

Lower Guadalupe HUC-8 Subshed, TX Base Level Engineering (BLE) Results

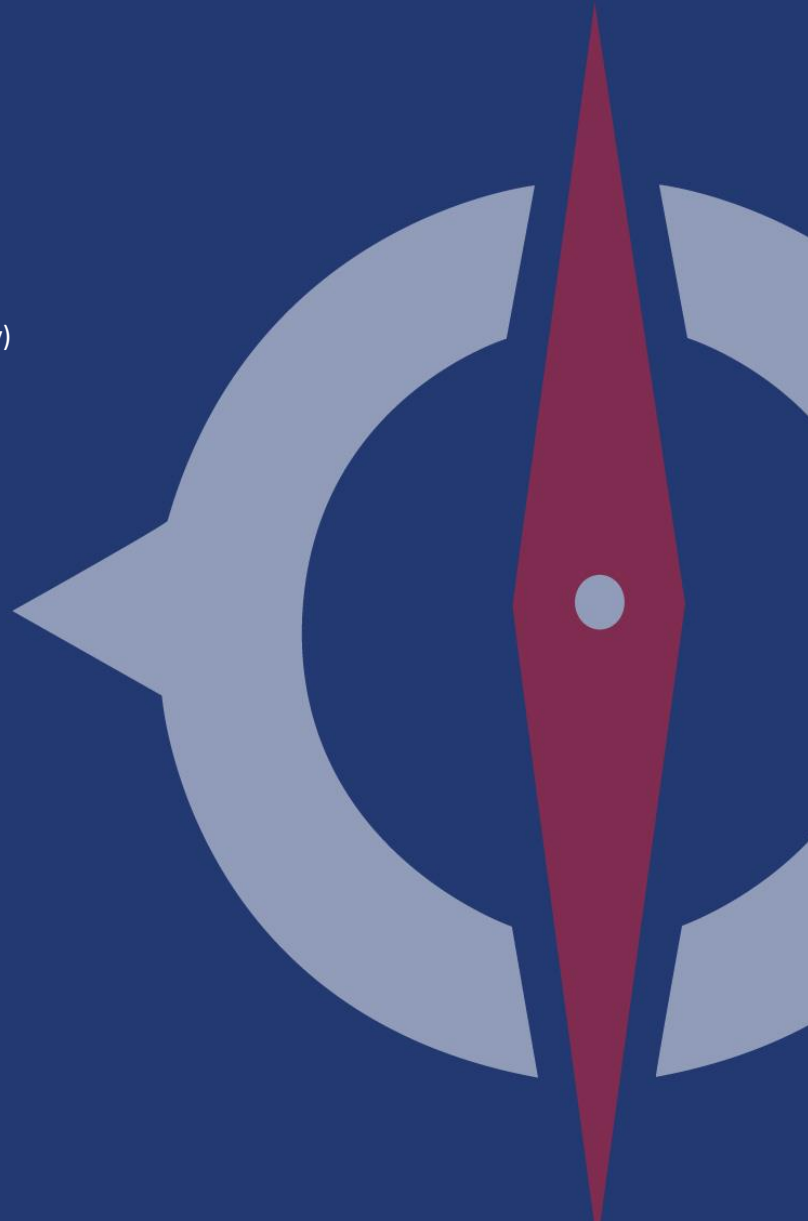
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Table of Contents

Executive Summary	1
Base Level Engineering (BLE) Methodology	4
1.1 Topographic Data	5
1.1.1 Leveraged Data Descriptions	7
1.1.2 Data Processing	9
1.2 Hydrology	10
1.3 Hydraulics	14
1.4 Quality Control	16
1.5 One-percent Special Flood Hazard Area Delineation	17
Challenges	18
3.1 Validation of Effective Zone A SFHA	19
References	24
Appendix A Summary of Peak Qs	A-1
Appendix B BLE Maps	B-1



Executive Summary

FEMA Region VI contracted Compass to complete a Base Level Engineering (BLE) analysis for the Guadalupe-Blanco Watershed in East Central Texas, to support FEMA's Discovery process and validation of effective Zone A Special Flood Hazard Area (SFHA). The BLE process involves using best available data and incorporating automated techniques with traditional model development procedures to produce regulatory quality flood hazard boundaries for the 1-percent annual chance event as well as estimates of flood hazard boundaries for multiple recurrence intervals.

The source digital terrain data used for surface model development in support of hydrologic and hydraulic (H&H) analysis as well as mapping activities were made available through coordination with the Guadalupe-Blanco River Authority (GBRA), Federal Emergency Management Agency (FEMA), Texas Natural Resources Information System (TNRIS), Halff Associates Inc., and United States Geological Survey (USGS). The four sets used for this project area were the 3ft DEM from LiDAR, DeWitt County 2016 LiDAR, TNRIS 2013 LiDAR, and (USGS) NED DEM.

Flood discharges for this study were calculated using USGS regression equations with a multiplier to calibrate to gage analysis. Regression Equations obtained from the Scientific Investigations Report (SIR) 2009-5087, Regression Equations for Estimation of Annual Peak-Streamflow Frequency for Undeveloped Watersheds in Texas Using an L-moment-Based, PRESS-Minimized, Residual-Adjusted Approach (2009) were used while PeakFQ version 7.1 was used to perform Flood Frequency Analysis (FFA).

The Hydrologic Engineering Center's River Analysis System (HEC-RAS) program version 4.1 was used to compute water surface elevations on a stream by stream basis. All hydraulic models were computed using 1-D steady state analysis.

The stream mile network that was validated for Middle Guadalupe Watershed was compiled using FEMA's Coordinated Needs Management Strategy (CNMS) inventory in conjunction with the National Hydrography Dataset (NHD) 24K High Resolution. Table ES-1 lists the stream miles identified by each source for this BLE validation analysis.

Table ES-1. Summary of Stream Miles

Source	Lower Guadalupe Stream Miles
CNMS	826.1
NHD	243.3
Total	1069.4

The full CNMS inventory of Zone A studies (826.1 miles) in the Lower Guadalupe Watershed were evaluated. Of this existing inventory, 130.3 miles were classified as VALID-NVUE COMPLIANT. Based on the validation assessment, CNMS has been updated to reflect 577.8 miles of UNVERIFIED and 228.8 miles of VALID.

Total miles validated in CNMS are summarized in Table ES-2 and illustrated in Figure ES-1 below.



Table ES-2: Zone A Validation Results

Validation Status	Status Type	Total Miles
VALID	NVUE COMPLIANT	228.8
UNVERIFIED	TO BE STUDIED	577.8

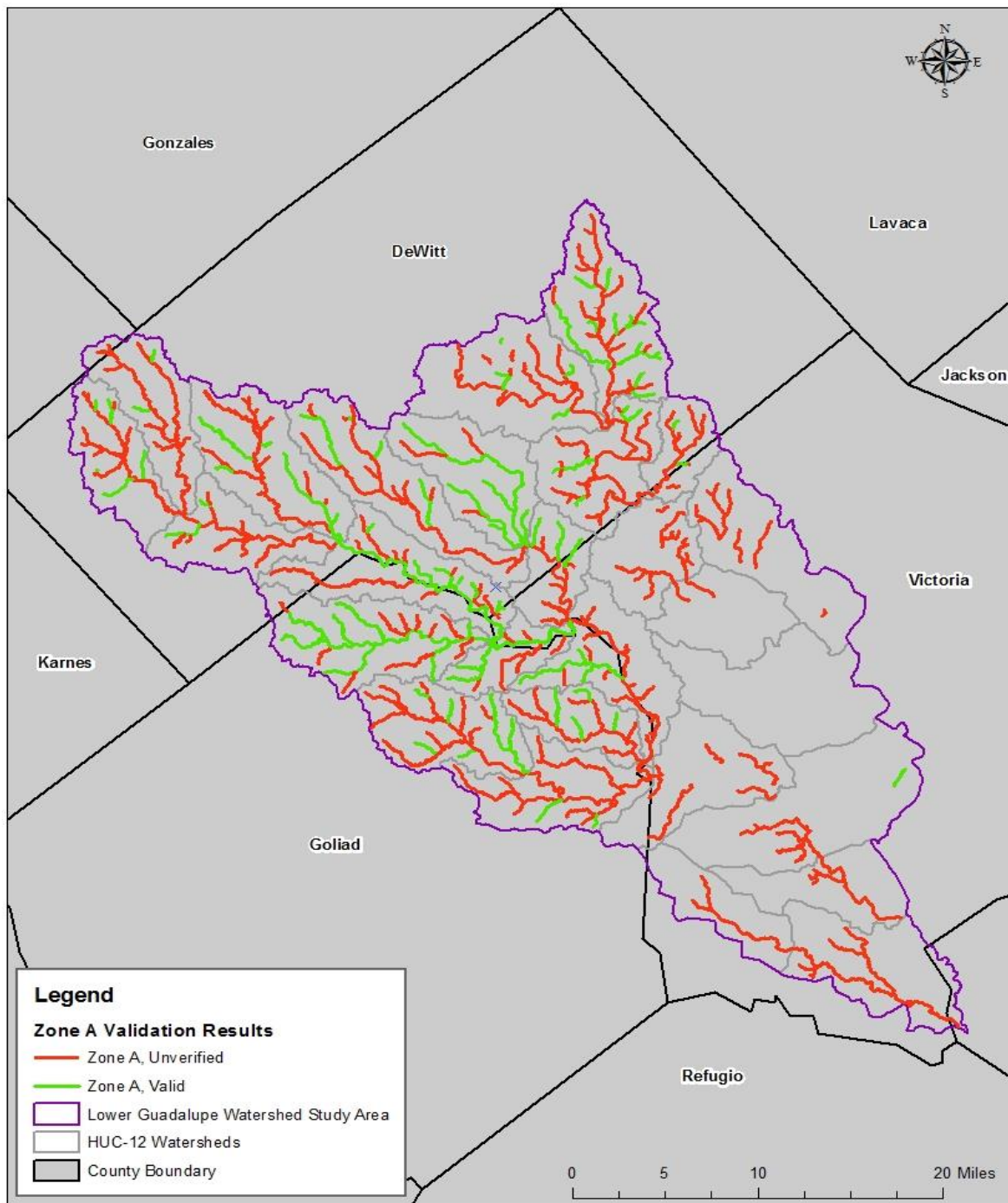


Figure ES-1. Lower Guadalupe HUC-8 Subshed CNMS Validation Results



An overall risk for each HUC-12 watershed was calculated using the National Flood Risk Percentages Dataset and its proportional area. The weighted risk was multiplied by the percentage of points in the watershed that failed the CNMS comparison to effectively determine the priority score. Figure ES-2 below shows the range of the Lower Guadalupe HUC-8 priority scores which can be used to initiate discussions during the Discovery phase. Black Bayou-Guadalupe River HUC-12 was determined to have the highest priority score and the most need while Irish Creek HUC-12 has the lowest score.

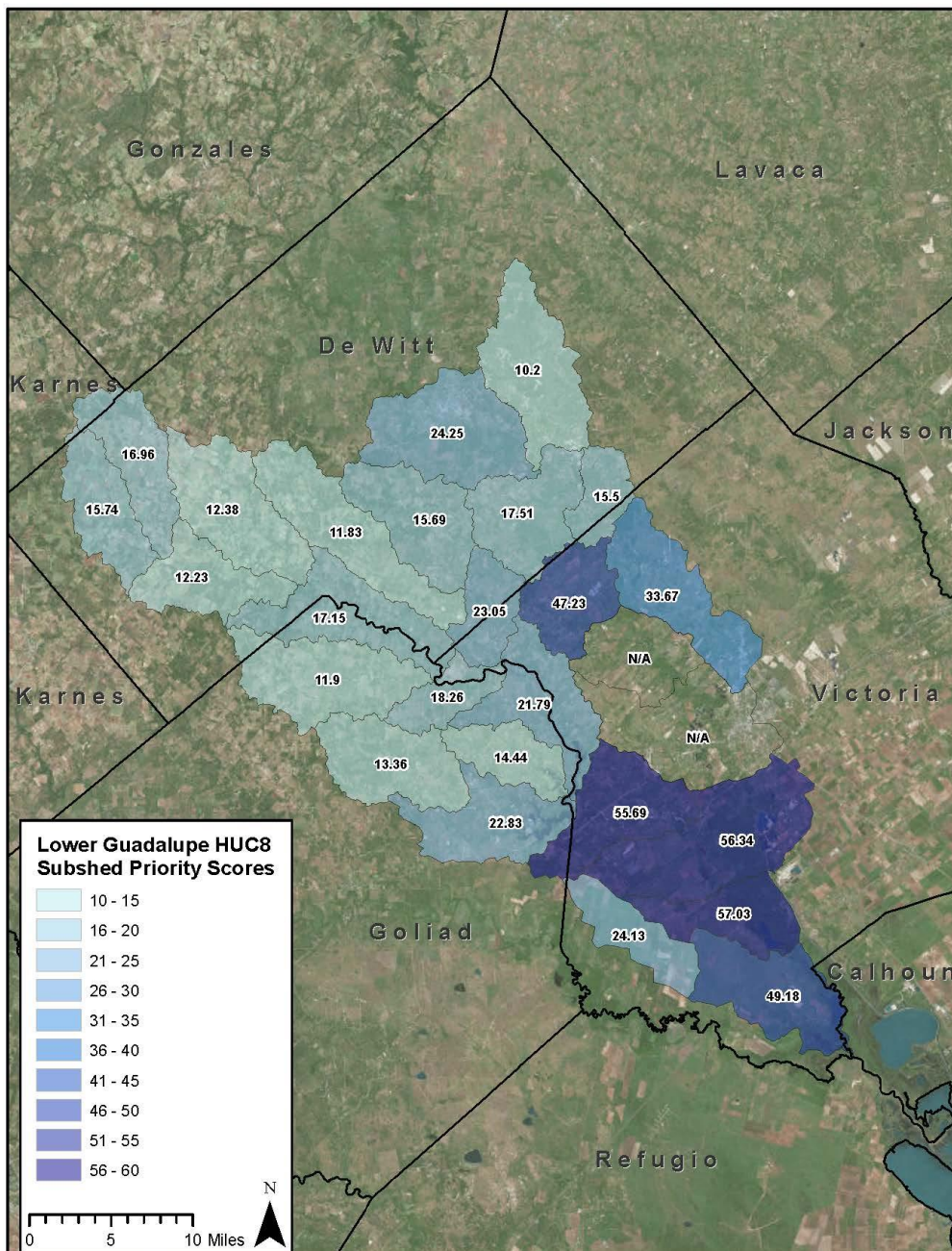


Figure ES-2. Ranking of Lower Guadalupe HUC-8 Subshed



Base Level Engineering (BLE) Methodology

Recent innovations and efficiencies in floodplain mapping have allowed the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) to develop a process called Base Level Engineering (BLE), which can be used to address current program challenges, including the validation of Zone A studies and the availability of flood risk data in the early stages of a Flood Risk Project. The BLE process involves using best available data and incorporating automated techniques with traditional model development procedures to produce regulatory quality flood hazard boundaries for the 1-percent annual chance event as well as estimates of flood hazard boundaries for multiple recurrence intervals. The cost for developing the data and estimates resulting from the BLE process are lower than standard flood production costs. The BLE results may be used for eventual production of regulatory and non-regulatory products.

As described in Title 42 of the Code of Federal Regulations, Chapter III, Section 4101(e), once every five years, FEMA must evaluate whether the information on Flood Insurance Rate Maps (FIRMs) reflects the current risks in floodprone areas. FEMA makes this determination of flood hazard data validity by examining flood study attributes and change characteristics, as specified in the Validation Checklist of the Coordinated Needs Management Strategy (CNMS) Technical Reference. The CNMS Validation Checklist provides a series of critical and secondary checks to determine the validity of flood hazard areas studied by detailed methods (e.g., Zone AE, AH, or AO). While the critical and secondary elements in CNMS provide a comprehensive method of evaluating the validity of Zone AE studies, a cost-effective approach for evaluating Zone A studies has been lacking.

In addition to the need for Zone A validation guidance, FEMA standards require flood risk data to be provided in the early stages of a Flood Risk Project. FEMA Program Standard SID #29 requires that during Discovery, data must be identified that illustrates potential changes in flood elevation and mapping that may result from the proposed project scope. If available data does not clearly illustrate the likely changes, an analysis is required that estimates the likely changes. This data and any associated analyses should be shared and results should be discussed with stakeholders.

An important goal of the BLE process is the scalability of the results. Scalability means that the results of a BLE analysis can not only be used for CNMS evaluations of Zone A studies, but can also be leveraged throughout the Risk MAP program. The data resulting from a BLE analysis can be updated as needed and used for the eventual production of regulatory and non-regulatory products, outreach and risk communication, and MT-1 processing. Leveraging this data outside the Risk MAP program may also be valuable to external stakeholders.

FEMA Region VI contracted Compass to complete a BLE analysis for the Guadalupe-Blanco Watershed in South Central Texas, to support FEMA's Discovery process and validation of effective Zone A Special Flood Hazard Area (SFHA). The study extents include portions of Bandera, Bastrop, Blanco, Caldwell, Comal, DeWitt, Fayette, Gillespie, Goliad, Gonzales, Guadalupe, Hays, Karnes, Kendall, Kerr, Travis, Victoria, and Wilson Counties and include the following communities: Cities of Blanco, Bulverde, Cuero, Garden Ridge, Gonzales, Ingram, Kerrville, Kyle, Lockhart, Luling, Martindale, Mountain City, Mustang Ridge, New Braunfels, Niederwald, Nixon, San Marcos, Schertz, Seguin, Smiley, Victoria, Waelder, Woodcreek, Yorktown, and the Towns of Flatonia and Umland. The study area consisted of four HUC-8 basins: Lower



Guadalupe River, Middle Guadalupe River, San Marcos River, and Upper Guadalupe River. Figure 1 shows the orientation of the Guadalupe-Blanco River HUC-8 basins with respect to the counties.

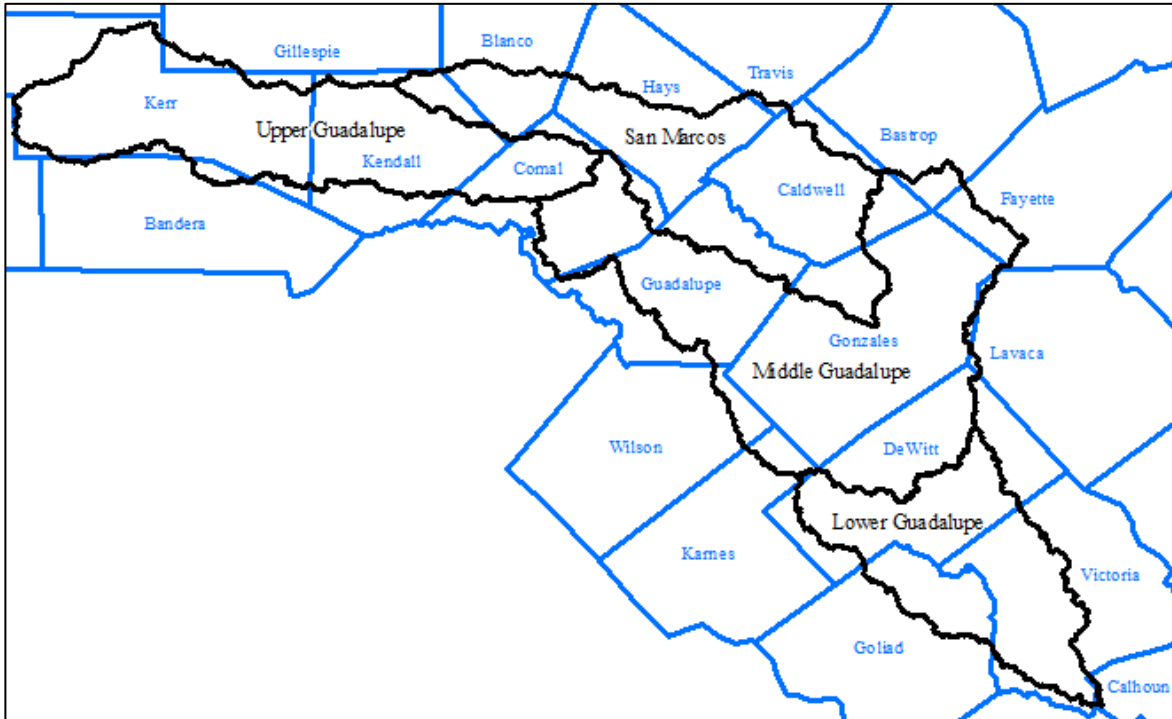


Figure 1. Guadalupe-Blanco Watershed HUC-8 Basins

Compass studied approximately 1,069 miles of stream reaches within the Lower Guadalupe Watershed with a minimum drainage area tolerance of one square mile. The selection and extent of stream reaches studied was based upon the number of stream miles with minimum drainage area of one square mile and not the number of effective Zone A stream miles. Study reaches were extended above this one square mile threshold as appropriate to ensure all effective Zone A floodplain received an updated analysis. Topographic data available from the United States Geologic Survey (USGS) was used to determine the hydrologic and hydraulic characteristics of the watershed. The following sections will summarize the BLE process and will discuss the results along with their recommended use.

1.1 Topographic Data

The primary topographic datasets were made available through coordination with the Guadalupe-Blanco River Authority (GBRA), Federal Emergency Management Agency (FEMA), Texas Natural Resources Information System (TNRIS), Halff Associates Inc., and United States Geological Survey (USGS). The four sets used for this project area were the 3ft DEM from LiDAR, DeWitt County 2016 LiDAR, TNRIS 2013 LiDAR, and (USGS) NED DEM. Figure 2 shows the extents of these terrain sources.



The 3ft DEM from LiDAR, was created by Halff Associates Inc. using existing topographic and elevation data (previously flown and processed). The result of this effort consisted of a basin wide terrain dataset. Multiple sources of data were utilized including, but not limited to data from U.S. Army Corps of Engineers (USACE), FEMA, Capital Area Council of Governments (CAPCOG), TNRIS, United States Geological Survey (USGS), and the City of Austin (COA).

The DeWitt County 2016 LiDAR was acquired and processed from March 2nd through March 4th of 2016 with a publication date of June 30th of 2016. LiDAR were collected to the extent of the buffered project area (612.3 square miles with a 100-meter buffer of the AOI) and derivative products produced in compliance with this task order and the USGS NGP specifications. The Non Vegetated Vertical Accuracy (NVA) reported for the DeWitt County 2016 LiDAR dataset used for Middle Guadalupe was 7.1 cm at the 95% confidence level. The corresponding 1m hydro flattened DEMs from this LiDAR NVA were reported at 7.3cm at the 95% confidence level.

The TNRIS 2013 50cm Ellis, Navarro, Wilson & Karnes LiDAR was acquired and processed from April 12, 2013 through October 1, 2013 with a publication date of November 1, 2013. The project area for this task order consisted of two areas of interest (AOI) covering 19 counties in Texas. The combined sites covered approximately 4,542 square miles. The Fundamental Vertical Accuracy (FVA) reported for the 2013 LiDAR dataset used for Middle Guadalupe was 13.776cm at the 95% confidence level.

The USGS NED 1/3 Arc Second DEM was used as a low priority data source to buffer the project beyond the basin extent. The data was downloaded from the USGS NED website and processed to match the projection and units of the other data sources. This DEM is a compilation of the best source data by the USGS.

The 3ft DEM from LiDAR was used as the main data source as it covered the entire Middle Guadalupe HUC. The DeWitt County 2016 DEMs from LiDAR and 2013 LiDAR were determined to be the best available data in the areas where they were located within the HUC and were prioritized above the 3ft DEM from LiDAR in those areas. The USGS NED 1/3 Arc Second DEM was used as the lowest prioritized data where better source data was unavailable.

