City of Leavenworth
Stormwater Management Program

Adopted by the City Commission October 27, 2020

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PROGRAM HISTORY

The City of Leavenworth was established in the 1850s along Three-Mile Creek and on the banks of the Missouri River. Since that time, the City has grown to include most of the Three-Mile Creek and Five-Mile Creek watersheds. (A map showing the aforementioned area is on the next page.)

There has been a history of flooding since the founding of the City, with notable examples and additional information in the attached Appendix. The most recent dramatic example was in October 2005 where an estimated 11 inches of rain fell in a four-hour period, causing significant property damage throughout the community. On July 6, 2015 over three inches fell in a one-hour period also causing significant damage.

It is understandable that the City focused efforts since at least the 1980s to improve stream capacity to reduce flooding. Key improvements include:

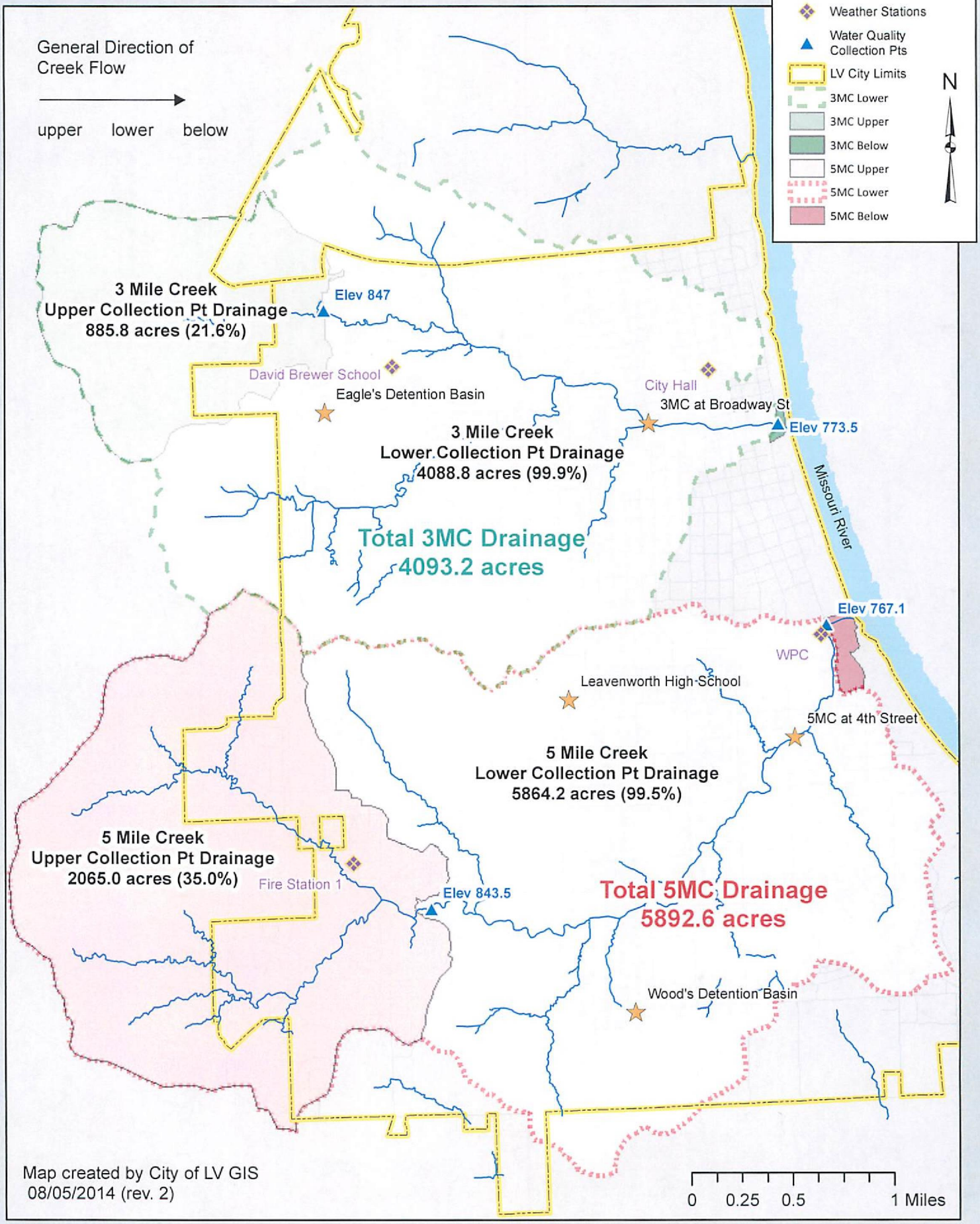
- Fifteen replaced major bridges.[1]
- Channel improvements on Three-Mile Creek between Missouri River and Broadway including removal of railroad trestle west of 7th Street
- Stormwater Master Plan (1997)
- FEMA Floodplain Revisions on Three-Mile Creek, especially in the downtown area (2014 and 2015)
- Approved sales tax with dedicated stormwater funding (1995, 2005, 2015)
- Approved Stormwater Fee in 2018 (Implemented in 2019)

