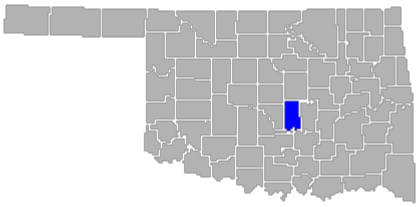
FLOOD INSURANCE STUDY

FEDERAL EMERGENCY MANAGEMENT AGENCY

VOLUME 1 of 2



POTTAWATOMIE COUNTY, OK

AND INCORPORATED AREAS

COMMUNITY NAME	NUMBER	COMMUNITY NAME	NUMBER
Absentee Shawnee Tribe	400580	McLoud, Town of	400398
Asher, Town of	400259	Oklahoma City, City of [1]	405378
Bethel Acres, Town of	400346	Pink, Town of	400523
Brooksville, City of	400469	Pottawatomie County Unincorporated Areas	400496
Citizen Potawatomi Nation	400553	Sac and Fox Nation	400576
Earlsboro, Town of	400524	Shawnee, City of	400178
Johnson, Town of	400242	St. Louis, Town of	400326
Kickapoo Tribe of Oklahoma	400563	Tecumseh, City of	400179
Macomb, Town of	400525	Tribbey, Town of	400421
Maud, City of	400401	Wanette, Town of	400180

[1]No Special Flood Hazard Areas Identified within Pottawatomie County

PRELIMINARY

June 20, 2016

FLOOD INSURANCE STUDY NUMBER
40125CV001B

Version Number 2.3.3.2

FEMA

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FLOOD INSURANCE STUDY REPORT
POTTAWATOMIE COUNTY, OK

SECTION 1.0 – INTRODUCTION

1.1 The National Flood Insurance Program

The National Flood Insurance Program (NFIP) is a voluntary Federal program that enables property owners in participating communities to purchase insurance protection against losses from flooding. This insurance is designed to provide an insurance alternative to disaster assistance to meet the escalating costs of repairing damage to buildings and their contents caused by floods.

For decades, the national response to flood disasters was generally limited to constructing flood-control works such as dams, levees, sea-walls, and the like, and providing disaster relief to flood victims. This approach did not reduce losses nor did it discourage unwise development. In some instances, it may have actually encouraged additional development. To compound the problem, the public generally could not buy flood coverage from insurance companies, and building techniques to reduce flood damage were often overlooked.

In the face of mounting flood losses and escalating costs of disaster relief to the general taxpayers, the U.S. Congress created the NFIP. The intent was to reduce future flood damage through community floodplain management ordinances, and provide protection for property owners against potential losses through an insurance mechanism that requires a premium to be paid for the protection.

The U.S. Congress established the NFIP on August 1, 1968, with the passage of the National Flood Insurance Act of 1968. The NFIP was broadened and modified with the passage of the Flood Disaster Protection Act of 1973 and other legislative measures. It was further modified by the National Flood Insurance Reform Act of 1994 and the Flood Insurance Reform Act of 2004. The NFIP is administered by the Federal Emergency Management Agency (FEMA), which is a component of the Department of Homeland Security (DHS).

Participation in the NFIP is based on an agreement between local communities and the Federal Government. If a community adopts and enforces floodplain management regulations to reduce future flood risks to new construction and substantially improved structures in Special Flood Hazard Areas (SFHAs), the Federal Government will make flood insurance available within the community as a financial protection against flood losses. The community's floodplain management regulations must meet or exceed criteria established in accordance with Title 44 Code of Federal Regulations (CFR) Part 60.3, *Criteria for Land Management and Use*.

SFHAs are delineated on the community's Flood Insurance Rate Maps (FIRMs). Under the NFIP, buildings that were built before the flood hazard was identified on the community's FIRMs are generally referred to as "Pre-FIRM" buildings. When the NFIP was created, the U.S. Congress recognized that insurance for Pre-FIRM buildings would be prohibitively expensive if the premiums were not subsidized by the Federal Government. Congress also recognized that most of these floodprone buildings were built by individuals who did not have sufficient knowledge of the flood hazard to make informed decisions. The NFIP requires that full actuarial rates reflecting the complete flood risk be charged on all buildings constructed or substantially improved on or after

the effective date of the initial FIRM for the community or after December 31, 1974, whichever is later. These buildings are generally referred to as "Post-FIRM" buildings.

1.2 Purpose of this Flood Insurance Study Report

This Flood Insurance Study (FIS) report revises and updates information on the existence and severity of flood hazards for the study area. The studies described in this report developed flood hazard data that will be used to establish actuarial flood insurance rates and to assist communities in efforts to implement sound floodplain management.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive than the minimum Federal requirements. Contact your State NFIP Coordinator to ensure that any higher State standards are included in the community's regulations.

1.3 Jurisdictions Included in the Flood Insurance Study Project

This FIS Report covers the entire geographic area of Pottawatomie County, Oklahoma.

The jurisdictions that are included in this project area, along with the Community Identification Number (CID) for each community and the 8-digit Hydrologic Unit Codes (HUC-8) sub-basins affecting each, are shown in Table 1. The Flood Insurance Rate Map (FIRM) panel numbers that affect each community are listed. If the flood hazard data for the community is not included in this FIS Report, the location of that data is identified.

The location of flood hazard data for participating communities in multiple jurisdictions is also indicated in the table.

Jurisdictions that have no identified SFHAs as of the effective date of this study are indicated in the table. Changed conditions in these communities (such as urbanization or annexation) or the availability of new scientific or technical data about flood hazards could make it necessary to determine SFHAs in these jurisdictions in the future.

Table 1: Listing of NFIP Jurisdictions

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Absentee Shawnee Tribe	400580	11090203, 11100302	40125C0040J, 40125C0100J, 40125C0170H, 40125C0190J, 40125C0195J, 40125C0205J, 40125C0210J, 40125C0215J, 40125C0220J, 40125C0230J, 40125C0250J, 40125C0260H, 40125C0280H, 40125C0300H, 40125C0305H, 40125C0310H	
Asher, Town of	400259	11090202	40125C0425H, 40125C0525H	
Bethel Acres, Town of	400346	11090203, 11100302	40125C0160H, 40125C0170H, 40125C0180J, 40125C0185J, 40125C0190J, 40125C0195J, 40125C0205J, 40125C0215J	
Brooksville, City of	400469	11090203	40125C0305H	
Citizen Potawatomi Nation	400553	11100302, 11090203, 11090202	40125C0215J, 40125C0220J, 40125C0310H, 40125C0350H, 40125C0400H, 40125C0450H, 40125C0500H, 40125C0525H, 40125C0550H	

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Earlsboro, Town of	400524	11090203, 11100302	40125C0100J, 40125C0230J, 40125C0250J	
Johnson, Town of	400242	11100302	40125C0100J	
Kickapoo Tribe of Oklahoma	400563	11100302	40125C0030J, 40125C0035J, 40125C0040J, 40125C0045J, 40125C0065J, 40125C0185J, 40125C0205J, 40125C0210J, 40125C0220J	Lincoln County FIS Report, 2010
Macomb, Town of	400525	11090203	40125C0300H	
Maud, City of	400401	11090203	40125C0350H, 40125C0450H	Seminole County FIS Report, 2011
McLoud, Town of	400398	11100302	40125C0022J, 40125C0025J, 40125C0030J, 40125C0040J, 40125C0045J, 40125C0160H, 40125C0180J, 40125C0185J	
Oklahoma City, City of [1]	405378	11100302	40125C0160H, 40125C0180J	Canadian County FIS Report, 2008; Cleveland County FIS Report, 2013; Oklahoma County FIS Report, 2009
Pink, Town of	400523	11090203, 11100302	40125C0170H, 40125C0190J, 40125C0195J, 40125C0260H, 40125C0270H, 40125C0280H, 40125C0290H,	

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Pink, Town of	400523	11090203, 11100302	40125C0300H	
Pottawatomie County (Unincorporated Areas)	400496	11090203, 11100303, 11090202, 11090203, 11100302	40125C0022J, 40125C0025J, 40125C0030J, 40125C0035J, 40125C0040J, 40125C0045J, 40125C0065J, 40125C0070J, 40125C0075H, 40125C0100J, 40125C0125J, 40125C0150H, 40125C0160H, 40125C0180J, 40125C0185J, 40125C0190J, 40125C0195J, 40125C0205J, 40125C0210J, 40125C0215J, 40125C0220J, 40125C0230J, 40125C0250J, 40125C0260H, 40125C0270H, 40125C0280H, 40125C0290H, 40125C0300H, 40125C0305H, 40125C0310H, 40125C0325H, 40125C0350H, 40125C0375H, 40125C0400H, 40125C0425H, 40125C0450H, 40125C0475H, 40125C0500H,	

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Pottawatomie County (Unincorporated Areas)	400496	11090203, 11100303, 11090202, 11090203, 11100302	40125C0525H, 40125C0550H	
Sac and Fox Nation	400576	11100302, 11100303	40125C0070J, 40125C0075H, 40125C0100J, 40125C0125J, 40125C0210J, 40125C0250J	Lincoln County FIS Report, 2010
Shawnee, City of	400178	11090203, 11100302, 11100303	40125C0045J, 40125C0065J, 40125C0070J, 40125C0075H, 40125C0180J, 40125C0185J, 40125C0190J, 40125C0195J 40125C0205J, 40125C0210J, 40125C0215J, 40125C0220J, 40125C0230J, 40125C0250J	
St. Louis, Town of	400326	11090203	40125C0425H, 40125C0450H	
Tecumseh, City of	400179	11090203, 11100302	40125C0215J, 40125C0220J, 40125C0305H, 40125C0310H	
Tribbey, Town of	400421	11090202, 11090203	40125C0270H, 40125C0290H, 40125C0300H, 40125C0375H, 40125C0400H	

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Wanette, Town of	400180	11090202	40125C0500H	

[1]No Special Flood Hazard Areas Identified

1.4 Considerations for using this Flood Insurance Study Report

The NFIP encourages State and local governments to implement sound floodplain management programs. To assist in this endeavor, each FIS Report provides floodplain data, which may include a combination of the following: 10-, 4-, 2-, 1-, and 0.2-percent annual chance flood elevations (the 1% annual chance flood elevation is also referred to as the Base Flood Elevation (BFE)); delineations of the 1% annual chance and 0.2% annual chance floodplains; and 1% annual chance floodway. This information is presented on the FIRM and/or in many components of the FIS Report, including Flood Profiles, Floodway Data tables, Summary of Non-Coastal Stillwater Elevations tables, and Coastal Transect Parameters tables (not all components may be provided for a specific FIS).

This section presents important considerations for using the information contained in this FIS Report and the FIRM, including changes in format and content. Figures 1, 2, and 3 present information that applies to using the FIRM with the FIS Report.

- Part or all of this FIS Report may be revised and republished at any time. In addition, part of this FIS Report may be revised by a Letter of Map Revision (LOMR), which does not involve republication or redistribution of the FIS Report. Refer to Section 6.5 of this FIS Report for information about the process to revise the FIS Report and/or FIRM.

  It is, therefore, the responsibility of the user to consult with community officials by contacting the community repository to obtain the most current FIS Report components. Communities participating in the NFIP have established repositories of flood hazard data for floodplain management and flood insurance purposes. Community map repository addresses are provided in Table 31, "Map Repositories," within this FIS Report.

- New FIS Reports are frequently developed for multiple communities, such as entire counties. A countywide FIS Report incorporates previous FIS Reports for individual communities and the unincorporated area of the county (if not jurisdictional) into a single document and supersedes those documents for the purposes of the NFIP.

  The initial Countywide FIS Report for Pottawatomie County became effective on September 3, 2010. Refer to Table 28 for information about subsequent revisions to the FIRMs.

- The CRS is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. Visit the FEMA Web site at www.fema.gov/national-flood-insurance-program-community-rating-

system or contact your appropriate FEMA Regional Office for more information about this program.

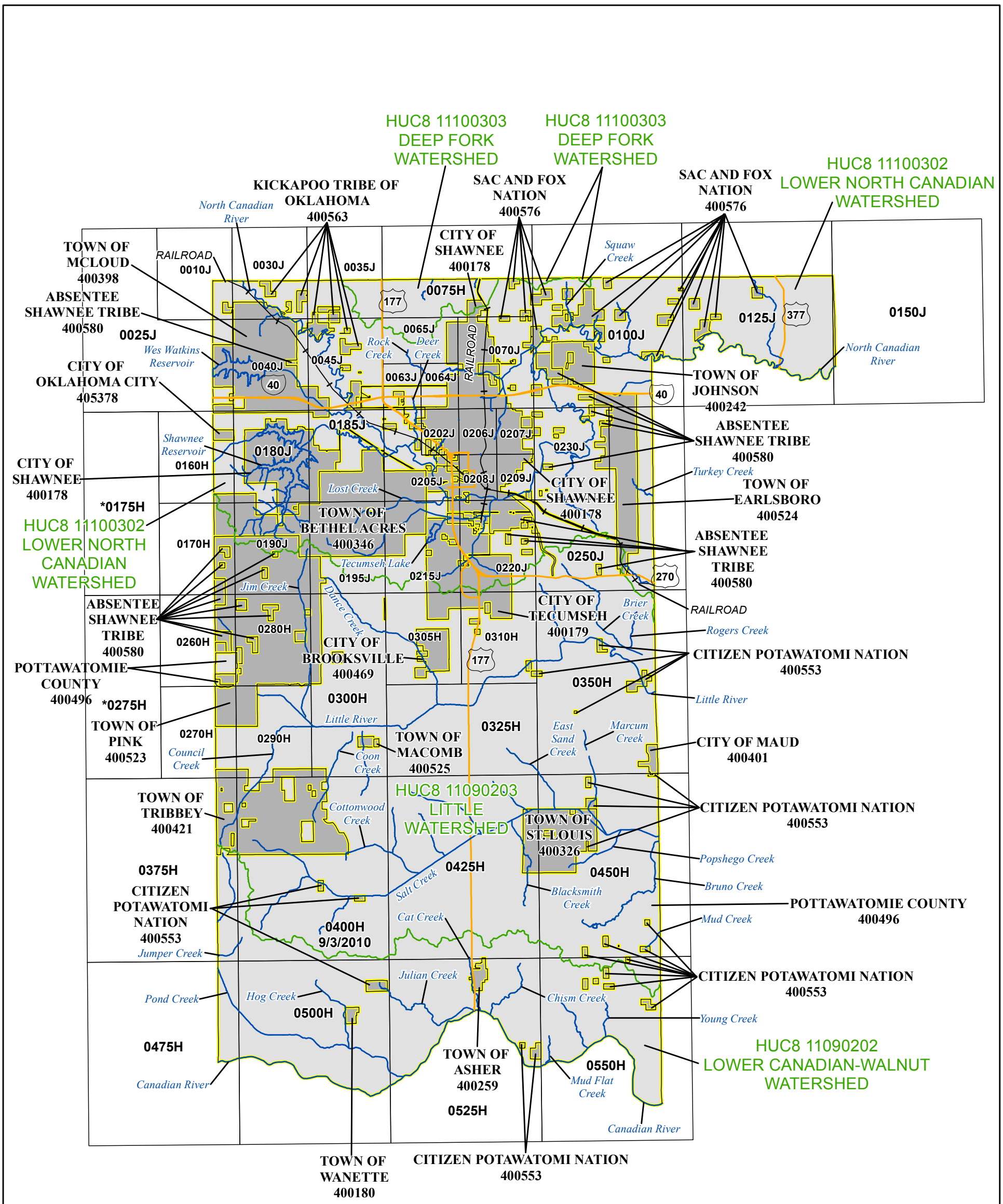
- Previous FIS Reports and FIRMs may have included levees that were accredited as reducing the risk associated with the 1% annual chance flood based on the information available and the mapping standards of the NFIP at that time. For FEMA to continue to accredit the identified levees, the levees must meet the criteria of the Code of Federal Regulations, Title 44, Section 65.10 (44 CFR 65.10), titled "Mapping of Areas Protected by Levee Systems."

  Since the status of levees is subject to change at any time, the user should contact the appropriate agency for the latest information regarding levees presented in Table 9 of this FIS Report. For levees owned or operated by the U.S. Army Corps of Engineers (USACE), information may be obtained from the USACE national levee database nld.usace.army.mil. For all other levees, the user is encouraged to contact the appropriate local community.

- FEMA has developed a *Guide to Flood Maps* (FEMA 258) and online tutorials to assist users in accessing the information contained on the FIRM. These include how to read panels and step-by-step instructions to obtain specific information. To obtain this guide and other assistance in using the FIRM, visit the FEMA Web site at www.fema.gov/online-tutorials.

The FIRM Index in Figure 1 shows the overall FIRM panel layout within Pottawatomie County, and also displays the panel number and effective date for each FIRM panel in the county. Other information shown on the FIRM Index includes community boundaries, flooding sources, watershed boundaries, and United States Geological Survey (USGS) Hydrologic Unit Code-8 (HUC-8) codes.

Figure 1: FIRM Panel Index



1 in = 5 miles

0 1 2 4 6 8 Miles

Oklahoma State Plane South (FIPS Zone 3502); North American Datum 1983 North American Vertical Datum of 1988

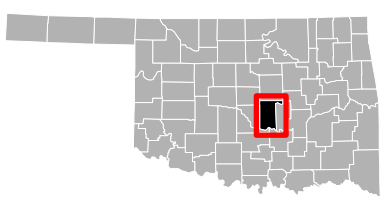
THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT

HTTP://MSC.FEMA.GOV

SEE FLOOD INSURANCE STUDY FOR ADDITIONAL INFORMATION

*PANEL NOT PRINTED - Area Outside County Boundary

COUNTY LOCATOR



NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP INDEX

POTTAWATOMIE COUNTY, OK And Incorporated Areas

PANELS PRINTED:

0010, 0025, 0030, 0035, 0040, 0045, 0063, 0064, 0065, 0070, 0075, 0100, 0125, 0150, 0160, 0170, 0180, 0185, 0190, 0195, 0202, 0205, 0206, 0207, 0208, 0209, 0215, 0220, 0230, 0250, 0260, 0270, 0280, 0290, 0300, 0305, 0310, 0325, 0350, 0375, 0400, 0425, 0450, 0475, 0500, 0525, 0550

FEMA

MAP NUMBER
40125CIND0B

MAP REVISED

Each FIRM panel may contain specific notes to the user that provide additional information regarding the flood hazard data shown on that map. However, the FIRM panel does not contain enough pace to show all the notes that may be relevant in helping to better understand the information on the panel. Figure 2 contains the full list of these notes.

Figure 2: FIRM Notes to Users

NOTES TO USERS

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products, or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Map Service Center at the number listed above.

For community and countywide map dates, refer to Table 28 in this FIS Report.

To determine if flood insurance is available in the community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

PRELIMINARY FIS REPORT: FEMA maintains information about map features, such as street locations and names, in or near designated flood hazard areas. Requests to revise information in or near designated flood hazard areas may be provided to FEMA during the community review period, at the final Consultation Coordination Officer's meeting, or during the statutory 90-day appeal period. Approved requests for changes will be shown on the final printed FIRM.

The map is for use in administering the NFIP. It may not identify all areas subject to flooding, particularly from local drainage sources of small size. Consult the community map repository to find updated or additional flood hazard information.

BASE FLOOD ELEVATIONS: For more detailed information in areas where Base Flood Elevations (BFEs) and/or floodways have been determined, consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables within this FIS Report. Use the flood elevation data within the FIS Report in conjunction with the FIRM for construction and/or floodplain management.

FLOODWAY INFORMATION: Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the FIS Report for this jurisdiction.

FLOOD CONTROL STRUCTURE INFORMATION: Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 4.3 "Non-Levee Flood Protection Measures" of this FIS Report for information on flood control structures for this jurisdiction.

PROJECTION INFORMATION: The projection used in the preparation of the map was Lambert Conformal Conic, Oklahoma South Zone 3502**.** The horizontal datum was NAD 83 GRS 1980 Spheroid**.** Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.

ELEVATION DATUM: Flood elevations on the FIRM are referenced to the North American Vertical Datum of 1988 (NAVD 88)**.** These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988 (NAVD 88)**,** visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

Local vertical monuments may have been used to create the map. To obtain current monument information, please contact the appropriate local community listed in Table 31 of this FIS Report.

BASE MAP INFORMATION: Base map information shown on the FIRM was provided by Center for Spatial Analysis (University of Oklahoma) and Pottawatomie County E-911 System Trust Authority. For information about base maps, refer to Section 6.2 “Base Map” in this FIS Report.

Corporate limits shown on the map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after the map was published, map users should contact appropriate community officials to verify current corporate limit locations.

NOTES FOR FIRM INDEX

REVISIONS TO INDEX: As new studies are performed and FIRM panels are updated within Pottawatomie County, OK, corresponding revisions to the FIRM Index will be incorporated within the FIS Report to reflect the effective dates of those panels. Please refer to Table 28 of this FIS Report to determine the most recent FIRM revision date for each community. The most recent FIRM panel effective date will correspond to the most recent index date.

SPECIAL NOTES FOR SPECIFIC FIRM PANELS

This Notes to Users section was created specifically for Pottawatomie County, OK, effective *(DATE).*

FLOOD RISK REPORT: A Flood Risk Report (FRR) may be available for many of the flooding sources and communities referenced in this FIS Report. The FRR is provided to increase public awareness of flood risk by helping communities identify the areas within their jurisdictions that have the greatest risks. Although non-regulatory, the information provided within the FRR can assist communities in assessing and evaluating mitigation opportunities to reduce these risks. It can also be used by communities developing or updating flood risk mitigation plans. These plans allow communities to identify and evaluate opportunities to reduce potential loss of life and property. However, the FRR is not intended to be the final authoritative source of all flood risk data for a project area; rather, it should be used with other data sources to paint a comprehensive picture of flood risk.

Each FIRM panel contains an abbreviated legend for the features shown on the maps. However, the FIRM panel does not contain enough space to show the legend for all map features. Figure 3 shows the full legend of all map features. Note that not all of these features may appear on the FIRM panels in Pottawatomie County.

Figure 3: Map Legend for FIRM

SPECIAL FLOOD HAZARD AREAS: *The 1% annual chance flood, also known as the base flood or 100-year flood, has a 1% chance of happening or being exceeded each year. Special Flood Hazard Areas are subject to flooding by the 1% annual chance flood. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood. The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights. See note for specific types. If the floodway is too narrow to be shown, a note is shown.*

	Special Flood Hazard Areas subject to inundation by the 1% annual chance flood (Zones A, AE, AH, AO, AR, A99, V and VE)
Zone A	The flood insurance rate zone that corresponds to the 1% annual chance floodplains. No base (1% annual chance) flood elevations (BFEs) or depths are shown within this zone.
Zone AE	The flood insurance rate zone that corresponds to the 1% annual chance floodplains. Base flood elevations derived from the hydraulic analyses are shown within this zone, either at cross section locations or as static whole-foot elevations that apply throughout the zone.
Zone AH	The flood insurance rate zone that corresponds to the areas of 1% annual chance shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot BFEs derived from the hydraulic analyses are shown at selected intervals within this zone.
Zone AO	The flood insurance rate zone that corresponds to the areas of 1% annual chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average whole-foot depths derived from the hydraulic analyses are shown within this zone.
Zone AR	The flood insurance rate zone that corresponds to areas that were formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
Zone A99	The flood insurance rate zone that corresponds to areas of the 1% annual chance floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No base flood elevations or flood depths are shown within this zone.
Zone V	The flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Base flood elevations are not shown within this zone.