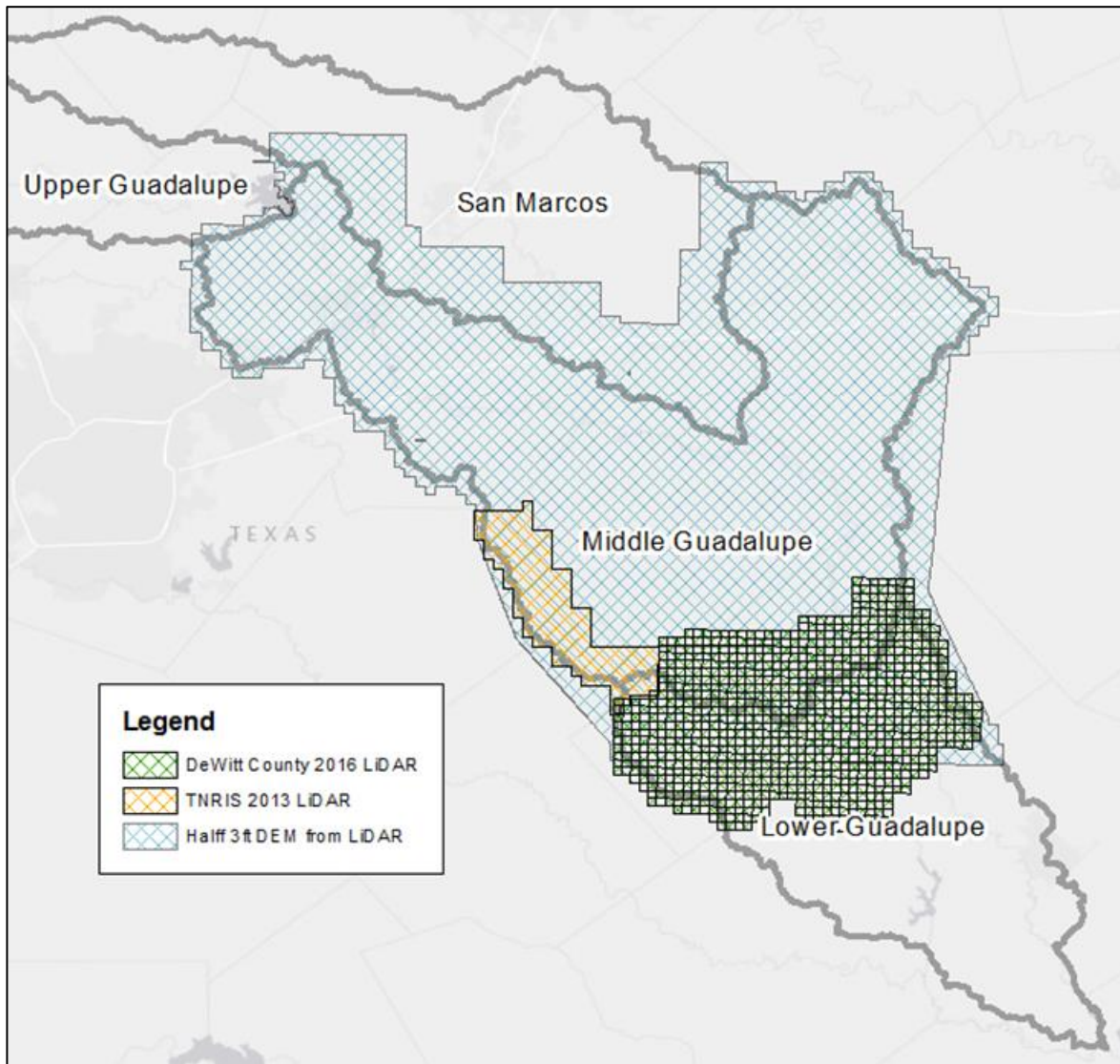


Figure 2. Extent of LiDAR Data

1.1.1 Leveraged Data Descriptions

1.1.1.1 3ft DEM from LiDAR

The 3ft DEM from LiDAR terrain data set utilizes the best available topographic information. Halff Associates Inc. compiled LiDAR data from previous studies and sources within the GBRA study area. Where there was overlapping LiDAR data, the LiDAR with the highest quality was used and USGS data was used in areas with no available LiDAR data. It was assumed that the LiDAR datasets obtained from the different sources had been previously evaluated for quality control by the contractor that collected the data. Any issues discovered after the LiDAR data was compiled in to a terrain dataset were reported to the respective source and addressed appropriately. Table 1 shows the multiple LiDAR sources that make up the 3ft DEM.

**Table 1. LiDAR Sources for 3ft DEM**

County	Age	Accuracy	Source & Contact	Approximate Footprint (sq mi)
Bastrop	2008	0.70m	CAPCOG	65
Caldwell	2007	1.40m	CAPCOG	750
	2008	0.70m	CAPCOG	150
Comal	2011	0.61m	FEMA	600
DeWitt		DEM	TNRIS	350
	2012	0.51m	USACE	50
Fayette	2008	0.70m	CAPCOG	120
Guadalupe	2008	1.40m	CAPCOG	10
	2007	1.40m	CAPCOG	90
	2011	0.61m	FEMA	600
Gonzales	2009	1.00m	TNRIS	1200
Hays	2008	0.70m	CAPCOG	750
	2003	1.70m	COA	130
	2011	0.61m	FEMA	25
Victoria	2006	1.40m	FEMA	650

The resulting dataset was a seamless 3ft DEM covering Lower Guadalupe, Middle Guadalupe, San Marcos and a small portion of Upper Guadalupe HUCs. The portion of the 3ft DEM covering Middle Guadalupe was then extracted out for use in this project.

1.1.1.2 DeWitt County 2016 LiDAR

Compass has provided FEMA with planning, acquisition, processing, and derivative product generation from LiDAR data over the area of interest (AOI) defined as DeWitt County, TX. The collection design required LiDAR be acquired to an aggregate nominal pulse spacing (ANPS) of 0.7 meters (2ppsm), including overlap, and processed according to the United States Geological Survey (USGS) National Geospatial Program (NGP) LiDAR Base Specification v1.2, to which FEMA Standards for Flood Risk Analysis and Mapping defer. The total area of the AOI is approximately 606.7 square miles. LiDAR were collected to the extent of the buffered project area (612.3 square miles with a 100-meter buffer of the AOI) and derivative products produced in compliance with this task order and the USGS NGP specifications. The purpose of the DeWitt County LiDAR collection is to support various risk analyses including hydrologic analysis, hydraulic analysis, and non-regulatory product development (e.g. depth grids and risk probability grids). 1m Hydro flattened DEMs from LiDAR, provided with this data, were used for this project. The Non Vegetated Vertical Accuracy (NVA) reported for the DeWitt County 2016 LiDAR in 1m DEM format, used for Middle Guadalupe, was 7.3 cm at the 95% confidence level.



1.1.1.3 TNRIS 2013 50cm Ellis, Navarro, Wilson & Karnes LiDAR

The TNRIS 2013 50cm Ellis, Navarro, Wilson & Karnes LiDAR project was completed in 2013. The data was acquired and processed by Gorrondona & Associates, Inc. (Gorrondona) team, which consisted of the following firms; Gorrondona, Williams Aerial and Mapping (WAM), and McKim & Creed, Inc. The acquisitions took place from April 12, 2013 through October 1, 2013. The project areas of interest (AOI) cover two separate sites over all or a portion of nineteen counties in Texas covering 4542 square miles. For the purposes of this project the LiDAR points were gridded 3ft by 3ft in an effort to save processing time and space due to the density of the original LiDAR points. The LiDAR dataset used for this project tested to .137-meter fundamental vertical accuracy at 95% confidence level based on a consolidated RMSEz (0.042-meter) which meet project accuracy specifications of the National Standard for Spatial Data Accuracy (NSSDA).

1.1.1.4 USGS NED DEM

The National Elevation Dataset (NED), a product of the USGS, is a seamless gridded dataset representing the best available raster elevation data available to the USGS for the conterminous United States, Alaska, Hawaii, and territorial islands. The NED is derived from diverse source data that are processed to a common coordinate system and unit of vertical measure. The NED serves the Middle Guadalupe HUC topographic data development activity for hydrology needs only and is being used outside the county boundary for calculating contributing drainage area.

1.1.2 Data Processing

The Watershed Information System (WISE) software platform was utilized in order to create a digital surface model for the Middle Guadalupe HUC project area. This module allows source data from a variety of sources to be prioritized based on level of accuracy or preference of the user. For the Middle Guadalupe HUC, the 3ft DEM from LiDAR dataset was used as the primary data source for TIN surface creation. The TNRIS 2012 and 2013 were also used and prioritized higher as they were more accurate in the area they were collected within the HUC. Three “patches” were also created from existing LiDAR tiles that were previously used in the creation of the 3ft DEM. These patches were necessary because of a processing error in the 3ft DEM. The tiles were reprocessed, reimported and prioritized higher than the 3ft DEM which corrected these errors. After initial production newer DeWitt County 2016 LiDAR was made available. It was mosaicked in 1m DEM form on top of the existing DEMs as it was of the highest accuracy and most current data. The DeWitt County 2016 data covered the TNRIS 2012 LiDAR previously used and was therefore the TNRIS 2012 was omitted from this report. The USGS NED DEM data was used as the secondary data source for areas where LIDAR did not exist.

The TIN was developed using the 3ft DEM, TNRIS 2012-13 LiDAR sets originally, and the USGS NED data to create a seamless surface. A DEM was sampled from the TIN based on the user defined grid resolution of minor cells (in this case a 3-foot DEM was sampled). Visual inspection of the 3-foot DEM was performed to ensure no voids and/or artifacts were present in the TIN. The TIN surface model was affirmed to be suitable for the creation of the 10ft and 50ft DEMs. Newer DeWitt County 2016 LiDAR was acquired and made available for this project. The DeWitt County



2016 1m DEMs from LiDAR were mosaicked on top of all existing DEMs and visually inspected again to make sure there were no artifacts.

After TIN creation, a 10ft DEM was sampled for hydraulic takeoffs and supporting other hydraulic analyses. Lastly, a 50-foot DEM was sampled from the TIN for hydro enforcement of the project area. Proprietary software was used to identify natural sinks, peaks and flat areas in the 50-foot DEM surface. Elevations of the cells in the DEM were algorithmically calculated and the best path to route flow was determined without filling sinks in the DEM. Once all calculations were completed, the flow was checked confirming that all drainage flowed downstream correctly and routed to outside of the project area

A new composite surface of the combined source topographic datasets, a seamless Triangular Irregular Network (TIN), was constructed using the WISE (Watershed Information System) Terrain Analyst tools. The TNRS DEM data were used as the primary data source for the TIN while the 10-meter DEM was the secondary data source where TNRS data did not exist for adequate buffer of the project area. A 10-foot DEM was sampled from the composite TIN and was used as the primary source for cross section takeoffs supporting hydraulic analyses. This 10-foot DEM was also used for visual QC and to support floodplain mapping tasks. A 50-foot DEM was sampled from the TIN for hydro enforcement to support hydrology tasks including flow vector and basin delineation.

Root Mean Square Error (RMSE) was calculated on the leveraged LiDAR-derivative DEM data used in this BLE analysis. The vertical accuracy of the source DEMs was calculated using QC checkpoints for the entire Chambers/Chambers project area from original LiDAR QC reports acquired with the TNRS data. The entire project area tested at 3.77 centimeters (cm) RMSEz, well within the 12.5 cm FEMA requirement for leveraged topographic data.

In addition to the quantitative assessment of the source digital terrain, a qualitative visual inspection of the composite DEM was performed using a hillshade derived from the 10-foot DEM. The visual inspection indicated no unusual or non-terrestrial features were observed in the composite DEM assuring the surface files used for H&H and floodplain mapping activities are sufficient for BLE analysis.

1.2 Hydrology

Flood discharges for this study were calculated using USGS regression equations with multipliers to calibrate to gage analysis. Scientific Investigations Report (SIR) 2009-5087, Regression Equations for Estimation of Annual Peak-Streamflow Frequency for Undeveloped Watersheds in Texas Using an L-moment-Based, PRESS-Minimized, Residual-Adjusted Approach (2009) contains the most recent regression equations for Texas and was used as the basis for regression calculations.

The WISE computer program was used to delineate drainage basins in shapefile format using the 50-foot resolution DEM. WISE was used to calculate the main-channel slope for each basin. The basin shapefile attribution was automated by WISE with drainage area and main-channel slope.



In order to perform the regression analysis and attribute each basin with appropriate discharge values, a script was written in Python and run in ESRI's ArcCatalog. This script required input of drainage area and main-channel slope (from WISE), as well as mean annual precipitation, OmegaEM and the calibration adjustment discussed below.

Regression equations were reviewed by comparing the results to updated flood frequency analyses for USGS stream gages in the Guadalupe-Blanco basin, as well as available USACE watershed modeling that was completed as of the time of this study. The completed USACE watershed modeling includes results for the San Marcos River basin from its headwater to its confluence with Plum Creek. These results are presented in a Technical Memorandum, dated March 30, 2016, from the USACE Fort Worth District to FEMA Region VI and titled "Preliminary Flow Frequency Analyses for the San Marcos River Basin".

The 19 gages used for comparison include 3 discontinued gages, Rebecca Creek near Spring Branch (08167600), San Marco River at Ottine (08173500), and Coletto Creek near Schroeder (08177000); the flood frequency estimates for these 3 gages were taken from USGS WRIR 96-4307, "Regional Equations for Estimation of Peak Streamflow Frequency for Natural Basins in Texas". The flood frequency estimates for most of the 16 active gages were updated using data through the 2015 water year, which ended in September 2015. The frequency analyses for 2 gages on the Blanco River, however, were updated using the peak flows recorded during the October 2015 flood, under the assumption that this flood will turn out to be annual maximum peak for the 2016 water year. The updated gage flood frequency analyses for 11 of 16 active gage locations were performed using the USGS PeakFQ software, following Bulletin 17B guidelines. Updated flood frequency analyses for 5 gages, however, were provided by the USACE. Flood frequency analyses for 3 gages in the San Marcos River basin were provided by the USACE in the previously referenced March 30, 2016 Technical Memorandum and flood frequency analyses for 2 gages on the Blanco River were provided in a Technical Memorandum, dated September 25, 2015 "Flow Frequency Analyses for the Blanco River at Wimberley and Kyle, Texas in Response to the May 2015 Flood Event".

The USGS regression equations exhibited a bias toward under-prediction when compared to the 19 USGS stream gages in the Guadalupe-Blanco River basin. As a result of this bias, use of the regression equations to develop the hydrology for the Guadalupe-Blanco BLE study resulted in discharges that were consistently less than the gage estimates for comparable drainage area streams. Regression multipliers were developed for each recurrence interval.

In order to develop a suitable adjustment or calibration to the discharge estimates at the 19 Guadalupe-Blanco River basin stream gages, the drainage area and discharge estimates were transformed to log10 units. The original SIR 2009-5087 regression analysis was performed in log10 space, which is standard practice in statistical hydrology because the log10-transform results in distributions of the variables that more closely resemble normal distributions and because the relations between peak discharge and the watershed characteristics are more linear in log10



space. A plot of log10 of drainage area versus the log10 of the 100-year recurrence interval peak discharges with linear best-fit lines for both the gage peak discharges and the regression peak discharges confirms the under-prediction bias of the regression estimates and indicates that the slopes of the best-fit line for the regression and the gage discharge estimates are similar (though not the same). This similarity in slope indicates that the under-prediction bias is relatively consistent across the range of observed drainage areas and therefore a simple multiplier adjustment would serve to correct the regression equation estimates and reduce the bias toward under-prediction.

The adjustment factor is computed by taking the average of the differences between log10 of the gage discharge estimates and the regression discharge estimates for each of the 19 stream gages. This average difference is added to the log10 of the regression discharge estimate, or equivalently, the average difference is converted back to arithmetic space and used as a simple multiplier adjustment factor on the computed regression discharge. The average difference between the gage and regression discharge estimates for the 100-year recurrence interval was 0.1942 log10 units, which translates to a multiplier of 1.564. Similar analyses were performed for the 10-, 25-, 50-, and 500-year recurrence interval regression equations with similar results.

It is important to note that the adjustment for each recurrence interval is less than the residual standard error reported for each recurrence interval in USGS SIR 2009-5087.

Any modeling at a higher level of detail than the base level engineering should utilize a more detailed method to determine hydrology, including hydrologic modeling or more detailed, site-specific gage comparison and adjustment.

Table 1 shows the published equations, the 1-percent-plus and 1-percent-minus equations and regression multipliers that were used for this study. In these equations, Q_i represents peak streamflow for i -recurrence interval (annual chance exceedance (a.c.e.) in cubic feet per second, P represents mean annual precipitation in inches, S represents dimensionless main-channel slope, Ω represents the OmegaEM parameter, and A is cumulative drainage area in square miles.

Table 2. Summary of Regression Equations (SIR 2009-5087)

Recurrence Interval	Equation ¹	Regression Multiplier
$Q_{10\%}$	$P^{1.203} S^{0.403} \times 10^{[0.918 \Omega + 13.62 - 11.97A^{(-0.0289)}]}$	1.121
$Q_{4\%}$	$P^{1.140} S^{0.446} \times 10^{[0.945 \Omega + 11.79 - 9.819A^{(-0.0374)}]}$	1.321
$Q_{2\%}$	$P^{1.105} S^{0.476} \times 10^{[0.961 \Omega + 11.17 - 8.997A^{(-0.0424)}]}$	1.454
$Q_{1\%}$	$P^{1.071} S^{0.507} \times 10^{[0.969 \Omega + 10.82 - 8.448A^{(-0.0467)}]}$	1.564
$Q_{0.2\%}$	$P^{0.988} S^{0.569} \times 10^{[0.976 \Omega + 10.40 - 7.605A^{(-0.0554)}]}$	1.789



Recurrence Interval	Equation ¹	Regression Multiplier
Q _{1%plus}	$10^{(\text{LOG}(Q_{1\%}) / \text{LOG}(10) + 0.3)}$	*
Q _{1%minus}	$10^{(\text{LOG}(Q_{1\%}) / \text{LOG}(10) - 0.3)}$	*
¹ Variables: Q _i peak flow for i recurrence interval (a.c.e.), in cubic feet per second; P, Mean Annual Precipitation in Inches; S, Main-channel slope (dimensionless); Ω, OmegaEM parameter; A, Cumulative Drainage Area in square miles		

Discharges for the 1-percent plus and 1-percent minus a.c.e. were calculated by applying the mean residual standard error for the Q_{1%} equation.

The mean annual precipitation values were determined based on shapefile coverage obtained from the Texas Water Development Board and available for download from the following location: http://www.twdb.texas.gov/mapping/gisdata/doc/Precipitation_Shapefile.zip

The annual precipitation values reflect data for the climatological period 1981-2010 as recorded by the Natural Resources Conservation Service (NRCS).

Main channel slope was calculated in WISE. An automated routine was used to determine the longest flowpath from the upstream of a reach to the outlet of the sub-basin of interest based on flowpaths developed from the 50-foot DEM. Once the length of the flowpath was delineated, elevations for the endpoints were determined based on the TIN developed from the LiDAR. The slope was calculated by dividing the fall by the reach distance and the result was reported in foot/foot.

From USGS SIR 2009-5087, the OmegaEM parameter is a generalized terrain and climate index that expresses relative differences in peak-streamflow potential. A shapefile was developed and populated with OmegaEM values based on Figure 2 in SIR 2009-5087. This shapefile was used, along with a python script in ArcCatalog, to determine OmegaEM values on a sub-basin basis. For sub-basins that are split, the dominant OmegaEM value for the sub-basin was used.

Drainage area for each sub-basin was determined based on automated basin delineations performed in WISE. Basin break points were set by the user with a sub-basin target of one square mile in size. This criterion was adjusted for streams with larger drainage areas in order to avoid excessive and unnecessary discharge breaks. Break points were also set just upstream of stream confluences. Cumulative drainage area was determined based on these automated delineations performed by WISE in combination with a stream connectivity routine that defined the stream reach segments with upstream and downstream neighbors.



As discussed in previously, a Python script in ArcCatalog was used to compute discharges for each sub-basin. The sub-basin shapefile was attributed with the computed discharges as part of the automated script. From the sub-watershed basin shapefile the discharges were incorporated into the HEC-RAS models using an automated routine in WISE. Discharges, as well as water surface elevation results, were associated with the hydraulic cross sections prior to generation of floodplain boundaries and grid mapping. Those results are available in GIS format as part of this BLE submittal package.

BLE analysis was compared with effective discharge data where available. At these locations, the general trend showed that the effective discharges match considerably well with the discharges computed for this study.

1.3 Hydraulics

The hydraulic approach for BLE analysis for the Lower Guadalupe watershed consisted of using the terrain model described in section 1.1 in combination with hydrology input computed as described in section 1.2 to establish water surface elevations using 1-D steady state analysis. The Hydrologic Engineering Center's River Analysis System (HEC-RAS) program version 4.1 was chosen as the computer model to compute water surface elevations on a stream by stream basis. The WISE computer program was used to establish model stream orientation, initial hydraulic cross section layout and stationing, assign n-values to cross sections, and to develop all input files for the HEC-RAS program. ESRI's ArcMap program was used to review and refine cross section layout orientation.

First pass cross section layout was performed using an automated routine in WISE based on the drainage area at the cross section location. A first draft model was created based on this initial cross section layout and draft boundaries were developed. At this stage, a second pass inspection for cross section placement occurred. Significant refinement occurred during this step. To improve the hydraulic models, additional cross sections were added as needed to better define the BLE floodplain boundary. Cross sections were extended in locations where overtopping occurred. Orientation of cross sections was refined to improve on the perpendicular orientation to flow. Additional cross sections were added at floodplain constrictions and at downstream portions of tributaries to ensure a proper tie-in with receiving streams. Cross sections were adjusted to remove sections that intersected hydraulic crossings in the floodplain. For some of the largest studied streams, cross sections were laid out manually in order to have more reasonable spacing and better capture the constrictions in the floodplain.

Cross sections were not drawn on top of roadways or railroads. Cross sections were placed at the upstream and downstream face of major roads and railroads. Major roads are those designated in the Texas DOT road coverage as On System Highways. The road coverage can be acquired in shapefile format from the TNRIS website at the following link: <https://tnris.org/data-catalog/entry/txdot-roadways/>. Ineffective flow stations were placed in the hydraulic models as appropriate to account for flow constrictions at crossings as well as at locations deemed by the engineer to be ineffective at conveying flow downstream.



Cross sections were drawn on dam tops for significant dams with well defined spillways in order to better represent ponded water upstream of the structures. It was assumed in doing this that the vast majority of the flow during a flood event would pass the spillway and that the hydraulic model would reasonably estimate flow across the spillway as represented in the hydraulic cross section. This was the method used for the Coletto Creek Reservoir as flood elevations at the desired frequencies were not available. The elevations used in the modeling were checked against known elevations from past flooding events and effective Zone A boundaries and the results were determined reasonable.

Significant effort was made to start all tributaries below the receiving water surface elevations but this was not always achieved, particularly in wide, flat floodplains where small tributaries ran parallel to large streams or where road crossings or dams interfered with cross section alignments.

The relationship between drainage area and assigned channel geometry is shown in Table 3. These default values for dimensions and spacing are subject to change based on the details noted above as well as the judgment of the responsible engineer.

Table 3: Cross Section Default Parameters

Drainage area (upper limit)	XS Spacing	Channel Top Width	Channel Bottom Width	Channel Depth
1.0	500	4	3.5	0.5
2.0	500	6	5	0.5
4.0	500	11	10	0.5
8.0	500	18	17	0.5
10.0	500	20	19	0.5
15.0	600	26	25	0.5
20.0	600	32	31	0.5
25.0	600	38	36	0.5
30.0	600	43	41	0.5
40.0	600	52	50	0.5
50.0	600	60	57	1
75.0	750	68	65	1
100.0	750	76	73	1
150.0	1000	91	88	1
250.0	1000	122	119	2
500.0	1500	198	195	2
1000.0	2500	351	346	3
2000.0	4000	657	652	3
5000.0	4000	1575	1565	3
>5000.0	4000	2000	1990	4

Manning's roughness coefficients (n-values) were determined using the 2011 National Land Cover Data (NLCD) dataset in combination with n-values from Chow (1959) and Calenda, et al. (2005). The association between the n-values and the NLCD Classification is shown in Table 4. Manning's n-value takeoffs were performed by WISE and the n-values were adjusted based on engineering



judgment and external review. N-values within channel banks were limited by the automated routine to a range of 0.030 to 0.050. N-values in the overbanks of 0.12 were revised to 0.10 and n-values of 0.16 were revised to 0.12 for all streams within the study.

Table 4: Manning's "n" Roughness Based on 2001 NLCD Classification (Moore, 2011)

NLCD Classification	Minimum	Normal	Maximum	Source
Open Water	.025	.03	.033	Chow 1959
Developed, Open Space	.01	.013	.016	Calenda, et al. 2005
Developed, Low Intensity	.038	.05	.063	Calenda, et al. 2005
Developed, Medium Intensity	.056	.075	.094	Calenda, et al. 2005
Developed, High Intensity	.075	.1	.125	Calenda, et al. 2005
Barren Land	.025	.03	.035	Chow 1959
Deciduous Forest	.1	.12	.16	Chow 1959
Evergreen Forest	.1	.12	.16	Chow 1959
Mixed Forest	.1	.12	.16	Chow 1959
Scrub/Shrub	.035	.05	.07	Chow 1959
Grassland/Herbaceous	.025	.03	.035	Chow 1959
Pasture/Hay	.03	.04	.05	Chow 1959
Cultivated Crops	.025	.035	.045	Chow 1959
Woody Wetlands	.08	.1	.12	Chow 1959
Emergent Herbaceous Wetland	.075	.1	.15	Chow 1959

The boundary condition used for the majority of the study streams was normal depth with a default value of 0.005 ft/ft. For streams with names in the National Flood Hazard Layer (NFHL) and streams with large drainage areas (generally greater than 10 square miles), the normal depth slope was calculated based on the HEC-RAS profile invert. For studies that have a known downstream water surface elevation from an effective study, those known water elevations were used as the starting condition.