During the late 1980s, the Environmental Protection Agency (EPA) determined that stormwater discharges from urban areas were having a negative impact on the nation's waterways. In the 1990s, Congress expanded the Clean Water Act authority to regulate municipal stormwater discharges under the National Pollutant Discharge Elimination System (NPDES). Phase I regulations were implemented in 1990 for large municipalities and Phase II regulations were implemented in 1999 for smaller municipalities such as Leavenworth.

The City of Leavenworth received its first NPDES stormwater permit from the Kansas Department of Health and Environment (KDHE) in 2004, along with 58 other regulated entities. All regulated Phase II entities have the same six minimum requirements:

[1] Listing of replaced bridges since 1980 is attached to this report.

City of Leavenworth, KS
Stormwater Management Data Collection



- Public Education and Outreach
- Public Participation and Involvement
- Illicit Discharge Detection and Elimination
- Construction Site Runoff Control
- Post Construction Runoff Control
- Pollution Prevention and Good Housekeeping

A new Five-Year NPDES permit was issued to City of Leavenworth in 2019 which includes the six minimum control measures. The intent of the permit is that the City will conduct programs and enact/enforce regulations that are generally expected to improve water quality entering the streams from the City.

A variety of activities have been identified by KDHE as being appropriate for the purpose of reducing pollution. These activities are often known by the term "Best Management Practice" (BMP). The City is required to participate in at least a sufficient number of these activities to meet the participation guidelines of the State between 2020 and 2024. This is accomplished by creation of this document – known as the "**Stormwater Management Program**" (SMP) in calendar year 2020, and carrying out the BMP items 2021 through 2024.

Staff has identified specific activities that will provide the required number of points for the duration of the permit. A table showing these activities and the associated point value is included in this document.

The City is required to submit an annual report to KDHE related to stormwater activities. This annual report is typically submitted in February of each year after a review by the City Commission of the Stormwater Management Program and of the Annual Report.

STORMWATER PROGRAM GOALS

The stormwater program of the City has two goals:

- Protect people and property from flood events
- Protect and enhance water quality

The City works to meet these goals by having a qualified staff and appropriate standards for design and construction of improvements.

STAFF

The Public Works Department staff includes engineers, inspectors, technicians, GIS mappers and project managers who review plans for all projects. The Community Development Department also reviews plans for compliance with zoning ordinances.

The Street Division has significant staffing and equipment resources to assist in addressing stormwater matters that may occur. There are two full-time stormwater employees who inspect, evaluate, clean and perform small repairs on existing

stormwater infrastructure. The Community Development Department has two full-time inspectors to evaluate zoning matters within the City including stormwater concerns. Employees of Water Pollution Control (wastewater) are actively engaged in maintaining the wastewater collection system to prevent sanitary sewer overflows of all types. They perform any water quality or water quantity measuring and testing work required.

Use of the GIS system to assist in managing stormwater has greatly increased in the last five years. The detailed system information is available online to the public. Additional GIS tools include internal development of dat8a loggers to enter field information on stormwater structures and locations.