Figure 3: Map Legend for FIRM

Zone VE	Zone VE is the flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Base flood elevations derived from the coastal analyses are shown within this zone as static whole-foot elevations that apply throughout the zone.
	Regulatory Floodway determined in Zone AE.
OTHER AREAS OF FLOOD HAZARD	
	Shaded Zone X: Areas of 0.2% annual chance flood hazards and areas of 1% annual chance flood hazards with average depths of less than 1 foot or with drainage areas less than 1 square mile.
	Future Conditions 1% Annual Chance Flood Hazard – Zone X: The flood insurance rate zone that corresponds to the 1% annual chance floodplains that are determined based on future-conditions hydrology. No base flood elevations or flood depths are shown within this zone.
	Area with Reduced Flood Risk due to Levee: Areas where an accredited levee, dike, or other flood control structure has reduced the flood risk from the 1% annual chance flood.
OTHER AREAS	
	Zone D (Areas of Undetermined Flood Hazard): The flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible
NO SCREEN	Unshaded Zone X: Areas determined to be outside the 0.2% annual chance flood hazard
FLOOD HAZARD AND OTHER BOUNDARY LINES	
(ortho) (vector)	Flood Zone Boundary (white line on ortho-photography-based mapping; gray line on vector-based mapping)
	Limit of Study
	Jurisdiction Boundary
	Limit of Moderate Wave Action (LiMWA): Indicates the inland limit of the area affected by waves greater than 1.5 feet
GENERAL STRUCTURES	
Aqueduct *Channel* *Culvert* *Storm Sewer*	Channel, Culvert, Aqueduct, or Storm Sewer
Dam *Jetty* *Weir*	Dam, Jetty, Weir

Figure 3: Map Legend for FIRM

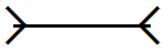
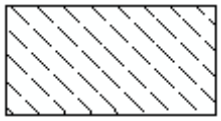
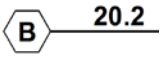
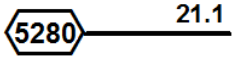
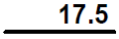
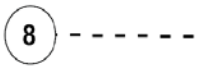
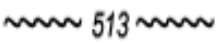
	Levee, Dike or Floodwall
 *Bridge*	Bridge
COASTAL BARRIER RESOURCES SYSTEM (CBRS) AND OTHERWISE PROTECTED AREAS (OPA): *CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.*	
 **CBRS AREA 09/30/2009**	Coastal Barrier Resources System Area: Labels are shown to clarify where this area shares a boundary with an incorporated area or overlaps with the floodway.
 **OTHERWISE PROTECTED AREA 09/30/2009**	Otherwise Protected Area
REFERENCE MARKERS	
	River mile Markers
CROSS SECTION & TRANSECT INFORMATION	
	Lettered Cross Section with Regulatory Water Surface Elevation (BFE)
	Numbered Cross Section with Regulatory Water Surface Elevation (BFE)
	Unlettered Cross Section with Regulatory Water Surface Elevation (BFE)
	Coastal Transect
	Profile Baseline: Indicates the modeled flow path of a stream and is shown on FIRM panels for all valid studies with profiles or otherwise established base flood elevation.
	Coastal Transect Baseline: Used in the coastal flood hazard model to represent the 0.0-foot elevation contour and the starting point for the transect and the measuring point for the coastal mapping.
	Base Flood Elevation Line (shown for flooding sources for which no cross sections or profile are available)
ZONE AE (EL 16)	Static Base Flood Elevation value (shown under zone label)

Figure 3: Map Legend for FIRM

ZONE AO (DEPTH 2)	Zone designation with Depth
ZONE AO (DEPTH 2) (VEL 15 FPS)	Zone designation with Depth and Velocity
BASE MAP FEATURES	
Missouri Creek	River, Stream or Other Hydrographic Feature
	Interstate Highway
	U.S. Highway
	State Highway
	County Highway
MAPLE LANE	Street, Road, Avenue Name, or Private Drive if shown on Flood Profile
	Railroad
	Horizontal Reference Grid Line
	Horizontal Reference Grid Ticks
+	Secondary Grid Crosshairs
Land Grant	Name of Land Grant
7	Section Number
R. 43 W. T. 22 N.	Range, Township Number
$^{42}76^{000m}$E	Horizontal Reference Grid Coordinates (UTM)
365000 FT	Horizontal Reference Grid Coordinates (State Plane)
80° 16’ 52.5”	Corner Coordinates (Latitude, Longitude)

SECTION 2.0 – FLOODPLAIN MANAGEMENT APPLICATIONS

2.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1% annual chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2% annual chance (500-year) flood is employed to indicate additional areas of flood hazard in the community.

Each flooding source included in the project scope has been studied and mapped using professional engineering and mapping methodologies that were agreed upon by FEMA and Pottawatomie County as appropriate to the risk level. Flood risk is evaluated based on factors such as known flood hazards and projected impact on the built environment. Engineering analyses were performed for each studied flooding source to calculate its 1% annual chance flood elevations; elevations corresponding to other floods (e.g. 10-, 4-, 2-, 0.2-percent annual chance, etc.) may have also been computed for certain flooding sources. Engineering models and methods are described in detail in Section 5.0 of this FIS Report. The modeled elevations at cross sections were used to delineate the floodplain boundaries on the FIRM; between cross sections, the boundaries were interpolated using elevation data from various sources. More information on specific mapping methods is provided in Section 6.0 of this FIS Report.

Depending on the accuracy of available topographic data (Table 22), study methodologies employed (Section 5.0), and flood risk, certain flooding sources may be mapped to show both the 1% and 0.2% annual chance floodplain boundaries, regulatory water surface elevations (BFEs), and/or a regulatory floodway. Similarly, other flooding sources may be mapped to show only the 1% annual chance floodplain boundary on the FIRM, without published water surface elevations. In cases where the 1% and 0.2% annual chance floodplain boundaries are close together, only the 1% annual chance floodplain boundary is shown on the FIRM. Figure 3, "Map Legend for FIRM", describes the flood zones that are used on the FIRMs to account for the varying levels of flood risk that exist along flooding sources within the project area. Table 2 and Table 3 indicate the flood zone designations for each flooding source and each community within Pottawatomie County, OK, respectively.

Table 2, "Flooding Sources Included in this FIS Report," lists each flooding source, including its study limits, affected communities, mapped zone on the FIRM, and the completion date of its engineering analysis from which the flood elevations on the FIRM and in the FIS Report were derived. Descriptions and dates for the latest hydrologic and hydraulic analyses of the flooding sources are shown in Table 12. Floodplain boundaries for these flooding sources are shown on the FIRM (published separately) using the symbology described in Figure 3. On the map, the 1% annual chance floodplain corresponds to the SFHAs. The 0.2% annual chance floodplain shows areas that, although out of the regulatory floodplain, are still subject to flood hazards.

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 procedures to remove these areas from the SFHA are described in Section 6.5 of this FIS Report.

Table 2: Flooding Sources Included in this FIS Report

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Bullfrog Creek	Absentee Shawnee Tribe, Town of Pink	Confluence with Pecan Creek	Approximately 0.6 mile downstream of Highway 9	11090203	3.68		N	AE	August 2008
Deer Creek	Pottawatomie County (Unincorporated Areas)	Approximately 2,973 feet above the confluence with North Canadian River	Downstream of Interstate Highway 40	11100302	2.68		Y	AE	January 19, 2014
Deer Creek	Kickapoo Tribe of Oklahoma, Pottawatomie County (Unincorporated Areas)	Confluence with North Canadian River	Downstream of Interstate Highway 40	11100302	4.70		N	A	January 19, 2014
Little River	Absentee Shawnee Tribe, Town of Pink, Pottawatomie County (Unincorporated Areas)	Approximately 240 feet downstream of Okay Road	Approximately 1.5 miles upstream of the confluence of Pecan Creek	11090203	2.49		N	AE	August 2008

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
North Canadian River (Lower Reach)	Pottawatomie County (Unincorporated Areas), Sac and Fox Nation	Just upstream of Lake Eufaula	Approximately 2,800 ft downstream Oklahoma State Route 3E	11100302	172.00		N	A	January 19, 2014
North Canadian River (Lower Reach)	Pottawatomie County (Unincorporated Areas), Sac and Fox Nation	Approximately 1,200 ft upstream of Lake Road	Approximately 2,700 ft Northeast of intersection of Highway Drive and Redskin Road	11100302	13.47		N	A	January 19, 2014
North Canadian River (Upper Reach)	Pottawatomie County (Unincorporated Areas), Sac and Fox Nation, Town of McLoud	Approximately 2,500 ft downstream of corporate limit of Kickapoo Tribal Land	Approximately 5,200 ft downstream of US Route 62	11100302	13.29		Y	AE	January 19, 2014
North Canadian River (Lower Reach)	Kickapoo Tribe of Oklahoma, Pottawatomie County (Unincorporated Areas)	Approximately 2,800 ft downstream of Oklahoma State Route 3E	Approximately 1,200 ft upstream of Lake Road	11100302	8.72		Y	AE	January 19, 2014

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Pecan Creek	Absentee Shawnee Tribe, Pottawatomie County (Unincorporated Areas)	Confluence with Little River	Approximately 1.8 miles upstream of confluence of Bullfrog Creek	11090203	2.66		N	AE	August 2008
Rock Creek	City of Shawnee, Pottawatomie County (Unincorporated Areas)	Just upstream of Kickapoo Street	Approximately 4,400 ft upstream of Garretts Lake Road	11100302	4.30		N	AE	January 19, 2014
Rock Creek	City of Shawnee, Sac and Fox Nation, Pottawatomie County (Unincorporated Areas)	Approximately 1,795 ft upstream of its confluence with North Canadian River	Approximately 200 ft upstream of Kickapoo Street	11100302	4.80		N	AE	August 2008
Rosedale Park Tributary	City of Shawnee	Confluence with Tributary No. 1 to North Canadian River	Approximately 50 ft downstream of Philadelphia Street	11100302	0.27		Y	AE	January 19, 2014

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Squirrel Creek	Town of Bethel Acres, Pottawatomie County (Unincorporated Areas), City of Shawnee, Citizen Potawatomi Nation	Confluence with North Canadian River	Approximately 1,500 ft downstream of Waco Road	11100302	6.98		Y	AE	January 19, 2014
Tributary A to Tributary No. 1 to North Canadian River	City of Shawnee	Confluence with Tributary No. 1 to North Canadian River	Just downstream of Wayne Street	11100302	1.46		N	AE	January 19, 2014
Tributary A to Tributary No. 2 to North Canadian River	Pottawatomie County (Unincorporated Areas), City of Shawnee	Approximately 890 ft above confluence with North Canadian River	Just downstream of W Independence Street	11100302	0.60		N	AE	January 19, 2014
Tributary A to Tributary No. 4 to North Canadian River	Pottawatomie County (Unincorporated Areas)	Confluence with Tributary No. 4 to North Canadian River	Approximately 2,140 ft upstream of Brangus Road	11100302	0.40		N	AE	January 19, 2014

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Tributary A to Tributary No. 5 to North Canadian River	City of Shawnee, Pottawatomie County (Unincorporated Areas)	Confluence with Tributary No. 5 to North Canadian River	Approximately 200 ft upstream of Country Club Road	11100302	0.59		N	AE	January 19, 2014
Tributary A-1 to Tributary No. 2 to North Canadian River	City of Shawnee, Kickapoo Tribe of Oklahoma	Confluence with Tributary A to Tributary No. 2 to North Canadian River	Approximately 600 ft downstream of N Leo Street	11100302	0.28		N	AE	January 19, 2014
Tributary B to Tributary No. 1 to North Canadian River	City of Shawnee	Confluence with Tributary No. 1 to North Canadian River	Just downstream of Kickapoo Street	11100302	1.06		N	AE	January 19, 2014
Tributary B to Tributary No. 2 to North Canadian River	Pottawatomie County (Unincorporated Areas)	Just downstream of W Independence Street	Just downstream of State Highway 177	11100302	0.67		N	AE	January 19, 2014
Tributary B to Tributary No. 5 to North Canadian River	City of Shawnee	Confluence with Tributary No. 5 to North Canadian River	Approximately 130 ft upstream of Sequoya Street	11100302	0.99		N	AE	January 19, 2014
Tributary B-1 to Tributary No. 5 to North Canadian River	City of Shawnee	Confluence with Tributary B to Tributary No. 5 to North Canadian River	Approximately 290 ft upstream of Seneca Street	11100302	0.36		N	AE	January 19, 2014

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Tributary C to Tributary No. 2 to North Canadian River	City of Shawnee	Confluence with Tributary No. 2 to North Canadian River	Approximately 450 ft east of intersection of Rosa Street and N Leo Street	11100302	0.19		N	AE	January 19, 2014
Tributary No. 1 to Deer Creek	Pottawatomie County (Unincorporated Areas)	Confluence with Deer Creek	Approximately 500 ft downstream of 45th Street	11100302	0.46		N	AE	January 19, 2014
Tributary No. 1 to North Canadian River	City of Shawnee	Confluence with North Canadian River	Approximately 450 ft downstream of Independence Street	11100302	2.83		Y	AE	January 19, 2014
Tributary No. 1 to Rock Creek	City of Shawnee	Confluence with Rock Creek	Approximately 70 ft upstream of West 45th Street	11100302	2.85		Y	AE	August 2008
Tributary No. 1 to Rock Creek	City of Shawnee	Just upstream of W 45th Street	Just downstream of MacArthur Street	11100302	1.32		N	AE	January 19, 2014
Tributary No. 1 Squirrel Creek	City of Tecumseh, Citizen Potawatomi Nation	Approximately 40 ft upstream of Benson Park Road	Approximately 1,600 ft upstream of 5th Street	11100302	2.62		Y	AE	January 19, 2014
Tributary No. 1 to Tributary No. 1 to Rock Creek	City of Shawnee	Confluence with Tributary No. 1 to Rock Creek	Approximately 820 ft upstream of N Leo Street	11100302	1.01		N	AE	January 19, 2014

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Tributary No. 1 to Tributary No. 2 to Rock Creek	City of Shawnee	Just downstream of N Harrison Street	Just upstream of W 45th Street	11100302	1.48		N	AE	January 19, 2014
Tributary No. 1 to Tributary No. 5 to Rock Creek	City of Shawnee	Confluence with Tributary No. 5 to Rock Creek	Approximately 1,600 ft upstream of confluence with Tributary No. 5 to Rock Creek	11100302	0.31		N	AE	January 19, 2014
Tributary No. 1 to Tributary No. 7 to Rock Creek	Pottawatomie County (Unincorporated Areas)	Confluence with Tributary No. 7 to Rock Creek	Approximately 1,710 ft upstream of Garretts Lake Road	11100302	0.81		N	AE	January 19, 2014
Tributary No. 1 to Tributary No. 8 to Rock Creek	Pottawatomie County (Unincorporated Areas)	Confluence with Tributary No. 8 to Rock Creek	Just downstream of Interstate Highway 40	11100302	0.41		N	AE	January 19, 2014
Tributary No. 1 to Tributary No. 9 to Rock Creek	Pottawatomie County (Unincorporated Areas)	Confluence with Tributary No. 9 to Rock Creek	Approximately 1,610ft upstream of confluence with Tributary No.9 to Rock Creek	11100302	0.31		N	AE	January 19, 2014

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Tributary No. 10 to Rock Creek	Pottawatomie County (Unincorporated Areas)	Confluence with Rock Creek	Approximately 1,500 ft upstream of confluence with Rock Creek	11100302	0.29		N	AE	January 19, 2014
Tributary No. 11 to Rock Creek	Pottawatomie County (Unincorporated Areas)	Confluence with Rock Creek	Approximately 190 ft upstream of Coker Road	11100302	0.25		N	AE	January 19, 2014
Tributary No. 12 to Rock Creek	Pottawatomie County (Unincorporated Areas)	Confluence with Rock Creek	Approximately 860 ft upstream of confluence with Rock Creek	11100302	0.16		N	AE	January 19, 2014
Tributary No. 1-A to Tributary No. 2 to Rock Creek	City of Shawnee	Confluence with Tributary No. 1 to Tributary No. 2 to Rock Creek	Just upstream of W MacArthur Street	11100302	1.91		N	AE	January 19, 2014
Tributary No. 2 to North Canadian River	City of Shawnee, Kickapoo Tribe of Oklahoma, Pottawatomie County (Unincorporated Areas)	Just downstream of W Independence Street	Just downstream of Midland Street	11100302	1.28		N	AE	January 19, 2014

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Tributary No. 2 to North Canadian River	Kickapoo Tribe of Oklahoma, Pottawatomie County (Unincorporated Areas)	Approximately 0.6 mile upstream of its confluence with North Canadian River	Approximately 0.9 mile upstream of its confluence with North Canadian River	11100302	0.36		Y	AE	August 2008
Tributary No. 2 to Rock Creek	City of Shawnee, Pottawatomie County (Unincorporated Areas)	Confluence with Rock Creek	Approximately 450 ft upstream of 45th Street	11100302	1.78		Y	AE	August 2008
Tributary No. 2 to Rock Creek	City of Shawnee	Approximately 450 ft upstream of E 45th Street	Approximately 200 ft downstream of E 42nd Street	11100302	0.19		N	AE	January 19, 2014
Tributary No. 2 to Squirrel Creek	City of Tecumseh	Confluence with Tributary No. 1 to Squirrel Creek	Approximately 0.5 mile downstream of Harrison Road	11100302	0.60		Y	AE	August 2008
Tributary No. 2 to Tributary No. 1 to Rock Creek	City of Shawnee	Confluence with Tributary No. 1 to Rock Creek	Approximately 2,670 ft upstream of Kickapoo Street	11100302	0.72		N	AE	January 19, 2014
Tributary No. 2 to Tributary No. 2 to Rock Creek	City of Shawnee	Confluence with Tributary No. 2 to Rock Creek	Just upstream of E MacArthur Street	11100302	1.50		N	AE	January 19, 2014

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Tributary No. 2 to Tributary No. 9 to Rock Creek	Pottawatomie County (Unincorporated Areas)	Confluence with Tributary No. 9 to Rock Creek	Approximately 950 ft upstream of confluence with Tributary No. 9 to Rock Creek	11100302	0.18		N	AE	January 19, 2014
Tributary No. 3 to North Canadian River	Pottawatomie County (Unincorporated Areas), Kickapoo Tribe of Oklahoma, City of Shawnee	Confluence with Tributary No. 2 to North Canadian River	Approximately 0.7 mile upstream of confluence with Tributary No. 2 to North Canadian River	11100302	0.70		N	AE	August 2008
Tributary No. 3 to North Canadian River	Kickapoo Tribe of Oklahoma, City of Shawnee	Approximately 0.7 mile upstream of confluence with Tributary No. 2 to North Canadian River	Approximately 1,400 ft downstream of N Leo Street	11100302	0.30		N	AE	January 19, 2014
Tributary No. 3 to Rock Creek	Kickapoo Tribe of Oklahoma, City of Shawnee	Confluence with Tributary No. 2 to Rock Creek	Approximately 0.9 mile upstream of 45th Street	11100302	2.27		Y	AE	August 2008
Tributary No. 3 to Rock Creek	City of Shawnee	Approximately 2,190 ft downstream of E MacArthur Street	Approximately 120 ft upstream of Center Street	11100302	1.02		N	AE	January 19, 2014

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Tributary No. 3 to Squirrel Creek	City of Tecumseh	Confluence with Squirrel Creek	Just upstream of Sharon Road	11100302	2.23		Y	AE	August 2008
Tributary No. 4 to North Canadian River	City of Shawnee, Pottawatomie County (Unincorporated Areas)	Confluence with North Canadian River	Approximately 300 ft upstream of E Bradley Street	11100302	1.74		N	AE	January 19, 2014
Tributary No. 4 to Rock Creek	City of Shawnee	Confluence with Rock Creek	Approximately 2,350 ft upstream of Garretts Lake Road	11100302	0.81		N	AE	January 19, 2014
Tributary No. 5 to North Canadian River	City of Shawnee, Pottawatomie County (Unincorporated Areas)	Confluence with North Canadian River	Approximately 1,500 ft upstream of W Independence Street	11100302	2.63		N	AE	January 19, 2014
Tributary No. 5 to Rock Creek	City of Shawnee, Pottawatomie County (Unincorporated Areas)	Confluence with Rock Creek	Approximately 1,420 ft upstream of Leo Street	11100302	1.53		N	AE	January 19, 2014

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Tributary No. 6 to North Canadian River	Kickapoo Tribe of Oklahoma, Pottawatomie County (Unincorporated Areas)	Confluence with North Canadian River	Approximately 850 ft upstream of Independence Street	11100302	0.52		N	AE	January 19, 2014
Tributary No. 6 to Rock Creek	Pottawatomie County (Unincorporated Areas)	Confluence with Rock Creek	Approximately 2,200 ft upstream of Garretts Lake Road	11100302	0.74		N	AE	January 19, 2014
Tributary No. 7 to Rock Creek	Pottawatomie County (Unincorporated Areas)	Confluence with Rock Creek	Approximately 4,200 ft upstream of Garretts Lake Road	11100302	1.54		N	AE	January 19, 2014
Tributary No. 8 to Rock Creek	City of Shawnee, Pottawatomie County (Unincorporated Areas)	Confluence with Rock Creek	Approximately 270 ft downstream of Acme Road	11100302	1.30		N	AE	January 19, 2014
Tributary No. 9 to Rock Creek	Pottawatomie County (Unincorporated Areas)	Confluence with Rock Creek	Just downstream of Coker Road	11100302	1.29		N	AE	January 19, 2014

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Unnamed Tributary to Tributary No. 2 to Squirrel Creek	City of Tecumseh	Confluence with Tributary No. 2 to Squirrel Creek	Approximately 0.6 mile upstream of its confluence with Tributary No. 2 Squirrel Creek	11100302	0.64		Y	AE	August 2008
Wynnewood Creek	Town of McLoud	Confluence with North Canadian River	Approximately 500 ft upstream of US Route 270	11100302	1.26		Y	AE	August 2008

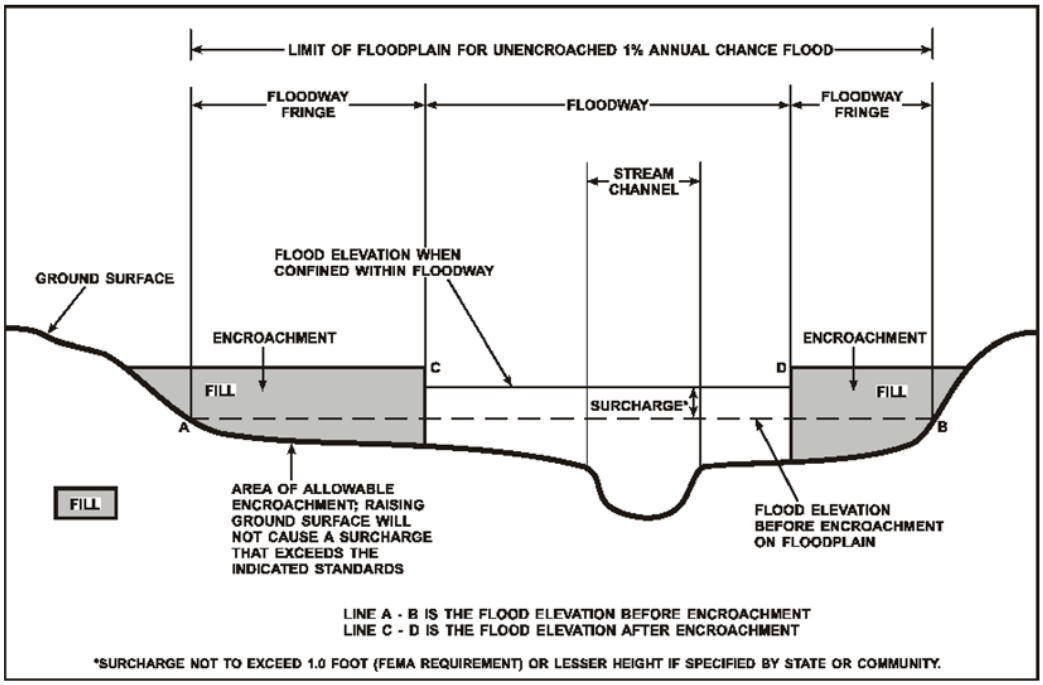
2.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard.

