City of Leavenworth, Kansas

January 1, 2020 - December 31, 2020

Kansas Permit No: M-MO12-SN01

Federal Permit No: KSR044011

February 28, 2021

RESOLUTION NO. B-2277

A RESOLUTION APPROVING THE 2020 KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT (KDHE) ANNUAL REPORT FOR STORMWATER AND AUTHORIZING THE CITY OF LEAVENWORTH, KANSAS, TO SUBMIT THE REPORT TO KDHE.

WHEREAS, the City of Leavenworth, Kansas is regulated by the Kansas Department of Health and Environment (KDHE) and the US Environmental Protection Agency (EPA) as a Phase II City for stormwater purposes; and

WHEREAS, the City of Leavenworth, Kansas has prepared the Annual Report for Stormwater as required and reviewed such report at the February 9, 2021 City Commission meeting allowing time for public review and input prior to approval by the Governing Body.

NOW, THEREFORE, BE IT RESOLVED BY THE GOVERNING BODY OF THE CITY OF LEAVENWORTH, KANSAS:

Section 1. That the 2020 Annual Report for Stormwater reflects the direction, efforts and accomplishments by City of Leavenworth for calendar year 2020. It shall be an official record of these actions to meet the requirements of Kansas Department of Health and Environment (KDHE) for an Annual Report until or unless changed by official action.

PASSED AND APPROVED this 23rd day of February 2021.

CITY OF LEAVENWORTH, KANSAS

Nancy D. Bauder, Mayor

ATTEST:

Carla K. Williamson, CMC, City Clerk

(SEAL)

February 25, 2021

Mr. Jordan A. Beck
KDHE Bureau of Water
1000 SW Jackson, Suite 420
Topeka, KS 66612-1367

RE: **2020 KDHE Report on Stormwater**
City of Leavenworth

Please find the following submitted for compliance with 2020 Annual Report for Stormwater.

- CD containing final report with signed certification and the PDF file of Leavenworth stormwater system and outfalls, and the City of Leavenworth Stormwater Management Program adopted October 27, 2020.

Please do not hesitate to call me at (913) 684-0375 if you have any questions.

Sincerely,

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

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LEAVENWORTH KS 66048-1912

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KDHE BUREAU OF WATER
1000 SW JACKSON ST
STE 420
TOPEKA KS 66612-1367

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CITY OF LEAVENWORTH

Kansas Stormwater Annual Report Form for

Municipal Separate Storm Sewer Systems (MS4)

January 1, 2020 - December 31, 2020

TABLE OF CONTENTS

Section A
Local Government Information

- DVD Submitted to KDHE
  - Copy of this Report
  - Copy of 2020 Stormwater Management Program
  - PDF of Stormwater System Showing Inlets, Outfalls and other Information

KANSAS STORMWATER 2020 ANNUAL REPORT FORM
FOR MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4)

Please place an "X" in the left box if any information has changed from previous years

☐	Permittee [Agency Name] Mailing Address 1:	City of Leavenworth
☐	Mailing Address 2:	100 N. 5th Street
☐	Municipality:	Leavenworth
	State:	Kansas
☐	Zip Code:	66048
☐	MS4 Program Contact - Person:	Michael G. McDonald
☐	Contact E-Mail Address:	mmcdonald@firstcity.org
☐	Contact Phone Number:	913-684-0375
☒	MS4 Program Construction Contact - Person	Michael T. Stephan
☒	Construction E-Mail Address:	mstephan@firstcity.org
☐	Contact Phone Number:	913-684-0375
☐	Kansas Permit Number: — Ex. M-MC21-SU01	M-MO12-SN01

Reporting period covers activities from January 1, 2020 through December 31, 2020.

This annual report must be submitted to the Kansas Department of Health and Environment (KDHE) by February 28th, 2021. The annual report is to be submitted as PDF files to KDHE preferably on a standard compact disk (CD) or digital versatile disk (DVD). If the permittee does not have the ability to provide the files in a CD or DVD, a flash drive can be submitted. Some permittees provide additional hard copy submissions of the annual report or supplemental documents along with the electronic files. There is no requirement to provide hard copies of any documents other than a simple transmittal letter.

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Item 2

- Executive Summary

SECTION 1: EXECUTIVE SUMMARY

To satisfy the requirements of the NPDES permit, this annual report summarizes the City of Leavenworth's plans and actions to reduce the discharge of pollutants from the municipal separate storm sewer system (MS4) to the maximum extent practicable, to protect water quality, and to meet the appropriate water quality requirements of the Clean Water Act. The information contained within this report was obtained through interviews with City staff, review of permits and projects from 2020, and examining communications and publications made available to the citizens of Leavenworth.

The COVID-19 Pandemic had significant impact on the City of Leavenworth activities beginning in March 2020. Ultimately, staff and the public adapted to various work-from-home options, online meetings, sudden absences of key persons and other changes in operations. City operations are still being impacted from the pandemic.

City staff pursue activities in all of the Six Minimum Control Measures throughout the year. Key observations for the purposes of this report are shown below.

- **Were there any aspects of the program that appeared especially effective at reducing pollutants in your stormwater discharge?**
    - Contractor and public compliance with implementation of the Land Disturbance Permit requirements is improved over the initial years and is generally satisfactory.
    - Street sweeping is an effective tool for removing pollutants.
    - Use of "Stormwater Utility" funds to address long-standing small to medium-sized issues has reduced erosion in several locations through the "Orange Fence Repair Projects".

- **Were there any aspects of the program that provided unsatisfactory results?**

While most items identified as BMPs (Best Management Practices) are believed to be effective at some level, the passive education and information sharing such as leaving material at the library and having informational brochures available were probably the least effective tools identified.

- **What was the most successful part of the program?**

The visibly effective measures of correctly installed construction site runoff control and post-construction activities were the most successful parts of the program.

- **What was the most challenging aspect of the program?**

The Grease Trap Program is easily the most challenging activity. Owners of Grease Traps and Interceptors are often working hard to grow their business and see City efforts to ensure compliance with regulations as a hindrance. Staff has improved compliance in this area over the last few years.

- **Describe any City/County area MS4 clean ups and the participation.**
    - City of Leavenworth usually sponsors a "City-Wide Clean Up" effort each year, but due to COVID-19 and its restrictions, this event did not take place. The City did, however, conducted its annual free paper-shredding event in August, 2020.

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- The City has created a "Three-Mile Creek" monthly clean-up program for six citizen groups that received $500 donation per group from transient guest tax dollars in 2020.

- **Describe the elected officials' participation in the stormwater pollution elimination.**

The City Commission has supported stormwater pollution elimination by creating a "Stormwater Utility" that is funded by a fee on all properties. This fee is used to address longstanding stormwater problems in the community, typically including reduction or elimination of erosion that has been causing failed roadways, culverts and streambanks. The Commission has also supported staff goal to have all public and private projects have some level of permanent water quality improvement included.

The City Commission reviewed and approved the new Stormwater Management Plan (SMP) on October 27, 2020. Staff was also direct to proceed with ordinances related to fees/fines for operation of BMP installations, construction sites, grease traps and general maintenance of permanent water quality structures.

- **Describe the collaboration with other organizations to eliminate stormwater pollution.**

The City typically coordinates a "City-Wide" clean-up day with about 35-50 groups. This event was cancelled in 2020 due to COVID; however, several groups are believed to have picked up trash in a less formal manner throughout the City. Leavenworth County provided one HHW (Household Hazardous Waste) collection service on September 5, 2020

- **If an audit/inspection of your MS4 program was conducted by EPA or KDHE during the year, list the items the audit/inspection report identified as required changes and provide a narrative explanation of how the changes were implemented or explain the plan to implement the changes and identify a target date for final implementation.**

There were no known inspections of the MS4 program by KDHE or EPA in 2020.

Item 3

- New Stormwater Resolution/Ordinances

  These are show here with title and brief description. Full documentation can be found at: https://www.leavenworthks.org/publicworks/page/engineering

  - **Policy Report No. 20-57** Review Proposed Changes to City Code Stormwater Detention, Retention & Facility Maintenance (December 15, 2020)
  - **Policy Report No. 20-54** Review Proposed Changes to City Code Grease Traps (November 17, 2020)
  - **Resolution No. B-2267** Adopting the 2020-2024 Stormwater Management Program as the Official Stormwater Management Program of the City of Leavenworth, Kansas and Replacing the 2016 Stormwater Management Program Adopted February 23, 2016. (October 27, 2020) ***Document can be found at Appendix F***
  - **Policy Report No. 20-25** Review 2020-2024 Draft Stormwater Management Program (June 2, 2020)
  - **Resolution No. B-2245** Approving the 2019 KDHE Annual Report for Stormwater and Authorizing the City of Leavenworth, Kansas, to Submit the Report to KDHE (February 25, 2020)
  - **Resolution No. B-2277** 2020 KDHE Annual Report for Stormwater (February 23, 2021)

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Item 4

- Topics Required to be Addressed in this Report as Identified in Part V of the Permit

The permittee is well advised to accurately report the conditions and status of their stormwater program and give due consideration to improving or enhancing their program where it is weak, or deficient in any of the core aspects (stormwater management program, six minimum control measures and TMDL best management practices - if applicable - also for Phase I permittees monitoring industrial facilities).

TOPICS REQUIRED TO BE ADDRESSED IN THIS REPORT AS IDENTIFIED IN PART V OF THE PERMIT

Within the next one or two pages, or perhaps more if so desired, provide comments addressing the following items:

1. ***Provide the status of compliance with permit conditions, an assessment of the appropriateness of the implemented Best Management Practices, progress towards achieving the statutory goal of reducing the discharge of pollutants to the maximum extent practicable (MEP), and the measurable goals with an indication of the progress toward meeting the goals for each of the six minimum control measures.***

   City of Leavenworth opinion is that the information shown in each of the "Six Minimum Control Measures" tables support the conclusion that meaningful reduction in discharge of pollutants has occurred over the last five years of the permit. This was especially true in 2019 and slightly reduced due to COVID in 2020.

2. ***Provide results of information collected and analyzed, (for example test results, surveys, or public comments/input) during the annual reporting period. This may include monitoring data used to assess the success of best management practices with respect to reduction in pollutant discharge. Include an interpretation of the information which addresses success or failure of the portion of the program for which the information applies.***

   The City has collected information on a wide variety of municipal activities associated with various BMPs. This includes data on street sweeping, deicing use (salt), grease trap program, land disturbance permit issuance, SSO reporting, creek crossing inspections, BMP operation (particularly detention basins) annual meeting, recycling, grass/leaf/brush disposal and others. There has been no overall "trend" noticed in this data, but it is indicative of the effort of our community to be aware of important issues related to water quality. Specific data for many of these reporting items is in the assessment of the various BMP activities for the last year. It is clear that staff, public, contractors and businesses are aware of the various permitting programs associated with the SMP, and water quality is improved and/or maintained as a result. Participation in individual programs may have been reduced during the year due to COVID.

3. ***Provide results of information collected and analyzed, if any, during the annual reporting period, including monitoring data used to assess the success of the program at reducing the TMDL regulated pollutants.***

   KDHE removed the requirement that the City sample stormwater entering and leaving the City beginning in the 2019 Calendar Year. The City does continue to sample rivers and creeks (especially for E. coli) when evaluating action for SSO events. Sampling is also done as part of the NPDES Permit for the Wastewater Plant as well as within the Sanitary Sewer System for industrial chemicals that are not easily removed with the systems in place at the WWTP.

4. ***Provide a summary of the stormwater activities that were scheduled to be undertaken during the previous calendar year and the status of these activities.***

Key programs associated with stormwater activities, all of these programs were conducted in 2020 as noted. There are many other smaller programs as well.

- ✓ Building Permits, Fills, Excavations are evaluated for needing an NOI, Land Disturbance Permit, Basic Erosion Control, SWPP and other clean water related elements
- ✓ Projects under construction are inspected and deficiencies brought to the attention of the contractor, owner or other appropriate person
- ✓ City-wide civic effort for "Spring Clean-up" - not held due to COVID-19 restrictions
- ✓ Grease Trap Program inspections and reports
- ✓ BMP annual meeting
- ✓ Street Sweeping Program - Goal of once per month on Arterials and three times per year on residential streets was met.
- ✓ Leaf Collection Program – eliminated curbside pick-up program in 2019, but retains free drop off site and collection by Refuse Service. Leaf disposal site was closed March 16, 2020 through April 27, 2020 due to COVID-19 restrictions.
- ✓ Free Drop-Off Recycling Program was closed March 16, 2020 through April 27, 2020 due to COVID-19 restrictions.
- ✓ Household Hazardous Waste Program (Coordinated with Leavenworth County) was postponed to later in 2020 due to COVID-19.
- ✓ Free drop-off refuse disposal once per month (April event was cancelled due to COVID-19 restrictions)
- ✓ Maintain "Clean-up you Dog Poop" effort at selected City parks
- ✓ Aggressive response to SSO calls 24/7
- ✓ Creek Crossing (Sanitary Sewer) Inspections at least four times each year
- ✓ Sewer line cleaning and TV program
- ✓ Stormwater articles in City newsletters

5. ***Provide a summary of the stormwater activities which are scheduled to be undertaken during the next calendar year (including an implementation schedule).***

All activities as noted in #4 are expected to be continued in 2021 as part of the Commission adopted Stormwater Management Program that incorporates these activities and others for implementation in 2021.

6. ***Provide a map showing changes in the permittee's Permit Area if the permit area has changed within the year.***

There were no changes to the City Limits in 2020.

7. ***Provide a description of significant changes in any of the BMPs.***

The City has made the following changes to BMPs in 2020:

- City-Wide Clean-up was cancelled and is expected to return post-COVID
- Leaf Collection Program – city eliminated curbside pick-up in 2019, but retains free drop off site and collection by Refuse Service. Leaf disposal site was closed six weeks due to COVID, but is now back in normal operation with appropriate safeguards.
- Recycling Center Operations and Free Saturday Drop off activities were closed six weeks due to COVID, but is now back in normal operation with appropriate safeguards.

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8. ***Provide a list of any ordinances or resolutions which were updated in the last year and are associated with the SMP. Please note, page one of this report requires submission of any new stormwater-related ordinances or resolutions, or any such updated ordinances or resolution be submitted with this annual report.***

   There were several ordinances and resolutions passed and adopted by the City Commission in 2020. Most notably was the new SMP document and establishing a fee/fine structure for erosion control, grease traps and permanent BMP maintenance. Titles and links to the documents are shown in this report. *Appendix E, Resolution No. B-2267 attached.*

9. ***Provide a list of other parties (such as other municipalities or consultants), which are responsible for implementing any of the program areas of the Stormwater Management Program.***

   There were no other municipalities or consultants involved with implementing the SMP.

10. ***For Phase I permittees only, provide a summary of the inspection results, including the wet weather surface water quality monitoring test results, and information obtained under PART III Monitoring Industrial Stormwater Discharges section of this permit.***

    KDHE has released the City of Leavenworth from sampling stormwater entering and leaving the City limits in 2019.

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Sections A, B, C & D

- KDHE Stormwater 2020 Annual Report

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SIX MINIMUM CONTROL MEASURES FOR MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4s) WITH NPDES PERMITS

The following outlines the NPDES permit requirements for implementation of the Six Minimum Control Measures as required under Kansas MS4 permits issued by the KDHE. The NPDES permit provided to the MS4 authority should be reviewed for additional requirements associated with implementation of the Six Minimum Control Measures such as deadlines for the implementation of the requirements or supplemental requirements associated with the individual measures. The general requirements are as follows:

A. Six Minimum Controls — The permittee shall develop and implement Best Management Practices (BMPs) with measurable goals for each of the six minimum control measures. The six minimum control measures and the associated requirements are listed and explained as follows:

1. **Public Education and Outreach**

   The permittee shall implement a public education program which includes distribution of educational materials to the community or conducting equivalent outreach activities which address the impacts of stormwater discharges on water bodies and the steps the public can take to reduce pollutants in stormwater runoff.

2. **Public Involvement and Participation**

   The permittee shall implement a public involvement and participation program to solicit public comment and recommendations regarding the BMPs and measurable goals utilized by the permittee to comply with the permit. The permittee shall comply with state and local public notice requirements when implementing a public involvement and participation program.

This section intentionally left blank

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3. Illicit Discharge Detection and Elimination

The permittee shall:

a. Develop, implement and enforce a program to detect and eliminate illicit discharges into the MS4.

b. Develop a storm sewer system map of the permittee's MS4, showing the location of all outfalls, either pipes or open channel drainage, showing the names and location of all streams or lakes that receive discharges from those outfalls. A copy of the map shall be submitted to KDHE. This map may be submitted as a PDF file(s) on a CD or DVD.

c. Enact ordinances or resolutions to prohibit non-stormwater discharges into the storm sewer system and implement appropriate enforcement procedures and actions if the permittee has such authority. A copy of the ordinances or resolutions shall be submitted to KDHE.

d. Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste; and

e. Develop and implement a plan to detect and address prohibited non-stormwater discharges including, but not limited to illegal dumping to the storm sewer system. Unless identified byeither the permittee or KDHE as a significant source of pollutants to waters of the state, the following examples of non-stormwater discharges are not prohibited from entering the MS4:

1. Water line flushing
2. Diverted stream flow
3. Rising groundwaters
4. Uncontaminated groundwater infiltration as defined under 40 CFR 35.2005(20) to separate storm sewers
5. Uncontaminated pumped groundwater
6. Contaminated groundwater if authorized by KDHE and approved by the municipality
7. Discharges from potable water sources
8. Foundation drains
9. Air conditioning condensate
10. Irrigation waters
11. Springs
12. Water from crawl space pumps
13. Footing drains
14. Lawn watering
15. Individual residential car washing
16. Occasional not-for-profit car wash activities
17. Flows from riparian habits and wetlands
18. Dechlorinated swimming pool discharges excluding filter backwash
19. Street wash waters (excluding street sweepings which have been removed from the street)
20. Discharges of flows from firefighting activities
21. Heat pump discharge waters (residential only)
22. Treated wastewater meeting requirements of a NPDES permit
23. Sump pump drains
24. Other discharges determined not to be a significant source of pollutants to waters of the state, a public health hazard, or a nuisance

4. Construction Site Stormwater Runoff Control

The permittee shall develop, implement, and enforce a program to reduce pollutants in any stormwater runoff to the MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. Reduction of stormwater discharges from construction activity disturbing less than one acre must be included in the program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more. The program must include the development and implementation, at a minimum, of the following:

a. Permittees which have the authority to enact ordinances or resolutions shall enact such ordinances or resolutions to require erosion and sediment controls, as well as sanctions to ensure compliance, to the extent allowable under State and Local law,

b. Requirements for construction site owners or operators to implement appropriate erosion and sediment control best management practices,

c. Requirements for construction site owners or operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that are likely to cause adverse impacts to water quality,

d. Procedures for site plan review which incorporate consideration of potential water quality impacts,

e. Procedures for receipt and consideration of information submitted by the public,

f. Procedures for site inspection and enforcement of control measures.

5. Post-Construction Stormwater Management in New Development and Redevelopment Projects

The permittee shall develop, implement, and enforce a program to address post-construction stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development and implementation, at a minimum of the following:

a. BMPs to prevent or minimize adverse water quality impacts,

b. Strategies which include a combination of structural and/or non-structural BMPs appropriate for the municipality,

c. For permittees which have the authority, ordinances or resolutions to address post-construction runoff from new development and redevelopment projects to the extent allowable under state and local law,

d. Ensure adequate long-term operation and maintenance of BMPs.