PROGRAM TOOLS

The City uses a variety of tools to assist in the evaluation and management of stormwater issues. The primary entry point for information is the City of Leavenworth Web page. Three key locations are:

1. Stormwater Fee focused pages managed by the City Manager's Office at: www.leavenworthks.org/ctymanager/page/stormwater-projects
2. Stormwater Management Program pages on Public Works pages at: www.leavenworthks.org/publicworks
3. GIS site: www.gis.firstcity.org

The following documents and activities are a key part of the current program and are available or linked to online through the City website.

1. Stormwater Master Plan (1997 by Black & Veatch)
2. Stormwater Design Guidelines (March 2015)
3. American Public Works Association Section 5600 as a guideline (2011)
4. MARC/APWA BMP Manual as a guideline (2012)
5. Floodplain Management (20103CV000B, July 2015)
6. Requiring a "Land Disturbance Permit" for most construction activity (March 2015)
7. Various City Ordinances
8. Submit Annual Report to KDHE after review by City Commission

STORMWATER MANAGEMENT PROGRAM IMPLEMENTATION

City Staff has reviewed the KDHE list of activities related to the six minimum control measures. Several activities associated with each of the six minimum control measures have been identified as being appropriate for Leavenworth. The intent is that the City and residents participate in the identified activities to ensure the needs of the community are addressed and the City complies with the KDHE/NPDES requirements.

The new permit requirements focus obtaining point totals through measureable activities. *The majority of these identified activities are currently in place and do not require further action beyond* more detailed descriptions and expectations for each

activity. It is expected that this effort will reviewed with the Commission as needed and at least annually during preparation of the annual report.

Additional actions by the City will be necessary to achieve all of the necessary points, primarily through adoption of more formal design guidelines and creating better enforcement mechanisms:

- Review and Adopt APWA 5600 in a greater capacity than simply a reference.
- Review and Adopt MARC BMP Manual in a greater capacity than simply a reference.
- Adopting additional resolutions or ordinances to enable better enforcement of the regulations.

Please do not hesitate to contact the Office of the City Engineer should you have any questions regarding this program.

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City Engineer
Public Works Director
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100 N. 5th Street
Leavenworth, KS 66048
mmcdonald@firstcity.org
913-684-0375

Attachments

- FEMA Narrative on Flood Events from FIS 20103CV000B
- Stormwater Management Program Goals
- Listing of Replacement Bridges since 1980

1. PUBLIC EDUCATION & OUTREACH (ED & O)	2021	2022	2023	2024
	4 Points Total		7 Points Total	
BMP PROGRAM	**POINTS**			
ED & O - 01 - Maintain a stormwater webpage for the permittee.	3	2	2	2
ED & O - 02 - Distribute educational materials (either flyers, brochures, catalog mailings, handouts, or e-mails) addressing various pertinent stormwater public education topics.	2	2	2	2
ED & O - 03 - Provide either training or educational materials to permittee identified businesses at high risk of contributing to stormwater pollution.	2	2	2	2
ED & O - 04 - Apply notification, placard, covers/hatches with message, or stencil, on stormwater inlets to provide a message similar to “No Dumping – Drains to River”		2		2
ED & O - 05 - Post the municipality’s MS4 permit and SMP document on either the stormwater web page or the municipal webpage.	1	1	1	1
ED & O - 12 - Create a stormwater information brochure to provide to the public at public meetings and/or hearings.	1	1	1	1
ED & O - 13 - Operate an adopt-a-highway program to utilize public volunteers to clean road right-of-way.	1	1	1	1
ED & O - 15 - Hold a social media campaign addressing various pertinent stormwater public education topics.	2	2	2	2
ED & O - 17 - Operate an adopt-a-street program to utilize public volunteers to clean street right-of-way.	1	1	1	1
TOTAL	**15**			

