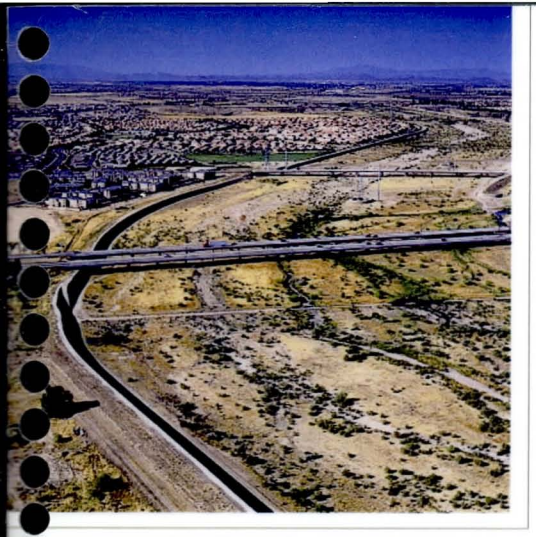

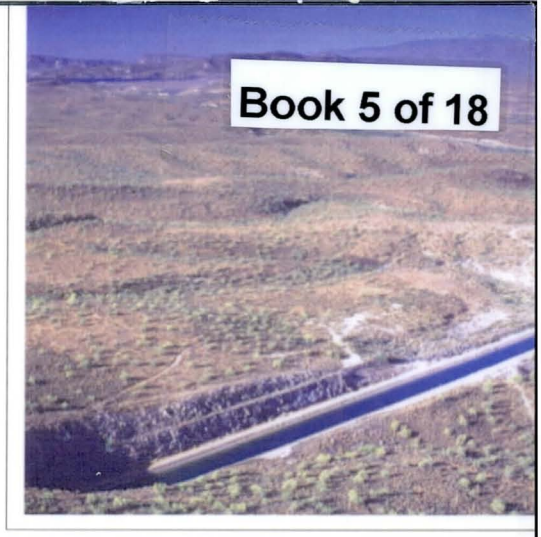

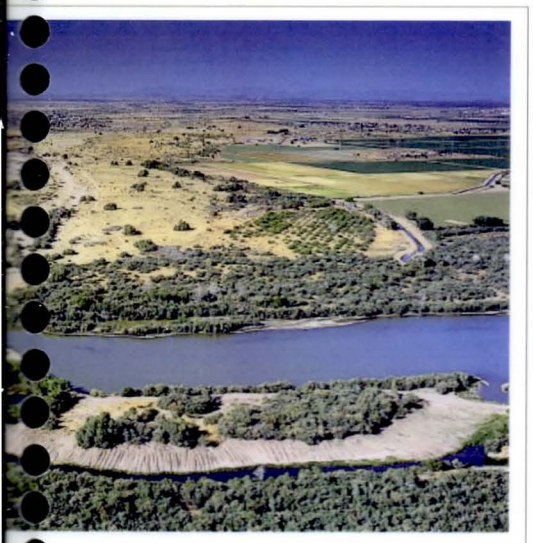

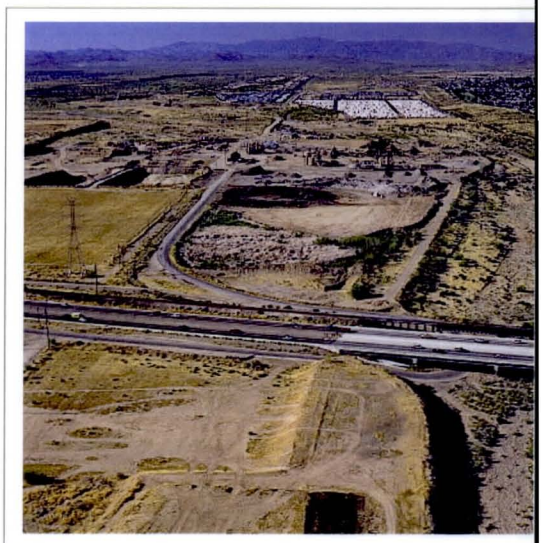

AGUA FRIA
WATERCOURSE MASTER PLAN

Final Hydrology Report

Prepared for

Flood Control Distrct

A109.205

September 2001

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Acknowledgements

This watercourse master plan was prepared by a group of Maricopa County and Consulting professionals dedicated to improving the way we protect people and property from flood damages while meeting the multiple use needs of a growing population. The commitment to this ideal was demonstrated throughout this project by the Maricopa County Board of Supervisors and by leaders of the Flood Control District of Maricopa County. Finally, the plan for the West Valley Recreation Corridor captures the vision of John F. Long — a man who has spent his entire life trying to improve and promote quality of life for families in the West Valley.

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Table of Contents

1 INTRODUCTION 1

1.1 Project Background 1

1.2 Existing Condition 1

1.3 Corps Hydrologic Models 2

1.4 Tributary Flows 2

2 FLOOD ROUTING 5

2.1 Purpose 5

2.2 Methodology 5

2.3 Floodplain Storage 6

2.4 Results 6

2.5 Conclusions 8

3 RETENTION MODELING 9

3.1 Purpose 9

3.2 Hydrologic Retention Models 9

3.3 Methodology 10

3.4 Results 11

3.5 Conclusion 12

4 SUMMARY/RECOMMENDATIONS 13

4.1 Summary of Hydrologic Evaluation 13

4.2 Recommendations/Alternative Analysis Hydrology 13

5 REFERENCES 14

APPENDICIES

APPENDIX A – HEC-RAS MODELS

APPENDIX B – ROUTING MODELS

APPENDIX C – RETENTION MODELS

LIST OF FIGURES

FIGURE 1-VICINITY MAP 4

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1 INTRODUCTION

1.1 Project Background

The Agua Fria Watercourse Master Plan (Watercourse Master Plan) encompasses an area of the greater Phoenix metropolitan area generally known as the "West Valley". The Agua Fria River (River) is over 100 miles long, extending from central Arizona near the Town of Prescott to the confluence of the Gila River near the City of Avondale. The Watercourse Master Plan encompasses the 35-mile reach from the Gila River to the New Waddell Dam. See Figure 1-Vicinity Map on page 4 for the river from the dam to the Gila River.

Between the New Waddell Dam and the Gila River, the Agua Fria River flows through the Cities and Towns of Peoria, Glendale, Surprise, El Mirage, Youngtown, Phoenix and Avondale. Land uses along the River vary from undeveloped desert canyons to urbanized areas to extensive gravel mines to agricultural fields. The purpose of the Watercourse Master Plan is to establish a long-term planning document for future development near the River. The goals of the master plan are flood control and public safety; conservation of habitat; and incorporation of multi-use recreational facilities.

This hydrology report is prepared for the Flood Control District of Maricopa County as a part of the technical documentation for the Agua Fria Watercourse Master Plan. The U.S. Army Corps of Engineers (Corps) originally developed the regulatory hydrology for the Agua Fria River. The Corps' hydrologic modeling is documented in the report (Study) titled "*Hydrologic Evaluation of New Waddell Dam on Downstream Peak Discharges in the Agua Fria River*," July 1995. The Corps' hydrology reflects the construction and accepted operation of the New Waddell Dam.

Kimley-Horn and Associates (KHA) created supplemental hydrologic models as part of the master planning process. The models are intended for planning uses only and should not be used for regulatory purposes. The supplemental models were created to evaluate:

- The effectiveness of the existing retention policies within the watershed.
- Floodwave attenuation in the River as it relates to encroachment of the floodplain.

1.2 Existing Condition

The Agua Fria River watershed is approximately 2,250 square miles in size. The New Waddell Dam, constructed in 1991, cuts off the upper 1,459 square miles of the watershed. Although the dam does not have dedicated flood control space, the Corps determined that for a 100-year flood, that the dam provides a greater degree of downstream flood protection. The greater degree of protection is reflected in the hydrologic modeling. The capacity of the dam at an elevation of 1,725 feet is 1,101,000 ac-ft, but the normal "pool" elevation is 1,694 feet. The primary function of New Waddell Dam is to supply and store waters from the Central Arizona Project Canal, and capture

surface waters from the River. Flooding on the River through the West Valley is generally the result of runoff emanating from downstream of the dam; however, in very large flood events a significant discharge from the dam is possible.

For planning purposes, the River is divided into three general reaches:

Upper Reach- New Waddell Dam to Bell Road
At this time, the upper reach is generally undeveloped desert from the dam to Jomax Road. The area from Jomax Road to Bell Road has several large sand and gravel mines within the floodway and floodplain fringe. Residential development has occurred in the lower portion of this reach, primarily on the east overbank area. Some of the residential development had encroached the historic floodplain. Several other residential developments on both sides of the River are in the planning stages.

Middle Reach- Bell Road to the Confluence of The New River
Numerous sand and gravel mines within the floodplain and floodway characterize this reach. Residential development is common up to the boundary of the floodplain. New residential subdivisions are planned or under construction within the floodplain fringe. This reach is constricted and well incised.

Lower Reach- The Confluence of New River to the Confluence of the Gila River
Extensive levees and several grade control structures have been constructed between the confluence with New River and Lower Buckeye Road. With the exception of some utility crossings, bridges and power pole bases, there is no development within the River. The levees, designed and constructed by the Corps to the standard project flood (SPF), terminate near MC 85. Numerous agricultural fields are located within the floodplain downstream from MC 85.

1.3 Corps Hydrologic Models

The US Army Corps of Engineers, Los Angeles District, established the regulatory hydrology for the River in July 1995. The hydrology is documented in the report "*Hydrologic Evaluation of New Waddell Dam on Downstream Peak Discharges in the Agua Fria River.*" The Corps' hydrology is the basis for current regulatory discharges on the Agua Fria River. The U.S. Army Corps of Engineers have performed several analyses of the Agua Fria River. Another study, "*Hydrology for Evaluation of Flood Reduction by New Waddell Dam, Agua Fria River below New Waddell Dam to the New River Confluence*", 1988, describes the hydrologic design parameters of the River and New Waddell Dam.

For purposes of comparison, results of this study are compared to the 1% (100-year) flow rates established by the Corps.

1.4 Tributary Flows

Local runoff drains to the upper reach of the River in numerous locations such as Morgan City Wash, Caterpillar Tank Wash and Twin Buttes Wash. These washes are uncontrolled and drain generally undeveloped desert areas.

Below the uncontrolled drainage area is the McMicken Dam outlet channel, a potentially major tributary. According to the 1988 Corps study, "no contributing flow from McMicken Dam was included in the discharge-frequency evaluation of Agua Fria River because it either occurs at a different time than local flow due to longer time of concentration, or a different season than New Waddell Dam." The design storm for New Waddell Dam is a general winter storm, as compared to a summer thunderstorm for McMicken Dam.

The next major tributary is the New River. The New River is the discharge point for the ACDC, a Flood Control District and Corps project, constructed to divert floodwaters from north central Phoenix to the New River. Flood control dams located on the New River, Skunk Creek, Cave Creek, and Dreamy Draw play an integral role in the functioning of this system. The ACDC and associated dams were designed to reduce peak flow rates into the New River. However, according to the Corps' 1988 study, the New River inflows to the Agua Fria dominate the more frequent flow events. In the 1995 report, the Corps considered the inflow from the New River for estimating peak discharges, although documentation of the specific hydrographs used was lacking. The hydrographs developed for the New River were based on the SPF rather than the 100-year event.

N

Not to Scale

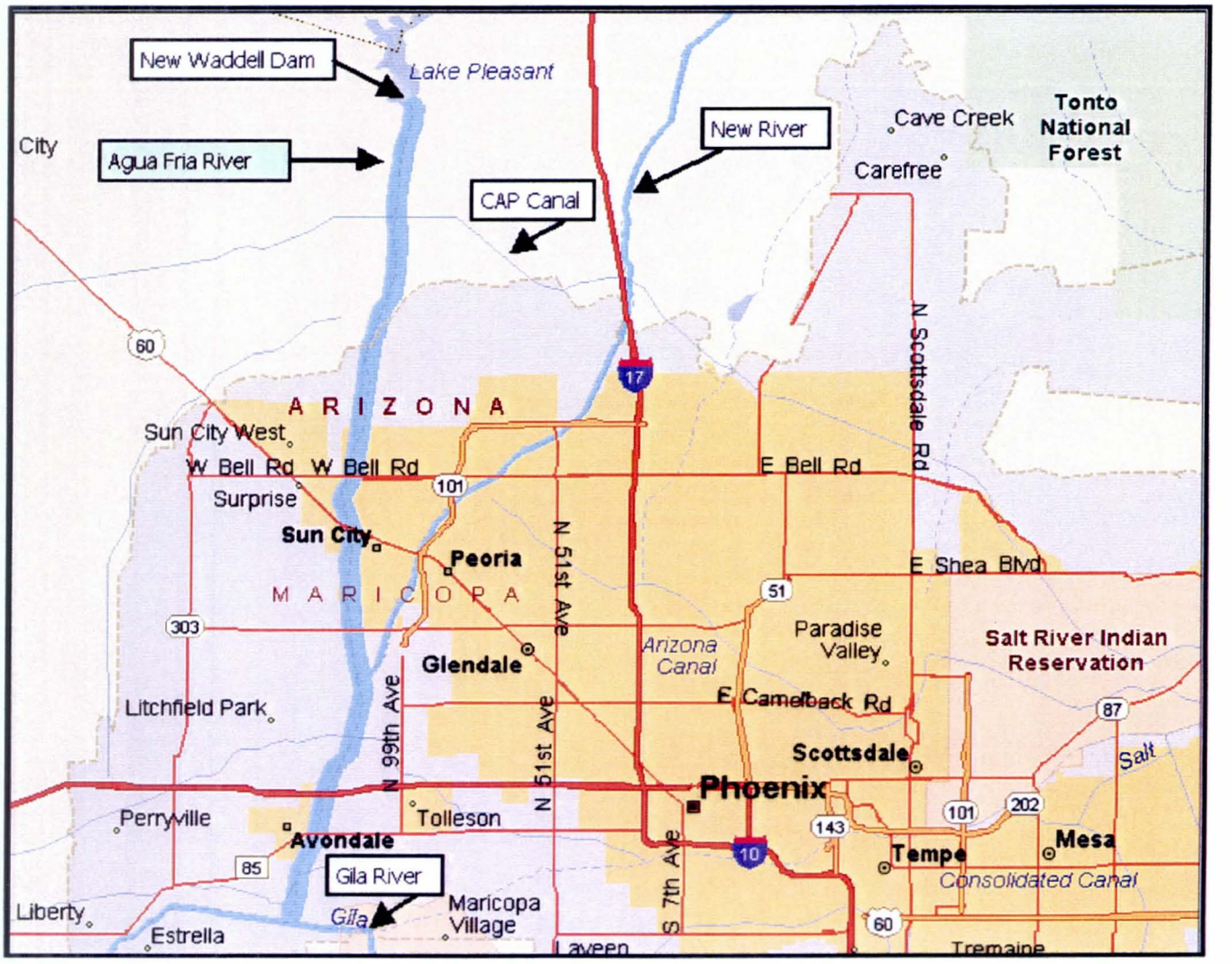

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FIGURE 1

Location Map

2 FLOOD ROUTING

2.1 Purpose

The 100-year flood routing model of the Agua Fria River has been undertaken as a general evaluation of floodwave attenuation as impacted by floodplain encroachment. In general, floodwaves can be attenuated where significant floodplain storage exists. The question being evaluated is whether floodplain encroachment as allowed under the floodplain regulation, would lead to loss of attenuation and increasing flood peaks.

2.2 Methodology

The flood routing investigation was accomplished using the modified Puls routing method in HEC-1 to route the Corps regulatory hydrographs. The modified Puls method is ideal for evaluating this type of storage routing. Modified Puls routing assumes that the river corridor is a linear reservoir, thus accounting for floodplain storage. The investigation was limited to the river corridor upstream of the confluence with the New River.

The Agua Fria River was divided into two reaches, the aforementioned upper and middle reaches. Due to the presence of levees in the lower reach, the analysis was terminated at the New River Confluence. Significant storage was not anticipated in this reach. Separate models were created for each reach. For the upper and middle reach, hydrographs from the Study were directly input into the model. The 9000-cfs outflow from the New Waddell Dam was not included in this analysis since it is understood that the release would not coincide with flows occurring in the uncontrolled lower watershed. Combined probability computations were performed by the Corps to determine a discharge-frequency relationship. The evaluation found "that for a specific frequency, the local runoff value was much larger than that for the routed dam flow."

Modified Puls routing methodology was used in the HEC-1 program to model flood routing through the Agua Fria River. This routing method is hydrologic rather than hydraulic. It treats the river system as a series of cascading reservoirs. The calculations focus on the relationship between storage and discharge to determine outflow based on available storage. The storage volume reaches a maximum when the outflow equals the inflow. This model is dependent on the lengths of the river reach or the number of routing steps (NSTEPS) in a reach. The subreach lengths in the models are approximately a quarter of a mile and the value of NSTEPS varies depending upon the velocity in the subreach. The determination of the value of NSTEPS is determined through an iterative process on a reach by reach basis. The HEC-RAS model establishes an initial flow velocity for each reach. The time for a discrete volume of water to cross the reach is manually calculated using the initial velocity and the length of the reach. The time obtained is then divided by the calculation time interval of the HEC-1 model (NMIN) to determine NSTEPS. A shorter NMIN results in a larger NSTEPS value, which generally leads to a reduction in storage.

2.3 Floodplain Storage

Floodplain storage occurs naturally in floodplains. The impact of storage on floodwave attenuation tends to be most pronounced in wide floodplains and less pronounced in narrow floodplains. The Agua Fria River upstream of the New River has both confined reaches as well as wide reaches. Sand and gravel pits are scattered throughout the River both inside and outside the floodway. Some of these pits can provide significant storage volume.

A key aspect of the hydrologic model, however, was estimating a series of flood events, the stage-storage-discharge relationships for the watercourse. Stage-storage curves were developed on a reach by reach basis using HEC-RAS and modeled in HEC-1 as the initial conditions. The HEC-RAS model was translated from the HEC-2 regulatory model for planning purposes. The stage-storage volume used in the HEC-1 models is calculated using the total volume output from HEC-RAS. The results from the HEC-RAS analysis can be found in Appendix A. In order to simplify the model, direct channel losses and additional inflow were assumed negligible.

To estimate floodplain storage at various flow rates, a multiple-profile analysis was developed in HEC-RAS. At each flow rate, an estimate of reach storage was obtained from the RAS output. Since this analysis was for hydrologic purposes, the ineffective flow cards of the HEC-RAS were modified to include those areas that water could get to. From a hydraulic standpoint, however, the pits are not effective for conveying flows. HEC-RAS models river hydraulics from the lowest point of the cross-section up, without regard for horizontal continuity. In order to eliminate this problem encroachment cards were added to the model to separate the hydraulically continuous channel from the sand and gravel pits.

The addition of encroachment cards does not eliminate the impact sand and gravel mines have on the river, rather they clarify the limits of the channel. All sand and gravel mines within the floodplain are modeled unless they are considered hydraulically disconnected. Hydraulic connectivity is determined using HEC-RAS cross-sections and aerial photography.

For the floodway analysis, storage volume estimates were obtained directly from the HEC-RAS Floodway model. The Floodway model is independent of the location of sand and gravel mines. Encroachment cards are placed at the floodway line without regard for the sand and gravel mines.

2.4 Results

Two conditions were modeled for this investigation. The first was the Floodplain model depicting the existing unencroached floodplain. The second was the Floodway model, which is the floodplain encroached to the regulatory floodway line. The floodplain model was developed to establish a baseline flow condition from which to compare the impacts of future encroachments. Due to the significant variation between the routing methods used by the Corps (Muskingum Routing) and Modified Puls, it was unclear as to how closely the Corps' results would match with the floodplain model. The results of the floodplain model for all practical purposes matched the published results of the Corps.

However, one significant variation is the timing differential between KHA's and the Corps' floodplain models. The peak flow rate for the KHA models occurs about two hours later, than the Corps' model. In evaluating the issue of timing, it was concluded that this delay in timing in part represented the time for floodwaters to fill channel storage, most notably sand and gravel pits.

The Floodplain model shows a significant amount of flow attenuation through the river reach. In general, the more narrow incised upper reaches had less attenuation than the wider southern reaches. However, flood attenuation was most dramatically impacted in the reaches with significant sand and gravel mining activity. Three areas in particular stand out: south of Jomax Road to Beardsley Road, north of Grand Avenue to Bell Road, and near Northern Avenue.

Comparison of the two models confirms the assumption that encroachments on the floodway fringe will increase peak flows downstream and decrease the time it takes for the River to peak. (See Table 2.1 below for a comparison between models.)

The subreach from New Waddell Dam to Jomax Road originates at the upper end as a canyon-like reach with minimal overbank storage. Near the CAP siphon, the River broadens into a wider floodplain. Currently, there is no significant in channel mining activity upstream of Jomax Road. In the subreach between Jomax and Bell Road, the River is characterized by several large sand and gravel mines. The Floodway model demonstrates that peak flow rates would increase by approximately 30% upstream of Bell Road if the floodplain were encroached to the floodway line.

The middle subreach, between Bell Road and the New River confluence, is also impacted by sand and gravel mines. Encroachment to the Floodway causes a 16% increase over the Floodplain model just north of the New River confluence. While it is not possible to precisely evaluate the percentage of attenuation that can be attributed to sand and gravel mining and that which can be attributed to floodplain storage, it is apparent that attenuation is significantly impacted in those areas with large pits in the floodplain fringe.

Table 2.1 – Peak Flow Comparison

	USACOE	Floodplain	Floodway
Location	Q (cfs)	Q (cfs)	Q (cfs)
D/S New Waddell Dam	22000	22200	22200
Jomax Road	N/A	20000	20500
U/S Bell Road	N/A	15300	19700
CP1037 (Bell Rd.)	37500	37500	37500
CP1038 (Grand Ave.)	34500	34400	36600
CP1039U (U/S New River)	30000	30300	35200

See Appendix B for the HEC-1 routing models and summary spreadsheets.

2.5 Conclusions

The objective of modeling the hydrologic routing was to determine how much floodwave attenuation occurs in the River under existing conditions and ultimate conditions (encroachment to the floodway line.) The Floodplain model produced results similar to the regulatory flow rates established by the Corps between Bell Road and the New River confluence. Sand and gravel pits, like those north of Grand Avenue, provide a significant amount of storage volume that accounts for some of the attenuation in the Floodplain model. Further, the floodway model demonstrates that downstream flood peaks will increase significantly (up to 30%).

It was noted that floodplain encroachment led to a decrease in the time to peak by approximately two hours. Based on existing studies, it was not possible to determine if flow rates downstream from the New River confluence would be adversely impacted by this shift in timing.

3 RETENTION MODELING

3.1 Purpose

The retention investigation, which encompassed the entire River downstream of New Waddell Dam, was based on simplified retention and future condition assumptions. The purpose of the analysis was to evaluate the effectiveness of retention policies on future flood peaks along the Agua Fria Watercourse from New Waddell Dam to the Gila River confluence. The watershed of interest contributes flow to the Agua Fria River downstream from New Waddell Dam to the confluence of the Gila River. A map of the subbasin boundaries can be found in Appendix D. The map is a copy of the original used by the Corps to delineate the subbasins described in their 1995 Study.

Maricopa County and many of the municipalities in the Phoenix metropolitan area established storm water retention policies in the mid to late 1980's to ensure that future development would not adversely impact downstream areas of the watershed. The majority of municipalities require on-site retention of the runoff from a 100-year, 2-hour rainfall. Although not all municipalities have the same retention criteria, they all require retention of no less than the 100-year, 1-hour rainfall.

The City of Surprise is the largest municipality with the 100-year, 1-hour rainfall criteria. The majority of the City is in subbasin 35, which drains to McMicken Dam. Subbasin 36 and 39, however, are influenced by the City's criteria. Approximately 50 percent of subbasin 36 and 60 percent of subbasin 39 are in the City of Surprise. Less than five percent of any other subbasin was affected by the criteria.

3.2 Hydrologic Retention Models

An existing condition model was created KHA to provide the framework to develop three future condition models. The existing condition model is a reconstruction of hydrology originally presented in the Corps' 1995 Study. Electronic versions of the Corps' models were not available, making the reconstruction necessary. The Corps' model is based on existing land use conditions as described in the Study. The model was reconstructed using input parameters from the Corps' model including rainfall curves, loss rates, percentage of impervious area, and physical basin parameters, such as slope, area and roughness.

The Corps transformed the existing condition hydrologic model to a future condition model by increasing the percentage of impervious area in the watershed. The Los Angeles District Economics Section of the Corps developed a land use map, utilized in the 1995 Study. The map projects future development in the Agua Fria River watershed for the year 2071. The Corps used the mapping to estimate the increase in impervious area due to future development. The percentage of impervious area was the only parameter that changed between the future and existing models presented in the 1995 Study.

Based upon the foundation of the existing condition model, KHA created three hydrologic retention models to compare the impact of retention regulations. As with the Corps hydrology, the fundamental difference between the existing condition model and the future condition models is an increase in the percentage of impervious area within the watershed. This difference is reflected in the diversion records. A No Retention model was developed by increasing the percentage of impervious area. No other modifications were made to this model. A second future condition model, Retention I, makes the simplifying assumption that watershed runoff is retained at the outlet of the subbasin. The third model, Retention II, assumes runoff from existing development bypass retention storage to flow directly to the River. Flows from future developments are assumed to be retained on-site. The Retention II Model is believed to be the most reasonable representation of future conditions, since the policy is implemented on a development by development basis, rather than through the use of regional basins.

All models use 6-hour and 24-hour storms to compare the effectiveness of retention policies. Most local ordinances require retention of runoff from approximately the 1-hour to 2-hour storm. The larger storms are modeled to evaluate the impact of retention on peak flows from larger storms.

3.3 Methodology

The Corps' HEC-1 program was utilized to create the existing drainage runoff model throughout the watershed. This model was created by inputting the Corps' parameters directly into the MCUHP2 program and HEC-1. The results of the KHA existing conditions model indicated that peak flow rates were slightly higher than those used in the Corps' Regulatory model. This is neither surprising nor alarming since the Corps' 100-year results are a function of the SPF event. However, the results developed in this analysis were reasonable. The objective of the modeling is to evaluate the effectiveness of the retention policies, not duplicate peak flows produced by the Corps' modeling.

The three future condition models for the Master Plan were created based on the KHA existing condition model. In all, the percentage of impervious area was increased to match the Corps' future condition models. The percentage of impervious area was increased to future condition levels to create the No Retention Model. This is considered to represent the worst case scenario.

The Retention I Model incorporated retention into the watershed by using a simplified assumption that all runoff was retained at the end of the major drainage basins. Diversion records were added to the HEC-1 model at the end of the major drainage basins to represent retention of a calculated volume of runoff. Once the retention volume was satisfied, runoff was no longer diverted out of the model. The retention volume was calculated using Equation 8.1 of the FCDMC Drainage Design Manual, Volume II.

$V = C * A * P / 12$

Where

V = Volume Required, ac-ft
C = Runoff coefficient (assumed to be 0.6 for single family homes)
A = Contributing Drainage Area, acres
P = Rainfall depth, in (determined from the PREFRE program)

The rainfall depth used to calculate retention volumes is adjusted to reflect the difference in retention criteria within the City of Surprise.

See Table 3.1 below for a volume calculation summary.

The amount of available retention storage from each subbasin is determined based on the difference in impervious area between existing and future condition land uses. It was assumed retention volume would be provided in areas developed subsequent to the existing condition. The increase in the percentage of impervious area in each subbasin was multiplied by the area of the subbasin to determine the area developed in the future condition. The developed area and runoff coefficients were then used in Equation 8.2 to determine amount of potential storage. See Table 3.1 below for volume calculations.

Table 3.1 – Retention Volumes

Basin	A (ac)	Vol (ac-ft)
1036	5811	755
1037	17229	2240
1039	16979	2054
1040	26112	3395
1042	5709	742

The Retention II Model recognized that only a portion of the runoff would be diverted to retention storage. A certain percentage of the watershed was developed prior to the implementation of a retention policy. Runoff from the previous development is assumed to bypass directly to the River. The new development is assumed to retain runoff up to the calculated required retention volume. Diversion cards within the HEC-1 model were configured to allow a percentage of flow to bypass to the River, while retaining the remainder of the flow, up to the specified volume.

3.4 Results

The existing condition model produced results higher than anticipated, but reasonable enough to serve as a basis for the future condition model and retention models. The increase in percentage of impervious area increased the future condition flows over existing conditions by varied amounts. In the Retention I model, the time to peak lengthened and the peak flows decreased at the concentration points. The retention volume had no affect on peak flows exiting the subbasins.

The Retention II model used a modified approach to the diversion records. This model showed longer times to peak and decreased peak flows, confirming that retention basins have a positive affect on the peak flows out of the subbasins and in the river.

See Table 3.2 below for a comparison between models for the 100-year, 6-hour storm.

Table 3.2 – Comparison Between Retention models

Location	Existing	Future	Retention I	Retention II
	Qpeak(cfs)	Qpeak(cfs)	Qpeak(cfs)	Qpeak(cfs)
Sub-basin 1036	21,500	22,100	22,100	22,100
Sub-basin 1037	24,800	26,400	26,400	26,400
CP1037 @ Bell Rd.	43,800	45,900	45,700	36,500
Sub-basin 1039	21,600	23,100	23,100	23,100
CP1039 @ New River	39,800	41,600	39,200	33,600
Sub-basin 1040	28,300	31,900	31,900	31,900
CP1040 @ I-10	41,500	48,300	38,300	35,200
Sub-basin 1042	5,500	6,400	6,400	6,400
CP1042 @ Avondale	40,000	48,000	37,600	33,300

See Drainage Area Map in Appendix D for Subbasin location.

See Appendix C for existing conditions and retention HEC-1 models.

3.5 Conclusion

The objective of the retention model was to evaluate the effect of current retention policies on a fully developed watershed. Based on simplified assumptions, the current retention policy will effectively control inflows to the Agua Fria River and no additional increase in retention storage is necessary to account for watershed development.

Assuming a standard retention basin depth of three feet, the one-foot freeboard requirement provides an additional 30-40% capacity in each basin. Although this is a significant volume, it is not incorporated in any of the retention models.

4 SUMMARY/RECOMMENDATIONS

4.1 Summary of Hydrologic Evaluation

- Modified Puls routing was utilized to determine that there is a significant amount of attenuation in certain stretches of the Agua Fria River, while other areas pass flows through with very little attenuation.
- The results from the Floodway model indicate that encroachment on the floodplain will increase flows in certain sections of the River by nearly 30%.
- Sand and gravel pits within the floodway or floodplain can have a significant impact on river routing hydrology because of the amount of storage volume they provide.
- The results from the retention models showed that the current retention policy is effective in controlling the peak flow rates from subbasins.

4.2 Recommendations/Alternative Analysis Hydrology

1. Retention policies as currently crafted must diligently be implemented since they currently control watershed flows.
2. Floodplain regulations are leading to the loss of floodplain storage, and the potential for higher future flow rates. Management strategies must either limit this future increase by preserving effective storage, or must adapt hazard mitigation strategies to protect existing and future development.
3. For the Alternative Analysis and Recommended Plan, it is recommended the following hydrology be utilized:
   Structural Alternative - Use encroachment model results, assuming they are significantly higher than regulatory flows.
   Non-structural Alternative - Evaluate using regulatory and encroached model results. The encroached would simulate no change in floodplain regulation, and the regulatory model would be to assume no additional floodplain encroachment.
   Combined Alternative - Same as Non-structural Alternative
   Recommended Plan - Flood routing model will be modified to reflect encroachment and storage options.

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APPENDIX A HEC-RAS MODEL

Floodplain Model

Floodway Model

Floodplain Model

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	33.82	1000.00	6904.97	1.60
1	33.82	5000.00	12053.73	4.16
1	33.82	10000.00	17171.68	6.18
1	33.82	20000.00	25928.93	8.35
1	33.82	30000.00	34046.77	9.18
1	33.82	40000.00	41599.64	9.76
1	33.73	1000.00	6900.63	7.69
1	33.73	5000.00	12043.46	8.47
1	33.73	10000.00	17155.03	7.80
1	33.73	20000.00	25901.01	8.10
1	33.73	30000.00	34007.54	8.41
1	33.73	40000.00	41550.07	8.81
1	33.63	1000.00	6897.86	2.76
1	33.63	5000.00	12034.87	5.34
1	33.63	10000.00	17139.44	6.72
1	33.63	20000.00	25873.93	8.55
1	33.63	30000.00	33970.13	9.74
1	33.63	40000.00	41503.09	10.50
1	33.54	1000.00	6892.61	1.87
1	33.54	5000.00	12022.50	4.25
1	33.54	10000.00	17120.23	5.58
1	33.54	20000.00	25843.97	7.20
1	33.54	30000.00	33931.00	8.32
1	33.54	40000.00	41455.41	9.21
1	33.46	1000.00	6886.30	1.19
1	33.46	5000.00	12010.54	3.50
1	33.46	10000.00	17102.76	4.97
1	33.46	20000.00	25816.63	6.30
1	33.46	30000.00	33894.21	6.83
1	33.46	40000.00	41409.42	7.09
1	33.41	1000.00	6882.52	2.82
1	33.41	5000.00	12002.74	4.81
1	33.41	10000.00	17091.48	6.41
1	33.41	20000.00	25798.54	7.98
1	33.41	30000.00	33869.17	8.93
1	33.41	40000.00	41377.45	9.64
1	33.36	1000.00	6878.90	1.26
1	33.36	5000.00	11995.21	3.80
1	33.36	10000.00	17080.86	5.77
1	33.36	20000.00	25781.71	7.52
1	33.36	30000.00	33846.05	8.16
1	33.36	40000.00	41348.03	8.43
1	33.3	1000.00	6872.39	0.94
1	33.3	5000.00	11984.75	3.00

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	33.3	10000.00	17067.73	4.95
1	33.3	20000.00	25762.89	7.34
1	33.3	30000.00	33820.52	8.13
1	33.3	40000.00	41315.05	8.21
1	33.29	1000.00	6871.61	3.47
1	33.29	5000.00	11983.01	3.66
1	33.29	10000.00	17065.29	4.51
1	33.29	20000.00	25759.09	5.15
1	33.29	30000.00	33815.23	5.43
1	33.29	40000.00	41308.16	5.61
1	33.25	1000.00	6869.55	2.01
1	33.25	5000.00	11975.81	3.48
1	33.25	10000.00	17053.24	4.00
1	33.25	20000.00	25737.46	4.35
1	33.25	30000.00	33784.52	4.60
1	33.25	40000.00	41268.73	4.81
1	33.19	1000.00	6866.92	4.28
1	33.19	5000.00	11966.00	3.85
1	33.19	10000.00	17033.97	3.47
1	33.19	20000.00	25702.23	3.81
1	33.19	30000.00	33735.21	4.14
1	33.19	40000.00	41206.76	4.44
1	33.12	1000.00	6863.48	1.43
1	33.12	5000.00	11952.06	2.00
1	33.12	10000.00	17009.46	2.60
1	33.12	20000.00	25662.07	3.43
1	33.12	30000.00	33681.79	4.01
1	33.12	40000.00	41141.78	4.48
1	33.06	1000.00	6859.53	2.02
1	33.06	5000.00	11938.92	3.42
1	33.06	10000.00	16989.35	4.55
1	33.06	20000.00	25631.45	5.96
1	33.06	30000.00	33642.09	6.82
1	33.06	40000.00	41094.11	7.51
1	32.998	1000.00	6857.21	5.57
1	32.998	5000.00	11931.65	8.00
1	32.998	10000.00	16977.87	9.21
1	32.998	20000.00	25613.11	10.69
1	32.998	30000.00	33617.28	11.28
1	32.998	40000.00	41063.74	12.11
1	32.993	1000.00	6857.05	3.16
1	32.993	5000.00	11931.17	5.53
1	32.993	10000.00	16977.10	7.19
1	32.993	20000.00	25611.84	9.00

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	32.993	30000.00	33615.51	9.84
1	32.993	40000.00	41061.56	10.75
1	32.9885	Bridge		
1	32.984	1000.00	6856.81	3.67
1	32.984	5000.00	11930.49	7.70
1	32.984	10000.00	16976.04	9.22
1	32.984	20000.00	25610.16	10.53
1	32.984	30000.00	33613.09	11.25
1	32.984	40000.00	41058.63	12.16
1	32.979	1000.00	6856.64	3.60
1	32.979	5000.00	11930.06	7.20
1	32.979	10000.00	16975.36	9.82
1	32.979	20000.00	25609.07	13.22
1	32.979	30000.00	33611.63	15.95
1	32.979	40000.00	41056.83	17.33
1	32.92	1000.00	6854.58	3.44
1	32.92	5000.00	11924.46	5.84
1	32.92	10000.00	16966.89	7.55
1	32.92	20000.00	25596.71	10.50
1	32.92	30000.00	33595.86	12.13
1	32.92	40000.00	41037.41	13.14
1	32.86	1000.00	6853.05	7.20
1	32.86	5000.00	11919.46	9.16
1	32.86	10000.00	16958.67	10.19
1	32.86	20000.00	25582.49	9.74
1	32.86	30000.00	33574.33	8.72
1	32.86	40000.00	41009.72	8.88
1	32.79	1000.00	6849.79	1.64
1	32.79	5000.00	11912.38	4.60
1	32.79	10000.00	16948.01	6.70
1	32.79	20000.00	25563.25	8.67
1	32.79	30000.00	33544.57	9.56
1	32.79	40000.00	40970.84	9.93
1	32.72	1000.00	6844.05	1.43
1	32.72	5000.00	11901.85	3.85
1	32.72	10000.00	16933.76	5.78
1	32.72	20000.00	25541.39	7.68
1	32.72	30000.00	33515.36	8.83
1	32.72	40000.00	40934.11	9.61
1	32.64	1000.00	6837.58	1.26
1	32.64	5000.00	11889.84	3.10
1	32.64	10000.00	16917.55	4.45
1	32.64	20000.00	25517.64	5.97

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	32.64	30000.00	33485.14	7.09
1	32.64	40000.00	40897.90	7.97
1	32.58	1000.00	6832.71	1.47
1	32.58	5000.00	11879.64	3.35
1	32.58	10000.00	16903.27	4.73
1	32.58	20000.00	25496.71	6.47
1	32.58	30000.00	33458.52	7.42
1	32.58	40000.00	40865.98	8.03
1	32.52	1000.00	6829.37	4.44
1	32.52	5000.00	11868.71	3.40
1	32.52	10000.00	16886.94	4.29
1	32.52	20000.00	25472.07	5.48
1	32.52	30000.00	33426.42	6.28
1	32.52	40000.00	40826.75	6.86
1	32.43	1000.00	6822.35	1.08
1	32.43	5000.00	11845.83	2.07
1	32.43	10000.00	16853.81	2.99
1	32.43	20000.00	25424.25	4.34
1	32.43	30000.00	33366.64	5.35
1	32.43	40000.00	40756.22	6.20
1	32.34	1000.00	6815.38	4.14
1	32.34	5000.00	11823.37	3.65
1	32.34	10000.00	16821.23	4.61
1	32.34	20000.00	25377.60	6.05
1	32.34	30000.00	33308.70	7.06
1	32.34	40000.00	40688.31	7.84
1	32.24	1000.00	6812.10	3.42
1	32.24	5000.00	11806.77	3.48
1	32.24	10000.00	16794.33	4.18
1	32.24	20000.00	25336.75	5.52
1	32.24	30000.00	33256.33	6.46
1	32.24	40000.00	40625.47	7.18
1	32.15	1000.00	6809.40	4.92
1	32.15	5000.00	11795.09	6.15
1	32.15	10000.00	16773.04	5.61
1	32.15	20000.00	25301.27	5.87
1	32.15	30000.00	33209.59	6.44
1	32.15	40000.00	40568.73	6.95
1	32.05	1000.00	6804.80	1.63
1	32.05	5000.00	11782.15	3.33
1	32.05	10000.00	16750.68	4.44
1	32.05	20000.00	25263.04	5.65
1	32.05	30000.00	33158.86	6.54
1	32.05	40000.00	40507.13	7.29

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	31.96	1000.00	6798.11	1.84
1	31.96	5000.00	11765.08	3.43
1	31.96	10000.00	16724.31	4.30
1	31.96	20000.00	25221.91	5.54
1	31.96	30000.00	33105.77	6.45
1	31.96	40000.00	40443.65	7.20
1	31.86	1000.00	6792.66	2.49
1	31.86	5000.00	11747.59	3.16
1	31.86	10000.00	16696.83	4.07
1	31.86	20000.00	25179.26	5.25
1	31.86	30000.00	33050.84	6.11
1	31.86	40000.00	40378.06	6.83
1	31.77	1000.00	6788.34	3.09
1	31.77	5000.00	11729.00	3.17
1	31.77	10000.00	16667.64	3.98
1	31.77	20000.00	25134.65	5.28
1	31.77	30000.00	32993.89	6.25
1	31.77	40000.00	40310.48	7.06
1	31.67	1000.00	6782.37	1.38
1	31.67	5000.00	11708.69	2.53
1	31.67	10000.00	16636.37	3.37
1	31.67	20000.00	25088.03	4.57
1	31.67	30000.00	32935.16	5.47
1	31.67	40000.00	40241.42	6.22
1	31.59	1000.00	6774.54	1.28
1	31.59	5000.00	11687.89	2.47
1	31.59	10000.00	16605.80	3.43
1	31.59	20000.00	25043.53	4.78
1	31.59	30000.00	32879.67	5.78
1	31.59	40000.00	40176.59	6.62
1	31.49	1000.00	6768.74	4.61
1	31.49	5000.00	11667.29	3.30
1	31.49	10000.00	16573.70	3.85
1	31.49	20000.00	24995.96	5.02
1	31.49	30000.00	32819.57	5.85
1	31.49	40000.00	40105.90	6.56
1	31.39	1000.00	6764.10	1.96
1	31.39	5000.00	11646.96	2.97
1	31.39	10000.00	16539.09	3.50
1	31.39	20000.00	24943.00	4.59
1	31.39	30000.00	32751.15	5.30
1	31.39	40000.00	40024.88	5.99
1	31.29	1000.00	6759.12	3.12

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	31.29	5000.00	11630.36	4.51
1	31.29	10000.00	16510.94	5.27
1	31.29	20000.00	24897.47	6.00
1	31.29	30000.00	32689.84	6.39
1	31.29	40000.00	39949.38	6.59
1	31.2	1000.00	6756.32	4.50
1	31.2	5000.00	11617.58	3.64
1	31.2	10000.00	16486.49	3.59
1	31.2	20000.00	24854.60	4.15
1	31.2	30000.00	32631.68	4.73
1	31.2	40000.00	39876.50	5.15
1	31.11	1000.00	6752.97	2.81
1	31.11	5000.00	11603.20	4.41
1	31.11	10000.00	16459.20	5.14
1	31.11	20000.00	24805.51	5.50
1	31.11	30000.00	32563.89	5.66
1	31.11	40000.00	39792.01	5.94
1	31.01	1000.00	6749.64	4.22
1	31.01	5000.00	11590.80	4.71
1	31.01	10000.00	16436.76	4.96
1	31.01	20000.00	24762.67	5.12
1	31.01	30000.00	32499.46	4.98
1	31.01	40000.00	39710.48	5.27
1	30.92	1000.00	6745.89	2.33
1	30.92	5000.00	11575.76	3.40
1	30.92	10000.00	16407.50	3.67
1	30.92	20000.00	24706.60	4.07
1	30.92	30000.00	32417.18	4.45
1	30.92	40000.00	39607.86	4.87
1	30.82	1000.00	6741.40	2.98
1	30.82	5000.00	11559.27	3.80
1	30.82	10000.00	16377.56	4.32
1	30.82	20000.00	24652.86	4.89
1	30.82	30000.00	32338.44	4.67
1	30.82	40000.00	39508.60	4.79
1	30.73	1000.00	6737.12	2.34
1	30.73	5000.00	11546.51	4.81
1	30.73	10000.00	16356.69	6.25
1	30.73	20000.00	24618.13	7.71
1	30.73	30000.00	32287.55	8.12
1	30.73	40000.00	39442.62	7.93
1	30.65	1000.00	6733.49	3.08
1	30.65	5000.00	11536.76	5.13
1	30.65	10000.00	16341.72	6.66

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	30.65	20000.00	24594.29	8.32
1	30.65	30000.00	32254.86	9.25
1	30.65	40000.00	39398.61	9.00
1	30.55	1000.00	6728.31	1.90
1	30.55	5000.00	11522.87	3.83
1	30.55	10000.00	16321.05	5.29
1	30.55	20000.00	24562.13	6.91
1	30.55	30000.00	32211.25	7.54
1	30.55	40000.00	39340.96	7.75
1	30.46	1000.00	6722.68	2.20
1	30.46	5000.00	11508.29	4.05
1	30.46	10000.00	16299.13	5.22
1	30.46	20000.00	24527.91	6.61
1	30.46	30000.00	32164.22	7.27
1	30.46	40000.00	39280.18	7.59
1	30.36	1000.00	6717.46	2.15
1	30.36	5000.00	11494.24	4.09
1	30.36	10000.00	16277.02	5.18
1	30.36	20000.00	24490.20	5.76
1	30.36	30000.00	32110.33	5.88
1	30.36	40000.00	39209.28	5.89
1	30.26	1000.00	6712.85	3.19
1	30.26	5000.00	11478.78	3.64
1	30.26	10000.00	16250.61	4.01
1	30.26	20000.00	24444.22	4.75
1	30.26	30000.00	32046.15	5.35
1	30.26	40000.00	39126.66	5.74
1	30.17	1000.00	6708.99	2.69
1	30.17	5000.00	11462.38	3.25
1	30.17	10000.00	16221.96	3.82
1	30.17	20000.00	24398.48	5.05
1	30.17	30000.00	31987.12	6.08
1	30.17	40000.00	39055.38	6.96
1	30.07	1000.00	6703.73	2.09
1	30.07	5000.00	11445.32	4.00
1	30.07	10000.00	16194.51	5.10
1	30.07	20000.00	24357.21	6.59
1	30.07	30000.00	31934.93	7.57
1	30.07	40000.00	38994.02	8.42
1	29.99	1000.00	6700.18	5.77
1	29.99	5000.00	11434.62	7.05
1	29.99	10000.00	16176.43	7.35
1	29.99	20000.00	24325.96	7.34
1	29.99	30000.00	31891.36	7.29

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	29.99	40000.00	38939.21	7.35
1	29.89	1000.00	6693.32	0.99
1	29.89	5000.00	11416.33	2.05
1	29.89	10000.00	16147.88	2.81
1	29.89	20000.00	24279.87	3.84
1	29.89	30000.00	31826.48	4.29
1	29.89	40000.00	38855.63	4.53
1	29.8	1000.00	6683.44	1.06
1	29.8	5000.00	11391.95	2.11
1	29.8	10000.00	16112.46	2.92
1	29.8	20000.00	24227.78	3.95
1	29.8	30000.00	31756.74	4.45
1	29.8	40000.00	38766.05	4.54
1	29.72	1000.00	6676.59	2.79
1	29.72	5000.00	11373.39	4.36
1	29.72	10000.00	16082.86	4.59
1	29.72	20000.00	24175.44	4.12
1	29.72	30000.00	31681.15	3.96
1	29.72	40000.00	38666.20	3.96
1	29.624	1000.00	6672.40	2.63
1	29.624	5000.00	11360.71	4.61
1	29.624	10000.00	16058.54	4.54
1	29.624	20000.00	24121.17	3.90
1	29.624	30000.00	31599.80	4.01
1	29.624	40000.00	38560.02	4.17
1	29.6175	Bridge		
1	29.611	1000.00	6671.98	4.70
1	29.611	5000.00	11359.55	8.08
1	29.611	10000.00	16056.73	10.09
1	29.611	20000.00	24118.35	7.59
1	29.611	30000.00	31596.13	8.13
1	29.611	40000.00	38555.60	8.56
1	29.54	1000.00	6669.99	4.02
1	29.54	5000.00	11352.59	4.95
1	29.54	10000.00	16045.72	6.22
1	29.54	20000.00	24096.56	7.29
1	29.54	30000.00	31566.27	7.92
1	29.54	40000.00	38518.54	8.55
1	29.47	1000.00	6666.65	1.94
1	29.47	5000.00	11342.28	3.69
1	29.47	10000.00	16029.21	4.59
1	29.47	20000.00	24068.21	5.32
1	29.47	30000.00	31528.38	6.12

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	29.47	40000.00	38472.61	6.84
1	29.39	1000.00	6661.71	2.21
1	29.39	5000.00	11327.43	3.17
1	29.39	10000.00	16005.34	3.90
1	29.39	20000.00	24028.07	4.68
1	29.39	30000.00	31477.00	5.56
1	29.39	40000.00	38411.93	6.32
1	29.3	1000.00	6658.01	3.54
1	29.3	5000.00	11315.25	5.90
1	29.3	10000.00	15984.68	6.40
1	29.3	20000.00	23992.06	6.76
1	29.3	30000.00	31428.62	6.92
1	29.3	40000.00	38353.57	7.37
1	29.23	1000.00	6655.34	3.36
1	29.23	5000.00	11304.60	3.39
1	29.23	10000.00	15964.82	3.59
1	29.23	20000.00	23957.91	4.37
1	29.23	30000.00	31381.32	4.87
1	29.23	40000.00	38295.58	5.34
1	29.14	1000.00	6651.73	2.81
1	29.14	5000.00	11291.38	5.29
1	29.14	10000.00	15937.78	4.35
1	29.14	20000.00	23910.49	4.37
1	29.14	30000.00	31315.70	4.43
1	29.14	40000.00	38216.29	4.82
1	29.04	1000.00	6648.67	5.71
1	29.04	5000.00	11280.58	5.05
1	29.04	10000.00	15912.75	4.10
1	29.04	20000.00	23863.08	4.13
1	29.04	30000.00	31248.02	4.20
1	29.04	40000.00	38135.21	4.66
1	28.95	1000.00	6645.63	2.90
1	28.95	5000.00	11269.57	5.24
1	28.95	10000.00	15890.82	5.95
1	28.95	20000.00	23821.49	5.58
1	28.95	30000.00	31187.08	5.14
1	28.95	40000.00	38063.02	5.66
1	28.86	1000.00	6642.37	3.94
1	28.86	5000.00	11260.60	7.00
1	28.86	10000.00	15875.20	7.12
1	28.86	20000.00	23791.57	7.03
1	28.86	30000.00	31140.86	6.32
1	28.86	40000.00	38003.21	5.66

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	28.76	1000.00	6638.48	2.47
1	28.76	5000.00	11250.50	5.03
1	28.76	10000.00	15858.57	6.27
1	28.76	20000.00	23762.31	6.59
1	28.76	30000.00	31098.17	6.71
1	28.76	40000.00	37945.73	6.74
1	28.67	1000.00	6634.64	3.24
1	28.67	5000.00	11240.42	5.45
1	28.67	10000.00	15842.31	6.20
1	28.67	20000.00	23732.29	5.84
1	28.67	30000.00	31055.69	5.92
1	28.67	40000.00	37891.29	6.05
1	28.58	1000.00	6630.80	2.35
1	28.58	5000.00	11229.47	4.10
1	28.58	10000.00	15824.33	5.06
1	28.58	20000.00	23697.86	5.25
1	28.58	30000.00	31006.69	5.46
1	28.58	40000.00	37827.95	5.50
1	28.52	1000.00	6627.39	2.23
1	28.52	5000.00	11219.58	3.80
1	28.52	10000.00	15808.53	4.82
1	28.52	20000.00	23668.84	5.51
1	28.52	30000.00	30964.16	5.55
1	28.52	40000.00	37772.83	5.84
1	28.45	1000.00	6624.26	3.23
1	28.45	5000.00	11209.70	4.65
1	28.45	10000.00	15791.96	5.16
1	28.45	20000.00	23639.18	5.63
1	28.45	30000.00	30919.73	5.61
1	28.45	40000.00	37715.40	5.68
1	28.39	1000.00	6621.10	2.09
1	28.39	5000.00	11199.30	3.62
1	28.39	10000.00	15772.10	3.95
1	28.39	20000.00	23601.11	4.29
1	28.39	30000.00	30862.63	4.49
1	28.39	40000.00	37641.11	4.74
1	28.31	1000.00	6617.24	3.34
1	28.31	5000.00	11186.36	3.99
1	28.31	10000.00	15748.40	4.35
1	28.31	20000.00	23557.11	4.66
1	28.31	30000.00	30799.65	4.90
1	28.31	40000.00	37563.05	5.38
		.		
1	28.21	1000.00	6612.73	1.98
1	28.21	5000.00	11169.93	2.94

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	28.21	10000.00	15719.46	3.42
1	28.21	20000.00	23506.91	4.19
1	28.21	30000.00	30727.82	4.38
1	28.21	40000.00	37477.17	4.94
1	28.12	1000.00	6607.69	2.45
1	28.12	5000.00	11153.08	3.68
1	28.12	10000.00	15690.07	4.15
1	28.12	20000.00	23457.30	4.73
1	28.12	30000.00	30656.42	4.91
1	28.12	40000.00	37389.77	5.15
1	28.04	1000.00	6602.07	1.46
1	28.04	5000.00	11134.06	2.14
1	28.04	10000.00	15659.58	2.85
1	28.04	20000.00	23404.75	3.35
1	28.04	30000.00	30582.47	3.63
1	28.04	40000.00	37296.77	3.89
1	27.94	1000.00	6596.84	5.32
1	27.94	5000.00	11113.17	4.41
1	27.94	10000.00	15623.61	4.11
1	27.94	20000.00	23342.17	4.61
1	27.94	30000.00	30493.54	4.73
1	27.94	40000.00	37185.41	5.03
1	27.86	1000.00	6593.78	2.37
1	27.86	5000.00	11100.42	3.44
1	27.86	10000.00	15598.37	3.66
1	27.86	20000.00	23296.63	3.96
1	27.86	30000.00	30427.50	4.10
1	27.86	40000.00	37102.32	4.32
1	27.77	1000.00	6590.19	4.24
1	27.77	5000.00	11084.32	3.33
1	27.77	10000.00	15568.70	3.69
1	27.77	20000.00	23243.11	4.20
1	27.77	30000.00	30350.93	4.46
1	27.77	40000.00	37007.02	4.86
1	27.68	1000.00	6586.97	2.95
1	27.68	5000.00	11068.74	3.85
1	27.68	10000.00	15539.13	3.81
1	27.68	20000.00	23190.94	4.30
1	27.68	30000.00	30276.21	4.43
1	27.68	40000.00	36913.99	4.66
1	27.58	1000.00	6581.60	1.92
1	27.58	5000.00	11047.37	2.42
1	27.58	10000.00	15498.03	2.63
1	27.58	20000.00	23120.25	3.15

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	27.58	30000.00	30179.55	3.64
1	27.58	40000.00	36794.99	4.06
1	27.48	1000.00	6576.46	4.09
1	27.48	5000.00	11023.94	4.05
1	27.48	10000.00	15450.69	3.76
1	27.48	20000.00	23029.03	3.43
1	27.48	30000.00	30057.58	3.78
1	27.48	40000.00	36646.73	4.12
1	27.39	1000.00	6571.72	1.89
1	27.39	5000.00	11004.09	2.73
1	27.39	10000.00	15411.52	3.10
1	27.39	20000.00	22949.62	3.42
1	27.39	30000.00	29946.31	3.61
1	27.39	40000.00	36507.97	3.82
1	27.3	1000.00	6566.44	3.21
1	27.3	5000.00	10981.20	3.40
1	27.3	10000.00	15367.51	3.44
1	27.3	20000.00	22862.12	3.34
1	27.3	30000.00	29822.38	3.62
1	27.3	40000.00	36352.52	3.88
1	27.19	1000.00	6558.61	1.30
1	27.19	5000.00	10955.96	2.52
1	27.19	10000.00	15322.77	3.16
1	27.19	20000.00	22773.12	3.36
1	27.19	30000.00	29698.32	3.58
1	27.19	40000.00	36197.83	3.75
1	27.11	1000.00	6552.34	4.75
1	27.11	5000.00	10933.90	3.49
1	27.11	10000.00	15282.00	3.16
1	27.11	20000.00	22695.70	3.25
1	27.11	30000.00	29586.47	3.08
1	27.11	40000.00	36060.13	3.28
1	27.03	1000.00	6549.40	1.59
1	27.03	5000.00	10923.20	3.15
1	27.03	10000.00	15260.76	3.74
1	27.03	20000.00	22656.80	4.56
1	27.03	30000.00	29527.46	5.03
1	27.03	40000.00	35983.42	5.03
1	26.94	1000.00	6542.73	1.66
1	26.94	5000.00	10907.01	3.46
1	26.94	10000.00	15231.41	3.09
1	26.94	20000.00	22606.83	3.17
1	26.94	30000.00	29459.41	3.29
1	26.94	40000.00	35898.96	3.59

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	26.83	1000.00	6537.50	4.26
1	26.83	5000.00	10891.32	4.34
1	26.83	10000.00	15202.71	5.20
1	26.83	20000.00	22554.08	4.83
1	26.83	30000.00	29371.27	3.11
1	26.83	40000.00	35794.04	3.47
1	26.73	1000.00	6531.91	1.09
1	26.73	5000.00	10875.05	2.28
1	26.73	10000.00	15177.08	2.91
1	26.73	20000.00	22511.16	3.86
1	26.73	30000.00	29294.75	3.74
1	26.73	40000.00	35700.27	3.84
1	26.63	1000.00	6524.24	2.09
1	26.63	5000.00	10851.70	2.41
1	26.63	10000.00	15138.77	2.79
1	26.63	20000.00	22447.13	3.04
1	26.63	30000.00	29191.73	2.74
1	26.63	40000.00	35572.70	3.05
1	26.55	1000.00	6519.23	2.18
1	26.55	5000.00	10831.80	3.03
1	26.55	10000.00	15103.61	3.32
1	26.55	20000.00	22385.62	4.02
1	26.55	30000.00	29090.93	3.77
1	26.55	40000.00	35444.44	3.65
1	26.47	1000.00	6515.78	4.18
1	26.47	5000.00	10816.35	3.38
1	26.47	10000.00	15075.34	3.67
1	26.47	20000.00	22336.82	4.04
1	26.47	30000.00	29019.33	4.54
1	26.47	40000.00	35348.98	4.72
1	26.37	1000.00	6511.86	2.20
1	26.37	5000.00	10796.74	2.49
1	26.37	10000.00	15039.31	2.72
1	26.37	20000.00	22268.63	2.80
1	26.37	30000.00	28925.24	2.97
1	26.37	40000.00	35231.41	3.22
1	26.29	1000.00	6508.10	4.06
1	26.29	5000.00	10775.72	2.64
1	26.29	10000.00	15001.80	3.06
1	26.29	20000.00	22199.70	3.57
1	26.29	30000.00	28825.77	3.60
1	26.29	40000.00	35108.99	3.90
1	26.2	1000.00	6505.63	4.15

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	26.2	5000.00	10761.59	5.45
1	26.2	10000.00	14971.66	3.69
1	26.2	20000.00	22146.81	4.09
1	26.2	30000.00	28748.27	4.22
1	26.2	40000.00	35011.92	4.38
1	26.12	1000.00	6501.83	2.09
1	26.12	5000.00	10743.99	2.07
1	26.12	10000.00	14933.79	2.24
1	26.12	20000.00	22081.94	2.71
1	26.12	30000.00	28656.87	2.94
1	26.12	40000.00	34898.11	3.22
1	26.03	1000.00	6497.09	2.28
1	26.03	5000.00	10719.50	2.21
1	26.03	10000.00	14887.26	2.25
1	26.03	20000.00	22003.89	2.66
1	26.03	30000.00	28551.29	3.01
1	26.03	40000.00	34771.07	3.38
1	25.94	1000.00	6493.97	5.75
1	25.94	5000.00	10704.78	7.44
1	25.94	10000.00	14858.11	6.51
1	25.94	20000.00	21945.14	4.10
1	25.94	30000.00	28474.09	4.59
1	25.94	40000.00	34677.77	4.83
1	25.86	1000.00	6491.31	2.73
1	25.86	5000.00	10696.27	4.73
1	25.86	10000.00	14841.67	5.64
1	25.86	20000.00	21906.51	7.07
1	25.86	30000.00	28420.34	7.22
1	25.86	40000.00	34604.53	6.42
1	25.79	1000.00	6487.83	2.55
1	25.79	5000.00	10684.73	3.44
1	25.79	10000.00	14818.74	3.10
1	25.79	20000.00	21868.79	3.71
1	25.79	30000.00	28368.59	4.21
1	25.79	40000.00	34536.16	4.62
1	25.72	1000.00	6485.19	3.81
1	25.72	5000.00	10675.37	5.71
1	25.72	10000.00	14798.87	5.79
1	25.72	20000.00	21831.88	5.26
1	25.72	30000.00	28319.84	5.98
1	25.72	40000.00	34477.33	6.68
1	25.691	1000.00	6483.18	4.82
1	25.691	5000.00	10667.98	5.81
1	25.691	10000.00	14783.37	5.14

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	25.691	20000.00	21799.20	4.98
1	25.691	30000.00	28273.41	4.91
1	25.691	40000.00	34419.73	5.10
1	25.666	1000.00	6480.05	2.60
1	25.666	5000.00	10657.49	4.44
1	25.666	10000.00	14761.68	4.63
1	25.666	20000.00	21757.96	5.28
1	25.666	30000.00	28213.41	5.74
1	25.666	40000.00	34345.33	6.42
1	25.572	1000.00	6475.04	2.02
1	25.572	5000.00	10643.42	3.69
1	25.572	10000.00	14736.36	4.28
1	25.572	20000.00	21714.62	5.07
1	25.572	30000.00	28153.51	5.48
1	25.572	40000.00	34272.71	5.91
1	25.526	1000.00	6472.53	2.51
1	25.526	5000.00	10635.99	3.85
1	25.526	10000.00	14723.21	4.20
1	25.526	20000.00	21691.38	4.53
1	25.526	30000.00	28120.18	4.60
1	25.526	40000.00	34230.70	4.78
1	25.478	1000.00	6470.20	2.48
1	25.478	5000.00	10628.85	4.33
1	25.478	10000.00	14710.45	5.00
1	25.478	20000.00	21668.50	5.83
1	25.478	30000.00	28086.98	6.19
1	25.478	40000.00	34188.16	6.45
1	25.382	1000.00	6465.37	2.34
1	25.382	5000.00	10615.23	4.15
1	25.382	10000.00	14687.00	4.77
1	25.382	20000.00	21625.76	4.86
1	25.382	30000.00	28025.55	4.97
1	25.382	40000.00	34109.37	5.14
1	25.288	1000.00	6461.18	3.26
1	25.288	5000.00	10600.46	3.61
1	25.288	10000.00	14662.37	4.49
1	25.288	20000.00	21579.29	4.89
1	25.288	30000.00	27958.80	5.17
1	25.288	40000.00	34023.46	5.33
1	25.192	1000.00	6456.53	2.00
1	25.192	5000.00	10581.23	2.59
1	25.192	10000.00	14630.01	3.00
1	25.192	20000.00	21522.33	3.52
1	25.192	30000.00	27878.92	3.82

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	25.192	40000.00	33920.63	3.98
1	25.098	1000.00	6451.89	3.20
1	25.098	5000.00	10559.57	2.74
1	25.098	10000.00	14592.00	3.09
1	25.098	20000.00	21455.79	3.43
1	25.098	30000.00	27787.70	3.81
1	25.098	40000.00	33802.75	3.91
1	24.996	1000.00	6447.13	2.10
1	24.996	5000.00	10538.37	2.98
1	24.996	10000.00	14554.46	3.37
1	24.996	20000.00	21386.07	3.52
1	24.996	30000.00	27690.36	3.66
1	24.996	40000.00	33678.07	3.87
1	24.91	1000.00	6442.99	2.97
1	24.91	5000.00	10520.94	2.86
1	24.91	10000.00	14522.27	2.96
1	24.91	20000.00	21325.47	3.19
1	24.91	30000.00	27601.68	3.22
1	24.91	40000.00	33567.11	3.46
1	24.816	1000.00	6438.09	1.85
1	24.816	5000.00	10499.56	2.41
1	24.816	10000.00	14483.50	2.81
1	24.816	20000.00	21255.66	3.21
1	24.816	30000.00	27499.97	3.37
1	24.816	40000.00	33441.52	3.66
1	24.721	1000.00	6432.62	2.25
1	24.721	5000.00	10477.54	2.65
1	24.721	10000.00	14444.45	2.88
1	24.721	20000.00	21185.88	3.18
1	24.721	30000.00	27402.82	3.52
1	24.721	40000.00	33320.63	3.73
1	24.631	1000.00	6427.96	2.35
1	24.631	5000.00	10458.69	3.07
1	24.631	10000.00	14410.35	3.46
1	24.631	20000.00	21124.41	3.86
1	24.631	30000.00	27317.73	4.05
1	24.631	40000.00	33213.72	4.30
1	24.543	1000.00	6423.22	2.10
1	24.543	5000.00	10440.51	2.75
1	24.543	10000.00	14378.68	3.21
1	24.543	20000.00	21069.32	3.79
1	24.543	30000.00	27240.25	4.10
1	24.543	40000.00	33117.67	4.46

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	24.449	1000.00	6417.99	2.27
1	24.449	5000.00	10420.59	2.99
1	24.449	10000.00	14344.35	3.44
1	24.449	20000.00	21011.02	4.04
1	24.449	30000.00	27160.99	4.55
1	24.449	40000.00	33020.58	4.96
1	24.353	1000.00	6412.29	1.88
1	24.353	5000.00	10398.17	2.34
1	24.353	10000.00	14306.23	2.77
1	24.353	20000.00	20948.00	3.38
1	24.353	30000.00	27076.33	3.71
1	24.353	40000.00	32917.31	4.04
1	24.26	1000.00	6406.10	1.79
1	24.26	5000.00	10371.98	2.02
1	24.26	10000.00	14263.04	2.50
1	24.26	20000.00	20877.23	3.03
1	24.26	30000.00	26979.42	3.31
1	24.26	40000.00	32800.39	3.69
1	24.212	1000.00	6403.01	1.98
1	24.212	5000.00	10358.61	2.31
1	24.212	10000.00	14241.22	2.80
1	24.212	20000.00	20840.90	3.31
1	24.212	30000.00	26928.72	3.50
1	24.212	40000.00	32739.23	3.83
1	24.165	1000.00	6399.54	1.39
1	24.165	5000.00	10345.33	1.96
1	24.165	10000.00	14220.52	2.64
1	24.165	20000.00	20807.08	3.34
1	24.165	30000.00	26880.85	3.54
1	24.165	40000.00	32680.07	3.77
1	24.067	1000.00	6394.00	4.44
1	24.067	5000.00	10324.69	5.00
1	24.067	10000.00	14183.11	3.75
1	24.067	20000.00	20736.36	3.21
1	24.067	30000.00	26774.97	3.06
1	24.067	40000.00	32543.36	3.08
1	23.974	1000.00	6386.53	0.86
1	23.974	5000.00	10299.13	1.35
1	23.974	10000.00	14132.51	1.51
1	23.974	20000.00	20641.84	1.80
1	23.974	30000.00	26640.70	2.04
1	23.974	40000.00	32374.83	2.25
1	23.881	1000.00	6348.71	2.55
1	23.881	5000.00	10228.95	4.02