1.4 Quality Control

Following the initial BLE analysis in each watershed, the flood hazard area delineations created by the BLE process were reviewed for areas where the results were not ideal.

QC results indicated that some of the models should be extended to cover the scope of effective flood hazard data. Those streams were extended farther upstream to match the extents of the SFHA data.

Typical manual editing resulting from reasonability checks included adding cross-sections, adjusting orientation of cross sections, trimming cross sections and reduction of the default "V" angle of cross sections. It is estimated that 50 percent of cross-sections were adjusted in some work areas while other areas did not require as much editing. Other examples of manual editing included adding cross-sections at confluence areas, modification to improve perpendicular orientation at the channel, adjustment of discharge breaks to better represent flow addition points, revisions to dam spillways and dam tops, and revisions to n-values.



A major component of the QC process was an automated check that identified locations where the 1-percent a.c.e profile was crossed by another frequency or by the 1-percent plus or 1-percent minus profile. Significant effort was made to reasonably resolve all of these instances. Another automated check identified locations where there was a drawdown of greater than 0.5 feet on the 1-percent a.c.e. water surface profile. This check is particularly useful for identifying errors in the model such as a channel that is too wide, a poorly placed cross section, or a need for additional cross sections. Again, significant effort was made to reasonable resolve these drawdown situations.

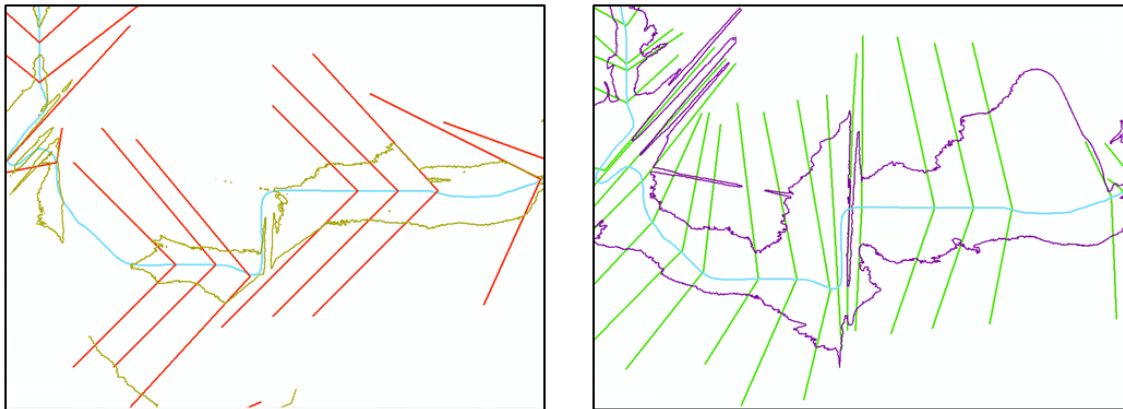


Figure 3: Default “V” angle cross-sections automated by WISE (left). Manually edited cross-sections to more accurately capture terrain (right). Resulting flood boundaries shown in gold (left) or purple (right) for clarity.

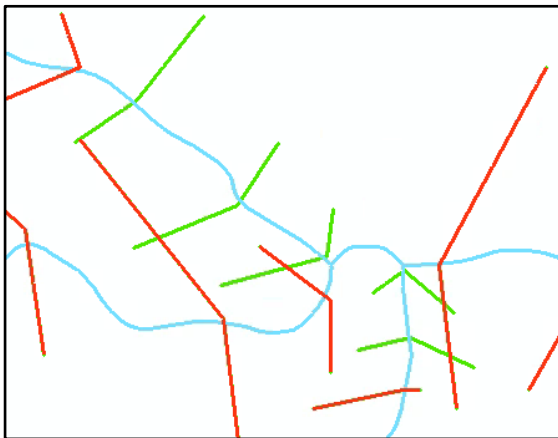


Figure 4: Manually added cross-sections (green) to improve accuracy of tie-ins at confluences.

1.5 One-percent Special Flood Hazard Area Delineation

The 1-percent and 0.2-percent boundaries were mapped using a routine that develops water surface elevation grids based on the 10-foot cell size DEM developed. This product was converted to a polygon for cleaning. The cleaning routine involved manual inspection of the polygons to identify and remove areas of disconnected flooding. In general, areas with a size of less than 5,000 square feet were removed and all others were investigated to determine whether they should be considered as potentially part of the special flood hazard area (SFHA). This investigation



was aided by the ground DEM and aerial imagery. Manual adjustments to the polygons were made to account for spillways on dams which could not be accurately modeled using HEC-RAS as well as disconnected areas along the flooding source that should reasonably be connected.

Following the removal of disconnected flooding areas and other boundary adjustments, the small islands in the floodplain were filled. Islands with a size between roughly 5,000 and 30,000 square feet were inspected and, in general, islands that were less than 10,000 square feet were filled.

Once the island filling process was complete, the water surface raster mapping routine was run and set to conform to the polygon boundary. This ensures that the water surface raster and the flood plain boundary are consistent with each other. The depth raster product was created at the end of the process by performing a raster subtraction with the water surface elevation raster and the ground DEM.

Challenges

Challenges encountered during BLE analyses will vary based on available data on which to run the analysis. The Lower Guadalupe Watershed analysis presented challenges as summarized in the following paragraphs.

There is a contentious LAMP analysis underway for the most-downstream portion of the Guadalupe River, approximately where tidal effects begin to dominate flooding elevations. A draft of the 1% annual chance analysis was provided and used to inform the modeling and mapping for the 1% annual chance and more frequent events within the leveed area. The 0.2% annual chance modeling and mapping did not incorporate information from the draft LAMP analysis.

As noted in Section 1.2 above, regression equations under-predicted discharges compared to gage estimates. Regression multipliers were developed to calibrate each recurrence interval.

As noted in Section 1.3 above, significant effort was made to start all tributaries below the receiving water surface elevations but this was not always achieved, particularly in wide, flat floodplains where small tributaries ran parallel to large streams or where road crossings or dams interfered with cross section alignments.

As noted in Section 1.4 above, multiple streamlines did not extend far enough to fully capture effective flood hazard data. The streamlines generated in the development of the one square mile basins were extended in order to more closely match the effective areas and CNMS streams.

Due to the flat topography in areas throughout the watershed, it was often difficult to obtain relief without overflows and spillover into adjacent floodplains. Cross-sections were extended and re-oriented in a manner to most reasonably model and map these areas.

Results and Recommendations

The BLE results for the Lower Guadalupe Watershed produced an SFHA that compares reasonably well with the effective SFHA in most cases, and provides an additional estimated SFHA in areas that do not currently have an SFHA mapped. These results provide context for flood risk communication as part of the Discovery process, and should be verified through community work map meetings before being applied to a regulatory product.

A map showing the BLE results are included as Appendix B.



3.1 Validation of Effective Zone A SFHA

The inventory of Zone A studies (826.1 miles) in the Lower Guadalupe Watershed were classified in CNMS as follows: 407.6 miles with a validation status of “UNKNOWN,” 288.2 miles with a validation status of “UNVERIFIED,” and the remainder with a validation status of “VALID.” The following is a summary of the results of the CNMS validation assessment for the effective Zone A studies in the study area. Initial Assessment checks A1-A3 were evaluated for the CNMS inventory of Zone A studies.

INITIAL ASSESSMENT A1 – SIGNIFICANT TOPOGRAPHY UPDATE CHECK

This check involves determining whether a topographic data source is available that is significantly better than what was used for the effective Zone A modeling and mapping. For the Lower Guadalupe Watershed study area, the effective Zone A topographic data leveraged a variety of sources, but primarily were based upon USGS 24K map products. The TNRIS 2009 and 2012 1-meter and 1.5-meter gridded DEM data derived from Lidar, 2006 Texas Water Development Board (TWDB) 1-meter DEM data derived from Lidar, and the 2016 DeWitt County Lidar within the study area represents a significant improvement from the assumed effective Zone A topographic source, and therefore check A1 was set to fail for all reaches.

INITIAL ASSESSMENT A2 – CHECK FOR SIGNIFICANT HYDROLOGY CHANGES

This check involves first determining whether regression equations were used in the effective study. If they were then it was determined if new regression equations have become available from the USGS since the date of the effective Zone A study. If newer regression equations exist for the area of interest, then an engineer must determine whether these regression equations would significantly affect the 1-percent-annual-chance flow. Scientific Investigations Report 2009-5087, Regression Equations for Estimation of Annual Peak-Streamflow Frequency for Undeveloped Watersheds in Texas Using an L-moment-Based, PRESS-Minimized, Residual-Adjusted Approach (2009) contains the most recent regression equations for Texas. Because the hydrology methods used for most of the effective Zone A studies are unknown, assessment check A2 was passed for all reaches except those in Goliad County. Goliad County effective Zone As used regression equations, so these reaches were set to fail.

INITIAL ASSESSMENT A3 – CHECK FOR SIGNIFICANT DEVELOPMENT

This check involves using the National Urban Change Indicator (NUCI) dataset to assess increased urbanization in the watershed of the Zone A study. If the percentage of urban area within the HUC-12 watershed containing the effective Zone A study is 15% or more, and has increased by 50% or more since the effective analysis, the study would fail this check. Although the NUCI data provide year-to-year changes in urbanization, the NLCD also is needed to establish a baseline of urban land cover for this analysis. The check for significant development in the TX study area was completed by evaluating percentage of urban change at the HUC-12 level. Of the 27 HUC-12 watersheds within the study area, none meet the threshold of 15% or more urban cover. Therefore, A3 was marked as passing for the entire HUC-8.



Table 5: Zone A Initial Assessment Results

Assessment Check	Pass / Fail	Notes
A1 – Topography	Fail	New LiDAR significantly better than effective topo source
A2 – Hydrology	Pass / Fail	Effective Hydrology methods unknown / 2009 equations create a significant change
A3- Development	Pass	All non-urban watersheds

VALIDATION CHECK A4 – CHECK OF STUDIES BACKED BY TECHNICAL DATA

Zone A studies that pass all initial assessment checks described above may be categorized as “Valid” in the CNMS Inventory only if the effective Zone A study is supported by modeling or sound engineering judgment and all regulatory products are in agreement. If the effective Zone A study passes all initial assessment checks, but is not supported by modeling, or if the original engineering method used is unsupported or undocumented, a comparison of the BLE results and effective Zone A’s is performed. Due to lack of documentation of the original engineering methods in most of the HUC-8 watershed, the check A4 for streams within the study area have been marked as failing in CNMS. The exception is Goliad County streams where methods were known and appropriate. These reaches were set to pass this element.

VALIDATION CHECK A5 – COMPARISON OF BLE AND EFFECTIVE ZONE A

The BLE /effective Zone A comparison method leverages the existing Floodplain Boundary Standard (FBS) certification procedures described in FEMA SID 113, but with a slight modification. This modified FBS comparison approach uses the 1-percent plus and 1-percent minus flood profiles and horizontal and vertical tolerances described in the *First Order Approximation—Methodology, Validation, and Scalability Guidance Procedures (Version 1.5)*. For the comparison of BLE and effective Zone A in the Texas study area, the following vertical and horizontal tolerances were used to conduct the modified FBS procedure. One point was placed every 200 feet along the floodplain boundaries for comparison.

Vertical Tolerance: +/- 5 feet (one-half contour interval of assumed effective topographic source).

Horizontal Tolerance: +/-75 feet (standard horizontal tolerance for BLE comparison testing).

Of the 405 modeled BLE streams in the study area, 83 were found to correspond (within the tolerance limits) with effective Zone A flood zones. Comparison results for these streams were grouped at the HUC-12 level and are summarized in Table 7 below to better understand the general health of the HUC-12 watershed, but the validation check was performed at the stream level. Streams where the percentage of passing FBS sample points is greater than or equal to 85% are marked as “Pass”, otherwise marked as “Fail”.



VALIDATION RESULTS

Based on the validation assessments and BLE comparison results described above, the CNMS inventory of Zone A studies in the Lower Guadalupe Watershed study area has been updated, with 577.8 miles categorized as and 159.6 miles categorized as VALID. Total miles in each of these categories are summarized in Table 6 and illustrated in Figure 5 below.

Table 6: Zone A Validation Results

Validation Status	Status Type	Total Miles
VALID	NVUE COMPLIANT	228.8
UNVERIFIED	TO BE STUDIED	577.8

Table 7: BLE Comparison Results

HUC-12 Watershed		Total FBS points	Fail	Pass	%Pass	BLE Comparison Pass? (>85%)	Priority Score
Watershed Name	Watershed Number						
Lower Guadalupe	All Streams	16163	3853	12310	75.28%	Fail	n/a
Black Bayou-Guadalupe River	121002040402	38	25	13	34.21%	Fail	57.03
Boggy Branch-Fivemile Creek	121002040209	816	160	656	80.39%	Fail	15.69
City of Victoria-Spring Creek	121002040107	314	154	160	50.96%	Fail	33.67
Court Branch-Coleto Creek	121002040305	331	224	107	32.33%	Fail	55.69
Dry Creek-Guadalupe River	121002040401	208	142	66	31.73%	Fail	56.34
Eighteenmile Creek	121002040206	1143	170	973	85.13%	Pass	11.90
Headwaters Kuy Creek	121002040403	63	19	44	69.84%	Fail	24.13
Headwaters Perdido Creek	121002040303	1156	193	963	83.30%	Fail	13.36
Hog Thief Creek-Coleto Creek	121002040301	720	190	530	73.61%	Fail	21.79
Irish Creek	121002040102	1485	255	1230	82.83%	Fail	10.20
Kuy Creek-Guadalupe River	121002040404	381	209	172	45.14%	Fail	49.18
Lower Fifteenmile Creek	121002040207	499	111	388	77.76%	Fail	18.26
Lower Twelvemile Creek	121002040210	421	115	306	72.68%	Fail	23.05



HUC-12 Watershed		Total	Fail	Pass	%Pass	BLE	Priority
Mission Creek-Guadalupe River	121002040106	X	X	X	X	Fail	X
Oaxley Branch-Guadalupe River	121002040101	538	169	369	68.59%	Fail	24.25
Perdido Creek-Coleto Creek	121002040304	729	208	521	71.47%	Fail	22.83
Price Creek	121002040104	518	107	411	79.34%	Fail	15.50
Reeds Branch-Guadalupe River	121002040103	860	188	672	78.14%	Fail	17.51
Rocky Creek-Guadalupe River	121002040105	204	112	92	45.10%	Fail	47.23
Salt Creek	121002040201	795	199	596	74.97%	Fail	16.96
Saxet Lakes-Guadalupe River	121002040108	X	X	X	X	Fail	X
Smith Creek	121002040203	582	89	493	84.71%	Fail	12.23
Thomas Creek	121002040202	671	132	539	80.33%	Fail	15.74
Turkey Creek	121002040302	737	133	604	81.95%	Fail	14.44
Upper Fifteenmile Creek	121002040205	954	204	750	78.62%	Fail	17.15
Upper Twelvemile Creek	121002040208	955	152	803	84.08%	Fail	11.83
Yorktown Creek	121002040204	1045	193	852	81.53%	Fail	12.38

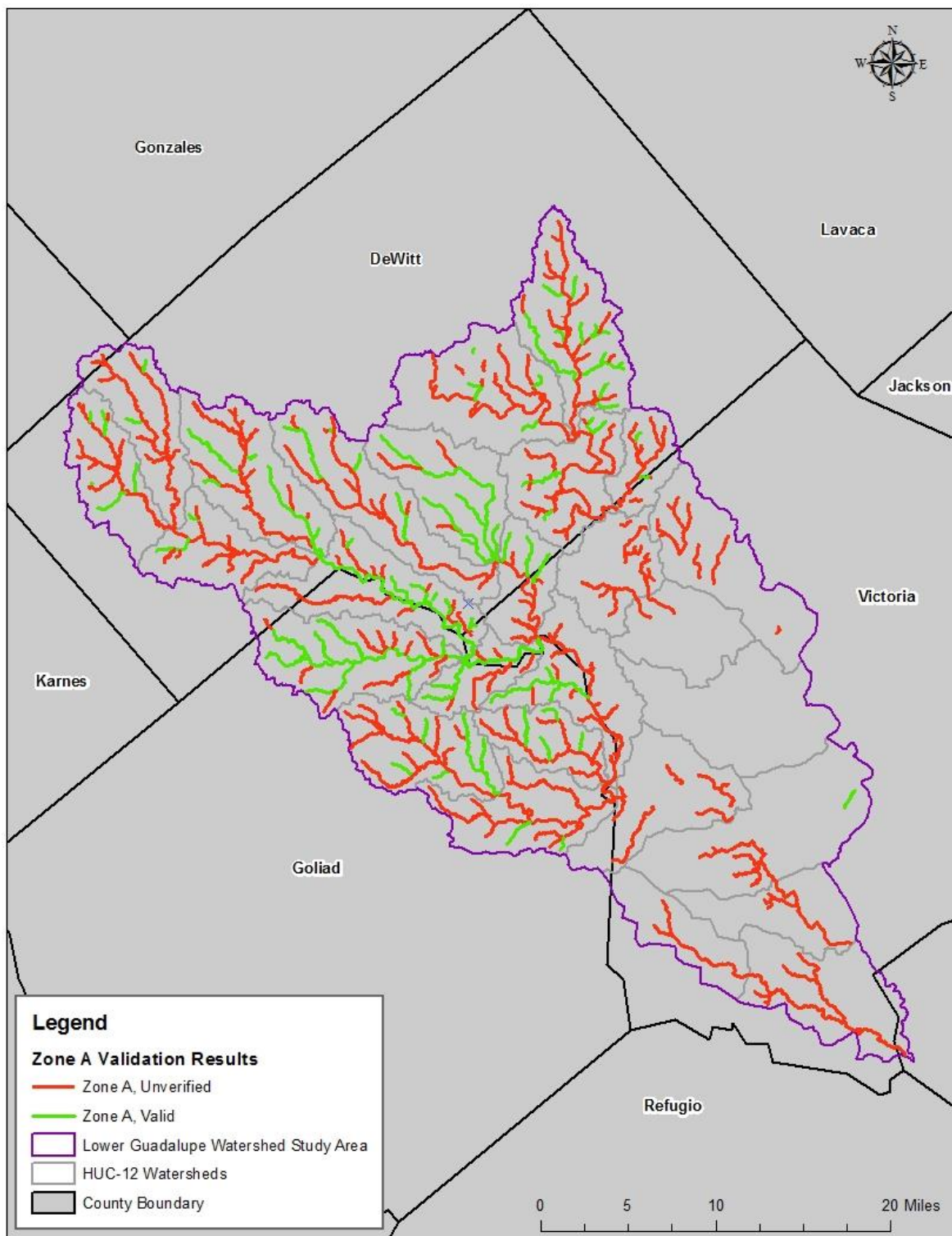


Figure 5. Lower Guadalupe Watershed CNMS Validation Results



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Appendix A Summary of Peak Qs

Table A-1. Summary of Hydrology

Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
BLUE BAYOU	3.05	1,884	944	3,760
BLUE BAYOU	13.44	8,556	4,288	17,072
BLUE BAYOU	23.94	13,061	6,546	26,060
BLUE BRANCH	0.51	1,175	589	2,344
BLUE BRANCH	1.55	2,934	1,471	5,854
BOGGY BRANCH	0.83	1,156	579	2,306
BOGGY BRANCH	1.07	1,605	805	3,203
BOGGY BRANCH	1.53	2,141	1,073	4,272
BOGGY BRANCH	2.03	2,658	1,332	5,303
BOGGY BRANCH	2.19	2,746	1,376	5,479
BOGGY BRANCH	2.69	3,281	1,644	6,546
BOGGY BRANCH	3.19	3,827	1,918	7,636
BOGGY BRANCH	3.28	3,867	1,938	7,715
BOGGY BRANCH	5.39	5,573	2,793	11,119
BOGGY BRANCH	6.37	6,568	3,292	13,106
BOGGY BRANCH	7.05	7,046	3,531	14,058
BOGGY BRANCH	7.93	7,737	3,877	15,436
BOGGY BRANCH	8.47	8,099	4,059	16,160
BOGGY BRANCH NR THOMAS CR	0.95	1,916	960	3,823
BOGGY BRANCH NR THOMAS CR	1.45	2,461	1,233	4,909
BOGGY BRANCH NR THOMAS CR	1.94	3,043	1,525	6,071
BOGGY BRANCH NR THOMAS CR	2.01	3,203	1,605	6,391
BOGGY CREEK	1.00	1,116	559	2,227
BOGGY CREEK	1.05	1,215	609	2,424
BOGGY CREEK	1.95	2,162	1,084	4,314
BOGGY CREEK	2.36	2,928	1,468	5,843
BOGGY CREEK	3.20	3,823	1,916	7,629
BOGGY CREEK	3.33	3,934	1,972	7,850
BOGGY CREEK	3.92	4,454	2,232	8,886
BOGGY CREEK	7.01	7,444	3,731	14,853
BUTLER CREEK	0.76	1,351	677	2,695
BUTLER CREEK	1.26	2,146	1,076	4,282
BUTLER CREEK	1.65	2,583	1,295	5,154
BUTLER CREEK	2.51	3,986	1,998	7,953
BUTLER CREEK	3.01	4,636	2,324	9,251



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
CARLISLE CREEK	0.59	1,566	785	3,124
CARLISLE CREEK	1.07	2,047	1,026	4,084
CARLISLE CREEK	1.14	2,139	1,072	4,268
CARLISLE CREEK	1.46	2,795	1,401	5,576
CARLISLE CREEK	4.04	5,594	2,804	11,162
CARLISLE CREEK	4.38	5,879	2,946	11,730
CARLISLE CREEK	4.73	5,329	2,671	10,633
CARLISLE CREEK	5.15	6,322	3,169	12,615
CARLISLE CREEK	9.39	9,282	4,652	18,520
CATTAIL CREEK	0.98	1,010	506	2,015
CATTAIL CREEK	1.40	2,076	1,041	4,142
CATTAIL CREEK	1.90	2,772	1,389	5,531
CATTAIL CREEK	2.38	3,531	1,770	7,046
COLETO CREEK	0.51	1,005	504	2,006
COLETO CREEK	0.97	1,509	756	3,011
COLETO CREEK	1.69	2,329	1,167	4,648
COLETO CREEK	2.47	3,062	1,534	6,109
COLETO CREEK	5.05	5,276	2,644	10,528
COLETO CREEK	5.56	5,745	2,879	11,463
COLETO CREEK	6.87	6,705	3,361	13,379
COLETO CREEK	7.33	6,853	3,434	13,673
COLETO CREEK	7.84	7,120	3,569	14,207
COLETO CREEK	8.51	7,391	3,704	14,747
COLETO CREEK	8.99	7,747	3,883	15,457
COLETO CREEK	9.35	7,924	3,971	15,810
COLETO CREEK	9.87	8,305	4,162	16,570
COLETO CREEK	11.77	9,379	4,701	18,714
COLETO CREEK	12.27	9,654	4,839	19,263
COLETO CREEK	12.69	9,918	4,971	19,789
COLETO CREEK	14.40	10,539	5,282	21,028
COLETO CREEK	23.03	15,666	7,852	31,258
COLETO CREEK	23.76	15,961	7,999	31,846
COLETO CREEK	25.32	16,655	8,347	33,230
COLETO CREEK	26.26	16,149	8,094	32,221
COLETO CREEK	27.45	16,606	8,323	33,132
COLETO CREEK	28.91	19,556	9,801	39,020
COLETO CREEK	29.40	19,861	9,954	39,628
COLETO CREEK	29.89	19,240	9,643	38,388



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
COLETO CREEK	29.96	19,148	9,597	38,206
COLETO CREEK	31.82	19,778	9,913	39,463
COLETO CREEK	32.65	20,164	10,106	40,232
COLETO CREEK	63.18	33,026	16,552	65,895
COLETO CREEK	64.20	33,310	16,694	66,462
COLETO CREEK	69.79	35,063	17,573	69,960
COLETO CREEK	70.15	36,309	18,198	72,446
COLETO CREEK	72.92	37,061	18,574	73,946
COLETO CREEK	73.89	37,210	18,649	74,243
COLETO CREEK	74.89	37,229	18,659	74,282
COLETO CREEK	75.74	37,329	18,709	74,481
COLETO CREEK	77.60	37,939	19,014	75,698
COLETO CREEK	81.09	39,047	19,570	77,909
COLETO CREEK	83.22	39,568	19,831	78,948
COLETO CREEK	84.04	39,583	19,839	78,979
COLETO CREEK	85.41	39,662	19,878	79,137
COLETO CREEK	87.92	40,529	20,313	80,867
COLETO CREEK	88.70	40,719	20,408	81,245
COLETO CREEK	89.17	40,550	20,323	80,907
COLETO CREEK	89.66	40,611	20,353	81,029
COLETO CREEK	89.98	40,534	20,315	80,877
COLETO CREEK	90.30	40,670	20,383	81,148
COLETO CREEK	90.64	40,565	20,331	80,937
COLETO CREEK	91.07	40,477	20,287	80,762
COLETO CREEK	91.35	40,446	20,271	80,700
COLETO CREEK	92.69	40,666	20,381	81,140
COLETO CREEK	138.54	54,082	27,105	107,907
COLETO CREEK	140.22	54,246	27,188	108,236
COLETO CREEK	141.17	54,158	27,143	108,060
COLETO CREEK	141.87	53,794	26,961	107,332
COLETO CREEK	142.76	53,905	27,017	107,556
COLETO CREEK	143.34	53,985	27,056	107,713
COLETO CREEK	148.08	56,676	28,405	113,083
COLETO CREEK	148.81	56,751	28,443	113,234
COLETO CREEK	150.86	56,846	28,490	113,422
COLETO CREEK	151.14	56,664	28,399	113,059
COLETO CREEK	165.40	58,220	29,179	116,163
COLETO CREEK	165.62	59,858	30,000	119,432