2. PUBLIC INVOLVEMENT/PARTICIPATION (P I/P)	2021	2022	2023	2024
	3 Points Total		6 Points Total	
BMP PROGRAM	**POINTS**			
P I/P - 01 - Hold a public hearing or public forum to notify the public about stormwater program activities and to solicit public comments regarding stormwater issues.	2	2	2	2
P I/P - 03 - Hold park or stream bank clean-up events for public volunteers to aid municipal staff in removing trash, debris, or pollutant sources from the selected clean-up area.	3	3	3	3
P I/P - 04 - Train either citizen watch groups, homeowner associations (HOAs), or public service groups to recognize illicit discharge activities and communicate observations to appropriate municipal staff.	2	2	2	2
P I/P - 05 - Provide at least two events for residents to engage in cleanup activities and improve water quality in the municipality.	3	3	3	3
TOTAL	**10**			

3. ILLICIT DISCHARGE DETECTION & ELIMINATION (IDD & E)	2021	2022	2023	2024
	5 Points Total		7 Points Total	
BMP PROGRAM	**POINTS**			
IDD & E - 04 - Implement a program to evaluate MS4 outfalls to identify illicit discharges.	1	1	1	1
IDD & E - 06 - Inspect, by televising pipelines or direct visualization of open channel drainage, 2% of the MS4 system within the permit area all conducted within a 12-month period to aid in identifying illicit discharges as well as evaluate the condition of the storm sewer lines/drainage channels-ditches.	3	3	3	3
IDD & E - 07 - Implement a Household Hazardous Waste Collection Program (HHWCP) or document others have implemented such a program to provide such service to all property owners or residents located within the permit area.	3	3	3	3
IDD & E - 10 - Inspect, 5% of the MS4 system Stormwater inlets and/or outfalls within the permit area all conducted within a 12-month period to aid in identifying illicit discharges.	3	3	3	3
TOTAL	**10**			

4. CONSTRUCTION SITE STORMWATER RUNOFF CONTROL (CSSRC)	2021	2022	2023	2024
	4 Points Total		6 Points Total	
BMP PROGRAM	**POINTS**			
CSSRC - 01 - Implement a requirement for a Soil Erosion and Sediment Control (SESC) Plan for any land disturbance sites which are either equal to or greater than 1 acre or for which there is construction activity disturbing less than one acre which is part of a larger common plan of development or sale that in total disturbs one acre or more.	3	2	2	2
CSSRC - 02 - Develop and adopt a design manual for erosion and sediment control BMPs which are required to be used on sites which will be disturbed and are either equal to or greater than 1 acre or for which there is construction activity disturbing less than one acre which is part of a larger common plan of development or sale that in total disturbs one acre or more.	3	2	2	2
CSSRC - 04 - Develop a site plan review process which considers potential water quality impacts which may occur during construction as well as post construction impacts.	3	2	2	2
CSSRC - 07 - Acquire or develop a software tracking system to track inspections and related tasks.	1	1	1	1
TOTAL	**10**			

5. **POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT & REDEVELOPMENT PROJECTS (P-C SM)**	2021	2022	2023	2024
	5 Points Total		7 Points Total	
BMP PROGRAM	**POINTS**			
P-C SM - 01 - Develop and adopt a custom design manual for Post-Construction Stormwater Management which specifies various structural BMPs which are required for new development and re-development construction sites which are greater than 1 acre or for which there is construction activity disturbing less than one acre which is part of a larger common plan of development or sale that in total disturbs one acre or more. (Points shown reflect adopting existing APWA/MARC manuals)	6	5	5	5
P-C SM - 03 - Develop and implement a program to ensure adequate long-term cleaning, operation and maintenance of all municipally owned or operated post-construction structural stormwater BMP facilities.	3	2	2	2
P-C SM - 05 - Develop and implement a program for inspection of permittee owned structural BMPs which includes implementation of needed maintenance to ensure long-term operation of the BMPs.	3	2	2	2
P-C SM - 06 - Develop and implement a program for inspection of known privately owned structural BMPs which includes providing the owner of the BMPs an inspection report which specifies needed maintenance to ensure long-term operation of the BMPs.	3	2	2	2
TOTAL	**15**			

6. POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS (PP/GH)	**2021**	**2022**	**2023**	**2024**
	4 Points Total		**6 Points Total**	
BMP PROGRAM	**POINTS**			
PP/G H - 01 - Install a screening device or method at a single municipal storm sewer outfall or on the storm sewer line immediately upstream of the outfall to reduce the discharge of floatables or other objects to receiving waters.	3	2	2	2
PP/GH - 03 - Develop a guidance document for municipal staff or third-party contractors which apply pesticides.	2	1	1	1
PP/GH - 05 - Implement a program for street sweeping in which the street sweepings are collected and disposed of properly or recycled/reused if possible.	3	2	2	2
PP/GH - 07 - Implement a program to inspect stormwater inlets to identify illicit discharges and clean drop inlets of accumulated debris.	1	1	1	1
PP/GH - 08 - Develop, implement and keep updated an online storm sewer map accessible to the public.	3	2	2	2
PP/GH - 12 - Install a stormwater treatment system for capture of either trash, sediment, or debris.	3	2	2	2
TOTAL	**15**			

LEAVENWORTH COUNTY, KANSAS

AND INCORPORATED AREAS

COMMUNITY NAME	COMMUNITY NUMBER
BASEHOR, CITY OF	200187
EASTON, CITY OF	200188
LANSING, CITY OF	200189
LEAVENWORTH, CITY OF	200180
LEAVENWORTH COUNTY UNINCORPORATED AREAS	200186
LINWOOD, CITY OF	200191
TONGANOXIE, CITY OF	200192

REVISED: July 16, 2015

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER

20103CV000B

Transcribed from Federal Emergency Management Agency, Flood Insurance Study Number 20103CV000B

City of Leavenworth

The flood producing characteristics of Threemile, South Branch, and Fivemile Creeks are typical of small watersheds in the Midwest region. Past flood flows have usually been caused by short duration thunderstorms having high intensity rainfall. Conversely, flood problems associated with the Missouri River are usually caused by long protracted fronts occurring over large areas. There are no natural obstructions to flood flow in the Threemile Creek floodplain. Obstructions restricting floodwater flow have been created by man's continued encroachment on the Threemile Creek floodplain. Severe restrictions to flood flow have been created in the past by construction of many bridges located in the floodplain between Tenth Street and the mouth. In addition, a portion of the creek channel had been enclosed in a box culvert located under the railroad yards between Seventh Street and Broadway. Because of inadequate openings in these bridges and culvert, a cumulative aggravation of flood backwater occurred in the lower floodplain.

The City of Leavenworth embarked on a substantial effort to improved flooding conditions downstream of Tenth Street in the early 1980's. The bridge on Tenth Street was replaced in 1983, the bridge on Cherokee (west of Broadway) in 1981, and the bridge on Shawnee west of Tenth in 1985. The rail yard trestles were removed by 1988. In addition, new bridges have been constructed at Third Street, Sixth Street, Seventh Street, Broadway and Shawnee Streets since 1988. Construction of a pedestrian trail at creek level between Esplanade Street and 7th Street contributed to larger channel cross sections between Fourth Street and Seventh Street and generally improved flow characteristics. A new bridge at Second Street is expected to be constructed in 2015. A significantly larger natural open channel was constructed between 6th Street and Cherokee Streets in the early 1990's.

The improvements since the last FIS have had a significant impact on the critical area near Cherokee and Broadway Streets. At this location flood flows were impeded by small bridge openings at Cherokee Street and at Broadway Street that forced excess water out of banks through the developed floodplain area along Cherokee Street. Flow from this area attempting to return to the channel was further impeded by the now removed railroad yard culvert. Flooding at Cherokee Street occurs less often with the construction of the noted improvements.

Channel restrictions between Cherokee Street and Shawnee Street west of Broadway remain. These restrictions continue to pose a threat to structures along Miami St. between 8th St. and 10th St.

Since there is no stream gaging stations on Threemile Creek or its South Branch, documentation of flood problems affecting Leavenworth in the past rely completely upon historical accounts. Detailed investigations have been made of flooding which occurred in July 1958 and October 1961. In addition, fragmentary records of 11 additional floods have been found through a search of newspaper files. It appears that the maximum known flood prior to 1972 occurred in 1904. This flood had an estimated peak discharge of 7,000 cubic feet per second (cfs) at the mouth (between the discharge of a 50-year and 100-year flood), and 6,500 cfs at Seventh Street. The following composite accounts describe the July 1958 and October 1961 events experienced on Threemile Creek.