For purposes of the NFIP, a floodway is used as a tool to assist local communities in balancing floodplain development against increasing flood hazard. With this approach, the area of the 1% annual chance floodplain on a river is divided into a floodway and a floodway fringe based on hydraulic modeling. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment in order to carry the 1% annual chance flood. The floodway fringe is the area between the floodway and the 1% annual chance floodplain boundaries where encroachment is permitted. The floodway must be wide enough so that the floodway fringe could be completely obstructed without increasing the water surface elevation of the 1% annual chance flood more than 1 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 4.

To participate in the NFIP, Federal regulations require communities to limit increases caused by encroachment to 1.0 foot, provided that hazardous velocities are not produced. Regulations for Oklahoma require communities in Pottawatomie County to limit increases caused by encroachment to 1.0 foot and several communities have adopted additional restrictions. The floodways in this project are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway projects.

Figure 4: Floodway Schematic



Floodway widths presented in this FIS Report and on the FIRM were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. For certain stream segments, floodways were adjusted so that the amount of floodwaters conveyed on each side of the floodplain would be reduced equally. The results of the floodway computations have been tabulated for selected cross sections and are shown in Table 24, "Floodway Data."

All floodways that were developed for this Flood Risk Project are show on the FIRM using the symbology described in Figure 3. Each FIRM panel contains an abbreviated legend for the features shown on the maps. However the FIRM panel does not contain enough space to show the legend for all map features. Figure 3 shows the full legend of all map features. Note that not all of these features may appear on the FIRM panels in Pottawatomie County. In cases where the floodway and 1% annual chance floodplain boundaries are either close together or collinear, only the floodway boundary has been shown on the FIRM. For information about the delineation of floodways on the FIRM, refer to Section 6.3.

2.3 Base Flood Elevations

The hydraulic characteristics of flooding sources were analyzed to provide estimates of the elevations of floods of the selected recurrence intervals. The Base Flood Elevation (BFE) is the elevation of the 1% annual chance flood. These BFEs are most commonly rounded to the whole foot, as shown on the FIRM, but in certain circumstances or locations they may be rounded to 0.1 foot. Cross section lines shown on the FIRM may also be labeled with the BFE rounded to 0.1 foot. Whole-foot BFEs derived from engineering analyses that apply to coastal areas, areas of ponding, or other static areas with little elevation change may also be shown at selected intervals on the FIRM.

Cross sections with BFEs shown on the FIRM correspond to the cross sections shown in the Floodway Data table and Flood Profiles in this FIS Report. BFEs are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS Report in conjunction with the data shown on the FIRM.

2.4 Non-Encroachment Zones

This section is not applicable to this Flood Risk Project.

2.5 Coastal Flood Hazard Areas

This section is not applicable to this Flood Risk Project.

2.5.1 Water Elevations and the Effects of Waves

This section is not applicable to this Flood Risk Project.

Figure 5: Wave Runup Transect Schematic

[Not Applicable to this Flood Risk Project]

2.5.2 Floodplain Boundaries and BFEs for Coastal Areas

This section is not applicable to this Flood Risk Project.

2.5.3 Coastal High Hazard Areas

This section is not applicable to this Flood Risk Project.

Figure 6: Coastal Transect Schematic

[Not Applicable to this Flood Risk Project]

2.5.4 Limit of Moderate Wave Action

This section is not applicable to this Flood Risk Project.

SECTION 3.0 – INSURANCE APPLICATIONS

3.1 National Flood Insurance Program Insurance Zones

For flood insurance applications, the FIRM designates flood insurance rate zones as described in Figure 3, "Map Legend for FIRM." Flood insurance zone designations are assigned to flooding sources based on the results of the hydraulic or coastal analyses. Insurance agents use the zones shown on the FIRM and depths and base flood elevations in this FIS Report in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

The 1% annual chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (e.g. Zones A, AE, V, VE, etc.), and the 0.2% annual chance floodplain boundary corresponds to the boundary of areas of additional flood hazards. Table 3 lists the flood insurance zones in the unincorporated and incorporated areas of Pottawatomie County.

Table 3: Flood Zone Designations by Community

Community	Flood Zone(s)
Absentee Shawnee Tribe	A, AE, X
Asher, Town of	A, X
Bethel Acres, Town of	A, AE, X
Brooksville, City of	A, X
Citizen Potawatomi Nation	A, AE, X
Earlsboro, Town of	A, X
Johnson, Town of	A, X
Kickapoo Tribe of Oklahoma	A, AE, X
Macomb, Town of	A, X
Maud, City of	A, X
McLoud, Town of	A, AE, X
Oklahoma City, City of	X
Pink, Town of	A, AE, X
Pottawatomie County (Unincorporated Areas)	A, AE, X
Sac and Fox Nation	A, AE, X
Shawnee, City of	A, AE, X
St. Louis, Town of	A, X
Tecumseh, City of	A, AE, X
Tribbey, Town of	A, X
Wanette, Town of	A, X

3.2 Coastal Barrier Resources System

This section not applicable to this Flood Risk Project.

Table 4: Coastal Barrier Resources System Information

[Not Applicable to this Flood Risk Project]

SECTION 4.0 – AREA STUDIED

4.1 Basin Description

Table 5 contains a description of the characteristics of the HUC-8 sub-basins within which each community falls. The table includes the main flooding sources within each basin, a brief description of the basin, and its drainage area.

Table 5: Basin Characteristics

HUC-8 Sub-Basin Name	HUC-8 Sub-Basin Number	Primary Flooding Source	Description of Affected Area	Drainage Area (Square Miles)
Deep Fork	11100303	Canadian River Deep Fork	This is the smallest watershed in Pottawatomie County, covering a small portion of the northern end of the county	14
Little	11090203	Canadian River	This is the largest watershed within Pottawatomie County stretching across the center of the county	370
Lower Canadian-Walnut	11090202	Canadian River	This is the second smallest watershed in Pottawatomie County stretching across the southern end of the county	115
Lower North Canadian	11100302	North Canadian River	This is the second largest watershed within Pottawatomie County stretching across the northern portion of the county	295

4.2 Principal Flood Problems

Table 6 contains a description of the principal flood problems that have been noted for Pottawatomie County by flooding source.

Table 6: Principal Flood Problems

Flooding Source	Description of Flood Problems
North Canadian River	The principal flooding source in Pottawatomie County is the North Canadian River and its tributaries. Most damage can be attributed to the North Canadian River as there are more structures along the river than along the other streams studied. The North Canadian River flood of October 1923 was the largest in recent history. The estimated magnitude of this flood varied between 80,000 cubic feet per second (cfs) (estimated by USACE) and 130,000 cfs (estimated by the City of Oklahoma City) near Oklahoma City.
Little River	Near the City of Tecumseh, rose above flood stage of 11 feet and crested at 15 feet.

Table 7 contains information about historic flood elevations in the communities within Pottawatomie County.

Table 7: Historic Flooding Elevations

[Not Applicable to this Flood Risk Project]

4.3 Non-Levee Flood Protection Measures

Table contains information about non-levee flood protection measures within Pottawatomie County such as dams, jetties, and or dikes. Levees are addressed in Section 4.4 of this FIS Report.

Table 8: Non-Levee Flood Protection Measures

Flooding Source	Structure Name	Type of Measure	Location	Description of Measure
North Deer Creek	N/A	Dam (1)	Wes Watkins Reservoir	Used for flood control
Salt Creek	N/A	Dams (30)	Various Locations	Used for flood control

4.4 Levees

This section is not applicable to this Flood Risk Project.

Table 9: Levees

[Not Applicable to this Flood Risk Project]

SECTION 5.0 – ENGINEERING METHODS

For the flooding sources in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude that are expected to be equaled or exceeded at least once on the average during any 10-, 25-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 25-, 50-, 100-, and 500-year floods, have a 10-, 4-, 2-, 1-, and 0.2% annual chance, respectively, of being equaled or exceeded during any year.

Although the recurrence interval represents the long-term, average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood that equals or exceeds the 100-year flood (1-percent chance of annual exceedance) during the term of a 30-year mortgage is approximately 26 percent (about 3 in 10); for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

The engineering analyses described here incorporate the results of previously issued Letters of Map Change (LOMCs) listed in Table 27, “Incorporated Letters of Map Change”, which include Letters of Map Revision (LOMRs). For more information about LOMRs, refer to Section 6.5, “FIRM Revisions.”

5.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak elevation-frequency relationships for floods of the selected recurrence intervals for each flooding source studied. Hydrologic analyses are typically performed at the watershed level. Depending on factors such as watershed size and shape, land use and urbanization, and natural or man-made storage, various models or methodologies may be applied. A summary of the hydrologic methods applied to develop the discharges used in the hydraulic analyses for each stream is provided in Table 12. Greater detail (including assumptions, analysis, and results) is available in the archived project documentation.

A summary of the discharges is provided in Table 10. Frequency Discharge-Drainage Area Curves used to develop the hydrologic models may also be shown in Figure 7 for selected flooding sources. A summary of stillwater elevations developed for non-coastal flooding sources is provided in Table 11. (Coastal stillwater elevations are discussed in Section 5.3 and shown in Table 17.) Stream gage information is provided in Table 12.

Table 10: Summary of Discharges

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Future	0.2% Annual Chance
Bullfrog Creek	At its confluence with Pecan Creek	44.60	*	*	*	11,500	*
Deer Creek	Just upstream of the Pottawatomie/Seminole County boundary	7.29	2,270	3,490	4,390	5,430	8,370
	Approximately 300 ft above confluence with North Canadian River	3.9	3,036.74	3,540.9	4,975.14	5,093.13	8,183.12
	At confluence with North Canadian River	3.9	3,033.46	3,538.34	4,974.03	5,086.97	8,173.68
	Approximately 2,000 ft above confluence with North Canadian River	3.5	2,803.04	3,254.22	4,545.99	4,642.04	7,396.33
	Approximately 1,700 ft below MacArthur Road	3.2	2,696.92	3,129.9	4,352.51	4,437.03	7,041.07
	At Route 270/177	2.4	2,072.29	2,394.49	3,348.67	3,410.57	5,416.89
	At Elks Club Lake Dam	2.0	1,903.06	2,196.66	3,082.93	3,136.7	4,948.69
	At 45th Street	1.5	1,408.12	1,625.89	2,275.18	2,316.02	3,609.08
	Approximately 1,000 ft upstream of 45th Street	1.3	1,259.35	1,451.39	2,017.08	2,048.24	3,179.69
	Approximately 400 ft below Interstate 40	1.1	1,129.31	1,301.61	1,804.9	1,837.72	2,834.95
	Just D/S of Econtuchka Road	0.96	703	1,100	1,360	1,720	2,660

*Data not computed

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Future	0.2% Annual Chance
Little River	At Stream Station 180+00**	96.0	*	*	*	34,300	*
North Canadian River (Lower Reach)	Just upstream of confluence of Shan Creek	1,4138.0	21,281	28,502	34,360	40,601	56,731
	At Econtuchka Road	14,090.5	20,817	27,924	33,693	39,842	55,737
	Just upstream of confluence of Rock Creek	14,035.0	20,286	27,261	32,927	38,969	54,594
	Approximately 3,180 feet downstream of State Highway 3	14,003.1	19,986	26,886	32,493	38,475	53,945
North Canadian River (Upper Reach)	Just upstream of confluence of Squirrel Creek	13,964.5	19,629	26,438	31,975	37,884	53,169
	At Interstate 177	13,958.6	19,574	26,371	31,897	37,795	53,052
	Approximately 1,175 feet upstream of Lake Road	13,950.2	19,498	26,275	31,786	37,668	52,886
	At Bethel Road	13,892.3	18,974	25,618	31,024	36,799	51,742
	At State Highway 270	13,840.5	18,516	25,043	30,357	36,036	50,738
	Approximately 3.4 miles downstream of McLoud corporate Limits	13,828.0	18,406	24,905	30,197	35,853	50,497
	Approximately 9,250 ft upstream of State Highway 102	13,806.8	18,223	24,674	29,929	35,547	50,093
Pecan Creek	At its confluence with the Little River	63.10	*	*	*	9,600	*

*Data not computed
**Partially controlled by upstream reservoirs

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Future	0.2% Annual Chance
Rock Creek	At its confluence with the North Canadian River	64.50	*	*	*	10,800	*
	Below confluence with Tributary 4 to Rock Creek	8.3	3,274.88	4,788.67	6,238.84	7,814.54	12,038.92
	Above confluence with Tributary 4 to Rock Creek	7.7	3,201.22	4,671.67	6,081.7	7,606.32	11,688.48
	Below confluence with Tributary 5 to Rock Creek	7.5	3,253.55	4,680.79	6,133.02	7,649.47	11,760.01
	Above confluence with Tributary 5 to Rock Creek	6.4	2,864.81	4,144.96	5,411.78	6,728.56	10,318.82
	Below confluence with Tributary 6 to Rock Creek	6.1	2,917.95	4,340.43	5,507.7	6,804.99	10,462.11
	Below confluence with Tributary 7 to Rock Creek	5.9	2,907.41	4,297.87	5,443.42	6,726.77	10,420.27
	Above confluence with Tributary 6 to Rock Creek	5.9	2,865.79	4,253.71	5,393.12	6,661.68	10,233.05
	Above confluence with Tributary 7 to Rock Creek	4.9	2,300.31	3,402.32	4,339.7	5,393.09	8,413.59
	Below confluence with Tributary 8 to Rock Creek	4.8	2,295.41	3,377.12	4,313.87	5,363	8,403.39
	Above confluence with Tributary 8 to Rock Creek	3.5	1,635.59	2,457.04	3,167.25	3,943.51	6,134.89
	Below confluence with Tributary 9 to Rock Creek	3.1	1,568.82	2,401.35	3,122.62	3,935.46	6,020.75
	Above confluence with Tributary 9 to Rock Creek	1.7	950.86	1,445.79	1,879.39	2,385.53	3,618.92
	Below confluence with Tributary 10 to Rock Creek	1.2	725.1	1,100.99	1,409.7	1,736.35	2,561.84

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Future	0.2% Annual Chance
Rock Creek	Below confluence with Tributary 11 to Rock Creek	1.0	614.94	939.2	1,204.33	1,487.96	2,200.92
	Above confluence with Tributary 10 to Rock Creek	1.0	616.83	942.13	1,209.71	1,494.19	2,207.97
	Above confluence with Tributary 11 to Rock Creek	0.8	488.23	739.42	944.5	1,162.45	1,711.33
	Below confluence with Tributary 12 to Rock Creek	0.7	472.71	715.71	913.21	1,123.31	1,653.04
	Above confluence with Tributary 12 to Rock Creek	0.2	179.6	263.43	330.4	400.84	576.42
Rosedale Park Tributary	Above confluence with Tributary 1 to North Canadian River	0.2	264	331	383	434	557
Squirrel Creek	At confluence with North Canadian River	24.6	6,575	9,048	11,625	14,443	21,914
	At approximately 2,080 feet upstream of Hardesty Road	17.41	5,126	8,081	10,114	12,261	17,904
	At Interstate 177	10.16	4,730	6,538	7,981	9,500	13,378
	At approximately 2,000 feet upstream of Coker Road	8.15	4,457	6,108	7,422	8,798	12,281
Tributary No. 1 to Deer Creek	At upstream end of Elks Club Lake	0.4	539.16	608.49	810.99	820.84	1,218.62
	Approximately 800 ft downstream of 45th Street	0.3	406.87	456.74	607.5	613.87	902.8

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Future	0.2% Annual Chance
Tributary No. 1 to North Canadian River	Above confluence with North Canadian River	3.2	3,211.52	4,108.67	4,898.45	5,693.48	7,504.53
	Below confluence with Tributary A to Tributary No. 1 to North Canadian River	3.0	3,185.28	4,041.13	4,809.4	5,572.83	7,281.63
	Above confluence with Tributary A to Tributary No. 1 to North Canadian River	2.4	3,187.04	4,042.54	4,810.57	5,573.48	7,282.28
	Approximately 200 ft upstream of N Oklahoma Avenue	2.1	2,470.61	3,171.42	3,747.45	4,328.36	5,704.02
	Approximately 1,000 ft upstream of E Highland Street	1.9	2,350.14	2,999.95	3,531.04	4,050.48	5,315.88
	Above E Highland Street	1.9	2,331.08	2,982.08	3,521.97	4,049	5,298.89
	Below confluence with Tributary B to Tributary 1 to North Canadian River	1.8	2,269.92	2,891.39	3,401.13	3,916.84	5,095.43
	Below confluence with Rosedale Park Tributary	0.8	1,141.49	1,461.94	1,713.18	1,965.65	2,553.27
	Above confluence with Rosedale Park Tributary	0.6	881.67	1,134.37	1,336.98	1,535.79	2,000.47
	Approximately 800 ft downstream of E Independence Street	0.5	748.28	958.5	1,123.4	1,282.16	1,665.72
Tributary No. 1 to Rock Creek	At W 45th St	1.3	917.21	1,295.63	1,601.92	1,921.72	2,791.85

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Future	0.2% Annual Chance
Tributary No. 1 to Rock Creek	At its confluence with North Canadian River	3.1	*	*	*	2,400	*
	Below confluence with Tributary 1 to Tributary 1 to Rock Creek	1.2	964.85	1,385.44	1,719.13	2,069.71	2,937.27
	Above confluence with Tributary 1 to Tributary 1 to Rock Creek	0.6	581.65	835.12	1,035	1,244.2	1,760.25
	Approximately 1,400ft upstream of Hardesty Drive	0.3	289.74	409.57	503.47	601.29	839.08
Tributary No. 1 to Squirrel Creek	At Confluence with Squirrel Creek	6.66	4,642	6,199	7,453	8,756	11,196
	At Benson Park Road	5.76	4,107	5,456	6,567	7,725	10,367
	Just upstream of confluence of Tributary No. 2	2.16	1,845	2,411	2,911	3,430	4,707
Tributary No. 1 to Tributary No. 1 to Rock Creek	Above confluence with Tributary 1 to Rock Creek	0.6	425.99	609.15	755.35	909.48	1,288.01
	Just beyond the west end of Hardesty Drive	0.4	258.4	364.43	448.45	535.81	751.39
Tributary No. 1 to Tributary No. 2 to Rock Creek	Above confluence with Tributary 2 to Rock Creek	1.3	652.67	982.16	1,248.8	1,536.4	2,263.32
	Below confluence with Tributary 1-A to Tributary 2 to Rock Creek	1.2	606.4	908.88	1,156.58	1,419.18	2,083.25
	Above confluence with Tributary 1-A to Tributary 2 to Rock Creek	0.6	275.72	404.04	508.04	617.88	894.46

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Future	0.2% Annual Chance
Tributary No. 1 to Tributary No. 5 to Rock Creek	Above confluence with Tributary No. 5 to Rock Creek	0.4	216.88	325.98	415.22	509.91	748.14
Tributary No. 1 to Tributary No. 7 to Rock Creek	Above confluence with Tributary No. 7 to Rock Creek	0.2	158.14	226.12	280.28	336.8	475.91
Tributary No. 1 to Tributary No. 8 to Rock Creek	Above confluence with Tributary No. 8 to Rock Creek	0.3	178.23	257.42	320.67	386.86	551.61
Tributary No. 1 to Tributary No. 9 to Rock Creek	Above confluence with Tributary No. 9 to Rock Creek	0.2	190.32	274.27	341	410.78	583.36
Tributary No. 10 to Rock Creek	Above confluence with Rock Creek	0.1	152.5	219	271.27	326.06	460.48
Tributary No. 11 to Rock Creek	Above confluence with Rock Creek	0.2	130.98	206.19	268.06	334.66	504.33
Tributary No. 12 to Rock Creek	Above confluence with Rock Creek	0.5	306.19	470.21	604.7	748.73	1,112.22
Tributary No. 1-A to Tributary No. 2 to Rock Creek	Above confluence with Tributary No. 1 to Tributary No. 2 to Rock Creek	0.6	385.07	592.69	762.14	942.76	1,396.14
	Approximately 1,500 ft downstream of E 34th Street	0.3	202.07	306.11	390.53	480.14	705.21

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Future	0.2% Annual Chance
Tributary No. 2 to North Canadian River	At Stream Station 3,110	2.04	1,059	*	1,796	2,179	3,112
	Below confluence with Tributary B to Tributary 2 to North Canadian River	1.7	2,007.51	2,585.97	3,036.71	3,498.52	4,614.49
	At Stream Station 3,760	1.5	778	*	1,177	1,300	1,530
	At Stream Station 4,413 (railroad embankment)	1.4	901	*	1,521	1,840	2,617
	Above confluence with Tributary B to Tributary 2 to North Canadian River	1.2	1,429.82	1,845.1	2,169.47	2,502.49	3,308.31
	At Route 270/177	1.1	1,355.18	1,744.63	2,046.3	2,356.07	3,113.04
	Below confluence with Tributary C to Tributary 2 to North Canadian River	0.2	354.67	446.17	514.35	584.18	750.48
Tributary No. 2 to Rock Creek	At its confluence with Rock Creek	8.7	*	*	*	4,400	*
	Approximately 350 ft upstream of E 45th Street	0.1	140.38	201.21	248.45	298.18	418.6
Tributary No. 2 to Squirrel Creek	Just upstream of its confluence with Tributary No. 1	1.95	1,166	1,549	1,849	2,165	2,968
	Upstream of confluence of Unnamed Tributary to Tributary No. 2	0.82	780	1,030	1,224	1,424	1,914