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
COLETO CREEK	167.51	60,201	30,172	120,116
COLETO CREEK	167.55	59,971	30,057	119,658
COLETO CREEK	169.42	60,041	30,092	119,798
COLETO CREEK	172.93	60,910	30,527	121,531
COLETO CREEK	174.42	60,522	30,333	120,756
COLETO CREEK	175.37	60,645	30,394	121,002
COLETO CREEK	175.55	62,230	31,189	124,165
COLETO CREEK	178.28	62,193	31,170	124,091
COLETO CREEK	182.42	62,601	31,375	124,905
COLETO CREEK	237.17	72,661	36,417	144,977
COLETO CREEK	238.26	74,371	37,274	148,389
COLETO CREEK	239.87	74,479	37,328	148,606
COLETO CREEK	250.18	75,001	37,590	149,648
COLETO CREEK	356.81	98,807	49,521	197,146
COLETO CREEK	361.27	99,527	49,881	198,582
COLETO CREEK	363.20	99,388	49,812	198,305
COLETO CREEK	363.91	98,395	49,314	196,323
COLETO CREEK	368.76	98,764	49,499	197,060
COLETO CREEK	369.71	97,878	49,055	195,293
COLETO CREEK	380.46	99,167	49,701	197,864
COLETO CREEK	382.34	98,674	49,454	196,880
COLETO CREEK	386.62	102,106	51,174	203,729
COLETO CREEK	388.20	98,996	49,616	197,523
COLETO CREEK	389.52	101,520	50,881	202,559
COLETO CREEK	390.55	101,081	50,661	201,684
COLETO CREEK	392.97	100,627	50,433	200,778
COLETO CREEK	393.79	100,178	50,208	199,882
COLETO CREEK	395.16	99,659	49,948	198,846
COLETO CREEK	395.67	98,985	49,610	197,500
COLETO CREEK	417.78	98,974	49,605	197,479
COLETO CREEK	418.05	105,915	53,083	211,329
COLETO CREEK	494.01	112,802	56,535	225,070
COLETO CREEK	496.91	116,030	58,153	231,510
COLETO CREEK	497.56	119,015	59,649	237,466
COLETO CREEK	499.76	118,779	59,530	236,994
COLETO CREEK	511.50	116,760	58,519	232,967
COLETO CREEK	512.67	119,354	59,819	238,143
COLETO CREEK	523.43	118,590	59,436	236,619



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
COLETO CREEK	531.80	123,159	61,726	245,735
COLETO CREEK	540.20	122,664	61,478	244,747
COURT BRANCH	1.04	1,470	737	2,933
COURT BRANCH	1.95	2,482	1,244	4,952
COURT BRANCH	2.40	3,213	1,611	6,412
COURT BRANCH	2.51	3,228	1,618	6,441
COURT BRANCH	2.88	3,636	1,823	7,256
COURT BRANCH	3.51	4,446	2,228	8,871
COURT BRANCH	4.43	5,085	2,549	10,147
COURT BRANCH	6.64	6,895	3,456	13,757
COURT BRANCH	8.39	8,189	4,104	16,338
COW CREEK	0.75	1,749	876	3,489
COW CREEK	1.40	2,818	1,412	5,622
COW CREEK	1.60	2,992	1,499	5,969
COW CREEK	3.18	5,206	2,609	10,387
COW CREEK	3.27	5,189	2,601	10,354
COW CREEK	3.57	5,524	2,769	11,022
COW CREEK	3.96	5,580	2,796	11,133
CRESECENT VALLEY CREEK	1.08	879	440	1,753
CRESECENT VALLEY CREEK	1.29	1,207	605	2,407
CRESECENT VALLEY CREEK	1.90	1,897	951	3,784
CRESECENT VALLEY CREEK	3.71	3,473	1,741	6,929
CRESECENT VALLEY CREEK	4.22	3,896	1,953	7,774
CRESECENT VALLEY CREEK	4.69	4,131	2,070	8,242
CRESECENT VALLEY CREEK	5.34	4,568	2,289	9,114
CRESECENT VALLEY CREEK	5.64	4,776	2,394	9,529
CRESECENT VALLEY CREEK	7.69	6,164	3,090	12,300
CRESECENT VALLEY CREEK	7.93	6,314	3,165	12,599
CRESECENT VALLEY CREEK	8.86	6,780	3,398	13,528
CRESECENT VALLEY CREEK	9.78	6,967	3,492	13,902
CRITTENON HOLLOW	0.79	1,380	692	2,753
CRITTENON HOLLOW	0.88	1,514	759	3,020
CRITTENON HOLLOW	1.24	2,726	1,366	5,439
CRITTENON HOLLOW	1.61	3,006	1,507	5,998
CRITTENON HOLLOW	2.39	3,985	1,997	7,951
CRITTENON HOLLOW	2.99	4,739	2,375	9,456
CRITTENON HOLLOW	3.48	5,077	2,545	10,131
CRITTENON HOLLOW	3.83	5,184	2,598	10,344



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
CRITTENON HOLLOW	4.56	5,972	2,993	11,915
CUSHMAN BAYOU	1.95	1,823	914	3,637
CUSHMAN BAYOU	2.95	1,694	849	3,381
CUSHMAN BAYOU	3.18	1,793	899	3,578
CUSHMAN BAYOU	4.43	2,450	1,228	4,888
CYPRESS BAYOU	1.78	2,506	1,256	5,000
CYPRESS BAYOU	4.07	3,931	1,970	7,843
DRY CREEK	1.25	2,133	1,069	4,256
DRY CREEK	1.65	2,567	1,287	5,122
DRY CREEK	2.11	3,020	1,513	6,025
DRY CREEK	3.06	3,931	1,970	7,843
DRY CREEK	3.31	4,166	2,088	8,312
DRY CREEK	4.12	5,005	2,508	9,986
DRY CREEK	4.28	5,207	2,610	10,390
DRY CREEK	6.62	7,362	3,690	14,689
DRY CREEK	8.19	8,627	4,324	17,212
DRY CREEK	8.76	8,831	4,426	17,621
DRY CREEK	12.19	11,471	5,749	22,888
DRY CREEK	12.78	11,920	5,974	23,784
DRY CREEK	15.93	13,672	6,852	27,280
DRY CREEK	18.22	15,356	7,696	30,639
DRY CREEK	19.43	15,584	7,810	31,094
DRY CREEK	19.99	15,792	7,915	31,508
DRY CREEK	20.91	15,963	8,001	31,851
DRY CREEK	34.17	21,964	11,008	43,823
DRY CREEK	36.59	22,747	11,400	45,386
DRY CREEK GOLIAD	0.58	1,324	664	2,642
DRY CREEK GOLIAD	0.96	1,915	960	3,820
DRY CREEK GOLIAD	1.35	2,474	1,240	4,936
DRY CREEK GOLIAD	2.44	3,838	1,923	7,657
DRY CREEK GOLIAD	3.00	4,421	2,216	8,821
DRY CREEK GOLIAD	3.13	4,535	2,273	9,049
DRY CREEK GOLIAD	3.85	5,299	2,656	10,572
DRY KUY CREEK	2.18	1,537	770	3,067
DRY KUY CREEK	2.75	1,834	919	3,659
DRY KUY CREEK	3.00	1,844	924	3,678
DRY KUY CREEK	3.49	2,177	1,091	4,344
DRY KUY CREEK	3.89	2,506	1,256	5,001



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
DRY KUY CREEK	4.68	3,232	1,620	6,450
DRY KUY CREEK	8.75	5,808	2,911	11,589
DRY KUY CREEK	9.74	6,460	3,238	12,890
DRY KUY CREEK	10.46	7,018	3,517	14,003
EIGHTEENMILE CREEK	1.56	3,094	1,551	6,174
EIGHTEENMILE CREEK	1.98	3,471	1,739	6,925
EIGHTEENMILE CREEK	2.36	3,830	1,919	7,641
EIGHTEENMILE CREEK	3.16	4,871	2,441	9,718
EIGHTEENMILE CREEK	3.70	5,214	2,613	10,403
EIGHTEENMILE CREEK	4.11	5,551	2,782	11,076
EIGHTEENMILE CREEK	6.75	8,243	4,131	16,447
EIGHTEENMILE CREEK	7.24	8,523	4,271	17,005
EIGHTEENMILE CREEK	7.79	8,867	4,444	17,693
EIGHTEENMILE CREEK	12.06	12,316	6,172	24,573
EIGHTEENMILE CREEK	14.46	13,713	6,873	27,361
EIGHTEENMILE CREEK	15.12	13,988	7,011	27,911
EIGHTEENMILE CREEK	17.59	15,324	7,680	30,575
EIGHTEENMILE CREEK	18.22	15,579	7,808	31,084
EIGHTEENMILE CREEK	23.68	19,506	9,776	38,920
EIGHTEENMILE CREEK	28.06	22,015	11,033	43,925
EIGHTEENMILE CREEK	28.50	21,936	10,994	43,768
EIGHTEENMILE CREEK	29.35	21,876	10,964	43,649
EIGHTEENMILE CREEK	31.33	22,957	11,506	45,806
EIGHTEENMILE CREEK	33.28	23,809	11,933	47,506
EIGHTEENMILE CREEK	34.86	24,472	12,265	48,828
EIGHTEENMILE CREEK	35.55	24,516	12,287	48,916
EIGHTEENMILE CREEK	36.45	24,732	12,395	49,346
EIGHTEENMILE CREEK	37.24	24,877	12,468	49,637
EIGHTEENMILE CREEK	37.28	24,803	12,431	49,488
EIGHTEENMILE CREEK	43.81	27,668	13,867	55,205
EIGHTEENMILE CREEK	45.48	28,302	14,185	56,470
EIGHTEENMILE CREEK	45.83	28,384	14,226	56,634
EIGHTEENMILE CREEK	47.43	29,844	14,958	59,547
EIGHTEENMILE CREEK	47.85	29,776	14,923	59,410
ELM BAYOU	5.56	2,984	1,496	5,954
ELM BAYOU	6.12	3,520	1,764	7,023
FARMER CREEK	0.99	2,059	1,032	4,109
FARMER CREEK	1.57	2,819	1,413	5,624



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
FARMER CREEK	2.29	3,590	1,799	7,163
FARMER CREEK	2.70	3,998	2,004	7,977
FARMER CREEK	3.40	4,743	2,377	9,464
FARMER CREEK	4.23	5,432	2,723	10,839
FARMER CREEK	5.85	6,961	3,489	13,889
FARMER CREEK	7.09	7,986	4,003	15,935
FARMER CREEK	7.61	8,155	4,087	16,271
FIFTEENMILE CREEK	0.80	1,176	589	2,346
FIFTEENMILE CREEK	1.84	2,768	1,387	5,523
FIFTEENMILE CREEK	2.34	3,166	1,587	6,317
FIFTEENMILE CREEK	2.84	3,663	1,836	7,309
FIFTEENMILE CREEK	3.34	4,332	2,171	8,643
FIFTEENMILE CREEK	5.61	6,675	3,346	13,319
FIFTEENMILE CREEK	5.91	6,811	3,413	13,589
FIFTEENMILE CREEK	7.67	8,222	4,121	16,405
FIFTEENMILE CREEK	8.15	8,498	4,259	16,956
FIFTEENMILE CREEK	9.15	9,128	4,575	18,212
FIVEMILE CREEK	1.00	1,313	658	2,621
FIVEMILE CREEK	1.45	1,897	951	3,784
FIVEMILE CREEK	1.83	2,114	1,060	4,218
FIVEMILE CREEK	2.33	2,419	1,212	4,826
FIVEMILE CREEK	2.58	2,548	1,277	5,084
FIVEMILE CREEK	3.47	3,034	1,521	6,054
FIVEMILE CREEK	7.85	6,166	3,090	12,303
FIVEMILE CREEK	8.80	7,764	3,891	15,492
FIVEMILE CREEK	9.45	7,141	3,579	14,249
FIVEMILE CREEK	9.90	8,388	4,204	16,736
FIVEMILE CREEK	10.62	7,774	3,896	15,511
FIVEMILE CREEK	11.05	8,868	4,445	17,695
FIVEMILE CREEK	11.55	9,174	4,598	18,304
FIVEMILE CREEK	11.79	8,222	4,121	16,405
FIVEMILE CREEK	16.66	10,520	5,273	20,990
FIVEMILE CREEK	17.10	11,991	6,010	23,925
FIVEMILE CREEK	17.51	11,919	5,974	23,782
FIVEMILE CREEK	18.01	12,086	6,057	24,114
FIVEMILE CREEK	18.03	12,039	6,034	24,020
FIVEMILE CREEK	22.21	14,397	7,216	28,727
FIVEMILE CREEK	23.48	14,910	7,473	29,749



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
FIVEMILE CREEK	24.37	15,184	7,610	30,295
FIVEMILE CREEK	25.46	15,751	7,894	31,428
FIVEMILE CREEK	25.79	15,786	7,912	31,497
FIVEMILE CREEK	28.39	16,896	8,468	33,713
FIVEMILE CREEK	28.88	17,074	8,557	34,067
FIVEMILE CREEK	29.27	17,459	8,750	34,836
FIVEMILE CREEK	37.76	21,225	10,638	42,350
FIVEMILE CREEK	39.12	21,663	10,857	43,224
GOBBLER CREEK	1.02	2,088	1,047	4,167
GOBBLER CREEK	2.80	4,186	2,098	8,353
GOBBLER CREEK	3.22	4,592	2,302	9,163
GOBBLER CREEK	4.55	5,962	2,988	11,896
GOHLKE CREEK TRIBUTARY	0.60	1,171	587	2,336
GOHLKE CREEK TRIBUTARY	1.08	1,268	636	2,531
GOHLKE CREEK TRIBUTARY	1.57	2,003	1,004	3,996
GOHLKE CREEK TRIBUTARY	1.69	2,145	1,075	4,280
GOHLKE CREEK TRIBUTARY	2.64	3,308	1,658	6,601
HOG BRANCH	0.51	1,201	602	2,397
HOG BRANCH	0.83	1,532	768	3,058
HOG BRANCH	1.31	2,198	1,102	4,387
HOG BRANCH	1.75	2,659	1,332	5,305
HOG BRANCH	2.10	3,119	1,563	6,223
HOG CREEK	0.59	1,372	688	2,738
HOG CREEK	0.90	1,994	999	3,978
HOG CREEK	1.43	2,647	1,326	5,281
HOG CREEK	3.63	5,454	2,734	10,883
HOG CREEK	4.61	6,531	3,273	13,031
HOG CREEK	5.09	6,765	3,391	13,498
HOG THIEF CREEK	0.91	1,486	745	2,966
HOG THIEF CREEK	2.15	2,967	1,487	5,921
HOG THIEF CREEK	3.23	4,009	2,009	7,999
HOG THIEF CREEK	4.49	5,304	2,659	10,584
HOG THIEF CREEK	5.18	5,935	2,974	11,841
HOG THIEF CREEK	5.81	6,492	3,254	12,954
HOG THIEF CREEK	6.69	7,288	3,653	14,542
HOG THIEF CREEK	8.64	8,776	4,399	17,511
HOG THIEF CREEK	10.49	9,987	5,006	19,927
HOOSIER CREEK	0.73	1,545	775	3,084



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
HOOSIER CREEK	1.02	1,914	959	3,820
HOOSIER CREEK	1.57	2,762	1,384	5,511
HOOSIER CREEK	1.66	2,804	1,405	5,594
HOOSIER CREEK	2.45	3,682	1,845	7,346
HOOSIER CREEK	2.72	3,968	1,989	7,917
HOOSIER CREEK	3.45	4,737	2,374	9,453
HOOSIER CREEK	4.02	5,226	2,619	10,427
HOOSIER CREEK	5.51	6,630	3,323	13,228
HOOSIER CREEK	6.29	7,326	3,672	14,618
HOOSIER CREEK	6.83	7,743	3,881	15,449
HOOSIER CREEK	7.56	8,292	4,156	16,545
HOOSIER CREEK	8.58	8,890	4,455	17,737
HOOSIER CREEK	8.63	8,878	4,450	17,715
HOOSIER CREEK	9.51	9,536	4,779	19,027
HOOSIER CREEK	10.45	10,134	5,079	20,220
HOOSIER CREEK	11.25	10,512	5,268	20,973
HOOSIER CREEK	12.27	11,405	5,716	22,757
HOOSIER CREEK	12.79	11,676	5,852	23,297
HOOSIER CREEK	13.21	11,897	5,963	23,737
IRISH CREEK	0.63	969	486	1,934
IRISH CREEK	1.09	1,462	733	2,917
IRISH CREEK	1.83	2,258	1,131	4,504
IRISH CREEK	3.12	3,531	1,770	7,046
IRISH CREEK	3.64	3,942	1,976	7,866
IRISH CREEK	3.87	4,174	2,092	8,329
IRISH CREEK	4.58	4,738	2,375	9,454
IRISH CREEK	5.00	4,935	2,473	9,846
IRISH CREEK	5.31	5,159	2,586	10,293
IRISH CREEK	8.51	7,575	3,797	15,115
IRISH CREEK	10.51	8,672	4,346	17,302
IRISH CREEK	11.78	9,605	4,814	19,164
IRISH CREEK	15.43	11,494	5,761	22,934
IRISH CREEK	16.10	11,907	5,968	23,758
IRISH CREEK	16.80	12,239	6,134	24,419
IRISH CREEK	18.39	12,659	6,344	25,257
IRISH CREEK	18.78	12,986	6,508	25,911
IRISH CREEK	19.26	13,300	6,666	26,537
IRISH CREEK	19.59	13,498	6,765	26,933



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
IRISH CREEK	19.79	13,943	6,988	27,820
IRISH CREEK	20.29	13,732	6,882	27,399
IRISH CREEK	20.75	13,981	7,007	27,896
IRISH CREEK	20.83	13,916	6,974	27,765
IRISH CREEK	26.17	17,242	8,642	34,403
IRISH CREEK	27.11	17,719	8,880	35,353
IRISH CREEK	27.60	17,826	8,934	35,567
IRISH CREEK	32.38	20,068	10,058	40,041
IRISH CREEK	39.62	22,708	11,381	45,309
IRISH CREEK	39.82	23,475	11,765	46,839
IRISH CREEK	40.58	23,776	11,916	47,440
IRISH CREEK	40.85	23,170	11,613	46,231
IRISH CREEK	41.31	23,496	11,776	46,882
IRISH CREEK	46.12	25,522	12,791	50,923
IRISH CREEK	46.41	25,522	12,791	50,923
IRISH CREEK	46.86	25,669	12,865	51,217
IRISH CREEK	47.01	25,856	12,959	51,589
JIM BRANCH OUTFALL	1.08	952	477	1,899
JIM BRANCH OUTFALL	2.16	1,991	998	3,972
JIM BRANCH OUTFALL	2.81	2,530	1,268	5,049
JIM BRANCH OUTFALL	3.69	3,526	1,767	7,035
JIM BRANCH OUTFALL	4.36	3,825	1,917	7,631
JIM BRANCH OUTFALL	9.81	7,036	3,526	14,038
JOHNS CREEK	0.94	1,904	954	3,800
JOHNS CREEK	1.42	2,557	1,282	5,102
JOHNS CREEK	1.82	3,063	1,535	6,112
JOHNS CREEK	2.38	3,617	1,813	7,217
JOHNS CREEK	2.62	3,810	1,910	7,603
JOHNS CREEK	3.04	4,209	2,109	8,397
KILGORE CREEK	0.83	1,629	816	3,250
KILGORE CREEK	1.47	2,457	1,232	4,903
KILGORE CREEK	3.70	4,943	2,477	9,862
KILGORE CREEK	4.48	5,556	2,785	11,086
KILGORE CREEK	6.81	7,658	3,838	15,280
KILGORE CREEK	7.64	7,855	3,937	15,672
KUY CREEK	3.33	2,021	1,013	4,033
KUY CREEK	4.32	2,292	1,149	4,574
KUY CREEK	5.53	2,654	1,330	5,296



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
KUY CREEK	6.54	2,952	1,479	5,890
KUY CREEK	7.07	3,306	1,657	6,597
KUY CREEK	8.02	3,809	1,909	7,601
KUY CREEK	8.96	4,208	2,109	8,397
KUY CREEK	13.18	5,739	2,876	11,451
KUY CREEK	14.95	6,260	3,137	12,490
KUY CREEK	18.97	7,498	3,758	14,960
KUY CREEK	19.44	7,597	3,807	15,158
KUY CREEK	20.42	7,922	3,970	15,805
KUY CREEK	21.37	8,389	4,204	16,738
KUY CREEK	23.09	8,901	4,461	17,760
KUY CREEK	23.43	9,096	4,559	18,148
KUY CREEK	24.47	9,576	4,799	19,107
KUY CREEK	24.80	9,845	4,934	19,644
KUY CREEK	33.29	12,822	6,426	25,583
KUY CREEK	34.69	13,263	6,647	26,463
KUY CREEK	36.42	14,541	7,288	29,013
KUY CREEK	38.52	15,808	7,923	31,542
KUY CREEK	41.12	16,568	8,304	33,058
KUY CREEK	42.97	17,609	8,825	35,135
KUY CREEK	43.76	16,818	8,429	33,555
KUY CREEK	45.85	17,745	8,893	35,405
KUY CREEK	46.19	17,704	8,873	35,324
KUY CREEK	57.25	20,484	10,266	40,870
KUY CREEK	60.57	21,845	10,949	43,587
KUY CREEK	65.05	22,847	11,450	45,585
KUY CREEK	66.95	23,006	11,530	45,903
KUY CREEK	72.04	23,003	11,529	45,898
KUY CREEK	72.12	24,267	12,163	48,420
LG Stream002	1.09	1,622	813	3,236
LG Stream010	0.58	1,266	635	2,526
LG Stream019	0.26	605	303	1,207
LG Stream043	0.45	740	371	1,476
LG Stream067	0.18	267	134	533
LG Stream082	0.51	1,278	640	2,549
LG Stream088	0.53	1,190	597	2,375
LG Stream117	0.95	2,447	1,226	4,883
LG Stream119	0.98	2,707	1,357	5,401



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
LG Stream126	0.52	1,108	555	2,211
LG Stream140	1.05	295	148	589
LG Stream140	1.44	2,060	1,032	4,109
LG Stream142	0.45	928	465	1,852
LG Stream169	0.91	1,114	558	2,223
LG Stream182	0.51	862	432	1,719
LG Stream210	0.86	1,991	998	3,972
LG Stream235	1.01	1,939	972	3,869
LG Stream235	1.04	2,259	1,132	4,506
LG Stream255	0.29	636	319	1,268
LG Stream302	0.69	985	493	1,965
LITTLE SALT CREEK	0.52	1,406	704	2,804
LITTLE SALT CREEK	1.01	1,476	740	2,946
LITTLE SALT CREEK	1.47	1,932	968	3,854
LITTLE SALT CREEK	1.62	2,038	1,021	4,066
LITTLE SALT CREEK	3.03	3,290	1,649	6,565
LITTLE SALT CREEK	3.92	3,927	1,968	7,835
LITTLE SALT CREEK	4.69	4,546	2,279	9,071
LITTLE SALT CREEK	4.97	4,726	2,369	9,430
LITTLE SALT CREEK	5.47	5,196	2,604	10,367
LITTLE SALT CREEK	5.97	5,521	2,767	11,015
LITTLE SALT CREEK	6.99	6,199	3,107	12,368
LITTLE SALT CREEK	7.48	6,413	3,214	12,796
LITTLE SALT CREEK	7.58	6,505	3,260	12,980
LITTLE SALT CREEK	8.53	7,375	3,696	14,714
LOST CREEK	1.24	1,785	895	3,562
LOST CREEK	2.86	3,469	1,739	6,922
LOST CREEK	3.65	4,586	2,299	9,151
MILBY CREEK	0.69	1,443	723	2,880
MILBY CREEK	1.33	2,475	1,240	4,938
MILBY CREEK	2.44	3,907	1,958	7,795
MILBY CREEK	3.82	5,417	2,715	10,809
MILBY CREEK	5.48	6,936	3,476	13,840
MILBY CREEK	6.36	7,433	3,725	14,831
MISSION CREEK	1.05	1,591	797	3,174
MISSION CREEK	1.29	1,920	962	3,831
MISSION CREEK	2.19	3,180	1,594	6,344
MISSION CREEK	2.91	4,085	2,047	8,150