6. Pollution Prevention/Good Housekeeping for Municipal Operations

The permittee shall develop and implement an operation and maintenance program that includes employee training to prevent and reduce stormwater pollution from municipal operations activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance.

B. Stormwater Management Program

Please place an "X" in the left boxes to complete the table below.

YES	NO	N/A	
☒	☐	☐	Has the Stormwater Management Program (SMP) been developed and implemented?
☒	☐	☐	Has the SMP been modified or updated during this reporting period?
☐	☒	☐	If the answer to question 2 above was "yes," has the modified SMP been submitted to KDHE for review? It is included with this report.

If the answer to item 3 is a "NO," a copy of the updated SMP must be submitted with this annual report. If it is anticipated a measurable goal cannot be met in the next year, the SMP should be modified and submitted to KDHE for review. The modifications may include different BMPs and/or revised goals to avoid being in a position of non-compliance. However, reasonable BMPs with reasonable goals must be implemented or KDHE may require the permittee to modify the SMP to include additional or better BMPs and/or more reasonable goals.

C. Total Maximum Daily Load (TMDL) Best Management Practices (BMPs)

Some permittees are required to implement BMPs to reduce the discharge of listed TMDL regulated pollutants (potentially any or all of the following pollutants – bacteria, nutrients, and sediment)

Please place an "X" in the left boxes to complete the table below.

YES	NO	N/A	
☐	☐	☒	Were any BMPs intended to attenuate the discharge of TMDL regulated pollutants implemented? See your permit to determine if TMDL regulated pollutants are listed for the receiving stream affected by your stormwater system (TMDL Table).
☐	☐	☒	List all of the BMPs intended to attenuate the discharge of TMDL regulated pollutants as identified in the SMP and provide the requested information in the following table.

List all the TMDL BMPs as identified in the SMP and provide the requested information in the following table.

D. TMDL BMP Table — Please fill out accordingly

BMP ID NUMBER	BRIEF BMP DESCRIPTION	REGULATED TMDL PARAMETERS	MEASURABLE GOAL(S)	PROGRESS ACHIEVING GOAL(S) (MEASURED RESULT)

City Not Required to Report

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Section E

- Stormwater Management Program Requirements (Sections E1 - E6)

Stormwater Management Program Requirements (Six Minimum Control Measures)

1. Public Education and Outreach (Table) - Please fill out accordingly

List all of the public education and outreach BMPs as identified in the SMP and provide the requested information in the following table. (List presentations and media)

BMP ID NUMBER	BRIEF BMP DESCRIPTION	MEASURABLE GOAL(S)	PROGRESS ACHIEVING GOAL(S) (MEASURED RESULT)
1.1	Webpage link to stormwater infrastructure information – City Stormwater Management Program, Stormwater Guidelines, 2019 Stormwater Permit.	# of visitors – in June 2019 the City switched to a new website that monitors views since the switch. The new site had 819,022 views, with 32,440 views on the Solid Waste Division page and 6,942 views on the Brush Site page during the reporting period.	All previous permits and annual reports are available online at the City's webpage. Posted are brochures listing steps to slow down or stop soil erosion. Brochures can be found at: https://www.leavenworthks.org/publicworks
1.2	Place documents in public library.	# Check-out requests – Unknown	All items available in the reference section at the public library. No check out requests are known.
1.3	Include articles or stories related to stormwater in City newsletter in at least two issues per year.	# Articles/Stories – 6 articles from the 2 issues in 2020 can be found at: https://www.leavenworthks.org/citymanager/page/public-information-office # Issues – 2 issues of City Connection delivered in 2020, and the link is: https://issuu.com/melissabower	Coordination between Public Information Office and Public Works has stories on the City's stormwater project/programs. From the Parks Division: Legacy Trees, Adopt-a-Park - all can be found at this link: https://www.leavenworthks.org/parksrec Due to COVID-19 and its restrictions, there was no Spring Cleanup; however, a Community Paper Shredding Even & Household Hazardous Waste drop off was held during the City's Free First Saturday on September 5, 2020.
1.4	City-generated posts on social media related to stormwater issues at least ten occurrences per year.	# Posts - 35	Public Information Office interacts with the public on social media on a wide range of stormwater-related issues. Two examples of social media posts can be found at BMP 1.4.
1.5	Provide information to citizens regarding the City of Leavenworth Solid Waste Division.	Distribute trash bags to citizens with proper disposal handout.	The City continues to provide citizens with information via the City website, handouts, and a recycling coach app. A paper insert with solid waste and other City information is provided to the doorstep of nearly all residences twice per year in a roll of trash bags. The City also utilizes free notification space on monthly residential water billing for trash bag delivery that falls one month prior to the event, twice per year, and a "Recycle Coach App" to assist residents with refuse issues.
1.6	Show stormwater information on local cable TV station.	Broadcast community forums in which continued water quality discussions take place. There were 14 City Commission meetings (study sessions and regular meetings) during the course of the year that specifically discussed stormwater. These meetings can be viewed on the City's channel cable TV station and YouTube.	Public Information Office broadcasts City Commission Meetings, Planning Commission Meetings and others on City channel cable TV which began live broadcast online in 2017. The list of meetings can be found at Appendix D, BMP 1.6 & 2.1.

E. SMP Requirements (Six Minimum Control Measures) (Continued)

2. Public Involvement and Participation (Table) - Please fill out accordingly

List all of the public improvement and participation BMPs as identified in the SMP and provide the requested information in the following table. (List all associated and partnerships)

BMP ID NUMBER	BRIEF BMP DESCRIPTION	MEASURABLE GOAL(S)	PROGRESS ACHIEVING GOAL(S) (MEASURED RESULT)
2.1	Hold public information meetings regarding stormwater issues.	Annual review by City Commission of Stormwater Annual Report – YES. Review of stormwater projects in annual Capital Improvement Plan - YES.	City Commission reviewed KDHE annual stormwater report February 25th, 2020. The meetings were also broadcast on the City's channel cable TV station and YouTube. City Commission reviewed stormwater projects for CIP in 2020 and approved design and construction of several projects. See listing in appendix D for 2.1 & 1.6.
2.2	Create an "Adopt a Stream Program"	# Streams adopted - None # Streams cleaned – 6 (See notes)	The City's "Three-Mile Creek" monthly clean-up program had six citizen groups that received $500 donations per group from transient guest tax dollars in 2020.
2.3	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. - Ongoing	Public Information Office continues a robust social media program for all City issues. Posted information on other efforts such as detention ponds, creek bank erosion, and water quality issues improves as staff skills increase. Additionally, the many ways to slow down or stop soil erosion can be found in erosion control brochures which can be found at: https://www.leavenworthks.org/publicworks
2.4	Annual Citywide Clean-Up Program.	# Groups - N/A # Participants - N/A	Due to COVID-19 and its restrictions, this event did not take place.
2.5	Customer surveys – conduct at least one survey each year on stormwater related issues in an on-line environment.	# of responses – N/A	No survey was conducted in 2020 as surveys in previous years have resulted in extremely limited responses.
2.6	Encourage groups to participate in activities such as inlet stencil program and similar.	# Groups – None # Programs – None	Due to COVID-19 and its restrictions, this event did not take place.

E. SMP Requirements (Six Minimum Control Measures) (Continued)

a. Illicit Discharge Detection and Elimination

Please place an "X" in the left boxes to complete the table below.

YES	NO	N/A	
☒	☐	☐	Has a program/plan been developed and is it presently implemented to detect and address illicit/prohibited discharges into the MS4?
☒	☐	☐	Has a map of the MS4 been developed, showing the location of all outfalls, either pipes or open channel drainage,showing names and location of all streams or lakes receiving discharges from the outfalls?
☐	☒	☐	The permit may require the permittee enact ordinances, or resolutions. Have ordinances, or resolutions, or regulations to prohibit non-stormwater discharges into the storm sewer system been enacted? Effective date:
☐	☒	☐	Have the ordinances, resolutions, or regulations been modified? Effective date:

List all the Illicit Discharge Detection and Elimination BMPs as identified in the SMP and provide the requested information in the following table

This section intentionally left blank

25

E. Stormwater Management Program Requirements (Six Minimum Control Measures)

3. Illicit Discharge Detection and Elimination (Table) - Please fill out accordingly

List all of the illicit discharge detection and elimination BMPs as identified in the SMP and provide the requested information in the following table.

BMP ID NUMBER	BRIEF BMP DESCRIPTION	MEASURABLE GOAL(S)	PROGRESS ACHIEVING GOAL(S) (MEASURED RESULT)
3.1	Inspect complaints of illicit discharge.	Inform public of methods to communicate concerns regarding illicit discharges - YES # Reports investigated – in 2020 there were 154 total incoming calls regarding sewer issues: WPC: 28, Public Works: 12, Street: 1, Citizens: 113.	Public Information Officer has created social media space for complaints. Other calls are forwarded to WPC for evaluation and possible action. 24/7 "real person" phone answering service can dispatch City forces for emergencies during off-duty hours.
3.2	Update stormwater outfall maps.	Continue efforts to accurately locate and measure existing and new stormwater infrastructure.	City maps are updated constantly. The GIS staff and the stormwater crew assist in obtaining accurate measurements and locations. In 2016 the maps were made available online to the public. The GIS link is: https://gis.firstcity.org
3.3	Inspect outfalls	# Outfalls inspected – over 1,826 inlets and drains were inspected. No specific notation on "outfall".	Continued effort by the stormwater crew has inspected infrastructure throughout the year as part of their routine work and for the GIS staff. Additionally, stormwater crew inspects for pollution evidence either entering or exiting the area. See also BMP 6.4.
3.4	Collect yard waste at City composting facility.	# Customers: for 2020, Grass – 181, Leaves - 1,505.	City provides free drop off of yard waste for composting. There may be slight overlap with #3.5. Note: Due to COVID-19, the brush site and recycling center were closed from March 16 - April 27, 2020.
3.5	Collect tree and brush debris at brush disposal site.	# Customers – 2,011 for 2020. (1,077 on free Saturdays, 934p on other days).	City provides a KDHE-approved site for drop off of tree and brush debris for disposal through a combination of mulching, composting and burning. Note: Due to COVID-19, the brush site and recycling center were closed from March 16 - April 27, 2020.
3.6	Collect household hazardous waste (HHW) as part of Citywide clean-up event.	# Pounds of household hazardous waste recycled – approximately 4,310 lbs.	City residents are directed to Leavenworth County facility during most of the year. Citywide clean up accepts HHW at MSC; however, this event was cancelled due to COVID-19. One HHW event was held later in 2020.
3.7	Conduct free disposal. Saturdays (first Saturday)	# Events - 11 # Tons collected – 249.75 (trash)	The free Saturdays are well attended; however, volume of recycling material is not weighed separately.
3.8	Staff training	# of staff trained – 2 staff participated in 19 online training opportunities.	Due to COVID-19, there was no in-person training held.
3.9	Storm sewer maintenance and inspection.	Provide dry weather storm sewer inspection. - YES.	Two-person crew inspects stormwater structures and works with GIS staff. City began development of stormwater inspection "app" in 2019.

3.10	...spection of sanitary sewer systems.	Inspect residential and commercial sanitary systems for improper discharge into storm drains. - YES Inspect sanitary sewer system to reduce number and volume associated with SSO - YES Coordinate SSO events between wastewater staff, building officials and engineering. - YES	City operates CCTV of sewer and storm sewer systems throughout the year. Approximately 44.7 total miles of sanitary sewer lines were cleaned in 2020. City inspected 8.7 miles of sanitary sewer and .56 miles of storm sewers with CCTV. City completed $89,194.87 in work within the sanitary sewer system in 2020 to reduce Inflow and Infiltration to and from the storm sewer system. The WPC staff's aggressive response to SSOs greatly improved coordination between wastewater staff and building inspection staff on review and resolution of SSO events.
3.11	Commercial Grease Trap Inspection Program	Review status of commercial grease traps through record review and physical inspection – YES. Draft ordinances reviewed.	An aggressive Grease Trap Inspection Program has improved participation and recordkeeping from the approximately 70 entities required to have a grease trap. At least 44 different installations were visited by City staff in 2020 as a result of this program, and 2 establishments/businesses that had grease traps closed, and one changed ownership during the reporting period. A summary of this program for 2020 can be found at the appendix for BMP 3.

E. SMP Requirements (Six Minimum Control Measures) (Continued)

b. Construction Site Stormwater Runoff Control

Please place an "X" in the left boxes to complete the table below.

YES	NO	N/A	
☒	☐	☐	The permit requires the permittee, if they have such authority, to enact ordinances or resolutions. Have ordinances or resolutions to address construction site runoff from new development/redevelopment projects been enacted? Effective date: 12/23/2016
☒	☐	☐	Has a copy of the ordinances or resolutions been submitted to KDHE as required by the permit?
☒	☐	☐	Has a procedure or program been developed requiring construction site owners and/or operators to implement appropriate erosion and sediment control best management practices?
☒	☐	☐	Has a procedure or program been developed requiring construction site owners and/or operators to control waste such as discarded building materials, concrete truck washout, chemicals, paint, litter, and sanitary waste atconstruction sites likely to cause adverse impacts to water quality?
☒	☐	☐	Has a procedure been developed and implemented requiring site plan review which includes consideration of potential water quality impacts?
☒	☐	☐	Has a procedure been developed for the receipt andconsideration of information submitted by the public?
☒	☐	☐	Has a procedure been developed and implemented forconstruction site inspection and enforcement of the control measures?

List all the construction site stormwater runoff control BMPs as identified in the SMP and provide the requested information in the following table.

E. Stormwater Management Program Requirements (Six Minimum Control Measures)

4. Construction Site Stormwater Runoff Control (Table) - Please fill out accordingly

List all of the Site Stormwater Runoff Control BMPs as identifies in the SMP and provide the requested information in the following table.

BMP ID NUMBER	BRIEF BMP DESCRIPTION	MEASURABLE GOAL(S)	PROGRESS ACHIEVING GOAL(S) (MEASURED RESULT)
4.1	Construction drawing plan review and site runoff control.	# Plans reviewed – 86 (74 were construction and 12 were development). # LDPs issued - 86 (66-residential, 8-commercial construction, 12-site development/utility work.)	All development projects were reviewed related to installation of appropriate BMPs. All construction projects were reviewed to ensure adequate BMPs were included in the work to prevent erosion runoff.
4.2	Publish updated standard details and design criteria for erosion control.	Make available on-line - YES Review annually with staff – no formal meeting; however, staff has met informally throughout the year.	Discussed with the Development Review Committee (DRC) and with the designers.
4.3	Staff training on runoff inspection.	# Inspectors trained – Staff; see section 3.8.	Due to COVID-19, there was no in-person training held.
4.4	Inform local contractors of LDP.	Annual notification of LDP requirements - YES LDP documents available online - YES	Contractor's LDPs are regularly inspected and contractors are informed of any deficiencies. LDPs were discussed when the permit was issued. A completed LDP example can be found at BMP 4 - Land Disturbance Permit Applications.
4.5	Pre-construction meetings with owner and contractor - require meetings with owner and contractor prior to commencement of grading operations.	# Meetings – 13 (City projects)	All City-funded projects have a pre-construction conference. Development projects typically meet at the Development Review Committee where BMP requirements are discussed and then incorporated into the plans. City has no requirement that private development have a pre-con with the City.
4.6	Construction site inspection and enforcement - increase the frequency of inspections and communications back to owner/contractor.	Documentation of inspections – YES 534 total inspections were conducted in 2020; including detention basin inspections.	Extensive documentation of site visits (both random and after rainfall) are included in each project file. This includes City and development projects, and individual LDP inspections (such as home construction).

E. SMP Requirements (Six Minimum Control Measures) (Continued)

c. Post-Construction Site Stormwater Management in New Developmentand Redevelopment

Please place an "X" in the left boxes to complete the table below.

YES	NO	N/A	
☒	☐	☐	The permit requires the permittee, if they have such authority, to enact ordinances or resolutions. Have ordinances or resolutions to address construction site runoff from new development and redevelopment projects been enacted? Effective date: 12/23/2016
☒	☐	☐	Has a copy of the ordinances or resolutions been submitted to KDHE as required by the permit?
☒	☐	☐	Has a post-construction stormwater runoff program been implemented?
☒	☐	☐	Have post-construction sites been inspected?
☒	☐	☐	Are BMPs specified to minimize adverse water quality impacts?
☒	☐	☐	Have strategies been developed to include a combination of structural and/or non-structural BMP appropriate for the municipality?
☒	☐	☐	Have measures been implemented to ensure adequate long-term operation and maintenance of structural BMPs?

List all the post-construction site stormwater management in new development and redevelopment BMPs as identified in the SMP and provide the requested information in the following table.

This section intentionally left blank

30

E. Stormwater Management Program Requirements (Six Minimum Control Measures)

5. Post-Construction Site Stormwater Runoff Control (Table) - Please fill out accordingly

List all of the post-construction site stormwater runoff BMPs as identified in the SMPs and provide the requested information in the following table.

BMP ID NUMBER	BRIEF BMP DESCRIPTION	MEASURABLE GOAL(S)	PROGRESS ACHIEVING GOAL(S) (MEASURED RESULT)
5.1	Construct sediment vane traps on new and reconstructed inlets.	# Inlets - 20	Sediment traps were installed on new and replacement inlets on various projects.
5.2	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 - 0 # Tracts from tax sale - 0 # Acres acquired/year – 2.43	Property on NE corner of 3rd and Olive for future detention pond.
5.3	Enforce post construction runoff control ordinance.	#LDP releases – 60 Documentation of inspection and communication – YES.	LDPs are closed out when the danger of off-site erosion has been eliminated though either vegetation or other means. This is documented in the various permits. Several LDPs are still open through 2020 - 4 from 2017 and 5 from 2019.
5.4	Conduct long-term BMP maintenance inspections.	Documentation of inspection and communication - YES. City spent 65 hours conducting inspections of selected sites on random, after rainfall, or with depth-recording equipment.	City continues outreach to detention basin BMP owners. A meeting was held on January 30, 2020 with 10 attendees where they were given a packet with the meeting's agenda and a basic overview of detention basin maintenance. The packet also included examples of an emergency spill plan and an inspection form. This effort will continue and expand. Currently there are 68 BMP sites.
5.6	Analyze existing structural BMP performances at selected sites (particularly detention basins).	# Sites evaluated – 2	City installed depth-recording devices in locations in 2020. This is to facilitate evaluation of performance. Selected graphs and charts are shared informally with interested parties via email. Examples can be found at Appendix **D.**
5.7	Measure rain gauge and creek depth to evaluate flow quantity and duration from at least March – October.	# Rain gauges - 4 # Stream gauges - 5	City continues to maintain rain and creek monitors. The City also collaborates with other local governments on an extended rain gauge network. Selected graphs and charts are shared informally with interested parties via email.

31

E. SMP Requirements (Six Minimum Control Measures) (Continued)

d. Municipal Pollution Prevention/Housekeeping

Please place an "X" in the left boxes to complete the table below.

YES	NO	N/A	
☒	☐	☐	The permit requires the permittee to enact a program to address pollution prevention/good housekeeping for Municipal Operations. Has such a program been enacted?

List all the municipal pollution prevention/housekeeping BMPs as identified in the SMP and provide the requested information in the following table.

This section intentionally left blank

32

E. Stormwater Management Program Requirements (Six Minimum Control Measures) (CONTINUED)

6. Municipal Pollution Prevention / Housekeeping (Table) - Please fill out accordingly

List all of the municipal pollution prevention / housekeeping BMPs as identified in the SMPs and provide the requested information in the following table.