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Future	0.2% Annual Chance
Tributary No. 2 to Tributary No. 1 to Rock Creek	Above confluence with Tributary 1 to Rock Creek	1.4	108	160.08	201.87	245.95	356.1
Tributary No. 2 to Tributary No. 2 to Rock Creek	Above confluence with Tributary 2 to Rock Creek	0.9	554.29	846.57	1,088.38	1,350.07	2,004.8
	Approximately 350 ft downstream of Country Grove Drive	0.6	346.48	528.39	679.37	851.12	1,270.76
	At E MacArthur Street	0.3	214.6	317.91	401.34	489.82	709.81
Tributary No. 2 to Tributary No. 9 to Rock Creek	Above confluence with Tributary 9 to Rock Creek	0.3	166.34	255.7	329.06	407.47	606.55
Tributary No. 3 to North Canadian River	At its confluence with Tributary No. 2	1.22	892	*	1,484	1,785	2,517
	Below confluence with Unnamed Tributary 1 to Tributary 3 to North Canadian River	1.1	1,001.09	1,343.16	1,611.64	1,891.25	2,583.04
	Below confluence with Unnamed Tributary 2 to Tributary 3 to North Canadian River	0.9	868.45	1,154.46	1,376.38	1,606.19	2,158.75
	Below W Benedict Street	0.8	789.23	1,044.4	1,241.2	1,444.58	1,933.39
Tributary No. 3 to Rock Creek	At its confluence with Tributary No. 2 to Rock Creek	8.0	*	*	*	4,400	*
	Approximately 200 ft upstream of Cambridge Court	0.6	551.25	800.57	997.64	1,205.68	1,718.61
	At E MacArthur Street	0.3	328.81	477.31	594.82	718.29	1,020.98

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Future	0.2% Annual Chance
Tributary No. 3 to Squirrel Creek	At its confluence with Squirrel Creek	5.37	1,350	1,860	2,278	2,751	4,259
	Upstream of Lake Tecumseh	3.55	1,838	2,570	3,150	3,771	5,327
Tributary No. 4 to North Canadian River	Below confluence with Tributary A to Tributary 4 to North Canadian River	1.6	972.17	1,343.79	1,641.2	1,951.23	2,692.07
	At confluence with North Canadian River	1.6	935.15	1,301.55	1,596.94	1,905.39	2,645.21
	Approximately 2,100 ft upstream of East Independence Street crossing #2	0.9	556.94	749.15	903.15	1,058.64	1,436.28
	Approximately 1,800 ft upstream of East Independence Street crossing #2	0.9	627.42	843.17	1,016.12	1,190.66	1,614.46
	Below E Independence Street crossing #1	0.8	571.48	747.17	888.17	1,029.66	1,372.12
	Approximately 500 ft downstream of East Independence Street crossing #1	0.8	569.51	750.04	895.34	1,041.61	1,396.58
	Above East Independence Street crossing #1	0.7	505.37	657.58	779.86	902.18	1,198.28
	Approximately 500 ft upstream of East Bradley Street	0.5	346.9	448.97	529.78	611.48	809.36

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Future	0.2% Annual Chance
Tributary No. 4 to Rock Creek	Above confluence with Rock Creek	0.6	404.8	604.41	773.17	934.93	1,352.95
	Approximately 1,700 ft above Garretts Lake Road	0.3	223.29	334.32	423.6	518.07	755.33
Tributary No. 5 to North Canadian River	Above confluence with North Canadian River	1.8	976.92	1,300.57	1,561.89	1,826.74	2,489.59
	Approximately 500 ft downstream of Brangus Road	1.7	944.85	1,256.28	1,506.91	1,760.13	2,393.87
	Below confluence with Tributary A to Tributary 5 to North Canadian River	1.4	882.4	1,152.17	1,373.93	1,595.69	2,149.74
	Approximately 1,200 ft below confluence with Tributary A to Tributary 5 to North Canadian River	1.4	885.62	1,158.43	1,382.27	1,606.64	2,167.01
	Below inline lake (golf course)	1.2	774.96	1,008.64	1,201.31	1,392.91	1,869.6
	Below confluence with Tributary B to Tributary 5 to North Canadian River	1.1	909.29	1,192.64	1,419.55	1,646.22	2,194.13
	Above confluence with Tributary B to Tributary 5 to North Canadian River	0.6	449.42	596.39	714.55	832.46	1,117.56
	Approximately 800 ft downstream of Augusta Drive	0.5	421.19	552.64	657.7	762.8	1,018.49
	Approximately 600 ft upstream of East Independence Street	0.3	246.09	317.22	373.67	429.65	564.98

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Future	0.2% Annual Chance
Tributary No. 5 to North Canadian River	Approximately 150ft upstream of East Independence Street	0.3	299.64	386.47	455.36	523.82	689.49
Tributary No. 5 to Rock Creek	Above confluence with Rock Creek	1.0	529.72	791.36	1,004.78	1,231.84	1,810.14
	Below confluence with Tributary 1 to Tributary 5 to Rock Creek	0.8	473.54	700.54	884.84	1,079.28	1,569.06
	Above confluence with Tributary 1 to Tributary 5 to Rock Creek	0.4	259.93	379.55	476.19	577.98	832.02
Tributary No. 6 to North Canadian River	Above confluence with Tributary 2 to North Canadian River	0.5	361.93	521.06	642.02	766.99	1,077.29
	Approximately 1,100 ft downstream of Acme Road	0.4	382.67	528.37	639.94	756.03	1,051.69
	Approximately 250 ft upstream of Independence Road	0.3	317.44	430.56	517.1	605.77	826.31
	At Route 270/177	0.2	185.81	248.39	296.34	345.87	467.11
Tributary No. 6 to Rock Creek	Above confluence with Rock Creek	0.2	155.45	225.85	282.34	341.84	488.85
Tributary No. 7 to Rock Creek	Above confluence with Rock Creek	1.1	697.9	1,049.58	1,330.64	1,631.9	2,371.36
	Below confluence with Tributary 1 to Tributary 7 to Rock Creek	1.0	705.75	1,066.63	1,348.5	1,643.28	2,373.7

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Future	0.2% Annual Chance
Tributary No. 7 to Rock Creek	Above confluence with Tributary 1 to Tributary 7 to Rock Creek	0.8	585.43	875.25	1,103.52	1,342.32	1,931.06
	Approximately 700 ft downstream of Valley View Drive	0.4	345.19	492.74	609.06	730.53	1,027.28
Tributary No. 8 to Rock Creek	Above confluence with Rock Creek	1.2	886.8	1,298.03	1,634.34	1,984.4	2,893.56
	Approximately 600 ft upstream of confluence with Rock Creek	1.1	818.5	1,192.86	1,498.41	1,815.42	2,639.56
	Below Westech Road	0.8	631.69	915.03	1,141.92	1,379.53	1,967.74
	At Westech Road	0.8	631.69	915.03	1,141.92	1,379.53	1,967.74
	Below confluence with Tributary No. 1 to Tributary No. 8 to Rock Creek	0.6	500.28	721.29	898.1	1,083.88	1,541.83
	Above confluence with Tributary No. 1 to Tributary No. 8 to Rock Creek	0.4	344.56	495.61	615.29	741.1	1,051.11
Tributary No. 9 to Rock Creek	Above confluence with Rock Creek	1.5	642.63	1,006.86	1,310.36	1,633.3	2,460.58
	Below confluence with Tributary No. 1 to Tributary No. 9 to Rock Creek	1.3	591.42	921.11	1,195.16	1,488	2,237.82
	Above confluence with Tributary No. 1 to Tributary No. 9 to Rock Creek	1.1	446.94	704.86	919.91	1,152.18	1,749.28

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Future	0.2% Annual Chance
Tributary No. 9 to Rock Creek	Below confluence with Tributary No. 2 to Tributary No. 9 to Rock Creek	0.9	395.09	623.84	814.31	1,020.08	1,547.77
	Above confluence with Tributary No. 2 to Tributary No. 9 to Rock Creek	0.6	240.36	385.02	506.79	638.35	978.72
Tributary A to Tributary No. 1 to North Canadian River	Above confluence with Tributary No. 1 to North Canadian River	0.7	752.09	980.37	1,159.89	1,338.12	1,781.26
	Approximately 500 ft upstream of East Main Street	0.6	676.75	871.89	1,024.24	1,174.91	1,542.42
	Approximately 150 ft downstream of North Shawnee Avenue	0.5	595.21	759.75	887.55	1,014.22	1,319.35
Tributary A to Tributary No. 2 to North Canadian River	Below confluence with Tributary A-1 to Tributary No. 2 to North Canadian River	0.3	384.18	497.46	583.02	671.44	883.39
	Above confluence with Tributary No. 2 to North Canadian River	0.3	460.81	601.37	707.86	817.48	1,081.31
Tributary A to Tributary No. 4 to North Canadian River	Approximately 2,300 ft downstream of Pam Drive	0.5	340.23	474.67	585.68	699.09	977.77
	Above confluence with Tributary 4 to North Canadian River	0.5	347.31	486.51	601.6	719.45	1,009.59
	Approximately 1,000 ft downstream of Pam Drive	0.1	81.48	115.49	143.77	172.79	244.39

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Future	0.2% Annual Chance
Tributary A to Tributary No. 5 to North Canadian River	Above confluence with Tributary No. 5 to North Canadian River	0.3	226.2	297.51	354.59	411.6	549.96
Tributary A-1 to Tributary No. 2 to North Canadian River	Above confluence with Tributary A to Tributary 2 to North Canadian River	0.2	283.1	363.46	424.37	487.32	638.61
	At Route 270/177	0.1	199.37	250.1	287.54	325.94	416.79
Tributary B to Tributary No. 1 to North Canadian River	Approximately 250 ft upstream of N Hobson Avenue	0.9	1,219.26	1,538.74	1,798.02	2,060.46	2,670.19
	Above confluence with Tributary No. 1 to North Canadian River	0.9	1,227.53	1,559.66	1,823.8	2,086.58	2,708.24
	Below North Market Avenue	0.8	1,089.93	1,374.58	1,594.27	1,809.71	2,324.44
	Below North Beard Avenue	0.8	1,170.26	1,471.03	1,722.17	1,968.99	2,543.94
	Below North Kickapoo Avenue	0.6	844.86	1,059.73	1,225.51	1,389.45	1,787.68
	Approximately 500 ft downstream of West Independence Street	0.4	599.07	750.5	869.1	988.55	1,274.5
	Above North Kickapoo Avenue	0.4	597.25	749.22	867.47	983.35	1,262.3
Tributary B to Tributary No. 2 to North Canadian River	At Route 270/177	0.4	495.95	631.79	734.46	839.48	1,092.9

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Future	0.2% Annual Chance
Tributary B to Tributary No. 5 to North Canadian River	Above confluence with Tributary No. 5 to North Canadian River	0.5	462.32	599.66	708.76	818.05	1,081.19
	Approximately 150 ft downstream of Mohican Drive	0.3	269.61	346.1	406.63	466.69	612
	Above confluence with Tributary B-1 to Tributary No. 5 to North Canadian River	0.1	108.66	140.49	165.78	190.88	251.58
Tributary B-1 to Tributary No. 5 to North Canadian River	Above confluence with Tributary B to Tributary 5 to North Canadian River	0.2	166.44	211.99	247.97	283.55	369.49
Tributary C to Tributary No. 2 to North Canadian River	Above confluence with Tributary 2 to North Canadian River	0.1	136.08	171.23	197.3	224.01	287.42
Wynnewood Creek	At its confluence with North Canadian River	1.7	1,200	*	2,400	3,000	5,000

Figure 7: Frequency Discharge-Drainage Area Curves

[Not Applicable to this Flood Risk Project]

Table 11: Summary of Non-Coastal Stillwater Elevations

[Not Applicable to this Flood Risk Project]

Table 12: Stream Gage Information used to Determine Discharges

Flooding Source	Gage Identifier	Agency that Maintains Gage	Site Name	Drainage Area (Square Miles)	Period of Record	
					From	To
North Canadian River	USGS_07241550	USGS	North Canadian River Near Harrah, OK	13,501	1/1/1977	12/31/2011
North Canadian River	USGS_07242000	USGS	North Canadian River Near Wetumka, OK	14,290	1/1/1938	12/31/2011

5.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals. Base flood elevations on the FIRM represent the 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 coastal areas, areas of ponding, and other areas with static base flood elevations. These whole-foot elevations may not exactly reflect the elevations derived from the hydraulic analyses. Flood elevations shown on the FIRM are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS Report in conjunction with the data shown on the FIRM. The hydraulic analyses for this FIS were based on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

For streams for which hydraulic analyses were based on cross sections, locations of selected cross sections are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (section 6.3), selected cross sections are also listed on Table 24, “Floodway Data.”

A summary of the methods used in hydraulic analyses performed for this project is provided in Table 13. Roughness coefficients are provided in Table 14. Roughness coefficients are values representing the frictional resistance water experiences when passing overland or through a channel. They are used in the calculations to determine water surface elevations. Greater detail (including assumptions, analysis, and results) is available in the archived project documentation.

Table 13: Summary of Hydrologic and Hydraulic Analyses

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
Bullfrog Creek	Confluence with Pecan Creek	Approximately 0.6 mile downstream of Highway 9	Regression Equations	HEC-2	August 2008	AE	
Deer Creek	Approximately 3,120 ft above the confluence with North Canadian River	Downstream of Interstate Highway 40	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Deer Creek	Confluence with North Canadian River	Downstream of Interstate Highway 40	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	A	
Little River	Approximately 240 ft downstream of Okay Road	Approximately 1.5 miles upstream of the confluence of Pecan Creek	Calculations	HEC-2	August 2008	AE	
North Canadian River	Upstream of Lake Eufaula	Approximately 3,000 ft downstream Oklahoma State Route 3E	Other (Gage Analysis)	HEC-RAS 3.1.1. and up	January 19, 2014	A	
North Canadian River	Approximately 1,200 ft upstream of Lake Road	Approximately 2,700 ft Northeast of intersection of Highway Drive and Redskin Road	Other (Gage Analysis)	HEC-RAS 3.1.1. and up	January 19, 2014	A	

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
North Canadian River	Approximately 2,500 ft downstream of corporate limit of Kickapoo Tribal Land	Approximately 5,200 ft downstream of US Route 62	Other (Gage Analysis)	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
North Canadian River	Approximately 3,000 ft downstream of Oklahoma State Route 3E	Approximately 1,200 ft upstream of Lake Road	Other (Gage Analysis)	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Pecan Creek	Confluence with Little River	Approximately 1.8 miles upstream of confluence of Bullfrog Creek	Regression Equations	HEC-2	August 2008	AE	
Rock Creek	Upstream of Kickapoo Street	Approximately 4,400 ft upstream of Garretts Lake Road	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Rock Creek	Approximately 1,425 ft upstream of its confluence with North Canadian River	Approximately 200 ft upstream of Kickapoo Street	Regression Equations	HEC-2	August 2008	AE	
Rosedale Park Tributary	Confluence with Tributary No. 1 to North Canadian River	Approximately 50 ft downstream of Philadelphia Street	Other (Gage Analysis)	HEC-RAS 3.1.1. and up	January 19, 2014	AE	

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
Squirrel Creek	Confluence with North Canadian River	Approximately 1,500 ft downstream of Waco Road	Other (Gage Analysis)	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary A to Tributary No. 1 to North Canadian River	Confluence with Tributary No. 1 to North Canadian River	Just downstream of Wayne Street	Other (Gage Analysis)	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary A to Tributary No. 2 to North Canadian River	Confluence with North Canadian River	Just upstream of West Independence Street	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary A to Tributary No. 4 to North Canadian River	Confluence with Tributary No. 4 to North Canadian River	Approximately 2,140 ft upstream of confluence with Tributary No. 4 to North Canadian River	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary A to Tributary No. 5 to North Canadian River	Confluence with Tributary No. 5 to North Canadian River	Approximately 200 ft upstream of Country Club Road	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary A-1 to Tributary No. 2 to North Canadian River	Confluence with Tributary A to Tributary No. 2 to North Canadian River	Approximately 600 ft downstream of N Leo Street	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
Tributary B to Tributary No. 1 to North Canadian River	Confluence with Tributary No. 1 to North Canadian River	Just downstream of Kickapoo Street	Other (Gage Analysis)	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary B to Tributary No. 2 to North Canadian River	Downstream of W Independence Street	Just downstream of State Highway 177	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary B to Tributary No. 5 to North Canadian River	Confluence with Tributary No. 5 to North Canadian River	Approximately 130 ft upstream of Sequoya Street	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary B-1 to Tributary No. 5 to North Canadian River	Confluence with Tributary B to Tributary No. 5 to North Canadian River	Approximately 290 ft upstream of Seneca Street	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary C to Tributary No. 2 to North Canadian River	Confluence with Tributary No. 2 to North Canadian River	Approximately 1,000 ft upstream of confluence with Tributary No. 2 to North Canadian River	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary No. 1 to Deer Creek	Confluence with Deer Creek	Approximately 500 ft downstream of 45th Street	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
Tributary No. 1 to North Canadian River	Confluence with North Canadian River	Approximately 450 ft downstream of Independence Street	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary No. 1 to Rock Creek	Confluence with Rock Creek	Approximately 70 ft upstream of West 45th Street	Regression Equations	HEC-2	August 2008	AE	
Tributary No. 1 to Rock Creek	Upstream of W 45th Street	Just downstream of MacArthur Street	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary No. 1 to Squirrel Creek	Approximately 40 ft downstream of Benson Park Road	Approximately 1,600 ft upstream of 5th Street	Regression Equations	HEC-2	August 2008	AE	
Tributary No. 1 to Tributary No. 1 to Rock Creek	Confluence with Tributary No. 1 to Rock Creek	Approximately 820 ft upstream of North Leo Street	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary No. 1 to Tributary No. 2 to Rock Creek	Approximately 700 ft downstream of North Harrison Street	Just upstream of West 45th Street	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
Tributary No. 1 to Tributary No. 5 to Rock Creek	Confluence with Tributary No. 5 to Rock Creek	Approximately 1,600 ft upstream of confluence with Tributary No. 5 to Rock Creek	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary No. 1 to Tributary No. 7 to Rock Creek	Confluence with Tributary No. 7 to Rock Creek	Approximately 1,710 ft upstream of Garretts Lake Road	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary No. 1 to Tributary No. 8 to Rock Creek	Confluence with Tributary No. 8 to Rock Creek	Just downstream of Interstate Highway 40	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary No. 1 to Tributary No. 9 to Rock Creek	Confluence with Tributary No. 9 to Rock Creek	Approximately 1,610 ft upstream of confluence with Tributary No. 9 to Rock Creek	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary No. 10 to Rock Creek	Confluence with Rock Creek	Approximately 1,500 ft upstream of confluence with Rock Creek	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary No. 11 to Rock Creek	Confluence with Rock Creek	Approximately 190 ft upstream of Coker Road	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
Tributary No. 12 to Rock Creek	Confluence with Rock Creek	Approximately 860 ft upstream of confluence with Rock Creek	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary No. 1 A to Tributary No. 2 to Rock Creek	Confluence with Tributary No. 1 to Tributary No. 2 to Rock Creek	Just upstream of W MacArthur Street	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary No. 2 to North Canadian River	Downstream of West Independence Street	Just downstream of Midland Street	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary No. 2 to North Canadian River	Approximately 0.6 mile upstream of its confluence with North Canadian River	Approximately 0.9 mile upstream of its confluence with North Canadian River	Regression Equations	HEC-2	August 2008	AE	
Tributary No. 2 to North Canadian River	Approximately 0.9 miles upstream of its confluence with North Canadian River	Approximately 440 ft upstream of West Franklin Street	Regression Equations	HEC-2	August 2008	AE	
Tributary No. 2 to Rock Creek	Confluence with Rock Creek	Approximately 450 feet upstream of 45th Street	Regression Equations	HEC-2	August 2008	AE	

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
Tributary No. 2 to Rock Creek	Approximately 450 ft upstream of East 45th Street	Approximately 200 ft downstream of East 42nd Street	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary No. 2 to Squirrel Creek	Confluence with Tributary No. 1 to Squirrel Creek	Approximately 0.5 mile downstream of Harrison Road	Regression Equations	HEC-2	August 2008	AE	
Tributary No. 2 to Tributary No. 1 to Rock Creek	Confluence with Tributary No. 1 to Rock Creek	Approximately 2,670 ft upstream of Kickapoo Street	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary No. 2 to Tributary No. 2 to Rock Creek	Confluence with Tributary No. 2 to Rock Creek	Just upstream of E MacArthur Street	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary No. 2 to Tributary No. 9 to Rock Creek	Confluence with Tributary No. 9 to Rock Creek	Approximately 950 ft upstream of confluence with Tributary No. 9 to Rock Creek	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary No. 3 to North Canadian River	Confluence with Tributary No. 2 to North Canadian River	Approximately 0.7 mile upstream of confluence with Tributary No. 2 to North Canadian River	Regression Equations	HEC-2	August 2008	AE	

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
Tributary No. 3 to North Canadian River	Approximately 0.7 mile upstream of confluence with Tributary No. 2 to North Canadian River	Upstream of North Leo Street	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary No. 3 to Rock Creek	Confluence with Tributary No. 2 to Rock Creek	Approximately 0.9 mile upstream of 45th Street	Regression Equations	HEC-2	August 2008	AE	
Tributary No. 3 to Rock Creek	Approximately 2,190 ft downstream of E MacArthur Street	Approximately 120 ft upstream of Federal Street	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary No. 3 to Squirrel Creek	Confluence with Squirrel Creek	Just upstream of Sharon Road	Regression Equations	HEC-2	August 2008	AE	
Tributary No. 4 to North Canadian River	Confluence with North Canadian River	Approximately 380 ft upstream of East Bradley Street	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary No. 4 to Rock Creek	Confluence with Rock Creek	Approximately 2,350 ft upstream of Garretts Lake Road	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
Tributary No. 5 to North Canadian River	Confluence with North Canadian River	Approximately 1,440 ft upstream of W Independence Street	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary No. 5 to Rock Creek	Confluence with Rock Creek	Approximately 1,340 ft upstream of Leo Street	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary No. 6 to North Canadian River	Confluence with North Canadian River	Approximately 850 ft upstream of Independence Street	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary No. 6 to Rock Creek	Confluence with Rock Creek	Approximately 2,200 ft upstream of Garretts Lake Road	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary No. 7 to Rock Creek	Confluence with Rock Creek	Approximately 4,200 ft upstream of Garretts Lake Road	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary No. 8 to Rock Creek	Confluence with Rock Creek	Approximately 270 ft downstream of Acme Road	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	
Tributary No. 9 to Rock Creek	Confluence with Rock Creek	Downstream of Coker Road	HEC-HMS 3.5 and up	HEC-RAS 3.1.1. and up	January 19, 2014	AE	

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
Unnamed Tributary to Tributary No. 2 to Squirrel Creek	Confluence with Tributary No. 2 to Squirrel Creek	Approximately 0.6 mile upstream of its confluence with Tributary No. 2 Squirrel Creek	Regression Equations	HEC-2	August 2008	AE	
Wynnewood Creek	Confluence with North Canadian River	Approximately 360 ft upstream of 10th Street	HEC-1	HEC-2	August 2008	AE	