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
MISSION CREEK	3.39	4,512	2,261	9,002
MISSION CREEK	4.33	5,400	2,706	10,774
MISSION CREEK	5.17	6,325	3,170	12,619
MISSION CREEK	5.63	6,813	3,414	13,593
NORTH FORK CREEK	1.02	1,607	806	3,207
NORTH FORK CREEK	1.52	2,319	1,162	4,627
NORTH FORK CREEK	2.71	3,856	1,932	7,693
NORTH FORK CREEK	3.37	4,602	2,306	9,182
NORTH FORK CREEK	3.73	5,086	2,549	10,147
NORTH FORK CREEK	3.90	5,304	2,658	10,582
NORTH OUTFALL	1.17	1,373	688	2,739
NORTH OUTFALL	1.60	723	363	1,443
NORTH OUTFALL	1.84	2,643	1,325	5,274
OAXLEY BRANCH	1.41	1,946	975	3,883
OAXLEY BRANCH	1.89	2,307	1,156	4,603
OAXLEY BRANCH	2.91	3,289	1,648	6,562
OAXLEY BRANCH	3.40	3,703	1,856	7,389
OAXLEY BRANCH	3.89	3,936	1,973	7,854
OAXLEY BRANCH	4.17	4,225	2,117	8,429
OAXLEY BRANCH	4.67	4,555	2,283	9,089
OAXLEY BRANCH	5.03	5,094	2,553	10,165
OAXLEY BRANCH	8.34	7,756	3,887	15,476
PAYTON BRANCH	0.65	688	345	1,373
PAYTON BRANCH	0.94	1,163	583	2,320
PAYTON BRANCH	1.54	1,945	975	3,881
PAYTON BRANCH	2.89	3,366	1,687	6,715
PAYTON BRANCH	4.19	4,785	2,398	9,547
PERDIDO CREEK	0.84	1,620	812	3,233
PERDIDO CREEK	1.44	2,495	1,251	4,979
PERDIDO CREEK	1.76	2,808	1,407	5,602
PERDIDO CREEK	4.11	5,839	2,926	11,650
PERDIDO CREEK	7.13	8,737	4,379	17,432
PERDIDO CREEK	9.33	10,569	5,297	21,088
PERDIDO CREEK	10.06	10,758	5,392	21,465
PERDIDO CREEK	13.60	13,491	6,762	26,919
PERDIDO CREEK	15.70	14,652	7,343	29,234
PERDIDO CREEK	17.42	15,494	7,765	30,914
PERDIDO CREEK	25.33	20,652	10,350	41,206



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
PERDIDO CREEK	26.31	20,893	10,471	41,688
PERDIDO CREEK	27.63	22,107	11,080	44,109
PERDIDO CREEK	28.32	21,643	10,847	43,183
PERDIDO CREEK	28.90	22,274	11,164	44,443
PERDIDO CREEK	29.61	22,528	11,291	44,950
PERDIDO CREEK	29.97	22,419	11,236	44,732
PERDIDO CREEK	30.71	22,033	11,043	43,961
PERDIDO CREEK	38.99	25,995	13,028	51,866
PERDIDO CREEK	40.04	25,841	12,951	51,559
PERDIDO CREEK	40.91	26,135	13,098	52,146
PERDIDO CREEK	41.38	26,365	13,214	52,606
PERDIDO CREEK	41.83	26,224	13,143	52,324
PERDIDO CREEK	55.95	32,334	16,205	64,515
PERDIDO CREEK	56.66	32,370	16,223	64,587
PERDIDO CREEK	58.18	33,657	16,868	67,155
PERDIDO CREEK	58.68	33,464	16,772	66,770
PERDIDO CREEK	63.71	35,329	17,706	70,491
PERDIDO CREEK	64.16	35,177	17,630	70,187
PERDIDO CREEK	74.10	38,992	19,542	77,799
PERDIDO CREEK	74.75	39,161	19,627	78,136
PERDIDO CREEK	75.24	39,076	19,584	77,967
PERDIDO CREEK	75.38	38,904	19,498	77,624
PRICE CREEK	0.66	1,174	588	2,342
PRICE CREEK	1.16	1,889	947	3,769
PRICE CREEK	1.35	2,124	1,065	4,239
PRICE CREEK	2.96	4,177	2,094	8,335
PRICE CREEK	4.11	5,321	2,667	10,617
PRICE CREEK	4.55	5,670	2,842	11,313
PRICE CREEK	4.82	5,916	2,965	11,804
PRICE CREEK	5.25	6,201	3,108	12,372
PRICE CREEK	9.17	9,578	4,801	19,111
PRICE CREEK	9.57	11,038	5,532	22,024
PRICE CREEK	11.82	12,720	6,375	25,380
PRICE CREEK	12.52	13,023	6,527	25,984
PRICE CREEK	13.02	13,549	6,790	27,033
PRICE CREEK	13.34	13,780	6,907	27,495
PRICE CREEK	15.62	14,783	7,409	29,495
PRICE CREEK	16.81	16,645	8,342	33,212



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
REEDS BRANCH	0.53	1,044	523	2,083
REEDS BRANCH	0.76	1,409	706	2,812
REEDS BRANCH	1.26	2,148	1,076	4,285
REEDS BRANCH	1.55	2,358	1,182	4,705
REEDS BRANCH	2.04	2,920	1,463	5,825
REEDS BRANCH	2.06	2,929	1,468	5,844
REEDS BRANCH	3.17	3,993	2,001	7,966
REEDS BRANCH	4.04	4,743	2,377	9,463
REEDS BRANCH	4.54	4,984	2,498	9,943
REEDS BRANCH	4.80	5,216	2,614	10,407
ROAD CREEK	0.58	1,019	511	2,033
ROAD CREEK	1.13	1,763	883	3,517
ROAD CREEK	1.73	2,454	1,230	4,896
ROAD CREEK	2.55	3,200	1,604	6,384
ROAD CREEK	3.20	3,884	1,947	7,749
ROAD CREEK	4.20	4,927	2,469	9,830
ROAD CREEK	5.84	6,287	3,151	12,544
ROAD CREEK	10.00	9,512	4,767	18,979
ROAD CREEK	10.86	9,929	4,976	19,812
ROAD CREEK	11.15	9,947	4,985	19,847
ROAD CREEK	13.64	12,002	6,015	23,946
ROCKY CREEK	1.24	2,760	1,384	5,508
ROCKY CREEK	2.13	4,185	2,097	8,350
ROCKY CREEK	2.52	4,362	2,186	8,703
ROCKY CREEK	5.14	7,303	3,660	14,571
ROCKY CREEK	6.85	9,482	4,752	18,919
ROCKY CREEK	6.99	9,409	4,716	18,774
ROCKY CREEK	11.94	13,947	6,990	27,828
ROCKY CREEK	15.23	15,466	7,751	30,859
SANDY FORK	0.51	1,139	571	2,272
SANDY FORK	1.01	1,768	886	3,527
SANDY FORK	1.25	2,085	1,045	4,159
SANDY FORK	2.13	3,169	1,588	6,323
SANDY FORK	2.68	3,623	1,816	7,229
SANDY FORK	3.67	4,471	2,241	8,920
SANDY FORK	4.13	4,731	2,371	9,440
SANDY FORK	4.20	4,781	2,396	9,539
SANDY FORK	5.09	5,485	2,749	10,944



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
SANDY FORK	5.58	5,792	2,903	11,556
SANDY FORK	5.63	5,822	2,918	11,617
SANDY FORK	5.96	6,076	3,045	12,123
SANDY FORK	6.42	6,353	3,184	12,676
SANDY FORK	6.82	6,557	3,287	13,084
SANDY FORK	7.19	6,830	3,423	13,627
SHILOH CREEK	0.51	764	383	1,524
SHILOH CREEK	0.85	1,230	617	2,455
SHILOH CREEK	1.91	2,231	1,118	4,451
SHILOH CREEK	2.26	2,522	1,264	5,033
SHILOH CREEK	2.60	2,730	1,368	5,447
SHILOH CREEK	3.54	3,549	1,779	7,082
SHILOH CREEK	4.45	4,245	2,128	8,470
SHILOH CREEK	5.27	4,815	2,413	9,608
SHILOH CREEK	6.81	5,902	2,958	11,776
SHILOH CREEK	7.09	6,933	3,475	13,833
SHILOH CREEK	7.45	7,334	3,676	14,633
SHILOH CREEK	8.69	7,907	3,963	15,777
SHILOH CREEK	8.75	8,237	4,128	16,435
SPRING BAYOU	1.90	2,154	1,080	4,298
SPRING BAYOU	5.93	5,479	2,746	10,933
SPRING BAYOU	10.26	6,992	3,504	13,951
SPRING CREEK	1.55	2,584	1,295	5,155
SPRING CREEK	2.17	3,163	1,585	6,312
SPRING CREEK	2.74	3,718	1,863	7,418
SPRING CREEK	3.71	4,845	2,428	9,666
SPRING CREEK	4.25	5,121	2,566	10,217
SPRING CREEK	4.76	5,488	2,750	10,950
SPRING CREEK	8.26	8,084	4,052	16,130
SPRING CREEK	11.67	10,547	5,286	21,043
SPRING CREEK	12.53	10,739	5,382	21,427
SPRING CREEK	13.00	11,379	5,703	22,704
SPRING CREEK	13.30	11,369	5,698	22,684
SPRING CREEK	14.16	11,751	5,889	23,446
SPRING CREEK	14.81	12,114	6,071	24,170
SPRING CREEK	15.12	12,330	6,179	24,601
SPRING CREEK	15.83	12,797	6,413	25,533
SPRING CREEK	19.13	14,431	7,232	28,793



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
SPRING CREEK	24.39	17,295	8,668	34,508
SPRING CREEK	25.27	17,715	8,879	35,347
SPRING CREEK	26.00	17,820	8,931	35,555
SPRING CREEK	26.44	17,651	8,846	35,218
SPRING CREEK	31.15	20,301	10,175	40,506
SPRING CREEK	31.95	20,324	10,186	40,553
SPRING CREEK	32.26	20,451	10,250	40,805
SPRING CREEK	33.05	20,485	10,267	40,873
SPRING CREEK	34.83	21,195	10,623	42,290
SPRING CREEK	36.48	21,997	11,024	43,889
SPRING CREEK	37.00	22,141	11,097	44,176
SPRING CREEK	37.33	22,234	11,143	44,362
SPRING CREEK	39.94	23,525	11,790	46,938
SPRING CREEK	41.66	24,244	12,151	48,373
SPRING CREEK	43.36	24,851	12,455	49,584
SULPHUR CREEK	0.31	512	257	1,022
SULPHUR CREEK	3.32	4,185	2,097	8,349
SULPHUR CREEK	4.29	5,077	2,544	10,130
SULPHUR CREEK	4.78	5,642	2,828	11,257
SULPHUR CREEK	5.57	6,251	3,133	12,472
SULPHUR CREEK	5.97	6,770	3,393	13,508
SULPHUR CREEK	6.86	7,195	3,606	14,355
SULPHUR CREEK	7.42	7,571	3,794	15,105
SULPHUR CREEK	7.97	7,887	3,953	15,737
SULPHUR CREEK	8.76	8,504	4,262	16,969
SULPHUR CREEK	9.23	9,186	4,604	18,328
THOMAS CREEK	0.57	1,403	703	2,799
THOMAS CREEK	0.67	1,381	692	2,756
THOMAS CREEK	1.32	2,184	1,095	4,357
THOMAS CREEK	2.03	2,833	1,420	5,653
THOMAS CREEK	3.01	3,724	1,867	7,431
THOMAS CREEK	3.50	4,109	2,059	8,199
THOMAS CREEK	3.57	4,213	2,112	8,406
THOMAS CREEK	5.88	6,375	3,195	12,721
THOMAS CREEK	6.36	6,439	3,227	12,847
THOMAS CREEK	6.73	6,495	3,255	12,959
THOMAS CREEK	6.89	6,643	3,329	13,255
THOMAS CREEK	11.50	10,093	5,058	20,138



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
THOMAS CREEK	11.99	10,383	5,204	20,717
THOMAS CREEK	13.67	11,561	5,794	23,068
THOMAS CREEK	16.65	14,172	7,103	28,277
THOMAS CREEK	21.24	16,885	8,463	33,691
THOMAS CREEK	22.55	17,489	8,765	34,894
THOMAS CREEK	23.05	17,141	8,591	34,202
THOMAS CREEK	23.33	17,233	8,637	34,385
THOMAS CREEK	23.58	17,328	8,684	34,573
THOMAS CREEK	27.95	19,399	9,723	38,706
THOMAS CREEK	27.97	19,431	9,739	38,771
THOMAS CREEK	30.28	20,349	10,199	40,601
THREEMILE CREEK	0.36	652	327	1,300
THREEMILE CREEK	2.12	3,265	1,636	6,514
THREEMILE CREEK	2.62	3,165	1,586	6,315
THREEMILE CREEK	3.09	3,540	1,774	7,064
THREEMILE CREEK	3.29	3,658	1,833	7,299
THREEMILE CREEK	3.76	4,025	2,017	8,031
THREEMILE CREEK	4.16	4,308	2,159	8,595
THREEMILE CREEK	4.46	4,499	2,255	8,977
TRIB 1 TO BOGGY BRANCH	0.19	567	284	1,131
TRIB 1 TO BOGGY CREEK	1.01	1,140	572	2,275
TRIB 1 TO BOGGY CREEK	1.25	1,364	683	2,721
TRIB 1 TO BOGGY CREEK	1.81	2,142	1,073	4,273
TRIB 1 TO BOGGY CREEK	2.30	2,881	1,444	5,748
TRIB 1 TO CARLISLE CREEK	0.37	1,087	545	2,170
TRIB 1 TO COLETO CREEK	0.42	898	450	1,791
TRIB 1 TO COLETO CREEK RESERVOIR	0.11	46	23	92
TRIB 1 TO COTTONWOOD CREEK	0.92	1,644	824	3,281
TRIB 1 TO COURT BRANCH	1.03	1,427	715	2,847
TRIB 1 TO COURT BRANCH	1.33	1,809	907	3,610
TRIB 1 TO COURT BRANCH	1.55	2,130	1,068	4,250
TRIB 1 TO COW CREEK	1.03	2,172	1,089	4,335
TRIB 1 TO COW CREEK	1.17	2,397	1,201	4,783
TRIB 1 TO CRESCENT VALLEY CREEK	1.36	1,763	884	3,518
TRIB 1 TO CRITTENON HOLLOW	0.46	1,070	536	2,135
TRIB 1 TO CUSHMAN BAYOU	1.24	745	373	1,486
TRIB 1 TO CYPRESS BAYOU	1.73	2,100	1,053	4,191



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
TRIB 1 TO DRY CREEK	1.35	2,241	1,123	4,470
TRIB 1 TO DRY KUY CREEK	0.79	584	293	1,166
TRIB 1 TO DRY KUY CREEK	1.27	963	483	1,922
TRIB 1 TO DRY KUY CREEK	1.78	1,507	755	3,007
TRIB 1 TO DRY KUY CREEK	2.94	2,491	1,249	4,971
TRIB 1 TO DRY KUY CREEK	3.04	2,590	1,298	5,168
TRIB 1 TO EIGHTEENMILE CREEK	0.47	1,249	626	2,492
TRIB 1 TO EIGHTEENMILE CREEK	1.05	2,206	1,106	4,402
TRIB 1 TO FARMER CREEK	0.39	940	471	1,875
TRIB 1 TO FARMER CREEK	0.66	1,510	757	3,013
TRIB 1 TO FIVEMILE CREEK	0.52	1,276	639	2,546
TRIB 1 TO FIVEMILE CREEK	0.97	1,693	849	3,378
TRIB 1 TO FIVEMILE CREEK	1.28	2,171	1,088	4,332
TRIB 1 TO GOBBLER CREEK	0.51	1,019	511	2,034
TRIB 1 TO GOBBLER CREEK	0.88	1,681	842	3,354
TRIB 1 TO GUADALUPE RIVER	1.07	1,201	602	2,397
TRIB 1 TO GUADALUPE RIVER	1.37	1,921	963	3,834
TRIB 1 TO GUADALUPE RIVER	1.47	1,987	996	3,964
TRIB 1 TO GUADALUPE RIVER	2.96	3,357	1,682	6,697
TRIB 1 TO GUADALUPE RIVER	3.79	3,714	1,862	7,411
TRIB 1 TO GUADALUPE RIVER	5.58	4,621	2,316	9,219
TRIB 1 TO GUADALUPE RIVER	5.72	5,042	2,527	10,060
TRIB 1 TO HOG CREEK	0.67	1,395	699	2,784
TRIB 1 TO HOG CREEK	0.68	1,398	701	2,790
TRIB 1 TO HOG CREEK	1.51	2,684	1,345	5,355
TRIB 1 TO HOG THIEF CREEK	0.46	999	500	1,992
TRIB 1 TO HOG THIEF CREEK	0.96	1,991	998	3,973
TRIB 1 TO HOOSIER CREEK	0.98	1,949	977	3,888
TRIB 1 TO IRISH CREEK	0.22	637	319	1,271
TRIB 1 TO IRISH CREEK	0.99	1,903	954	3,797
TRIB 1 TO IRISH CREEK	1.17	2,139	1,072	4,267
TRIB 1 TO IRISH CREEK	2.04	3,336	1,672	6,657
TRIB 1 TO IRISH CREEK	3.48	5,067	2,540	10,111
TRIB 1 TO IRISH CREEK	3.98	5,630	2,822	11,233
TRIB 1 TO IRISH CREEK	4.45	5,868	2,941	11,709
TRIB 1 TO KILGORE CREEK	0.32	729	365	1,454
TRIB 1 TO KILGORE CREEK	1.15	2,204	1,105	4,398
TRIB 1 TO KUY CREEK	1.12	1,815	910	3,622



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
TRIB 1 TO KUY CREEK	1.34	2,032	1,018	4,055
TRIB 1 TO KUY CREEK	1.56	2,069	1,037	4,128
TRIB 1 TO LITTLE SALT CREEK	0.29	776	389	1,547
TRIB 1 TO LOST CREEK	0.52	1,021	512	2,038
TRIB 1 TO MILBY CREEK	0.42	1,157	580	2,309
TRIB 1 TO MILBY CREEK	0.67	1,569	787	3,131
TRIB 1 TO NORTH FORK CREEK	0.34	832	417	1,661
TRIB 1 TO OAKLEY BRANCH	0.74	1,430	717	2,853
TRIB 1 TO OAKLEY BRANCH	1.23	2,080	1,043	4,151
TRIB 1 TO OAKLEY BRANCH	1.64	2,659	1,333	5,306
TRIB 1 TO OAKLEY BRANCH	2.86	4,396	2,203	8,772
TRIB 1 TO PAYTON BRANCH	0.29	612	307	1,221
TRIB 1 TO PAYTON BRANCH	0.58	1,128	565	2,250
TRIB 1 TO PERDIDO CREEK	0.39	1,042	522	2,079
TRIB 1 TO PERDIDO CREEK	0.73	1,698	851	3,388
TRIB 1 TO PRICE CREEK	1.29	2,278	1,141	4,544
TRIB 1 TO PRICE CREEK	2.00	3,674	1,841	7,330
TRIB 1 TO REEDS BRANCH	0.40	942	472	1,879
TRIB 1 TO ROAD CREEK	1.42	1,854	929	3,698
TRIB 1 TO ROAD CREEK	1.79	2,233	1,119	4,456
TRIB 1 TO ROAD CREEK	2.47	2,942	1,474	5,870
TRIB 1 TO ROCKY CREEK	1.18	2,245	1,125	4,480
TRIB 1 TO ROCKY CREEK	1.97	3,462	1,735	6,908
TRIB 1 TO ROCKY CREEK	2.06	3,572	1,790	7,127
TRIB 1 TO ROCKY CREEK	2.12	3,667	1,838	7,317
TRIB 1 TO ROCKY CREEK	2.97	4,857	2,434	9,692
TRIB 1 TO ROCKY CREEK	4.04	6,177	3,096	12,325
TRIB 1 TO ROCKY CREEK	4.70	6,562	3,289	13,093
TRIB 1 TO SANDY FORK	0.31	695	348	1,386
TRIB 1 TO SHILOH CREEK	0.70	1,330	666	2,653
TRIB 1 TO SMITH CREEK	0.81	1,825	915	3,641
TRIB 1 TO SPRING BAYOU	1.47	2,136	1,071	4,262
TRIB 1 TO SPRING CREEK	1.67	1,625	815	3,243
TRIB 1 TO THOMAS CREEK	1.06	1,934	969	3,859
TRIB 1 TO THOMAS CREEK	1.55	2,753	1,380	5,492
TRIB 1 TO THOMAS CREEK	1.65	2,581	1,293	5,149
TRIB 1 TO THOMAS CREEK	2.49	3,337	1,673	6,658
TRIB 1 TO THOMAS CREEK	3.44	4,202	2,106	8,384



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
TRIB 1 TO THOMAS CREEK	3.87	4,586	2,299	9,151
TRIB 1 TO THREEMILE CREEK	1.71	2,208	1,107	4,406
TRIB 1 TO TURKEY CREEK	0.24	523	262	1,044
TRIB 1 TO TURKEY CREEK	0.50	909	455	1,813
TRIB 1 TO TWELVEMILE CREEK	0.96	1,763	883	3,517
TRIB 1 TO TWELVEMILE CREEK	1.42	2,423	1,215	4,835
TRIB 1 TO TWELVEMILE CREEK	2.00	3,099	1,553	6,184
TRIB 1 TO YORKTOWN CREEK	0.50	1,133	568	2,261
TRIB 1 TO YORKTOWN CREEK	0.71	1,368	686	2,729
TRIB 1_1 TO FIFTEENMILE CREEK	0.55	1,234	619	2,462
TRIB 1_1 TO IRISH CREEK	0.47	986	494	1,966
TRIB 1_1 TO OAKLEY BRANCH	0.51	1,471	737	2,935
TRIB 1_1 TO OAKLEY BRANCH	0.61	1,287	645	2,568
TRIB 1_1 TO OAKLEY BRANCH	1.01	1,818	911	3,627
TRIB 1_1 TO OAKLEY BRANCH	1.08	1,862	933	3,716
TRIB 1_1_1 TO OAKLEY BRANCH	0.18	503	252	1,004
TRIB 1_2 TO IRISH CREEK	1.00	1,951	978	3,894
TRIB 1_2 TO IRISH CREEK	1.34	2,390	1,198	4,769
TRIB 1_3 TO IRISH CREEK	0.50	1,119	561	2,233
TRIB 1_3 TO IRISH CREEK	0.80	1,553	779	3,099
TRIB 1_4 TO IRISH CREEK	0.50	1,484	744	2,961
TRIB 1_4 TO IRISH CREEK	0.75	1,500	752	2,993
TRIB 10 TO EIGHTEENMILE CREEK	0.35	980	491	1,956
TRIB 10 TO EIGHTEENMILE CREEK	1.07	2,557	1,282	5,103
TRIB 10 TO EIGHTEENMILE CREEK	1.53	3,133	1,570	6,252
TRIB 10 TO FIFTEENMILE CREEK	1.03	1,688	846	3,368
TRIB 10 TO FIFTEENMILE CREEK	1.25	1,950	977	3,891
TRIB 10 TO FIFTEENMILE CREEK	2.40	3,258	1,633	6,500
TRIB 10 TO FIFTEENMILE CREEK	4.24	5,373	2,693	10,720
TRIB 10 TO GUADALUPE RIVER	1.21	2,644	1,325	5,276
TRIB 10 TO GUADALUPE RIVER	1.46	3,220	1,614	6,424
TRIB 10 TO IRISH CREEK	0.69	933	468	1,862
TRIB 10 TO KUY CREEK	1.79	1,135	569	2,265
TRIB 10 TO KUY CREEK	3.67	1,985	995	3,961
TRIB 10 TO KUY CREEK	5.67	2,986	1,496	5,957
TRIB 10 TO KUY CREEK	7.50	3,842	1,926	7,667
TRIB 10 TO PRICE CREEK	0.51	991	497	1,978
TRIB 10 TO PRICE CREEK	0.57	972	487	1,939