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	23.881	10000.00	14028.65	4.11
1	23.881	20000.00	20491.93	4.94
1	23.881	30000.00	26454.39	5.54
1	23.881	40000.00	32157.84	6.06
1	23.79	1000.00	6192.56	2.49
1	23.79	5000.00	10035.68	2.92
1	23.79	10000.00	13801.58	3.07
1	23.79	20000.00	20222.53	3.60
1	23.79	30000.00	26154.46	4.20
1	23.79	40000.00	31831.84	4.71
1	23.692	1000.00	5779.51	3.50
1	23.692	5000.00	9581.48	4.55
1	23.692	10000.00	13315.49	5.16
1	23.692	20000.00	19693.42	5.72
1	23.692	30000.00	25594.84	6.33
1	23.692	40000.00	31246.69	6.95
1	23.598	1000.00	5307.53	2.26
1	23.598	5000.00	9070.87	2.98
1	23.598	10000.00	12776.75	3.37
1	23.598	20000.00	19115.96	4.04
1	23.598	30000.00	24990.43	4.74
1	23.598	40000.00	30619.79	5.33
1	23.504	1000.00	5048.75	3.05
1	23.504	5000.00	8781.61	4.06
1	23.504	10000.00	12462.78	4.34
1	23.504	20000.00	18767.15	4.88
1	23.504	30000.00	24615.68	5.40
1	23.504	40000.00	30224.52	6.05
1	23.409	1000.00	4995.27	2.15
1	23.409	5000.00	8709.95	3.20
1	23.409	10000.00	12373.88	3.59
1	23.409	20000.00	18648.19	3.75
1	23.409	30000.00	24470.98	4.00
1	23.409	40000.00	30060.19	4.34
1	23.314	1000.00	4989.44	1.84
1	23.314	5000.00	8689.95	2.64
1	23.314	10000.00	12340.46	3.35
1	23.314	20000.00	18585.56	3.64
1	23.314	30000.00	24383.18	3.90
1	23.314	40000.00	29951.30	4.16
1	23.219	1000.00	4983.16	1.85
1	23.219	5000.00	8668.06	2.64
1	23.219	10000.00	12305.32	3.23
1	23.219	20000.00	18524.34	3.92

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	23.219	30000.00	24297.04	4.16
1	23.219	40000.00	29844.32	4.49
1	23.124	1000.00	4978.10	2.86
1	23.124	5000.00	8648.18	3.12
1	23.124	10000.00	12270.39	3.28
1	23.124	20000.00	18465.78	3.84
1	23.124	30000.00	24215.20	4.17
1	23.124	40000.00	29743.59	4.53
1	23.029	1000.00	4973.64	2.12
1	23.029	5000.00	8630.00	2.89
1	23.029	10000.00	12236.56	3.19
1	23.029	20000.00	18407.18	3.62
1	23.029	30000.00	24134.32	3.93
1	23.029	40000.00	29642.46	4.11
1	22.935	1000.00	4968.77	2.14
1	22.935	5000.00	8611.19	2.71
1	22.935	10000.00	12202.24	2.98
1	22.935	20000.00	18347.27	3.43
1	22.935	30000.00	24051.51	3.71
1	22.935	40000.00	29537.66	3.92
1	22.839	1000.00	4963.86	2.18
1	22.839	5000.00	8592.49	3.08
1	22.839	10000.00	12168.26	3.39
1	22.839	20000.00	18287.19	3.71
1	22.839	30000.00	23968.01	3.97
1	22.839	40000.00	29432.35	4.18
1	22.745	1000.00	4958.62	1.88
1	22.745	5000.00	8575.28	3.19
1	22.745	10000.00	12138.64	3.86
1	22.745	20000.00	18233.24	4.11
1	22.745	30000.00	23892.09	4.31
1	22.745	40000.00	29335.63	4.45
1	22.651	1000.00	4953.75	2.57
1	22.651	5000.00	8557.13	2.74
1	22.651	10000.00	12107.61	3.09
1	22.651	20000.00	18178.68	3.62
1	22.651	30000.00	23817.34	4.04
1	22.651	40000.00	29242.05	4.38
1	22.558	1000.00	4948.67	1.88
1	22.558	5000.00	8540.62	4.26
1	22.558	10000.00	12079.36	5.26
1	22.558	20000.00	18130.92	6.26
1	22.558	30000.00	23752.96	6.83
1	22.558	40000.00	29162.18	7.18

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	22.462	1000.00	4944.21	4.03
1	22.462	5000.00	8524.36	2.68
1	22.462	10000.00	12052.72	3.25
1	22.462	20000.00	18085.60	3.78
1	22.462	30000.00	23690.33	4.09
1	22.462	40000.00	29081.63	4.21
1	22.368	1000.00	4940.25	2.26
1	22.368	5000.00	8504.09	2.73
1	22.368	10000.00	12018.31	3.11
1	22.368	20000.00	18027.06	3.68
1	22.368	30000.00	23610.47	4.12
1	22.368	40000.00	28979.20	4.34
1	22.273	1000.00	4924.25	2.10
1	22.273	5000.00	8475.26	4.56
1	22.273	10000.00	11978.54	6.67
1	22.273	20000.00	17967.95	8.38
1	22.273	30000.00	23534.99	9.50
1	22.273	40000.00	28887.20	10.29
1	22.177	1000.00	4909.26	5.04
1	22.177	5000.00	8448.75	3.72
1	22.177	10000.00	11940.40	3.54
1	22.177	20000.00	17909.53	3.89
1	22.177	30000.00	23459.99	4.29
1	22.177	40000.00	28796.21	4.55
1	22.082	1000.00	4897.53	0.53
1	22.082	5000.00	8421.45	1.43
1	22.082	10000.00	11895.66	1.99
1	22.082	20000.00	17834.46	2.57
1	22.082	30000.00	23359.82	2.97
1	22.082	40000.00	28673.27	3.32
1	21.986	1000.00	4681.71	2.73
1	21.986	5000.00	8174.30	3.65
1	21.986	10000.00	11622.29	3.96
1	21.986	20000.00	17522.13	4.60
1	21.986	30000.00	23013.35	4.99
1	21.986	40000.00	28298.29	5.41
1	21.893	1000.00	4428.93	4.63
1	21.893	5000.00	7889.98	4.69
1	21.893	10000.00	11313.09	5.02
1	21.893	20000.00	17180.32	6.01
1	21.893	30000.00	22643.85	6.80
1	21.893	40000.00	27904.96	7.40
1	21.798	1000.00	4369.42	2.57

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	21.798	5000.00	7815.24	4.33
1	21.798	10000.00	11227.13	6.24
1	21.798	20000.00	17074.28	6.55
1	21.798	30000.00	22521.74	6.99
1	21.798	40000.00	27767.29	7.23
1	21.716	1000.00	4366.67	5.72
1	21.716	5000.00	7805.07	5.45
1	21.716	10000.00	11208.17	4.45
1	21.716	20000.00	17039.72	5.04
1	21.716	30000.00	22474.07	5.57
1	21.716	40000.00	27707.30	6.02
1	21.621	1000.00	4354.48	0.52
1	21.621	5000.00	7777.28	1.29
1	21.621	10000.00	11162.43	1.74
1	21.621	20000.00	16972.91	2.55
1	21.621	30000.00	22391.60	3.25
1	21.621	40000.00	27611.05	3.81
1	21.524	1000.00	4335.08	0.72
1	21.524	5000.00	7740.02	2.03
1	21.524	10000.00	11107.17	2.68
1	21.524	20000.00	16889.97	3.11
1	21.524	30000.00	22288.63	3.51
1	21.524	40000.00	27490.16	3.80
1	21.431	1000.00	4320.24	0.80
1	21.431	5000.00	7714.99	2.52
1	21.431	10000.00	11070.73	3.58
1	21.431	20000.00	16825.13	3.83
1	21.431	30000.00	22196.02	3.68
1	21.431	40000.00	27368.71	3.48
1	21.337	1000.00	4286.84	0.22
1	21.337	5000.00	7663.33	0.70
1	21.337	10000.00	11002.66	1.07
1	21.337	20000.00	16727.19	1.61
1	21.337	30000.00	22066.05	1.95
1	21.337	40000.00	27199.89	2.07
1	21.245	1000.00	4201.67	3.75
1	21.245	5000.00	7552.17	6.15
1	21.245	10000.00	10873.23	8.53
1	21.245	20000.00	16567.16	9.05
1	21.245	30000.00	21881.09	10.22
1	21.245	40000.00	26985.11	10.88
1	21.157	1000.00	4136.74	2.80
1	21.157	5000.00	7463.54	3.09
1	21.157	10000.00	10766.28	3.13

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	21.157	20000.00	16428.24	3.70
1	21.157	30000.00	21718.58	4.20
1	21.157	40000.00	26799.20	4.48
1	21.061	1000.00	4120.38	1.56
1	21.061	5000.00	7426.42	3.19
1	21.061	10000.00	10710.24	4.54
1	21.061	20000.00	16342.45	6.10
1	21.061	30000.00	21606.34	6.78
1	21.061	40000.00	26658.82	6.84
1	20.958	1000.00	4103.27	2.37
1	20.958	5000.00	7393.50	4.02
1	20.958	10000.00	10664.89	5.31
1	20.958	20000.00	16273.95	6.57
1	20.958	30000.00	21515.65	7.24
1	20.958	40000.00	26546.78	8.07
1	20.864	1000.00	4093.35	2.58
1	20.864	5000.00	7371.46	3.66
1	20.864	10000.00	10631.30	4.05
1	20.864	20000.00	16218.52	4.43
1	20.864	30000.00	21439.87	4.54
1	20.864	40000.00	26452.58	4.55
1	20.769	1000.00	4089.42	3.42
1	20.769	5000.00	7356.87	4.24
1	20.769	10000.00	10604.24	4.34
1	20.769	20000.00	16167.13	4.28
1	20.769	30000.00	21366.14	4.49
1	20.769	40000.00	26357.38	4.73
1	20.675	1000.00	4085.02	2.09
1	20.675	5000.00	7342.69	3.82
1	20.675	10000.00	10579.48	4.80
1	20.675	20000.00	16120.94	5.52
1	20.675	30000.00	21299.60	5.60
1	20.675	40000.00	26272.86	5.80
1	20.579	1000.00	4080.79	3.91
1	20.579	5000.00	7329.16	4.83
1	20.579	10000.00	10557.55	5.81
1	20.579	20000.00	16082.30	6.49
1	20.579	30000.00	21243.47	6.83
1	20.579	40000.00	26198.40	6.62
1	20.483	1000.00	4077.29	2.92
1	20.483	5000.00	7314.80	3.50
1	20.483	10000.00	10534.18	4.34
1	20.483	20000.00	16043.73	5.50
1	20.483	30000.00	21189.86	5.94

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	20.483	40000.00	26126.50	5.90
1	20.435	1000.00	4075.09	2.40
1	20.435	5000.00	7306.79	3.72
1	20.435	10000.00	10521.53	4.78
1	20.435	20000.00	16023.72	5.98
1	20.435	30000.00	21162.51	6.52
1	20.435	40000.00	26090.32	6.51
1	20.388	1000.00	4073.00	3.16
1	20.388	5000.00	7299.61	4.33
1	20.388	10000.00	10508.78	4.31
1	20.388	20000.00	16002.44	4.98
1	20.388	30000.00	21132.94	5.25
1	20.388	40000.00	26051.65	5.33
1	20.343	1000.00	4071.25	2.96
1	20.343	5000.00	7293.69	4.55
1	20.343	10000.00	10496.52	4.16
1	20.343	20000.00	15980.57	4.49
1	20.343	30000.00	21101.38	4.58
1	20.343	40000.00	26010.49	4.69
1	20.294	1000.00	4068.93	2.30
1	20.294	5000.00	7285.78	3.20
1	20.294	10000.00	10481.37	3.68
1	20.294	20000.00	15953.66	4.27
1	20.294	30000.00	21063.26	4.67
1	20.294	40000.00	25961.91	4.98
1	20.207	1000.00	4064.85	2.91
1	20.207	5000.00	7270.56	3.65
1	20.207	10000.00	10454.30	3.96
1	20.207	20000.00	15907.48	4.66
1	20.207	30000.00	21000.91	5.28
1	20.207	40000.00	25884.03	5.67
1	20.111	1000.00	4059.43	1.65
1	20.111	5000.00	7253.66	3.14
1	20.111	10000.00	10424.08	3.56
1	20.111	20000.00	15855.98	4.13
1	20.111	30000.00	20933.08	4.73
1	20.111	40000.00	25799.55	5.07
1	20.015	1000.00	4053.87	2.68
1	20.015	5000.00	7236.97	3.78
1	20.015	10000.00	10393.84	4.00
1	20.015	20000.00	15802.80	4.42
1	20.015	30000.00	20861.44	4.78
1	20.015	40000.00	25710.01	5.10

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	19.92	1000.00	4048.35	1.69
1	19.92	5000.00	7218.93	2.74
1	19.92	10000.00	10361.04	3.10
1	19.92	20000.00	15746.64	3.79
1	19.92	30000.00	20782.84	4.03
1	19.92	40000.00	25612.82	4.39
1	19.827	1000.00	4042.76	2.49
1	19.827	5000.00	7199.13	2.95
1	19.827	10000.00	10327.07	3.55
1	19.827	20000.00	15690.81	4.29
1	19.827	30000.00	20702.91	4.42
1	19.827	40000.00	25512.12	4.53
1	19.732	1000.00	4037.32	1.83
1	19.732	5000.00	7179.80	2.99
1	19.732	10000.00	10295.48	3.73
1	19.732	20000.00	15638.00	4.41
1	19.732	30000.00	20628.35	4.84
1	19.732	40000.00	25414.75	4.92
1	19.635	1000.00	4032.42	3.24
1	19.635	5000.00	7161.29	3.22
1	19.635	10000.00	10264.65	3.74
1	19.635	20000.00	15584.17	4.17
1	19.635	30000.00	20554.07	4.50
1	19.635	40000.00	25318.21	4.65
1	19.542	1000.00	4028.11	2.20
1	19.542	5000.00	7143.43	3.11
1	19.542	10000.00	10234.66	3.80
1	19.542	20000.00	15530.92	4.33
1	19.542	30000.00	20477.92	4.41
1	19.542	40000.00	25220.16	4.58
1	19.446	1000.00	4023.24	2.53
1	19.446	5000.00	7124.36	2.89
1	19.446	10000.00	10202.07	3.27
1	19.446	20000.00	15474.62	3.88
1	19.446	30000.00	20398.58	4.30
1	19.446	40000.00	25119.34	4.55
1	19.352	1000.00	4018.38	2.07
1	19.352	5000.00	7107.83	3.98
1	19.352	10000.00	10170.99	3.97
1	19.352	20000.00	15417.79	4.04
1	19.352	30000.00	20319.49	4.23
1	19.352	40000.00	25018.86	4.39
		.		
1	19.256	1000.00	4013.75	3.15
1	19.256	5000.00	7094.50	4.69

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	19.256	10000.00	10146.90	5.89
1	19.256	20000.00	15372.21	6.55
1	19.256	30000.00	20254.96	7.02
1	19.256	40000.00	24935.89	7.25
1	19.162	1000.00	4009.49	2.30
1	19.162	5000.00	7080.90	3.70
1	19.162	10000.00	10124.11	4.22
1	19.162	20000.00	15331.56	4.71
1	19.162	30000.00	20197.35	4.90
1	19.162	40000.00	24861.25	5.01
1	19.066	1000.00	4004.30	2.15
1	19.066	5000.00	7064.40	3.29
1	19.066	10000.00	10097.66	4.46
1	19.066	20000.00	15286.94	5.61
1	19.066	30000.00	20134.28	6.05
1	19.066	40000.00	24779.63	6.27
1	18.978	1000.00	3999.99	3.01
1	18.978	5000.00	7050.86	4.86
1	18.978	10000.00	10074.89	4.74
1	18.978	20000.00	15247.61	4.92
1	18.978	30000.00	20080.63	5.45
1	18.978	40000.00	24712.68	5.96
1	18.97	Bridge		
1	18.962	1000.00	3999.24	2.20
1	18.962	5000.00	7048.50	3.36
1	18.962	10000.00	10070.44	3.73
1	18.962	20000.00	15239.52	4.33
1	18.962	30000.00	20069.88	4.97
1	18.962	40000.00	24699.69	5.53
1	18.937	1000.00	3998.04	3.41
1	18.937	5000.00	7043.58	2.82
1	18.937	10000.00	10061.36	2.86
1	18.937	20000.00	15223.64	3.14
1	18.937	30000.00	20048.33	3.33
1	18.937	40000.00	24673.29	3.53
1	18.839	1000.00	3977.90	1.66
1	18.839	5000.00	7003.92	2.63
1	18.839	10000.00	10004.42	3.70
1	18.839	20000.00	15135.82	4.95
1	18.839	30000.00	19932.93	5.79
1	18.839	40000.00	24534.33	6.53
1	18.748	1000.00	3801.61	2.78
1	18.748	5000.00	6801.15	3.94

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	18.748	10000.00	9785.11	4.96
1	18.748	20000.00	14888.52	6.21
1	18.748	30000.00	19661.07	7.11
1	18.748	40000.00	24241.76	7.91
1	18.653	1000.00	3528.89	2.18
1	18.653	5000.00	6494.76	3.46
1	18.653	10000.00	9458.84	4.37
1	18.653	20000.00	14535.62	5.79
1	18.653	30000.00	19287.40	7.06
1	18.653	40000.00	23850.82	8.18
1	18.558	1000.00	3401.97	1.93
1	18.558	5000.00	6340.22	3.19
1	18.558	10000.00	9285.85	3.68
1	18.558	20000.00	14336.70	4.25
1	18.558	30000.00	19068.60	4.71
1	18.558	40000.00	23615.74	5.16
1	18.464	1000.00	3377.96	5.29
1	18.464	5000.00	6297.96	6.15
1	18.464	10000.00	9220.86	3.65
1	18.464	20000.00	14242.85	3.91
1	18.464	30000.00	18954.49	4.61
1	18.464	40000.00	23484.08	5.14
1	18.369	1000.00	3367.32	2.85
1	18.369	5000.00	6275.38	5.99
1	18.369	10000.00	9174.03	5.99
1	18.369	20000.00	14162.36	5.23
1	18.369	30000.00	18851.10	5.19
1	18.369	40000.00	23361.62	5.48
1	18.275	1000.00	3364.08	4.01
1	18.275	5000.00	6262.90	4.98
1	18.275	10000.00	9141.47	4.86
1	18.275	20000.00	14097.47	5.32
1	18.275	30000.00	18758.72	5.32
1	18.275	40000.00	23247.85	5.59
1	18.182	1000.00	3361.25	3.96
1	18.182	5000.00	6249.54	4.28
1	18.182	10000.00	9110.71	4.32
1	18.182	20000.00	14043.10	5.19
1	18.182	30000.00	18680.47	5.35
1	18.182	40000.00	23147.74	5.28
1	18.093	1000.00	3357.42	2.20
1	18.093	5000.00	6235.98	3.78
1	18.093	10000.00	9083.59	3.79
1	18.093	20000.00	13997.37	4.47

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	18.093	30000.00	18613.78	4.43
1	18.093	40000.00	23058.99	4.36
1	18	1000.00	3350.70	1.39
1	18	5000.00	6217.96	2.75
1	18	10000.00	9049.45	3.04
1	18	20000.00	13938.75	3.53
1	18	30000.00	18525.71	3.40
1	18	40000.00	22943.30	3.45
1	17.91	1000.00	3342.07	1.17
1	17.91	5000.00	6196.47	2.39
1	17.91	10000.00	9012.15	2.88
1	17.91	20000.00	13872.28	3.11
1	17.91	30000.00	18423.57	3.00
1	17.91	40000.00	22801.30	2.74
1	17.821	1000.00	3333.51	1.40
1	17.821	5000.00	6174.29	3.04
1	17.821	10000.00	8974.45	4.09
1	17.821	20000.00	13802.46	4.58
1	17.821	30000.00	18312.77	4.80
1	17.821	40000.00	22647.15	5.15
1	17.73	1000.00	3260.85	1.57
1	17.73	5000.00	6083.09	3.66
1	17.73	10000.00	8863.25	4.80
1	17.73	20000.00	13650.11	5.69
1	17.73	30000.00	18106.87	5.90
1	17.73	40000.00	22391.72	6.05
1	17.638	1000.00	3114.65	3.45
1	17.638	5000.00	5919.71	5.64
1	17.638	10000.00	8683.69	6.99
1	17.638	20000.00	13439.61	8.65
1	17.638	30000.00	17859.63	9.42
1	17.638	40000.00	22111.02	10.40
1	17.548	1000.00	2975.03	2.37
1	17.548	5000.00	5762.90	4.06
1	17.548	10000.00	8511.21	5.00
1	17.548	20000.00	13236.91	5.24
1	17.548	30000.00	17626.64	5.14
1	17.548	40000.00	21847.83	5.01
1	17.458	1000.00	2835.44	2.90
1	17.458	5000.00	5593.06	3.34
1	17.458	10000.00	8315.56	3.76
1	17.458	20000.00	12992.81	3.97
1	17.458	30000.00	17334.88	3.94
1	17.458	40000.00	21505.34	3.92

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	17.37	1000.00	2706.06	2.07
1	17.37	5000.00	5429.91	2.97
1	17.37	10000.00	8123.61	3.26
1	17.37	20000.00	12744.57	3.29
1	17.37	30000.00	17032.08	3.42
1	17.37	40000.00	21145.08	3.58
1	17.277	1000.00	2593.81	3.62
1	17.277	5000.00	5285.81	3.28
1	17.277	10000.00	7947.41	3.02
1	17.277	20000.00	12508.73	3.18
1	17.277	30000.00	16742.21	3.39
1	17.277	40000.00	20794.21	3.47
1	17.18	1000.00	2479.69	2.60
1	17.18	5000.00	5142.40	4.36
1	17.18	10000.00	7776.18	5.49
1	17.18	20000.00	12294.44	6.95
1	17.18	30000.00	16489.29	7.64
1	17.18	40000.00	20488.47	8.04
1	17.085	1000.00	2352.83	2.74
1	17.085	5000.00	4989.49	4.73
1	17.085	10000.00	7602.73	5.69
1	17.085	20000.00	12090.41	6.82
1	17.085	30000.00	16258.23	7.75
1	17.085	40000.00	20220.51	8.56
1	16.99	1000.00	2252.88	2.07
1	16.99	5000.00	4867.39	3.87
1	16.99	10000.00	7462.85	5.13
1	16.99	20000.00	11922.83	6.75
1	16.99	30000.00	16065.32	7.40
1	16.99	40000.00	19994.68	7.87
1	16.895	1000.00	2230.96	2.24
1	16.895	5000.00	4831.93	3.75
1	16.895	10000.00	7414.80	4.87
1	16.895	20000.00	11854.65	6.39
1	16.895	30000.00	15977.89	7.52
1	16.895	40000.00	19876.53	7.40
1	16.801	1000.00	2218.74	1.83
1	16.801	5000.00	4800.70	3.43
1	16.801	10000.00	7365.70	4.54
1	16.801	20000.00	11777.02	5.95
1	16.801	30000.00	15875.80	6.94
1	16.801	40000.00	19734.52	7.69
1	16.707	1000.00	2196.61	2.06

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	16.707	5000.00	4751.61	3.67
1	16.707	10000.00	7294.07	4.86
1	16.707	20000.00	11669.38	6.42
1	16.707	30000.00	15737.50	7.59
1	16.707	40000.00	19551.68	8.53
1	16.612	1000.00	2181.71	2.81
1	16.612	5000.00	4716.11	3.79
1	16.612	10000.00	7241.94	4.91
1	16.612	20000.00	11585.47	6.46
1	16.612	30000.00	15623.79	7.65
1	16.612	40000.00	19401.72	8.68
1	16.518	1000.00	2177.08	2.21
1	16.518	5000.00	4701.08	3.84
1	16.518	10000.00	7218.90	5.10
1	16.518	20000.00	11546.81	6.44
1	16.518	30000.00	15570.82	7.41
1	16.518	40000.00	19335.28	8.32
1	16.516	Bridge		
1	16.514	1000.00	2176.92	3.65
1	16.514	5000.00	4700.48	5.25
1	16.514	10000.00	7217.94	6.03
1	16.514	20000.00	11545.05	7.35
1	16.514	30000.00	15568.45	8.05
1	16.514	40000.00	19332.38	8.58
1	16.506	1000.00	2176.64	3.28
1	16.506	5000.00	4699.46	4.34
1	16.506	10000.00	7216.15	4.90
1	16.506	20000.00	11542.13	6.04
1	16.506	30000.00	15564.58	7.05
1	16.506	40000.00	19327.59	7.65
1	16.494	Bridge		
1	16.482	1000.00	2175.91	3.74
1	16.482	5000.00	4696.22	3.74
1	16.482	10000.00	7210.51	4.50
1	16.482	20000.00	11533.11	5.81
1	16.482	30000.00	15553.22	7.06
1	16.482	40000.00	19314.02	8.10
1	16.471	1000.00	2175.55	3.61
1	16.471	5000.00	4694.59	4.50
1	16.471	10000.00	7207.77	5.31
1	16.471	20000.00	11528.79	6.64
1	16.471	30000.00	15547.53	7.98
1	16.471	40000.00	19306.17	9.14

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	16.385	1000.00	2172.68	3.64
1	16.385	5000.00	4685.76	8.67
1	16.385	10000.00	7193.06	11.61
1	16.385	20000.00	11503.37	12.63
1	16.385	30000.00	15513.17	12.73
1	16.385	40000.00	19260.80	13.69
1	16.289	1000.00	2168.77	2.52
1	16.289	5000.00	4675.19	4.05
1	16.289	10000.00	7176.34	5.13
1	16.289	20000.00	11475.55	6.73
1	16.289	30000.00	15474.60	7.93
1	16.289	40000.00	19212.74	9.03
1	16.195	1000.00	2164.46	2.84
1	16.195	5000.00	4661.11	4.11
1	16.195	10000.00	7154.00	5.17
1	16.195	20000.00	11439.88	6.50
1	16.195	30000.00	15427.03	7.53
1	16.195	40000.00	19153.47	8.45
1	16.099	1000.00	2160.12	2.54
1	16.099	5000.00	4647.80	4.67
1	16.099	10000.00	7130.45	4.87
1	16.099	20000.00	11395.16	4.87
1	16.099	30000.00	15363.39	5.18
1	16.099	40000.00	19067.90	5.72
1	16.004	1000.00	2155.82	2.82
1	16.004	5000.00	4633.33	3.46
1	16.004	10000.00	7103.43	3.89
1	16.004	20000.00	11340.75	4.35
1	16.004	30000.00	15279.07	4.83
1	16.004	40000.00	18945.81	5.45
1	15.909	1000.00	2151.44	2.46
1	15.909	5000.00	4617.37	3.78
1	15.909	10000.00	7075.94	4.60
1	15.909	20000.00	11285.62	5.30
1	15.909	30000.00	15188.91	5.79
1	15.909	40000.00	18813.41	6.55
1	15.814	1000.00	2145.78	1.72
1	15.814	5000.00	4603.16	4.31
1	15.814	10000.00	7052.27	5.72
1	15.814	20000.00	11237.91	7.34
1	15.814	30000.00	15114.71	8.25
1	15.814	40000.00	18710.15	9.04
1	15.719	1000.00	2137.92	1.28

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	15.719	5000.00	4586.98	3.05
1	15.719	10000.00	7026.87	4.44
1	15.719	20000.00	11191.75	6.28
1	15.719	30000.00	15051.95	7.78
1	15.719	40000.00	18631.08	9.03
1	15.658	1000.00	2132.64	1.70
1	15.658	5000.00	4574.74	3.34
1	15.658	10000.00	7008.16	4.18
1	15.658	20000.00	11159.26	4.65
1	15.658	30000.00	15009.56	5.25
1	15.658	40000.00	18578.57	5.51
1	15.564	1000.00	2127.41	3.27
1	15.564	5000.00	4558.46	3.94
1	15.564	10000.00	6981.34	4.52
1	15.564	20000.00	11110.57	4.68
1	15.564	30000.00	14943.84	5.01
1	15.564	40000.00	18496.37	5.34
1	15.469	1000.00	2124.20	4.05
1	15.469	5000.00	4544.44	4.43
1	15.469	10000.00	6955.40	4.31
1	15.469	20000.00	11060.84	4.23
1	15.469	30000.00	14874.75	4.45
1	15.469	40000.00	18409.06	4.56
1	15.374	1000.00	2120.12	2.17
1	15.374	5000.00	4532.29	5.14
1	15.374	10000.00	6934.52	7.32
1	15.374	20000.00	11018.82	6.73
1	15.374	30000.00	14813.08	6.30
1	15.374	40000.00	18331.43	6.86
1	15.281	1000.00	2116.46	5.34
1	15.281	5000.00	4519.75	3.86
1	15.281	10000.00	6915.71	4.82
1	15.281	20000.00	10982.00	4.83
1	15.281	30000.00	14757.99	4.87
1	15.281	40000.00	18263.30	5.12
1	15.188	1000.00	2113.62	3.16
1	15.188	5000.00	4504.69	3.55
1	15.188	10000.00	6891.29	4.24
1	15.188	20000.00	10937.91	4.89
1	15.188	30000.00	14694.51	5.10
1	15.188	40000.00	18182.87	5.29
1	15.094	1000.00	2109.31	2.27
1	15.094	5000.00	4488.17	3.32
1	15.094	10000.00	6863.03	3.70

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	15.094	20000.00	10890.05	4.29
1	15.094	30000.00	14625.33	4.33
1	15.094	40000.00	18093.71	4.41
1	15	1000.00	2104.66	2.66
1	15	5000.00	4472.83	4.21
1	15	10000.00	6834.39	4.30
1	15	20000.00	10840.04	4.85
1	15	30000.00	14553.61	5.29
1	15	40000.00	18002.07	5.69
1	14.905	1000.00	2100.11	2.42
1	14.905	5000.00	4455.41	2.70
1	14.905	10000.00	6803.87	3.34
1	14.905	20000.00	10787.73	4.00
1	14.905	30000.00	14482.53	4.45
1	14.905	40000.00	17914.65	4.86
1	14.809	1000.00	2093.53	1.40
1	14.809	5000.00	4433.84	2.71
1	14.809	10000.00	6769.52	3.47
1	14.809	20000.00	10731.99	4.40
1	14.809	30000.00	14408.14	4.99
1	14.809	40000.00	17822.02	5.23
1	14.708	1000.00	2086.00	1.92
1	14.708	5000.00	4414.26	3.66
1	14.708	10000.00	6739.05	4.73
1	14.708	20000.00	10682.41	5.56
1	14.708	30000.00	14338.81	5.58
1	14.708	40000.00	17732.59	5.66
1	14.619	1000.00	2082.10	4.97
1	14.619	5000.00	4400.08	3.96
1	14.619	10000.00	6715.78	4.53
1	14.619	20000.00	10643.26	5.41
1	14.619	30000.00	14281.76	5.70
1	14.619	40000.00	17658.43	5.89
1	14.525	1000.00	2078.40	2.21
1	14.525	5000.00	4382.42	2.75
1	14.525	10000.00	6683.61	2.93
1	14.525	20000.00	10592.09	3.78
1	14.525	30000.00	14213.15	4.36
1	14.525	40000.00	17573.38	4.79
1	14.43	1000.00	2073.69	2.78
1	14.43	5000.00	4363.73	3.64
1	14.43	10000.00	6647.18	3.56
1	14.43	20000.00	10534.65	4.37
1	14.43	30000.00	14137.57	4.86

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	14.43	40000.00	17481.27	5.24
1	14.335	1000.00	2069.57	2.82
1	14.335	5000.00	4348.07	3.76
1	14.335	10000.00	6615.48	3.76
1	14.335	20000.00	10482.78	4.52
1	14.335	30000.00	14067.81	5.02
1	14.335	40000.00	17395.40	5.43
1	14.24	1000.00	2065.44	2.72
1	14.24	5000.00	4333.59	4.19
1	14.24	10000.00	6585.65	3.95
1	14.24	20000.00	10432.26	4.54
1	14.24	30000.00	13998.61	4.85
1	14.24	40000.00	17308.66	5.01
1	14.145	1000.00	2061.34	2.88
1	14.145	5000.00	4319.68	4.07
1	14.145	10000.00	6555.55	3.73
1	14.145	20000.00	10381.39	4.51
1	14.145	30000.00	13928.92	4.94
1	14.145	40000.00	17220.71	5.16
1	14.049	1000.00	2057.63	3.47
1	14.049	5000.00	4306.14	4.61
1	14.049	10000.00	6527.98	4.92
1	14.049	20000.00	10335.45	5.82
1	14.049	30000.00	13865.83	6.33
1	14.049	40000.00	17139.43	6.45
1	13.952	1000.00	2054.13	3.26
1	13.952	5000.00	4293.67	4.82
1	13.952	10000.00	6505.92	5.81
1	13.952	20000.00	10297.51	6.60
1	13.952	30000.00	13813.84	7.25
1	13.952	40000.00	17072.73	7.69
1	13.856	1000.00	2051.45	6.57
1	13.856	5000.00	4278.91	3.35
1	13.856	10000.00	6480.89	3.90
1	13.856	20000.00	10255.86	4.87
1	13.856	30000.00	13756.71	5.30
1	13.856	40000.00	17002.00	5.77
1	13.76	1000.00	2049.27	4.53
1	13.76	5000.00	4263.46	4.35
1	13.76	10000.00	6452.86	4.49
1	13.76	20000.00	10207.63	4.82
1	13.76	30000.00	13689.70	5.16
1	13.76	40000.00	16919.97	5.61

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	13.663	1000.00	2046.67	4.49
1	13.663	5000.00	4252.10	6.37
1	13.663	10000.00	6428.81	5.35
1	13.663	20000.00	10161.02	5.25
1	13.663	30000.00	13623.04	5.39
1	13.663	40000.00	16839.10	5.98
1	13.565	1000.00	2043.71	3.61
1	13.565	5000.00	4241.73	5.16
1	13.565	10000.00	6407.45	5.72
1	13.565	20000.00	10118.22	5.79
1	13.565	30000.00	13561.34	6.11
1	13.565	40000.00	16761.89	6.23
1	13.518	1000.00	2042.14	3.75
1	13.518	5000.00	4236.52	6.04
1	13.518	10000.00	6398.00	6.61
1	13.518	20000.00	10100.30	7.30
1	13.518	30000.00	13534.36	6.76
1	13.518	40000.00	16723.94	5.94
1	13.467	1000.00	2040.42	3.46
1	13.467	5000.00	4231.23	5.69
1	13.467	10000.00	6387.57	5.40
1	13.467	20000.00	10077.53	4.33
1	13.467	30000.00	13499.33	4.36
1	13.467	40000.00	16675.83	4.53
1	13.4585	Bridge		
1	13.45	1000.00	2039.72	2.58
1	13.45	5000.00	4229.13	4.32
1	13.45	10000.00	6383.31	4.38
1	13.45	20000.00	10068.04	4.01
1	13.45	30000.00	13485.57	4.17
1	13.45	40000.00	16658.38	4.40
1	13.395	1000.00	2037.33	3.04
1	13.395	5000.00	4222.31	5.62
1	13.395	10000.00	6370.77	6.76
1	13.395	20000.00	10041.23	6.54
1	13.395	30000.00	13445.58	6.25
1	13.395	40000.00	16606.99	6.33
1	13.296	1000.00	2031.66	1.62
1	13.296	5000.00	4204.99	2.50
1	13.296	10000.00	6343.24	3.21
1	13.296	20000.00	9994.77	4.26
1	13.296	30000.00	13380.23	4.91
1	13.296	40000.00	16523.95	5.28

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	13.2	1000.00	2023.70	1.35
1	13.2	5000.00	4181.98	2.59
1	13.2	10000.00	6308.36	3.52
1	13.2	20000.00	9943.14	4.85
1	13.2	30000.00	13313.47	5.66
1	13.2	40000.00	16440.87	6.00
1	13.103	1000.00	2015.76	1.65
1	13.103	5000.00	4161.83	3.34
1	13.103	10000.00	6278.60	4.51
1	13.103	20000.00	9899.60	6.11
1	13.103	30000.00	13257.24	7.05
1	13.103	40000.00	16362.29	5.97
1	13.007	1000.00	2009.71	2.29
1	13.007	5000.00	4146.37	4.27
1	13.007	10000.00	6255.83	5.85
1	13.007	20000.00	9866.30	8.11
1	13.007	30000.00	13214.92	9.86
1	13.007	40000.00	16302.42	11.06
1	12.913	1000.00	1925.09	2.67
1	12.913	5000.00	4043.15	4.08
1	12.913	10000.00	6138.53	5.12
1	12.913	20000.00	9730.13	6.83
1	12.913	30000.00	13063.86	8.08
1	12.913	40000.00	16135.66	8.32
1	12.816	1000.00	1757.47	2.47
1	12.816	5000.00	3841.55	3.46
1	12.816	10000.00	5913.02	4.53
1	12.816	20000.00	9472.16	6.01
1	12.816	30000.00	12779.93	7.16
1	12.816	40000.00	15825.66	8.17
1	12.725	1000.00	1644.74	2.05
1	12.725	5000.00	3698.06	3.43
1	12.725	10000.00	5748.39	4.34
1	12.725	20000.00	9275.80	5.12
1	12.725	30000.00	12555.46	5.35
1	12.725	40000.00	15572.85	5.38
1	12.63	1000.00	1611.31	1.83
1	12.63	5000.00	3645.83	3.13
1	12.63	10000.00	5678.50	3.43
1	12.63	20000.00	9172.96	3.98
1	12.63	30000.00	12416.06	4.52
1	12.63	40000.00	15392.64	4.97
1	12.529	1000.00	1604.85	2.31
1	12.529	5000.00	3623.48	2.64

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	12.529	10000.00	5637.24	3.12
1	12.529	20000.00	9094.88	4.21
1	12.529	30000.00	12291.33	5.09
1	12.529	40000.00	15213.82	5.81
1	12.47	1000.00	1601.72	2.78
1	12.47	5000.00	3609.03	2.85
1	12.47	10000.00	5611.46	3.50
1	12.47	20000.00	9049.22	4.50
1	12.47	30000.00	12220.81	5.16
1	12.47	40000.00	15115.46	5.68
1	12.42	1000.00	1599.63	2.84
1	12.42	5000.00	3593.49	1.41
1	12.42	10000.00	5582.93	1.98
1	12.42	20000.00	9000.84	2.93
1	12.42	30000.00	12150.00	3.60
1	12.42	40000.00	15019.66	4.08
1	12.359	1000.00	1596.34	1.68
1	12.359	5000.00	3561.39	1.01
1	12.359	10000.00	5516.08	0.97
1	12.359	20000.00	8893.02	1.23
1	12.359	30000.00	12008.71	1.44
1	12.359	40000.00	14846.33	1.61
1	12.247	1000.00	1590.71	4.16
1	12.247	5000.00	3522.91	3.95
1	12.247	10000.00	5398.09	1.04
1	12.247	20000.00	8701.46	1.23
1	12.247	30000.00	11761.39	1.41
1	12.247	40000.00	14551.53	1.57
1	12.141	1000.00	1587.25	3.37
1	12.141	5000.00	3510.28	6.73
1	12.141	10000.00	5295.83	1.32
1	12.141	20000.00	8520.49	1.40
1	12.141	30000.00	11521.56	1.55
1	12.141	40000.00	14262.13	1.69
1	12.042	1000.00	1584.56	6.68
1	12.042	5000.00	3503.04	11.00
1	12.042	10000.00	5246.61	13.43
1	12.042	20000.00	8384.20	2.26
1	12.042	30000.00	11299.52	1.63
1	12.042	40000.00	13987.28	1.72
1	11.943	1000.00	1554.85	0.20
1	11.943	5000.00	3459.17	0.70
1	11.943	10000.00	5188.64	1.08
1	11.943	20000.00	8228.46	1.10

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	11.943	30000.00	11041.29	1.14
1	11.943	40000.00	13677.53	1.31
1	11.9	1000.00	1545.66	6.26
1	11.9	5000.00	3444.91	10.02
1	11.9	10000.00	5169.38	12.39
1	11.9	20000.00	8191.75	15.25
1	11.9	30000.00	10978.74	4.12
1	11.9	40000.00	13600.81	3.63
1	11.847	1000.00	1450.48	0.04
1	11.847	5000.00	3335.22	0.18
1	11.847	10000.00	5048.31	0.33
1	11.847	20000.00	8052.68	0.58
1	11.847	30000.00	10805.13	0.79
1	11.847	40000.00	13402.46	0.99
1	11.75	1000.00	1202.49	0.06
1	11.75	5000.00	3050.35	0.24
1	11.75	10000.00	4734.66	0.43
1	11.75	20000.00	7693.52	0.75
1	11.75	30000.00	10409.42	1.01
1	11.75	40000.00	12962.89	1.16
1	11.653	1000.00	1050.40	0.13
1	11.653	5000.00	2872.32	0.53
1	11.653	10000.00	4536.29	0.93
1	11.653	20000.00	7460.40	1.51
1	11.653	30000.00	10121.74	1.54
1	11.653	40000.00	12610.21	1.55
1	11.557	1000.00	933.94	0.08
1	11.557	5000.00	2730.46	0.34
1	11.557	10000.00	4374.86	0.59
1	11.557	20000.00	7249.29	0.88
1	11.557	30000.00	9827.51	0.97
1	11.557	40000.00	12240.36	1.07
1	11.46	1000.00	851.42	0.48
1	11.46	5000.00	2623.70	1.44
1	11.46	10000.00	4243.55	1.79
1	11.46	20000.00	7016.36	1.18
1	11.46	30000.00	9467.50	0.98
1	11.46	40000.00	11776.20	0.96
1	11.428	1000.00	847.04	4.44
1	11.428	5000.00	2615.56	6.25
1	11.428	10000.00	4230.38	7.56
1	11.428	20000.00	6980.09	9.25
1	11.428	30000.00	9404.02	10.72
1	11.428	40000.00	11690.37	11.82

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	11.419	Bridge		
1	11.41	1000.00	846.17	3.03
1	11.41	5000.00	2612.61	4.61
1	11.41	10000.00	4225.74	6.12
1	11.41	20000.00	6972.45	7.41
1	11.41	30000.00	9394.31	8.76
1	11.41	40000.00	11678.95	10.11
1	11.325	1000.00	841.48	1.68
1	11.325	5000.00	2600.38	3.67
1	11.325	10000.00	4208.01	5.17
1	11.325	20000.00	6944.58	6.88
1	11.325	30000.00	9358.19	7.73
1	11.325	40000.00	11633.56	7.42
1	11.224	1000.00	836.63	4.71
1	11.224	5000.00	2583.90	3.56
1	11.224	10000.00	4181.53	3.94
1	11.224	20000.00	6901.39	4.54
1	11.224	30000.00	9300.36	5.06
1	11.224	40000.00	11555.18	5.00
1	11.128	1000.00	830.82	1.21
1	11.128	5000.00	2560.22	1.78
1	11.128	10000.00	4141.09	2.15
1	11.128	20000.00	6834.28	2.67
1	11.128	30000.00	9211.75	3.07
1	11.128	40000.00	11439.26	3.18
1	11.029	1000.00	822.44	1.81
1	11.029	5000.00	2532.76	2.91
1	11.029	10000.00	4095.00	3.38
1	11.029	20000.00	6758.29	3.98
1	11.029	30000.00	9109.55	4.53
1	11.029	40000.00	11306.77	5.10
1	10.942	1000.00	816.48	1.74
1	10.942	5000.00	2513.37	2.55
1	10.942	10000.00	4063.68	3.35
1	10.942	20000.00	6707.11	4.27
1	10.942	30000.00	9037.26	4.53
1	10.942	40000.00	11209.37	4.39
1	10.846	1000.00	810.19	1.96
1	10.846	5000.00	2493.11	3.23
1	10.846	10000.00	4032.67	4.19
1	10.846	20000.00	6657.51	5.08
1	10.846	30000.00	8964.62	5.03
1	10.846	40000.00	11106.98	4.70

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	10.752	1000.00	802.85	1.31
1	10.752	5000.00	2473.95	2.80
1	10.752	10000.00	4004.29	3.91
1	10.752	20000.00	6611.71	4.93
1	10.752	30000.00	8894.79	4.79
1	10.752	40000.00	11007.49	4.48
1	10.632	1000.00	792.83	1.60
1	10.632	5000.00	2449.18	3.04
1	10.632	10000.00	3968.77	4.22
1	10.632	20000.00	6555.58	5.37
1	10.632	30000.00	8808.95	5.31
1	10.632	40000.00	10886.77	5.08
1	10.538	1000.00	784.91	1.26
1	10.538	5000.00	2427.28	2.19
1	10.538	10000.00	3934.83	2.69
1	10.538	20000.00	6500.39	3.26
1	10.538	30000.00	8730.89	3.64
1	10.538	40000.00	10783.80	3.85
1	10.442	1000.00	776.68	1.42
1	10.442	5000.00	2401.88	2.11
1	10.442	10000.00	3892.08	2.45
1	10.442	20000.00	6427.82	2.86
1	10.442	30000.00	8632.09	3.16
1	10.442	40000.00	10658.09	3.33
1	10.343	1000.00	768.38	1.33
1	10.343	5000.00	2376.45	2.32
1	10.343	10000.00	3848.17	2.67
1	10.343	20000.00	6348.83	2.79
1	10.343	30000.00	8518.31	2.70
1	10.343	40000.00	10515.63	2.87
1	10.265	1000.00	763.94	5.00
1	10.265	5000.00	2360.40	3.89
1	10.265	10000.00	3821.50	4.98
1	10.265	20000.00	6300.46	5.41
1	10.265	30000.00	8446.45	5.11
1	10.265	40000.00	10423.89	4.78
1	10.167	1000.00	759.35	1.72
1	10.167	5000.00	2342.53	2.85
1	10.167	10000.00	3791.99	3.30
1	10.167	20000.00	6249.20	3.74
1	10.167	30000.00	8370.26	3.68
1	10.167	40000.00	10322.55	3.70
1	10.071	1000.00	753.44	2.37

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	10.071	5000.00	2324.77	3.94
1	10.071	10000.00	3759.85	4.01
1	10.071	20000.00	6189.48	3.70
1	10.071	30000.00	8280.26	3.43
1	10.071	40000.00	10206.76	3.54
1	9.981	1000.00	748.52	2.08
1	9.981	5000.00	2309.63	3.31
1	9.981	10000.00	3732.42	3.84
1	9.981	20000.00	6133.67	3.54
1	9.981	30000.00	8195.41	3.45
1	9.981	40000.00	10099.68	3.63
1	9.885	1000.00	743.35	2.46
1	9.885	5000.00	2294.04	4.32
1	9.885	10000.00	3706.39	5.32
1	9.885	20000.00	6086.77	7.08
1	9.885	30000.00	8122.58	6.11
1	9.885	40000.00	10006.88	6.05
1	9.79	1000.00	740.20	7.24
1	9.79	5000.00	2279.26	3.62
1	9.79	10000.00	3675.54	2.94
1	9.79	20000.00	6036.64	3.47
1	9.79	30000.00	8047.88	3.75
1	9.79	40000.00	9907.98	3.79
1	9.696	1000.00	733.77	1.10
1	9.696	5000.00	2255.77	1.98
1	9.696	10000.00	3628.26	2.16
1	9.696	20000.00	5958.23	2.57
1	9.696	30000.00	7941.69	2.82
1	9.696	40000.00	9771.77	2.93
1	9.605	1000.00	726.49	2.89
1	9.605	5000.00	2230.74	2.68
1	9.605	10000.00	3584.91	3.24
1	9.605	20000.00	5889.25	4.35
1	9.605	30000.00	7850.78	5.17
1	9.605	40000.00	9658.69	5.81
1	9.519	1000.00	722.85	2.82
1	9.519	5000.00	2212.32	2.98
1	9.519	10000.00	3554.56	3.63
1	9.519	20000.00	5844.26	4.93
1	9.519	30000.00	7793.48	5.74
1	9.519	40000.00	9589.95	6.32
1	9.435	1000.00	719.25	2.86
1	9.435	5000.00	2195.41	3.07
1	9.435	10000.00	3523.87	3.08

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	9.435	20000.00	5795.42	3.64
1	9.435	30000.00	7729.06	4.07
1	9.435	40000.00	9510.96	4.39
1	9.343	1000.00	714.92	2.31
1	9.343	5000.00	2174.52	2.35
1	9.343	10000.00	3484.21	2.58
1	9.343	20000.00	5725.98	2.88
1	9.343	30000.00	7634.26	3.12
1	9.343	40000.00	9394.39	3.40
1	9.266	1000.00	711.21	2.76
1	9.266	5000.00	2154.36	2.31
1	9.266	10000.00	3450.09	2.96
1	9.266	20000.00	5667.03	3.60
1	9.266	30000.00	7552.18	3.85
1	9.266	40000.00	9292.22	4.05
1	9.198	1000.00	708.33	2.97
1	9.198	5000.00	2135.47	2.06
1	9.198	10000.00	3420.73	2.64
1	9.198	20000.00	5618.26	3.13
1	9.198	30000.00	7485.58	3.51
1	9.198	40000.00	9208.68	3.75
1	9.191	1000.00	708.05	2.64
1	9.191	5000.00	2133.63	2.22
1	9.191	10000.00	3417.84	2.79
1	9.191	20000.00	5613.61	3.65
1	9.191	30000.00	7479.55	4.39
1	9.191	40000.00	9201.42	5.09
1	9.184	Bridge		
1	9.177	1000.00	707.56	3.10
1	9.177	5000.00	2130.96	2.82
1	9.177	10000.00	3413.43	3.19
1	9.177	20000.00	5606.50	3.76
1	9.177	30000.00	7470.68	4.51
1	9.177	40000.00	9191.24	5.23
1	9.098	1000.00	704.73	3.69
1	9.098	5000.00	2113.92	2.78
1	9.098	10000.00	3381.34	2.79
1	9.098	20000.00	5552.71	3.36
1	9.098	30000.00	7401.18	3.83
1	9.098	40000.00	9106.02	3.99
1	8.992	1000.00	699.94	2.12
1	8.992	5000.00	2093.71	3.74
1	8.992	10000.00	3338.16	3.18

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	8.992	20000.00	5468.65	2.85
1	8.992	30000.00	7285.58	3.07
1	8.992	40000.00	8959.83	3.31
1	8.875	1000.00	693.07	2.03
1	8.875	5000.00	2076.12	4.42
1	8.875	10000.00	3302.70	5.42
1	8.875	20000.00	5384.36	4.18
1	8.875	30000.00	7164.12	4.15
1	8.875	40000.00	8807.84	4.35
1	8.768	1000.00	685.31	1.42
1	8.768	5000.00	2060.21	3.80
1	8.768	10000.00	3279.51	5.81
1	8.768	20000.00	5330.15	5.52
1	8.768	30000.00	7080.28	5.15
1	8.768	40000.00	8698.68	5.13
1	8.646	1000.00	674.99	1.40
1	8.646	5000.00	2030.85	1.85
1	8.646	10000.00	3237.13	2.46
1	8.646	20000.00	5256.96	3.21
1	8.646	30000.00	6974.40	3.80
1	8.646	40000.00	8562.25	4.29
1	8.534	1000.00	667.51	2.49
1	8.534	5000.00	2002.42	3.33
1	8.534	10000.00	3190.74	3.62
1	8.534	20000.00	5177.28	4.02
1	8.534	30000.00	6862.28	4.45
1	8.534	40000.00	8417.28	4.80
1	8.433	1000.00	663.22	3.48
1	8.433	5000.00	1982.78	3.34
1	8.433	10000.00	3157.00	4.20
1	8.433	20000.00	5117.74	5.33
1	8.433	30000.00	6779.34	6.21
1	8.433	40000.00	8310.39	6.91
1	8.325	1000.00	657.43	2.06
1	8.325	5000.00	1956.23	2.75
1	8.325	10000.00	3115.94	3.65
1	8.325	20000.00	5053.83	4.79
1	8.325	30000.00	6696.50	5.59
1	8.325	40000.00	8210.16	6.23
1	8.198	1000.00	648.56	1.90
1	8.198	5000.00	1921.83	2.83
1	8.198	10000.00	3062.33	3.61
1	8.198	20000.00	4969.59	4.69
1	8.198	30000.00	6586.38	5.50

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	8.198	40000.00	8077.47	6.23
1	8.105	1000.00	640.94	1.27
1	8.105	5000.00	1897.38	2.17
1	8.105	10000.00	3024.48	2.91
1	8.105	20000.00	4911.33	3.92
1	8.105	30000.00	6511.38	4.66
1	8.105	40000.00	7988.97	5.38
1	8.03	1000.00	636.13	4.15
1	8.03	5000.00	1882.43	5.36
1	8.03	10000.00	3001.24	6.26
1	8.03	20000.00	4875.93	7.78
1	8.03	30000.00	6466.07	8.84
1	8.03	40000.00	7930.85	7.72
1	8.01	1000.00	635.43	1.02
1	8.01	5000.00	1880.54	2.11
1	8.01	10000.00	2998.29	2.81
1	8.01	20000.00	4871.31	3.65
1	8.01	30000.00	6460.00	4.18
1	8.01	40000.00	7922.88	4.59
1	8.005	Bridge		
1	8	1000.00	634.13	1.23
1	8	5000.00	1877.31	2.37
1	8	10000.00	2993.40	3.08
1	8	20000.00	4863.69	3.90
1	8	30000.00	6449.95	4.41
1	8	40000.00	7910.64	4.81
1	7.99	1000.00	633.27	1.45
1	7.99	5000.00	1875.01	2.65
1	7.99	10000.00	2989.85	3.40
1	7.99	20000.00	4858.04	4.24
1	7.99	30000.00	6442.43	4.77
1	7.99	40000.00	7901.43	5.18
1	7.96	1000.00	630.63	1.61
1	7.96	5000.00	1867.47	2.68
1	7.96	10000.00	2978.13	3.46
1	7.96	20000.00	4839.28	4.33
1	7.96	30000.00	6417.42	4.88
1	7.96	40000.00	7870.76	5.32
1	7.87	1000.00	622.03	1.33
1	7.87	5000.00	1846.99	3.09
1	7.87	10000.00	2946.34	3.88
1	7.87	20000.00	4788.06	4.75
1	7.87	30000.00	6349.24	5.39

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	7.87	40000.00	7787.27	5.93
1	7.77	1000.00	614.32	3.39
1	7.77	5000.00	1825.93	3.06
1	7.77	10000.00	2912.31	3.59
1	7.77	20000.00	4733.43	4.52
1	7.77	30000.00	6277.54	5.25
1	7.77	40000.00	7700.45	5.87
1	7.67	1000.00	601.61	0.52
1	7.67	5000.00	1797.57	1.51
1	7.67	10000.00	2871.15	2.28
1	7.67	20000.00	4673.81	3.36
1	7.67	30000.00	6203.44	4.17
1	7.67	40000.00	7613.93	4.84
1	7.58	1000.00	585.05	1.10
1	7.58	5000.00	1766.19	2.43
1	7.58	10000.00	2828.12	3.37
1	7.58	20000.00	4613.74	4.65
1	7.58	30000.00	6129.90	5.59
1	7.58	40000.00	7528.78	6.36
1	7.49	1000.00	577.29	1.99
1	7.49	5000.00	1746.01	3.11
1	7.49	10000.00	2798.10	4.03
1	7.49	20000.00	4569.22	5.29
1	7.49	30000.00	6073.81	6.23
1	7.49	40000.00	7462.69	7.01
1	7.39	1000.00	569.45	1.21
1	7.39	5000.00	1725.08	2.59
1	7.39	10000.00	2767.10	3.62
1	7.39	20000.00	4523.02	4.95
1	7.39	30000.00	6015.40	5.92
1	7.39	40000.00	7393.67	6.71
1	7.29	1000.00	563.25	3.73
1	7.29	5000.00	1707.32	4.19
1	7.29	10000.00	2739.47	4.76
1	7.29	20000.00	4480.66	5.85
1	7.29	30000.00	5961.25	6.72
1	7.29	40000.00	7329.30	7.46
1	7.2	1000.00	557.67	1.42
1	7.2	5000.00	1687.03	2.13
1	7.2	10000.00	2708.85	3.09
1	7.2	20000.00	4434.79	4.37
1	7.2	30000.00	5903.21	5.31
1	7.2	40000.00	7260.73	6.07

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	7.1	1000.00	551.72	2.99
1	7.1	5000.00	1667.97	5.11
1	7.1	10000.00	2679.75	5.44
1	7.1	20000.00	4390.54	6.38
1	7.1	30000.00	5846.78	7.17
1	7.1	40000.00	7193.75	7.86
1	7.08	1000.00	550.38	1.66
1	7.08	5000.00	1664.15	2.97
1	7.08	10000.00	2673.53	4.01
1	7.08	20000.00	4380.75	5.42
1	7.08	30000.00	5834.13	6.47
1	7.08	40000.00	7178.63	7.33
1	7.06	1000.00	548.83	1.60
1	7.06	5000.00	1659.88	2.94
1	7.06	10000.00	2667.10	3.85
1	7.06	20000.00	4371.13	5.09
1	7.06	30000.00	5821.97	6.01
1	7.06	40000.00	7164.27	6.77
1	7.02	1000.00	544.70	1.03
1	7.02	5000.00	1650.15	2.42
1	7.02	10000.00	2652.76	3.39
1	7.02	20000.00	4349.92	4.66
1	7.02	30000.00	5795.22	5.59
1	7.02	40000.00	7132.75	6.35
1	6.99	1000.00	542.74	2.56
1	6.99	5000.00	1645.48	4.21
1	6.99	10000.00	2645.80	5.26
1	6.99	20000.00	4339.47	6.69
1	6.99	30000.00	5781.98	7.75
1	6.99	40000.00	7117.09	8.66
1	6.97	1000.00	541.59	1.75
1	6.97	5000.00	1642.05	3.03
1	6.97	10000.00	2640.45	3.95
1	6.97	20000.00	4331.25	5.22
1	6.97	30000.00	5771.44	6.15
1	6.97	40000.00	7104.58	6.94
1	6.93	1000.00	538.14	1.36
1	6.93	5000.00	1632.90	2.75
1	6.93	10000.00	2626.74	3.76
1	6.93	20000.00	4310.80	5.11
1	6.93	30000.00	5745.57	6.09
1	6.93	40000.00	7074.10	6.92
1	6.91	1000.00	536.49	1.57
1	6.91	5000.00	1628.91	3.34

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	6.91	10000.00	2620.95	4.66
1	6.91	20000.00	4302.36	6.48
1	6.91	30000.00	5735.03	7.86
1	6.91	40000.00	7061.88	9.19
1	6.89	1000.00	535.32	3.48
1	6.89	5000.00	1625.83	5.30
1	6.89	10000.00	2616.35	6.66
1	6.89	20000.00	4295.46	8.39
1	6.89	30000.00	5726.26	9.60
1	6.89	40000.00	7051.35	10.03
1	6.82	1000.00	531.69	1.73
1	6.82	5000.00	1613.18	2.41
1	6.82	10000.00	2597.27	3.27
1	6.82	20000.00	4267.27	4.60
1	6.82	30000.00	5690.63	5.58
1	6.82	40000.00	7008.39	6.39
1	6.79	1000.00	530.19	1.80
1	6.79	5000.00	1608.12	2.85
1	6.79	10000.00	2589.83	3.88
1	6.79	20000.00	4256.78	5.55
1	6.79	30000.00	5677.70	6.79
1	6.79	40000.00	6993.39	7.84
1	6.77	1000.00	529.23	4.87
1	6.77	5000.00	1604.98	6.86
1	6.77	10000.00	2584.70	6.69
1	6.77	20000.00	4249.22	8.38
1	6.77	30000.00	5668.21	9.68
1	6.77	40000.00	6982.17	10.57
1	6.73	1000.00	526.96	1.53
1	6.73	5000.00	1596.55	2.03
1	6.73	10000.00	2571.44	2.83
1	6.73	20000.00	4229.40	3.90
1	6.73	30000.00	5643.11	4.68
1	6.73	40000.00	6952.35	5.33
1	6.71	1000.00	524.81	0.96
1	6.71	5000.00	1589.97	1.82
1	6.71	10000.00	2562.33	2.72
1	6.71	20000.00	4216.51	3.93
1	6.71	30000.00	5627.17	4.83
1	6.71	40000.00	6933.80	5.57
1	6.69	1000.00	522.34	1.48
1	6.69	5000.00	1582.88	2.28
1	6.69	10000.00	2552.45	3.12
1	6.69	20000.00	4202.40	4.21

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	6.69	30000.00	5609.66	5.01
1	6.69	40000.00	6913.35	5.66
1	6.66	1000.00	520.65	1.98
1	6.66	5000.00	1577.61	3.40
1	6.66	10000.00	2544.40	4.16
1	6.66	20000.00	4190.08	5.21
1	6.66	30000.00	5593.86	5.98
1	6.66	40000.00	6894.49	6.58
1	6.64	1000.00	519.14	2.14
1	6.64	5000.00	1572.35	2.60
1	6.64	10000.00	2536.09	3.38
1	6.64	20000.00	4177.14	4.44
1	6.64	30000.00	5577.18	5.22
1	6.64	40000.00	6874.51	5.87
1	6.61	1000.00	517.32	1.68
1	6.61	5000.00	1566.25	3.09
1	6.61	10000.00	2526.61	3.93
1	6.61	20000.00	4162.66	5.12
1	6.61	30000.00	5558.71	6.02
1	6.61	40000.00	6852.60	6.77
1	6.59	1000.00	515.61	1.13
1	6.59	5000.00	1561.48	1.97
1	6.59	10000.00	2519.58	2.80
1	6.59	20000.00	4152.32	3.92
1	6.59	30000.00	5545.75	4.75
1	6.59	40000.00	6837.36	5.43
1	6.56	1000.00	513.03	1.63
1	6.56	5000.00	1553.79	2.58
1	6.56	10000.00	2508.38	3.41
1	6.56	20000.00	4135.96	4.54
1	6.56	30000.00	5525.26	5.38
1	6.56	40000.00	6813.31	6.06
1	6.54	1000.00	512.00	3.59
1	6.54	5000.00	1549.76	3.18
1	6.54	10000.00	2502.23	4.11
1	6.54	20000.00	4126.67	5.43
1	6.54	30000.00	5513.49	6.42
1	6.54	40000.00	6799.39	7.23
1	6.52	1000.00	511.02	1.49
1	6.52	5000.00	1545.61	2.04
1	6.52	10000.00	2496.18	2.93
1	6.52	20000.00	4117.88	4.14
1	6.52	30000.00	5502.51	5.04
1	6.52	40000.00	6786.51	5.77

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	6.43	1000.00	505.89	2.88
1	6.43	5000.00	1526.93	3.99
1	6.43	10000.00	2468.62	4.90
1	6.43	20000.00	4077.10	6.17
1	6.43	30000.00	5451.12	7.11
1	6.43	40000.00	6725.86	7.88
1	6.35	1000.00	500.77	1.53
1	6.35	5000.00	1511.22	2.75
1	6.35	10000.00	2444.55	3.74
1	6.35	20000.00	4040.49	5.09
1	6.35	30000.00	5404.25	6.05
1	6.35	40000.00	6669.95	6.82
1	6.26	1000.00	494.12	1.98
1	6.26	5000.00	1492.78	3.59
1	6.26	10000.00	2416.68	4.57
1	6.26	20000.00	3998.00	5.75
1	6.26	30000.00	5349.61	6.58
1	6.26	40000.00	6604.55	7.24
1	6.16	1000.00	487.92	1.74
1	6.16	5000.00	1474.98	2.92
1	6.16	10000.00	2388.90	3.77
1	6.16	20000.00	3954.59	4.89
1	6.16	30000.00	5293.30	5.71
1	6.16	40000.00	6536.87	6.38
1	6.07	1000.00	482.88	3.29
1	6.07	5000.00	1454.16	2.61
1	6.07	10000.00	2357.19	3.48
1	6.07	20000.00	3906.39	4.64
1	6.07	30000.00	5231.77	5.48
1	6.07	40000.00	6463.70	6.17
1	5.99	1000.00	478.75	1.74
1	5.99	5000.00	1436.47	2.72
1	5.99	10000.00	2330.70	3.63
1	5.99	20000.00	3866.55	4.81
1	5.99	30000.00	5181.09	5.66
1	5.99	40000.00	6403.57	6.35
1	5.9	1000.00	473.20	2.54
1	5.9	5000.00	1416.28	2.98
1	5.9	10000.00	2299.89	3.82
1	5.9	20000.00	3819.51	4.95
1	5.9	30000.00	5120.90	5.78
1	5.9	40000.00	6331.88	6.46
1	5.81	1000.00	467.99	1.94

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	5.81	5000.00	1395.63	2.61
1	5.81	10000.00	2268.38	3.48
1	5.81	20000.00	3771.61	4.64
1	5.81	30000.00	5059.79	5.50
1	5.81	40000.00	6259.26	6.20
1	5.79	1000.00	466.71	4.41
1	5.79	5000.00	1390.20	4.05
1	5.79	10000.00	2260.06	5.11
1	5.79	20000.00	3758.73	6.30
1	5.79	30000.00	5043.25	7.22
1	5.79	40000.00	6239.52	7.99
1	5.77	1000.00	465.50	2.20
1	5.77	5000.00	1384.97	2.93
1	5.77	10000.00	2251.79	3.72
1	5.77	20000.00	3745.73	4.84
1	5.77	30000.00	5026.46	5.68
1	5.77	40000.00	6219.46	6.38
1	5.75	1000.00	464.19	2.98
1	5.75	5000.00	1379.46	3.11
1	5.75	10000.00	2242.88	3.75
1	5.75	20000.00	3732.00	4.86
1	5.75	30000.00	5008.93	5.71
1	5.75	40000.00	6198.65	6.42
1	5.7	1000.00	458.71	0.83
1	5.7	5000.00	1363.51	1.74
1	5.7	10000.00	2219.36	2.53
1	5.7	20000.00	3698.11	3.70
1	5.7	30000.00	4966.87	4.57
1	5.7	40000.00	6149.55	5.28
1	5.6945	Bridge		
1	5.689	1000.00	457.16	0.84
1	5.689	5000.00	1359.81	1.76
1	5.689	10000.00	2214.29	2.57
1	5.689	20000.00	3691.20	3.76
1	5.689	30000.00	4958.49	4.65
1	5.689	40000.00	6139.91	5.38
1	5.65	1000.00	453.28	2.35
1	5.65	5000.00	1348.74	2.86
1	5.65	10000.00	2198.41	3.71
1	5.65	20000.00	3668.86	5.07
1	5.65	30000.00	4931.03	6.08
1	5.65	40000.00	6108.02	6.90
1	5.54	1000.00	443.98	1.03

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	5.54	5000.00	1320.53	2.01
1	5.54	10000.00	2154.53	2.57
1	5.54	20000.00	3602.57	3.32
1	5.54	30000.00	4846.56	3.87
1	5.54	40000.00	6007.66	4.31
1	5.51	1000.00	441.53	1.59
1	5.51	5000.00	1313.64	2.57
1	5.51	10000.00	2143.46	3.12
1	5.51	20000.00	3585.44	4.06
1	5.51	30000.00	4824.50	4.73
1	5.51	40000.00	5981.26	5.28
1	5.48	1000.00	439.35	1.57
1	5.48	5000.00	1306.82	2.48
1	5.48	10000.00	2132.27	3.04
1	5.48	20000.00	3568.55	4.10
1	5.48	30000.00	4802.94	4.86
1	5.48	40000.00	5955.62	5.47
1	5.38	1000.00	431.95	1.67
1	5.38	5000.00	1286.05	3.38
1	5.38	10000.00	2098.29	4.13
1	5.38	20000.00	3516.48	5.20
1	5.38	30000.00	4736.29	6.02
1	5.38	40000.00	5876.31	6.70
1	5.328	1000.00	427.33	1.19
1	5.328	5000.00	1274.41	2.33
1	5.328	10000.00	2080.49	3.21
1	5.328	20000.00	3489.52	4.40
1	5.328	30000.00	4702.05	5.29
1	5.328	40000.00	5835.80	6.02
1	5.317	1000.00	426.27	1.42
1	5.317	5000.00	1271.55	2.50
1	5.317	10000.00	2076.31	3.38
1	5.317	20000.00	3483.40	4.61
1	5.317	30000.00	4694.41	5.52
1	5.317	40000.00	5826.83	6.27
1	5.305	1000.00	425.12	1.21
1	5.305	5000.00	1268.46	2.34
1	5.305	10000.00	2071.81	3.26
1	5.305	20000.00	3476.86	4.52
1	5.305	30000.00	4686.25	5.46
1	5.305	40000.00	5817.28	6.23
1	5.29	1000.00	424.08	1.47
1	5.29	5000.00	1265.61	2.50
1	5.29	10000.00	2067.71	3.46

