-1-RB	I51RB25	30.49	1984		17.7	na	1.2				
	648	179.3	LR-I5-1-RB	I51RB10vb	30.02	878		73.0	na	1.1				
	649	179.3	LR-I5-1-RB	I51RB05	29.87	621		96.0	na	1.0				
	650	179.3	LR-I5-1-RB	I51RB00vb	29.66	350		100.0	na	1.0				
Iron Gate-Shasta	651	179.3	LR-I5-1-LB	I51LB00vb	29.59	275	11516530	100.0	na	1.0	30.0	11/6/02	890	From CH2MHill
	652	179.3	LR-I5-1-LB	I51LB05	29.68	364		100.0	na	1.0	30.78	4/15/03	3010	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	653	179.3	LR-I5-1-LB	I51LB20vb	30.02	878		73.0	na	1.1	30.23	9/12/03	1190	
	654	179.3	LR-I5-1-LB	I51LB25	30.32	1533		29.1	na	1.2				
	655	179.3	LR-I5-1-LB	I51LB28vb	30.48	1948		18.0	na	1.2				
	656	179.3	LR-I5-1-LB	I51LB45	31.21	4805		3.7	na	1.7				
Iron Gate-Shasta	657	184.20	LR-CW-1-LB	CW1LB65	31.66	5637	11516530	2.3	na	1.9	30.185	11/7/02	889	From CH2MHill
	658	184.20	LR-CW-1-LB	CW1LB53vb	31.07	3300		9.1	na	1.4	30.995	4/15/03	3010	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	659	184.20	LR-CW-1-LB	CW1LB45	30.92	2780		12.8	na	1.3	30.31	9/12/03	1190	
	660	184.20	LR-CW-1-LB	CW1LB41vb	30.84	2540		13.8	na	1.3				
	661	184.20	LR-CW-1-LB	CW1LB25	30.49	1565		28.4	na	1.2				
	662	184.20	LR-CW-1-LB	CW1LB19vb	30.20	941		70.6	na	1.1				
	663	184.20	LR-CW-1-LB	CW1LB10vb	29.99	576		97.0	na	1.0				
	664	184.20	LR-CW-1-LB	CW1LB05	29.88	421		99.5	na	1.0				
	665	184.20	LR-CW-1-LB	CW1LB00vb	29.70	221		100.0	na	1.0				
Iron Gate-Shasta	666	184.20	LR-CW-1-RB	CW1RB00vb	29.55	98	11516530	100.0	na	<1 year	30.185	11/7/02	889	From CH2MHill
	667	184.20	LR-CW-1-RB	CW1RB05	29.65	171		100.0	na	<1 year	30.995	4/15/03	3010	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	668	184.20	LR-CW-1-RB	CW1RB25	29.94	504		98.7	na	1.0	30.31	9/12/03	1190	
	669	184.20	LR-CW-1-RB	CW1RB45	30.12	795		76.5	na	1.1				
	670	184.20	LR-CW-1-RB	CW1RB65	30.17	884		72.6	na	1.1				
	671	184.20	LR-CW-1-RB	CW1RB85	30.02	623		96.0	na	1.0				
	672	184.20	LR-CW-1-RB	CW1RB105	30.23	1006		68.7	na	1.1				
	673	184.20	LR-CW-1-RB	CW1RB125	30.48	1550		28.6	na	1.2				
	674	184.20	LR-CW-1-RB	CW1RB145	30.65	1975		17.7	na	1.2				
	675	184.20	LR-CW-1-RB	CW1RB102vb	30.17	889		72.5	na	1.1				
	676	184.20	LR-CW-1-RB	CW1RB165	31.07	3300		9.1	na	1.4				
	677	184.20	LR-CW-1-RB	CW1RB185	31.88	6666		1.1	na	2.1				
	678	184.20	LR-CW-1-RB	CW1RB205	32.68	11115		0.0	na	3.6				
Iron Gate-Shasta	679	184.21	LR-CW-2-LB	CW2LB65	31.69	9712	11516530	0.3	na	3.0	30.08	11/7/02	889	From CH2MHill
	680	184.21	LR-CW-2-LB	CW2LB61vb	31.23	6498		2.8	na	2.1	30.74	4/15/03	3010	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	681	184.21	LR-CW-2-LB	CW2LB45	30.76	3913		10.5	na	1.5	30.2	9/12/03	1190	
	682	184.21	LR-CW-2-LB	CW2LB26vb	30.07	1320		73.4	na	1.1				
	683	184.21	LR-CW-2-LB	CW2LB25	29.98	1096		95.1	na	1.1				
	684	184.21	LR-CW-2-LB	CW2LB05	29.39	124		100.0	na	<1 year				
	685	184.21	LR-CW-2-LB	CW2LB00vb	29.23	29		100.0	na	<1 year				
Iron Gate-Shasta	686	184.21	LR-CW-2-RB	CW2RB00vb	29.13	4	11516530	100.0	na	<1 year	30.08	11/7/02	889	From CH2MHill
	687	184.21	LR-CW-2-RB	CW2RB05	29.24	34		100.0	na	<1 year	30.74	4/15/03	3010	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	688	184.21	LR-CW-2-RB	CW2RB25	29.91	936		97.6	na	1.1	30.2	9/12/03	1190	
	689	184.21	LR-CW-2-RB	CW2RB45	29.85	801		99.0	na	1.1				
	690	184.21	LR-CW-2-RB	CW2RB65	30.08	1353		72.4	na	1.1				

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River Reach	Plot No.	River Mile	Project Segment	Plot ID	Plot Elev. Adj. (m)	Flow Required to Inundate Plot Elev. (cfs)	Gage # or flow data source	ID (%)	IF (hours)	Return Frequency (yrs)	WSEL	Date	Q	Q vs. Y Comments
	691	184.21	LR-CW-2-RB	CW2RB85	30.21	1733		48.6	na	1.2				
	692	184.21	LR-CW-2-RB	CW2RB105	30.60	3217		14.2	na	1.4				
	693	184.21	LR-CW-2-RB	CW2RB125	30.98	5071		5.6	na	1.8				
	694	184.21	LR-CW-2-RB	CW2RB145	31.29	6922		2.0	na	2.2				
	695	184.21	LR-CW-2-RB	CW2RB165	32.09	13015		0.0	na	4.4				
	696	184.21	LR-CW-2-RB	CW2RB178vb	32.21	14123		0.0	na	5.0				
	697	184.21	LR-CW-2-RB	CW2RB185	32.25	14465		0.0	na	5.3				
	698	184.21	LR-CW-2-RB	CW2RB195vb	32.29	14839		0.0	na	5.5				
	699	184.21	LR-CW-2-RB	CW2RB205	32.46	16570		0.0	na	6.7				
	700	184.21	LR-CW-2-RB	CW2RB225	32.64	18433		0.0	na	8.3				
Iron Gate-Shasta	701	184.3	LR-CWkb-RB-3	KBRB165	32.82	62167	11516530	0.0	na	>500 years	30.15	11/7/02	889	From CH2MHill
	702	184.3	LR-CWkb-RB-3	KBRB145	32.35	39729		0.0	na	99.4	30.60	4/15/03	3010	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	703	184.3	LR-CWkb-RB-3	KBRB125	31.38	12385		0.0	na	4.1	30.28	9/12/03	1190	
	704	184.3	LR-CWkb-RB-3	KBRB105	30.76	4231		5.3	na	1.6				
	705	184.3	LR-CWkb-RB-3	KBRB85	30.49	2271		15.1	na	1.3				
	706	184.3	LR-CWkb-RB-3	KBRB70vb	30.18	928		70.9	na	1.1				
	707	184.3	LR-CWkb-RB-3	KBRB65	30.12	769		78.1	na	1.1				
	708	184.3	LR-CWkb-RB-3	KBRB45	30.12	752		80.0	na	1.1				
	709	184.3	LR-CWkb-RB-3	KBRB25	30.13	803		76.1	na	1.1				
	710	184.3	LR-CWkb-RB-3	KBRB05	30.07	630		96.0	na	1.0				
	711	184.3	LR-CWkb-RB-3	KBRB00vb	30.12	769		78.1	na	1.1				
Iron Gate-Shasta	712	184.3	LR-CWkbis-3	KBISLB00vb	29.87	265	11516530	100.0	na	1.0	30.15	11/7/02	889	From CH2MHill
	713	184.3	LR-CWkbis-3	KBISLB05	29.89	298		100.0	na	1.0	30.60	4/15/03	3010	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	714	184.3	LR-CWkbis-3	KBISLB15vb	29.91	334		100.0	na	1.0	30.28	9/12/03	1190	
	715	184.3	LR-CWkbis-3	KBISLB25	30.02	534		98.5	na	1.0				
	716	184.3	LR-CWkbis-3	KBISLB30vb	30.06	615		96.1	na	1.0				
	717	184.3	LR-CWkbis-3	KBISLB45	30.21	1026		62.3	na	1.1				
	718	184.3	LR-CWkbis-3	KBISLB65	30.24	1151		49.7	na	1.1				
	719	184.3	LR-CWkbis-3	KBISLB85	30.30	1360		35.1	na	1.1				
	720	184.3	LR-CWkbis-3	KBISLB105	30.33	1486		30.2	na	1.2				
	721	184.3	LR-CWkbis-3	KBISLB120vb	30.22	1066		53.0	na	1.1				
	722	184.3	LR-CWkbis-3	KBISLB125	30.18	928		70.9	na	1.1				
	723	184.3	LR-CWkbis-3	KBISLB145	29.99	472		98.9	na	1.0				
Iron Gate-Shasta	724	184.3	LR-CWkb-LB-3	KBLB00vb	29.75	141	11516530	100.0	na	<1 year	30.15	11/7/02	889	From CH2MHill
	725	184.3	LR-CWkb-LB-3	KBLB05	29.79	174		100.0	na	<1 year	30.60	4/15/03	3010	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	726	184.3	LR-CWkb-LB-3	KBLB22vb	30.12	769		78.1	na	1.1	30.28	9/12/03	1190	
	727	184.3	LR-CWkb-LB-3	KBLB25	30.30	1360		35.1	na	1.1				
	728	184.3	LR-CWkb-LB-3	KBLB33vb	30.49	2271		15.1	na	1.3				
	729	184.3	LR-CWkb-LB-3	KBLB45	30.69	3626		7.1	na	1.5				
	730	184.3	LR-CWkb-LB-3	KBLB65	31.83	22393		0.0	na	13.2				