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
TRIB 10 TO PRICE CREEK	1.00	1,624	814	3,239
TRIB 10 TO PRICE CREEK	1.52	2,369	1,187	4,727
TRIB 10 TO SALT CREEK	0.56	1,084	543	2,163
TRIB 10 TO SPRING CREEK	0.87	1,550	777	3,093
TRIB 10 TO SPRING CREEK	1.41	2,331	1,168	4,652
TRIB 10 TO SPRING CREEK	2.09	3,165	1,586	6,315
TRIB 10 TO SPRING CREEK	2.40	3,471	1,740	6,926
TRIB 10 TO TWELVEMILE CREEK	0.25	619	310	1,235
TRIB 10_1 TO FIFTEENMILE CREEK	0.77	1,437	720	2,867
TRIB 10_1 TO FIFTEENMILE CREEK	1.47	2,082	1,043	4,154
TRIB 10_2 TO FIFTEENMILE CREEK	0.50	1,034	518	2,063
TRIB 10_2 TO FIFTEENMILE CREEK	0.67	1,462	733	2,916
TRIB 11 TO EIGHTEENMILE CREEK	1.26	2,588	1,297	5,164
TRIB 11 TO EIGHTEENMILE CREEK	2.15	3,807	1,908	7,597
TRIB 11 TO FIFTEENMILE CREEK	0.51	1,052	527	2,100
TRIB 11 TO GUADALUPE RIVER	1.18	1,813	909	3,618
TRIB 11 TO GUADALUPE RIVER	1.33	2,180	1,092	4,349
TRIB 11 TO GUADALUPE RIVER	2.61	3,809	1,909	7,600
TRIB 11 TO GUADALUPE RIVER	3.41	4,589	2,300	9,156
TRIB 11 TO GUADALUPE RIVER	3.87	4,880	2,446	9,737
TRIB 11 TO GUADALUPE RIVER	4.36	5,407	2,710	10,789
TRIB 11 TO GUADALUPE RIVER	4.82	5,867	2,940	11,706
TRIB 11 TO GUADALUPE RIVER	5.32	6,245	3,130	12,460
TRIB 11 TO GUADALUPE RIVER	5.51	6,650	3,333	13,269
TRIB 11 TO GUADALUPE RIVER	6.03	7,302	3,660	14,570
TRIB 11 TO IRISH CREEK	0.50	992	497	1,980
TRIB 11 TO IRISH CREEK	1.32	1,901	953	3,793
TRIB 11 TO IRISH CREEK	2.24	2,551	1,278	5,090
TRIB 11 TO IRISH CREEK	3.31	3,645	1,827	7,272
TRIB 11 TO KUY CREEK	1.40	910	456	1,817
TRIB 11 TO PRICE CREEK	0.32	595	298	1,188
TRIB 11 TO TWELVEMILE CREEK	0.72	1,124	563	2,242
TRIB 11 TO TWELVEMILE CREEK	0.89	1,270	637	2,535
TRIB 11 TO TWELVEMILE CREEK	1.80	2,581	1,294	5,150
TRIB 11_1 TO GUADALUPE RIVER	0.42	998	500	1,992
TRIB 11_1 TO IRISH CREEK	0.37	741	371	1,478
TRIB 11_1 TO IRISH CREEK	0.76	1,084	543	2,164
TRIB 11_1 TO TWELVEMILE CREEK	0.60	1,389	696	2,771



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
TRIB 11_1 TO TWELVEMILE CREEK	0.80	1,653	828	3,297
TRIB 11_1_1 TO IRISH CREEK	0.12	339	170	676
TRIB 11_2 TO GUADALUPE RIVER	0.19	615	308	1,227
TRIB 11_2 TO IRISH CREEK	0.40	768	385	1,532
TRIB 11_3 TO GUADALUPE RIVER	0.41	997	500	1,990
TRIB 11_3 TO IRISH CREEK	0.51	664	333	1,325
TRIB 11_4 TO GUADALUPE RIVER	0.88	2,321	1,163	4,630
TRIB 11_4 TO GUADALUPE RIVER	1.25	2,387	1,197	4,764
TRIB 12 TO GUADALUPE RIVER	1.26	2,068	1,036	4,126
TRIB 12 TO GUADALUPE RIVER	1.76	2,722	1,364	5,430
TRIB 12 TO GUADALUPE RIVER	2.21	3,409	1,708	6,801
TRIB 12 TO GUADALUPE RIVER	2.94	4,411	2,211	8,802
TRIB 12 TO GUADALUPE RIVER	4.09	5,685	2,849	11,343
TRIB 12 TO GUADALUPE RIVER	4.21	5,752	2,883	11,477
TRIB 12 TO GUADALUPE RIVER	5.32	6,786	3,401	13,540
TRIB 12 TO IRISH CREEK	0.56	707	354	1,410
TRIB 12 TO IRISH CREEK	1.07	1,496	750	2,985
TRIB 12 TO KUY CREEK	1.00	653	327	1,303
TRIB 12 TO KUY CREEK	1.84	1,216	609	2,426
TRIB 12 TO KUY CREEK	2.61	1,576	790	3,145
TRIB 12 TO KUY CREEK	2.84	1,736	870	3,463
TRIB 12 TO KUY CREEK	3.07	1,719	862	3,430
TRIB 12 TO KUY CREEK	3.50	2,019	1,012	4,029
TRIB 12 TO SALT CREEK	0.45	714	358	1,424
TRIB 12 TO SALT CREEK	0.64	963	483	1,921
TRIB 12 TO TWELVEMILE CREEK	1.06	1,590	797	3,172
TRIB 12 TO TWELVEMILE CREEK	1.22	1,847	926	3,685
TRIB 12 TO TWELVEMILE CREEK	2.91	3,687	1,848	7,356
TRIB 12 TO TWELVEMILE CREEK	3.39	4,218	2,114	8,417
TRIB 12_1 TO GUADALUPE RIVER	0.51	1,367	685	2,728
TRIB 12_1 TO GUADALUPE RIVER	0.61	1,641	823	3,275
TRIB 12_1 TO SALT CREEK	0.15	443	222	884
TRIB 12_1 TO TWELVEMILE CREEK	0.54	1,068	535	2,130
TRIB 12_1 TO TWELVEMILE CREEK	0.72	1,317	660	2,627
TRIB 12_1 TO TWELVEMILE CREEK	1.18	2,085	1,045	4,160
TRIB 12_1_1 TO TWELVEMILE CREEK	0.43	1,008	505	2,011
TRIB 12_2 TO GUADALUPE RIVER	0.67	1,461	732	2,915



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
TRIB 12_2 TO GUADALUPE RIVER	0.72	1,513	758	3,019
TRIB 12_3 TO GUADALUPE RIVER	0.48	1,121	562	2,237
TRIB 13 TO FIFTEENMILE CREEK	1.02	1,489	746	2,971
TRIB 13 TO FIFTEENMILE CREEK	1.63	2,462	1,234	4,912
TRIB 13 TO GUADALUPE RIVER	0.50	1,319	661	2,632
TRIB 13 TO GUADALUPE RIVER	0.58	1,388	695	2,769
TRIB 13 TO GUADALUPE RIVER	1.33	2,798	1,402	5,583
TRIB 13 TO GUADALUPE RIVER	2.31	4,404	2,207	8,788
TRIB 13 TO IRISH CREEK	0.58	1,296	649	2,585
TRIB 13 TO IRISH CREEK	0.99	1,691	848	3,374
TRIB 13 TO IRISH CREEK	1.48	2,430	1,218	4,849
TRIB 13 TO IRISH CREEK	1.61	2,524	1,265	5,036
TRIB 13 TO KUY CREEK	1.39	1,061	532	2,117
TRIB 13 TO TWELVEMILE CREEK	0.98	1,413	708	2,819
TRIB 13 TO TWELVEMILE CREEK	1.39	2,042	1,023	4,075
TRIB 13 TO TWELVEMILE CREEK	1.87	2,573	1,290	5,134
TRIB 13 TO TWELVEMILE CREEK	2.33	2,801	1,404	5,588
TRIB 13 TO TWELVEMILE CREEK	2.57	3,272	1,640	6,528
TRIB 13_1 TO FIFTEENMILE CREEK	0.60	1,564	784	3,121
TRIB 13_1 TO GUADALUPE RIVER	0.50	1,283	643	2,560
TRIB 13_1 TO GUADALUPE RIVER	0.97	2,271	1,138	4,532
TRIB 13_1 TO IRISH CREEK	0.39	883	443	1,762
TRIB 13_2 TO GUADALUPE RIVER	0.50	1,159	581	2,313
TRIB 14 TO FIFTEENMILE CREEK	1.00	1,610	807	3,212
TRIB 14 TO FIFTEENMILE CREEK	1.45	2,143	1,074	4,275
TRIB 14 TO GUADALUPE RIVER	0.52	790	396	1,577
TRIB 14 TO GUADALUPE RIVER	0.58	1,204	604	2,403
TRIB 14 TO GUADALUPE RIVER	1.03	2,240	1,123	4,469
TRIB 14 TO GUADALUPE RIVER	1.06	2,408	1,207	4,804
TRIB 14 TO IRISH CREEK	0.71	1,200	601	2,394
TRIB 14 TO IRISH CREEK	1.23	1,998	1,001	3,986
TRIB 14 TO IRISH CREEK	1.71	2,580	1,293	5,148
TRIB 14 TO IRISH CREEK	1.95	2,654	1,330	5,296
TRIB 14 TO IRISH CREEK	2.77	3,583	1,796	7,150
TRIB 14 TO KUY CREEK	1.00	633	317	1,264
TRIB 14 TO KUY CREEK	1.45	837	420	1,671
TRIB 14 TO KUY CREEK	1.74	1,158	580	2,310
TRIB 14 TO KUY CREEK	2.51	1,633	818	3,257



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
TRIB 14 TO KUY CREEK	3.15	2,079	1,042	4,149
TRIB 14 TO TWELVEMILE CREEK	1.01	1,346	674	2,685
TRIB 14 TO TWELVEMILE CREEK	1.13	1,681	842	3,354
TRIB 14_1 TO IRISH CREEK	0.55	1,045	524	2,086
TRIB 14_1 TO IRISH CREEK	0.62	1,106	554	2,207
TRIB 14_2 TO IRISH CREEK	0.38	727	365	1,451
TRIB 14_2 TO IRISH CREEK	0.49	889	446	1,774
TRIB 14_2_1 TO IRISH CREEK	0.23	505	253	1,007
TRIB 14_2_2 TO IRISH CREEK	0.10	296	148	591
TRIB 15 TO FIFTEENMILE CREEK	0.93	1,646	825	3,284
TRIB 15 TO IRISH CREEK	0.51	1,105	554	2,205
TRIB 16 TO FIFTEENMILE CREEK	1.00	2,272	1,139	4,534
TRIB 16 TO FIFTEENMILE CREEK	1.41	2,335	1,170	4,659
TRIB 16 TO IRISH CREEK	0.21	504	252	1,005
TRIB 17 TO FIFTEENMILE CREEK	0.69	1,139	571	2,272
TRIB 17 TO FIFTEENMILE CREEK	1.16	1,779	891	3,549
TRIB 17 TO FIFTEENMILE CREEK	1.60	2,421	1,213	4,831
TRIB 17 TO FIFTEENMILE CREEK	1.85	2,713	1,360	5,414
TRIB 17 TO GUADALUPE RIVER	0.52	821	411	1,638
TRIB 17 TO GUADALUPE RIVER	0.98	1,534	769	3,061
TRIB 17 TO GUADALUPE RIVER	1.11	1,702	853	3,396
TRIB 17 TO GUADALUPE RIVER	1.58	2,289	1,147	4,567
TRIB 17 TO GUADALUPE RIVER	2.08	2,904	1,455	5,794
TRIB 17 TO GUADALUPE RIVER	2.10	2,947	1,477	5,881
TRIB 18 TO FIFTEENMILE CREEK	0.60	944	473	1,884
TRIB 18 TO GUADALUPE RIVER	0.82	1,656	830	3,305
TRIB 18 TO GUADALUPE RIVER	1.71	2,944	1,475	5,873
TRIB 18 TO IRISH CREEK	0.12	331	166	660
TRIB 19 TO GUADALUPE RIVER	0.50	932	467	1,860
TRIB 19 TO IRISH CREEK	0.81	1,534	769	3,061
TRIB 1A TO COLETO CREEK	1.00	827	415	1,651
TRIB 1A TO COLETO CREEK	1.15	1,060	531	2,115
TRIB 1A TO COLETO CREEK	2.09	2,004	1,004	3,998
TRIB 1A TO COLETO CREEK	2.73	3,281	1,644	6,546
TRIB 1A TO COLETO CREEK	4.49	4,744	2,378	9,466
TRIB 1A TO COLETO CREEK	6.13	6,227	3,121	12,424
TRIB 1A TO GUADALUPE RIVER	0.98	1,386	694	2,765
TRIB 1A TO GUADALUPE RIVER	1.05	1,556	780	3,105



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
TRIB 1A TO GUADALUPE RIVER	3.03	3,806	1,908	7,594
TRIB 1A TO ROAD CREEK	1.04	920	461	1,836
TRIB 1A TO ROAD CREEK	1.30	1,229	616	2,452
TRIB 1A TO ROAD CREEK	2.01	1,978	991	3,946
TRIB 1A TO ROAD CREEK	2.74	2,726	1,366	5,439
TRIB 1A TO ROAD CREEK	3.49	3,347	1,678	6,679
TRIB 1A TO ROCKY CREEK	0.37	1,086	545	2,168
TRIB 1A TO ROCKY CREEK	0.91	2,255	1,130	4,500
TRIB 1A_1 TO COLETO CREEK	1.18	1,436	720	2,866
TRIB 1A_1 TO COLETO CREEK	1.61	2,162	1,083	4,313
TRIB 1A_1 TO GUADALUPE RIVER	1.36	2,333	1,169	4,656
TRIB 2 TO BOGGY BRANCH	0.53	1,857	931	3,705
TRIB 2 TO BOGGY BRANCH	0.59	1,488	746	2,970
TRIB 2 TO BUTLER CREEK	0.37	802	402	1,599
TRIB 2 TO CARLISLE CREEK	0.97	1,851	928	3,693
TRIB 2 TO CARLISLE CREEK	1.47	2,015	1,010	4,020
TRIB 2 TO CARLISLE CREEK	1.97	2,853	1,430	5,693
TRIB 2 TO CARLISLE CREEK	2.11	3,301	1,655	6,587
TRIB 2 TO COLETO CREEK	0.09	212	106	422
TRIB 2 TO COLETO CREEK RESERVOIR	0.21	457	229	912
TRIB 2 TO COTTONWOOD CREEK	0.91	1,380	692	2,754
TRIB 2 TO COTTONWOOD CREEK	1.19	1,781	892	3,553
TRIB 2 TO COURT BRANCH	1.02	1,414	709	2,822
TRIB 2 TO COURT BRANCH	1.58	2,225	1,115	4,439
TRIB 2 TO CRESCENT VALLEY CREEK	1.02	712	357	1,420
TRIB 2 TO CRESCENT VALLEY CREEK	1.30	1,408	706	2,810
TRIB 2 TO CRITTENNOON HOLLOW	0.25	712	357	1,421
TRIB 2 TO DRY CREEK	4.10	5,122	2,567	10,219
TRIB 2 TO DRY CREEK	11.03	5,576	2,795	11,125
TRIB 2 TO EIGHTEENMILE CREEK	0.33	847	424	1,689
TRIB 2 TO FARMER CREEK	1.08	2,153	1,079	4,297
TRIB 2 TO FARMER CREEK	1.22	2,261	1,133	4,511
TRIB 2 TO FIFTEENMILE CREEK	1.41	2,709	1,358	5,406
TRIB 2 TO FIVEMILE CREEK	0.85	1,448	726	2,889
TRIB 2 TO GUADALUPE RIVER	1.08	509	255	1,016
TRIB 2 TO GUADALUPE RIVER	1.79	972	487	1,940



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
TRIB 2 TO GUADALUPE RIVER	3.24	1,764	884	3,519
TRIB 2 TO GUADALUPE RIVER	5.52	2,909	1,458	5,805
TRIB 2 TO GUADALUPE RIVER	7.90	4,843	2,427	9,664
TRIB 2 TO GUADALUPE RIVER	8.25	5,570	2,792	11,114
TRIB 2 TO GUADALUPE RIVER	8.61	5,998	3,006	11,967
TRIB 2 TO GUADALUPE RIVER	10.73	7,734	3,876	15,432
TRIB 2 TO GUADALUPE RIVER	11.39	8,181	4,100	16,324
TRIB 2 TO GUADALUPE RIVER	11.74	8,394	4,207	16,749
TRIB 2 TO GUADALUPE RIVER	12.39	8,782	4,401	17,522
TRIB 2 TO GUADALUPE RIVER	12.74	8,932	4,477	17,822
TRIB 2 TO GUADALUPE RIVER	14.74	9,644	4,834	19,243
TRIB 2 TO GUADALUPE RIVER	21.79	12,563	6,296	25,067
TRIB 2 TO GUADALUPE RIVER	22.78	12,649	6,339	25,237
TRIB 2 TO GUADALUPE RIVER	25.30	13,623	6,827	27,181
TRIB 2 TO GUADALUPE RIVER	31.59	15,993	8,016	31,911
TRIB 2 TO GUADALUPE RIVER	32.88	16,073	8,056	32,070
TRIB 2 TO GUADALUPE RIVER	33.19	15,974	8,006	31,873
TRIB 2 TO GUADALUPE RIVER	35.25	15,083	7,559	30,095
TRIB 2 TO GUADALUPE RIVER	35.45	15,067	7,551	30,062
TRIB 2 TO GUADALUPE RIVER	38.57	15,900	7,969	31,725
TRIB 2 TO GUADALUPE RIVER	38.59	15,886	7,962	31,696
TRIB 2 TO GUADALUPE RIVER	41.72	16,818	8,429	33,556
TRIB 2 TO GUADALUPE RIVER	46.19	17,507	8,774	34,931
TRIB 2 TO GUADALUPE RIVER	47.33	18,187	9,115	36,289
TRIB 2 TO GUADALUPE RIVER	47.87	18,533	9,289	36,979
TRIB 2 TO HOG THIEF CREEK	0.46	949	475	1,893
TRIB 2 TO HOG THIEF CREEK	0.63	1,303	653	2,599
TRIB 2 TO HOG THIEF CREEK	0.93	1,859	932	3,710
TRIB 2 TO HOOSIER CREEK	0.20	651	326	1,299
TRIB 2 TO IRISH CREEK	0.45	982	492	1,960
TRIB 2 TO KUY CREEK	1.24	1,223	613	2,441
TRIB 2 TO KUY CREEK	1.61	1,883	944	3,756
TRIB 2 TO KUY CREEK	1.85	2,160	1,083	4,310
TRIB 2 TO LITTLE SALT CREEK	0.52	1,047	525	2,089
TRIB 2 TO MILBY CREEK	0.15	437	219	871
TRIB 2 TO MILBY CREEK	0.82	2,042	1,023	4,074
TRIB 2 TO PAYTON BRANCH	1.05	1,189	596	2,372
TRIB 2 TO PAYTON BRANCH	1.14	1,475	739	2,943



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
TRIB 2 TO PAYTON BRANCH	1.35	1,725	864	3,441
TRIB 2 TO PERDIDO CREEK	0.49	1,241	622	2,477
TRIB 2 TO PERDIDO CREEK	0.89	1,955	980	3,900
TRIB 2 TO PRICE CREEK	0.35	1,022	512	2,039
TRIB 2 TO ROAD CREEK	0.57	1,285	644	2,564
TRIB 2 TO ROAD CREEK	0.94	1,867	936	3,726
TRIB 2 TO ROCKY CREEK	1.05	2,103	1,054	4,195
TRIB 2 TO ROCKY CREEK	1.33	2,510	1,258	5,008
TRIB 2 TO ROCKY CREEK	1.70	3,064	1,536	6,113
TRIB 2 TO SALT CREEK	0.21	618	310	1,232
TRIB 2 TO SHILOH CREEK	0.50	771	386	1,538
TRIB 2 TO SHILOH CREEK	0.74	1,083	543	2,160
TRIB 2 TO SHILOH CREEK	1.11	1,485	744	2,963
TRIB 2 TO SPRING BAYOU	1.31	1,888	946	3,767
TRIB 2 TO SPRING BAYOU	2.17	2,478	1,242	4,944
TRIB 2 TO SPRING BAYOU	3.88	4,042	2,026	8,065
TRIB 2 TO SPRING CREEK	1.71	2,528	1,267	5,044
TRIB 2 TO SULPHUR CREEK	0.61	974	488	1,943
TRIB 2 TO SULPHUR CREEK	1.18	1,814	909	3,620
TRIB 2 TO SULPHUR CREEK	2.02	2,785	1,396	5,556
TRIB 2 TO THOMAS CREEK	0.55	1,131	567	2,257
TRIB 2 TO THOMAS CREEK	0.85	1,840	922	3,672
TRIB 2 TO TURKEY CREEK	0.36	868	435	1,732
TRIB 2 TO TURKEY CREEK	0.88	1,766	885	3,524
TRIB 2 TO TWELVEMILE CREEK	1.06	2,092	1,048	4,173
TRIB 2 TO TWELVEMILE CREEK	1.69	3,061	1,534	6,107
TRIB 2 TO TWELVEMILE CREEK	1.80	3,115	1,561	6,215
TRIB 2 TO YORKTOWN CREEK	0.96	1,996	1,000	3,982
TRIB 2_1 TO DRY CREEK	1.80	1,656	830	3,304
TRIB 2_1 TO DRY CREEK	3.33	2,460	1,233	4,909
TRIB 2_1 TO GUADALUPE RIVER	1.11	1,620	812	3,232
TRIB 2_1 TO SPRING BAYOU	1.70	2,247	1,126	4,483
TRIB 2_10 TO GUADALUPE RIVER	1.03	1,099	551	2,194
TRIB 2_10 TO GUADALUPE RIVER	1.25	1,506	755	3,005
TRIB 2_10 TO GUADALUPE RIVER	1.36	1,932	968	3,855
TRIB 2_11 TO GUADALUPE RIVER	1.78	1,309	656	2,611
TRIB 2_12 TO GUADALUPE RIVER	2.20	1,535	769	3,062
TRIB 2_13 TO GUADALUPE RIVER	1.35	814	408	1,623



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
TRIB 2_2 TO GUADALUPE RIVER	1.99	902	452	1,799
TRIB 2_2 TO GUADALUPE RIVER	2.97	1,244	624	2,482
TRIB 2_2 TO GUADALUPE RIVER	3.68	1,336	670	2,666
TRIB 2_3 TO GUADALUPE RIVER	2.01	1,150	576	2,295
TRIB 2_3 TO GUADALUPE RIVER	3.10	1,520	762	3,033
TRIB 2_4 TO GUADALUPE RIVER	1.04	1,332	668	2,658
TRIB 2_4 TO GUADALUPE RIVER	1.35	1,804	904	3,600
TRIB 2_4 TO GUADALUPE RIVER	1.76	2,496	1,251	4,980
TRIB 2_4 TO GUADALUPE RIVER	1.82	2,483	1,244	4,954
TRIB 2_5 TO GUADALUPE RIVER	1.08	2,045	1,025	4,080
TRIB 2_6 TO GUADALUPE RIVER	1.78	1,005	504	2,006
TRIB 2_6 TO GUADALUPE RIVER	2.81	1,555	780	3,103
TRIB 2_6 TO GUADALUPE RIVER	3.11	2,067	1,036	4,125
TRIB 2_6 TO GUADALUPE RIVER	3.74	2,947	1,477	5,880
TRIB 2_6 TO GUADALUPE RIVER	5.62	4,991	2,501	9,958
TRIB 2_6 TO GUADALUPE RIVER	5.95	5,214	2,613	10,403
TRIB 2_6-1 TO GUADALUPE RIVER	1.16	1,038	520	2,070
TRIB 2_6-1 TO GUADALUPE RIVER	1.34	1,615	810	3,223
TRIB 2_7 TO GUADALUPE RIVER	2.01	1,368	686	2,729
TRIB 2_7 TO GUADALUPE RIVER	2.48	1,628	816	3,247
TRIB 2_8 TO GUADALUPE RIVER	1.34	843	423	1,683
TRIB 2_8 TO GUADALUPE RIVER	1.57	1,077	540	2,149
TRIB 2_8 TO GUADALUPE RIVER	1.71	1,499	751	2,990
TRIB 2_8 TO GUADALUPE RIVER	2.09	1,786	895	3,564
TRIB 2_8 TO GUADALUPE RIVER	2.33	2,390	1,198	4,769
TRIB 2_8 TO GUADALUPE RIVER	3.30	3,242	1,625	6,469
TRIB 2_8 TO GUADALUPE RIVER	3.71	3,936	1,973	7,853
TRIB 2_8 TO GUADALUPE RIVER	4.14	4,229	2,120	8,438
TRIB 2_8 TO GUADALUPE RIVER	6.07	5,738	2,876	11,449
TRIB 2_8-1 TO GUADALUPE RIVER	1.09	1,726	865	3,444
TRIB 2_8-1 TO GUADALUPE RIVER	1.38	2,207	1,106	4,403
TRIB 2_8-1 TO GUADALUPE RIVER	1.87	2,665	1,336	5,317
TRIB 2_9 TO GUADALUPE RIVER	1.12	1,469	736	2,932
TRIB 2_9 TO GUADALUPE RIVER	1.43	2,146	1,075	4,282
TRIB 20 TO IRISH CREEK	0.59	1,053	528	2,102
TRIB 20_1 TO GUADALUPE RIVER	0.32	708	355	1,413
TRIB 22 TO GUADALUPE RIVER	1.39	2,001	1,003	3,993
TRIB 22 TO GUADALUPE RIVER	1.66	2,383	1,194	4,754



