



City of Leavenworth  
100 N. 5<sup>th</sup> Street  
Leavenworth, Kansas 66048

CITY COMMISSION STUDY SESSION  
COMMISSION CHAMBERS  
TUESDAY, APRIL 21, 2020 7:00 P.M.

Welcome - Please turn off or silence all cell phones during the Study Session.

*Meetings are televised everyday on Channel 2 at 7 p.m. and midnight and available for viewing on YouTube*

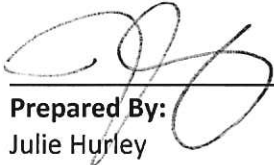
- ***Due to the restriction of social distancing and prohibition of gathering of 10 or more people to mitigate the spread of COVID-19, the City Commission study session will not be open to the public. In accordance with Kansas Open Meetings Act (KOMA), the meeting can be viewed live on Channel 2 and via Facebook Live.***
- ***Questions on agenda items will be read during discussion on that topic.***
  - ***Submit your question to [cwilliamson@firstcity.org](mailto:cwilliamson@firstcity.org) no later than 6:00 pm on April 21<sup>th</sup>.***
- ***Members of the public wishing to receive agenda notifications can contact the city clerk [cwilliamson@firstcity.org](mailto:cwilliamson@firstcity.org) to be added to the agenda email distribution list. Agendas are also available for viewing on the city website [www.leavenworthks.org](http://www.leavenworthks.org)***

**Study Session:**

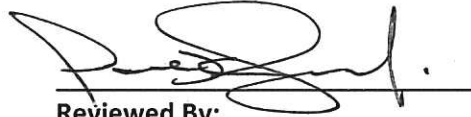
1. Comprehensive Plan Kickoff with Shockey Consulting (pg. 2)
2. Convention & Visitors Bureau Semi-Annual Report (pg. 13)
3. Review Status of Identified Stormwater Projects (pg. 24)
4. Review 2019-2024 KDHE Stormwater Permit & Stormwater Management Program (pg. 35)

**POLICY REPORT**  
**Comprehensive Plan Kickoff Meeting**

**APRIL 21, 2020**



**Prepared By:**  
Julie Hurley  
Director of Planning and  
Community Development



**Reviewed By:**  
Paul Kramer  
City Manager

**DISCUSSION:**

In December, 2019, the City entered into a contract with Shockey Consulting to provide services for a Comprehensive Plan update. As of this date, we are in the Phase 2: Discovery, portion of the project. The Phase 1: Project Launch, portion of the project was completed in February and included a kickoff meeting with staff, approval of a Project Management Plan, approval of a logo and branding scheme, and establishment of a Work Plan and project management tool.

The Discovery phase involves a review and analysis of existing plans and data and development of mapping protocol by the consultant, which is currently underway. The next portions of this phase will involve the creation of a current "snapshot" and "trend cards" by the consultant upon completion of their review of existing plans and data, before moving into Phase 3: Creating Consensus, in which the bulk of the public participation component of the planning process will take place.

Shockey Consulting staff will facilitate a discussion with the Commissioners to explain roles and responsibilities, discuss the project work plan, identify critical questions to answer, and to learn more about the community and potential partnerships.



## City of Leavenworth

### PROJECT LAUNCH – KICKOFF MEETING WITH ELECTED OFFICIALS

**MEETING DATE/TIME:** Tuesday, April 21, 2020 at 7:00 P.M.

**MEETING LOCATION:** City Commission Study Session - GoToMeeting

**MEETING PURPOSE:** Explain roles & responsibilities, project work plan. Identify critical questions to answer, learn more about the community, potential partnerships and community culture.

#### PROJECT ROLES

**Client Name:** City of Leavenworth, Kansas

**City Project Manager:** Julie Hurley, 913.680.2616 or [jhurley@firstcity.org](mailto:jhurley@firstcity.org)

**Shockey Project Manager:** Shelby Ferguson, 816.645.1183 or [shelby@shockeyconsulting.com](mailto:shelby@shockeyconsulting.com)

**Shockey Principal-in-Charge:** Sheila Shockey – final decisions for the project team regarding changes to the scope, schedule, and budget.

#### PROJECT DESCRIPTION

**Description:** Shockey Consulting has been selected to assist with the update the City's 2011 comprehensive plan. Though the current plan is relatively recent, market conditions have changed significantly, and the plan is in need of extensive update and revision. This update will create a comprehensive plan that will guide the development and redevelopment of Leavenworth for the next 10 years. A key aspect of the plan will be to establish the community's vision for the future, this will be established through an engagement process that gives the community the opportunity to provide input and feedback.

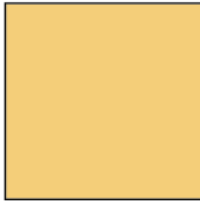
## PROJECT IDENTITY

Name of project: Leavenworth 2030 First City, Future Forward

### CITY LOGO / COLORS



#12284D C = 100  
R = 19 M = 87  
G = 41 K = 41  
B = 76 Y = 40



#EFC079 C = 4  
R = 244 M = 18  
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### CHAPTER COLORS



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B = 132 Y = 9



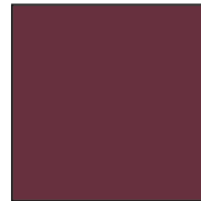
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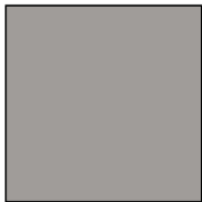


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#662F3D C = 44  
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G = 48 K = 57  
B = 61 Y = 42

### NEUTRAL ACCENT








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G = 155 K = 36  
B = 152 Y = 1

**Header - GALANO GROTESQUE**  
Body - Lato

## PROJECT BUDGET, SERVICES AND DELIVERABLES

<b>Phase 1 – Project Launch</b>	<b>\$3,255</b>
Kickoff Meeting	\$1,850
Project Management Plan	\$505
Work Plan	\$560
Establish Project Management Tool	\$340
<b>Phase 2 – Discovery</b>	<b>\$44,865</b>
Review Existing Plans & Conduct Analysis	\$2,913
Develop Mapping Protocol	\$405
Create Current Snapshot	\$3,120
Trend Cards & Strategic Foresight	\$1,492
Mapping	\$2,395
Market Analysis	\$15,420
Existing Conditions Analysis	\$19,120
<b>Phase 3 – Creating Consensus</b>	<b>\$20,935</b>
Engagement Plan	\$1,180
Branding & Template Creation	\$1,495
Contacts Database	\$955
Insight Foresight Hub	\$1,870
Online Surveys (3)	\$2,485
Conversation Kits	\$1,125
Displays and Kiosks (3)	\$1,290
Pop Up Engagement	\$1,945
City Commission/Planning Commission Workshops	\$4,030
Focus Group Meetings (4) and Community Workshop	\$4,560
<b>Phase 4 – Crafting the Plan</b>	<b>\$11,360</b>
Draft Comprehensive Plan Process	\$11,360
<b>Phase 5 – Adopting the Plan</b>	<b>\$4,670</b>
Presentation for Adoption	\$2,290
Deliver Final Plan	\$2,380
<b>Project Communication and Decision-Making</b>	<b>\$14,915</b>
<b>Total Fee</b>	<b>\$100,000</b>

PROJECT LAUNCH	DISCOVERY	ENGAGE	PLAN	ADOPT & IMPLEMENT
 <p data-bbox="113 483 382 594"><b>PHASE ONE: Let's Get on the Same Page</b></p>	 <p data-bbox="520 483 789 626"><b>PHASE TWO: Developing the Story of Leavenworth</b></p>	 <p data-bbox="932 483 1163 594"><b>PHASE THREE: Creating Consensus</b></p>	 <p data-bbox="1333 483 1562 594"><b>PHASE FOUR: Crafting the Plan</b></p>	 <p data-bbox="1755 483 1946 594"><b>PHASE FIVE: Adopting the Plan</b></p>
DELIVERABLES	DELIVERABLES	DELIVERABLES	DELIVERABLES	DELIVERABLES
<ul data-bbox="58 748 436 927" style="list-style-type: none"> <li>• Project Management Plan</li> <li>• Public Engagement Plan</li> <li>• Communications Plan</li> <li>• Website Content</li> </ul>	<ul data-bbox="459 748 821 1430" style="list-style-type: none"> <li>• Existing Plans Review Document</li> <li>• Mapping Protocol, Land Use Map, Base Maps, &amp; Layers</li> <li>• Current Snapshot &amp; Trend Cards</li> <li>• Focus Group Meeting Invitation, Agenda, Materials, &amp; Summary</li> <li>• Elected Officials &amp; City Staff Workshop Invitation, Agenda, Materials, &amp; Summary</li> <li>• Stakeholder Interview Questionnaire &amp; Summary</li> </ul>	<ul data-bbox="861 748 1239 1317" style="list-style-type: none"> <li>• Digital Engagement Platform</li> <li>• Online Preference Survey</li> <li>• Community Visioning Workshop Invitation, Agenda, Materials, &amp; Summary</li> <li>• Focus Group Meeting Invitation, Agenda, Materials, &amp; Summary (2)</li> <li>• Elected Officials &amp; City Staff Workshop Invitation, Agenda, Materials, &amp; Summary (3)</li> </ul>	<ul data-bbox="1262 748 1623 1219" style="list-style-type: none"> <li>• Elected Officials &amp; City Staff Workshop Invitation, Agenda, Materials, &amp; Summary</li> <li>• Focus Group Meeting Invitation, Agenda, Materials, &amp; Summary</li> <li>• Market Analysis &amp; Economic Development Policies</li> <li>• Draft Comprehensive Plan</li> </ul>	<ul data-bbox="1663 748 2041 1308" style="list-style-type: none"> <li>• Elected Officials &amp; City Staff Workshop Invitation, Agenda, Materials, &amp; Summary (2)</li> <li>• City Commission &amp; Planning Commission Presentation &amp; Materials</li> <li>• Plan Reveal Invitation, Agenda, Materials, &amp; Summary</li> <li>• Planning Commission Final Presentation</li> <li>• Final Comprehensive Plan (document &amp; web-ready)</li> </ul>
January 2020 - February 2020	January 2020 - June 2020	April 2020 - September 2020	August 2020 - October 2020	November 2020 - December 2020

## DISCOVERY AND ANALYSIS

Critical Questions to Answer Through This Process	Who should be involved in this discussion?	What information is available to inform this discussion?
What is the vision for the City?		
What are the goals?		
What are the strategies?		
How will we measure progress toward goals?		
What are the housing needs? Gaps in price point?		
What keeps us from building infill housing?		
How do we revitalize neighborhoods?		
What new housing is needed?		
What are the needs for quality, affordable housing?		
What history/culture should be preserved?		
What makes our community unique?		
What would attract people downtown?		
What types of jobs are needed?		
What is keeping us from repurposing commercial buildings?		
What are the transportation issues?		
What are the infrastructure needs?		
How do we attract employers with good paying jobs?		
How can we strengthen our education opportunities to grow our population and prosperity?		
How can we support community health?		
How can we make our town more attractive?		
Other?		