Appendix A Transect and Plot Location and Elevations, Rating Curves, and Results

River Reach	Plot No.	River Mile	Project Segment	Plot ID	Plot Elev. Adj. (m)	Flow Required to Inundate Plot Elev. (cfs)	Gage # or flow data source	ID (%)	IF (hours)	Return Frequency (yrs)	WSEL	Date	Q	Q vs. Y Comments
Link River	1	254.1	LiR-run2755.1-rb	91R00vb	29.25	26	11507500	100.0	na	<1 year	29.67	10/9/02	684	From CH2MHill
	2	254.1	LiR-run2755.1-rb	91R05	29.30	48		100.0	na	<1 year	29.65	2/10/03	625	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	3	254.1	LiR-run2755.1-rb	91R14vb	29.51	290		92.7	na	<1 year	29.63	10/21/02	553	
	4	254.1	LiR-run2755.1-rb	91R24vb	29.63	579		71.9	na	<1 year				
	5	254.1	LiR-run2755.1-rb	91R25	29.75	1004		27.5	na	<1 year				
	6	254.1	LiR-run2755.1-rb	91R45	30.09	3293		1.6	na	1.9				
	7	254.1	LiR-run2755.1-rb	91R49vb	30.07	3067		2.2	na	1.7				
	8	254.1	LiR-run2755.1-rb	91R65	30.12	3530		0.9	na	2.1				
	9	254.1	LiR-run2755.1-rb	91R85	30.25	5045		0.1	na	4.6				
	10	254.1	LiR-run2755.1-rb	91R105	30.26	5083		0.1	na	4.7				
	11	254.1	LiR-run2755.1-rb	91R125	30.38	6756		0.0	na	11.1				
	12	254.1	LiR-run2755.1-rb	91R145	30.37	6616		0.0	na	10.3				
	13	254.1	LiR-run2755.1-rb	91R165	30.55	9816		0.0	na	52.5				
	14	254.1	LiR-run2755.1-rb	91R182vb	30.84	16875		0.0	na	>500 years				
	15	254.1	LiR-run2755.1-rb	91R185	30.91	18777		0.0	na	>500 years				
	16	254.1	LiR-run2755.1-rb	91R205	31.06	23877		0.0	na	>500 years				
	17	254.1	LiR-run2755.1-rb	91R225	31.39	38079		0.0	na	>500 years				
	18	254.1	LiR-run2755.1-rb	91R245	31.60	49335		0.0	na	>500 years				
	19	254.1	LiR-run2755.1-rb	91R265	31.76	59320		0.0	na	>500 years				
	20	254.1	LiR-run2755.1-rb	91R285	32.10	85546		0.0	na	>500 years				
	21	254.1	LiR-run2755.1-rb	91R305	32.39	113201		0.0	na	>500 years				
	22	254.1	LiR-run2755.1-rb	91R325	32.54	129396		0.0	na	>500 years				
	23	254.1	LiR-run2755.1-rb	91R345	32.70	147843		0.0	na	>500 years				
	24	254.1	LiR-run2755.1-rb	91R365	32.86	169227		0.0	na	>500 years				
Link River	25	254.1	LiR-run2755.2-rb	92R00vb	29.28	38	11507500	100.0	na	<1 year	29.67	10/9/02	684	From CH2MHill
	26	254.1	LiR-run2755.2-rb	92R05	29.33	65		100.0	na	<1 year	29.65	2/10/03	625	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	27	254.1	LiR-run2755.2-rb	92R11vb	29.49	252		94.6	na	<1 year	29.63	10/21/02	553	
	28	254.1	LiR-run2755.2-rb	92R15vb	29.55	363		89.6	na	<1 year				
	29	254.1	LiR-run2755.2-rb	92R25	29.82	1334		12.9	na	<1 year				
	30	254.1	LiR-run2755.2-rb	92R45	30.15	3811		0.6	na	2.5				
	31	254.1	LiR-run2755.2-rb	92R65	30.33	6031		0.1	na	7.6				
	32	254.1	LiR-run2755.2-rb	92R85	30.34	6163		0.1	na	8.2				
	33	254.1	LiR-run2755.2-rb	92R92vb	30.37	6616		0.0	na	10.3				
	34	254.1	LiR-run2755.2-rb	92R105	30.38	6898		0.0	na	11.9				
	35	254.1	LiR-run2755.2-rb	92R125	30.46	8110		0.0	na	22.0				
	36	254.1	LiR-run2755.2-rb	92R145	30.50	8878		0.0	na	32.6				
	37	254.1	LiR-run2755.2-rb	92R160vb	30.62	11343		0.0	na	114.2				
	38	254.1	LiR-run2755.2-rb	92R165	30.71	13320		0.0	na	312.3				
	39	254.1	LiR-run2755.2-rb	92R185	31.11	25688		0.0	na	>500 years				
	40	254.1	LiR-run2755.2-rb	92R205	31.36	36439		0.0	na	>500 years				
	41	254.1	LiR-run2755.2-rb	92R225	31.45	41028		0.0	na	>500 years				
	42	254.1	LiR-run2755.2-rb	92R245	31.74	58305		0.0	na	>500 years				
	43	254.1	LiR-run2755.2-rb	92R250vb	31.77	60140		0.0	na	>500 years				
	44	254.1	LiR-run2755.2-rb	92R265	32.13	88453		0.0	na	>500 years				
Link River	45	254	LiR-pool2602-rb	P260200vb	29.37	536	11507500	75.3	na	<1 year	29.51	10/9/02	684	From CH2MHill
	46	254	LiR-pool2602-rb	P260205	29.49	665		62.4	na	<1 year	29.45	2/10/03	625	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	47	254	LiR-pool2602-rb	P260225	29.51	693		59.1	na	<1 year	29.37	10/23/02	795	
	48	254	LiR-pool2602-rb	P260245	29.83	1132		18.9	na	<1 year	Two WSEL data points			
	49	254	LiR-pool2602-rb	P260265	30.01	1424		11.3	na	<1 year	Did not use 10/23 outlier			
	50	254	LiR-pool2602-rb	P260285	30.01	1429		11.3	na	<1 year				
	51	254	LiR-pool2602-rb	P2602105	30.14	1670		8.0	na	<1 year				
	52	254	LiR-pool2602-rb	P2602125	30.25	1895		6.4	na	<1 year				
	53	254	LiR-pool2602-rb	P2602145	30.50	2468		3.7	na	1.2				
	54	254	LiR-pool2602-rb	P2602165	30.44	2335		4.0	na	1.2				
	55	254	LiR-pool2602-rb	P2602185	31.03	4009		0.5	na	2.7				
	56	254	LiR-pool2602-rb	P2602205	30.97	3802		0.6	na	2.5				
	57	254	LiR-pool2602-rb	P2602225	31.06	4110		0.5	na	2.9				
	58	254	LiR-pool2602-rb	P2602245	31.20	4593		0.2	na	3.7				
	59	254	LiR-pool2602-rb	P2602265	31.39	5270		0.1	na	5.2				
	60	254	LiR-pool2602-rb	P2602285	31.47	5616		0.1	na	6.2				

Appendix A Transect and Plot Location and Elevations, Rating Curves, and Results

River Reach	Plot No.	River Mile	Project Segment	Plot ID	Plot Elev. Adj. (m)	Flow Required to Inundate Plot Elev. (cfs)	Gage # or flow data source	ID (%)	IF (hours)	Return Frequency (yrs)	WSEL	Date	Q	Q vs. Y Comments
	61	254	LiR-pool2602-rb	P2602305	31.77	6858		0.0	na	11.6				
	62	254	LiR-pool2602-rb	P2602325	31.90	7490		0.0	na	16.1				
	63	254	LiR-pool2602-rb	P2602345	32.06	8231		0.0	na	23.4				
	64	254	LiR-pool2602-rb	P2602365	32.12	8554		0.0	na	27.6				
	65	254	LiR-pool2602-rb	P2602385	32.33	9652		0.0	na	48.3				
	66	254	LiR-pool2602-rb	P2602405	32.70	11798		0.0	na	144.0				
	67	254	LiR-pool2602-rb	P2602425	32.80	12447		0.0	na	200.3				
	68	254	LiR-pool2602-rb	P2602445	33.17	14945		0.0	na	>500 years				
	69	254	LiR-pool2602-rb	P2602465	33.90	20576		0.0	na	>500 years				
Keno Canyon	70	232.4	KRR-GEO-3-LB	KC3LB00vb	40.12	2039	11509500	12.0	5.0	1.1	39.32	8/9/02	366	From CH2MHill
	71	232.4	KRR-GEO-3-LB	KC3LB05	40.12	2019		12.0	299.5	1.1	39.39	11/11/02	na	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	72	232.4	KRR-GEO-3-LB	KC3LB25	39.72	963		43.3	106	<1 year	40.13	4/14/03	2060	
	73	232.4	KRR-GEO-3-LB	KC3LB45	39.57	689		70.1	37	<1 year	Two WSEL data points			
	74	232.4	KRR-GEO-3-LB	KC3LB65	39.30	344		99.4	37	<1 year	No discharge data from USGS for Nov, 2002			
	75	232.4	KRR-GEO-3-LB	KC3LB72vb	39.09	178		100.0	28	<1 year				
	76	232.4	KRR-GEO-3-LB	KC3LB82vb	39.00	132		100.0	28	<1 year				
	77	232.4	KRR-GEO-3-LB	KC3LB85	38.90	85		100.0	28	<1 year				
	78	232.4	KRR-GEO-3-LB	KC3LB105	38.68	28		100.0	28	<1 year				
	79	232.4	KRR-GEO-3-LB	KC3LB125	38.57	13		100.0	28	<1 year				
	80	232.4	KRR-GEO-3-LB	KC3LB145	38.37	2		100.0	28	<1 year				
	81	232.4	KRR-GEO-3-LB	KC3LB165	38.32	1		100.0	28	<1 year				
	82	232.4	KRR-GEO-3-LB	KC3LB172vb	38.33	1		100.0	28	<1 year				
	83	232.4	KRR-GEO-3-LB	KC3LB185	38.71	35		100.0	28	<1 year				
	84	232.4	KRR-GEO-3-LB	KC3LB205	38.69	30		100.0	28	<1 year				
Keno Canyon	85	232.4	KRR-GEO-3-RB	KC3RB-1vb	38.55	12	11509500	100.0	32	<1 year	39.3	8/9/02	366	From CH2MHill
	86	232.4	KRR-GEO-3-RB	KC3RB00vb	38.64	22		100.0	32	<1 year	39.39	11/11/02	na	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	87	232.4	KRR-GEO-3-RB	KC3RB05	38.73	37		100.0	32	<1 year	40.13	4/14/03	2060	
	88	232.4	KRR-GEO-3-RB	KC3RB10vb	38.83	64		100.0	32	<1 year	Two WSEL data points			
	89	232.4	KRR-GEO-3-RB	KC3RB25	38.85	70		100.0	32	<1 year	No discharge data from USGS for Nov, 2002			
	90	232.4	KRR-GEO-3-RB	KC3RB45	39.05	156		100.0	32	<1 year				
	91	232.4	KRR-GEO-3-RB	KC3RB65	39.24	290		99.7	12	<1 year				
	92	232.4	KRR-GEO-3-RB	KC3RB85	39.30	344		99.4	39	<1 year				
	93	232.4	KRR-GEO-3-RB	KC3RB105	39.51	605		86.3	19	<1 year				
	94	232.4	KRR-GEO-3-RB	KC3RB120vb	39.72	969		43.3	106	<1 year				
	95	232.4	KRR-GEO-3-RB	KC3RB125	39.88	1321		25.8	4	<1 year				
	96	232.4	KRR-GEO-3-RB	KC3RB145	40.16	2177		11.0	706.5	1.1				
	97	232.4	KRR-GEO-3-RB	KC3RB165	40.51	3665		5.6	398.5	1.9				
Keno Canyon	98	232.3	KRR-GEO-2-LB-IS.	KC200vb	36.79	6509	11509500	0.1	4.0	5.2	34.57	8/9/02	366	From CH2MHill
	99	232.3	KRR-GEO-2-LB-IS.	KC205	36.70	6110		0.9	101.0	4.5	35.11	11/11/02	na	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	100	232.3	KRR-GEO-2-LB-IS.	KC225	35.96	3209		6.1	7.0	1.6	35.42	4/14/03	2060	
	101	232.3	KRR-GEO-2-LB-IS.	KC235vb	35.59	2151		10.8	649	1.1	35.56	4/2/03	2310	
	102	232.3	KRR-GEO-2-LB-IS.	KC245	35.02	967		42.8	98	<1 year	36.26	3/28/03	3410	
	103	232.3	KRR-GEO-2-LB-IS.	KC265	35.20	1284		28.5	33	<1 year	No discharge data from USGS for Nov, 2002			
	104	232.3	KRR-GEO-2-LB-IS.	KC285	35.04	997		42.4	74	<1 year				
	105	232.3	KRR-GEO-2-LB-IS.	KC2105	35.26	1403		23.4	32	<1 year				
	106	232.3	KRR-GEO-2-LB-IS.	KC2125	34.91	803		56.7	38	<1 year				
	107	232.3	KRR-GEO-2-LB-IS.	KC2134	34.85	721		65.8	6	<1 year				
	108	232.3	KRR-GEO-2-LB-IS.	KC2145	35.20	1296		28.5	7	<1 year				
	109	232.3	KRR-GEO-2-LB-IS.	KC2165	35.18	1250		30.3	18	<1 year				
	110	232.3	KRR-GEO-2-LB-IS.	KC2185	35.26	1397		23.0	40	<1 year				
	111	232.3	KRR-GEO-2-LB-IS.	KC2205	35.12	1144		33.3	32	<1 year				
	112	232.3	KRR-GEO-2-LB-IS.	KC2363vb	35.03	982		42.8	59	<1 year				
	113	232.3	KRR-GEO-2-LB-IS.	KC2365	34.94	848		51.9	24	<1 year				
	114	232.3	KRR-GEO-2-LB-IS.	KC2385	34.54	360		99.4	32	<1 year				
	115	232.3	KRR-GEO-2-LB-IS.	KC2405	34.93	830		53.2	41	<1 year				
	116	232.3	KRR-GEO-2-LB-IS.	KC2425	34.70	532		90.2	26	<1 year				
	117	232.3	KRR-GEO-2-LB-IS.	KC2445	34.51	333		99.4	39	<1 year				
	118	232.3	KRR-GEO-2-LB-IS.	KC2465	34.31	182		100.0	32	<1 year				
	119	232.3	KRR-GEO-2-LB-IS.	KC2469vb	34.33	192		100.0	32	<1 year				
Keno Canyon	120	232.0	KRR-GEO-1	KC1LB00vb	27.57	966	11509500	43.50	98	<1 year	na	na	na	USGS gage station

