

# FLOOD INSURANCE STUDY

## FEDERAL EMERGENCY MANAGEMENT AGENCY

VOLUME 2 OF 4



## COCONINO COUNTY, ARIZONA

AND INCORPORATED AREAS

COMMUNITY NAME	COMMUNITY NUMBER
COCONINO COUNTY UNINCORPORATED AREAS	040019
FLAGSTAFF, CITY OF	040020
FREDONIA, TOWN OF	040021
HAVASUPAI INDIAN RESERVATION	040023
PAGE, CITY OF	040113
SEDONA, CITY OF	040130
TUSAYAN, TOWN OF	040139
WILLIAMS, CITY OF	040027



# FEMA

**REVISED:**

**March 21, 2023**

FLOOD INSURANCE STUDY NUMBER

04005CV002C

Version Number 2.4.3.5

# TABLE OF CONTENTS

## Volume 1

	<u>Page</u>
<b>SECTION 1.0 – INTRODUCTION</b>	<b>1</b>
1.1 The National Flood Insurance Program	1
1.2 Purpose of this Flood Insurance Study Report	2
1.3 Jurisdictions Included in the Flood Insurance Study Project	2
1.4 Considerations for using this Flood Insurance Study Report	15
<b>SECTION 2.0 – FLOODPLAIN MANAGEMENT APPLICATIONS</b>	<b>27</b>
2.1 Floodplain Boundaries	27
2.2 Floodways	35
2.3 Base Flood Elevations	36
2.4 Non-Encroachment Zones	37
2.5 Coastal Flood Hazard Areas	37
2.5.1 Water Elevations and the Effects of Waves	37
2.5.2 Floodplain Boundaries and BFEs for Coastal Areas	38
2.5.3 Coastal High Hazard Areas	38
2.5.4 Limit of Moderate Wave Action	38
<b>SECTION 3.0 – INSURANCE APPLICATIONS</b>	<b>38</b>
3.1 National Flood Insurance Program Insurance Zones	38
<b>SECTION 4.0 – AREA STUDIED</b>	<b>39</b>
4.1 Basin Description	39
4.2 Principal Flood Problems	43
4.3 Non-Levee Flood Protection Measures	47
4.4 Levees	50
<b>SECTION 5.0 – ENGINEERING METHODS</b>	<b>50</b>
5.1 Hydrologic Analyses	50
5.2 Hydraulic Analyses	63

### Figures – Volume 1

	<u>Page</u>
Figure 1: FIRM Panel Index	17
Figure 2: FIRM Notes to Users	20
Figure 3: Map Legend for FIRM	23
Figure 4: Floodway Schematic	36
Figure 5: Wave Runup Transect Schematic	38
Figure 6: Coastal Transect Schematic	38
Figure 7: Frequency Discharge-Drainage Area Curves	62

# TABLE OF CONTENTS

## Volume 1 *(continued)*

### Tables – Volume 1

	<u>Page</u>
Table 1: Listing of NFIP Jurisdictions	3
Table 2: Flooding Sources Included in this FIS Report	28
Table 3: Flood Zone Designations by Community	38
Table 4: Basin Characteristics	39
Table 5: Principal Flood Problems	43
Table 6: Historic Flooding Elevations	47
Table 7: Non-Levee Flood Protection Measures	47
Table 8: Levees	50
Table 9: Summary of Discharges	51
Table 10: Summary of Non-Coastal Stillwater Elevations	62
Table 11: Stream Gage Information used to Determine Discharges	63
Table 12: Summary of Hydrologic and Hydraulic Analyses	64

### Volume 2

	<u>Page</u>
<b>SECTION 5.0 – ENGINEERING METHODS <i>(continued)</i></b>	
5.3 Coastal Analyses	103
5.3.1 Total Stillwater Elevations	104
5.3.2 Waves	104
5.3.3 Coastal Erosion	104
5.3.4 Wave Hazard Analyses	104
5.4 Alluvial Fan Analyses	104
<b>SECTION 6.0 – MAPPING METHODS</b>	<b>104</b>
6.1 Vertical and Horizontal Control	104
6.2 Base Map	106
6.3 Floodplain and Floodway Delineation	107
6.4 Coastal Flood Hazard Mapping	170
6.5 FIRM Revisions	170
6.5.1 Letters of Map Amendment	170
6.5.2 Letters of Map Revision Based on Fill	170
6.5.3 Letters of Map Revision	171
6.5.4 Physical Map Revisions	171
6.5.5 Contracted Restudies	172
6.5.6 Community Map History	172
<b>SECTION 7.0 – CONTRACTED STUDIES AND COMMUNITY COORDINATION</b>	<b>174</b>
7.1 Contracted Studies	174
7.2 Community Meetings	176
<b>SECTION 8.0 – ADDITIONAL INFORMATION</b>	<b>179</b>
<b>SECTION 9.0 – BIBLIOGRAPHY AND REFERENCES</b>	<b>180</b>

## TABLE OF CONTENTS

### Volume 2 (continued)

#### Figures – Volume 2

Figure 8: 1-Percent-Annual-Chance Total Stillwater Elevations for Coastal Areas	104
Figure 9: Transect Location Map	104

#### Tables – Volume 2

	<u>Page</u>
Table 12: Summary of Hydrologic and Hydraulic Analyses (continued)	96
Table 13: Roughness Coefficients	103
Table 14: Summary of Coastal Analyses	103
Table 15: Tide Gage Analysis Specifics	104
Table 16: Coastal Transect Parameters	104
Table 17: Summary of Alluvial Fan Analyses	104
Table 18: Results of Alluvial Fan Analyses	104
Table 19: Countywide Vertical Datum Conversion	105
Table 20: Stream-Based Vertical Datum Conversion	105
Table 21: Base Map Sources	106
Table 22: Summary of Topographic Elevation Data used in Mapping	108
Table 23: Floodway Data	111
Table 24: Flood Hazard and Non-Encroachment Data for Selected Streams	170
Table 25: Summary of Coastal Transect Mapping Considerations	170
Table 26: Incorporated Letters of Map Change	171
Table 27: Community Map History	173
Table 28: Summary of Contracted Studies Included in this FIS Report	174
Table 29: Community Meetings	177
Table 30: Map Repositories	179
Table 31: Additional Information	180
Table 32: Bibliography and References	181

### Volume 3

#### Exhibits – Volume 3

<u>Flood Profiles</u>	<u>Panel</u>
Baderville Tributary to Rio de Flag	01-03 P
Bow and Arrow Wash	04-07 P
Cataract Creek	08-11 P
Cataract Creek Tributary	12-15 P
Cemetery Wash	16-17 P
Clay Avenue Wash	18-20 P
Clay Avenue Wash Split Flow	21 P
Country Club Wash	22 P
Dewey Grade Wash	23 P
Fanning Drive Wash	24-28 P

# TABLE OF CONTENTS

## Volume 3

### Exhibits - Volume 3 (continued)

<u>Flood Profiles (continued)</u>	<u>Panel</u>
Golf Course Creek	29-30 P
Gravesite Wash	31 P
Harrenburg Wash	32 P
Holy Cross Wash	33 P
Howard Draw Wash	34-35 P
Kanab Creek	36-37 P
Margs Draw Wash	38 P
Memorial Knolls Wash	39-40 P
Memorial Park Wash	41-44 P
Morgan Wash	45-46 P
Mountaineer Wash	47-49 P
Munds Canyon Creek	50-55 P
Munds Park Wash	56-57 P
Oak Creek	58-72 P
O'Neil Springs Wash	73-75 P
O'Neil Tank Wash	76 P
Painted Memorial Wash	77 P
Peaceful Valley Wash	78-79 P
Peak View Wash	80 P
Penstock Avenue Wash	81-83 P
Pumphouse Wash	84-87 P

## Volume 4

### Exhibits – Volume 4

Rio de Flag	88-109 P
Rio de Flag Split Flow	110 P
San Miguel Wash	111 P
Santa Fe Wash East	112-115 P
Santa Fe Wash West	116-119 P
School Soldier Wash	120-124 P
Schoolhouse Draw	125-126 P
Schultz Creek	127-131 P
Sinclair Wash	132-135 P
Soldier Wash	136-138 P
Spruce Avenue Wash	139-143 P
Switzer Canyon Wash	144-155 P
Table Top Airport Wash	156-158 P
Tributary 1 to Baderville Tributary	160 P
Tributary 2 to Baderville Tributary	161 P
Unnamed Wash	162 P
West Street Wash	163-164 P

### **Published Separately**

Flood Insurance Rate Map (FIRM)

**Table 12: Summary of Hydrologic and Hydraulic Analyses (Continued)**

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Spruce Avenue Wash	North of Walmart on Huntington Drive	Approximately 0.1 mile north of crossing the Arizona National Scenic Trail	HEC-1	HEC-2 step-backwater	01/01/1981	AE w/ Floodway	<p>Water-surface elevations in the City of Flagstaff were computed with obstruction of modeled hydraulic structures considered. This approach was considered necessary because of the high debris potential due to urbanization and natural vegetation.</p> <p>The best available mapping was used for approximate study analysis. Approximate study areas, described as lower Spruce Avenue Wash, were studied to determine delineations for the 1-percent-annual-chance flood by use of normal depth calculations using Manning's equation.</p> <p>Shallow flooding occurs along Spruce Avenue Wash from Linda Vista Drive south along Grandview Drive and First and Second Streets to the Atchison, Topeka &amp; Santa Fe Railroad. Shallow flooding occurs between Spruce Avenue Wash and West Street Wash below First Avenue. An area of shallow flooding east of Spruce Avenue Wash occurs between Cedar Avenue south along Rose and Third Streets to just north of Sixth Avenue. Another area of shallow flooding occurs along the northern end of Paradise Road and between Paradise Road and Spruce Avenue Wash north of Park Way.</p>

**Table 12: Summary of Hydrologic and Hydraulic Analyses (Continued)**

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Stoneman Lake	At Stoneman Lake Road	At Lake View Court	Frequency Analysis Regression Equations	Frequency Analysis	03/01/1981	AE	<p>Analyses were carried out to establish the peak elevation-frequency relationships for floods of the selected recurrence intervals for Stoneman Lake. No lake gage records exist for Stoneman Lake. Approximate historic lake elevations were determined from recollections of long-time local residents and observations of high water marks from U.S. Forest Service aerial photographs (USDA 1978). Water-surface elevations were established in June 1980 when they were above normal water elevations.</p> <p>Elevations of various recurrence intervals were determined for Stoneman Lake using a frequency analysis of a synthetic lake record generated by a water-balance accounting model that was calibrated to information on historic lake levels. Documentation of the model development and assumptions are presented in the report <i>Stoneman Lake Elevation-Frequency Analysis, Coconino County, Arizona</i> (Dames &amp; Moore 1982).</p> <p>The hydrologic assumptions used in developing the revision were taken from a report, <i>Methods for Estimating the Magnitude and Frequency of Floods in Arizona</i> (Roeske 1978). Regression equations for the high-elevation region in that report were applied to the study area.</p>
Substation Soldier Wash	Confluence with Soldier Wash	Approximately 2,140 feet US from confluence	HEC-HMS, Version 4.2	HEC-RAS Version 4.1.0	05/30/2018	A	

**Table 12: Summary of Hydrologic and Hydraulic Analyses (Continued)**

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Switzer Canyon Wash	At eastern Route 66 crossing	Approximately 2,800 feet upstream of San Francisco Street crossing	HEC-1	HEC-2 step-backwater, USACE Computer Program 723-X6-L Water – Surface Profiles	04/012004	AE w/ Floodway, AH	<p>The USACE had previously studied Rio de Flag and Sinclair Wash in a 1975 report (USACE - Los Angeles 1975). A study addressing floodflow peaks on Rio de Flag and other tributaries within the City of Flagstaff, including Clay Avenue Wash, Fanning Drive Wash, Sinclair Wash, and Switzer Canyon Wash, was published for the City of Flagstaff in 1979 (Arizona Engineering Company 1979). A complete review of the hydrology of both reports was conducted.</p> <p>The hydrology model from the City of Flagstaff report (Arizona Engineering Company 1979) was adopted with minor modifications for use in this FIS.</p> <p>Water-surface elevations in the City of Flagstaff were computed with obstruction of modeled hydraulic structures considered. This approach was considered necessary because of the high debris potential due to urbanization and natural vegetation.</p> <p>An area of ponding occurs along Switzer Canyon Wash between Huntington Drive and Interstate Highway 40.</p> <p>The revision along Switzer Canyon Wash was based on new detailed flooding for Switzer Canyon Wash produced by the USACE, Los Angeles District, as part of the Limited Map Maintenance Program study for the City of Flagstaff, Arizona. The hydraulic analysis was performed using the USACE Computer Program 723-X6-L Water – Surface Profiles.</p>

**Table 12: Summary of Hydrologic and Hydraulic Analyses (Continued)**

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Switzer Canyon Wash <i>(continued)</i>	At eastern U.S. Route 66 crossing	Approximately 2,800 feet upstream of San Francisco Street crossing	HEC-1	HEC-2 step- backwater, USACE Computer Program 723- X6-L Water – Surface Profiles	04/01/2004	AE w/ Floodway, AH	<p>A hydraulic analysis was performed to determine the channel capacity for Switzer Canyon Wash. Cross sections for the hydraulic analysis were taken from topographic maps at a scale of 1:1,200, with a contour interval of 2 feet (Aerial Mapping Company 1975). Cross sections in all detailed study areas were located at close intervals upstream and downstream of pipe culverts to investigate possible significant backwater effects. All road crossings were surveyed to obtain pipe sizes and elevation data. The portion of Switzer Canyon Wash from the upstream Turquoise Drive crossing to Meadow Lark Drive is an underground pipe which is assumed to be 50- percent open during a 1-percent-annual-chance flood event. The discharge through the pipe was calculated to be 100 cfs by using Chart 6 of the Hydraulic Charts for the Selection of Highway Culverts (USDOT 1965).</p> <p>In this model, there are several apparent locations that produce hydraulic jumps due to culverts and changes in slopes. Just south of Turquoise Drive, the culvert produces high velocities through the structure and a hydraulic jump downstream. Approximately 780 feet southeast of Forest Avenue along the wash, the culvert produces high velocities through the structure and a hydraulic jump downstream. Other locations of hydraulic jumps; southeast of the intersection of Turquoise Drive and Oak Avenue due to the culvert at this location; south of McPhearson Park Driveway due to the culvert at this location; and lastly, approximately 480 feet north of McPhearson Park Driveway and continues to about 670 feet upstream of the channel. The grade slightly increases in this location, thus creating hydraulic jumps in this area.</p>

**Table 12: Summary of Hydrologic and Hydraulic Analyses (Continued)**

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Switzer Canyon Wash <i>(continued)</i>	At eastern Route 66 crossing	Approximately 2,800 feet upstream of San Francisco Street crossing	Discharges obtained from the City of Flagstaff FIS (1996)	HEC-2 step-backwater, USACE Computer Program 723-X6-L Water – Surface Profiles	04/01/2004	AE w/ Floodway, AH	<p>There are several locations showing divided flow, these divided flows appear to be isolated islands and appear to be hydraulically connected both upstream and downstream.</p> <p>There are five locations where supercritical flow conditions occur.</p> <p>Near the mouths of streams studied in detail, floodway computations are made without regard to flood elevations on the receiving water body. Therefore, “Without Floodway” elevations presented in Table 23 for certain downstream cross sections of Switzer Canyon Wash are lower than the regulatory flood elevations in that area, which must take into account the 1-percent-annual-chance flooding due to backwater from other sources.</p>
Table Top Airport Wash	Confluence with Oak Creek	Approximately 2,100 feet US from Creek View Circle Spur	Regression Equations - USGS	HEC-RAS, Version 4.1.0	05/30/2018	AE w/ Floodway	
Tributary 1 To Baderville Tributary	At confluence with Baderville Tributary	Approximately 275 feet west of North Hadrians Walk	Normal-depth calculations	HEC-2 step-backwater, WSPRO, J635	01/01/1981	AE	
Tributary 2 To Baderville Tributary	At confluence with Baderville Tributary	Approximately 75 feet north of North Galloway Trail	Normal-depth calculations	HEC-2 step-backwater, WSPRO, J635	01/01/1981	AE	

**Table 12: Summary of Hydrologic and Hydraulic Analyses (Continued)**

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Unnamed Wash	At West High Country Trail	At Detention Basin	Not Provided	Not Provided	01/01/1981	AE w/ Floodway	The best available mapping was used for approximate study analysis. Approximate study areas, described as Unnamed Wash (intersection of Interstate Highways 40 and 17), were studied to determine delineations for the 1-percent-annual-chance flood by use of normal depth calculations using Manning's equation.
West Fork Oak Creek	Confluence with Oak Creek	Approximately 1,810 feet US from confluence	Regression Equations - USGS	HEC-RAS Version 4.1.0	05/30/2018	A	
West Street Wash	At 6 <sup>th</sup> Avenue	Approximately 0.1 mile east of Cedar Avenue	HEC-1	HEC-2 step- backwater	01/01/1981	AE	<p>Water-surface elevations in the City of Flagstaff were computed with obstruction of modeled hydraulic structures considered. This approach was considered necessary because of the high debris potential due to urbanization and natural vegetation.</p> <p>A drainage pipe at Sixth Avenue intercepts a large portion of the West Street Wash 1-percent-annual-chance discharge. The remaining discharge causes shallow flooding with an average depth of less than 1 foot south of Sixth Avenue, between Izabel Street and East Street.</p> <p>West Street Wash has divided flow between Second and Johnson Avenues.</p>

**Table 12: Summary of Hydrologic and Hydraulic Analyses (Continued)**

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Unnamed Streams, Tucker Flat Wash, Schoolhouse Draw, Pumphouse Wash, Wildcat Canyon Creek, Rio de Flag, Cataract Creek	Various	Various	Not Available	Not Available	04/01/2008	A	
Various Zone A Streams Studied by Approximate Methods within Coconino County	Various	Various	Not Available	Not Available	01/01/1981	A	None
Various Zone A Streams Studied by Approximate Methods within the City of Flagstaff	Various	Various	Not Available	Not Available	01/01/1981	A	None
Various Zone A Streams Studied by Approximate Methods within the Town of Fredonia	Various	Various	Not Available	Not Available	3/01/1981	A	None
Various Zone A Streams Studied by Approximate Methods within the City of Williams	Various	Various	Not Available	Not Available	03/01/1981	A	None

**Table 13: Roughness Coefficients**

Flooding Source	Channel “n”	Overbank “n”
Bow and Arrow Wash	0.017-0.072	0.017-0.200
Cataract Creek	0.014-0.055	0.014-0.077
Cataract Creek Tributary	0.014-0.055	0.014-0.077
Clay Avenue Wash	0.024-0.040	0.030-0.100
Country Club Wash	0.017-0.034	0.031-0.034
Dewey Grade Wash	0.032	0.032-0.12
Fanning Drive Wash	0.017-0.043	0.020-0.053
Golf Course Creek	0.018-0.1	0.018-0.1
Gravesite Wash	0.032	0.018-0.12
Harrenburg Wash	0.045	0.023-0.12
Holy Cross Wash	0.018-0.1	0.018-0.1
Howard Draw Wash	0.030-0.045	0.040-0.055
Margs Draw Wash	0.018-0.1	0.018-0.1
Memorial Knolls Wash	0.018-0.1	0.018-0.1
Memorial Park Wash	0.018-0.1	0.018-0.1
Morgan Wash	0.018-0.1	0.018-0.1
Mountaineer Wash	0.032	0.018-0.12
Munds Canyon Creek	0.018-0.1	0.018-0.1
Munds Park Wash	0.013-0.039	0.030-0.049
Oak Creek	0.018-0.1	0.018-0.1
O’Neil Springs Wash	0.032	0.032-0.12
O’Neil Tank Wash	0.032	0.032-0.12
Painted Memorial Wash	0.018-0.1	0.018-0.1
Peaceful Valley Wash	0.034	0.036
Peak View Wash	0.040-0.053	0.045-0.058
Penstock Avenue Wash	0.015-0.038	0.028-0.150
Pumphouse Wash	0.032-0.075	0.032-0.12
Rio de Flag	0.015-0.061	0.015-0.150
San Miguel Wash	0.018-0.1	0.018-0.1
Santa Fe Wash East	0.015-0.072	0.036-0.107
School Soldier Wash	0.018-0.1	0.018-0.1
Schoolhouse Draw Wash	0.032	0.032-0.12
Schultz Creek	0.015-0.085	0.045-0.120
Sinclair Wash	0.024-0.040	0.045-0.050
Soldier Wash	0.018-0.1	0.018-0.1
Spruce Avenue Wash	0.020-0.040	0.020-0.150
Substation Soldier Wash	0.018-0.1	0.018-0.1
Switzer Canyon Wash	0.030-0.085	: 0.018-0.150
Table Top Airport Wash	0.018-0.1	0.018-0.1
West Fork Oak Creek	0.018-0.1	0.018-0.1
West Street Wash	0.035-0.045	0.050-0.150

**5.3 Coastal Analyses**

This section is not applicable to this Flood Risk Project.