Table 14: Roughness Coefficients

Flooding Source	Channel “n”	Overbank “n”
Bullfrog Creek	0.060-0.070	0.085-0.120
Deer Creek (near City of Shawnee)	0.030-0.045	0.040-0.100
Deer Creek (Pottawatomie and Seminole County Unincorporated Areas)	0.045	0.05-0.08
Little River	0.050-0.060	0.075-0.100
North Canadian River (Approximate Study Reach 1)	0.040-0.070	0.032-0.100
North Canadian River (Approximate Study Reach 2)	0.040	0.016-0.100
North Canadian River (Lower Reach	0.040-0.045	0.045-0.080
North Canadian River (Upper Reach)	0.045	0.050-0.080
Pecan Creek	0.065-0.070	0.090-0.120
Rock Creek	0.040	0.050-0.150
Rosedale Park Tributary	0.040	0.070
Squirrel Creek	0.035-0.040	0.040-0.100
Tributary A to Tributary No. 1 to North Canadian River	0.040	0.055-0.150
Tributary A to Tributary No. 2 to North Canadian River	0.030	0.045-0.150
Tributary A to Tributary No. 4 to North Canadian River	0.030-0.040	0.055-0.150
Tributary A to Tributary No. 5 to North Canadian River	0.040	0.050-0.150
Tributary A-1 to Tributary No. 2 to North Canadian River	0.030-0.040	0.040-0.150
Tributary B to Tributary No. 1 to North Canadian River	0.020-0.040	0.055-0.150
Tributary B to Tributary No. 2 to North Canadian River	0.040	0.055-0.150

Flooding Source	Channel “n”	Overbank “n”
Tributary B to Tributary No. 5 to North Canadian River	0.030-0.040	0.055-0.150
Tributary B-1 to Tributary No. 5 to North Canadian River	0.040	0.065-0.150
Tributary C to Tributary No. 2 to North Canadian River	0.030	0.055-0.150
Tributary No. 1 to Deer Creek	0.030	0.040-0.050
Tributary No. 1 to North Canadian River	0.040-0.050	0.040-0.070
Tributary No. 1 to Rock Creek	0.025-0.060	0.055-0.150
Tributary No. 1 to Squirrel Creek	0.030-0.065	0.025-0.090
Tributary No. 1 to Tributary No. 1 to Rock Creek	0.030-0.040	0.055-0.150
Tributary No. 1 to Tributary No. 2 to Rock Creek	0.030-0.040	0.055-0.150
Tributary No. 1 to Tributary No. 5 to Rock Creek	0.040	0.055-0.150
Tributary No. 1 to Tributary No. 7 to Rock Creek	0.030-0.040	0.055-0.150
Tributary No. 1 to Tributary No. 8 to Rock Creek	0.040	0.055-0.150
Tributary No. 1 to Tributary No. 9 to Rock Creek	0.040	0.055-0.150
Tributary No. 10 to Rock Creek	0.040	0.055-0.150
Tributary No. 11 to Rock Creek	0.040	0.055-0.150
Tributary No. 12 to Rock Creek	0.040	0.055-0.150
Tributary No. 1-A to Tributary No. 2 to Rock Creek	0.040	0.055-0.150
Tributary No. 2 to North Canadian River	0.030-0.050	0.045-0.150
Tributary No. 2 to Rock Creek	0.040	0.055-0.150
Tributary No. 2 to Squirrel Creek	0.030-0.065	0.025-0.090
Tributary No. 2 to Tributary No. 1 to Rock Creek	0.030-0.040	0.050-0.150

Flooding Source	Channel “n”	Overbank “n”
Tributary No. 2 to Tributary No. 2 to Rock Creek	0.040	0.055-0.150
Tributary No. 2 to Tributary No. 9 to Rock Creek	0.040	0.055-0.150
Tributary No. 3 to North Canadian River	0.040	0.055-0.150
Tributary No. 3 to Rock Creek	0.040	0.055-0.150
Tributary No. 3 to Squirrel Creek	0.030-0.065	0.025-0.090
Tributary No. 4 to North Canadian River	0.030-0.060	0.055-0.150
Tributary No. 4 to Rock Creek	0.040	0.055-0.150
Tributary No. 5 to North Canadian River	0.030-0.040	0.050-0.150
Tributary No. 5 to Rock Creek	0.040	0.055-0.150
Tributary No. 6 to North Canadian River	0.030-0.040	0.055-0.150
Tributary No. 6 to Rock Creek	0.030-0.040	0.055-0.150
Tributary No. 7 to Rock Creek	0.030-0.040	0.055-0.150
Tributary No. 8 to Rock Creek	0.040	0.055-0.150
Tributary No. 9 to Rock Creek	0.040	0.045-0.150
Wynnewood Creek	0.030-0.040	0.040-0.100

5.3 Coastal Analyses

This section is not applicable to this Flood Risk Project.

Table 15: 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% Annual Chance Total Stillwater Elevations for Coastal Areas

[Not Applicable to this Flood Risk Project]

Table 16: 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 17: 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 is not applicable to this Flood Risk Project.

Table 18: Summary of Alluvial Fan Analyses

[Not Applicable to this Flood Risk Project]

Table 19: 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 North American Vertical Datum of 1988 (NAVD 88). 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 http://www.ngs.noaa.gov/, or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

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 contact information services Branch of the NGS at (301) 713-3242, or visit their website at http://www.ngs.noaa.gov/.

The datum conversion locations and values that were calculated for Pottawatomie County are provided in Table 20.

Table 20: Countywide Vertical Datum Conversion

[Not Applicable to this Flood Risk Project]

Table 21: Stream-by-Stream Vertical Datum Conversion

[Not Applicable to this Flood Risk Project]

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/guidelines-and-standards-flood-risk-analysis-and-mapping.

Base map information shown on the FIRM was derived from the sources described in Table 22.

Table 22: Base Map Sources

Data Type	Data Provider	Data Date	Data Scale	Data Description
Street Centerline Files for Pottawatomie County, OK	Pottawatomie County E-911 System Trust Authority	2008	1:12000	Roads and railroad line data
Tribal Area Boundaries	FEMA Region VI Regional Management Center	2008	1:12000	Tribal Area Boundaries
Political Boundary and PLSS Information for Pottawatomie County, OK	Center for Spatial Analysis (University of Oklahoma)	2007	1:12000	County, Municipal and Public Land Survey System boundary

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 23.

In cases where the 1% and 0.2% annual chance floodplain boundaries are close together, only the 1% 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 24, "Floodway Data."

Table 23: Summary of Topographic Elevation Data used in Mapping

Community	Flooding Source(s)	Source for Topographic Elevation Data					
		Description	Scale	Contour Interval	$RMSE_z$	$Accuracy_z$	Citation
Absentee Shawnee Tribe	Deer Creek and its Tributaries, North Canadian River and its Tributaries, Rock Creek and its Tributaries, Rosedale Park Tributary, Squirrel Creek	LiDAR	N/A	N/A	7.5 cm	20.1 cm	USGS 2012
Citizen Potawatomi Nation							
City of Shawnee							
Kickapoo Tribe of Oklahoma							
Pottawatomie County (Unincorporated Areas)							
Sac and Fox Nation							
Town of Bethel Acres							
Town of Earlsboro							
Town of Johnson							
Town of McLoud							
Town of McLoud	North Deer Creek and its Tributaries, Wes Watkins Reservoir	Topographic Maps	1:2,400	2 ft	N/A	N/A	Aerial 1985

Community	Flooding Source(s)	Source for Topographic Elevation Data					
		Description	Scale	Contour Interval	$RMSE_z$	$Accuracy_z$	Citation
Absentee Shawnee Tribe	Bullfrog Creek, Little River, Pecan Creek, Rock Creek, Tributary No. 1 to Rock Creek, Tributary No. 1 to Squirrel Creek, Tributary No. 2 to North Canadian River, Tributary No. 2 to Rock Creek, Tributary No. 2 to Squirrel Creek, Tributary No. 3 to North Canadian River, Tributary No. 3 to Rock Creek, Tributary No. 3 to Squirrel Creek, Unnamed Tributary to Tributary No. 2 to Squirrel Creek, Wynnewood Creek, All Zone A streams in HUCs (11100303, 11090202 and 11090203)	Topographic Maps	1:24,000	10 ft	N/A	N/A	USGS 1979
Citizen Pottawatomie Nation							
City of Brooksville							
City of Maud							
City of Shawnee							
City of Tecumseh							
Kickapoo Tribe of Oklahoma							
Pottawatomie County (Unincorporated Areas)							
Sac and Fox Nation							
Town of Asher							
Town of Bethel Acres							
Town of Earlsboro							
Town of Macomb							
Town of McLoud							
Town of Pink							
Town of St. Louis							
Town of Tribbey							
Town of Wanette							

BFEs shown at cross sections on the FIRM represent the 1% 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 coastal areas, areas of ponding, and other areas with static base flood elevations.

Table 24: Floodway Data

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
North Canadian River (Lower Reach)								
A	910,525	1,092	9,097	4.2	974.6	974.6	975.5	0.9
B	910,875	996	8,589	4.5	975.9	975.9	976.6	0.7
C	913,572	2,100	20,987	1.8	977.7	977.7	978.2	0.5
D	922,243	1,700	10,847	3.5	980.1	980.1	980.9	0.8
E	922,913	1,233	9,055	4.2	981.3	981.3	981.7	0.4
F	927,819	2,733	20,035	1.9	984.0	984.0	984.7	0.7
G	932,157	1,103	9,473	4.0	986.3	986.3	987.1	0.8
H	932,331	1,194	12,285	3.1	986.9	986.9	987.5	0.6
I	935,255	985	10,265	3.7	990.0	990.0	990.5	0.5
J	942,228	1,113	9,534	4.0	993.3	993.3	994.1	0.8
K	943,187	1,770	16,703	2.3	994.3	994.3	995.0	0.7
L	947,875	1,839	13,243	2.9	996.0	996.0	996.9	0.9
M	949,606	2,100	12,086	3.1	996.3	996.3	997.3	1.0
N	952,105	540	6,227	6.1	999.3	999.3	999.6	0.3
O	953,987	1,218	10,386	3.6	1,001.4	1,001.4	1,001.6	0.2

[1]Feet above Lake Eufaula

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

POTTAWATOMIE COUNTY, OK AND INCORPORATED AREAS

FLOODWAY DATA

NORTH CANADIAN RIVER (LOWER REACH)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
North Canadian River (Upper Reach)								
A	1,031,941[1]	5,927	60,386	0.6	1,043.5	1,043.5	1,044.0	0.5
B	1,045,636[1]	4,730	27,288	1.3	1,043.9	1,043.9	1,044.6	0.7
C	1,051,163[1]	2,227	12,107	3.0	1,046.3	1,046.3	1,047.0	0.7
D	1,058,363[1]	545	4,934	7.3	1,052.1	1,052.1	1,052.7	0.6
E	1,058,794[1]	408	7,663	4.7	1,053.7	1,053.7	1,054.4	0.7
F	1,064,015[1]	733	8,108	4.4	1,055.7	1,055.7	1,056.3	0.6
G	1,067,815[1]	1,594	17,805	2.0	1,058.5	1,058.5	1,059.1	0.6
H	1,073,697[1]	3,100	27,877	1.3	1,059.2	1,059.2	1,059.9	0.7
Rosedale Park Tributary								
A	541[2]	21	65	6.7	1,030.8	1,030.8	1,030.8	0.0
B	1,399[2]	20	49	8.8	1,039.8	1,039.8	1,039.8	0.0

[1]Feet above Lake Eufaula

[2]Feet above confluence with Tributary No. 1 to North Canadian River

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

POTTAWATOMIE COUNTY, OK
AND INCORPORATED AREAS

FLOODWAY DATA

NORTH CANADIAN RIVER (UPPER REACH) – ROSEDALE PARK TRIBUTARY

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY[3]	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Squirrel Creek								
A	2,853	1,730[4]	6,631	1.7	984.7	984.6[2]	984.7	0.1
B	4,868	585	3,086	6.3	985.2	985.1	985.6	0.5
C	4,992	595	3,724	4.8	988.8	987.2	988.2	1.0
D	7,416	900	3,788	2.5	992.4	991.7	992.0	0.3
E	7,979	400	1,373	8.0	992.7	991.4	992.0	0.6
F	8,093	500	2,094	5.9	993.0	993.6	993.6	0.0
G	10,121	1,200	6,151	1.5	994.4	995.4	995.8	0.4
H	10,829	1,500	4,346	2.1	994.9	995.5	996.2	0.7
I	11,385	1,227	4,370	2.1	995.5	995.8	996.5	0.7
J	11,750	1,650	7,087	1.3	995.8	995.9	996.9	1.0
K	12,637	1,750	3,446	2.7	996.3	996.2	997.2	1.0
L	15,196	1,440	4,346	2.1	998.6	998.2	999.0	0.8
M	15,465	1,450	6,789	1.4	1,000.5	1,000.2	1,001.1	0.9
N	16,819	1,109	4,043	1.7	1,000.8	1,000.5	1,001.4	0.9
O	19,713	1,051	3,620	2.1	1,009.3	1,002.2	1,002.8	0.6
P	21,047	1,279	3,991	2.0	1,009.6	1,003.4	1,004.1	0.7
Q	21,747	1,183	3,406	2.5	1,009.6	1,003.7	1,004.7	1.0
R	24,703	633	2,559	3.7	1,015.3	1,008.9	1,009.8	0.9
S	26,217	578	3,624	2.6	1,015.8	1,013.6	1,014.3	0.7
T	28,711	564	2,148	4.4	1,016.4	1,015.5	1,016.1	0.6
U	28,866	623	3,010	3.2	1,017.5	1,017.3	1,018.1	0.8
V	30,668	692	3,672	2.6	1,021.6	1,021.6	1,022.2	0.6
W	33,491	791	2,487	3.5	1,024.4	1,024.4	1,025.1	0.7
X	35,363	701	2,625	3.4	1,029.1	1,029.1	1,029.6	0.5
Y	35,483	701	3,079	2.9	1,030.1	1,030.1	1,030.7	0.6
Z	36,854	150	815	10.8	1,032.7	1,032.7	1,033.1	0.4

[1]Feet above confluence with North Canadian River

[2]Elevation computed without consideration of backwater effects from North Canadian River

[3]Elevation computed with consideration from levee-like structure

[4]Floodway width includes floodway from North Canadian River

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

POTTAWATOMIE COUNTY, OK AND INCORPORATED AREAS

FLOODWAY DATA

SQUIRREL CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Tributary No. 1 to North Canadian River								
A	2,409	87	1,086	5.2	987.3	987.3	988.1	0.8
B	2,590	109	1,440	4.0	997.8	997.8	997.8	0.0
C	4,209	96	783	7.3	998.5	998.5	999.3	0.8
D	4,281	91	798	7.1	1,000.6	1,000.6	1,000.7	0.1
E	4,605	105	1,262	4.4	1,001.0	1,001.0	1,001.8	0.8
F	4,805	133	1,652	3.4	1,002.7	1,002.7	1,003.5	0.8
G	5,337	63	788	7.1	1,004.1	1,004.1	1,004.7	0.6
H	6,115	103	598	9.3	1,010.2	1,010.2	1,010.5	0.3
I	6,261	140	902	6.2	1,013.0	1,013.0	1,013.2	0.2
J	7,179	62	688	8.1	1,014.3	1,014.3	1,014.9	0.6
K	7,275	124	1,245	4.5	1,016.4	1,016.4	1,016.8	0.4
L	8,282	145	1,092	5.1	1,019.6	1,019.6	1,019.8	0.2
M	8,350	150	877	6.4	1,019.6	1,019.6	1,019.9	0.3
N	9,018	115	675	6.4	1,021.6	1,021.6	1,022.6	1.0
O	9,289	65	603	6.7	1,023.2	1,023.2	1,023.3	0.1
P	11,160	175	1,138	1.3	1,026.3	1,026.3	1,027.3	1.0
Q	11,271	232	1,033	1.5	1,028.2	1,028.2	1,028.9	0.7
R	11,879	42	339	4.5	1,030.1	1,030.1	1,030.7	0.6
S	11,962	30	400	3.8	1,036.5	1,036.5	1,036.8	0.3
T	13,323	60	209	7.4	1,037.3	1,037.3	1,038.0	0.7
U	14,909	24	120	10.7	1,048.1	1,048.1	1,048.2	0.1

[1]Feet above confluence with North Canadian River

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

POTTAWATOMIE COUNTY, OK
AND INCORPORATED AREAS

FLOODWAY DATA

TRIBUTARY NO. 1 TO NORTH CANADIAN RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Tributary No. 1 to Rock Creek								
A-B*								
C	7,150	317	1,368	1.9	986.1	986.1	986.8	0.7
D	9,000	150	791	3.2	990.9	990.9	991.0	0.1
E	10,600	175	503	4.5	994.4	994.4	995.0	0.6
F	11,000	180	836	2.7	999.2	999.2	999.2	0.0
G	12,925	67	365	6.2	1,003.6	1,003.6	1,003.7	0.1
H	14,900	160	361	6.2	1,012.7	1,012.7	1,012.8	0.1
I	15,075	173	895	2.5	1,015.8	1,015.8	1,015.8	0.0

[1]Feet above confluence with Rock Creek
*No floodway data computed

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

POTTAWATOMIE COUNTY, OK AND INCORPORATED AREAS

FLOODWAY DATA

TRIBUTARY NO. 1 TO ROCK CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Tributary No. 1 to Squirrel Creek								
A	5,260	330	1,226	3.7	1,000.3	1,000.3	1,001.2	0.9
B	6,650	335	1,559	2.9	1,002.6	1,002.6	1,003.3	0.7
C	10,080	400	1,080	4.3	1,013.3	1,013.3	1,013.8	0.5
D	12,200	432[2]	1,704	2.7	1,015.3	1,015.3	1,016.2	0.9
E	12,320	89[2]	390	11.8	1,015.3	1,015.3	1,016.2	0.9
F	13,400	225	827	3.2	1,018.7	1,018.7	1,019.4	0.7
G	13,516	260	976	2.7	1,018.7	1,018.7	1,019.5	0.8
H	13,700	460	1,520	1.8	1,018.9	1,018.9	1,019.7	0.8
I	13,985	832	1,735	1.5	1,021.0	1,021.0	1,021.4	0.4
J	14,170	49	271	9.9	1,021.0	1,021.0	1,021.4	0.4
K	14,900	300	1,180	2.3	1,022.8	1,022.8	1,023.6	0.8
L	16,320	479	770	3.5	1,026.1	1,026.1	1,026.2	0.1
M	17,210	398	545	4.9	1,029.8	1,029.8	1,029.8	0.0
N	17,270	72	259	10.4	1,029.9	1,029.9	1,029.9	0.0
O	17,300	100	537	4.1	1,031.8	1,031.8	1,031.8	0.0
P	17,410	142	498	4.4	1,032.1	1,032.1	1,032.1	0.0
Q	18,040	100	539	4.1	1,032.5	1,032.5	1,033.5	1.0

[1]Feet above confluence with Squirrel Creek
[2]Combined Tributary No. 1 to Squirrel Creek/Tributary No. 2 to Squirrel Creek floodway

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

POTTAWATOMIE COUNTY, OK
AND INCORPORATED AREAS

FLOODWAY DATA

TRIBUTARY NO. 1 TO SQUIRREL CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Tributary No. 2 to North Canadian River								
A	3,110[1]	45	544	4.0	1,004.8	1,004.8	1,005.8	1.0
B	3,760[1]	55	557	2.3	1,005.5	1,005.5	1,006.5	1.0
C	4,330[1]	120	766	1.7	1,005.9	1,005.9	1,006.9	1.0
D	4,480[1]	260	3,407	0.4	1,017.1	1,017.1	1,018.0	0.9
E	4,735[1]	140	1,584	0.8	1,017.1	1,017.1	1,018.0	0.9
Tributary No. 2 to Rock Creek								
A-E*								
F	6,936[2]	250	1,062	3.0	976.3	976.3	976.3	0.0
G	7,816[2]	245	356	5.0	979.9	979.9	979.9	0.0
H	8,856[2]	250	368	4.8	992.9	992.9	992.9	0.0
I	9,420[2]	190	328	5.4	998.6	998.6	998.6	0.0

[1]Feet above confluence with North Canadian River
[2]Feet above confluence with Rock Creek
*No floodway data computed

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

POTTAWATOMIE COUNTY, OK AND INCORPORATED AREAS

FLOODWAY DATA

TRIBUTARY NO. 2 TO NORTH CANADIAN RIVER - TRIBUTARY NO. 2 TO ROCK CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Tributary No. 2 to Squirrel Creek								
D	20[1]	432[2]	1,704	2.7	1,015.3	1,015.3	1,016.2	0.9
E	100[1]	89[2]	390	11.8	1,015.3	1,015.3	1,016.2	0.9
F	1,000[1]	700[3]	1,114	2.1	1,018.8	1,017.2[4]	1,017.3[4]	0.1
G	2,660[1]	307	485	2.7	1,022.8	1,022.8	1,023.7	0.9
Tributary No. 3 to Rock Creek								
A-B*								
C	5,987[5]	115	348	5.3	974.4	974.4	974.8	0.4
D	7,187[5]	200	472	3.9	981.9	981.9	981.9	0.0
E	7,297[5]	150	686	2.7	983.7	983.7	983.7	0.0
F	8,607[5]	80	708	2.2	988.0	988.0	988.9	0.9
G	10,012[5]	95	517	3.0	995.7	995.7	996.6	0.9
H	12,050[5]	276	326	4.8	1,008.6	1,008.6	1,008.6	0.0

[1]Feet above confluence with Squirrel Creek with Tributary No. 1 to Squirrel Creek
[2]Width is combined with Tributary No. 1 to Squirrel Creek
[3]Width is combined with Unnamed Tributary to Tributary No. 2 to Squirrel Creek
[4]Elevation computed without consideration of backwater effects from Tributary No. 1 to Squirrel Creek
[5]Feet above confluence with Rock Creek
*No floodway data computed

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

POTTAWATOMIE COUNTY, OK AND INCORPORATED AREAS

FLOODWAY DATA

TRIBUTARY NO. 2 TO SQUIRREL CREEK – TRIBUTARY NO. 3 TO ROCK CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Tributary No. 3 to Squirrel Creek								
A*								
B	9,490[1]	1,483	13,245	0.2	1,028.0	1,028.0	1,028.0	0.0
C	10,255[1]	110	926	3.3	1,028.0	1,028.0	1,028.0	0.0
D	10,610[1]	1,887	6,514	0.5	1,028.1	1,028.1	1,028.2	0.1
Unnamed Tributary to Tributary No. 2 to Squirrel Creek								
F	650[2]	700[3]	1,114	2.1	1,018.8	1,017.2[4]	1,017.3[4]	0.1
G	2,480[2]	200	286	5.4	1,022.5	1,022.5	1,023.2	0.7

[1]Feet above confluence with Squirrel Creek
[2]Feet above confluence with Tributary No. 2 to Squirrel Creek
*No floodway data computed
[3]Width is combined with Tributary to Tributary No. 2 to Squirrel Creek
[4]Elevation computed without consideration of backwater effects from Tributary No. 2 to Squirrel Creek

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

POTTAWATOMIE COUNTY, OK AND INCORPORATED AREAS

FLOODWAY DATA

TRIBUTARY NO. 3 TO SQUIRREL CREEK – UNNAMED TRIBUTARY TO TRIBUTARY NO. 2 TO SQUIRREL CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Wynnewood Creek								
A	3,730	103	320	9.4	1,055.9	1,055.9	1,056.0	0.1
B	4,310	120	427	7.0	1,061.0	1,061.0	1,061.2	0.2
C	5,020	120	557	5.4	1,065.6	1,065.6	1,066.4	0.8
D	5,600	100	532	5.6	1,071.0	1,071.0	1,071.0	0.0
E	6,440	130	556	5.3	1,077.3	1,077.3	1,077.3	0.0

[1]Feet above confluence with North Canadian River

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

POTTAWATOMIE COUNTY, OK AND INCORPORATED AREAS

FLOODWAY DATA

WYNNEWOOD CREEK

Table 25: 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 26: 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 to Flood Risk Projects 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 31, "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/floodplain-management/letter-map-amendment-loma 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.