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River Reach	Plot No.	River Mile	Project Segment	Plot ID	Plot Elev. Adj. (m)	Flow Required to Inundate Plot Elev. (cfs)	Gage # or flow data source	ID (%)	IF (hours)	Return Frequency (yrs)	WSEL	Date	Q	Q vs. Y Comments
	121	232.0	KRR-GEO-1	KC1LB05	27.78	1390		24.00	40	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	122	232.0	KRR-GEO-1	KC1LB18vb	28.12	2281		10.60	8.0	1.2				
	123	232.0	KRR-GEO-1	KC1LB25	28.29	2834		7.50	17.0	1.4				
	124	232.0	KRR-GEO-1	KC1LB26vb	28.62	4160		4.60	4.0	2.3				
	125	232.0	KRR-GEO-1	KC1LB45	28.81	5123		3.00	62.5	3.2				
	126	232.0	KRR-GEO-1	KC1LB65	29.16	7104		0.00	259.0	6.4				
	127	232.0	KRR-GEO-1	KC1LB85	29.30	8107		0.00	30.0	9.1				
	128	232.0	KRR-GEO-1	KC1LB105	29.39	8742		0.00	na	11.3				
	129	232.0	KRR-GEO-1	KC1LB125	29.44	9083		0.00	na	12.8				
	130	232.0	KRR-GEO-1	KC1LB145	29.45	9175		0.00	na	13.2				
	131	232.0	KRR-GEO-1	KC1LB165	29.46	9268		0.00	na	13.6				
	132	232.0	KRR-GEO-1	KC1LB185	29.40	8764		0.00	na	11.4				
	133	232.0	KRR-GEO-1	KC1LB205	29.33	8258		0.00	9177.0	9.5				
	134	232.0	KRR-GEO-1	KC1LB216vb	29.46	9244		0.00	na	13.5				
	135	232.0	KRR-GEO-1	KC1LB225	29.62	10506		0.00	na	21.1				
	136	232.0	KRR-GEO-1	KC1LB245	29.62	10481		0.00	na	20.9				
JC Boyle Bypass	137	221.00	BBR-run ls-55.2	55AR00vb	28.58	25	11510700 minus turbine	100.0	na	na				From TRPA
	138	221.00	BBR-run ls-55.2	55AR05	28.50	8		100.0	na	na				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	139	221.00	BBR-run ls-55.2	55AR25	28.53	14		100.0	na	na				
	140	221.00	BBR-run ls-55.2	55AR45	28.46	3		100.0	na	na				
	141	221.00	BBR-run ls-55.2	55AR65	29.00	341		100.0	na	na				
	142	221.00	BBR-run ls-55.2	55AR85	29.09	470		11.4	1046.0	na				
	143	221.00	BBR-run ls-55.2	55AR93vb	29.30	826		9.6	341.5	na				
	144	221.00	BBR-run ls-55.2	55AR105	29.85	2411		4.6	118.0	na				
	145	221.00	BBR-run ls-55.2	55AR116vb	29.72	1970		6.1	591.5	na				
	146	221.00	BBR-run ls-55.2	55AR125	29.75	2052		6.1	633.0	na				
	147	221.00	BBR-run ls-55.2	55AR145	29.75	2052		6.1	633.0	na				
	148	221.00	BBR-run ls-55.2	55AR152vb	29.96	2853		3.8	71.0	na				
	149	221.00	BBR-run ls-55.2	55AR165	31.48	13170		0.0	na	na				
	150	221.00	BBR-run ls-55.2	55AR185	31.82	16656		0.0	na	na				
JC Boyle Bypass	151	221.01	BBR-run ls-55.1	55BR00vb	28.79	95	11510700 minus turbine	100.0	na	na				From TRPA
	152	221.01	BBR-run ls-55.1	55BR05	28.86	136		100.0	na	na				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	153	221.01	BBR-run ls-55.1	55BR25	28.76	79		100.0	na	na				
	154	221.01	BBR-run ls-55.1	55BR45	29.10	337		100.0	na	na				
	155	221.01	BBR-run ls-55.1	55BR58vb	29.48	913		9.2	349.5	na				
	156	221.01	BBR-run ls-55.1	55BR65	29.74	1483		8.0	427.5	na				
	157	221.01	BBR-run ls-55.1	55BR85	29.98	2176		5.2	479.0	na				
	158	221.01	BBR-run ls-55.1	55BR105	31.46	9956		0.0	na	na				
	159	221.01	BBR-run ls-55.1	55BR125	31.44	9797		0.0	na	na				
	160	221.01	BBR-run ls-55.1	55BR145	31.25	8453		0.0	na	na				
JC Boyle Bypass	161	223.00	BBR-pool133.1	133AR00vb	28.71	129	11510700 minus turbine	100.0	na	na				From TRPA
	162	223.00	BBR-pool133.1	133AR05	28.73	138		100.0	na	na				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	163	223.00	BBR-pool133.1	133AR25	29.17	460		11.4	1046.0	na				
	164	223.00	BBR-pool133.1	133AR42vb	29.58	960		8.9	321.0	na				
	165	223.00	BBR-pool133.1	133AR45	29.66	1089		8.8	358.0	na				
	166	223.00	BBR-pool133.1	133AR65	30.23	2183		5.2	479.0	na				
	167	223.00	BBR-pool133.1	133AR85	30.66	3260		2.5	na	na				
	168	223.00	BBR-pool133.1	133AR105	30.73	3480		2.0	na	na				
JC Boyle Bypass	169	223.01	BBR-pool133.2	133BR00vb	28.10	#NUM!	11510700 minus turbine	100.0	na	na				From TRPA
	170	223.01	BBR-pool133.2	133BR05	29.27	469		11.4	1046.0	na				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	171	223.01	BBR-pool133.2	133BR20vb	29.74	1026		8.9	358.0	na				
	172	223.01	BBR-pool133.2	133BR25	29.89	1258		8.5	331.0	na				
	173	223.01	BBR-pool133.2	133BR31vb	30.04	1506		8.0	391.0	na				
	174	223.01	BBR-pool133.2	133BR45	30.63	2766		3.9	61.5	na				
	175	223.01	BBR-pool133.2	133BR65	31.24	4503		0.2	na	na				
	176	223.01	BBR-pool133.2	133BR85	32.37	9079		0.0	na	na				

Appendix A Transect and Plot Location and Elevations, Rating Curves, and Results

River Reach	Plot No.	River Mile	Project Segment	Plot ID	Plot Elev. Adj. (m)	Flow Required to Inundate Plot Elev. (cfs)	Gage # or flow data source	ID (%)	IF (hours)	Return Frequency (yrs)	WSEL	Date	Q	Q vs. Y Comments
	177	223.01	BBR-pool133.2	133BR105vb	33.07	12817		0.0	na	na				
JC Boyle Bypass	178	222.00	BBR-pow ms-183.1	183AR00vb	29.00	107	11510700 minus turbine	100.0	na	na				From TRPA
	179	222.00	BBR-pow ms-183.1	183AR05	29.40	619		11.4	700.5	na				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	180	222.00	BBR-pow ms-183.1	183AR25	29.35	517		11.4	1046.0	na				
	181	222.00	BBR-pow ms-183.1	183AR45	29.25	366		100.0	na	na				
	182	222.00	BBR-pow ms-183.1	183AR62vb	29.57	1043		8.8	358.0	na				
	183	222.00	BBR-pow ms-183.1	183AR65	29.61	1176		8.7	329.0	na				
	184	222.00	BBR-pow ms-183.1	183AR69vb	29.62	1226		8.6	307.5	na				
	185	222.00	BBR-pow ms-183.1	183AR79vb	29.78	1810		6.2	353.0	na				
	186	222.00	BBR-pow ms-183.1	183AR85	30.01	3037		3.5	55.0	na				
	187	222.00	BBR-pow ms-183.1	183AR91vb	30.09	3532		1.9	na	na				
	188	222.00	BBR-pow ms-183.1	183AR103vb	30.29	5097		0.0	na	na				
	189	222.00	BBR-pow ms-183.1	183AR105	30.42	6306		0.0	na	na				
JC Boyle Bypass	190	222.01	BBR-pow ms-183.2	183BR00vb	29.34	202	11510700 minus turbine	100.0	na	na				From TRPA
	191	222.00	BBR-pow ms-183.2	183BR05	29.77	1180		8.7	329.0	na				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	192	222.00	BBR-pow ms-183.2	183BR25	29.39	257		100.0	na	na				
	193	222.00	BBR-pow ms-183.2	183BR37vb	29.63	727		9.8	700.5	na				
	194	222.00	BBR-pow ms-183.2	183BR45	29.76	1134		8.7	329.0	na				
	195	222.00	BBR-pow ms-183.2	183BR65	30.03	2479		4.6	37.0	na				
	196	222.00	BBR-pow ms-183.2	183BR85	30.47	6550		0.0	na	na				
Fall Creek	197	n/a	FC-unit31-rb/lb	31BL50vb	31.46	2630	11512000	0.0	na	>500 years				From TRPA
	198	n/a	FC-unit31-rb/lb	31BL45	31.41	2437		0.0	na	>500 years				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	199	n/a	FC-unit31-rb/lb	31BL25	30.55	388		0.0	na	5.5				
	200	n/a	FC-unit31-rb/lb	31BL05	30.09	52		3.9	na	1.5				
	201	n/a	FC-unit31-rb/lb	31BL00vb	29.80	2		100.0	na	1.3				
	202	n/a	FC-unit31-rb/lb	31BR00vb	29.83	4		100.0	na	1.3				
	203	n/a	FC-unit31-rb/lb	31BR05	30.01	29		84.0	na	1.4				
	204	n/a	FC-unit31-rb/lb	31BR15vb	30.13	67		0.3	na	1.6				
	205	n/a	FC-unit31-rb/lb	31BR25	30.10	56		2.5	na	1.6				
	206	n/a	FC-unit31-rb/lb	31BR45	30.17	84		0.1	na	1.7				
	207	n/a	FC-unit31-rb/lb	31BR65	30.53	364		0.0	na	5.0				
	208	n/a	FC-unit31-rb/lb	31BR85	30.72	625		0.0	na	13.4				
	209	n/a	FC-unit31-rb/lb	31BR105	31.44	2552		0.0	na	>500 years				
	210	n/a	FC-unit31-rb/lb	31BR125	31.71	3739		0.0	na	>500 years				
Fall Creek	211	n/a	FC-unit33-rb/lb	33BR30vb	30.93	255	11512000	0.0	na	3.3				From TRPA
	212	n/a	FC-unit33-rb/lb	33BR25	30.79	198		0.0	na	2.7				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	213	n/a	FC-unit33-rb/lb	33BR05	29.98	12		100.0	na	1.3				
	214	n/a	FC-unit33-rb/lb	33BR00vb	29.82	2		100.0	na	1.3				
	215	n/a	FC-unit33-rb/lb	33BL00vb	29.82	2		100.0	na	1.3				
	216	n/a	FC-unit33-rb/lb	33BL05	30.05	19		100.0	na	1.4				
	217	n/a	FC-unit33-rb/lb	33BL20vb	30.05	19		100.0	na	1.4				
	218	n/a	FC-unit33-rb/lb	33BL25	30.06	20		100.0	na	1.4				
	219	n/a	FC-unit33-rb/lb	33BL45	30.07	21		100.0	na	1.4				
	220	n/a	FC-unit33-rb/lb	33BL65	30.08	22		100.0	na	1.4				
	221	n/a	FC-unit33-rb/lb	33BL85	29.72	0		100.0	na	1.3				
	222	n/a	FC-unit33-rb/lb	33BL90vb	30.10	25		99.4	na	1.4				
	223	n/a	FC-unit33-rb/lb	33BL105	30.29	55		2.8	na	1.6				
	224	n/a	FC-unit33-rb/lb	33BL125	30.59	129		0.0	na	2.1				
	225	n/a	FC-unit33-rb/lb	33BL145	31.07	320		0.0	na	4.2				
	226	n/a	FC-unit33-rb/lb	33BL165	31.45	538		0.0	na	9.6				
Fall Creek	227	n/a	FC-unit39-rb/lb	39CR45	31.28	2389	11512000	0.0	na	>500 years				From TRPA
	228	n/a	FC-unit39-rb/lb	39CR32vb	31.20	2033		0.0	na	>500 years				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	229	n/a	FC-unit39-rb/lb	39CR25	31.00	1302		0.0	na	171.3				
	230	n/a	FC-unit39-rb/lb	39CR05	30.20	60		1.0	na	1.6				
	231	n/a	FC-unit39-rb/lb	39CR00vb	29.89	2		100.0	na	1.3				
	232	n/a	FC-unit39-rb/lb	39CL00vb	29.89	2		100.0	na	1.3				
	233	n/a	FC-unit39-rb/lb	39CL05	30.00	10		100.0	na	1.3				