## **STAKEHOLDER ENGAGEMENT PLAN**

The project team is working closely with City staff to develop a Stakeholder Engagement Plan. The Stakeholder Engagement Plan is a snapshot of who to involve and how.

Objectives for Stakeholder Engagement

- Inform the stakeholders by providing balanced and objective information to assist them in understanding the problems, alternatives, opportunities, and solutions.
- Consult the stakeholders on (Which questions above?)
- Build partnerships with other agencies and stakeholders for planning and implementation.

What are the Key messages to engage people?

Who should be involved? Specific groups

How do we reach them?

What is our strategy for “hard to reach” groups?





## Chapter Organization & Color Scheme

The Leavenworth 2030 Comprehensive Plan will be organized into the following Chapters with the following color scheme:

### Introduction & Plan Overview

Blue Zodiac - Primary Color

### Chapter 1: Community Identity

Bahama Blue - Primary Color

Golden Sand - Secondary Color

Dawn - Tertiary Color

### Chapter 2: Livable Built Environment

Plum - Primary Color

Smalt Blue - Secondary Color

Sycamore - Tertiary Color

### Chapter 3: Harmony with Nature

Sycamore - Primary Color

Golden Sand - Secondary Color

Blue Stone - Tertiary Color

### Chapter 4: Resilient Economy

Smalt Blue - Primary Color

Sycamore - Secondary Color

Bahama Blue - Tertiary Color

### Chapter 5: Healthy Community

Blue Stone - Primary Color

Plum - Secondary Color

Golden Sand - Tertiary Color

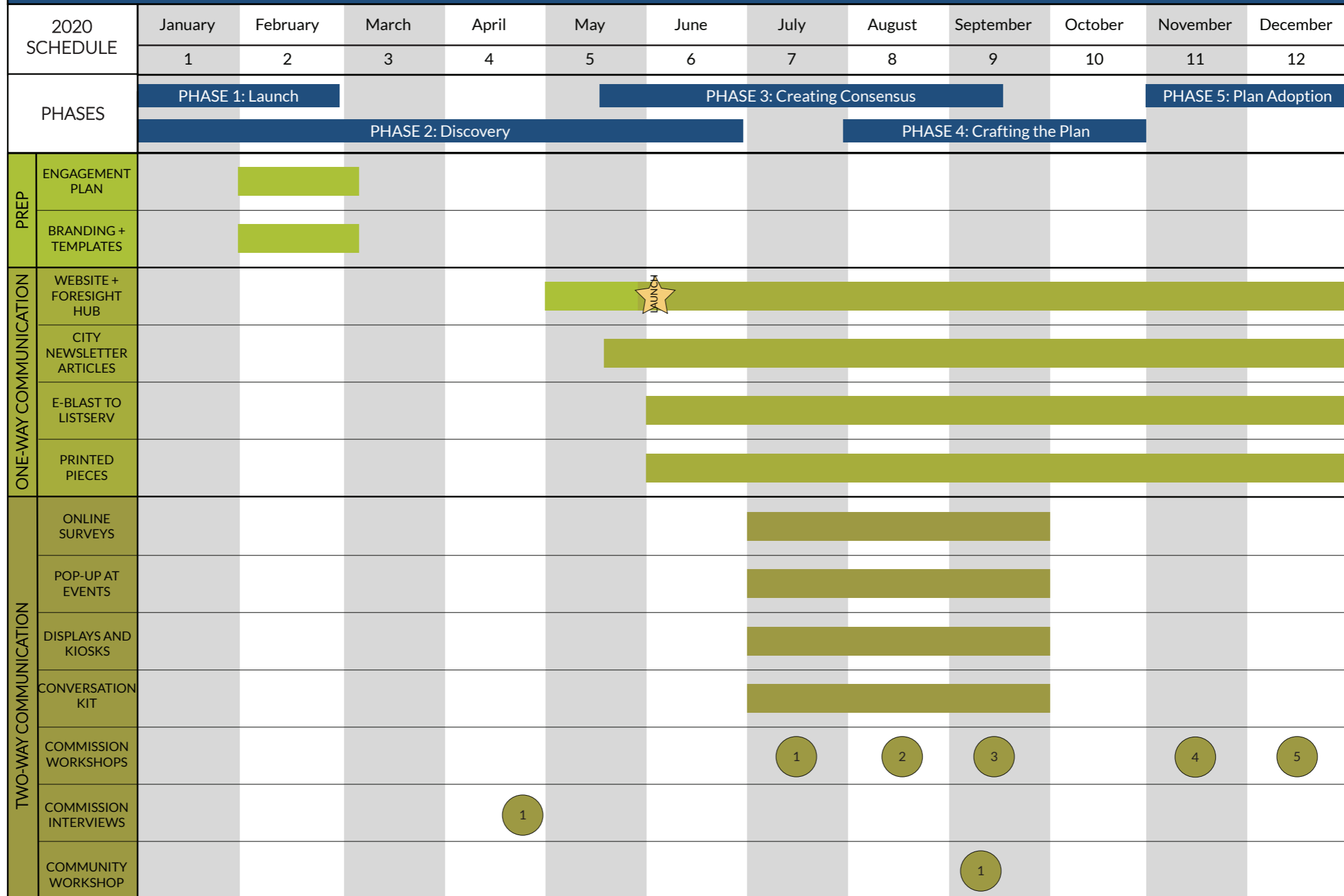
### Chapter 6: Land Use & Community Design

Blue Zodiac - Primary Color

Sycamore - Secondary Color

Dawn - Tertiary Color

SCHEDULE	January 2020	February 2020	March 2020	April 2020	May 2020	June 2020	July 2020	August 2020	September 2020	October 2020	November 2020	Dec. 2020		
	1	2	3	4	5	6	7	8	9	10	11	12		
PHASES	PHASE 1: Launch			PHASE 2: Discovery					PHASE 3: Creating Consensus			PHASE 4: Crafting the Plan		PHASE 5: Plan Adoption
PROJECT MANAGEMENT TEAM	Project Initiation Meeting 1/21			Discovery Phase Meeting 4/21	Discovery Phase Meeting 5/19	Discovery Phase Meeting 6/16		Community Workshop Prep Review 8/11	Policies & Design Guidelines & Strategies Review 9/22		Review Plan Drafts 11/17	Finalize Plan Drafts 12/15		
FOCUS GROUP					Kickoff Zoom Call and Questionnaire 5/XX		Issues Identification & Trends 7/XX	Goals and Objectives 8/XX		Finale Review 10/XX				
CITY COMMISSION/ PLANNING COMMISSION WORKSHOPS				City Commission Kickoff Zoom Meeting; One-on-One Discussions & Online Survey			Issues, Trends Guiding Principles, & Vision Statement	Goals and Objectives	Policies, Design Guidelines & Strategies		Review Plan Drafts	Finalize Plan Drafts		
COMMUNITY ENGAGEMENT	SEE NEXT PAGE FOR DETAILS													





# LEAVENWORTH KS COMPREHENSIVE PLAN UPDATE ROADMAP

THE FUTURE STARTS HERE

## STRATEGIC FORESIGHT

As our world changes, **STRATEGIC FORESIGHT** is the key to identifying the right path. We use data, forecasting, and **local and national trends** to help your community anticipate forces that may assist or impede it from achieving its vision. With strategic foresight, you can create a proactive Plan that is adaptable to future conditions.

## WHY NOW?

We live in a changing world. Bring your community together by focusing on tomorrow, creating a common understanding of how to put your vision into action.

## GOALS & OBJECTIVES

**GOALS & OBJECTIVES** are our long-term desired outcomes and move the community toward achieving the vision.

Goals answer the question: What do we want?

**Example:** Increase health and wellness of all residents.



## VISION

**VISION** creates a vivid mental picture of the community's desire. A **VISION STATEMENT** inspires & energizes.

**Example:** To be the healthiest community in America.

"Vision without execution is hallucination."  
- Thomas Edison

## WHAT IS STRATEGIC VISIONING & COMPREHENSIVE PLANNING?

A vision describes the desired future in idealistic and aspirational terms. **STRATEGIC VISIONING** goes a step further and designs the path we will take to realize that vision. Strategic visioning takes a vision and puts it into action. Strategic visioning provides the framework for Comprehensive Plans.

"Cities have the capacity of providing something for everybody, only because, and only when, they are created by everybody."  
- Jane Jacobs

## POLICIES

**POLICIES** are statements that guide development and public investment.

Future land use maps depict policies.



**Community Dashboard** is how stakeholders hold each other accountable; a dashboard shares results with the community, charting progress by goal.

## STRATEGIES

**STRATEGIES** provide direction toward goals and move the community toward the strategic vision.

**Example:** Provide recreational and educational opportunities that promote a healthy lifestyle.



"The only thing that is constant is change."  
- Heraclitus



**Policy Report**  
**Leavenworth Convention and Visitors Bureau – Semi-Annual Report**  
**April 21, 2020**

Prepared By:



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Kristi Lee  
CVB Manager

Reviewed By:



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Taylour Tedder  
Assistant City Manager

Reviewed By:



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Paul Kramer  
City Manager

**BACKGROUND:**

Leavenworth Convention and Visitors Bureau (CVB) Manager Kristi Lee will provide an update of activities and operations of the CVB.