BMP ID NUMBER	BRIEF BMP DESCRIPTION	MEASURABLE GOAL(S)	PROGRESS ACHIEVING GOAL(S) (MEASURED RESULT)
6.1	Review City facilities for water quality concerns and develop plans to address them, goal is at least three facilities per year.	# Reports prepared: 0 design reports were completed.	2 sites with enhanced water quality - City Hall parking lot & Thornton Street were constructed in 2020.
6.2	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 – exceeded annual goals - met goal of 3 monthly sweepings. # Times completed collector/arterial sweeping – exceeded annual goals - met goal of 3 monthly sweepings. # Miles of streets swept – 2,400 # Pounds of debris removed – 532.67 tons.	Street sweeping program operations continued throughout the year. There are 2 sweepers. Equipment repair and turnover reduced effectiveness also.
6.3	Snow removal operations - use ground speed control and GPS equipment to keep salt use within guidelines.	# Tons of salt used per year - 490 # Pounds per lane mile per storm – 419 lbs/lane-mile average for 2020.	Use of ground speed control resulted in application rates between 256 & 551 lbs/lane-mile.
6.4	Stormwater inlet cleaning.	# Inlets – 667	Stormwater crew inspected and/or maintained approximately 4,761 inlets, and cleaned 667 area drains and other stormwater facilities. See also 3.3.
6.5	Continue Citywide Leaf Collection Program.	Program was modified in 2019. COVID-19 precautions closed leaf disposal area between mid-March and late-April.	Leaf Collection Program – modified by eliminating curbside leaf pick-up in 2019, but retained free drop off site and collection by Refuse Service.

Section F

No Surface Water Testing Required in 2020

Section G

Certification

35

Certification

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violation."

Signature of Permittee: _____ **Date Signed:** 2-24-21

(Legally responsible person)

Name Printed: Paul Kramer **Title:** City Manager

10 CFR 122.22 Signatories to permit applications and reports.

(a) Application. All permit applications shall be signed by either a principal executive officer or ranking elected official.

All reports required by permits, and other information requested by the Director shall be signed by a person described in paragraph (a) of this section, or by a duly authorized representative of that person.

Please note the submission requirements on page 1. Submit this report to:

KANSAS DEPARTMENT OF HEALTH & ENVIRONMENT

Municipal Programs Section

100 SW Jackson Street, Suite 420

Topeka, Kansas 66612

Appendix A
Summary of Sampling Data

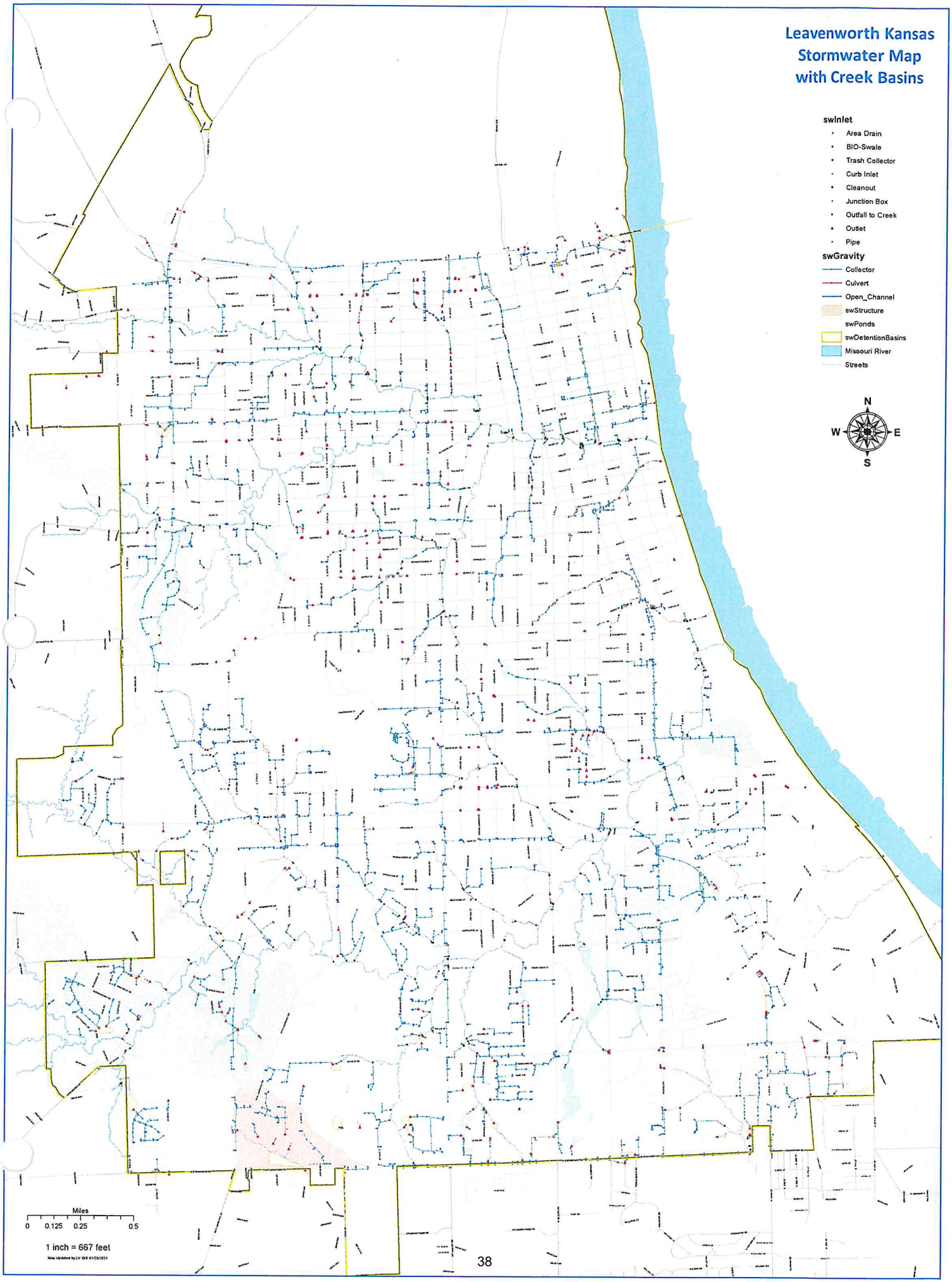
- City was released from water quality sampling requirements beginning in 2019.

- Leavenworth Basin Map showing
  - Leavenworth Gauge Locations
    - 3-Mile Creek
    - 5-Mile Creek
    - 2nd & Chestnut
    - Cheyenne west of 14th Street
    - Grand Avenue west at Ironmoulders
  - BMP Performance Measuring Sites

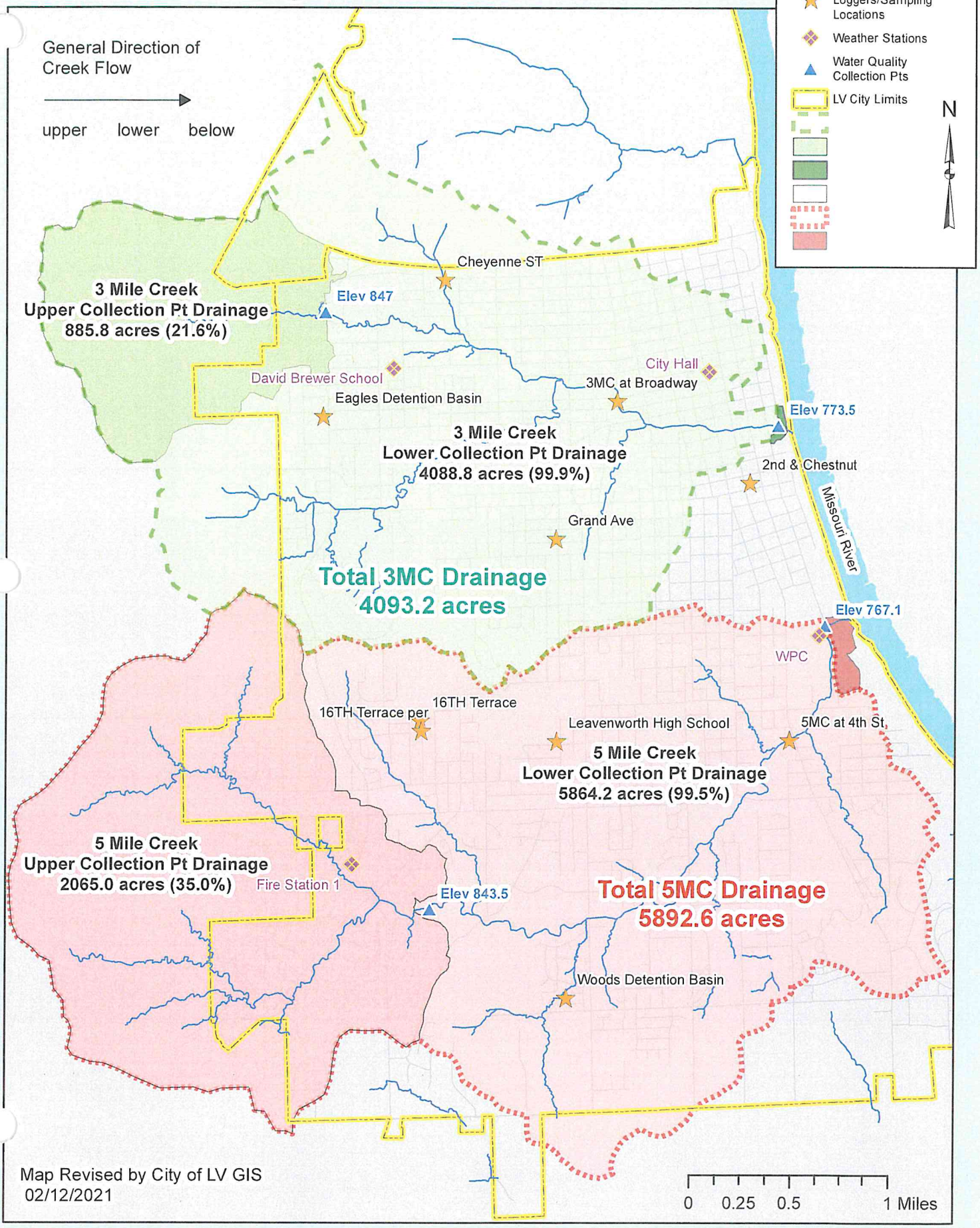
    (There were very few high rainfall event days in 2020. Staff was able to evaluate performance at the following sites. Please note that "Eagles" never produced sufficient depth to record meaningful data.)

    - 16th Terrace
    - Eagles
- Weather Summary - 2020 City Hall Monthly Summary

37


Leavenworth Kansas
Stormwater Map
with Creek Basins
swInlet
Area Drain
BIO-Swale
Trash Collector
Curb Inlet
Cleanout
Junction Box
Outfall to Creek
Outlet
Pipe
swGravity
Collector
Culvert
Open_Channel
swStructure
swPonds
swDetentionBasins
Missouri River
Streets
N
W
E
S
Miles
0 0.125 0.25 0.5
1 inch = 667 feet

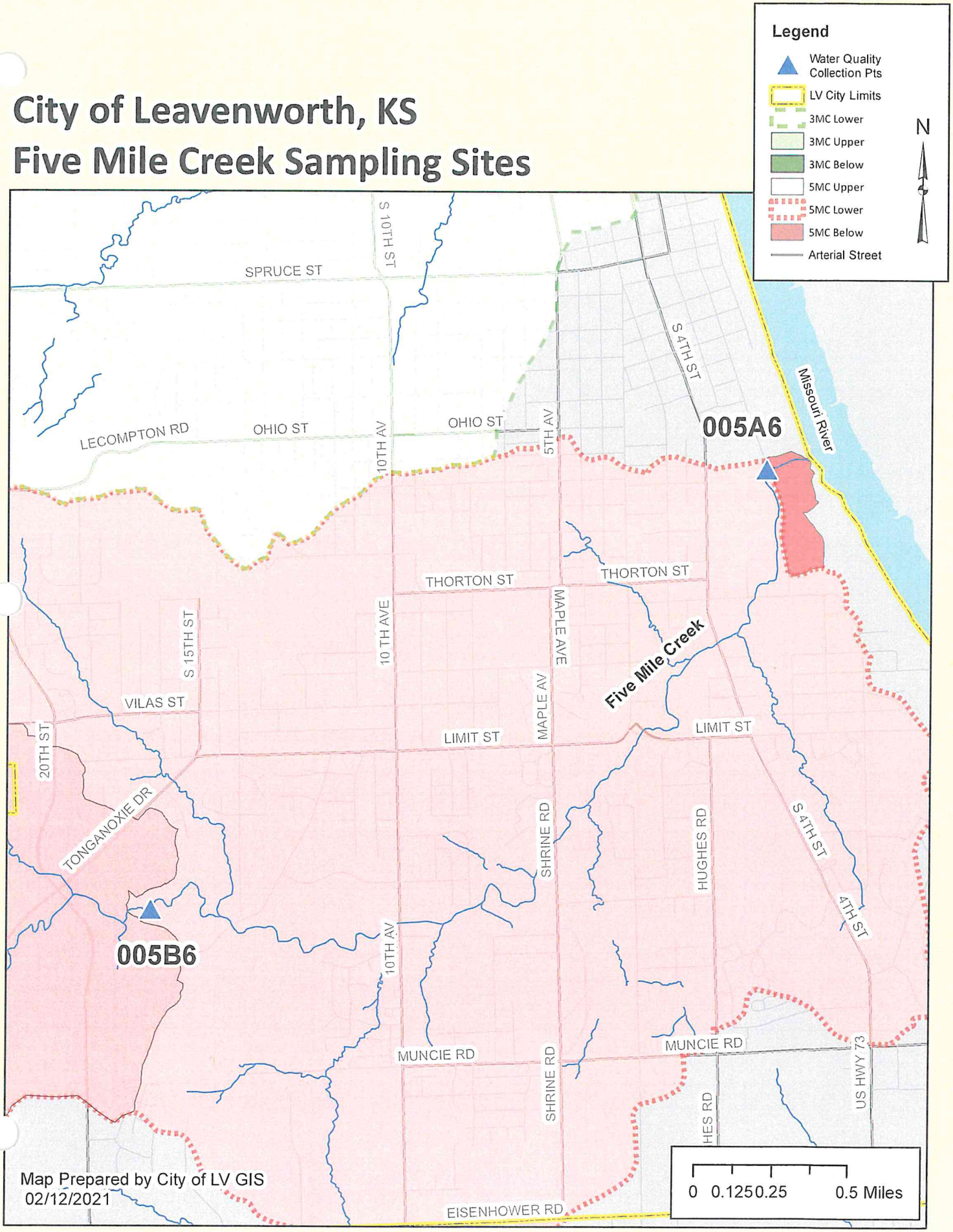
City of Leavenworth, KS
Stormwater Management Data Collection



City of Leavenworth, KS
Three Mile Creek Sampling Sites

Map Prepared by City of LV GIS
02/12/2021

City of Leavenworth, KS
Five Mile Creek Sampling Sites



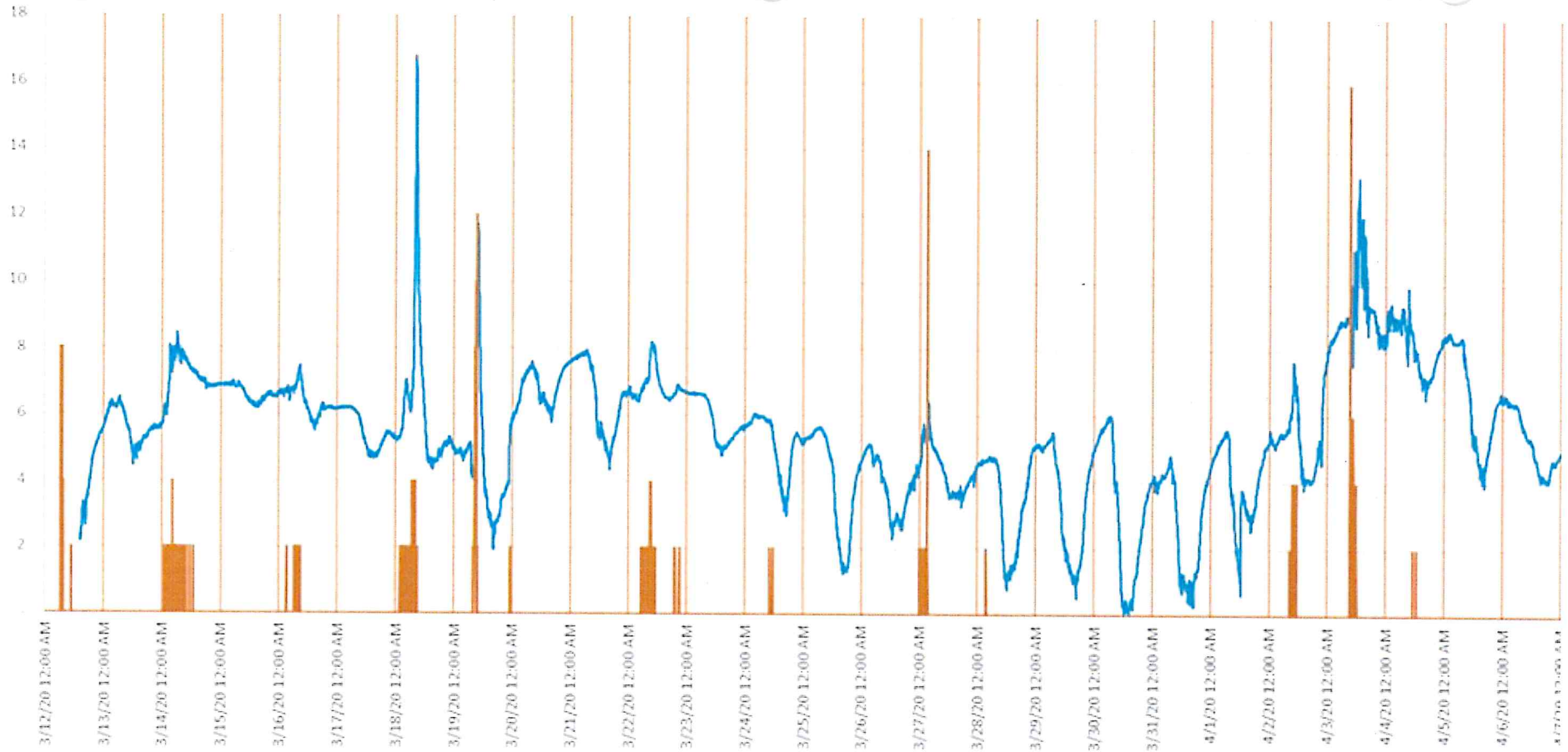
Mike McDonald

From: Mike McDonald
Sent: Tuesday, April 14, 2020 4:42 PM
To: 'Amy D. Kliewer (kliewerad@cdmsmith.com)'; 'Angie Morgan (angie.morgan@glmv.com)'; Barry Smith; 'brett@napiereng.com'; 'Brian Hill PE (bhill@mkec.com)'; 'Buchanan, Kimberly'; Chuck Staples; 'Clint Robinson'; 'Cmagaha@leavenworthcounty.org'; 'Curtis Talcott P.E. (ctalcott@ric-consult.com)'; 'dave.stokka@usd453.org'; David Griffith; 'David Nolte (david.nolte@ibhc.com)'; 'dbparke@transystems.com'; 'Dedeke, Matt'; 'Donald W. Baker P. E. D. WRE CPESC (DBaker@wrs-rc.com)'; 'Gene Myracle'; 'greg@lexeco.com'; Hal Burdette; 'HensonJ@bv.com'; 'Jerry Richardson'; 'Joel Mahnken'; 'John Spell'; 'Jonathan Wiles (jwiles@wycokck.org)'; 'Joshua L. Erhart (jerhart@dlrgroup.com)'; Justin Stewart; 'Katie Schleicher (kschleicher@trekkllc.com)'; 'Katy Steinbacher'; 'Ken Miller'; 'Kevin.gullett@usd453.org'; 'Kyle Kosovich'; 'lauren@lexeco.com'; 'lcmadsen@transystems.com'; Manuel Carrera; 'Mark Wade'; 'Matt Harper (MHarper@wrs-rc.com)'; 'Matthew Jones (mjones@libertymo.gov)'; Melissa Bower; 'Michael Winckler'; Mike Hooper; 'Mike McDonald (Home)'; 'Mike Smith, Water Resources Solutions'; 'Mike Spickelmier (mspickelmier@lansing.ks.org)'; 'patzwald@sbcglobal.net'; 'Randy Gorton (randall.gorton@ibhc.com)'; Sara Croke; 'Sarah Rose Shafer (sarah@sarahrosehenke.com)'; 'Sauer, Andrew N'; 'Severns, Billy'; Steve Grant; 'Tammy Snyder (tsnyder@cityofshawnee.org)'; 'thomasvmorey@yahoo.com'; Tim Guardado; 'Viktor Hlas'; 'Young, Patrick'
Subject: 16th Terrace - Detention Pond March 2020

We are providing data for this site as we get it to the designer, who actually appreciates it!