Appendix A Transect and Plot Location and Elevations, Rating Curves, and Results

River Reach	Plot No.	River Mile	Project Segment	Plot ID	Plot Elev. Adj. (m)	Flow Required to Inundate Plot Elev. (cfs)	Gage # or flow data source	ID (%)	IF (hours)	Return Frequency (yrs)	WSEL	Date	Q	Q vs. Y Comments
	234	n/a	FC-unit39-rb/lb	39CL10vb	30.59	394		0.0	na	5.6				
	235	n/a	FC-unit39-rb/lb	39CL20vb	30.03	14		100.0	na	1.3				
	236	n/a	FC-unit39-rb/lb	39CL25	30.05	17		100.0	na	1.4				
	237	n/a	FC-unit39-rb/lb	39CL45	30.24	77		0.1	na	1.7				
	238	n/a	FC-unit39-rb/lb	39CL65	30.39	173		0.0	na	2.4				
	239	n/a	FC-unit39-rb/lb	39CL85	30.70	570		0.0	na	10.9				
	240	n/a	FC-unit39-rb/lb	39CL105	31.34	2682		0.0	na	>500 years				
JC Boyle Peaking	241	215.60	Peak Glide-71.1-RB	71AR00vb	28.60	212	11510700	100.0	0	<1 year				From TRPA
	242	215.60	Peak Glide-71.1-RB	71AR05	28.67	313		100.0	2	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	243	215.60	Peak Glide-71.1-RB	71AR19vb	29.01	1350		52.5	14	<1 year				
	244	215.60	Peak Glide-71.1-RB	71AR25	29.14	2033		28.6	16	<1 year				
	245	215.60	Peak Glide-71.1-RB	71AR34vb	29.37	3775		7.4	na	1.5				
	246	215.60	Peak Glide-71.1-RB	71AR45	29.60	6406		0.6	na	3.0				
	247	215.60	Peak Glide-71.1-RB	71AR65	29.82	9793		0.0	na	7.1				
	248	215.60	Peak Glide-71.1-RB	71AR85	30.01	13475		0.0	na	18.3				
	249	215.60	Peak Glide-71.1-RB	71AR105	30.03	14018		0.0	na	21.0				
	250	215.60	Peak Glide-71.1-RB	71AR125	30.12	16188		0.0	na	36.7				
	251	215.60	Peak Glide-71.1-RB	71AR145	30.23	18911		0.0	na	73.9				
	252	215.60	Peak Glide-71.1-RB	71AR165	30.29	20739		0.0	na	118.2				
	253	215.60	Peak Glide-71.1-RB	71AR185	30.37	23164		0.0	na	220.4				
	254	215.60	Peak Glide-71.1-RB	71AR195vb	30.39	23947		0.0	na	269.6				
	255	215.60	Peak Glide-71.1-RB	71AR205	30.47	26510		0.0	na	>500 years				
	256	215.60	Peak Glide-71.1-RB	71AR225vb	30.58	30518		0.0	na	>500 years				
	257	215.60	Peak Glide-71.1-RB	71AR245vb	30.65	33407		0.0	na	>500 years				
JC Boyle Peaking	258	215.61	Peak Glide-71.2-RB	71BR00vb	28.75	221	11510700	100.0	9	<1 year				From TRPA
	259	215.61	Peak Glide-71.2-RB	71BR05	28.85	378		82.9	11	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	260	215.61	Peak Glide-71.2-RB	71BR25	29.05	968		58.2	14	<1 year				
	261	215.61	Peak Glide-71.2-RB	71BR45	29.35	2642		22.1	17	1.1				
	262	215.61	Peak Glide-71.2-RB	71BR65	29.45	3506		8.0	12	1.4				
	263	215.61	Peak Glide-71.2-RB	71BR85	29.72	6845		0.1	na	3.3				
	264	215.61	Peak Glide-71.2-RB	71BR105	29.97	11417		0.0	na	10.8				
	265	215.61	Peak Glide-71.2-RB	71BR125	30.36	22088		0.0	na	167.2				
	266	215.62	Peak Glide-71.2-RB	71BR145	30.42	24260		0.0	na	292.1				
JC Boyle Peaking	267	215.62	Peak Glide-71.3-RB	71CR00vb	28.93	751	11510700	64.2	10	<1 year				From TRPA
	268	215.62	Peak Glide-71.3-RB	71CR05	29.03	1132		55.8	13	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	269	215.62	Peak Glide-71.3-RB	71CR12vb	29.08	1341		52.6	14	<1 year				
	270	215.62	Peak Glide-71.3-RB	71CR25	29.11	1485		49.8	14	<1 year				
	271	215.62	Peak Glide-71.3-RB	71CR45	29.01	1047		56.8	13	<1 year				
	272	215.62	Peak Glide-71.3-RB	71CR65	29.11	1470		50.0	14	<1 year				
	273	215.62	Peak Glide-71.3-RB	71CR85	29.21	2047		28.4	16	<1 year				
	274	215.62	Peak Glide-71.3-RB	71CR105	29.36	3081		11.2	12	1.3				
	275	215.62	Peak Glide-71.3-RB	71CR125	29.38	3228		8.9	14	1.3				
	276	215.62	Peak Glide-71.3-RB	71CR141vb	29.03	1132		55.8	13	<1 year				
	277	215.62	Peak Glide-71.3-RB	71CR145	28.88	618		67.7	10	<1 year				
	278	215.62	Peak Glide-71.3-RB	71CR165	28.91	696		65.9	10	<1 year				
	279	215.62	Peak Glide-71.3-RB	71CR172vb	28.97	902		59.6	12	<1 year				
	280	215.62	Peak Glide-71.3-RB	71CR185	29.49	4175		6.1	na	1.7				
	281	215.62	Peak Glide-71.3-RB	71CR188vb	29.53	4600		4.2	na	1.9				
	282	215.62	Peak Glide-71.3-RB	71CR205	29.88	9170		0.0	na	6.0				
	283	215.62	Peak Glide-71.3-RB	71CR225	30.11	13467		0.0	na	18.2				
	284	215.62	Peak Glide-71.3-RB	71CR245	30.57	25481		0.0	na	399.8				
JC Boyle Peaking	285	215.63	Peak Riffle-70.1-RB	70AR00vb	28.88	117	11510700	100.0	0	<1 year				From TRPA
	286	215.63	Peak Riffle-70.1-RB	70AR05	28.99	206		100.0	0	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	287	215.63	Peak Riffle-70.1-RB	70AR14vb	29.19	466		70.5	11	<1 year				
	288	215.63	Peak Riffle-70.1-RB	70AR25	29.70	2181		27.0	16	1.0				
	289	215.63	Peak Riffle-70.1-RB	70AR45	29.78	2638		21.9	17	1.1				
	290	215.63	Peak Riffle-70.1-RB	70AR65	30.00	4267		6.6	na	1.7				
	291	215.63	Peak Riffle-70.1-RB	70AR85	29.96	3955		6.1	na	1.6				
	292	215.63	Peak Riffle-70.1-RB	70AR96vb	29.99	4161		5.4	na	1.7				

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River Reach	Plot No.	River Mile	Project Segment	Plot ID	Plot Elev. Adj. (m)	Flow Required to Inundate Plot Elev. (cfs)	Gage # or flow data source	ID (%)	IF (hours)	Return Frequency (yrs)	WSEL	Date	Q	Q vs. Y Comments
	293	215.63	Peak Riffle-70.1-RB	70AR105	30.34	8064		0.0	na	4.6				
	294	215.63	Peak Riffle-70.1-RB	70AR125	30.87	18435		0.0	na	65.4				
JC Boyle Peaking	295	218.60	Peak Run ms-30.3-RB	30CR00vb	29.45	460	11510700	71.2	11	<1 year				From TRPA
	296	218.60	Peak Run ms-30.3-RB	30CR05	29.70	917		59.2	12	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	297	218.60	Peak Run ms-30.3-RB	30CR12vb	29.74	1004		57.6	13	<1 year				
	298	218.60	Peak Run ms-30.3-RB	30CR24vb	29.74	990		57.6	13	<1 year				
	299	218.60	Peak Run ms-30.3-RB	30CR25	29.82	1176		54.9	13	<1 year				
	300	218.60	Peak Run ms-30.3-RB	30CR35vb	29.82	1176		54.9	13	<1 year				
	301	218.60	Peak Run ms-30.3-RB	30CR45	29.85	1267		53.9	14	<1 year				
	302	218.60	Peak Run ms-30.3-RB	30CR65	30.18	2235		26.6	16	1.0				
	303	218.60	Peak Run ms-30.3-RB	30CR67vb	30.18	2256		26.6	17	1.0				
	304	218.60	Peak Run ms-30.3-RB	30CR83vb	30.22	2385		24.7	17	1.1				
	305	218.60	Peak Run ms-30.3-RB	30CR85	30.25	2507		23.7	17	1.1				
	306	218.60	Peak Run ms-30.3-RB	30CR105	30.22	2389		24.7	17	1.1				
	307	218.60	Peak Run ms-30.3-RB	30CR125	30.26	2541		23.4	17	1.1				
	308	218.60	Peak Run ms-30.3-RB	30CR128vb	30.20	2331		25.9	17	1.0				
	309	218.60	Peak Run ms-30.3-RB	30CR145	30.69	4420		7.6	na	1.8				
	310	218.60	Peak Run ms-30.3-RB	30CR165	30.63	4107		6.3	na	1.6				
	311	218.60	Peak Run ms-30.3-RB	30CR185	30.69	4405		5.1	na	1.8				
	312	218.60	Peak Run ms-30.3-RB	30CR205	30.75	4698		3.9	na	1.9				
	313	218.60	Peak Run ms-30.3-RB	30CR225	30.92	5623		1.8	na	2.4				
	314	218.60	Peak Run ms-30.3-RB	30CR245	31.01	6156		0.8	na	2.8				
JC Boyle Peaking	315	218.70	Peak Pool-29.1-RB	29AR00vb	29.42	584	11510700	68.2	11	<1 year				From TRPA
	316	218.70	Peak Pool-29.1-RB	29AR05	29.49	703		65.6	10	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	317	218.70	Peak Pool-29.1-RB	29AR25	29.42	589		68.2	11	<1 year				
	318	218.70	Peak Pool-29.1-RB	29AR36vb	29.59	871		59.8	12	<1 year				
	319	218.70	Peak Pool-29.1-RB	29AR42vb	29.69	1080		56.2	13	<1 year				
	320	218.70	Peak Pool-29.1-RB	29AR45	29.81	1379		51.7	14	<1 year				
	321	218.70	Peak Pool-29.1-RB	29AR65	30.00	1917		30.2	16	<1 year				
	322	218.70	Peak Pool-29.1-RB	29AR85	30.23	2714		19.4	17	1.2				
	323	218.70	Peak Pool-29.1-RB	29AR105	30.28	2918		14.0	17	1.2				
	324	218.70	Peak Pool-29.1-RB	29AR125	30.42	3529		7.8	na	1.4				
	325	218.70	Peak Pool-29.1-RB	29AR145	30.57	4211		5.7	na	1.7				
	326	218.70	Peak Pool-29.1-RB	29AR165	30.56	4196		6.0	na	1.7				
	327	218.70	Peak Pool-29.1-RB	29AR185	30.70	4899		3.6	na	2.0				
	328	218.70	Peak Pool-29.1-RB	29AR205	30.75	5171		2.9	na	2.2				
	329	218.70	Peak Pool-29.1-RB	29AR225	30.88	5927		1.2	na	2.6				
	330	218.70	Peak Pool-29.1-RB	29AR229vb	30.90	6059		1.0	na	2.7				
	331	218.70	Peak Pool-29.1-RB	29AR245	31.19	8028		0.0	na	4.5				
JC Boyle Peaking	332	218.71	Peak Pool-29.2-RB	29BR00vb	29.56	726	11510700	64.6	10	<1 year				From TRPA
	333	218.71	Peak Pool-29.2-RB	29BR05	29.62	831		61.1	12	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	334	218.71	Peak Pool-29.2-RB	29BR09vb	29.68	938		58.4	13	<1 year				
	335	218.71	Peak Pool-29.2-RB	29BR25	30.01	1695		35.1	15	<1 year				
	336	218.71	Peak Pool-29.2-RB	29BR45	30.34	2763		18.1	17	1.2				
	337	218.71	Peak Pool-29.2-RB	29BR61vb	30.49	3342		8.6	na	1.4				
	338	218.71	Peak Pool-29.2-RB	29BR65	30.51	3430		8.2	na	1.4				
	339	218.71	Peak Pool-29.2-RB	29BR77vb	30.64	3987		6.6	na	1.6				
	340	218.71	Peak Pool-29.2-RB	29BR81vb	30.69	4241		5.5	na	1.7				
	341	218.71	Peak Pool-29.2-RB	29BR85	30.79	4701		3.9	na	1.9				
	342	218.71	Peak Pool-29.2-RB	29BR105	31.23	7199		0.0	na	3.6				
	343	218.71	Peak Pool-29.2-RB	29BR125	31.60	9895		0.0	na	7.3				
JC Boyle Peaking	344	219.20	Peak Pool-18.1-RB	18AR00vb	29.56	681	11510700	66.2	10	<1 year				From TRPA
	345	219.20	Peak Pool-18.1-RB	18AR05	29.60	762		63.8	10	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	346	219.20	Peak Pool-18.1-RB	18AR08vb	29.64	843		61.1	12	<1 year				
	347	219.20	Peak Pool-18.1-RB	18AR13vb	29.73	1039		56.9	13	<1 year				

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River Reach	Plot No.	River Mile	Project Segment	Plot ID	Plot Elev. Adj. (m)	Flow Required to Inundate Plot Elev. (cfs)	Gage # or flow data source	ID (%)	IF (hours)	Return Frequency (yrs)	WSEL	Date	Q	Q vs. Y Comments
	348	219.20	Peak Pool-18.1-RB	18AR25	30.18	2434		24.3	17	1.1				
	349	219.20	Peak Pool-18.1-RB	18AR31vb	30.15	2338		25.4	17	1.0				
	350	219.20	Peak Pool-18.1-RB	18AR45	30.21	2580		22.9	17	1.1				
	351	219.20	Peak Pool-18.1-RB	18AR65	30.50	3932		6.9	na	1.6				
	352	219.20	Peak Pool-18.1-RB	18AR85	31.28	9358		0.0	na	6.3				
JC Boyle Peaking	353	204.40	Peak-Run-207B-RB	207B00vb	28.88	85	11510700	100.0	0	<1 year				From TRPA
	354	204.40	Peak-Run-207B-RB	207B05	28.91	103		100.0	0	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	355	204.40	Peak-Run-207B-RB	207B20vb	29.21	351		92.8	10	<1 year				
	356	204.40	Peak-Run-207B-RB	207B25	29.38	568		68.6	11	<1 year				
	357	204.40	Peak-Run-207B-RB	207B35vb	29.48	731		64.5	10	<1 year				
	358	204.40	Peak-Run-207B-RB	207B45	29.70	1161		55.4	13	<1 year				
	359	204.40	Peak-Run-207B-RB	207B55vb	29.91	1708		34.8	15	<1 year				
	360	204.40	Peak-Run-207B-RB	207B65	29.98	1885		30.8	16	<1 year				
	361	204.40	Peak-Run-207B-RB	207B80vb	30.23	2740		18.5	17	1.2				
	362	204.40	Peak-Run-207B-RB	207B85	30.47	3716		7.3	na	1.5				
JC Boyle Peaking	363	204.50	Peak-Barn Pool A-RB	BPAR00vb	27.65	5	11510700	100.0	0	<1 year				From TRPA
	364	204.50	Peak-Barn Pool A-RB	BPAR05	27.88	72		100.0	0	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	365	204.50	Peak-Barn Pool A-RB	BPAR20vb	28.03	186		100.0	0	<1 year				
	366	204.50	Peak-Barn Pool A-RB	BPAR24vb	28.16	354		92.4	10	<1 year				
	367	204.50	Peak-Barn Pool A-RB	BPAR30vb	28.16	354		92.4	10	<1 year				
	368	204.50	Peak-Barn Pool A-RB	BPAR40vb	28.16	354		92.4	10	<1 year				
	369	204.50	Peak-Barn Pool A-RB	BPAR45	28.07	234		100.0	0	<1 year				
	370	204.50	Peak-Barn Pool A-RB	BPAR65	28.04	199		100.0	0	<1 year				
	371	204.50	Peak-Barn Pool A-RB	BPAR80vb	28.00	156		100.0	0	<1 year				
	372	204.50	Peak-Barn Pool A-RB	BPAR85	28.00	162		100.0	0	<1 year				
	373	204.50	Peak-Barn Pool A-RB	BPAR105	27.94	107		100.0	0	<1 year				
	374	204.50	Peak-Barn Pool A-RB	BPAR125	28.16	364		92.4	10	<1 year				
	375	204.50	Peak-Barn Pool A-RB	BPAR145	28.37	840		61.7	12	<1 year				
	376	204.50	Peak-Barn Pool A-RB	BPAR165	28.87	3254		8.9	na	1.3				
	377	204.50	Peak-Barn Pool A-RB	BPAR185	29.27	7142		0.0	na	3.6				
	378	204.50	Peak-Barn Pool A-RB	BPAR205	29.41	9017		0.0	na	5.8				
	379	204.50	Peak-Barn Pool A-RB	BPAR225	29.58	11613		0.0	na	11.3				
	380	204.50	Peak-Barn Pool A-RB	BPAR245	29.66	13026		0.0	na	16.3				
	381	204.50	Peak-Barn Pool A-RB	BPAR265	29.86	17266		0.0	na	48.4				
JC Boyle Peaking	382	204.50	Peak-Barn Pool A-LB	BPAL00vb	27.95	120	11510700	100.0	9	<1 year				From TRPA
	383	204.50	Peak-Barn Pool A-LB	BPAL05	27.97	135		100.0	9	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	384	204.50	Peak-Barn Pool A-LB	BPAL20vb	28.16	364		92.4	11	<1 year				
	385	204.50	Peak-Barn Pool A-LB	BPAL30vb	28.38	858		60.7	15	<1 year				
	386	204.50	Peak-Barn Pool A-LB	BPAL35	28.58	1568		44.7	17	<1 year				
	387	204.50	Peak-Barn Pool A-LB	BPAL45vb	28.77	2599		22.7	334	1.1				
	388	204.50	Peak-Barn Pool A-LB	BPAL55	28.97	4064		6.6	na	1.6				
	389	204.50	Peak-Barn Pool A-LB	BPAL75	29.51	10501		0.0	na	8.5				
	390	204.50	Peak-Barn Pool A-LB	BPAL95	29.98	20000		0.0	na	97.8				
JC Boyle Peaking	391	204.60	Peak-Riff-201.5B-LB	2015L00vb	28.24	64	11510700	100.0	0	<1 year				From TRPA
	392	204.60	Peak-Riff-201.5B-LB	2015L05	28.33	125		100.0	0	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	393	204.60	Peak-Riff-201.5B-LB	2015L20vb	28.59	465		71.1	11	<1 year				
	394	204.60	Peak-Riff-201.5B-LB	2015L25	28.66	613		67.8	11	<1 year				
	395	204.60	Peak-Riff-201.5B-LB	2015L45	29.26	2926		14.1	17	1.2				
	396	204.60	Peak-Riff-201.5B-LB	2015L65	29.91	8442		0.0	na	5.0				
	397	204.60	Peak-Riff-201.5B-LB	2015L76vb	30.38	15047		0.0	na	27.4				
	398	204.60	Peak-Riff-201.5B-LB	2015L80	30.43	15857		0.0	na	33.7				
	399	204.60	Peak-Riff-201.5B-LB	2015L85vb	30.48	16695		0.0	na	41.8				
	400	204.60	Peak-Riff-201.5B-LB	2015L105vb	30.64	19605		0.0	na	88.3				