2019 YE REVIEW & SEMI ANNUAL REPORT

# LEAVENWORTH CONVENTION AND VISITORS BUREAU

April 21, 2020

Leavenworth, Kansas



CONVENTION AND VISITORS BUREAU

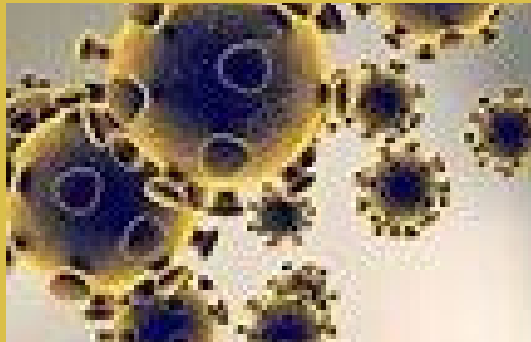


# Discussion points

Travel Industry Update  
Leavenworth Update



# Travel Industry



## COVID-19

The Department of State has issued a Global Level 4 Health Advisory and advises U.S. citizens to avoid all international travel due to the global impact of COVID-19.

<https://www.ustravel.org/toolkit/covid-19-travel-industry-research>



## National Travel and Tourism Week May 3-9, '20

NTTW is still going to be celebrated this year with a new slogan: The Spirit of Travel cannot be broken. It will celebrate the value travel holds for our economy, businesses and personal wellbeing.



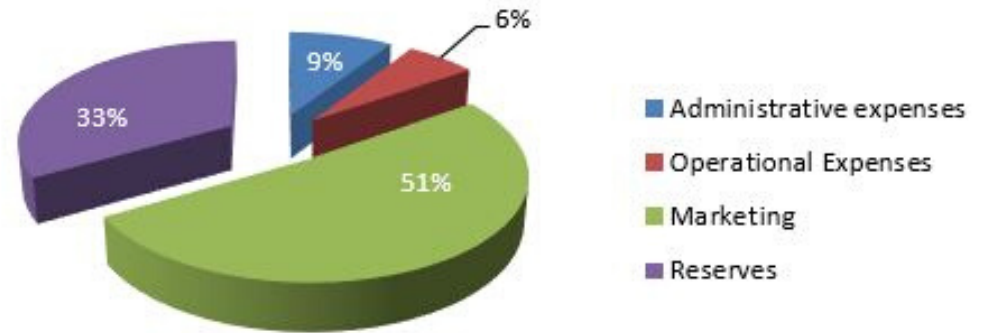
## REAL ID Act

October 1, 2020 the US Dept of Homeland Security will implement the last phase of the Real ID Act which will require all Americans to present REAL ID compliant driver's licenses or another form of acceptable ID to go through airport security.



# LEAVENWORTH STATISTICS 2019

## 2019 Budgeted Expenditures by Function



## Estimated visitors to Leavenworth

2014	191,344	2017	214,688
2015	193,520	2018	240,900
2016	177,472	2019	214,075

- 1.2 M print distribution
- 4.2 M digital ad impressions & Billboards
- 122k website views
- 331k social media impressions
- 14+k visitor guidebooks distributed
- 9,644 Individual requests filled
- 5.5k visitors guidebooks distributed for 2020

### Top Referral Sites

travelks.com, On-Line Campaign, LeavenworthKS.org

## Top 5 pages on the Website

- Events
- Home Pg
- USP
- Attractions
- USDB

## Top 5 States Visiting Website

- Kansas
- Missouri
- Illinois
- D.C.
- Texas



## Occupancy

Occupancy		Supply	
2017	66.6%	2017	98,915
2018	56.6%	2018	135,381
2019	64.5%	2019	131,765



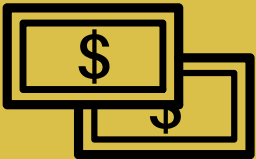
## ADR

Average Daily Rate		Revenue per available Room	
2017	\$106.90	2017	\$71.15
2018	\$109.17	2018	\$62.89
2019	\$108.30	2019	\$69.81



## Revenue

Revenue		
2017	\$7 M	65,835 room nights
2018	\$8.5 M	77,985 room nights
2019	\$9.2 M	84,933 room nights*



## TGT Collected

Collected		
2017	\$347K	40,657 room nights
2018	\$423K	48,401 room nights
2019	\$531K	61,326 room nights

\*Approx. 28% of room nights sold are TGT exempt

2019 Figures based on:  
Fairfield Inn, Hampton Inn, Home2 Suites and TownePlace

# 2019 REVIEW



## Attended 9 Trade Shows

1. American Bus Association - group
2. Select Traveler - group
3. PAIR Day - Leisure
4. Spring Media Tradeshow - Leisure
5. Missouri Bank Travel - group
6. PAIR Day - Leisure
7. Tour Kansas Showcase - group
8. Small Market Meetings - Meeting
9. KSAE Conference - meetings

## Tours to Leavenworth

25 Group Tours

7 Meetings

Direct economic impact = \$66,084.26

2 Sports

## Economic Impact of Tours/meetings reunions and Sports

2,394 people

x \$75 per day

\$179,550

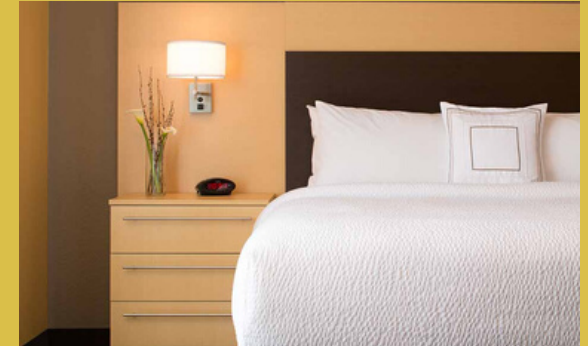
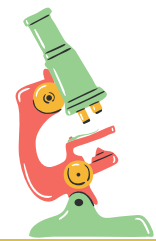
est. visitors to Leavenworth

214,075 x \$75 per day

\$16,055,625



# Local Updates on COVID-19



## COVID-19

I have added a page to our website that has official updates and includes a listing of all the restaurants in town with their menu's for easy access.

There is also a listing for some of the retail stores that are offering curbside and shipping.

<https://destinationsinternational.org/covid-19-partner-resources-research>

## Video showing the 5 Ways to Help Small Businesses Survive the COVID19 economy.

I will continue to post on social media the positive ways in which the community is coming together. 2,950 reach/29 shares.

## Local Occupancy

I visited with the local hoteliers on Wed. April 15 to get updates from them. Three are in the double digits 19% to 32% and one is around 5% to 7%. Just this week there seems to be a slight increase to daily occupancy. One also mentioned they thought they could start bringing some staff back starting next week. Several said they have taken advantage of the Disaster Loans available.



select  
TRAVELER



Travel Industry  
Association of Kansas

## 2020 TRADE SHOWS and CONFERENCES ATTENDED

ABA, American Bus Association

Jan. 25-29, in Louisville, KY

TIAK Day on the Hill

Feb. 5-6, in Topeka KS

PAIR Day, Ft Leavenworth (cancelled)

April 4

## 2020 TRADE SHOWS and CONFERENCES COMING UP

African American Travel Council, Topeka, KS (postponed)

April 14-16 moved to Nov. 6-9 in Georgia

Missouri Bank Travel, Cape Girardeau, MO (cancelled)

April 27-29

Midwest Travel Network, St. Cloud, MN (postponed?)

June 18-20

PAIR Day, Ft Leavenworth

Aug. 17

Going on Faith and Select Traveler, Wichita, KS

August 19-22

Small Market Meetings, French Lick, IN

Oct. 4-7

TIAK Tourism Conference, Liberal, KS

Oct. 18-22

KSAE Meeting Show, Topeka KS

Dec. 9-10



## **Feb 1, 2020: TGT Grants**

The Tourism Grant review committee met on Feb 13th and determined the amounts for the grant applications for the Feb. 1, 2020 round. We were able to roll over \$2,500 from previous unused grant funds and awarded seven organizations with funding for 2020. They are as follows: First City Film for \$1500, Arin Yoon Photography for \$1500, LCHS for \$3000, LMS for \$3000, RACC for \$3000, CW Parker for \$2500 and Santa Fe Trails for \$3000.

## **Upcoming Dates to remember**

**165th Anniversary of the Davis Funeral Chapel building**

May 2020

**160th Anniversary of the Pony Express**

June 2020

**55th Anniversary of the Carroll mansion Museum**

June 19, 2020

**100th Anniversary of the ratification of the 19th Amendment**

August 18th, 2020

**160th Anniversary of the State of Kansas**

January 29, 2021

**175th Anniversary of Buffalo Bill Cody**

February 2021

**200th Anniversary Santa Fe Trail**

2021

**SOME OF LEAVENWORTH  
CVB'S PARTNERS:**



**Thank you  
ALL!**



**POLICY REPORT PWD NO. 20-19**  
**REVIEW STATUS OF IDENTIFIED STORMWATER PROJECTS**  
**April 21, 2020**

Prepared by:



Michael G. McDonald, P.E.,  
Director of Public Works

Reviewed by:



Paul Kramer,  
City Manager

**ISSUE:**

Review the status of the Stormwater Management Program, specifically focusing on completed, in-progress and planned projects funded by the Stormwater Utility Fee.

**BACKGROUND:**

In 2018, the City Commission adopted Charter Ordinance No. 58 establishing the Stormwater Utility Fee as a dedicated revenue source to address maintenance, repair and replacement of critical stormwater infrastructure in the City. The program was activated in January 2019, when the first funds became available.

The City Commission and City staff determined that the immediate priority for the program was the repair of "orange fence" locations, which indicate areas that had been identified and bordered with orange safety fence while plans and resources for repair were identified. Most of these locations have been issues for many years, affecting private property and often posing a threat to other City infrastructure. Beyond the orange fence projects, the City had identified a number of additional projects ranging in size and scope that required attention. Another important factor in the first 16 months of the program were emergency repairs, which are also included in the summary below. Over almost a year and half, the City has created an active program.

Additionally, staff has approximately 100 future projects identified that are in some level of assessment, scoring or planning stages. The attached "Stormwater Prioritization Matrix" table lists all of the locations identified by citizen complaints or City staff. This list is not all-inclusive as it does not address all locations of known stone arches and corrugated metal pipe, which will require full evaluation at some point.

As of April 2020, the following projects have been completed, are in the construction phase, or in the design phase.