This was pretty small potatoes for rain - but you have to practice to make sure the data collection process is working

Pretty impressed with the system we have established – these data loggers make life a LOT easier than the "Good Old Days" of Stevens Type F, SigmaMotor air bubblers, etc.


18
16
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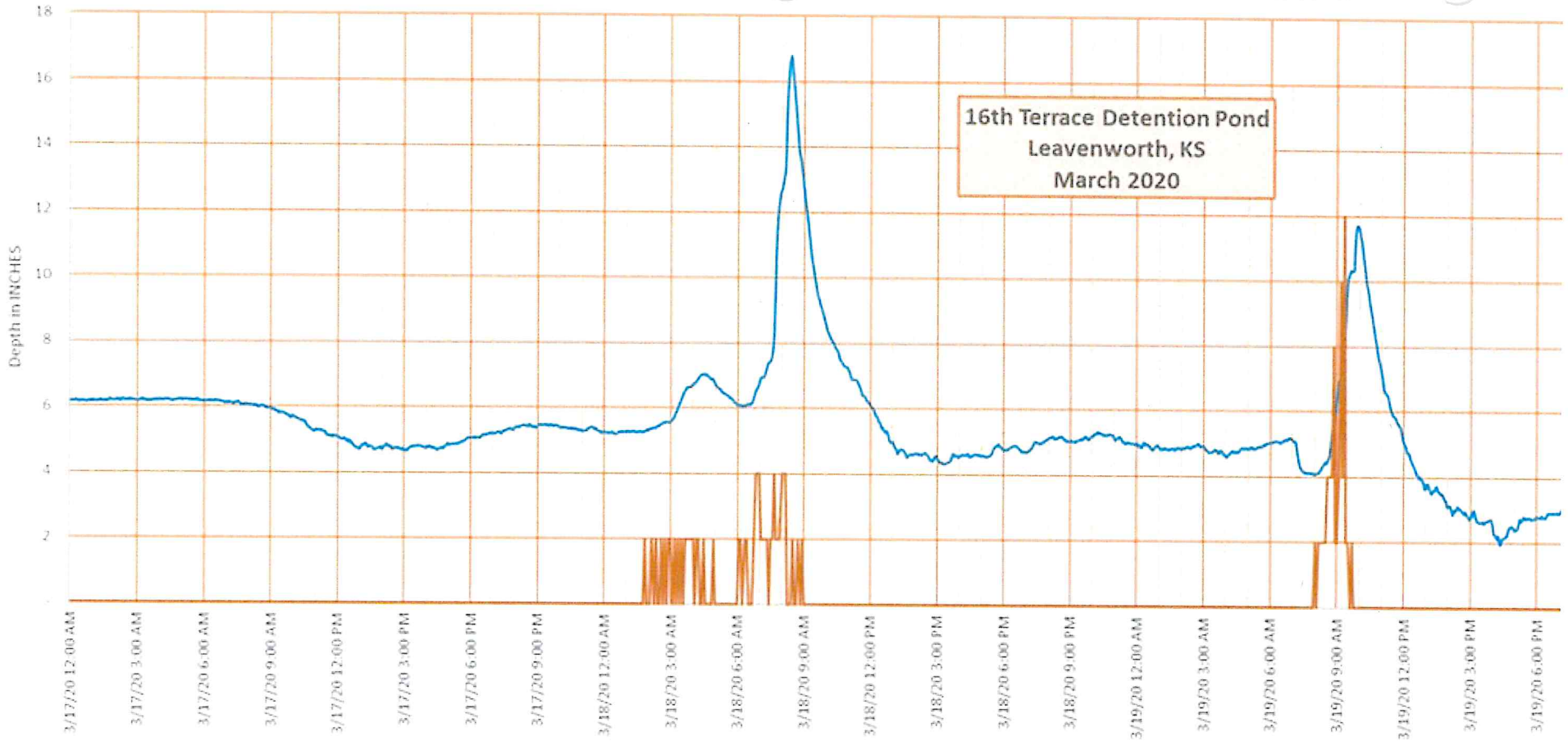
16th Terrace Detention Pond
Leavenworth, KS
March 2020
Depth in INCHES
18
16
14
12
10
8
6
4
2
3/17/20 12:00 AM
3/17/20 3:00 AM
3/17/20 6:00 AM
3/17/20 9:00 AM
3/17/20 12:00 PM
3/17/20 3:00 PM
3/17/20 6:00 PM
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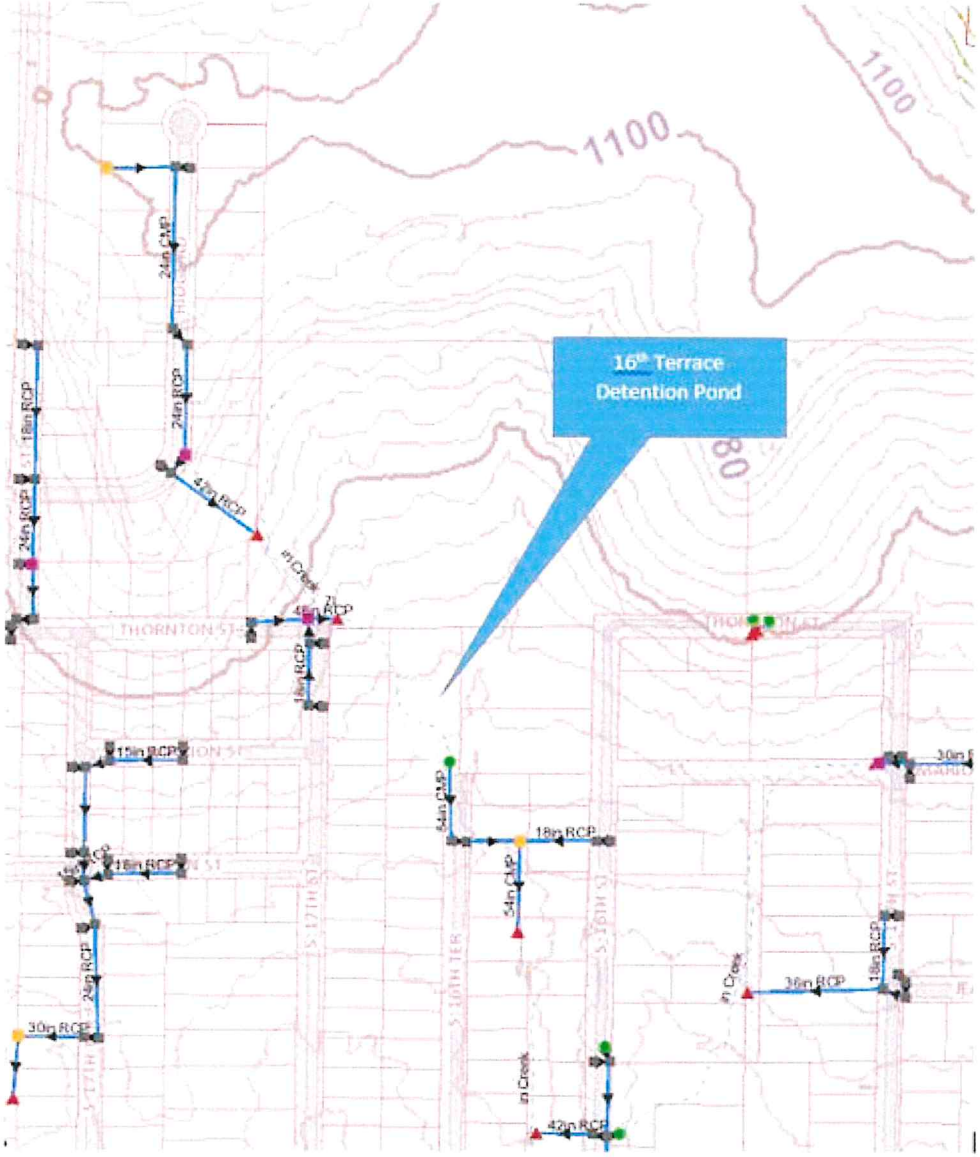

16th Terrace
Detention Pond
1100
1100
24in CMP
24in RCP
18in RCP
24in RCP
42in RCP
48in RCP
18in RCP
15in RCP
18in RCP
24in RCP
30in RCP
54in CMP
18in RCP
54in CMP
42in RCP
36in RCP
18in RCP
30in RCP

Mike McDonald

From: Mike McDonald
Sent: Monday, July 20, 2020 10:50 PM
To: Amy D. Kliewer (kliewerad@cdmsmith.com); Angie Morgan (angie.morgan@glmv.com); Barry Smith; brett@napiereng.com; Brian Hill PE (bhill@mkec.com); Buchanan, Kimberly; Clint Robinson; Cmagaha@leavenworthcounty.org; Curtis Talcott P.E. (ctalcott@ric-consult.com); dave.stokka@usd453.org; David Nolte (david.nolte@ibhc.com); 'dbparke@transystems.com'; Dedeke, Matt; Donald W. Baker P. E. D. WRE CPESC (DBaker@wrs-rc.com); Gene Myracle; greg@lexeco.com; Hal Burdette; HensonJ@bv.com; Hilary Zerr (hilary@davidsonae.com); Jerry Richardson; Joel Mahnken; John Spell; Jonathan Wiles (jwiles@wycokck.org); Joshua L. Erhart (jerhart@dlrgroup.com); Justin Stewart; Katie Schleicher (kschleicher@trekkllc.com); Katy Steinbacher; Kayla Manning; Ken Miller; Kevin.gullett@usd453.org; Kyle Kosovich; lauren@lexeco.com; 'lcmadsen@transystems.com'; Manuel Carrera; Mark Wade; Matt Harper (MHarper@wrs-rc.com); Matthew Jones (mjones@libertymo.gov); Melissa Bower; Michael Winckler; Mike Hooper; Mike McDonald (Home); Mike Smith, Water Resources Solutions; Mike Spickelmier (mspickelmier@lansing.ks.org); 'patzwald@sbcglobal.net'; Randy Gorton (randall.gorton@ibhc.com); Sara Croke; Sauer, Andrew N; Severns, Billy; sshafer@wycokck.org; Steve Grant; Tammy Snyder (tsnyder@cityofshawnee.org); thomasvmorey@yahoo.com; Tim Guardado; Viktor Hlas; Young, Patrick
Subject: Rain (no creeks) 7-20-2020

Some rainfall data from this morning

As miserable as it was – was less than (or about) a 1-year storm.

We have upgraded all of the 4x weather stations with improved rainfall measurement capabilities (10 years – WOOHOO) in the last 60 days.

Astute observers will note – we don't have readings from WPC/WWTP – this is due to a Johnny Cash in Reverse problem – One piece at a time and it COST ME (LOTS) of Dimes! We may have been hit by lightning, and have been trying to fix the station – but – one we replace the last unreplaced part – we will know how big the circle is that we have been running in!!

Anyway – I am so excited t soon be getting our data logger info to cross pollinate with the rainfall data- I mean – THE Social highlight of the season. Next week I suspect, and hopefully none of the data loggers have been stolen this time!

As Always – data on request, comments welcome

Mike

Leavenworth, KS
Rainfall July 20, 2020

	eavenworth Fire Station 1		Leavenworth City Hall		David Brewer Elementary	
	Rainfall	Return	Rainfall	Return	Rainfall	Return
5-min	0.25	<1	0.23	<1		
15-min	0.32	<1	0.43	<1	0.59	<1
30-min	0.34	<1	0.77	<1	0.82	<1
60-min	0.70	<1	1.11	<1	1.18	<1

PRECIPITATION FREQUENCY ESTIMATES

by duration	1	2	5	10	25
5-min:	0.40	0.47	0.59	0.69	0.84
10-min:	0.58	0.69	0.86	1.02	1.23
15-min:	0.71	0.84	1.05	1.24	1.50
30-min:	1.00	1.18	1.49	1.76	2.15
60-min:	1.30	1.56	2.00	2.37	2.90
2-hr:	1.60	1.94	2.51	2.98	3.66
3-hr:	1.81	2.20	2.85	3.40	4.18
6-hr:	2.17	2.64	3.42	4.08	5.02

Mike McDonald

From: Mike McDonald
Sent: Friday, July 31, 2020 10:47 AM
To: 'Amy D. Kliewer (kliewerad@cdmsmith.com)'; 'Angie Morgan (angie.morgan@glmv.com)'; Barry Smith; 'brett@napiereng.com'; 'Brian Hill PE (bhill@mkec.com)'; 'Buchanan, Kimberly'; 'Clint Robinson'; 'Cmagaha@leavenworthcounty.org'; 'Curtis Talcott P.E. (ctalcott@ric-consult.com)'; 'dave.stokka@usd453.org'; 'David Nolte (david.nolte@ibhc.com)'; 'dbparke@transystems.com'; 'Dedeke, Matt'; 'Donald W. Baker P. E. D. WRE CPESC (DBaker@wrs-rc.com)'; 'Gene Myracle'; 'greg@lexeco.com'; Hal Burdette; 'HensonJ@bv.com'; 'Hilary Zerr (hilary@davidsonae.com)'; 'Jerry Richardson'; 'Joel Mahnken'; 'John Spell'; 'Jonathan Wiles (jwiles@wycokck.org)'; 'Joshua L. Erhart (jerhart@dlrgroup.com)'; Justin Stewart; 'Katie Schleicher (kschleicher@trekkllc.com)'; 'Katy Steinbacher'; 'Kayla Manning'; 'Ken Miller'; 'Kyle Kosovich'; 'lauren@lexeco.com'; 'lcmadsen@transystems.com'; Manuel Carrera; 'Mark Wade'; 'Matt Harper (MHarper@wrs-rc.com)'; 'Matthew Jones (mjones@libertymo.gov)'; Melissa Bower; 'Michael Winckler'; Mike Hooper; 'Mike McDonald (Home)'; 'Mike Smith, Water Resources Solutions'; 'Mike Spickelmier (mspickelmier@lansing.ks.org)'; 'patzwald@sbcglobal.net'; 'Randy Gorton (randall.gorton@ibhc.com)'; Sara Croke; 'Sarah Rose Shafer (sarah@sarahrosehenke.com)'; 'Sauer, Andrew N'; 'Severns, Billy'; Steve Grant; 'Tammy Snyder (tsnyder@cityofshawnee.org)'; 'thomasvmorey@yahoo.com'; Tim Guardado; 'Viktor Hlas'; 'Young, Patrick'
Subject: 16th Terrace Detention Basin - July 15, 2020

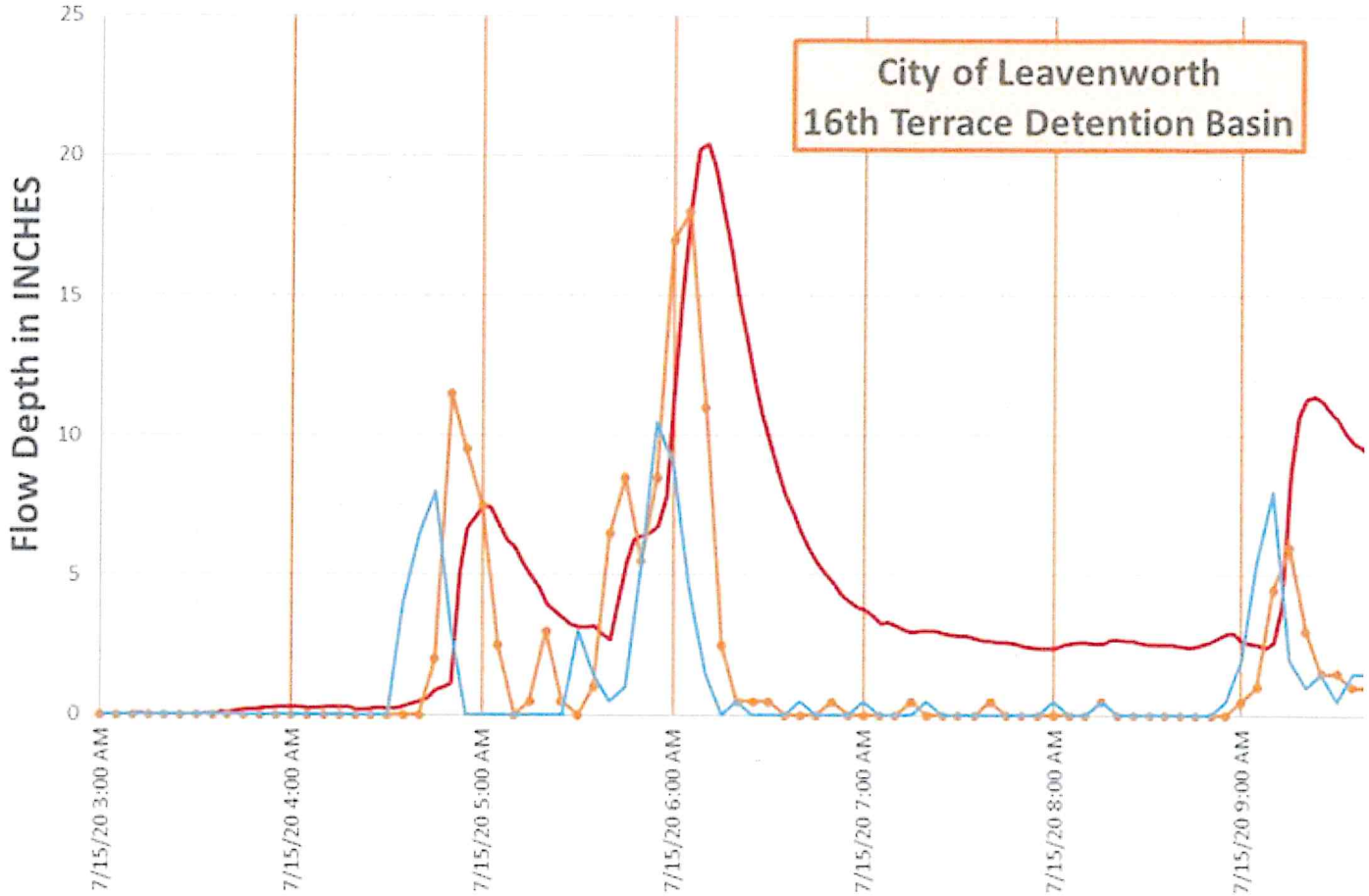
Another chart from the 3.24" of rain on July 15th