Appendix A Transect and Plot Location and Elevations, Rating Curves, and Results

River Reach	Plot No.	River Mile	Project Segment	Plot ID	Plot Elev. Adj. (m)	Flow Required to Inundate Plot Elev. (cfs)	Gage # or flow data source	ID (%)	IF (hours)	Return Frequency (yrs)	WSEL	Date	Q	Q vs. Y Comments
	401	204.60	Peak-Riff-201.5B-LB	2015L125	30.90	24944		0.0	na	348.2				
	402	204.60	Peak-Riff-201.5B-LB	2015L145	31.34	36222		0.0	na	>500 years				
	403	204.60	Peak-Riff-201.5B-LB	2015L165	31.83	51643		0.0	na	>500 years				
	404	204.60	Peak-Riff-201.5B-LB	2015L185	32.56	82066		0.0	na	>500 years				
JC Boyle Peaking	405	204.60	Peak-Riff-201.5B-RB	2015R00vb	28.50	318	11510700	100.0	3	<1 year				From TRPA
	406	204.60	Peak-Riff-201.5B-RB	2015R05	28.49	301		100.0	0	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	407	204.60	Peak-Riff-201.5B-RB	2015R25vb	28.54	374		82.9	10	<1 year				
	408	204.60	Peak-Riff-201.5B-RB	2015R45vb	28.56	404		72.0	10	<1 year				
	409	204.60	Peak-Riff-201.5B-RB	2015R65vb	28.56	415		72.0	10	<1 year				
	410	204.60	Peak-Riff-201.5B-RB	2015R85vb	28.51	327		99.2	10	<1 year				
	411	204.60	Peak-Riff-201.5B-RB	2015R105	28.47	275		100.0	0	<1 year				
	412	204.60	Peak-Riff-201.5B-RB	2015R125	28.40	195		100.0	0	<1 year				
	413	204.60	Peak-Riff-201.5B-RB	2015R145	28.56	415		72.0	10	<1 year				
	414	204.60	Peak-Riff-201.5B-RB	2015R165	29.00	1641		39.4	14	<1 year				
	415	204.60	Peak-Riff-201.5B-RB	2015R185	29.39	3796		7.3	na	1.5				
	416	204.60	Peak-Riff-201.5B-RB	2015R205	29.26	2976		13.2	17	1.2				
	417	204.60	Peak-Riff-201.5B-RB	2015R225	29.63	5665		1.8	na	2.5				
	418	204.60	Peak-Riff-201.5B-RB	2015R245	29.88	8160		0.0	na	4.7				
	419	204.60	Peak-Riff-201.5B-RB	2015R265	29.90	8435		0.0	na	5.0				
	420	204.60	Peak-Riff-201.5B-RB	2015R285	29.90	8435		0.0	na	5.0				
	421	204.60	Peak-Riff-201.5B-RB	2015R305	29.91	8504		0.0	na	5.1				
	422	204.60	Peak-Riff-201.5B-RB	2015R325	30.00	9516		0.0	na	6.6				
	423	204.60	Peak-Riff-201.5B-RB	2015R345	29.94	8857		0.0	na	5.6				
	424	204.60	Peak-Riff-201.5B-RB	2015R365	29.94	8857		0.0	na	5.6				
	425	204.60	Peak-Riff-201.5B-RB	2015R385vb	29.94	8857		0.0	na	5.6				
	426	204.60	Peak-Riff-201.5B-RB	2015R405vb	30.01	9742		0.0	na	7.0				
	427	204.60	Peak-Riff-201.5B-RB	2015R425vb	29.92	8645		0.0	na	5.3				
	428	204.60	Peak-Riff-201.5B-RB	2015R445	29.67	6051		1.1	na	2.7				
	429	204.60	Peak-Riff-201.5B-RB	2015R465	29.67	6051		1.1	na	2.7				
	430	204.60	Peak-Riff-201.5B-RB	2015R485	29.79	7181		0.0	na	3.6				
	431	204.60	Peak-Riff-201.5B-RB	2015R505	29.67	5995		1.2	na	2.7				
	432	204.60	Peak-Riff-201.5B-RB	2015R515vb	29.70	6279		0.7	na	2.9				
	433	204.60	Peak-Riff-201.5B-RB	2015R525	29.65	5884		1.3	na	2.6				
	434	204.60	Peak-Riff-201.5B-RB	2015R545	29.67	6051		1.1	na	2.7				
	435	204.60	Peak-Riff-201.5B-RB	2015R565	29.90	8366		0.0	na	4.9				
	436	204.60	Peak-Riff-201.5B-RB	2015R575vb	30.19	12101		0.0	na	12.8				
JC Boyle Peaking	437	206.51	Peak-Run-177A-RB	177A00vb	29.84	776	11510700	63.1	10	<1 year				From TRPA
	438	206.51	Peak-Run-177A-RB	177A05	29.89	873		60.2	12	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	439	206.51	Peak-Run-177A-RB	177A25	29.87	838		61.3	12	<1 year				
	440	206.51	Peak-Run-177A-RB	177A45	29.90	896		59.6	12	<1 year				
	441	206.51	Peak-Run-177A-RB	177A65	30.03	1165		55.0	13	<1 year				
	442	206.51	Peak-Run-177A-RB	177A80vb	30.16	1511		49.0	13	<1 year				
	443	206.51	Peak-Run-177A-RB	177A85	30.20	1615		41.7	14	<1 year				
	444	206.51	Peak-Run-177A-RB	177A93vb	30.41	2268		26.2	16	1.0				
	445	206.51	Peak-Run-177A-RB	177A105	30.64	3157		9.0	na	1.3				
	446	206.51	Peak-Run-177A-RB	177A125	31.16	5927		1.3	na	2.6				
	447	206.51	Peak-Run-177A-RB	177A145	32.58	19617		0.0	na	88.6				
JC Boyle Peaking	448	206.50	Peak-Run-177B-RB	177B00vb	30.02	770	11510700	63.1	10	<1 year				From TRPA
	449	206.50	Peak-Run-177B-RB	177B05	30.04	823		62.0	11	<1 year				Elev (m) = (a*Q(cfs)^b+ c)/3.281
	450	206.50	Peak-Run-177B-RB	177B25	30.20	1175		55.3	13	<1 year				
	451	206.50	Peak-Run-177B-RB	177B30vb	30.39	1673		35.6	15	<1 year				
	452	206.50	Peak-Run-177B-RB	177B45	30.45	1885		30.9	16	<1 year				
	453	206.50	Peak-Run-177B-RB	177B55vb	30.68	2728		19.5	17	1.2				
	454	206.50	Peak-Run-177B-RB	177B65	30.87	3551		7.6	na	1.4				
	455	206.50	Peak-Run-177B-RB	177B85	31.54	7863		0.0	na	4.3				
	456	206.50	Peak-Run-177B-RB	177B105	32.45	17510		0.0	na	51.6				
JC Boyle Peaking	457	206.49	Peak-LGR-176A-RB	176A00vb	29.09	357	11510700	92.6	10	<1 year				From TRPA
	458	206.49	Peak-LGR-176A-RB	176A05	29.16	474		70.8	11	<1 year				Elev (m) = (a*Q(cfs)^b+
	459	206.49	Peak-LGR-176A-RB	176A25	29.22	597		68.3	11	<1 year				

Appendix A Transect and Plot Location and Elevations, Rating Curves, and Results

River Reach	Plot No.	River Mile	Project Segment	Plot ID	Plot Elev. Adj. (m)	Flow Required to Inundate Plot Elev. (cfs)	Gage # or flow data source	ID (%)	IF (hours)	Return Frequency (yrs)	WSEL	Date	Q	Q vs. Y Comments
	460	206.49	Peak-LGR-176A-RB	176A45	29.34	921		59.2	12	<1 year				c)/3.281
	461	206.49	Peak-LGR-176A-RB	176A65	29.48	1386		52.0	14	<1 year				
	462	206.49	Peak-LGR-176A-RB	176A85	29.36	968		58.2	13	<1 year				
	463	206.49	Peak-LGR-176A-RB	176A91vb	29.52	1597		43.7	14	<1 year				
	464	206.49	Peak-LGR-176A-RB	176A95vb	29.55	1711		34.6	15	<1 year				
	465	206.49	Peak-LGR-176A-RB	176A105	29.56	1755		33.4	15	<1 year				
	466	206.49	Peak-LGR-176A-RB	176A125	29.79	3188		9.0	na	1.3				
	467	206.49	Peak-LGR-176A-RB	176A130vb	29.87	3862		6.9	na	1.5				
	468	206.49	Peak-LGR-176A-RB	176A145	29.98	4855		3.8	na	2.0				
	469	206.49	Peak-LGR-176A-RB	176A165	30.04	5521		2.2	na	2.4				
	470	206.49	Peak-LGR-176A-RB	176A245vb	30.51	13297		0.0	na	17.5				
JC Boyle Peaking	471	208.50	Peak-Run-150A-LB	150A00vb	29.39	801	11510700	62.4	11	<1 year				From TRPA
	472	208.50	Peak-Run-150A-LB	150A05	29.53	1096		56.2	13	<1 year				Elev (m) =
	473	208.50	Peak-Run-150A-LB	150A13vb	29.62	1334		52.8	14	<1 year				(a*Q(cfs)^b+
	474	208.50	Peak-Run-150A-LB	150A25	29.79	1820		31.5	15	<1 year				c)/3.281
	475	208.50	Peak-Run-150A-LB	150A45	30.02	2637		22.1	17	1.1				
	476	208.50	Peak-Run-150A-LB	150A65	30.10	2925		14.1	17	1.2				
	477	208.50	Peak-Run-150A-LB	150A85	30.46	4597		4.2	na	1.9				
	478	208.50	Peak-Run-150A-LB	150A105	30.66	5701		1.7	na	2.5				
JC Boyle Peaking	479	208.51	Peak-Run-150B-LB	150B00vb	29.43	704	11510700	65.5	10	<1 year				From TRPA
	480	208.51	Peak-Run-150B-LB	150B05	29.45	740		64.6	10	<1 year				Elev (m) =
	481	208.51	Peak-Run-150B-LB	150B25	29.78	1476		49.8	14	<1 year				(a*Q(cfs)^b+
	482	208.51	Peak-Run-150B-LB	150B45	30.18	2773		17.9	17	1.2				c)/3.281
	483	208.51	Peak-Run-150B-LB	150B65	30.30	3218		8.9	na	1.3				
	484	208.51	Peak-Run-150B-LB	150B85	30.45	3905		6.9	na	1.6				
	485	208.51	Peak-Run-150B-LB	150B105	30.77	5490		2.4	na	2.3				
	486	208.51	Peak-Run-150B-LB	150B125	31.06	7241		0.0	na	3.7				
JC Boyle Peaking	487	208.60	Peak-Pool-147.1-RB	147PC00vb	29.58	1077	11510700	56.4	13	<1 year				From TRPA
	488	208.60	Peak-Pool-147.1-RB	147PC05	29.85	1576		45.4	14	<1 year				Elev (m) =
	489	208.60	Peak-Pool-147.1-RB	147PC13vb	30.16	2262		26.5	17	1.0				(a*Q(cfs)^b+
	490	208.60	Peak-Pool-147.1-RB	147PC25	30.37	2791		17.6	17	1.2				c)/3.281
	491	208.60	Peak-Pool-147.1-RB	147PC40vb	30.58	3383		8.6	na	1.4				
	492	208.60	Peak-Pool-147.1-RB	147PC45	30.64	3556		7.7	na	1.4				
	493	208.60	Peak-Pool-147.1-RB	147PC65	31.08	5024		3.2	na	2.1				
Iron Gate-Shasta	494	189.41	LR-IG-2-RB	434100vb	26.42	3150	11516530	10.1	na	1.4	25.90	8/2/02	660	USGS gage station
	495	189.41	LR-IG-2-RB	434105	26.44	3233		9.6	na	1.4	26.45	11/8/02	895	Elev (m) =
	496	189.41	LR-IG-2-RB	434115vb	26.47	3360		8.7	na	1.4	27.10	4/15/02	1790	(a*Q(cfs)^b+
	497	189.41	LR-IG-2-RB	434125	26.52	3576		7.3	na	1.5				c)/3.281
	498	189.41	LR-IG-2-RB	434140vb	26.67	4265		5.1	na	1.6				
	499	189.41	LR-IG-2-RB	434145	26.72	4508		4.5	na	1.6				
	500	189.41	LR-IG-2-RB	434165	26.82	5015		3.3	na	1.7				
	501	189.41	LR-IG-2-RB	434185	27.02	6108		1.7	na	2.0				
	502	189.41	LR-IG-2-RB	4341105	27.32	7950		0.4	na	2.5				
	503	189.41	LR-IG-2-RB	4341125	27.52	9312		0.1	na	2.9				
	504	189.41	LR-IG-2-RB	4341145	27.62	10033		0.0	na	3.1				
Iron Gate-Shasta	505	189.41	LR-IG-2-LB	434265	29.01	22827	11516530	0.0	na	13.9	25.90	8/2/02	660	USGS gage station
	506	189.41	LR-IG-2-LB	434245	28.36	16201		0.0	na	6.4	26.45	11/8/02	895	Elev (m) =
	507	189.41	LR-IG-2-LB	434235vb	28.09	13781		0.0	na	4.8	27.10	4/15/02	1790	(a*Q(cfs)^b+
	508	189.41	LR-IG-2-LB	434225	27.47	8961		0.2	na	2.8				c)/3.281
	509	189.41	LR-IG-2-LB	434218vb	27.05	6282		1.6	na	2.0				
	510	189.41	LR-IG-2-LB	434209vb	26.66	4217		5.3	na	1.6				
	511	189.41	LR-IG-2-LB	434205	26.46	3317		9.0	na	1.4				
	512	189.41	LR-IG-2-LB	434200vb	26.41	3109		10.2	na	1.4				
Iron Gate-Shasta	513	189.40	LR-IG-1-LB	GS1LB00vb	26.07	723	11516530	89.8	na	1.1	25.90	8/2/02	660	From CH2MHill
	514	189.40	LR-IG-1-LB	GS1LB05	26.09	732		86.1	na	1.1	26.45	11/8/02	895	Elev (m) =
	515	189.40	LR-IG-1-LB	GS1LB25	25.87	576		96.8	na	1.0	27.10	4/15/02	1790	(a*Q(cfs)^b+