1. 3118 Iowa, complete - \$23,805.
2. 2019 Stormwater Project - North (Orange Fence 1), complete - \$153,335.
  - a. 12th & Cherokee
  - b. 330 20th Terrace
  - c. 5th & Elm
  - d. 509 S. 17th Street
  - e. 1013 17th Terrace



3. 2019 Stormwater Project – South (Orange Fence 2), complete - \$268,584.
  - a. 1316 Kansas
  - b. 1210 Washington
  - c. 637 McDonald Road
  - d. 908 Park Avenue
4. Stubby Park Stormwater Project, under construction - \$540,435.
5. Limit Street Emergency Repair Project, complete - \$120,945.
6. 9th & Ottawa Emergency Repair, under construction - \$82,450.
7. Independence Court Bank Stabilization Project, contract awarded - \$362,000.
8. 16th Terrace & Thornton Phase 1, completed - \$135,501.
9. 16th Terrace & Thornton Phase 2, bid in 2020 – est. \$300,000.
10. 16th Terrace & Thornton Phase 3, bid in 2020 or 2021 – est. \$285,000.
11. 2020 Stormwater Project – (Orange Fence 3) – under design – est. \$250,000.
  - a. 6th Avenue & Broadway
  - b. 6th Avenue & Oak
12. 2nd & Chestnut Stormwater Replacement Project, under design – est. \$1,800,000.

This project listing identifies \$1,687,055 in projects that have been completed, or are currently under construction, or have a contract awarded for construction. The projects being designed or waiting to be bid total an additional \$2,635,000.

To objectively review projects, staff has developed a scoring matrix. The rating of projects places a numerical value on the following categories.

- Health & Safety
- Number of residents affected
- City Infrastructure affected
- Environmental impact
- Years problem has existed
- Condition of the stormwater system
- Type of system

**ATTACHMENTS:**

Stormwater Prioritization Matrix  
Category Rating Sheet  
Project Pictures

## Category Rating Sheet

**Category**

Rating

Notes: It is anticipated the Matrix will be used once a problem/location is identified.

**Health & Safety**

Reported Death or Serious Injury	10
High Risk of Injury or Death	7
Moderate Risk of Injury	5
Low Risk of Injury	2
Inconvenience	1

**Number of Residents Affected**

Over 60	5
31 to 60	4
16 to 30	3
6 to 15	2
0 to 5	1

**City Infrastructure Affected**

Arterial Street/Major Stormwater System	7
Collector Street	5
Residential Street	3
Residential Yard	2
Creek Bank	1

**Environmental Impact**

Major Impact on Water Quality and Ecology	7
Minimal Impact on Water Quality and Ecology	5
No Impact	0

Notes: Has the issue caused a failure of the sanitary sewer system?  
Will a continuation of the issue cause a failure of the sanitary sewer system?

**Number of Years Problem Existed**

Over 40 yrs.	5
20 to 40 yrs.	4
10 to 19 yrs.	3
5 to 9 yrs.	2
less than 5 yrs.	1

**Physical Condition of Stormwater System**

Failed System	7
Poor; Known Older System	5
Average; Known Newer System	4
No System; Public Property	3
No System; Private Property	2
Good; New System	1

Notes: Does the system have sink holes?  
Does the piping have major cracks or structural issues?  
Has the system surpassed its' expected life span?

**Type of System**

Corrugated Metal Pipe	5
Brick/Stone Arch	4
Concrete Pipe	3
Open Channel	2
Roadside Ditch	0



City of Leavenworth  
Stormwater Prioritization Chart

	PROJECT DESCRIPTION/LOCATION	Health & Safety	Residents Affected	City Infrastructure Affected	Environmental Impact	Years Problem Existed	Physical Condition of Stormwater System	Type of System	Overall Rating	Project Description
1	16th Terr. & Thornton Phase 2	2	2	2	5	2	5	2	20	Drainageway Erosion
2	16th Terr. & Thornton Phase 3	2	1	2	5	2	2	2	16	Drainageway Erosion - Alternate to Phase 2
3	Independence Ct. Bank Stabilization	2	1	2	5	1	3	2	16	Creek Bank Erosion - Property owner losing yard - sanitary sewer within 15'
4	2nd St. & Chestnut Stormwater Project	5	5	5	7	3	5	4	34	CMP collapse - Arch Failure - Sinkholes on private property - Failing inlets
5	Stubby Park Stormwater	2	3	2	5	3	5	5	25	Old CMP - Deep structure - New park over system
6	3100 Foxhill Storm Repair	2	1	2	5	2	5	5	22	Sinkholes on private property - failing junction box - CMP
7	1017 Randolph Stormwater (Rock of Ages)	2	3	3	5	3	5	5	26	CMP - Structure flooding - Stone arch
8	14th & Kiowa Drainage	2	2	3	5	2	3	4	21	Inadequate street crossing - occasional roadway flooding - new upstream structure
9	715 6th Ave.	5	3	3	7	2	5	5	30	Sinkhole on private property - CMP failure on private property and in alley next to structure
10	746 Spruce (Alley)	2	3	3	5	2	5	5	25	Sinkhole on private property - CMP failure on private property and in alley next to structure
11	1516 Gatewood	1	1	2	1	2	4		11	Drainageway erosion and pipe failure/seperation (to be fixed with Independence Court)
12	637 McDonald	5	5	3	5	3	5	5	31	CMP failure - collapsing roadway
13	4715 Brewer Pl.	1	1	2	0	2	4	5	15	Sinkhole in right-of-way
14	1536 Gatewood St.	1	1	2	5	2	2	2	15	Creek bank failure - yard erosion - City sewer main
15	908 Park Ave.	2	1	2	0	2	5	5	17	CMP failure - Sinkholes on private property
16	1316 Kansas	2	1	2	0	2	5	5	17	CMP failure - Sinkholes on private property
17	1210 Washington	5	4	3	5	2	5	5	29	CMP failure of crossroad pipe
18	330 20th St. Terrace	1	1	2	0	2	5	5	16	CMP failure - Sinkholes on private property
19	1200 Cherokee St.	2	3	3	0	2	5	5	20	CMP failure of crossroad pipe
20	509 S. 17th St.	1	1	2	0	1	4	5	14	CMP failure - Sinkholes on private property
21	900 Klemp St.	5	1	3	0	2	5	5	21	CMP failure of crossroad pipe
22	1013 17th St. Terr.	1	1	2	0	1	4	0	9	CMP failure - Sinkholes on private property
23	5th Street & Elm Street	5	1	3	0	2	5	4	20	Inlet failure in right-of-way
24	Spring Garden								0	At Vilas & at Santa Fe - Pipe & Ditch issues
25	20th Street & Woodridge Drive								0	Sinkholes at edge of concrete sidewalk/trail
26	4th Street Arch								0	Poor arch from 3-mile creek north
27	810 Cherokee	2	1	1	5	3	5		17	Eroded outlet pipe - Area inlet damage
28	Cody Park Bank Stabilization								0	Creek Bank Erosion, threatening Sanitary Main
29	1420 Cheyenne	1	1	1	0	3	2	5	13	CMP Rusted out - Street edge collapsing
30	61 Sheridan	2	1	2	0	2	5		12	Sinkholes on private property - Roadside ditch failure
31	514 McDonald	2	2	3	5	2	4	5	23	Outlet pipe needs reset, grading riprap installed
32	901 Osage	4	3	3	7	2	5	5	29	Alley bank erosion - CMP failure
33	3rd St. & Marion	2	4	3	5	2	5	3	24	West creek bank erosion - Outlet pipe reinstallation
34	1809 Evergreen	1	1	2	5	1	4	5	19	Outlet repair, stabilization, riprap
35	76 Ash	2	1	3	5	1	4	5	21	Sinkhole on private property - Pipe repair
36	Limit St. west of Sommerset Dr.	2	2	3	0	2	4	0	13	Street shoulder failure next to roadside ditch

37	741 Pottawatomie	2	2	2	5	2	5	5	23	Pipe blockage - area inlet lid pops off - floods private property
38	3229 Grand & 3225 Meadow Rd.	1	1	3	0	2	4	5	16	Area inlet blockage - Replace junction box
39	10th Ave Trail	1	2	2	0	1	4	2	12	Creek bank erosion on school property
40	2108 Garland	1	1	1	7	1	2	2	15	Trees and brush in creek bed
41	1208 High St.	1	1	2	0	1	2	2	9	Ditch eroding
42	2420 Garland								0	Ditch & broken storm box
43	1205 Franklin								0	Sinkholes across the street
44	9th & Pottawatomie St.	5	3	3	0	1	5	4	21	Poor stone arch
45	8th & Shawnee St.	5	1	2	0	2	3	2	15	Bank stabilization
46	Cheyenne & Broadway								0	Storm box
47	Hebellin St.								0	Drainage & Inlet stabilization
48	5 Mile Creek - 19th to 18th	5	2	7	5	2	3	2	26	Eroding creek bank & around headwall
49	Broadway Bridge at Cherokee								0	South end, install inlets & pipe to 3-mile creek
50	734 Deerfield St.	5	2	3	0	1	7	3	21	Poor lip holding metal lid, replace lid and throat
51	1501 Kenton St.								0	Inlets & pipe to 3-mile creek (behind Jerry Kopp)
52	3642 Hughes Road								0	Sinkhole at inlet & sidewalk, rusted CMP
53	10th Ave. & Santa Fe								0	Sinking at inlet, bad concrete
54	Ohio & Washington								0	East-west line, south side
55	Ohio & Westwood								0	Replace inlets
56	10th & Miami St.	5	2	3	0	1	7	5	23	NE corner, Inlet & lid
57	5th & Pennsylvania St.	5	3	5	0	1	7	3	24	SW & SE pipe & inlets
58	2812 Folsom St.	2	1	2	0	1	4	3	13	Sinkholes south of house, near west inlet
59	Osage & Allen St.	5	2	3	0	1	5	3	19	SE corner, inlet collapsed
60	18th St. & Ridge Road								0	Sinkhole at inlet
61	Ottawa & 13th Terrace								0	Replace Inlet
62	14th & Kiowa St.	2	2	3	0	2	7	4	20	Poor inlets & arch
63	100 Block of Dakota St.								0	??
64	Michigan St. - Broadway to 9th Ave.								0	??
65	Kansas & Columbia Ave.								0	Inlet replacement??
66	3909 Shrine Park Rd.	2	2	5	0	1	7	3	20	Settled sidewalk at curb inlet
67	Lecompton & 16th	1	3	5	0	3	3	0	15	Drainage issue - Water under road and ditching to be completed
68	712 N. 18th St.	5	1	2	5	2	2	2	19	Eroded creek bank - obstruction at CRP
69	2404 S. 16th St.	5	1	2	0	1	7	5	21	Rusted CMP
70	5th & Maple St.	2	1	3	0	1	3	2	12	Eroded ditch bank along Maple
71	1104 Columbia Ave.	2	1	2	0	1	5	3	14	Regrade & raise junction box
72	1213 Kickapoo St.	5	2	3	0	2	7	5	24	Sinkholes - collapsing curb inlet, eroded headwall
73	1509 Klemp St.	5	2	3	0	1	7	5	23	Rusted CM CRP, Eroded street edge
74	509 Shawnee	2	3	3	5	3	5	5	26	Sinkhole in City parking lot
75	1705 Chester Ct.	1	1	2	0	1	3	5	13	Erosion at SB 1538
76	503 S. 5th St.	7	1	3	0	1	3	0	15	Alley - Eroded bank & guardrail leaning
77	574 Doniphan St.	5	1	3	0	1	3	0	13	Guardrail Leaning - Bank Eroded
78	1616 Klemp St.								0	Ditch Draininf issue-Flat, City has made some fixes.
79	1046 Wellington St.	2	1	2	0	1	7	5	18	Rusted CMP
80	1314 Revolutionary Court	5	1	2	0	1	7	5	21	Eroded around area inlet in backyard, maybe rusted pipe?
81	1000 Jackson Street	1	1	2	0	1	2	2	9	Flooding in yard
82	919 Parkway Court	5	1	2	0	1	2	2	13	Eroded ditch bank - Private??
83	1216 Michigan St.	2	1	3	0	1	5	3	15	Sinkhole - RCP maybe pulling apart