**Table 14: Summary of Coastal Analyses**

[Not Applicable to this Flood Risk Project]

### **5.3.1 Total Stillwater Elevations**

This section is not applicable to this Flood Risk Project.

#### **Figure 8: 1-Percent-Annual-Chance Total Stillwater Elevations for Coastal Areas**

[Not Applicable to this Flood Risk Project]

#### **Table 15: Tide Gage Analysis Specifics**

[Not Applicable to this Flood Risk Project]

### **5.3.2 Waves**

This section is not applicable to this Flood Risk Project.

### **5.3.3 Coastal Erosion**

This section is not applicable to this Flood Risk Project.

### **5.3.4 Wave Hazard Analyses**

This section is not applicable to this Flood Risk Project.

#### **Table 16: Coastal Transect Parameters**

[Not Applicable to this Flood Risk Project]

#### **Figure 9: Transect Location Map**

[Not Applicable to this Flood Risk Project]

## **5.4 Alluvial Fan Analyses**

This section does not apply to this Flood Risk Project.

#### **Table 17: Summary of Alluvial Fan Analyses**

[Not Applicable to this Flood Risk Project.]

#### **Table 18: Results of Alluvial Fan Analyses**

[Not Applicable to this Flood Risk Project.]

## **SECTION 6.0 – MAPPING METHODS**

### **6.1 Vertical and Horizontal Control**

All FIS Reports and FIRMs are referenced to a specific vertical datum. The vertical datum provides a starting point against which flood, ground, and structure elevations can be referenced and compared. Until recently, the standard vertical datum used for newly

created or revised FIS Reports and FIRMs was the National Geodetic Vertical Datum of 1929 (NGVD29). With the completion of the North American Vertical Datum of 1988 (NAVD88), many FIS Reports and FIRMs are now prepared using NAVD88 as the referenced vertical datum.

Flood elevations shown in this FIS Report and on the FIRMs are referenced to NAVD88. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between NGVD29 and NAVD88 or other datum conversion, visit the National Geodetic Survey website at [www.ngs.noaa.gov](http://www.ngs.noaa.gov).

Temporary vertical monuments are often established during the preparation of a flood hazard analysis for the purpose of establishing local vertical control. Although these monuments are not shown on the FIRM, they may be found in the archived project documentation associated with the FIS Report and the FIRMs for this community. Interested individuals may contact FEMA to access these data.

To obtain current elevation, description, and/or location information for benchmarks in the area, please visit the NGS website at [www.ngs.noaa.gov](http://www.ngs.noaa.gov).

The datum conversion locations and values that were calculated for Coconino County are provided in Table 19.

**Table 19: Countywide Vertical Datum Conversion**  
**[Not Applicable to this Flood Risk Project.]**

A countywide conversion factor could not be generated for Coconino County because the maximum variance from average exceeds 0.25 feet. Calculations for the vertical offsets on a stream by stream basis are depicted in Table 20.

**Table 20: Stream-Based Vertical Datum Conversion**

Flooding Source	Average Vertical Datum Conversion Factor (feet)
Baderville Tributary to Rio de Flag	+3.496
Bow and Arrow Wash	+3.382
Cataract Creek	+3.252
Cataract Creek Tributary	+3.287
Cemetary Wash	+3.234
Clay Avenue Wash	+3.412
Clay Avenue Wash Split Flow	+3.412
Country Club Wash	+3.390
Detention Basin	+3.390
Fanning Drive Wash	+3.458
Howard Draw Wash	+3.401
Kanab Creek	+2.952
Morman Lake	+3.400

**Table 20: Stream-Based Vertical Datum Conversion**

Flooding Source	Average Vertical Datum Conversion Factor (feet)
Munds Canyon Creek	+2.842
Munds Park Wash	+3.155
Oak Creek	+2.837
Peaceful Valley Wash	+3.398
Penstock Avenue Wash	+3.435
Rio de Flag	+3.461
Rio de Flag Split Flow	+3.461
Santa Fe Wash East	+3.238
Santa Fe Wash West	+3.231
Sinclair Wash	+3.388
Soldier Wash	+2.648
Spruce Avenue Wash	+3.380/3.460
Stoneman Lake	+3.200
Switzer Canyon Wash	+3.402
Tributary Number 1 to Baderville Tributary	+3.506
Tributary Number 2 to Baderville Tributary	+3.490
Unnamed Wash	+3.390
West Street Wash	+3.435

## 6.2 Base Map

The FIRMs and FIS Report for this project have been produced in a digital format. The flood hazard information was converted to a Geographic Information System (GIS) format that meets FEMA's FIRM Database specifications and geographic information standards. This information is provided in a digital format so that it can be incorporated into a local GIS and be accessed more easily by the community. The FIRM Database includes most of the tabular information contained in the FIS Report in such a way that the data can be associated with pertinent spatial features. For example, the information contained in the Floodway Data table and Flood Profiles can be linked to the cross sections that are shown on the FIRMs. Additional information about the FIRM Database and its contents can be found in FEMA's *Guidelines and Standards for Flood Risk Analysis and Mapping*, [www.fema.gov/flood-maps/guidance-partners/guidelines-standards](http://www.fema.gov/flood-maps/guidance-partners/guidelines-standards).

Base map information shown on the FIRM was derived from the sources described in Table 21.

**Table 21: Base Map Sources**

Data Type	Data Provider	Data Date	Data Scale	Data Description
Aerial Photography	National Agriculture Imagery Program	2017	N/A	Orthoimagery for Coconino County, Arizona

**Table 21: Base Map Sources (continued)**

Data Type	Data Provider	Data Date	Data Scale	Data Description
Base Map Features	Coconino County Public Works	2012	N/A	Coconino County base map features
HUC 8 watersheds for Coconino County, AZ	United States Geological Survey	2018	1:6,000	Subbasin descriptions
Public Land Survey System (range, township, and sections)	Bureau of Land Management and US Forest Service	2006	N/A	Township, range, and section boundary
Roadways - Updated TIGER Roads	U.S Census Bureau	2017	1:12,000	Tiger roads were updated by contractor
USDA-FSA-APFO Digital Ortho Mosaic Coconino County, AZ 2017	USDA-FSA Aerial Photography Field Office	2017	1:24,000	National Agriculture Imagery Program (NAIP) Color Mosaic Image for Yavapai County, AZ
U.S. Geological Survey Digital Orthophoto Quadrangles	USGS	1992 or later	1:12,000	Information derived from U.S. Geological Survey Digital Orthophoto Quadrangles produced at a scale of 1:12,000 from photography dated 1992 or later

### 6.3 Floodplain and Floodway Delineation

The FIRM shows tints, screens, and symbols to indicate floodplains and floodways as well as the locations of selected cross sections used in the hydraulic analyses and floodway computations.

For riverine flooding sources, the mapped floodplain boundaries shown on the FIRM have been delineated using the flood elevations determined at each cross section; between cross sections, the boundaries were interpolated using the topographic elevation data described in Table 22.

In cases where the 1-percent and 0.2-percent-annual-chance floodplain boundaries are close together, only the 1-percent-annual-chance floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

The floodway widths presented in this FIS Report and on the FIRM were computed for certain stream segments on the basis of equal conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. Table 2 indicates the flooding sources for which floodways have been determined. The results of the floodway computations for those flooding sources have been tabulated for selected cross sections and are shown in Table 23, "Floodway Data."

**Table 22: Summary of Topographic Elevation Data used in Mapping**

Community	Flooding Source	Source for Topographic Elevation Data			
		Description	Scale	Contour Interval	Citation
Coconino County, (Unincorporated Areas)	Howard Draw Wash	Aerial Photography	1:12,000	N/A	Aerial Mapping Company 1975
Coconino County, (Unincorporated Areas)	Mormon Lake	Topographic Maps	1:4,800	4 ft	PRC Toups 1978; USDA 1978
Coconino County, (Unincorporated Areas)	Munds Park Wash, Munds Park Wash West, Unnamed Wash 1	LIDAR and Aerial imagery	1 foot pixel resolution	2 ft	Sanborn, 2009a
Coconino County, (Unincorporated Areas)	Pumphouse Wash and associated tributaries	IDAR and Aerial imagery	N/A	2 ft	Sanborn, 2009b
Coconino County, (Unincorporated Areas)	Rio de Flag (north and northeast of the City of Flagstaff)	Aerial Photography	1:14,000	N/A	Aerial Mapping Company 1978d
Coconino County, (Unincorporated Areas)	Stoneman Lake	Topographic Maps	1:1,200	1 ft	USDA 1980
Coconino County, (Unincorporated Areas); Flagstaff, City of	Bow and Arrow Wash, Peak View Wash, Rio de Flag, Schultz Creek, Switzer Canyon Wash	Topographic Maps	N/A 1:24,000	2 ft 20 ft	USGS 1965, 1974
Coconino County, Unincorporated Areas; Flagstaff, City of	Oak Creek, Rio de Flag	Topographic Maps	1:2,400 1:4,800	5 ft 2 ft	USDA, 1971 Flagstaff, 1975

**Table 22: Summary of Topographic Elevation Data used in Mapping (continued)**

Community	Flooding Source	Source for Topographic Elevation Data			
		Description	Scale	Contour Interval	Citation
Coconino County (Unincorporated Areas); Flagstaff, City of	Rio de Flag	Digital Elevation Model, LiDAR, Topographic Maps	10 m, N/A, 1:4,800	10 m, N/A, 4 ft	USGSb, Flagstaff, PRC Toups 1978
Coconino County, (Unincorporated Areas); Flagstaff, City of	(Lower) Rio de Flag	Topographic Maps	1:24,000	20 ft	USACE-HEC 1976
Coconino County, (Unincorporated Areas); Flagstaff, City of	Rio de Flag, Spruce Avenue Wash, Switzer Canyon Wash, Unnamed Wash	Topographic Maps	1:4,800	2 ft	NOAA 1973a
Coconino County, (Unincorporated Areas); Flagstaff, City of	Switzer Canyon Wash	Topographic Maps	1:1,200	2 ft	Aerial Mapping Company 1975
Coconino County, (Unincorporated Areas); Flagstaff, City of	Areas of Shallow Flooding	Topographic Maps	1:4,800	2 ft 4 ft	NOAA 1973a, Dames and Moore 1982
Coconino County, (Unincorporated Areas); Fredonia, Town of; Williams, City of	Cataract Creek, Cataract Creek Tributary, Howard Draw Wash, Munds Park Wash, Rio de Flag (north of Flagstaff), Santa Fe Wash East, Santa Fe Wash West	Topographic Maps	1:4,800	4 ft	PRC Toups 1978
Coconino County, (Unincorporated Areas); Fredonia, Town of; Williams, City of	Cataract Creek, Cataract Creek Tributary, Munds Park Wash, Santa Fe Wash East, Santa Fe Wash West	Aerial Photography	1:14,400	N/A	Aerial Mapping Company 1978a, 1978b
Coconino County, (Unincorporated Areas); Sedona, City of	Munds Canyon Creek, Oak Creek, and Soldier Wash	Topographic Maps	1:2,400	5 ft	USDA 1971

**Table 22: Summary of Topographic Elevation Data used in Mapping (continued)**

Community	Flooding Source	Source for Topographic Elevation Data			
		Description	Scale	Contour Interval	Citation
Coconino County, (Unincorporated Areas); Sedona, City of	Golf Course, Holy Cross Wash, Margs Draw Wash, Memorial Knolls Wash, Memorial Park Wash, Morgan Wash, Munds Canyon Creek, Oak Creek, Painted Memorial Creek, San Miguel Wash, School Soldier Wash, Substation Soldier Wash, Table Top Airport Wash, West Fork Oak Creek	Aerial Photgraphy	N/A	N/A	USDA, 2017
Flagstaff, City of	Clay Avenue Wash	Topographic Maps	1:600	5 ft	WET 1989
Flagstaff, City of	Clay Avenue Wash, Fanning Drive Wash, Rio de Flag (sections within the City of Flagstaff), Sinclair Wash, and Switzer Canyon Wash	Aerial Photography and Topographic Maps	1:6,000 1:4,800	N/A	Flagstaff 1975a, 1975b

BFEs shown at cross sections on the FIRM represent the 1-percent-annual-chance water surface elevations shown on the Flood Profiles and in the Floodway Data tables in the FIS Report. Rounded whole-foot elevations may be shown on the FIRM in areas of ponding, and other areas with static base flood elevations.

**Table 23: Floodway Data**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Baderville Tributary to Rio De Flag								
A	1,940	107	259	1.5	7,304.1	7,304.1	7,305.1	1.0
B	2,795	86	97	4.0	7,305.9	7,305.9	7,306.9	1.0
C	3,212	157	177	2.2	7,307.8	7,307.8	7,308.8	1.0
D	3,270	102	361	1.1	7,311.1	7,311.1	7,311.8	0.7
E	3,585	55	198	2.0	7,311.1	7,311.1	7,311.8	0.7
F	4,230	66	157	1.4	7,311.2	7,311.2	7,312.2	1.0
G	4,870	60	40	5.6	7,314.0	7,314.0	7,314.2	0.2
H	4,916	51	116	1.9	7,315.7	7,315.7	7,316.6	0.9
I	5,845	50	97	2.3	7,316.5	7,316.5	7,317.3	0.8
J	6,255	35	59	3.8	7,318.1	7,318.1	7,318.6	0.5
K	7,280	32	51	2.9	7,322.6	7,322.6	7,323.6	1.0
L	8,150	22	37	4.1	7,327.1	7,327.1	7,328.1	1.0

<sup>1</sup> Feet above confluence with Rio de Flag

<b>TABLE 23</b>	<b>FEDERAL EMERGENCY MANAGEMENT AGENCY</b>	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	
	<b>BADERVILLE TRIBUTARY TO RIO DE FLAG</b>	

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Bow and Arrow Wash								
A	317	57	199	2.1	6,801.6	6,801.6	6,802.6	1.0
B	792	57	67	6.2	6,804.0	6,804.0	6,804.2	0.2
C	1,267	65	105	4.0	6,807.3	6,807.3	6,807.7	0.4
D	1,742	56	67	6.2	6,812.0	6,812.0	6,812.0	0.0
E	2,218	63	78	5.3	6,817.0	6,817.0	6,817.0	0.0
F	2,482	45	102	4.1	6,818.6	6,818.6	6,818.7	0.1
G	2,798	42	60	6.9	6,820.8	6,820.8	6,820.8	0.0
H	3,221	44	94	4.4	6,823.9	6,823.9	6,823.9	0.0
I	3,802	57	67	6.2	6,830.1	6,830.1	6,830.2	0.1
J	3,960	65	102	4.1	6,831.9	6,831.9	6,832.1	0.2
K	4,330	43	61	6.8	6,834.9	6,834.9	6,834.9	0.0
L	5,227	32	70	4.6	6,841.7	6,841.7	6,841.9	0.2
M	5,597	16	37	8.6	6,847.2	6,847.2	6,847.2	0.0
N	6,230	40	94	3.4	6,849.9	6,849.9	6,850.6	0.7
O	6,758	22	41	7.8	6,857.2	6,857.2	6,857.2	0.0
P	7,603	20	60	5.4	6,863.2	6,863.2	6,864.2	1.0
Q	7,920	16	37	8.7	6,866.1	6,866.1	6,866.5	0.4
R	8,237	58	120	2.7	6,868.3	6,868.3	6,868.9	0.6
S	8,659	27	44	7.3	6,872.5	6,872.5	6,872.5	0.0
T	8,818	23	42	7.7	6,876.2	6,876.2	6,876.2	0.0
U	8,971	41	146	2.2	6,878.4	6,878.4	6,878.5	0.1
V	9,086	39	252	1.3	6,883.2	6,883.2	6,883.7	0.5
W	9,213	55	277	1.2	6,883.2	6,883.2	6,883.8	0.6
X	9,890	46	80	4.0	6,885.0	6,885.0	6,885.0	0.0
Y	10,081	55	94	3.4	6,886.3	6,886.3	6,886.4	0.1
Z	10,532	67	121	2.6	6,888.3	6,888.3	6,888.4	0.1
AA	10,982	78	114	2.1	6,890.1	6,890.1	6,890.1	0.0

<sup>1</sup> Feet above confluence with Rio de Flag

<b>TABLE 23</b>	<b>FEDERAL EMERGENCY MANAGEMENT AGENCY</b>	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	<b>BOW AND ARROW WASH</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Bow and Arrow Wash (Cont'd)								
AB	11,112	61	64	3.8	6,890.8	6,890.8	6,890.9	0.1
AC	11,257	46	81	3.0	6,891.3	6,891.3	6,891.6	0.3
AD	11,392	42	80	3.0	6,891.6	6,891.6	6,892.2	0.6
AE	11,484	33	53	4.6	6,891.9	6,891.9	6,892.7	0.8
AF	11,519	40	82	2.9	6,892.3	6,892.3	6,893.1	0.8
AG	11,704	44	103	2.4	6,893.0	6,893.0	6,893.7	0.7
AH	11,747	41	71	3.4	6,893.1	6,893.1	6,893.8	0.7
AI	11,884	53	87	2.8	6,893.7	6,893.7	6,894.3	0.6
AJ	12,011	34	59	4.1	6,894.3	6,894.3	6,895.0	0.7
AK	12,101	41	70	3.5	6,894.6	6,894.6	6,895.2	0.6
AL	12,192	39	86	2.8	6,895.2	6,895.2	6,896.0	0.8
AM	12,361	32	40	6.1	6,895.5	6,895.5	6,896.0	0.5
AN	12,476	52	109	2.2	6,896.0	6,896.0	6,896.7	0.7
AO	12,583	43	76	3.2	6,896.2	6,896.2	6,896.8	0.6
AP	12,743	40	47	4.1	6,896.7	6,896.7	6,897.0	0.3
AQ	12,844	41	56	3.4	6,897.5	6,897.5	6,897.7	0.2
AR	12,896	42	89	2.2	6,898.0	6,898.0	6,898.5	0.5
AS	13,000	34	47	4.1	6,898.1	6,898.1	6,898.9	0.8
AT	13,043	38	89	2.2	6,898.5	6,898.5	6,899.2	0.7
AU	13,195	41	71	2.7	6,898.7	6,898.7	6,899.5	0.8
AV	13,285	43	72	2.1	6,899.4	6,899.4	6,899.9	0.5
AW	13,494	39	72	2.1	6,900.7	6,900.7	6,901.3	0.6
AX	13,557	43	62	2.5	6,900.8	6,900.8	6,901.3	0.5
AY	13,727	37	51	3.0	6,902.3	6,902.3	6,902.6	0.3
AZ	13,960	47	70	2.2	6,903.4	6,903.4	6,903.8	0.4
BA	14,226	36	30	5.3	6,904.9	6,904.9	6,905.0	0.1
BB	14,515	40	38	4.1	6,907.7	6,907.7	6,907.7	0.0
BC	14,932	79	53	2.9	6,912.9	6,912.9	6,912.9	0.0

<sup>1</sup> Feet above confluence with Rio de Flag

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	
		<b>BOW AND ARROW WASH</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Bow and Arrow Wash (Cont'd)								
BD	15,206	47	38	4.1	6,915.1	6,915.1	6,915.1	0.0
BE	15,663	24	25	5.8	6,918.2	6,918.2	6,918.2	0.0
BF	16,326	82	68	2.2	6,924.4	6,924.4	6,924.7	0.3
BG	16,762	72	71	2.1	6,927.8	6,927.8	6,927.9	0.1
BH	16,917	57	60	2.4	6,930.9	6,930.9	6,930.9	0.0
BI	17,448	72	39	3.5	6,932.4	6,932.4	6,932.4	0.0
BJ	17,899	43	38	3.6	6,939.5	6,939.5	6,939.5	0.0
BK	18,462	46	37	3.7	6,946.7	6,946.7	6,946.7	0.0
BL	18,725	30	39	3.5	6,949.3	6,949.3	6,949.3	0.0