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River Reach	Plot No.	River Mile	Project Segment	Plot ID	Plot Elev. Adj. (m)	Flow Required to Inundate Plot Elev. (cfs)	Gage # or flow data source	ID (%)	IF (hours)	Return Frequency (yrs)	WSEL	Date	Q	Q vs. Y Comments
	516	189.40	LR-IG-1-LB	GS1LB45	26.28	882		72.6	na	1.1				c)/3.281
	517	189.40	LR-IG-1-LB	GS1LB50vb	26.41	997		69.4	na	1.1				
	518	189.40	LR-IG-1-LB	GS1LB65	26.80	1378		33.6	na	1.1				
	519	189.40	LR-IG-1-LB	GS1LB85	27.57	2321		14.9	na	1.3				
	520	189.40	LR-IG-1-LB	GS1LB105	27.62	2390		14.5	na	1.3				
	521	189.40	LR-IG-1-LB	GS1LB125	28.64	4074		5.8	na	1.6				
	522	189.40	LR-IG-1-LB	GS1LB145	30.68	8937		0.2	na	2.8				
Iron Gate-Shasta	523	189.40	LR-IG-1-RB	GS1RB365	27.98	2934	11516530	11.5	na	1.4	25.90	8/2/02	660	From CH2MHill
	524	189.40	LR-IG-1-RB	GS1RB345	27.54	2282		15.1	na	1.3	26.45	11/8/02	895	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	525	189.40	LR-IG-1-RB	GS1RB325	26.91	1499		30.0	na	1.2	27.10	4/15/02	1790	
	526	189.40	LR-IG-1-RB	GS1RB305	27.05	1651		26.8	na	1.2				
	527	189.40	LR-IG-1-RB	GS1RB285	27.10	1716		24.8	na	1.2				
	528	189.40	LR-IG-1-RB	GS1RB265	27.13	1753		23.7	na	1.2				
	529	189.40	LR-IG-1-RB	GS1RB245	27.17	1797		21.7	na	1.2				
	530	189.40	LR-IG-1-RB	GS1RB225	27.24	1887		18.5	na	1.2				
	531	189.40	LR-IG-1-RB	GS1RB205	27.33	1996		17.4	na	1.2				
	532	189.40	LR-IG-1-RB	GS1RB185	27.26	1910		18.2	na	1.2				
	533	189.40	LR-IG-1-RB	GS1RB165	26.99	1588		28.1	na	1.2				
	534	189.40	LR-IG-1-RB	GS1RB145	26.99	1581		28.0	na	1.2				
	535	189.40	LR-IG-1-RB	GS1RB125	26.95	1540		28.9	na	1.2				
	536	189.40	LR-IG-1-RB	GS1RB120vb	26.90	1486		30.1	na	1.2				
	537	189.40	LR-IG-1-RB	GS1RB105	26.83	1413		30.9	na	1.1				
	538	189.40	LR-IG-1-RB	GS1RB85	26.77	1342		37.0	na	1.1				
	539	189.40	LR-IG-1-RB	GS1RB65	26.64	1218		48.5	na	1.1				
	540	189.40	LR-IG-1-RB	GS1RB45	26.53	1111		51.0	na	1.1				
	541	189.40	LR-IG-1-RB	GS1RB30vb	26.47	1055		54.4	na	1.1				
	542	189.40	LR-IG-1-RB	GS1RB25	26.37	962		70.0	na	1.1				
	543	189.40	LR-IG-1-RB	GS1RB05	26.01	675		95.5	na	1.1				
	544	189.40	LR-IG-1-RB	GS1RB00vb	25.91	602			na	1.0				
Iron Gate-Shasta	545	189.60	LR-IG-4-RB	GS4RB00vb	26.08	219	11516530	100.0	na	1.0	26.70	8/2/02	660	From CH2MHill
	546	189.60	LR-IG-4-RB	GS4RB05	26.18	279		100.0	na	1.0	26.80	11/8/02	895	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	547	189.60	LR-IG-4-RB	GS4RB25	26.59	601		96.3	na	1.0	27.60	4/15/03	1790	
	548	189.60	LR-IG-4-RB	GS4RB36vb	26.80	812		75.6	na	1.1				
	549	189.60	LR-IG-4-RB	GS4RB45	27.14	1200		48.8	na	1.1				
	550	189.60	LR-IG-4-RB	GS4RB65	27.67	1951		18.0	na	1.2				
	551	189.60	LR-IG-4-RB	GS4RB85	28.59	3630		7.1	na	1.5				
	552	189.60	LR-IG-4-RB	GS4RB90	29.05	4648		4.1	na	1.7				
Iron Gate-Shasta	553	189.60	LR-IG-4-LB	GS4LB00vb	26.38	428	11516530	99.3	na	1.0	26.70	8/2/02	660	From CH2MHill
	554	189.60	LR-IG-4-LB	GS4LB05	26.44	472		98.9	na	1.0	26.80	11/8/02	895	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	555	189.60	LR-IG-4-LB	GS4LB20vb	26.80	817		75.6	na	1.1	27.60	4/15/03	1790	
	556	189.60	LR-IG-4-LB	GS4LB25	26.95	976		69.8	na	1.1				
	557	189.60	LR-IG-4-LB	GS4LB45	27.03	1069		53.0	na	1.1				
	558	189.60	LR-IG-4-LB	GS4LB65	27.16	1234		48.3	na	1.1				
	559	189.60	LR-IG-4-LB	GS4LB85	27.36	1503		29.7	na	1.2				
	560	189.60	LR-IG-4-LB	GS4LB105	27.70	2012		17.3	na	1.2				
	561	189.60	LR-IG-4-LB	GS4LB125	27.91	2344		14.8	na	1.3				
	562	189.60	LR-IG-4-LB	GS4LB145	28.37	3192		9.9	na	1.4				
Iron Gate-Shasta	563	186.60	LR-R Ranch-1-LB	RR1LB190vb	29.39	27959	11516530	0.0	na	25.3	26.9	8/12/02	663	From CH2MHill
	564	186.60	LR-R Ranch-1-LB	RR1LB185	29.35	26652		0.0	na	21.7	27.0	11/2/02	887	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	565	186.60	LR-R Ranch-1-LB	RR1LB165	29.05	18790		0.0	na	8.7	27.2	9/12/03	1190	
	566	186.60	LR-R Ranch-1-LB	RR1LB145	28.81	14165		0.0	na	5.1				
	567	186.60	LR-R Ranch-1-LB	RR1LB125	28.72	12526		0.0	na	4.2				
	568	186.60	LR-R Ranch-1-LB	RR1LB105	28.62	11005		0.0	na	3.5				
	569	186.60	LR-R Ranch-1-LB	RR1LB85	28.35	7685		0.5	na	2.4				
	570	186.60	LR-R Ranch-1-LB	RR1LB72vb	28.20	6205		1.6	na	2.0				
	571	186.60	LR-R Ranch-1-LB	RR1LB65	28.14	5709		2.2	na	1.9				
	572	186.60	LR-R Ranch-1-LB	RR1LB45	27.78	3314		9.0	na	1.4				
	573	186.60	LR-R Ranch-1-LB	RR1LB25	27.53	2214		15.7	na	1.3				
	574	186.60	LR-R Ranch-1-LB	RR1LB20vb	27.44	1893		18.5	na	1.2				
	575	186.60	LR-R Ranch-1-LB	RR1LB05	27.15	1128		50.4	na	1.1				