84	Cody Park Stormline	5	3	1	0	1	5	3	<b>18</b>	Sinkholes - RCP pulling apart
85	3118 Iowa St. - Phase 2	5	2	3	5	1	7	5	<b>28</b>	Sinkhole - Rusted CMP going south along west side of street
86	2200 S. 16th Terrace	5	1	3	5	1	7	5	<b>27</b>	Rusted CMP under sidewalk and curb
87	1210 Spruce St.	7	2	3	0	1	7	5	<b>25</b>	Inlets in alley need replaced at new CRP
88	20th & Marjorie Court	7	3	7	0	1	5	3	<b>26</b>	Replace curb inlet top - material at MSC
89	1608 Hollman St.	5	1	1	5	1	3	2	<b>18</b>	Creek Bank Erosion
90	1214 Pawnee St.	5	1	2	0	1	7	5	<b>21</b>	Sinkholes - Rusted CMP & eroded bank
91	833 Park Ave.	2	2	3	0	1	3	5	<b>16</b>	Sinkhole - unmarked stormline extension uncapped
92	717 Oak St.	5	1	2	5	1	5	4	<b>23</b>	Alley - Arch & bridge poor condition, some erosion
93	1520 Osage St.								<b>0</b>	??
94	1413 Osage St.								<b>0</b>	??
95	1405 Miami St.								<b>0</b>	??
96	2305 S. 16th Street	1	1	1	0	1	5	3	<b>12</b>	36" RCP, End Pipe Pulling Away at Creek
97	713 N 18th Street	2	2	3	0	1	5	3	<b>16</b>	Sinkhole at Sidewalk at Creek, over 42" Storm Pipe
98	1203 S. 16th St.								<b>0</b>	Driveway pipes filled & ditches need cleaned
99	740 Cherokee St.								<b>0</b>	Poor brick arch and inlets
100	12th & Osage	2	1	5	0	1	3	3	<b>15</b>	At the Bridge, Erosion Issues
101									<b>0</b>	
102									<b>0</b>	
103									<b>0</b>	
104									<b>0</b>	
105									<b>0</b>	

- Stormwater 1 Projects/2019
- Stormwater 2 Projects/2019
- Stormwater 3 Projects/2020
- Bonded City Stormwater Project 2020
- Stormwater Funded Project 2019
- Need City Commission Priority Input/Identified by the commission as a project
- Street Department Fixed
- Previously Rated

# City of Leavenworth Identified Stormwater Projects - Before and After Pictures

## City Commission Meeting April 21, 2020

**3118 Iowa - Before**



**3118 Iowa - After**



**City of Leavenworth Identified Stormwater Projects - Before and After Pictures  
City Commission Meeting April 21, 2020**

**509 S. 17th - Before**



**509 S. 17th - After**



# City of Leavenworth Identified Stormwater Projects - Before and After Pictures

## City Commission Meeting April 21, 2020

### 1203 Cherokee - Before



### 1203 Cherokee - After





# City of Leavenworth Identified Stormwater Projects - Before and After Pictures

## City Commission Meeting April 21, 2020

### 1316 Kansas - Before



### 1316 Kansas - After



# City of Leavenworth Identified Stormwater Projects - Before and After Pictures

## City Commission Meeting April 21, 2020

### 1210 Washington - Before



### 1210 Washington - After




POLICY REPORT PWD NO. 20-20

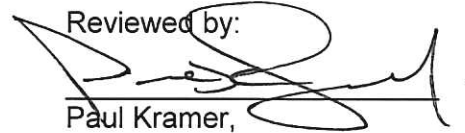
REVIEW 2019-2024 KDHE STORMWATER PERMIT  
AND STORMWATER MANAGEMENT PROGRAM

April 21, 2020

Prepared by:

  
Michael G. McDonald, P.E.,  
Director of Public Works

Reviewed by:

  
Paul Kramer,  
City Manager

**ISSUE:**

The City of Leavenworth has been required to have a Stormwater Management Program (SMP) since the early 2000s. KDHE has issued a new permit for 2019-2024 which changes how the SMP is developed.

**BACKGROUND:**

This requirement came from national environmental efforts beginning in the 1970s, and the resulting court cases being resolved in late 1990s. The EPA stormwater program is administered by KDHE for all cities in Kansas. The current permit (2019-2024) is included on the City webpage below. The current SMP document is attached to this Policy Report. Additionally – an excellent background document has been prepared by the National Association of Clean Water Agencies that describes the difficulties in the overall implementation of national stormwater policy.

- **Stormwater Management Program:**  
[https://www.leavenworthks.org/sites/default/files/fileattachments/public\\_works/page/4591/leavenworthstormwatermgtprogram\\_23feb16.pdf](https://www.leavenworthks.org/sites/default/files/fileattachments/public_works/page/4591/leavenworthstormwatermgtprogram_23feb16.pdf)
- **Current Permit**  
[https://www.leavenworthks.org/sites/default/files/fileattachments/public\\_works/page/149/npdes\\_stormwater\\_permit\\_23oct19.pdf](https://www.leavenworthks.org/sites/default/files/fileattachments/public_works/page/149/npdes_stormwater_permit_23oct19.pdf)
- **Background**  
<https://www.nacwa.org/docs/default-source/news-publications/White-Papers/2018-03-07permittingguide.pdf>

The SMP lists a series of activities that the City is expected to implement in order to reduce pollutants by “the maximum extent practicable” (MEP). The use of MEP language is related to court cases prohibiting the EPA/KDHE from regulating streamflow water quality directly (in most situations), and provides an indirect method to regulate efforts that should favorably impact water quality.

There are six statutory areas known as “Minimum Control Measures” (MCM) that must be addressed in the SMP. The activities used in each of the six areas are known as “Best Management Practices” or BMPs.

**Minimum Control Measures**

- 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

Reports are to be submitted to KDHE on an annual basis that evaluate the effectiveness of the SMP and BMPs. The City has submitted reports since at least 2004, and these are available on the web site: <https://www.leavenworthks.org/publicworks/page/annual-stormwater-reports>

The current KDHE Stormwater Permit was issued in late 2019 after being delayed almost a year as EPA and KDHE resolved their conflicts. The permit has meaningfully changed in many aspects although the six primary factors remain the same. The EPA has been moving towards being a data-driven agency for over a decade. This impacts permitting and reporting as programs are required to be less “verbal” and more “Yes/No” or “points based”. This permit is an example of that.

KDHE has identified BMPs for each of the six MCMs. Each of the BMPs has a point value, and the points vary according to date of implementation and how many years it is used. The City is required to meet several point totals at various times in the permit. City staff is confident that what we are already doing will meet the point goals for the duration of the permit.

It is interesting to note that:

1. No other BMPs are allowed to be created, and ones in the permit cannot be revised. This may change over the life of the permit.
2. KDHE has informed our office that if it appears the City is dropping programs due to “excess” points in the SMP annual report, it would likely result in a sternly-worded letter at a minimum.
3. Some BMPs are extremely narrowly focused and are intended for specific locations that may have difficulty meeting points goals otherwise.

It is the intent of the permit that the City create a new SMP in 2020 to implement in 2021. The practical truth is that it will look a lot like the current SMP and activities. KDHE and EPA have both stressed to City staff the importance of public involvement in this process. There is no requirement for a “Public Hearing”, but opportunities for input are expected to be available.

This Policy report is to provide some background on the process, and set some milestones for the next few months. The goal is to have an adopted SMP by late 2020.

Proposed steps for upcoming study sessions, perhaps monthly:

1. Review regulatory process and expectations, receive information from Commissioners and the public. (This policy report).
2. Identify selected BMPs that will meet the KDHE points totals and discuss with Commission.
3. Prepare a draft SMP based on proposed BMPs and review with the Commission
4. Have opportunity to meet and discuss with the public (assuming no COVID issues) outside of City Hall.

After the work noted above – prepare a final draft for review at a regular meeting. It would then be appropriate to place this in Ordinance form for first consideration.

**ATTACHMENTS:**

City of Leavenworth Stormwater Management Program

# **City of Leavenworth Stormwater Management Program**

Adopted by the City Commission February 23, 2016

## City of Leavenworth Stormwater Management Program

February 2016

### Program History

The City of Leavenworth was established in the 1850's 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.