<sup>1</sup> Feet above confluence with Rio de Flag

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	
		<b>BOW AND ARROW WASH</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Cataract Creek								
A	634	86	524	7.4	6,707.8	6,707.8	6,708.5	0.7
B	1,478	86	661	8.3	6,715.2	6,715.2	6,715.6	0.4
C	2,429	89	616	6.3	6,717.7	6,717.7	6,718.6	0.9
D	3,432	330	2,069	3.0	6,725.1	6,725.1	6,725.1	0.0
E	4,424	170	842	4.6	6,726.0	6,726.0	6,726.2	0.2
F	5,227	130	1,125	3.6	6,732.6	6,732.6	6,733.6	1.0
G	6,252	250	987	3.7	6,733.3	6,733.3	6,734.2	0.9
H	6,542	44	234	3.3	6,733.7	6,733.7	6,734.6	0.9
I	6,964	44	155	4.9	6,734.3	6,734.3	6,734.8	0.5
J	7,096	29	66	8.6	6,736.4	6,736.4	6,736.4	0.0
K	7,572	35	97	5.9	6,742.7	6,742.7	6,742.8	0.1
L	8,205	33	89	6.4	6,748.2	6,748.2	6,748.3	0.1
M	8,311	100	279	2.5	6,750.6	6,750.6	6,751.3	0.7
N	8,575	80	151	4.5	6,751.5	6,751.5	6,751.8	0.3
O	9,103	40	106	6.4	6,754.0	6,754.0	6,754.0	0.0
P	9,314	45	120	6.9	6,757.9	6,757.9	6,757.9	0.0
Q	9,895	44	109	7.6	6,764.2	6,764.2	6,764.2	0.0
R	10,000	57	106	7.8	6,768.6	6,768.6	6,768.6	0.0
S	10,212	35	107	7.7	6,771.2	6,771.2	6,771.3	0.1
T	10,317	49	167	4.9	6,772.7	6,772.7	6,772.8	0.1
U	10,423	51	198	4.2	6,773.3	6,773.3	6,773.4	0.1
V	10,528	38	169	5.0	6,774.6	6,774.6	6,774.6	0.0
W	10,740	47	157	5.4	6,775.1	6,775.1	6,775.5	0.4
X	10,845	75	292	3.1	6,777.6	6,777.6	6,778.6	1.0
Y	11,109	46	105	8.6	6,779.9	6,779.9	6,779.9	0.0
Z	11,215	73	361	2.5	6,784.0	6,784.0	6,785.0	1.0
AA	11,479	52	112	8.1	6,785.0	6,785.0	6,785.1	0.1
AB	11,584	91	389	2.3	6,787.9	6,787.9	6,788.9	1.0

<sup>1</sup> Feet above confluence with Santa Fe Wash East

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	<b>CATARACT CREEK</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Cataract Creek (Cont'd)								
AC	11,848 <sup>1</sup>	40	108	8.3	6,792.3	6,792.3	6,792.5	0.2
AD	11,954 <sup>1</sup>	95	369	2.7	6,796.2	6,796.2	6,797.1	0.9
AE	12,218 <sup>1</sup>	70	315	3.5	6,801.2	6,801.2	6,801.6	0.4
AF	12,588 <sup>1</sup>	25	99	11.2	6,805.4	6,805.4	6,805.7	0.3
AG	12,957 <sup>1</sup>	40	135	8.2	6,815.3	6,815.3	6,816.3	1.0
AH	13,380 <sup>1</sup>	57	115	8.2	6,824.6	6,824.6	6,824.6	0.0
AI	13,538 <sup>1</sup>	413	2,213	0.5	6,876.8	6,876.8	6,876.8	0.0
AJ	14,330 <sup>1</sup>	320	1,603	0.7	6,876.8	6,876.8	6,876.8	0.0
AK	15,175 <sup>1</sup>	255	1,266	0.9	6,876.8	6,876.8	6,876.8	0.0
AL	15,861 <sup>1</sup>	116	419	2.6	6,876.8	6,876.8	6,876.8	0.0
AM	16,231 <sup>1</sup>	65	153	7.2	6,882.9	6,882.9	6,882.9	0.0
Cataract Creek Tributary								
A	7,603 <sup>2</sup>	55	38	4.8	6,823.7	6,823.7	6,823.7	0.0
B	8,131 <sup>2</sup>	27	30	6.1	6,843.0	6,843.0	6,843.0	0.0
C	8,976 <sup>2</sup>	195	3,875	0.1	6,898.4	6,898.4	6,898.4	0.0
D	9,398 <sup>2</sup>	190	2,196	0.1	6,898.4	6,898.4	6,898.4	0.0
E	9,874 <sup>2</sup>	103	495	0.4	6,898.4	6,898.4	6,898.4	0.0
F	10,085 <sup>2</sup>	41	78	2.4	6,898.4	6,898.4	6,898.4	0.0
G	10,454 <sup>2</sup>	25	30	6.2	6,904.6	6,904.6	6,904.6	0.0
H	10,507 <sup>2</sup>	19	27	6.8	6,909.2	6,909.2	6,909.2	0.0
I	10,771 <sup>2</sup>	43	38	4.9	6,916.2	6,916.2	6,916.2	0.0
J	11,194 <sup>2</sup>	475	7,120	0.1	6,983.5	6,983.5	6,983.5	0.0
K	11,880 <sup>2</sup>	287	2,299	0.2	6,983.5	6,983.5	6,983.5	0.0
L	12,038 <sup>2</sup>	69	100	4.8	6,983.5	6,983.5	6,983.5	0.0

<sup>1</sup> Feet above confluence with Santa Fe Wash East

<sup>2</sup> Feet above confluence with West Cataract Creek

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	<b>CATARACT CREEK-CATARACT CREEK TRIBUTARY</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Cemetery Wash								
A	739 <sup>1</sup>	1,005	1,581	0.2	6,744.2	6,744.2	6,744.2	0.0
B	1,109 <sup>1</sup>	25	48	8.0	6,745.1	6,745.1	6,745.5	0.4
C	2,112 <sup>1</sup>	111	97	4.0	6,758.7	6,758.7	6,759.4	0.7
D	2,218 <sup>1</sup>	34	53	7.2	6,762.3	6,762.3	6,763.2	0.9
E	2,693 <sup>1</sup>	31	65	5.9	6,767.8	6,767.8	6,768.0	0.2
F	3,062 <sup>1</sup>	25	48	8.0	6,772.1	6,772.1	6,772.5	0.4
G	3,274 <sup>1</sup>	60	202	1.9	6,776.3	6,776.3	6,776.3	0.0
H	3,379 <sup>1</sup>	108	341	1.1	6,781.7	6,781.7	6,781.7	0.0
I	3,802 <sup>1</sup>	65	69	5.6	6,784.5	6,784.5	6,784.5	0.0
J	3,907 <sup>1</sup>	25	52	7.4	6,786.4	6,786.4	6,786.4	0.0
K	4,382 <sup>1</sup>	38	61	6.3	6,793.7	6,793.7	6,793.7	0.0
L	4,541 <sup>1</sup>	38	61	6.3	6,797.4	6,797.4	6,797.4	0.0
M	4,910 <sup>1</sup>	43	64	6.0	6,805.2	6,805.2	6,805.2	0.0
Clay Avenue Wash								
A	1,584 <sup>2</sup>	75	287	1.6	6,897.8	6,897.8	6,898.8	1.0
B	2,038 <sup>2</sup>	198	108	4.2	6,898.3	6,898.3	6,899.3	1.0
C	2,244 <sup>2</sup>	158	143	3.1	6,901.9	6,901.9	6,901.9	0.0
D	2,524 <sup>2</sup>	314	206	2.2	6,901.9	6,901.9	6,902.7	0.8
E	2,767 <sup>2</sup>	380	142	3.2	6,903.6	6,903.6	6,903.6	0.0
F	3,084 <sup>2</sup>	220	206	2.2	6,903.9	6,903.9	6,904.7	0.8
G	3,691 <sup>2</sup>	34	62	7.2	6,911.0	6,911.0	6,911.8	0.8
H	4,330 <sup>2</sup>	14	45	10.1	6,928.1	6,928.1	6,928.8	0.7
I	4,884 <sup>2</sup>	27	117	3.9	6,934.6	6,934.6	6,935.4	0.8
J-Z*								

<sup>1</sup> Feet above confluence with West Cataract Creek

<sup>2</sup> Feet above confluence with Rio de Flag

\* Floodway Data Not Computed

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	<b>CEMETARY WASH – CLAY AVENUE WASH</b>

**Table 23: Floodway Data (continued)**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION ( FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Country Club Wash								
A	1,848 <sup>1</sup>	529	3,037	0.0	6,768.5	6,768.5	6,768.5	0.0
B	2,482 <sup>1</sup>	476	1,893	0.1	6,768.5	6,768.5	6,768.5	0.0
C	2,798 <sup>1</sup>	292	630	0.2	6,768.5	6,768.5	6,768.5	0.0
D	2,851 <sup>1</sup>	20	20	5.7	6,770.9	6,770.9	6,770.9	0.0
E	2,904 <sup>1</sup>	151	316	0.4	6,771.5	6,771.5	6,771.5	0.0
F	3,221 <sup>1</sup>	49	135	0.8	6,771.5	6,771.5	6,771.5	0.0
G	3,538 <sup>1</sup>	158	443	0.3	6,771.5	6,771.5	6,771.5	0.0
H	3,590 <sup>1</sup>	24	39	2.9	6,771.5	6,771.5	6,771.5	0.0
I	3,696 <sup>1</sup>	35	41	1.9	6,771.7	6,771.7	6,771.7	0.0
J	4,171 <sup>1</sup>	17	15	5.3	6,775.0	6,775.0	6,775.0	0.0
K	4,330 <sup>1</sup>	30	18	4.4	6,780.4	6,780.4	6,780.6	0.2
L	4,594 <sup>1</sup>	30	24	3.1	6,783.4	6,783.4	6,783.7	0.3
M	5,069 <sup>1</sup>	30	46	1.7	6,784.4	6,784.4	6,784.7	0.3
N	5,174 <sup>1</sup>	13	13	5.7	6,784.6	6,784.6	6,784.6	0.0
O	5,650 <sup>1</sup>	20	18	2.9	6,789.9	6,789.9	6,790.0	0.1

<sup>1</sup>Feet above confluence with Rio de Flag

TABLE 23	<b>FEDERAL EMERGENCY MANAGEMENT AGENCY</b> <b>COCONINO COUNTY, ARIZONA</b> <b>AND INCORPORATED AREAS</b>	<b>FLOODWAY DATA</b>
		<b>FLOODING SOURCE: COUNTRY CLUB WASH</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	404	44	27	4.5	6,742.5	6,742.5	6,742.5	0.0
B	1,113	49	29	4.3	6,758.6	6,758.6	6,758.7	0.1

<sup>1</sup> Feet above confluence with Pumphouse Wash

<b>TABLE 23</b>	FEDERAL EMERGENCY MANAGEMENT AGENCY  <b>COCONINO COUNTY, AZ</b>  AND INCORPORATED AREAS	<b>FLOODWAY DATA</b>
		<b>DEWEY GRADE WASH</b>

**Table 23: Floodway Data (continued)**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION ( FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	613	140	1,131	2.7	6,787.5	6,787.5	6,788.5	1.0
B	803	39	147	5.0	6,787.5	6,787.5	6,788.5	1.0
C	1,109	30	79	9.2	6,791.1	6,791.1	6,791.4	0.3
D	1,510	60	155	4.6	6,801.5	6,801.5	6,802.5	1.0
E	2,677	45	120	6.0	6,821.6	6,821.6	6,822.0	0.4
F	3,369	50	123	5.9	6,828.0	6,828.0	6,828.2	0.2
G	3,781	38	86	8.4	6,834.0	6,834.0	6,834.6	0.6
H	3,960	50	129	5.6	6,834.0	6,834.0	6,834.6	0.6
I	4,430	50	97	7.4	6,836.5	6,836.5	6,837.4	0.9
J-AG*								

<sup>1</sup>Feet above confluence with Rio de Flag

\*Floodway not computed

TABLE 23

**FEDERAL EMERGENCY MANAGEMENT AGENCY  
COCONINO COUNTY, ARIZONA  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**FLOODING SOURCE: FANNING DRIVE WASH**

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	958	40	65	6.6	6,712.8	6,712.8	6,712.8	0.0
B	1,555	47	66	6.5	6,717.3	6,717.3	6,717.6	0.3
C	1,943	45	194	1.0	6,724.2	6,724.2	6,724.2	0.0
D	2,584	31	62	3.1	6,724.5	6,724.5	6,724.5	0.0

<sup>1</sup> Feet above confluence with Pumphouse Wash

<b>TABLE 23</b>	FEDERAL EMERGENCY MANAGEMENT AGENCY  <b>COCONINO COUNTY, AZ</b>  AND INCORPORATED AREAS	<b>FLOODWAY DATA</b>
		<b>GRAVESITE WASH</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	320	79	398	6.8	6,674.1	6,674.1	6,674.9	0.8
B	469	38	206	13.2	6,680.9	6,680.9	6,680.9	0.0
C	1,343	187	1,360	2.0	6,684.0	6,684.0	6,684.0	0.0

<sup>1</sup> Feet above confluence with Pumphouse Wash

<b>TABLE 23</b>	FEDERAL EMERGENCY MANAGEMENT AGENCY  <b>COCONINO COUNTY, AZ</b>  AND INCORPORATED AREAS	<b>FLOODWAY DATA</b>
		<b>HARRENBURG WASH</b>

**Table 23: Floodway Data (continued)**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A-B <sup>2</sup>								
C	893	30	60	7.6	4,143.6	4,143.6	4,143.6	0.0
D	1,012	29	60	7.7	4,148.5	4,148.5	4,148.6	0.1

<sup>1</sup> Stream distance in feet above confluence with Oak Creek  
<sup>2</sup> Cross Sections A-B located in Yavapai County

<b>TABLE 23</b>	<b>FEDERAL EMERGENCY MANAGEMENT AGENCY</b>	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, ARIZONA</b>	<b>FLOODING SOURCE: HOLY CROSS WASH</b>
	<b>AND INCORPORATED AREAS</b>	

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Howard Draw Wash								
A	370	740	10,547	0.4	6,810.6	6,810.6	6,811.4	0.8
B	739	650	9,000	0.5	6,810.6	6,810.6	6,811.4	0.8
C	1,214	810	10,000	0.5	6,810.6	6,810.6	6,811.4	0.8
D	1,954	470	4,535	1.0	6,810.6	6,810.6	6,811.4	0.8
E	2,534	515	3,674	1.2	6,810.6	6,810.6	6,811.4	0.8
F	2,957	365	2,185	2.1	6,810.6	6,810.6	6,811.4	0.8
G	3,749	235	613	7.4	6,811.9	6,811.9	6,812.7	0.8
H	4,382	230	1,164	3.9	6,814.6	6,814.6	6,815.5	0.9
I	5,069	260	1,102	4.1	6,815.9	6,815.9	6,816.7	0.8
J	5,597	230	1,052	4.1	6,817.2	6,817.2	6,818.0	0.8
K	6,494	120	569	7.5	6,819.9	6,819.9	6,820.6	0.7
L	7,075	250	1,791	2.4	6,821.4	6,821.4	6,822.2	0.8
M	7,867	150	760	5.6	6,821.6	6,821.6	6,822.4	0.8
N	8,342	180	580	7.4	6,823.4	6,823.4	6,823.9	0.5
O	9,029	260	1,194	3.6	6,826.1	6,826.1	6,826.9	0.8
P	9,240	240	951	4.5	6,826.7	6,826.7	6,827.3	0.6
Q	9,451	300	575	7.4	6,827.6	6,827.6	6,828.2	0.6
R	9,715	305	1,157	3.7	6,829.3	6,829.3	6,830.2	0.9
S	9,874	250	1,017	4.2	6,829.9	6,829.9	6,830.6	0.7
T	10,454	130	455	8.9	6,831.7	6,831.7	6,832.0	0.3

<sup>1</sup> Feet above Limit of Detailed Study (Limit of Detailed Study is approximately 750 feet downstream of first road crossing)

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	<b>HOWARD DRAW WASH</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET) <sup>2</sup>	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Kanab Creek								
A	230,683	106	1,490	7.0	4,664.4	4,664.4	4,665.2	0.8
B	231,264	114	1,910	5.5	4,665.2	4,665.2	4,666.1	0.9
C	231,845	58	1,050	10.0	4,665.2	4,665.2	4,666.1	0.9
D	232,267	80	1,005	10.4	4,665.4	4,665.4	4,666.2	0.8
E	232,478	69	840	12.5	4,665.4	4,665.4	4,666.2	0.8
F	233,006	47	679	15.5	4,667.5	4,667.5	4,668.0	0.5
G	233,851	88	1,032	10.2	4,672.6	4,672.6	4,672.7	0.1
H	234,854	75	637	16.5	4,674.4	4,674.4	4,674.4	0.0
I	235,541	96	1,408	7.5	4,680.0	4,680.0	4,680.0	0.0
J	236,438	114	721	14.6	4,682.0	4,682.0	4,682.0	0.0
K	237,072	236	1,246	8.4	4,687.3	4,687.3	4,687.3	0.0
L	237,125	254	1,778	5.9	4,696.9	4,696.9	4,696.9	0.0
M	237,178	140	780	13.5	4,696.9	4,696.9	4,696.9	0.0
N	237,389	235	1,516	6.9	4,698.9	4,698.9	4,698.9	0.0
O	238,181	200	1,016	10.3	4,700.7	4,700.7	4,700.7	0.0
P	238,920	205	1,168	9.0	4,704.5	4,704.5	4,705.1	0.6
Q	239,554	110	1,008	10.4	4,706.1	4,706.1	4,707.1	1.0
R	240,557	158	1,613	6.5	4,709.2	4,709.2	4,710.1	0.9

<sup>1</sup> Feet above confluence with Colorado River

<sup>2</sup> Width extends beyond county boundary

TABLE 23

FEDERAL EMERGENCY MANAGEMENT AGENCY

**COCONINO COUNTY, AZ  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**KANAB CREEK**

**Table 23: Floodway Data (continued)**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	193	22	88	11.2	4,183.7	4,183.7	4,183.7	0.0
B	311	24	110	9.0	4,187.3	4,187.3	4,188.2	0.9
C	453	19	92	10.7	4,191.8	4,191.8	4,192.2	0.4
D	645	24	93	10.6	4,200.3	4,200.3	4,200.4	0.1
E	902	29	112	8.8	4,207.9	4,207.9	4,208.2	0.3
F	1,189	20	85	11.6	4,215.5	4,215.5	4,215.6	0.1
G	1,262	25	110	9.0	4,217.2	4,217.2	4,217.9	0.7

<sup>1</sup> Stream distance in feet above confluence with Morgan Wash

TABLE 23

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**COCONINO COUNTY, ARIZONA**  
 AND INCORPORATED AREAS

**FLOODWAY DATA**

**FLOODING SOURCE: MARGS DRAW WASH**

**Table 23: Floodway Data (continued)**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	130	14	54	1.6	4,194.7	4,194.7	4,194.8	0.1
B	221	13	15	5.9	4,199.0	4,199.0	4,199.0	0.0
C	333	16	16	5.6	4,207.2	4,207.2	4,207.3	0.1
D	395	15	23	7.7	4,210.1	4,210.1	4,210.1	0.0
E	420	36	48	2.4	4,213.1	4,213.1	4,213.2	0.1
F	479	25	19	4.5	4,213.6	4,213.6	4,213.6	0.0
G	533	16	16	5.6	4,216.2	4,216.2	4,216.2	0.0
H	667	10	13	6.6	4,222.8	4,222.8	4,222.8	0.0
I	933	9	13	6.7	4,236.6	4,236.6	4,236.6	0.0
J	1,066	8	12	7.1	4,244.2	4,244.2	4,244.3	0.1

<sup>1</sup> Stream distance in feet above confluence with Morgan Wash

TABLE 23

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**COCONINO COUNTY, ARIZONA**  
 AND INCORPORATED AREAS

**FLOODWAY DATA**

**FLOODING SOURCE: MEMORIAL KNOLLS WASH**

**Table 23: Floodway Data (continued)**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	776	13	56	10.7	4,116.7	4,116.7	4,117.0	0.3
B	904	41	64	6.9	4,123.8	4,123.8	4,123.8	0.0
C	1,189	24	54	8.2	4,132.6	4,132.6	4,132.6	0.0
D	1,521	18	50	8.9	4,143.1	4,143.1	4,143.2	0.1
E	1,595	31	57	7.7	4,146.5	4,146.5	4,146.8	0.3
F	1,939	42	65	6.8	4,153.8	4,153.8	4,153.8	0.0
G	2,177	24	60	7.3	4,161.5	4,161.5	4,161.7	0.2
H	2,330	27	56	7.9	4,168.6	4,168.6	4,168.6	0.0
I	2,389	19	54	8.2	4,170.7	4,170.7	4,170.7	0.0
J	2,465	25	93	4.7	4,173.8	4,173.8	4,173.8	0.0
K	2,835	30	51	7.2	4,184.7	4,184.7	4,184.7	0.0
L	3,258	43	60	6.1	4,201.1	4,201.1	4,201.2	0.1
M	3,349	26	49	7.6	4,204.2	4,204.2	4,204.2	0.0
N	3,466	19	148	2.5	4,212.4	4,212.4	4,213.2	0.8
O	3,671	23	62	3.0	4,214.0	4,214.0	4,214.1	0.1
P	3,777	11	19	7.5	4,217.7	4,217.7	4,217.8	0.1
Q	3,912	24	25	5.6	4,222.2	4,222.2	4,222.2	0.0
R	4,138	30	79	1.8	4,232.4	4,232.4	4,232.6	0.2
S	4,266	25	31	4.4	4,234.5	4,234.5	4,234.5	0.0