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	5.29	20000.00	3470.93	4.77
1	5.29	30000.00	4678.87	5.75
1	5.29	40000.00	5808.65	6.54
1	5.27	1000.00	422.49	2.32
1	5.27	5000.00	1260.50	3.21
1	5.27	10000.00	2060.25	4.33
1	5.27	20000.00	3460.04	5.89
1	5.27	30000.00	4665.28	7.06
1	5.27	40000.00	5792.73	8.03
1	5.25	1000.00	420.96	1.58
1	5.25	5000.00	1255.89	3.02
1	5.25	10000.00	2053.44	4.11
1	5.25	20000.00	3450.03	5.58
1	5.25	30000.00	4652.72	6.66
1	5.25	40000.00	5777.97	7.54
1	5.203	1000.00	418.20	2.85
1	5.203	5000.00	1248.37	4.91
1	5.203	10000.00	2042.04	6.17
1	5.203	20000.00	3432.70	7.76
1	5.203	30000.00	4630.56	8.89
1	5.203	40000.00	5751.56	9.79
1	5.201	1000.00	418.07	1.41
1	5.201	5000.00	1248.05	2.79
1	5.201	10000.00	2041.55	3.79
1	5.201	20000.00	3431.95	5.11
1	5.201	30000.00	4629.61	6.11
1	5.201	40000.00	5750.43	6.94
1	5.15	1000.00	415.05	3.73
1	5.15	5000.00	1238.94	4.35
1	5.15	10000.00	2027.39	5.18
1	5.15	20000.00	3410.72	6.80
1	5.15	30000.00	4602.56	7.86
1	5.15	40000.00	5718.08	8.55
1	5.1	1000.00	412.49	1.84
1	5.1	5000.00	1231.07	3.72
1	5.1	10000.00	2014.64	4.74
1	5.1	20000.00	3390.63	5.84
1	5.1	30000.00	4576.03	6.54
1	5.1	40000.00	5685.43	7.06
1	5.02	1000.00	408.70	3.79
1	5.02	5000.00	1217.71	3.35
1	5.02	10000.00	1992.19	3.76
1	5.02	20000.00	3354.55	4.71
1	5.02	30000.00	4528.63	5.47

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	5.02	40000.00	5627.62	6.05
1	5	1000.00	407.53	1.34
1	5	5000.00	1213.32	2.14
1	5	10000.00	1985.27	2.97
1	5	20000.00	3344.19	4.18
1	5	30000.00	4515.56	5.09
1	5	40000.00	5612.09	5.79
1	4.98	1000.00	406.17	1.67
1	4.98	5000.00	1208.88	2.43
1	4.98	10000.00	1978.67	3.16
1	4.98	20000.00	3334.63	4.28
1	4.98	30000.00	4503.68	5.11
1	4.98	40000.00	5598.07	5.74
1	4.89	1000.00	398.90	1.58
1	4.89	5000.00	1185.42	2.62
1	4.89	10000.00	1942.90	3.46
1	4.89	20000.00	3282.58	4.84
1	4.89	30000.00	4438.77	5.87
1	4.89	40000.00	5520.80	6.55
1	4.79	1000.00	394.10	4.36
1	4.79	5000.00	1170.17	6.02
1	4.79	10000.00	1918.69	6.86
1	4.79	20000.00	3244.50	7.37
1	4.79	30000.00	4387.11	7.19
1	4.79	40000.00	5456.89	7.44
1	4.759	1000.00	391.47	1.09
1	4.759	5000.00	1162.32	1.93
1	4.759	10000.00	1906.60	2.62
1	4.759	20000.00	3225.42	3.57
1	4.759	30000.00	4361.44	4.28
1	4.759	40000.00	5425.67	4.86
1	4.7565	Bridge		
1	4.754	1000.00	390.08	1.20
1	4.754	5000.00	1158.27	1.99
1	4.754	10000.00	1900.62	2.68
1	4.754	20000.00	3216.64	3.64
1	4.754	30000.00	4350.45	4.36
1	4.754	40000.00	5412.80	4.95
1	4.7	1000.00	386.66	2.04
1	4.7	5000.00	1146.71	2.55
1	4.7	10000.00	1882.92	3.20
1	4.7	20000.00	3189.94	4.13
1	4.7	30000.00	4316.67	4.84

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	4.7	40000.00	5372.96	5.44
1	4.6	1000.00	379.22	1.24
1	4.6	5000.00	1121.81	2.10
1	4.6	10000.00	1844.42	2.79
1	4.6	20000.00	3131.71	3.77
1	4.6	30000.00	4242.99	4.52
1	4.6	40000.00	5286.07	5.14
1	4.52	1000.00	371.06	1.15
1	4.52	5000.00	1098.49	2.08
1	4.52	10000.00	1809.47	2.79
1	4.52	20000.00	3080.18	3.80
1	4.52	30000.00	4178.53	4.57
1	4.52	40000.00	5210.57	5.20
1	4.5	1000.00	368.29	0.88
1	4.5	5000.00	1091.53	1.89
1	4.5	10000.00	1799.45	2.71
1	4.5	20000.00	3065.79	3.86
1	4.5	30000.00	4160.74	4.73
1	4.5	40000.00	5189.89	5.46
1	4.48	1000.00	365.63	1.03
1	4.48	5000.00	1085.02	1.99
1	4.48	10000.00	1790.14	2.72
1	4.48	20000.00	3052.52	3.75
1	4.48	30000.00	4144.38	4.53
1	4.48	40000.00	5170.89	5.18
1	4.39	1000.00	355.35	1.22
1	4.39	5000.00	1057.67	2.22
1	4.39	10000.00	1749.66	2.96
1	4.39	20000.00	2993.43	4.03
1	4.39	30000.00	4070.80	4.84
1	4.39	40000.00	5084.90	5.51
1	4.3	1000.00	346.12	1.17
1	4.3	5000.00	1032.76	2.21
1	4.3	10000.00	1712.65	2.99
1	4.3	20000.00	2939.33	4.12
1	4.3	30000.00	4003.37	4.97
1	4.3	40000.00	5006.04	5.67
1	4.27	1000.00	343.84	1.15
1	4.27	5000.00	1026.82	2.24
1	4.27	10000.00	1704.05	3.15
1	4.27	20000.00	2926.99	4.45
1	4.27	30000.00	3988.13	5.44
1	4.27	40000.00	4988.30	6.26

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	4.26	1000.00	341.89	1.21
1	4.26	5000.00	1022.00	2.55
1	4.26	10000.00	1697.00	3.37
1	4.26	20000.00	2916.77	4.53
1	4.26	30000.00	3975.44	5.41
1	4.26	40000.00	4973.50	6.15
1	4.16	1000.00	330.35	0.83
1	4.16	5000.00	997.10	2.07
1	4.16	10000.00	1661.08	2.98
1	4.16	20000.00	2864.97	4.25
1	4.16	30000.00	3911.17	5.20
1	4.16	40000.00	4898.53	5.98
1	4.094	1000.00	324.57	3.09
1	4.094	5000.00	984.36	5.30
1	4.094	10000.00	1642.69	6.66
1	4.094	20000.00	2838.14	8.40
1	4.094	30000.00	3877.47	9.60
1	4.094	40000.00	4858.85	10.57
1	4.092	1000.00	324.45	1.40
1	4.092	5000.00	984.04	2.70
1	4.092	10000.00	1642.19	3.46
1	4.092	20000.00	2837.34	4.39
1	4.092	30000.00	3876.43	5.05
1	4.092	40000.00	4857.60	5.60
1	4.06	1000.00	321.84	1.60
1	4.06	5000.00	976.92	2.78
1	4.06	10000.00	1630.94	3.48
1	4.06	20000.00	2819.51	4.36
1	4.06	30000.00	3853.18	5.02
1	4.06	40000.00	4829.61	5.56
1	4.04	1000.00	320.31	2.03
1	4.04	5000.00	972.07	2.90
1	4.04	10000.00	1623.25	3.69
1	4.04	20000.00	2807.36	4.72
1	4.04	30000.00	3837.39	5.47
1	4.04	40000.00	4810.65	6.09
1	4.02	1000.00	318.69	1.09
1	4.02	5000.00	967.41	2.14
1	4.02	10000.00	1616.19	2.91
1	4.02	20000.00	2796.58	3.88
1	4.02	30000.00	3823.57	4.58
1	4.02	40000.00	4794.19	5.15
1	3.93	1000.00	309.71	1.54
1	3.93	5000.00	943.19	2.65

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	3.93	10000.00	1579.28	3.34
1	3.93	20000.00	2739.81	4.22
1	3.93	30000.00	3750.71	4.89
1	3.93	40000.00	4707.40	5.44
1	3.83	1000.00	300.98	1.14
1	3.83	5000.00	920.06	2.33
1	3.83	10000.00	1542.97	3.00
1	3.83	20000.00	2683.08	3.89
1	3.83	30000.00	3677.63	4.55
1	3.83	40000.00	4620.19	5.10
1	3.81	1000.00	299.20	1.65
1	3.81	5000.00	915.42	2.93
1	3.81	10000.00	1535.61	3.61
1	3.81	20000.00	2671.60	4.56
1	3.81	30000.00	3662.87	5.31
1	3.81	40000.00	4602.61	5.93
1	3.8	1000.00	298.02	1.48
1	3.8	5000.00	912.07	2.57
1	3.8	10000.00	1530.17	3.16
1	3.8	20000.00	2663.00	4.02
1	3.8	30000.00	3651.81	4.69
1	3.8	40000.00	4589.43	5.26
1	3.78	1000.00	296.19	1.66
1	3.78	5000.00	906.42	2.51
1	3.78	10000.00	1520.98	3.08
1	3.78	20000.00	2648.61	3.96
1	3.78	30000.00	3633.37	4.64
1	3.78	40000.00	4567.51	5.22
1	3.77	1000.00	295.69	1.61
1	3.77	5000.00	904.82	2.53
1	3.77	10000.00	1518.41	3.17
1	3.77	20000.00	2644.63	4.12
1	3.77	30000.00	3628.30	4.86
1	3.77	40000.00	4561.50	5.48
1	3.7685	Bridge		
1	3.767	1000.00	295.50	3.17
1	3.767	5000.00	904.04	2.65
1	3.767	10000.00	1517.15	3.27
1	3.767	20000.00	2642.69	4.23
1	3.767	30000.00	3625.83	5.00
1	3.767	40000.00	4558.59	5.64
1	3.757	1000.00	294.70	0.93
1	3.757	5000.00	901.38	1.82

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	3.757	10000.00	1513.10	2.50
1	3.757	20000.00	2636.67	3.47
1	3.757	30000.00	3618.30	4.21
1	3.757	40000.00	4549.77	4.83
1	3.747	1000.00	293.51	1.00
1	3.747	5000.00	898.19	1.78
1	3.747	10000.00	1508.43	2.41
1	3.747	20000.00	2629.89	3.31
1	3.747	30000.00	3609.90	4.00
1	3.747	40000.00	4540.00	4.57
1	3.7405	Bridge		
1	3.734	1000.00	292.10	1.09
1	3.734	5000.00	894.12	1.83
1	3.734	10000.00	1502.42	2.47
1	3.734	20000.00	2621.13	3.38
1	3.734	30000.00	3599.05	4.09
1	3.734	40000.00	4527.38	4.68
1	3.729	1000.00	291.55	0.99
1	3.729	5000.00	892.53	1.77
1	3.729	10000.00	1500.07	2.42
1	3.729	20000.00	2617.72	3.35
1	3.729	30000.00	3594.83	4.06
1	3.729	40000.00	4522.47	4.66
1	3.69	1000.00	287.48	3.03
1	3.69	5000.00	880.83	4.88
1	3.69	10000.00	1482.65	6.25
1	3.69	20000.00	2591.36	7.45
1	3.69	30000.00	3561.27	8.23
1	3.69	40000.00	4482.64	8.87
1	3.64	1000.00	285.17	1.96
1	3.64	5000.00	874.56	3.99
1	3.64	10000.00	1472.91	5.17
1	3.64	20000.00	2574.96	6.12
1	3.64	30000.00	3539.90	7.29
1	3.64	40000.00	4457.04	8.36
1	3.55	1000.00	280.98	3.99
1	3.55	5000.00	862.18	5.03
1	3.55	10000.00	1452.80	5.83
1	3.55	20000.00	2538.11	5.85
1	3.55	30000.00	3491.83	6.50
1	3.55	40000.00	4399.07	6.97
1	3.47	1000.00	277.01	1.60
1	3.47	5000.00	850.74	3.27

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	3.47	10000.00	1434.72	4.40
1	3.47	20000.00	2504.38	4.97
1	3.47	30000.00	3447.93	5.92
1	3.47	40000.00	4345.49	6.58
1	3.43	1000.00	274.44	2.01
1	3.43	5000.00	844.11	3.67
1	3.43	10000.00	1424.71	4.79
1	3.43	20000.00	2486.35	5.22
1	3.43	30000.00	3424.89	6.04
1	3.43	40000.00	4318.01	6.79
1	3.4	1000.00	272.89	3.15
1	3.4	5000.00	840.15	6.89
1	3.4	10000.00	1418.69	9.16
1	3.4	20000.00	2475.09	9.47
1	3.4	30000.00	3409.75	9.90
1	3.4	40000.00	4299.72	10.62
1	3.37	1000.00	270.59	1.20
1	3.37	5000.00	834.40	2.34
1	3.37	10000.00	1410.02	3.10
1	3.37	20000.00	2461.19	4.16
1	3.37	30000.00	3391.40	4.91
1	3.37	40000.00	4277.44	5.46
1	3.27	1000.00	262.74	1.96
1	3.27	5000.00	811.46	2.80
1	3.27	10000.00	1373.83	3.38
1	3.27	20000.00	2404.65	4.13
1	3.27	30000.00	3319.39	4.85
1	3.27	40000.00	4191.44	5.46
1	3.18	1000.00	255.06	1.25
1	3.18	5000.00	787.91	2.24
1	3.18	10000.00	1336.19	2.88
1	3.18	20000.00	2343.46	3.57
1	3.18	30000.00	3241.36	4.20
1	3.18	40000.00	4099.49	4.78
1	3.08	1000.00	241.97	0.68
1	3.08	5000.00	756.07	1.51
1	3.08	10000.00	1288.27	2.05
1	3.08	20000.00	2270.32	2.80
1	3.08	30000.00	3149.61	3.39
1	3.08	40000.00	3992.35	3.89
1	2.99	1000.00	225.95	0.76
1	2.99	5000.00	719.90	1.67
1	2.99	10000.00	1234.72	2.25
1	2.99	20000.00	2190.70	2.98

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	2.99	30000.00	3049.79	3.53
1	2.99	40000.00	3875.28	3.98
1	2.89	1000.00	212.43	1.00
1	2.89	5000.00	687.23	1.93
1	2.89	10000.00	1184.28	2.40
1	2.89	20000.00	2113.08	3.05
1	2.89	30000.00	2951.22	3.60
1	2.89	40000.00	3758.81	4.07
1	2.8	1000.00	202.85	1.38
1	2.8	5000.00	658.98	2.01
1	2.8	10000.00	1137.65	2.38
1	2.8	20000.00	2038.93	2.95
1	2.8	30000.00	2857.48	3.53
1	2.8	40000.00	3648.42	4.00
1	2.7	1000.00	195.13	1.61
1	2.7	5000.00	633.11	2.46
1	2.7	10000.00	1094.45	3.00
1	2.7	20000.00	1967.47	3.49
1	2.7	30000.00	2764.08	3.81
1	2.7	40000.00	3536.37	4.13
1	2.6	1000.00	189.15	2.37
1	2.6	5000.00	611.87	2.99
1	2.6	10000.00	1058.81	3.48
1	2.6	20000.00	1907.09	4.23
1	2.6	30000.00	2676.90	4.49
1	2.6	40000.00	3426.24	4.78
1	2.51	1000.00	183.47	1.79
1	2.51	5000.00	589.99	2.38
1	2.51	10000.00	1022.37	2.97
1	2.51	20000.00	1846.61	3.62
1	2.51	30000.00	2594.05	4.16
1	2.51	40000.00	3324.31	4.64
1	2.41	1000.00	177.68	2.17
1	2.41	5000.00	569.46	3.30
1	2.41	10000.00	988.67	3.89
1	2.41	20000.00	1786.36	3.93
1	2.41	30000.00	2513.57	4.30
1	2.41	40000.00	3226.85	4.67
1	2.33	1000.00	171.70	1.72
1	2.33	5000.00	552.23	3.36
1	2.33	10000.00	959.05	3.54
1	2.33	20000.00	1731.32	3.49
1	2.33	30000.00	2440.49	3.89
1	2.33	40000.00	3139.16	4.32

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	2.25	1000.00	166.12	2.43
1	2.25	5000.00	535.94	3.55
1	2.25	10000.00	930.28	4.04
1	2.25	20000.00	1678.59	4.41
1	2.25	30000.00	2369.13	4.61
1	2.25	40000.00	3053.07	4.96
1	2.18	1000.00	159.42	1.28
1	2.18	5000.00	516.84	2.52
1	2.18	10000.00	900.79	3.42
1	2.18	20000.00	1631.68	4.02
1	2.18	30000.00	2306.14	4.13
1	2.18	40000.00	2977.35	4.40
1	2.1	1000.00	152.51	1.38
1	2.1	5000.00	498.80	2.56
1	2.1	10000.00	874.14	3.42
1	2.1	20000.00	1589.18	4.15
1	2.1	30000.00	2247.85	4.44
1	2.1	40000.00	2906.11	4.75
1	2.02	1000.00	145.87	1.69
1	2.02	5000.00	479.78	2.74
1	2.02	10000.00	845.34	3.47
1	2.02	20000.00	1543.02	3.97
1	2.02	30000.00	2184.49	4.05
1	2.02	40000.00	2827.43	4.13
1	1.94	1000.00	140.34	2.30
1	1.94	5000.00	460.66	2.91
1	1.94	10000.00	816.22	3.82
1	1.94	20000.00	1495.82	4.59
1	1.94	30000.00	2119.67	4.73
1	1.94	40000.00	2746.04	4.69
1	1.87	1000.00	134.35	1.78
1	1.87	5000.00	439.53	2.77
1	1.87	10000.00	780.14	2.94
1	1.87	20000.00	1436.48	3.51
1	1.87	30000.00	2041.51	3.99
1	1.87	40000.00	2650.49	4.22
1	1.79	1000.00	128.73	2.20
1	1.79	5000.00	419.56	2.74
1	1.79	10000.00	742.63	2.92
1	1.79	20000.00	1375.53	3.60
1	1.79	30000.00	1964.34	4.17
1	1.79	40000.00	2557.28	4.25
1	1.71	1000.00	122.44	1.56

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	1.71	5000.00	394.77	2.01
1	1.71	10000.00	698.74	2.33
1	1.71	20000.00	1305.39	2.78
1	1.71	30000.00	1875.98	3.14
1	1.71	40000.00	2449.19	3.29
1	1.64	1000.00	112.06	0.84
1	1.64	5000.00	361.79	1.51
1	1.64	10000.00	645.95	1.98
1	1.64	20000.00	1222.12	2.48
1	1.64	30000.00	1767.64	2.74
1	1.64	40000.00	2317.66	3.02
1	1.56	1000.00	94.26	0.54
1	1.56	5000.00	322.48	1.46
1	1.56	10000.00	587.80	1.96
1	1.56	20000.00	1125.06	1.99
1	1.56	30000.00	1643.03	2.31
1	1.56	40000.00	2171.37	2.62
1	1.48	1000.00	79.14	1.24
1	1.48	5000.00	292.68	2.71
1	1.48	10000.00	544.02	3.55
1	1.48	20000.00	1042.54	3.23
1	1.48	30000.00	1534.25	3.32
1	1.48	40000.00	2041.88	3.54
1	1.4	1000.00	71.85	2.21
1	1.4	5000.00	274.87	4.07
1	1.4	10000.00	516.92	5.38
1	1.4	20000.00	987.37	5.51
1	1.4	30000.00	1453.76	5.45
1	1.4	40000.00	1940.39	5.59
1	1.33	1000.00	68.12	4.31
1	1.33	5000.00	262.22	4.60
1	1.33	10000.00	496.74	5.44
1	1.33	20000.00	945.54	4.74
1	1.33	30000.00	1384.18	3.87
1	1.33	40000.00	1847.40	3.75
1	1.25	1000.00	62.24	1.25
1	1.25	5000.00	245.94	2.82
1	1.25	10000.00	471.96	3.97
1	1.25	20000.00	898.15	4.84
1	1.25	30000.00	1306.77	5.05
1	1.25	40000.00	1742.98	5.11
1	1.17	1000.00	55.29	2.24
1	1.17	5000.00	228.35	3.63
1	1.17	10000.00	445.37	4.45

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	1.17	20000.00	846.08	3.85
1	1.17	30000.00	1227.58	3.64
1	1.17	40000.00	1638.16	3.65
1	1.1	1000.00	48.47	1.55
1	1.1	5000.00	203.57	1.91
1	1.1	10000.00	404.19	2.25
1	1.1	20000.00	769.31	2.67
1	1.1	30000.00	1116.63	2.95
1	1.1	40000.00	1496.62	3.17
1	1.01	1000.00	41.54	1.73
1	1.01	5000.00	177.61	2.53
1	1.01	10000.00	357.26	2.55
1	1.01	20000.00	687.05	2.75
1	1.01	30000.00	1005.49	3.05
1	1.01	40000.00	1361.10	3.38
1	0.92	1000.00	36.84	2.85
1	0.92	5000.00	158.95	2.90
1	0.92	10000.00	320.82	3.04
1	0.92	20000.00	615.49	2.91
1	0.92	30000.00	902.37	2.83
1	0.92	40000.00	1227.48	2.73
1	0.83	1000.00	32.77	2.19
1	0.83	5000.00	142.81	3.42
1	0.83	10000.00	287.28	3.02
1	0.83	20000.00	547.11	3.03
1	0.83	30000.00	797.78	2.99
1	0.83	40000.00	1078.37	2.71
1	0.73	1000.00	27.16	1.89
1	0.73	5000.00	123.38	2.56
1	0.73	10000.00	244.43	2.37
1	0.73	20000.00	465.85	2.59
1	0.73	30000.00	683.49	2.97
1	0.73	40000.00	925.10	3.28
1	0.63	1000.00	22.13	2.82
1	0.63	5000.00	103.91	3.44
1	0.63	10000.00	203.93	3.53
1	0.63	20000.00	387.80	3.39
1	0.63	30000.00	565.96	2.87
1	0.63	40000.00	770.67	2.70
1	0.54	1000.00	17.94	2.70
1	0.54	5000.00	84.33	2.65
1	0.54	10000.00	165.57	2.69
1	0.54	20000.00	313.75	2.94
1	0.54	30000.00	450.39	3.18

HEC-RAS Plan: FP-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	0.54	40000.00	607.11	2.97
1	0.44	1000.00	14.05	3.34
1	0.44	5000.00	61.04	2.46
1	0.44	10000.00	118.64	2.39
1	0.44	20000.00	229.51	2.68
1	0.44	30000.00	330.83	2.77
1	0.44	40000.00	438.76	2.63
1	0.35	1000.00	10.04	2.54
1	0.35	5000.00	39.02	2.92
1	0.35	10000.00	72.31	2.70
1	0.35	20000.00	142.27	2.69
1	0.35	30000.00	206.62	2.89
1	0.35	40000.00	269.51	2.91
1	0.25	1000.00	6.13	3.23
1	0.25	5000.00	21.55	3.51
1	0.25	10000.00	36.75	3.73
1	0.25	20000.00	68.25	3.41
1	0.25	30000.00	99.14	3.37
1	0.25	40000.00	127.29	3.39
1	0.16	1000.00		1.27
1	0.16	5000.00		2.08
1	0.16	10000.00		2.62
1	0.16	20000.00		3.20
1	0.16	30000.00		3.44
1	0.16	40000.00		3.68

Kimley-Horn
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Floodway Model

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	33.82	1000.00	1987.03	1.60
1	33.82	5000.00	6284.36	4.16
1	33.82	10000.00	10443.67	6.11
1	33.82	20000.00	17187.64	8.38
1	33.82	30000.00	22743.55	9.75
1	33.82	40000.00	27572.29	10.68
1	33.73	1000.00	1982.70	7.69
1	33.73	5000.00	6273.96	8.18
1	33.73	10000.00	10427.01	7.89
1	33.73	20000.00	17161.23	9.03
1	33.73	30000.00	22708.66	9.99
1	33.73	40000.00	27529.23	10.65
1	33.63	1000.00	1979.64	2.42
1	33.63	5000.00	6264.77	4.89
1	33.63	10000.00	10411.07	6.39
1	33.63	20000.00	17135.40	8.45
1	33.63	30000.00	22675.01	10.13
1	33.63	40000.00	27488.54	11.56
1	33.54	1000.00	1973.59	1.61
1	33.54	5000.00	6250.96	3.74
1	33.54	10000.00	10390.49	5.12
1	33.54	20000.00	17104.45	6.85
1	33.54	30000.00	22636.09	8.14
1	33.54	40000.00	27442.96	9.25
1	33.46	1000.00	1966.43	1.07
1	33.46	5000.00	6237.37	3.08
1	33.46	10000.00	10371.22	4.46
1	33.46	20000.00	17075.96	6.09
1	33.46	30000.00	22600.09	7.23
1	33.46	40000.00	27400.70	8.21
1	33.41	1000.00	1961.89	1.99
1	33.41	5000.00	6228.06	3.78
1	33.41	10000.00	10358.18	5.30
1	33.41	20000.00	17056.62	7.11
1	33.41	30000.00	22575.41	8.32
1	33.41	40000.00	27371.59	9.39
1	33.36	1000.00	1957.41	1.10
1	33.36	5000.00	6218.54	3.05
1	33.36	10000.00	10344.99	4.59
1	33.36	20000.00	17037.08	6.34
1	33.36	30000.00	22549.85	7.23
1	33.36	40000.00	27340.74	7.91
1	33.3	1000.00	1949.90	0.81
1	33.3	5000.00	6205.77	2.49

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	33.3	10000.00	10328.76	4.07
1	33.3	20000.00	17014.81	6.20
1	33.3	30000.00	22521.69	7.63
1	33.3	40000.00	27307.44	8.88
1	33.29	1000.00	1949.01	3.21
1	33.29	5000.00	6204.02	4.95
1	33.29	10000.00	10326.46	6.71
1	33.29	20000.00	17011.62	8.59
1	33.29	30000.00	22517.68	9.80
1	33.29	40000.00	27302.76	10.95
1	33.25	1000.00	1947.13	2.63
1	33.25	5000.00	6198.20	5.02
1	33.25	10000.00	10317.80	6.79
1	33.25	20000.00	16997.28	7.71
1	33.25	30000.00	22498.04	8.23
1	33.25	40000.00	27278.22	6.88
1	33.19	1000.00	1944.97	4.59
1	33.19	5000.00	6190.22	4.74
1	33.19	10000.00	10302.70	4.10
1	33.19	20000.00	16969.87	4.49
1	33.19	30000.00	22459.85	4.88
1	33.19	40000.00	27229.99	5.23
1	33.12	1000.00	1941.82	1.63
1	33.12	5000.00	6178.00	2.25
1	33.12	10000.00	10281.08	2.92
1	33.12	20000.00	16934.60	3.88
1	33.12	30000.00	22413.21	4.56
1	33.12	40000.00	27173.31	5.10
1	33.06	1000.00	1938.12	2.02
1	33.06	5000.00	6165.66	3.42
1	33.06	10000.00	10262.23	4.55
1	33.06	20000.00	16906.05	5.96
1	33.06	30000.00	22376.43	6.87
1	33.06	40000.00	27129.30	7.62
1	32.998	1000.00	1935.80	5.57
1	32.998	5000.00	6158.39	8.00
1	32.998	10000.00	10250.76	9.21
1	32.998	20000.00	16887.71	10.70
1	32.998	30000.00	22351.83	11.40
1	32.998	40000.00	27099.36	12.29
1	32.993	1000.00	1935.64	3.16
1	32.993	5000.00	6157.92	5.53
1	32.993	10000.00	10249.99	7.19
1	32.993	20000.00	16886.44	9.00

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	32.993	30000.00	22350.08	9.92
1	32.993	40000.00	27097.21	10.88
1	32.9885	Bridge		
1	32.984	1000.00	1935.40	3.67
1	32.984	5000.00	6157.23	7.70
1	32.984	10000.00	10248.92	9.23
1	32.984	20000.00	16884.77	10.48
1	32.984	30000.00	22347.65	11.55
1	32.984	40000.00	27094.18	12.45
1	32.979	1000.00	1935.23	3.60
1	32.979	5000.00	6156.80	7.20
1	32.979	10000.00	10248.25	9.83
1	32.979	20000.00	16883.67	13.18
1	32.979	30000.00	22346.21	15.82
1	32.979	40000.00	27092.43	17.95
1	32.92	1000.00	1933.17	3.44
1	32.92	5000.00	6151.20	5.84
1	32.92	10000.00	10239.79	7.56
1	32.92	20000.00	16871.54	10.87
1	32.92	30000.00	22331.41	13.66
1	32.92	40000.00	27075.21	15.76
1	32.86	1000.00	1931.64	7.20
1	32.86	5000.00	6146.21	9.16
1	32.86	10000.00	10231.57	10.19
1	32.86	20000.00	16857.25	9.32
1	32.86	30000.00	22310.74	8.54
1	32.86	40000.00	27049.30	8.74
1	32.79	1000.00	1928.33	1.61
1	32.79	5000.00	6138.92	4.42
1	32.79	10000.00	10220.62	6.44
1	32.79	20000.00	16836.89	8.16
1	32.79	30000.00	22279.84	9.09
1	32.79	40000.00	27009.46	9.65
1	32.72	1000.00	1922.44	1.39
1	32.72	5000.00	6127.89	3.65
1	32.72	10000.00	10205.76	5.54
1	32.72	20000.00	16814.47	7.72
1	32.72	30000.00	22250.36	9.06
1	32.72	40000.00	26973.17	10.07
1	32.64	1000.00	1915.80	1.22
1	32.64	5000.00	6115.10	2.87
1	32.64	10000.00	10188.55	4.14
1	32.64	20000.00	16789.60	5.73

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	32.64	30000.00	22218.99	6.95
1	32.64	40000.00	26936.06	7.96
1	32.58	1000.00	1910.72	1.40
1	32.58	5000.00	6103.97	3.04
1	32.58	10000.00	10173.19	4.43
1	32.58	20000.00	16767.48	6.15
1	32.58	30000.00	22191.17	7.13
1	32.58	40000.00	26903.41	7.97
1	32.52	1000.00	1906.98	3.29
1	32.52	5000.00	6092.25	3.21
1	32.52	10000.00	10156.45	4.30
1	32.52	20000.00	16742.89	5.71
1	32.52	30000.00	22159.70	6.73
1	32.52	40000.00	26866.01	7.56
1	32.43	1000.00	1901.04	1.44
1	32.43	5000.00	6071.07	2.36
1	32.43	10000.00	10126.47	3.44
1	32.43	20000.00	16699.76	4.92
1	32.43	30000.00	22106.06	6.03
1	32.43	40000.00	26803.22	6.94
1	32.34	1000.00	1895.53	4.15
1	32.34	5000.00	6050.92	3.74
1	32.34	10000.00	10097.88	4.97
1	32.34	20000.00	16658.41	6.52
1	32.34	30000.00	22054.52	7.63
1	32.34	40000.00	26742.71	8.51
1	32.24	1000.00	1892.27	3.44
1	32.24	5000.00	6035.41	3.97
1	32.24	10000.00	10073.29	4.73
1	32.24	20000.00	16620.82	6.17
1	32.24	30000.00	22006.18	7.16
1	32.24	40000.00	26684.74	7.93
1	32.15	1000.00	1889.54	4.76
1	32.15	5000.00	6024.71	6.58
1	32.15	10000.00	10054.53	6.74
1	32.15	20000.00	16589.65	7.16
1	32.15	30000.00	21965.01	7.87
1	32.15	40000.00	26634.78	8.54
1	32.05	1000.00	1884.46	1.44
1	32.05	5000.00	6011.90	3.28
1	32.05	10000.00	10033.86	4.50
1	32.05	20000.00	16556.29	6.22
1	32.05	30000.00	21921.81	7.54
1	32.05	40000.00	26583.19	8.65

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	31.96	1000.00	1876.35	1.41
1	31.96	5000.00	5994.21	3.25
1	31.96	10000.00	10007.78	4.36
1	31.96	20000.00	16518.11	5.87
1	31.96	30000.00	21874.16	7.00
1	31.96	40000.00	26527.46	7.93
1	31.86	1000.00	1868.81	1.67
1	31.86	5000.00	5976.76	3.36
1	31.86	10000.00	9981.35	4.37
1	31.86	20000.00	16478.22	5.69
1	31.86	30000.00	21823.53	6.66
1	31.86	40000.00	26467.53	7.47
1	31.77	1000.00	1863.29	2.92
1	31.77	5000.00	5959.17	3.29
1	31.77	10000.00	9954.29	4.28
1	31.77	20000.00	16437.01	5.66
1	31.77	30000.00	21770.99	6.69
1	31.77	40000.00	26405.23	7.54
1	31.67	1000.00	1857.84	1.64
1	31.67	5000.00	5940.64	2.90
1	31.67	10000.00	9926.02	3.83
1	31.67	20000.00	16394.48	5.12
1	31.67	30000.00	21717.10	6.07
1	31.67	40000.00	26341.57	6.85
1	31.59	1000.00	1851.46	1.62
1	31.59	5000.00	5923.10	3.01
1	31.59	10000.00	9899.88	4.12
1	31.59	20000.00	16355.71	5.61
1	31.59	30000.00	21668.18	6.69
1	31.59	40000.00	26283.90	7.58
1	31.49	1000.00	1846.38	3.95
1	31.49	5000.00	5904.97	3.45
1	31.49	10000.00	9871.74	4.16
1	31.49	20000.00	16313.25	5.37
1	31.49	30000.00	21613.89	6.21
1	31.49	40000.00	26219.44	6.92
1	31.39	1000.00	1841.79	2.13
1	31.39	5000.00	5885.61	3.11
1	31.39	10000.00	9839.28	3.67
1	31.39	20000.00	16262.54	4.67
1	31.39	30000.00	21547.89	5.37
1	31.39	40000.00	26140.61	6.01
1	31.29	1000.00	1837.12	3.19

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	31.29	5000.00	5870.37	5.21
1	31.29	10000.00	9813.34	6.05
1	31.29	20000.00	16220.25	6.99
1	31.29	30000.00	21490.41	7.29
1	31.29	40000.00	26069.66	7.54
1	31.2	1000.00	1834.35	4.50
1	31.2	5000.00	5859.06	4.03
1	31.2	10000.00	9791.44	3.94
1	31.2	20000.00	16183.26	4.80
1	31.2	30000.00	21440.24	5.54
1	31.2	40000.00	26006.98	6.06
1	31.11	1000.00	1831.00	2.81
1	31.11	5000.00	5846.89	5.63
1	31.11	10000.00	9767.75	6.39
1	31.11	20000.00	16140.30	6.20
1	31.11	30000.00	21381.46	6.42
1	31.11	40000.00	25933.22	6.63
1	31.01	1000.00	1827.68	4.26
1	31.01	5000.00	5836.26	4.99
1	31.01	10000.00	9749.70	6.10
1	31.01	20000.00	16104.00	6.27
1	31.01	30000.00	21327.91	6.28
1	31.01	40000.00	25863.71	6.44
1	30.92	1000.00	1823.88	2.27
1	30.92	5000.00	5824.07	4.30
1	30.92	10000.00	9728.97	5.11
1	30.92	20000.00	16064.81	5.99
1	30.92	30000.00	21271.42	6.72
1	30.92	40000.00	25791.73	7.34
1	30.82	1000.00	1819.60	3.43
1	30.82	5000.00	5811.29	4.92
1	30.82	10000.00	9706.96	5.60
1	30.82	20000.00	16028.01	6.91
1	30.82	30000.00	21222.78	7.97
1	30.82	40000.00	25732.75	8.85
1	30.73	1000.00	1815.51	2.34
1	30.73	5000.00	5799.77	4.82
1	30.73	10000.00	9688.52	6.46
1	30.73	20000.00	15999.20	8.41
1	30.73	30000.00	21185.96	9.98
1	30.73	40000.00	25689.05	11.31
1	30.65	1000.00	1811.88	3.09
1	30.65	5000.00	5790.01	5.12
1	30.65	10000.00	9673.78	6.67

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	30.65	20000.00	15976.77	8.78
1	30.65	30000.00	21157.60	10.40
1	30.65	40000.00	25655.68	11.77
1	30.55	1000.00	1806.70	1.90
1	30.55	5000.00	5776.05	3.80
1	30.55	10000.00	9652.89	5.18
1	30.55	20000.00	15945.55	7.03
1	30.55	30000.00	21118.14	8.35
1	30.55	40000.00	25609.13	9.43
1	30.46	1000.00	1801.05	2.19
1	30.46	5000.00	5761.45	4.07
1	30.46	10000.00	9631.27	5.46
1	30.46	20000.00	15913.40	7.28
1	30.46	30000.00	21077.29	8.55
1	30.46	40000.00	25560.66	9.56
1	30.36	1000.00	1795.96	2.27
1	30.36	5000.00	5748.16	4.53
1	30.36	10000.00	9610.86	5.74
1	30.36	20000.00	15881.43	7.06
1	30.36	30000.00	21035.80	8.05
1	30.36	40000.00	25510.83	8.88
1	30.26	1000.00	1791.40	3.03
1	30.26	5000.00	5733.57	3.70
1	30.26	10000.00	9586.81	4.34
1	30.26	20000.00	15842.71	5.44
1	30.26	30000.00	20985.53	6.35
1	30.26	40000.00	25450.53	7.11
1	30.17	1000.00	1787.68	3.01
1	30.17	5000.00	5718.29	3.64
1	30.17	10000.00	9561.59	4.52
1	30.17	20000.00	15803.89	6.09
1	30.17	30000.00	20936.57	7.40
1	30.17	40000.00	25392.86	8.48
1	30.07	1000.00	1782.48	1.95
1	30.07	5000.00	5701.61	3.69
1	30.07	10000.00	9535.44	4.67
1	30.07	20000.00	15765.23	6.22
1	30.07	30000.00	20888.35	7.36
1	30.07	40000.00	25336.37	8.28
1	29.99	1000.00	1778.94	7.04
1	29.99	5000.00	5690.47	7.18
1	29.99	10000.00	9517.03	7.94
1	29.99	20000.00	15734.85	8.32
1	29.99	30000.00	20847.82	8.76

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	29.99	40000.00	25286.50	9.08
1	29.89	1000.00	1772.97	1.13
1	29.89	5000.00	5674.63	2.47
1	29.89	10000.00	9492.57	3.40
1	29.89	20000.00	15695.29	4.56
1	29.89	30000.00	20794.25	5.20
1	29.89	40000.00	25219.84	5.70
1	29.8	1000.00	1763.71	1.06
1	29.8	5000.00	5652.81	2.19
1	29.8	10000.00	9461.28	3.10
1	29.8	20000.00	15648.85	4.20
1	29.8	30000.00	20733.62	4.85
1	29.8	40000.00	25146.26	5.35
1	29.72	1000.00	1756.86	2.79
1	29.72	5000.00	5634.69	4.36
1	29.72	10000.00	9432.56	4.52
1	29.72	20000.00	15602.56	5.00
1	29.72	30000.00	20671.73	5.42
1	29.72	40000.00	25070.16	5.77
1	29.624	1000.00	1752.67	2.63
1	29.624	5000.00	5622.01	4.61
1	29.624	10000.00	9409.58	5.29
1	29.624	20000.00	15561.94	6.04
1	29.624	30000.00	20616.40	6.75
1	29.624	40000.00	25001.62	7.33
1	29.6175	Bridge		
1	29.611	1000.00	1752.25	4.70
1	29.611	5000.00	5620.85	8.11
1	29.611	10000.00	9407.77	10.07
1	29.611	20000.00	15559.12	10.16
1	29.611	30000.00	20612.73	11.14
1	29.611	40000.00	24997.19	12.12
1	29.54	1000.00	1750.26	4.01
1	29.54	5000.00	5613.79	4.81
1	29.54	10000.00	9396.34	5.85
1	29.54	20000.00	15539.56	7.23
1	29.54	30000.00	20587.20	8.51
1	29.54	40000.00	24966.66	9.61
1	29.47	1000.00	1746.91	1.93
1	29.47	5000.00	5603.51	3.80
1	29.47	10000.00	9380.49	5.19
1	29.47	20000.00	15514.60	6.77
1	29.47	30000.00	20555.63	8.09

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	29.47	40000.00	24929.54	9.20
1	29.39	1000.00	1742.03	2.29
1	29.39	5000.00	5589.73	3.62
1	29.39	10000.00	9359.54	4.58
1	29.39	20000.00	15482.95	6.14
1	29.39	30000.00	20516.18	7.42
1	29.39	40000.00	24883.41	8.48
1	29.3	1000.00	1738.35	3.43
1	29.3	5000.00	5578.00	5.31
1	29.3	10000.00	9340.15	6.03
1	29.3	20000.00	15452.55	7.22
1	29.3	30000.00	20477.53	8.28
1	29.3	40000.00	24837.44	9.09
1	29.23	1000.00	1735.87	4.04
1	29.23	5000.00	5568.55	4.51
1	29.23	10000.00	9323.38	5.04
1	29.23	20000.00	15425.28	6.33
1	29.23	30000.00	20441.85	7.26
1	29.23	40000.00	24793.95	7.90
1	29.14	1000.00	1732.76	3.08
1	29.14	5000.00	5558.19	6.18
1	29.14	10000.00	9302.63	5.22
1	29.14	20000.00	15391.31	6.16
1	29.14	30000.00	20396.74	6.83
1	29.14	40000.00	24738.21	7.28
1	29.04	1000.00	1729.92	5.77
1	29.04	5000.00	5548.44	5.16
1	29.04	10000.00	9280.33	4.34
1	29.04	20000.00	15353.14	4.87
1	29.04	30000.00	20346.20	5.55
1	29.04	40000.00	24675.73	6.00
1	28.95	1000.00	1726.89	2.90
1	28.95	5000.00	5537.80	5.61
1	28.95	10000.00	9259.81	6.90
1	28.95	20000.00	15316.65	6.92
1	28.95	30000.00	20297.58	7.42
1	28.95	40000.00	24615.26	7.74
1	28.86	1000.00	1723.63	3.94
1	28.86	5000.00	5529.05	7.00
1	28.86	10000.00	9245.16	7.37
1	28.86	20000.00	15289.86	7.87
1	28.86	30000.00	20260.67	8.42
1	28.86	40000.00	24568.83	8.93

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	28.76	1000.00	1719.73	2.47
1	28.76	5000.00	5518.97	5.05
1	28.76	10000.00	9228.98	6.66
1	28.76	20000.00	15263.49	8.62
1	28.76	30000.00	20225.79	10.11
1	28.76	40000.00	24526.47	11.33
1	28.67	1000.00	1715.90	3.24
1	28.67	5000.00	5508.93	5.48
1	28.67	10000.00	9213.56	6.84
1	28.67	20000.00	15239.74	8.70
1	28.67	30000.00	20195.68	10.29
1	28.67	40000.00	24490.94	11.67
1	28.58	1000.00	1712.06	2.35
1	28.58	5000.00	5497.99	4.10
1	28.58	10000.00	9196.50	5.30
1	28.58	20000.00	15213.55	6.98
1	28.58	30000.00	20162.98	8.46
1	28.58	40000.00	24452.79	9.72
1	28.52	1000.00	1708.65	2.23
1	28.52	5000.00	5488.16	3.85
1	28.52	10000.00	9181.50	5.11
1	28.52	20000.00	15190.92	6.82
1	28.52	30000.00	20135.32	8.47
1	28.52	40000.00	24420.92	9.88
1	28.45	1000.00	1705.52	3.23
1	28.45	5000.00	5478.56	4.88
1	28.45	10000.00	9166.71	6.17
1	28.45	20000.00	15168.03	7.67
1	28.45	30000.00	20107.29	9.26
1	28.45	40000.00	24388.73	10.69
1	28.39	1000.00	1702.36	2.09
1	28.39	5000.00	5468.76	3.83
1	28.39	10000.00	9150.77	4.79
1	28.39	20000.00	15141.42	5.85
1	28.39	30000.00	20071.96	6.48
1	28.39	40000.00	24346.26	7.11
1	28.31	1000.00	1698.50	3.34
1	28.31	5000.00	5456.41	4.14
1	28.31	10000.00	9130.71	4.99
1	28.31	20000.00	15105.39	5.12
1	28.31	30000.00	20022.52	5.54
1	28.31	40000.00	24285.97	6.05
1	28.21	1000.00	1693.99	1.97
1	28.21	5000.00	5441.61	3.43

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	28.21	10000.00	9107.02	4.41
1	28.21	20000.00	15063.11	5.40
1	28.21	30000.00	19965.26	6.14
1	28.21	40000.00	24216.37	6.78
1	28.12	1000.00	1688.87	2.37
1	28.12	5000.00	5426.12	3.69
1	28.12	10000.00	9082.92	4.75
1	28.12	20000.00	15024.28	5.98
1	28.12	30000.00	19913.34	6.61
1	28.12	40000.00	24153.15	7.17
1	28.04	1000.00	1683.46	1.58
1	28.04	5000.00	5409.86	2.75
1	28.04	10000.00	9059.01	3.92
1	28.04	20000.00	14986.43	4.98
1	28.04	30000.00	19863.20	5.78
1	28.04	40000.00	24092.35	6.44
1	27.94	1000.00	1678.58	5.60
1	27.94	5000.00	5392.34	4.61
1	27.94	10000.00	9030.32	4.57
1	27.94	20000.00	14940.47	5.58
1	27.94	30000.00	19803.79	6.47
1	27.94	40000.00	24021.42	7.24
1	27.86	1000.00	1675.57	2.37
1	27.86	5000.00	5380.16	3.63
1	27.86	10000.00	9006.59	3.77
1	27.86	20000.00	14902.03	4.66
1	27.86	30000.00	19754.53	5.49
1	27.86	40000.00	23963.05	6.19
1	27.77	1000.00	1672.01	4.32
1	27.77	5000.00	5366.12	4.17
1	27.77	10000.00	8979.82	4.43
1	27.77	20000.00	14857.85	5.25
1	27.77	30000.00	19697.70	6.05
1	27.77	40000.00	23895.42	6.73
1	27.68	1000.00	1668.80	2.94
1	27.68	5000.00	5353.05	4.37
1	27.68	10000.00	8955.32	4.66
1	27.68	20000.00	14815.38	5.21
1	27.68	30000.00	19642.15	5.93
1	27.68	40000.00	23828.67	6.57
1	27.58	1000.00	1663.59	2.02
1	27.58	5000.00	5335.09	2.92
1	27.58	10000.00	8922.38	3.29
1	27.58	20000.00	14758.29	3.92

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	27.58	30000.00	19567.81	4.57
1	27.58	40000.00	23739.72	5.13
1	27.48	1000.00	1658.69	4.21
1	27.48	5000.00	5314.92	4.23
1	27.48	10000.00	8883.12	4.16
1	27.48	20000.00	14683.10	3.95
1	27.48	30000.00	19469.53	4.53
1	27.48	40000.00	23621.40	4.99
1	27.39	1000.00	1654.47	2.17
1	27.39	5000.00	5298.81	3.68
1	27.39	10000.00	8851.46	4.12
1	27.39	20000.00	14618.07	4.36
1	27.39	30000.00	19381.12	4.69
1	27.39	40000.00	23512.23	5.01
1	27.3	1000.00	1649.62	2.96
1	27.3	5000.00	5281.36	3.84
1	27.3	10000.00	8815.68	3.65
1	27.3	20000.00	14549.37	4.04
1	27.3	30000.00	19285.02	4.44
1	27.3	40000.00	23391.19	4.73
1	27.19	1000.00	1643.24	1.75
1	27.19	5000.00	5260.01	2.96
1	27.19	10000.00	8775.71	3.62
1	27.19	20000.00	14477.91	4.20
1	27.19	30000.00	19186.44	4.57
1	27.19	40000.00	23267.56	4.87
1	27.11	1000.00	1638.67	5.26
1	27.11	5000.00	5242.89	4.66
1	27.11	10000.00	8742.92	4.04
1	27.11	20000.00	14419.10	4.41
1	27.11	30000.00	19106.05	4.93
1	27.11	40000.00	23168.01	5.39
1	27.03	1000.00	1635.80	1.59
1	27.03	5000.00	5233.30	3.15
1	27.03	10000.00	8723.77	3.71
1	27.03	20000.00	14386.35	4.71
1	27.03	30000.00	19063.15	5.58
1	27.03	40000.00	23116.47	6.32
1	26.94	1000.00	1629.13	1.66
1	26.94	5000.00	5217.17	3.50
1	26.94	10000.00	8695.44	3.41
1	26.94	20000.00	14343.78	4.45
1	26.94	30000.00	19010.19	5.33
1	26.94	40000.00	23054.62	6.05

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	26.83	1000.00	1623.89	4.25
1	26.83	5000.00	5201.52	4.32
1	26.83	10000.00	8668.51	5.62
1	26.83	20000.00	14300.69	5.74
1	26.83	30000.00	18954.90	6.22
1	26.83	40000.00	22988.90	6.73
1	26.73	1000.00	1618.27	1.08
1	26.73	5000.00	5185.17	2.26
1	26.73	10000.00	8643.62	2.90
1	26.73	20000.00	14260.98	3.92
1	26.73	30000.00	18903.75	4.72
1	26.73	40000.00	22928.12	5.39
1	26.63	1000.00	1610.50	2.03
1	26.63	5000.00	5161.47	2.37
1	26.63	10000.00	8606.81	3.05
1	26.63	20000.00	14206.80	4.16
1	26.63	30000.00	18836.43	5.04
1	26.63	40000.00	22849.70	5.78
1	26.55	1000.00	1605.74	2.48
1	26.55	5000.00	5142.70	3.56
1	26.55	10000.00	8576.27	4.12
1	26.55	20000.00	14159.51	4.94
1	26.55	30000.00	18777.05	5.80
1	26.55	40000.00	22779.96	6.51
1	26.47	1000.00	1602.77	5.06
1	26.47	5000.00	5129.47	3.92
1	26.47	10000.00	8552.74	4.27
1	26.47	20000.00	14119.29	4.86
1	26.47	30000.00	18724.66	5.49
1	26.47	40000.00	22717.19	6.06
1	26.37	1000.00	1599.25	2.36
1	26.37	5000.00	5112.97	3.03
1	26.37	10000.00	8524.32	3.69
1	26.37	20000.00	14069.05	4.14
1	26.37	30000.00	18658.55	4.75
1	26.37	40000.00	22637.75	5.28
1	26.29	1000.00	1595.72	4.27
1	26.29	5000.00	5094.97	2.97
1	26.29	10000.00	8494.74	3.60
1	26.29	20000.00	14017.06	4.13
1	26.29	30000.00	18591.55	4.87
1	26.29	40000.00	22558.17	5.50
1	26.2	1000.00	1593.26	3.94

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	26.2	5000.00	5081.87	5.49
1	26.2	10000.00	8469.39	4.43
1	26.2	20000.00	13974.01	5.31
1	26.2	30000.00	18534.14	5.58
1	26.2	40000.00	22488.10	5.84
1	26.12	1000.00	1590.03	2.80
1	26.12	5000.00	5067.73	2.83
1	26.12	10000.00	8439.67	2.97
1	26.12	20000.00	13923.16	3.41
1	26.12	30000.00	18464.73	3.86
1	26.12	40000.00	22401.90	4.22
1	26.03	1000.00	1586.15	2.43
1	26.03	5000.00	5049.72	2.85
1	26.03	10000.00	8405.75	3.12
1	26.03	20000.00	13863.91	3.65
1	26.03	30000.00	18387.64	4.33
1	26.03	40000.00	22308.35	4.82
1	25.94	1000.00	1583.18	5.75
1	25.94	5000.00	5037.82	7.44
1	25.94	10000.00	8383.85	7.55
1	25.94	20000.00	13824.19	6.97
1	25.94	30000.00	18335.03	7.04
1	25.94	40000.00	22245.47	7.86
1	25.86	1000.00	1580.52	2.73
1	25.86	5000.00	5029.34	4.76
1	25.86	10000.00	8368.07	5.41
1	25.86	20000.00	13792.68	5.88
1	25.86	30000.00	18289.30	6.25
1	25.86	40000.00	22189.49	6.69
1	25.79	1000.00	1577.04	2.55
1	25.79	5000.00	5018.42	3.77
1	25.79	10000.00	8347.99	3.96
1	25.79	20000.00	13758.38	4.91
1	25.79	30000.00	18243.10	5.70
1	25.79	40000.00	22133.24	6.38
1	25.72	1000.00	1574.40	3.81
1	25.72	5000.00	5009.58	5.73
1	25.72	10000.00	8331.96	6.84
1	25.72	20000.00	13730.43	6.93
1	25.72	30000.00	18206.80	7.95
1	25.72	40000.00	22089.97	8.89
1	25.691	1000.00	1572.39	4.82
1	25.691	5000.00	5002.21	5.81
1	25.691	10000.00	8317.87	5.37

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	25.691	20000.00	13703.53	5.71
1	25.691	30000.00	18170.23	6.09
1	25.691	40000.00	22045.62	6.60
1	25.666	1000.00	1569.26	2.60
1	25.666	5000.00	4991.72	4.44
1	25.666	10000.00	8297.24	4.90
1	25.666	20000.00	13667.26	5.94
1	25.666	30000.00	18120.61	6.70
1	25.666	40000.00	21985.90	7.62
1	25.572	1000.00	1564.25	2.02
1	25.572	5000.00	4977.84	3.78
1	25.572	10000.00	8273.59	4.64
1	25.572	20000.00	13628.79	5.74
1	25.572	30000.00	18068.50	6.22
1	25.572	40000.00	21924.82	7.06
1	25.526	1000.00	1561.74	2.51
1	25.526	5000.00	4970.50	3.85
1	25.526	10000.00	8260.94	4.23
1	25.526	20000.00	13606.84	4.74
1	25.526	30000.00	18036.10	4.68
1	25.526	40000.00	21886.52	5.28
1	25.478	1000.00	1559.41	2.48
1	25.478	5000.00	4963.35	4.33
1	25.478	10000.00	8248.19	5.02
1	25.478	20000.00	13583.98	5.83
1	25.478	30000.00	18001.69	6.07
1	25.478	40000.00	21844.37	6.35
1	25.382	1000.00	1554.58	2.34
1	25.382	5000.00	4949.76	4.16
1	25.382	10000.00	8224.94	4.83
1	25.382	20000.00	13542.33	5.08
1	25.382	30000.00	17943.01	5.46
1	25.382	40000.00	21771.42	5.96
1	25.288	1000.00	1550.39	3.27
1	25.288	5000.00	4934.91	3.57
1	25.288	10000.00	8200.21	4.42
1	25.288	20000.00	13497.47	5.08
1	25.288	30000.00	17881.11	5.58
1	25.288	40000.00	21695.57	6.05
1	25.192	1000.00	1545.73	1.99
1	25.192	5000.00	4915.92	2.64
1	25.192	10000.00	8169.21	3.21
1	25.192	20000.00	13444.95	3.86
1	25.192	30000.00	17811.04	4.42

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	25.192	40000.00	21611.27	4.98
1	25.098	1000.00	1541.17	3.38
1	25.098	5000.00	4896.39	3.26
1	25.098	10000.00	8135.38	3.55
1	25.098	20000.00	13387.40	4.07
1	25.098	30000.00	17735.03	4.58
1	25.098	40000.00	21521.20	5.14
1	24.996	1000.00	1536.38	2.01
1	24.996	5000.00	4877.67	3.20
1	24.996	10000.00	8101.99	3.70
1	24.996	20000.00	13327.12	3.96
1	24.996	30000.00	17653.87	4.36
1	24.996	40000.00	21423.96	4.82
1	24.91	1000.00	1532.27	3.23
1	24.91	5000.00	4861.50	3.10
1	24.91	10000.00	8072.92	3.32
1	24.91	20000.00	13272.96	3.58
1	24.91	30000.00	17580.69	4.00
1	24.91	40000.00	21335.58	4.42
1	24.816	1000.00	1527.54	1.87
1	24.816	5000.00	4841.53	2.56
1	24.816	10000.00	8038.36	3.16
1	24.816	20000.00	13211.71	3.74
1	24.816	30000.00	17498.62	4.19
1	24.816	40000.00	21237.16	4.69
1	24.721	1000.00	1522.07	2.24
1	24.721	5000.00	4819.99	2.61
1	24.721	10000.00	8002.66	3.08
1	24.721	20000.00	13152.82	3.84
1	24.721	30000.00	17420.75	4.41
1	24.721	40000.00	21144.36	4.93
1	24.631	1000.00	1517.56	2.53
1	24.631	5000.00	4801.59	3.31
1	24.631	10000.00	7971.11	3.80
1	24.631	20000.00	13100.07	4.34
1	24.631	30000.00	17350.48	4.78
1	24.631	40000.00	21060.05	5.28
1	24.543	1000.00	1512.97	2.09
1	24.543	5000.00	4783.91	2.71
1	24.543	10000.00	7940.77	3.21
1	24.543	20000.00	13049.58	4.03
1	24.543	30000.00	17282.78	4.58
1	24.543	40000.00	20978.85	5.12

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	24.449	1000.00	1507.77	2.31
1	24.449	5000.00	4764.19	3.10
1	24.449	10000.00	7907.79	3.76
1	24.449	20000.00	12997.06	4.71
1	24.449	30000.00	17213.15	5.30
1	24.449	40000.00	20894.29	5.70
1	24.353	1000.00	1501.93	1.77
1	24.353	5000.00	4741.29	2.20
1	24.353	10000.00	7870.28	2.70
1	24.353	20000.00	12936.85	3.36
1	24.353	30000.00	17133.41	3.82
1	24.353	40000.00	20796.10	4.15
1	24.26	1000.00	1495.82	1.97
1	24.26	5000.00	4715.21	2.18
1	24.26	10000.00	7826.95	2.58
1	24.26	20000.00	12866.24	3.13
1	24.26	30000.00	17040.38	3.56
1	24.26	40000.00	20682.25	3.89
1	24.212	1000.00	1492.77	1.85
1	24.212	5000.00	4702.92	2.58
1	24.212	10000.00	7805.49	2.86
1	24.212	20000.00	12830.12	3.32
1	24.212	30000.00	16992.24	3.68
1	24.212	40000.00	20623.07	3.97
1	24.165	1000.00	1489.92	2.18
1	24.165	5000.00	4691.63	2.47
1	24.165	10000.00	7785.47	2.83
1	24.165	20000.00	12795.70	3.30
1	24.165	30000.00	16945.74	3.66
1	24.165	40000.00	20565.63	3.96
1	24.067	1000.00	1483.77	1.72
1	24.067	5000.00	4667.28	2.38
1	24.067	10000.00	7742.24	2.63
1	24.067	20000.00	12723.07	3.20
1	24.067	30000.00	16848.69	3.64
1	24.067	40000.00	20446.87	4.00
1	23.974	1000.00	1479.32	4.98
1	23.974	5000.00	4647.86	3.78
1	23.974	10000.00	7706.50	4.03
1	23.974	20000.00	12662.01	4.48
1	23.974	30000.00	16768.27	5.13
1	23.974	40000.00	20349.64	5.69
1	23.881	1000.00	1475.95	2.53
1	23.881	5000.00	4632.53	3.62

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	23.881	10000.00	7679.24	4.31
1	23.881	20000.00	12615.59	5.40
1	23.881	30000.00	16707.29	6.15
1	23.881	40000.00	20276.28	6.81
1	23.79	1000.00	1471.73	2.68
1	23.79	5000.00	4618.54	4.27
1	23.79	10000.00	7654.59	4.57
1	23.79	20000.00	12576.10	5.66
1	23.79	30000.00	16655.70	6.54
1	23.79	40000.00	20214.59	7.34
1	23.692	1000.00	1467.79	3.46
1	23.692	5000.00	4605.13	4.56
1	23.692	10000.00	7631.07	5.56
1	23.692	20000.00	12538.52	7.00
1	23.692	30000.00	16606.22	7.82
1	23.692	40000.00	20155.05	8.52
1	23.598	1000.00	1463.85	2.40
1	23.598	5000.00	4589.94	3.09
1	23.598	10000.00	7605.71	3.65
1	23.598	20000.00	12499.17	4.76
1	23.598	30000.00	16555.35	5.67
1	23.598	40000.00	20094.27	6.44
1	23.504	1000.00	1459.53	2.88
1	23.504	5000.00	4572.34	3.36
1	23.504	10000.00	7575.07	3.74
1	23.504	20000.00	12451.83	4.81
1	23.504	30000.00	16495.26	5.63
1	23.504	40000.00	20023.34	6.34
1	23.409	1000.00	1455.53	2.76
1	23.409	5000.00	4556.61	3.88
1	23.409	10000.00	7545.95	4.05
1	23.409	20000.00	12406.80	5.29
1	23.409	30000.00	16437.84	6.25
1	23.409	40000.00	19954.74	6.92
1	23.314	1000.00	1450.90	2.18
1	23.314	5000.00	4541.88	3.80
1	23.314	10000.00	7518.89	4.32
1	23.314	20000.00	12362.51	4.96
1	23.314	30000.00	16380.16	5.58
1	23.314	40000.00	19885.43	6.21
1	23.219	1000.00	1445.93	2.43
1	23.219	5000.00	4524.45	2.89
1	23.219	10000.00	7489.40	3.52
1	23.219	20000.00	12310.89	4.02

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	23.219	30000.00	16311.50	4.54
1	23.219	40000.00	19802.70	5.00
1	23.124	1000.00	1441.12	2.33
1	23.124	5000.00	4503.45	2.57
1	23.124	10000.00	7455.67	3.25
1	23.124	20000.00	12253.16	3.89
1	23.124	30000.00	16235.89	4.51
1	23.124	40000.00	19711.01	4.94
1	23.029	1000.00	1437.09	3.01
1	23.029	5000.00	4485.20	3.50
1	23.029	10000.00	7424.64	3.77
1	23.029	20000.00	12200.65	4.41
1	23.029	30000.00	16164.90	4.66
1	23.029	40000.00	19622.46	4.85
1	22.935	1000.00	1432.95	2.14
1	22.935	5000.00	4467.87	2.71
1	22.935	10000.00	7392.76	2.98
1	22.935	20000.00	12145.99	3.46
1	22.935	30000.00	16088.80	3.76
1	22.935	40000.00	19526.54	4.01
1	22.839	1000.00	1428.04	2.16
1	22.839	5000.00	4449.17	3.08
1	22.839	10000.00	7358.78	3.39
1	22.839	20000.00	12086.12	3.71
1	22.839	30000.00	16005.89	3.97
1	22.839	40000.00	19422.69	4.20
1	22.745	1000.00	1422.79	1.89
1	22.745	5000.00	4431.97	3.19
1	22.745	10000.00	7329.18	3.86
1	22.745	20000.00	12032.16	4.11
1	22.745	30000.00	15929.99	4.32
1	22.745	40000.00	19326.26	4.46
1	22.651	1000.00	1417.89	2.51
1	22.651	5000.00	4413.77	2.72
1	22.651	10000.00	7298.01	3.06
1	22.651	20000.00	11977.34	3.59
1	22.651	30000.00	15855.24	4.04
1	22.651	40000.00	19232.98	4.40
1	22.558	1000.00	1412.85	1.94
1	22.558	5000.00	4397.43	4.40
1	22.558	10000.00	7269.95	5.44
1	22.558	20000.00	11929.76	6.41
1	22.558	30000.00	15790.87	6.84
1	22.558	40000.00	19152.84	7.07

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	22.462	1000.00	1408.20	3.31
1	22.462	5000.00	4380.88	2.55
1	22.462	10000.00	7242.93	3.11
1	22.462	20000.00	11884.60	3.75
1	22.462	30000.00	15728.05	4.07
1	22.462	40000.00	19071.80	4.22
1	22.368	1000.00	1404.15	2.44
1	22.368	5000.00	4362.03	3.40
1	22.368	10000.00	7210.38	3.66
1	22.368	20000.00	11828.71	4.10
1	22.368	30000.00	15651.01	4.48
1	22.368	40000.00	18973.23	4.72
1	22.273	1000.00	1398.57	1.81
1	22.273	5000.00	4344.67	3.24
1	22.273	10000.00	7181.87	4.45
1	22.273	20000.00	11781.19	5.81
1	22.273	30000.00	15587.13	6.68
1	22.273	40000.00	18892.63	7.11
1	22.177	1000.00	1394.14	4.68
1	22.177	5000.00	4331.15	6.29
1	22.177	10000.00	7157.86	5.26
1	22.177	20000.00	11741.02	5.72
1	22.177	30000.00	15532.75	6.12
1	22.177	40000.00	18824.33	6.48
1	22.082	1000.00	1387.59	1.06
1	22.082	5000.00	4314.91	2.44
1	22.082	10000.00	7127.93	3.02
1	22.082	20000.00	11689.44	3.67
1	22.082	30000.00	15462.94	4.18
1	22.082	40000.00	18738.74	4.64
1	21.986	1000.00	1379.74	2.72
1	21.986	5000.00	4294.70	3.62
1	21.986	10000.00	7094.00	3.96
1	21.986	20000.00	11633.24	4.60
1	21.986	30000.00	15388.01	5.06
1	21.986	40000.00	18648.51	5.56
1	21.893	1000.00	1376.41	4.59
1	21.893	5000.00	4281.11	4.84
1	21.893	10000.00	7069.17	5.25
1	21.893	20000.00	11590.92	6.20
1	21.893	30000.00	15330.29	6.83
1	21.893	40000.00	18578.07	7.41
1	21.798	1000.00	1372.90	2.59

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	21.798	5000.00	4267.91	4.04
1	21.798	10000.00	7047.34	5.40
1	21.798	20000.00	11554.53	6.58
1	21.798	30000.00	15280.29	7.12
1	21.798	40000.00	18515.82	7.53
1	21.716	1000.00	1370.18	5.78
1	21.716	5000.00	4258.69	7.80
1	21.716	10000.00	7031.09	6.92
1	21.716	20000.00	11522.97	5.98
1	21.716	30000.00	15236.55	6.50
1	21.716	40000.00	18460.85	6.93
1	21.621	1000.00	1362.98	0.94
1	21.621	5000.00	4237.15	1.63
1	21.621	10000.00	6995.72	2.16
1	21.621	20000.00	11461.18	2.71
1	21.621	30000.00	15160.04	3.46
1	21.621	40000.00	18371.08	4.07
1	21.524	1000.00	1352.70	1.46
1	21.524	5000.00	4207.99	2.64
1	21.524	10000.00	6952.23	3.63
1	21.524	20000.00	11386.31	3.69
1	21.524	30000.00	15070.26	4.48
1	21.524	40000.00	18267.74	5.07
1	21.431	1000.00	1346.94	2.96
1	21.431	5000.00	4189.60	3.66
1	21.431	10000.00	6926.20	5.37
1	21.431	20000.00	11340.82	7.54
1	21.431	30000.00	15008.47	7.05
1	21.431	40000.00	18191.69	7.14
1	21.337	1000.00	1335.32	0.59
1	21.337	5000.00	4154.74	1.05
1	21.337	10000.00	6880.01	1.59
1	21.337	20000.00	11278.72	2.40
1	21.337	30000.00	14928.43	3.03
1	21.337	40000.00	18096.41	3.55
1	21.245	1000.00	1323.76	2.05
1	21.245	5000.00	4122.33	3.90
1	21.245	10000.00	6835.26	4.86
1	21.245	20000.00	11214.84	5.48
1	21.245	30000.00	14848.05	5.73
1	21.245	40000.00	18001.64	6.03
1	21.157	1000.00	1319.81	2.80
1	21.157	5000.00	4108.15	3.16
1	21.157	10000.00	6808.94	3.17