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
TRIB 22 TO GUADALUPE RIVER	2.67	3,578	1,793	7,138
TRIB 22 TO GUADALUPE RIVER	3.16	4,189	2,100	8,359
TRIB 22 TO GUADALUPE RIVER	3.66	4,723	2,367	9,424
TRIB 22 TO GUADALUPE RIVER	3.77	4,834	2,423	9,645
TRIB 23 TO GUADALUPE RIVER	0.59	1,256	629	2,505
TRIB 2A TO COLETO CREEK	1.40	2,091	1,048	4,171
TRIB 3 TO BOGGY BRANCH	0.50	1,055	529	2,105
TRIB 3 TO BOGGY BRANCH	0.64	1,267	635	2,527
TRIB 3 TO CARLISLE CREEK	0.30	792	397	1,580
TRIB 3 TO COLETO CREEK	0.34	725	364	1,447
TRIB 3 TO COLETO CREEK RESERVOIR	0.37	667	334	1,330
TRIB 3 TO CRITTENNOON HOLLOW	0.50	979	491	1,954
TRIB 3 TO CRITTENNOON HOLLOW	0.58	1,175	589	2,344
TRIB 3 TO DRY CREEK	1.15	1,998	1,002	3,987
TRIB 3 TO DRY CREEK	1.30	2,318	1,162	4,625
TRIB 3 TO EIGHTEENMILE CREEK	0.31	797	399	1,589
TRIB 3 TO EIGHTEENMILE CREEK	0.79	1,682	843	3,356
TRIB 3 TO EIGHTEENMILE CREEK	1.14	2,178	1,092	4,346
TRIB 3 TO FIFTEENMILE CREEK	0.04	79	40	158
TRIB 3 TO FIFTEENMILE CREEK	1.17	1,532	768	3,056
TRIB 3 TO FIFTEENMILE CREEK	1.42	1,753	879	3,499
TRIB 3 TO FIFTEENMILE CREEK	1.54	1,900	952	3,790
TRIB 3 TO FIFTEENMILE CREEK	2.66	3,166	1,587	6,316
TRIB 3 TO FIFTEENMILE CREEK	3.09	3,710	1,859	7,402
TRIB 3 TO FIFTEENMILE CREEK	3.23	3,906	1,958	7,794
TRIB 3 TO FIFTEENMILE CREEK	3.29	4,129	2,069	8,238
TRIB 3 TO FIFTEENMILE CREEK	3.37	4,135	2,072	8,250
TRIB 3 TO FIVEMILE CREEK	0.99	1,306	655	2,606
TRIB 3 TO FIVEMILE CREEK	1.48	1,620	812	3,233
TRIB 3 TO FIVEMILE CREEK	1.97	2,144	1,075	4,278
TRIB 3 TO FIVEMILE CREEK	2.02	2,325	1,165	4,640
TRIB 3 TO FIVEMILE CREEK	3.94	4,068	2,039	8,117
TRIB 3 TO GUADALUPE RIVER	1.83	2,932	1,469	5,850
TRIB 3 TO HOG THIEF CREEK	0.40	677	339	1,351
TRIB 3 TO HOG THIEF CREEK	0.62	1,124	563	2,243
TRIB 3 TO HOOSIER CREEK	0.16	448	224	893
TRIB 3 TO IRISH CREEK	0.20	613	307	1,222



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
TRIB 3 TO KUY CREEK	2.08	2,274	1,140	4,537
TRIB 3 TO KUY CREEK	3.06	2,947	1,477	5,879
TRIB 3 TO PERDIDO CREEK	0.66	1,354	679	2,702
TRIB 3 TO PERDIDO CREEK	1.27	2,277	1,141	4,544
TRIB 3 TO PRICE CREEK	0.40	1,066	534	2,128
TRIB 3 TO ROCKY CREEK	1.19	2,737	1,372	5,461
TRIB 3 TO ROCKY CREEK	1.83	3,611	1,810	7,205
TRIB 3 TO SALT CREEK	0.50	932	467	1,860
TRIB 3 TO SALT CREEK	1.00	1,592	798	3,176
TRIB 3 TO SALT CREEK	1.23	2,003	1,004	3,997
TRIB 3 TO SANDY FORK	0.22	609	305	1,214
TRIB 3 TO SANDY FORK	0.52	1,169	586	2,332
TRIB 3 TO SHILOH CREEK	0.59	871	436	1,738
TRIB 3 TO SHILOH CREEK	0.61	826	414	1,648
TRIB 3 TO SMITH CREEK	0.50	960	481	1,916
TRIB 3 TO SMITH CREEK	0.96	1,623	814	3,239
TRIB 3 TO SMITH CREEK	1.43	2,318	1,162	4,624
TRIB 3 TO SMITH CREEK	1.85	2,824	1,415	5,634
TRIB 3 TO SMITH CREEK	2.34	3,449	1,729	6,882
TRIB 3 TO SMITH CREEK	2.45	3,622	1,815	7,227
TRIB 3 TO THOMAS CREEK	0.42	874	438	1,745
TRIB 3 TO THOMAS CREEK	0.83	1,876	940	3,743
TRIB 3 TO THOMAS CREEK	1.85	3,119	1,563	6,223
TRIB 3 TO THOMAS CREEK	2.35	3,936	1,973	7,853
TRIB 3 TO THOMAS CREEK	2.55	3,767	1,888	7,516
TRIB 3 TO TURKEY CREEK	0.44	914	458	1,824
TRIB 3 TO TURKEY CREEK	0.82	1,625	814	3,243
TRIB 3 TO TWELVEMILE CREEK	1.07	1,585	794	3,162
TRIB 3 TO TWELVEMILE CREEK	1.40	1,881	943	3,753
TRIB 3 TO TWELVEMILE CREEK	1.89	2,288	1,147	4,565
TRIB 3 TO TWELVEMILE CREEK	2.39	2,810	1,408	5,606
TRIB 3 TO TWELVEMILE CREEK	2.50	3,041	1,524	6,067
TRIB 3 TO TWELVEMILE CREEK	3.73	4,355	2,183	8,689
TRIB 3 TO YORKTOWN CREEK	0.24	530	266	1,058
TRIB 3 TO YORKTOWN CREEK	0.52	1,045	524	2,084
TRIB 3 TO YORKTOWN CREEK	0.97	1,644	824	3,280
TRIB 3 TO YORKTOWN CREEK	1.47	2,311	1,158	4,612
TRIB 3 TO YORKTOWN CREEK	1.92	2,752	1,379	5,490



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
TRIB 3 TO YORKTOWN CREEK	3.86	5,234	2,623	10,444
TRIB 3 TO YORKTOWN CREEK	4.00	5,498	2,755	10,969
TRIB 3 TO YORKTOWN CREEK	5.16	6,673	3,345	13,315
TRIB 3_1 TO COLETO CREEK	1.37	1,015	509	2,025
TRIB 3_1 TO FIFTEENMILE CREEK	0.57	1,225	614	2,444
TRIB 3_1 TO FIFTEENMILE CREEK	0.64	1,193	598	2,380
TRIB 3_1 TO FIFTEENMILE CREEK	1.10	1,836	920	3,664
TRIB 3_1 TO FIVEMILE CREEK	1.05	1,552	778	3,096
TRIB 3_1 TO FIVEMILE CREEK	1.55	1,898	951	3,788
TRIB 3_1 TO FIVEMILE CREEK	1.82	2,509	1,257	5,005
TRIB 3_1 TO SANDY FORK	0.19	482	242	962
TRIB 3_1 TO THOMAS CREEK	0.51	878	440	1,752
TRIB 3_1 TO THOMAS CREEK	0.55	1,046	524	2,087
TRIB 3_1 TO TWELVEMILE CREEK	0.35	795	398	1,586
TRIB 3_1 TO YORKTOWN CREEK	0.50	895	449	1,786
TRIB 3_1 TO YORKTOWN CREEK	0.65	1,114	558	2,223
TRIB 3_1_1 TO FIFTEENMILE CREEK	0.32	838	420	1,673
TRIB 3_1_1 TO FIFTEENMILE CREEK	0.35	815	409	1,627
TRIB 3_2 TO FIFTEENMILE CREEK	1.05	1,421	712	2,835
TRIB 3_2 TO THOMAS CREEK	0.36	821	412	1,638
TRIB 3A TO COLETO CREEK	1.11	1,008	505	2,011
TRIB 3A TO COLETO CREEK	1.72	1,396	700	2,785
TRIB 3A TO COLETO CREEK	2.45	1,667	836	3,327
TRIB 3A TO COLETO CREEK	4.30	2,445	1,225	4,878
TRIB 3A TO COLETO CREEK	4.79	2,440	1,223	4,869
TRIB 3A TO COLETO CREEK	5.24	2,797	1,402	5,580
TRIB 3A TO COLETO CREEK	6.19	3,348	1,678	6,679
TRIB 3A TO COLETO CREEK	6.63	3,967	1,988	7,916
TRIB 3A TO COLETO CREEK	6.97	4,618	2,314	9,214
TRIB 3A TO COLETO CREEK	7.91	5,322	2,667	10,618
TRIB 3A TO COLETO CREEK	8.87	5,850	2,932	11,672
TRIB 3A TO COLETO CREEK	9.43	6,736	3,376	13,441
TRIB 3A TO COLETO CREEK	10.89	7,734	3,876	15,431
TRIB 3A_1 TO COLETO CREEK	1.07	1,600	802	3,192
TRIB 3A_1 TO COLETO CREEK	1.12	1,773	888	3,537
TRIB 3B TO COLETO CREEK	1.21	2,057	1,031	4,105
TRIB 3B TO COLETO CREEK	1.65	2,613	1,310	5,213



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
TRIB 4 TO BOGGY BRANCH	0.55	860	431	1,717
TRIB 4 TO BOGGY BRANCH	0.67	1,049	526	2,094
TRIB 4 TO COLETO CREEK	0.54	1,389	696	2,771
TRIB 4 TO COLETO CREEK	0.98	2,207	1,106	4,404
TRIB 4 TO COLETO CREEK	1.40	2,586	1,296	5,161
TRIB 4 TO COLETO CREEK RESERVOIR	0.52	1,032	517	2,059
TRIB 4 TO CRITTENNOON HOLLOW	0.50	1,030	516	2,055
TRIB 4 TO CRITTENNOON HOLLOW	0.66	1,254	629	2,503
TRIB 4 TO DRY CREEK	1.05	1,722	863	3,436
TRIB 4 TO DRY CREEK	1.50	2,455	1,231	4,899
TRIB 4 TO DRY CREEK	1.86	2,815	1,411	5,617
TRIB 4 TO EIGHTEENMILE CREEK	0.24	624	313	1,245
TRIB 4 TO EIGHTEENMILE CREEK	1.11	2,050	1,028	4,091
TRIB 4 TO EIGHTEENMILE CREEK	5.28	6,733	3,375	13,435
TRIB 4 TO EIGHTEENMILE CREEK	6.22	7,604	3,811	15,172
TRIB 4 TO FIFTEENMILE CREEK	0.50	894	448	1,784
TRIB 4 TO FIFTEENMILE CREEK	1.34	2,137	1,071	4,264
TRIB 4 TO FIVEMILE CREEK	0.37	858	430	1,712
TRIB 4 TO GUADALUPE RIVER	1.39	1,515	759	3,024
TRIB 4 TO GUADALUPE RIVER	1.68	1,936	970	3,862
TRIB 4 TO GUADALUPE RIVER	3.36	3,983	1,996	7,948
TRIB 4 TO HOG THIEF CREEK	0.30	708	355	1,412
TRIB 4 TO HOG THIEF CREEK	0.56	1,163	583	2,320
TRIB 4 TO HOOSIER CREEK	0.23	551	276	1,099
TRIB 4 TO IRISH CREEK	0.50	895	448	1,785
TRIB 4 TO IRISH CREEK	0.94	1,496	750	2,985
TRIB 4 TO KUY CREEK	1.10	1,521	762	3,035
TRIB 4 TO PERDIDO CREEK	0.72	1,514	759	3,021
TRIB 4 TO PERDIDO CREEK	1.20	2,241	1,123	4,472
TRIB 4 TO PRICE CREEK	0.98	2,262	1,134	4,514
TRIB 4 TO PRICE CREEK	1.48	2,526	1,266	5,040
TRIB 4 TO PRICE CREEK	1.91	2,974	1,491	5,935
TRIB 4 TO SALT CREEK	0.56	1,333	668	2,659
TRIB 4 TO SALT CREEK	0.71	1,465	734	2,923
TRIB 4 TO SANDY FORK	0.50	1,146	574	2,287
TRIB 4 TO SHILOH CREEK	0.50	682	342	1,361
TRIB 4 TO SHILOH CREEK	0.68	922	462	1,840



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
TRIB 4 TO SMITH CREEK	0.14	247	124	493
TRIB 4 TO SMITH CREEK	1.14	1,725	864	3,441
TRIB 4 TO SMITH CREEK	1.23	1,832	918	3,655
TRIB 4 TO SMITH CREEK	1.73	2,533	1,269	5,053
TRIB 4 TO SMITH CREEK	1.94	2,869	1,438	5,725
TRIB 4 TO SPRING CREEK	1.00	1,646	825	3,285
TRIB 4 TO SPRING CREEK	1.50	2,402	1,204	4,793
TRIB 4 TO THOMAS CREEK	1.05	1,329	666	2,651
TRIB 4 TO THOMAS CREEK	1.57	2,025	1,015	4,041
TRIB 4 TO THOMAS CREEK	2.73	3,160	1,584	6,306
TRIB 4 TO THOMAS CREEK	2.90	3,449	1,728	6,881
TRIB 4 TO THOMAS CREEK	3.22	3,765	1,887	7,512
TRIB 4 TO THOMAS CREEK	4.20	4,496	2,253	8,970
TRIB 4 TO THOMAS CREEK	4.61	4,908	2,460	9,793
TRIB 4 TO TURKEY CREEK	0.47	736	369	1,469
TRIB 4 TO TURKEY CREEK	1.04	1,689	847	3,370
TRIB 4 TO TURKEY CREEK	1.66	2,506	1,256	5,001
TRIB 4 TO TWELVEMILE CREEK	0.97	1,773	889	3,538
TRIB 4 TO TWELVEMILE CREEK	1.07	1,673	839	3,338
TRIB 4 TO TWELVEMILE CREEK	1.46	2,169	1,087	4,327
TRIB 4 TO TWELVEMILE CREEK	1.95	2,772	1,389	5,530
TRIB 4 TO TWELVEMILE CREEK	2.45	3,312	1,660	6,609
TRIB 4 TO TWELVEMILE CREEK	2.94	3,960	1,985	7,902
TRIB 4 TO TWELVEMILE CREEK	3.11	4,162	2,086	8,304
TRIB 4_1 TO EIGHTEENMILE CREEK	0.62	1,384	694	2,762
TRIB 4_1 TO EIGHTEENMILE CREEK	1.47	2,715	1,361	5,417
TRIB 4_1 TO EIGHTEENMILE CREEK	2.35	3,911	1,960	7,803
TRIB 4_1 TO EIGHTEENMILE CREEK	3.02	4,712	2,361	9,401
TRIB 4_1 TO EIGHTEENMILE CREEK	3.68	5,127	2,569	10,229
TRIB 4_1 TO FIFTEENMILE CREEK	0.55	1,013	508	2,021
TRIB 4_1 TO FIFTEENMILE CREEK	0.72	1,158	580	2,311
TRIB 4_1 TO THOMAS CREEK	0.47	871	437	1,739
TRIB 4_2 TO THOMAS CREEK	0.32	769	385	1,535
TRIB 4_3 TO THOMAS CREEK	0.68	1,329	666	2,652
TRIB 4_4 TO THOMAS CREEK	0.52	1,241	622	2,476
TRIB 4_4 TO THOMAS CREEK	0.72	1,285	644	2,564
TRIB 4A TO COLETO CREEK	1.02	1,319	661	2,632
TRIB 4A TO COLETO CREEK	1.40	1,896	950	3,783



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
TRIB 4A TO COLETO CREEK	2.06	3,027	1,517	6,041
TRIB 4B TO COLETO CREEK	1.58	2,962	1,484	5,909
TRIB 4B TO COLETO CREEK	1.68	3,069	1,538	6,124
TRIB 4B TO COLETO CREEK	2.85	4,748	2,380	9,473
TRIB 4B TO COLETO CREEK	4.60	6,816	3,416	13,599
TRIB 4B_1 TO COLETO CREEK	1.03	2,095	1,050	4,180
TRIB 4B_1 TO COLETO CREEK	1.44	2,651	1,329	5,290
TRIB 4B_2 TO COLETO CREEK	1.05	2,386	1,196	4,761
TRIB 5 TO BOGGY BRANCH	0.55	964	483	1,923
TRIB 5 TO BOGGY BRANCH	1.01	1,701	853	3,394
TRIB 5 TO BOGGY BRANCH	1.40	2,049	1,027	4,087
TRIB 5 TO BOGGY BRANCH	1.75	2,411	1,208	4,811
TRIB 5 TO COLETO CREEK	0.16	484	243	966
TRIB 5 TO COLETO CREEK	0.72	1,869	937	3,729
TRIB 5 TO COLETO CREEK	1.26	2,697	1,352	5,382
TRIB 5 TO COLETO CREEK RESERVOIR	0.68	1,457	730	2,908
TRIB 5 TO CRITTENNOON HOLLOW	0.10	363	182	724
TRIB 5 TO DRY CREEK	1.00	1,249	626	2,493
TRIB 5 TO DRY CREEK	2.05	2,529	1,268	5,047
TRIB 5 TO EIGHTEENMILE CREEK	0.38	1,144	573	2,283
TRIB 5 TO FIFTEENMILE CREEK	1.22	1,790	897	3,572
TRIB 5 TO FIFTEENMILE CREEK	1.62	2,160	1,083	4,311
TRIB 5 TO FIFTEENMILE CREEK	2.08	2,764	1,385	5,515
TRIB 5 TO FIFTEENMILE CREEK	2.79	3,568	1,788	7,120
TRIB 5 TO FIFTEENMILE CREEK	3.43	4,245	2,128	8,471
TRIB 5 TO FIVEMILE CREEK	0.37	699	351	1,396
TRIB 5 TO GUADALUPE RIVER	2.61	3,269	1,638	6,523
TRIB 5 TO GUADALUPE RIVER	4.77	5,431	2,722	10,837
TRIB 5 TO HOG THIEF CREEK	0.25	450	225	898
TRIB 5 TO HOG THIEF CREEK	0.51	957	480	1,910
TRIB 5 TO HOOSIER CREEK	0.38	982	492	1,959
TRIB 5 TO IRISH CREEK	0.53	891	447	1,778
TRIB 5 TO IRISH CREEK	0.96	1,675	839	3,341
TRIB 5 TO IRISH CREEK	1.47	2,154	1,080	4,298
TRIB 5 TO IRISH CREEK	2.72	3,594	1,801	7,170
TRIB 5 TO IRISH CREEK	3.92	4,672	2,342	9,322
TRIB 5 TO IRISH CREEK	5.21	5,649	2,831	11,272



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
TRIB 5 TO KUY CREEK	0.78	1,005	504	2,005
TRIB 5 TO LITTLE SALT CREEK	0.28	801	401	1,598
TRIB 5 TO PERDIDO CREEK	0.42	987	495	1,969
TRIB 5 TO PERDIDO CREEK	0.73	1,549	776	3,091
TRIB 5 TO PERDIDO CREEK	2.42	4,012	2,011	8,004
TRIB 5 TO PERDIDO CREEK	3.31	4,941	2,476	9,858
TRIB 5 TO PRICE CREEK	0.39	817	409	1,629
TRIB 5 TO SALT CREEK	0.50	1,076	539	2,146
TRIB 5 TO SALT CREEK	0.92	1,895	950	3,781
TRIB 5 TO SANDY FORK	0.27	723	362	1,442
TRIB 5 TO SHILOH CREEK	0.31	609	305	1,216
TRIB 5 TO SMITH CREEK	1.32	2,124	1,064	4,237
TRIB 5 TO SMITH CREEK	1.54	2,042	1,023	4,074
TRIB 5 TO SMITH CREEK	2.95	3,540	1,774	7,063
TRIB 5 TO SMITH CREEK	3.44	4,008	2,009	7,997
TRIB 5 TO SPRING CREEK	1.16	1,533	768	3,058
TRIB 5 TO SPRING CREEK	1.50	2,035	1,020	4,060
TRIB 5 TO SPRING CREEK	1.67	2,499	1,253	4,987
TRIB 5 TO THOMAS CREEK	0.51	1,042	522	2,079
TRIB 5 TO THOMAS CREEK	0.94	1,499	751	2,991
TRIB 5 TO THOMAS CREEK	1.65	2,298	1,152	4,584
TRIB 5 TO TURKEY CREEK	0.40	870	436	1,735
TRIB 5 TO TURKEY CREEK	1.00	1,848	926	3,687
TRIB 5 TO TURKEY CREEK	1.76	2,758	1,382	5,503
TRIB 5 TO TWELVEMILE CREEK	0.53	1,417	710	2,827
TRIB 5 TO YORKTOWN CREEK	0.51	1,009	506	2,013
TRIB 5 TO YORKTOWN CREEK	0.80	1,348	676	2,690
TRIB 5 TO YORKTOWN CREEK	1.21	2,104	1,054	4,198
TRIB 5_1 TO FIFTEENMILE CREEK	0.56	1,023	513	2,042
TRIB 5_1 TO FIFTEENMILE CREEK	0.63	1,236	619	2,466
TRIB 5_1 TO GUADALUPE RIVER	1.18	1,992	998	3,974
TRIB 5_1 TO IRISH CREEK	0.42	826	414	1,648
TRIB 5_1 TO IRISH CREEK	0.90	1,563	783	3,118
TRIB 5_1 TO THOMAS CREEK	0.47	833	418	1,663
TRIB 5_1_1 TO IRISH CREEK	0.18	458	229	913
TRIB 5_2 TO FIFTEENMILE CREEK	0.34	807	404	1,609
TRIB 5_2 TO IRISH CREEK	0.50	741	371	1,478
TRIB 5_2 TO IRISH CREEK	0.77	1,218	611	2,431



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
TRIB 5_3 TO FIFTEENMILE CREEK	0.27	640	321	1,276
TRIB 5_3 TO IRISH CREEK	0.88	1,489	746	2,970
TRIB 5A TO COLETO CREEK	1.14	2,524	1,265	5,035
TRIB 5A TO COLETO CREEK	1.86	3,609	1,809	7,200
TRIB 5A TO COLETO CREEK	2.07	3,909	1,959	7,800
TRIB 5A TO COLETO CREEK	2.90	5,167	2,590	10,310
TRIB 5A TO COLETO CREEK	3.22	5,470	2,741	10,914
TRIB 5A TO COLETO CREEK	3.89	6,132	3,073	12,236
TRIB 5A TO PERDIDO CREEK	1.20	2,566	1,286	5,120
TRIB 5A TO PERDIDO CREEK	1.65	3,221	1,614	6,427
TRIB 6 TO COLETO CREEK	0.38	618	310	1,233
TRIB 6 TO COLETO CREEK	0.66	1,114	558	2,222
TRIB 6 TO COLETO CREEK	1.12	1,990	998	3,971
TRIB 6 TO COLETO CREEK RESERVOIR	1.07	1,472	738	2,937
TRIB 6 TO COLETO CREEK RESERVOIR	1.53	2,070	1,037	4,130
TRIB 6 TO COLETO CREEK RESERVOIR	1.87	2,248	1,127	4,485
TRIB 6 TO CRITTENNOON HOLLOW	0.28	820	411	1,636
TRIB 6 TO DRY CREEK	1.18	1,834	919	3,659
TRIB 6 TO EIGHTEENMILE CREEK	0.59	1,508	756	3,008
TRIB 6 TO EIGHTEENMILE CREEK	1.08	2,365	1,185	4,718
TRIB 6 TO FIFTEENMILE CREEK	0.31	777	389	1,549
TRIB 6 TO FIFTEENMILE CREEK	1.19	2,401	1,203	4,791
TRIB 6 TO FIFTEENMILE CREEK	1.64	3,184	1,596	6,353
TRIB 6 TO FIVEMILE CREEK	0.52	667	334	1,331
TRIB 6 TO FIVEMILE CREEK	1.01	1,238	621	2,471
TRIB 6 TO FIVEMILE CREEK	1.28	1,515	759	3,022
TRIB 6 TO FIVEMILE CREEK	2.64	2,849	1,428	5,684
TRIB 6 TO FIVEMILE CREEK	2.96	3,034	1,521	6,054
TRIB 6 TO FIVEMILE CREEK	3.27	3,197	1,602	6,379
TRIB 6 TO GUADALUPE RIVER	1.73	2,251	1,128	4,492
TRIB 6 TO GUADALUPE RIVER	2.89	3,145	1,576	6,274
TRIB 6 TO HOG THIEF CREEK	0.12	264	132	527
TRIB 6 TO HOG THIEF CREEK	0.28	630	316	1,256
TRIB 6 TO IRISH CREEK	0.48	936	469	1,868
TRIB 6 TO KUY CREEK	0.82	623	312	1,242
TRIB 6 TO KUY CREEK	1.05	985	494	1,966