There has been a history of flooding since the founding of the city, with notable examples in the attached Appendix. The most recent dramatic example was in October 2005 where an estimated eleven 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 1980's to improve stream capacity to reduce flooding. Key improvements include:

- Replaced Major Bridges (at least 8)
- Channel Improvements on Three-Mile Creek between Missouri River and Broadway
- Stormwater Master Plan (1997)
- FEMA Floodplain Revisions on Three-Mile Creek (2014 and 2015)
- Approved Sales Tax with dedicated stormwater funding (1995, 2005, 2015)

During the late 1980's 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 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. Public outreach and education
2. Public involvement
3. Municipal pollution prevention
4. Construction site stormwater control
5. Illicit discharge detection and elimination
6. Post construction stormwater control.

Stormwater Management Program  
City of Leavenworth  
February 17, 2016

A new NPDES permit was issued to City of Leavenworth in 2014 which includes the same six minimum control measures, along with additional requirements for water quality testing and an updating of the Stormwater Management Program

### **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 that review plans for all projects. The Community Development Department 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, and 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) perform the measuring and testing work required.

### **Program Tools**

The City uses a variety of tools to assist in the evaluation and management of stormwater issues including:

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  
City of Leavenworth  
February 17, 2016

**Stormwater Management Program Implementation**

City Staff has created goals related to the six minimum control measures in an effort to meet the needs of the community and comply with the NPDES requirements. These are shown in the attached pages.

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

Michael G. McDonald  
City Engineer  
Public Works Director  
City Hall  
100 N Fifth Street  
Leavenworth, KS  
[mmcdonald@firstcity.org](mailto:mmcdonald@firstcity.org)  
913-684-0375

**Attachments**

- FEMA Narrative on Flood events from FIS 20103CV000B
- Stormwater Management Program Goals



**Stormwater Management Program BMP List  
February 23, 2016**

**Minimum Control Measure #1 - Public Education and Outreach**

BMP	Measure	Responsibility	Schedule (Permit Year)
Web Page link to stormwater infrastructure information – Master Plan, Management Plan, Map	# of visitors	Leavenworth	1,2,3,4,5
Place documents in Public Library stormwater infrastructure information – Master Plan, Management Plan, Map	# Check-out requests	Leavenworth	1,2,3,4,5
Include articles or stories related to stormwater in city newsletter in at least two issues per year	# Articles/Stories # Issues	Leavenworth	1,2,3,4,5
City generated posts on social media related to stormwater issues at least ten occurrences per year	# Posts	Leavenworth	1,2,3,4,5
Provide information to Citizens regarding the City of Leavenworth Solid Waste Division.	Distribute trash bags to citizens with proper disposal handout	Leavenworth	1,2,3,4,5
Show Stormwater information on Local cable TV Station	Broadcast community forums, in which continued water quality discussions take place	Leavenworth	1,2,3,4,5

Stormwater Management Program BMP List  
February 23, 2016

Minimum Control Measure #2 - Public Participation and Involvement

BMP	Measure	Responsibility	Schedule (Permit Year)
Hold Public Information Meetings Regarding Stormwater Issues	Annual review by City Commission of Stormwater Annual Report  Review of Stormwater projects in annual Capital Improvement Plan	Leavenworth	1,2,3,4,5
Create an "Adopt a Stream Program"	# Streams Adopted  # Streams Cleaned	Leavenworth	1,2,3,4,5
Improve Lines of Communication with the Public through use of website and social media	Integrate contemporary methods of providing and receiving information to the Public.	Leavenworth	1,2,3,4,5
Annual City-Wide Clean-up Program	# Groups  # Participants	Leavenworth	1,2,3,4,5
Customer Surveys – conduct at least one survey each year on stormwater related issues in an on-line environment	# of responses	Leavenworth	1,2,3,4,5
Encourage groups to participate in activities such as inlet stencil program and similar	# groups  # programs	Leavenworth	1,2,3,4,5

Stormwater Management Program BMP List  
February 23, 2016

**Minimum Control Measure #3 - Illicit Discharge Detection and Elimination (IDDE)**

BMP	Measure	Responsibility	Schedule (Permit Year)
Inspect complaints of Illicit Discharge	Inform public of methods to communicate concerns regarding Illicit discharges  # reports investigated	Leavenworth	1, 2, 3,4, 5
Update Stormwater Outfall Maps	Continue efforts to accurately locate and measure existing and new stormwater Infrastructure	Leavenworth	1,2,3,4,5
Inspect Outfalls	# outfalls inspected	Leavenworth	1,2,3,4,5
Collect Yard Waste at City Composting Facility	# customers	Leavenworth	1,2,3,4,5
Collect Tree and Brush Debris at Brush disposal site	# customers	Leavenworth	1,2,3,4,5
Collect Household Hazardous Waste as part of Citywide Clean-up Event	# pounds of household hazardous waste recycled	Leavenworth	1, 2, 3,4, 5
Conduct Free Disposal Saturdays (First Saturday)	# Events  # Tons Collected	Leavenworth	1,2,3,4,5
Staff Training	# of staff trained	Leavenworth	1,2,3,4,5

**Stormwater Management Program BMP List  
February 23, 2016**

Stormsewer Maintenance and Inspection	Provide dry weather storm sewer inspection.	Leavenworth	1,2,3,4,5
Inspection of Sanitary Sewer Systems	<p>Inspect residential and commercial sanitary systems for improper discharge into storm drains.</p> <p>Inspect sanitary sewer system to reduce number and volume associated with SSO</p> <p>Coordinate SSO events between Wastewater Staff, Building Officials and Engineering.</p>	Leavenworth	1,2,3,4,5
Commercial Grease Trap Inspection Program	Review status of commercial grease traps through record review and physical inspection	Leavenworth	1,2,3,4,5

Stormwater Management Program BMP List  
February 23, 2016

**Minimum Control Measure #4 - Construction Site Runoff Control**

BMP	Measure	Responsibility	Schedule (Permit Year)
Construction Drawing plan review and Site Runoff Control	# plans reviewed # LDP Issued	Leavenworth	1, 2, 3,4,5
Publish Updated Standard Details and Design Criteria for Erosion Control*	Make available on-line Review annually with staff	Leavenworth	1,2,3,4,5
Staff Training on Runoff Inspection	# inspectors trained	Leavenworth	1,2,3,4,5
Inform Local Contractors of LDP	Annual notification of LDP requirements LDP documents available on-line	Leavenworth	1,2,3,4,5
Pre-Construction Meetings with Owner and Contractor - Require meetings with owner and contractor prior to commencement of grading operations.	# Meetings	Leavenworth	1,2,3,4,5
Construction Site Inspection and Enforcement - Increase the frequency of inspections and communications back to owner/contractor	Documentation of inspections	Leavenworth	1,2,3,4,5

Stormwater Management Program BMP List  
February 23, 2018

**Minimum Control Measure #5 - Post Construction Runoff Control**

BMP	Measure	Responsibility	Schedule (Permit Year)
Construct Sediment vane traps on new and reconstructed inlets	# Inlets	Leavenworth	1,2,3,4,5
Protect sensitive areas, such as wetlands and riparian areas through plan review and selected land acquisition from developers and at tax sales	# tracts acquired from developers # tracts acquired from Tax sale # Acres acquired/year	Leavenworth	1,2,3,4,5
Enforce Post Construction Runoff Control Ordinance	# LDP Releases  Documentation of Inspection and communication	Leavenworth	1,2,3,4,5
Conduct Long Term BMP Maintenance Inspections	Documentation of inspection and communication	Leavenworth	1,2,3,4,5
Analyze Existing Structural BMP Performances at selected sites (particularly detention basins)	# sites evaluated	Leavenworth	1,2,3,4,5
Measure rain gage and creek depth to evaluate flow quantity and duration from at least March – October.	# Rain gages # Stream gages	Leavenworth	1,2,3,4,5

Stormwater Management Program BMP List  
February 23, 2016

Minimum Control Measure #6 - Municipal Pollution Prevention

BMP	Measure	Responsibility	Schedule (Permit Year)
Review City Facilities for water quality concerns and develop plans to address them, goal is at least three facilities per year	# Reports Prepared	Leavenworth	1,2,3,4,5
Street Sweeping Program - goal is residential areas three times per year and collector/arterial streets once per month (8 months)	# Times completed Residential Area Sweeping  # Times completed Collector/arterial Sweeping  # hours sweeping	Leavenworth	1,2,3,4, 5
Snow Removal Operations - Use ground speed control and GPS equipment to keep salt use within guidelines	# tons of salt used per year # pounds per lane mile per storm	Leavenworth	1,2,3,4,5
Stormwater Inlet Cleaning	# Inlets	Leavenworth	1,2,3,4, 5
Continue Citywide Leaf Collection Program (currently one-half of city each year)	# loads	Leavenworth	1,2,3,4,5

# FLOOD INSURANCE STUDY



## LEAVENWORTH COUNTY, KANSAS AND INCORPORATED AREAS

COMMUNITY  
NAME  
BASEHOR, CITY OF  
EASTON, CITY OF  
LANSING, CITY OF  
LEAVENWORTH, CITY OF  
LEAVENWORTH COUNTY  
UNINCORPORATED AREAS  
LINWOOD, CITY OF  
TONGANOXIE, CITY OF

COMMUNITY  
NUMBER  
200187  
200188  
200189  
200190  
200188  
  
200191  
200192



REVISED: July 16, 2015



Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER

20103CV000B



September 1970. Unfortunately, precise data regarding flood levels reached by these events have not been documented. The following extracts from the Leavenworth Times described two of the events that were experienced. "On July 30, 1958, more than four and half inches of rain fell in the area." Hundreds of area residents were delayed in reaching their homes by streams that were overflowing their banks at many locations. On October 13, 1961, three to four inches of rainfall occurred in the area.

The City of Lansing is above the floodplain of the Missouri River except for the areas where Sevenmile Creek and other right bank tributaries enter the Missouri River. The only 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 to the Leavenworth and Lansing areas. The damages were \$112,000 to business property, \$12,600 to homes, and \$600 to public property (Reference 1). The main sewers are subject to silting and other damage by flooding from the Missouri River.

#### 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 improve 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 6<sup>th</sup> 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 8<sup>th</sup> St. and 10<sup>th</sup> 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 1/2 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 banks upstream of Cherokee Street and flowed east along Cherokee Street, returning to the banks of the creek at 6<sup>th</sup> 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 the more 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 4<sup>th</sup> 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 resulted in significant flooding along Cherokee Street.

- October 2<sup>nd</sup> 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 11<sup>th</sup> Street and downstream to 6<sup>th</sup> Street. A new bridge was under construction at 6<sup>th</sup> 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 feet 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 7500 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 possibly 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.