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	21.157	20000.00	11169.08	3.70
1	21.157	30000.00	14785.32	4.17
1	21.157	40000.00	17924.11	4.57
1	21.061	1000.00	1313.98	1.56
1	21.061	5000.00	4089.68	3.18
1	21.061	10000.00	6777.45	4.51
1	21.061	20000.00	11119.03	6.37
1	21.061	30000.00	14720.21	7.62
1	21.061	40000.00	17844.75	8.02
1	20.958	1000.00	1307.37	2.37
1	20.958	5000.00	4072.04	3.97
1	20.958	10000.00	6751.34	5.06
1	20.958	20000.00	11080.02	6.36
1	20.958	30000.00	14670.56	7.31
1	20.958	40000.00	17782.91	7.43
1	20.864	1000.00	1302.74	2.56
1	20.864	5000.00	4057.69	3.96
1	20.864	10000.00	6728.73	4.94
1	20.864	20000.00	11043.62	5.98
1	20.864	30000.00	14621.84	6.43
1	20.864	40000.00	17720.91	6.72
1	20.769	1000.00	1298.80	3.42
1	20.769	5000.00	4043.80	4.35
1	20.769	10000.00	6705.38	4.87
1	20.769	20000.00	11003.68	5.42
1	20.769	30000.00	14567.43	6.04
1	20.769	40000.00	17653.41	6.63
1	20.675	1000.00	1294.40	2.09
1	20.675	5000.00	4029.76	3.81
1	20.675	10000.00	6682.28	4.95
1	20.675	20000.00	10965.70	6.55
1	20.675	30000.00	14517.66	7.68
1	20.675	40000.00	17593.94	8.73
1	20.579	1000.00	1290.17	3.91
1	20.579	5000.00	4016.16	4.78
1	20.579	10000.00	6660.72	5.81
1	20.579	20000.00	10932.02	7.17
1	20.579	30000.00	14474.26	8.28
1	20.579	40000.00	17542.65	9.26
1	20.483	1000.00	1286.67	2.92
1	20.483	5000.00	4002.00	3.64
1	20.483	10000.00	6638.31	4.74
1	20.483	20000.00	10897.60	6.44
1	20.483	30000.00	14430.39	7.69

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	20.483	40000.00	17490.43	8.56
1	20.435	1000.00	1284.46	2.40
1	20.435	5000.00	3994.36	3.99
1	20.435	10000.00	6626.52	5.18
1	20.435	20000.00	10879.74	6.68
1	20.435	30000.00	14407.63	7.74
1	20.435	40000.00	17463.21	8.58
1	20.388	1000.00	1282.38	3.16
1	20.388	5000.00	3987.45	4.40
1	20.388	10000.00	6614.57	4.64
1	20.388	20000.00	10860.49	5.64
1	20.388	30000.00	14382.70	6.55
1	20.388	40000.00	17433.13	7.20
1	20.343	1000.00	1280.63	2.96
1	20.343	5000.00	3981.58	4.56
1	20.343	10000.00	6602.82	4.23
1	20.343	20000.00	10840.82	4.94
1	20.343	30000.00	14356.71	5.48
1	20.343	40000.00	17401.50	5.97
1	20.294	1000.00	1278.31	2.29
1	20.294	5000.00	3973.51	3.08
1	20.294	10000.00	6587.19	3.43
1	20.294	20000.00	10814.99	4.26
1	20.294	30000.00	14322.85	5.00
1	20.294	40000.00	17360.75	5.62
1	20.207	1000.00	1274.16	2.82
1	20.207	5000.00	3958.44	3.87
1	20.207	10000.00	6560.40	4.32
1	20.207	20000.00	10771.83	5.29
1	20.207	30000.00	14267.18	6.05
1	20.207	40000.00	17294.04	6.63
1	20.111	1000.00	1269.02	1.80
1	20.111	5000.00	3942.93	3.41
1	20.111	10000.00	6532.29	3.65
1	20.111	20000.00	10726.47	4.52
1	20.111	30000.00	14208.71	5.31
1	20.111	40000.00	17223.50	5.89
1	20.015	1000.00	1263.76	2.64
1	20.015	5000.00	3927.61	4.01
1	20.015	10000.00	6503.29	4.12
1	20.015	20000.00	10677.89	4.69
1	20.015	30000.00	14144.89	5.17
1	20.015	40000.00	17146.53	5.68

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	19.92	1000.00	1258.37	1.78
1	19.92	5000.00	3910.77	2.94
1	19.92	10000.00	6471.97	3.28
1	19.92	20000.00	10624.79	3.98
1	19.92	30000.00	14072.91	4.42
1	19.92	40000.00	17059.44	4.87
1	19.827	1000.00	1253.03	2.59
1	19.827	5000.00	3892.48	3.22
1	19.827	10000.00	6440.40	3.91
1	19.827	20000.00	10572.67	4.71
1	19.827	30000.00	13998.83	4.70
1	19.827	40000.00	16968.25	4.99
1	19.732	1000.00	1247.50	1.74
1	19.732	5000.00	3873.98	3.00
1	19.732	10000.00	6411.01	3.91
1	19.732	20000.00	10524.72	4.88
1	19.732	30000.00	13929.49	5.27
1	19.732	40000.00	16878.41	5.24
1	19.635	1000.00	1242.65	3.69
1	19.635	5000.00	3856.26	3.50
1	19.635	10000.00	6382.29	4.09
1	19.635	20000.00	10475.99	4.58
1	19.635	30000.00	13859.86	4.69
1	19.635	40000.00	16788.59	5.01
1	19.542	1000.00	1238.55	2.20
1	19.542	5000.00	3839.13	3.11
1	19.542	10000.00	6353.64	3.81
1	19.542	20000.00	10426.00	4.46
1	19.542	30000.00	13786.05	4.50
1	19.542	40000.00	16696.31	4.79
1	19.446	1000.00	1233.68	2.53
1	19.446	5000.00	3820.41	2.98
1	19.446	10000.00	6321.65	3.37
1	19.446	20000.00	10371.39	3.98
1	19.446	30000.00	13707.05	4.21
1	19.446	40000.00	16598.42	4.56
1	19.352	1000.00	1228.82	2.07
1	19.352	5000.00	3804.23	3.99
1	19.352	10000.00	6292.56	4.38
1	19.352	20000.00	10318.83	4.54
1	19.352	30000.00	13631.56	4.63
1	19.352	40000.00	16501.95	4.62
1	19.256	1000.00	1224.19	3.14
1	19.256	5000.00	3790.89	4.68

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	19.256	10000.00	6269.95	5.99
1	19.256	20000.00	10277.32	6.93
1	19.256	30000.00	13572.28	7.56
1	19.256	40000.00	16424.21	7.89
1	19.162	1000.00	1219.91	2.28
1	19.162	5000.00	3777.34	3.73
1	19.162	10000.00	6247.76	4.37
1	19.162	20000.00	10239.75	5.20
1	19.162	30000.00	13521.11	5.75
1	19.162	40000.00	16359.58	6.10
1	19.066	1000.00	1214.77	2.21
1	19.066	5000.00	3760.74	3.23
1	19.066	10000.00	6221.47	4.36
1	19.066	20000.00	10197.16	5.56
1	19.066	30000.00	13462.84	6.02
1	19.066	40000.00	16285.89	6.29
1	18.978	1000.00	1210.49	2.96
1	18.978	5000.00	3747.12	4.95
1	18.978	10000.00	6198.57	4.81
1	18.978	20000.00	10157.89	5.00
1	18.978	30000.00	13409.13	5.49
1	18.978	40000.00	16218.97	5.98
1	18.97	Bridge		
1	18.962	1000.00	1209.75	2.28
1	18.962	5000.00	3744.82	3.45
1	18.962	10000.00	6194.21	3.81
1	18.962	20000.00	10149.96	4.41
1	18.962	30000.00	13398.49	5.02
1	18.962	40000.00	16206.06	5.57
1	18.937	1000.00	1208.58	3.50
1	18.937	5000.00	3740.09	3.01
1	18.937	10000.00	6185.68	3.22
1	18.937	20000.00	10135.72	3.89
1	18.937	30000.00	13379.99	4.52
1	18.937	40000.00	16184.00	5.07
1	18.839	1000.00	1203.23	1.65
1	18.839	5000.00	3719.28	2.63
1	18.839	10000.00	6152.10	3.70
1	18.839	20000.00	10082.98	4.90
1	18.839	30000.00	13312.26	5.68
1	18.839	40000.00	16103.65	6.34
1	18.748	1000.00	1197.92	2.79
1	18.748	5000.00	3701.86	3.95

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	18.748	10000.00	6126.29	4.98
1	18.748	20000.00	10043.33	6.19
1	18.748	30000.00	13260.60	6.97
1	18.748	40000.00	16041.71	7.64
1	18.653	1000.00	1193.16	2.16
1	18.653	5000.00	3686.33	3.49
1	18.653	10000.00	6101.20	4.20
1	18.653	20000.00	10003.63	5.27
1	18.653	30000.00	13208.90	6.12
1	18.653	40000.00	15979.64	6.83
1	18.558	1000.00	1187.70	2.18
1	18.558	5000.00	3669.57	3.49
1	18.558	10000.00	6074.17	4.39
1	18.558	20000.00	9960.79	5.45
1	18.558	30000.00	13153.97	6.37
1	18.558	40000.00	15914.38	7.16
1	18.464	1000.00	1183.22	3.31
1	18.464	5000.00	3652.32	3.30
1	18.464	10000.00	6046.90	4.16
1	18.464	20000.00	9918.61	5.52
1	18.464	30000.00	13100.07	6.46
1	18.464	40000.00	15850.87	7.33
1	18.369	1000.00	1180.32	5.40
1	18.369	5000.00	3638.04	5.79
1	18.369	10000.00	6022.10	5.80
1	18.369	20000.00	9879.75	7.01
1	18.369	30000.00	13049.25	7.75
1	18.369	40000.00	15789.14	8.13
1	18.275	1000.00	1177.82	4.01
1	18.275	5000.00	3627.16	4.98
1	18.275	10000.00	5999.98	4.88
1	18.275	20000.00	9841.09	5.38
1	18.275	30000.00	12996.05	5.77
1	18.275	40000.00	15722.39	6.16
1	18.182	1000.00	1174.99	3.96
1	18.182	5000.00	3614.83	4.28
1	18.182	10000.00	5975.13	4.32
1	18.182	20000.00	9797.32	5.07
1	18.182	30000.00	12936.16	5.68
1	18.182	40000.00	15648.32	6.16
1	18.093	1000.00	1171.16	2.20
1	18.093	5000.00	3601.25	3.77
1	18.093	10000.00	5948.00	3.78
1	18.093	20000.00	9750.94	4.44

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	18.093	30000.00	12874.87	5.11
1	18.093	40000.00	15574.01	5.67
1	18	1000.00	1164.43	1.39
1	18	5000.00	3583.19	2.74
1	18	10000.00	5914.50	3.15
1	18	20000.00	9695.06	3.85
1	18	30000.00	12802.24	4.44
1	18	40000.00	15487.34	4.97
1	17.91	1000.00	1155.79	1.17
1	17.91	5000.00	3561.64	2.38
1	17.91	10000.00	5878.36	2.95
1	17.91	20000.00	9637.84	3.84
1	17.91	30000.00	12728.29	4.46
1	17.91	40000.00	15399.76	5.03
1	17.821	1000.00	1147.22	1.40
1	17.821	5000.00	3541.36	3.07
1	17.821	10000.00	5847.29	4.22
1	17.821	20000.00	9590.53	5.49
1	17.821	30000.00	12667.23	6.31
1	17.821	40000.00	15327.70	7.10
1	17.73	1000.00	1139.78	1.57
1	17.73	5000.00	3524.91	3.65
1	17.73	10000.00	5822.92	4.84
1	17.73	20000.00	9552.78	6.17
1	17.73	30000.00	12617.52	6.96
1	17.73	40000.00	15268.22	7.67
1	17.638	1000.00	1134.63	3.45
1	17.638	5000.00	3512.51	5.79
1	17.638	10000.00	5803.72	7.19
1	17.638	20000.00	9522.39	8.94
1	17.638	30000.00	12576.71	9.82
1	17.638	40000.00	15218.79	10.78
1	17.548	1000.00	1130.80	2.47
1	17.548	5000.00	3501.39	4.33
1	17.548	10000.00	5785.74	5.34
1	17.548	20000.00	9491.23	5.84
1	17.548	30000.00	12531.73	5.86
1	17.548	40000.00	15160.52	5.81
1	17.458	1000.00	1126.74	2.90
1	17.458	5000.00	3487.10	3.38
1	17.458	10000.00	5761.77	3.93
1	17.458	20000.00	9448.45	4.48
1	17.458	30000.00	12468.59	4.59
1	17.458	40000.00	15077.25	4.72

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	17.37	1000.00	1122.29	2.07
1	17.37	5000.00	3470.25	3.03
1	17.37	10000.00	5733.05	3.59
1	17.37	20000.00	9397.58	4.03
1	17.37	30000.00	12396.31	4.37
1	17.37	40000.00	14985.29	4.67
1	17.277	1000.00	1117.90	3.62
1	17.277	5000.00	3452.00	3.58
1	17.277	10000.00	5698.87	3.55
1	17.277	20000.00	9336.63	4.09
1	17.277	30000.00	12312.89	4.57
1	17.277	40000.00	14881.94	4.98
1	17.18	1000.00	1113.95	2.60
1	17.18	5000.00	3436.27	4.36
1	17.18	10000.00	5669.54	5.49
1	17.18	20000.00	9287.16	6.95
1	17.18	30000.00	12245.87	7.66
1	17.18	40000.00	14799.03	8.17
1	17.085	1000.00	1109.63	2.74
1	17.085	5000.00	3423.57	4.73
1	17.085	10000.00	5648.93	5.69
1	17.085	20000.00	9253.77	6.82
1	17.085	30000.00	12200.70	7.67
1	17.085	40000.00	14743.12	8.40
1	16.99	1000.00	1104.77	2.07
1	16.99	5000.00	3410.06	3.87
1	16.99	10000.00	5627.60	5.13
1	16.99	20000.00	9219.97	6.79
1	16.99	30000.00	12156.67	8.01
1	16.99	40000.00	14690.24	9.02
1	16.895	1000.00	1099.43	2.24
1	16.895	5000.00	3394.98	3.74
1	16.895	10000.00	5604.61	4.86
1	16.895	20000.00	9185.10	6.39
1	16.895	30000.00	12112.21	7.50
1	16.895	40000.00	14637.53	8.42
1	16.801	1000.00	1093.80	1.84
1	16.801	5000.00	3379.15	3.44
1	16.801	10000.00	5580.64	4.62
1	16.801	20000.00	9149.10	6.24
1	16.801	30000.00	12066.46	7.40
1	16.801	40000.00	14583.38	8.37
1	16.707	1000.00	1087.91	2.06

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	16.707	5000.00	3363.07	3.68
1	16.707	10000.00	5556.49	4.86
1	16.707	20000.00	9113.07	6.47
1	16.707	30000.00	12020.65	7.59
1	16.707	40000.00	14529.10	8.50
1	16.612	1000.00	1083.09	2.81
1	16.612	5000.00	3347.69	3.79
1	16.612	10000.00	5533.00	4.91
1	16.612	20000.00	9077.74	6.53
1	16.612	30000.00	11975.43	7.64
1	16.612	40000.00	14475.25	8.56
1	16.518	1000.00	1078.46	2.21
1	16.518	5000.00	3332.67	3.84
1	16.518	10000.00	5510.10	5.10
1	16.518	20000.00	9042.89	6.56
1	16.518	30000.00	11930.31	7.40
1	16.518	40000.00	14421.32	8.14
1	16.516	Bridge		
1	16.514	1000.00	1078.30	3.65
1	16.514	5000.00	3332.06	5.25
1	16.514	10000.00	5509.14	6.03
1	16.514	20000.00	9041.14	7.37
1	16.514	30000.00	11928.02	8.49
1	16.514	40000.00	14418.59	9.42
1	16.506	1000.00	1078.02	3.28
1	16.506	5000.00	3331.04	4.34
1	16.506	10000.00	5507.35	4.90
1	16.506	20000.00	9038.22	6.04
1	16.506	30000.00	11924.26	7.09
1	16.506	40000.00	14414.10	7.97
1	16.494	Bridge		
1	16.482	1000.00	1077.29	3.74
1	16.482	5000.00	3327.80	3.74
1	16.482	10000.00	5501.70	4.50
1	16.482	20000.00	9029.21	5.81
1	16.482	30000.00	11912.84	6.97
1	16.482	40000.00	14400.60	7.94
1	16.471	1000.00	1076.93	3.61
1	16.471	5000.00	3326.17	4.50
1	16.471	10000.00	5498.96	5.31
1	16.471	20000.00	9024.92	6.64
1	16.471	30000.00	11907.45	7.85
1	16.471	40000.00	14394.27	8.86

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	16.385	1000.00	1074.06	3.64
1	16.385	5000.00	3317.38	8.68
1	16.385	10000.00	5484.66	11.60
1	16.385	20000.00	9000.99	12.63
1	16.385	30000.00	11876.08	13.60
1	16.385	40000.00	14356.70	14.76
1	16.289	1000.00	1070.15	2.52
1	16.289	5000.00	3306.83	4.04
1	16.289	10000.00	5468.20	5.08
1	16.289	20000.00	8974.16	6.61
1	16.289	30000.00	11841.16	7.90
1	16.289	40000.00	14315.34	9.10
1	16.195	1000.00	1065.84	2.84
1	16.195	5000.00	3292.71	4.09
1	16.195	10000.00	5445.59	5.08
1	16.195	20000.00	8939.03	6.48
1	16.195	30000.00	11797.02	7.72
1	16.195	40000.00	14264.28	8.91
1	16.099	1000.00	1061.50	2.54
1	16.099	5000.00	3279.55	4.82
1	16.099	10000.00	5423.20	5.33
1	16.099	20000.00	8900.57	5.70
1	16.099	30000.00	11746.06	6.18
1	16.099	40000.00	14204.04	6.85
1	16.004	1000.00	1057.20	2.82
1	16.004	5000.00	3265.26	3.46
1	16.004	10000.00	5397.48	3.86
1	16.004	20000.00	8853.27	4.26
1	16.004	30000.00	11681.52	4.74
1	16.004	40000.00	14126.86	5.31
1	15.909	1000.00	1052.82	2.46
1	15.909	5000.00	3249.29	3.78
1	15.909	10000.00	5369.86	4.55
1	15.909	20000.00	8803.71	5.14
1	15.909	30000.00	11614.21	5.63
1	15.909	40000.00	14046.71	6.30
1	15.814	1000.00	1047.16	1.72
1	15.814	5000.00	3235.10	4.31
1	15.814	10000.00	5347.15	5.62
1	15.814	20000.00	8764.80	6.84
1	15.814	30000.00	11560.52	7.34
1	15.814	40000.00	13981.85	7.95
1	15.719	1000.00	1039.30	1.28

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	15.719	5000.00	3218.91	3.05
1	15.719	10000.00	5323.55	4.34
1	15.719	20000.00	8727.21	5.60
1	15.719	30000.00	11509.48	6.34
1	15.719	40000.00	13919.70	7.00
1	15.658	1000.00	1034.02	1.70
1	15.658	5000.00	3206.69	3.35
1	15.658	10000.00	5305.83	4.49
1	15.658	20000.00	8699.30	5.62
1	15.658	30000.00	11472.51	6.38
1	15.658	40000.00	13874.98	7.02
1	15.564	1000.00	1028.79	3.28
1	15.564	5000.00	3190.60	4.03
1	15.564	10000.00	5280.33	4.75
1	15.564	20000.00	8657.60	5.61
1	15.564	30000.00	11417.34	6.32
1	15.564	40000.00	13808.24	6.96
1	15.469	1000.00	1025.59	4.05
1	15.469	5000.00	3176.62	4.36
1	15.469	10000.00	5256.29	4.94
1	15.469	20000.00	8616.95	5.68
1	15.469	30000.00	11364.14	6.54
1	15.469	40000.00	13744.37	7.28
1	15.374	1000.00	1021.51	2.17
1	15.374	5000.00	3164.20	4.99
1	15.374	10000.00	5236.45	6.97
1	15.374	20000.00	8583.73	8.41
1	15.374	30000.00	11321.22	9.70
1	15.374	40000.00	13693.33	10.88
1	15.281	1000.00	1017.85	5.32
1	15.281	5000.00	3152.51	4.69
1	15.281	10000.00	5219.30	6.21
1	15.281	20000.00	8556.03	7.51
1	15.281	30000.00	11285.03	8.37
1	15.281	40000.00	13650.17	9.21
1	15.188	1000.00	1015.01	3.16
1	15.188	5000.00	3138.65	3.60
1	15.188	10000.00	5198.42	4.80
1	15.188	20000.00	8523.41	6.37
1	15.188	30000.00	11242.34	7.37
1	15.188	40000.00	13598.82	8.16
1	15.094	1000.00	1010.69	2.26
1	15.094	5000.00	3122.05	3.26
1	15.094	10000.00	5172.24	3.94

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	15.094	20000.00	8483.74	5.16
1	15.094	30000.00	11191.43	6.05
1	15.094	40000.00	13538.06	6.80
1	15	1000.00	1006.00	2.62
1	15	5000.00	3106.89	4.45
1	15	10000.00	5146.52	5.06
1	15	20000.00	8443.27	6.19
1	15	30000.00	11138.87	7.03
1	15	40000.00	13475.12	7.75
1	14.905	1000.00	1001.59	2.60
1	14.905	5000.00	3091.00	3.05
1	14.905	10000.00	5119.94	3.77
1	14.905	20000.00	8401.14	4.87
1	14.905	30000.00	11084.83	5.83
1	14.905	40000.00	13411.00	6.66
1	14.809	1000.00	995.17	1.40
1	14.809	5000.00	3071.06	2.82
1	14.809	10000.00	5089.49	3.90
1	14.809	20000.00	8356.14	5.55
1	14.809	30000.00	11029.43	6.90
1	14.809	40000.00	13347.16	8.10
1	14.708	1000.00	987.64	1.92
1	14.708	5000.00	3051.83	3.61
1	14.708	10000.00	5061.22	4.81
1	14.708	20000.00	8313.96	6.03
1	14.708	30000.00	10973.66	6.26
1	14.708	40000.00	13279.58	6.53
1	14.619	1000.00	983.75	5.04
1	14.619	5000.00	3037.54	3.98
1	14.619	10000.00	5038.50	4.73
1	14.619	20000.00	8276.82	5.70
1	14.619	30000.00	10921.17	6.24
1	14.619	40000.00	13212.79	6.63
1	14.525	1000.00	980.10	2.25
1	14.525	5000.00	3020.38	2.89
1	14.525	10000.00	5007.64	3.08
1	14.525	20000.00	8228.55	4.11
1	14.525	30000.00	10858.00	4.89
1	14.525	40000.00	13136.15	5.55
1	14.43	1000.00	975.44	2.78
1	14.43	5000.00	3002.40	3.71
1	14.43	10000.00	4973.73	3.91
1	14.43	20000.00	8177.07	5.07
1	14.43	30000.00	10792.22	5.87

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	14.43	40000.00	13058.11	6.54
1	14.335	1000.00	971.31	2.82
1	14.335	5000.00	2987.23	3.91
1	14.335	10000.00	4944.91	4.11
1	14.335	20000.00	8132.01	5.19
1	14.335	30000.00	10733.73	6.00
1	14.335	40000.00	12987.68	6.62
1	14.24	1000.00	967.18	2.72
1	14.24	5000.00	2973.17	4.25
1	14.24	10000.00	4917.57	4.27
1	14.24	20000.00	8087.94	5.20
1	14.24	30000.00	10675.99	5.90
1	14.24	40000.00	12917.63	6.47
1	14.145	1000.00	963.09	2.88
1	14.145	5000.00	2959.37	4.07
1	14.145	10000.00	4888.96	3.79
1	14.145	20000.00	8041.54	4.73
1	14.145	30000.00	10615.41	5.50
1	14.145	40000.00	12844.49	6.12
1	14.049	1000.00	959.37	3.47
1	14.049	5000.00	2945.83	4.61
1	14.049	10000.00	4861.65	4.92
1	14.049	20000.00	7996.95	5.89
1	14.049	30000.00	10557.60	6.76
1	14.049	40000.00	12775.06	7.47
1	13.952	1000.00	955.87	3.26
1	13.952	5000.00	2933.35	4.82
1	13.952	10000.00	4839.59	5.81
1	13.952	20000.00	7959.09	6.55
1	13.952	30000.00	10507.23	7.23
1	13.952	40000.00	12713.99	7.91
1	13.856	1000.00	953.20	6.57
1	13.856	5000.00	2918.60	3.35
1	13.856	10000.00	4814.47	3.87
1	13.856	20000.00	7916.82	4.77
1	13.856	30000.00	10451.61	5.57
1	13.856	40000.00	12647.85	6.37
1	13.76	1000.00	951.01	4.53
1	13.76	5000.00	2903.15	4.35
1	13.76	10000.00	4786.57	4.57
1	13.76	20000.00	7870.22	5.29
1	13.76	30000.00	10390.32	5.88
1	13.76	40000.00	12575.85	6.62

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	13.663	1000.00	948.41	4.49
1	13.663	5000.00	2891.78	6.37
1	13.663	10000.00	4763.17	5.57
1	13.663	20000.00	7827.72	5.78
1	13.663	30000.00	10331.35	6.06
1	13.663	40000.00	12506.03	6.83
1	13.565	1000.00	945.46	3.61
1	13.565	5000.00	2881.42	5.16
1	13.565	10000.00	4742.23	5.72
1	13.565	20000.00	7788.01	6.13
1	13.565	30000.00	10275.47	6.64
1	13.565	40000.00	12437.21	6.90
1	13.518	1000.00	943.88	3.76
1	13.518	5000.00	2876.21	6.05
1	13.518	10000.00	4732.77	6.61
1	13.518	20000.00	7770.95	7.62
1	13.518	30000.00	10250.72	7.44
1	13.518	40000.00	12403.15	6.70
1	13.467	1000.00	942.16	3.46
1	13.467	5000.00	2870.92	5.69
1	13.467	10000.00	4722.35	5.40
1	13.467	20000.00	7748.51	4.33
1	13.467	30000.00	10216.86	4.35
1	13.467	40000.00	12356.63	4.42
1	13.4585	Bridge		
1	13.45	1000.00	941.47	2.58
1	13.45	5000.00	2868.82	4.32
1	13.45	10000.00	4718.09	4.38
1	13.45	20000.00	7739.03	4.01
1	13.45	30000.00	10203.08	4.16
1	13.45	40000.00	12338.74	4.30
1	13.395	1000.00	939.08	3.04
1	13.395	5000.00	2862.00	5.62
1	13.395	10000.00	4705.54	6.76
1	13.395	20000.00	7712.21	6.54
1	13.395	30000.00	10162.99	6.22
1	13.395	40000.00	12285.87	6.10
1	13.296	1000.00	933.41	1.62
1	13.296	5000.00	2844.68	2.50
1	13.296	10000.00	4678.01	3.21
1	13.296	20000.00	7665.74	4.26
1	13.296	30000.00	10098.37	5.02
1	13.296	40000.00	12203.54	5.56

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	13.2	1000.00	925.45	1.34
1	13.2	5000.00	2821.67	2.59
1	13.2	10000.00	4643.13	3.52
1	13.2	20000.00	7614.10	4.85
1	13.2	30000.00	10033.34	5.83
1	13.2	40000.00	12126.23	6.64
1	13.103	1000.00	917.50	1.65
1	13.103	5000.00	2801.52	3.34
1	13.103	10000.00	4613.38	4.51
1	13.103	20000.00	7570.55	6.11
1	13.103	30000.00	9978.80	7.27
1	13.103	40000.00	12062.24	8.24
1	13.007	1000.00	911.43	2.28
1	13.007	5000.00	2786.06	4.27
1	13.007	10000.00	4590.60	5.84
1	13.007	20000.00	7537.22	8.10
1	13.007	30000.00	9937.11	9.79
1	13.007	40000.00	12013.40	11.22
1	12.913	1000.00	906.82	2.68
1	12.913	5000.00	2772.49	4.08
1	12.913	10000.00	4569.84	5.12
1	12.913	20000.00	7506.47	6.76
1	12.913	30000.00	9898.38	7.95
1	12.913	40000.00	11967.73	8.90
1	12.816	1000.00	902.23	2.47
1	12.816	5000.00	2756.76	3.46
1	12.816	10000.00	4545.26	4.51
1	12.816	20000.00	7468.78	5.83
1	12.816	30000.00	9849.84	6.74
1	12.816	40000.00	11909.55	7.46
1	12.725	1000.00	897.30	2.05
1	12.725	5000.00	2740.72	3.43
1	12.725	10000.00	4520.01	4.25
1	12.725	20000.00	7428.15	5.06
1	12.725	30000.00	9796.18	5.64
1	12.725	40000.00	11844.23	6.12
1	12.63	1000.00	891.38	1.83
1	12.63	5000.00	2723.28	3.16
1	12.63	10000.00	4490.49	3.57
1	12.63	20000.00	7379.25	4.34
1	12.63	30000.00	9731.20	4.95
1	12.63	40000.00	11764.65	5.41
1	12.529	1000.00	885.40	2.31
1	12.529	5000.00	2702.05	2.65

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	12.529	10000.00	4451.40	2.79
1	12.529	20000.00	7311.94	3.13
1	12.529	30000.00	9639.82	3.39
1	12.529	40000.00	11648.52	3.47
1	12.47	1000.00	882.26	2.78
1	12.47	5000.00	2687.66	2.86
1	12.47	10000.00	4424.39	2.87
1	12.47	20000.00	7263.92	2.90
1	12.47	30000.00	9573.81	3.04
1	12.47	40000.00	11563.97	3.05
1	12.42	1000.00	880.18	2.85
1	12.42	5000.00	2672.17	1.41
1	12.42	10000.00	4396.52	1.62
1	12.42	20000.00	7216.34	2.05
1	12.42	30000.00	9507.90	2.25
1	12.42	40000.00	11479.26	2.37
1	12.359	1000.00	876.89	1.68
1	12.359	5000.00	2644.26	1.25
1	12.359	10000.00	4339.88	1.18
1	12.359	20000.00	7123.63	1.45
1	12.359	30000.00	9383.27	1.66
1	12.359	40000.00	11325.18	1.83
1	12.247	1000.00	871.29	4.19
1	12.247	5000.00	2613.94	6.24
1	12.247	10000.00	4241.69	1.26
1	12.247	20000.00	6957.33	1.40
1	12.247	30000.00	9162.91	1.56
1	12.247	40000.00	11058.68	1.71
1	12.141	1000.00	868.04	3.75
1	12.141	5000.00	2604.36	7.20
1	12.141	10000.00	4161.78	1.83
1	12.141	20000.00	6798.54	1.59
1	12.141	30000.00	8944.72	1.69
1	12.141	40000.00	10790.49	1.82
1	12.042	1000.00	864.79	3.69
1	12.042	5000.00	2596.17	7.56
1	12.042	10000.00	4123.50	10.01
1	12.042	20000.00	6668.66	2.10
1	12.042	30000.00	8751.76	1.98
1	12.042	40000.00	10546.88	2.06
1	11.943	1000.00	861.75	4.20
1	11.943	5000.00	2587.96	7.01
1	11.943	10000.00	4110.60	8.60
1	11.943	20000.00	6590.90	5.18

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	11.943	30000.00	8607.75	3.07
1	11.943	40000.00	10354.63	2.89
1	11.9	1000.00	860.41	3.87
1	11.9	5000.00	2583.77	5.98
1	11.9	10000.00	4103.92	7.66
1	11.9	20000.00	6576.38	8.21
1	11.9	30000.00	8576.89	5.59
1	11.9	40000.00	10311.01	4.84
1	11.847	1000.00	858.68	3.40
1	11.847	5000.00	2578.46	5.82
1	11.847	10000.00	4095.58	7.38
1	11.847	20000.00	6552.64	4.52
1	11.847	30000.00	8525.17	3.39
1	11.847	40000.00	10235.39	3.27
1	11.75	1000.00	855.13	3.24
1	11.75	5000.00	2568.61	6.13
1	11.75	10000.00	4080.38	8.13
1	11.75	20000.00	6508.64	6.50
1	11.75	30000.00	8441.06	5.47
1	11.75	40000.00	10115.05	4.82
1	11.653	1000.00	851.41	3.07
1	11.653	5000.00	2559.15	6.25
1	11.653	10000.00	4066.30	8.53
1	11.653	20000.00	6468.61	5.32
1	11.653	30000.00	8370.97	4.63
1	11.653	40000.00	10014.60	4.52
1	11.557	1000.00	847.07	2.40
1	11.557	5000.00	2549.38	5.73
1	11.557	10000.00	4052.46	8.36
1	11.557	20000.00	6427.92	6.25
1	11.557	30000.00	8305.36	6.33
1	11.557	40000.00	9927.68	6.66
1	11.46	1000.00	842.68	3.02
1	11.46	5000.00	2538.45	5.05
1	11.46	10000.00	4036.48	6.54
1	11.46	20000.00	6393.69	7.57
1	11.46	30000.00	8255.78	8.05
1	11.46	40000.00	9865.46	8.67
1	11.428	1000.00	841.59	4.13
1	11.428	5000.00	2534.87	5.67
1	11.428	10000.00	4030.68	6.66
1	11.428	20000.00	6383.83	7.97
1	11.428	30000.00	8242.07	8.70
1	11.428	40000.00	9848.54	9.44

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	11.419	Bridge		
1	11.41	1000.00	840.63	2.74
1	11.41	5000.00	2531.62	4.24
1	11.41	10000.00	4025.39	5.42
1	11.41	20000.00	6374.71	6.17
1	11.41	30000.00	8229.92	7.16
1	11.41	40000.00	9833.84	8.04
1	11.325	1000.00	836.18	2.02
1	11.325	5000.00	2520.05	4.74
1	11.325	10000.00	4008.05	6.64
1	11.325	20000.00	6346.21	8.81
1	11.325	30000.00	8192.91	10.02
1	11.325	40000.00	9789.65	11.04
1	11.224	1000.00	829.80	1.80
1	11.224	5000.00	2502.56	2.72
1	11.224	10000.00	3982.37	3.63
1	11.224	20000.00	6307.17	4.74
1	11.224	30000.00	8142.15	5.50
1	11.224	40000.00	9728.70	6.12
1	11.128	1000.00	824.07	2.30
1	11.128	5000.00	2481.77	2.83
1	11.128	10000.00	3950.06	3.50
1	11.128	20000.00	6256.32	4.32
1	11.128	30000.00	8075.89	4.95
1	11.128	40000.00	9649.15	5.48
1	11.029	1000.00	818.11	1.80
1	11.029	5000.00	2460.73	2.91
1	11.029	10000.00	3914.85	3.36
1	11.029	20000.00	6198.58	4.04
1	11.029	30000.00	8000.37	4.65
1	11.029	40000.00	9558.36	5.16
1	10.942	1000.00	812.15	1.74
1	10.942	5000.00	2441.31	2.55
1	10.942	10000.00	3883.26	3.32
1	10.942	20000.00	6148.39	4.38
1	10.942	30000.00	7935.18	5.09
1	10.942	40000.00	9480.43	5.71
1	10.846	1000.00	805.85	1.94
1	10.846	5000.00	2420.97	3.21
1	10.846	10000.00	3852.12	4.21
1	10.846	20000.00	6100.03	5.31
1	10.846	30000.00	7872.46	6.14
1	10.846	40000.00	9405.67	6.87

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	10.752	1000.00	798.44	1.29
1	10.752	5000.00	2401.60	2.76
1	10.752	10000.00	3823.53	3.85
1	10.752	20000.00	6056.35	5.23
1	10.752	30000.00	7815.22	5.93
1	10.752	40000.00	9336.67	6.49
1	10.632	1000.00	787.31	1.30
1	10.632	5000.00	2373.23	2.36
1	10.632	10000.00	3781.73	3.13
1	10.632	20000.00	5992.77	4.01
1	10.632	30000.00	7731.79	4.60
1	10.632	40000.00	9235.76	5.10
1	10.538	1000.00	779.33	1.58
1	10.538	5000.00	2348.74	2.29
1	10.538	10000.00	3744.51	2.99
1	10.538	20000.00	5934.94	3.86
1	10.538	30000.00	7656.88	4.51
1	10.538	40000.00	9145.98	5.04
1	10.442	1000.00	773.42	2.57
1	10.442	5000.00	2327.40	3.32
1	10.442	10000.00	3711.42	4.22
1	10.442	20000.00	5883.33	5.35
1	10.442	30000.00	7590.05	6.14
1	10.442	40000.00	9066.01	6.81
1	10.343	1000.00	767.73	1.82
1	10.343	5000.00	2310.86	4.09
1	10.343	10000.00	3685.56	5.26
1	10.343	20000.00	5843.24	6.92
1	10.343	30000.00	7538.57	8.24
1	10.343	40000.00	9004.82	9.35
1	10.265	1000.00	764.21	5.09
1	10.265	5000.00	2299.08	3.92
1	10.265	10000.00	3667.60	5.24
1	10.265	20000.00	5816.25	7.05
1	10.265	30000.00	7504.49	8.26
1	10.265	40000.00	8964.97	9.39
1	10.167	1000.00	759.63	1.72
1	10.167	5000.00	2281.21	2.83
1	10.167	10000.00	3638.73	3.33
1	10.167	20000.00	5772.43	4.30
1	10.167	30000.00	7450.07	5.26
1	10.167	40000.00	8902.18	6.12
1	10.071	1000.00	753.73	2.37

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	10.071	5000.00	2263.25	3.88
1	10.071	10000.00	3607.26	4.25
1	10.071	20000.00	5721.00	4.84
1	10.071	30000.00	7385.57	5.63
1	10.071	40000.00	8827.32	6.37
1	9.981	1000.00	748.79	2.06
1	9.981	5000.00	2247.83	3.24
1	9.981	10000.00	3580.80	3.99
1	9.981	20000.00	5675.27	4.66
1	9.981	30000.00	7327.26	5.53
1	9.981	40000.00	8758.79	6.28
1	9.885	1000.00	743.93	2.82
1	9.885	5000.00	2232.50	4.51
1	9.885	10000.00	3554.78	5.02
1	9.885	20000.00	5629.69	5.54
1	9.885	30000.00	7267.96	6.16
1	9.885	40000.00	8688.07	6.76
1	9.79	1000.00	739.95	2.99
1	9.79	5000.00	2216.84	3.12
1	9.79	10000.00	3527.66	3.70
1	9.79	20000.00	5584.58	4.77
1	9.79	30000.00	7208.22	5.49
1	9.79	40000.00	8616.07	6.12
1	9.696	1000.00	735.54	2.25
1	9.696	5000.00	2200.05	3.66
1	9.696	10000.00	3499.18	4.29
1	9.696	20000.00	5540.13	5.47
1	9.696	30000.00	7150.19	6.27
1	9.696	40000.00	8546.06	6.87
1	9.605	1000.00	731.14	2.89
1	9.605	5000.00	2182.10	2.68
1	9.605	10000.00	3469.08	3.25
1	9.605	20000.00	5494.07	4.32
1	9.605	30000.00	7090.80	5.09
1	9.605	40000.00	8474.62	5.69
1	9.519	1000.00	727.50	2.82
1	9.519	5000.00	2163.53	2.93
1	9.519	10000.00	3438.39	3.54
1	9.519	20000.00	5447.24	4.57
1	9.519	30000.00	7030.21	5.21
1	9.519	40000.00	8401.94	5.75
1	9.435	1000.00	723.89	2.86
1	9.435	5000.00	2146.17	2.97
1	9.435	10000.00	3408.26	3.26

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	9.435	20000.00	5399.66	4.07
1	9.435	30000.00	6968.03	4.69
1	9.435	40000.00	8327.81	5.31
1	9.343	1000.00	719.57	2.31
1	9.343	5000.00	2127.94	3.11
1	9.343	10000.00	3376.05	3.63
1	9.343	20000.00	5345.88	4.17
1	9.343	30000.00	6897.05	4.66
1	9.343	40000.00	8243.42	5.18
1	9.266	1000.00	715.85	2.76
1	9.266	5000.00	2110.69	2.40
1	9.266	10000.00	3348.56	3.20
1	9.266	20000.00	5300.23	4.03
1	9.266	30000.00	6835.59	4.47
1	9.266	40000.00	8169.03	4.88
1	9.198	1000.00	712.97	2.97
1	9.198	5000.00	2092.85	2.22
1	9.198	10000.00	3322.38	3.10
1	9.198	20000.00	5258.42	3.86
1	9.198	30000.00	6779.91	4.41
1	9.198	40000.00	8101.60	4.90
1	9.191	1000.00	712.69	2.65
1	9.191	5000.00	2091.09	2.22
1	9.191	10000.00	3319.70	2.78
1	9.191	20000.00	5254.16	3.52
1	9.191	30000.00	6774.38	4.11
1	9.191	40000.00	8095.00	4.61
1	9.184	Bridge		
1	9.177	1000.00	712.21	3.11
1	9.177	5000.00	2088.42	2.82
1	9.177	10000.00	3315.28	3.18
1	9.177	20000.00	5246.78	3.62
1	9.177	30000.00	6764.90	4.20
1	9.177	40000.00	8083.73	4.71
1	9.098	1000.00	709.37	3.65
1	9.098	5000.00	2071.37	2.78
1	9.098	10000.00	3282.89	2.75
1	9.098	20000.00	5190.38	3.18
1	9.098	30000.00	6692.84	3.77
1	9.098	40000.00	7998.64	4.28
1	8.992	1000.00	704.37	2.00
1	8.992	5000.00	2051.04	3.69
1	8.992	10000.00	3238.61	3.09

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	8.992	20000.00	5111.93	3.40
1	8.992	30000.00	6593.77	4.05
1	8.992	40000.00	7882.61	4.62
1	8.875	1000.00	696.87	1.81
1	8.875	5000.00	2032.65	4.07
1	8.875	10000.00	3200.84	4.84
1	8.875	20000.00	5042.19	4.95
1	8.875	30000.00	6504.98	5.61
1	8.875	40000.00	7777.87	6.19
1	8.768	1000.00	688.46	1.35
1	8.768	5000.00	2016.46	3.96
1	8.768	10000.00	3176.02	5.67
1	8.768	20000.00	4991.86	5.25
1	8.768	30000.00	6437.06	5.65
1	8.768	40000.00	7695.11	6.11
1	8.646	1000.00	675.67	1.00
1	8.646	5000.00	1989.15	2.03
1	8.646	10000.00	3136.33	2.74
1	8.646	20000.00	4923.38	3.61
1	8.646	30000.00	6346.92	4.29
1	8.646	40000.00	7586.73	4.85
1	8.534	1000.00	665.41	1.97
1	8.534	5000.00	1963.19	3.67
1	8.534	10000.00	3095.12	4.14
1	8.534	20000.00	4856.84	4.70
1	8.534	30000.00	6260.73	5.27
1	8.534	40000.00	7483.18	5.72
1	8.433	1000.00	660.58	3.49
1	8.433	5000.00	1946.47	3.62
1	8.433	10000.00	3067.55	4.74
1	8.433	20000.00	4810.89	6.10
1	8.433	30000.00	6200.50	7.17
1	8.433	40000.00	7410.11	8.02
1	8.325	1000.00	655.58	2.11
1	8.325	5000.00	1925.89	2.87
1	8.325	10000.00	3036.36	3.79
1	8.325	20000.00	4762.89	4.94
1	8.325	30000.00	6138.94	5.74
1	8.325	40000.00	7336.60	6.39
1	8.198	1000.00	647.72	1.82
1	8.198	5000.00	1898.37	2.72
1	8.198	10000.00	2994.04	3.48
1	8.198	20000.00	4697.86	4.53
1	8.198	30000.00	6055.52	5.33

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	8.198	40000.00	7237.80	6.06
1	8.105	1000.00	640.53	1.37
1	8.105	5000.00	1876.05	2.35
1	8.105	10000.00	2960.10	3.16
1	8.105	20000.00	4646.80	4.28
1	8.105	30000.00	5990.99	5.13
1	8.105	40000.00	7163.19	6.00
1	8.03	1000.00	636.12	4.19
1	8.03	5000.00	1862.09	5.32
1	8.03	10000.00	2938.47	6.29
1	8.03	20000.00	4613.94	7.84
1	8.03	30000.00	5948.94	8.84
1	8.03	40000.00	7109.26	7.72
1	8.01	1000.00	635.42	1.02
1	8.01	5000.00	1860.19	2.11
1	8.01	10000.00	2935.51	2.81
1	8.01	20000.00	4609.33	3.65
1	8.01	30000.00	5942.88	4.18
1	8.01	40000.00	7101.29	4.59
1	8.005	Bridge		
1	8	1000.00	634.11	1.23
1	8	5000.00	1856.96	2.37
1	8	10000.00	2930.63	3.08
1	8	20000.00	4601.71	3.90
1	8	30000.00	5932.83	4.41
1	8	40000.00	7089.05	4.81
1	7.99	1000.00	633.25	1.45
1	7.99	5000.00	1854.67	2.65
1	7.99	10000.00	2927.08	3.40
1	7.99	20000.00	4596.05	4.24
1	7.99	30000.00	5925.31	4.77
1	7.99	40000.00	7079.84	5.18
1	7.96	1000.00	630.62	1.61
1	7.96	5000.00	1847.14	2.69
1	7.96	10000.00	2915.36	3.46
1	7.96	20000.00	4577.30	4.33
1	7.96	30000.00	5900.32	4.88
1	7.96	40000.00	7049.23	5.32
1	7.87	1000.00	623.22	1.33
1	7.87	5000.00	1828.38	3.09
1	7.87	10000.00	2885.89	3.89
1	7.87	20000.00	4529.65	4.75
1	7.87	30000.00	5837.13	5.39

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	7.87	40000.00	6972.24	5.93
1	7.77	1000.00	617.22	3.39
1	7.77	5000.00	1809.71	3.06
1	7.77	10000.00	2855.14	3.59
1	7.77	20000.00	4480.09	4.52
1	7.77	30000.00	5772.41	5.25
1	7.77	40000.00	6894.41	5.87
1	7.67	1000.00	604.50	0.52
1	7.67	5000.00	1781.35	1.51
1	7.67	10000.00	2813.98	2.28
1	7.67	20000.00	4420.47	3.36
1	7.67	30000.00	5698.31	4.17
1	7.67	40000.00	6807.89	4.84
1	7.58	1000.00	587.95	1.10
1	7.58	5000.00	1749.97	2.43
1	7.58	10000.00	2770.94	3.37
1	7.58	20000.00	4360.39	4.65
1	7.58	30000.00	5624.77	5.59
1	7.58	40000.00	6722.74	6.36
1	7.49	1000.00	580.19	1.99
1	7.49	5000.00	1729.79	3.11
1	7.49	10000.00	2740.93	4.03
1	7.49	20000.00	4315.88	5.29
1	7.49	30000.00	5568.68	6.23
1	7.49	40000.00	6656.65	7.01
1	7.39	1000.00	572.35	1.21
1	7.39	5000.00	1708.86	2.59
1	7.39	10000.00	2709.93	3.62
1	7.39	20000.00	4269.68	4.95
1	7.39	30000.00	5510.27	5.92
1	7.39	40000.00	6587.63	6.71
1	7.29	1000.00	566.15	3.73
1	7.29	5000.00	1691.10	4.19
1	7.29	10000.00	2682.30	4.76
1	7.29	20000.00	4227.31	5.85
1	7.29	30000.00	5456.12	6.72
1	7.29	40000.00	6523.27	7.46
1	7.2	1000.00	560.57	1.42
1	7.2	5000.00	1670.81	2.13
1	7.2	10000.00	2651.68	3.09
1	7.2	20000.00	4181.44	4.37
1	7.2	30000.00	5398.08	5.31
1	7.2	40000.00	6454.69	6.07

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	7.1	1000.00	554.62	2.99
1	7.1	5000.00	1651.75	5.11
1	7.1	10000.00	2622.58	5.44
1	7.1	20000.00	4137.20	6.38
1	7.1	30000.00	5341.65	7.17
1	7.1	40000.00	6387.71	7.86
1	7.08	1000.00	553.28	1.66
1	7.08	5000.00	1647.93	2.97
1	7.08	10000.00	2616.36	4.01
1	7.08	20000.00	4127.41	5.42
1	7.08	30000.00	5329.00	6.47
1	7.08	40000.00	6372.59	7.33
1	7.06	1000.00	551.73	1.60
1	7.06	5000.00	1643.66	2.94
1	7.06	10000.00	2609.93	3.85
1	7.06	20000.00	4117.79	5.09
1	7.06	30000.00	5316.84	6.01
1	7.06	40000.00	6358.24	6.77
1	7.02	1000.00	547.60	1.03
1	7.02	5000.00	1633.93	2.42
1	7.02	10000.00	2595.59	3.39
1	7.02	20000.00	4096.57	4.66
1	7.02	30000.00	5290.09	5.59
1	7.02	40000.00	6326.71	6.35
1	6.99	1000.00	545.64	2.56
1	6.99	5000.00	1629.26	4.21
1	6.99	10000.00	2588.63	5.26
1	6.99	20000.00	4086.13	6.69
1	6.99	30000.00	5276.85	7.75
1	6.99	40000.00	6311.05	8.66
1	6.97	1000.00	544.49	1.75
1	6.97	5000.00	1625.84	3.03
1	6.97	10000.00	2583.28	3.95
1	6.97	20000.00	4077.91	5.22
1	6.97	30000.00	5266.31	6.15
1	6.97	40000.00	6298.54	6.94
1	6.93	1000.00	541.04	1.36
1	6.93	5000.00	1616.68	2.75
1	6.93	10000.00	2569.57	3.76
1	6.93	20000.00	4057.45	5.11
1	6.93	30000.00	5240.44	6.09
1	6.93	40000.00	6268.06	6.92
1	6.91	1000.00	539.39	1.57
1	6.91	5000.00	1612.69	3.34

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	6.91	10000.00	2563.78	4.66
1	6.91	20000.00	4049.02	6.48
1	6.91	30000.00	5229.90	7.86
1	6.91	40000.00	6255.85	9.19
1	6.89	1000.00	538.22	3.48
1	6.89	5000.00	1609.61	5.30
1	6.89	10000.00	2559.18	6.66
1	6.89	20000.00	4042.11	8.39
1	6.89	30000.00	5221.13	9.60
1	6.89	40000.00	6245.31	10.03
1	6.82	1000.00	534.59	1.73
1	6.82	5000.00	1596.96	2.41
1	6.82	10000.00	2540.09	3.27
1	6.82	20000.00	4013.93	4.60
1	6.82	30000.00	5185.50	5.58
1	6.82	40000.00	6202.36	6.39
1	6.79	1000.00	533.09	1.80
1	6.79	5000.00	1591.90	2.85
1	6.79	10000.00	2532.66	3.88
1	6.79	20000.00	4003.44	5.55
1	6.79	30000.00	5172.57	6.79
1	6.79	40000.00	6187.36	7.84
1	6.77	1000.00	532.13	4.87
1	6.77	5000.00	1588.76	6.86
1	6.77	10000.00	2527.53	6.69
1	6.77	20000.00	3995.88	8.38
1	6.77	30000.00	5163.08	9.68
1	6.77	40000.00	6176.14	10.57
1	6.73	1000.00	529.86	1.53
1	6.73	5000.00	1580.33	2.03
1	6.73	10000.00	2514.26	2.83
1	6.73	20000.00	3976.05	3.90
1	6.73	30000.00	5137.98	4.68
1	6.73	40000.00	6146.32	5.33
1	6.71	1000.00	527.71	0.96
1	6.71	5000.00	1573.75	1.82
1	6.71	10000.00	2505.16	2.72
1	6.71	20000.00	3963.16	3.93
1	6.71	30000.00	5122.04	4.83
1	6.71	40000.00	6127.76	5.57
1	6.69	1000.00	525.24	1.48
1	6.69	5000.00	1566.66	2.28
1	6.69	10000.00	2495.28	3.12
1	6.69	20000.00	3949.06	4.21

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	6.69	30000.00	5104.53	5.01
1	6.69	40000.00	6107.31	5.66
1	6.66	1000.00	523.55	1.98
1	6.66	5000.00	1561.39	3.40
1	6.66	10000.00	2487.23	4.16
1	6.66	20000.00	3936.74	5.21
1	6.66	30000.00	5088.73	5.98
1	6.66	40000.00	6088.45	6.58
1	6.64	1000.00	522.04	2.14
1	6.64	5000.00	1556.13	2.60
1	6.64	10000.00	2478.92	3.38
1	6.64	20000.00	3923.80	4.44
1	6.64	30000.00	5072.05	5.22
1	6.64	40000.00	6068.47	5.87
1	6.61	1000.00	520.22	1.68
1	6.61	5000.00	1550.03	3.09
1	6.61	10000.00	2469.44	3.93
1	6.61	20000.00	3909.32	5.12
1	6.61	30000.00	5053.58	6.02
1	6.61	40000.00	6046.56	6.77
1	6.59	1000.00	518.51	1.13
1	6.59	5000.00	1545.26	1.97
1	6.59	10000.00	2462.41	2.80
1	6.59	20000.00	3898.98	3.92
1	6.59	30000.00	5040.61	4.75
1	6.59	40000.00	6031.32	5.43
1	6.56	1000.00	515.93	1.63
1	6.56	5000.00	1537.57	2.58
1	6.56	10000.00	2451.21	3.41
1	6.56	20000.00	3882.61	4.54
1	6.56	30000.00	5020.13	5.38
1	6.56	40000.00	6007.27	6.06
1	6.54	1000.00	514.90	3.59
1	6.54	5000.00	1533.54	3.18
1	6.54	10000.00	2445.05	4.11
1	6.54	20000.00	3873.33	5.43
1	6.54	30000.00	5008.36	6.42
1	6.54	40000.00	5993.34	7.23
1	6.52	1000.00	513.92	1.49
1	6.52	5000.00	1529.39	2.04
1	6.52	10000.00	2439.01	2.93
1	6.52	20000.00	3864.53	4.14
1	6.52	30000.00	4997.38	5.03
1	6.52	40000.00	5980.46	5.77

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	6.43	1000.00	508.79	2.88
1	6.43	5000.00	1510.71	3.99
1	6.43	10000.00	2411.45	4.90
1	6.43	20000.00	3823.75	6.17
1	6.43	30000.00	4945.98	7.11
1	6.43	40000.00	5919.80	7.88
1	6.35	1000.00	503.67	1.53
1	6.35	5000.00	1495.00	2.75
1	6.35	10000.00	2387.38	3.74
1	6.35	20000.00	3787.14	5.09
1	6.35	30000.00	4899.11	6.05
1	6.35	40000.00	5863.87	6.81
1	6.26	1000.00	497.01	1.98
1	6.26	5000.00	1476.56	3.59
1	6.26	10000.00	2359.50	4.57
1	6.26	20000.00	3744.65	5.75
1	6.26	30000.00	4844.42	6.57
1	6.26	40000.00	5798.36	7.22
1	6.16	1000.00	490.82	1.74
1	6.16	5000.00	1458.76	2.92
1	6.16	10000.00	2331.73	3.77
1	6.16	20000.00	3701.19	4.89
1	6.16	30000.00	4787.97	5.70
1	6.16	40000.00	5730.41	6.35
1	6.07	1000.00	485.78	3.29
1	6.07	5000.00	1437.94	2.61
1	6.07	10000.00	2300.00	3.48
1	6.07	20000.00	3652.89	4.63
1	6.07	30000.00	4726.16	5.45
1	6.07	40000.00	5656.77	6.12
1	5.99	1000.00	481.65	1.74
1	5.99	5000.00	1420.26	2.72
1	5.99	10000.00	2273.50	3.63
1	5.99	20000.00	3612.85	4.78
1	5.99	30000.00	4675.08	5.60
1	5.99	40000.00	5596.00	6.27
1	5.9	1000.00	476.10	2.54
1	5.9	5000.00	1400.04	2.97
1	5.9	10000.00	2242.51	3.79
1	5.9	20000.00	3565.22	4.86
1	5.9	30000.00	4613.84	5.64
1	5.9	40000.00	5522.89	6.29
1	5.81	1000.00	470.86	1.93

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	5.81	5000.00	1379.22	2.57
1	5.81	10000.00	2210.30	3.36
1	5.81	20000.00	3515.94	4.48
1	5.81	30000.00	4550.75	5.28
1	5.81	40000.00	5447.82	5.95
1	5.79	1000.00	469.48	3.55
1	5.79	5000.00	1373.62	3.82
1	5.79	10000.00	2201.51	4.69
1	5.79	20000.00	3502.30	5.79
1	5.79	30000.00	4533.22	6.66
1	5.79	40000.00	5426.94	7.40
1	5.77	1000.00	468.03	1.87
1	5.77	5000.00	1367.86	2.59
1	5.77	10000.00	2192.41	3.35
1	5.77	20000.00	3488.11	4.43
1	5.77	30000.00	4515.02	5.24
1	5.77	40000.00	5405.30	5.92
1	5.75	1000.00	466.35	2.09
1	5.75	5000.00	1361.32	2.50
1	5.75	10000.00	2182.36	3.27
1	5.75	20000.00	3472.97	4.37
1	5.75	30000.00	4495.89	5.20
1	5.75	40000.00	5382.76	5.89
1	5.7	1000.00	458.27	0.56
1	5.7	5000.00	1342.21	1.48
1	5.7	10000.00	2155.70	2.26
1	5.7	20000.00	3435.42	3.35
1	5.7	30000.00	4449.78	4.18
1	5.7	40000.00	5329.33	4.86
1	5.6945	Bridge		
1	5.689	1000.00	455.96	0.56
1	5.689	5000.00	1337.86	1.49
1	5.689	10000.00	2149.99	2.27
1	5.689	20000.00	3427.75	3.38
1	5.689	30000.00	4440.57	4.22
1	5.689	40000.00	5318.81	4.92
1	5.65	1000.00	449.43	1.08
1	5.65	5000.00	1324.06	2.10
1	5.65	10000.00	2131.38	3.01
1	5.65	20000.00	3402.17	4.25
1	5.65	30000.00	4409.51	5.18
1	5.65	40000.00	5283.03	5.95
1	5.54	1000.00	440.06	2.08

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	5.54	5000.00	1298.43	3.40
1	5.54	10000.00	2093.92	4.35
1	5.54	20000.00	3346.90	5.56
1	5.54	30000.00	4339.91	6.43
1	5.54	40000.00	5201.02	7.14
1	5.51	1000.00	438.60	2.33
1	5.51	5000.00	1293.85	3.62
1	5.51	10000.00	2086.55	4.37
1	5.51	20000.00	3335.48	5.69
1	5.51	30000.00	4325.19	6.67
1	5.51	40000.00	5183.44	7.49
1	5.48	1000.00	436.85	1.71
1	5.48	5000.00	1288.31	2.73
1	5.48	10000.00	2077.49	3.36
1	5.48	20000.00	3321.92	4.58
1	5.48	30000.00	4308.00	5.46
1	5.48	40000.00	5163.11	6.19
1	5.38	1000.00	429.53	1.67
1	5.38	5000.00	1267.83	3.38
1	5.38	10000.00	2044.13	4.13
1	5.38	20000.00	3271.14	5.20
1	5.38	30000.00	4243.23	6.02
1	5.38	40000.00	5086.26	6.70
1	5.328	1000.00	424.90	1.19
1	5.328	5000.00	1256.19	2.33
1	5.328	10000.00	2026.32	3.21
1	5.328	20000.00	3244.17	4.40
1	5.328	30000.00	4208.99	5.29
1	5.328	40000.00	5045.74	6.02
1	5.317	1000.00	423.84	1.42
1	5.317	5000.00	1253.34	2.50
1	5.317	10000.00	2022.14	3.38
1	5.317	20000.00	3238.05	4.61
1	5.317	30000.00	4201.34	5.52
1	5.317	40000.00	5036.77	6.27
1	5.305	1000.00	422.70	1.21
1	5.305	5000.00	1250.25	2.34
1	5.305	10000.00	2017.65	3.26
1	5.305	20000.00	3231.52	4.52
1	5.305	30000.00	4193.19	5.46
1	5.305	40000.00	5027.22	6.23
1	5.29	1000.00	421.66	1.47
1	5.29	5000.00	1247.39	2.50
1	5.29	10000.00	2013.55	3.46

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	5.29	20000.00	3225.58	4.77
1	5.29	30000.00	4185.81	5.75
1	5.29	40000.00	5018.59	6.54
1	5.27	1000.00	420.06	2.32
1	5.27	5000.00	1242.28	3.21
1	5.27	10000.00	2006.09	4.33
1	5.27	20000.00	3214.70	5.89
1	5.27	30000.00	4172.21	7.06
1	5.27	40000.00	5002.67	8.03
1	5.25	1000.00	418.54	1.58
1	5.25	5000.00	1237.67	3.02
1	5.25	10000.00	1999.28	4.11
1	5.25	20000.00	3204.68	5.58
1	5.25	30000.00	4159.65	6.66
1	5.25	40000.00	4987.91	7.54
1	5.203	1000.00	415.77	2.85
1	5.203	5000.00	1230.16	4.91
1	5.203	10000.00	1987.88	6.17
1	5.203	20000.00	3187.35	7.76
1	5.203	30000.00	4137.49	8.89
1	5.203	40000.00	4961.50	9.79
1	5.201	1000.00	415.65	1.41
1	5.201	5000.00	1229.83	2.79
1	5.201	10000.00	1987.39	3.79
1	5.201	20000.00	3186.61	5.11
1	5.201	30000.00	4136.54	6.11
1	5.201	40000.00	4960.37	6.94
1	5.15	1000.00	412.62	3.73
1	5.15	5000.00	1220.73	4.35
1	5.15	10000.00	1973.23	5.18
1	5.15	20000.00	3165.37	6.80
1	5.15	30000.00	4109.50	7.86
1	5.15	40000.00	4928.02	8.55
1	5.1	1000.00	410.06	1.84
1	5.1	5000.00	1212.85	3.72
1	5.1	10000.00	1960.48	4.74
1	5.1	20000.00	3145.29	5.84
1	5.1	30000.00	4082.97	6.54
1	5.1	40000.00	4895.37	7.06
1	5.02	1000.00	406.27	3.79
1	5.02	5000.00	1199.50	3.35
1	5.02	10000.00	1938.02	3.76
1	5.02	20000.00	3109.21	4.71
1	5.02	30000.00	4035.56	5.47

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	5.02	40000.00	4837.56	6.05
1	5	1000.00	405.11	1.34
1	5	5000.00	1195.11	2.14
1	5	10000.00	1931.10	2.97
1	5	20000.00	3098.84	4.18
1	5	30000.00	4022.50	5.09
1	5	40000.00	4822.03	5.79
1	4.98	1000.00	403.75	1.67
1	4.98	5000.00	1190.67	2.43
1	4.98	10000.00	1924.51	3.16
1	4.98	20000.00	3089.28	4.28
1	4.98	30000.00	4010.61	5.11
1	4.98	40000.00	4808.02	5.74
1	4.89	1000.00	396.47	1.58
1	4.89	5000.00	1167.21	2.62
1	4.89	10000.00	1888.74	3.46
1	4.89	20000.00	3037.24	4.84
1	4.89	30000.00	3945.71	5.87
1	4.89	40000.00	4730.74	6.55
1	4.79	1000.00	391.68	4.36
1	4.79	5000.00	1151.95	6.02
1	4.79	10000.00	1864.53	6.86
1	4.79	20000.00	2999.16	7.37
1	4.79	30000.00	3894.05	7.19
1	4.79	40000.00	4666.83	7.44
1	4.759	1000.00	389.04	1.09
1	4.759	5000.00	1144.11	1.93
1	4.759	10000.00	1852.43	2.62
1	4.759	20000.00	2980.07	3.57
1	4.759	30000.00	3868.37	4.28
1	4.759	40000.00	4635.61	4.86
1	4.7565	Bridge		
1	4.754	1000.00	387.65	1.20
1	4.754	5000.00	1140.05	1.99
1	4.754	10000.00	1846.45	2.68
1	4.754	20000.00	2971.29	3.64
1	4.754	30000.00	3857.39	4.36
1	4.754	40000.00	4622.74	4.95
1	4.7	1000.00	384.23	2.04
1	4.7	5000.00	1128.50	2.55
1	4.7	10000.00	1828.75	3.20
1	4.7	20000.00	2944.59	4.13
1	4.7	30000.00	3823.60	4.84

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	4.7	40000.00	4582.90	5.44
1	4.6	1000.00	376.80	1.24
1	4.6	5000.00	1103.60	2.10
1	4.6	10000.00	1790.26	2.79
1	4.6	20000.00	2886.36	3.77
1	4.6	30000.00	3749.92	4.52
1	4.6	40000.00	4496.01	5.14
1	4.52	1000.00	368.63	1.15
1	4.52	5000.00	1080.27	2.08
1	4.52	10000.00	1755.31	2.79
1	4.52	20000.00	2834.84	3.80
1	4.52	30000.00	3685.46	4.57
1	4.52	40000.00	4420.51	5.20
1	4.5	1000.00	365.87	0.88
1	4.5	5000.00	1073.32	1.89
1	4.5	10000.00	1745.28	2.71
1	4.5	20000.00	2820.45	3.86
1	4.5	30000.00	3667.68	4.73
1	4.5	40000.00	4399.83	5.46
1	4.48	1000.00	363.20	1.03
1	4.48	5000.00	1066.80	1.99
1	4.48	10000.00	1735.98	2.72
1	4.48	20000.00	2807.17	3.75
1	4.48	30000.00	3651.31	4.53
1	4.48	40000.00	4380.83	5.18
1	4.39	1000.00	352.93	1.22
1	4.39	5000.00	1039.45	2.22
1	4.39	10000.00	1695.50	2.96
1	4.39	20000.00	2748.09	4.03
1	4.39	30000.00	3577.73	4.84
1	4.39	40000.00	4294.84	5.51
1	4.3	1000.00	343.70	1.17
1	4.3	5000.00	1014.54	2.21
1	4.3	10000.00	1658.48	2.99
1	4.3	20000.00	2693.98	4.12
1	4.3	30000.00	3510.30	4.97
1	4.3	40000.00	4215.98	5.67
1	4.27	1000.00	341.41	1.15
1	4.27	5000.00	1008.60	2.24
1	4.27	10000.00	1649.88	3.15
1	4.27	20000.00	2681.65	4.45
1	4.27	30000.00	3495.06	5.44
1	4.27	40000.00	4198.24	6.26

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	4.26	1000.00	339.46	1.21
1	4.26	5000.00	1003.78	2.55
1	4.26	10000.00	1642.83	3.37
1	4.26	20000.00	2671.43	4.53
1	4.26	30000.00	3482.37	5.41
1	4.26	40000.00	4183.44	6.15
1	4.16	1000.00	327.93	0.83
1	4.16	5000.00	978.88	2.07
1	4.16	10000.00	1606.91	2.98
1	4.16	20000.00	2619.63	4.25
1	4.16	30000.00	3418.10	5.20
1	4.16	40000.00	4108.47	5.98
1	4.094	1000.00	322.15	3.09
1	4.094	5000.00	966.14	5.30
1	4.094	10000.00	1588.53	6.66
1	4.094	20000.00	2592.79	8.40
1	4.094	30000.00	3384.41	9.60
1	4.094	40000.00	4068.79	10.57
1	4.092	1000.00	322.03	1.40
1	4.092	5000.00	965.82	2.70
1	4.092	10000.00	1588.03	3.46
1	4.092	20000.00	2592.00	4.39
1	4.092	30000.00	3383.37	5.05
1	4.092	40000.00	4067.54	5.60
1	4.06	1000.00	319.42	1.60
1	4.06	5000.00	958.71	2.78
1	4.06	10000.00	1576.78	3.48
1	4.06	20000.00	2574.17	4.36
1	4.06	30000.00	3360.12	5.02
1	4.06	40000.00	4039.55	5.56
1	4.04	1000.00	317.88	2.03
1	4.04	5000.00	953.85	2.90
1	4.04	10000.00	1569.08	3.69
1	4.04	20000.00	2562.02	4.72
1	4.04	30000.00	3344.33	5.47
1	4.04	40000.00	4020.59	6.09
1	4.02	1000.00	316.26	1.09
1	4.02	5000.00	949.19	2.14
1	4.02	10000.00	1562.03	2.91
1	4.02	20000.00	2551.24	3.88
1	4.02	30000.00	3330.51	4.58
1	4.02	40000.00	4004.13	5.15
1	3.93	1000.00	307.29	1.54
1	3.93	5000.00	924.98	2.65