<sup>1</sup> Stream distance in Feet above confluence with Oak Creek

TABLE 23

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**COCONINO COUNTY, ARIZONA**  
 AND INCORPORATED AREAS

**FLOODWAY DATA**

**FLOODING SOURCE: MEMORIAL PARK WASH**

**Table 23: Floodway Data (continued)**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	699	42	227	12.9	4,163.8	4,163.8	4,163.8	0.0
B	1,108	83	308	9.6	4,173.1	4,173.1	4,173.4	0.3
C	1,480	41	207	12.6	4,182.5	4,182.5	4,182.9	0.4
D	1,973	58	235	11.1	4,193.0	4,193.0	4,193.1	0.1
E	2,746	110	320	8.2	4,215.2	4,215.2	4,215.3	0.1
F	3,410	55	233	11.2	4,231.4	4,231.4	4,231.5	0.1
G	3,657	75	343	7.7	4,242.0	4,242.0	4,242.8	0.8
H	3,947	46	220	11.9	4,247.6	4,247.6	4,247.6	0.0
I	4,194	93	297	8.8	4,254.2	4,254.2	4,254.2	0.0
J	4,362	41	211	12.4	4,258.8	4,258.8	4,258.8	0.0
K	4,687	96	375	7.0	4,267.3	4,267.3	4,267.3	0.0

<sup>1</sup> Stream distance in Feet above confluence with Oak Creek

TABLE 23

**FEDERAL EMERGENCY MANAGEMENT AGENCY  
COCONINO COUNTY, ARIZONA  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**FLOODING SOURCE: MORGAN WASH**

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1,453	63	126	6.5	6,762.4	6,761.3 <sup>2</sup>	6,761.4	0.1
B	2,541	55	150	5.5	6,765.9	6,765.9	6,766.5	0.6
C	3,638	40	96	8.5	6,775.5	6,775.5	6,776.2	0.7
D	5,298	47	66	6.6	6,802.2	6,802.2	6,802.2	0.0
E	6,046	51	88	4.9	6,813.2	6,813.2	6,813.7	0.5

<sup>1</sup>Feet above confluence with Schoolhouse Draw Wash

<sup>2</sup>Elevation computed without consideration of backwater effects from Schoolhouse Draw Wash

<b>TABLE 23</b>	<b>FEDERAL EMERGENCY MANAGEMENT AGENCY</b>  <b>COCONINO COUNTY, AZ</b>  <b>AND INCORPORATED AREAS</b>	<b>FLOODWAY DATA</b>
		<b>MOUNTAINAIRE WASH</b>

**Table 23: Floodway Data (continued)**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	205	107	907	16.2	4,577.2	4,577.2	4,577.5	0.3
B	733	71	784	18.7	4,601.4	4,601.4	4,602.2	0.8
C	1,237	73	790	18.6	4,619.0	4,619.0	4,619.1	0.1
D	1,747	80	817	18.0	4,637.2	4,637.2	4,637.3	0.1
E	2,633	58	733	20.0	4,666.7	4,666.7	4,667.5	0.8
F	3,471	109	906	16.2	4,699.9	4,699.9	4,699.9	0.0
G	4,000	62	747	19.7	4,716.7	4,716.7	4,717.4	0.7
H	4,500	88	842	17.4	4,738.0	4,738.0	4,738.1	0.1
I	5,000	98	867	16.9	4,762.0	4,762.0	4,762.1	0.1
J	5,500	84	829	17.7	4,778.3	4,778.3	4,778.5	0.2
K	6,500	81	848	17.3	4,820.4	4,820.4	4,821.1	0.7
L	7,012	88	839	17.5	4,844.1	4,844.1	4,844.5	0.4
M	7,500	65	761	19.3	4,865.0	4,865.0	4,865.0	0.0
N	8,363	74	826	17.8	4,911.5	4,911.5	4,912.0	0.5
O	9,382	62	750	19.6	4,946.4	4,946.4	4,947.2	0.8
P	10,293	85	834	17.6	4,989.8	4,989.8	4,990.2	0.4
Q	10,816	117	932	15.8	5,019.5	5,019.5	5,020.4	0.9
R	11,288	83	825	17.8	5,041.4	5,041.4	5,042.3	0.9
S	11,732	56	725	20.2	5,067.5	5,067.5	5,067.7	0.2
T	12,273	71	789	18.6	5,087.6	5,087.6	5,088.2	0.6

<sup>1</sup> Stream distance in Feet above confluence with Oak Creek

TABLE 23

**FEDERAL EMERGENCY MANAGEMENT AGENCY  
COCONINO COUNTY, ARIZONA  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**FLOODING SOURCE: MUNDS CANYON CREEK**

**Table 23: Floodway Data (continued)**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
U	12,805	78	830	17.7	5,111.2	5,111.2	5,112.1	0.9
V	13,275	91	852	17.2	5,133.5	5,133.5	5,133.8	0.3
W	13,884	68	774	19.0	5,167.9	5,167.9	5,168.0	0.1

<sup>1</sup> Stream distance in Feet above confluence with Oak Creek

TABLE 23

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**COCONINO COUNTY, ARIZONA**  
 AND INCORPORATED AREAS

**FLOODWAY DATA**

**FLOODING SOURCE: MUNDS CANYON CREEK**

**Table 23: Floodway Data (continued)**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION ( FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	32,419	79	946	13.8	6458.1	6458.1	6458.5	0.4
B	32,736	245	2,791	4.7	6461.7	6461.7	6462.4	0.7
C	33,422	620	7,096	0.9	6462.3	6462.3	6463.0	0.7
D	35,323	700	4,029	1.6	6462.3	6462.3	6463.0	0.7
E	36,326	200	1,014	5.8	6462.3	6462.3	6463.3	1.0
F	37,752	132	565	10.5	6462.3	6462.3	6466.7	0.4
G	38,122	666	8,018	0.7	6479.1	6479.1	6479.1	0.0
H	38,914	1,075	13,166	0.4	6479.1	6479.1	6479.1	0.0
I	39,494	380	1,553	3.8	6479.1	6479.1	6479.1	0.0
J	39,811	175	494	12.0	6481.8	6481.8	6481.8	0.0
K	40,550	127	512	11.5	6493.2	6493.2	6493.2	0.0
L	40,762	85	451	13.1	6499.4	6499.4	6499.4	0.0
M	41,131	117	498	11.9	6505.0	6505.0	6505.0	0.0
N	41,765	116	540	10.9	6516.5	6516.5	6516.5	0.0
O	42,187	86	432	13.7	6525.1	6525.1	6525.1	0.0
P	42,610	91	437	13.5	6532.3	6532.3	6532.3	0.0
Q	43,085	91	458	12.9	6544.6	6544.6	6544.6	0.0
R	44,088	76	433	13.7	6570.7	6570.7	6570.7	0.0

<sup>1</sup>Feet above confluence with Oak Creek

<b>TABLE 23</b>	<b>FEDERAL EMERGENCY MANAGEMENT AGENCY</b>	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, ARIZONA</b>	
	<b>AND INCORPORATED AREAS</b>	<b>FLOODING SOURCE: MUNDS PARK WASH</b>

**Table 23: Floodway Data (continued)**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	186,536	289	2,686	11.2	4,096.1	4,096.1	4,096.8	0.7
B	187,348	306	2,790	10.8	4,104.4	4,104.4	4,105.1	0.7
C	187,552	305	2,988	10.1	4,107.2	4,107.2	4,107.5	0.3
D	188,683	330	2,972	10.1	4,116.0	4,116.0	4,116.5	0.5
E	190,362	426	3,503	8.6	4,132.2	4,132.2	4,132.6	0.4
F	192,189	518	3,514	8.6	4,152.3	4,152.3	4,152.3	0.0
G	193,779	326	2,900	10.0	4,167.3	4,167.3	4,167.3	0.0
H	195,113	288	2,252	12.9	4,178.4	4,178.4	4,178.7	0.3
I	196,000	301	2,685	10.8	4,189.0	4,189.0	4,189.6	0.6
J	196,787	162	2,935	9.7	4,199.6	4,199.6	4,199.6	0.0
K	197,276	466	4,300	6.7	4,203.9	4,203.9	4,204.1	0.2
L	199,007	295	2,745	10.3	4,222.5	4,222.5	4,223.1	0.6
M	200,485	139	1,775	16.0	4,236.1	4,236.1	4,236.4	0.3
N	201,676	420	3,725	7.6	4,251.9	4,251.9	4,252.5	0.6
O	202,943	213	1,877	15.0	4,266.4	4,266.4	4,266.5	0.1
P	204,236	198	1,656	17.0	4,278.9	4,278.9	4,279.4	0.5
Q	206,736	195	1,952	14.4	4,309.7	4,309.7	4,309.7	0.0
R	208,787	280	2,115	13.3	4,337.1	4,337.1	4,337.2	0.1
S	210,510	210	2,203	12.8	4,363.6	4,363.6	4,363.6	0.0
T	211,816	303	2,550	11.0	4,381.7	4,381.7	4,381.7	0.0

<sup>1</sup> Stream distance in Feet above confluence with Verde River

TABLE 23

**FEDERAL EMERGENCY MANAGEMENT AGENCY  
COCONINO COUNTY, ARIZONA  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**FLOODING SOURCE: OAK CREEK**

**Table 23: Floodway Data (continued)**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
U	213,124	313	2,829	9.9	4,403.4	4,403.4	4,403.4	0.0
V	214,370	325	2,580	10.9	4,425.4	4,425.4	4,425.4	0.0
W	215,379	306	2,343	12.0	4,442.5	4,442.5	4,442.5	0.0
X	216,463	514	2,682	10.3	4,457.2	4,457.2	4,457.2	0.0
Y	217,532	369	2,036	13.5	4,472.4	4,472.4	4,472.6	0.2
Z	218,924	371	3,045	9.1	4,499.5	4,499.5	4,499.8	0.3
AA	219,867	152	1,885	14.6	4,516.3	4,516.3	4,516.3	0.0
AB	221,030	377	2,596	10.6	4,538.3	4,538.3	4,538.4	0.1
AC	222,338	272	2,966	9.3	4,569.1	4,569.1	4,569.1	0.0
AD	222,903	125	1,245	16.7	4,573.2	4,573.2	4,573.2	0.0
AE	223,099	191	2,677	7.8	4,581.5	4,581.5	4,581.5	0.0
AF	223,738	132	1,214	17.1	4,592.2	4,592.2	4,592.2	0.0
AG	224,568	128	1,177	17.4	4,608.5	4,608.5	4,608.5	0.0
AH	225,536	252	1,903	10.8	4,631.6	4,631.6	4,631.6	0.0
AI	227,107	129	1,426	14.3	4,669.0	4,669.0	4,669.0	0.0
AJ	229,143	154	1,400	14.6	4,700.1	4,700.1	4,700.1	0.0
AK	230,671	133	1,285	15.9	4,732.9	4,732.9	4,732.9	0.0
AL	231,618	234	2,157	9.5	4,756.3	4,756.3	4,756.3	0.0
AM	232,905	171	1,587	12.9	4,768.2	4,768.2	4,768.2	0.0
AN	234,443	109	1,093	18.1	4,794.2	4,794.2	4,794.2	0.0

<sup>1</sup> Stream distance in Feet above confluence with Verde River

TABLE 23

**FEDERAL EMERGENCY MANAGEMENT AGENCY  
COCONINO COUNTY, ARIZONA  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**FLOODING SOURCE: OAK CREEK**

**Table 23: Floodway Data (continued)**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AO	236,678	195	1,480	13.3	4,834.4	4,834.4	4,834.4	0.0
AP	238,129	101	1,182	16.7	4,856.8	4,856.8	4,856.8	0.0
AQ	239,031	51	858	23.0	4,876.6	4,876.6	4,876.6	0.0
AR	239,735	160	3,379	5.9	4,904.8	4,904.8	4,904.8	0.0
AS	240,987	108	1,308	15.1	4,917.7	4,917.7	4,917.7	0.0
AT	242,501	84	1,041	18.9	4,958.2	4,958.2	4,958.2	0.0
AU	243,504	107	1,129	17.5	4,979.4	4,979.4	4,979.4	0.0
AV	244,522	152	1,263	15.6	5,001.7	5,001.7	5,001.8	0.1
AW	245,574	105	1,147	17.2	5,024.9	5,024.9	5,025.0	0.1
AX	245,693	129	1,901	10.4	5,034.0	5,034.0	5,034.0	0.0
AY	245,846	123	1,647	12.0	5,037.0	5,037.0	5,037.7	0.7
AZ	247,653	170	1,302	15.1	5,083.8	5,083.8	5,083.8	0.0
BA	247,836	234	1,949	10.1	5,094.8	5,094.8	5,094.9	0.1
BB	248,182	180	1,628	12.1	5,100.4	5,100.4	5,100.5	0.1
BC	249,551	109	1,171	16.8	5,132.0	5,132.0	5,132.1	0.1
BD	250,430	125	1,210	16.3	5,161.7	5,161.7	5,161.8	0.1
BE	251,420	111	1,119	17.6	5,188.9	5,188.9	5,189.0	0.1
BF	252,983	109	1,129	17.5	5,217.8	5,217.8	5,217.8	0.0
BG	253,904	143	1,289	15.3	5,235.4	5,235.4	5,235.4	0.0
BH	254,762	144	1,296	15.2	5,253.5	5,253.5	5,253.7	0.2

<sup>1</sup> Stream distance in Feet above confluence with Verde River

TABLE 23

**FEDERAL EMERGENCY MANAGEMENT AGENCY  
COCONINO COUNTY, ARIZONA  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**FLOODING SOURCE: OAK CREEK**

**Table 23: Floodway Data (continued)**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
BI	256,218	166	1,852	9.6	5,275.7	5,275.7	5,275.7	0.0
BJ	257,453	131	1,572	11.3	5,284.9	5,284.9	5,284.9	0.0
BK	259,286	108	1,133	10.4	5,306.8	5,306.8	5,306.8	0.0
BL	260,015	86	847	14.0	5,313.6	5,313.6	5,313.6	0.0
BM	260,995	155	946	12.5	5,330.2	5,330.2	5,330.3	0.1
BN	261,499	138	902	13.1	5,351.4	5,351.4	5,351.4	0.0
BO	262,565	148	1,423	8.3	5,375.3	5,375.3	5,375.3	0.0
BP	263,851	262	1,414	8.4	5,390.8	5,390.8	5,390.8	0.0
BQ	265,725	196	1,484	8.0	5,416.8	5,416.8	5,416.8	0.0
BR	266,560	217	1,081	10.4	5,431.9	5,431.9	5,432.0	0.1
BS	267,497	204	1,067	10.5	5,445.3	5,445.3	5,445.3	0.0
BT	268,722	203	998	11.3	5,469.4	5,469.4	5,469.4	0.0
BU	269,646	79	694	15.9	5,486.6	5,486.6	5,486.6	0.0
BV	270,375	138	926	11.9	5,502.6	5,502.6	5,502.6	0.0
BW	270,481	173	1,087	10.1	5,505.8	5,505.8	5,505.9	0.1
BX	270,628	102	931	11.9	5,509.0	5,509.0	5,509.1	0.1
BY	272,399	137	871	12.7	5,542.6	5,542.6	5,542.6	0.0
BZ	273,988	101	767	14.4	5,578.0	5,578.0	5,578.2	0.2
CA	275,143	122	934	11.8	5,604.9	5,604.9	5,604.9	0.0
CB	275,846	96	734	15.0	5,626.8	5,626.8	5,626.9	0.1
CC	276,830	187	970	11.4	5,652.7	5,652.7	5,652.7	0.0
CD	277,231	102	771	14.3	5,662.4	5,662.4	5,662.5	0.1

<sup>1</sup> Stream distance in Feet above confluence with Verde River

TABLE 23

**FEDERAL EMERGENCY MANAGEMENT AGENCY  
COCONINO COUNTY, ARIZONA  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**FLOODING SOURCE: OAK CREEK**

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	2,293	14	21	6.7	6,735.0	6,735.0	6,735.5	0.5
B	2,447	17	23	6.3	6,750.3	6,750.3	6,750.3	0.0
C	2,856	17	22	6.5	6,789.0	6,789.0	6,789.0	0.0

<sup>1</sup> Feet above confluence with Pumphouse Wash

<b>TABLE 23</b>	FEDERAL EMERGENCY MANAGEMENT AGENCY  <b>COCONINO COUNTY, AZ</b>  AND INCORPORATED AREAS	<b>FLOODWAY DATA</b>
		<b>O'NEIL SPRINGS WASH</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	761	85	87	5.5	6,709.4	6,709.4	6,709.4	0.0
B	985	77	84	5.7	6,714.5	6,714.5	6,715.2	0.7
C	1,166	85	104	4.6	6,716.9	6,716.9	6,717.1	0.2

<sup>1</sup> Feet above confluence with Pumphouse Wash

<b>TABLE 23</b>	FEDERAL EMERGENCY MANAGEMENT AGENCY  <b>COCONINO COUNTY, AZ</b>  AND INCORPORATED AREAS	<b>FLOODWAY DATA</b>
		<b>O'NEIL TANK WASH</b>

**Table 23: Floodway Data (continued)**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	14	13	26	7.0	4,212.6	4,212.6	4,213.2	0.6
B	114	10	22	8.3	4,218.1	4,218.1	4,218.1	0.0
C	265	12	24	7.8	4,222.0	4,222.0	4,222.0	0.0
D	463	18	28	6.5	4,225.9	4,225.9	4,226.0	0.1
E	679	16	32	5.7	4,233.7	4,233.7	4,233.8	0.1
F	832	13	29	6.3	4,237.7	4,237.7	4,238.7	1.0
G	1,022	11	23	8.0	4,243.6	4,243.6	4,243.6	0.0
H	1,116	12	30	6.1	4,246.8	4,246.8	4,247.2	0.4
I	1,164	13	34	5.4	4,248.0	4,248.0	4,248.2	0.2

<sup>1</sup> Stream distance in feet above confluence with Memorial Park Wash

TABLE 23

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**COCONINO COUNTY, ARIZONA**  
 AND INCORPORATED AREAS

**FLOODWAY DATA**

**FLOODING SOURCE: PAINTED MEMORIAL WASH**

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Peaceful Valley Wash								
A	1,690	789	7,485	0.0	6,768.5	6,768.5	6,768.5	0.0
B	2,835	568	3,857	0.0	6,768.5	6,768.5	6,768.5	0.0
C	4,150	408	1,779	0.2	6,768.5	6,768.5	6,768.5	0.0
D	5,306	104	101	3.0	6,771.0	6,771.0	6,771.0	0.0
E	5,856	113	94	2.6	6,773.4	6,773.4	6,773.4	0.0
F	7,498	51	37	4.6	6,786.4	6,786.4	6,786.4	0.0
G	8,659	50	35	4.8	6,795.6	6,795.6	6,796.0	0.4
H	9,293	52	57	3.0	6,800.8	6,800.8	6,801.1	0.3
I	9,715	50	35	4.8	6,806.7	6,806.7	6,807.1	0.4
J	10,032	31	54	3.2	6,808.2	6,808.2	6,809.0	0.8
K	10,771	30	26	5.3	6,818.5	6,818.5	6,819.1	0.6
L	11,669	29	35	4.0	6,828.9	6,828.9	6,829.3	0.4

<sup>1</sup> Feet above confluence with Rio de Flag

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	<b>PEACEFUL VALLEY WASH</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Peak View Wash								
A	68	14	9	2.2	7,112.8	7,112.8	7,112.8	0.0
B	224	12	52	2.0	7,113.0	7,113.0	7,113.1	0.1
C	284	19	69	1.5	7,113.1	7,113.1	7,113.2	0.1
D	421	13	55	1.9	7,113.2	7,113.2	7,113.3	0.1
E	561	18	64	1.6	7,113.3	7,113.3	7,113.4	0.1
F	700	18	56	1.9	7,113.9	7,113.9	7,114.0	0.1
G	755	22	54	2.0	7,114.0	7,114.0	7,114.1	0.1
H	836	17	48	2.2	7,114.1	7,114.1	7,114.1	0.0
I	941	19	66	1.6	7,115.3	7,115.3	7,115.3	0.0
J	1,009	26	16	6.5	7,115.3	7,115.3	7,115.3	0.0
K	1,121	24	24	4.4	7,118.4	7,118.4	7,118.4	0.0
L	1,196	14	45	2.3	7,121.1	7,121.1	7,121.1	0.0
M	1,234	28	23	4.6	7,121.6	7,121.6	7,121.7	0.1
N	1,278	47	27	3.9	7,122.6	7,122.6	7,122.6	0.0