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
TRIB 6 TO KUY CREEK	1.31	1,551	777	3,095
TRIB 6 TO KUY CREEK	2.31	2,731	1,369	5,449
TRIB 6 TO PERDIDO CREEK	0.48	1,080	541	2,155
TRIB 6 TO PERDIDO CREEK	0.89	1,827	916	3,646
TRIB 6 TO PERDIDO CREEK	1.71	2,987	1,497	5,960
TRIB 6 TO PERDIDO CREEK	2.35	3,919	1,964	7,820
TRIB 6 TO PRICE CREEK	0.46	859	431	1,714
TRIB 6 TO PRICE CREEK	0.73	1,064	533	2,123
TRIB 6 TO PRICE CREEK	1.15	1,881	943	3,753
TRIB 6 TO PRICE CREEK	1.64	2,571	1,288	5,129
TRIB 6 TO PRICE CREEK	1.73	2,641	1,324	5,270
TRIB 6 TO PRICE CREEK	2.56	3,468	1,738	6,921
TRIB 6 TO PRICE CREEK	3.47	4,329	2,170	8,637
TRIB 6 TO PRICE CREEK	3.75	4,566	2,288	9,110
TRIB 6 TO SALT CREEK	0.29	695	348	1,386
TRIB 6 TO SANDY FORK	0.66	1,188	596	2,371
TRIB 6 TO SHILOH CREEK	0.58	1,076	540	2,148
TRIB 6 TO SHILOH CREEK	0.68	1,143	573	2,280
TRIB 6 TO SMITH CREEK	1.08	2,134	1,069	4,257
TRIB 6 TO SMITH CREEK	1.57	2,510	1,258	5,007
TRIB 6 TO SMITH CREEK	1.84	2,862	1,434	5,711
TRIB 6 TO SPRING CREEK	1.01	1,719	861	3,430
TRIB 6 TO SPRING CREEK	1.82	2,791	1,399	5,568
TRIB 6 TO SPRING CREEK	2.17	3,312	1,660	6,609
TRIB 6 TO SPRING CREEK	2.79	4,074	2,042	8,128
TRIB 6 TO SPRING CREEK	3.42	4,587	2,299	9,152
TRIB 6 TO SPRING CREEK	4.04	5,221	2,617	10,417
TRIB 6 TO SPRING CREEK	4.51	5,658	2,836	11,290
TRIB 6 TO THOMAS CREEK	0.80	1,498	751	2,989
TRIB 6 TO THOMAS CREEK	1.57	2,328	1,167	4,645
TRIB 6 TO THOMAS CREEK	1.80	2,668	1,337	5,323
TRIB 6 TO TWELVEMILE CREEK	0.57	1,026	514	2,047
TRIB 6 TO TWELVEMILE CREEK	1.06	1,720	862	3,431
TRIB 6 TO TWELVEMILE CREEK	1.54	2,431	1,219	4,851
TRIB 6 TO TWELVEMILE CREEK	1.72	2,831	1,419	5,648
TRIB 6 TO YORKTOWN CREEK	1.46	2,195	1,100	4,380
TRIB 6 TO YORKTOWN CREEK	1.60	2,365	1,185	4,719
TRIB 6 TO YORKTOWN CREEK	2.48	3,130	1,569	6,246



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
TRIB 6 TO YORKTOWN CREEK	2.77	3,401	1,704	6,785
TRIB 6 TO YORKTOWN CREEK	3.24	3,855	1,932	7,692
TRIB 6 TO YORKTOWN CREEK	3.63	4,099	2,054	8,179
TRIB 6 TO YORKTOWN CREEK	4.12	4,425	2,218	8,830
TRIB 6 TO YORKTOWN CREEK	4.60	4,748	2,380	9,473
TRIB 6 TO YORKTOWN CREEK	4.89	4,898	2,455	9,772
TRIB 6 TO YORKTOWN CREEK	5.21	5,255	2,634	10,485
TRIB 6 TO YORKTOWN CREEK	5.59	5,699	2,856	11,370
TRIB 6_1 TO FIVEMILE CREEK	0.51	828	415	1,652
TRIB 6_1 TO FIVEMILE CREEK	0.86	1,222	612	2,438
TRIB 6_1 TO PRICE CREEK	0.11	339	170	676
TRIB 6_1 TO PRICE CREEK	0.43	1,032	517	2,059
TRIB 6_1 TO THOMAS CREEK	0.50	1,069	536	2,133
TRIB 6_1_1 TO PRICE CREEK	0.21	574	288	1,145
TRIB 6_2 TO PRICE CREEK	0.50	1,048	525	2,091
TRIB 6_2 TO PRICE CREEK	0.54	1,180	592	2,355
TRIB 6_3 TO PRICE CREEK	0.28	743	373	1,483
TRIB 6_4 TO PRICE CREEK	0.30	633	317	1,263
TRIB 6_5 TO PRICE CREEK	0.22	452	226	901
TRIB 7 TO COLETO CREEK RESERVOIR	1.19	1,807	906	3,606
TRIB 7 TO COLETO CREEK RESERVOIR	1.28	1,945	975	3,881
TRIB 7 TO COLETO CREEK RESERVOIR	3.44	4,891	2,451	9,759
TRIB 7 TO COLETO CREEK RESERVOIR	4.20	5,344	2,679	10,664
TRIB 7 TO DRY CREEK	1.75	2,524	1,265	5,037
TRIB 7 TO EIGHTEENMILE CREEK	0.90	1,957	981	3,904
TRIB 7 TO EIGHTEENMILE CREEK	1.38	2,712	1,359	5,410
TRIB 7 TO EIGHTEENMILE CREEK	1.82	3,172	1,590	6,329
TRIB 7 TO FIFTEENMILE CREEK	0.75	1,442	723	2,876
TRIB 7 TO FIFTEENMILE CREEK	0.80	1,453	728	2,898
TRIB 7 TO FIFTEENMILE CREEK	1.25	1,553	778	3,098
TRIB 7 TO FIFTEENMILE CREEK	1.76	2,305	1,155	4,600
TRIB 7 TO GUADALUPE RIVER	2.34	4,680	2,346	9,338
TRIB 7 TO GUADALUPE RIVER	2.88	5,332	2,672	10,639
TRIB 7 TO IRISH CREEK	0.39	742	372	1,480
TRIB 7 TO KUY CREEK	1.18	1,171	587	2,337



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
TRIB 7 TO LITTLE SALT CREEK	0.29	659	330	1,316
TRIB 7 TO PERDIDO CREEK	0.39	1,057	530	2,109
TRIB 7 TO PERDIDO CREEK	1.09	2,399	1,202	4,786
TRIB 7 TO PERDIDO CREEK	2.02	3,959	1,984	7,899
TRIB 7 TO PERDIDO CREEK	2.61	4,652	2,332	9,282
TRIB 7 TO PRICE CREEK	0.19	578	290	1,154
TRIB 7 TO SALT CREEK	0.96	1,526	765	3,046
TRIB 7 TO SALT CREEK	1.50	2,294	1,150	4,577
TRIB 7 TO SMITH CREEK	0.50	675	338	1,347
TRIB 7 TO SMITH CREEK	0.62	1,280	641	2,554
TRIB 7 TO SPRING CREEK	1.03	1,396	700	2,786
TRIB 7 TO SPRING CREEK	1.56	1,984	994	3,959
TRIB 7 TO SPRING CREEK	1.92	2,330	1,168	4,648
TRIB 7 TO SPRING CREEK	2.58	3,019	1,513	6,023
TRIB 7 TO SPRING CREEK	3.42	3,797	1,903	7,576
TRIB 7 TO SPRING CREEK	4.22	4,556	2,283	9,090
TRIB 7 TO SPRING CREEK	4.88	5,377	2,695	10,728
TRIB 7 TO THOMAS CREEK	0.44	1,048	525	2,091
TRIB 7 TO TWELVEMILE CREEK	1.04	1,613	808	3,219
TRIB 7 TO TWELVEMILE CREEK	2.17	3,226	1,617	6,437
TRIB 7 TO YORKTOWN CREEK	0.87	1,493	748	2,979
TRIB 7_1 TO COLETO CREEK RSVR	1.21	2,212	1,108	4,413
TRIB 7_1 TO COLETO CREEK RSVR	1.85	2,888	1,447	5,762
TRIB 7_1 TO IRISH CREEK	0.22	452	226	901
TRIB 7_1 TO TWELVEMILE CREEK	0.70	1,208	606	2,411
TRIB 8 TO COLETO CREEK RESERVOIR	1.19	2,046	1,025	4,082
TRIB 8 TO EIGHTEENMILE CREEK	0.68	1,231	617	2,457
TRIB 8 TO EIGHTEENMILE CREEK	0.82	1,455	729	2,904
TRIB 8 TO EIGHTEENMILE CREEK	1.48	2,451	1,229	4,891
TRIB 8 TO EIGHTEENMILE CREEK	1.97	3,079	1,543	6,144
TRIB 8 TO FIFTEENMILE CREEK	0.57	1,247	625	2,489
TRIB 8 TO FIFTEENMILE CREEK	1.54	2,846	1,427	5,679
TRIB 8 TO GUADALUPE RIVER	0.32	865	434	1,726
TRIB 8 TO GUADALUPE RIVER	1.03	2,408	1,207	4,805
TRIB 8 TO GUADALUPE RIVER	1.61	4,054	2,032	8,088
TRIB 8 TO GUADALUPE RIVER	1.94	4,042	2,026	8,064
TRIB 8 TO IRISH CREEK	0.50	962	482	1,919



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
TRIB 8 TO IRISH CREEK	0.61	1,060	531	2,114
TRIB 8 TO IRISH CREEK	1.06	1,786	895	3,564
TRIB 8 TO IRISH CREEK	1.35	2,101	1,053	4,192
TRIB 8 TO KUY CREEK	1.16	1,213	608	2,421
TRIB 8 TO LITTLE SALT CREEK	0.90	1,442	723	2,878
TRIB 8 TO PRICE CREEK	0.37	1,027	515	2,049
TRIB 8 TO SALT CREEK	0.47	984	493	1,963
TRIB 8 TO SMITH CREEK	1.02	1,550	777	3,092
TRIB 8 TO SMITH CREEK	2.47	2,997	1,502	5,980
TRIB 8 TO SMITH CREEK	2.73	3,658	1,833	7,299
TRIB 8 TO SPRING CREEK	1.38	2,135	1,070	4,259
TRIB 8 TO SPRING CREEK	1.88	2,632	1,319	5,252
TRIB 8 TO SPRING CREEK	2.48	3,191	1,599	6,368
TRIB 8 TO SPRING CREEK	3.00	3,617	1,813	7,216
TRIB 8 TO TWELVEMILE CREEK	0.62	1,298	650	2,589
TRIB 8 TO TWELVEMILE CREEK	0.66	1,347	675	2,687
TRIB 8 TO YORKTOWN CREEK	0.62	991	497	1,978
TRIB 8 TO YORKTOWN CREEK	1.36	2,009	1,007	4,008
TRIB 8 TO YORKTOWN CREEK	2.38	3,010	1,509	6,007
TRIB 8 TO YORKTOWN CREEK	5.03	5,412	2,712	10,797
TRIB 8_1 TO FIFTEENMILE CREEK	0.62	1,515	759	3,022
TRIB 8_1 TO IRISH CREEK	0.41	896	449	1,787
TRIB 8_1 TO SMITH CREEK	0.95	1,552	778	3,096
TRIB 8_1 TO YORKTOWN CREEK	1.00	1,340	672	2,675
TRIB 8_1 TO YORKTOWN CREEK	2.39	2,767	1,387	5,520
TRIB 8_1_1 TO YORKTOWN CREEK	0.90	1,534	769	3,060
TRIB 8_2 TO YORKTOWN CREEK	0.71	959	481	1,914
TRIB 8_3 TO YORKTOWN CREEK	0.37	705	353	1,407
TRIB 9 TO EIGHTEENMILE CREEK	0.68	1,393	698	2,780
TRIB 9 TO EIGHTEENMILE CREEK	1.03	2,019	1,012	4,029
TRIB 9 TO EIGHTEENMILE CREEK	1.35	2,416	1,211	4,821
TRIB 9 TO EIGHTEENMILE CREEK	1.91	3,192	1,600	6,369
TRIB 9 TO FIFTEENMILE CREEK	0.59	1,081	542	2,156
TRIB 9 TO FIFTEENMILE CREEK	0.70	1,257	630	2,507
TRIB 9 TO GUADALUPE RIVER	1.55	2,792	1,400	5,572
TRIB 9 TO GUADALUPE RIVER	2.82	4,912	2,462	9,800
TRIB 9 TO KUY CREEK	1.29	1,382	693	2,758
TRIB 9 TO PRICE CREEK	0.52	1,077	540	2,149



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
TRIB 9 TO PRICE CREEK	0.71	1,324	663	2,641
TRIB 9 TO SALT CREEK	1.36	1,958	982	3,907
TRIB 9 TO SALT CREEK	2.09	2,927	1,467	5,840
TRIB 9 TO SMITH CREEK	0.99	1,487	745	2,967
TRIB 9 TO SMITH CREEK	1.18	1,714	859	3,420
TRIB 9 TO SMITH CREEK	2.10	3,030	1,519	6,046
TRIB 9 TO SMITH CREEK	3.77	4,773	2,392	9,522
TRIB 9 TO SMITH CREEK	5.05	5,894	2,954	11,760
TRIB 9 TO SMITH CREEK	5.23	6,153	3,084	12,276
TRIB 9 TO SPRING CREEK	0.43	1,066	534	2,126
TRIB 9 TO SPRING CREEK	0.97	1,999	1,002	3,988
TRIB 9 TO SPRING CREEK	1.64	2,827	1,417	5,640
TRIB 9 TO SPRING CREEK	2.37	3,588	1,798	7,158
TRIB 9 TO SPRING CREEK	3.10	4,327	2,169	8,633
TRIB 9 TO TWELVEMILE CREEK	0.50	1,229	616	2,453
TRIB 9 TO TWELVEMILE CREEK	0.53	1,246	625	2,486
TRIB 9_1 TO GUADALUPE RIVER	0.57	879	441	1,754
TRIB 9_1 TO GUADALUPE RIVER	0.73	1,157	580	2,308
TRIB 9_1 TO GUADALUPE RIVER	1.15	1,997	1,001	3,985
TRIB 9_1 TO SALT CREEK	0.22	519	260	1,036
TRIB 9_1 TO SMITH CREEK	0.51	895	449	1,787
TRIB 9_1 TO SMITH CREEK	0.79	1,615	810	3,223
TRIB 9_2 TO SMITH CREEK	1.09	337	169	673
TRIB 9_2 TO SMITH CREEK	1.57	2,276	1,140	4,540
TRIB A TO TURKEY CREEK	0.48	712	357	1,420
TRIB A TO TURKEY CREEK	1.08	1,512	758	3,017
TRIB A TO TURKEY CREEK	1.87	2,201	1,103	4,391
TRIB TO FIFTEENMILE CREEK	0.57	1,113	558	2,221
TRIB TO FIFTEENMILE CREEK	1.20	2,048	1,027	4,087
TRIB TO FIFTEENMILE CREEK	1.37	2,090	1,047	4,169
TRIB TO FIFTEENMILE CREEK	2.33	3,312	1,660	6,608
TRIB TO FIFTEENMILE CREEK	2.81	3,741	1,875	7,464
TRIB TO FIFTEENMILE CREEK	3.59	4,531	2,271	9,040
TRIB TO FIFTEENMILE CREEK	4.15	5,106	2,559	10,188
TRIB TO FIFTEENMILE CREEK	4.78	5,783	2,898	11,538
TRIB TO FIFTEENMILE CREEK	5.18	5,980	2,997	11,933
TRIB TO FIFTEENMILE CREEK	5.31	6,000	3,007	11,972
TRIB TO TRIB 5 TO PERDIDO CREEK	0.57	1,420	712	2,834

Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
TRIB TO TRIB 5 TO PERDIDO CREEK	0.97	2,099	1,052	4,188
TURKEY CREEK	0.60	1,235	619	2,463
TURKEY CREEK	1.14	2,126	1,065	4,242
TURKEY CREEK	1.67	2,852	1,430	5,691
TURKEY CREEK	2.23	3,443	1,726	6,870
TURKEY CREEK	2.68	3,904	1,957	7,790
TURKEY CREEK	4.93	6,324	3,169	12,618
TURKEY CREEK	7.25	8,492	4,256	16,943
TURKEY CREEK	8.14	8,782	4,402	17,523
TURKEY CREEK	8.72	9,386	4,704	18,727
TURKEY CREEK	10.12	10,240	5,132	20,432
TURKEY CREEK	11.01	10,612	5,318	21,173
TURKEY CREEK	16.15	13,987	7,010	27,907
TURKEY CREEK	17.69	14,190	7,112	28,313
TURKEY CREEK	19.06	13,915	6,974	27,764
TURKEY CREEK	21.53	14,601	7,318	29,133
TWELVEMILE CREEK	0.41	726	364	1,449
TWELVEMILE CREEK	1.16	1,581	793	3,155
TWELVEMILE CREEK	1.56	2,201	1,103	4,392
TWELVEMILE CREEK	2.78	3,577	1,793	7,137
TWELVEMILE CREEK	4.11	4,558	2,285	9,095
TWELVEMILE CREEK	4.57	4,881	2,446	9,739
TWELVEMILE CREEK	4.89	5,051	2,532	10,078
TWELVEMILE CREEK	5.39	5,380	2,696	10,734
TWELVEMILE CREEK	5.88	5,741	2,877	11,454
TWELVEMILE CREEK	6.38	6,005	3,010	11,981
TWELVEMILE CREEK	6.45	5,996	3,005	11,964
TWELVEMILE CREEK	6.94	6,365	3,190	12,700
TWELVEMILE CREEK	7.37	6,613	3,314	13,195
TWELVEMILE CREEK	7.46	6,718	3,367	13,403
TWELVEMILE CREEK	11.23	10,084	5,054	20,121
TWELVEMILE CREEK	11.67	10,328	5,176	20,606
TWELVEMILE CREEK	12.43	10,711	5,368	21,371
TWELVEMILE CREEK	13.01	11,106	5,566	22,159
TWELVEMILE CREEK	13.45	11,153	5,590	22,253
TWELVEMILE CREEK	13.86	11,204	5,616	22,356
TWELVEMILE CREEK	14.36	11,420	5,724	22,786
TWELVEMILE CREEK	14.44	11,376	5,702	22,699



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
TWELVEMILE CREEK	23.36	16,943	8,491	33,805
TWELVEMILE CREEK	23.72	16,514	8,276	32,949
TWELVEMILE CREEK	25.00	17,245	8,643	34,408
TWELVEMILE CREEK	26.28	17,595	8,818	35,107
TWELVEMILE CREEK	28.90	18,852	9,448	37,614
TWELVEMILE CREEK	30.00	19,354	9,700	38,616
TWELVEMILE CREEK	31.14	19,552	9,799	39,010
TWELVEMILE CREEK	35.04	21,233	10,642	42,365
TWELVEMILE CREEK	35.18	21,120	10,585	42,140
TWELVEMILE CREEK	36.24	21,652	10,852	43,201
TWELVEMILE CREEK	37.28	21,687	10,869	43,271
TWELVEMILE CREEK	38.37	21,971	11,012	43,839
TWELVEMILE CREEK	38.62	21,834	10,943	43,564
TWELVEMILE CREEK	40.64	22,625	11,339	45,143
TWELVEMILE CREEK	41.15	22,687	11,371	45,267
TWELVEMILE CREEK	41.98	23,721	11,889	47,329
TWELVEMILE CREEK	42.87	23,842	11,949	47,572
TWELVEMILE CREEK	43.35	24,075	12,066	48,035
TWELVEMILE CREEK	43.85	24,185	12,121	48,256
TWELVEMILE CREEK	44.12	24,244	12,151	48,373
TWELVEMILE CREEK	44.50	24,313	12,185	48,511
TWELVEMILE CREEK	47.13	25,258	12,659	50,395
TWELVEMILE CREEK	47.62	25,426	12,743	50,732
TWELVEMILE CREEK	86.79	39,974	20,035	79,759
TWELVEMILE CREEK	88.58	40,091	20,093	79,992
TWELVEMILE CREEK	89.52	40,064	20,080	79,938
TWELVEMILE CREEK	90.87	40,305	20,200	80,418
TWELVEMILE CREEK	94.48	40,779	20,438	81,366
TWELVEMILE CREEK	94.86	40,634	20,365	81,076
TWELVEMILE CREEK	98.88	43,098	21,600	85,993
TWELVEMILE CREEK	101.19	42,148	21,124	84,097
TWELVEMILE CREEK	101.34	43,295	21,699	86,386
TWELVEMILE CREEK	102.70	43,415	21,759	86,624
TWELVEMILE CREEK	105.96	43,093	21,598	85,982
WEST OUTFALL	1.46	1,295	649	2,583
WEST OUTFALL	1.83	1,910	957	3,810
WEST OUTFALL	2.53	3,178	1,593	6,341
WEST OUTFALL	3.61	4,324	2,167	8,627



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
WHISPERING CREEK	0.43	440	221	878
WHISPERING CREEK	1.00	1,204	603	2,403
WHISPERING CREEK	1.55	1,872	938	3,736
WHISPERING CREEK	2.01	2,681	1,344	5,350
WOODS CREEK	0.93	1,288	646	2,571
WOODS CREEK	1.39	1,997	1,001	3,985
WOODS CREEK	1.82	2,515	1,261	5,019
WOODS CREEK	2.29	2,969	1,488	5,923
WOODS CREEK	2.68	3,141	1,574	6,267
WOODS CREEK	3.17	3,962	1,986	7,906
WOODS CREEK	3.32	4,213	2,111	8,405
WRIGHT CREEK	1.01	1,092	547	2,179
WRIGHT CREEK	1.83	1,975	990	3,941
WRIGHT CREEK	2.39	2,836	1,421	5,658
WRIGHT CREEK	2.67	3,224	1,616	6,432
WRIGHT CREEK	3.46	4,223	2,117	8,426
WRIGHT CREEK	4.32	5,132	2,572	10,239
WRIGHT CREEK	4.56	5,478	2,746	10,931
WRIGHT CREEK	5.16	6,158	3,086	12,286
YORKTOWN CREEK	0.91	1,174	588	2,342
YORKTOWN CREEK	1.41	1,703	854	3,398
YORKTOWN CREEK	1.88	2,094	1,050	4,179
YORKTOWN CREEK	2.21	2,361	1,184	4,712
YORKTOWN CREEK	2.68	2,732	1,369	5,451
YORKTOWN CREEK	2.85	2,868	1,437	5,723
YORKTOWN CREEK	3.32	3,248	1,628	6,481
YORKTOWN CREEK	3.73	3,417	1,713	6,818
YORKTOWN CREEK	4.23	3,853	1,931	7,689
YORKTOWN CREEK	4.73	4,251	2,130	8,481
YORKTOWN CREEK	4.79	4,269	2,139	8,517
YORKTOWN CREEK	9.99	7,760	3,889	15,483
YORKTOWN CREEK	10.91	8,434	4,227	16,828
YORKTOWN CREEK	12.11	9,154	4,588	18,264
YORKTOWN CREEK	18.20	12,370	6,200	24,681
YORKTOWN CREEK	19.58	14,490	7,262	28,912
YORKTOWN CREEK	20.18	14,714	7,374	29,358
YORKTOWN CREEK	25.73	17,671	8,856	35,258
YORKTOWN CREEK	26.23	17,885	8,964	35,685



Stream Name	Drainage Area (sq. mi)	1% Peak Q (cfs)	1%- Peak Q (cfs)	1%+ Peak Q (cfs)
YORKTOWN CREEK	26.57	17,983	9,013	35,881
YORKTOWN CREEK	27.97	18,536	9,290	36,984
YORKTOWN CREEK	28.09	18,444	9,244	36,801
YORKTOWN CREEK	28.80	18,466	9,255	36,844
YORKTOWN CREEK	30.31	19,150	9,598	38,209
YORKTOWN CREEK	30.58	19,043	9,544	37,995
YORKTOWN CREEK	31.79	19,525	9,786	38,957
YORKTOWN CREEK	32.15	19,572	9,809	39,052
YORKTOWN CREEK	33.26	19,986	10,017	39,877
YORKTOWN CREEK	33.67	20,065	10,056	40,034
YORKTOWN CREEK	34.04	19,949	9,998	39,804
YORKTOWN CREEK	34.34	19,953	10,000	39,811
YORKTOWN CREEK	43.91	23,991	12,024	47,869
YORKTOWN CREEK	45.41	24,559	12,309	49,002

Appendix B BLE Maps