#### 2.4 Flood Protection Measures

There are several flood protection measures operable for the benefit of Leavenworth County. The Mud Creek Levee Unit meets the requirements and provisions of Section 65.10 of the NFIP regulations. The levee system provides flood protection for the 1-percent annual chance flood event on Mud Creek. The levee system is currently in the USACE PL 84-99 levee program and is periodically inspected by the Kansas City USACE District. There are some low frequency private agricultural levees along Stranger Creek that do not meet the FEMA 3-foot freeboard requirement and any other provisions of Section 65.10 of the NFIP regulations. There are no major structural flood protection measures planned for this study area. However, the adoption of State and local development regulations concerning floodplain management will help alleviate storm related losses.



# Stormwater Phase II Final Rule

## Small MS4 Stormwater Program Overview

### Stormwater Phase II Final Rule Fact Sheet Series

#### Overview

1.0 – Stormwater Phase II Final Rule: An Overview

#### Small MS4 Program

2.0 – Small MS4 Stormwater Program Overview

2.1 – Who's Covered? Designation and Waivers of Regulated Small MS4s

2.2 – Urbanized Areas: Definition and Description

#### Minimum Control Measures

2.3 – Public Education and Outreach

2.4 – Public Participation/Involvement

2.5 – Illicit Discharge Detection and Elimination

2.6 – Construction Site Runoff Control

2.7 – Post-Construction Runoff Control

2.8 – Pollution Prevention/Good Housekeeping

2.9 – Permitting and Reporting: The Process and Requirements

2.10 – Federal and State-Operated MS4s: Program Implementation

#### Construction Program

3.0 – Construction Program Overview

3.1 – Construction Rainfall Erosivity Waiver

#### Industrial "No Exposure"

4.0 – Conditional No Exposure Exclusion for Industrial Activity

Polluted storm water runoff is often transported to municipal separate storm sewer systems (MS4s) and ultimately discharged into local rivers and streams without treatment. EPA's Stormwater Phase II Rule establishes an MS4 stormwater management program that is intended to improve the Nation's waterways by reducing the quantity of pollutants that stormwater picks up and carries into storm sewer systems during storm events. Common pollutants include oil and grease from roadways, pesticides from lawns, sediment from construction sites, and carelessly discarded trash, such as cigarette butts, paper wrappers, and plastic bottles. When deposited into nearby waterways through MS4 discharges, these pollutants can impair the waterways, thereby discouraging recreational use of the resource, contaminating drinking water supplies, and interfering with the habitat for fish, other aquatic organisms, and wildlife.

In 1990, EPA promulgated rules establishing Phase I of the National Pollutant Discharge Elimination System (NPDES) stormwater program. The Phase I program for MS4s requires operators of "medium" and "large" MS4s, that is, those that generally serve populations of 100,000 or greater, to implement a stormwater management program as a means to control polluted discharges from these MS4s. The Stormwater Phase II Rule extends coverage of the NPDES stormwater program to certain "small" MS4s but takes a slightly different approach to how the stormwater management program is developed and implemented.

### What Is a Phase II Small MS4?

A small MS4 is any MS4 not already covered by the Phase I program as a medium or large MS4. The Phase II Rule automatically covers on a nationwide basis all small MS4s located in "urbanized areas" (UAs) as defined by the Bureau of the Census (unless waived by the NPDES permitting authority), and on a case-by-case basis those small MS4s located outside of UAs that the NPDES permitting authority designates. For more information on Phase II small MS4 coverage, see Fact Sheets 2.1 and 2.2.

### What Are the Phase II Small MS4 Program Requirements?

Operators of regulated small MS4s are required to design their programs to:

- Reduce the discharge of pollutants to the "maximum extent practicable" (MEP);
- Protect water quality; and
- Satisfy the appropriate water quality requirements of the Clean Water Act.

Implementation of the MEP standard will typically require the development and implementation of BMPs and the achievement of measurable goals to satisfy each of the six minimum control measures.

The Phase II Rule defines a small MS4 stormwater management program as a program comprising six elements that, when implemented in concert, are expected to result in significant reductions of pollutants discharged into receiving waterbodies.

The six MS4 program elements, termed “minimum control measures,” are outlined below. For more information on each of these required control measures, see Fact Sheets 2.3 – 2.8.

- ① **Public Education and Outreach**  
Distributing educational materials and performing outreach to inform citizens about the impacts polluted stormwater runoff discharges can have on water quality.
- ② **Public Participation/Involvement**  
Providing opportunities for citizens to participate in program development and implementation, including effectively publicizing public hearings and/or encouraging citizen representatives on a stormwater management panel.
- ③ **Illicit Discharge Detection and Elimination**  
Developing and implementing a plan to detect and eliminate illicit discharges to the storm sewer system (includes developing a system map and informing the community about hazards associated with illegal discharges and improper disposal of waste).
- ④ **Construction Site Runoff Control**  
Developing, implementing, and enforcing an erosion and sediment control program for construction activities that disturb 1 or more acres of land (controls could include silt fences and temporary stormwater detention ponds).
- ⑤ **Post-Construction Runoff Control**  
Developing, implementing, and enforcing a program to address discharges of post-construction stormwater runoff from new development and redevelopment areas. Applicable controls could include preventative actions such as protecting sensitive areas (e.g., wetlands) or the use of structural BMPs such as grassed swales or porous pavement.
- ⑥ **Pollution Prevention/Good Housekeeping**  
Developing and implementing a program with the goal of preventing or reducing pollutant runoff from municipal operations. The program must include municipal staff training on pollution prevention measures and techniques (e.g., regular street sweeping, reduction in the use of pesticides or street salt, or frequent catch-basin cleaning).

## What Information Must the NPDES Permit Application Include?

The Phase II program for MS4s is designed to accommodate a general permit approach using a Notice of Intent (NOI) as the permit application. The operator of a regulated small MS4 must include in its permit application, or NOI, its chosen BMPs and measurable goals for each minimum control measure. To help permittees identify the most appropriate BMPs for their programs, EPA issued a Menu of BMPs to serve as guidance. NPDES permitting authorities can modify the EPA menu or develop their own list. For more information on application requirements, see Fact Sheet 2.9.

## What Are the Implementation Options?

The rule identifies a number of implementation options for regulated small MS4 operators. These include sharing responsibility for program development with a nearby regulated small MS4, taking advantage of existing local or State programs, or participating in the implementation of an existing Phase I MS4's stormwater program as a co-permittee. These options are intended to promote a regional approach to stormwater management coordinated on a watershed basis.

## What Kind of Program Evaluation/Assessment Is Required?

Permittees need to evaluate the effectiveness of their chosen BMPs to determine whether the BMPs are reducing the discharge of pollutants from their systems to the “maximum extent practicable” and to determine if the BMP mix is satisfying the water quality requirements of the Clean Water Act. Permittees also are required to assess their progress in achieving their program’s measurable goals. While monitoring is not required under the rule, the NPDES permitting authority has the discretion to require monitoring if deemed necessary. If there is an indication of a need for improved controls, permittees can revise their mix of BMPs to create a more effective program. For more information on program evaluation/assessment, see Fact Sheet 2.9.

## For Additional Information

### Contacts

- ☞ U.S. EPA Office of Wastewater Management  
<http://www.epa.gov/npdes/stormwater>  
Phone: 202-564-9545
  
- ☞ Your NPDES Permitting Authority. Most States and Territories are authorized to administer the NPDES Program, except the following, for which EPA is the permitting authority:  

Alaska	Guam
District of Columbia	Johnston Atoll
Idaho	Midway and Wake Islands
Massachusetts	Northern Mariana Islands
New Hampshire	Puerto Rico
New Mexico	Trust Territories
American Samoa	
  
- ☞ A list of names and telephone numbers for each EPA Region and State is located at <http://www.epa.gov/npdes/stormwater> (click on "Contacts").

### Reference Documents

- ☞ EPA's Stormwater Web Site  
<http://www.epa.gov/npdes/stormwater>
  - Stormwater Phase II Final Rule Fact Sheet Series
  - Stormwater Phase II Final Rule (64 *FR* 68722)
  - National Menu of Best Management Practices for Stormwater Phase II
  - Measurable Goals Guidance for Phase II Small MS4s
  - Stormwater Case Studies
  - And many others

## **KDHE GUIDANCE FOR COMPLETION OF A STORMWATER MANAGEMENT PROGRAM DOCUMENT IN COMPLIANCE WITH THE REQUIREMENTS OF AN MS4 NPDES STORMWATER PERMIT**

### **A. General Guidance and Background**

The Municipal Separate Storm Sewer System (MS4) NPDES stormwater permits issued by KDHE require preparation of a Stormwater Management Program (SMP) document, also referred to as a stormwater management plan. The acronym SMP is used to help differentiate this plan from other plans required by NPDES stormwater permits in Kansas. Both industrial stormwater permits as well as construction stormwater general permits call for development of a Stormwater Pollution Prevention (SWP2) Plan.

The SMP documents which have been prepared by various NPDES permitted MS4 municipalities in Kansas range from documents of a few pages to documents contained in multiple three ring binders with several hundred pages. The purpose of this guidance document is to identify the requirements for an SMP document and help to avoid development of a document excessively long and detailed or too brief and unacceptable.

The SMP document should comply with the requirements of the permit and may also satisfy other needs of the permittee. As an example some SMP documents include multiyear capital improvement plans, this is not required by the MS4 permit but may be useful to the permittee. Additionally, some municipalities may have established a stormwater utility and imposed a stormwater fee for property owners. The present fee schedule and ordinance may be included in the SMP document, however, there is no requirement within the MS4 permit for the permittee to impose a stormwater utility fee nor include such documents in the SMP.

The MS4 permit should be fully read and understood prior to writing or updating the SMP document. Typically, the MS4 permits require the SMP document be drafted or updated with the intent of implementing a program designed to:

- 1) Reduce the discharge of pollutants from the MS4 to the Maximum Extent Practicable.
- 2) Fully implement the six minimum control measures as presented in the permit.
- 3) Satisfy the requirements of the permit, the Clean Water Act and Kansas surface water quality statutes and regulations.