Two rain gages shown – the Fire Station 1 (blue) is much closer to the location

Basin was nowhere near "full", but the release rate looks good

Data on Request

Mike



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Mike McDonald

From: Mike McDonald
Sent: Tuesday, November 24, 2020 10:16 AM
To: 'Amy D. Kliewer (kliewerad@cdmsmith.com)'; 'Angie Morgan (angie.morgan@glmv.com)'; Barry Smith; 'brett@napiereng.com'; 'Brian Hill PE (bhill@mkec.com)'; 'Claudia Larkin (clarkin@edwardsvilleks.org)'; 'Clint Robinson'; 'Cmagaha@leavenworthcounty.org'; 'Curtis Talcott P.E. (ctalcott@ric-consult.com)'; 'dave.stokka@usd453.org'; 'David Nolte (david.nolte@ibhc.com)'; 'dbparke@transystems.com'; 'Dedeke, Matt'; 'Donald W. Baker P. E. D. WRE CPESC (DBaker@wrs-rc.com)'; 'Gene Myracle'; 'greg@lexeco.com'; Hal Burdette; 'HensonJ@bv.com'; 'Hilary Zerr (hilary@davidsonae.com)'; 'Jerry Richardson'; 'Joel Mahnken'; 'John Spell'; 'Jonathan Wiles (jwiles@wycokck.org)'; 'Joshua L. Erhart (jerhart@dlrgroup.com)'; Justin Stewart; 'Katie Schleicher (kschleicher@trekkllc.com)'; 'Katy Steinbacher'; 'Kayla Manning'; 'Ken Miller'; 'Kim Buchannon'; 'Kyle Kosovich'; 'lauren@lexeco.com'; 'lcmadsen@transystems.com'; Manuel Carrera; 'Mark Wade'; 'Matt Harper (MHarper@wrs-rc.com)'; 'Matthew Jones (mjones@libertymo.gov)'; Melissa Bower; 'Michael Winckler'; Mike Hooper; 'Mike McDonald (Home)'; 'Mike Smith, Water Resources Solutions'; 'Mike Spickelmier (mspickelmier@lansing.ks.org)'; 'patzwald@sbcglobal.net'; 'Randy Gorton (randall.gorton@ibhc.com)'; Sara Croke; 'Sarah Rose Shafer (sarah@sarahrosehenke.com)'; 'Sauer, Andrew N'; 'Severns, Billy'; Steve Grant; 'Tammy Snyder (tsnyder@cityofshawnee.org)'; 'thomasvmorey@yahoo.com'; Tim Guardado; 'Viktor Hlas'; 'Young, Patrick'; 'Zach Phillips'
Subject: Thoughts on Data Loggers and Learning Curves

Well – climbing the learning curve on the data logger and the software. And sort of revisiting our beginning of data collection and learning to really love Excel.

As a side note – Appears I have been corrupted by MicroSoft – in preparation for retirement – I have been testing LibreOffice and Apache OpenOffice (I have used earlier version in the distant past) in an effort to wean myself off of the MS software. No such luck! I cannot replicate these charts without putting a hole in the drywall the size and shape of my head. Appears I am stuck! Both of these FREE programs are totally AWESOME – but it appears I have moved past them for this work, or just not willing to take on the learning curve!

Concerns with Atmospheric Pressure Correction

The impact of atmospheric pressure on depth data from pressure loggers is often underestimated, especially at shallow depths. As an example – I put the logger in the sewer lagoon at Joannes house. Initial conditions were about 8" of depth in a low area. Left it there from Noon Saturday to about 5:00PM Sunday and studied it Sunday evening. Lots of interesting variations, and was studying the data to see if I could see when we used the facilities, took showers, impact of a small rain. I was pretty excited until I remembered that I had not adjusted for pressure changes. Pressure goes up (down) – and depth is artificially made deeper (shallower) than it is. Even in the short test – the impact of barometric pressure between high and low was well over 2"!

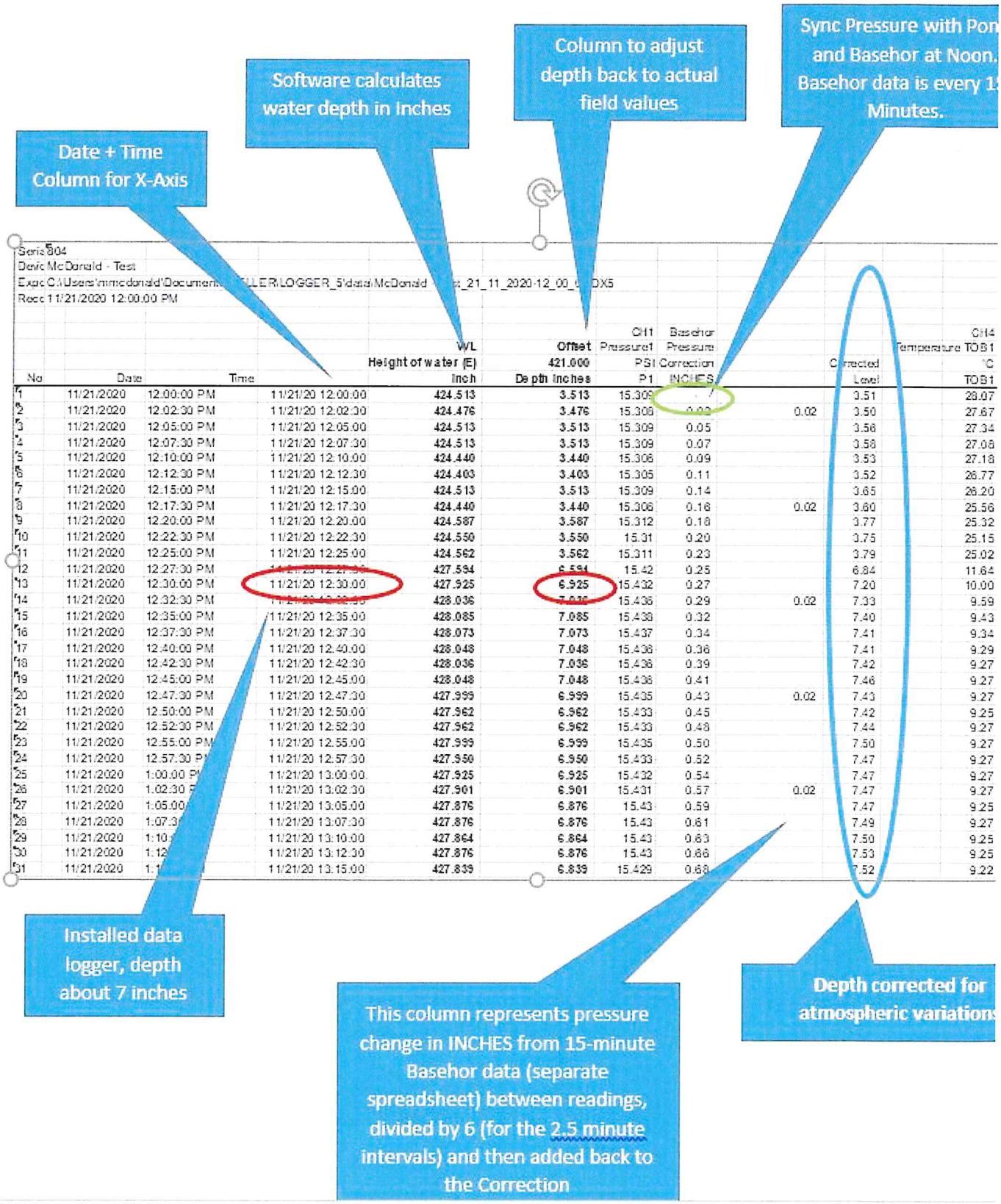
Max	14.99493	PSI
min	14.90161	PSI
	0.093319	PSI
	2.58	Inches

How to adjust Barometric Pressure

Soooooo – the logger software is cleverly set up to adjust this annoyance by using either an integrated fresh air tube or (as we do) a separate logger for barometric variations. We use one at the WWTP which works fine for our needs citywide. Years back – until we figured it out – I had our team "use the Baro data from the rain gauge". OMG – that is INSANELY TEDIOUS! More on that below!!!!

The impact of all of this blather is shown in some charts below. It also helps to read the data closely as you prepare to deal with it – some baro data is in PSI (as in 14.7 standard), others is in "Inches of Mercury" which is numerically about twice the PSI values. Easy to screw that one up when making adjustments – ask me how I know that!

As I did not have a separate barometer for the sewer lagoon, I used Basehor data. Great – not too far away, reliable, etc. Problem is/was – depth data is in 2.5 minute intervals, and baro data is in 15 Minutes intervals. Uh-Oh! Muscle memory kicks in – I sort of recall doing this manual adjustment in that years back deal . Set up the spreadsheet with the measured depth in one column. Then figure the depth difference from PSI in weather station, and line up with the same time of the depth data, then Add/Subtract as appropriate and WooHoo. **Uhhhh – not so fast**. Even our short test had over 700 depth data points, and the 15 minute baro data lines up with every 6th 2.5 minute depth data point. I created a simple routine to interpolate between baro points to adjust the depth data, and inserted by hand between the data points - TEDIOUS BEYOND BELIEF.



Serie 804
Devic McDonald - Test
Expo C:\Users\mmcdonald\Documents\...LLER\LOGGER_5\data\McDonald ...t_21_11_2020-12_00_...DX5
Reco 11/21/2020 12:00:00 PM

No	Date	Time		WL Height of water (E) inch	Offset 421.000 Depth inches	CH1 Pressure1 PSI P1	Basehor Pressure Correction INCHES		Corrected Level	CH4 Temperature TOB1 °C TOB1
1	11/21/2020	12:00:00 PM	11/21/20 12:00:00	424.513	3.513	15.309			3.51	28.07
2	11/21/2020	12:02:30 PM	11/21/20 12:02:30	424.476	3.476	15.308	0.02	0.02	3.50	27.67
3	11/21/2020	12:05:00 PM	11/21/20 12:05:00	424.513	3.513	15.309	0.05		3.56	27.34
4	11/21/2020	12:07:30 PM	11/21/20 12:07:30	424.513	3.513	15.309	0.07		3.58	27.08
5	11/21/2020	12:10:00 PM	11/21/20 12:10:00	424.440	3.440	15.306	0.09		3.53	27.18
6	11/21/2020	12:12:30 PM	11/21/20 12:12:30	424.403	3.403	15.305	0.11		3.52	26.77
7	11/21/2020	12:15:00 PM	11/21/20 12:15:00	424.513	3.513	15.309	0.14		3.65	26.20
8	11/21/2020	12:17:30 PM	11/21/20 12:17:30	424.440	3.440	15.306	0.16	0.02	3.60	25.56
9	11/21/2020	12:20:00 PM	11/21/20 12:20:00	424.587	3.587	15.312	0.18		3.77	25.32
10	11/21/2020	12:22:30 PM	11/21/20 12:22:30	424.550	3.550	15.31	0.20		3.75	25.15
11	11/21/2020	12:25:00 PM	11/21/20 12:25:00	424.562	3.562	15.311	0.23		3.79	25.02
12	11/21/2020	12:27:30 PM	[illegible]	427.594	6.594	15.42	0.25		6.84	11.64
13	11/21/2020	12:30:00 PM	11/21/20 12:30:00	427.925	6.925	15.432	0.27		7.20	10.00
14	11/21/2020	12:32:30 PM	[illegible]	428.036	7.036	15.436	0.29	0.02	7.33	9.59
15	11/21/2020	12:35:00 PM	11/21/20 12:35:00	428.085	7.085	15.438	0.32		7.40	9.43
16	11/21/2020	12:37:30 PM	11/21/20 12:37:30	428.073	7.073	15.437	0.34		7.41	9.34
17	11/21/2020	12:40:00 PM	11/21/20 12:40:00	428.048	7.048	15.436	0.36		7.41	9.29
18	11/21/2020	12:42:30 PM	11/21/20 12:42:30	428.036	7.036	15.436	0.39		7.42	9.27
19	11/21/2020	12:45:00 PM	11/21/20 12:45:00	428.048	7.048	15.436	0.41		7.46	9.27
20	11/21/2020	12:47:30 PM	11/21/20 12:47:30	427.999	6.999	15.435	0.43	0.02	7.43	9.27
21	11/21/2020	12:50:00 PM	11/21/20 12:50:00	427.962	6.962	15.433	0.45		7.42	9.25
22	11/21/2020	12:52:30 PM	11/21/20 12:52:30	427.962	6.962	15.433	0.48		7.44	9.27
23	11/21/2020	12:55:00 PM	11/21/20 12:55:00	427.999	6.999	15.435	0.50		7.50	9.27
24	11/21/2020	12:57:30 PM	11/21/20 12:57:30	427.950	6.950	15.433	0.52		7.47	9.27
25	11/21/2020	1:00:00 PM	11/21/20 13:00:00	427.925	6.925	15.432	0.54		7.47	9.27
26	11/21/2020	1:02:30 P[illegible]	11/21/20 13:02:30	427.901	6.901	15.431	0.57	0.02	7.47	9.27
27	11/21/2020	1:05:00 P[illegible]	11/21/20 13:05:00	427.876	6.876	15.43	0.59		7.47	9.25
28	11/21/2020	1:07:30 P[illegible]	11/21/20 13:07:30	427.876	6.876	15.43	0.61		7.49	9.27
29	11/21/2020	1:10:00 P[illegible]	11/21/20 13:10:00	427.864	6.864	15.43	0.63		7.50	9.25
30	11/21/2020	1:12:30 P[illegible]	11/21/20 13:12:30	427.876	6.876	15.43	0.66		7.53	9.25
31	11/21/2020	1:15:00 P[illegible]	11/21/20 13:15:00	427.839	6.839	15.429	0.68		7.52	9.22

QUESTION – Is there a better EXCEL way to do this without me losing my mind!

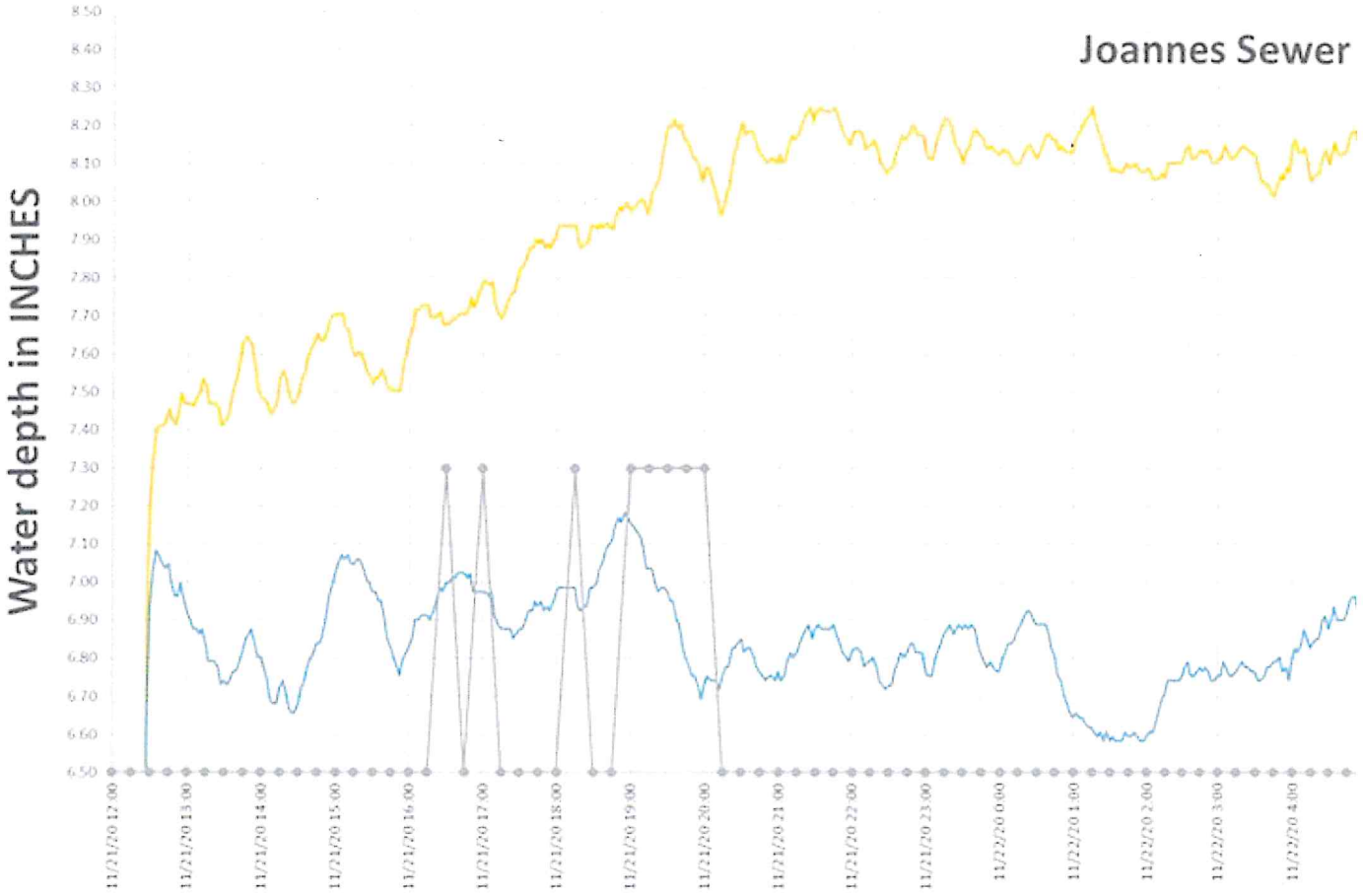
In the end – I could not see any definitive patterns in the use of the facilities, or of the rainfall, and I have learned how to better use the pretty powerful software! Some charts and graphs below. The thing to look at is the blue line which is "as measured – raw data", and the yellow line is corrected for atmospheric pressure.

And – look at the yellow (corrected) line – and remember we are talking tenths of inches!

1. There is not a lot of water in the lagoon right now – more like a shallow channel about 15 feet long. I assume the gradual increase in depth is between 1300 and 1900 on the 21st due to general water use around the house during the day.
2. On the 21st – the rain may be part of the peaks between 1900 – 2100, may or may not be timed out the same as Basehor rain, but likely the same pattern.
3. On the 22nd between about 0900 and Noon – I think you see the impact of our normal Sunday activity, bathrooms, showers, laundry, dishes – about 0.10 Inch – WOOHOO! And attribute the gradual decline in level as being due to evaporation, transpiration, and other appropriate lagoon activities.

I'll send the data if you are interested!