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	3.93	10000.00	1525.12	3.34
1	3.93	20000.00	2494.46	4.22
1	3.93	30000.00	3257.65	4.89
1	3.93	40000.00	3917.34	5.44
1	3.83	1000.00	298.56	1.14
1	3.83	5000.00	901.84	2.33
1	3.83	10000.00	1488.80	3.00
1	3.83	20000.00	2437.74	3.89
1	3.83	30000.00	3184.56	4.55
1	3.83	40000.00	3830.12	5.10
1	3.81	1000.00	296.77	1.65
1	3.81	5000.00	897.21	2.93
1	3.81	10000.00	1481.45	3.61
1	3.81	20000.00	2426.25	4.56
1	3.81	30000.00	3169.81	5.31
1	3.81	40000.00	3812.54	5.93
1	3.8	1000.00	295.59	1.48
1	3.8	5000.00	893.86	2.57
1	3.8	10000.00	1476.00	3.16
1	3.8	20000.00	2417.66	4.02
1	3.8	30000.00	3158.75	4.69
1	3.8	40000.00	3799.36	5.26
1	3.78	1000.00	293.76	1.66
1	3.78	5000.00	888.21	2.51
1	3.78	10000.00	1466.81	3.08
1	3.78	20000.00	2403.27	3.96
1	3.78	30000.00	3140.31	4.64
1	3.78	40000.00	3777.44	5.22
1	3.77	1000.00	293.27	1.61
1	3.77	5000.00	886.62	2.54
1	3.77	10000.00	1464.24	3.17
1	3.77	20000.00	2399.29	4.12
1	3.77	30000.00	3135.24	4.87
1	3.77	40000.00	3771.43	5.48
1	3.7685	Bridge		
1	3.767	1000.00	293.07	3.17
1	3.767	5000.00	885.83	2.65
1	3.767	10000.00	1462.98	3.27
1	3.767	20000.00	2397.35	4.23
1	3.767	30000.00	3132.77	5.00
1	3.767	40000.00	3768.52	5.64
1	3.757	1000.00	292.27	0.93
1	3.757	5000.00	883.17	1.82

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	3.757	10000.00	1458.94	2.50
1	3.757	20000.00	2391.32	3.47
1	3.757	30000.00	3125.24	4.21
1	3.757	40000.00	3759.70	4.83
1	3.747	1000.00	291.08	1.00
1	3.747	5000.00	879.99	1.78
1	3.747	10000.00	1454.26	2.41
1	3.747	20000.00	2384.54	3.31
1	3.747	30000.00	3116.84	4.00
1	3.747	40000.00	3749.92	4.57
1	3.7405	Bridge		
1	3.734	1000.00	289.67	1.09
1	3.734	5000.00	875.92	1.83
1	3.734	10000.00	1448.26	2.47
1	3.734	20000.00	2375.79	3.38
1	3.734	30000.00	3106.00	4.09
1	3.734	40000.00	3737.31	4.68
1	3.729	1000.00	289.12	0.99
1	3.729	5000.00	874.33	1.77
1	3.729	10000.00	1445.91	2.42
1	3.729	20000.00	2372.37	3.35
1	3.729	30000.00	3101.77	4.06
1	3.729	40000.00	3732.39	4.66
1	3.69	1000.00	285.05	3.03
1	3.69	5000.00	862.64	4.90
1	3.69	10000.00	1428.48	6.25
1	3.69	20000.00	2346.02	7.45
1	3.69	30000.00	3068.22	8.23
1	3.69	40000.00	3692.56	8.86
1	3.64	1000.00	282.74	1.96
1	3.64	5000.00	856.38	3.99
1	3.64	10000.00	1418.75	5.17
1	3.64	20000.00	2329.62	6.12
1	3.64	30000.00	3046.87	7.30
1	3.64	40000.00	3666.94	8.36
1	3.55	1000.00	278.55	3.99
1	3.55	5000.00	844.00	5.03
1	3.55	10000.00	1398.64	5.83
1	3.55	20000.00	2292.77	5.85
1	3.55	30000.00	2999.02	6.56
1	3.55	40000.00	3610.07	7.23
1	3.47	1000.00	274.58	1.60
1	3.47	5000.00	832.56	3.27

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	3.47	10000.00	1380.56	4.40
1	3.47	20000.00	2259.03	4.97
1	3.47	30000.00	2955.29	5.92
1	3.47	40000.00	3557.75	6.66
1	3.43	1000.00	272.01	2.01
1	3.43	5000.00	825.93	3.67
1	3.43	10000.00	1370.55	4.79
1	3.43	20000.00	2241.00	5.22
1	3.43	30000.00	2932.27	6.05
1	3.43	40000.00	3530.49	6.81
1	3.4	1000.00	270.46	3.11
1	3.4	5000.00	821.95	6.78
1	3.4	10000.00	1364.53	9.16
1	3.4	20000.00	2229.75	9.47
1	3.4	30000.00	2917.14	9.90
1	3.4	40000.00	3512.25	10.65
1	3.37	1000.00	268.17	1.22
1	3.37	5000.00	816.24	2.38
1	3.37	10000.00	1355.96	3.15
1	3.37	20000.00	2216.02	4.23
1	3.37	30000.00	2899.08	5.04
1	3.37	40000.00	3490.70	5.73
1	3.27	1000.00	260.39	1.97
1	3.27	5000.00	793.45	2.79
1	3.27	10000.00	1319.93	3.36
1	3.27	20000.00	2159.78	4.10
1	3.27	30000.00	2827.64	4.80
1	3.27	40000.00	3406.45	5.39
1	3.18	1000.00	252.67	1.23
1	3.18	5000.00	769.73	2.21
1	3.18	10000.00	1281.89	2.84
1	3.18	20000.00	2097.88	3.51
1	3.18	30000.00	2748.53	4.13
1	3.18	40000.00	3312.84	4.67
1	3.08	1000.00	239.36	0.66
1	3.08	5000.00	737.47	1.49
1	3.08	10000.00	1233.24	2.02
1	3.08	20000.00	2023.44	2.75
1	3.08	30000.00	2654.87	3.31
1	3.08	40000.00	3203.11	3.79
1	2.99	1000.00	222.99	0.74
1	2.99	5000.00	700.74	1.65
1	2.99	10000.00	1179.12	2.24
1	2.99	20000.00	1943.52	3.01

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	2.99	30000.00	2554.90	3.59
1	2.99	40000.00	3086.01	4.06
1	2.89	1000.00	209.61	1.06
1	2.89	5000.00	668.77	2.06
1	2.89	10000.00	1130.05	2.56
1	2.89	20000.00	1868.43	3.24
1	2.89	30000.00	2459.25	3.76
1	2.89	40000.00	2972.26	4.18
1	2.8	1000.00	200.34	1.38
1	2.8	5000.00	641.62	2.04
1	2.8	10000.00	1085.51	2.45
1	2.8	20000.00	1797.59	3.06
1	2.8	30000.00	2368.41	3.59
1	2.8	40000.00	2863.44	4.01
1	2.7	1000.00	192.63	1.61
1	2.7	5000.00	615.91	2.46
1	2.7	10000.00	1042.95	3.00
1	2.7	20000.00	1727.66	3.54
1	2.7	30000.00	2277.30	3.97
1	2.7	40000.00	2753.16	4.32
1	2.6	1000.00	186.65	2.37
1	2.6	5000.00	594.66	2.99
1	2.6	10000.00	1007.18	3.45
1	2.6	20000.00	1667.22	4.05
1	2.6	30000.00	2195.89	4.47
1	2.6	40000.00	2652.76	4.81
1	2.51	1000.00	180.97	1.79
1	2.51	5000.00	572.91	2.40
1	2.51	10000.00	971.78	3.12
1	2.51	20000.00	1610.36	4.04
1	2.51	30000.00	2120.82	4.69
1	2.51	40000.00	2561.55	5.23
1	2.41	1000.00	175.17	2.16
1	2.41	5000.00	552.48	3.30
1	2.41	10000.00	939.88	4.14
1	2.41	20000.00	1557.67	4.54
1	2.41	30000.00	2051.16	5.00
1	2.41	40000.00	2477.24	5.42
1	2.33	1000.00	169.24	1.75
1	2.33	5000.00	535.27	3.37
1	2.33	10000.00	911.50	3.77
1	2.33	20000.00	1509.57	4.40
1	2.33	30000.00	1988.07	5.09
1	2.33	40000.00	2401.35	5.69

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	2.25	1000.00	163.64	2.36
1	2.25	5000.00	518.99	3.55
1	2.25	10000.00	883.79	4.17
1	2.25	20000.00	1464.31	5.05
1	2.25	30000.00	1929.50	5.71
1	2.25	40000.00	2331.57	6.31
1	2.18	1000.00	157.04	1.33
1	2.18	5000.00	499.87	2.51
1	2.18	10000.00	854.43	3.41
1	2.18	20000.00	1419.35	4.26
1	2.18	30000.00	1872.24	4.92
1	2.18	40000.00	2264.06	5.50
1	2.1	1000.00	150.50	1.49
1	2.1	5000.00	481.87	2.59
1	2.1	10000.00	827.90	3.50
1	2.1	20000.00	1379.00	4.69
1	2.1	30000.00	1820.34	5.36
1	2.1	40000.00	2202.42	5.94
1	2.02	1000.00	144.71	2.11
1	2.02	5000.00	463.13	2.81
1	2.02	10000.00	800.05	3.76
1	2.02	20000.00	1337.20	4.95
1	2.02	30000.00	1765.46	5.42
1	2.02	40000.00	2136.18	5.83
1	1.94	1000.00	139.51	2.03
1	1.94	5000.00	443.22	2.61
1	1.94	10000.00	770.16	3.47
1	1.94	20000.00	1290.61	4.34
1	1.94	30000.00	1703.55	4.84
1	1.94	40000.00	2060.37	5.10
1	1.87	1000.00	133.87	2.21
1	1.87	5000.00	423.11	3.43
1	1.87	10000.00	736.32	3.59
1	1.87	20000.00	1235.18	4.26
1	1.87	30000.00	1630.57	4.86
1	1.87	40000.00	1971.61	5.23
1	1.79	1000.00	128.93	2.20
1	1.79	5000.00	405.13	2.72
1	1.79	10000.00	702.09	2.87
1	1.79	20000.00	1178.74	3.52
1	1.79	30000.00	1558.16	4.13
1	1.79	40000.00	1884.52	4.41
1	1.71	1000.00	122.62	1.55

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	1.71	5000.00	380.11	1.98
1	1.71	10000.00	657.86	2.37
1	1.71	20000.00	1110.02	3.18
1	1.71	30000.00	1471.65	3.71
1	1.71	40000.00	1781.09	4.07
1	1.64	1000.00	112.16	0.84
1	1.64	5000.00	346.78	1.49
1	1.64	10000.00	604.97	1.96
1	1.64	20000.00	1032.54	2.67
1	1.64	30000.00	1374.14	3.14
1	1.64	40000.00	1666.08	3.55
1	1.56	1000.00	94.23	0.54
1	1.56	5000.00	307.10	1.44
1	1.56	10000.00	546.94	2.01
1	1.56	20000.00	947.32	2.56
1	1.56	30000.00	1269.06	3.10
1	1.56	40000.00	1544.78	3.58
1	1.48	1000.00	79.02	1.23
1	1.48	5000.00	276.99	2.67
1	1.48	10000.00	503.16	3.47
1	1.48	20000.00	877.75	3.77
1	1.48	30000.00	1182.07	4.24
1	1.48	40000.00	1443.58	4.70
1	1.4	1000.00	71.70	2.21
1	1.4	5000.00	259.03	4.07
1	1.4	10000.00	475.72	5.41
1	1.4	20000.00	827.78	5.64
1	1.4	30000.00	1114.63	5.98
1	1.4	40000.00	1361.21	6.31
1	1.33	1000.00	68.03	4.53
1	1.33	5000.00	247.16	5.28
1	1.33	10000.00	457.25	6.49
1	1.33	20000.00	790.28	5.65
1	1.33	30000.00	1059.99	5.53
1	1.33	40000.00	1292.54	5.84
1	1.25	1000.00	62.35	1.29
1	1.25	5000.00	231.93	2.89
1	1.25	10000.00	434.70	4.13
1	1.25	20000.00	750.63	5.78
1	1.25	30000.00	1003.10	6.46
1	1.25	40000.00	1221.13	6.90
1	1.17	1000.00	54.63	1.64
1	1.17	5000.00	213.33	3.12
1	1.17	10000.00	407.28	4.01

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	1.17	20000.00	708.38	4.86
1	1.17	30000.00	946.06	5.36
1	1.17	40000.00	1150.62	5.83
1	1.1	1000.00	47.25	1.70
1	1.1	5000.00	190.45	2.36
1	1.1	10000.00	369.94	2.77
1	1.1	20000.00	649.52	3.63
1	1.1	30000.00	869.01	4.28
1	1.1	40000.00	1057.80	4.80
1	1.01	1000.00	40.81	1.81
1	1.01	5000.00	168.08	2.70
1	1.01	10000.00	331.34	3.06
1	1.01	20000.00	587.71	3.62
1	1.01	30000.00	789.53	4.16
1	1.01	40000.00	962.96	4.62
1	0.92	1000.00	36.25	2.85
1	0.92	5000.00	149.89	2.86
1	0.92	10000.00	299.00	3.19
1	0.92	20000.00	533.96	3.91
1	0.92	30000.00	718.88	4.42
1	0.92	40000.00	877.64	4.85
1	0.83	1000.00	32.17	2.19
1	0.83	5000.00	133.93	3.56
1	0.83	10000.00	268.33	3.43
1	0.83	20000.00	480.12	3.63
1	0.83	30000.00	646.71	4.03
1	0.83	40000.00	789.68	4.39
1	0.73	1000.00	26.57	1.89
1	0.73	5000.00	114.23	2.42
1	0.73	10000.00	228.57	2.45
1	0.73	20000.00	411.59	3.05
1	0.73	30000.00	556.33	3.55
1	0.73	40000.00	680.53	3.96
1	0.63	1000.00	21.53	2.82
1	0.63	5000.00	94.89	3.76
1	0.63	10000.00	189.21	3.58
1	0.63	20000.00	342.46	3.63
1	0.63	30000.00	464.43	3.96
1	0.63	40000.00	568.99	4.27
1	0.54	1000.00	17.34	2.70
1	0.54	5000.00	76.62	2.77
1	0.54	10000.00	150.91	2.64
1	0.54	20000.00	272.17	3.04
1	0.54	30000.00	369.62	3.43

HEC-RAS Plan: FW-SS River: Agua Fria Reach: 1 (Continued)

Reach	River Sta	Q Total	Volume	Vel Total
		(cfs)	(acre-ft)	(ft/s)
1	0.54	40000.00	452.98	3.77
1	0.44	1000.00	13.46	3.34
1	0.44	5000.00	55.98	2.95
1	0.44	10000.00	107.90	2.85
1	0.44	20000.00	196.58	3.18
1	0.44	30000.00	268.11	3.50
1	0.44	40000.00	328.96	3.79
1	0.35	1000.00	9.49	2.60
1	0.35	5000.00	36.79	3.16
1	0.35	10000.00	67.97	3.02
1	0.35	20000.00	123.68	3.23
1	0.35	30000.00	168.62	3.54
1	0.35	40000.00	206.74	3.85
1	0.25	1000.00	5.40	2.85
1	0.25	5000.00	19.60	3.32
1	0.25	10000.00	33.95	3.57
1	0.25	20000.00	59.76	3.78
1	0.25	30000.00	80.70	4.10
1	0.25	40000.00	98.56	4.43
1	0.16	1000.00		1.65
1	0.16	5000.00		2.55
1	0.16	10000.00		3.13
1	0.16	20000.00		3.78
1	0.16	30000.00		4.29
1	0.16	40000.00		4.73

Kimley-Horn
and Associates, Inc.

APPENDIX B HEC-1 MODIFIED PULS

FP100n.out – Floodplain Model-Upper Reach

FP100s.out – Floodplain Model-Middle Reach

FW100n.out – Floodway Model-Upper Reach

FW100s.out – Floodway Model-Middle Reach

Kimley-Horn
and Associates, Inc.

FP100n.out

Floodplain Model-Upper Reach

```
1****************************************                                                    ****************************************
 *                                      *                                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *              JUL   1997              *                                                    *    HYDROLOGIC ENGINEERING CENTER     *
 *           VERSION 4.1                *                                                    *          609 SECOND STREET           *
 *                                      *                                                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   17APR01  TIME  16:07:45  *                                                    *           (916) 756-1104             *
 *                                      *                                                    *                                      *
****************************************                                                    ****************************************


                                                X     X  XXXXXXX   XXXXX           X
                                                X     X  X        X     X         XX
                                                X     X  X        X                X
                                                XXXXXXX  XXXX     X        XXXXX   X
                                                X     X  X        X                X
                                                X     X  X        X     X          X
                                                X     X  XXXXXXX   XXXXX         XXX


          THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

          THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
          THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
          NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
          DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL   LOSS RATE:GREEN AND AMPT INFILTRATION
          KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1                                                   HEC-1 INPUT                                                          PAGE  1

        LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

          1           ID   Agua Fria River Existing Conditions
                      * ******************************************************************************
                      *                                                                              *
                      *                  Flood Control District of Maricopa County                   *
                      *                Agua Fria River Watercourse Floodplain Study                  *
                      *                                FCD99-24                                      *
                      *                                                                              *
                      *                        EXISTING CONDITIONS HYDROLOGY                         *
                      *                                                                              *
                      *                                                                              *
                      *                  Prepared by Kimley-Horn and Associates, Inc.                *
                      *                              KHA Job No. 09113104                            *
                      *                                                                              *
                      *                                February 2001                                 *
                      *                                                                              *
                      *                                                                              *
                      *  The flood routing model was developed to evaluate flood wave attenuation as *
                      *  related to overbank storage.  The Modified-Puls method was utilized to      *
                      *  simulate flood routing. Stage-storage-discharge relationships were developed*
                      *  on a reach by reach basis using HEC-RAS.  Routing reaches are approximately *
                      *  1/4 mile long. Direct channel losses are assumed negligible.               *
                      *  This hydrology is a FLOODPLAIN model of existing conditions on the Agua Fria*
                      *  River and its tributaries from New Waddell Dam to the New River confluence. *
                      *  Hydrographs were obtained from a study by the Corps of Engineers entitled   *
                      *  "Agua Fria River Study New Waddell Dam to Gila River Confluence, Arizona."  *
                      *  This model is the upper reach of the Agua Fria River, from New Waddell Dam  *
                      *  to Bell Road. Two 100-year hydrographs shall be used, one downstream of the *
                      *  Dam and a second at Bell Road (CP1037).  All other inflow is assumed to be  *
                      *  negligible.                                                                 *
                      *                                                                              *
                      * ******************************************************************************
          2           ID    Agua Fria Water Course - Direct input of existing
          3           ID    conditions 100-yr hydrograph, per the Corps of Engineers' report
          4           IT       5       0       0     300
          5           IN      30
          6           IO       5
*** FREE ***
                      *DIAGRAM

          7           KK    1037
          8           KO       1
          9           KM   Runoff hydrograph for subbasin 1037
         10           BA     102
         11           QI       0       0       0       0      50     200     500    2000    3900   11000
         12           QI   16800   22200   20300   17500   14500   12800   10800    8800    7200    6100
         13           QI    5500    4500    3500    3000    2500    2200    1900    1800    1300    1100
         14           QI    1050     800     500     450     450     450     450     450     450     400
         15           QI     400      50     0.1       0       0       0       0       0       0       0

         16           KKRS33.540,,,,,,,,,
         17           RS       1    FLOW      -1
         18           SV       0      20      38      53      81     110     140
         19           SQ       0    1000    5000   10000   20000   30000   40000
1                                                   HEC-1 INPUT                                                          PAGE  2

        LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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 20          KK RS33.30,,,,,,,,,
 21          RS       1    FLOW      -1
 22          SV       0      13      46      78     131     178     221
 23          SQ       0    1000    5000   10000   20000   30000   40000

 24          KKRS33.060,,,,,,
 25          RS       1    FLOW      -1
 26          SV       0      10      27      41      68      98     123
 27          SQ       0    1000    5000   10000   20000   30000   40000

 28          KKRS32.790,,,,,,
 29          RS       1    FLOW      -1
 30          SV       0      20      44      61      91     118     144
 31          SQ       0    1000    5000   10000   20000   30000   40000

 32          KKRS32.520,,,,,,
 33          RS       1    FLOW      -1
 34          SV       0      17      62      93     135     170     201
 35          SQ       0    1000    5000   10000   20000   30000   40000

 36          KKRS32.240,,,,,,
 37          RS       1    FLOW      -1
 38          SV       0      14      42      70     115     151     182
 39          SQ       0    1000    5000   10000   20000   30000   40000

 40          KKRS31.960,,,,,,
 41          RS       1    FLOW      -1
 42          SV       0      16      56      88     134     171     202
 43          SQ       0    1000    5000   10000   20000   30000   40000

 44          KKRS31.670,,,,,,
 45          RS       1    FLOW      -1
 46          SV       0      18      62      97     145     184     217
 47          SQ       0    1000    5000   10000   20000   30000   40000

 48          KKRS31.390,,,,,,
 49          RS       1    FLOW      -1
 50          SV       0      11      44      80     137     187     233
 51          SQ       0    1000    5000   10000   20000   30000   40000

 52          KKRS31.110,,,,,,
 53          RS       1    FLOW      -1
 54          SV       0      12      44      82     153     225     283
 55          SQ       0    1000    5000   10000   20000   30000   40000

 56          KKRS30.820,,,,,,
 57          RS       1    FLOW      -1
 58          SV       0      13      36      57      91     127     168
 59          SQ       0    1000    5000   10000   20000   30000   40000
                                          HEC-1 INPUT                                                    PAGE  3

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 60          KKRS20.550,,,,,,
 61          RS       1    FLOW      -1
 62          SV       0      15      44      70     118     165     214
 63          SQ       0    1000    5000   10000   20000   30000   40000

 64          KKRS30.260,,,,,,
 65          RS       1    FLOW      -1
 66          SV       0      13      44      74     118     155     187
 67          SQ       0    1000    5000   10000   20000   30000   40000

 68          KKRS29.990,,,,,,
 69          RS       1    FLOW      -1
 70          SV       0      24      61      94     151     210     273
 71          SQ       0    1000    5000   10000   20000   30000   40000

 72          KKRS29.720,,,,,,
 73          RS       1    FLOW      -1
 74          SV       0      10      31      54     107     153     194
 75          SQ       0    1000    5000   10000   20000   30000   40000

 76          KKRS29.470,,,,,,
 77          RS       1    FLOW      -1
 78          SV       0      11      38      64     110     147     177
 79          SQ       0    1000    5000   10000   20000   30000   40000

 80          KKRS29.230,,,,,,
 81          RS       1    FLOW      -1
 82          SV       0      10      35      74     136     194     233
 83          SQ       0    1000    5000   10000   20000   30000   40000

 84          KKRS28.950,,,,,,
 85          RS       1    FLOW      -1
 86          SV       0      11      29      49      89     131     172
 87          SQ       0    1000    5000   10000   20000   30000   40000

 88          KKRS28.670,,,,,,
 89          RS       1    FLOW      -1
 90          SV       0      10      31      50      93     136     176
 91          SQ       0    1000    5000   10000   20000   30000   40000

 92          KKRS28.450,,,,,,
 93          RS       1    FLOW      -1
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  94          SV       0      12      40      73     132     192     238
  95          SQ       0    1000    5000   10000   20000   30000   40000

  96          KKRS28.210,,,,,,
  97          RS       1    FLOW      -1
  98          SV       0      16      57      96     165     234     292
  99          SQ       0    1000    5000   10000   20000   30000   40000
1                                          HEC-1 INPUT                                                    PAGE  4

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 100          KKRS27.940,,,,,,
 101          RS       1    FLOW      -1
 102          SV       0      10      44      84     151     217     271
 103          SQ       0    1000    5000   10000   20000   30000   40000

 104          KKRS27.680,,,,,,
 105          RS       1    FLOW      -1
 106          SV       0      15      65     128     241     330     406
 107          SQ       0    1000    5000   10000   20000   30000   40000

 108          KKRS27.390,,,,,,
 109          RS       1    FLOW      -1
 110          SV       0      19      70     130     254     360     448
 111          SQ       0    1000    5000   10000   20000   30000   40000

 112          KKRS27.110,,,,,,
 113          RS       2    FLOW      -1
 114          SV       0      15      43      79     142     215     266
 115          SQ       0    1000    5000   10000   20000   30000   40000

 116          KKRS26.830,,,,,,
 117          RS       1    FLOW      -1
 118          SV       0      18      60      99     168     280     350
 119          SQ       0    1000    5000   10000   20000   30000   40000

 120          KKRS26.550,,,,,,
 121          RS       1    FLOW      -1
 122          SV       0      11      56     102     186     265     335
 123          SQ       0    1000    5000   10000   20000   30000   40000

 124          KKRS26.290,,,,,,
 125          RS       1    FLOW      -1
 126          SV       0      11      56     115     196     274     338
 127          SQ       0    1000    5000   10000   20000   30000   40000

 128          KKRS26.030,,,,,,
 129          RS       2    FLOW      -1
 130          SV       0       9      35      69     135     183     235
 131          SQ       0    1000    5000   10000   20000   30000   40000

 132          KKRS25.790,,,,,,
 133          RS       1    FLOW      -1
 134          SV       0      15      49      96     177     248     305
 135          SQ       0    1000    5000   10000   20000   30000   40000

 136          KKRS25.5260,,,,,,
 137          RS       1    FLOW      -1
 138          SV       0      11      36      61     112     161     207
 139          SQ       0    1000    5000   10000   20000   30000   40000
                                           HEC-1 INPUT                                                    PAGE  5

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 140          KKRS25.2880,,,,,,
 141          RS       1    FLOW      -1
 142          SV       0       9      41      70     124     171     221
 143          SQ       0    1000    5000   10000   20000   30000   40000

 144          KKRS25.0980,,,,,,
 145          RS       1    FLOW      -1
 146          SV       0      14      60     109     200     288     361
 147          SQ       0    1000    5000   10000   20000   30000   40000

 148          KKRS24.8160,,,,,,
 149          RS       2    FLOW      -1
 150          SV       0      15      59     105     186     260     324
 151          SQ       0    1000    5000   10000   20000   30000   40000

 152          KKRS24.5430,,,,,,
 153          RS       1    FLOW      -1
 154          SV       0      17      69     116     192     261     317
 155          SQ       0    1000    5000   10000   20000   30000   40000

 156          KKRS24.260,,,,,,
 157          RS       2    FLOW      -1
 158          SV       0      20      73     131     235     339     426
 159          SQ       0    1000    5000   10000   20000   30000   40000

 160          KKRS23.974,,,,,,
 161          RS       3    FLOW      -1
 162          SV       0     607     718     817     948    1046    1128
 163          SQ       0    1000    5000   10000   20000   30000   40000
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 164          KKRS23.692,,,,,,
 165          RS       1    FLOW      -1
 166          SV       0     784     872     942    1045    1124    1187
 167          SQ       0    1000    5000   10000   20000   30000   40000

 168          KKRS23.409,,,,,,
 169          RS       1    FLOW      -1
 170          SV       0      17      62     103     182     256     317
 171          SQ       0    1000    5000   10000   20000   30000   40000

 172          KKRS23.124,,,,,,
 173          RS       1    FLOW      -1
 174          SV       0      14      56     102     179     247     311
 175          SQ       0    1000    5000   10000   20000   30000   40000

 176          KKRS22.839,,,,,,
 177          RS       1    FLOW      -1
 178          SV       0      15      52      89     156     215     270
 179          SQ       0    1000    5000   10000   20000   30000   40000
1                                          HEC-1 INPUT                                                    PAGE  6

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 180          KKRS22.558,,,,,,
 181          RS       1    FLOW      -1
 182          SV       0      24      65     101     163     218     275
 183          SQ       0    1000    5000   10000   20000   30000   40000

 184          KKRS22.273,,,,,,
 185          RS       1    FLOW      -1
 186          SV       0     243     301     356     446     522     589
 187          SQ       0    1000    5000   10000   20000   30000   40000

 188          KKRS21.986,,,,,,
 189          RS       1    FLOW      -1
 190          SV       0     315     369     414     482     539     591
 191          SQ       0    1000    5000   10000   20000   30000   40000

 192          KKRS21.716,,,,,,
 193          RS       1    FLOW      -1
 194          SV       0      46      90     137     215     278     339
 195          SQ       0    1000    5000   10000   20000   30000   40000

 196          KKRS21.431,,,,,,
 197          RS       1    FLOW      -1
 198          SV       0     184     251     304     397     477     570
 199          SQ       0    1000    5000   10000   20000   30000   40000

 200          KKRS21.157,,,,,,
 201          RS       1    FLOW      -1
 202          SV       0      33      70     101     154     203     252
 203          SQ       0    1000    5000   10000   20000   30000   40000

 204          KKRS20.958,,,,,,
 205          RS       1    FLOW      -1
 206          SV       0      18      51      85     153     216     274
 207          SQ       0    1000    5000   10000   20000   30000   40000

 208          KKRS20.675,,,,,,
 209          RS       1    FLOW      -1
 210          SV       0      10      36      58      97     137     183
 211          SQ       0    1000    5000   10000   20000   30000   40000

 212          KKRS20.435,,,,,,
 213          RS       1    FLOW      -1
 214          SV       0      10      36      67     116     162     206
 215          SQ       0    1000    5000   10000   20000   30000   40000
 216          ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
 LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   7         1037
                V
                V
  16     RS33.540
                V
                V
  20      RS33.30
                V
                V
  24     RS33.060
                V
                V
  28     RS32.790
                V
                V
  32     RS32.520
                V
                V
  36     RS32.240
                V
```

```
                V
  40    RS31.960
                V
                V
  44    RS31.670
                V
                V
  48    RS31.390
                V
                V
  52    RS31.110
                V
                V
  56    RS30.820
                V
                V
  60    RS20.550
                V
                V
  64    RS30.260
                V
                V
  68    RS29.990
                V
                V
  72    RS29.720
                V
                V
  76    RS29.470
                V
                V
  80    RS29.230
                V
                V
  84    RS28.950
                V
                V
  88    RS28.670
                V
                V
  92    RS28.450
                V
                V
  96    RS28.210
                V
                V
 100    RS27.940
                V
                V
 104    RS27.680
                V
                V
 108    RS27.390
                V
                V
 112    RS27.110
                V
                V
 116    RS26.830
                V
                V
 120    RS26.550
                V
                V
 124    RS26.290
                V
                V
 128    RS26.030
                V
                V
 132    RS25.790
                V
                V
 136    RS25.526
                V
                V
 140    RS25.288
                V
                V
 144    RS25.098
                V
                V
 148    RS24.816
                V
                V
 152    RS24.543
                V
                V
 156    RS24.260
                V
                V
 160    RS23.974
                V
                V
 164    RS23.692
                V
```

```
                V
  168     RS23.409
                V
                V
  172     RS23.124
                V
                V
  176     RS22.839
                V
                V
  180     RS22.558
                V
                V
  184     RS22.273
                V
                V
  188     RS21.986
                V
                V
  192     RS21.716
                V
                V
  196     RS21.431
                V
                V
  200     RS21.157
                V
                V
  204     RS20.958
                V
                V
  208     RS20.675
                V
                V
  212     RS20.435
(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
****************************************                                    ****************************************
*                                      *                                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *    U.S. ARMY CORPS OF ENGINEERS      *
*              JUL   1997              *                                    *    HYDROLOGIC ENGINEERING CENTER     *
*            VERSION 4.1               *                                    *          609 SECOND STREET           *
*                                      *                                    *       DAVIS, CALIFORNIA 95616        *
*  RUN DATE   17APR01  TIME  16:07:45  *                                    *           (916) 756-1104             *
*                                      *                                    *                                      *
****************************************                                    ****************************************


                        Agua Fria River Existing Conditions
                         Agua Fria Water Course - Direct input of existing
                         conditions 100-yr hydrograph, per the Corps of Engineers' report

  6 IO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

    IT          HYDROGRAPH TIME DATA
                       NMIN           5  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ         300  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      2    0  ENDING DATE
                     NDTIME        0055  ENDING TIME
                     ICENT          19  CENTURY MARK

                COMPUTATION INTERVAL     .08 HOURS
                     TOTAL TIME BASE   24.92 HOURS

        ENGLISH UNITS
             DRAINAGE AREA         SQUARE MILES
             PRECIPITATION DEPTH   INCHES
             LENGTH, ELEVATION     FEET
             FLOW                  CUBIC FEET PER SECOND
             STORAGE VOLUME        ACRE-FEET
             SURFACE AREA          ACRES
             TEMPERATURE           DEGREES FAHRENHEIT


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          **************
          *            *
  7 KK    *      1037  *
          *            *
          **************

  8 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           1  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
```

Runoff hydrograph for subbasin 1037

```
 5 IN          TIME DATA FOR INPUT TIME SERIES
                    JXMIN          30  TIME INTERVAL IN MINUTES
                   JXDATE      1    0  STARTING DATE
                   JXTIME           0  STARTING TIME

            SUBBASIN RUNOFF DATA

 10 BA         SUBBASIN CHARACTERISTICS
                    TAREA      102.00  SUBBASIN AREA
```

***

HYDROGRAPH AT STATION 1037

DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1		0000	1	0.	1		0615	76	18900.	1		1230	151	2200.	1		1845	226	450.
1		0005	2	0.	1		0620	77	18433.	1		1235	152	2150.	1		1850	227	450.
1		0010	3	0.	1		0625	78	17967.	1		1240	153	2100.	1		1855	228	450.
1		0015	4	0.	1		0630	79	17500.	1		1245	154	2050.	1		1900	229	450.
1		0020	5	0.	1		0635	80	17000.	1		1250	155	2000.	1		1905	230	442.
1		0025	6	0.	1		0640	81	16500.	1		1255	156	1950.	1		1910	231	433.
1		0030	7	0.	1		0645	82	16000.	1		1300	157	1900.	1		1915	232	425.
1		0035	8	0.	1		0650	83	15500.	1		1305	158	1883.	1		1920	233	417.
1		0040	9	0.	1		0655	84	15000.	1		1310	159	1867.	1		1925	234	408.
1		0045	10	0.	1		0700	85	14500.	1		1315	160	1850.	1		1930	235	400.
1		0050	11	0.	1		0705	86	14217.	1		1320	161	1833.	1		1935	236	400.
1		0055	12	0.	1		0710	87	13933.	1		1325	162	1817.	1		1940	237	400.
1		0100	13	0.	1		0715	88	13650.	1		1330	163	1800.	1		1945	238	400.
1		0105	14	0.	1		0720	89	13367.	1		1335	164	1717.	1		1950	239	400.
1		0110	15	0.	1		0725	90	13083.	1		1340	165	1633.	1		1955	240	400.
1		0115	16	0.	1		0730	91	12800.	1		1345	166	1550.	1		2000	241	400.
1		0120	17	0.	1		0735	92	12467.	1		1350	167	1467.	1		2005	242	342.
1		0125	18	0.	1		0740	93	12133.	1		1355	168	1383.	1		2010	243	283.
1		0130	19	0.	1		0745	94	11800.	1		1400	169	1300.	1		2015	244	225.
1		0135	20	8.	1		0750	95	11467.	1		1405	170	1267.	1		2020	245	167.
1		0140	21	17.	1		0755	96	11133.	1		1410	171	1233.	1		2025	246	108.
1		0145	22	25.	1		0800	97	10800.	1		1415	172	1200.	1		2030	247	50.
1		0150	23	33.	1		0805	98	10467.	1		1420	173	1167.	1		2035	248	42.
1		0155	24	42.	1		0810	99	10133.	1		1425	174	1133.	1		2040	249	33.
1		0200	25	50.	1		0815	100	9800.	1		1430	175	1100.	1		2045	250	25.
1		0205	26	75.	1		0820	101	9467.	1		1435	176	1092.	1		2050	251	17.
1		0210	27	100.	1		0825	102	9133.	1		1440	177	1083.	1		2055	252	8.
1		0215	28	125.	1		0830	103	8800.	1		1445	178	1075.	1		2100	253	0.
1		0220	29	150.	1		0835	104	8533.	1		1450	179	1067.	1		2105	254	0.
1		0225	30	175.	1		0840	105	8267.	1		1455	180	1058.	1		2110	255	0.
1		0230	31	200.	1		0845	106	8000.	1		1500	181	1050.	1		2115	256	0.
1		0235	32	250.	1		0850	107	7733.	1		1505	182	1008.	1		2120	257	0.
1		0240	33	300.	1		0855	108	7467.	1		1510	183	967.	1		2125	258	0.
1		0245	34	350.	1		0900	109	7200.	1		1515	184	925.	1		2130	259	0.
1		0250	35	400.	1		0905	110	7017.	1		1520	185	883.	1		2135	260	0.
1		0255	36	450.	1		0910	111	6833.	1		1525	186	842.	1		2140	261	0.
1		0300	37	500.	1		0915	112	6650.	1		1530	187	800.	1		2145	262	0.
1		0305	38	750.	1		0920	113	6467.	1		1535	188	750.	1		2150	263	0.
1		0310	39	1000.	1		0925	114	6283.	1		1540	189	700.	1		2155	264	0.
1		0315	40	1250.	1		0930	115	6100.	1		1545	190	650.	1		2200	265	0.
1		0320	41	1500.	1		0935	116	6000.	1		1550	191	600.	1		2205	266	0.
1		0325	42	1750.	1		0940	117	5900.	1		1555	192	550.	1		2210	267	0.
1		0330	43	2000.	1		0945	118	5800.	1		1600	193	500.	1		2215	268	0.
1		0335	44	2317.	1		0950	119	5700.	1		1605	194	492.	1		2220	269	0.
1		0340	45	2633.	1		0955	120	5600.	1		1610	195	483.	1		2225	270	0.
1		0345	46	2950.	1		1000	121	5500.	1		1615	196	475.	1		2230	271	0.
1		0350	47	3267.	1		1005	122	5333.	1		1620	197	467.	1		2235	272	0.
1		0355	48	3583.	1		1010	123	5167.	1		1625	198	458.	1		2240	273	0.
1		0400	49	3900.	1		1015	124	5000.	1		1630	199	450.	1		2245	274	0.
1		0405	50	5083.	1		1020	125	4833.	1		1635	200	450.	1		2250	275	0.
1		0410	51	6267.	1		1025	126	4667.	1		1640	201	450.	1		2255	276	0.
1		0415	52	7450.	1		1030	127	4500.	1		1645	202	450.	1		2300	277	0.
1		0420	53	8633.	1		1035	128	4333.	1		1650	203	450.	1		2305	278	0.
1		0425	54	9817.	1		1040	129	4167.	1		1655	204	450.	1		2310	279	0.
1		0430	55	11000.	1		1045	130	4000.	1		1700	205	450.	1		2315	280	0.
1		0435	56	11967.	1		1050	131	3833.	1		1705	206	450.	1		2320	281	0.
1		0440	57	12933.	1		1055	132	3667.	1		1710	207	450.	1		2325	282	0.
1		0445	58	13900.	1		1100	133	3500.	1		1715	208	450.	1		2330	283	0.
1		0450	59	14867.	1		1105	134	3417.	1		1720	209	450.	1		2335	284	0.
1		0455	60	15833.	1		1110	135	3333.	1		1725	210	450.	1		2340	285	0.
1		0500	61	16800.	1		1115	136	3250.	1		1730	211	450.	1		2345	286	0.
1		0505	62	17700.	1		1120	137	3167.	1		1735	212	450.	1		2350	287	0.
1		0510	63	18600.	1		1125	138	3083.	1		1740	213	450.	1		2355	288	0.
1		0515	64	19500.	1		1130	139	3000.	1		1745	214	450.	2		0000	289	0.
1		0520	65	20400.	1		1135	140	2917.	1		1750	215	450.	2		0005	290	0.
1		0525	66	21300.	1		1140	141	2833.	1		1755	216	450.	2		0010	291	0.
1		0530	67	22200.	1		1145	142	2750.	1		1800	217	450.	2		0015	292	0.
1		0535	68	21883.	1		1150	143	2667.	1		1805	218	450.	2		0020	293	0.
1		0540	69	21567.	1		1155	144	2583.	1		1810	219	450.	2		0025	294	0.
1		0545	70	21250.	1		1200	145	2500.	1		1815	220	450.	2		0030	295	0.
1		0550	71	20933.	1		1205	146	2450.	1		1820	221	450.	2		0035	296	0.
1		0555	72	20617.	1		1210	147	2400.	1		1825	222	450.	2		0040	297	0.
1		0600	73	20300.	1		1215	148	2350.	1		1830	223	450.	2		0045	298	0.
1		0605	74	19833.	1		1220	149	2300.	1		1835	224	450.	2		0050	299	0.

```
  1     0610   75    19367.   *    1     1225  150     2250.   *    1     1840  225      450.   *    2     0055  300        0.
                              *                                   *                                  *
*****************************************************************************************************************************
```

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
22200.	5.50	(CFS)	12738.	3914.	3770.	3770.
		(INCHES)	1.161	1.427	1.427	1.427
		(AC-FT)	6316.	7762.	7762.	7762.

CUMULATIVE AREA = 102.00 SQ MI

1

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	1037	22200.	5.50	12738.	3914.	3770.	102.00		
ROUTED TO	RS33.540	22061.	5.58	12734.	3914.	3770.	102.00		
ROUTED TO	RS33.30	21870.	5.67	12724.	3914.	3770.	102.00		
ROUTED TO	RS33.060	21868.	5.67	12722.	3914.	3770.	102.00		
ROUTED TO	RS32.790	21798.	5.75	12717.	3914.	3770.	102.00		
ROUTED TO	RS32.520	21781.	5.75	12701.	3914.	3770.	102.00		
ROUTED TO	RS32.240	21724.	5.83	12691.	3914.	3770.	102.00		
ROUTED TO	RS31.960	21668.	5.83	12677.	3914.	3770.	102.00		
ROUTED TO	RS31.670	21638.	5.92	12658.	3914.	3770.	102.00		
ROUTED TO	RS31.390	21555.	6.00	12646.	3914.	3770.	102.00		
ROUTED TO	RS31.110	21406.	6.08	12633.	3914.	3770.	102.00		
ROUTED TO	RS30.820	21367.	6.17	12626.	3914.	3770.	102.00		
ROUTED TO	RS20.550	21304.	6.17	12615.	3914.	3770.	102.00		
ROUTED TO	RS30.260	21297.	6.25	12602.	3914.	3770.	102.00		
ROUTED TO	RS29.990	21221.	6.33	12586.	3913.	3770.	102.00		
ROUTED TO	RS29.720	21174.	6.42	12579.	3913.	3769.	102.00		
ROUTED TO	RS29.470	21142.	6.42	12569.	3913.	3769.	102.00		
ROUTED TO	RS29.230	21076.	6.50	12558.	3913.	3769.	102.00		
ROUTED TO	RS28.950	21052.	6.58	12552.	3913.	3769.	102.00		
ROUTED TO	RS28.670	21011.	6.67	12544.	3913.	3769.	102.00		
ROUTED TO	RS28.450	20945.	6.75	12532.	3913.	3769.	102.00		
ROUTED TO	RS28.210	20868.	6.83	12505.	3913.	3769.	102.00		
ROUTED TO	RS27.940	20799.	6.92	12488.	3912.	3768.	102.00		
ROUTED TO	RS27.680	20633.	7.08	12451.	3912.	3768.	102.00		
ROUTED TO									

	RS27.390	20420.	7.25	12417.	3911.	3767.	102.00
ROUTED TO							
	RS27.110	20391.	7.33	12410.	3910.	3766.	102.00
ROUTED TO							
	RS26.830	20286.	7.42	12385.	3908.	3764.	102.00
ROUTED TO							
	RS26.550	20216.	7.50	12358.	3907.	3763.	102.00
ROUTED TO							
	RS26.290	20148.	7.67	12330.	3906.	3762.	102.00
ROUTED TO							
	RS26.030	20144.	7.67	12325.	3904.	3761.	102.00
ROUTED TO							
	RS25.790	20059.	7.83	12307.	3902.	3759.	102.00
ROUTED TO							
	RS25.526	20025.	7.83	12300.	3901.	3757.	102.00
ROUTED TO							
	RS25.288	19999.	7.92	12287.	3899.	3756.	102.00
ROUTED TO							
	RS25.098	19910.	8.08	12257.	3897.	3753.	102.00
ROUTED TO							
	RS24.816	19879.	8.17	12245.	3894.	3751.	102.00
ROUTED TO							
	RS24.543	19816.	8.25	12207.	3891.	3748.	102.00
ROUTED TO							
	RS24.260	19763.	8.42	12188.	3887.	3744.	102.00
ROUTED TO							
	RS23.974	19707.	8.58	11456.	3650.	3515.	102.00
ROUTED TO							
	RS23.692	18521.	9.08	10146.	3258.	3138.	102.00
ROUTED TO							
	RS23.409	18258.	9.25	10098.	3249.	3130.	102.00
ROUTED TO							
	RS23.124	18076.	9.33	10057.	3242.	3123.	102.00
ROUTED TO							
	RS22.839	17926.	9.42	10026.	3235.	3116.	102.00
ROUTED TO							
	RS22.558	17810.	9.58	9986.	3223.	3104.	102.00
ROUTED TO							
	RS22.273	17426.	9.75	9642.	3101.	2986.	102.00
ROUTED TO							
	RS21.986	16927.	9.92	9164.	2942.	2834.	102.00
ROUTED TO							
	RS21.716	16522.	10.17	9083.	2919.	2811.	102.00
ROUTED TO							
	RS21.431	15809.	10.42	8779.	2826.	2722.	102.00
ROUTED TO							
	RS21.157	15706.	10.50	8725.	2809.	2706.	102.00
ROUTED TO							
	RS20.958	15512.	10.58	8689.	2800.	2697.	102.00
ROUTED TO							
	RS20.675	15472.	10.67	8666.	2795.	2692.	102.00
ROUTED TO							
	RS20.435	15390.	10.75	8641.	2790.	2687.	102.00

*** NORMAL END OF HEC-1 ***

Kimley-Horn
and Associates, Inc.

FP100s.out

Floodplain Model-Middle Reach

```
1****************************************                                                    ****************************************
 *                                      *                                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                                    *   U.S. ARMY CORPS OF ENGINEERS       *
 *              JUL   1997              *                                                    *   HYDROLOGIC ENGINEERING CENTER      *
 *           VERSION 4.1                *                                                    *         609 SECOND STREET            *
 *                                      *                                                    *      DAVIS, CALIFORNIA 95616         *
 *  RUN DATE   17APR01  TIME  16:07:51  *                                                    *          (916) 756-1104              *
 *                                      *                                                    *                                      *
****************************************                                                    ****************************************


                                                X     X  XXXXXXX   XXXXX          X
                                                X     X  X        X     X        XX
                                                X     X  X        X               X
                                                XXXXXXX  XXXX     X        XXXXX  X
                                                X     X  X        X               X
                                                X     X  X        X     X         X
                                                X     X  XXXXXXX   XXXXX        XXX


        THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

        THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
        THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
        NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
        DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL   LOSS RATE:GREEN AND AMPT INFILTRATION
        KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1                                                HEC-1 INPUT                                                          PAGE  1

      LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

        1           ID   Agua Fria River Existing Conditions
                    * ***************************************************************************
                    *                                                                           *
                    *                 Flood Control District of Maricopa County                 *
                    *               Agua Fria River Watercourse Floodplain Study                *
                    *                                FCD99-24                                   *
                    *                                                                           *
                    *                        EXISTING CONDITIONS HYDROLOGY                      *
                    *                                                                           *
                    *                                                                           *
                    *                  Prepared by Kimley-Horn and Associates, Inc.             *
                    *                            KHA Job No. 091131.04                          *
                    *                                                                           *
                    *                               February 2001                               *
                    *                                                                           *
                    *                                                                           *
                    *  The flood routing model was developed to evlauate flood wave attenuation as *
                    *  related to overbank storage.  The Modified-Puls method was utilized to   *
                    *  simulate flood routing. Stage-storage-discharge relationships were developed*
                    *  on a reach by reach basis using HEC-RAS.  Routing reaches are approximately *
                    *  1/4 mile long. Direct channel losses are assumed negligible.             *
                    *  This hydrology is a FLOODPLAIN model of existing conditions on the Agua Fria*
                    *  River and its tributaries from New Waddell Dam to the New River confluence. *
                    *  Hydrographs were obtained from a study by the Corps of Engineers entitled  *
                    *  "Agua Fria River Study New Waddell Dam to Gila River Confluence, Arizona."  *
                    *  This model is the lower reach of the Agua Fria River, from Bell Road to   *
                    *  the New River confluence. Two 100-year hydrographs shall be used, one    *
                    *  downstream of the Dam and a second at Bell Road (CP1037).  All other inflow *
                    *  is assumed to be negligible.                                              *
                    *                                                                           *
                    * ***************************************************************************
        2           ID    Agua Fria Water Course - Direct input of existing
        3           ID    conditions 100-yr hydrograph.  Compare output to see
        4           ID    how close results are to the Corps of Engineers' study.
        5           IT       5       0       0     300
        6           IN      30
        7           IO       5
*** FREE ***
                    *DIAGRAM

        8           KK  CP1037
        9           KO       1
       10           KM   Runoff hydrograph for concentration point 1037
       11           BA     171
       12           QI       0       0       0       0     100     300     800    2700    5600   17000
       13           QI   25500   35200   37500   31800   27200   23900   19300   16000   13200   10800
       14           QI    9200    7800    6200    5000    4100    3800    3000    2800    2100    1900
       15           QI    1900    1800    1000     800     750     750     750     750     500     500
       16           QI     100       1      .1     .01       0
                                                HEC-1 INPUT                                                          PAGE  2

      LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


       17           KKRS20.207,,,,,,
       18           RS       1    FLOW      -1
       19           SV       0      17      52      93     161     218     271
       20           SQ       0    1000    5000   10000   20000   30000   40000
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 21          KKRS19.920,,,,,,
 22          RS       1    FLOW      -1
 23          SV       0      16      58      96     162     229     295
 24          SQ       0    1000    5000   10000   20000   30000   40000

 25          KKRS19.635,,,,,,
 26          RS       1    FLOW      -1
 27          SV       0      14      53      94     166     235     299
 28          SQ       0    1000    5000   10000   20000   30000   40000

 29          KKRS19.352,,,,,,
 30          RS       1    FLOW      -1
 31          SV       0      14      43      73     131     185     239
 32          SQ       0    1000    5000   10000   20000   30000   40000

 33          KKRS19.066,,,,,,,
 34          RS       1    FLOW      -1
 35          SV       0      26      60      93     151     201     245
 36          SQ       0    1000    5000   10000   20000   30000   40000

 37          KKRS18.839,,,,,,,
 38          RS       1    FLOW      -1
 39          SV       0     576     664     719     799     864     919
 40          SQ       0    1000    5000   10000   20000   30000   40000

 41          KKRS18.558,,,,,,,
 42          RS       1    FLOW      -1
 43          SV       0      38      77     144     239     310     368
 44          SQ       0    1000    5000   10000   20000   30000   40000

 45          KKRS18.275,,,,,,,
 46          RS       1    FLOW      -1
 47          SV       0      13      45      92     159     233     305
 48          SQ       0    1000    5000   10000   20000   30000   40000

 49          KKRS18.000,,,,,,
 50          RS       1    FLOW      -1
 51          SV       0      90     135     186     289     419     552
 52          SQ       0    1000    5000   10000   20000   30000   40000

 53          KKRS17.730,,,,,,
 54          RS       1    FLOW      -1
 55          SV       0     425     490     548     657     772     886
 56          SQ       0    1000    5000   10000   20000   30000   40000
1                                     HEC-1 INPUT                                                    PAGE  3

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 57          KKRS17.458,,,,,,
 58          RS       1    FLOW      -1
 59          SV       0     356     451     539     698     846    1017
 60          SQ       0    1000    5000   10000   20000   30000   40000

 61          KKRS17.180,,,,,,
 62          RS       1    FLOW      -1
 63          SV       0     249     310     361     440     511     612
 64          SQ       0    1000    5000   10000   20000   30000   40000

 65          KKRS16.895,,,,,,
 66          RS       1    FLOW      -1
 67          SV       0      49     116     173     269     354     475
 68          SQ       0    1000    5000   10000   20000   30000   40000

 69          KKRS16.612,,,,,,
 70          RS       1    FLOW      -1
 71          SV       0       9      30      49      82     111     141
 72          SQ       0    1000    5000   10000   20000   30000   40000

 73          KKRS16.385,,,,,,
 74          KO       1
 75          RS       1    FLOW      -1
 76          SV       0      13      38      63     108     150     193
 77          SQ       0    1000    5000   10000   20000   30000   40000

 78          KKRS16.099,,,,,,
 79          RS       1    FLOW      -1
 80          SV       0      14      45      78     157     249     358
 81          SQ       0    1000    5000   10000   20000   30000   40000

 82          KKRS15.814,,,,,,
 83          RS       1    FLOW      -1
 84          SV       0      18      45      71     127     171     214
 85          SQ       0    1000    5000   10000   20000   30000   40000

 86          KKRS15.564,,,,,,
 87          RS       1    FLOW      -1
 88          SV       0      11      39      66     129     186     233
 89          SQ       0    1000    5000   10000   20000   30000   40000

 90          KKRS15.281,,,,,,
 91          RS       1    FLOW      -1
 92          SV       0      12      47      81     142     204     261
 93          SQ       0    1000    5000   10000   20000   30000   40000
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  94          KKRS15.000,,,,,,
  95          RS       1    FLOW      -1
  96          SV       0      19      59      95     158     215     269
  97          SQ       0    1000    5000   10000   20000   30000   40000
1                                          HEC-1 INPUT                                                    PAGE  4

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


  98          KKRS14.708,,,,,,
  99          RS       1    FLOW      -1
 100          SV       0      12      51      92     148     201     251
 101          SQ       0    1000    5000   10000   20000   30000   40000

 102          KKRS14.430,,,,,,
 103          RS       1    FLOW      -1
 104          SV       0      12      44      92     153     209     261
 105          SQ       0    1000    5000   10000   20000   30000   40000

 106          KKRS14.145,,,,,,
 107          RS       1    FLOW      -1
 108          SV       0      10      41      75     126     172     219
 109          SQ       0    1000    5000   10000   20000   30000   40000

 110          KKRS13.856,,,,,,
 111          RS       1    FLOW      -1
 112          SV       0       8      37      73     138     195     240
 113          SQ       0    1000    5000   10000   20000   30000   40000

 114          KKRS13.565,,,,,,
 115          RS       1    FLOW      -1
 116          SV       0      12      37      64     123     181     238
 117          SQ       0    1000    5000   10000   20000   30000   40000

 118          KKRS13.296,,,,,,
 119          RS       1    FLOW      -1
 120          SV       0      22      59      87     128     165     222
 121          SQ       0    1000    5000   10000   20000   30000   40000

 122          KKRS13.007,,,,,,
 123          RS       1    FLOW      -1
 124          SV       0     365     448     507     591     659     730
 125          SQ       0    1000    5000   10000   20000   30000   40000

 126          KKRS12.725,,,,,,
 127          RS       1    FLOW      -1
 128          SV       0      43      89     137     227     335     457
 129          SQ       0    1000    5000   10000   20000   30000   40000

 130          KKRS12.470,,,,,,
 131          RS       1    FLOW      -1
 132          SV       0      11      86     213     348     459     564
 133          SQ       0    1000    5000   10000   20000   30000   40000

 134          KKRS12.247,,,,,,
 135          RS       2    FLOW      -1
 136          SV       0       6      20     151     317     462     564
 137          SQ       0    1000    5000   10000   20000   30000   40000
1                                          HEC-1 INPUT                                                    PAGE  5

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 138          KKRS12.042,,,,,,
 139          RS       1    FLOW      -1
 140          SV       0     382     453     512     691     890    1024
 141          SQ       0    1000    5000   10000   20000   30000   40000

 142          KKRS11.750,,,,,,
 143          RS       4    FLOW      -1
 144          SV       0     351     427     491     677     942    1187
 145          SQ       0    1000    5000   10000   20000   30000   40000

 146          KKRS11.460,,,,,,
 147          RS       5    FLOW      -1
 148          SV       0      15      40      62     115     167     221
 149          SQ       0    1000    5000   10000   20000   30000   40000

 150          KKRS11.224,,,,,,
 151          RS       1    FLOW      -1
 152          SV       0      20      71     118     194     263     346
 153          SQ       0    1000    5000   10000   20000   30000   40000

 154          KKRS10.942,,,,,,
 155          RS       1    FLOW      -1
 156          SV       0      14      39      59      95     142     202
 157          SQ       0    1000    5000   10000   20000   30000   40000

 158          KKRS10.752,,,,,,
 159          RS       1    FLOW      -1
 160          SV       0      18      47      69     111     164     224
 161          SQ       0    1000    5000   10000   20000   30000   40000

 162          KKRS10.538,,,,,,
 163          RS       1    FLOW      -1
 164          SV       0      21      67     113     200     284     360
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165          SQ       0    1000    5000   10000   20000   30000   40000

166          KKRS10.265,,,,,,
167          RS       1    FLOW      -1
168          SV       0      11      36      62     111     166     217
169          SQ       0    1000    5000   10000   20000   30000   40000

170          KKRS10.071,,,,,,
171          RS       1    FLOW      -1
172          SV       0       5      15      27      56      85     107
173          SQ       0    1000    5000   10000   20000   30000   40000

174          KK RS9.981,,,,,
175          KO       1
176          RS       1    FLOW      -1
177          SV       0       5      16      26      47      73      93
178          SQ       0    1000    5000   10000   20000   30000   40000
179          ZZ
1
             SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
 LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   8      CP1037
               V
               V
  17    RS20.207
               V
               V
  21    RS19.920
               V
               V
  25    RS19.635
               V
               V
  29    RS19.352
               V
               V
  33    RS19.066
               V
               V
  37    RS18.839
               V
               V
  41    RS18.558
               V
               V
  45    RS18.275
               V
               V
  49    RS18.000
               V
               V
  53    RS17.730
               V
               V
  57    RS17.458
               V
               V
  61    RS17.180
               V
               V
  65    RS16.895
               V
               V
  69    RS16.612
               V
               V
  73    RS16.385
               V
               V
  78    RS16.099
               V
               V
  82    RS15.814
               V
               V
  86    RS15.564
               V
               V
  90    RS15.281
               V
               V
  94    RS15.000
               V
               V
  98    RS14.708
               V
               V
 102    RS14.430
               V
               V
 106    RS14.145
               V
```

```
                V
  110    RS13.856
                V
                V
  114    RS13.565
                V
                V
  118    RS13.296
                V
                V
  122    RS13.007
                V
                V
  126    RS12.725
                V
                V
  130    RS12.470
                V
                V
  134    RS12.247
                V
                V
  138    RS12.042
                V
                V
  142    RS11.750
                V
                V
  146    RS11.460
                V
                V
  150    RS11.224
                V
                V
  154    RS10.942
                V
                V
  158    RS10.752
                V
                V
  162    RS10.538
                V
                V
  166    RS10.265
                V
                V
  170    RS10.071
                V
                V
  174     RS9.981

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************                                    ****************************************
*                                      *                                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *    U.S. ARMY CORPS OF ENGINEERS      *
*              JUL   1997              *                                    *    HYDROLOGIC ENGINEERING CENTER     *
*           VERSION 4.1                *                                    *          609 SECOND STREET           *
*                                      *                                    *       DAVIS, CALIFORNIA 95616        *
*  RUN DATE   17APR01  TIME  16:07:51  *                                    *           (916) 756-1104             *
*                                      *                                    *                                      *
****************************************                                    ****************************************


                        Agua Fria River Existing Conditions
                         Agua Fria Water Course - Direct input of existing
                         conditions 100-yr hydrograph.  Compare output to see
                         how close results are to the Corps of Engineers' study.

  7 IO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

    IT          HYDROGRAPH TIME DATA
                       NMIN           5  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ         300  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      2    0  ENDING DATE
                     NDTIME        0055  ENDING TIME
                     ICENT           19  CENTURY MARK

                 COMPUTATION INTERVAL     .08 HOURS
                      TOTAL TIME BASE   24.92 HOURS

         ENGLISH UNITS
              DRAINAGE AREA          SQUARE MILES
              PRECIPITATION DEPTH    INCHES
              LENGTH, ELEVATION      FEET
              FLOW                   CUBIC FEET PER SECOND
              STORAGE VOLUME         ACRE-FEET
              SURFACE AREA           ACRES
              TEMPERATURE            DEGREES FAHRENHEIT
```

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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
  8 KK    *    CP1037  *
          *            *
          **************

  9 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           1  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                          Runoff hydrograph for concentration point 1037

  6 IN          TIME DATA FOR INPUT TIME SERIES
                      JXMIN          30  TIME INTERVAL IN MINUTES
                     JXDATE      1    0  STARTING DATE
                     JXTIME           0  STARTING TIME

             SUBBASIN RUNOFF DATA

 11 BA          SUBBASIN CHARACTERISTICS
                      TAREA      171.00  SUBBASIN AREA

                                                                  ***

*****************************************************************************************************************************************

                                                HYDROGRAPH AT STATION   CP1037

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```

DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1		0000	1	0.	1		0615	76	34650.	1		1230	151	3800.	1		1845	226	625.
1		0005	2	0.	1		0620	77	33700.	1		1235	152	3667.	1		1850	227	583.
1		0010	3	0.	1		0625	78	32750.	1		1240	153	3533.	1		1855	228	542.
1		0015	4	0.	1		0630	79	31800.	1		1245	154	3400.	1		1900	229	500.
1		0020	5	0.	1		0635	80	31033.	1		1250	155	3267.	1		1905	230	500.
1		0025	6	0.	1		0640	81	30267.	1		1255	156	3133.	1		1910	231	500.
1		0030	7	0.	1		0645	82	29500.	1		1300	157	3000.	1		1915	232	500.
1		0035	8	0.	1		0650	83	28733.	1		1305	158	2967.	1		1920	233	500.
1		0040	9	0.	1		0655	84	27967.	1		1310	159	2933.	1		1925	234	500.
1		0045	10	0.	1		0700	85	27200.	1		1315	160	2900.	1		1930	235	500.
1		0050	11	0.	1		0705	86	26650.	1		1320	161	2867.	1		1935	236	433.
1		0055	12	0.	1		0710	87	26100.	1		1325	162	2833.	1		1940	237	367.
1		0100	13	0.	1		0715	88	25550.	1		1330	163	2800.	1		1945	238	300.
1		0105	14	0.	1		0720	89	25000.	1		1335	164	2683.	1		1950	239	233.
1		0110	15	0.	1		0725	90	24450.	1		1340	165	2567.	1		1955	240	167.
1		0115	16	0.	1		0730	91	23900.	1		1345	166	2450.	1		2000	241	100.
1		0120	17	0.	1		0735	92	23133.	1		1350	167	2333.	1		2005	242	84.
1		0125	18	0.	1		0740	93	22367.	1		1355	168	2217.	1		2010	243	67.
1		0130	19	0.	1		0745	94	21600.	1		1400	169	2100.	1		2015	244	50.
1		0135	20	17.	1		0750	95	20833.	1		1405	170	2067.	1		2020	245	34.
1		0140	21	33.	1		0755	96	20067.	1		1410	171	2033.	1		2025	246	17.
1		0145	22	50.	1		0800	97	19300.	1		1415	172	2000.	1		2030	247	1.
1		0150	23	67.	1		0805	98	18750.	1		1420	173	1967.	1		2035	248	1.
1		0155	24	83.	1		0810	99	18200.	1		1425	174	1933.	1		2040	249	1.
1		0200	25	100.	1		0815	100	17650.	1		1430	175	1900.	1		2045	250	1.
1		0205	26	133.	1		0820	101	17100.	1		1435	176	1900.	1		2050	251	0.
1		0210	27	167.	1		0825	102	16550.	1		1440	177	1900.	1		2055	252	0.
1		0215	28	200.	1		0830	103	16000.	1		1445	178	1900.	1		2100	253	0.
1		0220	29	233.	1		0835	104	15533.	1		1450	179	1900.	1		2105	254	0.
1		0225	30	267.	1		0840	105	15067.	1		1455	180	1900.	1		2110	255	0.
1		0230	31	300.	1		0845	106	14600.	1		1500	181	1900.	1		2115	256	0.
1		0235	32	383.	1		0850	107	14133.	1		1505	182	1883.	1		2120	257	0.
1		0240	33	467.	1		0855	108	13667.	1		1510	183	1867.	1		2125	258	0.
1		0245	34	550.	1		0900	109	13200.	1		1515	184	1850.	1		2130	259	0.
1		0250	35	633.	1		0905	110	12800.	1		1520	185	1833.	1		2135	260	0.
1		0255	36	717.	1		0910	111	12400.	1		1525	186	1817.	1		2140	261	0.
1		0300	37	800.	1		0915	112	12000.	1		1530	187	1800.	1		2145	262	0.
1		0305	38	1117.	1		0920	113	11600.	1		1535	188	1667.	1		2150	263	0.
1		0310	39	1433.	1		0925	114	11200.	1		1540	189	1533.	1		2155	264	0.
1		0315	40	1750.	1		0930	115	10800.	1		1545	190	1400.	1		2200	265	0.
1		0320	41	2067.	1		0935	116	10533.	1		1550	191	1267.	1		2205	266	0.
1		0325	42	2383.	1		0940	117	10267.	1		1555	192	1133.	1		2210	267	0.
1		0330	43	2700.	1		0945	118	10000.	1		1600	193	1000.	1		2215	268	0.
1		0335	44	3183.	1		0950	119	9733.	1		1605	194	967.	1		2220	269	0.
1		0340	45	3667.	1		0955	120	9467.	1		1610	195	933.	1		2225	270	0.
1		0345	46	4150.	1		1000	121	9200.	1		1615	196	900.	1		2230	271	0.
1		0350	47	4633.	1		1005	122	8967.	1		1620	197	867.	1		2235	272	0.
1		0355	48	5117.	1		1010	123	8733.	1		1625	198	833.	1		2240	273	0.
1		0400	49	5600.	1		1015	124	8500.	1		1630	199	800.	1		2245	274	0.
1		0405	50	7500.	1		1020	125	8267.	1		1635	200	792.	1		2250	275	0.
1		0410	51	9400.	1		1025	126	8033.	1		1640	201	783.	1		2255	276	0.
1		0415	52	11300.	1		1030	127	7800.	1		1645	202	775.	1		2300	277	0.
1		0420	53	13200.	1		1035	128	7533.	1		1650	203	767.	1		2305	278	0.
1		0425	54	15100.	1		1040	129	7267.	1		1655	204	758.	1		2310	279	0.
1		0430	55	17000.	1		1045	130	7000.	1		1700	205	750.	1		2315	280	0.
1		0435	56	18417.	1		1050	131	6733.	1		1705	206	750.	1		2320	281	0.
1		0440	57	19833.	1		1055	132	6467.	1		1710	207	750.	1		2325	282	0.
1		0445	58	21250.	1		1100	133	6200.	1		1715	208	750.	1		2330	283	0.

1	0450	59	22667.	*	1	1105	134	6000.	*	1	1720	209	750.	*	1	2335	284	0.
1	0455	60	24083.	*	1	1110	135	5800.	*	1	1725	210	750.	*	1	2340	285	0.
1	0500	61	25500.	*	1	1115	136	5600.	*	1	1730	211	750.	*	1	2345	286	0.
1	0505	62	27117.	*	1	1120	137	5400.	*	1	1735	212	750.	*	1	2350	287	0.
1	0510	63	28733.	*	1	1125	138	5200.	*	1	1740	213	750.	*	1	2355	288	0.
1	0515	64	30350.	*	1	1130	139	5000.	*	1	1745	214	750.	*	2	0000	289	0.
1	0520	65	31967.	*	1	1135	140	4850.	*	1	1750	215	750.	*	2	0005	290	0.
1	0525	66	33583.	*	1	1140	141	4700.	*	1	1755	216	750.	*	2	0010	291	0.
1	0530	67	35200.	*	1	1145	142	4550.	*	1	1800	217	750.	*	2	0015	292	0.
1	0535	68	35583.	*	1	1150	143	4400.	*	1	1805	218	750.	*	2	0020	293	0.
1	0540	69	35967.	*	1	1155	144	4250.	*	1	1810	219	750.	*	2	0025	294	0.
1	0545	70	36350.	*	1	1200	145	4100.	*	1	1815	220	750.	*	2	0030	295	0.
1	0550	71	36733.	*	1	1205	146	4050.	*	1	1820	221	750.	*	2	0035	296	0.
1	0555	72	37117.	*	1	1210	147	4000.	*	1	1825	222	750.	*	2	0040	297	0.
1	0600	73	37500.	*	1	1215	148	3950.	*	1	1830	223	750.	*	2	0045	298	0.
1	0605	74	36550.	*	1	1220	149	3900.	*	1	1835	224	708.	*	2	0050	299	0.
1	0610	75	35600.	*	1	1225	150	3850.	*	1	1840	225	667.	*	2	0055	300	0.
				*					*					*				

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PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+		(CFS)				
+ 37500.	6.00		22107.	6717.	6470.	6470.
		(INCHES)	1.202	1.461	1.461	1.461
		(AC-FT)	10962.	13322.	13322.	13322.