On July 30, 1958, more than 4 /12 inches of rain fell in the Leavenworth area. Damage estimated at $30,000 was reported from businessmen and homeowners from the resulting flood on Threemile Creek. The downtown area was hardest hit, especially on Cherokee from Broadway to Seventh Street where the discharge of the flood was estimated at 4,300 cfs.

On October 13, 1961, three to four inches of rainfall fell in the Leavenworth area. The resulting flood on Threemile Creek exceeded bank full capacity at 7:00 PM, crested at about 9:00 PM, and receded to within-bank stages at 11:30 PM. The flood caused $71,000 damage in Leavenworth, of which $58,700 was damage to 24 business places and 16 residences, and the remainder was damage to transportation facilities and municipal property. The discharge at Seventh Street was estimated at 4,000 cfs.

The City of Leavenworth Public Works Department has identified the following significant flood events since 1972 (Reference 12). In all cases - water overtopped the bank upstream of Cherokee Street and flowed east along Cherokee Street, returning to the banks of the creek at 6th Street. Flooding of the 800 and 900 blocks of Miami also occurred in the same years noted below causing damage to residences and businesses. Water has been as high as two feet deep in Miami Street. The city has purchased several homes using "buy-out" programs, and worked with businesses to ensure that they take appropriate measures to minimize risks from flooding. Some of them ore notable events include:

- July 6-7, 1986 - 10.4 inches of rain fell, causing water to flow down Cherokee Street and floating several automobiles and trailers.

- May 15, 1990 - 4.4 inches of rain fell causing minor flooding.

- October 4th, 1998 - between six and eight inches of rain fell in a twelve hour period causing damage on Cherokee Street and areas upstream of Shawnee (west of Tenth Street). Damage was also noted in the 800 and 900 blocks of Miami Street.

- 1993 - Local heavy thunderstorms combined with an elevated water surface in Three-Mile Creek from record flooding on the Missouri River from record flooding on the Missouri River resulted in significant flooding along Cherokee Street.

- October 2nd, 2005 - a NWS gage recorded 5.6 inches of rain, but eyewitness accounts and anecdotal evidence supports between seven and eleven inches of rain falling in a four hour period in some locations. The resulting flood was identified as the worst in memory, and flooded structures between 11th Street and downstream to 6th Street. A new bridge was under construction at 6th Street, and the debris caused the complete collapse of the falsework. The floodwater and debris and falsework passed through the old railroad Bridge at Esplanade Street which acted as lens and focused the stream upon the mouth of the creek at the Missouri River. The jet of water undermined the sanitary sewer along the banks of the Missouri River. A hole that later measured as over forty feet deep appeared where the sewer had been buried twenty feed below the creek bottom. The sewers were repaired by late 2006 at a total cost of about $1,000,000. Estimates of flow were later determined by Black & Veatch Engineers as being in excess of 7,500 cfs at Esplanade street.

- There has been no further flooding of Cherokee Streets between 2005 and October 2014.

Flood damage along South Branch of Three-Mile Creek has typically been much less severe than that along the Main Branch of Threemile Creek. Damage to road crossings and property near Eleventh Street as well as scouring is likely to take place during floods.

Severe restrictions from bridges across Five-Mile Creek have been addressed with new structures at Fourth Street, Second Avenue/Limit Street and Shrine Park Road since 1972. Inadequate openings of the older bridges had caused a cumulative aggravation by flood backwater in the floodplain.

Newspaper accounts provide most of the history of flooding on Fivemile Creek prior to the 1970's. These accounts reveal that flooding has occurred several times in the past. Notable floods were reported in June 1942, July 1958, October 1961, April 1969, and September 1970. Unfortunately, precise data regarding flood levels reached by these floods have not been documented.