The permit defines Maximum Extent Practicable as implementation of the Best Management Practices (BMPs) as specified in the SMP. However, failure to implement the BMP in a manner to achieve the measurable goal or failure to implement reasonable goals can constitute a failure to comply with the permit and may place the permittee in jeopardy of enforcement by KDHE. Please note, these MS4 NPDES permits are joint State of Kansas and Federal permits and the Federal Government, normally the Environmental Protection Agency, can also bring enforcement action for failure to comply with the permit. Federal regulations and the permit require implementation of BMPs to achieve improvements in stormwater quality and are expected to result in significant reductions of pollutants discharged into surface waterbodies.

There are six minimum control measures for which BMPs are to be implemented to attenuate the discharge of pollutants in stormwater. This document does not define specific BMPs and associated measurable goals which must be implemented for each permittee. Permittees have great discretion in the selection of BMPs and associated measurable goals. However, implemented BMPs should be reasonable, and effective.

The six minimum control measures (and their associated EPA Fact Sheet numbers) are listed as follows:

- 1) Public Education and Outreach (Fact Sheet 2.3)
- 2) Public Participation and Involvement (Fact Sheet 2.4)
- 3) Illicit Discharge Detection and Elimination (Fact Sheet 2.5)
- 4) Construction Site Stormwater Runoff Control (Fact Sheet 2.6)
- 5) Post-Construction Stormwater Management in New Development and Redevelopment Projects (Fact Sheet 2.7)
- 6) Pollution Prevention/Good Housekeeping for Municipal Operations (Fact Sheet 2.8)

The SMP document should at a minimum identify the associated BMPs, their goals, and the responsible party or entity tasked with implementation or maintenance of the BMP. Additional guidance and information regarding implementation of BMPs for the six minimum control measures can be obtained from EPA Fact Sheets addressing each of the measures. The Fact Sheets are available from EPA on-line, a search engine should be able to locate them by the fact sheet number, for example "Fact Sheet 2.5".

Additionally, many MS4 NPDES permits require implementation of BMPs to reduce the discharge of TMDL pollutants identified in the permit and also conduct surface water monitoring for various parameters associated with the specified TMDL pollutants. If there are no TMDL pollutants and associated impaired stream or lake identified in the TMDL table within the permit then the permit does not require either implementation of BMPs to reduce TMDL pollutants or surface water monitoring for associated parameters. In the event such BMPs and monitoring are required the SMP document should at a minimum identify the associated BMPs, their goals, the individuals or entity responsible for surface water monitoring, and a map should be included which identifies the surface water monitoring locations.

## B. KDHE Recommended Format and Items Which Should be Included in the SMP Document.

The SMP document should address the program tasks and items necessary to comply with the requirements of the permit. It may address other issues and include additional information so as to provide for the needs of the municipality. KDHE has attempted to provide as much flexibility for the permittee to develop a stormwater program which best serves the needs of the municipality and achieves compliance with the NPDES MS4 permit.

The SMP document should outline stormwater program activities, monitoring requirements, BMPs, BMP goals, reporting requirements, and responsible parties for implementing this work. The document should be sufficiently comprehensive such that if the stormwater manager discontinues employment, some other municipal staff member could review the document and understand the commitments and obligations which must be met to ensure satisfactory operation of the program and continued compliance with the MS4 NPDES permit.

Suggested elements in the document include the following:

- Table of Contents, this may be included if the document is at least moderately long, perhaps 20 pages or more. A table of contents is not required by the MS4 permit.
- An Introductory Section may be helpful to provide an overview of the MS4 permit program and the specific aspects of the local program as it presently exists. A history of how the program developed may be useful. Any such introduction is not required by the MS4 permit.
- A general section which address municipal staff responsibilities should be included. Perhaps a chain of command listing or organizational chart may be helpful. The individual or entity responsible for ensuring the program is enacted in compliance with the MS4 permit should be identified. This need not name specific staff members but simply identify the staff positions who are responsible for various aspects of implementation. This section is required by the MS4 permit.

KDHE recommends within this section a list of general permit requirements be included which may not be addressed subsequently in the document. This list may include such items, if included in the permit, as a requirement to update the SMP document (including any specific items or subjects specified by the permit), the duty to reapply for continued permit coverage prior to expiration of the present permit, update of maps, and an explanation of the management staff responsible for compliance with the stormwater management program. If a schedule of compliance is included in the permit, the schedule should be repeated here and an explanation of how compliance with the schedule will be accomplished should be provided. This entire section is not necessarily required by the permit, but some items addressed above may be required by the permit. This section is required by the MS4 permit.

- A section which addresses the six minimum control measures and specifies the BMPs which the municipality has committed to implement must be included. This section is required by the MS4 permit. Normally the BMPs are included in a table format, and the table should specify:
  1. the individual BMP,
  2. a general description of the BMP,
  3. the measurable goal the municipality commits to achieve,
  4. and the responsible staff positions and/or entities who are principally responsible for implementing and/ or maintaining the BMP.

Guidance for implementing BMPs for the six minimum control measures can be found within Fact Sheets prepared by the EPA. Six separate fact sheets, one for each control measure, are available on-line and are numbered as indicated in the list of control measures on page two. Additionally, a search for "[Stormwater Phase II Final Rule Fact Sheet Series](#)" will normally provide links to the Fact Sheets. The EPA Fact Sheets provide only guidance, they are not a portion of the enforceable NPDES MS4 permit. Review of the Fact Sheets is recommended when drafting or updating the SMP document.

This section should be organized in subsections, one for each of the six minimum control measures. Each subsection should address the BMPs which are to be implemented. In some cases individual BMPs may be repeated under multiple control measures. As an example, distribution of leaflets for public education by inserting them in the utility bills may serve to meet the obligation of implementing one of the BMPs for the Public Education minimum control measure. This same BMP may be repeated under the subsection listing BMPs for control of TMDL pollutants if a commitment to distribute a leaflet addressing proper fertilizer application to lawns is scheduled in late winter with one of the monthly utility bills. This section is required in the SMP document.

An example of a portion of a table listing a few of the BMPs for Illicit Discharge Detection and Elimination is provided on the next page as follows:

Illicit Discharge Detection and Elimination		
BMP Description	Measurable Goal	Responsible Staff
Update the Stormwater GIS map as required.	Updated Stormwater system map will be included with annual report.	Public Works GIS staff of City of Watertown.
Inspect a portion of the MS4 outfalls and their associated collection system for illicit discharges annually.	The number of MS4 stormwater outfalls at the start of the calendar year shall be documented and the number of outfalls with their associated collection system which are inspected shall be documented at the end of the calendar year.  Number of MS4 stormwater outfalls inspected by the end of the year shall equal or exceed 5% of the number of outfalls documented at the start of the year.	Public Works staff of City of Watertown.
Any spill reports received by the Public Works Department shall be conveyed to the on-call Public Works staff member for his response or consultation with municipal staff on site.	All spill reports received by the on call Public Works staff member shall be logged in and each of the logged spills (100%) shall be physically attended by the on call staff member (or his designee) or verbal guidance by the staff member/designee shall be provided to municipal staff on site. All spill reports which are logged in shall include documentation of the response.	On call Public Works staff Member City of Watertown.
Review and update the Stormwater Pollution Ordinance No XXXX every other year (even years) with an update of enforcement procedures as needed.	Ordinance reviewed and updated (if required).	Stormwater Director City of Watertown

- If a TMDL table is included in the MS4 permit with TMDL regulated pollutants listed and a listing of targeted streams and/or lakes, the BMPs for which the municipality commits to implement for reduction of the discharge of TMDL pollutants must be identified. In addition to the BMPs the associated measurable goals must also be specified. Normally this is accomplished in a table format similar to the tables addressed above with the six minimum control measures. Any specific requirements specified in the permit for reduction of TMDL regulated pollutants should be repeated in this section and an explanation of how the permittee will achieve compliance with these requirements is to be included. This section must be included if a TMDL table with TMDL pollutants listed in the table is included in the permit.
- A section should be included which addresses required permit compliance activities and scheduled milestones. These requirements are often addressed in the permit in a section titled "Permit Compliance Activities and Schedules".

- A current map of the municipality which illustrates the permit area must be included in the SMP document. These maps may need to be updated each year in conjunction with the annual report. This item is required by the MS4 permit.

## C. SUMMARY

The NPDES MS4 permits require SMP documents be drafted or updated periodically. The current version of the SMP document must be submitted with each annual report provided to KDHE. KDHE reviews the SMP documents, normally an approval letter is not provided as there is no requirement for approval. For documents which are found to be inadequate, notification to the permittee will be provided with a specific request for revision. When SMP documents are reviewed by KDHE, the items which will be checked include the following:

- 1) Review Table of Contents. A table is not required by the permit, it is only recommended at times.
- 2) Review the introductory section. This section is not required by the permit but may be included at the discretion of the permittee.
- 3) Review the general section which address managerial and operational responsibilities. Additionally, this section should address any permit requirements which are not addressed elsewhere in the SMP document. Inclusion of this section is required.
- 4) Review the section which addresses implementation of BMPs for the six minimum control measures. This section is required.
- 5) Review the section, if present, which includes a table for implementation of BMPs for reduction of TMDL pollutants. This section is to be included only if a TMDL table is included in the permit and TMDL pollutants are listed in the table along with the targeted stream(s) and/or lake(s). This section is required if the permit imposes the requirement for TMDL BMPs and surface water monitoring.
- 6) Review the section which addresses permit compliance activities and scheduled milestones. This section is required if a "Permit Compliance Activities and Schedules" section is included in the permit.
- 7) Review the current map of the permit area and confirm updates as needed. The permit area is the area for which the permittee is implementing the stormwater management program. The MS4 permit typically indicates this permit area is either the area within the municipality (normally area within corporate limits of a city) or for municipalities in an urbanized area, as defined by the U. S. Census Bureau, the

area within the permittee's jurisdiction which is also located in the urbanized area. This map is required by the permit and must be included in the SMP document. Urbanized area maps are associated with six municipalities, they are as follows:

- 1) Kansas City,
- 2) Lawrence,
- 3) Topeka,
- 4) St. Joseph, Missouri (small area in Kansas)
- 5) Wichita,
- 6) Manhattan.

Maps of urbanized areas in Kansas can be found on the KDHE Municipal Stormwater Program webpage at the following link - url:

"List of 2010 Urbanized Area Maps" <http://www.kdheks.gov/muni/ms4.htm>