CUMULATIVE AREA = 171.00 SQ MI

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          *            *
 73 KK    *  RS16.385  *     ,,,,,,
          *            *
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 74 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           1  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

            HYDROGRAPH ROUTING DATA

 75 RS          STORAGE ROUTING
                      NSTPS           1  NUMBER OF SUBREACHES
                       ITYP        FLOW  TYPE OF INITIAL CONDITION
                     RSVRIC       -1.00  INITIAL CONDITION
                          X         .00 WORKING R AND D COEFFICIENT

 76 SV            STORAGE          .0      13.0      38.0      63.0     108.0     150.0     193.0

 77 SQ          DISCHARGE          0.     1000.     5000.    10000.    20000.    30000.    40000.

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HYDROGRAPH AT STATION RS16.385

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE
						*							*						
1		0000	1	0.	.00	*	1		0820	101	27880.	141.10	*	1		1640	201	2047.	19.55
1		0005	2	0.	.00	*	1		0825	102	27162.	138.08	*	1		1645	202	2014.	19.33
1		0010	3	0.	.00	*	1		0830	103	26483.	135.23	*	1		1650	203	1980.	19.13
1		0015	4	0.	.00	*	1		0835	104	25821.	132.45	*	1		1655	204	1947.	18.92
1		0020	5	0.	.00	*	1		0840	105	25164.	129.69	*	1		1700	205	1911.	18.70
1		0025	6	0.	.00	*	1		0845	106	24507.	126.93	*	1		1705	206	1874.	18.46
1		0030	7	0.	.00	*	1		0850	107	23851.	124.17	*	1		1710	207	1835.	18.22
1		0035	8	0.	.00	*	1		0855	108	23196.	121.42	*	1		1715	208	1792.	17.95
1		0040	9	0.	.00	*	1		0900	109	22544.	118.69	*	1		1720	209	1746.	17.66
1		0045	10	0.	.00	*	1		0905	110	21897.	115.97	*	1		1725	210	1697.	17.36
1		0050	11	0.	.00	*	1		0910	111	21257.	113.28	*	1		1730	211	1646.	17.04
1		0055	12	0.	.00	*	1		0915	112	20632.	110.65	*	1		1735	212	1593.	16.71
1		0100	13	0.	.00	*	1		0920	113	20050.	108.21	*	1		1740	213	1539.	16.37
1		0105	14	0.	.00	*	1		0925	114	19531.	105.89	*	1		1745	214	1485.	16.03
1		0110	15	0.	.00	*	1		0930	115	19000.	103.50	*	1		1750	215	1432.	15.70
1		0115	16	0.	.00	*	1		0935	116	18453.	101.04	*	1		1755	216	1381.	15.38
1		0120	17	0.	.00	*	1		0940	117	17907.	98.58	*	1		1800	217	1332.	15.08
1		0125	18	0.	.00	*	1		0945	118	17367.	96.15	*	1		1805	218	1287.	14.79
1		0130	19	0.	.00	*	1		0950	119	16838.	93.77	*	1		1810	219	1245.	14.53
1		0135	20	0.	.00	*	1		0955	120	16320.	91.44	*	1		1815	220	1207.	14.30
1		0140	21	0.	.00	*	1		1000	121	15815.	89.17	*	1		1820	221	1174.	14.09
1		0145	22	0.	.00	*	1		1005	122	15322.	86.95	*	1		1825	222	1144.	13.90
1		0150	23	0.	.00	*	1		1010	123	14842.	84.79	*	1		1830	223	1119.	13.74
1		0155	24	0.	.00	*	1		1015	124	14375.	82.69	*	1		1835	224	1097.	13.61
1		0200	25	0.	.00	*	1		1020	125	13921.	80.64	*	1		1840	225	1078.	13.49
1		0205	26	0.	.00	*	1		1025	126	13481.	78.66	*	1		1845	226	1063.	13.39
1		0210	27	0.	.00	*	1		1030	127	13056.	76.75	*	1		1850	227	1050.	13.31

1	0215	28	0.	.00	*	1	1035	128	12647.	74.91	*	1	1855	228	1040.	13.25
1	0220	29	0.	.00	*	1	1040	129	12256.	73.15	*	1	1900	229	1031.	13.20
1	0225	30	0.	.00	*	1	1045	130	11885.	71.48	*	1	1905	230	1024.	13.15
1	0230	31	0.	.00	*	1	1050	131	11537.	69.91	*	1	1910	231	1019.	13.12
1	0235	32	0.	.00	*	1	1055	132	11212.	68.46	*	1	1915	232	1015.	13.09
1	0240	33	0.	.00	*	1	1100	133	10912.	67.11	*	1	1920	233	1011.	13.07
1	0245	34	0.	.00	*	1	1105	134	10636.	65.86	*	1	1925	234	1008.	13.05
1	0250	35	0.	.00	*	1	1110	135	10382.	64.72	*	1	1930	235	1006.	13.04
1	0255	36	0.	.00	*	1	1115	136	10155.	63.70	*	1	1935	236	1005.	13.03
1	0300	37	0.	.00	*	1	1120	137	9961.	62.81	*	1	1940	237	1003.	13.02
1	0305	38	0.	.00	*	1	1125	138	9788.	61.94	*	1	1945	238	1002.	13.02
1	0310	39	0.	.00	*	1	1130	139	9599.	61.00	*	1	1950	239	1002.	13.01
1	0315	40	0.	.00	*	1	1135	140	9399.	60.00	*	1	1955	240	1001.	13.01
1	0320	41	0.	.00	*	1	1140	141	9190.	58.95	*	1	2000	241	1001.	13.00
1	0325	42	0.	.00	*	1	1145	142	8974.	57.87	*	1	2005	242	1001.	13.00
1	0330	43	0.	.00	*	1	1150	143	8751.	56.75	*	1	2010	243	1000.	13.00
1	0335	44	0.	.00	*	1	1155	144	8523.	55.61	*	1	2015	244	1000.	13.00
1	0340	45	0.	.00	*	1	1200	145	8290.	54.45	*	1	2020	245	1000.	13.00
1	0345	46	0.	.00	*	1	1205	146	8055.	53.27	*	1	2025	246	1000.	13.00
1	0350	47	0.	.00	*	1	1210	147	7817.	52.09	*	1	2030	247	1000.	13.00
1	0355	48	0.	.00	*	1	1215	148	7579.	50.90	*	1	2035	248	1000.	13.00
1	0400	49	0.	.00	*	1	1220	149	7342.	49.71	*	1	2040	249	1000.	13.00
1	0405	50	0.	.00	*	1	1225	150	7107.	48.54	*	1	2045	250	1000.	13.00
1	0410	51	0.	.00	*	1	1230	151	6876.	47.38	*	1	2050	251	1000.	13.00
1	0415	52	0.	.00	*	1	1235	152	6650.	46.25	*	1	2055	252	1000.	13.00
1	0420	53	0.	.00	*	1	1240	153	6431.	45.15	*	1	2100	253	1000.	13.00
1	0425	54	0.	.00	*	1	1245	154	6220.	44.10	*	1	2105	254	1000.	13.00
1	0430	55	0.	.00	*	1	1250	155	6019.	43.10	*	1	2110	255	1000.	13.00
1	0435	56	0.	.00	*	1	1255	156	5829.	42.14	*	1	2115	256	1000.	13.00
1	0440	57	0.	.00	*	1	1300	157	5651.	41.25	*	1	2120	257	1000.	13.00
1	0445	58	0.	.00	*	1	1305	158	5485.	40.43	*	1	2125	258	1000.	13.00
1	0450	59	0.	.00	*	1	1310	159	5334.	39.67	*	1	2130	259	1000.	13.00
1	0455	60	0.	.00	*	1	1315	160	5201.	39.00	*	1	2135	260	1000.	13.00
1	0500	61	0.	.00	*	1	1320	161	5087.	38.44	*	1	2140	261	1000.	13.00
1	0505	62	0.	.00	*	1	1325	162	4999.	37.99	*	1	2145	262	1000.	13.00
1	0510	63	0.	.00	*	1	1330	163	4935.	37.60	*	1	2150	263	1000.	12.99
1	0515	64	0.	.00	*	1	1335	164	4864.	37.15	*	1	2155	264	1000.	12.99
1	0520	65	0.	.00	*	1	1340	165	4786.	36.66	*	1	2200	265	999.	12.99
1	0525	66	0.	.00	*	1	1345	166	4703.	36.14	*	1	2205	266	999.	12.99
1	0530	67	0.	.00	*	1	1350	167	4617.	35.60	*	1	2210	267	999.	12.99
1	0535	68	0.	.00	*	1	1355	168	4528.	35.05	*	1	2215	268	999.	12.99
1	0540	69	0.	.00	*	1	1400	169	4437.	34.48	*	1	2220	269	999.	12.99
1	0545	70	0.	.00	*	1	1405	170	4345.	33.91	*	1	2225	270	999.	12.99
1	0550	71	1.	.01	*	1	1410	171	4253.	33.33	*	1	2230	271	999.	12.99
1	0555	72	1.	.01	*	1	1415	172	4159.	32.75	*	1	2235	272	999.	12.99
1	0600	73	3.	.04	*	1	1420	173	4066.	32.16	*	1	2240	273	999.	12.98
1	0605	74	7.	.10	*	1	1425	174	3973.	31.58	*	1	2245	274	999.	12.98
1	0610	75	21.	.27	*	1	1430	175	3881.	31.00	*	1	2250	275	999.	12.98
1	0615	76	69.	.90	*	1	1435	176	3789.	30.43	*	1	2255	276	998.	12.98
1	0620	77	373.	4.85	*	1	1440	177	3698.	29.86	*	1	2300	277	998.	12.98
1	0625	78	2393.	21.71	*	1	1445	178	3609.	29.31	*	1	2305	278	998.	12.98
1	0630	79	8660.	56.30	*	1	1450	179	3521.	28.75	*	1	2310	279	998.	12.97
1	0635	80	17008.	94.54	*	1	1455	180	3434.	28.21	*	1	2315	280	998.	12.97
1	0640	81	23527.	122.82	*	1	1500	181	3348.	27.68	*	1	2320	281	998.	12.97
1	0645	82	27678.	140.25	*	1	1505	182	3264.	27.15	*	1	2325	282	998.	12.97
1	0650	83	30009.	150.04	*	1	1510	183	3180.	26.63	*	1	2330	283	997.	12.97
1	0655	84	31404.	156.04	*	1	1515	184	3097.	26.11	*	1	2335	284	997.	12.96
1	0700	85	32426.	160.43	*	1	1520	185	3015.	25.60	*	1	2340	285	997.	12.96
1	0705	86	33228.	163.88	*	1	1525	186	2934.	25.09	*	1	2345	286	997.	12.96
1	0710	87	33811.	166.39	*	1	1530	187	2854.	24.59	*	1	2350	287	996.	12.95
1	0715	88	34180.	167.98	*	1	1535	188	2776.	24.10	*	1	2355	288	996.	12.95
1	0720	89	34348.	168.70	*	1	1540	189	2700.	23.62	*	2	0000	289	996.	12.95
1	0725	90	34334.	168.63	*	1	1545	190	2625.	23.16	*	2	0005	290	996.	12.94
1	0730	91	34159.	167.89	*	1	1550	191	2554.	22.71	*	2	0010	291	995.	12.94
1	0735	92	33851.	166.56	*	1	1555	192	2486.	22.29	*	2	0015	292	995.	12.93
1	0740	93	33436.	164.77	*	1	1600	193	2422.	21.89	*	2	0020	293	995.	12.93
1	0745	94	32938.	162.63	*	1	1605	194	2361.	21.51	*	2	0025	294	994.	12.93
1	0750	95	32379.	160.23	*	1	1610	195	2305.	21.16	*	2	0030	295	994.	12.92
1	0755	96	31776.	157.64	*	1	1615	196	2253.	20.83	*	2	0035	296	994.	12.92
1	0800	97	31127.	154.84	*	1	1620	197	2205.	20.53	*	2	0040	297	993.	12.91
1	0805	98	30394.	151.70	*	1	1625	198	2161.	20.26	*	2	0045	298	993.	12.91
1	0810	99	29546.	148.09	*	1	1630	199	2120.	20.00	*	2	0050	299	992.	12.90
1	0815	100	28672.	144.42	*	1	1635	200	2083.	19.77	*	2	0055	300	992.	12.89
					*						*					

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 34348.	7.33		19676.	6013.	5792.	5792.
		(INCHES)	1.070	1.308	1.308	1.308
		(AC-FT)	9757.	11927.	11927.	11927.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
169.	7.33	105.	37.	35.	35.

CUMULATIVE AREA = 171.00 SQ MI

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            *            *
 174 KK     *   RS9.981  *      ,,,,,
            *            *
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 175 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           1  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

              HYDROGRAPH ROUTING DATA

 176 RS          STORAGE ROUTING
                      NSTPS           1  NUMBER OF SUBREACHES
                       ITYP        FLOW  TYPE OF INITIAL CONDITION
                     RSVRIC       -1.00  INITIAL CONDITION
                          X         .00 WORKING R AND D COEFFICIENT

 177 SV            STORAGE          .0       5.0      16.0      26.0      47.0      73.0      93.0

 178 SQ          DISCHARGE          0.     1000.     5000.    10000.    20000.    30000.    40000.
                                                                  ***

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN     1000. TO    40000.
                THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
                THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)
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HYDROGRAPH AT STATION RS9.981

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE
1		0000	1	0.	.00	*	1		0820	101	0.	.00	*	1		1640	201	4607.	14.92
1		0005	2	0.	.00	*	1		0825	102	0.	.00	*	1		1645	202	4519.	14.68
1		0010	3	0.	.00	*	1		0830	103	0.	.00	*	1		1650	203	4430.	14.43
1		0015	4	0.	.00	*	1		0835	104	0.	.00	*	1		1655	204	4341.	14.19
1		0020	5	0.	.00	*	1		0840	105	0.	.00	*	1		1700	205	4252.	13.94
1		0025	6	0.	.00	*	1		0845	106	0.	.00	*	1		1705	206	4163.	13.70
1		0030	7	0.	.00	*	1		0850	107	1.	.00	*	1		1710	207	4074.	13.45
1		0035	8	0.	.00	*	1		0855	108	6.	.03	*	1		1715	208	3986.	13.21
1		0040	9	0.	.00	*	1		0900	109	47.	.23	*	1		1720	209	3898.	12.97
1		0045	10	0.	.00	*	1		0905	110	331.	1.66	*	1		1725	210	3811.	12.73
1		0050	11	0.	.00	*	1		0910	111	2307.	8.59	*	1		1730	211	3725.	12.49
1		0055	12	0.	.00	*	1		0915	112	7791.	21.58	*	1		1735	212	3639.	12.26
1		0100	13	0.	.00	*	1		0920	113	13876.	34.14	*	1		1740	213	3553.	12.02
1		0105	14	0.	.00	*	1		0925	114	18641.	44.15	*	1		1745	214	3469.	11.79
1		0110	15	0.	.00	*	1		0930	115	22169.	52.64	*	1		1750	215	3385.	11.56
1		0115	16	0.	.00	*	1		0935	116	24792.	59.46	*	1		1755	216	3303.	11.33
1		0120	17	0.	.00	*	1		0940	117	26828.	64.75	*	1		1800	217	3221.	11.11
1		0125	18	0.	.00	*	1		0945	118	28280.	68.53	*	1		1805	218	3141.	10.89
1		0130	19	0.	.00	*	1		0950	119	29254.	71.06	*	1		1810	219	3063.	10.67
1		0135	20	0.	.00	*	1		0955	120	29860.	72.64	*	1		1815	220	2986.	10.46
1		0140	21	0.	.00	*	1		1000	121	30218.	73.44	*	1		1820	221	2911.	10.26
1		0145	22	0.	.00	*	1		1005	122	30281.	73.56	*	1		1825	222	2839.	10.06
1		0150	23	0.	.00	*	1		1010	123	30137.	73.27	*	1		1830	223	2768.	9.86
1		0155	24	0.	.00	*	1		1015	124	29903.	72.75	*	1		1835	224	2699.	9.67
1		0200	25	0.	.00	*	1		1020	125	29591.	71.94	*	1		1840	225	2633.	9.49
1		0205	26	0.	.00	*	1		1025	126	29177.	70.86	*	1		1845	226	2570.	9.32
1		0210	27	0.	.00	*	1		1030	127	28704.	69.63	*	1		1850	227	2508.	9.15
1		0215	28	0.	.00	*	1		1035	128	28187.	68.29	*	1		1855	228	2449.	8.99
1		0220	29	0.	.00	*	1		1040	129	27634.	66.85	*	1		1900	229	2393.	8.83
1		0225	30	0.	.00	*	1		1045	130	27053.	65.34	*	1		1905	230	2338.	8.68
1		0230	31	0.	.00	*	1		1050	131	26452.	63.77	*	1		1910	231	2286.	8.54
1		0235	32	0.	.00	*	1		1055	132	25836.	62.17	*	1		1915	232	2235.	8.40
1		0240	33	0.	.00	*	1		1100	133	25214.	60.56	*	1		1920	233	2185.	8.26
1		0245	34	0.	.00	*	1		1105	134	24591.	58.94	*	1		1925	234	2137.	8.13
1		0250	35	0.	.00	*	1		1110	135	23973.	57.33	*	1		1930	235	2090.	8.00
1		0255	36	0.	.00	*	1		1115	136	23362.	55.74	*	1		1935	236	2044.	7.87
1		0300	37	0.	.00	*	1		1120	137	22762.	54.18	*	1		1940	237	1998.	7.75
1		0305	38	0.	.00	*	1		1125	138	22169.	52.64	*	1		1945	238	1953.	7.62
1		0310	39	0.	.00	*	1		1130	139	21570.	51.08	*	1		1950	239	1908.	7.50
1		0315	40	0.	.00	*	1		1135	140	20946.	49.46	*	1		1955	240	1862.	7.37
1		0320	41	0.	.00	*	1		1140	141	20282.	47.73	*	1		2000	241	1817.	7.25
1		0325	42	0.	.00	*	1		1145	142	19552.	46.06	*	1		2005	242	1772.	7.12
1		0330	43	0.	.00	*	1		1150	143	18867.	44.62	*	1		2010	243	1727.	7.00
1		0335	44	0.	.00	*	1		1155	144	18263.	43.35	*	1		2015	244	1682.	6.88
1		0340	45	0.	.00	*	1		1200	145	17702.	42.18	*	1		2020	245	1637.	6.75
1		0345	46	0.	.00	*	1		1205	146	17171.	41.06	*	1		2025	246	1593.	6.63
1		0350	47	0.	.00	*	1		1210	147	16661.	39.99	*	1		2030	247	1550.	6.51
1		0355	48	0.	.00	*	1		1215	148	16166.	38.95	*	1		2035	248	1507.	6.39
1		0400	49	0.	.00	*	1		1220	149	15684.	37.94	*	1		2040	249	1465.	6.28
1		0405	50	0.	.00	*	1		1225	150	15215.	36.95	*	1		2045	250	1425.	6.17
1		0410	51	0.	.00	*	1		1230	151	14759.	35.99	*	1		2050	251	1387.	6.06
1		0415	52	0.	.00	*	1		1235	152	14316.	35.06	*	1		2055	252	1350.	5.96
1		0420	53	0.	.00	*	1		1240	153	13887.	34.16	*	1		2100	253	1315.	5.87
1		0425	54	0.	.00	*	1		1245	154	13474.	33.30	*	1		2105	254	1283.	5.78
1		0430	55	0.	.00	*	1		1250	155	13078.	32.46	*	1		2110	255	1252.	5.69
1		0435	56	0.	.00	*	1		1255	156	12700.	31.67	*	1		2115	256	1224.	5.61
1		0440	57	0.	.00	*	1		1300	157	12340.	30.91	*	1		2120	257	1197.	5.54
1		0445	58	0.	.00	*	1		1305	158	12001.	30.20	*	1		2125	258	1173.	5.48

1	0450	59	0.	.00	*	1	1310	159	11684.	29.54	*	1	2130	259	1152.	5.42
1	0455	60	0.	.00	*	1	1315	160	11390.	28.92	*	1	2135	260	1132.	5.36
1	0500	61	0.	.00	*	1	1320	161	11119.	28.35	*	1	2140	261	1114.	5.31
1	0505	62	0.	.00	*	1	1325	162	10873.	27.83	*	1	2145	262	1098.	5.27
1	0510	63	0.	.00	*	1	1330	163	10648.	27.36	*	1	2150	263	1084.	5.23
1	0515	64	0.	.00	*	1	1335	164	10437.	26.92	*	1	2155	264	1072.	5.20
1	0520	65	0.	.00	*	1	1340	165	10235.	26.49	*	1	2200	265	1061.	5.17
1	0525	66	0.	.00	*	1	1345	166	10042.	26.09	*	1	2205	266	1052.	5.14
1	0530	67	0.	.00	*	1	1350	167	9847.	25.69	*	1	2210	267	1044.	5.12
1	0535	68	0.	.00	*	1	1355	168	9664.	25.33	*	1	2215	268	1037.	5.10
1	0540	69	0.	.00	*	1	1400	169	9488.	24.98	*	1	2220	269	1031.	5.08
1	0545	70	0.	.00	*	1	1405	170	9307.	24.61	*	1	2225	270	1025.	5.07
1	0550	71	0.	.00	*	1	1410	171	9125.	24.25	*	1	2230	271	1021.	5.06
1	0555	72	0.	.00	*	1	1415	172	8940.	23.88	*	1	2235	272	1017.	5.05
1	0600	73	0.	.00	*	1	1420	173	8750.	23.50	*	1	2240	273	1014.	5.04
1	0605	74	0.	.00	*	1	1425	174	8555.	23.11	*	1	2245	274	1012.	5.03
1	0610	75	0.	.00	*	1	1430	175	8356.	22.71	*	1	2250	275	1009.	5.03
1	0615	76	0.	.00	*	1	1435	176	8153.	22.31	*	1	2255	276	1008.	5.02
1	0620	77	0.	.00	*	1	1440	177	7948.	21.90	*	1	2300	277	1006.	5.02
1	0625	78	0.	.00	*	1	1445	178	7742.	21.48	*	1	2305	278	1005.	5.01
1	0630	79	0.	.00	*	1	1450	179	7536.	21.07	*	1	2310	279	1004.	5.01
1	0635	80	0.	.00	*	1	1455	180	7331.	20.66	*	1	2315	280	1003.	5.01
1	0640	81	0.	.00	*	1	1500	181	7129.	20.26	*	1	2320	281	1003.	5.01
1	0645	82	0.	.00	*	1	1505	182	6930.	19.86	*	1	2325	282	1002.	5.01
1	0650	83	0.	.00	*	1	1510	183	6737.	19.47	*	1	2330	283	1002.	5.00
1	0655	84	0.	.00	*	1	1515	184	6551.	19.10	*	1	2335	284	1001.	5.00
1	0700	85	0.	.00	*	1	1520	185	6372.	18.74	*	1	2340	285	1001.	5.00
1	0705	86	0.	.00	*	1	1525	186	6202.	18.40	*	1	2345	286	1001.	5.00
1	0710	87	0.	.00	*	1	1530	187	6042.	18.08	*	1	2350	287	1001.	5.00
1	0715	88	0.	.00	*	1	1535	188	5891.	17.78	*	1	2355	288	1000.	5.00
1	0720	89	0.	.00	*	1	1540	189	5749.	17.50	*	2	0000	289	1000.	5.00
1	0725	90	0.	.00	*	1	1545	190	5614.	17.23	*	2	0005	290	1000.	5.00
1	0730	91	0.	.00	*	1	1550	191	5485.	16.97	*	2	0010	291	1000.	5.00
1	0735	92	0.	.00	*	1	1555	192	5359.	16.72	*	2	0015	292	1000.	5.00
1	0740	93	0.	.00	*	1	1600	193	5242.	16.48	*	2	0020	293	1000.	5.00
1	0745	94	0.	.00	*	1	1605	194	5137.	16.27	*	2	0025	294	1000.	5.00
1	0750	95	0.	.00	*	1	1610	195	5050.	16.10	*	2	0030	295	1000.	5.00
1	0755	96	0.	.00	*	1	1615	196	4982.	15.95	*	2	0035	296	1000.	5.00
1	0800	97	0.	.00	*	1	1620	197	4924.	15.79	*	2	0040	297	1000.	5.00
1	0805	98	0.	.00	*	1	1625	198	4854.	15.60	*	2	0045	298	1000.	5.00
1	0810	99	0.	.00	*	1	1630	199	4776.	15.38	*	2	0050	299	1000.	5.00
1	0815	100	0.	.00	*	1	1635	200	4693.	15.16	*	2	0055	300	1000.	5.00
					*						*					

****

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
30281.	10.08	(CFS)	17204.	5299.	5104.	5104.
		(INCHES)	.935	1.153	1.153	1.153
		(AC-FT)	8531.	10511.	10511.	10511.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
74.	10.08	42.	14.	14.	14.

CUMULATIVE AREA = 171.00 SQ MI

1

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	CP1037	37500.	6.00	22107.	6717.	6470.	171.00		
ROUTED TO	RS20.207	37205.	6.00	22089.	6717.	6470.	171.00		
ROUTED TO	RS19.920	37039.	6.08	22074.	6717.	6470.	171.00		
ROUTED TO	RS19.635	36876.	6.17	22056.	6717.	6470.	171.00		
ROUTED TO	RS19.352	36758.	6.17	22045.	6717.	6470.	171.00		
ROUTED TO	RS19.066	36727.	6.25	22032.	6717.	6470.	171.00		
ROUTED TO	RS18.839	36631.	6.33	21639.	6575.	6333.	171.00		
ROUTED TO	RS18.558	36520.	6.42	21554.	6565.	6323.	171.00		
ROUTED TO	RS18.275	36388.	6.50	21508.	6561.	6320.	171.00		

ROUTED TO	RS18.000	35970.	6.58	21418.	6533.	6292.	171.00
ROUTED TO	RS17.730	35675.	6.75	20859.	6345.	6112.	171.00
ROUTED TO	RS17.458	34946.	7.00	20252.	6173.	5945.	171.00
ROUTED TO	RS17.180	34707.	7.08	19880.	6049.	5826.	171.00
ROUTED TO	RS16.895	34406.	7.25	19720.	6024.	5803.	171.00
ROUTED TO	RS16.612	34393.	7.33	19710.	6020.	5798.	171.00
ROUTED TO	RS16.385	34348.	7.33	19676.	6013.	5792.	171.00
ROUTED TO	RS16.099	34126.	7.50	19629.	6006.	5785.	171.00
ROUTED TO	RS15.814	34091.	7.58	19599.	5997.	5777.	171.00
ROUTED TO	RS15.564	34035.	7.67	19574.	5992.	5771.	171.00
ROUTED TO	RS15.281	33984.	7.67	19534.	5986.	5766.	171.00
ROUTED TO	RS15.000	33940.	7.75	19485.	5976.	5756.	171.00
ROUTED TO	RS14.708	33899.	7.83	19437.	5970.	5751.	171.00
ROUTED TO	RS14.430	33846.	7.92	19393.	5964.	5745.	171.00
ROUTED TO	RS14.145	33791.	8.00	19365.	5959.	5740.	171.00
ROUTED TO	RS13.856	33771.	8.00	19335.	5955.	5736.	171.00
ROUTED TO	RS13.565	33712.	8.08	19311.	5949.	5730.	171.00
ROUTED TO	RS13.296	33651.	8.17	19275.	5938.	5720.	171.00
ROUTED TO	RS13.007	33539.	8.25	18705.	5754.	5542.	171.00
ROUTED TO	RS12.725	33124.	8.50	18595.	5732.	5521.	171.00
ROUTED TO	RS12.470	32792.	8.67	18420.	5727.	5516.	171.00
ROUTED TO	RS12.247	32653.	8.75	18338.	5724.	5513.	171.00
ROUTED TO	RS12.042	31299.	9.17	17914.	5531.	5328.	171.00
ROUTED TO	RS11.750	30814.	9.50	17501.	5354.	5157.	171.00
ROUTED TO	RS11.460	30807.	9.58	17477.	5347.	5150.	171.00
ROUTED TO	RS11.224	30634.	9.67	17386.	5337.	5140.	171.00
ROUTED TO	RS10.942	30558.	9.75	17347.	5330.	5133.	171.00
ROUTED TO	RS10.752	30489.	9.83	17317.	5320.	5125.	171.00
ROUTED TO	RS10.538	30349.	9.92	17239.	5310.	5115.	171.00
ROUTED TO	RS10.265	30298.	10.00	17218.	5304.	5109.	171.00
ROUTED TO	RS10.071	30280.	10.00	17204.	5302.	5107.	171.00
ROUTED TO	RS9.981	30281.	10.08	17204.	5299.	5104.	171.00

Kimley-Horn
and Associates, Inc.

FW100n.out

Floodway Model-Upper Reach

```
1****************************************                                                    ****************************************
*                                      *                                                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                                    *    U.S. ARMY CORPS OF ENGINEERS      *
*              JUL   1997              *                                                    *    HYDROLOGIC ENGINEERING CENTER     *
*           VERSION 4.1                *                                                    *          609 SECOND STREET           *
*                                      *                                                    *       DAVIS, CALIFORNIA 95616        *
*  RUN DATE   17MAY01  TIME  09:05:21  *                                                    *           (916) 756-1104             *
*                                      *                                                    *                                      *
****************************************                                                    ****************************************


                                        X     X  XXXXXXX   XXXXX           X
                                        X     X  X        X     X         XX
                                        X     X  X        X                X
                                        XXXXXXX  XXXX     X        XXXXX   X
                                        X     X  X        X                X
                                        X     X  X        X     X          X
                                        X     X  XXXXXXX   XXXXX         XXX


          THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

          THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
          THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
          NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
          DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL   LOSS RATE:GREEN AND AMPT INFILTRATION
          KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1                                                   HEC-1 INPUT                                                          PAGE  1

         LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

           1           ID   Agua Fria River Existing Conditions
                       * ******************************************************************************
                       *                                                                              *
                       *                 Flood Control District of Maricopa County                    *
                       *               Agua Fria River Watercourse Floodplain Study                   *
                       *                                FCD99-24                                      *
                       *                                                                              *
                       *                        EXISTING CONDITIONS HYDROLOGY                         *
                       *                                                                              *
                       *                                                                              *
                       *                  Prepared by Kimley-Horn and Associates, Inc.                *
                       *                              KHA Job No. 09113104                            *
                       *                                                                              *
                       *                                  February 2001                               *
                       *                                                                              *
                       *                                                                              *
                       *  The flood routing model was developed to evaluate flood wave attenuation as *
                       *  related to overbank storage.  The Modified-Puls method was utilized to      *
                       *  simulate flood routing. Stage-storage-discharge relationships were developed*
                       *  on a reach by reach basis using HEC-RAS.  Routing reaches are approximately *
                       *  1/4 mile long. Direct channel losses are assumed negligible.               *
                       *  This hydrology is a FLOODWAY model of existing conditions on the Agua Fria  *
                       *  River and its tributaries from New Waddell Dam to the New River confluence. *
                       *  Hydrographs were obtained from a study by the Corps of Engineers entitled   *
                       *  "Agua Fria River Study New Waddell Dam to Gila River Confluence, Arizona."  *
                       *  This model is the upper reach of the Agua Fria River, from New Waddell Dam  *
                       *  to Bell Road. Two 100-year hydrographs shall be used, one downstream of the *
                       *  Dam and a second at Bell Road (CP1037).  All other inflow is assumed to be  *
                       *  negligible.                                                                 *
                       *                                                                              *
                       * ******************************************************************************
           2           ID    Agua Fria Water Course - Direct input of existing
           3           ID    conditions 100-yr hydrograph, per the Corps of Engineers' report
           4           IT       5       0       0     300
           5           IN      30
           6           IO       5
*** FREE ***
                       *DIAGRAM

           7           KK    1037
           8           KO       1
           9           KM   Runoff hydrograph for subbasin 1037
          10           BA     102
          11           QI       0       0       0       0      50     200     500    2000    3900   11000
          12           QI   16800   22200   20300   17500   14500   12800   10800    8800    7200    6100
          13           QI    5500    4500    3500    3000    2500    2200    1900    1800    1300    1100
          14           QI    1050     800     500     450     450     450     450     450     450     400
          15           QI     400      50     0.1       0       0       0       0       0       0       0

          16           KKRS33.540,,,,,,,,,
          17           RS       1    FLOW      -1
          18           SV       0      24      45      62      90     114     136
          19           SQ       0    1000    5000   10000   20000   30000   40000
1                                                   HEC-1 INPUT                                                          PAGE  2

         LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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 20          KK RS33.30,,,,,,,,,
 21          RS       1    FLOW      -1
 22          SV       0      12      40      67     109     145     178
 23          SQ       0    1000    5000   10000   20000   30000   40000

 24          KKRS33.060,,,,,,
 25          RS       1    FLOW      -1
 26          SV       0      10      27      42      69      97     120
 27          SQ       0    1000    5000   10000   20000   30000   40000

 28          KKRS32.790,,,,,,
 29          RS       1    FLOW      -1
 30          SV       0      21      47      64      94     120     143
 31          SQ       0    1000    5000   10000   20000   30000   40000

 32          KKRS32.520,,,,,,
 33          RS       1    FLOW      -1
 34          SV       0      15      57      83     122     154     181
 35          SQ       0    1000    5000   10000   20000   30000   40000

 36          KKRS32.240,,,,,,
 37          RS       1    FLOW      -1
 38          SV       0      16      41      66     103     132     157
 39          SQ       0    1000    5000   10000   20000   30000   40000

 40          KKRS31.960,,,,,,
 41          RS       1    FLOW      -1
 42          SV       0      19      54      82     124     157     186
 43          SQ       0    1000    5000   10000   20000   30000   40000

 44          KKRS31.670,,,,,,
 45          RS       1    FLOW      -1
 46          SV       0      16      55      87     132     169     201
 47          SQ       0    1000    5000   10000   20000   30000   40000

 48          KKRS31.390,,,,,,
 49          RS       1    FLOW      -1
 50          SV       0      11      39      72     122     166     207
 51          SQ       0    1000    5000   10000   20000   30000   40000

 52          KKRS31.110,,,,,,
 53          RS       1    FLOW      -1
 54          SV       0      11      36      61     112     159     200
 55          SQ       0    1000    5000   10000   20000   30000   40000

 56          KKRS30.820,,,,,,
 57          RS       1    FLOW      -1
 58          SV       0      13      35      54      82     105     124
 59          SQ       0    1000    5000   10000   20000   30000   40000
1                                        HEC-1 INPUT                                                    PAGE  3

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 60          KKRS20.550,,,,,,
 61          RS       1    FLOW      -1
 62          SV       0      15      42      66     103     133     159
 63          SQ       0    1000    5000   10000   20000   30000   40000

 64          KKRS30.260,,,,,,
 65          RS       1    FLOW      -1
 66          SV       0      12      43      70     108     138     164
 67          SQ       0    1000    5000   10000   20000   30000   40000

 68          KKRS29.990,,,,,,
 69          RS       1    FLOW      -1
 70          SV       0      22      56      84     132     176     216
 71          SQ       0    1000    5000   10000   20000   30000   40000

 72          KKRS29.720,,,,,,
 73          RS       1    FLOW      -1
 74          SV       0      10      31      52      88     116     141
 75          SQ       0    1000    5000   10000   20000   30000   40000

 76          KKRS29.470,,,,,,
 77          RS       1    FLOW      -1
 78          SV       0      11      35      57      89     114     136
 79          SQ       0    1000    5000   10000   20000   30000   40000

 80          KKRS29.230,,,,,,
 81          RS       1    FLOW      -1
 82          SV       0       9      31      64     109     144     179
 83          SQ       0    1000    5000   10000   20000   30000   40000

 84          KKRS28.950,,,,,,
 85          RS       1    FLOW      -1
 86          SV       0      11      29      46      77     102     124
 87          SQ       0    1000    5000   10000   20000   30000   40000

 88          KKRS28.670,,,,,,
 89          RS       1    FLOW      -1
 90          SV       0      10      30      47      72      88     102
 91          SQ       0    1000    5000   10000   20000   30000   40000

 92          KKRS28.450,,,,,,
 93          RS       1    FLOW      -1
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  94          SV       0      12      37      60     105     142     172
  95          SQ       0    1000    5000   10000   20000   30000   40000

  96          KKRS28.210,,,,,,
  97          RS       1    FLOW      -1
  98          SV       0      15      49      77     123     161     195
  99          SQ       0    1000    5000   10000   20000   30000   40000
1                                          HEC-1 INPUT                                                    PAGE  4

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 100          KKRS27.940,,,,,,
 101          RS       1    FLOW      -1
 102          SV       0      10      39      75     125     162     193
 103          SQ       0    1000    5000   10000   20000   30000   40000

 104          KKRS27.680,,,,,,
 105          RS       1    FLOW      -1
 106          SV       0      14      54     104     197     261     316
 107          SQ       0    1000    5000   10000   20000   30000   40000

 108          KKRS27.390,,,,,,
 109          RS       1    FLOW      -1
 110          SV       0      16      56     109     199     275     344
 111          SQ       0    1000    5000   10000   20000   30000   40000

 112          KKRS27.110,,,,,,
 113          RS       1    FLOW      -1
 114          SV       0      15      41      74     118     151     179
 115          SQ       0    1000    5000   10000   20000   30000   40000

 116          KKRS26.830,,,,,,
 117          RS       1    FLOW      -1
 118          SV       0      18      59      92     141     178     209
 119          SQ       0    1000    5000   10000   20000   30000   40000

 120          KKRS26.550,,,,,,
 121          RS       1    FLOW      -1
 122          SV       0      10      48      82     142     186     222
 123          SQ       0    1000    5000   10000   20000   30000   40000

 124          KKRS26.290,,,,,,
 125          RS       1    FLOW      -1
 126          SV       0      10      45      89     153     204     250
 127          SQ       0    1000    5000   10000   20000   30000   40000

 128          KKRS26.030,,,,,,
 129          RS       1    FLOW      -1
 130          SV       0       9      31      58     106     145     175
 131          SQ       0    1000    5000   10000   20000   30000   40000

 132          KKRS25.790,,,,,,
 133          RS       1    FLOW      -1
 134          SV       0      15      48      87     152     207     247
 135          SQ       0    1000    5000   10000   20000   30000   40000

 136          KKRS25.5260,,,,,,
 137          RS       1    FLOW      -1
 138          SV       0      11      36      61     109     155     191
 139          SQ       0    1000    5000   10000   20000   30000   40000
1                                          HEC-1 INPUT                                                    PAGE  5

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 140          KKRS25.2880,,,,,,
 141          RS       1    FLOW      -1
 142          SV       0       9      39      65     110     146     174
 143          SQ       0    1000    5000   10000   20000   30000   40000

 144          KKRS25.0980,,,,,,
 145          RS       1    FLOW      -1
 146          SV       0      14      55      97     176     236     284
 147          SQ       0    1000    5000   10000   20000   30000   40000

 148          KKRS24.8160,,,,,,
 149          RS       2    FLOW      -1
 150          SV       0      15      58      98     162     216     258
 151          SQ       0    1000    5000   10000   20000   30000   40000

 152          KKRS24.5430,,,,,,
 153          RS       1    FLOW      -1
 154          SV       0      17      69     114     183     242     297
 155          SQ       0    1000    5000   10000   20000   30000   40000

 156          KKRS24.260,,,,,,
 157          RS       2    FLOW      -1
 158          SV       0      17      67     120     204     272     333
 159          SQ       0    1000    5000   10000   20000   30000   40000

 160          KKRS23.974,,,,,,
 161          RS       1    FLOW      -1
 162          SV       0      12      43      75     123     162     195
 163          SQ       0    1000    5000   10000   20000   30000   40000
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 164          KKRS23.692,,,,,,
 165          RS       1    FLOW      -1
 166          SV       0      12      49      85     132     168     200
 167          SQ       0    1000    5000   10000   20000   30000   40000

 168          KKRS23.409,,,,,,
 169          RS       1    FLOW      -1
 170          SV       0      14      53      90     154     202     244
 171          SQ       0    1000    5000   10000   20000   30000   40000

 172          KKRS23.124,,,,,,
 173          RS       2    FLOW      -1
 174          SV       0      13      54      97     167     230     288
 175          SQ       0    1000    5000   10000   20000   30000   40000

 176          KKRS22.839,,,,,,
 177          RS       1    FLOW      -1
 178          SV       0      15      52      89     156     215     270
 179          SQ       0    1000    5000   10000   20000   30000   40000
1                                          HEC-1 INPUT                                          PAGE  6

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 180          KKRS22.558,,,,,,
 181          RS       1    FLOW      -1
 182          SV       0      14      53      88     149     204     260
 183          SQ       0    1000    5000   10000   20000   30000   40000

 184          KKRS22.273,,,,,,
 185          RS       1    FLOW      -1
 186          SV       0      19      50      88     148     199     244
 187          SQ       0    1000    5000   10000   20000   30000   40000

 188          KKRS21.986,,,,,,
 189          RS       1    FLOW      -1
 190          SV       0      10      36      63     110     151     188
 191          SQ       0    1000    5000   10000   20000   30000   40000

 192          KKRS21.716,,,,,,
 193          RS       1    FLOW      -1
 194          SV       0      23      69     105     182     228     269
 195          SQ       0    1000    5000   10000   20000   30000   40000

 196          KKRS21.431,,,,,,
 197          RS       1    FLOW      -1
 198          SV       0      27      81     117     172     223     268
 199          SQ       0    1000    5000   10000   20000   30000   40000

 200          KKRS21.157,,,,,,
 201          RS       2    FLOW      -1
 202          SV       0      12      36      58      89     115     141
 203          SQ       0    1000    5000   10000   20000   30000   40000

 204          KKRS20.958,,,,,,
 205          RS       1    FLOW      -1
 206          SV       0      13      42      69     114     153     189
 207          SQ       0    1000    5000   10000   20000   30000   40000

 208          KKRS20.675,,,,,,
 209          RS       1    FLOW      -1
 210          SV       0      10      35      56      86     110     131
 211          SQ       0    1000    5000   10000   20000   30000   40000

 212          KKRS20.435,,,,,,
 213          RS       1    FLOW      -1
 214          SV       0      10      36      66     108     140     169
 215          SQ       0    1000    5000   10000   20000   30000   40000
 216          ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
 LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   7         1037
                V
                V
  16     RS33.540
                V
                V
  20      RS33.30
                V
                V
  24     RS33.060
                V
                V
  28     RS32.790
                V
                V
  32     RS32.520
                V
                V
  36     RS32.240
                V
```

```
                V
 40     RS31.960
                V
                V
 44     RS31.670
                V
                V
 48     RS31.390
                V
                V
 52     RS31.110
                V
                V
 56     RS30.820
                V
                V
 60     RS20.550
                V
                V
 64     RS30.260
                V
                V
 68     RS29.990
                V
                V
 72     RS29.720
                V
                V
 76     RS29.470
                V
                V
 80     RS29.230
                V
                V
 84     RS28.950
                V
                V
 88     RS28.670
                V
                V
 92     RS28.450
                V
                V
 96     RS28.210
                V
                V
100     RS27.940
                V
                V
104     RS27.680
                V
                V
108     RS27.390
                V
                V
112     RS27.110
                V
                V
116     RS26.830
                V
                V
120     RS26.550
                V
                V
124     RS26.290
                V
                V
128     RS26.030
                V
                V
132     RS25.790
                V
                V
136     RS25.526
                V
                V
140     RS25.288
                V
                V
144     RS25.098
                V
                V
148     RS24.816
                V
                V
152     RS24.543
                V
                V
156     RS24.260
                V
                V
160     RS23.974
                V
                V
164     RS23.692
                V
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                V
  168    RS23.409
                V
                V
  172    RS23.124
                V
                V
  176    RS22.839
                V
                V
  180    RS22.558
                V
                V
  184    RS22.273
                V
                V
  188    RS21.986
                V
                V
  192    RS21.716
                V
                V
  196    RS21.431
                V
                V
  200    RS21.157
                V
                V
  204    RS20.958
                V
                V
  208    RS20.675
                V
                V
  212    RS20.435

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************                                    ****************************************
*                                      *                                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *    U.S. ARMY CORPS OF ENGINEERS      *
*              JUL   1997              *                                    *    HYDROLOGIC ENGINEERING CENTER     *
*            VERSION 4.1               *                                    *          609 SECOND STREET           *
*                                      *                                    *       DAVIS, CALIFORNIA 95616        *
*  RUN DATE   17MAY01  TIME  09:05:21  *                                    *           (916) 756-1104             *
*                                      *                                    *                                      *
****************************************                                    ****************************************


                         Agua Fria River Existing Conditions
                          Agua Fria Water Course - Direct input of existing
                          conditions 100-yr hydrograph, per the Corps of Engineers' report

   6 IO          OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE

     IT          HYDROGRAPH TIME DATA
                        NMIN           5  MINUTES IN COMPUTATION INTERVAL
                       IDATE      1    0  STARTING DATE
                       ITIME        0000  STARTING TIME
                          NQ         300  NUMBER OF HYDROGRAPH ORDINATES
                      NDDATE      2    0  ENDING DATE
                      NDTIME        0055  ENDING TIME
                      ICENT          19  CENTURY MARK

                  COMPUTATION INTERVAL     .08 HOURS
                       TOTAL TIME BASE   24.92 HOURS

          ENGLISH UNITS
               DRAINAGE AREA          SQUARE MILES
               PRECIPITATION DEPTH    INCHES
               LENGTH, ELEVATION      FEET
               FLOW                   CUBIC FEET PER SECOND
               STORAGE VOLUME         ACRE-FEET
               SURFACE AREA           ACRES
               TEMPERATURE            DEGREES FAHRENHEIT


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
   7 KK     *      1037  *
            *            *
            **************

   8 KO          OUTPUT CONTROL VARIABLES
                       IPRNT           1  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE
```

Runoff hydrograph for subbasin 1037

```
 5 IN          TIME DATA FOR INPUT TIME SERIES
                    JXMIN          30  TIME INTERVAL IN MINUTES
                   JXDATE      1    0  STARTING DATE
                   JXTIME           0  STARTING TIME

            SUBBASIN RUNOFF DATA

 10 BA         SUBBASIN CHARACTERISTICS
                    TAREA      102.00  SUBBASIN AREA
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HYDROGRAPH AT STATION 1037

****

DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1		0000	1	0.	1		0615	76	18900.	1		1230	151	2200.	1		1845	226	450.
1		0005	2	0.	1		0620	77	18433.	1		1235	152	2150.	1		1850	227	450.
1		0010	3	0.	1		0625	78	17967.	1		1240	153	2100.	1		1855	228	450.
1		0015	4	0.	1		0630	79	17500.	1		1245	154	2050.	1		1900	229	450.
1		0020	5	0.	1		0635	80	17000.	1		1250	155	2000.	1		1905	230	442.
1		0025	6	0.	1		0640	81	16500.	1		1255	156	1950.	1		1910	231	433.
1		0030	7	0.	1		0645	82	16000.	1		1300	157	1900.	1		1915	232	425.
1		0035	8	0.	1		0650	83	15500.	1		1305	158	1883.	1		1920	233	417.
1		0040	9	0.	1		0655	84	15000.	1		1310	159	1867.	1		1925	234	408.
1		0045	10	0.	1		0700	85	14500.	1		1315	160	1850.	1		1930	235	400.
1		0050	11	0.	1		0705	86	14217.	1		1320	161	1833.	1		1935	236	400.
1		0055	12	0.	1		0710	87	13933.	1		1325	162	1817.	1		1940	237	400.
1		0100	13	0.	1		0715	88	13650.	1		1330	163	1800.	1		1945	238	400.
1		0105	14	0.	1		0720	89	13367.	1		1335	164	1717.	1		1950	239	400.
1		0110	15	0.	1		0725	90	13083.	1		1340	165	1633.	1		1955	240	400.
1		0115	16	0.	1		0730	91	12800.	1		1345	166	1550.	1		2000	241	400.
1		0120	17	0.	1		0735	92	12467.	1		1350	167	1467.	1		2005	242	342.
1		0125	18	0.	1		0740	93	12133.	1		1355	168	1383.	1		2010	243	283.
1		0130	19	0.	1		0745	94	11800.	1		1400	169	1300.	1		2015	244	225.
1		0135	20	8.	1		0750	95	11467.	1		1405	170	1267.	1		2020	245	167.
1		0140	21	17.	1		0755	96	11133.	1		1410	171	1233.	1		2025	246	108.
1		0145	22	25.	1		0800	97	10800.	1		1415	172	1200.	1		2030	247	50.
1		0150	23	33.	1		0805	98	10467.	1		1420	173	1167.	1		2035	248	42.
1		0155	24	42.	1		0810	99	10133.	1		1425	174	1133.	1		2040	249	33.
1		0200	25	50.	1		0815	100	9800.	1		1430	175	1100.	1		2045	250	25.
1		0205	26	75.	1		0820	101	9467.	1		1435	176	1092.	1		2050	251	17.
1		0210	27	100.	1		0825	102	9133.	1		1440	177	1083.	1		2055	252	8.
1		0215	28	125.	1		0830	103	8800.	1		1445	178	1075.	1		2100	253	0.
1		0220	29	150.	1		0835	104	8533.	1		1450	179	1067.	1		2105	254	0.
1		0225	30	175.	1		0840	105	8267.	1		1455	180	1058.	1		2110	255	0.
1		0230	31	200.	1		0845	106	8000.	1		1500	181	1050.	1		2115	256	0.
1		0235	32	250.	1		0850	107	7733.	1		1505	182	1008.	1		2120	257	0.
1		0240	33	300.	1		0855	108	7467.	1		1510	183	967.	1		2125	258	0.
1		0245	34	350.	1		0900	109	7200.	1		1515	184	925.	1		2130	259	0.
1		0250	35	400.	1		0905	110	7017.	1		1520	185	883.	1		2135	260	0.
1		0255	36	450.	1		0910	111	6833.	1		1525	186	842.	1		2140	261	0.
1		0300	37	500.	1		0915	112	6650.	1		1530	187	800.	1		2145	262	0.
1		0305	38	750.	1		0920	113	6467.	1		1535	188	750.	1		2150	263	0.
1		0310	39	1000.	1		0925	114	6283.	1		1540	189	700.	1		2155	264	0.
1		0315	40	1250.	1		0930	115	6100.	1		1545	190	650.	1		2200	265	0.
1		0320	41	1500.	1		0935	116	6000.	1		1550	191	600.	1		2205	266	0.
1		0325	42	1750.	1		0940	117	5900.	1		1555	192	550.	1		2210	267	0.
1		0330	43	2000.	1		0945	118	5800.	1		1600	193	500.	1		2215	268	0.
1		0335	44	2317.	1		0950	119	5700.	1		1605	194	492.	1		2220	269	0.
1		0340	45	2633.	1		0955	120	5600.	1		1610	195	483.	1		2225	270	0.
1		0345	46	2950.	1		1000	121	5500.	1		1615	196	475.	1		2230	271	0.
1		0350	47	3267.	1		1005	122	5333.	1		1620	197	467.	1		2235	272	0.
1		0355	48	3583.	1		1010	123	5167.	1		1625	198	458.	1		2240	273	0.
1		0400	49	3900.	1		1015	124	5000.	1		1630	199	450.	1		2245	274	0.
1		0405	50	5083.	1		1020	125	4833.	1		1635	200	450.	1		2250	275	0.
1		0410	51	6267.	1		1025	126	4667.	1		1640	201	450.	1		2255	276	0.
1		0415	52	7450.	1		1030	127	4500.	1		1645	202	450.	1		2300	277	0.
1		0420	53	8633.	1		1035	128	4333.	1		1650	203	450.	1		2305	278	0.
1		0425	54	9817.	1		1040	129	4167.	1		1655	204	450.	1		2310	279	0.
1		0430	55	11000.	1		1045	130	4000.	1		1700	205	450.	1		2315	280	0.
1		0435	56	11967.	1		1050	131	3833.	1		1705	206	450.	1		2320	281	0.
1		0440	57	12933.	1		1055	132	3667.	1		1710	207	450.	1		2325	282	0.
1		0445	58	13900.	1		1100	133	3500.	1		1715	208	450.	1		2330	283	0.
1		0450	59	14867.	1		1105	134	3417.	1		1720	209	450.	1		2335	284	0.
1		0455	60	15833.	1		1110	135	3333.	1		1725	210	450.	1		2340	285	0.
1		0500	61	16800.	1		1115	136	3250.	1		1730	211	450.	1		2345	286	0.
1		0505	62	17700.	1		1120	137	3167.	1		1735	212	450.	1		2350	287	0.
1		0510	63	18600.	1		1125	138	3083.	1		1740	213	450.	1		2355	288	0.
1		0515	64	19500.	1		1130	139	3000.	1		1745	214	450.	2		0000	289	0.
1		0520	65	20400.	1		1135	140	2917.	1		1750	215	450.	2		0005	290	0.
1		0525	66	21300.	1		1140	141	2833.	1		1755	216	450.	2		0010	291	0.
1		0530	67	22200.	1		1145	142	2750.	1		1800	217	450.	2		0015	292	0.
1		0535	68	21883.	1		1150	143	2667.	1		1805	218	450.	2		0020	293	0.
1		0540	69	21567.	1		1155	144	2583.	1		1810	219	450.	2		0025	294	0.
1		0545	70	21250.	1		1200	145	2500.	1		1815	220	450.	2		0030	295	0.
1		0550	71	20933.	1		1205	146	2450.	1		1820	221	450.	2		0035	296	0.
1		0555	72	20617.	1		1210	147	2400.	1		1825	222	450.	2		0040	297	0.
1		0600	73	20300.	1		1215	148	2350.	1		1830	223	450.	2		0045	298	0.
1		0605	74	19833.	1		1220	149	2300.	1		1835	224	450.	2		0050	299	0.

```
  1     0610   75    19367.   *    1     1225  150     2250.   *    1     1840  225      450.   *    2     0055  300        0.
                              *                                   *                                 *
*****************************************************************************************************************************
```

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
22200.	5.50	(CFS)	12738.	3914.	3770.	3770.
		(INCHES)	1.161	1.427	1.427	1.427
		(AC-FT)	6316.	7762.	7762.	7762.

CUMULATIVE AREA = 102.00 SQ MI

1

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	1037	22200.	5.50	12738.	3914.	3770.	102.00		
ROUTED TO	RS33.540	22070.	5.58	12734.	3914.	3770.	102.00		
ROUTED TO	RS33.30	21965.	5.58	12725.	3914.	3770.	102.00		
ROUTED TO	RS33.060	21933.	5.67	12724.	3914.	3770.	102.00		
ROUTED TO	RS32.790	21896.	5.67	12717.	3914.	3770.	102.00		
ROUTED TO	RS32.520	21847.	5.75	12703.	3914.	3770.	102.00		
ROUTED TO	RS32.240	21808.	5.75	12694.	3914.	3770.	102.00		
ROUTED TO	RS31.960	21769.	5.83	12681.	3914.	3770.	102.00		
ROUTED TO	RS31.670	21698.	5.83	12665.	3914.	3770.	102.00		
ROUTED TO	RS31.390	21653.	5.92	12655.	3914.	3770.	102.00		
ROUTED TO	RS31.110	21581.	6.00	12649.	3914.	3770.	102.00		
ROUTED TO	RS30.820	21553.	6.00	12643.	3914.	3770.	102.00		
ROUTED TO	RS20.550	21538.	6.08	12633.	3914.	3770.	102.00		
ROUTED TO	RS30.260	21509.	6.08	12619.	3914.	3770.	102.00		
ROUTED TO	RS29.990	21463.	6.17	12602.	3913.	3769.	102.00		
ROUTED TO	RS29.720	21415.	6.17	12595.	3913.	3769.	102.00		
ROUTED TO	RS29.470	21428.	6.25	12586.	3913.	3769.	102.00		
ROUTED TO	RS29.230	21376.	6.25	12576.	3913.	3769.	102.00		
ROUTED TO	RS28.950	21383.	6.33	12568.	3913.	3769.	102.00		
ROUTED TO	RS28.670	21380.	6.33	12563.	3913.	3769.	102.00		
ROUTED TO	RS28.450	21337.	6.42	12550.	3913.	3769.	102.00		
ROUTED TO	RS28.210	21294.	6.42	12526.	3913.	3769.	102.00		
ROUTED TO	RS27.940	21273.	6.50	12507.	3912.	3768.	102.00		
ROUTED TO	RS27.680	21090.	6.58	12477.	3912.	3768.	102.00		
ROUTED TO									

+	RS27.390	20910.	6.75	12445.	3911.	3767.	102.00
ROUTED TO							
+	RS27.110	20864.	6.75	12432.	3910.	3766.	102.00
ROUTED TO							
+	RS26.830	20855.	6.83	12400.	3908.	3765.	102.00
ROUTED TO							
+	RS26.550	20803.	6.92	12376.	3907.	3764.	102.00
ROUTED TO							
+	RS26.290	20724.	7.00	12354.	3906.	3763.	102.00
ROUTED TO							
+	RS26.030	20674.	7.08	12343.	3905.	3762.	102.00
ROUTED TO							
+	RS25.790	20590.	7.17	12322.	3903.	3760.	102.00
ROUTED TO							
+	RS25.526	20530.	7.25	12312.	3902.	3758.	102.00
ROUTED TO							
+	RS25.288	20514.	7.25	12296.	3900.	3757.	102.00
ROUTED TO							
+	RS25.098	20391.	7.42	12263.	3898.	3755.	102.00
ROUTED TO							
+	RS24.816	20363.	7.50	12245.	3895.	3752.	102.00
ROUTED TO							
+	RS24.543	20285.	7.58	12201.	3892.	3749.	102.00
ROUTED TO							
+	RS24.260	20252.	7.67	12172.	3889.	3746.	102.00
ROUTED TO							
+	RS23.974	20213.	7.75	12151.	3886.	3743.	102.00
ROUTED TO							
+	RS23.692	20170.	7.83	12125.	3884.	3741.	102.00
ROUTED TO							
+	RS23.409	20109.	7.92	12096.	3881.	3738.	102.00
ROUTED TO							
+	RS23.124	20081.	8.00	12077.	3878.	3735.	102.00
ROUTED TO							
+	RS22.839	20003.	8.08	12049.	3874.	3732.	102.00
ROUTED TO							
+	RS22.558	19948.	8.17	12017.	3871.	3729.	102.00
ROUTED TO							
+	RS22.273	19900.	8.25	11993.	3867.	3724.	102.00
ROUTED TO							
+	RS21.986	19883.	8.33	11977.	3864.	3722.	102.00
ROUTED TO							
+	RS21.716	19801.	8.50	11930.	3859.	3717.	102.00
ROUTED TO							
+	RS21.431	19763.	8.58	11868.	3851.	3710.	102.00
ROUTED TO							
+	RS21.157	19767.	8.58	11856.	3848.	3707.	102.00
ROUTED TO							
+	RS20.958	19741.	8.67	11834.	3845.	3703.	102.00
ROUTED TO							
+	RS20.675	19731.	8.67	11817.	3842.	3700.	102.00
ROUTED TO							
+	RS20.435	19714.	8.75	11794.	3839.	3698.	102.00

*** NORMAL END OF HEC-1 ***

Kimley-Horn
and Associates, Inc.

FW100s.out

Floodway Model-Middle Reach

```
1****************************************                                                    ****************************************
 *                                      *                                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *              JUL   1997              *                                                    *    HYDROLOGIC ENGINEERING CENTER     *
 *           VERSION 4.1                *                                                    *          609 SECOND STREET           *
 *                                      *                                                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   17MAY01  TIME  09:07:44  *                                                    *           (916) 756-1104             *
 *                                      *                                                    *                                      *
****************************************                                                    ****************************************


                                        X     X  XXXXXXX   XXXXX           X
                                        X     X  X        X     X         XX
                                        X     X  X        X                X
                                        XXXXXXX  XXXX     X        XXXXX   X
                                        X     X  X        X                X
                                        X     X  X        X     X          X
                                        X     X  XXXXXXX   XXXXX          XXX


        THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

        THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
        THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
        NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
        DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL   LOSS RATE:GREEN AND AMPT INFILTRATION
        KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1                                                HEC-1 INPUT                                                          PAGE  1

        LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

          1           ID   Agua Fria River Existing Conditions
                      * ***************************************************************************
                      *                                                                           *
                      *                Flood Control District of Maricopa County                  *
                      *              Agua Fria River Watercourse Floodplain Study                 *
                      *                                FCD99-24                                   *
                      *                                                                           *
                      *                        EXISTING CONDITIONS HYDROLOGY                      *
                      *                                                                           *
                      *                                                                           *
                      *                 Prepared by Kimley-Horn and Associates, Inc.              *
                      *                           KHA Job No. 091131.04                           *
                      *                                                                           *
                      *                              February 2001                                *
                      *                                                                           *
                      *                                                                           *
                      *  The flood routing model was developed to evlauate flood wave attenuation as *
                      *  related to overbank storage.  The Modified-Puls method was utilized to   *
                      *  simulate flood routing. Stage-storage-discharge relationships were developed*
                      *  on a reach by reach basis using HEC-RAS.  Routing reaches are approximately *
                      *  1/4 mile long. Direct channel losses are assumed negligible.             *
                      *  This hydrology is a FLOODWAY model of existing conditions on the Agua Fria  *
                      *  River and its tributaries from New Waddell Dam to the New River confluence. *
                      *  Hydrographs were obtained from a study by the Corps of Engineers entitled  *
                      *  "Agua Fria River Study New Waddell Dam to Gila River Confluence, Arizona."  *
                      *  This model is the lower reach of the Agua Fria River, from Bell Road to    *
                      *  the New River confluence. Two 100-year hydrographs shall be used, one     *
                      *  downstream of the Dam and a second at Bell Road (CP1037).  All other inflow *
                      *  is assumed to be negligible.                                              *
                      *                                                                           *
                      * ***************************************************************************
          2           ID    Agua Fria Water Course - Direct input of existing
          3           ID    conditions 100-yr hydrograph.  Compare output to see
          4           ID    how close results are to the Corps of Engineers' study.
          5           IT       5       0       0     300
          6           IN      30
          7           IO       5
*** FREE ***
                      *DIAGRAM

          8           KK  CP1037
          9           KO       1
         10           KM   Runoff hydrograph for concentration point 1037
         11           BA     171
         12           QI       0       0       0       0     100     300     800    1800    2700    5600
         13           QI   17000   25500   35200   37500   31800   27200   23900   19300   16000   13200
         14           QI   10800    9200    7800    6200    5000    4100    3800    3000    2800    2100
         15           QI    1900    1900    1800    1000     800     750     750     750     750     500
         16           QI     500     100       1      .1     .01       0
1                                                HEC-1 INPUT                                                          PAGE  2

        LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


         17           KKRS20.207,,,,,,
         18           RS       1    FLOW      -1
         19           SV       0      16      48      88     147     194     235
         20           SQ       0    1000    5000   10000   20000   30000   40000
```

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 21          KKRS19.920,,,,,,
 22          RS       2    FLOW      -1
 23          SV       0      16      55      90     149     213     271
 24          SQ       0    1000    5000   10000   20000   30000   40000

 25          KKRS19.635,,,,,,
 26          RS       1    FLOW      -1
 27          SV       0      14      52      90     157     228     287
 28          SQ       0    1000    5000   10000   20000   30000   40000

 29          KKRS19.352,,,,,,
 30          RS       1    FLOW      -1
 31          SV       0      14      43      71     122     169     216
 32          SQ       0    1000    5000   10000   20000   30000   40000

 33          KKRS19.066,,,,,,,
 34          RS       1    FLOW      -1
 35          SV       0      12      41      69     114     151     182
 36          SQ       0    1000    5000   10000   20000   30000   40000

 37          KKRS18.839,,,,,,,
 38          RS       1    FLOW      -1
 39          SV       0      16      50      78     122     158     189
 40          SQ       0    1000    5000   10000   20000   30000   40000

 41          KKRS18.558,,,,,,,
 42          RS       1    FLOW      -1
 43          SV       0      10      42      74     120     158     192
 44          SQ       0    1000    5000   10000   20000   30000   40000

 45          KKRS18.275,,,,,,,
 46          RS       1    FLOW      -1
 47          SV       0      13      44      85     146     194     235
 48          SQ       0    1000    5000   10000   20000   30000   40000

 49          KKRS18.000,,,,,,
 50          RS       2    FLOW      -1
 51          SV       0      25      58      92     142     185     219
 52          SQ       0    1000    5000   10000   20000   30000   40000

 53          KKRS17.730,,,,,,
 54          RS       1    FLOW      -1
 55          SV       0      13      38      61     104     149     191
 56          SQ       0    1000    5000   10000   20000   30000   40000
1                                        HEC-1 INPUT                                                    PAGE  3

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 57          KKRS17.458,,,,,,
 58          RS       1    FLOW      -1
 59          SV       0      13      51      92     161     223     278
 60          SQ       0    1000    5000   10000   20000   30000   40000

 61          KKRS17.180,,,,,,
 62          RS       1    FLOW      -1
 63          SV       0      15      41      65     102     134     162
 64          SQ       0    1000    5000   10000   20000   30000   40000

 65          KKRS16.895,,,,,,
 66          RS       1    FLOW      -1
 67          SV       0      16      47      72     107     137     162
 68          SQ       0    1000    5000   10000   20000   30000   40000

 69          KKRS16.612,,,,,,
 70          RS       1    FLOW      -1
 71          SV       0       9      30      48      77      99     119
 72          SQ       0    1000    5000   10000   20000   30000   40000

 73          KKRS16.385,,,,,,
 74          RS       1    FLOW      -1
 75          SV       0      13      38      61     100     130     153
 76          SQ       0    1000    5000   10000   20000   30000   40000

 77          KKRS16.099,,,,,,
 78          RS       1    FLOW      -1
 79          SV       0      14      44      76     136     186     222
 80          SQ       0    1000    5000   10000   20000   30000   40000

 81          KKRS15.814,,,,,,
 82          RS       1    FLOW      -1
 83          SV       0      18      45      67     107     143     174
 84          SQ       0    1000    5000   10000   20000   30000   40000

 85          KKRS15.564,,,,,,
 86          RS       1    FLOW      -1
 87          SV       0      11      38      61     102     132     158
 88          SQ       0    1000    5000   10000   20000   30000   40000

 89          KKRS15.281,,,,,,
 90          RS       1    FLOW      -1
 91          SV       0      12      46      73     113     146     175
 92          SQ       0    1000    5000   10000   20000   30000   40000

 93          KKRS15.000,,,,,,
```

```
  94          RS       1    FLOW      -1
  95          SV       0      18      55      85     129     165     196
  96          SQ       0    1000    5000   10000   20000   30000   40000
1                                     HEC-1 INPUT                                                    PAGE  4

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  97          KKRS14.708,,,,,,
  98          RS       1    FLOW      -1
  99          SV       0      12      49      87     137     181     221
 100          SQ       0    1000    5000   10000   20000   30000   40000

 101          KKRS14.430,,,,,,
 102          RS       1    FLOW      -1
 103          SV       0      12      43      85     136     177     214
 104          SQ       0    1000    5000   10000   20000   30000   40000

 105          KKRS14.145,,,,,,
 106          RS       1    FLOW      -1
 107          SV       0      10      41      74     125     164     197
 108          SQ       0    1000    5000   10000   20000   30000   40000

 109          KKRS13.856,,,,,,
 110          RS       1    FLOW      -1
 111          SV       0       8      37      72     129     176     211
 112          SQ       0    1000    5000   10000   20000   30000   40000

 113          KKRS13.565,,,,,,
 114          RS       1    FLOW      -1
 115          SV       0      12      37      64     122     177     234
 116          SQ       0    1000    5000   10000   20000   30000   40000

 117          KKRS13.296,,,,,,
 118          RS       1    FLOW      -1
 119          SV       0      22      59      87     129     161     190
 120          SQ       0    1000    5000   10000   20000   30000   40000

 121          KKRS13.007,,,,,,
 122          RS       1    FLOW      -1
 123          SV       0      14      45      71     109     141     169
 124          SQ       0    1000    5000   10000   20000   30000   40000

 125          KKRS12.725,,,,,,
 126          RS       1    FLOW      -1
 127          SV       0      15      53      96     164     222     280
 128          SQ       0    1000    5000   10000   20000   30000   40000

 129          KKRS12.470,,,,,,
 130          RS       2    FLOW      -1
 131          SV       0      11      74     183     307     411     505
 132          SQ       0    1000    5000   10000   20000   30000   40000

 133          KKRS12.247,,,,,,
 134          RS       3    FLOW      -1
 135          SV       0       7      18     118     289     411     512
 136          SQ       0    1000    5000   10000   20000   30000   40000
1                                     HEC-1 INPUT                                                    PAGE  5

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 137          KKRS12.042,,,,,,
 138          RS       1    FLOW      -1
 139          SV       0      10      28      43     160     311     432
 140          SQ       0    1000    5000   10000   20000   30000   40000

 141          KKRS11.750,,,,,,
 142          RS       1    FLOW      -1
 143          SV       0      12      30      44     115     185     250
 144          SQ       0    1000    5000   10000   20000   30000   40000

 145          KKRS11.460,,,,,,
 146          RS       1    FLOW      -1
 147          SV       0      13      36      54      87     114     137
 148          SQ       0    1000    5000   10000   20000   30000   40000

 149          KKRS11.224,,,,,,
 150          RS       1    FLOW      -1
 151          SV       0      18      61      99     159     207     248
 152          SQ       0    1000    5000   10000   20000   30000   40000

 153          KKRS10.942,,,,,,
 154          RS       1    FLOW      -1
 155          SV       0      14      40      60      92     120     144
 156          SQ       0    1000    5000   10000   20000   30000   40000

 157          KKRS10.752,,,,,,
 158          RS       1    FLOW      -1
 159          SV       0      19      53      79     121     158     191
 160          SQ       0    1000    5000   10000   20000   30000   40000

 161          KKRS10.538,,,,,,
 162          RS       1    FLOW      -1
 163          SV       0      15      50      77     119     152     181
 164          SQ       0    1000    5000   10000   20000   30000   40000
```

```
165          KKRS10.265,,,,,,
166          RS       1    FLOW      -1
167          SV       0      10      36      60      95     119     138
168          SQ       0    1000    5000   10000   20000   30000   40000

169          KKRS10.071,,,,,,
170          RS       1    FLOW      -1
171          SV       0       5      15      26      46      58      69
172          SQ       0    1000    5000   10000   20000   30000   40000

173          KK RS9.981,,,,,
174          RS       1    FLOW      -1
175          SV       0       5      15      26      46      59      71
176          SQ       0    1000    5000   10000   20000   30000   40000
177          ZZ
```