The flood of July 30, 1958, had Fivemile Creek flooding Shrine Park Road, Limit Street and U.S. 73 at Black Bridge (Reference 1).

The flood of October 12, 1961, swept away cut brush laying in the vicinity of the sewage treatment plant at Second and Fivemile Creek (Reference 1).

On April 26, 1969, Fivemile Creek ran 10-12 inches deep across Shrine Park Road, just south of the entrance to the golf club. Along south Fourth Street the stream spread out for a half mile or more and at Second Street, in the vicinity of the sewage disposal plant, the creek rose to the edge of the street (Reference 1).

Heavy rains since 1988 often result in water flowing across Shrine Park Road at low areas north of the new bridge and across Tenth Avenue at Wellington Drive. These events also result in significant erosion and scouring of the creek bank. Water has crossed the bridge at Second Avenue and Limit Street on several occasions at depths up to six inches since 1988. One notable event occurred on October 4, 1998, when 4.74 inches of rain fell in two hours (measured in south Leavenworth), and it resulted in ten inches of water across Tenth Avenue at Wellington, 24 to 30 inches across Shrine Park Road north of the bridge, and six to eight inches across Limit Street (Reference 12). A new larger bridge at this site is completed (2014) and is expected to reduce and possible eliminate roadway flooding at this location.

The City of Leavenworth is above the floodplain of the Missouri River except for the areas where Threemile and Fivemile Creeks and other smaller right bank tributaries enter the Missouri River. Recorded damage to the city, caused by flooding from the Missouri River, occurred when an emergency levee failed during the April 1952 flood. The flood caused a total of $125,200 damage in Leavenworth. The damages were $12,000 to business property, $12,600 to homes, and $600 to public property. The Wastewater Treatment Plant had never been threatened by flooding until it was inundated in the 1993 Missouri River Flooding, with repair costs in excess of $1 million required to restore service. The plant has been threatened to a level requiring sandbagging and other measures at least three additional times since 1993, most notably in 2011 due to releases from Corps of Engineers dams upstream when the levels were within six inches of the city closing the plant.

Second Street north of Five-Mile Creek is subject to standing water and flooding from high water in the Missouri River and is then closed to protect the public. This has happened at least five times since 1988.

The Riverfront Community Center (Union Railroad Depot) was protected from flooding in 1993 when nearly four feet of water from the Missouri River threatened the structure. Heroic efforts by the community created a sizable protective sandbag wall that prevented flooding, but the building suffered related damage requiring over $300,000 in repairs. It has been necessary to construct flood protective measures at least three times since 1993 with expenses typically in excess of $10,000 on each occasion. The City expects to construct a permanent floodwall with a FEMA grant in 2015 to reduce expenses and damage from future floods.

A combined effort of Leavenworth County, City of Leavenworth and City of Lansing resulted in a recording stream gage being installed at the Leavenworth Waterworks Intake structure on Dakota street in September 2012. This is expected to improve flood evaluation and forecast activities.

CITY OF LEAVENWORTH, KANSAS

2019 BRIDGE INSPECTION OF MAJOR BRIDGES REPLACED SINCE 1980

TABLE I : GENERAL BRIDGE INFORMATION

Local Bridge No./ NBI Number	Description	Year Built	Bridge Roadway Width (Ft)[1]	Traffic Volume (VPD) (2007)	Inventory Rating HS-Truck (Tons)	FHWA Sufficiency Rating[1]	Fracture Critical	Abutment Foundation Type	Pier Foundation Type	Geology Type	Underwater Inspection Type[2]	Scour Critical[3]	NBI Bridge Condition
A.95-2.45/ 415400523515002	10th St. @ Three Mile Creek 33'-44'-33' Concrete Haunched Slab Spans	1983	33.1	7170	35.6	95.3	No	Unknown	Spread Footings	Unknown	I	No	Good
A.98-2.34/ 415400523530007	Shawnee St. @ S Branch of Three Mile Creek Single 24' x 10' RFB	1984	32	2450	36	99.8	No	NA	NA	Unknown	I	No	Good
A.98-2.69/ 415400523530008	Shawnee St. @ Three Mile Creek 30'-40'-30' Concrete Haunches Slab Spans	2007	36.5	2325	45.1	97.8	No	Piling	Piling	Stone	I	No	Good
B.09-2.30/ 515400520000089	Cherokee St. @ Trib. To Three Mile Creek 43.5' Precast Concrete Arch	2016	26.5	1870	32.1	98.0	No	Footing	NA	Unknown	I	No	Good
B.09-2.80/ 415400523526001	Cherokee St. @ Three Mile Creek 24.5'-31'-24.5' Concrete Flat Slab Spans	1981	40.4	3130	37.7	98.7	No	Steel Pile	Steel Pile	Limestone	I	No	Good
B.13-2.85/ 415400523519025	Broadway St. @ Three Mile Creek 48'-64'-48' Concrete Haunched Slab Spans	1991	40.4	4435	50.3	98.6	No	Steel Pile	Footings	Shale	I	No	Fair