<sup>1</sup> Feet above confluence with Rio de Flag

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	<b>PEAK VIEW WASH</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Penstock Avenue Wash								
A	158	24	99	1.4	6,770.8	6,770.8	6,771.8	1.0
B	422	28	45	3.1	6,772.0	6,772.0	6,772.3	0.3
C	634	30	34	4.1	6,772.1	6,772.1	6,772.7	0.6
D	797	30	40	3.5	6,773.7	6,773.7	6,774.5	0.8
E	1,172	30	184	0.7	6,773.8	6,773.8	6,774.8	1.0
F	1,478	18	21	6.2	6,774.7	6,774.7	6,774.7	0.0
G	1,790	14	25	5.2	6,777.7	6,777.7	6,778.1	0.4
H	1,890	15	20	6.6	6,779.9	6,779.9	6,779.9	0.0
I	2,186	20	22	5.9	6,782.5	6,782.5	6,782.5	0.0
J	2,371	36	52	2.1	6,783.6	6,783.6	6,784.1	0.5
K	2,693	30	24	4.6	6,784.1	6,784.1	6,784.5	0.4
L	3,136	30	24	4.6	6,785.9	6,785.9	6,786.3	0.4
M	3,284	19	20	5.1	6,787.3	6,787.3	6,787.3	0.0
N	3,416	18	18	5.5	6,788.2	6,788.2	6,788.2	0.0
O	3,680	23	34	2.5	6,789.5	6,789.5	6,789.5	0.0
P	3,860	22	43	2.0	6,791.4	6,791.4	6,791.4	0.0
Q	3,965	15	15	5.7	6,795.4	6,795.4	6,795.4	0.0
R	4,150	24	41	1.7	6,796.3	6,796.3	6,796.3	0.0
S	4,425	13	22	3.2	6,799.3	6,799.3	6,799.3	0.0
T	4,536	24	48	1.2	6,802.5	6,802.5	6,802.5	0.0
U	4,704	20	35	1.7	6,804.0	6,804.0	6,804.0	0.0
V	4,873	14	15	3.8	6,809.9	6,809.9	6,809.9	0.0
W	5,064	13	11	5.2	6,812.7	6,812.7	6,812.7	0.0
X-Z*								

<sup>1</sup> Feet above confluence with Rio de Flag

\* Data Not Available

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	<b>PENSTOCK AVENUE WASH</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0	108	814	9.4	6,644.4	6,644.4	6,644.4	0.0
B	1,414	145	1,071	7.1	6,650.4	6,650.4	6,651.0	0.6
C	2,377	136	775	9.8	6,653.9	6,653.9	6,654.4	0.5
D	3,988	121	741	10.3	6,662.4	6,662.4	6,663.0	0.6
E	5,635	156	1,353	5.6	6,670.1	6,670.1	6,670.4	0.3
F	7,221	93	817	5.9	6,679.8	6,679.8	6,680.0	0.2
G	7,901	123	700	6.9	6,683.0	6,683.0	6,683.4	0.4
H	10,063	91	401	12.0	6,692.2	6,692.2	6,692.5	0.3
I	11,089	140	840	5.7	6,700.2	6,700.2	6,700.2	0.0
J	12,376	200	769	6.1	6,704.2	6,704.2	6,704.2	0.0
K	13,658	540	1,099	4.3	6,707.2	6,707.2	6,707.5	0.3
L	14,023	445	703	6.6	6,708.9	6,708.9	6,709.1	0.2
M	14,816	445	731	5.5	6,715.9	6,715.9	6,716.0	0.1
N	15,194	104	1,059	3.8	6,727.3	6,727.3	6,727.3	0.0
O	16,690	165	296	7.4	6,730.0	6,730.0	6,730.0	0.0
P	17,767	143	316	7.0	6,738.9	6,738.9	6,739.1	0.2
Q	18,715	118	266	7.7	6,746.5	6,746.5	6,746.5	0.0
R	19,566	142	275	7.5	6,756.8	6,756.8	6,756.9	0.1

<sup>1</sup> Feet above Limit of Study located approximately 2.3 mi upstream of confluence with Fry Canyon

<b>TABLE 23</b>	<b>FEDERAL EMERGENCY MANAGEMENT AGENCY</b>  <b>COCONINO COUNTY, AZ</b>  <b>AND INCORPORATED AREAS</b>	<b>FLOODWAY DATA</b>
		<b>PUMPHOUSE WASH</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
S	20,645	107	377	5.5	6,766.0	6,766.0	6,766.6	0.6
T	21,840	99	287	7.2	6,781.1	6,781.1	6,781.1	0.0
U	23,130	63	268	7.7	6,797.3	6,797.3	6798.1	0.8
V	23,627	35	167	12.3	6,807.3	6,807.3	6,807.3	0.0

<sup>1</sup> Feet above Limit of Study located approximately 2.3 mi upstream of confluence with Fry Canyon

<b>TABLE 23</b>	FEDERAL EMERGENCY MANAGEMENT AGENCY  <b>COCONINO COUNTY, AZ</b>  AND INCORPORATED AREAS	<b>FLOODWAY DATA</b>
		<b>PUMPHOUSE WASH</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Rio De Flag								
A	15,307	101	572	7.8	6,525.3	6,525.3	6,526.3	1.0
B	16,336	91	595	7.5	6,530.4	6,530.4	6,531.3	0.9
C	17,041	70	394	8.9	6,533.5	6,533.5	6,533.8	0.3
D	18,064	59	533	6.6	6,538.8	6,538.8	6,539.4	0.6
E	18,738	67	299	11.7	6,540.7	6,540.7	6,540.7	0.0
F	19,697	68	457	7.7	6,546.7	6,546.7	6,547.2	0.5
G	20,531	69	423	8.3	6,549.3	6,549.3	6,550.2	0.9
H	21,786	52	331	10.6	6,558.5	6,558.5	6,559.5	1.0
I	21,922	72	764	4.6	6,563.5	6,563.5	6,564.5	1.0
J	22,399	46	454	7.7	6,563.7	6,563.7	6,564.6	0.9
K	23,677	91	399	8.8	6,569.5	6,569.5	6,570.0	0.5
L	24,493	96	416	8.4	6,581.5	6,581.5	6,581.7	0.2
M	26,705	69	371	9.4	6,605.1	6,605.1	6,605.7	0.6
N	27,500	171	467	7.5	6,612.7	6,612.7	6,613.1	0.4
O	27,669	137	1,593	2.1	6,624.5	6,624.5	6,625.4	0.9
P	30,716	668	2,685	1.3	6,624.8	6,624.8	6,625.7	0.9
Q	31,755	427	840	4.0	6,625.3	6,625.3	6,626.2	0.9
R	34,749	84	593	5.7	6,641.5	6,641.5	6,642.5	1.0
S	36,090	46	252	13.4	6,682.6	6,682.6	6,682.8	0.2
T	36,913	103	586	5.8	6,736.5	6,736.5	6,736.9	0.4
U	37,334	156	861	3.9	6,737.9	6,737.9	6,738.2	0.3
V	37,865	167	1,002	3.4	6,738.5	6,738.5	6,739.0	0.5
W	39,292	116	539	6.3	6,740.0	6,740.0	6,740.9	0.9
X	39,660	169	1,901	1.8	6,749.2	6,749.2	6,749.4	0.2
Y	40,946	243	3,159	1.1	6,758.0	6,758.0	6,758.2	0.2
Z	41,042	255	3,695	0.9	6,758.0	6,758.0	6,758.2	0.2
AA	44,649	93	1,035	3.1	6,758.4	6,758.4	6,758.6	0.2

<sup>1</sup> Feet above confluence with San Francisco Wash

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	<b>RIO DE FLAG</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Rio De Flag (Cont'd)								
AB	45,794	171	2,395	1.4	6,768.5	6,768.5	6,768.5	0.0
AC	46,955	848	8,405	0.4	6,768.5	6,768.5	6,768.5	0.0
AD	48,275	833	11,670	0.3	6,768.5	6,768.5	6,768.5	0.0
AE	49,701	786	10,110	0.3	6,768.5	6,768.5	6,768.5	0.0
AF	50,651	1,813	21,512	0.2	6,768.5	6,768.5	6,768.5	0.0
AG	52,605	890	9,410	0.3	6,768.5	6,768.5	6,768.5	0.0
AH	54,136	1,297	7,133	0.5	6,768.7	6,768.7	6,768.7	0.0
AI	54,981	462	1,736	1.9	6,768.7	6,768.7	6,768.7	0.0
AJ	55,403	194	520	6.3	6,768.7	6,768.7	6,768.7	0.0
AK	55,509	399	1,373	2.4	6,772.0	6,772.0	6,772.0	0.0
AL	56,195	346	2,168	1.5	6,772.1	6,772.1	6,772.1	0.0
AM	57,410	579	2,684	1.2	6,772.3	6,772.3	6,772.3	0.0
AN	58,835	251	1,037	3.1	6,772.5	6,772.5	6,772.5	0.0
AO	59,786	146	416	7.8	6,772.9	6,772.9	6,773.4	0.5
AP	60,630	245	966	3.4	6,775.4	6,775.4	6,776.1	0.7
AQ	62,162	129	465	7.0	6,777.5	6,777.5	6,778.3	0.8
AR	62,426	53	339	9.6	6,778.1	6,778.1	6,779.1	1.0
AS	62,690	90	450	7.4	6,779.4	6,779.4	6,780.3	0.9
AT	62,954	382	862	3.8	6,781.9	6,781.9	6,782.0	0.1
AU	63,746	285	1,195	2.7	6,782.5	6,782.5	6,782.6	0.1
AV	64,907	146	573	5.7	6,782.7	6,782.7	6,783.1	0.4
AW	65,594	166	461	7.1	6,786.2	6,786.2	6,786.9	0.7
AX	66,227	216	947	3.4	6,788.2	6,788.2	6,789.2	1.0
AY	66,755	137	661	4.9	6,788.9	6,788.9	6,789.8	0.9
AZ	67,125	180	820	4.0	6,789.3	6,789.3	6,790.3	1.0
BA	67,494	267	1,315	2.4	6,790.0	6,790.0	6,790.7	0.7
BB	68,339	304	1,626	1.9	6,790.3	6,790.3	6,791.0	0.7
BC	68,603	275	1,309	2.4	6,790.3	6,790.3	6,791.0	0.7

<sup>1</sup> Feet above confluence with San Francisco Wash

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	<b>RIO DE FLAG</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Rio De Flag (Cont'd)								
BD	68,867	290	2,720	1.2	6,793.6	6,793.6	6,793.7	0.1
BE	69,501	160	1,427	2.2	6,793.7	6,793.7	6,793.7	0.0
BF	71,085	134	978	3.2	6,793.8	6,793.8	6,794.0	0.2
BG	72,827	210	1,564	2.0	6,794.1	6,794.1	6,794.5	0.4
BH	73,830	190	1,204	2.5	6,794.3	6,794.3	6,794.7	0.4
BI	74,306	240	1,455	2.1	6,794.4	6,794.4	6,794.9	0.5
BJ	75,837	340	1,470	2.1	6,794.6	6,794.6	6,795.3	0.7
BK	76,418	170	515	5.9	6,794.6	6,794.6	6,795.4	0.8
BL	77,790	125	639	4.8	6,798.0	6,798.0	6,798.8	0.8
BM	79,005	135	775	3.9	6,799.5	6,799.5	6,800.4	0.9
BN	79,744	60	372	8.2	6,800.1	6,800.1	6,800.9	0.8
BO	80,747	240	1,289	2.4	6,801.9	6,801.9	6,802.8	0.9
BP	81,064	209	1,042	2.6	6,802.1	6,802.1	6,802.9	0.8
BQ	81,275	40	208	13.0	6,806.6	6,806.6	6,806.6	0.0
BR	81,434	40	209	12.9	6,810.3	6,810.3	6,810.3	0.0
BS	81,750	166	1,811	1.5	6,813.9	6,813.9	6,813.9	0.0
BT	82,014	47	312	8.7	6,813.9	6,813.9	6,813.9	0.0
BU	82,701	210	2,493	1.1	6,814.9	6,814.9	6,815.0	0.1
BV	83,440	113	1,276	2.1	6,814.9	6,814.9	6,815.0	0.1
BW	84,074	91	680	4.0	6,814.9	6,814.9	6,815.0	0.1
BX	84,549	86	314	8.6	6,816.4	6,816.4	6,814.4	0.0
BY	84,918	103	712	3.8	6,818.5	6,818.5	6,818.6	0.1
BZ	85,394	74	276	9.8	6,820.3	6,820.3	6,820.3	0.0
CA	85,869	64	278	9.7	6,825.5	6,825.5	6,825.6	0.1
CB	86,872	90	322	8.4	6,842.3	6,842.3	6,842.3	0.0
CC	87,136	65	286	9.4	6,844.6	6,844.6	6,844.6	0.0
CD	87,717	63	353	7.7	6,847.8	6,847.8	6,848.6	0.8
CE	87,981	127	421	6.4	6,849.2	6,849.2	6,850.0	0.8

<sup>1</sup> Feet above confluence with San Francisco Wash

TABLE 23

FEDERAL EMERGENCY MANAGEMENT AGENCY

**COCONINO COUNTY, AZ  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**RIO DE FLAG**

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Rio De Flag (Cont'd)								
CF	88,245	107	240	7.7	6,853.0	6,853.0	6,853.0	0.0
CG	88,562	91	222	8.3	6,861.0	6,861.0	6,861.0	0.0
CH	89,142	35	154	12.0	6,871.7	6,871.7	6,871.7	0.0
CI	89,723	51	139	9.8	6,881.5	6,881.5	6,881.5	0.0
CJ	90,040	145	300	6.2	6,887.9	6,887.9	6,887.9	0.0
CK	90,198	115	424	4.4	6,889.7	6,889.7	6,889.7	0.0
CL	90,304	110	246	7.5	6,889.7	6,889.7	6,889.7	0.0
CM	90,410	105	463	4.0	6,891.4	6,891.4	6,891.4	0.0
CN	90,568	102	268	6.9	6,891.8	6,891.8	6,891.8	0.0
CO	90,674	83	426	4.3	6,893.1	6,893.1	6,893.1	0.0
CP	91,466	215	1,114	1.7	6,894.7	6,894.7	6,895.5	0.8
CQ	91,730	245	942	2.0	6,895.1	6,895.1	6,896.1	1.0
CR	91,941	230	579	3.2	6,895.1	6,895.1	6,896.1	1.0
CS	92,099	215	405	3.6	6,896.1	6,896.1	6,897.0	0.9
CT	92,733	197	583	2.4	6,897.4	6,897.4	6,898.1	0.7
CU	92,838	190	500	2.8	6,897.6	6,897.6	6,898.3	0.7
CV	93,261	220	1,022	1.4	6,902.0	6,902.0	6,902.6	0.6
CW	93,525	105	840	1.7	6,905.3	6,905.3	6,905.7	0.4
CX	94,106	234	227	4.0	6,905.8	6,905.8	6,906.4	0.6
CY	94,422	200	754	1.9	6,907.5	6,907.5	6,907.7	0.2
CZ	94,739	200	1,096	1.3	6,907.8	6,907.8	6,908.4	0.6
DA	95,162	225	338	4.1	6,908.7	6,908.7	6,909.5	0.8
DB	95,426	235	431	3.2	6,910.8	6,910.8	6,911.6	0.8
DC	95,584	240	773	1.8	6,911.7	6,911.7	6,912.7	1.0
DD	95,848	166	281	5.0	6,914.4	6,914.4	6,914.7	0.3
DE	96,059	146	305	4.6	6,915.8	6,915.8	6,916.7	0.9
DF	96,218	104	286	4.9	6,918.2	6,918.2	6,918.2	0.0
DG	96,323	112	560	2.5	6,918.4	6,918.4	6,918.7	0.3

<sup>1</sup> Feet above confluence with San Francisco Wash

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	
		<b>RIO DE FLAG</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Rio De Flag (Cont'd)								
DH	96,537	60	159	8.8	6,918.4	6,918.4	6,919.0	0.6
DI	96,904	242	249	5.6	6,932.0	6,932.0	6,932.3	0.3
DJ	97,326	149	572	2.4	6,932.8	6,932.8	6,933.5	0.7
DK	97,485	60	162	8.6	6,932.8	6,932.8	6,933.4	0.6
DL	97,749	45	213	6.6	6,934.7	6,934.7	6,935.7	1.0
DM	97,802	92	472	3.0	6,937.7	6,937.7	6,938.7	1.0
DN	98,382	47	140	10.0	6,939.5	6,939.5	6,939.5	0.0
DO	98,910	45	213	6.6	6,944.5	6,944.5	6,944.5	0.0
DP	99,069	72	330	4.2	6,946.8	6,946.8	6,946.8	0.0
DQ	99,438	30	121	11.6	6,948.0	6,948.0	6,948.0	0.0
DR	99,966	49	253	5.5	6,952.6	6,952.6	6,952.8	0.2
DS	100,283	21	108	13.0	6,953.7	6,853.7	6,853.7	0.0
DT	100,389	51	246	5.7	6,957.0	6,957.0	6,957.1	0.1
DU	100,706	53	202	6.9	6,958.1	6,958.1	6,958.1	0.0
DV	101,075	45	180	7.4	6,960.5	6,960.5	6,960.5	0.0
DW	101,498	37	172	7.8	6,963.0	6,963.0	6,963.0	0.0
DX	101,550	28	116	11.7	6,963.0	6,963.0	6,963.0	0.0
DY	102,026	53	864	5.1	6,967.2	6,967.2	6,967.2	0.0
DZ	102,659	132	356	3.8	6,969.1	6,969.1	6,969.1	0.0
EA	103,398	112	423	3.2	6,970.5	6,970.5	6,970.5	0.0
EB	103,451	27	115	11.8	6,971.0	6,971.0	6,971.0	0.0
EC	103,557	27	245	5.5	6,976.3	6,976.3	6,976.3	0.0
ED	103,926	69	376	3.5	6,977.0	6,977.0	6,977.1	0.1
EE	104,877	38	125	10.4	6,992.4	6,992.4	6,992.4	0.0
EF	106,250	64	287	4.5	7,002.7	7,002.7	7,003.1	0.4
EG	106,989	68	153	8.5	7,008.4	7,008.4	7,008.4	0.0
EH	107,781	33	119	10.9	7,030.6	7,030.6	7,030.6	0.0
EI	108,150	129	315	4.1	7,036.2	7,036.2	7,036.2	0.0

<sup>1</sup> Feet above confluence with San Francisco Wash

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	
		<b>RIO DE FLAG</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Rio De Flag (Cont'd)								
EJ	108,837	58	145	9.0	7,058.8	7,058.8	7,058.8	0.0
EK	109,347	170	278	4.3	7,086.7	7,086.7	7,086.7	0.0
EL	109,688	127	180	6.7	7,087.1	7,087.1	7,087.1	0.0
EM	109,979	61	288	4.2	7,091.7	7,091.7	7,091.8	0.1
EN	110,677	53	206	5.8	7,099.7	7,099.7	7,099.7	0.0
EO	111,648	39	154	7.8	7,108.3	7,108.3	7,108.3	0.0
EP	111,764	43	281	4.3	7,109.5	7,109.5	7,109.5	0.0
EQ	112,489	63	296	4.1	7,116.1	7,116.1	7,116.2	0.1
ER	112,945	83	318	3.8	7,121.5	7,121.5	7,121.9	0.4
ES	113,177	85	156	7.7	7,125.4	7,125.4	7,125.4	0.0
ET	113,560	75	237	5.1	7,126.9	7,126.9	7,127.2	0.3
EU	113,996	71	287	4.2	7,131.9	7,131.9	7,132.4	0.5
EV	114,589	60	235	5.1	7,142.2	7,142.2	7,142.9	0.7
EW	115,846	37	121	9.1	7,152.7	7,152.7	7,153.2	0.5
EX	115,972	36	178	6.2	7,155.2	7,155.2	7,156.2	1.0
EY	117,134	45	121	9.1	7,165.9	7,165.9	7,166.8	0.9
EZ	118,401	47	159	6.9	7,180.7	7,180.7	7,181.6	0.9
FA	119,668	45	122	9.0	7,211.9	7,211.9	7,212.6	0.7
FB	120,777	50	130	8.4	7,241.8	7,241.8	7,242.6	0.8
FC	121,886	58	146	7.6	7,259.6	7,259.6	7,260.3	0.7
FD	122,942	80	232	4.7	7,269.3	7,269.3	7,270.1	0.8
FE	123,787	50	132	8.4	7,281.6	7,281.6	7,282.2	0.6
FF	125,160	300	631	1.7	7,286.4	7,286.4	7,287.4	1.0
FG	126,057	85	159	6.9	7,288.5	7,288.5	7,289.1	0.6
FH	127,377	121	489	2.3	7,291.6	7,291.6	7,292.6	1.0
FI	128,592	77	197	5.6	7,293.2	7,293.2	7,294.2	1.0
FJ	129,595	145	320	3.4	7,297.3	7,297.3	7,298.2	0.9
FK	130,387	260	678	1.6	7,299.3	7,299.3	7,300.0	0.7