Mike



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JANUARY 2020

LOCAL CLIMATOLOGICAL DATA

DAVIS INSTRUMENTS, WEATHERLINK NETWORK

Leavenworth, KS USA

Leavenworth City Hall

Lat: 39.3195 Long: -94.9153 Elev (ground): 851 feet Time Zone: America/Chicago

Date	TEMPERATURE °F MAXIMUM	MINIMUM	AVERAGE	AVERAGE DEW PT	AVERAGE WET BULB	DEG DAYS BASE 65° HEATING	COOLING	PRECIP. (in) WATER EQUIV	PRESSURE (in Hg) AVERAGE STATION	AVERAGE SEA LEVEL	WIND SPEED = mph DIR = DEGREES RESULTANT SPEED	RES DIR	AVERAGE SPEED	WIND MAX INSTANT SPEED	INSTANT DIR	ARCHIVE SPEED	ARCHIVE DIR	Date
01	56	28	42	31	36	23.180	0.000	0.00	28.78	29.69	7	189	6	35	180	18	180	01
02	53	38	44	37	40	21.194	0.000	0.00	28.73	29.63	1	274	2	22	202	10	225	02
03	48	31	39	30	34	26.362	0.000	0.00	29.06	29.96	3	304	3	24	338	9	338	03
04	44	27	35	21	29	29.710	0.000	0.00	29.30	30.22	2	281	2	21	292	7	292	04
05	52	33	42	27	34	22.802	0.000	0.00	29.30	30.22	3	323	3	34	360	15	338	05
06	45	27	35	26	31	29.525	0.000	0.00	29.30	30.22	1	256	0	10	315	5	270	06
07	55	30	40	26	33	24.458	0.000	0.00	29.32	30.23	3	256	2	18	225	9	225	07
08	52	29	40	27	33	25.224	0.000	0.00	29.24	30.16	3	118	3	21	112	10	135	08
09	64	43	55	40	46	10.379	0.000	0.00	28.93	29.83	8	203	9	42	180	22	225	09
10	43	21	33	28	31	32.205	0.000	0.61	29.10	30.01	4	19	2	23	360	12	338	10
11	21	12	17	14	16	48.385	0.000	0.06	29.24	30.15		--	0	0	--	0	--	11
12	31	18	25	23	25	39.663	0.000	0.00	29.29	30.21		--	0	0	--	0	--	12
13	46	21	33	31	32	31.879	0.000	0.00	29.24	30.15	1	137	0	9	112	3	135	13
14	49	35	42	38	40	23.272	0.000	0.00	29.20	30.11	1	88	0	11	90	5	90	14
15	47	17	35	32	34	29.682	0.000	0.00	29.32	30.23	5	344	3	26	315	14	338	15
16	23	10	17	9	14	48.109	0.000	0.00	29.86	30.79	3	31	3	15	22	7	68	16
17	36	23	30	26	28	35.320	0.000	0.40	29.35	30.27	3	113	2	15	135	7	135	17
18	40	21	29	20	26	36.150	0.000	0.02	29.34	30.26	5	299	5	37	292	14	270	18
19	23	10	14	4	11	50.844	0.000	0.00	29.73	30.66	3	337	2	16	338	7	338	19
20	16	7	12	5	10	53.139	0.000	0.00	29.82	30.75	2	10	1	12	22	5	360	20
21	33	6	19	13	17	46.061	0.000	0.00	29.63	30.55	3	150	2	17	180	8	180	21
22	35	33	34	31	32	31.245	0.000	0.26	29.14	30.05	4	169	3	18	180	8	180	22
23	36	32	34	33	33	30.945	0.000	0.11	29.03	29.94	1	331	1	12	338	5	338	23
24	32	30	32	30	31	33.066	0.000	0.02	29.13	30.05	6	331	5	25	292	11	338	24
25	31	27	29	26	28	35.703	0.000	0.00	29.23	30.14	1	277	1	15	270	6	292	25
26	35	26	30	28	29	34.976	0.000	0.00	29.15	30.06	1	313	0	8	360	4	338	26
27	38	25	33	30	32	32.204	0.000	0.00	29.19	30.10	3	358	2	13	360	8	338	27
28	34	29	30	27	29	34.665	0.000	0.00	29.25	30.17	3	47	3	13	45	6	22	28
29	32	26	30	26	28	35.359	0.000	0.03	29.31	30.23	1	34	1	9	360	5	22	29
30	37	26	32	28	30	32.902	0.000	0.00	29.28	30.19	1	148	0	9	135	4	135	30
31	40	31	34	32	33	30.524	0.000	0.00	29.19	30.10	1	214	1	14	270	6	292	31
	39	25	32	26	29	32.875	0.000		29.26	30.17	3	205.42	3	< Monthly Avg				

NUMBER OF DAYS WITH: >
Maximum Temp ≥ 90: 0
Maximum Temp ≤ 32: 6
Minimum Temp ≤ 32: 25
Minimum Temp ≤ 0: 0
Precipitation ≥ 0.01 inch: 8
Precipitation ≥ 0.10 inch: 4
Greatest 24 – hr precipitation: 0.61 Date: 9-10
Monthly Total Precipitation: 1.51

SEA LEVEL PRESSURE: >
MAXIMUM: 30.90 DATE 16 TIME 10:15
MINIMUM: 29.51 1 16:50

DEGREEE DAYS: >
HEATING: MONTHLY TOTAL 1019.133 SEASON TO DATE TOTAL 0.000
COOLING: 0.000 780.468

FEBRUARY 2020
LOCAL CLIMATOLOGICAL DATA
DAVIS INSTRUMENTS, WEATHERLINK NETWORK

Leavenworth, KS USA
Leavenworth City Hall
Lat: 39.3195 Long: -94.9153 Elev (ground): 851 feet Time Zone: America/Chicago

	TEMPERATURE °F					DEG DAYS BASE 65°		PRECIP. (in)	PRESSURE (in Hg)		WIND SPEED = mph DIR = DEGREES							
														WIND MAX				
														INSTANT		ARCHIVE		
Date	MAXIMUM	MINIMUM	AVERAGE	AVERAGE DEW PT	AVERAGE WET BULB	HEATING	COOLING	WATER EQUIV	AVERAGE STATION	AVERAGE SEA LEVEL	RESULTANT SPEED	RES DIR	AVERAGE SPEED	SPEED	DIR	SPEED	DIR	Date
01	56	31	43	32	37	21.710	0.000	0.00	29.12	30.03	3	232	2	17	248	8	180	01
02	66	40	51	37	42	14.096	0.054	0.00	28.87	29.78	1	230	1	13	270	7	270	02
03	45	33	38	33	36	26.946	0.000	0.00	28.78	29.68	4	354	3	23	315	9	338	03
04	34	28	31	20	27	33.847	0.000	0.00	29.17	30.09	6	13	6	23	360	12	360	04
05	28	24	26	18	23	38.734	0.000	0.00	29.14	30.06	3	23	3	16	45	7	22	05
06	38	17	28	15	23	36.505	0.000	0.00	28.87	29.78	0	336	0	9	315	3	338	06
07	35	24	31	21	27	34.412	0.000	0.00	28.99	29.90	2	319	2	21	270	10	270	07
08	43	18	31	21	26	34.490	0.000	0.00	29.27	30.19	1	139	1	16	135	7	135	08
09	51	28	40	31	35	25.041	0.000	0.00	29.11	30.02	2	329	4	28	338	13	338	09
10	44	25	34	23	29	31.281	0.000	0.00	29.31	30.23	1	1	1	11	338	5	360	10
11	44	30	36	23	30	29.194	0.000	0.00	29.36	30.28	1	332	1	16	338	7	338	11
12	34	19	31	27	29	33.551	0.000	0.28	29.09	30.00	1	337	1	30	338	12	338	12
13	19	2	8	-1	6	57.043	0.000	0.00	29.58	30.51	4	332	3	30	315	10	338	13
14	24	3	15	5	12	50.228	0.000	0.00	29.60	30.52	3	154	1	16	180	7	158	14
15	47	23	36	28	33	28.809	0.000	0.00	29.23	30.15	2	208	2	23	180	10	180	15
16	54	26	39	32	35	25.933	0.000	0.00	29.16	30.07	1	140	0	10	180	5	202	16
17	62	34	45	37	41	19.574	0.000	0.00	28.99	29.90	3	315	3	35	292	16	338	17
18	43	28	34	24	30	30.284	0.000	0.00	29.45	30.36	4	350	3	22	338	10	338	18
19	39	23	30	23	27	34.770	0.000	0.00	29.67	30.59	3	47	2	15	22	7	22	19
20	30	18	23	11	19	41.557	0.000	0.00	29.87	30.80	4	4	3	16	360	7	360	20
21	44	17	30	16	24	35.176	0.000	0.00	29.68	30.61	5	198	4	23	180	12	180	21
22	53	31	41	27	34	23.541	0.000	0.00	29.29	30.20	4	197	4	21	180	11	225	22
23	60	43	51	40	44	14.022	0.000	0.00	29.07	29.98	1	161	1	11	135	6	158	23
24	49	37	42	38	40	23.113	0.000	0.25	28.89	29.80	5	13	5	21	360	11	22	24
25	44	33	38	28	33	27.075	0.000	0.00	29.16	30.07	5	4	4	25	338	12	360	25
26	38	26	32	19	27	33.051	0.000	0.00	29.43	30.35	6	338	5	26	315	12	338	26
27	45	25	34	23	29	30.633	0.000	0.00	29.30	30.21	1	309	1	17	248	8	360	27
28	55	29	41	31	35	23.868	0.000	0.00	29.29	30.21	3	311	2	21	292	11	270	28
29	63	28	47	32	38	18.089	0.000	0.00	29.18	30.09	5	163	3	21	180	12	180	29
	44	26	35	25	30	30.227	0.054		29.24	30.15	3	203.10	3	< Monthly Avg				

NUMBER OF DAYS WITH: >
Maximum Temp ≥ 90: 0
Maximum Temp ≤ 32: 4
Minimum Temp ≤ 32: 23
Minimum Temp ≤ 0: 0
Precipitation ≥ 0.01 inch: 2
Precipitation ≥ 0.10 inch: 2
Greatest 24 – hr precipitation: 0.28 Date: 11-12
Monthly Total Precipitation: 0.53

SEA LEVEL PRESSURE: >
MAXIMUM: 30.88 DATE 20 TIME 11:15
MINIMUM: 29.57 3 06:45

DEGREEE DAYS: >
HEATING: MONTHLY TOTAL 876.571 SEASON TO DATE TOTAL 0.000
COOLING: 0.054 780.468

FEBRUARY 2020
Leavenworth, KS USA

MARCH 2020
LOCAL CLIMATOLOGICAL DATA
DAVIS INSTRUMENTS, WEATHERLINK NETWORK

Leavenworth, KS USA
Leavenworth City Hall
Lat: 39.3195 Long: -94.9153 Elev (ground): 851 feet Time Zone: America/Chicago

DAVIS

Date	TEMPERATURE °F MAXIMUM	MINIMUM	AVERAGE	AVERAGE DEW PT	AVERAGE WET BULB	DEG DAYS BASE 65° HEATING	COOLING	PRECIP. (in) WATER EQUIV	PRESSURE (in Hg) AVERAGE STATION	AVERAGE SEA LEVEL	WIND SPEED = mph DIR = DEGREES RESULTANT SPEED	RES DIR	AVERAGE SPEED	WIND MAX INSTANT SPEED	INSTANT DIR	ARCHIVE SPEED	ARCHIVE DIR	Date
01	66	47	57	41	47	7.782	0.012	0.00	28.85	29.76	4	202	5	26	180	15	225	01
02	53	34	42	32	37	22.909	0.000	0.00	28.94	29.84	3	359	2	16	315	10	338	02
03	61	36	50	29	37	15.158	0.000	0.00	28.93	29.84	4	272	4	22	270	10	270	03
04	61	42	52	33	41	13.103	0.000	0.00	29.12	30.03	2	259	2	25	315	8	292	04
05	58	40	49	27	36	16.413	0.000	0.00	29.30	30.22	6	323	7	38	315	18	270	05
06	56	30	43	23	32	21.993	0.000	0.00	29.59	30.51	0	296	1	12	338	5	338	06
07	68	37	53	26	36	11.852	0.208	0.00	29.36	30.28	6	180	5	31	180	16	180	07
08	68	49	58	38	45	6.727	0.460	0.00	29.14	30.05	12	185	12	43	180	20	180	08
09	59	36	47	44	45	18.128	0.000	1.60	29.07	29.98	1	234	6	27	180	13	180	09
10	52	31	41	35	38	23.895	0.000	0.00	29.36	30.27	1	296	1	17	338	7	338	10
11	67	40	52	44	47	12.897	0.128	0.00	29.10	30.01	1	208	1	12	225	6	225	11
12	64	45	55	47	50	10.301	0.000	0.33	28.89	29.79	3	346	3	28	338	14	338	12
13	45	38	42	28	35	22.907	0.000	0.00	29.42	30.34	2	49	1	12	338	5	45	13
14	43	35	37	33	35	27.946	0.000	0.28	29.49	30.41	4	66	4	18	22	8	45	14
15	38	33	36	30	33	29.395	0.000	0.00	29.63	30.56	2	81	2	12	45	5	68	15
16	43	35	39	36	38	25.958	0.000	0.09	29.38	30.30	0	85	0	5	22	2	112	16
17	47	41	44	40	42	21.017	0.000	0.00	29.36	30.28	1	87	1	11	90	5	90	17
18	60	46	53	50	51	11.945	0.000	0.38	29.05	29.96	1	151	1	9	180	4	135	18
19	74	49	63	59	60	3.732	2.153	0.40	28.83	29.73	3	203	4	27	270	15	180	19
20	49	29	36	25	31	29.276	0.000	0.00	29.46	30.38	6	348	6	33	360	14	360	20
21	48	25	36	24	30	29.188	0.000	0.00	29.59	30.51	1	132	1	12	180	5	180	21
22	44	36	40	37	39	24.756	0.000	0.27	29.29	30.20	1	109	1	8	90	3	112	22
23	50	40	45	43	44	19.902	0.000	0.00	29.22	30.14	1	119	1	10	135	4	135	23
24	58	43	48	44	45	17.403	0.000	0.04	29.05	29.96	2	106	2	11	68	6	68	24
25	72	44	55	49	51	10.805	0.967	0.00	28.92	29.82	3	162	3	22	180	10	158	25
26	61	52	56	50	52	9.403	0.000	0.01	28.79	29.69	3	42	2	17	135	7	22	26
27	58	50	54	52	53	11.250	0.000	0.11	28.76	29.67	2	60	2	15	315	8	338	27
28	73	46	58	46	50	8.565	1.097	0.00	28.65	29.55	6	234	8	44	225	24	225	28
29	67	44	55	36	43	10.219	0.233	0.00	29.07	29.98	6	282	5	33	248	14	270	29
30	69	39	56	37	43	9.906	0.645	0.00	29.23	30.14	3	100	1	13	45	6	68	30
31	68	50	58	43	48	6.890	0.301	0.00	29.10	30.01	1	6	0	8	68	4	360	31
	58	40	49	38	42	16.504	0.621		29.16	30.07	3	180.08	3	< Monthly Avg				

NUMBER OF DAYS WITH: > Maximum Temp ≥ 90: 0 | Maximum Temp ≤ 32: 0 | Minimum Temp ≤ 32: 4 | Minimum Temp ≤ 0: 0 | Precipitation ≥ 0.01 inch: 9 | Precipitation ≥ 0.10 inch: 7

Greatest 24 – hr precipitation: 1.60 Date: 8-9
Monthly Total Precipitation: 3.51

		DATE	TIME
SEA LEVEL PRESSURE: >	MAXIMUM: 30.64	15	09:40
	MINIMUM: 29.42	28	11:20

		MONTHLY TOTAL	SEASON TO DATE TOTAL
DEGREEE DAYS: >	HEATING:	511.619	0.000
	COOLING:	6.206	780.468

MARCH 2020
Leavenworth, KS USA

APRIL 2020

LOCAL CLIMATOLOGICAL DATA

DAVIS INSTRUMENTS, WEATHERLINK NETWORK

Leavenworth, KS USA

Leavenworth City Hall

Lat: 39.3195 Long: -94.9153 Elev (ground): 851 feet Time Zone: America/Chicago

DAVIS

	TEMPERATURE °F					DEG DAYS BASE 65°		PRECIP. (in)	PRESSURE (in Hg)		WIND SPEED = mph DIR = DEGREES							
														WIND MAX				
														INSTANT		ARCHIVE		
Date	MAXIMUM	MINIMUM	AVERAGE	AVERAGE DEW PT	AVERAGE WET BULB	HEATING	COOLING	WATER EQUIV	AVERAGE STATION	AVERAGE SEA LEVEL	RESULTANT SPEED	RES DIR	AVERAGE SPEED	SPEED	DIR	SPEED	DIR	Date
01	72	45	60	45	50	7.050	1.569	0.00	29.00	29.91	4	166	3	23	202	12	135	01
02	69	41	61	48	52	4.897	0.849	0.18	28.95	29.86	3	145	3	18	180	9	135	02
03	41	29	31	27	30	33.683	0.000	0.18	29.27	30.18	4	336	1	18	360	8	338	03
04	46	29	36	30	33	28.745	0.000	0.00	29.33	30.25	2	32	1	12	360	6	68	04
05	61	36	48	40	43	17.334	0.000	0.00	29.20	30.11	2	133	1	13	135	6	135	05
06	67	51	60	55	57	5.585	0.348	0.00	29.00	29.91	2	188	2	20	180	8	180	06
07	84	62	71	61	63	0.878	6.503	0.00	28.84	29.74	3	224	3	18	202	9	225	07
08	88	54	67	50	54	3.326	5.700	0.00	28.86	29.77	5	343	3	30	338	14	338	08
09	60	39	50	25	36	15.458	0.000	0.00	29.17	30.09	5	340	4	34	292	14	315	09
10	54	30	44	23	33	21.244	0.000	0.00	29.23	30.15	1	194	2	15	225	8	180	10
11	74	49	61	45	51	6.340	1.990	0.21	28.79	29.69	5	180	5	29	202	18	225	11
12	62	32	48	43	45	17.356	0.000	0.78	28.75	29.65	3	333	6	35	292	18	338	12
13	45	28	36	19	28	28.904	0.000	0.00	29.33	30.24	3	332	3	29	315	10	338	13
14	50	31	41	19	30	24.285	0.000	0.00	29.36	30.28	3	264	2	20	248	9	270	14
15	54	34	44	26	34	21.409	0.000	0.00	29.23	30.15	0	329	1	19	180	8	225	15
16	45	36	40	32	36	24.730	0.000	0.49	29.25	30.17	3	68	3	16	90	8	68	16
17	47	33	38	32	35	26.938	0.000	0.27	29.27	30.18	3	357	2	20	360	8	360	17
18	63	35	49	35	40	16.070	0.000	0.00	29.09	30.00	4	203	4	30	180	14	180	18
19	66	46	56	39	46	8.930	0.037	0.00	28.93	29.83	3	48	2	19	22	10	45	19
20	71	43	56	42	47	9.811	0.833	0.00	28.94	29.85	2	283	2	25	292	10	270	20
21	72	46	60	38	45	5.987	1.374	0.00	29.09	30.00	0	115	1	11	180	5	225	21
22	65	54	59	47	52	5.623	0.000	0.02	28.91	29.82	2	185	2	18	158	7	180	22
23	76	53	63	54	56	5.066	2.657	0.00	28.78	29.69	1	157	0	6	225	3	135	23
24	66	52	57	54	55	7.603	0.014	1.16	28.86	29.76	1	6	1	19	292	8	225	24
25	67	50	57	47	51	7.983	0.114	0.05	29.08	29.99	3	354	3	23	315	10	360	25
26	71	44	60	45	50	6.135	1.296	0.00	29.22	30.13	1	191	1	14	180	7	180	26
27	76	55	65	52	56	2.976	3.057	0.02	29.06	29.97	5	183	5	29	225	13	180	27
28	74	54	64	55	58	3.150	1.703	0.10	28.88	29.79	1	263	2	29	292	10	315	28
29	70	51	59	44	49	6.509	0.830	0.00	28.98	29.88	6	333	6	38	315	16	338	29
30	75	50	63	46	51	4.993	2.646	0.00	29.09	30.00	1	327	1	17	338	6	360	30
	64	43	53	41	46	12.633	1.854		29.06	29.97	3	220.33	3	< Monthly Avg				