For more information about how to apply for a LOMA, call the FEMA Map Information 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/floodplain-management/letter-map-amendment-loma for the "MT-1 Application Forms and Instructions for Conditional and Final Letters of Map Amendment and Letters of Map Revision Based on Fill" of by calling the FEMA Map Information 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 http://www.fema.gov/media/fhm/lomrf/ot_lomrf.html.

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/national-flood-insurance-program-flood-hazard-mapping/mt-2-application-forms-and-instructions and download the form "MT-2 Application Forms and Instructions and 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 Map Information 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 Pottawatomie County FIRM are listed in Table 27.

Table 27: Incorporated Letters of Map Change

Case Number	Effective Date	Flooding Source	FIRM Panel(s)
11-06-3268P	06/23/2011	Tributary No. 3 to Rock Creek	40125C0207J

6.5.4 Physical Map Revisions

A 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 http://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 http://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 Pottawatomie County. Previously, separate FIRMs, Flood Hazard Boundary Maps (FHBMs) and/or Flood Boundary and Floodway Maps (FBFMs) 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 28, "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 28 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 Flood Hazard Boundary Map (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.

This is the first effective date that is shown on the FIRM panel.

- *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 Physical Map Revisions (PMR) 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 Pottawatomie County FIRMs in countywide format was April 2, 1992.

Table 28: Community Map History

Community Name	Initial Identification Date (First NFIP Map Published)	Initial FHBM Effective Date	FHBM Revision Date(s)	Initial FIRM Effective Date	FIRM Revision Date(s)
Absentee Shawnee Tribe	09/03/2010	N/A	N/A	09/03/2010	
Town of Asher	06/04/1976	06/04/1976	None	04/02/1992	09/03/2010
Town of Bethel Acres	12/31/1976	12/31/1976	None	12/01/1989	04/02/1992, 09/03/2010
City of Brooksville	04/18/1978	04/18/1978	None	08/19/1985	04/02/1992, 09/03/2010
Citizen Potawatomi Nation	09/03/2010	N/A	N/A	09/03/2010	
Town of Earlsboro	04/02/1992	N/A	N/A	04/02/1992	09/03/2010
Town of Johnson	09/03/2010	N/A	N/A	09/03/2010	
Kickapoo Tribe of Oklahoma	09/03/2010	N/A	N/A	09/03/2010	
Town of Macomb	04/02/1992	N/A	N/A	04/02/1992	09/03/2010
City of Maud	04/02/1976	04/02/1976	None	07/03/1985	04/02/1992, 09/03/2010
Town of McLoud	08/13/1976	08/13/1976	None	10/16/1987	04/02/1992, 09/03/2010
City of Oklahoma City	07/14/1972	07/14/1972	07/01/1974, 02/02/1979	11/03/1982	09/03/2010
Town of Pink	04/02/1992	N/A	N/A	04/02/1992	09/03/2010
Pottawatomie County Unincorporated Areas	05/25/1982	05/25/1982	None	06/01/1988	04/02/1992, 09/03/2010

Community Name	Initial Identification Date (First NFIP Map Published)	Initial FHBM Effective Date	FHBM Revision Date(s)	Initial FIRM Effective Date	FIRM Revision Date(s)
Sac and Fox Nation	09/03/2010	N/A	N/A	09/03/2010	
City of Shawnee	12/27/1974	12/27/1974	05/21/1976	7/2/1980	1/15/1988, 4/2/1992, 9/3/2010
Town of St. Louis	04/02/1992	N/A	N/A	04/02/1992	09/03/2010
City of Tecumseh	07/19/1974	07/19/1974	11/12/1976	07/16/1980	06/01/1984, 04/02/1992, 09/03/2010
Town of Tribbey	09/03/2010	N/A	N/A	09/03/2010	N/A
Town of Wanette	04/02/1992	N/A	N/A	04/02/1992	09/03/2010

SECTION 7.0 – CONTRACTED STUDIES AND COMMUNITY COORDINATION

7.1 Contracted Studies

Table 29 provides a summary of the contracted studies, by flooding source that are included in this FIS Report.

Table 29: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Bullfrog Creek	September 3, 2010	Watershed VI Alliance	EMT-2008-CO-0048	August 2008	Absentee Shawnee Tribe, Town of Pink
Deer Creek (Approximate Study)		RAMPP	HSFEHQ-09-D-0369	January 2014	Pottawatomie County Unincorporated Areas
Deer Creek (Detailed Study)		RAMPP	HSFEHQ-09-D-0369	January 2014	City of Shawnee, Kickapoo Tribe of Oklahoma, Pottawatomie County Unincorporated Areas, Town of Johnson
Little River	September 3, 2010	Watershed VI Alliance	EMT-2008-CO-0048	August 2008	Absentee Shawnee Tribe, Town of Pink, Pottawatomie

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
					County Unincorporated Areas
North Canadian River (Lower Reach) (Approximate Study)		RAMPP	HSFEHQ-09-D-0369	January 2014	Absentee Shawnee Tribe, Pottawatomie County Unincorporated Areas, Sac and Fox Nation, Town of Johnson
North Canadian River (Lower Reach) (Detailed Study)		RAMPP	HSFEHQ-09-D-0369	January 2014	Absentee Shawnee Tribe, City of Shawnee, Kickapoo Tribe of Oklahoma, Pottawatomie County Unincorporated Areas, Town of Bethel Acres
North Canadian River (Upper Reach) (Approximate Study)		RAMPP	HSFEHQ-09-D-0369	January 2014	Kickapoo Tribe of Oklahoma, Pottawatomie County Unincorporated Areas, Town of Bethel Acres
North Canadian River (Upper Reach) (Detailed Study)		RAMPP	HSFEHQ-09-D-0369	January 2014	Kickapoo Tribe of Oklahoma, Pottawatomie County Unincorporated Areas, Town of McLoud
Pecan Creek	September 3, 2010	Watershed VI Alliance	EMT-2008-CO-0048	August 2008	Absentee Shawnee Tribe, Town of Pink

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Rock Creek	September 3, 2010	Watershed VI Alliance	EMT-2008-CO-0048	August 2008	City of Shawnee, Pottawatomie County Unincorporated Areas, Sac and Fox Nation
Rock Creek		RAMPP	HSFEHQ-09-D-0369	January 2014	City of Shawnee, Pottawatomie County Unincorporated Areas
Shawnee Twin Lakes		RAMPP	HSFEHQ-09-D-0369	January 2014	City of Shawnee, Pottawatomie County Unincorporated Areas
Rosedale Park Tributary		RAMPP	HSFEHQ-09-D-0369	January 2014	City of Shawnee
Squirrel Creek		RAMPP	HSFEHQ-09-D-0369	January 2014	Citizen Potawatomi Nation, City of Shawnee, Pottawatomie County Unincorporated Areas, Town of Bethel Acres
Tributary A to Tributary No. 1 to North Canadian River		RAMPP	HSFEHQ-09-D-0369	January 2014	City of Shawnee
Tributary A to Tributary No. 2 to North Canadian River		RAMPP	HSFEHQ-09-D-0369	January 2014	City of Shawnee, Kickapoo Tribe of Oklahoma, Pottawatomie County Unincorporated Areas
Tributary A to Tributary No. 4 to North Canadian River		RAMPP	HSFEHQ-09-D-0369	January 2014	Pottawatomie County Unincorporated Areas

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Tributary A to Tributary No. 5 to North Canadian River		RAMPP	HSFEHQ-09-D-0369	January 2014	City of Shawnee, Pottawatomie County Unincorporated Areas
Tributary A-1 to Tributary 2 to North Canadian		RAMPP	HSFEHQ-09-D-0369	January 2014	City of Shawnee, Kickapoo Tribe of Oklahoma
Tributary B to Tributary No. 1 to North Canadian River		RAMPP	HSFEHQ-09-D-0369	January 2014	City of Shawnee
Tributary B to Tributary 2 to North Canadian River		RAMPP	HSFEHQ-09-D-0369	January 2014	Kickapoo Tribe of Oklahoma, Pottawatomie County Unincorporated Areas
Tributary B to Tributary No. 5 to North Canadian River		RAMPP	HSFEHQ-09-D-0369	January 2014	City of Shawnee
Tributary B-1 to Tributary No. 5 to North Canadian River		RAMPP	HSFEHQ-09-D-0369	January 2014	City of Shawnee
Tributary C to Tributary No. 2 to North Canadian River		RAMPP	HSFEHQ-09-D-0369	January 2014	City of Shawnee
Tributary No. 1 to Deer Creek		RAMPP	HSFEHQ-09-D-0369	January 2014	Pottawatomie County Unincorporated Areas
Tributary No. 1 to North Canadian River		RAMPP	HSFEHQ-09-D-0369	January 2014	City of Shawnee
Tributary No. 1 to Rock Creek	September 3, 2010	Watershed VI Alliance	EMT-2008-CO-0048	August 2008	City of Shawnee
Tributary No. 1 to Rock Creek		RAMPP	HSFEHQ-09-D-0369	January 2014	City of Shawnee
Tributary No. 1 to Squirrel Creek	September 3, 2010	Watershed VI Alliance	EMT-2008-CO-0048	August 2008	Citizen Potawatomi Nation, City of Tecumseh, Pottawatomie County Unincorporated Areas

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Tributary No. 1 to Tributary No. 1 to Rock Creek		RAMPP	HSFEHQ-09-D-0369	January 2014	City of Shawnee
Tributary No. 1 to Tributary No. 2 to Rock Creek		RAMPP	HSFEHQ-09-D-0369	January 2014	City of Shawnee
Tributary No. 1 to Tributary No. 5 to Rock Creek		RAMPP	HSFEHQ-09-D-0369	January 2014	City of Shawnee
Tributary No. 1 to Tributary No. 7 to Rock Creek		RAMPP	HSFEHQ-09-D-0369	January 2014	Pottawatomie County Unincorporated Areas
Tributary No. 1 to Tributary No. 8 to Rock Creek		RAMPP	HSFEHQ-09-D-0369	January 2014	Pottawatomie County Unincorporated Areas
Tributary No. 1 to Tributary No. 9 to Rock Creek		RAMPP	HSFEHQ-09-D-0369	January 2014	Pottawatomie County Unincorporated Areas
Tributary No. 10 to Rock Creek		RAMPP	HSFEHQ-09-D-0369	January 2014	Pottawatomie County Unincorporated Areas
Tributary No. 11 to Rock Creek		RAMPP	HSFEHQ-09-D-0369	January 2014	Pottawatomie County Unincorporated Areas
Tributary No. 12 to Rock Creek		RAMPP	HSFEHQ-09-D-0369	January 2014	Pottawatomie County Unincorporated Areas
Tributary No. 1-A to North Canadian River		RAMPP	HSFEHQ-09-D-0369	January 2014	City of Shawnee
Tributary No. 2 to North Canadian River	September 3, 2010	Watershed VI Alliance	EMT-2008-CO-0048	August 2008	Kickapoo Tribe of Oklahoma, Pottawatomie County Unincorporated Areas

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Tributary No. 2 to North Canadian River		RAMPP	HSFEHQ-09-D-0369	January 2014	City of Shawnee, Kickapoo Tribe of Oklahoma, Pottawatomie County Unincorporated Areas
Tributary No. 2 to Rock Creek	September 3, 2010	Watershed VI Alliance	EMT-2008-CO-0048	August 2008	City of Shawnee, Pottawatomie County Unincorporated Areas
Tributary No. 2 to Rock Creek		RAMPP	HSFEHQ-09-D-0369	January 2014	City of Shawnee
Tributary No. 2 to Squirrel Creek	September 3, 2010	Watershed VI Alliance	EMT-2008-CO-0048	August 2008	City of Shawnee
Tributary No. 2 to Tributary No. 2 to Rock Creek		RAMPP	HSFEHQ-09-D-0369	January 2014	City of Shawnee
Tributary No. 2 to Tributary No. 9 to Rock Creek		RAMPP	HSFEHQ-09-D-0369	January 2014	Pottawatomie County Unincorporated Areas
Tributary No. 3 to North Canadian River	September 3, 2010	Watershed VI Alliance	EMT-2008-CO-0048	August 2008	Kickapoo Tribe of Oklahoma, City of Shawnee
Tributary No. 3 to North Canadian River		RAMPP	HSFEHQ-09-D-0369	January 2014	City of Shawnee, Kickapoo Tribe of Oklahoma
Tributary No. 3 to Rock Creek	September 3, 2010	Watershed VI Alliance	EMT-2008-CO-0048	August 2008	City of Shawnee, Pottawatomie County Unincorporated Areas
Tributary No. 3 to Rock Creek		RAMPP	HSFEHQ-09-D-0369	January 2014	City of Shawnee
Tributary No. 3 to Squirrel Creek	September 3, 2010	Watershed VI Alliance	EMT-2008-CO-0048	August 2008	City of Tecumseh

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Tributary No. 4 to North Canadian River		RAMPP	HSFEHQ-09-D-0369	January 2014	City of Shawnee
Tributary No. 4 to Rock Creek		RAMPP	HSFEHQ-09-D-0369	January 2014	City of Shawnee
Tributary No. 5 to North Canadian River		RAMPP	HSFEHQ-09-D-0369	January 2014	City of Shawnee
Tributary No. 5 to Rock Creek		RAMPP	HSFEHQ-09-D-0369	January 2014	City of Shawnee, Pottawatomie County Unincorporated Areas
Tributary No. 6 to North Canadian River		RAMPP	HSFEHQ-09-D-0369	January 2014	Kickapoo Tribe of Oklahoma, Pottawatomie County Unincorporated Areas
Tributary No. 6 to Rock Creek		RAMPP	HSFEHQ-09-D-0369	January 2014	Pottawatomie County Unincorporated Areas
Tributary No. 7 to Rock Creek		RAMPP	HSFEHQ-09-D-0369	January 2014	Pottawatomie County Unincorporated Areas
Tributary No. 8 to Rock Creek		RAMPP	HSFEHQ-09-D-0369	January 2014	City of Shawnee, Pottawatomie County Unincorporated Areas
Tributary No. 9 to Rock Creek		RAMPP	HSFEHQ-09-D-0369	January 2014	Pottawatomie County Unincorporated Areas
Unnamed Tributary to Tributary No. 2 to Squirrel Creek	September 3, 2010	Watershed VI Alliance	EMT-2008-CO-0048	August 2008	City of Tecumseh
Wynnewood Creek	September 3, 2010	Watershed VI Alliance	EMT-2008-CO-0048	August 2008	Town of McLoud

7.2 Community Meetings

The dates of the community meeting held for this Flood Risk Project and previous Flood Risk Projects are shown in Table 30. These meetings may have previously been referred to by a variety of names (Community Coordination Officer (CC)), 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 30: Community Meetings

Community	FIS Report Dated	Date of Meeting	Meeting Type	Attended By
Asher, Town of	2010	12/12/2008	Final CCO	Kickapoo Housing Authority, FEMA, OWRB, the community and the study contractor
Citizen Pottawatomie Nation	(DATE)	05/14/2013	Initial CCO	FEMA, OWRB, RAMPP, USGS, the community
		02/03/2015	Flood Risk Review	FEMA, OWRB, RAMPP, the community
	2010	4/13/2007	Initial CCO	CED4, OWRB, the community, the Indian Health Service
		12/12/2008	Final CCO	Kickapoo Housing Authority, FEMA, OWRB, the community and the study contractor
Kickapoo Tribe of Oklahoma	2010	4/13/2007	Initial CCO	CED4, OWRB, the community, the Indian Health Service
McLoud, City of	(DATE)	05/14/2013	Initial CCO	FEMA, OWRB, RAMPP, USGS, the community
	2010	4/13/2007	Initial CCO	CED4, OWRB, the community, the Indian Health Service
		12/12/2008	Final CCO	Kickapoo Housing Authority, FEMA, OWRB, the community and the study contractor

Oklahoma City, City of	2010	4/13/2007	Initial CCO	CED4, OWRB, the community, the Indian Health Service
Pink, Town of	2010	4/13/2007	Initial CCO	CED4, OWRB, the community, the Indian Health Service
		12/12/2008	Final CCO	Kickapoo Housing Authority, FEMA, OWRB, the community and the study contractor
Pottawatomie County	(DATE)	05/14/2013	Initial CCO	FEMA, OWRB, RAMPP, USGS, the community
	2010	12/12/2008	Final CCO	Kickapoo Housing Authority, FEMA, OWRB, the community and the study contractor
Sac and Fox Nation	2010	12/12/2008	Final CCO	Kickapoo Housing Authority, FEMA, OWRB, the community and the study contractor
Shawnee, City of	(DATE)	08/30/2011	Discovery	FEMA, OWRB, RAMPP, USACE, the community
		05/14/2013	Initial CCO	FEMA, OWRB, RAMPP, USGS, the community
		02/03/2015	Flood Risk Review	FEMA, OWRB, RAMPP, the community

Shawnee, City of	2010	4/13/2007	Initial CCO	CED4, OWRB, the community, the Indian Health Service
		12/12/2008	Final CCO	Kickapoo Housing Authority, FEMA, OWRB, the community and the study contractor
Tecumseh, City of	(DATE)	05/14/2013	Initial CCO	FEMA, OWRB, RAMPP, USGS, the community
Wanette, Town of	2010	12/12/2008	Final CCO	Kickapoo Housing Authority, FEMA, OWRB, 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 http://www.fema.gov.

Table 31 is a list of the locations where FIRMs for Pottawatomie 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 31: Map Repositories

Community	Address	City	State	Zip Code
Absentee Shawnee Tribe	Tribe Complex 2025 South Gordon Cooper Drive	Shawnee	OK	74801
Asher, Town of	City Hall 117 West Main Street	Asher	OK	74826
Bethel Acres, Town of	Town Hall 18101 Bethel Road	Shawnee	OK	74801
Brooksville, City of	City Office 37697 Rattlesnake Hill Road	Tecumseh	OK	74873
Citizen Potawatomi Nation	Citizen Potawatomi Nation Administration Building 1601 South Gordon Cooper Drive	Shawnee	OK	74801
Earlsboro, Town of	City Hall 110 South Lamar Avenue	Earlsboro	OK	74840
Johnson, Town of	County Courthouse 325 North Broadway Avenue	Shawnee	OK	74801
Kickapoo Tribe of Oklahoma	Housing Authority 101 Blackberry Drive	McLoud	OK	74851
Macomb, Town of	City Office 28830 Main Street	Macomb	OK	74852
Maud, City of	City Hall 206 West Main Street	Maud	OK	74854
McLoud, Town of	City Hall 107 North Main Street	McLoud	OK	74851
Oklahoma City, City of[1]	City Hall 420 Main Street	Oklahoma City	OK	73102

Community	Address	City	State	Zip Code
Pink, Town of	Town Hall 22058 Pink Lane	Tecumseh	OK	74873
Pottawatomie County Unincorporated Areas	County Courthouse 325 North Broadway Avenue	Shawnee	OK	74801
Sac and Fox Nation	Administration Building	Stroud	OK	74079
Shawnee, City of	City Hall Annex Building 222 North Broadway Street	Shawnee	OK	74801
St. Louis, Town of	City Hall 206 West Main Street	Maud	OK	74854
Tecumseh, City of	City Hall 114 North Broadway Street	Tecumseh	OK	74873
Tribbey, Town of	County Courthouse 325 North Broadway Avenue	Shawnee	OK	74801

[1]No Special Flood Hazard Areas Identified

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 32.

Table 32 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 32: Additional Information

FEMA and the NFIP	
FEMA and FEMA Engineering Library website	http://www.fema.gov/
NFIP website	http://www.fema.gov/national-flood-insurance-program
NFHL Dataset	http://msc.fema.gov
Other Federal Agencies	
USGS website	http://www.usgs.gov
Hydraulic Engineering Center website	http://www.hec.usace.army.mil
State Agencies and Organizations	
State NFIP Coordinator	Gavin Brady, CFM Oklahoma Water Resources Board 3800 North Classen Blvd. Oklahoma City, OK 73118 (918) 581-2924 Fax: (918) 581-2754 jgbrady@owrb.ok.gov
State GIS Coordinator	Dr. Mike Sharp Director, Information Technology Division Oklahoma Conservation Commission 2800 North Lincoln Boulevard, Suite 160 Oklahoma City, OK 73105 (405) 521-4813 Fax: (405) 521-6686 msharp@okcc.state.ok.us mikes@okcc.state.ok.us
State Floodplain Mapping Coordinator	Matt Rollins, CFM Oklahoma Water Resources Board 3800 North Classen Blvd. Oklahoma City, OK 73118 405-530-8800 matt.rollins@owrb.ok.gov

SECTION 9.0 – BIBLIOGRAPHY AND REFERENCES

Table 33 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.