<sup>1</sup> Feet above confluence with San Francisco Wash

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	
		<b>RIO DE FLAG</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Rio De Flag (Cont'd)								
FL	131,760	250	533	2.1	7,299.9	7,299.9	7,300.9	1.0
FM	134,083	315 <sup>2</sup>	479	1.4	7,304.1	7,304.1	7,304.4	0.3
FN	135,456	250	363	1.5	7,304.8	7,304.8	7,305.4	0.6
FO	136,670	200	764	0.7	7,310.2	7,310.2	7,310.8	0.6
FP	137,779	94	63	4.3	7,311.7	7,311.7	7,311.9	0.2
FQ	138,360	24	57	4.8	7,316.2	7,316.2	7,316.8	0.6
FR	138,888	115	452	0.6	7,320.7	7,320.7	7,321.6	0.9
FS	140,155	31	43	6.3	7,333.3	7,333.3	7,333.4	0.1
FT	141,000	61	78	3.5	7,340.9	7,340.9	7,341.1	0.2
FU	142,003	20	36	7.7	7,353.8	7,353.8	7,353.9	0.1
FV	142,620	27	53	5.2	7,361.8	7,361.8	7,361.8	0.0
FW	143,518	14	12	5.5	7,380.2	7,380.2	7,380.2	0.0
FX	144,627	30	18	3.9	7,406.8	7,406.8	7,406.8	0.0
FY	145,735	17	15	4.4	7,427.9	7,427.9	7,427.9	0.0
FZ	146,686	44	19	3.6	7,455.9	7,455.9	7,455.9	0.0

<sup>1</sup> Feet above confluence with San Francisco Wash

<sup>2</sup> Combined Rio de Flag/Baderville Tributary to Rio de Flag Floodway

<b>TABLE 23</b>	<b>FEDERAL EMERGENCY MANAGEMENT AGENCY</b>	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	
		<b>RIO DE FLAG</b>

**Table 23: Floodway Data (continued)**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0	22	27	5.1	4,166.9	4,166.9	4,166.9	0.0
B	163	29	26	5.2	4,173.0	4,173.0	4,173.0	0.0
C	282	17	23	6.0	4,177.7	4,177.7	4,177.8	0.1
D	426	15	21	6.3	4,185.3	4,185.3	4,185.3	0.0
E	470	13	20	6.9	4,186.3	4,186.3	4,186.3	0.0

<sup>1</sup> Stream distance in Feet above confluence with Golf Course Creek

TABLE 23

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**COCONINO COUNTY, ARIZONA**  
 AND INCORPORATED AREAS

**FLOODWAY DATA**

**FLOODING SOURCE: SAN MIGUEL WASH**

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Santa Fe Wash East								
A	317	54	168	8.5	6,719.0	6,719.0	6,719.2	0.2
B	686	100	424	3.3	6,721.6	6,721.6	6,721.6	0.0
C	898	150	466	1.8	6,722.0	6,722.0	6,722.0	0.0
D	1,478	141	299	2.8	6,722.2	6,722.2	6,722.4	0.2
E	2,059	166	346	2.4	6,722.9	6,722.9	6,722.9	0.0
F	2,534	63	121	6.9	6,723.5	6,723.5	6,723.5	0.0
G	3,168	69	225	3.7	6,725.6	6,725.6	6,725.6	0.0
H	3,538	150	148	5.7	6,728.2	6,728.2	6,728.2	0.0
I	4,224	455	469	1.8	6,730.3	6,730.3	6,730.3	0.0
J	5,016	285	183	4.2	6,732.9	6,732.9	6,733.4	0.5
K	5,940	183	282	2.5	6,738.4	6,738.4	6,739.3	0.9
L	6,706	50	127	6.0	6,743.6	6,743.6	6,743.9	0.3
M	7,181	97	271	2.8	6,745.5	6,745.5	6,745.5	0.0
N	7,709	50	99	7.8	6,747.4	6,747.4	6,747.7	0.3
O	7,814	80	356	2.2	6,752.5	6,752.5	6,752.9	0.4
P	8,659	32	84	9.2	6,756.4	6,756.4	6,756.8	0.4
Q	9,715	66	133	5.8	6,768.3	6,768.3	6,768.8	0.5
R	10,402	42	62	6.8	6,775.5	6,775.5	6,775.7	0.2
S	10,613	40	91	4.6	6,778.9	6,778.9	6,778.9	0.0

<sup>1</sup> Feet above confluence with Cataract Creek

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	
		<b>SANTA FE WASH EAST</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Santa Fe Wash West								
A	158	84	197	3.6	6,721.7	6,721.7	6,721.7	0.0
B	686	232	371	1.9	6,722.8	6,722.8	6,722.8	0.0
C	1,109	170	167	4.2	6,724.0	6,724.0	6,724.0	0.0
D	1,373	65	131	5.4	6,725.0	6,725.0	6,725.1	0.1
E	1,795	62	148	4.8	6,726.4	6,726.4	6,726.4	0.0
F	2,165	78	281	2.5	6,727.3	6,727.3	6,727.4	0.1
G	2,851	274	328	2.2	6,730.5	6,730.5	6,730.5	0.0
H	3,590	134	132	5.3	6,733.5	6,733.5	6,733.5	0.0
I	4,066	214	278	2.6	6,735.9	6,735.9	6,735.9	0.0
J	4,382	500	1,580	0.4	6,740.4	6,740.4	6,740.5	0.1
K	5,333	240	163	3.9	6,742.1	6,742.1	6,742.1	0.0
L	5,914	295	229	2.8	6,747.5	6,747.5	6,747.5	0.0
M	6,225	123	125	5.1	6,750.3	6,750.3	6,750.3	0.0
N	6,442	30	146	4.1	6,757.0	6,757.0	6,757.0	0.0
O	7,075	55	236	1.4	6,757.5	6,757.5	6,758.1	0.6
P	7,814	20	28	6.8	6,762.5	6,762.5	6,763.4	0.9
Q	8,237	51	91	2.1	6,765.3	6,765.3	6,766.3	1.0

<sup>1</sup> Feet above confluence with Santa Fe Wash East

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	
		<b>SANTA FE WASH WEST</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	2,205	107	490	4.0	6,733.8	6,733.8	6,734.5	0.7
B	2,809	66	272	7.3	6,734.0	6,734.0	6,734.8	0.8
C	5,047	75	210	8.6	6,757.1	6,757.1	6,757.7	0.6
D	5,983	37	116	9.7	6,771.2	6,771.2	6,772.0	0.8
E	7,151	57	134	8.4	6,787.5	6,787.5	6,788.2	0.7
F	8,222	42	118	9.5	6,803.7	6,803.7	6,803.7	0.0
G	8,877	117	765	1.5	6,818.4	6,818.4	6,818.8	0.4
H	9,209	51	122	9.2	6,824.0	6,824.0	6,824.0	0.0
I	9,626	75	146	7.7	6,831.1	6,831.1	6,831.3	0.2
J	10,764	36	78	8.3	6,851.5	6,851.5	6,852.0	0.5
K	11,668	39	94	6.9	6,867.5	6,867.5	6,868.1	0.6

<sup>1</sup> Feet above confluence with Pumphouse Wash

<b>TABLE 23</b>	FEDERAL EMERGENCY MANAGEMENT AGENCY <b>COCONINO COUNTY, AZ</b> AND INCORPORATED AREAS	<b>FLOODWAY DATA</b>
		<b>SCHOOLHOUSE DRAW WASH</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Schultz Creek								
A	2,033	103	190	2.3	7,006.1	7,006.1	7,006.3	0.2
B	2,135	25	120	3.7	7,006.3	7,006.3	7,006.5	0.2
C	2,230	64	205	2.1	7,006.6	7,006.6	7,006.8	0.2
D	2,244	47	159	2.8	7,006.6	7,006.6	7,006.8	0.2
E	2,270	44	145	3.0	7,006.6	7,006.6	7,006.8	0.2
F	2,296	40	62	7.1	7,007.0	7,007.0	7,007.0	0.0
G	2,588	57	165	2.7	7,009.1	7,009.1	7,009.1	0.0
H	2,824	64	88	5.0	7,010.1	7,010.1	7,010.1	0.0
I	3,021	50	76	5.8	7,014.6	7,014.6	7,014.7	0.1
J	3,345	30	60	7.3	7,028.4	7,028.4	7,028.4	0.0
K	3,648	43	79	5.6	7,036.7	7,036.7	7,036.7	0.0
L	3,695	67	87	5.1	7,038.4	7,038.4	7,038.4	0.0
M	3,918	57	84	5.2	7,045.6	7,045.6	7,045.6	0.0
N	3,968	69	90	4.9	7,046.8	7,046.8	7,046.8	0.0
O	3,996	23	90	4.9	7,047.3	7,047.3	7,047.3	0.0
P	4,033	26	127	3.5	7,048.6	7,048.6	7,048.6	0.0
Q	4,047	51	64	6.9	7,048.5	7,048.5	7,048.5	0.0
R	4,167	59	84	5.3	7,052.8	7,052.8	7,052.8	0.0
S	4,468	40	59	7.4	7,063.7	7,063.7	7,063.7	0.0
T	4,521	82	92	4.8	7,065.2	7,065.2	7,065.2	0.0
U	4,539	20	54	8.2	7,065.2	7,065.2	7,065.2	0.0
V	4,568	15	99	4.4	7,069.5	7,069.5	7,069.5	0.0
W	4,584	38	142	3.1	7,069.9	7,069.9	7,069.9	0.0
X	4,655	20	50	8.8	7,069.6	7,069.6	7,069.6	0.0
Y	5,082	14	44	10.1	7,084.5	7,084.5	7,084.6	0.1
Z	5,344	21	49	9.1	7,092.6	7,092.6	7,092.6	0.0
AA	5,636	99	84	5.2	7,100.9	7,100.9	7,100.9	0.0
AB	5,861	32	64	6.9	7,104.7	7,104.7	7,104.9	0.2

<sup>1</sup> Feet above confluence with Rio de Flag

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	<b>SCHULTZ CREEK</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Schultz Creek (Cont'd)								
AC	6,054	62	64	6.9	7,109.0	7,109.0	7,109.0	0.0
AD	6,418	43	71	6.2	7,115.2	7,115.2	7,115.2	0.0
AE	6,654	58	65	6.8	7,119.0	7,119.0	7,119.0	0.0
AF	7,118	56	73	6.1	7,127.5	7,127.5	7,127.5	0.0
AG	7,334	61	67	6.6	7,131.8	7,131.8	7,131.8	0.0
AH	7,482	22	51	8.6	7,134.1	7,134.1	7,134.2	0.1
AI	7,672	41	62	7.1	7,139.8	7,139.8	7,139.8	0.0

<sup>1</sup> Feet above confluence with Rio de Flag

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	<b>SCHULTZ CREEK</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Sinclair Wash								
A	211	59	103	6.9	6,854.5	6,854.5	6,854.7	0.2
B	370	75	758	1.2	6,855.1	6,855.1	6,855.5	0.4
C	845	75	646	1.4	6,855.1	6,855.1	6,855.5	0.4
D	1,584	63	523	1.7	6,855.2	6,855.2	6,855.6	0.4
E	2,693	55	257	3.5	6,855.3	6,855.3	6,855.8	0.5
F	2,851	21	115	7.7	6,855.6	6,855.6	6,855.9	0.3
G	3,010	55	302	2.9	6,856.8	6,856.8	6,856.9	0.1
H	3,643	25	96	9.3	6,856.8	6,856.8	6,856.9	0.1
I	4,541	29	138	6.4	6,861.1	6,861.1	6,861.6	0.5
J	4,699	21	81	11.0	6,863.0	6,863.0	6,863.0	0.0
K	4,752	21	106	8.4	6,864.4	6,864.4	6,864.4	0.0
L	4,805	26	125	7.1	6,864.4	6,864.4	6,864.4	0.0
M	5,702	21	123	7.3	6,865.6	6,865.6	6,866.3	0.7
N	8,237	49	130	5.7	6,877.2	6,877.2	6,877.3	0.1
O	8,290	49	188	4.1	6,877.3	6,877.3	6,877.7	0.4
P	8,976	31	88	6.2	6,879.9	6,879.9	6,880.2	0.3
Q	9,134	37	274	2.0	6,885.9	6,885.9	6,885.9	0.0
R	10,032	48	135	4.1	6,886.2	6,886.2	6,886.3	0.1
S	10,718	31	97	5.7	6,888.6	6,888.6	6,888.6	0.0
T	10,930	134	636	0.9	6,894.2	6,894.2	6,895.2	1.0
U	12,514	33	67	8.2	6,900.0	6,900.0	6,900.0	0.0
V	13,517	45	137	4.0	6,904.9	6,904.9	6,905.9	0.1
W	13,992	30	67	7.0	6,908.4	6,908.4	6,908.5	0.1
X	14,203	47	246	1.9	6,909.0	6,909.0	6,909.7	0.7
Y	14,573	66	418	1.1	6,913.7	6,913.7	6,914.7	1.0
Z	14,784	95	433	1.1	6,913.7	6,913.7	6,914.7	1.0
AA	14,890	112	362	1.3	6,913.9	6,913.9	6,914.7	0.8
AB	15,576	51	129	3.6	6,913.9	6,913.9	6,914.9	1.0

<sup>1</sup> Feet above confluence With Rio de Flag

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	
		<b>SINCLAIR WASH</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Sinclair Wash (Cont'd)								
AC	17,530 <sup>1</sup>	50	61	6.1	6,930.6	6,930.6	6,930.6	0.0
AD	19,378 <sup>1</sup>	50	95	3.9	6,944.4	6,944.4	6,945.2	0.8
AE	21,067 <sup>1</sup>	44	54	5.0	6,955.9	6,955.9	6,955.9	0.0
Spruce Avenue Wash								
A	1,478	27	88	6.6	6,819.5	6,819.5	6,820.4	0.9
B	1,760	35	138	4.2	6,826.5	6,826.5	6,826.5	0.0
C	2,165	63	101	5.7	6,830.9	6,830.9	6,830.9	0.0
D	2,452	59	143	4.0	6,832.8	6,832.8	6,832.8	0.0
E-AB*								

<sup>1</sup> Feet above confluence with Rio de Flag

\* Floodway not computed

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	
	<b>SINCLAIR WASH – SPRUCE AVENUE WASH</b>	

**Table 23: Floodway Data (continued)**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	342	233	650	4.3	4,190.9	4,190.9	4,191.0	0.1
B	566	168	527	5.3	4,193.1	4,193.1	4,194.1	1.0
C	778	121	489	5.7	4,196.2	4,196.2	4,197.2	1.0
D	1,000	93	377	7.4	4,200.5	4,200.5	4,201.2	0.7
E	1,322	29	194	14.4	4,206.2	4,206.2	4,206.2	0.0
F	1,600	78	283	10.8	4,210.4	4,210.4	4,211.2	0.8
G	1,884	87	505	5.5	4,217.1	4,217.1	4,217.2	0.1
H	2,100	48	349	8.0	4,219.7	4,219.7	4,220.2	0.5
I	2,245	56	569	4.9	4,226.3	4,226.3	4,226.9	0.6
J	2,700	47	339	8.3	4,230.1	4,230.1	4,230.7	0.6
K	3,165	34	223	12.6	4,234.7	4,234.7	4,235.0	0.3
L	3,363	51	438	6.1	4,244.6	4,244.6	4,244.6	0.0
M	4,100	35	219	12.2	4,255.4	4,255.4	4,256.3	0.9
N	4,500	27	186	14.3	4,264.6	4,264.6	4,265.0	0.4
O	4,823	26	180	14.8	4,271.4	4,271.4	4,271.6	0.2
P	5,200	52	318	8.4	4,279.8	4,279.8	4,280.6	0.8
Q	5,700	35	209	9.8	4,286.8	4,286.8	4,287.7	0.9
R	6,100	30	190	10.9	4,296.6	4,296.6	4,297.3	0.7
S	6,456	37	175	11.7	4,304.8	4,304.8	4,304.9	0.1
T	6,700	36	186	11.1	4,310.0	4,310.0	4,310.4	0.4

<sup>1</sup> Stream distance in Feet above confluence with Oak Creek

TABLE 23

**FEDERAL EMERGENCY MANAGEMENT AGENCY  
COCONINO COUNTY, ARIZONA  
AND INCORPORATED AREAS**

**FLOODWAY DATA**

**FLOODING SOURCE: SOLDIER WASH**

**Table 23: Floodway Data (continued)**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
U	7,100	28	168	12.3	4,317.9	4,317.9	4,318.5	0.6
V	7,497	40	230	8.9	4,327.1	4,327.1	4,327.9	0.8
W	7,800	25	177	11.6	4,333.5	4,333.5	4,334.5	1.0

<sup>1</sup> Stream distance in Feet above confluence with Oak Creek

TABLE 23

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**COCONINO COUNTY, ARIZONA**  
 AND INCORPORATED AREAS

**FLOODWAY DATA**

**FLOODING SOURCE: SOLDIER WASH**

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Switzer Canyon Wash								
A	370	133	413	1.9	6,788.8	6,788.7 <sup>2</sup>	6,789.5	0.8
B	792	234	1,115	0.7	6,788.8	6,788.8	6,789.7	0.9
C	1,109	224	850	0.9	6,788.8	6,788.8	6,789.7	0.9
D	1,373	83	253	3.1	6,788.9	6,788.9	6,789.7	0.8
E	2,059	70	188	4.2	6,790.4	6,790.4	6,791.1	0.7
F	2,851	44	163	4.9	6,792.9	6,792.9	6,793.8	0.9
G	3,590	36	138	5.7	6,796.4	6,796.4	6,797.4	1.0
H	4,382	54	222	3.6	6,799.2	6,799.2	6,800.2	1.0
I	4,858	44	178	4.5	6,800.3	6,800.3	6,801.2	0.9
J	5,755	54	185	4.3	6,803.3	6,803.3	6,804.1	0.8
K	6,072	20	50	6.9	6,804.8	6,804.8	6,805.3	0.5
L	6,494	21	37	9.2	6,810.7	6,810.7	6,811.5	0.8
M	6,758	22	43	8.0	6,826.1	6,826.1	6,826.2	0.1
N	7,128	30	47	7.3	6,837.1	6,837.1	6,837.8	0.7
O	7,656	38	96	3.6	6,840.4	6,840.4	6,841.1	0.7
P	7,709	104	256	1.3	6,842.4	6,842.4	6,843.4	1.0
Q	7,973	87	292	1.2	6,842.4	6,842.4	6,843.4	1.0
R	8,712	52	97	3.6	6,843.1	6,843.1	6,843.7	0.6
S	9,451	51	60	5.7	6,848.8	6,848.8	6,848.8	0.0
T	9,827	67	148	2.3	6,850.2	6,850.2	6,850.2	0.0
U	9,984	19	41	8.4	6,852.5	6,852.5	6,852.5	0.0
V	10,238	27	73	4.7	6,854.6	6,854.6	6,854.6	0.0
W	10,404	26	83	4.2	6,855.2	6,855.2	6,855.2	0.0
X	10,510	26	73	4.7	6,855.4	6,855.4	6,855.4	0.0
Y	10,618	22	63	5.5	6,855.7	6,855.7	6,855.7	0.0
Z	10,967	29	92	3.8	6,856.5	6,856.5	6,856.5	0.0
AA	11,315	17	79	4.4	6,857.5	6,857.5	6,857.5	0.0
AB	11,378	29	90	2.0	6,857.8	6,857.8	6,857.8	0.0

<sup>1</sup> Feet above confluence with Rio de Flag

<sup>2</sup> Elevation computed without consideration of backwater effects from Rio de Flag

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	<b>SWITZER CANYON WASH</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Switzer Canyon Wash (Cont'd)								
AC	11,553	365	727	0.4	6,857.9	6,857.9	6,857.9	0.0
AD	11,669	299	331	1.1	6,858.0	6,858.0	6,858.0	0.0
AE	11,759	188	179	1.9	6,860.2	6,860.2	6,860.2	0.0
AF	12,883	27	159	1.6	6,868.6	6,868.6	6,869.0	0.4
AG	12,939	65	237	1.1	6,868.6	6,868.6	6,869.0	0.4
AH	13,165	58	168	1.5	6,868.8	6,868.8	6,869.2	0.4
AI	13,334	54	124	2.0	6,869.0	6,869.0	6,869.3	0.3
AJ	13,770	58	73	3.4	6,870.5	6,870.5	6,870.6	0.1
AK	13,827	54	173	1.4	6,870.8	6,870.8	6,870.9	0.1
AL	13,896	54	134	1.9	6,871.6	6,871.6	6,871.8	0.2
AM	13,940	29	118	2.1	6,871.7	6,871.7	6,871.9	0.2
AN	14,383	54	124	2.0	6,872.2	6,872.2	6,872.4	0.2
AO	14,778	98	164	1.5	6,872.9	6,872.9	6,873.0	0.1
AP	15,193	66	82	3.0	6,873.7	6,873.7	6,873.7	0.0
AQ	15,475	68	85	2.9	6,875.0	6,875.0	6,875.0	0.0
AR	15,679	90	61	4.1	6,876.5	6,876.5	6,876.5	0.0
AS	15,738	47	101	2.5	6,877.0	6,877.0	6,877.0	0.0
AT	15,849	48	31	8.0	6,877.6	6,877.6	6,877.6	0.0
AU	15,967	39	104	2.4	6,881.9	6,881.9	6,881.9	0.0
AV	16,044	49	91	2.8	6,882.4	6,882.4	6,882.4	0.0
AW	16,252	51	76	3.3	6,884.6	6,884.6	6,884.7	0.1
AX	16,693	90	95	2.6	6,891.1	6,891.1	6,891.4	0.3
AY	17,243	39	60	4.2	6,902.0	6,902.0	6,902.3	0.3
AZ	17,741	30	65	3.9	6,911.3	6,911.3	6,911.3	0.0
BA	18,174	48	46	5.4	6,921.7	6,921.7	6,921.9	0.2
BB	18,595	45	74	3.4	6,931.4	6,931.4	6,931.4	0.0
BC	19,012	30	39	6.4	6,942.9	6,942.9	6,942.9	0.0
BD	19,379	71	110	2.3	6,950.1	6,950.1	6,950.1	0.0