NUMBER OF DAYS WITH: >
Maximum Temp ≥ 90: 0
Maximum Temp ≤ 32: 0
Minimum Temp ≤ 32: 6
Minimum Temp ≤ 0: 0
Precipitation ≥ 0.01 inch: 11
Precipitation ≥ 0.10 inch: 7
Greatest 24 – hr precipitation: 1.21 Date: 24-25
Monthly Total Precipitation: 3.46

			DATE	TIME
SEA LEVEL PRESSURE: >	MAXIMUM:	30.39	14	00:30
	MINIMUM:	29.45	12	11:00

		MONTHLY TOTAL	SEASON TO DATE TOTAL
DEGREEE DAYS: >	HEATING:	378.999	0.000
	COOLING:	31.520	780.468

APRIL 2020
Leavenworth, KS USA

MAY 2020

LOCAL CLIMATOLOGICAL DATA

DAVIS INSTRUMENTS, WEATHERLINK NETWORK

Leavenworth, KS USA

Leavenworth City Hall

Lat: 39.3195 Long: -94.9153 Elev (ground): 851 feet Time Zone: America/Chicago

DAVIS

	TEMPERATURE °F					DEG DAYS BASE 65°		PRECIP. (in)	PRESSURE (in Hg)		WIND SPEED = mph DIR = DEGREES							
														WIND MAX				
														INSTANT		ARCHIVE		
Date	MAXIMUM	MINIMUM	AVERAGE	AVERAGE DEW PT	AVERAGE WET BULB	HEATING	COOLING	WATER EQUIV	AVERAGE STATION	AVERAGE SEA LEVEL	RESULTANT SPEED	RES DIR	AVERAGE SPEED	SPEED	DIR	SPEED	DIR	Date
01	81	53	69	54	58	3.357	7.062	0.00	28.94	29.84	4	182	3	31	180	14	158	01
02	80	59	71	55	59	0.664	6.558	0.00	28.99	29.90	4	40	3	21	22	10	22	02
03	73	58	66	48	53	1.305	2.775	0.03	29.07	29.98	2	65	2	17	68	8	68	03
04	60	52	56	49	52	9.173	0.000	0.42	28.99	29.90	2	82	2	26	338	10	68	04
05	71	50	59	44	49	7.158	1.084	0.00	29.13	30.04	4	312	4	34	315	16	270	05
06	61	44	53	43	47	11.891	0.000	0.00	29.32	30.24	1	349	1	14	338	5	360	06
07	62	41	52	44	47	13.299	0.000	0.07	29.19	30.11	1	191	0	9	225	4	225	07
08	59	43	52	37	43	13.332	0.000	0.22	29.26	30.17	3	359	3	25	360	9	360	08
09	64	38	53	38	43	12.233	0.000	0.01	29.32	30.24	3	238	2	22	315	6	180	09
10	60	41	51	31	39	14.299	0.000	0.00	29.38	30.30	4	326	3	26	315	9	292	10
11	52	40	47	31	38	18.290	0.000	0.00	29.43	30.35	1	295	0	12	270	6	270	11
12	56	44	49	40	44	15.581	0.000	0.00	29.30	30.22	1	131	1	12	112	5	112	12
13	62	50	55	51	53	10.044	0.000	0.00	29.06	29.97	2	130	2	14	112	5	112	13
14	82	62	71	64	66	0.604	6.452	0.04	28.90	29.80	3	187	3	28	180	13	180	14
15	73	63	67	62	63	0.356	2.716	0.00	28.98	29.89	2	59	2	15	22	6	45	15
16	74	62	68	62	64	0.676	3.570	0.01	28.97	29.88	1	137	0	11	135	5	135	16
17	69	56	63	54	57	2.668	0.706	0.00	28.95	29.86	3	319	3	23	270	9	338	17
18	61	55	58	50	53	7.256	0.000	0.00	29.02	29.92	3	341	2	21	315	7	360	18
19	70	55	61	54	56	4.663	0.866	0.00	29.05	29.96	2	29	1	11	22	5	68	19
20	69	59	64	58	60	2.301	1.015	0.00	29.08	29.99	1	86	1	11	135	4	68	20
21	71	60	64	59	61	1.791	1.287	0.01	29.03	29.94	3	97	2	14	90	6	45	21
22	76	60	67	62	63	1.456	3.097	0.22	28.92	29.82	2	138	2	24	202	10	225	22
23	85	61	73	63	66	0.831	8.720	0.00	28.88	29.78	2	230	2	15	202	5	225	23
24	85	68	75	66	69	0.000	10.127	0.06	28.88	29.78	2	203	2	26	202	11	180	24
25	79	66	71	67	68	0.000	5.664	0.73	28.90	29.81	1	133	1	17	135	8	135	25
26	76	65	68	66	67	0.000	3.120	0.63	28.85	29.76	0	192	1	14	225	6	225	26
27	75	63	69	64	65	0.309	3.916	0.00	28.95	29.86	0	335	0	7	292	3	292	27
28	77	63	69	64	65	0.066	3.916	0.21	29.01	29.92	1	352	1	17	360	7	360	28
29	79	58	69	51	56	1.351	5.052	0.00	29.22	30.13	2	337	2	19	135	7	135	29
30	75	54	65	55	58	2.700	2.891	0.00	29.29	30.20	3	52	2	14	68	8	68	30
31	80	60	70	58	61	1.217	5.726	0.03	29.28	30.20	4	111	4	17	112	9	112	31
	71	55	63	53	56	5.674	4.110		29.08	29.99	2	194.78	2	< Monthly Avg				

NUMBER OF DAYS WITH: > Maximum Temp ≥ 90: 0 | Maximum Temp ≤ 32: 0 | Minimum Temp ≤ 32: 0 | Minimum Temp ≤ 0: 0 | Precipitation ≥ 0.01 inch: 11 | Precipitation ≥ 0.10 inch: 6

Greatest 24 – hr precipitation: 1.08 Date: 25-26

Monthly Total Precipitation: 2.69

		DATE	TIME
SEA LEVEL PRESSURE: >	MAXIMUM: 30.43	11	09:05
	MINIMUM: 29.69	26	14:10

		MONTHLY TOTAL	SEASON TO DATE TOTAL
DEGREEE DAYS: >	HEATING:	158.871	0.000
	COOLING:	86.320	780.468

MAY 2020
Leavenworth, KS USA

JUNE 2020

LOCAL CLIMATOLOGICAL DATA

DAVIS INSTRUMENTS, WEATHERLINK NETWORK

Leavenworth, KS USA

Leavenworth City Hall

Lat: 39.3195 Long: -94.9153 Elev (ground): 851 feet Time Zone: America/Chicago

	TEMPERATURE °F					DEG DAYS BASE 65°		PRECIP. (in)	PRESSURE (in Hg)		WIND SPEED = mph DIR = DEGREES							
														WIND MAX				
														INSTANT		ARCHIVE		
Date	MAXIMUM	MINIMUM	AVERAGE	AVERAGE DEW PT	AVERAGE WET BULB	HEATING	COOLING	WATER EQUIV	AVERAGE STATION	AVERAGE SEA LEVEL	RESULTANT SPEED	RES DIR	AVERAGE SPEED	SPEED	DIR	SPEED	DIR	Date
01	85	68	77	64	67	0.000	11.555	0.00	29.14	30.05	7	179	6	29	225	15	202	01
02	89	68	78	66	69	0.000	13.476	0.00	29.03	29.94	6	189	6	21	202	11	202	02
03	92	73	82	72	74	0.000	17.217	0.00	28.89	29.80	5	215	4	19	202	10	202	03
04	89	66	78	69	71	0.000	13.323	0.15	28.84	29.75	3	187	4	42	270	15	270	04
05	92	67	81	70	72	0.000	15.809	0.50	28.93	29.84	1	175	3	36	360	15	270	05
06	94	72	84	73	75	0.000	19.177	0.00	28.98	29.89	3	128	3	17	112	8	112	06
07	93	76	84	71	74	0.000	19.201	0.00	28.92	29.82	5	137	5	18	158	9	158	07
08	92	75	84	70	73	0.000	18.710	0.00	28.80	29.71	4	120	4	22	45	10	135	08
09	91	70	81	68	71	0.000	16.425	0.00	28.56	29.45	2	152	4	25	202	14	202	09
10	77	58	68	54	58	0.822	4.244	0.01	28.87	29.77	5	285	7	30	315	13	315	10
11	89	58	75	56	60	1.109	11.593	0.00	29.26	30.17	3	222	3	19	202	10	248	11
12	92	65	79	62	66	0.007	14.063	0.00	29.26	30.18	1	155	2	13	202	7	202	12
13	91	66	81	65	68	0.000	15.934	0.00	29.16	30.07	3	126	3	17	158	9	112	13
14	92	72	82	65	69	0.000	17.212	0.00	29.14	30.06	4	140	3	18	202	9	158	14
15	92	73	83	67	71	0.000	18.021	0.00	29.20	30.11	4	147	4	17	158	10	202	15
16	91	72	82	69	72	0.000	16.636	0.00	29.17	30.08	4	122	4	16	158	11	112	16
17	89	72	80	67	70	0.000	15.008	0.00	29.07	29.98	6	134	5	20	135	11	158	17
18	91	73	82	67	70	0.000	17.133	0.00	28.99	29.89	5	151	5	23	90	11	135	18
19	82	70	74	69	70	0.000	9.338	0.11	29.04	29.94	1	263	2	15	270	7	248	19
20	85	66	76	67	69	0.000	10.557	0.00	29.01	29.92	2	219	2	13	248	7	270	20
21	87	69	79	69	71	0.000	14.431	0.00	28.92	29.82	3	169	3	18	180	10	158	21
22	86	68	78	67	70	0.000	13.452	0.00	28.89	29.79	2	295	4	21	338	9	338	22
23	81	64	72	59	62	0.055	7.218	0.00	29.02	29.93	3	323	4	19	360	10	360	23
24	84	60	74	58	62	0.602	9.421	0.00	29.02	29.92	2	1	2	15	360	8	45	24
25	93	67	80	66	69	0.000	14.490	0.02	29.00	29.90	3	167	4	22	158	12	202	25
26	90	72	82	69	72	0.000	16.569	0.00	28.97	29.88	4	176	4	19	180	11	202	26
27	82	67	74	68	70	0.000	9.350	1.57	28.90	29.80	1	143	4	28	45	14	360	27
28	90	70	81	73	74	0.000	15.914	0.01	28.77	29.67	5	149	5	26	135	13	135	28
29	88	77	82	74	76	0.000	16.949	0.00	28.79	29.69	6	150	6	20	158	10	180	29
30	92	78	84	74	76	0.000	18.799	0.00	28.79	29.69	5	144	5	21	158	10	180	30
	89	69	79	67	70	0.519	14.374		28.98	29.88	4	172.05	4	< Monthly Avg				

NUMBER OF DAYS WITH: >
Maximum Temp ≥ 90: 15
Maximum Temp ≤ 32: 0
Minimum Temp ≤ 32: 0
Minimum Temp ≤ 0: 0
Precipitation ≥ 0.01 inch: 5
Precipitation ≥ 0.10 inch: 4
Greatest 24 – hr precipitation: 1.57 Date: 26-27
Monthly Total Precipitation: 2.37

SEA LEVEL PRESSURE: >
MAXIMUM: 30.25 DATE 12 TIME 07:45
MINIMUM: 29.34 9 18:50

DEGREEE DAYS: >
HEATING: MONTHLY TOTAL 2.596 SEASON TO DATE TOTAL 0.000
COOLING: 431.229 780.468

JUNE 2020
Leavenworth, KS USA

JULY 2020

LOCAL CLIMATOLOGICAL DATA

DAVIS INSTRUMENTS, WEATHERLINK NETWORK

Leavenworth, KS USA

Leavenworth City Hall

Lat: 39.3195 Long: -94.9153 Elev (ground): 851 feet Time Zone: America/Chicago

	TEMPERATURE °F					DEG DAYS BASE 65°		PRECIP. (in)	PRESSURE (in Hg)		WIND SPEED = mph DIR = DEGREES							
														WIND MAX				
														INSTANT		ARCHIVE		
Date	MAXIMUM	MINIMUM	AVERAGE	AVERAGE DEW PT	AVERAGE WET BULB	HEATING	COOLING	WATER EQUIV	AVERAGE STATION	AVERAGE SEA LEVEL	RESULTANT SPEED	RES DIR	AVERAGE SPEED	SPEED	DIR	SPEED	DIR	Date
01	83	68	77	71	73	0.000	12.452	0.31	28.90	29.81	2	65	3	27	338	11	360	01
02	88	71	79	72	74	0.000	14.195	0.00	29.03	29.94	2	47	2	15	45	9	45	02
03	89	74	79	73	75	0.000	14.499	0.00	29.05	29.96	1	359	2	12	225	7	248	03
04	85	73	79	73	74	0.000	13.877	0.00	29.04	29.95	3	43	4	16	68	10	45	04
05	90	73	82	71	73	0.000	16.595	0.00	29.02	29.93	2	67	2	14	68	7	45	05
06	92	72	83	72	74	0.000	17.528	0.00	29.03	29.94	2	56	2	13	68	7	45	06
07	95	74	85	72	75	0.000	20.254	0.00	29.00	29.91	1	196	1	11	202	5	270	07
08	94	76	86	73	75	0.000	20.648	0.00	28.92	29.83	3	168	3	15	158	8	225	08
09	86	68	79	68	70	0.000	13.815	0.05	28.91	29.82	2	272	4	36	248	13	248	09
10	93	67	81	67	70	0.000	15.680	0.00	29.06	29.97	1	161	2	13	68	7	112	10
11	92	73	82	72	74	0.000	17.187	0.00	29.01	29.92	2	277	3	12	248	7	360	11
12	86	66	78	64	68	0.000	12.758	0.00	29.01	29.92	3	334	3	19	360	10	338	12
13	92	67	80	67	70	0.000	15.141	0.00	28.97	29.87	4	126	3	18	158	9	112	13
14	91	72	81	72	74	0.000	16.459	0.00	28.92	29.83	3	111	4	17	68	10	45	14
15	83	68	76	70	72	0.000	11.042	3.24	28.98	29.89	2	18	4	27	68	13	45	15
16	85	68	77	70	72	0.000	11.827	0.00	29.11	30.02	2	104	2	14	68	8	45	16
17	95	74	84	75	76	0.000	19.351	0.00	29.05	29.96	4	154	4	19	158	10	202	17
18	96	80	87	75	78	0.000	21.837	0.00	28.93	29.84	8	176	7	31	158	15	180	18
19	86	75	81	73	75	0.000	16.449	0.02	29.01	29.91	0	134	4	19	225	10	202	19
20	82	68	75	70	71	0.000	9.647	1.61	29.03	29.94	2	71	3	30	360	13	45	20
21	80	70	74	70	71	0.000	8.823	0.54	29.02	29.93	1	159	2	22	225	9	248	21
22	88	68	79	72	73	0.000	14.149	0.00	29.06	29.97	1	64	1	8	248	5	45	22
23	92	74	83	75	76	0.000	17.527	0.00	29.09	30.00	3	81	2	17	68	8	68	23
24	92	76	84	75	77	0.000	19.344	0.00	29.09	30.00	3	127	3	13	135	6	202	24
25	93	78	85	74	77	0.000	19.894	0.00	29.06	29.97	4	163	4	17	158	9	202	25
26	94	76	83	74	76	0.000	18.027	0.00	29.06	29.97	3	194	4	28	338	13	338	26
27	82	72	76	72	73	0.000	11.177	0.09	29.08	29.99	2	13	2	12	45	7	45	27
28	88	71	79	72	74	0.000	14.023	0.00	29.04	29.95	2	118	2	15	90	7	112	28
29	81	73	76	73	74	0.000	10.644	1.53	28.94	29.84	2	75	3	18	135	9	112	29
30	80	71	73	71	72	0.000	8.465	0.44	28.91	29.81	3	29	4	20	45	9	45	30
31	79	68	73	68	69	0.000	8.011	0.06	29.03	29.94	3	350	3	15	338	8	360	31
	88	72	80	71	73	0.000	14.881		29.01	29.92	2	139.15	3	< Monthly Avg				

NUMBER OF DAYS WITH: >
Maximum Temp ≥ 90: 13
Maximum Temp ≤ 32: 0
Minimum Temp ≤ 32: 0
Minimum Temp ≤ 0: 0
Precipitation ≥ 0.01 inch: 10
Precipitation ≥ 0.10 inch: 6
Greatest 24 – hr precipitation: 3.24 Date: 14-15
Monthly Total Precipitation: 7.89

SEA LEVEL PRESSURE: >
MAXIMUM: 30.07 DATE 16 TIME 11:05
MINIMUM: 29.67 1 04:10

DEGREEE DAYS: >
HEATING: MONTHLY TOTAL 0.000 SEASON TO DATE TOTAL 172.377
COOLING: 461.325 1588.842

JULY 2020
Leavenworth, KS USA

AUGUST 2020
LOCAL CLIMATOLOGICAL DATA
DAVIS INSTRUMENTS, WEATHERLINK NETWORK

Leavenworth, KS USA
Leavenworth City Hall
Lat: 39.3195 Long: -94.9153 Elev (ground): 851 feet Time Zone: America/Chicago