Appendix A Transect and Plot Location and Elevations, Rating Curves, and Results

River Reach	Plot No.	River Mile	Project Segment	Plot ID	Plot Elev. Adj. (m)	Flow Required to Inundate Plot Elev. (cfs)	Gage # or flow data source	ID (%)	IF (hours)	Return Frequency (yrs)	WSEL	Date	Q	Q vs. Y Comments
	576	186.60	LR-R Ranch-1-LB	RR1LB00vb	26.95	767		78.0	na	1.1				
Iron Gate-Shasta	577	186.60	LR-R Ranch-1-RB	RR1RB00	26.85	617	11516530	96.0	na	1.0	26.9	8/12/02	663	From CH2MHill
	578	186.60	LR-R Ranch-1-RB	RR1RB05	26.86	629		96.0	na	1.0	27.0	11/2/02	887	Elev (m) = (a*Q(cfs)^b+c)/3.281
	579	186.60	LR-R Ranch-1-RB	RR1RB20vb	27.38	1693		25.6	na	1.2	27.2	9/12/03	1190	
	580	186.60	LR-R Ranch-1-RB	RR1RB25	27.50	2102		16.7	na	1.2				
	581	186.60	LR-R Ranch-1-RB	RR1RB45	28.08	5261		3.0	na	1.8				
	582	186.60	LR-R Ranch-1-RB	RR1RB65	28.32	7355		0.6	na	2.3				
	583	186.60	LR-R Ranch-1-RB	RR1RB75vb	28.47	9093		0.2	na	2.8				
	584	186.60	LR-R Ranch-1-RB	RR1RB85	28.66	11658		0.0	na	3.8				
	585	186.60	LR-R Ranch-1-RB	RR1RB105	29.10	20024		0.0	na	10.0				
	586	186.60	LR-R Ranch-1-RB	RR1RB125	30.20	65002		0.0	na	>500 years				
Iron Gate-Shasta	587	179.00	LR-I5-3-RB	I53RB225	27.63	5506	11516530	2.7	na	1.9	26.4	8/12/02	663	From CH2MHill
	588	179.00	LR-I5-3-RB	I53RB205	27.50	4776		3.7	na	1.7	26.9	4/15/03	3010	Elev (m) = (a*Q(cfs)^b+c)/3.281
	589	179.00	LR-I5-3-RB	I53RB185	27.36	4055		5.8	na	1.6	26.425	9/12/03	1190	
	590	179.00	LR-I5-3-RB	I53RB165	27.37	4085		5.8	na	1.6				
	591	179.00	LR-I5-3-RB	I53RB150vb	27.35	3996		5.9	na	1.6				
	592	179.00	LR-I5-3-RB	I53RB145	27.34	3938		6.1	na	1.5				
	593	179.00	LR-I5-3-RB	I53RB125	27.32	3852		6.3	na	1.5				
	594	179.00	LR-I5-3-RB	I53RB105	27.34	3967		6.1	na	1.5				
	595	179.00	LR-I5-3-RB	I53RB85	27.35	4026		6.0	na	1.6				
	596	179.00	LR-I5-3-RB	I53RB77vb	27.39	4175		5.5	na	1.6				
	597	179.00	LR-I5-3-RB	I53RB65	27.47	4612		4.1	na	1.7				
	598	179.00	LR-I5-3-RB	I53RB45	27.33	3895		6.2	na	1.5				
	599	179.00	LR-I5-3-RB	I53RB31vb	26.12	555		97.8	na	1.0				
	600	179.00	LR-I5-3-RB	I53RB25	26.14	578		96.6	na	1.0				
	601	179.00	LR-I5-3-RB	I53RB05	25.92	339		100.0	na	1.0				
	602	179.00	LR-I5-3-RB	I53RB00vb	25.84	271		100.0	na	1.0				
Iron Gate-Shasta	603	179.00	LR-I5-3-LB	I53LB00vb	26.15	584	11516530	96.3	na	1.0	26.4	8/12/02	663	From CH2MHill
	604	179.00	LR-I5-3-LB	I53LB05	26.19	640		96.0	na	1.1	26.9	4/15/03	3010	Elev (m) = (a*Q(cfs)^b+c)/3.281
	605	179.00	LR-I5-3-LB	I53LB25	26.29	793		76.6	na	1.1	26.425	9/12/03	1190	
	606	179.00	LR-I5-3-LB	I53LB40vb	26.40	981		69.7	na	1.1				
	607	179.00	LR-I5-3-LB	I53LB45	26.46	1085		51.6	na	1.1				
	608	179.00	LR-I5-3-LB	I53LB65	26.46	1085		51.6	na	1.1				
	609	179.00	LR-I5-3-LB	I53LB85	26.76	1796		21.7	na	1.2				
	610	179.00	LR-I5-3-LB	I53LB105	27.19	3296		9.1	na	1.4				
	611	179.00	LR-I5-3-LB	I53LB125	27.88	7146		0.8	na	2.2				
	612	179.00	LR-I5-3-LB	I53LB145	27.96	7729		0.5	na	2.4				
	613	179.00	LR-I5-3-LB	I53LB165	28.24	10052		0.0	na	3.1				
	614	179.00	LR-I5-3-LB	I53LB185	28.35	11138		0.0	na	3.6				
	615	179.00	LR-I5-3-LB	I53LB205	28.49	12492		0.0	na	4.2				
	616	179.00	LR-I5-3-LB	I53LB225	28.53	12880		0.0	na	4.4				
	617	179.00	LR-I5-3-LB	I53LB245	28.66	14409		0.0	na	5.2				
	618	179.00	LR-I5-3-LB	I53LB255	28.76	15606		0.0	na	6.0				
Iron Gate-Shasta	619	179.4	LR-I5-2-LB	I52LB65	30.99	3128	11516530	10.2	na	1.4	30.34	11/7/02	889	From CH2MHill
	620	179.4	LR-I5-2-LB	I52LB45	30.75	2084		16.9	na	1.2	30.96	4/15/03	3010	Elev (m) = (a*Q(cfs)^b+c)/3.281
	621	179.4	LR-I5-2-LB	I52LB41vb	30.34	858		73.6	na	1.1	30.505	9/12/03	1190	
	622	179.4	LR-I5-2-LB	I52LB25	30.15	497		98.8	na	1.0				
	623	179.4	LR-I5-2-LB	I52LB05	29.99	292		100.0	na	1.0				
	624	179.4	LR-I5-2-LB	I52LB00vb	30.01	316		100.0	na	1.0				
Iron Gate-Shasta	625	179.4	LR-I5-2-RB	I52RB00vb	29.77	111	11516530	100.0	na	<1 year	30.34	11/7/02	889	From CH2MHill
	626	179.4	LR-I5-2-RB	I52RB05	29.76	101		100.0	na	<1 year	30.96	4/15/03	3010	Elev (m) = (a*Q(cfs)^b+c)/3.281
	627	179.4	LR-I5-2-RB	I52RB25	30.14	487		98.9	na	1.0	30.505	9/12/03	1190	
	628	179.4	LR-I5-2-RB	I52RB39vb	30.33	832		75.1	na	1.1				
	629	179.4	LR-I5-2-RB	I52RB45	30.44	1089		51.6	na	1.1				
	630	179.4	LR-I5-2-RB	I52RB50vb	30.49	1217		48.5	na	1.1				
	631	179.4	LR-I5-2-RB	I52RB65	30.51	1267		48.2	na	1.1				
	632	179.4	LR-I5-2-RB	I52RB85	30.64	1689		25.6	na	1.2				
	633	179.4	LR-I5-2-RB	I52RB105	30.61	1579		28.1	na	1.2				
	634	179.4	LR-I5-2-RB	I52RB125	30.55	1409		31.4	na	1.1				

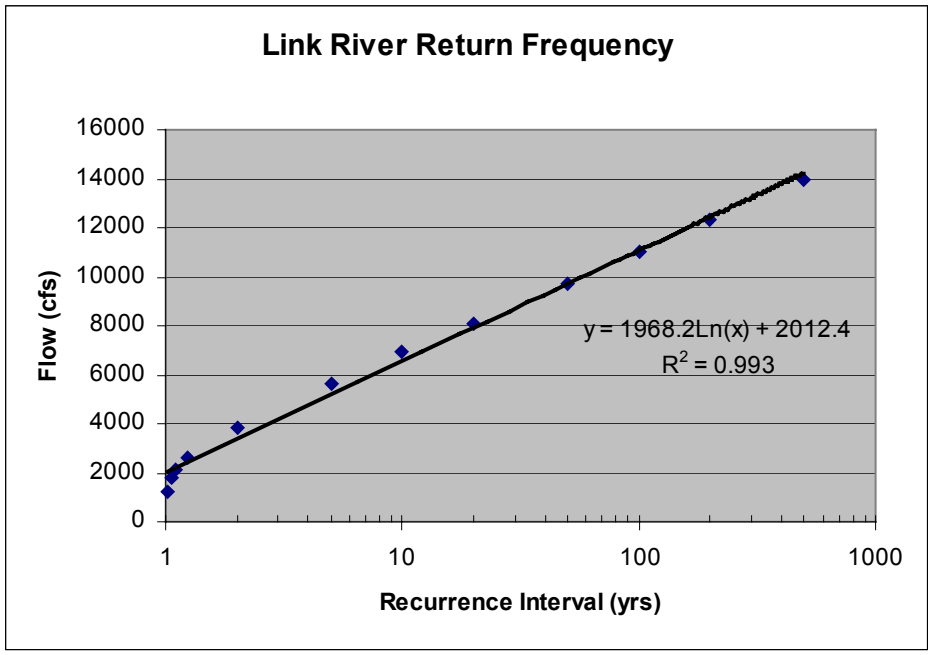
Appendix A Transect and Plot Location and Elevations, Rating Curves, and Results

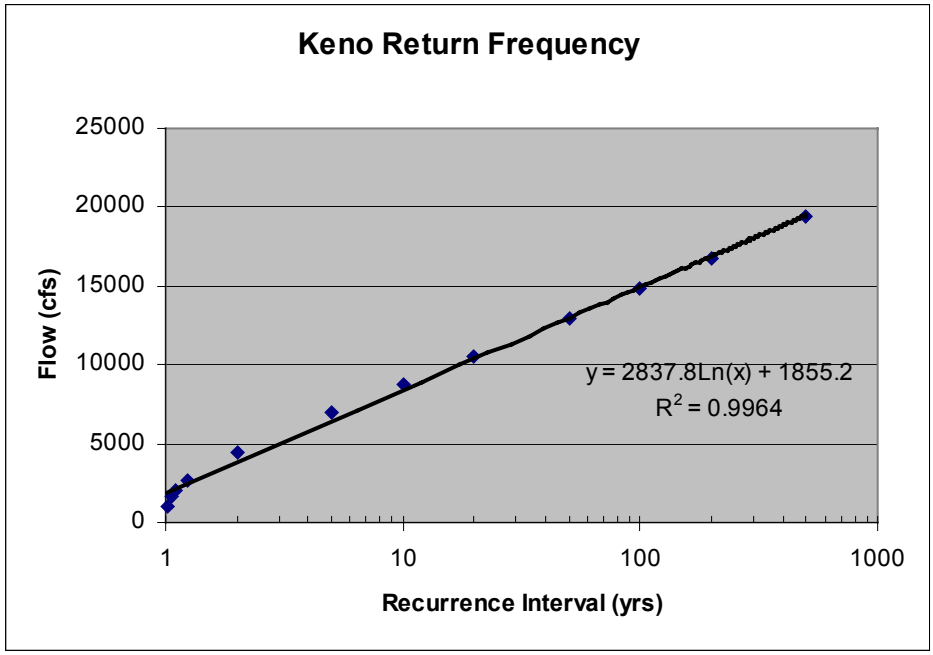
River Reach	Plot No.	River Mile	Project Segment	Plot ID	Plot Elev. Adj. (m)	Flow Required to Inundate Plot Elev. (cfs)	Gage # or flow data source	ID (%)	IF (hours)	Return Frequency (yrs)	WSEL	Date	Q	Q vs. Y Comments
	635	179.4	LR-I5-2-RB	I52RB145	30.61	1569		28.4	na	1.2				
	636	179.4	LR-I5-2-RB	I52RB165	30.75	2060		17.0	na	1.2				
	637	179.4	LR-I5-2-RB	I52RB185	30.95	2935		11.7	na	1.4				
	638	179.4	LR-I5-2-RB	I52RB205	31.00	3159		10.1	na	1.4				
	639	179.4	LR-I5-2-RB	I52RB211vb	31.35	5238		3.0	na	1.8				
	640	179.4	LR-I5-2-RB	I52RB225	31.89	9889		0.1	na	3.1				
Iron Gate-Shasta	641	179.3	LR-I5-1-RB	I51RB125	31.54	6562	11516530	1.2	na	2.1	30.0	11/6/02	890	From CH2MHill
	642	179.3	LR-I5-1-RB	I51RB105	31.10	4259		5.1	na	1.6	30.78	4/15/03	3010	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	643	179.3	LR-I5-1-RB	I51RB100vb	31.06	4095		5.7	na	1.6	30.23	9/12/03	1190	
	644	179.3	LR-I5-1-RB	I51RB85	30.96	3648		7.0	na	1.5				
	645	179.3	LR-I5-1-RB	I51RB65	30.78	2954		11.4	na	1.4				
	646	179.3	LR-I5-1-RB	I51RB45	30.66	2544		13.8	na	1.3				
	647	179.3	LR-I5-1-RB	I51RB25	30.49	1984		17.7	na	1.2				
	648	179.3	LR-I5-1-RB	I51RB10vb	30.02	878		73.0	na	1.1				
	649	179.3	LR-I5-1-RB	I51RB05	29.87	621		96.0	na	1.0				
	650	179.3	LR-I5-1-RB	I51RB00vb	29.66	350		100.0	na	1.0				
Iron Gate-Shasta	651	179.3	LR-I5-1-LB	I51LB00vb	29.59	275	11516530	100.0	na	1.0	30.0	11/6/02	890	From CH2MHill
	652	179.3	LR-I5-1-LB	I51LB05	29.68	364		100.0	na	1.0	30.78	4/15/03	3010	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	653	179.3	LR-I5-1-LB	I51LB20vb	30.02	878		73.0	na	1.1	30.23	9/12/03	1190	
	654	179.3	LR-I5-1-LB	I51LB25	30.32	1533		29.1	na	1.2				
	655	179.3	LR-I5-1-LB	I51LB28vb	30.48	1948		18.0	na	1.2				
	656	179.3	LR-I5-1-LB	I51LB45	31.21	4805		3.7	na	1.7				
Iron Gate-Shasta	657	184.20	LR-CW-1-LB	CW1LB65	31.66	5637	11516530	2.3	na	1.9	30.185	11/7/02	889	From CH2MHill
	658	184.20	LR-CW-1-LB	CW1LB53vb	31.07	3300		9.1	na	1.4	30.995	4/15/03	3010	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	659	184.20	LR-CW-1-LB	CW1LB45	30.92	2780		12.8	na	1.3	30.31	9/12/03	1190	
	660	184.20	LR-CW-1-LB	CW1LB41vb	30.84	2540		13.8	na	1.3				
	661	184.20	LR-CW-1-LB	CW1LB25	30.49	1565		28.4	na	1.2				
	662	184.20	LR-CW-1-LB	CW1LB19vb	30.20	941		70.6	na	1.1				
	663	184.20	LR-CW-1-LB	CW1LB10vb	29.99	576		97.0	na	1.0				
	664	184.20	LR-CW-1-LB	CW1LB05	29.88	421		99.5	na	1.0				
	665	184.20	LR-CW-1-LB	CW1LB00vb	29.70	221		100.0	na	1.0				
Iron Gate-Shasta	666	184.20	LR-CW-1-RB	CW1RB00vb	29.55	98	11516530	100.0	na	<1 year	30.185	11/7/02	889	From CH2MHill
	667	184.20	LR-CW-1-RB	CW1RB05	29.65	171		100.0	na	<1 year	30.995	4/15/03	3010	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	668	184.20	LR-CW-1-RB	CW1RB25	29.94	504		98.7	na	1.0	30.31	9/12/03	1190	
	669	184.20	LR-CW-1-RB	CW1RB45	30.12	795		76.5	na	1.1				
	670	184.20	LR-CW-1-RB	CW1RB65	30.17	884		72.6	na	1.1				
	671	184.20	LR-CW-1-RB	CW1RB85	30.02	623		96.0	na	1.0				
	672	184.20	LR-CW-1-RB	CW1RB105	30.23	1006		68.7	na	1.1				
	673	184.20	LR-CW-1-RB	CW1RB125	30.48	1550		28.6	na	1.2				
	674	184.20	LR-CW-1-RB	CW1RB145	30.65	1975		17.7	na	1.2				
	675	184.20	LR-CW-1-RB	CW1RB102vb	30.17	889		72.5	na	1.1				
	676	184.20	LR-CW-1-RB	CW1RB165	31.07	3300		9.1	na	1.4				
	677	184.20	LR-CW-1-RB	CW1RB185	31.88	6666		1.1	na	2.1				
	678	184.20	LR-CW-1-RB	CW1RB205	32.68	11115		0.0	na	3.6				
Iron Gate-Shasta	679	184.21	LR-CW-2-LB	CW2LB65	31.69	9712	11516530	0.3	na	3.0	30.08	11/7/02	889	From CH2MHill
	680	184.21	LR-CW-2-LB	CW2LB61vb	31.23	6498		2.8	na	2.1	30.74	4/15/03	3010	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	681	184.21	LR-CW-2-LB	CW2LB45	30.76	3913		10.5	na	1.5	30.2	9/12/03	1190	
	682	184.21	LR-CW-2-LB	CW2LB26vb	30.07	1320		73.4	na	1.1				
	683	184.21	LR-CW-2-LB	CW2LB25	29.98	1096		95.1	na	1.1				
	684	184.21	LR-CW-2-LB	CW2LB05	29.39	124		100.0	na	<1 year				
	685	184.21	LR-CW-2-LB	CW2LB00vb	29.23	29		100.0	na	<1 year				
Iron Gate-Shasta	686	184.21	LR-CW-2-RB	CW2RB00vb	29.13	4	11516530	100.0	na	<1 year	30.08	11/7/02	889	From CH2MHill
	687	184.21	LR-CW-2-RB	CW2RB05	29.24	34		100.0	na	<1 year	30.74	4/15/03	3010	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	688	184.21	LR-CW-2-RB	CW2RB25	29.91	936		97.6	na	1.1	30.2	9/12/03	1190	
	689	184.21	LR-CW-2-RB	CW2RB45	29.85	801		99.0	na	1.1				
	690	184.21	LR-CW-2-RB	CW2RB65	30.08	1353		72.4	na	1.1				