<sup>1</sup> Feet above confluence with Rio de Flag

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	<b>SWITZER CANYON WASH</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Switzer Canyon Wash (Cont'd)								
BE	19,512	50	42	5.9	6,953.0	6,953.0	6,953.0	0.0
BF	19,702	69	99	2.5	6,958.0	6,958.0	6,958.0	0.0
BG	19,786	15	32	7.8	6,963.3	6,963.3	6,963.3	0.0
BH	19,981	24	111	2.2	6,967.0	6,967.0	6,967.0	0.0
BI	20,039	46	159	1.6	6,967.1	6,967.1	6,967.1	0.0
BJ	20,171	26	34	7.4	6,968.0	6,968.0	6,968.0	0.0
BK	20,380	33	68	3.7	6,972.5	6,972.5	6,972.5	0.0
BL	20,404	16	38	6.5	6,972.6	6,972.6	6,972.6	0.0
BM	20,440	14	70	3.6	6,975.2	6,975.2	6,976.0	0.8
BN	20,524	37	95	2.6	6,975.6	6,975.6	6,976.5	0.9
BO	20,567	28	95	2.6	6,976.0	6,976.0	6,976.6	0.6
BP	20,601	21	37	6.8	6,976.7	6,976.7	6,976.8	0.1
BQ	20,709	60	225	1.1	6,982.8	6,982.8	6,983.5	0.7
BR	20,741	33	138	1.8	6,982.8	6,982.8	6,983.5	0.7
BS	20,799	50	137	1.8	6,982.8	6,982.8	6,983.5	0.7
BT	21,066	20	76	3.3	6,983.3	6,983.3	6,983.7	0.4
BU	21,146	40	172	1.5	6,985.1	6,985.1	6,985.8	0.7
BV	21,241	95	372	0.7	6,985.2	6,985.2	6,985.9	0.7
BW	21,317	74	186	1.3	6,985.2	6,985.2	6,985.9	0.7
BX	21,404	115	463	0.5	6,988.0	6,988.0	6,988.7	0.7
BY	21,620	149	242	1.0	6,988.0	6,988.0	6,988.7	0.7
BZ	21,887	92	38	4.0	6,990.6	6,990.6	6,990.6	0.0
CA	22,293	71	74	2.0	6,994.1	6,994.1	6,994.5	0.4
CB	22,557	81	37	4.0	6,997.6	6,997.6	6,997.6	0.0
CC	22,645	85	74	2.0	6,999.2	6,999.2	6,999.3	0.1
CD	22,939	23	26	5.9	7,004.4	7,004.4	7,004.4	0.0
CE	23,171	39	60	2.5	7,006.0	7,006.0	7,006.3	0.3
CF	23,446	50	62	2.4	7,006.7	7,006.7	7,007.2	0.5

<sup>1</sup> Feet above confluence with Rio de Flag

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	<b>SWITZER CANYON WASH</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Switzer Canyon Wash (Cont'd)								
CG	23,772	49	36	4.2	7,008.7	7,008.7	7,009.2	0.5
CH	24,297	110	78	1.9	7,013.4	7,013.4	7,013.4	0.0
CI	24,742	75	68	2.2	7,016.2	7,016.2	7,016.2	0.0
CJ	25,235	49	52	2.9	7,020.0	7,020.0	7,020.1	0.1
CK	25,716	90	71	2.1	7,024.1	7,024.1	7,024.1	0.0
CL	26,174	129	81	1.8	7,027.2	7,027.2	7,027.2	0.0
CM	26,547	128	79	1.9	7,030.0	7,030.0	7,030.0	0.0

<sup>1</sup> Feet above confluence with Rio de Flag

<b>TABLE 23</b>	<b>FEDERAL EMERGENCY MANAGEMENT AGENCY</b>	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	<b>SWITZER CANYON WASH</b>

**Table 23: Floodway Data (continued)**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	251	15	31	8.1	4,136.0	4,136.0	4,136.2	0.2
B	400	17	36	7.0	4,141.4	4,141.4	4,141.5	0.1
C	819	19	60	4.2	4,161.3	4,161.3	4,161.4	0.1
D	1,000	12	29	8.7	4,171.4	4,171.4	4,171.5	0.1
E	1,241	15	31	8.1	4,191.6	4,191.6	4,191.6	0.0
F	1,549	15	31	8.1	4,212.1	4,212.1	4,212.6	0.5
G	1,758	9	26	9.6	4,225.5	4,225.5	4,225.6	0.1
H	2,000	14	30	8.3	4,245.7	4,245.7	4,245.7	0.0
I	2,367	12	29	8.6	4,270.8	4,270.8	4,271.6	0.8
J	2,662	11	28	9.0	4,294.2	4,294.2	4,294.2	0.0

<sup>1</sup> Stream distance in Feet above confluence with Oak Creek

TABLE 23

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**COCONINO COUNTY, ARIZONA**  
 AND INCORPORATED AREAS

**FLOODWAY DATA**

**FLOODING SOURCE: TABLE TOP AIRPORT WASH**

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Tributary 1 to Baderville Tributary								
A	735	36	50	3.2	7,313.8	7,313.8	7,314.8	1.0
B	1410	29	41	4.0	7,318.5	7,318.5	7,319.2	0.7
C	2,105	35	49	3.3	7,322.9	7,322.9	7,323.9	1.0
D	2,475	25	37	4.3	7,325.9	7,325.9	7,326.5	0.6
Tributary 2 To Baderville Tributary								
A	685	24	37	2.0	7,321.4	7,321.4	7,322.4	1.0
B	1430	22	23	3.2	7,324.5	7,324.5	7,325.3	0.8

<sup>1</sup> Feet above confluence with Baderville Tributary to Rio de Flag

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	<b>TRIBUTARY 1 TO BADERVILLE TRIBUTARY – TRIBUTARY 2 TO BADERVILLE TRIBUTARY</b>

**Table 23: Floodway Data (continued)**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Unnamed Wash								
A	1,070	10	27	5.1	6,905.1	6,905.1	6,906.1	1.0
B	1,695	57	82	1.7	6,910.4	6,910.4	6,910.5	0.1
C	2,100	104	205	0.7	6,910.6	6,910.6	6,910.7	0.1
D	2,530	56	40	3.5	6,911.2	6,911.2	6,911.5	0.3
E	2,835	64	61	2.3	6,914.0	6,914.0	6,914.2	0.2
F	3,220	22	49	2.9	6,917.0	6,917.0	6,917.8	0.8

<sup>1</sup> Feet above Lake Mary Road

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY	<b>FLOODWAY DATA</b>
	<b>COCONINO COUNTY, AZ AND INCORPORATED AREAS</b>	<b>UNNAMED WASH</b>

**Table 24: Flood Hazard and Non-Encroachment Data for Selected Streams**  
**[Not applicable to this Flood Risk Project]**

#### **6.4 Coastal Flood Hazard Mapping**

This section is not applicable to this Flood Risk Project.

**Table 25: Summary of Coastal Transect Mapping Considerations**  
**[Not applicable to this Flood Risk Project]**

#### **6.5 FIRM Revisions**

This FIS Report and the FIRM are based on the most up-to-date information available to FEMA at the time of its publication; however, flood hazard conditions change over time. Communities or private parties may request flood map revisions at any time. Certain types of requests require submission of supporting data. FEMA may also initiate a revision. Revisions may take several forms, including Letters of Map Amendment (LOMAs), Letters of Map Revision Based on Fill (LOMR-Fs), Letters of Map Revision (LOMRs) (referred to collectively as Letters of Map Change (LOMCs)), Physical Map Revisions (PMRs), and FEMA-contracted restudies. These types of revisions are further described below. Some of these types of revisions do not result in the republishing of the FIS Report. To assure that any user is aware of all revisions, it is advisable to contact the community repository of flood-hazard data (shown in Table 30, “Map Repositories”).

##### **6.5.1 Letters of Map Amendment**

A LOMA is an official revision by letter to an effective NFIP map. A LOMA results from an administrative process that involves the review of scientific or technical data submitted by the owner or lessee of property who believes the property has incorrectly been included in a designated SFHA. A LOMA amends the currently effective FEMA map and establishes that a specific property is not located in a SFHA.

To obtain an application for a LOMA, visit [www.fema.gov/flood-maps/change-your-flood-zone](http://www.fema.gov/flood-maps/change-your-flood-zone) and download the form “MT-1 Application Forms and Instructions for Conditional and Final Letters of Map Amendment and Letters of Map Revision Based on Fill”. Visit the “Flood Map-Related Fees” section to determine the cost, if any, of applying for a LOMA.

FEMA offers a tutorial on how to apply for a LOMA. The LOMA Tutorial Series can be accessed at [www.fema.gov/online-tutorials](http://www.fema.gov/online-tutorials).

For more information about how to apply for a LOMA, call the FEMA Mapping and Insurance eXchange; toll free, at 1-877-FEMA MAP (1-877-336-2627).

##### **6.5.2 Letters of Map Revision Based on Fill**

A LOMR-F is an official revision by letter to an effective NFIP map. A LOMR-F states FEMA’s determination concerning whether a structure or parcel has been elevated on fill above the base flood elevation and is, therefore, excluded from the SFHA.

Information about obtaining an application for a LOMR-F can be obtained in the same manner as that for a LOMA, by visiting [www.fema.gov/flood-maps/change-your-flood-zone](http://www.fema.gov/flood-maps/change-your-flood-zone) for the “MT-1 Application Forms and Instructions for Conditional and Final Letters of Map Amendment and Letters of Map Revision Based on Fill” or by calling the FEMA Mapping and Insurance eXchange, toll free, at 1-877-FEMA MAP (1-877-336-2627). Fees for applying for a LOMR-F, if any, are listed in the "Flood Map-Related Fees" section.

A tutorial for LOMR-F is available at <https://www.fema.gov/online-tutorials>.

### **6.5.3 Letters of Map Revision**

A LOMR is an official revision to the currently effective FEMA map. It is used to change flood zones, floodplain and floodway delineations, flood elevations and planimetric features. All requests for LOMRs should be made to FEMA through the chief executive officer of the community, since it is the community that must adopt any changes and revisions to the map. If the request for a LOMR is not submitted through the chief executive officer of the community, evidence must be submitted that the community has been notified of the request.

To obtain an application for a LOMR, visit [www.fema.gov/flood-maps/change-your-flood-zone](http://www.fema.gov/flood-maps/change-your-flood-zone) and download the form “MT-2 Application Forms and Instructions for Conditional Letters of Map Revision and Letters of Map Revision”. Visit the “Flood Map-Related Fees” section to determine the cost of applying for a LOMR. For more information about how to apply for a LOMR, call the FEMA Mapping and Insurance eXchange; toll free, at 1-877-FEMA MAP (1-877-336-2627) to speak to a Map Specialist.

Previously issued mappable LOMCs (including LOMRs) that have been incorporated into the Coconino County FIRM are listed in Table 26.

**Table 26: Incorporated Letters of Map Change  
[Not Applicable to this Flood Risk Project.]**

### **6.5.4 Physical Map Revisions**

A Physical Map Revisions (PMR) is an official republication of a community’s NFIP map to effect changes to base flood elevations, floodplain boundary delineations, regulatory floodways and planimetric features. These changes typically occur as a result of structural works or improvements, annexations resulting in additional flood hazard areas or correction to base flood elevations or SFHAs.

The community’s chief executive officer must submit scientific and technical data to FEMA to support the request for a PMR. The data will be analyzed and the map will be revised if warranted. The community is provided with copies of the revised information and is afforded a review period. When the base flood elevations are changed, a 90-day appeal period is provided. A 6-month adoption period for formal approval of the revised map(s) is also provided.

For more information about the PMR process, please visit <https://www.fema.gov> and visit the “Flood Map Revision Processes” section.

### 6.5.5 Contracted Restudies

The NFIP provides for a periodic review and restudy of flood hazards within a given community. FEMA accomplishes this through a national watershed-based mapping needs assessment strategy, known as the Coordinated Needs Management Strategy (CNMS). The CNMS is used by FEMA to assign priorities and allocate funding for new flood hazard analyses used to update the FIS Report and FIRM. The goal of CNMS is to define the validity of the engineering study data within a mapped inventory. The CNMS is used to track the assessment process, document engineering gaps and their resolution, and aid in prioritization for using flood risk as a key factor for areas identified for flood map updates. Visit <https://www.fema.gov> to learn more about the CNMS or contact the FEMA Regional Office listed in Section 8 of this FIS Report.

### 6.5.6 Community Map History

The current FIRM presents flooding information for the entire geographic area of Coconino County. Previously, separate FIRMs, Flood Hazard Boundary Maps (FHBM) and/or Flood Boundary and Floodway Maps (FBFM) may have been prepared for the incorporated communities and the unincorporated areas in the county that had identified SFHAs. Current and historical data relating to the maps prepared for the project area are presented in Table 27, "Community Map History." A description of each of the column headings and the source of the date is also listed below.

- *Community Name* includes communities falling within the geographic area shown on the FIRM, including those that fall on the boundary line, nonparticipating communities, and communities with maps that have been rescinded. Communities with No Special Flood Hazards are indicated by a footnote. If all maps (FHBM, FBFM, and FIRM) were rescinded for a community, it is not listed in this table unless SFHAs have been identified in this community.
- *Initial Identification Date (First NFIP Map Published)* is the date of the first NFIP map that identified flood hazards in the community. If the FHBM has been converted to a FIRM, the initial FHBM date is shown. If the community has never been mapped, the upcoming effective date or "pending" (for Preliminary FIS Reports) is shown. If the community is listed in Table 27 but not identified on the map, the community is treated as if it were unmapped.
- *Initial FHBM Effective Date* is the effective date of the first FHBM. This date may be the same date as the Initial NFIP Map Date.
- *FHBM Revision Date(s)* is the date(s) that the FHBM was revised, if applicable.
- *Initial FIRM Effective Date* is the date of the first effective FIRM for the community.
- *FIRM Revision Date(s)* is the date(s) the FIRM was revised, if applicable. This is the revised date that is shown on the FIRM panel, if applicable. As countywide studies are completed or revised, each community listed should have its FIRM dates updated accordingly to reflect the date of the countywide study. Once the FIRMs exist in countywide format, as PMRs of FIRM panels within the county are completed, the FIRM Revision Dates in the table for each community affected by the PMR are updated with the date of the PMR, even if the PMR did not revise all the panels within that community.

The initial effective date for the Coconino County FIRMs in countywide format was 09/03/2010.

**Table 27: Community Map History**

Community Name	Initial Identification Date	Initial FHBM Effective Date	FHBM Revision Date(s)	Initial FIRM Effective Date	FIRM Revision Date(s)
Coconino County, Unincorporated Areas	01/24/1975	01/24/1975	05/30/1978	11/16/1983	03/21/2023 07/19/2022 09/03/2010 09/30/1995 12/17/1993 03/02/1993 09/28/1990 09/30/1988
Flagstaff, City of	06/28/1974	06/28/1974	10/01/1976	01/19/1983	07/19/2022 09/03/2010 08/02/1996 09/30/1995 09/28/1990
Fredonia, Town of	06/07/1974	06/07/1974	12/26/1975	05/17/1982	09/03/2010
Havasupai Indian Reservation <sup>1</sup>	01/24/1975	01/24/1975	05/30/1978	11/16/1983	09/03/2010
Page, City of <sup>1</sup>	01/24/1975	01/24/1975	05/30/1978	11/16/1983	09/03/2010
Sedona, City of (Coconino County) <sup>2</sup>	01/24/1975	01/24/1975	05/30/1978	11/16/1983	03/21/2023 09/03/2010 09/30/1988
Tusayan, Town of <sup>3</sup>	09/03/2010	N/A	N/A	09/03/2010	N/A
Williams, City of	04/05/1974	04/05/1974	12/12/1975	12/15/1983	09/03/2010

<sup>1</sup> This community did not have its own FIRM prior to this countywide FIS. The land area for this community was previously shown on the FIRM for the unincorporated areas of Coconino County, but was not identified as a separate NFIP community. Therefore, the dates for this community were taken from the FIRM for Coconino County.

<sup>2</sup> This community did not have its own FIRM prior to the countywide FIS reports for Coconino and Yavapai Counties. The land area for this community was previously shown on the FIRM panels for the unincorporated areas of Coconino and Yavapai Counties, but was not identified as a separate NFIP community. Therefore, the dates for this community were taken from the respective FIRM panels.

<sup>3</sup> This community did not have its own FIRM prior to this revised countywide FIS. The land area for this community was previously shown on the FIRM for the unincorporated areas of Coconino County, but was not identified as a separate NFIP community. Therefore, the dates for this community were taken from the FIRM for Coconino County.

## SECTION 7.0 – CONTRACTED STUDIES AND COMMUNITY COORDINATION

### 7.1 Contracted Studies

Table 28 provides a summary of the contracted studies, by flooding source, that are included in this FIS Report.

**Table 28: Summary of Contracted Studies Included in this FIS Report**

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Dewey Grade Wash, Gravesite Wash, Harrenburg Wash, Mountaineer Wash, O'Neil Springs Wash, O'Neil Tank Wash, Pumphouse Wash, Schoolhouse Draw Wash	07/19/2022	STARR II	FY18-STARRR09-WP4-12	September 2016	Coconino County, Unincorporated Areas
Golf Course Creek	03/21/2023	STARR II	MAS 2016-09-Yavapai-01a	May 2018	Sedona, City of
Holy Cross Wash	03/21/2023	STARR II	MAS 2016-09-Yavapai-01a	May 2018	Sedona, City of
Margs Draw Wash	03/21/2023	STARR II	MAS 2016-09-Yavapai-01a	May 2018	Coconino County, Unincorporated Areas; Sedona, City of
Memorial Knolls Wash	03/21/2023	STARR II	MAS 2016-09-Yavapai-01a	May 2018	Sedona, City of
Memorial Park Wash	03/21/2023	STARR II	MAS 2016-09-Yavapai-01a	May 2018	Sedona, City of
Morgan Wash	03/21/2023	STARR II	MAS 2016-09-Yavapai-01a	May 2018	Coconino County, Unincorporated Areas; Sedona, City of

**Table 28: Summary of Contracted Studies Included in this FIS Report (continued)**

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Munds Canyon Creek	03/21/2023	STARR II	MAS 2016-09-Yavapai-01a	May 2018	Coconino County, Unincorporated Areas
Oak Creek	03/21/2023	STARR II	MAS 2016-09-Yavapai-01a	May 2018	Coconino County, Unincorporated Areas, Sedona, City of
Painted Memorial Wash	03/21/2023	STARR II	MAS 2016-09-Yavapai-01a	May 2018	Sedona, City of
San Miguel Wash	03/21/2023	STARR II	MAS 2016-09-Yavapai-01a	May 2018	Sedona, City of
School Soldier Wash	03/21/2023	STARR II	MAS 2016-09-Yavapai-01a	May 2018	Sedona, City of
Soldier Wash	03/21/2023	STARR II	MAS 2016-09-Yavapai-01a	May 2018	Sedona, City of
Substation Soldier Wash	03/21/2023	STARR II	MAS 2016-09-Yavapai-01a	May 2018	Sedona, City of
Table Top Airport Wash	03/21/2023	STARR II	MAS 2016-09-Yavapai-01a	May 2018	Sedona, City of
West Fork Oak Creek	03/21/2023	STARR II	MAS 2016-09-Yavapai-01a	May 2018	Coconino County, Unincorporated Areas
Rio de Flag	09/03/2010	MAPIX-Mainland	Contract No. EMT-2003-CO-0047	December 2008	Coconino County, Unincorporated Areas
Peak View Wash, Schultz Creek, reaches of Rio de Flag, Switzer Canyon Wash, Bow and Arrow Wash	09/03/2010	Entellus, Inc.	FEMA Contact No. EMF-1999-CO-0057	April 2004	Coconino County, Unincorporated Areas
All significant flooding sources in affected communities	08/02/1996	City of Flagstaff	N/A	March 1995	Flagstaff, City of

**Table 28: Summary of Contracted Studies Included in this FIS Report (continued)**

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Fanning Drive Wash, Penstock Avenue Wash	09/30/1995	N/A	N/A	N/A	Coconino County, Unincorporated Areas; Flagstaff, City of
All significant flooding sources	12/17/1993	Water Engineering & Technology (WET)	N/A	N/A	Coconino County, Unincorporated Areas
All significant flooding sources	3/2/1993	U.S. Geological Survey, Tempe, Arizona	Interagency Agreement No. EMW-89- E-2997	N/A	Coconino County, Unincorporated Areas
All significant flooding sources	9/28/1990	U.S. Army Corps of Engineers, Los Angeles District	FEMA LMMP Interagency Agreement No. EMW-88-E2769 Project Order No. 8A	January 1989	Coconino County, Unincorporated Areas; Flagstaff, City of
All significant flooding sources	11/16/1983	PRC Toups	FEMA Contract No. H-4700	January 1981, March 1981	Coconino County Unincorporated Areas, City of Flagstaff, City of Williams, Town of Fredonia, City of Sedona

## 7.2 Community Meetings

The dates of the community meetings held for this Flood Risk Project and previous Flood Risk Projects are shown in Table 29. These meetings may have previously been referred to by a variety of names (Community Coordination Officer (CCO), Scoping, Discovery, etc.), but all meetings represent opportunities for FEMA, community officials, study contractors, and other invited guests to discuss the planning for and results of the project.