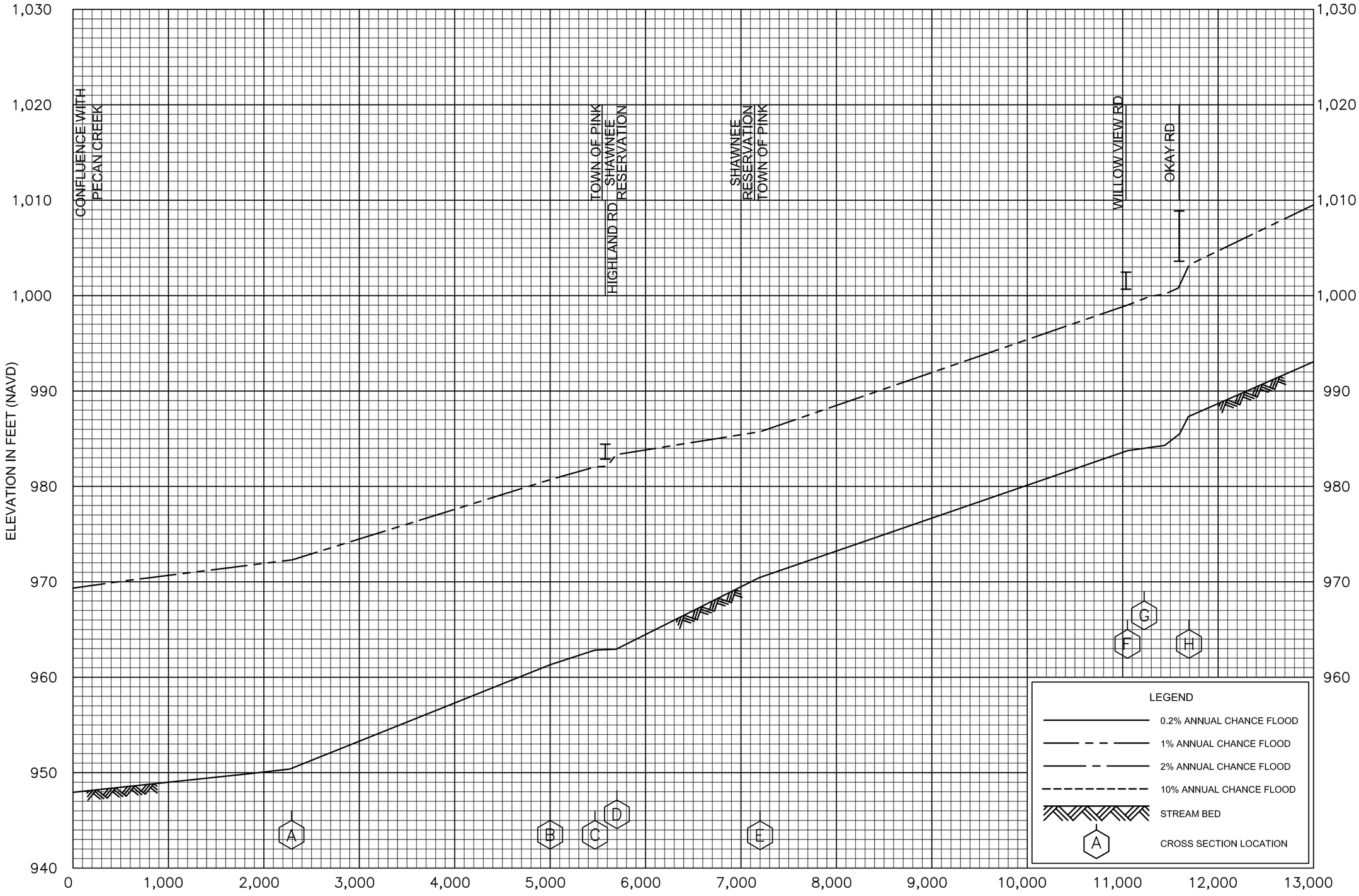
Table 33: Bibliography and References

Citation in this FIS	Publisher/ Issuer	*Publication Title,* "Article," Volume, Number, etc.	Author/Editor	Place of Publication	Publication Date/ Date of Issuance	Link
Aerial, 1985	Aerial Data Service, Inc.	*Topographic Maps compiled from aerial photographs, Scale 1:2,400, Contour Interval 2 Feet: McLoud, Oklahoma.*	Aerial Data Service, Inc.	Tulsa, OK	April 1985	http://www.aerialdata.com/
RAMPP, 2015	Risk Assessment, Mapping, and Planning Partners	*Base Map Submittal for Pottawatomie County, OK*	Risk Assessment, Mapping, and Planning Partners	Denton, TX	May 2015	https://hazards.fema.gov
FEMA, 2010	Federal Emergency Management Agency	*Flood Insurance Rate Map, Pottawatomie County, OK and Incorporated Areas*	Federal Emergency Management Agency	Washington, DC	September 2010	https://msc.fema.gov/portal
USGS SIR 2010-5137	USGS	*Methods for Estimating the Magnitude and Frequency of Peak Streamflows for Unregulated Streams in Oklahoma*	Jason M. Lewis	U.S. Geological Survey, Reston, VA	2010	http://pubs.usgs.gov/sir/2010/5137/pdf/SIR2010-5137.pdf
USACE, 2010	USACE	*Hydrologic Modeling System HEC-HMS User's Manual*	William A. Scharffenberg and Matthew J. Fleming	USACE, Davis, CA	August 2010	http://www.hec.usace.army.mil/software/hec-hms/documentation/HEC-HMS_Users_Manual_3.5.pdf

Citation in this FIS	Publisher/ Issuer	*Publication Title,* "Article," Volume, Number, etc.	Author/Editor	Place of Publication	Publication Date/ Date of Issuance	Link
USGS, 2006	USGS	*User's Manual for Program PeakFQ, Annual Flood-Frequency Analysis Using Bulletin 17B Guidelines*	Kathleen M. Flynn, William H. Kirby, and Paul R. Hummel	U.S. Geological Survey, Reston, VA	2006	http://pubs.usgs.gov/tm/2006/tm4b4/tm4b4.pdf
POTTAWATOMIE E-911, 2008	Pottawatomie County E-911 System Trust Authority	*Street Centerline Files for Pottawatomie County, OK*	Pottawatomie County E-911 System Trust Authority	Tecumseh, OK	January 2008	
FEMA RMC, 2008	FEMA Region VI Regional Management Center	*Tribal Area Boundaries*	FEMA Region VI Regional Management Center	Denton, TX	January 2008	https://msc.fema.gov/portal
CSA, 2008	Center for Spatial Analysis (University of Oklahoma)	*Political Boundary and PLSS Information for Pottawatomie County, OK*	Center for Spatial Analysis (University of Oklahoma)	Norman, OK	January 2007	http://geo.ou.edu/DataFrame.htm
FEMA, 2015	Federal Emergency Management Agency	*FIRM Panel Layout for Pottawatomie County, OK*	Federal Emergency Management Agency	Washington, DC	May 2015	https://msc.fema.gov/portal
LOMR 11-06-3268P	Federal Emergency Management Agency	*LOMR 11-06-3268P*	Federal Emergency Management Agency	Washington, DC	June 2011	https://msc.fema.gov/portal
LOMR 13-06-4706P	Federal Emergency Management Agency	*LOMR 13-06-4706P*	Federal Emergency Management Agency	Washington, DC	June 2014	https://msc.fema.gov/portal

Citation in this FIS	Publisher/ Issuer	*Publication Title,* "Article," Volume, Number, etc.	Author/Editor	Place of Publication	Publication Date/ Date of Issuance	Link
LOMR 13-06-0976P	Federal Emergency Management Agency	*LOMR 13-06-0976P*	Federal Emergency Management Agency	Washington, DC	August 2014	https://msc.fema.gov/portal
USGS 1979	U.S. Department of the Interior, Geological Survey	*7.5-Minutes Series of Topographic Maps, Scale 1:24,000, Contour Interval 10 Feet: Shawnee, Oklahoma, 1979*			1979	
USGS 2012	U.S. Department of the Interior, Geological Survey	*Pottawatomie, Seminole and McIntosh Counties - LiDAR*	USGS and Fugro EarthData, Inc.		July 2011	lidar.cr.usgs.gov/

Flood Profiles



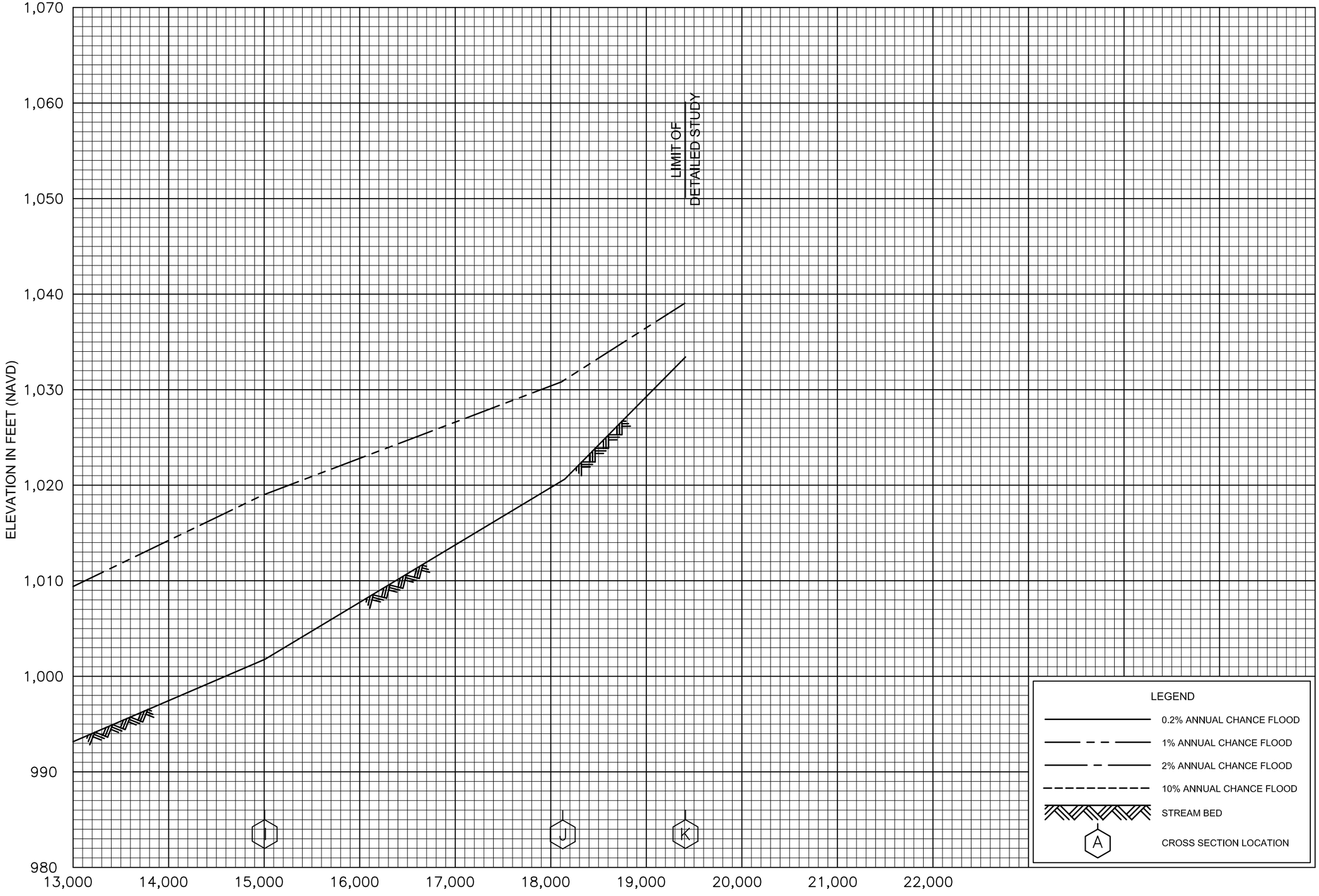
FLOOD PROFILES

BULLFROG CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

POTTAWATOMIE COUNTY, OK
AND INCORPORATED AREAS

01P



FLOOD PROFILES

BULLFROG CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

POTTAWATOMIE COUNTY, OK
AND INCORPORATED AREAS

02P

FLOOD PROFILES

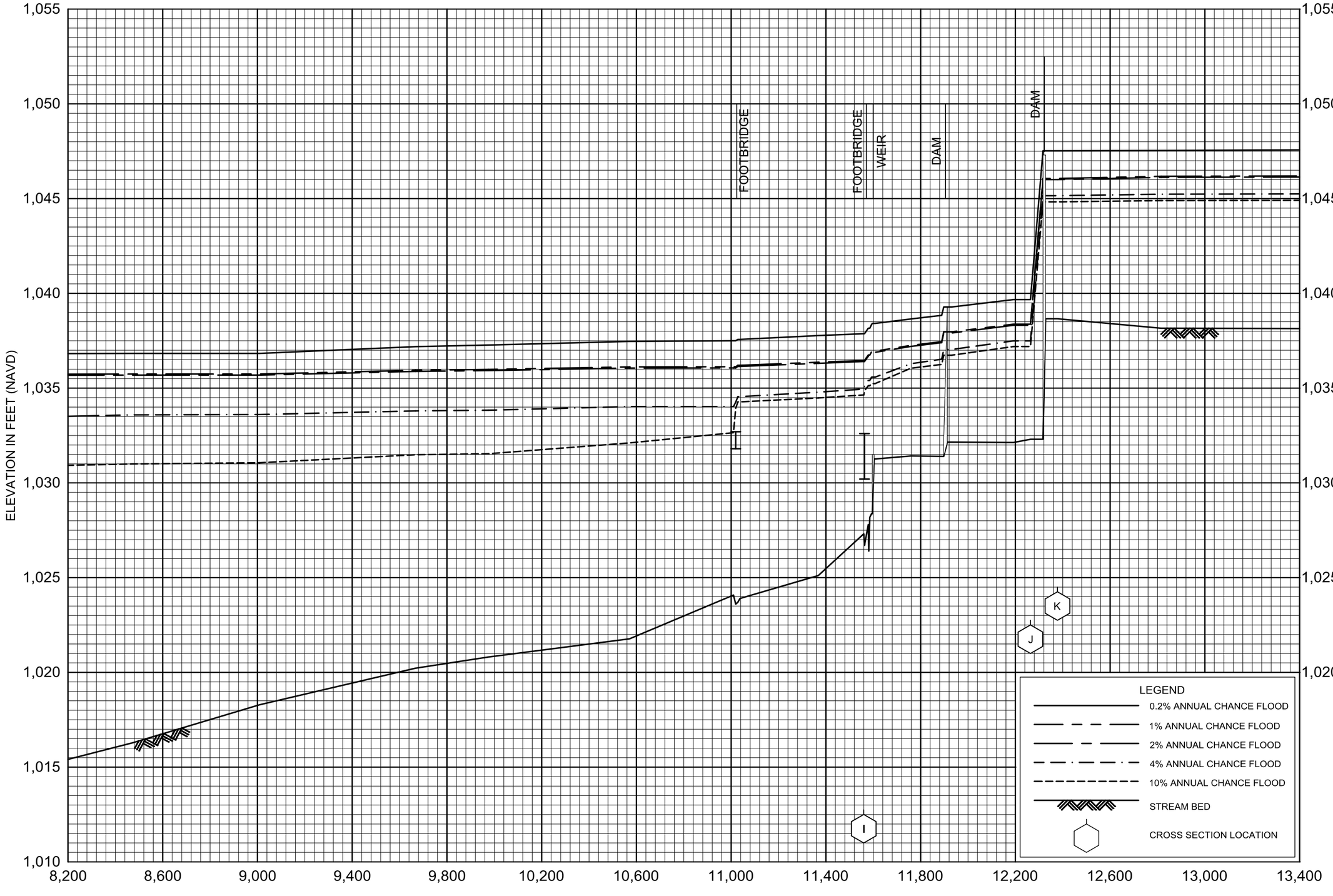
DEER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

POTTAWATOMIE COUNTY, OK

AND INCORPORATED AREAS

03P

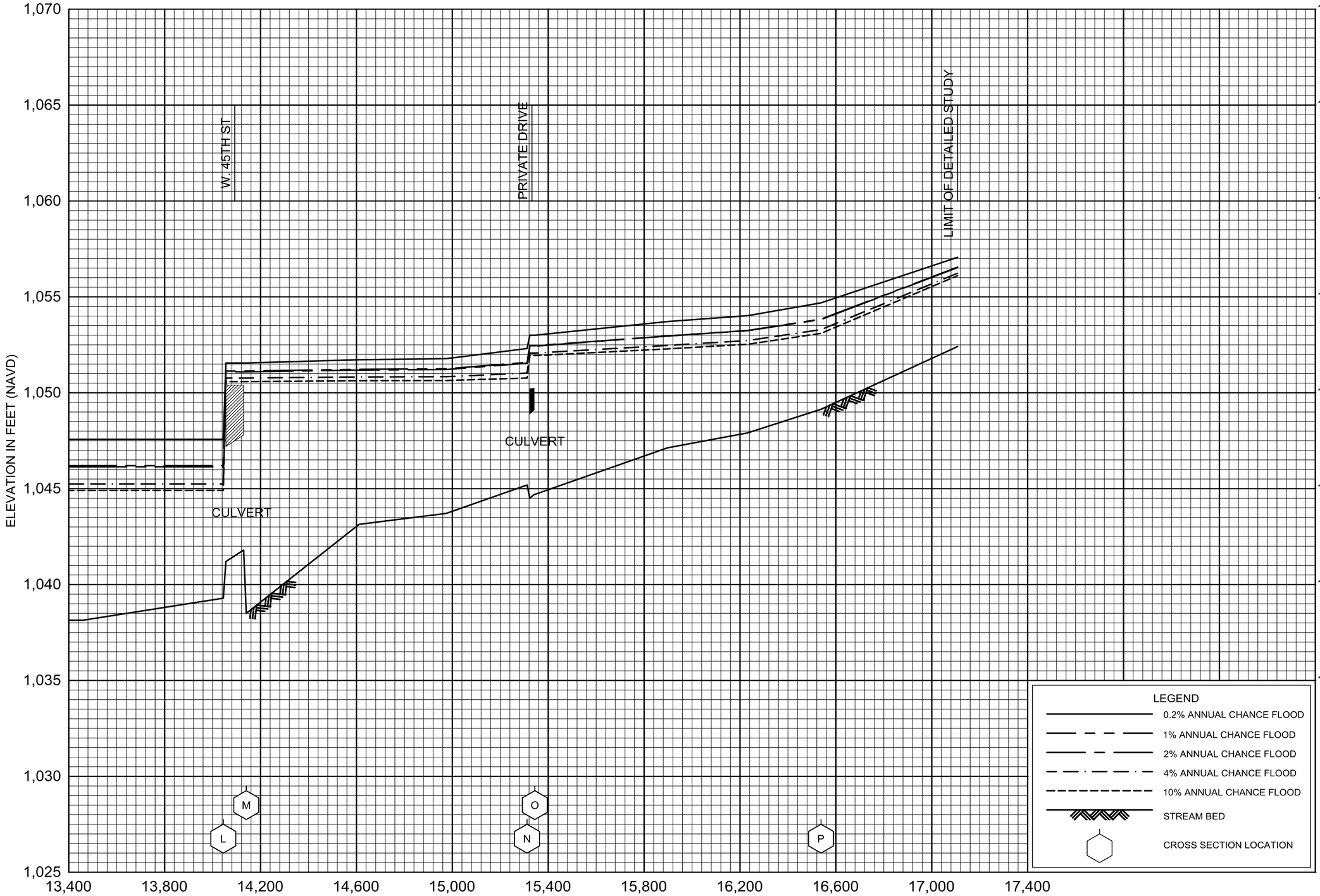


FLOOD PROFILES

DEER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

POTTAWATOMIE COUNTY, OK
AND INCORPORATED AREAS



FLOOD PROFILES

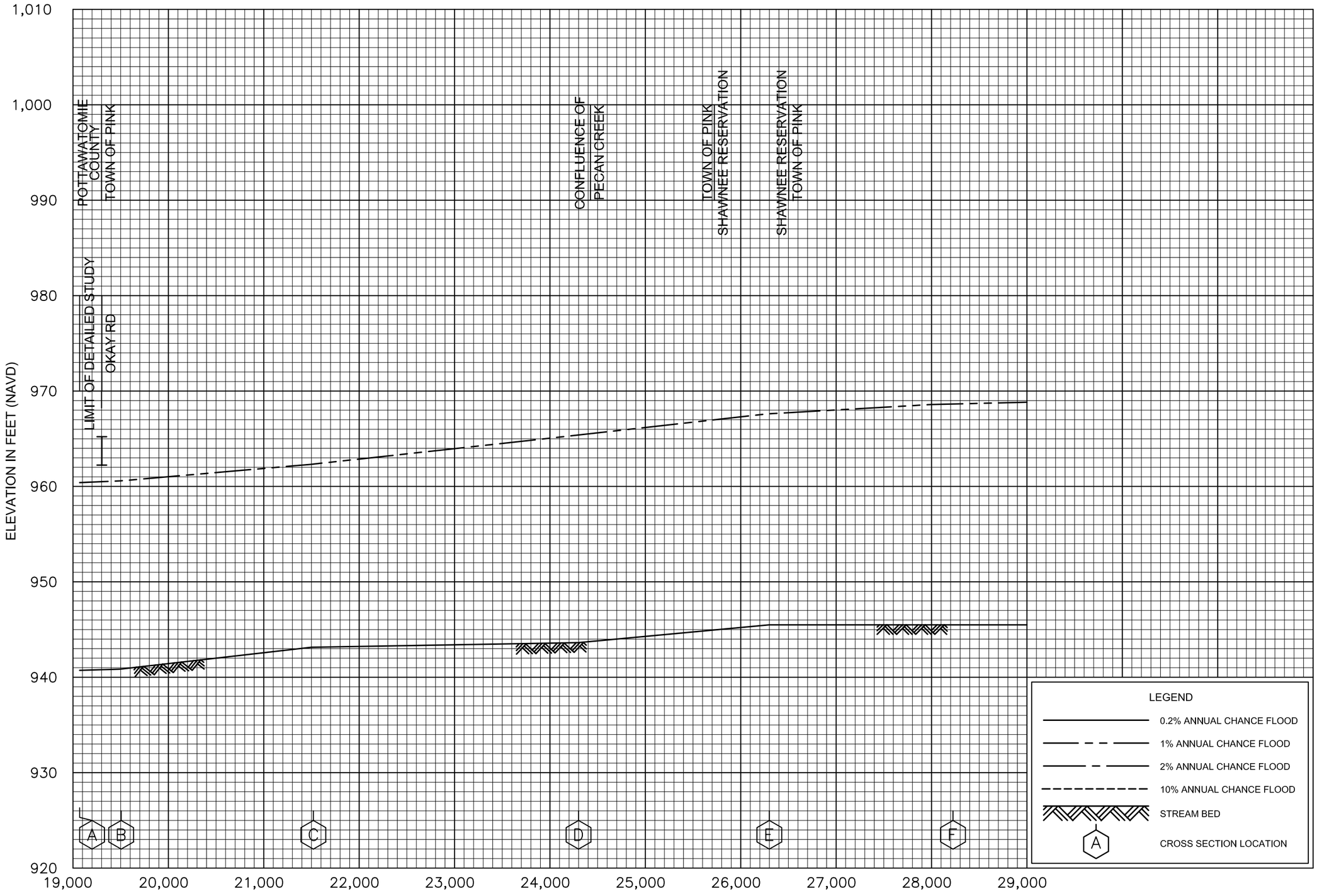
DEER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