TABLE 1 : GENERAL BRIDGE INFORMATION

Local Bridge No./ NBI Number	Description	Year Built	Bridge Roadway Width (Ft)[5]	Traffic Volume (VPD) (2007)	Inventory Rating HS-Truck (Tons)	FHWA Sufficiency Rating[1]	Fracture Critical	Abutment Foundation Type	Pier Foundation Type	Geology Type	Underwater Inspection Type[2]	Scour Critical[3]	NBI Bridge Condition[4]
B.13-2.96/ 415400523523023	7th St. @ Three Mile Creek 34'-42'-34' Concrete Haunched Slab Spans	1991	40	5725	39.7	97.5	No	Steel Pile	Steel Pile	Bedrock	I	No	Good
B.13-3.08/ 415400523525942	6th St. @ Three Mile Creek 35'-46'-35' Concrete Haunched Slab Spans	2007	27.5	1035	62.4	83.1	No	Piling	Piling	Unknown	I	No	Good
B.15-3.33/ 415400523531005	3rd St. @ Three Mile Creek 40'-50'-40' Prestressed Concrete Girder Spans	1988	39.4	2795	54.6	97.7	No	Steel Pile	Spread Footings	Shale	I	No	Fair
B.15-3.42/ 415400523533004	2nd St. @ Three Mile Creek 40' Concrete Arch Deck Span	2017	27	1100	41.4	83.0	No	Unknown	NA	Unknown	I	No	Good
C.16-3.69/ 415400523533003	2nd St. @ Five Mile Creek 33'-44'-33' Concrete Haunched Slab Spans	1981	36.1	2900	38.7	86.7	No	Steel Pile	Steel Pile	Shale	I	**No, POA in place**	Fair
C.97-3.30/ 415400523527970	Limit St. @ Five Mile Creek 36'-48'-36' Haunched Slab Spans	2014	44.0	8600 (2012)**	58	82.0	No	Steel Pile	Steel Pile	Unknown	I	No	Fair
D.00-1.48/ 415400523510990	Limit St. @ Trib. to Five Mile Creek Single 20' x 12' RFB	2014	24	3500 (2012)**	51.9	99.9	No	NA	NA	Unknown	I	No	Good
D.32-3.00/ 415400523521006	Shrine Park Rd. @ Five Mile Creek 40'-50'-40' Concrete Haunched Slab Spans	1993	34.1	5500	25.2	86.8	No	Steel Pile	Steel Pile	Bedrock	II	No	Good

TABLE 1 : GENERAL BRIDGE INFORMATION

Local Bridge No./ NBI Number	Description	Year Built	Bridge Roadway Width (Ft)[5]	Traffic Volume (VPD) (2007)	Inventory Rating HS-Truck (Tons)	FHWA Sufficiency Rating[1]	Fracture Critical	Abutment Foundation Type	Pier Foundation Type	Geology Type	Underwater Inspection Type[2]	Scour Critical[3]	NBI Bridge Condition[4]
D.51-2.50/ 415400523513851	10th Ave. @ Five Mile Creek Double 16' x 12' RFB	1980	50	7105	21.8	63.4	No	NA	NA	Unknown	I	No	Fair