**Table 29: Community Meetings**

Community	FIS Report Dated	Date of Meeting	Meeting Type	Attended By
Coconino County, Unincorporated Areas	03/23/2023	09/23/2020	Final CCO	FEMA, AZ DWR, STARRII, and community officials
		02/11/2015	Flood Risk Review	FEMA, BakerAECOM, JE Fuller, and the community
Flagstaff, City of	09/03/2010	05/06/2009	Final CCO	FEMA, the State of Arizona, the study contractors, the communities, and MAPIX Mainland
	09/30/1995	11/01/1994	Final CCO	FEMA, the community, and the study contractor
	09/28/1990	11/14/1989	Final CCO	FEMA, the community, and the study contractor
Fredonia, Town of	09/03/2010	05/06/2009	Final CCO	FEMA, the State of Arizona, the study contractors, the communities, and MAPIX Mainland
	11/17/1981	05/05/1981	Final CCO	FEMA, the community, and the study contractor
		04/05/1978	Initial CCO	FEMA, the community, and the study contractor
Havasupai Indian Reservation	09/03/2010	05/06/2009	Final CCO	FEMA, the State of Arizona, the study contractors, the communities, and MAPIX Mainland

**Table 29: Community Meetings (Continued)**

Community	FIS Report Dated	Date of Meeting	Meeting Type	Attended By
Page, City of	09/03/2010	05/06/2009	Final CCO	FEMA, the State of Arizona, the study contractors, the communities, and MAPIX Mainland
Sedona, City of	03/21/2023	09/23/2020	Final CCO	FEMA, AZ DWR, STARRII, and community officials
		05/09/2017	Flood Risk Review	FEMA, the community, and the study contractor
Tusayan, Town of	09/03/2010	05/06/2009	Final CCO	FEMA, the State of Arizona, the study contractors, the communities, and MAPIX Mainland
Williams, City of	09/03/2010	05/06/2009	Final CCO	FEMA, the State of Arizona, the study contractors, the communities, and MAPIX Mainland
	06/15/1983	08/12/1980	Final CCO	FEMA, the community, and the study contractor
		04/04/1978	Initial CCO	FEMA, the community, and the study contractor

## SECTION 8.0 – ADDITIONAL INFORMATION

Information concerning the pertinent data used in the preparation of this FIS Report can be obtained by submitting an order with any required payment to the FEMA Engineering Library. For more information on this process, see <https://www.fema.gov>.

The additional data that was used for this project includes the FIS Report and FIRM that were previously prepared for Coconino County and Incorporated Areas, (FEMA 2010a).

Table 30 is a list of the locations where FIRMs for Coconino County can be viewed. Please note that the maps at these locations are for reference only and are not for distribution. Also, please note that only the maps for the community listed in the table are available at that particular repository. A user may need to visit another repository to view maps from an adjacent community.

**Table 30: Map Repositories**

Community	Address	City	State	Zip Code
Coconino County, Unincorporated Areas	Coconino County Community Development Department 2500 North Fort Valley Road, Building 1	Flagstaff	AZ	86001
Flagstaff, City of	Community Development Department 211 West Aspen Avenue	Flagstaff	AZ	86001
Fredonia, Town of	Town Administration Department 25 North Main Street	Fredonia	AZ	86022
Havasupai Indian Reservation	Tribal Office 10 Main Street	Supai	AZ	86435
Page, City of	City Hall 697 Vista Avenue	Page	AZ	86040
Sedona, City of	Community Development Department 102 Roadrunner Drive	Sedona	AZ	86336
Tusayan, Town of	Town Hall 845 Mustang Drive	Tusayan	AZ	86023
Williams, City of	City Hall 113 South First Street	Williams	AZ	86046

The National Flood Hazard Layer (NFHL) dataset is a compilation of effective FIRM Databases and LOMCs. Together they create a GIS data layer for a State or Territory. The NFHL is updated as studies become effective and extracts are made available to the public monthly. NFHL data can be viewed or ordered from the website shown in Table 31.

Table 31 contains useful contact information regarding the FIS Report, the FIRM, and other relevant flood hazard and GIS data. In addition, information about the State NFIP

Coordinator and GIS Coordinator is shown in this table. At the request of FEMA, each Governor has designated an agency of State or territorial government to coordinate that State's or territory's NFIP activities. These agencies often assist communities in developing and adopting necessary floodplain management measures. State GIS Coordinators are knowledgeable about the availability and location of State and local GIS data in their state.

**Table 31: Additional Information**

FEMA and the NFIP	
FEMA and FEMA Engineering Library website	<a href="https://www.fema.gov/national-flood-insurance-program-flood-hazard-mapping/engineering-library">https://www.fema.gov/national-flood-insurance-program-flood-hazard-mapping/engineering-library</a>
NFIP website	<a href="https://www.fema.gov/national-flood-insurance-program">https://www.fema.gov/national-flood-insurance-program</a>
NFHL Dataset	<a href="https://www.msc.fema.gov">https://www.msc.fema.gov</a>
FEMA Region IX	Federal Emergency Management Agency 1111 Broadway, Suite 1200 Oakland, CA 94607-4052 510-627-7027
Other Federal Agencies	
USGS website	<a href="https://www.usgs.gov">https://www.usgs.gov</a>
Hydraulic Engineering Center website	<a href="http://www.hec.usace.army.mil">http://www.hec.usace.army.mil</a>
State Agencies and Organizations	
State NFIP Coordinator	Brian Cosson, CFM Arizona Department of Water Resources 1110 West Washington Street, Suite 310 Phoenix, AZ 85007 (602) 771-8657 <a href="mailto:btcosson@azwater.gov">btcosson@azwater.gov</a>
State GIS Coordinator	Gene Trobia State Cartographer, State Land Department Geographic Information Council, State of Arizona 1616 West Adams Street Phoenix, AZ 85007 (602) 542-4060 <a href="mailto:gtrobia@land.az.gov">gtrobia@land.az.gov</a>

## SECTION 9.0 – BIBLIOGRAPHY AND REFERENCES

Table 32 includes sources used in the preparation of and cited in this FIS Report as well as additional studies that have been conducted in the study area.

**Table 32: Bibliography and References**

Citation in this FIS	Publisher/ Issuer	<i>Publication Title, "Article," Volume, Number, etc.</i>	Author/ Editor	Place of Publication	Publication Date/ Date of Issuance	Link
Aerial Mapping Company 1978a	Aerial Mapping Company	<i>Aerial Photographs, Coconino County, Arizona, Scale 1:14,400</i>			November 1978	
Aerial Mapping Company 1978b	Aerial Mapping Company	<i>Aerial Photographs, Fredonia, Arizona, Scale 1:14,400</i>			November 1978	
Aerial Mapping Company 1978c	Aerial Mapping Company	<i>Aerial Photographs, Coconino County, Arizona, Scale 1:12,000</i>			October 1978	
Aerial Mapping Company 1978d	Aerial Mapping Company	<i>Aerial Photographs, Coconino County, Arizona, Scale 1:14,400</i>			October 1978	
Aerial Mapping Company 1975	Aerial Mapping Company	<i>Topographic Maps, Scale 1:1,200, Contour Interval 2 feet</i>			September 1975	
Aerial Photography 1978		<i>Aerial Photographs, Sinclair Wash, Scale 1:14,400</i>			October 1978	
Aerial Photography 1975		<i>Aerial Photographs, City of Flagstaff, Scale 1:6,000</i>			September 1975	

**Table 32: Bibliography and References (Continued)**

Citation in this FIS	Publisher/ Issuer	Publication Title, "Article," Volume, Number, etc.	Author/ Editor	Place of Publication	Publication Date/ Date of Issuance	Link
ADOT 1978	Arizona Department of Transportation	<i>Methods for Estimating the Magnitude and Frequency of Floods in Arizona</i>		Phoenix, Arizona	September 1978	
Arizona Engineering Company 1979	Arizona Engineering Company	<i>City of Flagstaff, Drainage Management Plan</i>		Flagstaff, Arizona	August 1979	
Atkins, 2016	Atkins North America, Inc.	<i>Kachina Village / Mountaineer Floodplain Delineation Study, Technical Data Notebook</i>		Phoenix, Arizona	September 2016	
Chow 1959	McGraw-Hill	<i>Computation of "n" Values Using Cowen's Method, Chapter 5, Open-Channel Hydraulics</i>	Chow, Ven Te		1959	
Coconino County Highway Department 1980	Coconino County Highway Department	<i>Mormon Lake Road Bridge, Project Number HB-983-906</i>			January 1980	
Dames & Moore 1982	Dames & Moore	<i>Stoneman Lake Elevation – Frequency Analysis, Coconino County, Arizona</i>		Bethesda, Maryland	December 1982	
FEMA 1981	Federal Emergency Management Agency	<i>Flood Insurance Study, Town of Fredonia, Coconino County, Arizona</i>			November 17, 1981	FEMA Flood Map Service Center <a href="https://msc.fema.gov">https://msc.fema.gov</a>
FEMA 1983	Federal Emergency Management Agency	<i>Flood Insurance Study, City of Williams, Coconino County, Arizona</i>			June 15, 1983	FEMA Flood Map Service Center <a href="https://msc.fema.gov">https://msc.fema.gov</a>

**Table 32: Bibliography and References (Continued)**

Citation in this FIS	Publisher/ Issuer	<i>Publication Title, "Article," Volume, Number, etc.</i>	Author/ Editor	Place of Publication	Publication Date/ Date of Issuance	Link
FEMA 1991	Federal Emergency Management Agency	<i>Flood Insurance Study, Yavapai County, Arizona (Unincorporated Areas)</i>			March 13, 1991	FEMA Flood Map Service Center <a href="https://msc.fema.gov">https://msc.fema.gov</a>
FEMA 1995	Federal Emergency Management Agency	<i>Flood Insurance Study, Coconino County, Arizona (Unincorporated Areas)</i>			September 30, 1995	FEMA Flood Map Service Center <a href="https://msc.fema.gov">https://msc.fema.gov</a>
FEMA 1996	Federal Emergency Management Agency	<i>Flood Insurance Study, City of Flagstaff, Coconino County, Arizona</i>			August 2, 1996	FEMA Flood Map Service Center <a href="https://msc.fema.gov">https://msc.fema.gov</a>
FEMA 2010a	Federal Emergency Management Agency	<i>Flood Insurance Study, Coconino County, Arizona and Incorporated Areas</i>			September 3, 2010	FEMA Flood Map Service Center <a href="https://msc.fema.gov">https://msc.fema.gov</a>
FEMA 2019	Federal Emergency Management Agency	<i>Flood Insurance Study, Yavapai County, Arizona and Incorporated Areas</i>			February 15, 2019	FEMA Flood Map Service Center <a href="https://msc.fema.gov">https://msc.fema.gov</a>
FEMA 2021	Federal Emergency Management Agency	<i>Flood Insurance Study, Coconino County, Arizona and Incorporated Areas</i>			July 19, 2022	FEMA Flood Map Service Center <a href="https://msc.fema.gov">https://msc.fema.gov</a>

**Table 32: Bibliography and References (Continued)**

Citation in this FIS	Publisher/ Issuer	<i>Publication Title, "Article," Volume, Number, etc.</i>	Author/ Editor	Place of Publication	Publication Date/ Date of Issuance	Link
FIA 1978	U.S. Department of Housing and Urban Development, Federal Insurance Administration	<i>Flood Hazard Boundary Map, Coconino County, Arizona, Scale 1:24,000</i>			May 30, 1978	FEMA Flood Map Service Center <a href="https://msc.fema.gov">https://msc.fema.gov</a>
Flagstaff 1975a	City of Flagstaff	<i>Aerial Photographs</i>			September 1975	
Flagstaff 1975b	City of Flagstaff	<i>Topographic Maps, Scale 1:4,800, Contour Interval 2 feet</i>		Flagstaff, Arizona	1975	
Flagstaff	City of Flagstaff	<i>Digital Elevation Model and LiDAR</i>				
Hydrology Consultants 1975	Hydrology Consultants, Inc.	<i>Lower Lake Mary Dam Report for City of Flagstaff</i>		Phoenix, Arizona	February 1975	
JEF 2012	JE Fuller Hydrology & Geomorphology, Inc.	<i>Munds Park Risk MAP Study (Coconino County, AZ), Technical Support Data Notebook</i>		Phoenix, Arizona	September 2012	
NAIP 2017	National Agriculture Imagery Program	<i>Orthoimagery for Coconino County, AZ</i>			2017	
NOAA 1973a	U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service	<i>Precipitation Frequency Atlas of the Western United States, Volume VIII</i>			1973	

**Table 32: Bibliography and References (Continued)**

Citation in this FIS	Publisher/ Issuer	Publication Title, "Article," Volume, Number, etc.	Author/ Editor	Place of Publication	Publication Date/ Date of Issuance	Link
NOAA 1973b	U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service	<i>Precipitation Frequency Atlas of the United States, Volume VI (Utah) and Volume VIII</i>			1973	
NOAA 2011	U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service	<i>Precipitation-Frequency Atlas of the United States, Volume I Version 5.0</i>		Silver Spring, Maryland	2011	
PRC Toups 1978	PRC Toups	<i>Topographic Maps, Scale 1:4,800, Contour Interval 4 feet</i>		Phoenix, Arizona	1978	
Roeske 1978		<i>Methods for Estimating the Magnitude and Frequency of Floods in Arizona, ADOT-RS- 15(121), Final Report</i>			1978	
Sanborn, 2009a	Sanborn Map Company	<i>LiDAR and Aerial Imagery over the areas of Bellemont, Doney Park, Pinewood, Cochina, and Fort Valley</i>			November 2009	
Sanborn, 2009b	Sanborn Map Company	<i>LiDAR and Aerial Imagery for the Kachina Village/ Mountainaire area</i>			November 2009	
Sedona 1999	City of Sedona Visitor Center	<i>Desert USA: An Online Travel and Adventure Guide to the American Southwest</i>			October 15, 1999	

**Table 32: Bibliography and References (Continued)**

Citation in this FIS	Publisher/ Issuer	Publication Title, "Article," Volume, Number, etc.	Author/ Editor	Place of Publication	Publication Date/ Date of Issuance	Link
USACE-HEC 1973	U.S. Army Corps of Engineers Hydrologic Engineering Center	<i>HEC-1 Flood Hydrograph Package, Generalized Computer Program</i>		Davis, California	January 1973	
USACE-HEC 1976	U.S. Army Corps of Engineers Hydrologic Engineering Center	<i>HEC-2 Water-Surface Profiles, Generalized Computer Program</i>		Davis, California	November 1976	
USACE-HEC 1998	U.S. Army Corps of Engineers Hydrologic Engineering Center	<i>HEC-1 Flood Hydrograph Package, Generalized Computer Program, Version 4.1</i>		Davis, California	June 1998	
USACE-HEC 2003	U.S. Army Corps of Engineers Hydrologic Engineering Center	<i>HEC-RAS River Analysis System, Version 3.1.1</i>		Davis, California	May 2003	
USACE-HEC 2010	U.S. Army Corps of Engineers Hydrologic Engineering Center	<i>HEC-RAS River Analysis System, Version 4.1.0</i>		Davis, California	January 2010	

**Table 32: Bibliography and References (Continued)**

Citation in this FIS	Publisher/ Issuer	Publication Title, "Article," Volume, Number, etc.	Author/ Editor	Place of Publication	Publication Date/ Date of Issuance	Link
USACE-HEC 2016	U.S. Army Corps of Engineers Hydrologic Engineering Center	<i>HEC-RAS River Analysis System, Version 5.1</i>		Davis, California	February 2016	
USACE-HEC-HMS 2016	U.S. Army Corps of Engineers Hydrologic Engineering Center	<i>HEC-HMS Hydrologic Modeling System, Version 4.2</i>		Davis, California	August 2016	
USACE - Los Angeles 1975	U.S. Army Corps of Engineers, Los Angeles District	<i>Floodplain Information, Rio de Flag and Sinclair Wash, Vicinity of Flagstaff, Coconino County, Arizona</i>			September 1975	
USBR 1974	U.S. Department of the Interior, Bureau of Reclamation	<i>Kanab Creek Basin Appraisal Report, Arizona-Utah</i>			February 1974	
USDA 1965	U.S. Department of Agriculture, Soil Conservation Service	<i>Technical Release No. 20, Computer Program, Project Formulation, Hydrology</i>			1965	
USDA 1971	U.S. Department of Agriculture, Forest Service	<i>Topographic Maps, Southwestern Region, Oak Creek Canyon, Scale 1:2,400, Contour Interval 5 feet</i>		Flagstaff, Arizona	1971	

**Table 32: Bibliography and References (Continued)**

Citation in this FIS	Publisher/ Issuer	Publication Title, "Article," Volume, Number, etc.	Author/ Editor	Place of Publication	Publication Date/ Date of Issuance	Link
USDA 1975	U.S. Department of Agriculture, Soil Conservation Service - Regional Technical Service Center, Engineering and Watershed Planning Unit	<i>TSC Technical Note - Hydrology - P0-6 (Rev.2)</i>		Portland, Oregon	October 21, 1975	
USDA 1978	U.S. Department of Agriculture, Forest Service	<i>Aerial Photographs, Mormon and Stoneman Lakes</i>			October 13, 1978	
USDA 1980	U.S. Department of Agriculture, Forest Service	<i>Stoneman Lake, Lake Botton Contour, Scale 1:1,200, Contour Interval 1 foot</i>		Albuquerque, New Mexico	July 1980	
USDOT 1965	U.S. Department of Transportation, Federal Highway Administration	<i>Hydraulic Engineering Circular No. 5</i>			December 1965	
USGS 1962	U.S. Department of the Interior, Geological Survey	<i>Circular 457, Floods in Utah, Magnitude and Frequency</i>			1962	

**Table 32: Bibliography and References (Continued)**

Citation in this FIS	Publisher/ Issuer	Publication Title, "Article," Volume, Number, etc.	Author/ Editor	Place of Publication	Publication Date/ Date of Issuance	Link
USGS 1965	U.S. Department of the Interior, Geological Survey	<i>7.5-Minute Series Topographic Maps, Scale 1:24,000, Contour Interval 20 feet - Stoneman Lake, Arizona</i>			1965	
USGS 1973	U.S. Department of the Interior, Geological Survey	<i>Roughness Coefficients for Stream Channels in Arizona, Open-File Report</i>		Tucson, Arizona	February 1973	
USGS 1974	U.S. Department of the Interior, Geological Survey	<i>7.5-Minute Series Topographic Maps, Scale 1:24,000, Contour Interval 20 feet - Mormon Lake, Arizona</i>			1965, Photorevised 1974	
USGS 1999	U.S. Geological Survey	<i>The National Flood-Frequency Program - Methods for Estimating Flood Magnitude and Frequency in Arizona. USGS Fact Sheet 111-98</i>			1999	
USGSc	U.S. Department of the Interior, Geological Survey	<i>Methods for Estimating Magnitude and Frequency of Flood in Arizona, Developed with Unregulated and Rural Peak-Flow Date through Water Year 2010, USGS Investigations Report 2014-5211</i>	Paretti, N.V., Kennedy, J.R., Turney, L.A., Veilleux, A.G.			

**Table 32: Bibliography and References (Continued)**

Citation in this FIS	Publisher/ Issuer	Publication Title, "Article," Volume, Number, etc.	Author/ Editor	Place of Publication	Publication Date/ Date of Issuance	Link
USGSa	Federal Highway Administration, U.S. Geological Survey	<i>Model for Water- Surface Profile Computations Program J635- Version P-84.001</i>				
USGSb	U.S. Geological Survey	<i>10-meter Digital Elevation Models</i>				
WET 1989	Water Engineering & Technology	<i>Living Springs, Floodplain Limits. Scale 1:600, CI 5 ft</i>			July 6, 1989	
Willdan 1977	Willdan Associates, Consulting Engineers and Planners	<i>Design Plans, Peak View Estates, Unit I, Channel Change, Rio de Flag and 20-Foot- Wide Drainage Channel (Peak View Wash)</i>		Phoenix, Arizona	May 1977	
Willdan 1980	Willdan Associates, Consulting Engineers and Planners	<i>Peak View Meadows, Unit II, Improvement Plans</i>		Phoenix, Arizona	March 1980	