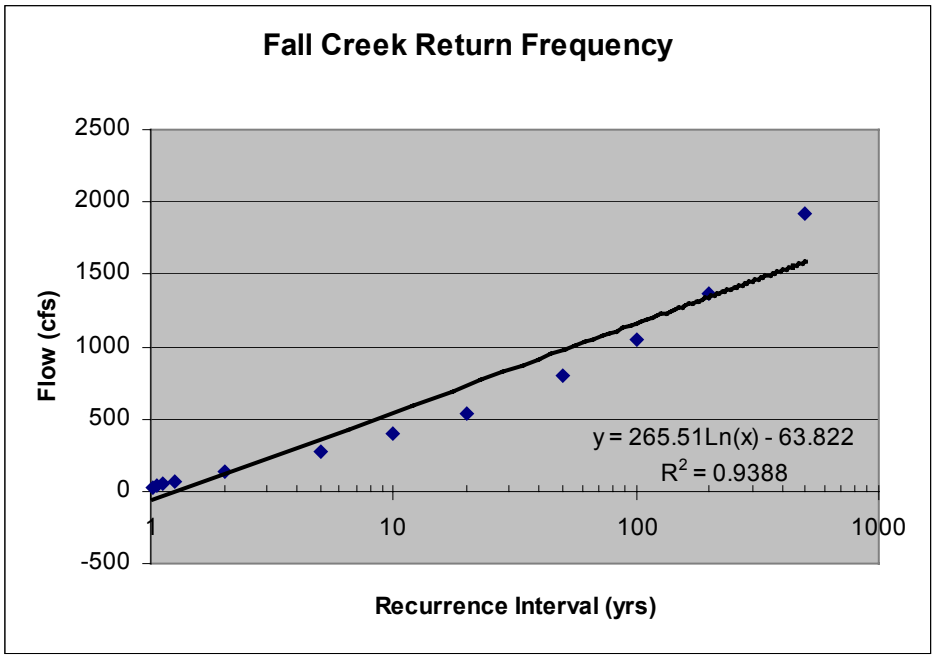
Appendix A Transect and Plot Location and Elevations, Rating Curves, and Results

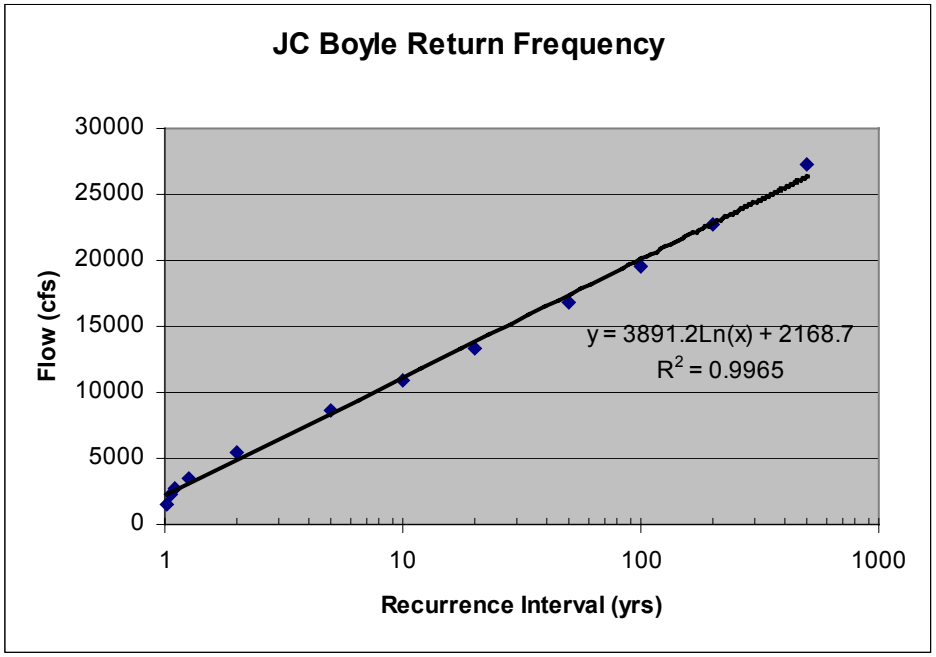
River Reach	Plot No.	River Mile	Project Segment	Plot ID	Plot Elev. Adj. (m)	Flow Required to Inundate Plot Elev. (cfs)	Gage # or flow data source	ID (%)	IF (hours)	Return Frequency (yrs)	WSEL	Date	Q	Q vs. Y Comments
	691	184.21	LR-CW-2-RB	CW2RB85	30.21	1733		48.6	na	1.2				
	692	184.21	LR-CW-2-RB	CW2RB105	30.60	3217		14.2	na	1.4				
	693	184.21	LR-CW-2-RB	CW2RB125	30.98	5071		5.6	na	1.8				
	694	184.21	LR-CW-2-RB	CW2RB145	31.29	6922		2.0	na	2.2				
	695	184.21	LR-CW-2-RB	CW2RB165	32.09	13015		0.0	na	4.4				
	696	184.21	LR-CW-2-RB	CW2RB178vb	32.21	14123		0.0	na	5.0				
	697	184.21	LR-CW-2-RB	CW2RB185	32.25	14465		0.0	na	5.3				
	698	184.21	LR-CW-2-RB	CW2RB195vb	32.29	14839		0.0	na	5.5				
	699	184.21	LR-CW-2-RB	CW2RB205	32.46	16570		0.0	na	6.7				
	700	184.21	LR-CW-2-RB	CW2RB225	32.64	18433		0.0	na	8.3				
Iron Gate-Shasta	701	184.3	LR-CWkb-RB-3	KBRB165	32.82	62167	11516530	0.0	na	>500 years	30.15	11/7/02	889	From CH2MHill
	702	184.3	LR-CWkb-RB-3	KBRB145	32.35	39729		0.0	na	99.4	30.60	4/15/03	3010	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	703	184.3	LR-CWkb-RB-3	KBRB125	31.38	12385		0.0	na	4.1	30.28	9/12/03	1190	
	704	184.3	LR-CWkb-RB-3	KBRB105	30.76	4231		5.3	na	1.6				
	705	184.3	LR-CWkb-RB-3	KBRB85	30.49	2271		15.1	na	1.3				
	706	184.3	LR-CWkb-RB-3	KBRB70vb	30.18	928		70.9	na	1.1				
	707	184.3	LR-CWkb-RB-3	KBRB65	30.12	769		78.1	na	1.1				
	708	184.3	LR-CWkb-RB-3	KBRB45	30.12	752		80.0	na	1.1				
	709	184.3	LR-CWkb-RB-3	KBRB25	30.13	803		76.1	na	1.1				
	710	184.3	LR-CWkb-RB-3	KBRB05	30.07	630		96.0	na	1.0				
	711	184.3	LR-CWkb-RB-3	KBRB00vb	30.12	769		78.1	na	1.1				
Iron Gate-Shasta	712	184.3	LR-CWkbis-3	KBISLB00vb	29.87	265	11516530	100.0	na	1.0	30.15	11/7/02	889	From CH2MHill
	713	184.3	LR-CWkbis-3	KBISLB05	29.89	298		100.0	na	1.0	30.60	4/15/03	3010	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	714	184.3	LR-CWkbis-3	KBISLB15vb	29.91	334		100.0	na	1.0	30.28	9/12/03	1190	
	715	184.3	LR-CWkbis-3	KBISLB25	30.02	534		98.5	na	1.0				
	716	184.3	LR-CWkbis-3	KBISLB30vb	30.06	615		96.1	na	1.0				
	717	184.3	LR-CWkbis-3	KBISLB45	30.21	1026		62.3	na	1.1				
	718	184.3	LR-CWkbis-3	KBISLB65	30.24	1151		49.7	na	1.1				
	719	184.3	LR-CWkbis-3	KBISLB85	30.30	1360		35.1	na	1.1				
	720	184.3	LR-CWkbis-3	KBISLB105	30.33	1486		30.2	na	1.2				
	721	184.3	LR-CWkbis-3	KBISLB120vb	30.22	1066		53.0	na	1.1				
	722	184.3	LR-CWkbis-3	KBISLB125	30.18	928		70.9	na	1.1				
	723	184.3	LR-CWkbis-3	KBISLB145	29.99	472		98.9	na	1.0				
Iron Gate-Shasta	724	184.3	LR-CWkb-LB-3	KBLB00vb	29.75	141	11516530	100.0	na	<1 year	30.15	11/7/02	889	From CH2MHill
	725	184.3	LR-CWkb-LB-3	KBLB05	29.79	174		100.0	na	<1 year	30.60	4/15/03	3010	Elev (m) = (a*Q(cfs)^b+ c)/3.281
	726	184.3	LR-CWkb-LB-3	KBLB22vb	30.12	769		78.1	na	1.1	30.28	9/12/03	1190	
	727	184.3	LR-CWkb-LB-3	KBLB25	30.30	1360		35.1	na	1.1				
	728	184.3	LR-CWkb-LB-3	KBLB33vb	30.49	2271		15.1	na	1.3				
	729	184.3	LR-CWkb-LB-3	KBLB45	30.69	3626		7.1	na	1.5				
	730	184.3	LR-CWkb-LB-3	KBLB65	31.83	22393		0.0	na	13.2				

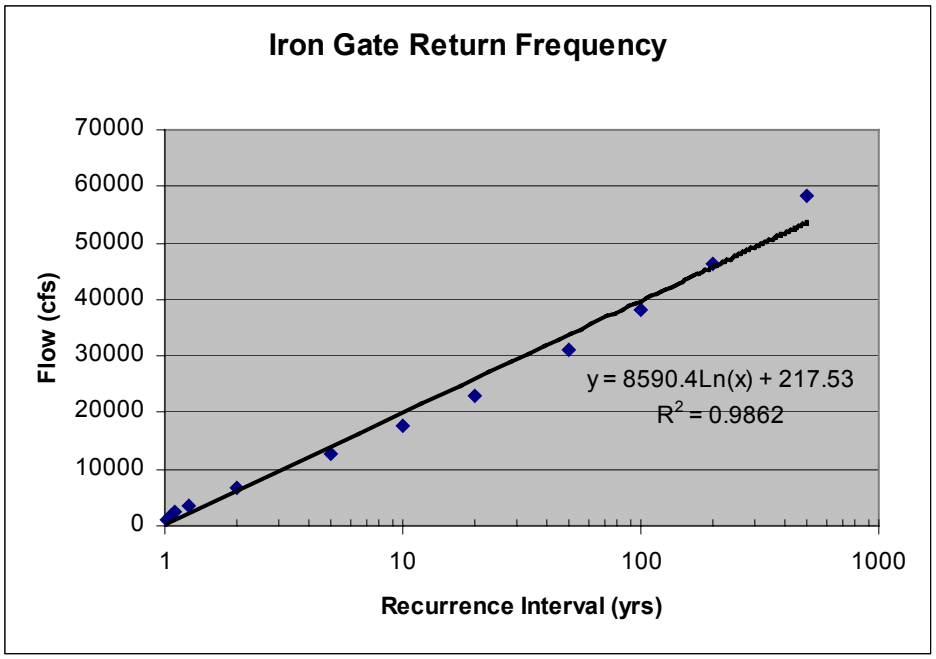
Appendix B – USGS Gage Return Frequency Relationships


Link River Return Frequency
16000
14000
12000
10000
8000
6000
4000
2000
0
Flow (cfs)
y = 1968.2Ln(x) + 2012.4
R2 = 0.993
1
10
100
1000
Recurrence Interval (yrs)


Keno Return Frequency
25000
20000
15000
10000
5000
0
Flow (cfs)
y = 2837.8Ln(x) + 1855.2
R2 = 0.9964
1
10
100
1000
Recurrence Interval (yrs)






Iron Gate Return Frequency
70000
60000
50000
40000
30000
20000
10000
0
Flow (cfs)
y = 8590.4Ln(x) + 217.53
R2 = 0.9862
1
10
100
1000
Recurrence Interval (yrs)