1

SCHEMATIC DIAGRAM OF STREAM NETWORK

```
INPUT
 LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   8      CP1037
               V
               V
  17    RS20.207
               V
               V
  21    RS19.920
               V
               V
  25    RS19.635
               V
               V
  29    RS19.352
               V
               V
  33    RS19.066
               V
               V
  37    RS18.839
               V
               V
  41    RS18.558
               V
               V
  45    RS18.275
               V
               V
  49    RS18.000
               V
               V
  53    RS17.730
               V
               V
  57    RS17.458
               V
               V
  61    RS17.180
               V
               V
  65    RS16.895
               V
               V
  69    RS16.612
               V
               V
  73    RS16.385
               V
               V
  77    RS16.099
               V
               V
  81    RS15.814
               V
               V
  85    RS15.564
               V
               V
  89    RS15.281
               V
               V
  93    RS15.000
               V
               V
  97    RS14.708
               V
               V
 101    RS14.430
               V
               V
 105    RS14.145
               V
               V
 109    RS13.856
```

```
                V
                V
  113     RS13.565
                V
                V
  117     RS13.296
                V
                V
  121     RS13.007
                V
                V
  125     RS12.725
                V
                V
  129     RS12.470
                V
                V
  133     RS12.247
                V
                V
  137     RS12.042
                V
                V
  141     RS11.750
                V
                V
  145     RS11.460
                V
                V
  149     RS11.224
                V
                V
  153     RS10.942
                V
                V
  157     RS10.752
                V
                V
  161     RS10.538
                V
                V
  165     RS10.265
                V
                V
  169     RS10.071
                V
                V
  173      RS9.981

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************                                    ****************************************
*                                       *                                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                    *    U.S. ARMY CORPS OF ENGINEERS      *
*              JUL   1997               *                                    *    HYDROLOGIC ENGINEERING CENTER     *
*           VERSION 4.1                 *                                    *          609 SECOND STREET           *
*                                       *                                    *       DAVIS, CALIFORNIA 95616        *
*  RUN DATE   17MAY01  TIME  09:07:44   *                                    *           (916) 756-1104             *
*                                       *                                    *                                      *
****************************************                                    ****************************************


                        Agua Fria River Existing Conditions
                         Agua Fria Water Course - Direct input of existing
                         conditions 100-yr hydrograph.  Compare output to see
                         how close results are to the Corps of Engineers' study.

  7 IO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE

    IT          HYDROGRAPH TIME DATA
                       NMIN          5  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ         300  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      2    0  ENDING DATE
                     NDTIME        0055  ENDING TIME
                     ICENT           19  CENTURY MARK

                 COMPUTATION INTERVAL     .08 HOURS
                      TOTAL TIME BASE   24.92 HOURS

        ENGLISH UNITS
             DRAINAGE AREA          SQUARE MILES
             PRECIPITATION DEPTH    INCHES
             LENGTH, ELEVATION      FEET
             FLOW                   CUBIC FEET PER SECOND
             STORAGE VOLUME         ACRE-FEET
             SURFACE AREA           ACRES
             TEMPERATURE            DEGREES FAHRENHEIT
```

```
*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
  8 KK    *   CP1037   *
          *            *
          **************

  9 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           1  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                          Runoff hydrograph for concentration point 1037

  6 IN          TIME DATA FOR INPUT TIME SERIES
                      JXMIN          30  TIME INTERVAL IN MINUTES
                     JXDATE      1    0  STARTING DATE
                     JXTIME           0  STARTING TIME

             SUBBASIN RUNOFF DATA

 11 BA          SUBBASIN CHARACTERISTICS
                      TAREA      171.00  SUBBASIN AREA

                                                                  ***
*****************************************************************************************************************************
                                                HYDROGRAPH AT STATION   CP1037
*****************************************************************************************************************************
                                 *                                *                                *
  DA MON HRMN  ORD      FLOW     *  DA MON HRMN  ORD      FLOW    *  DA MON HRMN  ORD      FLOW    *  DA MON HRMN  ORD      FLOW
                                 *                                *                                *
   1     0000    1        0.     *   1     0615   76    36350.    *   1     1230  151     4100.    *   1     1845  226      750.
   1     0005    2        0.     *   1     0620   77    36733.    *   1     1235  152     4050.    *   1     1850  227      750.
   1     0010    3        0.     *   1     0625   78    37117.    *   1     1240  153     4000.    *   1     1855  228      750.
   1     0015    4        0.     *   1     0630   79    37500.    *   1     1245  154     3950.    *   1     1900  229      750.
   1     0020    5        0.     *   1     0635   80    36550.    *   1     1250  155     3900.    *   1     1905  230      708.
   1     0025    6        0.     *   1     0640   81    35600.    *   1     1255  156     3850.    *   1     1910  231      667.
   1     0030    7        0.     *   1     0645   82    34650.    *   1     1300  157     3800.    *   1     1915  232      625.
   1     0035    8        0.     *   1     0650   83    33700.    *   1     1305  158     3667.    *   1     1920  233      583.
   1     0040    9        0.     *   1     0655   84    32750.    *   1     1310  159     3533.    *   1     1925  234      542.
   1     0045   10        0.     *   1     0700   85    31800.    *   1     1315  160     3400.    *   1     1930  235      500.
   1     0050   11        0.     *   1     0705   86    31033.    *   1     1320  161     3267.    *   1     1935  236      500.
   1     0055   12        0.     *   1     0710   87    30267.    *   1     1325  162     3133.    *   1     1940  237      500.
   1     0100   13        0.     *   1     0715   88    29500.    *   1     1330  163     3000.    *   1     1945  238      500.
   1     0105   14        0.     *   1     0720   89    28733.    *   1     1335  164     2967.    *   1     1950  239      500.
   1     0110   15        0.     *   1     0725   90    27967.    *   1     1340  165     2933.    *   1     1955  240      500.
   1     0115   16        0.     *   1     0730   91    27200.    *   1     1345  166     2900.    *   1     2000  241      500.
   1     0120   17        0.     *   1     0735   92    26650.    *   1     1350  167     2867.    *   1     2005  242      433.
   1     0125   18        0.     *   1     0740   93    26100.    *   1     1355  168     2833.    *   1     2010  243      367.
   1     0130   19        0.     *   1     0745   94    25550.    *   1     1400  169     2800.    *   1     2015  244      300.
   1     0135   20       17.     *   1     0750   95    25000.    *   1     1405  170     2683.    *   1     2020  245      233.
   1     0140   21       33.     *   1     0755   96    24450.    *   1     1410  171     2567.    *   1     2025  246      167.
   1     0145   22       50.     *   1     0800   97    23900.    *   1     1415  172     2450.    *   1     2030  247      100.
   1     0150   23       67.     *   1     0805   98    23133.    *   1     1420  173     2333.    *   1     2035  248       84.
   1     0155   24       83.     *   1     0810   99    22367.    *   1     1425  174     2217.    *   1     2040  249       67.
   1     0200   25      100.     *   1     0815  100    21600.    *   1     1430  175     2100.    *   1     2045  250       50.
   1     0205   26      133.     *   1     0820  101    20833.    *   1     1435  176     2067.    *   1     2050  251       34.
   1     0210   27      167.     *   1     0825  102    20067.    *   1     1440  177     2033.    *   1     2055  252       17.
   1     0215   28      200.     *   1     0830  103    19300.    *   1     1445  178     2000.    *   1     2100  253        1.
   1     0220   29      233.     *   1     0835  104    18750.    *   1     1450  179     1967.    *   1     2105  254        1.
   1     0225   30      267.     *   1     0840  105    18200.    *   1     1455  180     1933.    *   1     2110  255        1.
   1     0230   31      300.     *   1     0845  106    17650.    *   1     1500  181     1900.    *   1     2115  256        1.
   1     0235   32      383.     *   1     0850  107    17100.    *   1     1505  182     1900.    *   1     2120  257        0.
   1     0240   33      467.     *   1     0855  108    16550.    *   1     1510  183     1900.    *   1     2125  258        0.
   1     0245   34      550.     *   1     0900  109    16000.    *   1     1515  184     1900.    *   1     2130  259        0.
   1     0250   35      633.     *   1     0905  110    15533.    *   1     1520  185     1900.    *   1     2135  260        0.
   1     0255   36      717.     *   1     0910  111    15067.    *   1     1525  186     1900.    *   1     2140  261        0.
   1     0300   37      800.     *   1     0915  112    14600.    *   1     1530  187     1900.    *   1     2145  262        0.
   1     0305   38      967.     *   1     0920  113    14133.    *   1     1535  188     1883.    *   1     2150  263        0.
   1     0310   39     1133.     *   1     0925  114    13667.    *   1     1540  189     1867.    *   1     2155  264        0.
   1     0315   40     1300.     *   1     0930  115    13200.    *   1     1545  190     1850.    *   1     2200  265        0.
   1     0320   41     1467.     *   1     0935  116    12800.    *   1     1550  191     1833.    *   1     2205  266        0.
   1     0325   42     1633.     *   1     0940  117    12400.    *   1     1555  192     1817.    *   1     2210  267        0.
   1     0330   43     1800.     *   1     0945  118    12000.    *   1     1600  193     1800.    *   1     2215  268        0.
   1     0335   44     1950.     *   1     0950  119    11600.    *   1     1605  194     1667.    *   1     2220  269        0.
   1     0340   45     2100.     *   1     0955  120    11200.    *   1     1610  195     1533.    *   1     2225  270        0.
   1     0345   46     2250.     *   1     1000  121    10800.    *   1     1615  196     1400.    *   1     2230  271        0.
   1     0350   47     2400.     *   1     1005  122    10533.    *   1     1620  197     1267.    *   1     2235  272        0.
   1     0355   48     2550.     *   1     1010  123    10267.    *   1     1625  198     1133.    *   1     2240  273        0.
   1     0400   49     2700.     *   1     1015  124    10000.    *   1     1630  199     1000.    *   1     2245  274        0.
   1     0405   50     3183.     *   1     1020  125     9733.    *   1     1635  200      967.    *   1     2250  275        0.
   1     0410   51     3667.     *   1     1025  126     9467.    *   1     1640  201      933.    *   1     2255  276        0.
   1     0415   52     4150.     *   1     1030  127     9200.    *   1     1645  202      900.    *   1     2300  277        0.
   1     0420   53     4633.     *   1     1035  128     8967.    *   1     1650  203      867.    *   1     2305  278        0.
   1     0425   54     5117.     *   1     1040  129     8733.    *   1     1655  204      833.    *   1     2310  279        0.
   1     0430   55     5600.     *   1     1045  130     8500.    *   1     1700  205      800.    *   1     2315  280        0.
   1     0435   56     7500.     *   1     1050  131     8267.    *   1     1705  206      792.    *   1     2320  281        0.
   1     0440   57     9400.     *   1     1055  132     8033.    *   1     1710  207      783.    *   1     2325  282        0.
   1     0445   58    11300.     *   1     1100  133     7800.    *   1     1715  208      775.    *   1     2330  283        0.
   1     0450   59    13200.     *   1     1105  134     7533.    *   1     1720  209      767.    *   1     2335  284        0.
   1     0455   60    15100.     *   1     1110  135     7267.    *   1     1725  210      758.    *   1     2340  285        0.
```

1	0500	61	17000.	*	1	1115	136	7000.	*	1	1730	211	750.	*	1	2345	286	0.
1	0505	62	18417.	*	1	1120	137	6733.	*	1	1735	212	750.	*	1	2350	287	0.
1	0510	63	19833.	*	1	1125	138	6467.	*	1	1740	213	750.	*	1	2355	288	0.
1	0515	64	21250.	*	1	1130	139	6200.	*	1	1745	214	750.	*	2	0000	289	0.
1	0520	65	22667.	*	1	1135	140	6000.	*	1	1750	215	750.	*	2	0005	290	0.
1	0525	66	24083.	*	1	1140	141	5800.	*	1	1755	216	750.	*	2	0010	291	0.
1	0530	67	25500.	*	1	1145	142	5600.	*	1	1800	217	750.	*	2	0015	292	0.
1	0535	68	27117.	*	1	1150	143	5400.	*	1	1805	218	750.	*	2	0020	293	0.
1	0540	69	28733.	*	1	1155	144	5200.	*	1	1810	219	750.	*	2	0025	294	0.
1	0545	70	30350.	*	1	1200	145	5000.	*	1	1815	220	750.	*	2	0030	295	0.
1	0550	71	31967.	*	1	1205	146	4850.	*	1	1820	221	750.	*	2	0035	296	0.
1	0555	72	33583.	*	1	1210	147	4700.	*	1	1825	222	750.	*	2	0040	297	0.
1	0600	73	35200.	*	1	1215	148	4550.	*	1	1830	223	750.	*	2	0045	298	0.
1	0605	74	35583.	*	1	1220	149	4400.	*	1	1835	224	750.	*	2	0050	299	0.
1	0610	75	35967.	*	1	1225	150	4250.	*	1	1840	225	750.	*	2	0055	300	0.
				*					*					*				

****

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
37500.	6.50	(CFS)	22107.	6754.	6506.	6506.
		(INCHES)	1.202	1.469	1.469	1.469
		(AC-FT)	10962.	13397.	13397.	13397.

CUMULATIVE AREA = 171.00 SQ MI

1

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	CP1037	37500.	6.50	22107.	6754.	6506.	171.00		
ROUTED TO	RS20.207	37272.	6.50	22090.	6754.	6506.	171.00		
ROUTED TO	RS19.920	37153.	6.58	22083.	6754.	6506.	171.00		
ROUTED TO	RS19.635	36979.	6.67	22066.	6754.	6506.	171.00		
ROUTED TO	RS19.352	36919.	6.67	22054.	6754.	6506.	171.00		
ROUTED TO	RS19.066	36860.	6.75	22047.	6754.	6506.	171.00		
ROUTED TO	RS18.839	36851.	6.75	22039.	6754.	6506.	171.00		
ROUTED TO	RS18.558	36779.	6.75	22026.	6754.	6506.	171.00		
ROUTED TO	RS18.275	36760.	6.83	22006.	6754.	6506.	171.00		
ROUTED TO	RS18.000	36706.	6.83	21998.	6754.	6506.	171.00		
ROUTED TO	RS17.730	36690.	6.92	21987.	6754.	6506.	171.00		
ROUTED TO	RS17.458	36606.	7.00	21966.	6754.	6506.	171.00		
ROUTED TO	RS17.180	36587.	7.00	21961.	6754.	6506.	171.00		
ROUTED TO	RS16.895	36544.	7.08	21952.	6754.	6506.	171.00		
ROUTED TO	RS16.612	36557.	7.08	21945.	6754.	6506.	171.00		
ROUTED TO	RS16.385	36545.	7.08	21939.	6754.	6506.	171.00		
ROUTED TO	RS16.099	36498.	7.17	21923.	6754.	6506.	171.00		
ROUTED TO	RS15.814	36489.	7.17	21911.	6754.	6506.	171.00		
ROUTED TO	RS15.564	36450.	7.17	21906.	6754.	6505.	171.00		
ROUTED TO	RS15.281	36449.	7.25	21893.	6754.	6505.	171.00		

ROUTED TO	RS15.000	36418.	7.25	21875.	6753.	6505.	171.00
ROUTED TO	RS14.708	36387.	7.33	21848.	6753.	6504.	171.00
ROUTED TO	RS14.430	36339.	7.33	21819.	6752.	6504.	171.00
ROUTED TO	RS14.145	36328.	7.42	21796.	6752.	6503.	171.00
ROUTED TO	RS13.856	36286.	7.42	21770.	6751.	6503.	171.00
ROUTED TO	RS13.565	36221.	7.50	21760.	6750.	6502.	171.00
ROUTED TO	RS13.296	36188.	7.58	21744.	6748.	6500.	171.00
ROUTED TO	RS13.007	36187.	7.58	21727.	6746.	6498.	171.00
ROUTED TO	RS12.725	36105.	7.67	21687.	6744.	6495.	171.00
ROUTED TO	RS12.470	35993.	7.75	21585.	6742.	6494.	171.00
ROUTED TO	RS12.247	35916.	7.92	21526.	6740.	6492.	171.00
ROUTED TO	RS12.042	35471.	8.08	21525.	6738.	6490.	171.00
ROUTED TO	RS11.750	35357.	8.17	21519.	6735.	6488.	171.00
ROUTED TO	RS11.460	35340.	8.17	21518.	6732.	6485.	171.00
ROUTED TO	RS11.224	35301.	8.25	21498.	6727.	6480.	171.00
ROUTED TO	RS10.942	35285.	8.25	21493.	6723.	6476.	171.00
ROUTED TO	RS10.752	35254.	8.33	21478.	6717.	6470.	171.00
ROUTED TO	RS10.538	35240.	8.33	21462.	6712.	6465.	171.00
ROUTED TO	RS10.265	35212.	8.33	21454.	6709.	6462.	171.00
ROUTED TO	RS10.071	35214.	8.42	21446.	6707.	6460.	171.00
ROUTED TO	RS9.981	35224.	8.42	21446.	6705.	6459.	171.00

*** NORMAL END OF HEC-1 ***

Kimley-Horn
and Associates, Inc.

APPENDIX C HEC-1 RETENTION MODEL

CE6hr.out – Existing Conditions Model for the 6-hr event

CF6hr.out – Future Conditions Model for the 6-hr event

Diverf.out – Future Conditions Diversion Model simplified for the 6-hr event

Diverf2.out – Future Conditions Diversion Model modified for the 6-hr event

CE24hr.out – Existing Conditions Model for the 24-hr event

CF24hr.out – Future Conditions Model for the 24-hr event

Div24f.out – Future Conditions Diversion Model simplified for the 24-hr event

Kimley-Horn
and Associates, Inc.

CE6hr.out

Existing Conditions Model for the 6-hr event

```
1*****************************************                                                    ****************************************
 *                                       *                                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *              JUL   1997               *                                                    *    HYDROLOGIC ENGINEERING CENTER     *
 *           VERSION 4.1                 *                                                    *          609 SECOND STREET           *
 *                                       *                                                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   17MAY01  TIME  09:45:42   *                                                    *           (916) 756-1104             *
 *                                       *                                                    *                                      *
*****************************************                                                    ****************************************


                                        X     X  XXXXXXX   XXXXX           X
                                        X     X  X        X     X         XX
                                        X     X  X        X                X
                                        XXXXXXX  XXXX     X        XXXXX   X
                                        X     X  X        X                X
                                        X     X  X        X     X          X
                                        X     X  XXXXXXX   XXXXX          XXX


THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL   LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1                                          HEC-1 INPUT                                                                  PAGE  1

      LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

                    * ***************************************************************************
                    *                                                                           *
                    *                  Flood Control District of Maricopa County                *
                    *                   Agua Fria River Watercourse Master Plan                 *
                    *              From the New Waddell Dam to the Gila River Confluence        *
                    *                                FCD99-24                                   *
                    *                                                                           *
                    *                              Retention Model                              *
                    *                                                                           *
                    *                         100 yr, 6 hr storm event                          *
                    *                  Prepared by Kimley-Horn and Associates, Inc.             *
                    *                             KHA Job No. 091131004                         *
                    *                                                                           *
                    *                              February 2001                                *
                    *                                                                           *
                    *   This model has been created using input data from the U.S. Army Corps of  *
                    *   Engineers, Los Angeles District report entitled "Agua Fria River Study    *
                    *   New Waddell Dam to Gila River Confluence, Arizona" written in July of 1995.*
                    *   The intent of this model was to simulate the impact of the current and two *
                    *   proposed retention policies to evaluate the impact of development on      *
                    *   future flood peaks.                                                       *
                    *   The loss rate values were obtained from Table 8, pg. 37 of the Corps of   *
                    *   Engineers report.                                                         *
                    *   These values correspond to the HEC Exponential Loss Rate variables.       *
                    *   The subbasin areas were obtained from Table 7, pg 36 of the Corps of      *
                    *   Engineers report. The Flood Control District of Maricopa County's software *
                    *   package MCUHP2 was used to generate the PB, PC and UI records.  Input data *
                    *   for this program was obtained from Tables 6 and 7, pages 34 and 35        *
                    *   respectively, of the Corps of Engineers report.                           *
                    *   The IT record (time specification) variable NMIN (integer number of minutes*
                    *   in interval) was obtained from Section C on page 15 from the Corps report. *
                    *                                                                           *
                    * ***************************************************************************
                    *
        1           ID   AGUA FRIA WATERCOURSE MASTER PLAN
                    *DIAGRAM
        2           IT      15                    100
        3           IO       5
                    * DDM   ***** Preserved *****

        4           KK    1036
        5           KM   BASIN 1036
        6           KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
        7           KM    L=     17.0  Lca=      8.0   S=   94.0  Kn= .035  LAG= 137.0
        8           KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
        9           BA   69.00
       10           KM   RAINFALL DEPTH OF 3.30 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
       11           KM   AN AREAL REDUCTION COEFFICIENT OF  .846 WAS USED
       12           PB   2.790
       13           KM   THE FOLLOWING PC RECORD USED A 6-HOUR RAINFALL WITH PATTERN NO. 3.78
       14           PC    .000    .020    .032    .046    .066    .082    .099    .117    .135    .151
       15           PC    .170    .190    .220    .268    .351    .494    .661    .778    .847    .893
       16           PC    .931    .948    .966    .983   1.000
       17           LE     .33            2.00            5.00
       18           UI   1696.   1696.   4848.   7787.  10629.  13049.  15021.  16062.  16189.  15259.
1                                          HEC-1 INPUT                                                                  PAGE  2

      LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
 19          UI  13309.  11041.   9097.   7523.   6263.   5058.   4195.   3443.   2917.   2521.
 20          UI   1797.   1723.   1161.   1161.   1125.    413.    413.    413.    413.    413.
 21          UI    413.    413.    413.      0.      0.      0.      0.      0.      0.      0.
 22          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

 23          KK   R1036
 24          KM   Route the combined runoff hydrograph from SUB-BASIN 1036
 25          RM       4     1.0      .2

 26          KK    1037
 27          KM   SUB-BASIN 37
 28          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 29          KM   L=     26.0  Lca=     10.3   S=   70.0  Kn= .035  LAG= 188.0
 30          BA   102.3
 31          LE    0.33       0     2.0       0       5
 32          UI   1832.   1832.   2235.   5482.   7756.  10010.  12197.  13977.  15791.  16662.
 33          UI  17558.  17558.  16911.  16102.  14191.  12413.  10689.   9347.   8210.   7063.
 34          UI   6152.   5352.   4656.   4028.   3454.   3087.   2809.   2211.   1942.   1942.
 35          UI   1275.   1254.   1254.   1254.    641.    446.    446.    446.    446.    446.
 36          UI    446.    446.    446.    446.    446.    446.      0.      0.      0.      0.
 37          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

 38          KK  CP1037
             *  This point corresponds to the Bell Road crossing.
 39          KM   Combine runoff hydrograph 37 with New Waddell Dam hydrograph.
 40          HC       2

 41          KK   R38-1
             *  All pertinent routing data is summarized in Table 9 of the Corps report.
 42          KM   Route the combined hydrograph from CP1037 to CP1038
 43          RM       2     0.5     0.2
             *  Within the Corps report is a concentration point at this location (CP1038),
             *  and it corresponds to the Grand Ave crossing.
             *  No additional runoff added at CP1038.

 44          KK   R39-1
 45          KM   Route the combined runoff hydrograph from CP 1038 to CP 1039
 46          RM       8     1.8     0.2

 47          KK      39
 48          KM   SUB-BASIN 39
 49          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 50          KM   L=     13.8  Lca=      7.9   S=   22.0  Kn= .025  LAG= 119.0
 51          KM   PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 52          BA   59.30
 53          LE    0.33       0     2.0       0      13
 54          UI   1678.   2229.   5861.   9231.  12190.  14648.  15820.  15909.  14748.  12148.
 55          UI   9666.   7845.   6309.   4990.   4011.   3238.   2630.   2006.   1778.   1154.
 56          UI   1149.    907.    408.    408.    408.    408.    408.    408.    408.      0.
 57          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 58          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1                                          HEC-1 INPUT                                          PAGE  3
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 59          KK  CP1039
 60          KM   Combine routed hydrograph from CP 1038 and runoff hydrograph 39
 61          HC       2

 62          KK   R40-1
 63          KM   Route the combined runoff hydrograph from CP 1039 to CP 1040
 64          RM       5     1.2     0.2

 65          KK      40
 66          KM   SUB-BASIN 40
 67          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 68          KM   L=     18.5  Lca=     10.5   S=   15.0  Kn= .020  LAG= 127.0
 69          KM   PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 70          BA   81.60
 71          LE    0.33       0     2.0       0      21
 72          UI   2163.   2377.   7050.  10963.  14538.  18105.  19890.  20732.  19946.  17834.
 73          UI  14518.  11810.   9613.   7875.   6323.   5130.   4188.   3453.   2753.   2293.
 74          UI   1713.   1481.   1481.    651.    527.    527.    527.    527.    527.    527.
 75          UI    527.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 76          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

 77          KK  CP1040
             *  This concentration point corresponds to the Interstate 10 crossing.
 78          KM   Combine routed hydrograph from CP1039 and runoff hydrograph 40
 79          HC       2

 80          KK   R42-1
 81          KM   Route the combined runoff hydrograph from CP1040 to CP 1042
 82          RM       2     0.6     0.2

 83          KK      42
 84          KM   SUB-BASIN 42
 85          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 86          KM   L=      6.9  Lca=      3.2   S=   12.0  Kn= .025  LAG=  72.8
 87          KM   PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 88          BA   11.30
 89          LE    0.33       0     2.0       0       5
 90          UI    523.   1751.   3417.   4644.   4950.   4201.   2960.   2082.   1426.   1004.
 91          UI    696.    481.    358.    187.    127.    127.    127.      0.      0.      0.
```

```
 92          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

 93          KK  CP1042
 94          KM   Combine routed hydrograph from CP1040 with runoff hydrograph 42
             *  This concentration point corresponds to the Highway 80 crossing.
 95          HC       2

 96          KK   R43-1
 97          KM   Route the combined runoff hydrograph from CP1042 to CP 1043
 98          RM       4     1.1     0.2
             *  Within the Corps report there is a conc. point at this location (CP1043).
             *  This concentration point corresponds to the Agua Fria & Gila confluence.
             *  Study terminated at Agua Fria River and Gila River confluence.
 99          ZZ
1
             SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
 LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   4        1036
               V
               V
  23       R1036
               .
               .
  26           .        1037
               .           .
               .           .
  38      CP1037............
               V
               V
  41       R38-1
               V
               V
  44       R39-1
               .
               .
  47           .          39
               .           .
               .           .
  59      CP1039............
               V
               V
  62       R40-1
               .
               .
  65           .          40
               .           .
               .           .
  77      CP1040............
               V
               V
  80       R42-1
               .
               .
  83           .          42
               .           .
               .           .
  93      CP1042............
               V
               V
  96       R43-1
(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
****************************************                    ****************************************
*                                      *                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                    *   U.S. ARMY CORPS OF ENGINEERS       *
*              JUL   1997              *                    *   HYDROLOGIC ENGINEERING CENTER      *
*           VERSION 4.1                *                    *         609 SECOND STREET            *
*                                      *                    *      DAVIS, CALIFORNIA 95616         *
*  RUN DATE   17MAY01  TIME  09:45:42  *                    *          (916) 756-1104              *
*                                      *                    *                                      *
****************************************                    ****************************************


                        AGUA FRIA WATERCOURSE MASTER PLAN

  3 IO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

   IT           HYDROGRAPH TIME DATA
                       NMIN          15  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ         100  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      2    0  ENDING DATE
                     NDTIME        0045  ENDING TIME
                     ICENT          19  CENTURY MARK
```

COMPUTATION INTERVAL .25 HOURS
TOTAL TIME BASE 24.75 HOURS

ENGLISH UNITS

DRAINAGE AREA	SQUARE MILES
PRECIPITATION DEPTH	INCHES
LENGTH, ELEVATION	FEET
FLOW	CUBIC FEET PER SECOND
STORAGE VOLUME	ACRE-FEET
SURFACE AREA	ACRES
TEMPERATURE	DEGREES FAHRENHEIT

1

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+ HYDROGRAPH AT	1036	21183.	6.00	10205.	2665.	2584.	69.00		
+ ROUTED TO	R1036	19918.	7.00	10137.	2665.	2584.	69.00		
+ HYDROGRAPH AT	1037	23859.	6.75	14201.	3955.	3836.	102.30		
+ 2 COMBINED AT	CP1037	43748.	6.75	24310.	6620.	6420.	171.30		
+ ROUTED TO	R38-1	42752.	7.25	24215.	6620.	6420.	171.30		
+ ROUTED TO	R39-1	39908.	9.00	23913.	6620.	6420.	171.30		
+ HYDROGRAPH AT	39	21290.	5.50	9467.	2474.	2399.	59.30		
+ 2 COMBINED AT	CP1039	41642.	9.00	28967.	9094.	8818.	230.60		
+ ROUTED TO	R40-1	40098.	10.25	28636.	9094.	8818.	230.60		
+ HYDROGRAPH AT	40	29170.	5.75	13751.	3654.	3543.	81.60		
+ 2 COMBINED AT	CP1040	43271.	6.25	36717.	12748.	12361.	312.20		
+ ROUTED TO	R42-1	41927.	6.75	36404.	12748.	12361.	312.20		
+ HYDROGRAPH AT	42	5608.	5.00	1727.	435.	422.	11.30		
+ 2 COMBINED AT	CP1042	42755.	6.75	36750.	13183.	12784.	323.50		
+ ROUTED TO	R43-1	41027.	8.00	36334.	13183.	12784.	323.50		

*** NORMAL END OF HEC-1 ***

Kimley-Horn
and Associates, Inc.

CF6hr.out

Future Conditions Model for the 6-hr event

```
1****************************************                                                    ****************************************
*                                      *                                                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                                    *    U.S. ARMY CORPS OF ENGINEERS      *
*              JUL   1997              *                                                    *    HYDROLOGIC ENGINEERING CENTER     *
*           VERSION 4.1                *                                                    *          609 SECOND STREET           *
*                                      *                                                    *       DAVIS, CALIFORNIA 95616        *
*  RUN DATE   17MAY01  TIME  09:45:47  *                                                    *           (916) 756-1104             *
*                                      *                                                    *                                      *
****************************************                                                    ****************************************


                                        X     X  XXXXXXX   XXXXX           X
                                        X     X  X        X     X         XX
                                        X     X  X        X                X
                                        XXXXXXX  XXXX     X        XXXXX   X
                                        X     X  X        X                X
                                        X     X  X        X     X          X
                                        X     X  XXXXXXX   XXXXX          XXX


THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL   LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1                                          HEC-1 INPUT                                                          PAGE  1

LINE           ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

               * ***************************************************************************
               *                                                                           *
               *                  Flood Control District of Maricopa County                *
               *                   Agua Fria River Watercourse Master Plan                 *
               *             From the New Waddell Dam to the Gila River Confluence         *
               *                                FCD99-24                                   *
               *                                                                           *
               *                              Retention Model                              *
               *                                                                           *
               *                         100-yr, 6-hr storm event                          *
               *                 Prepared by Kimley-Horn and Associates, Inc.              *
               *                            KHA Job No. 091131004                          *
               *                                                                           *
               *                              February 2001                                *
               *                                                                           *
               *   This model has been created using input data from the U.S. Army Corps of *
               *   Engineers, Los Angeles District report entitled "Agua Fria River Study  *
               *   New Waddell Dam to Gila River Confluence, Arizona" written in July of 1995.*
               *   The intent of this model was to simulate the impact of the future       *
               *   development on future flood peaks.                                      *
               *   The future condition rate impervious values were obtained from the      *
               *   "Standard Project Flood Report for the Agua Fria River", Table 3, pg 14 by *
               *   the Corps of Engineers dated January 1989.                              *
               *   The loss rate values were obtained from Table 8, pg 37 of the Corps of  *
               *   Engineers report. These values correspond to the HEC Exponential Loss   *
               *   Rate variables.                                                         *
               *   The subbasin areas were obtained from Table 7, pg 36 of the Corps of    *
               *   Engineers report.                                                       *
               *   The Flood Control District of Maricopa County's software package MCUHP2 was*
               *   used to generate the PB, PC and UI records.  Input data for this program *
               *   was obtained from Tables 6 and 7, pages 34 and 35 respectively, of the  *
               *   Corps of Engineers report.                                              *
               *   The IT record (time specification) variable NMIN (integer number of minutes*
               *   in interval) was obtained from Section C on page 15 from the Corps report. *
               *                                                                           *
               * ***************************************************************************
               *
     1         ID   DDM MCUHP2 Agua Fria WMP
     2         ID
     3         IT      15                    100
     4         IO       5
               *DIAGRAM

     5         KK    1036
     6         KM   BASIN 1036
     7         KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
     8         KM    L=     17.0  Lca=      8.0   S=   94.0  Kn= .035  LAG= 137.0
     9         KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
    10         BA   69.00
    11         KM   RAINFALL DEPTH OF 3.30 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
    12         KM   AN AREAL REDUCTION COEFFICIENT OF  .846 WAS USED
    13         PB   2.790
    14         KM   THE FOLLOWING PC RECORD USED A 6-HOUR RAINFALL WITH PATTERN NO. 3.78
    15         PC    .000    .020    .032    .046    .066    .082    .099    .117    .135    .151
    16         PC    .170    .190    .220    .268    .351    .494    .661    .778    .847    .893
1                                          HEC-1 INPUT                                                          PAGE  2

LINE           ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
```

```
17          PC    .931    .948    .966    .983   1.000
18          LE     .33            2.00           10.00
19          UI   1696.   1696.   4848.   7787.  10629.  13049.  15021.  16062.  16189.  15259.
20          UI  13309.  11041.   9097.   7523.   6263.   5058.   4195.   3443.   2917.   2521.
21          UI   1797.   1723.   1161.   1161.   1125.    413.    413.    413.    413.    413.
22          UI    413.    413.    413.      0.      0.      0.      0.      0.      0.      0.
23          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
            * DDM   ***** Preserved *****

24          KK   R1036
25          KM   Route the combined runoff hydrograph from SUB-BASIN 1036
26          RM       4     1.0      .2

27          KK    1037
28          KM   BASIN 1037
29          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
30          KM    L=     26.0  Lca=     10.3   S=   70.0  Kn= .035  LAG= 188.0
31          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
32          BA  102.30
33          LE     .33            2.00           15.00
34          UI   1832.   1832.   2235.   5482.   7756.  10010.  12197.  13977.  15791.  16662.
35          UI  17558.  17558.  16911.  16102.  14191.  12413.  10689.   9347.   8210.   7063.
36          UI   6152.   5352.   4656.   4028.   3454.   3087.   2809.   2211.   1942.   1942.
37          UI   1275.   1254.   1254.   1254.    641.    446.    446.    446.    446.    446.
38          UI    446.    446.    446.    446.    446.    446.      0.      0.      0.      0.
39          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

40          KK  CP1037
            *  This point corresponds to the Bell Road crossing.
41          KM   Combine runoff hydrograph 1037 with runoff from SUB-BASIN 1036
42          HC       2

43          KK   R38-1
            *  All pertinent routing data is summarized in Table 9 of the Corps report.
44          KM   Route the combined hydrograph from CP1037 to CP1038
45          RM       2      .5      .2
            *  Within the Corps report is a concentration point at this location (CP1038),
            *  and it corresponds to the Grand Ave crossing.
            *  No additional runoff added at CP1038.

46          KK   R39-1
47          KM   Route the combined runoff hydrograph from CP 1038 to CP 1039
48          RM       8     1.8      .2

49          KK    1039
50          KM   BASIN 1039
51          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
52          KM    L=     13.8  Lca=      7.9   S=   22.0  Kn= .025  LAG= 119.0
53          KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
54          BA   59.30
55          LE     .33            2.00           30.00
56          UI   1678.   2229.   5861.   9231.  12190.  14648.  15820.  15909.  14748.  12148.
57          UI   9666.   7845.   6309.   4990.   4011.   3238.   2630.   2006.   1778.   1154.
58          UI   1149.    907.    408.    408.    408.    408.    408.    408.    408.      0.
59          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1                                       HEC-1 INPUT                                          PAGE  3

LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

60          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

61          KK  CP1039
62          KM   Combine routed hydrograph from CP 1037 and runoff hydrograph 39
63          HC       2

64          KK   R40-1
65          KM   Route the combined runoff hydrograph from CP 1039 to CP 1040
66          RM       5     1.2      .2

67          KK    1040
68          KM   BASIN 1040
69          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
70          KM    L=     18.5  Lca=     10.5   S=   15.0  Kn= .020  LAG= 127.0
71          KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
72          BA   81.60
73          LE     .33            2.00           40.00
74          UI   2163.   2377.   7050.  10963.  14538.  18105.  19890.  20732.  19946.  17834.
75          UI  14518.  11810.   9613.   7875.   6323.   5130.   4188.   3453.   2753.   2293.
76          UI   1713.   1481.   1481.    651.    527.    527.    527.    527.    527.    527.
77          UI    527.      0.      0.      0.      0.      0.      0.      0.      0.      0.
78          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

79          KK  CP1040
            *  This concentration point corresponds to the Interstate 10 crossing.
80          KM   Combine routed hydrograph from CP1039 and runoff hydrograph 40
81          HC       2

82          KK   R42-1
83          KM   Route the combined runoff hydrograph from CP1040 to CP 1042
84          RM       2      .6      .2
            * DDM   ***** Preserved *****

85          KK    1042
86          KM   BASIN 1042
87          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
```

```
 88          KM    L=      6.9  Lca=      3.2   S=   12.0  Kn= .025  LAG=  72.8
 89          KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
 90          BA   11.30
 91          LE     .33            2.00           35.00
 92          UI    523.   1751.   3417.   4644.   4950.   4201.   2960.   2082.   1426.   1004.
 93          UI    696.    481.    358.    187.    127.    127.    127.      0.      0.      0.
 94          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

 95          KK  CP1042
 96          KM   Combine routed hydrograph from CP1040 with runoff hydrograph 42
             *  This concentration point corresponds to the Highway 80 crossing.
 97          HC       2

 98          KK   R43-1
 99          KM   Route the combined runoff hydrograph from CP1042 to CP 1043
100          RM       4     1.1      .2
             *  Within the Corps report there is a conc. point at this location (CP1043).
             *  This concentration point corresponds to the Agua Fria & Gila confluence.
             *  Study terminated at Agua Fria River and Gila River confluence.
1                                        HEC-1 INPUT                                          PAGE  4

       LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 101         ZZ
1
            SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
 LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   5         1036
                V
               . V
  24        R1036
                .
                .
  27            .        1037
                .           .
                .           .
  40       CP1037...........
                V
                V
  43        R38-1
                V
                V
  46        R39-1
                .
                .
  49            .        1039
                .           .
                .           .
  61       CP1039...........
                V
                V
  64        R40-1
                .
                .
  67            .        1040
                .           .
                .           .
  79       CP1040...........
                V
                V
  82        R42-1
                .
                .
  85            .        1042
                .           .
                .           .
  95       CP1042...........
                V
                V
  98        R43-1

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1*****************************************                    *****************************************
*                                         *                    *                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)     *                    *    U.S. ARMY CORPS OF ENGINEERS       *
*              JUL   1997                 *                    *    HYDROLOGIC ENGINEERING CENTER      *
*           VERSION 4.1                   *                    *          609 SECOND STREET            *
*                                         *                    *       DAVIS, CALIFORNIA 95616         *
*  RUN DATE   17MAY01  TIME  09:45:47     *                    *           (916) 756-1104              *
*                                         *                    *                                       *
*****************************************                    *****************************************


                         DDM MCUHP2 Agua Fria WMP


  4 IO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
```

```
                QSCAL          0.  HYDROGRAPH PLOT SCALE

IT          HYDROGRAPH TIME DATA
                NMIN          15  MINUTES IN COMPUTATION INTERVAL
               IDATE      1    0  STARTING DATE
               ITIME        0000  STARTING TIME
                  NQ         100  NUMBER OF HYDROGRAPH ORDINATES
              NDDATE      2    0  ENDING DATE
              NDTIME        0045  ENDING TIME
               ICENT          19  CENTURY MARK

          COMPUTATION INTERVAL     .25 HOURS
               TOTAL TIME BASE   24.75 HOURS

     ENGLISH UNITS
          DRAINAGE AREA          SQUARE MILES
          PRECIPITATION DEPTH    INCHES
          LENGTH, ELEVATION      FEET
          FLOW                   CUBIC FEET PER SECOND
          STORAGE VOLUME         ACRE-FEET
          SURFACE AREA           ACRES
          TEMPERATURE            DEGREES FAHRENHEIT
1
                                          RUNOFF SUMMARY
                                     FLOW IN CUBIC FEET PER SECOND
                                  TIME IN HOURS,  AREA IN SQUARE MILES

                                 PEAK   TIME OF    AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
     OPERATION       STATION     FLOW    PEAK                                           AREA      STAGE     MAX STAGE
                                                     6-HOUR     24-HOUR     72-HOUR
     HYDROGRAPH AT
                       1036     21781.   6.00       10616.       2797.       2712.      69.00
     ROUTED TO
                      R1036     20506.   7.00       10548.       2797.       2712.      69.00
     HYDROGRAPH AT
                       1037     25448.   6.75       15384.       4347.       4215.     102.30
     2 COMBINED AT
                     CP1037     45923.   6.75       25884.       7143.       6927.     171.30
     ROUTED TO
                     R38-1      44908.   7.25       25803.       7143.       6927.     171.30
     ROUTED TO
                     R39-1      42012.   9.00       25508.       7143.       6927.     171.30
     HYDROGRAPH AT
                       1039     23090.   5.50       10718.       2859.       2772.      59.30
     2 COMBINED AT
                     CP1039     44054.   9.00       31452.      10002.       9699.     230.60
     ROUTED TO
                     R40-1      42482.  10.25       31094.      10002.       9699.     230.60
     HYDROGRAPH AT
                       1040     31909.   5.75       15676.       4247.       4118.      81.60
     2 COMBINED AT
                     CP1040     48280.   6.25       40531.      14249.      13818.     312.20
     ROUTED TO
                     R42-1      46854.   6.75       40199.      14249.      13818.     312.20
     HYDROGRAPH AT
                       1042      6263.   5.00        2190.        565.        547.      11.30
     2 COMBINED AT
                     CP1042     48076.   6.75       40723.      14814.      14365.     323.50
     ROUTED TO
                     R43-1      46271.   8.00       40288.      14814.      14365.     323.50


*** NORMAL END OF HEC-1 ***
```

Kimley-Horn
and Associates, Inc.

Diverf.out

Future Conditions Diversion Model simplified for the 6-hr event

```
1****************************************                                                    ****************************************
*                                      *                                                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                                    *   U.S. ARMY CORPS OF ENGINEERS       *
*              JUL   1997              *                                                    *   HYDROLOGIC ENGINEERING CENTER      *
*           VERSION 4.1                *                                                    *         609 SECOND STREET            *
*                                      *                                                    *      DAVIS, CALIFORNIA 95616         *
*  RUN DATE   17MAY01  TIME  09:21:51  *                                                    *          (916) 756-1104              *
*                                      *                                                    *                                      *
****************************************                                                    ****************************************


                                                X     X  XXXXXXX   XXXXX           X
                                                X     X  X        X     X         XX
                                                X     X  X        X                X
                                                XXXXXXX  XXXX     X        XXXXX   X
                                                X     X  X        X                X
                                                X     X  X        X     X          X
                                                X     X  XXXXXXX   XXXXX         XXX


THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL   LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1                                                HEC-1 INPUT                                                          PAGE  1

LINE           ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

               * ***************************************************************************
               *                                                                           *
               *                  Flood Control District of Maricopa County                *
               *                   Agua Fria River Watercourse Master Plan                 *
               *              From the New Waddell Dam to the Gila River Confluence        *
               *                                FCD99-24                                   *
               *                                                                           *
               *                              Retention Model                              *
               *                                                                           *
               *                         100-yr, 6-hr storm event                          *
               *                 Prepared by Kimley-Horn and Associates, Inc.              *
               *                            KHA Job No. 091131004                          *
               *                                                                           *
               *                                 May 2001                                  *
               *                                                                           *
               *   This model has been created using input data from the U.S. Army Corps of *
               *   Engineers, Los Angeles District report entitled "Agua Fria River Study  *
               *   New Waddell Dam to Gila River Confluence, Arizona" written in July of 1995.*
               *   The intent of this model was to simulate the impact of the current and two *
               *   proposed retention policies to evaluate the impact of development on    *
               *   future flood peaks.                                                     *
               *   The future condition rate impervious values were obtained from the      *
               *   "Standard Project Flood Report for the Agua Fria River", Table 3, pg 14 by *
               *   the Corps of Engineers dated January 1989.                              *
               *   Diversion volumes were determined by calculating the difference between *
               *   the future and existing conditions numbers in the Corps of Engineers'   *
               *   report and applying the equivalent land use values for a 1/4 acre lot from *
               *   TR-55 Urban Hydrology for Small Watersheds.
               *   The loss rate values were obtained from Table 8, pg 37 of the Corps of  *
               *   Engineers report. These values correspond to the HEC Exponential Loss   *
               *   Rate variables.                                                         *
               *   The subbasin areas were obtained from Table 7, pg 36 of the Corps of    *
               *   Engineers report.                                                       *
               *   The Flood Control District of Maricopa County's software package MCUHP2 was*
               *   used to generate the PB, PC and UI records.  Input data for this program *
               *   was obtained from Tables 6 and 7, pages 34 and 35 respectively, of the  *
               *   Corps of Engineers report.                                              *
               *   The IT record (time specification) variable NMIN (integer number of minutes*
               *   in interval) was obtained from Section C on page 15 from the Corps report. *
               *                                                                           *
               * ***************************************************************************
               *
     1         ID   DDM MCUHP2 Agua Fria WMP
     2         ID   THIS MODEL TAKES A SIMPLIFIED APPROACH TO RETENTION.  ALL RUNOFF GENERATED
     3         ID   IN THE SUB-BASIN WILL PASS THROUGH THE RETENTION BASIN. ONCE THE RETENTION
     4         ID   BASIN REACHES CAPACITY, THE HYDROGRAPH AND PEAK FLOWS ARE NO LONGER AFFECTED.
     5         ID   AS A RESULT PEAK FLOWS ARE NOT AFFECTED BY RETENTION BASINS AT ALL.
     6         ID
     7         ID   THIS MODEL HAS BEEN UPDATED FOR THE DRAFT FINAL HYDROLOGY REPORT.
     8         ID
     9         IT      15                    200
    10         IO       5
               *DIAGRAM
1                                                HEC-1 INPUT                                                          PAGE  2

LINE           ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
```

```
 11          KK    1036
 12          KM   BASIN 1036
 13          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 14          KM    L=     17.0  Lca=      8.0   S=   94.0  Kn= .035  LAG= 137.0
 15          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 16          BA   69.00
 17          KM   RAINFALL DEPTH OF 3.30 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
 18          KM   AN AREAL REDUCTION COEFFICIENT OF  .846 WAS USED
 19          PB   2.790
 20          KM   THE FOLLOWING PC RECORD USED A 6-HOUR RAINFALL WITH PATTERN NO. 3.78
 21          PC    .000    .020    .032    .046    .066    .082    .099    .117    .135    .151
 22          PC    .170    .190    .220    .268    .351    .494    .661    .778    .847    .893
 23          PC    .931    .948    .966    .983   1.000
 24          LE     .33            2.00           10.00
 25          UI   1696.   1696.   4848.   7787.  10629.  13049.  15021.  16062.  16189.  15259.
 26          UI  13309.  11041.   9097.   7523.   6263.   5058.   4195.   3443.   2917.   2521.
 27          UI   1797.   1723.   1161.   1161.   1125.    413.    413.    413.    413.    413.
 28          UI    413.    413.    413.      0.      0.      0.      0.      0.      0.      0.
 29          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

 30          KK    1036
 31          KM   DIVERSION OUT INTO "RETENTION BASIN"
             * THE RETENTION VOLUME IS BASED ON BOTH THE STANDARD 100-YR, 2-HR RAINFALL
             * AND THE 100-YR, 1-HR RAINFALL (CITY OF SURPRISE)
 32          DT  D-1036     668
 33          DI       0   30000
 34          DQ       0   30000
             * DDM   ***** Preserved *****

 35          KK   R1036
 36          KM   Route the combined runoff hydrograph from SUB-BASIN 1036
 37          RM       4     1.0      .2

 38          KK    1037
 39          KM   BASIN 1037
 40          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 41          KM    L=     26.0  Lca=     10.3   S=   70.0  Kn= .035  LAG= 188.0
 42          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 43          BA  102.30
 44          LE     .33            2.00           15.00
 45          UI   1832.   1832.   2235.   5482.   7756.  10010.  12197.  13977.  15791.  16662.
 46          UI  17558.  17558.  16911.  16102.  14191.  12413.  10689.   9347.   8210.   7063.
 47          UI   6152.   5352.   4656.   4028.   3454.   3087.   2809.   2211.   1942.   1942.
 48          UI   1275.   1254.   1254.   1254.    641.    446.    446.    446.    446.    446.
 49          UI    446.    446.    446.    446.    446.    446.      0.      0.      0.      0.
 50          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * DDM   ***** Preserved *****

 51          KK    1037
 52          KM   DIVERSION OUT INTO "RETENTION BASIN"
 53          DT  D-1037    2240
 54          DI       0   30000
 55          DQ       0   30000
1                                   HEC-1 INPUT                                          PAGE  3

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 56          KK  CP1037
             *  This point corresponds to the Bell Road crossing.
 57          KM   Combine runoff hydrograph 1037 with runoff from SUB-BASIN 1036
 58          HC       2

 59          KK   R38-1
             *  All pertinent routing data is summarized in Table 9 of the Corps report.
 60          KM   Route the combined hydrograph from CP1037 to CP1038
 61          RM       2      .5      .2
             *  Within the Corps report is a concentration point at this location (CP1038),
             *  and it corresponds to the Grand Ave crossing.
             *  No additional runoff added at CP1038.

 62          KK   R39-1
 63          KM   Route the combined runoff hydrograph from CP 1038 to CP 1039
 64          RM       8     1.8      .2

 65          KK    1039
 66          KM   BASIN 1039
 67          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 68          KM    L=     13.8  Lca=      7.9   S=   22.0  Kn= .025  LAG= 119.0
 69          KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
 70          BA   59.30
 71          LE     .33            2.00           30.00
 72          UI   1678.   2229.   5861.   9231.  12190.  14648.  15820.  15909.  14748.  12148.
 73          UI   9666.   7845.   6309.   4990.   4011.   3238.   2630.   2006.   1778.   1154.
 74          UI   1149.    907.    408.    408.    408.    408.    408.    408.    408.      0.
 75          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 76          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * DDM   ***** Preserved *****

 77          KK    1039
 78          KM   DIVERSION OUT INTO "RETENTION BASIN"
             * THE RETENTION VOLUME IS BASED ON BOTH THE STANDARD 100-YR, 2-HR RAINFALL
             * AND THE 100-YR, 1-HR RAINFALL (CITY OF SURPRISE)
 79          DT  D-1039    2054
 80          DI       0   30000
 81          DQ       0   30000
```

```
 82          KK  CP1039
 83          KM   Combine routed hydrograph from CP 1037 and runoff hydrograph 39
 84          HC       2

 85          KK   R40-1
 86          KM   Route the combined runoff hydrograph from CP 1039 to CP 1040
 87          RM       5     1.2      .2

 88          KK    1040
 89          KM   BASIN 1040
 90          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 91          KM    L=     18.5  Lca=     10.5   S=   15.0  Kn= .020  LAG= 127.0
 92          KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
 93          BA   81.60
 94          LE     .33            2.00           40.00
1                                        HEC-1 INPUT                                                    PAGE  4

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 95          UI   2163.   2377.   7050.  10963.  14538.  18105.  19890.  20732.  19946.  17834.
 96          UI  14518.  11810.   9613.   7875.   6323.   5130.   4188.   3453.   2753.   2293.
 97          UI   1713.   1481.   1481.    651.    527.    527.    527.    527.    527.    527.
 98          UI    527.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 99          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * DDM   ***** Preserved *****

100          KK    1040
101          KM   DIVERSION OUT INTO "RETENTION BASIN"
102          DT  D-1040    3395
103          DI       0   35000
104          DQ       0   35000

105          KK  CP1040
             *  This concentration point corresponds to the Interstate 10 crossing.
106          KM   Combine routed hydrograph from CP1039 and runoff hydrograph 40
107          HC       2

108          KK   R42-1
109          KM   Route the combined runoff hydrograph from CP1040 to CP 1042
110          RM       2      .6      .2
             * DDM   ***** Preserved *****

111          KK    1042
112          KM   BASIN 1042
113          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
114          KM    L=      6.9  Lca=      3.2   S=   12.0  Kn= .025  LAG=  72.8
115          KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
116          BA   11.30
117          LE     .33            2.00           35.00
118          UI    523.   1751.   3417.   4644.   4950.   4201.   2960.   2082.   1426.   1004.
119          UI    696.    481.    358.    187.    127.    127.    127.      0.      0.      0.
120          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

121          KK    1042
122          KM   DIVERSION OUT INTO "RETENTION BASIN"
123          DT  D-1042     742
124          DI       0   30000
125          DQ       0   30000

126          KK  CP1042
127          KM   Combine routed hydrograph from CP1040 with runoff hydrograph 42
             *  This concentration point corresponds to the Highway 80 crossing.
128          HC       2

129          KK   R43-1
130          KM   Route the combined runoff hydrograph from CP1042 to CP 1043
131          RM       4     1.1      .2
             *  Within the Corps report there is a conc. point at this location (CP1043).
             *  This concentration point corresponds to the Agua Fria & Gila confluence.
             *  Study terminated at Agua Fria River and Gila River confluence.
132          ZZ
1
          SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

 11        1036
              .
              .
 32           .-------> D-1036
 30        1036
              V
              V
 35       R1036
              .
              .
 38           .        1037
              .           .
              .           .
 53           .           .-------> D-1037
 51           .        1037
              .           .
              .           .
```

```
 56      CP1037............
              V
              V
 59       R38-1
              V
              V
 62       R39-1
              .
              .
 65           .        1039
              .           .
              .           .
 79           .           .-------> D-1039
 77           .        1039
              .           .
              .           .
 82      CP1039............
              V
              V
 85       R40-1
              .
              .
 88           .        1040
              .           .
              .           .
102           .           .-------> D-1040
100           .        1040
              .           .
              .           .
105      CP1040............
              V
              V
108       R42-1
              .
              .
111           .        1042
              .           .
              .           .
123           .           .-------> D-1042
121           .        1042
              .           .
              .           .
126      CP1042............
              V
              V
129       R43-1
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1****************************************                    ****************************************
*                                        *                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *                    *    U.S. ARMY CORPS OF ENGINEERS      *
*               JUL   1997               *                    *    HYDROLOGIC ENGINEERING CENTER     *
*            VERSION 4.1                 *                    *          609 SECOND STREET           *
*                                        *                    *       DAVIS, CALIFORNIA 95616        *
*  RUN DATE   17MAY01  TIME  09:21:51    *                    *           (916) 756-1104             *
*                                        *                    *                                      *
****************************************                    ****************************************
```

```
                        DDM MCUHP2 Agua Fria WMP
                        THIS MODEL TAKES A SIMPLIFIED APPROACH TO RETENTION.  ALL RUNOFF GENERATED
                        IN THE SUB-BASIN WILL PASS THROUGH THE RETENTION BASIN. ONCE THE RETENTION
                        BASIN REACHES CAPACITY, THE HYDROGRAPH AND PEAK FLOWS ARE NO LONGER AFFECTED.
                        AS A RESULT PEAK FLOWS ARE NOT AFFECTED BY RETENTION BASINS AT ALL.

                        THIS MODEL HAS BEEN UPDATED FOR THE DRAFT FINAL HYDROLOGY REPORT.

 10 IO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

    IT          HYDROGRAPH TIME DATA
                       NMIN          15  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ         200  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      3    0  ENDING DATE
                     NDTIME        0145  ENDING TIME
                      ICENT          19  CENTURY MARK

                 COMPUTATION INTERVAL     .25 HOURS
                      TOTAL TIME BASE   49.75 HOURS

         ENGLISH UNITS
              DRAINAGE AREA          SQUARE MILES
              PRECIPITATION DEPTH    INCHES
              LENGTH, ELEVATION      FEET
              FLOW                   CUBIC FEET PER SECOND
              STORAGE VOLUME         ACRE-FEET
              SURFACE AREA           ACRES
              TEMPERATURE            DEGREES FAHRENHEIT
```

1

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	1036	21781.	6.00	10616.	2797.	1349.	69.00		
DIVERSION TO	D-1036	8597.	6.00	1347.	337.	162.	69.00		
HYDROGRAPH AT	1036	21781.	6.00	9663.	2460.	1187.	69.00		
ROUTED TO	R1036	20441.	7.00	9587.	2460.	1187.	69.00		
HYDROGRAPH AT	1037	25448.	6.75	15384.	4347.	2097.	102.30		
DIVERSION TO	D-1037	21069.	6.75	4517.	1129.	545.	102.30		
HYDROGRAPH AT	1037	25448.	6.75	12296.	3217.	1552.	102.30		
2 COMBINED AT	CP1037	45738.	6.75	21747.	5677.	2739.	171.30		
ROUTED TO	R38-1	44298.	7.25	21646.	5677.	2739.	171.30		
ROUTED TO	R39-1	40351.	9.25	21341.	5677.	2739.	171.30		
HYDROGRAPH AT	1039	23090.	5.50	10718.	2859.	1379.	59.30		
DIVERSION TO	D-1039	21631.	5.75	4142.	1036.	500.	59.30		
HYDROGRAPH AT	1039	23051.	5.75	7276.	1824.	880.	59.30		
2 COMBINED AT	CP1039	41925.	9.25	25475.	7501.	3618.	230.60		
ROUTED TO	R40-1	39649.	10.50	24913.	7501.	3618.	230.60		
HYDROGRAPH AT	1040	31909.	5.75	15676.	4247.	2049.	81.60		
DIVERSION TO	D-1040	28614.	5.75	6847.	1712.	826.	81.60		
HYDROGRAPH AT	1040	31909.	5.75	10066.	2535.	1223.	81.60		
2 COMBINED AT	CP1040	40743.	10.50	31666.	10036.	4842.	312.20		
ROUTED TO	R42-1	39603.	11.00	31162.	10036.	4842.	312.20		
HYDROGRAPH AT	1042	6263.	5.00	2190.	565.	272.	11.30		
DIVERSION TO	D-1042	6263.	5.50	1496.	374.	180.	11.30		
HYDROGRAPH AT	1042	3832.	5.50	762.	190.	92.	11.30		
2 COMBINED AT	CP1042	39603.	11.00	31359.	10227.	4933.	323.50		
ROUTED TO	R43-1	37956.	12.25	30808.	10227.	4933.	323.50		

*** NORMAL END OF HEC-1 ***

Kimley-Horn
and Associates, Inc.