POTTAWATOMIE COUNTY, OK

AND INCORPORATED AREAS

05P



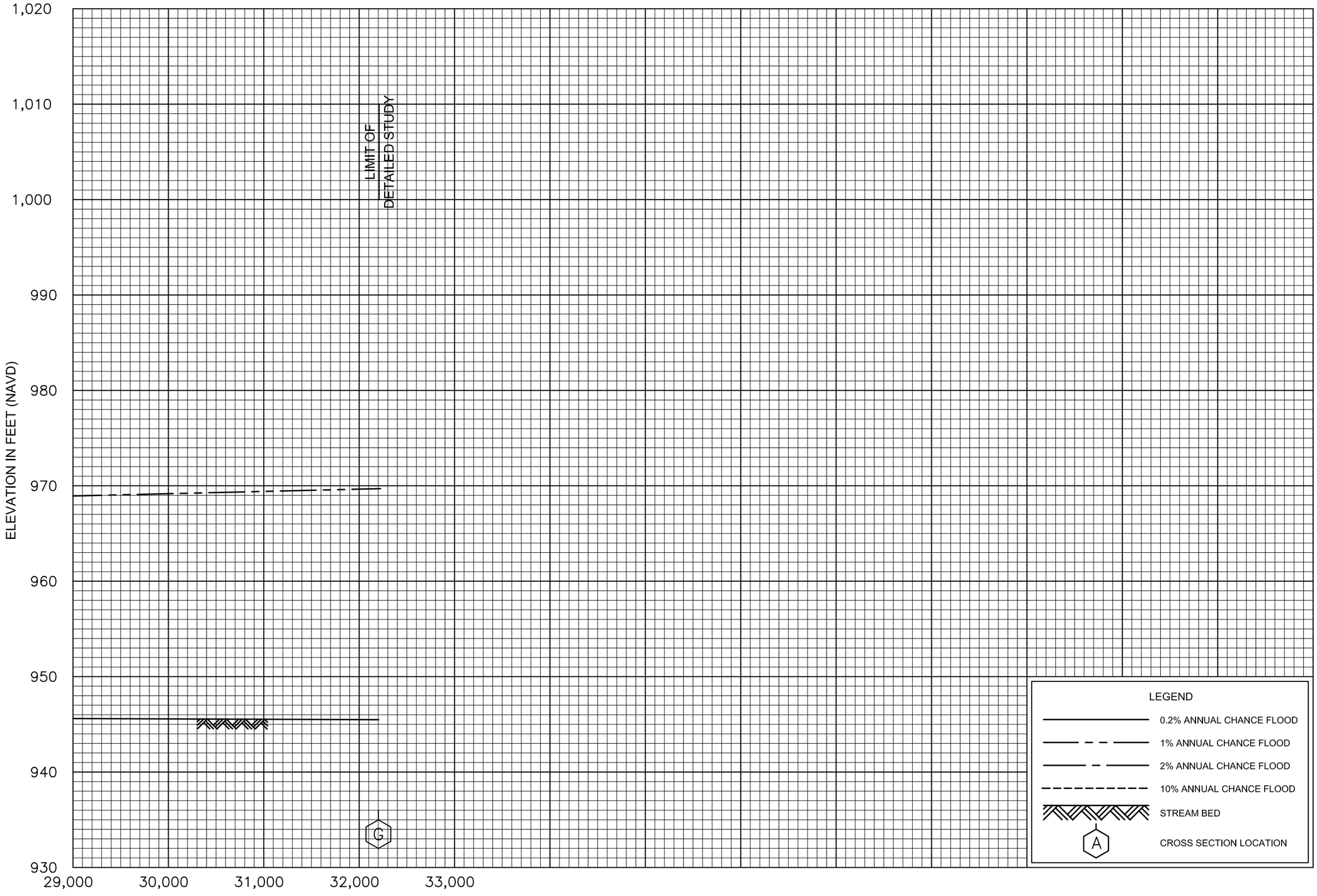
FLOOD PROFILES

LITTLE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

POTTAWATOMIE COUNTY, OK
AND INCORPORATED AREAS

06P

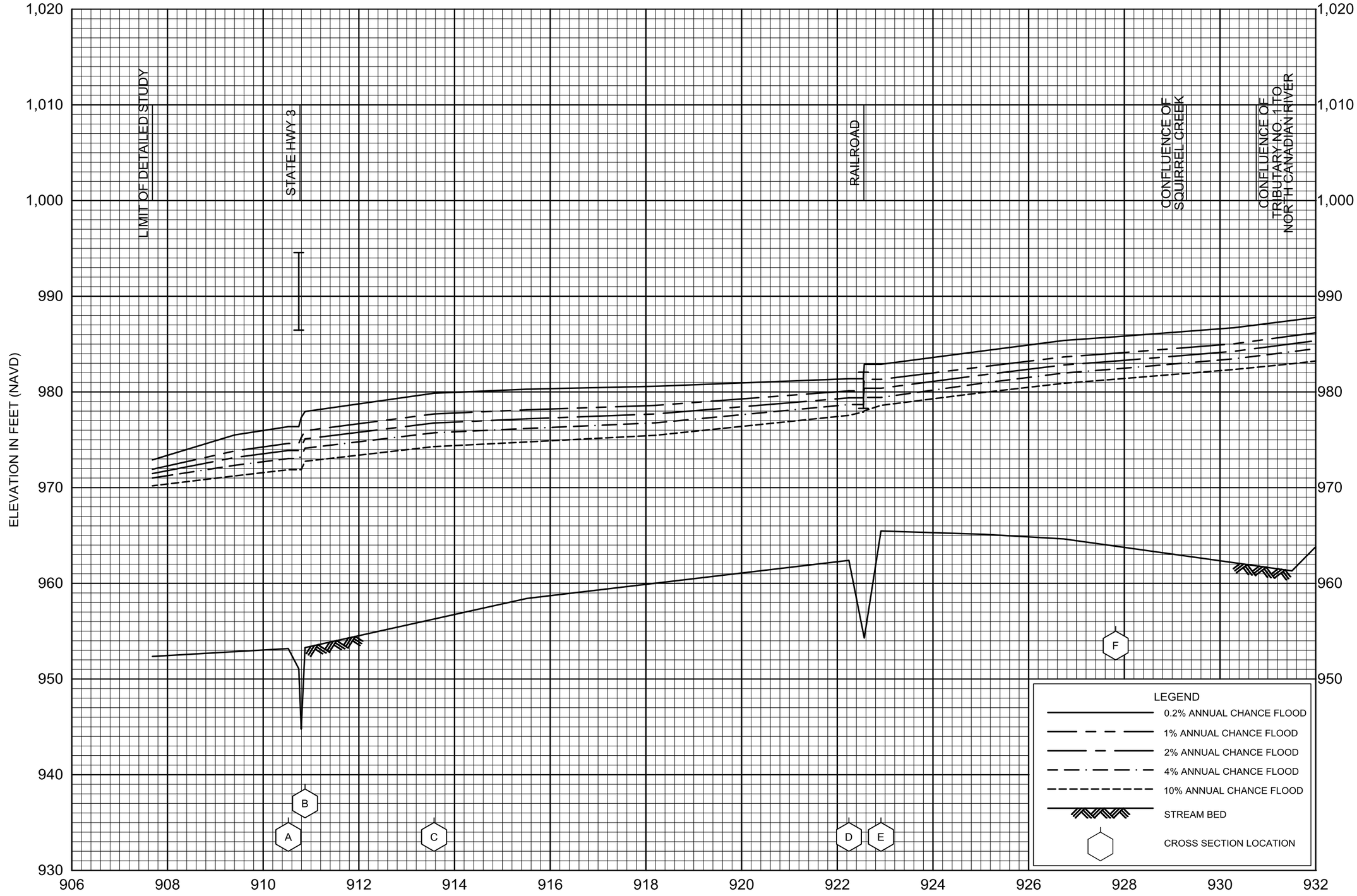


FLOOD PROFILES

LITTLE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

POTTAWATOMIE COUNTY, OK
AND INCORPORATED AREAS



FLOOD PROFILES

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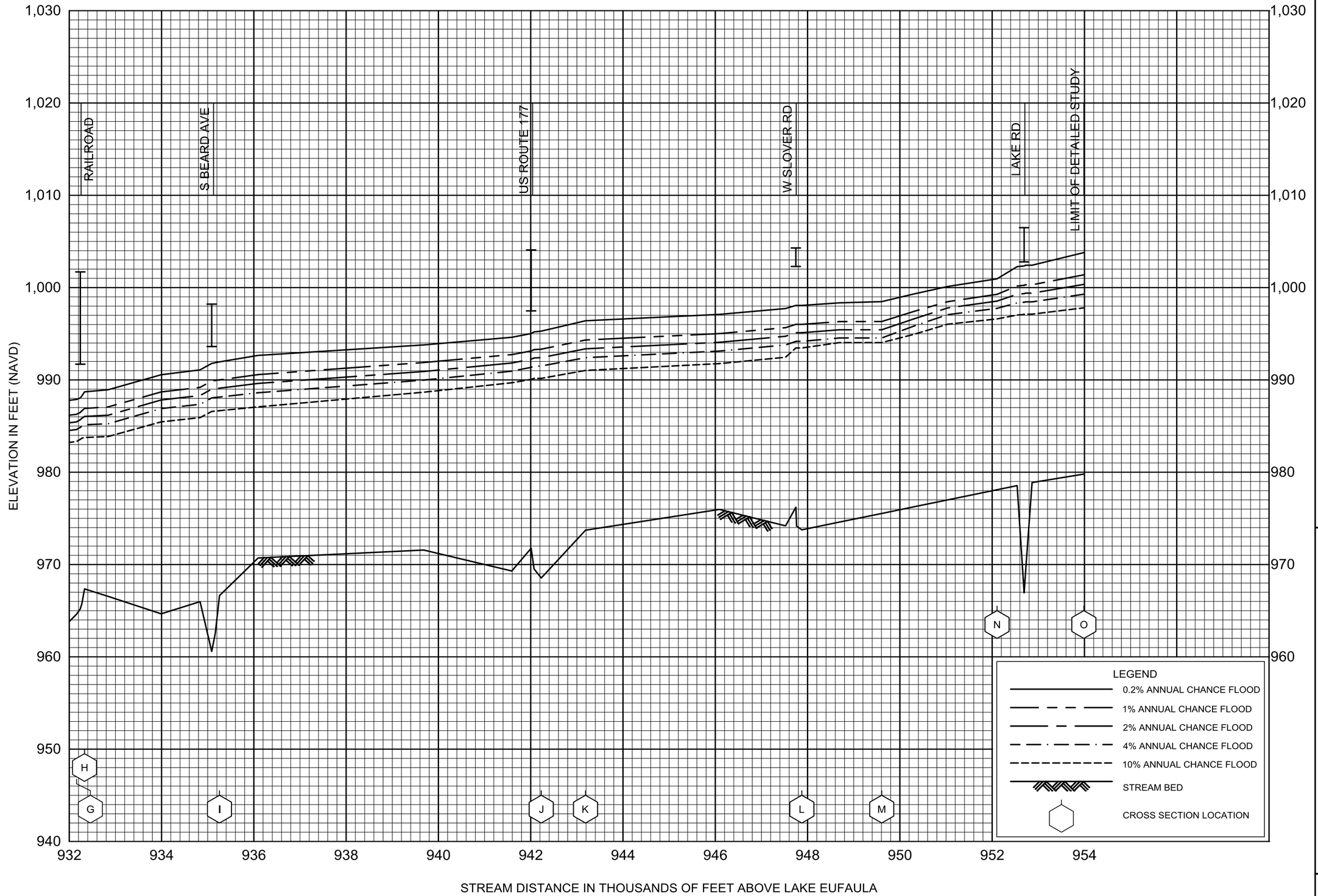
FEDERAL EMERGENCY MANAGEMENT AGENCY

POTTAWATOMIE COUNTY, OK

AND INCORPORATED AREAS



FLOOD PROFILES

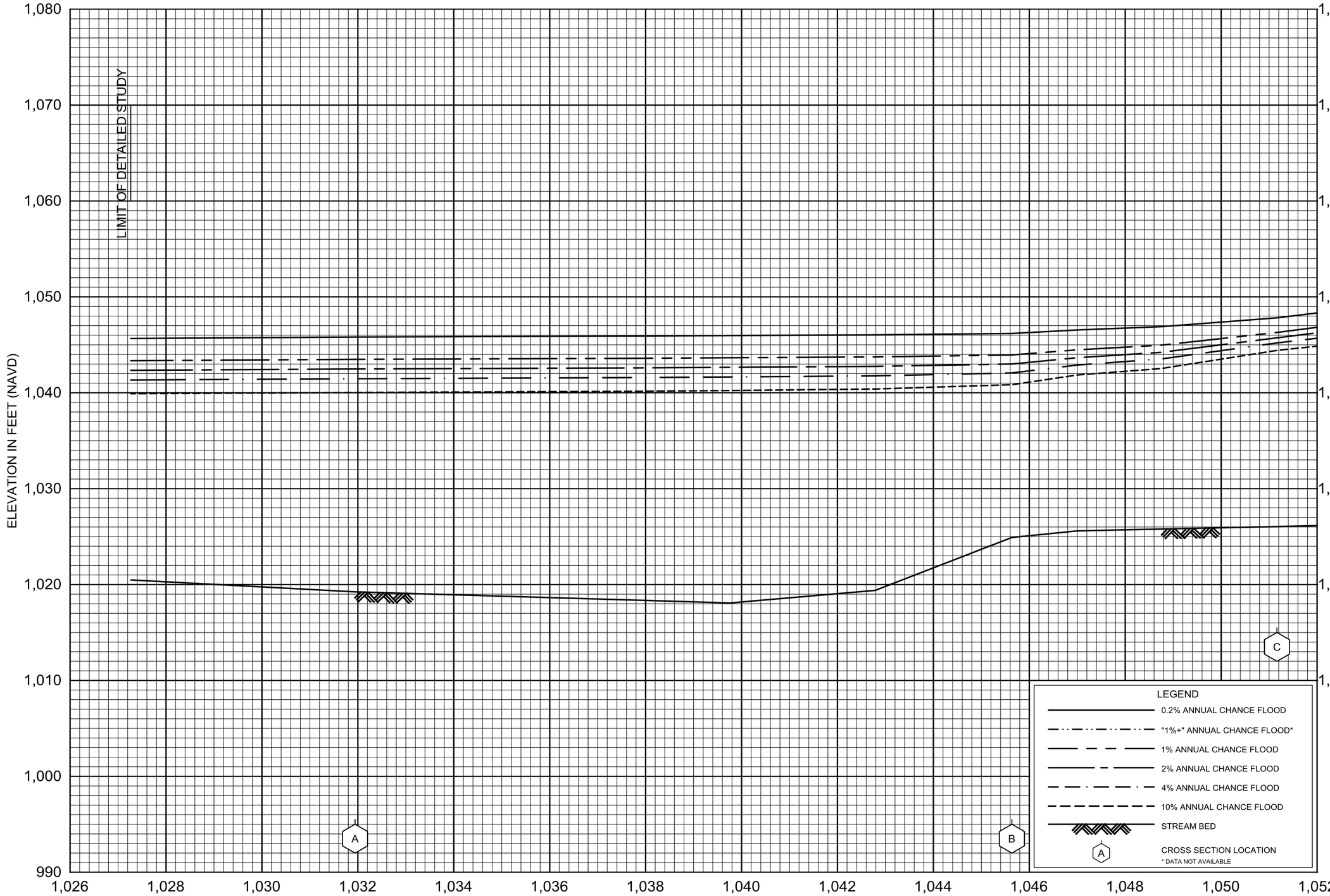
NORTH CANADIAN RIVER (LOWER REACH)

FEDERAL EMERGENCY MANAGEMENT AGENCY

POTTAWATOMIE COUNTY, OK

AND INCORPORATED AREAS

09P



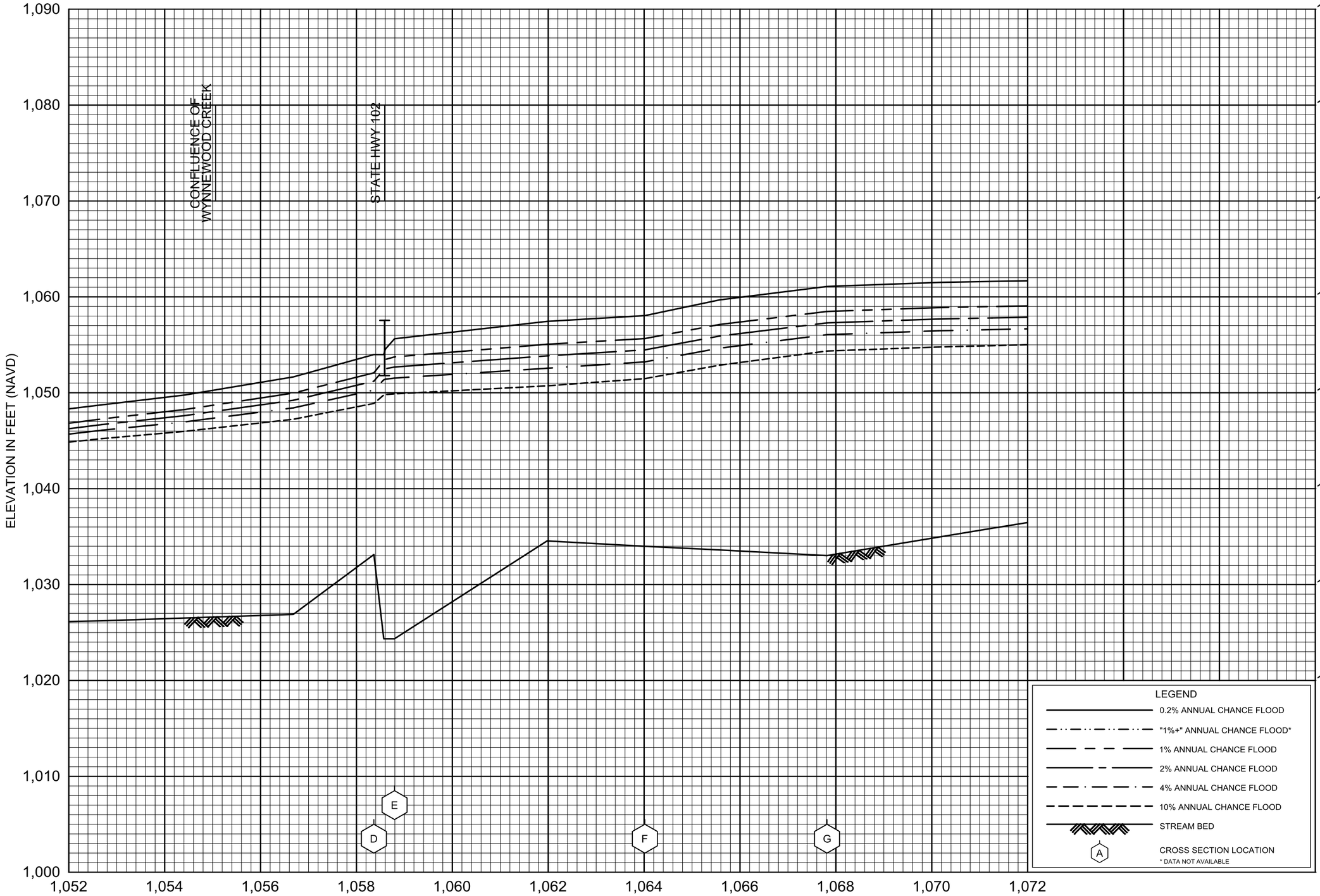
FLOOD PROFILES

NORTH CANADIAN RIVER (UPPER REACH)

FEDERAL EMERGENCY MANAGEMENT AGENCY

POTTAWATOMIE COUNTY, OK
AND INCORPORATED AREAS

10P



FLOOD PROFILES

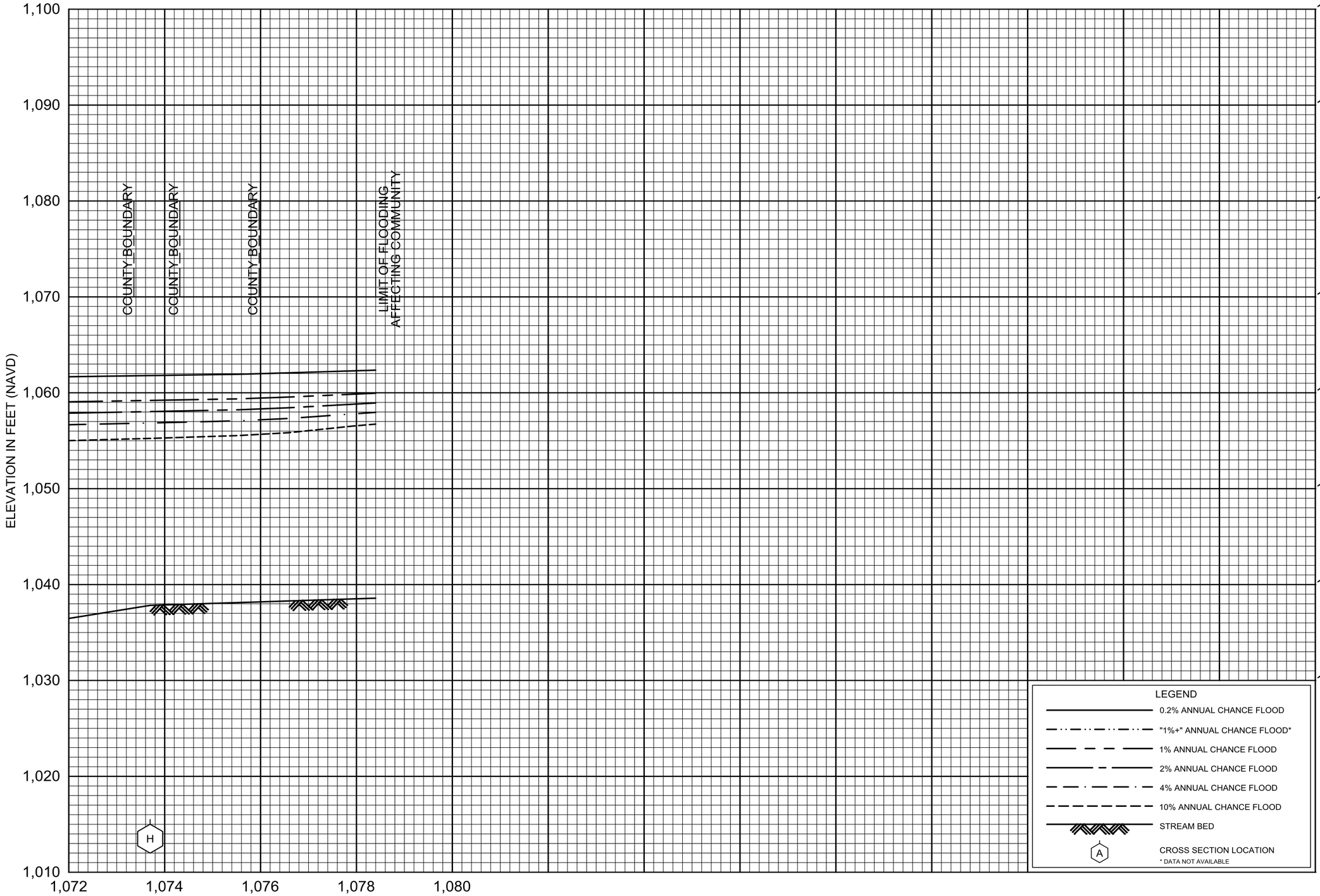
NORTH CANADIAN RIVER (UPPER REACH)

FEDERAL EMERGENCY MANAGEMENT AGENCY

POTTAWATOMIE COUNTY, OK

AND INCORPORATED AREAS

11P



FLOOD PROFILES

NORTH CANADIAN RIVER (UPPER REACH)

FEDERAL EMERGENCY MANAGEMENT AGENCY

POTTAWATOMIE COUNTY, OK

AND INCORPORATED AREAS

12P