Diverf2.out

Future Conditions Diversion Model modified for the 6-hr event

```
1****************************************                                                    ****************************************
 *                                      *                                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *              JUL   1997              *                                                    *    HYDROLOGIC ENGINEERING CENTER     *
 *           VERSION 4.1                *                                                    *          609 SECOND STREET           *
 *                                      *                                                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   17MAY01  TIME  09:21:58  *                                                    *           (916) 756-1104             *
 *                                      *                                                    *                                      *
****************************************                                                    ****************************************


                                                X     X  XXXXXXX   XXXXX           X
                                                X     X  X        X     X         XX
                                                X     X  X        X                X
                                                XXXXXXX  XXXX     X        XXXXX   X
                                                X     X  X        X                X
                                                X     X  X        X     X          X
                                                X     X  XXXXXXX   XXXXX         XXX


          THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

          THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
          THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
          NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
          DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL   LOSS RATE:GREEN AND AMPT INFILTRATION
          KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1                                                   HEC-1 INPUT                                                          PAGE  1

     LINE           ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

                    * ***************************************************************************
                    *                                                                           *
                    *                  Flood Control District of Maricopa County                *
                    *                   Agua Fria River Watercourse Master Plan                 *
                    *              From the New Waddell Dam to the Gila River Confluence        *
                    *                                FCD99-24                                   *
                    *                                                                           *
                    *                              Retention Model                              *
                    *                                                                           *
                    *                         100-yr, 6-hr storm event                          *
                    *                 Prepared by Kimley-Horn and Associates, Inc.              *
                    *                             KHA Job No. 091131004                         *
                    *                                                                           *
                    *                                May 2001                                   *
                    *                                                                           *
                    *   This model has been created using input data from the U.S. Army Corps of  *
                    *   Engineers, Los Angeles District report entitled "Agua Fria River Study    *
                    *   New Waddell Dam to Gila River Confluence, Arizona" written in July of 1995.*
                    *   The intent of this model was to simulate the impact of the current and two *
                    *   proposed retention policies to evaluate the impact of development on      *
                    *   future flood peaks.                                                       *
                    *   The future condition rate impervious values were obtained from the        *
                    *   "Standard Project Flood Report for the Agua Fria River", Table 3, pg 14 by *
                    *   the Corps of Engineers dated January 1989.                                *
                    *   Diversion volumes were determined by calculating the difference between   *
                    *   the future and existing conditions numbers in the Corps of Engineers'     *
                    *   report and applying the equivalent land use values for a 1/4 acre lot from *
                    *   TR-55 Urban Hydrology for Small Watersheds.                               *
                    *   The loss rate values were obtained from Table 8, pg 37 of the Corps of    *
                    *   Engineers report. These values correspond to the HEC Exponential Loss     *
                    *   Rate variables.                                                           *
                    *   The subbasin areas were obtained from Table 7, pg 36 of the Corps of      *
                    *   Engineers report.                                                         *
                    *   The Flood Control District of Maricopa County's software package MCUHP2 was*
                    *   used to generate the PB, PC and UI records.  Input data for this program  *
                    *   was obtained from Tables 6 and 7, pages 34 and 35 respectively, of the    *
                    *   Corps of Engineers report.                                                *
                    *   The IT record (time specification) variable NMIN (integer number of minutes*
                    *   in interval) was obtained from Section C on page 15 from the Corps report. *
                    *                                                                           *
                    * ***************************************************************************
                    *
       1            ID   DDM MCUHP2 Agua Fria WMP
       2            ID   THIS MODEL RECOGNIZES THAT NOT ALL RUNOFF GENERATED IN THE SUB-BASINS WILL
       3            ID   BE DIVERTED INTO A RETENTION BASIN. ONLY A PERCENTAGE OF THE RUNOFF, AS
       4            ID   DETERMINED BY THE AMOUNT OF DEVELOPED LAND, WILL BE DIVERTED INTO THE
       5            ID   RETENTION BASIN.
       6            ID
       7            ID   THIS MODEL HAS BEEN UPDATED FOR THE DRAFT FINAL HYDROLOGY REPORT.
       8            ID
       9            IT      15                     200
      10            IO       5
                    *DIAGRAM
1                                                   HEC-1 INPUT                                                          PAGE  2

     LINE           ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
```

```
11          KK    1036
12          KM   BASIN 1036
13          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
14          KM    L=      17.0  Lca=      8.0   S=   94.0  Kn= .035  LAG= 137.0
15          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
16          BA   69.00
17          KM   RAINFALL DEPTH OF 3.30 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
18          KM   AN AREAL REDUCTION COEFFICIENT OF  .846 WAS USED
19          PB   2.790
20          KM   THE FOLLOWING PC RECORD USED A 6-HOUR RAINFALL WITH PATTERN NO. 3.78
21          PC    .000    .020    .032    .046    .066    .082    .099    .117    .135    .151
22          PC    .170    .190    .220    .268    .351    .494    .661    .778    .847    .893
23          PC    .931    .948    .966    .983   1.000
24          LE     .33            2.00           10.00
25          UI   1696.   1696.   4848.   7787.  10629.  13049.  15021.  16062.  16189.  15259.
26          UI  13309.  11041.   9097.   7523.   6263.   5058.   4195.   3443.   2917.   2521.
27          UI   1797.   1723.   1161.   1161.   1125.    413.    413.    413.    413.    413.
28          UI    413.    413.    413.      0.      0.      0.      0.      0.      0.      0.
29          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

30          KK    1036
31          KM   DIVERSION OUT INTO "RETENTION BASIN"
32          DT  D-1036     668
33          DI       0   10000  100000
34          DQ       0    1300   13000
            * DDM   ***** Preserved *****

35          KK   R1036
36          KM   Route the combined runoff hydrograph from SUB-BASIN 1036
37          RM       4     1.0      .2

38          KK    1037
39          KM   BASIN 1037
40          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
41          KM    L=      26.0  Lca=     10.3   S=   70.0  Kn= .035  LAG= 188.0
42          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
43          BA  102.30
44          LE     .33            2.00           15.00
45          UI   1832.   1832.   2235.   5482.   7756.  10010.  12197.  13977.  15791.  16662.
46          UI  17558.  17558.  16911.  16102.  14191.  12413.  10689.   9347.   8210.   7063.
47          UI   6152.   5352.   4656.   4028.   3454.   3087.   2809.   2211.   1942.   1942.
48          UI   1275.   1254.   1254.   1254.    641.    446.    446.    446.    446.    446.
49          UI    446.    446.    446.    446.    446.    446.      0.      0.      0.      0.
50          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
            * DDM   ***** Preserved *****

51          KK    1037
52          KM   DIVERSION OUT INTO "RETENTION BASIN"
53          DT  D-1037    2240
54          DI       0   10000  100000
55          DQ       0    2600   26000
```



```
LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

56          KK  CP1037
            *  This point corresponds to the Bell Road crossing.
57          KM   Combine runoff hydrograph 1037 with runoff from SUB-BASIN 1036
58          HC       2

59          KK   R38-1
            *  All pertinent routing data is summarized in Table 9 of the Corps report.
60          KM   Route the combined hydrograph from CP1037 to CP1038
61          RM       2      .5      .2
            *  Within the Corps report is a concentration point at this location (CP1038),
            *  and it corresponds to the Grand Ave crossing.
            *  No additional runoff added at CP1038.

62          KK   R39-1
63          KM   Route the combined runoff hydrograph from CP 1038 to CP 1039
64          RM       8     1.8      .2

65          KK    1039
66          KM   BASIN 1039
67          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
68          KM    L=      13.8  Lca=      7.9   S=   22.0  Kn= .025  LAG= 119.0
69          KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
70          BA   59.30
71          LE     .33            2.00           30.00
72          UI   1678.   2229.   5861.   9231.  12190.  14648.  15820.  15909.  14748.  12148.
73          UI   9666.   7845.   6309.   4990.   4011.   3238.   2630.   2006.   1778.   1154.
74          UI   1149.    907.    408.    408.    408.    408.    408.    408.    408.      0.
75          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
76          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
            * DDM   ***** Preserved *****

77          KK    1039
78          KM   DIVERSION OUT INTO "RETENTION BASIN"
79          DT  D-1039    2054
80          DI       0   10000  100000
81          DQ       0    4500   45000

82          KK  CP1039
83          KM   Combine routed hydrograph from CP 1037 and runoff hydrograph 39
84          HC       2
```

```
 85          KK   R40-1
 86          KM   Route the combined runoff hydrograph from CP 1039 to CP 1040
 87          RM       5     1.2      .2

 88          KK    1040
 89          KM   BASIN 1040
 90          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 91          KM    L=     18.5  Lca=     10.5   S=   15.0  Kn= .020  LAG= 127.0
 92          KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
 93          BA   81.60
 94          LE     .33            2.00           40.00
 95          UI   2163.   2377.   7050.  10963.  14538.  18105.  19890.  20732.  19946.  17834.
 96          UI  14518.  11810.   9613.   7875.   6323.   5130.   4188.   3453.   2753.   2293.
1                                          HEC-1 INPUT                                          PAGE  4

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 97          UI   1713.   1481.   1481.    651.    527.    527.    527.    527.    527.    527.
 98          UI    527.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 99          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * DDM   ***** Preserved *****

100          KK    1040
101          KM   DIVERSION OUT INTO "RETENTION BASIN"
102          DT  D-1040    3395
103          DI       0   10000  100000
104          DQ       0    5000   50000

105          KK  CP1040
             *  This concentration point corresponds to the Interstate 10 crossing.
106          KM   Combine routed hydrograph from CP1039 and runoff hydrograph 40
107          HC       2

108          KK   R42-1
109          KM   Route the combined runoff hydrograph from CP1040 to CP 1042
110          RM       2      .6      .2
             * DDM   ***** Preserved *****

111          KK    1042
112          KM   BASIN 1042
113          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
114          KM    L=      6.9  Lca=      3.2   S=   12.0  Kn= .025  LAG=  72.8
115          KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
116          BA   11.30
117          LE     .33            2.00           35.00
118          UI    523.   1751.   3417.   4644.   4950.   4201.   2960.   2082.   1426.   1004.
119          UI    696.    481.    358.    187.    127.    127.    127.      0.      0.      0.
120          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

121          KK    1042
122          KM   DIVERSION OUT INTO "RETENTION BASIN"
123          DT  D-1042     742
124          DI       0   10000  100000
125          DQ       0    7900   79000

126          KK  CP1042
127          KM   Combine routed hydrograph from CP1040 with runoff hydrograph 42
             *  This concentration point corresponds to the Highway 80 crossing.
128          HC       2

129          KK   R43-1
130          KM   Route the combined runoff hydrograph from CP1042 to CP 1043
131          RM       4     1.1      .2
             *  Within the Corps report there is a conc. point at this location (CP1043).
             *  This concentration point corresponds to the Agua Fria & Gila confluence.
             *  Study terminated at Agua Fria River and Gila River confluence.
132          ZZ
1
             SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
 LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

 NO.       (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

  11         1036
                .
                .
  32            .-------> D-1036
  30         1036
                V
                V
  35        R1036
                .
                .
  38            .        1037
                .           .
                .           .
  53            .           .-------> D-1037
  51            .        1037
                .           .
                .           .
  56       CP1037............
                V
                V
  59        R38-1
```

```
                V
                V
  62         R39-1
                .
                .
  65            .        1039
                .           .
                .           .
  79            .           .-------> D-1039
  77            .        1039
                .           .
                .           .
  82       CP1039............
                V
                V
  85         R40-1
                .
                .
  88            .        1040
                .           .
                .           .
 102            .           .-------> D-1040
 100            .        1040
                .           .
                .           .
 105       CP1040............
                V
                V
 108         R42-1
                .
                .
 111            .        1042
                .           .
                .           .
 123            .           .-------> D-1042
 121            .        1042
                .           .
                .           .
 126       CP1042............
                V
                V
 129         R43-1
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1****************************************                    ****************************************
*                                      *                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                    *    U.S. ARMY CORPS OF ENGINEERS      *
*              JUL   1997              *                    *    HYDROLOGIC ENGINEERING CENTER     *
*            VERSION 4.1               *                    *          609 SECOND STREET           *
*                                      *                    *       DAVIS, CALIFORNIA 95616        *
*  RUN DATE   17MAY01  TIME  09:21:58  *                    *           (916) 756-1104             *
*                                      *                    *                                      *
****************************************                    ****************************************
```

```
                        DDM MCUHP2 Agua Fria WMP
                        THIS MODEL RECOGNIZES THAT NOT ALL RUNOFF GENERATED IN THE SUB-BASINS WILL
                        BE DIVERTED INTO A RETENTION BASIN. ONLY A PERCENTAGE OF THE RUNOFF, AS
                        DETERMINED BY THE AMOUNT OF DEVELOPED LAND, WILL BE DIVERTED INTO THE
                        RETENTION BASIN.

                        THIS MODEL HAS BEEN UPDATED FOR THE DRAFT FINAL HYDROLOGY REPORT.

  10 IO          OUTPUT CONTROL VARIABLES
                       IPRNT          5  PRINT CONTROL
                       IPLOT          0  PLOT CONTROL
                       QSCAL         0.  HYDROGRAPH PLOT SCALE

     IT          HYDROGRAPH TIME DATA
                        NMIN         15  MINUTES IN COMPUTATION INTERVAL
                       IDATE      1    0  STARTING DATE
                       ITIME        0000  STARTING TIME
                          NQ         200  NUMBER OF HYDROGRAPH ORDINATES
                      NDDATE      3    0  ENDING DATE
                      NDTIME        0145  ENDING TIME
                      ICENT           19  CENTURY MARK

                  COMPUTATION INTERVAL     .25 HOURS
                       TOTAL TIME BASE   49.75 HOURS

         ENGLISH UNITS
              DRAINAGE AREA          SQUARE MILES
              PRECIPITATION DEPTH    INCHES
              LENGTH, ELEVATION      FEET
              FLOW                   CUBIC FEET PER SECOND
              STORAGE VOLUME         ACRE-FEET
              SURFACE AREA           ACRES
              TEMPERATURE            DEGREES FAHRENHEIT
1
                                                RUNOFF SUMMARY
                                          FLOW IN CUBIC FEET PER SECOND
                                       TIME IN HOURS,  AREA IN SQUARE MILES
```

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	1036	21781.	6.00	10616.	2797.	1349.	69.00		
DIVERSION TO	D-1036	2832.	6.00	1334.	337.	162.	69.00		
HYDROGRAPH AT	1036	18950.	6.00	9300.	2460.	1187.	69.00		
ROUTED TO	R1036	17840.	7.00	9237.	2460.	1187.	69.00		
HYDROGRAPH AT	1037	25448.	6.75	15384.	4347.	2097.	102.30		
DIVERSION TO	D-1037	6616.	6.75	4000.	1129.	545.	102.30		
HYDROGRAPH AT	1037	18831.	6.75	11384.	3217.	1552.	102.30		
2 COMBINED AT	CP1037	36645.	6.75	20578.	5677.	2739.	171.30		
ROUTED TO	R38-1	35821.	7.25	20499.	5677.	2739.	171.30		
ROUTED TO	R39-1	33466.	9.00	20262.	5677.	2739.	171.30		
HYDROGRAPH AT	1039	23090.	5.50	10718.	2859.	1379.	59.30		
DIVERSION TO	D-1039	10390.	5.50	4129.	1036.	500.	59.30		
HYDROGRAPH AT	1039	12699.	5.50	6778.	1824.	880.	59.30		
2 COMBINED AT	CP1039	35508.	9.00	23983.	7501.	3618.	230.60		
ROUTED TO	R40-1	34252.	10.25	23803.	7501.	3618.	230.60		
HYDROGRAPH AT	1040	31909.	5.75	15676.	4247.	2049.	81.60		
DIVERSION TO	D-1040	15955.	5.75	6806.	1712.	826.	81.60		
HYDROGRAPH AT	1040	15955.	5.75	9237.	2535.	1223.	81.60		
2 COMBINED AT	CP1040	35614.	10.00	29055.	10036.	4842.	312.20		
ROUTED TO	R42-1	35093.	10.75	28865.	10036.	4842.	312.20		
HYDROGRAPH AT	1042	6263.	5.00	2190.	565.	272.	11.30		
DIVERSION TO	D-1042	4947.	6.25	1496.	374.	180.	11.30		
HYDROGRAPH AT	1042	2198.	6.25	738.	190.	92.	11.30		
2 COMBINED AT	CP1042	35093.	10.75	29142.	10227.	4933.	323.50		
ROUTED TO	R43-1	34382.	11.75	28842.	10227.	4933.	323.50		

*** NORMAL END OF HEC-1 ***

Kimley-Horn
and Associates, Inc.

CE24hr.out

Existing Conditions Model for the 24-hr event

```
1****************************************                                                    ****************************************
*                                      *                                                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                                    *   U.S. ARMY CORPS OF ENGINEERS       *
*              JUL   1997              *                                                    *   HYDROLOGIC ENGINEERING CENTER      *
*           VERSION 4.1                *                                                    *         609 SECOND STREET            *
*                                      *                                                    *      DAVIS, CALIFORNIA 95616         *
*  RUN DATE   17MAY01  TIME  09:52:57  *                                                    *          (916) 756-1104              *
*                                      *                                                    *                                      *
****************************************                                                    ****************************************


                                                X     X  XXXXXXX   XXXXX           X
                                                X     X  X        X     X         XX
                                                X     X  X        X                X
                                                XXXXXXX  XXXX     X        XXXXX   X
                                                X     X  X        X                X
                                                X     X  X        X     X          X
                                                X     X  XXXXXXX   XXXXX         XXX


THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL   LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1                                                HEC-1 INPUT                                                          PAGE  1

     LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

                   * ******************************************************************************
                   *                                                                              *
                   *                  Flood Control District of Maricopa County                   *
                   *                   Agua Fria River Watercourse Master Plan                    *
                   *              From the New Waddell Dam to the Gila River Confluence           *
                   *                                FCD99-24                                      *
                   *                                                                              *
                   *                              Retention Model                                 *
                   *                                                                              *
                   *                          100-yr, 24-hr storm event                           *
                   *                 Prepared by Kimley-Horn and Associates, Inc.                 *
                   *                             KHA Job No. 091131004                            *
                   *                                                                              *
                   *                              February 2001                                   *
                   *                                                                              *
                   *   This model has been created using input data from the U.S. Army Corps of   *
                   *   Engineers, Los Angeles District report entitled "Agua Fria River Study     *
                   *   New Waddell Dam to Gila River Confluence, Arizona" written in July of 1995.*
                   *   The intent of this model was to simulate the impact of the current and two *
                   *   proposed retention policies to evaluate the impact of development on       *
                   *   future flood peaks.                                                        *
                   *   The loss rate values were obtained from Table 8, pg. 37 of the Corps of    *
                   *   Engineers report.                                                          *
                   *   These values correspond to the HEC Exponential Loss Rate variables.        *
                   *   The subbasin areas were obtained from Table 7, pg 36 of the Corps of       *
                   *   Engineers report. The Flood Control District of Maricopa County's software *
                   *   package MCUHP2 was used to generate the PB, PC and UI records.  Input data *
                   *   for this program was obtained from Tables 6 and 7, pages 34 and 35         *
                   *   respectively, of the Corps of Engineers report.                            *
                   *   The IT record (time specification) variable NMIN (integer number of minutes*
                   *   in interval) was obtained from Section C on page 15 from the Corps report. *
                   *                                                                              *
                   * ******************************************************************************
                   *
       1           ID   AGUA FRIA WATERCOURSE MASTER PLAN
                   *DIAGRAM
       2           IT      15                    200
       3           IO       5
                   * DDM   ***** Preserved *****

       4           KK    1036
       5           KM   BASIN 1036
       6           KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
       7           KM    L=     17.0  Lca=      8.0   S=   94.0  Kn= .035  LAG= 137.0
       8           KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
       9           BA   69.00
      10           IN      15
      11           KM   RAINFALL DEPTH OF 4.11 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
      12           KM   AN AREAL REDUCTION COEFFICIENT OF  .920 WAS USED
      13           PB   3.781
      14           KM   THE FOLLOWING PC RECORD USED A 24-HOUR SCS TYPE II RAINFALL
      15           PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
      16           PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
      17           PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
      18           PC    .110    .115    .120    .126    .135    .142    .150    .158    .166    .175
1                                                HEC-1 INPUT                                                          PAGE  2

     LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
19          PC    .184    .195    .208    .224    .243    .266    .318    .479    .678    .716
20          PC    .743    .764    .781    .795    .808    .818    .828    .837    .844    .851
21          PC    .858    .865    .871    .877    .883    .889    .895    .900    .905    .910
22          PC    .915    .919    .923    .927    .931    .935    .939    .943    .947    .951
23          PC    .954    .957    .960    .963    .966    .969    .972    .975    .978    .981
24          PC    .984    .987    .990    .993    .996    .999   1.000
25          LE     .33            2.00            5.00
26          UI   1696.   1696.   4848.   7787.  10629.  13049.  15021.  16062.  16189.  15259.
27          UI  13309.  11041.   9097.   7523.   6263.   5058.   4195.   3443.   2917.   2521.
28          UI   1797.   1723.   1161.   1161.   1125.    413.    413.    413.    413.    413.
29          UI    413.    413.    413.      0.      0.      0.      0.      0.      0.      0.
30          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

31          KK   R1036
32          KM   Route the combined runoff hydrograph from SUB-BASIN 1036
33          RM       4     1.0      .2

34          KK    1037
35          KM   SUB-BASIN 37
36          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
37          KM   L=     26.0  Lca=     10.3   S=   70.0  Kn= .035  LAG= 188.0
38          BA   102.3
39          LE    0.33       0     2.0       0       5
40          UI   1832.   1832.   2235.   5482.   7756.  10010.  12197.  13977.  15791.  16662.
41          UI  17558.  17558.  16911.  16102.  14191.  12413.  10689.   9347.   8210.   7063.
42          UI   6152.   5352.   4656.   4028.   3454.   3087.   2809.   2211.   1942.   1942.
43          UI   1275.   1254.   1254.   1254.    641.    446.    446.    446.    446.    446.
44          UI    446.    446.    446.    446.    446.    446.      0.      0.      0.      0.
45          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

46          KK  CP1037
            *  This point corresponds to the Bell Road crossing.
47          KM   Combine runoff hydrograph 37 with New Waddell Dam hydrograph.
48          HC       2

49          KK   R38-1
            *  All pertinent routing data is summarized in Table 9 of the Corps report.
50          KM   Route the combined hydrograph from CP1037 to CP1038
51          RM       2     0.5     0.2
            *  Within the Corps report is a concentration point at this location (CP1038),
            *  and it corresponds to the Grand Ave crossing.
            *  No additional runoff added at CP1038.

52          KK   R39-1
53          KM   Route the combined runoff hydrograph from CP 1038 to CP 1039
54          RM       8     1.8     0.2

55          KK      39
56          KM   SUB-BASIN 39
57          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
58          KM   L=     13.8  Lca=      7.9   S=   22.0  Kn= .025  LAG= 119.0
59          KM   PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
60          BA   59.30
61          LE    0.33       0     2.0       0      13
62          UI   1678.   2229.   5861.   9231.  12190.  14648.  15820.  15909.  14748.  12148.
                                          HEC-1 INPUT                                          PAGE  3

LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

63          UI   9666.   7845.   6309.   4990.   4011.   3238.   2630.   2006.   1778.   1154.
64          UI   1149.    907.    408.    408.    408.    408.    408.    408.    408.      0.
65          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
66          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

67          KK  CP1039
68          KM   Combine routed hydrograph from CP 1038 and runoff hydrograph 39
69          HC       2

70          KK   R40-1
71          KM   Route the combined runoff hydrograph from CP 1039 to CP 1040
72          RM       5     1.2     0.2

73          KK      40
74          KM   SUB-BASIN 40
75          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
76          KM   L=     18.5  Lca=     10.5   S=   15.0  Kn= .020  LAG= 127.0
77          KM   PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
78          BA   81.60
79          LE    0.33       0     2.0       0      21
80          UI   2163.   2377.   7050.  10963.  14538.  18105.  19890.  20732.  19946.  17834.
81          UI  14518.  11810.   9613.   7875.   6323.   5130.   4188.   3453.   2753.   2293.
82          UI   1713.   1481.   1481.    651.    527.    527.    527.    527.    527.    527.
83          UI    527.      0.      0.      0.      0.      0.      0.      0.      0.      0.
84          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

85          KK  CP1040
            *  This concentration point corresponds to the Interstate 10 crossing.
86          KM   Combine routed hydrograph from CP1039 and runoff hydrograph 40
87          HC       2

88          KK   R42-1
89          KM   Route the combined runoff hydrograph from CP1040 to CP 1042
90          RM       2     0.6     0.2

91          KK      42
```

```
          92          KM   SUB-BASIN 42
          93          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
          94          KM   L=      6.9  Lca=      3.2   S=   12.0  Kn= .025  LAG=  72.8
          95          KM   PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
          96          BA   11.30
          97          LE    0.33       0     2.0       0       5
          98          UI    523.   1751.   3417.   4644.   4950.   4201.   2960.   2082.   1426.   1004.
          99          UI    696.    481.    358.    187.    127.    127.    127.      0.      0.      0.
         100          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

         101          KK  CP1042
         102          KM   Combine routed hydrograph from CP1040 with runoff hydrograph 42
                      *  This concentration point corresponds to the Highway 80 crossing.
         103          HC       2
1                                          HEC-1 INPUT                                          PAGE  4

        LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


         104          KK   R43-1
         105          KM   Route the combined runoff hydrograph from CP1042 to CP 1043
         106          RM       4     1.1     0.2
                      *  Within the Corps report there is a conc. point at this location (CP1043).
                      *  This concentration point corresponds to the Agua Fria & Gila confluence.
                      *  Study terminated at Agua Fria River and Gila River confluence.
         107          ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

    4         1036
                 V
                 V
   31        R1036
                 .
                 .
   34            .        1037
                 .           .
                 .           .
   46       CP1037............
                 V
                 V
   49        R38-1
                 V
                 V
   52        R39-1
                 .
                 .
   55            .          39
                 .           .
                 .           .
   67       CP1039............
                 V
                 V
   70        R40-1
                 .
                 .
   73            .          40
                 .           .
                 .           .
   85       CP1040............
                 V
                 V
   88        R42-1
                 .
                 .
   91            .          42
                 .           .
                 .           .
  101       CP1042............
                 V
                 V
  104        R43-1

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************                                    ****************************************
*                                      *                                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *    U.S. ARMY CORPS OF ENGINEERS      *
*              JUL   1997              *                                    *    HYDROLOGIC ENGINEERING CENTER     *
*            VERSION 4.1               *                                    *          609 SECOND STREET           *
*                                      *                                    *       DAVIS, CALIFORNIA 95616        *
*  RUN DATE   17MAY01  TIME  09:52:57  *                                    *           (916) 756-1104             *
*                                      *                                    *                                      *
****************************************                                    ****************************************


                         AGUA FRIA WATERCOURSE MASTER PLAN

   3 IO          OUTPUT CONTROL VARIABLES
                       IPRNT          5  PRINT CONTROL
```

```
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE

IT          HYDROGRAPH TIME DATA
                 NMIN         15  MINUTES IN COMPUTATION INTERVAL
                IDATE      1    0  STARTING DATE
                ITIME       0000  STARTING TIME
                   NQ        200  NUMBER OF HYDROGRAPH ORDINATES
               NDDATE      3    0  ENDING DATE
               NDTIME       0145  ENDING TIME
                ICENT         19  CENTURY MARK

            COMPUTATION INTERVAL     .25 HOURS
                 TOTAL TIME BASE   49.75 HOURS

     ENGLISH UNITS
          DRAINAGE AREA          SQUARE MILES
          PRECIPITATION DEPTH    INCHES
          LENGTH, ELEVATION      FEET
          FLOW                   CUBIC FEET PER SECOND
          STORAGE VOLUME         ACRE-FEET
          SURFACE AREA           ACRES
          TEMPERATURE            DEGREES FAHRENHEIT
1
                                        RUNOFF SUMMARY
                                   FLOW IN CUBIC FEET PER SECOND
                                TIME IN HOURS,  AREA IN SQUARE MILES
```

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	1036	23409.	13.75	10778.	2875.	1389.	69.00		
ROUTED TO	R1036	21873.	14.75	10704.	2875.	1389.	69.00		
HYDROGRAPH AT	1037	25766.	14.50	15010.	4265.	2062.	102.30		
2 COMBINED AT	CP1037	47275.	14.75	25678.	7140.	3450.	171.30		
ROUTED TO	R38-1	46136.	15.25	25568.	7140.	3450.	171.30		
ROUTED TO	R39-1	43001.	17.00	25265.	7139.	3450.	171.30		
HYDROGRAPH AT	39	23714.	13.50	9990.	2768.	1339.	59.30		
2 COMBINED AT	CP1039	45060.	17.00	30769.	9891.	4789.	230.60		
ROUTED TO	R40-1	43215.	18.00	30401.	9890.	4789.	230.60		
HYDROGRAPH AT	40	31683.	13.75	14505.	4213.	2041.	81.60		
2 COMBINED AT	CP1040	46624.	14.00	39300.	14082.	6830.	312.20		
ROUTED TO	R42-1	44967.	14.75	38948.	14081.	6830.	312.20		
HYDROGRAPH AT	42	6690.	12.75	1814.	470.	227.	11.30		
2 COMBINED AT	CP1042	45656.	14.75	39287.	14549.	7057.	323.50		
ROUTED TO	R43-1	43729.	15.75	38805.	14547.	7057.	323.50		

*** NORMAL END OF HEC-1 ***

Kimley-Horn
and Associates, Inc.

CF24hr.out

Future Conditions Model for the 24-hr event

```
1****************************************                                                    ****************************************
 *                                      *                                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *              JUL   1997              *                                                    *    HYDROLOGIC ENGINEERING CENTER     *
 *           VERSION 4.1                *                                                    *          609 SECOND STREET           *
 *                                      *                                                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   17MAY01  TIME  09:53:03  *                                                    *           (916) 756-1104             *
 *                                      *                                                    *                                      *
****************************************                                                    ****************************************

                                          X     X  XXXXXXX   XXXXX           X
                                          X     X  X        X     X         XX
                                          X     X  X        X                X
                                          XXXXXXX  XXXX     X        XXXXX   X
                                          X     X  X        X                X
                                          X     X  X        X     X          X
                                          X     X  XXXXXXX   XXXXX          XXX


THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL   LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1                                          HEC-1 INPUT                                                                PAGE  1

      LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

                    * ***********************************************************************
                    *                                                                       *
                    *                  Flood Control District of Maricopa County             *
                    *                   Agua Fria River Watercourse Master Plan             *
                    *             From the New Waddell Dam to the Gila River Confluence     *
                    *                              FCD99-24                                 *
                    *                                                                       *
                    *                            Retention Model                            *
                    *                                                                       *
                    *                        100-yr, 24-hr storm event                      *
                    *                 Prepared by Kimley-Horn and Associates, Inc.          *
                    *                          KHA Job No. 091131004                        *
                    *                                                                       *
                    *                             February 2001                             *
                    *                                                                       *
                    *   This model has been created using input data from the U.S. Army Corps of   *
                    *   Engineers, Los Angeles District report entitled "Agua Fria River Study     *
                    *   New Waddell Dam to Gila River Confluence, Arizona" written in July of 1995.*
                    *   The intent of this model was to simulate the impact of the future          *
                    *   development on future flood peaks.                                         *
                    *   The future condition rate impervious values were obtained from the         *
                    *   "Standard Project Flood Report for the Agua Fria River", Table 3, pg 14 by *
                    *   the Corps of Engineers dated January 1989.                                 *
                    *   The loss rate values were obtained from Table 8, pg 37 of the Corps of     *
                    *   Engineers report. These values correspond to the HEC Exponential Loss      *
                    *   Rate variables.                                                            *
                    *   The subbasin areas were obtained from Table 7, pg 36 of the Corps of       *
                    *   Engineers report.                                                          *
                    *   The Flood Control District of Maricopa County's software package MCUHP2 was*
                    *   used to generate the PB, PC and UI records.  Input data for this program   *
                    *   was obtained from Tables 6 and 7, pages 34 and 35 respectively, of the     *
                    *   Corps of Engineers report.                                                 *
                    *   The IT record (time specification) variable NMIN (integer number of minutes*
                    *   in interval) was obtained from Section C on page 15 from the Corps report. *
                    *                                                                       *
                    * ***********************************************************************
                    *
        1           ID   DDM MCUHP2 Agua Fria WMP
        2           ID
        3           IT      15                    200
        4           IO       5
                    *DIAGRAM

        5           KK    1036
        6           KM   BASIN 1036
        7           KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
        8           KM    L=     17.0  Lca=      8.0   S=   94.0  Kn= .035  LAG= 137.0
        9           KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
       10           BA   69.00
       11           KM   RAINFALL DEPTH OF 4.11 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
       12           KM   AN AREAL REDUCTION COEFFICIENT OF  .920 WAS USED
       13           PB   3.781
       14           KM   THE FOLLOWING PC RECORD USED A 24-HOUR SCS TYPE II RAINFALL
       15           PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
       16           PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
1                                          HEC-1 INPUT                                                                PAGE  2

      LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
```

```
 17          PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
 18          PC    .110    .115    .120    .126    .135    .142    .150    .158    .166    .175
 19          PC    .184    .195    .208    .224    .243    .266    .318    .479    .678    .716
 20          PC    .743    .764    .781    .795    .808    .818    .828    .837    .844    .851
 21          PC    .858    .865    .871    .877    .883    .889    .895    .900    .905    .910
 22          PC    .915    .919    .923    .927    .931    .935    .939    .943    .947    .951
 23          PC    .954    .957    .960    .963    .966    .969    .972    .975    .978    .981
 24          PC    .984    .987    .990    .993    .996    .999   1.000
 25          LE     .33            2.00           10.00
 26          UI   1696.   1696.   4848.   7787.  10629.  13049.  15021.  16062.  16189.  15259.
 27          UI  13309.  11041.   9097.   7523.   6263.   5058.   4195.   3443.   2917.   2521.
 28          UI   1797.   1723.   1161.   1161.   1125.    413.    413.    413.    413.    413.
 29          UI    413.    413.    413.      0.      0.      0.      0.      0.      0.      0.
 30          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * DDM    ***** Preserved *****

 31          KK   R1036
 32          KM   Route the combined runoff hydrograph from SUB-BASIN 1036
 33          RM       4     1.0      .2

 34          KK    1037
 35          KM   BASIN 1037
 36          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 37          KM    L=     26.0  Lca=     10.3   S=   70.0  Kn= .035  LAG= 188.0
 38          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 39          BA  102.30
 40          LE     .33            2.00           15.00
 41          UI   1832.   1832.   2235.   5482.   7756.  10010.  12197.  13977.  15791.  16662.
 42          UI  17558.  17558.  16911.  16102.  14191.  12413.  10689.   9347.   8210.   7063.
 43          UI   6152.   5352.   4656.   4028.   3454.   3087.   2809.   2211.   1942.   1942.
 44          UI   1275.   1254.   1254.   1254.    641.    446.    446.    446.    446.    446.
 45          UI    446.    446.    446.    446.    446.    446.      0.      0.      0.      0.
 46          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

 47          KK  CP1037
             *  This point corresponds to the Bell Road crossing.
 48          KM   Combine runoff hydrograph 1037 with runoff from SUB-BASIN 1036
 49          HC       2

 50          KK   R38-1
             *  All pertinent routing data is summarized in Table 9 of the Corps report.
 51          KM   Route the combined hydrograph from CP1037 to CP1038
 52          RM       2      .5      .2
             *  Within the Corps report is a concentration point at this location (CP1038),
             *  and it corresponds to the Grand Ave crossing.
             *  No additional runoff added at CP1038.

 53          KK   R39-1
 54          KM   Route the combined runoff hydrograph from CP 1038 to CP 1039
 55          RM       8     1.8      .2
1                                    HEC-1 INPUT                                          PAGE  3

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 56          KK    1039
 57          KM   BASIN 1039
 58          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 59          KM    L=     13.8  Lca=      7.9   S=   22.0  Kn= .025  LAG= 119.0
 60          KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
 61          BA   59.30
 62          LE     .33            2.00           30.00
 63          UI   1678.   2229.   5861.   9231.  12190.  14648.  15820.  15909.  14748.  12148.
 64          UI   9666.   7845.   6309.   4990.   4011.   3238.   2630.   2006.   1778.   1154.
 65          UI   1149.    907.    408.    408.    408.    408.    408.    408.    408.      0.
 66          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 67          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

 68          KK  CP1039
 69          KM   Combine routed hydrograph from CP 1037 and runoff hydrograph 39
 70          HC       2

 71          KK   R40-1
 72          KM   Route the combined runoff hydrograph from CP 1039 to CP 1040
 73          RM       5     1.2      .2

 74          KK    1040
 75          KM   BASIN 1040
 76          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 77          KM    L=     18.5  Lca=     10.5   S=   15.0  Kn= .020  LAG= 127.0
 78          KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
 79          BA   81.60
 80          LE     .33            2.00           40.00
 81          UI   2163.   2377.   7050.  10963.  14538.  18105.  19890.  20732.  19946.  17834.
 82          UI  14518.  11810.   9613.   7875.   6323.   5130.   4188.   3453.   2753.   2293.
 83          UI   1713.   1481.   1481.    651.    527.    527.    527.    527.    527.    527.
 84          UI    527.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 85          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

 86          KK  CP1040
             *  This concentration point corresponds to the Interstate 10 crossing.
 87          KM   Combine routed hydrograph from CP1039 and runoff hydrograph 40
 88          HC       2

 89          KK   R42-1
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```
 90          KM   Route the combined runoff hydrograph from CP1040 to CP 1042
 91          RM       2      .6      .2
             * DDM   ***** Preserved *****

 92          KK    1042
 93          KM   BASIN 1042
 94          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 95          KM    L=      6.9  Lca=      3.2   S=   12.0  Kn= .025  LAG=  72.8
 96          KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
 97          BA   11.30
 98          LE     .33            2.00           35.00
 99          UI    523.   1751.   3417.   4644.   4950.   4201.   2960.   2082.   1426.   1004.
100          UI    696.    481.    358.    187.    127.    127.    127.      0.      0.      0.
101          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1                                          HEC-1 INPUT                                          PAGE  4

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


102          KK  CP1042
103          KM   Combine routed hydrograph from CP1040 with runoff hydrograph 42
             *  This concentration point corresponds to the Highway 80 crossing.
104          HC       2

105          KK   R43-1
106          KM   Route the combined runoff hydrograph from CP1042 to CP 1043
107          RM       4     1.1      .2
             *  Within the Corps report there is a conc. point at this location (CP1043).
             *  This concentration point corresponds to the Agua Fria & Gila confluence.
             *  Study terminated at Agua Fria River and Gila River confluence.
108          ZZ
1
          SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
 LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.     (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   5        1036
               V
               V
  31       R1036
               .
               .
  34           .        1037
               .           .
               .           .
  47      CP1037............
               V
               V
  50       R38-1
               V
               V
  53       R39-1
               .
               .
  56           .        1039
               .           .
               .           .
  68      CP1039............
               V
               V
  71       R40-1
               .
               .
  74           .        1040
               .           .
               .           .
  86      CP1040............
               V
               V
  89       R42-1
               .
               .
  92           .        1042
               .           .
               .           .
 102      CP1042............
               V
               V
 105       R43-1

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************                    ****************************************
*                                      *                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                    *   U.S. ARMY CORPS OF ENGINEERS       *
*              JUL   1997              *                    *   HYDROLOGIC ENGINEERING CENTER      *
*           VERSION 4.1                *                    *         609 SECOND STREET            *
*                                      *                    *      DAVIS, CALIFORNIA 95616         *
*  RUN DATE   17MAY01  TIME  09:53:03  *                    *          (916) 756-1104              *
*                                      *                    *                                      *
****************************************                    ****************************************
```

```
                    DDM MCUHP2 Agua Fria WMP

4 IO          OUTPUT CONTROL VARIABLES
                    IPRNT           5  PRINT CONTROL
                    IPLOT           0  PLOT CONTROL
                    QSCAL          0.  HYDROGRAPH PLOT SCALE

  IT          HYDROGRAPH TIME DATA
                     NMIN          15  MINUTES IN COMPUTATION INTERVAL
                    IDATE      1    0  STARTING DATE
                    ITIME        0000  STARTING TIME
                       NQ         200  NUMBER OF HYDROGRAPH ORDINATES
                   NDDATE      3    0  ENDING DATE
                   NDTIME        0145  ENDING TIME
                    ICENT          19  CENTURY MARK

              COMPUTATION INTERVAL     .25 HOURS
                   TOTAL TIME BASE   49.75 HOURS

       ENGLISH UNITS
            DRAINAGE AREA          SQUARE MILES
            PRECIPITATION DEPTH    INCHES
            LENGTH, ELEVATION      FEET
            FLOW                   CUBIC FEET PER SECOND
            STORAGE VOLUME         ACRE-FEET
            SURFACE AREA           ACRES
            TEMPERATURE            DEGREES FAHRENHEIT
1
                                          RUNOFF SUMMARY
                                     FLOW IN CUBIC FEET PER SECOND
                                   TIME IN HOURS,  AREA IN SQUARE MILES

                                   PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
       OPERATION        STATION    FLOW     PEAK                                          AREA      STAGE     MAX STAGE
+                                                      6-HOUR     24-HOUR     72-HOUR
       HYDROGRAPH AT
+                         1036    23973.   13.75       11214.       3089.       1494.      69.00
       ROUTED TO
+                        R1036    22427.   14.75       11137.       3088.       1494.      69.00
       HYDROGRAPH AT
+                         1037    27282.   14.50       16255.       4894.       2373.     102.30
       2 COMBINED AT
+                       CP1037    49351.   14.75       27354.       7982.       3866.     171.30
       ROUTED TO
+                        R38-1    48198.   15.25       27244.       7981.       3866.     171.30
       ROUTED TO
+                        R39-1    45019.   17.00       26932.       7979.       3866.     171.30
       HYDROGRAPH AT
+                         1039    25426.   13.50       11279.       3394.       1645.      59.30
       2 COMBINED AT
+                       CP1039    47876.   17.00       33460.      11333.       5512.     230.60
       ROUTED TO
+                        R40-1    46039.   18.00       33077.      11332.       5512.     230.60
       HYDROGRAPH AT
+                         1040    34288.   13.75       16484.       5174.       2512.      81.60
       2 COMBINED AT
+                       CP1040    51502.   14.00       43631.      16459.       8024.     312.20
       ROUTED TO
+                        R42-1    49857.   14.75       43282.      16457.       8024.     312.20
       HYDROGRAPH AT
+                         1042     7313.   12.75        2260.        681.        330.      11.30
       2 COMBINED AT
+                       CP1042    50959.   14.75       43887.      17127.       8354.     323.50
       ROUTED TO
+                        R43-1    48953.   15.75       43405.      17124.       8354.     323.50

*** NORMAL END OF HEC-1 ***
```

Kimley-Horn
and Associates, Inc.

Div24f.out

Future Conditions Diversion Model simplified for the 24-hr event

```
1****************************************                                                    ****************************************
*                                      *                                                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                                    *    U.S. ARMY CORPS OF ENGINEERS      *
*              JUL   1997              *                                                    *    HYDROLOGIC ENGINEERING CENTER     *
*            VERSION 4.1               *                                                    *          609 SECOND STREET           *
*                                      *                                                    *       DAVIS, CALIFORNIA 95616        *
*  RUN DATE   17MAY01  TIME  10:06:39  *                                                    *           (916) 756-1104             *
*                                      *                                                    *                                      *
****************************************                                                    ****************************************


                                          X     X  XXXXXXX   XXXXX           X
                                          X     X  X        X     X         XX
                                          X     X  X        X                X
                                          XXXXXXX  XXXX     X        XXXXX   X
                                          X     X  X        X                X
                                          X     X  X        X     X          X
                                          X     X  XXXXXXX   XXXXX          XXX


THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL   LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1                                          HEC-1 INPUT                                                          PAGE  1

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

              * ***********************************************************************
              *                                                                       *
              *                 Flood Control District of Maricopa County             *
              *                  Agua Fria River Watercourse Master Plan              *
              *             From the New Waddell Dam to the Gila River Confluence     *
              *                              FCD99-24                                 *
              *                                                                       *
              *                           Retention Model                             *
              *                                                                       *
              *                        100-yr, 24-hr storm event                      *
              *                 Prepared by Kimley-Horn and Associates, Inc.          *
              *                          KHA Job No. 091131004                        *
              *                                                                       *
              *                             February 2001                             *
              *                                                                       *
              *   This model has been created using input data from the U.S. Army Corps of   *
              *   Engineers, Los Angeles District report entitled "Agua Fria River Study     *
              *   New Waddell Dam to Gila River Confluence, Arizona" written in July of 1995.*
              *   The intent of this model was to simulate the impact of the current and two *
              *   proposed retention policies to evaluate the impact of development on       *
              *   future flood peaks.                                                        *
              *   The future condition rate impervious values were obtained from the         *
              *   "Standard Project Flood Report for the Agua Fria River", Table 3, pg 14 by *
              *   the Corps of Engineers dated January 1989.                                 *
              *   Diversion volumes were determined from estimating the difference between   *
              *   the future and existing conditions numbers in the Corps of Engineers'      *
              *   report and applying in the equivalent land use values from the ADOT        *
              *   Drainage Design Manual - Hydrology.
              *   The loss rate values were obtained from Table 8, pg 37 of the Corps of     *
              *   Engineers report. These values correspond to the HEC Exponential Loss      *
              *   Rate variables.                                                            *
              *   The subbasin areas were obtained from Table 7, pg 36 of the Corps of       *
              *   Engineers report.                                                          *
              *   The Flood Control District of Maricopa County's software package MCUHP2 was*
              *   used to generate the PB, PC and UI records.  Input data for this program   *
              *   was obtained from Tables 6 and 7, pages 34 and 35 respectively, of the     *
              *   Corps of Engineers report.                                                 *
              *   The IT record (time specification) variable NMIN (integer number of minutes*
              *   in interval) was obtained from Section C on page 15 from the Corps report. *
              *                                                                       *
              * ***********************************************************************
              *
    1         ID   DDM MCUHP2 Agua Fria WMP
    2         ID   THIS MODEL TAKES A SIMPLIFIED APPROACH TO RETENTION.  ALL RUNOFF GENERATED
    3         ID   IN THE SUB-BASIN WILL PASS THROUGH THE RETENTION BASIN. ONCE THE RETENTION
    4         ID   BASIN REACHES CAPACITY, THE HYDROGRAPH AND PEAK FLOWS ARE NO LONGER AFFECTED.
    5         ID   AS A RESULT PEAK FLOWS ARE NOT AFFECTED BY RETENTION BASINS AT ALL.
    6         ID
    7         IT      15                    200
    8         IO       5
              *DIAGRAM
1                                          HEC-1 INPUT                                                          PAGE  2

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


    9         KK    1036
   10         KM   BASIN 1036
```

```
11          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
12          KM    L=     17.0  Lca=      8.0   S=   94.0  Kn= .035  LAG= 137.0
13          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
14          BA   69.00
15          KM   RAINFALL DEPTH OF 4.11 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
16          KM   AN AREAL REDUCTION COEFFICIENT OF  .920 WAS USED
17          PB   3.781
18          KM   THE FOLLOWING PC RECORD USED A 24-HOUR SCS TYPE II RAINFALL
19          PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
20          PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
21          PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
22          PC    .110    .115    .120    .126    .135    .142    .150    .158    .166    .175
23          PC    .184    .195    .208    .224    .243    .266    .318    .479    .678    .716
24          PC    .743    .764    .781    .795    .808    .818    .828    .837    .844    .851
25          PC    .858    .865    .871    .877    .883    .889    .895    .900    .905    .910
26          PC    .915    .919    .923    .927    .931    .935    .939    .943    .947    .951
27          PC    .954    .957    .960    .963    .966    .969    .972    .975    .978    .981
28          PC    .984    .987    .990    .993    .996    .999   1.000
29          LE     .33            2.00           10.00
30          UI   1696.   1696.   4848.   7787.  10629.  13049.  15021.  16062.  16189.  15259.
31          UI  13309.  11041.   9097.   7523.   6263.   5058.   4195.   3443.   2917.   2521.
32          UI   1797.   1723.   1161.   1161.   1125.    413.    413.    413.    413.    413.
33          UI    413.    413.    413.      0.      0.      0.      0.      0.      0.      0.
34          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

35          KK    1036
36          KM   DIVERSION OUT INTO "RETENTION BASIN"
37          DT  D-1036     668
38          DI       0   30000
39          DQ       0   30000
            * DDM   ***** Preserved *****

40          KK   R1036
41          KM   Route the combined runoff hydrograph from SUB-BASIN 1036
42          RM       4     1.0      .2

43          KK    1037
44          KM   BASIN 1037
45          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
46          KM    L=     26.0  Lca=     10.3   S=   70.0  Kn= .035  LAG= 188.0
47          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
48          BA  102.30
49          LE     .33            2.00           15.00
50          UI   1832.   1832.   2235.   5482.   7756.  10010.  12197.  13977.  15791.  16662.
51          UI  17558.  17558.  16911.  16102.  14191.  12413.  10689.   9347.   8210.   7063.
52          UI   6152.   5352.   4656.   4028.   3454.   3087.   2809.   2211.   1942.   1942.
53          UI   1275.   1254.   1254.   1254.    641.    446.    446.    446.    446.    446.
54          UI    446.    446.    446.    446.    446.    446.      0.      0.      0.      0.
55          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
            * DDM   ***** Preserved *****
```



```
LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

56          KK    1037
57          KM   DIVERSION OUT INTO "RETENTION BASIN"
58          DT  D-1037     2240
59          DI       0   40000
60          DQ       0   40000

61          KK  CP1037
            *  This point corresponds to the Bell Road crossing.
62          KM   Combine runoff hydrograph 1037 with runoff from SUB-BASIN 1036
63          HC       2

64          KK   R38-1
            *  All pertinent routing data is summarized in Table 9 of the Corps report.
65          KM   Route the combined hydrograph from CP1037 to CP1038
66          RM       2      .5      .2
            *  Within the Corps report is a concentration point at this location (CP1038),
            *  and it corresponds to the Grand Ave crossing.
            *  No additional runoff added at CP1038.

67          KK   R39-1
68          KM   Route the combined runoff hydrograph from CP 1038 to CP 1039
69          RM       8     1.8      .2

70          KK    1039
71          KM   BASIN 1039
72          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
73          KM    L=     13.8  Lca=      7.9   S=   22.0  Kn= .025  LAG= 119.0
74          KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
75          BA   59.30
76          LE     .33            2.00           30.00
77          UI   1678.   2229.   5861.   9231.  12190.  14648.  15820.  15909.  14748.  12148.
78          UI   9666.   7845.   6309.   4990.   4011.   3238.   2630.   2006.   1778.   1154.
79          UI   1149.    907.    408.    408.    408.    408.    408.    408.    408.      0.
80          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
81          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
            * DDM   ***** Preserved *****

82          KK    1039
83          KM   DIVERSION OUT INTO "RETENTION BASIN"
84          DT  D-1039     2054
85          DI       0   40000
```

```
 86          DQ       0   40000

 87          KK  CP1039
 88          KM   Combine routed hydrograph from CP 1037 and runoff hydrograph 39
 89          HC       2

 90          KK   R40-1
 91          KM   Route the combined runoff hydrograph from CP 1039 to CP 1040
 92          RM       5     1.2      .2
1                                    HEC-1 INPUT                                          PAGE  4

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 93          KK    1040
 94          KM   BASIN 1040
 95          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 96          KM    L=     18.5  Lca=     10.5   S=   15.0  Kn= .020  LAG= 127.0
 97          KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
 98          BA   81.60
 99          LE     .33            2.00           40.00
100          UI   2163.   2377.   7050.  10963.  14538.  18105.  19890.  20732.  19946.  17834.
101          UI  14518.  11810.   9613.   7875.   6323.   5130.   4188.   3453.   2753.   2293.
102          UI   1713.   1481.   1481.    651.    527.    527.    527.    527.    527.    527.
103          UI    527.      0.      0.      0.      0.      0.      0.      0.      0.      0.
104          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * DDM   ***** Preserved *****

105          KK    1040
106          KM   DIVERSION OUT INTO "RETENTION BASIN"
107          DT  D-1040    3395
108          DI       0   40000
109          DQ       0   40000

110          KK  CP1040
             *  This concentration point corresponds to the Interstate 10 crossing.
111          KM   Combine routed hydrograph from CP1039 and runoff hydrograph 40
112          HC       2

113          KK   R42-1
114          KM   Route the combined runoff hydrograph from CP1040 to CP 1042
115          RM       2      .6      .2
             * DDM   ***** Preserved *****

116          KK    1042
117          KM   BASIN 1042
118          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
119          KM    L=      6.9  Lca=      3.2   S=   12.0  Kn= .025  LAG=  72.8
120          KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
121          BA   11.30
122          LE     .33            2.00           35.00
123          UI    523.   1751.   3417.   4644.   4950.   4201.   2960.   2082.   1426.   1004.
124          UI    696.    481.    358.    187.    127.    127.    127.      0.      0.      0.
125          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

126          KK    1042
127          KM   DIVERSION OUT INTO "RETENTION BASIN"
128          DT  D-1042     742
129          DI       0   30000
130          DQ       0   30000

131          KK  CP1042
132          KM   Combine routed hydrograph from CP1040 with runoff hydrograph 42
             *  This concentration point corresponds to the Highway 80 crossing.
133          HC       2
1                                    HEC-1 INPUT                                          PAGE  5

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


134          KK   R43-1
135          KM   Route the combined runoff hydrograph from CP1042 to CP 1043
136          RM       4     1.1      .2
             *  Within the Corps report there is a conc. point at this location (CP1043).
             *  This concentration point corresponds to the Agua Fria & Gila confluence.
             *  Study terminated at Agua Fria River and Gila River confluence.
137          ZZ
1
          SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
 LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.     (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   9        1036
               .
               .
  37           .-------> D-1036
  35        1036
               V
               V
  40       R1036
               .
               .
  43           .        1037
               .           .
```

```
                .           .
   58           .           .-------> D-1037
   56           .       1037
                .           .
                .           .
   61      CP1037............
                V
                V
   64       R38-1
                V
                V
   67       R39-1
                .
                .
   70           .       1039
                .           .
                .           .
   84           .           .-------> D-1039
   82           .       1039
                .           .
                .           .
   87      CP1039............
                V
                V
   90       R40-1
                .
                .
   93           .       1040
                .           .
                .           .
  107           .           .-------> D-1040
  105           .       1040
                .           .
              . .           .
  110      CP1040............
                V
                V
  113       R42-1
                .
                .
  116           .       1042
                .           .
                .           .
  128           .           .-------> D-1042
  126           .       1042
                .           .
                .           .
  131      CP1042............
                V
                V
  134       R43-1
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1****************************************                    ****************************************
*                                      *                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                    *    U.S. ARMY CORPS OF ENGINEERS      *
*              JUL   1997              *                    *    HYDROLOGIC ENGINEERING CENTER     *
*            VERSION 4.1               *                    *          609 SECOND STREET           *
*                                      *                    *       DAVIS, CALIFORNIA 95616        *
*  RUN DATE   17MAY01  TIME  10:06:39  *                    *           (916) 756-1104             *
*                                      *                    *                                      *
****************************************                    ****************************************
```

```
                        DDM MCUHP2 Agua Fria WMP
                        THIS MODEL TAKES A SIMPLIFIED APPROACH TO RETENTION.  ALL RUNOFF GENERATED
                        IN THE SUB-BASIN WILL PASS THROUGH THE RETENTION BASIN. ONCE THE RETENTION
                        BASIN REACHES CAPACITY, THE HYDROGRAPH AND PEAK FLOWS ARE NO LONGER AFFECTED.
                        AS A RESULT PEAK FLOWS ARE NOT AFFECTED BY RETENTION BASINS AT ALL.

   8 IO          OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE

     IT          HYDROGRAPH TIME DATA
                        NMIN          15  MINUTES IN COMPUTATION INTERVAL
                       IDATE      1    0  STARTING DATE
                       ITIME        0000  STARTING TIME
                          NQ         200  NUMBER OF HYDROGRAPH ORDINATES
                      NDDATE      3    0  ENDING DATE
                      NDTIME        0145  ENDING TIME
                      ICENT           19  CENTURY MARK

                  COMPUTATION INTERVAL     .25 HOURS
                       TOTAL TIME BASE   49.75 HOURS

         ENGLISH UNITS
              DRAINAGE AREA          SQUARE MILES
              PRECIPITATION DEPTH    INCHES
              LENGTH, ELEVATION      FEET
              FLOW                   CUBIC FEET PER SECOND
```

STORAGE VOLUME ACRE-FEET
SURFACE AREA ACRES
TEMPERATURE DEGREES FAHRENHEIT

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	1036	23973.	13.75	11214.	3089.	1494.	69.00		
DIVERSION TO	D-1036	9848.	13.75	1188.	337.	162.	69.00		
HYDROGRAPH AT	1036	23973.	13.75	10543.	2759.	1331.	69.00		
ROUTED TO	R1036	22353.	14.75	10418.	2759.	1331.	69.00		
HYDROGRAPH AT	1037	27282.	14.50	16255.	4894.	2373.	102.30		
DIVERSION TO	D-1037	20640.	14.50	4147.	1129.	545.	102.30		
HYDROGRAPH AT	1037	27282.	14.50	13796.	3789.	1828.	102.30		
2 COMBINED AT	CP1037	49277.	14.75	24096.	6548.	3159.	171.30		
ROUTED TO	R38-1	47977.	15.25	23987.	6548.	3159.	171.30		
ROUTED TO	R39-1	43649.	17.00	23579.	6548.	3159.	171.30		
HYDROGRAPH AT	1039	25426.	13.50	11279.	3394.	1645.	59.30		
DIVERSION TO	D-1039	21704.	13.50	3657.	1036.	500.	59.30		
HYDROGRAPH AT	1039	25426.	13.50	8752.	2375.	1146.	59.30		
2 COMBINED AT	CP1039	46507.	17.00	28479.	8923.	4305.	230.60		
ROUTED TO	R40-1	43974.	18.25	27865.	8923.	4305.	230.60		
HYDROGRAPH AT	1040	34288.	13.75	16484.	5174.	2512.	81.60		
DIVERSION TO	D-1040	27985.	13.75	5951.	1712.	826.	81.60		
HYDROGRAPH AT	1040	34288.	13.75	12514.	3496.	1687.	81.60		
2 COMBINED AT	CP1040	46808.	18.25	36243.	12419.	5991.	312.20		
ROUTED TO	R42-1	45438.	19.00	35812.	12419.	5991.	312.20		
HYDROGRAPH AT	1042	7313.	12.75	2260.	681.	330.	11.30		
DIVERSION TO	D-1042	7313.	13.25	1369.	374.	180.	11.30		
HYDROGRAPH AT	1042	5892.	13.25	1096.	309.	149.	11.30		
2 COMBINED AT	CP1042	45608.	19.00	36219.	12728.	6141.	323.50		
ROUTED TO	R43-1	44012.	20.00	35649.	12728.	6141.	323.50		

*** NORMAL END OF HEC-1 ***

Kimley-Horn
and Associates, Inc.

Dive24f2.out

Future Conditions Diversion Model modified for the 24-hr event

```
1****************************************                                                    ****************************************
 *                                      *                                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *              JUL   1997              *                                                    *    HYDROLOGIC ENGINEERING CENTER     *
 *           VERSION 4.1                *                                                    *          609 SECOND STREET           *
 *                                      *                                                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   17MAY01  TIME  10:06:32  *                                                    *           (916) 756-1104             *
 *                                      *                                                    *                                      *
****************************************                                                    ****************************************


                                                X     X  XXXXXXX   XXXXX           X
                                                X     X  X        X     X         XX
                                                X     X  X        X                X
                                                XXXXXXX  XXXX     X        XXXXX   X
                                                X     X  X        X                X
                                                X     X  X        X     X          X
                                                X     X  XXXXXXX   XXXXX         XXX


THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL   LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1                                                HEC-1 INPUT                                                          PAGE  1

     LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

                   * ***********************************************************************
                   *                                                                       *
                   *                  Flood Control District of Maricopa County             *
                   *                   Agua Fria River Watercourse Master Plan             *
                   *              From the New Waddell Dam to the Gila River Confluence    *
                   *                                FCD99-24                               *
                   *                                                                       *
                   *                              Retention Model                          *
                   *                                                                       *
                   *                         100-yr, 24-hr storm event                     *
                   *                 Prepared by Kimley-Horn and Associates, Inc.          *
                   *                            KHA Job No. 091131004                      *
                   *                                                                       *
                   *                              February 2001                            *
                   *                                                                       *
                   *   This model has been created using input data from the U.S. Army Corps of   *
                   *   Engineers, Los Angeles District report entitled "Agua Fria River Study     *
                   *   New Waddell Dam to Gila River Confluence, Arizona" written in July of 1995.*
                   *   The intent of this model was to simulate the impact of the current and two *
                   *   proposed retention policies to evaluate the impact of development on       *
                   *   future flood peaks.                                                        *
                   *   The future condition rate impervious values were obtained from the         *
                   *   "Standard Project Flood Report for the Agua Fria River", Table 3, pg 14 by *
                   *   the Corps of Engineers dated January 1989.                                 *
                   *   Diversion volumes were determined from estimating the difference between   *
                   *   the future and existing conditions numbers in the Corps of Engineers'      *
                   *   report and applying in the equivalent land use values from the ADOT        *
                   *   Drainage Design Manual - Hydrology.
                   *   The loss rate values were obtained from Table 8, pg 37 of the Corps of     *
                   *   Engineers report. These values correspond to the HEC Exponential Loss      *
                   *   Rate variables.                                                            *
                   *   The subbasin areas were obtained from Table 7, pg 36 of the Corps of       *
                   *   Engineers report.                                                          *
                   *   The Flood Control District of Maricopa County's software package MCUHP2 was*
                   *   used to generate the PB, PC and UI records.  Input data for this program   *
                   *   was obtained from Tables 6 and 7, pages 34 and 35 respectively, of the     *
                   *   Corps of Engineers report.                                                 *
                   *   The IT record (time specification) variable NMIN (integer number of minutes*
                   *   in interval) was obtained from Section C on page 15 from the Corps report. *
                   *                                                                             *
                   * ***********************************************************************
                   *
        1          ID   DDM MCUHP2 Agua Fria WMP
        2          ID   THIS MODEL RECOGNIZES THAT NOT ALL RUNOFF GENERATED IN THE SUB-BASINS WILL
        3          ID   BE DIVERTED INTO A RETENTION BASIN. ONLY A PERCENTAGE OF THE RUNOFF, AS
        4          ID   DETERMINED BY THE AMOUNT OF DEVELOPED LAND, WILL BE DIVERTED INTO THE
        5          ID   RETENTION BASIN.
        6          ID
        7          IT      15                    200
        8          IO       5
                   *DIAGRAM
1                                                HEC-1 INPUT                                                          PAGE  2

     LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


        9          KK    1036
       10          KM   BASIN 1036
```

```
11          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
12          KM    L=     17.0  Lca=      8.0   S=   94.0  Kn= .035  LAG= 137.0
13          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
14          BA   69.00
15          KM   RAINFALL DEPTH OF 4.11 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
16          KM   AN AREAL REDUCTION COEFFICIENT OF  .920 WAS USED
17          PB   3.781
18          KM   THE FOLLOWING PC RECORD USED A 24-HOUR SCS TYPE II RAINFALL
19          PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
20          PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
21          PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
22          PC    .110    .115    .120    .126    .135    .142    .150    .158    .166    .175
23          PC    .184    .195    .208    .224    .243    .266    .318    .479    .678    .716
24          PC    .743    .764    .781    .795    .808    .818    .828    .837    .844    .851
25          PC    .858    .865    .871    .877    .883    .889    .895    .900    .905    .910
26          PC    .915    .919    .923    .927    .931    .935    .939    .943    .947    .951
27          PC    .954    .957    .960    .963    .966    .969    .972    .975    .978    .981
28          PC    .984    .987    .990    .993    .996    .999   1.000
29          LE     .33            2.00           10.00
30          UI   1696.   1696.   4848.   7787.  10629.  13049.  15021.  16062.  16189.  15259.
31          UI  13309.  11041.   9097.   7523.   6263.   5058.   4195.   3443.   2917.   2521.
32          UI   1797.   1723.   1161.   1161.   1125.    413.    413.    413.    413.    413.
33          UI    413.    413.    413.      0.      0.      0.      0.      0.      0.      0.
34          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

35          KK    1036
36          KM   DIVERSION OUT INTO "RETENTION BASIN"
37          DT  D-1036     668
38          DI       0   10000  100000
39          DQ       0    1300   13000
            * DDM   ***** Preserved *****

40          KK   R1036
41          KM   Route the combined runoff hydrograph from SUB-BASIN 1036
42          RM       4     1.0      .2

43          KK    1037
44          KM   BASIN 1037
45          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
46          KM    L=     26.0  Lca=     10.3   S=   70.0  Kn= .035  LAG= 188.0
47          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
48          BA  102.30
49          LE     .33            2.00           15.00
50          UI   1832.   1832.   2235.   5482.   7756.  10010.  12197.  13977.  15791.  16662.
51          UI  17558.  17558.  16911.  16102.  14191.  12413.  10689.   9347.   8210.   7063.
52          UI   6152.   5352.   4656.   4028.   3454.   3087.   2809.   2211.   1942.   1942.
53          UI   1275.   1254.   1254.   1254.    641.    446.    446.    446.    446.    446.
54          UI    446.    446.    446.    446.    446.    446.      0.      0.      0.      0.
55          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
            * DDM   ***** Preserved *****
```



```
LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

56          KK    1037
57          KM   DIVERSION OUT INTO "RETENTION BASIN"
58          DT  D-1037     2240
59          DI       0   10000  100000
60          DQ       0    2600   26000

61          KK  CP1037
            *  This point corresponds to the Bell Road crossing.
62          KM   Combine runoff hydrograph 1037 with runoff from SUB-BASIN 1036
63          HC       2

64          KK   R38-1
            *  All pertinent routing data is summarized in Table 9 of the Corps report.
65          KM   Route the combined hydrograph from CP1037 to CP1038
66          RM       2      .5      .2
            *  Within the Corps report is a concentration point at this location (CP1038),
            *  and it corresponds to the Grand Ave crossing.
            *  No additional runoff added at CP1038.

67          KK   R39-1
68          KM   Route the combined runoff hydrograph from CP 1038 to CP 1039
69          RM       8     1.8      .2

70          KK    1039
71          KM   BASIN 1039
72          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
73          KM    L=     13.8  Lca=      7.9   S=   22.0  Kn= .025  LAG= 119.0
74          KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
75          BA   59.30
76          LE     .33            2.00           30.00
77          UI   1678.   2229.   5861.   9231.  12190.  14648.  15820.  15909.  14748.  12148.
78          UI   9666.   7845.   6309.   4990.   4011.   3238.   2630.   2006.   1778.   1154.
79          UI   1149.    907.    408.    408.    408.    408.    408.    408.    408.      0.
80          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
81          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
            * DDM   ***** Preserved *****

82          KK    1039
83          KM   DIVERSION OUT INTO "RETENTION BASIN"
84          DT  D-1039     2054
85          DI       0   10000  100000
```

```
 86          DQ       0    4500   45000

 87          KK  CP1039
 88          KM   Combine routed hydrograph from CP 1037 and runoff hydrograph 39
 89          HC       2

 90          KK   R40-1
 91          KM   Route the combined runoff hydrograph from CP 1039 to CP 1040
 92          RM       5     1.2      .2
1                                    HEC-1 INPUT                                          PAGE  4

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 93          KK    1040
 94          KM   BASIN 1040
 95          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 96          KM    L=      18.5  Lca=      10.5   S=    15.0  Kn= .020  LAG= 127.0
 97          KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
 98          BA   81.60
 99          LE     .33            2.00           40.00
100          UI   2163.   2377.   7050.  10963.  14538.  18105.  19890.  20732.  19946.  17834.
101          UI  14518.  11810.   9613.   7875.   6323.   5130.   4188.   3453.   2753.   2293.
102          UI   1713.   1481.   1481.    651.    527.    527.    527.    527.    527.    527.
103          UI    527.      0.      0.      0.      0.      0.      0.      0.      0.      0.
104          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * DDM   ***** Preserved *****

105          KK    1040
106          KM   DIVERSION OUT INTO "RETENTION BASIN"
107          DT  D-1040    3395
108          DI       0   10000  100000
109          DQ       0    5000   50000

110          KK  CP1040
             *  This concentration point corresponds to the Interstate 10 crossing.
111          KM   Combine routed hydrograph from CP1039 and runoff hydrograph 40
112          HC       2

113          KK   R42-1
114          KM   Route the combined runoff hydrograph from CP1040 to CP 1042
115          RM       2      .6      .2
             * DDM   ***** Preserved *****

116          KK    1042
117          KM   BASIN 1042
118          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
119          KM    L=       6.9  Lca=       3.2   S=    12.0  Kn= .025  LAG=  72.8
120          KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
121          BA   11.30
122          LE     .33            2.00           35.00
123          UI    523.   1751.   3417.   4644.   4950.   4201.   2960.   2082.   1426.   1004.
124          UI    696.    481.    358.    187.    127.    127.    127.      0.      0.      0.
125          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

126          KK    1042
127          KM   DIVERSION OUT INTO "RETENTION BASIN"
128          DT  D-1042     742
129          DI       0   10000  100000
130          DQ       0    7900   79000

131          KK  CP1042
132          KM   Combine routed hydrograph from CP1040 with runoff hydrograph 42
             *  This concentration point corresponds to the Highway 80 crossing.
133          HC       2
1                                    HEC-1 INPUT                                          PAGE  5

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


134          KK   R43-1
135          KM   Route the combined runoff hydrograph from CP1042 to CP 1043
136          RM       4     1.1      .2
             *  Within the Corps report there is a conc. point at this location (CP1043).
             *  This concentration point corresponds to the Agua Fria & Gila confluence.
             *  Study terminated at Agua Fria River and Gila River confluence.
137          ZZ
1
          SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
 LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

 NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

  9         1036
               .
               .
 37             .-------> D-1036
 35         1036
               V
               V
 40        R1036
               .
               .
 43            .         1037
               .            .
```

```
                .           .
  58            .           .-------> D-1037
  56            .       1037
                .           .
                .           .
  61        CP1037............
                V
                V
  64         R38-1
                V
                V
  67         R39-1
                .
                .
  70            .       1039
                .           .
                .           .
  84            .           .-------> D-1039
  82            .       1039
                .           .
                .           .
  87        CP1039............
                V
                V
  90         R40-1
                .
                .
  93            .       1040
                .           .
                .           .
 107            .           .-------> D-1040
 105            .       1040
                .           .
                .           .
 110        CP1040............
                V
                V
 113         R42-1
                .
                .
 116            .       1042
                .           .
                .           .
 128            .           .-------> D-1042
 126            .       1042
                .           .
                .           .
 131        CP1042............
                V
                V
 134         R43-1
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1****************************************                    ****************************************
*                                      *                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                    *    U.S. ARMY CORPS OF ENGINEERS      *
*              JUL   1997              *                    *    HYDROLOGIC ENGINEERING CENTER     *
*           VERSION 4.1                *                    *          609 SECOND STREET           *
*                                      *                    *       DAVIS, CALIFORNIA 95616        *
*  RUN DATE   17MAY01  TIME  10:06:32  *                    *           (916) 756-1104             *
*                                      *                    *                                      *
****************************************                    ****************************************
```

DDM MCUHP2 Agua Fria WMP
THIS MODEL RECOGNIZES THAT NOT ALL RUNOFF GENERATED IN THE SUB-BASINS WILL BE DIVERTED INTO A RETENTION BASIN. ONLY A PERCENTAGE OF THE RUNOFF, AS DETERMINED BY THE AMOUNT OF DEVELOPED LAND, WILL BE DIVERTED INTO THE RETENTION BASIN.

```
  8 IO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

    IT          HYDROGRAPH TIME DATA
                       NMIN          15  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ         200  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      3    0  ENDING DATE
                     NDTIME        0145  ENDING TIME
                     ICENT           19  CENTURY MARK

                 COMPUTATION INTERVAL     .25 HOURS
                      TOTAL TIME BASE   49.75 HOURS

        ENGLISH UNITS
            DRAINAGE AREA          SQUARE MILES
            PRECIPITATION DEPTH    INCHES
            LENGTH, ELEVATION      FEET
            FLOW                   CUBIC FEET PER SECOND
```

STORAGE VOLUME ACRE-FEET
SURFACE AREA ACRES
TEMPERATURE DEGREES FAHRENHEIT

1

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	1036	23973.	13.75	11214.	3089.	1494.	69.00		
DIVERSION TO	D-1036	3116.	13.75	1306.	337.	162.	69.00		
HYDROGRAPH AT	1036	20856.	13.75	9931.	2752.	1331.	69.00		
ROUTED TO	R1036	19512.	14.75	9862.	2752.	1331.	69.00		
HYDROGRAPH AT	1037	27282.	14.50	16255.	4894.	2373.	102.30		
DIVERSION TO	D-1037	7093.	14.50	4210.	1129.	545.	102.30		
HYDROGRAPH AT	1037	20189.	14.50	12085.	3767.	1828.	102.30		
2 COMBINED AT	CP1037	39435.	14.75	21928.	6519.	3159.	171.30		
ROUTED TO	R38-1	38494.	15.25	21841.	6518.	3159.	171.30		
ROUTED TO	R39-1	35901.	17.00	21569.	6517.	3159.	171.30		
HYDROGRAPH AT	1039	25426.	13.50	11279.	3394.	1645.	59.30		
DIVERSION TO	D-1039	11442.	13.50	3842.	1036.	500.	59.30		
HYDROGRAPH AT	1039	13984.	13.50	7698.	2362.	1146.	59.30		
2 COMBINED AT	CP1039	38758.	17.00	26096.	8855.	4305.	230.60		
ROUTED TO	R40-1	37312.	18.00	25928.	8853.	4305.	230.60		
HYDROGRAPH AT	1040	34288.	13.75	16484.	5174.	2512.	81.60		
DIVERSION TO	D-1040	17144.	14.75	6251.	1712.	826.	81.60		
HYDROGRAPH AT	1040	20657.	14.75	10778.	3471.	1687.	81.60		
2 COMBINED AT	CP1040	40281.	18.00	32976.	12289.	5991.	312.20		
ROUTED TO	R42-1	39646.	18.50	32778.	12288.	5991.	312.20		
HYDROGRAPH AT	1042	7313.	12.75	2260.	681.	330.	11.30		
DIVERSION TO	D-1042	5777.	13.75	1384.	374.	180.	11.30		
HYDROGRAPH AT	1042	3320.	13.75	989.	308.	149.	11.30		
2 COMBINED AT	CP1042	39831.	18.50	33185.	12593.	6141.	323.50		
ROUTED TO	R43-1	38908.	19.75	32907.	12592.	6141.	323.50		

*** NORMAL END OF HEC-1 ***