	TEMPERATURE °F					DEG DAYS BASE 65°		PRECIP. (in)	PRESSURE (in Hg)		WIND SPEED = mph DIR = DEGREES							
														WIND MAX				
														INSTANT		ARCHIVE		
Date	MAXIMUM	MINIMUM	AVERAGE	AVERAGE DEW PT	AVERAGE WET BULB	HEATING	COOLING	WATER EQUIV	AVERAGE STATION	AVERAGE SEA LEVEL	RESULTANT SPEED	RES DIR	AVERAGE SPEED	SPEED	DIR	SPEED	DIR	Date
01	83	64	74	65	67	0.013	9.165	0.00	29.04	29.95	1	302	2	12	338	6	315	01
02	81	67	73	66	68	0.000	8.001	0.00	29.05	29.96	3	317	4	18	315	9	360	02
03	76	61	68	57	61	0.632	3.916	0.00	29.18	30.09	3	352	3	17	22	9	360	03
04	75	55	66	56	59	2.617	3.353	0.00	29.21	30.12	1	29	2	11	360	7	45	04
05	79	58	69	59	62	1.886	5.846	0.00	29.15	30.06	2	116	2	14	90	7	112	05
06	84	66	74	67	69	0.000	9.139	0.00	29.08	29.99	3	121	3	14	90	8	112	06
07	87	69	78	71	73	0.000	12.577	0.07	29.05	29.96	4	136	5	24	180	13	158	07
08	90	72	81	74	76	0.000	15.904	0.00	29.03	29.94	4	141	5	22	158	12	158	08
09	87	75	81	74	76	0.000	15.970	0.04	28.99	29.90	4	159	4	19	158	11	158	09
10	85	73	79	72	73	0.000	13.936	0.16	28.98	29.89	2	132	3	24	225	10	225	10
11	86	70	78	72	74	0.000	12.944	0.00	29.02	29.93	3	59	3	14	68	8	45	11
12	88	71	79	73	74	0.000	14.358	0.01	29.04	29.95	2	114	2	15	68	7	68	12
13	89	74	81	73	75	0.000	15.716	0.00	29.03	29.94	3	88	3	15	68	8	68	13
14	91	72	82	73	75	0.000	16.616	0.00	29.00	29.91	3	91	3	17	112	8	112	14
15	84	68	78	68	70	0.000	12.545	0.00	29.08	29.99	2	12	3	18	360	9	22	15
16	84	62	74	63	66	0.322	8.872	0.00	29.18	30.09	2	190	2	12	315	6	202	16
17	84	67	75	64	67	0.000	10.342	0.00	29.18	30.09	3	308	3	25	360	10	338	17
18	80	61	71	61	64	0.450	6.762	0.00	29.17	30.09	2	354	2	12	45	8	360	18
19	84	60	72	61	64	1.025	7.813	0.00	29.13	30.04	1	81	2	13	68	7	45	19
20	85	61	74	62	65	0.411	9.124	0.00	29.04	29.94	1	124	2	13	202	7	45	20
21	90	65	77	64	67	0.001	12.336	0.00	28.97	29.88	2	181	2	15	225	8	202	21
22	91	66	79	65	68	0.000	14.121	0.00	28.98	29.89	2	190	2	15	225	8	202	22
23	94	70	82	67	70	0.000	17.276	0.00	29.03	29.94	2	207	2	18	248	8	202	23
24	94	71	83	68	71	0.000	18.093	0.00	29.09	30.00	2	187	2	14	158	8	202	24
25	95	71	83	69	71	0.000	17.987	0.00	29.07	29.98	2	177	2	15	180	8	202	25
26	95	72	84	70	73	0.000	18.604	0.00	28.98	29.89	4	169	3	21	158	11	202	26
27	93	73	82	71	74	0.000	16.881	0.00	28.92	29.82	3	157	4	16	180	9	180	27
28	95	69	82	72	74	0.000	17.277	0.00	28.85	29.76	1	347	2	13	338	7	45	28
29	82	64	73	65	67	0.008	7.587	0.60	28.98	29.89	2	350	2	16	270	7	22	29
30	83	60	72	65	66	0.995	7.546	0.00	28.89	29.79	2	112	2	15	68	8	112	30
31	74	65	71	66	67	0.001	5.624	1.02	28.86	29.76	3	30	3	37	360	20	360	31
	86	67	77	67	69	0.697	11.814		29.04	29.95	2	172.06	3	< Monthly Avg				

NUMBER OF DAYS WITH: > Maximum Temp ≥ 90: 8 | Maximum Temp ≤ 32: 0 | Minimum Temp ≤ 32: 0 | Minimum Temp ≤ 0: 0 | Precipitation ≥ 0.01 inch: 5 | Precipitation ≥ 0.10 inch: 3 | Greatest 24 – hr precipitation: 1.02 Date: 30-31 | Monthly Total Precipitation: 1.90

		DATE	TIME
SEA LEVEL PRESSURE: >	MAXIMUM: 30.17	4	11:25
	MINIMUM: 29.65	31	07:05

		MONTHLY TOTAL	SEASON TO DATE TOTAL
DEGREEE DAYS: >	HEATING:	8.361	172.377
	COOLING:	366.234	1588.842

SEPTEMBER 2020

LOCAL CLIMATOLOGICAL DATA

DAVIS INSTRUMENTS, WEATHERLINK NETWORK

Leavenworth, KS USA

Leavenworth City Hall

Lat: 39.3195 Long: -94.9153 Elev (ground): 851 feet Time Zone: America/Chicago

DAVIS

	TEMPERATURE °F					DEG DAYS BASE 65°		PRECIP. (in)	PRESSURE (in Hg)		WIND SPEED = mph DIR = DEGREES							
														WIND MAX				
														INSTANT		ARCHIVE		
Date	MAXIMUM	MINIMUM	AVERAGE	AVERAGE DEW PT	AVERAGE WET BULB	HEATING	COOLING	WATER EQUIV	AVERAGE STATION	AVERAGE SEA LEVEL	RESULTANT SPEED	RES DIR	AVERAGE SPEED	SPEED	DIR	SPEED	DIR	Date
01	81	68	73	69	70	0.000	8.142	0.28	28.88	29.79	0	69	3	21	225	11	225	01
02	88	66	76	67	69	0.000	10.688	0.00	28.95	29.86	1	131	1	13	90	7	112	02
03	82	64	74	63	66	0.005	8.814	0.00	29.00	29.91	2	310	3	18	338	10	360	03
04	83	55	69	56	59	2.348	6.799	0.00	29.24	30.16	1	122	1	11	112	5	112	04
05	91	65	78	70	72	0.000	13.006	1.27	29.26	30.18	2	172	2	12	180	7	180	05
06	93	75	83	70	73	0.000	18.148	0.00	28.99	29.89	7	185	7	27	158	15	158	06
07	85	69	77	68	70	0.000	11.593	0.00	28.84	29.74	3	34	4	18	180	8	180	07
08	69	49	56	52	53	9.291	0.091	0.00	29.09	30.00	7	8	7	24	338	12	22	08
09	53	49	51	49	50	13.888	0.000	0.01	29.33	30.24	6	6	5	19	315	9	22	09
10	56	52	53	52	52	11.524	0.000	0.85	29.38	30.30	4	358	4	13	315	7	338	10
11	63	54	59	56	57	6.462	0.000	0.00	29.25	30.16	1	256	1	7	338	4	248	11
12	77	61	67	62	63	1.579	3.912	0.00	29.06	29.97	2	199	2	18	202	10	202	12
13	78	55	66	58	60	2.903	3.856	0.00	29.21	30.13	1	2	1	11	45	7	45	13
14	79	56	67	60	62	2.681	4.760	0.00	29.35	30.27	1	65	2	13	68	7	45	14
15	80	57	68	61	63	2.133	4.902	0.00	29.25	30.17	1	141	1	10	90	5	112	15
16	85	60	72	64	66	0.849	7.431	0.00	29.15	30.06	1	6	1	15	360	7	360	16
17	72	58	65	56	59	1.876	2.140	0.00	29.24	30.15	3	0	3	13	22	7	22	17
18	72	53	62	53	56	4.744	1.708	0.00	29.34	30.26	2	37	2	13	68	7	68	18
19	71	54	62	52	55	4.456	1.210	0.00	29.33	30.24	3	115	3	16	112	9	112	19
20	74	52	63	53	56	4.182	2.394	0.00	29.31	30.23	3	121	2	16	112	9	112	20
21	79	54	66	57	60	3.084	4.461	0.00	29.29	30.21	2	137	2	11	158	6	158	21
22	78	56	67	60	62	2.585	4.574	0.00	29.20	30.12	2	169	1	11	158	6	180	22
23	77	64	70	63	65	0.023	4.944	0.00	29.10	30.01	2	174	2	12	202	6	202	23
24	82	59	70	61	64	1.064	6.358	0.00	28.97	29.88	3	167	3	18	202	10	202	24
25	88	63	74	64	66	0.198	9.648	0.00	28.90	29.81	5	159	4	22	158	11	158	25
26	90	65	76	65	67	0.001	11.149	0.00	28.80	29.70	6	173	6	26	180	13	202	26
27	75	52	63	58	59	5.082	2.877	0.44	28.93	29.84	1	342	3	27	360	14	360	27
28	66	50	57	46	50	7.588	0.019	0.00	29.12	30.03	4	289	4	23	360	11	338	28
29	74	45	60	43	48	7.033	1.756	0.00	29.08	29.99	4	236	4	19	225	11	248	29
30	73	54	64	43	49	3.469	2.687	0.00	29.03	29.94	4	319	4	32	338	14	338	30
	77	58	67	58	61	3.962	5.854		29.13	30.04	3	150.09	3	< Monthly Avg				

NUMBER OF DAYS WITH: > Maximum Temp ≥ 90: 3 | Maximum Temp ≤ 32: 0 | Minimum Temp ≤ 32: 0 | Minimum Temp ≤ 0: 0 | Precipitation ≥ 0.01 inch: 4 | Precipitation ≥ 0.10 inch: 4

Greatest 24 – hr precipitation: 1.27 Date: 4-5
Monthly Total Precipitation: 2.85

			DATE	TIME
SEA LEVEL PRESSURE: >	MAXIMUM:	30.34	18	10:45
	MINIMUM:	29.61	26	16:10

		MONTHLY TOTAL	SEASON TO DATE TOTAL
DEGREEE DAYS: >	HEATING:	99.048	172.377
	COOLING:	158.069	1588.842

SEPTEMBER 2020
Leavenworth, KS USA

OCTOBER 2020
LOCAL CLIMATOLOGICAL DATA
DAVIS INSTRUMENTS, WEATHERLINK NETWORK

Leavenworth, KS USA
Leavenworth City Hall
Lat: 39.3195 Long: -94.9153 Elev (ground): 851 feet Time Zone: America/Chicago

	TEMPERATURE °F					DEG DAYS BASE 65°		PRECIP. (in)	PRESSURE (in Hg)		WIND SPEED = mph DIR = DEGREES							
														WIND MAX				
														INSTANT		ARCHIVE		
Date	MAXIMUM	MINIMUM	AVERAGE	AVERAGE DEW PT	AVERAGE WET BULB	HEATING	COOLING	WATER EQUIV	AVERAGE STATION	AVERAGE SEA LEVEL	RESULTANT SPEED	RES DIR	AVERAGE SPEED	SPEED	DIR	SPEED	DIR	Date
01	63	48	55	38	44	10.194	0.000	0.00	29.32	30.24	3	305	4	24	360	11	315	01
02	64	39	52	40	44	12.784	0.000	0.00	29.31	30.23	1	133	1	10	90	5	270	02
03	63	47	55	45	49	10.148	0.000	0.00	29.17	30.08	2	13	4	19	315	9	338	03
04	63	39	50	43	46	14.616	0.000	0.00	29.38	30.29	1	116	1	11	90	5	68	04
05	77	47	61	46	50	7.018	2.856	0.00	29.17	30.09	5	163	5	26	158	12	180	05
06	82	54	67	54	57	2.702	4.743	0.00	29.08	29.99	2	172	2	13	202	6	202	06
07	90	58	73	59	62	1.176	8.844	0.00	29.05	29.96	1	160	2	10	248	5	180	07
08	85	57	71	60	63	1.825	7.499	0.00	29.10	30.02	2	140	2	17	112	8	112	08
09	82	63	72	62	65	0.175	6.801	0.00	28.95	29.86	5	172	5	23	180	12	202	09
10	83	62	72	65	67	0.168	7.292	0.00	28.94	29.85	1	170	1	10	158	6	135	10
11	86	59	73	61	64	1.217	9.031	0.00	28.82	29.72	4	145	4	28	158	14	158	11
12	76	53	62	44	50	4.665	1.692	0.00	29.01	29.92	4	297	5	30	22	14	315	12
13	77	53	63	41	48	4.875	2.903	0.00	29.15	30.06	2	213	3	20	202	10	248	13
14	83	52	67	47	52	3.390	4.917	0.00	28.89	29.79	3	225	5	31	202	15	202	14
15	63	40	53	29	39	11.859	0.000	0.00	29.24	30.16	4	324	4	23	338	11	338	15
16	62	36	49	30	38	16.208	0.000	0.00	29.36	30.27	2	234	2	18	248	10	248	16
17	71	52	60	38	46	5.758	1.212	0.00	29.01	29.92	7	184	7	33	225	18	180	17
18	57	41	45	34	39	20.079	0.000	0.00	29.27	30.19	6	4	6	28	338	14	360	18
19	45	40	42	29	36	22.601	0.000	0.00	29.30	30.22	5	45	5	17	45	10	45	19
20	47	39	44	38	41	21.479	0.000	0.00	29.20	30.12	2	69	2	13	90	7	68	20
21	48	37	44	42	43	21.229	0.000	0.00	29.21	30.13	2	60	2	14	68	8	68	21
22	84	44	63	56	58	8.275	5.978	0.00	28.97	29.88	4	182	6	33	158	17	180	22
23	44	37	39	34	37	25.751	0.000	0.37	29.35	30.27	7	341	7	26	360	12	338	23
24	41	35	38	31	34	26.960	0.000	0.00	29.36	30.28	4	48	4	16	68	9	68	24
25	39	35	37	33	35	27.727	0.000	0.00	29.31	30.23	4	351	4	16	338	9	338	25
26	35	27	30	25	28	35.198	0.000	0.00	29.50	30.42	5	347	5	22	338	12	360	26
27	35	30	32	25	29	32.997	0.000	0.02	29.45	30.37	1	345	2	12	22	5	360	27
28	46	34	37	30	34	15.845	0.000	0.00	29.26	30.17	1	219	1	7	202	4	202	28
	64	45	54	42	46	13.104	5.314		29.18	30.10	3	184.89	4	< Monthly Avg				

NUMBER OF DAYS WITH: >
Maximum Temp ≥ 90: 1
Maximum Temp ≤ 32: 0
Minimum Temp ≤ 32: 2
Minimum Temp ≤ 0: 0
Precipitation ≥ 0.01 inch: 2
Precipitation ≥ 0.10 inch: 1
Greatest 24 — hr precipitation: 0.37 Date: 22-23
Monthly Total Precipitation: 0.39

SEA LEVEL PRESSURE: >
MAXIMUM: 30.48 DATE 26 TIME 11:00
MINIMUM: 29.55 11 23:30

DEGREEE DAYS: >
HEATING: MONTHLY TOTAL 366.919 SEASON TO DATE TOTAL 474.328
COOLING: 63.770 1604.726

OCTOBER 2020
Leavenworth, KS USA

NOVEMBER 2020
LOCAL CLIMATOLOGICAL DATA
DAVIS INSTRUMENTS, WEATHERLINK NETWORK

Leavenworth, KS USA
Leavenworth City Hall
Lat: 39.3195 Long: -94.9153 Elev (ground): 851 feet Time Zone: America/Chicago

	TEMPERATURE °F					DEG DAYS BASE 65°		PRECIP. (in)	PRESSURE (in Hg)		WIND SPEED = mph DIR = DEGREES							
														WIND MAX				
														INSTANT		ARCHIVE		
Date	MAXIMUM	MINIMUM	AVERAGE	AVERAGE DEW PT	AVERAGE WET BULB	HEATING	COOLING	WATER EQUIV	AVERAGE STATION	AVERAGE SEA LEVEL	RESULTANT SPEED	RES DIR	AVERAGE SPEED	SPEED	DIR	SPEED	DIR	Date
01	55	33	44	25	34	21.007	0.000	0.00	29.58	30.50	3	310	3	21	338	10	338	01
02	69	31	49	33	39	16.714	0.412	0.00	29.44	30.36	3	195	2	22	202	12	202	02
03	77	42	59	44	48	8.864	2.424	0.00	29.18	30.09	3	166	3	18	158	8	180	03
04	69	53	61	45	50	4.966	0.645	0.00	29.15	30.06	5	172	4	19	202	10	202	04
05	75	52	61	48	52	5.879	2.105	0.00	29.23	30.14	2	177	1	11	225	7	202	05
06	72	48	59	53	55	6.773	1.035	0.00	29.19	30.11	4	164	3	18	202	10	202	06
07	73	54	63	52	56	3.787	1.784	0.00	29.11	30.02	6	162	5	23	135	13	180	07
08	76	60	67	58	61	1.376	3.479	0.00	29.04	29.95	7	156	7	33	158	16	158	08
09	72	66	69	61	63	0.000	4.254	0.00	28.94	29.85	7	161	6	26	180	13	158	09
10	67	31	41	36	39	24.389	0.000	0.59	28.93	29.84	4	266	5	27	248	12	248	10
11	58	28	41	32	36	24.040	0.000	0.00	29.21	30.13	1	193	1	11	158	7	202	11
12	57	30	42	33	37	23.121	0.000	0.00	29.21	30.12	3	308	3	26	315	14	315	12
13	48	23	35	23	29	29.739	0.000	0.00	29.33	30.25	1	127	2	13	338	7	338	13
14	67	40	55	45	49	10.224	0.111	0.00	28.75	29.66	5	193	8	38	225	19	270	14
15	54	36	45	27	35	20.312	0.000	0.00	29.15	30.06	8	264	7	36	248	18	292	15
16	66	35	49	27	36	15.803	0.015	0.00	29.34	30.25	3	241	3	20	270	9	202	16
17	58	33	45	32	38	19.653	0.000	0.00	29.54	30.46	2	115	2	16	68	9	112	17
18	68	41	57	37	44	8.191	0.329	0.00	29.22	30.13	10	172	10	41	202	20	180	18
19	73	58	64	48	53	2.713	1.926	0.00	29.03	29.94	10	188	9	34	180	17	202	19
20	62	46	54	42	47	11.481	0.000	0.00	29.40	30.32	4	18	4	19	22	11	22	20
21	48	41	44	36	40	21.319	0.000	0.14	29.52	30.44	5	32	4	17	68	10	45	21
22	55	34	45	35	39	20.344	0.000	0.00	29.45	30.37	3	298	3	19	248	10	270	22
23	42	29	35	31	33	30.291	0.000	0.27	29.37	30.28	3	102	3	17	68	9	90	23
24	53	42	50	46	47	15.251	0.000	0.57	28.95	29.85	4	147	5	22	158	13	180	24
25	50	33	41	38	40	23.780	0.000	0.29	28.97	29.88	4	303	5	29	338	19	22	25
26	55	31	42	35	38	23.397	0.000	0.00	29.15	30.06	1	156	2	11	158	5	158	26
27	51	33	40	32	36	25.173	0.000	0.00	29.34	30.26	3	318	3	14	315	8	315	27
28	56	30	43	31	36	22.315	0.000	0.00	29.31	30.22	3	183	3	21	158	11	202	28
29	44	30	40	28	34	25.270	0.000	0.00	29.28	30.20	6	324	7	33	338	17	315	29
30	41	22	30	17	25	34.793	0.000	0.00	29.39	30.30	4	302	4	20	338	10	315	30
	60	39	49	38	42	17.275	1.543		29.22	30.14	4	197.09	4	< Monthly Avg				

NUMBER OF DAYS WITH: > Maximum Temp ≥ 90: 0 Maximum Temp ≤ 32: 0 Minimum Temp ≤ 32: 10 Minimum Temp ≤ 0: 0 Precipitation ≥ 0.01 inch: 5 Precipitation ≥ 0.10 inch: 5 Greatest 24 – hr precipitation: 0.86 Date: 24-25 Monthly Total Precipitation: 1.86

		DATE	TIME
SEA LEVEL PRESSURE: >	MAXIMUM: 30.58	1	10:50
	MINIMUM: 29.43	14	15:20

		MONTHLY TOTAL	SEASON TO DATE TOTAL
DEGREEE DAYS: >	HEATING:	500.964	2596.605
	COOLING:	18.517	0.000

DECEMBER 2020

LOCAL CLIMATOLOGICAL DATA

DAVIS INSTRUMENTS, WEATHERLINK NETWORK

Leavenworth, KS USA

Leavenworth City Hall

Lat: 39.3195 Long: -94.9153 Elev (ground): 851 feet Time Zone: America/Chicago

	TEMPERATURE °F					DEG DAYS BASE 65°		PRECIP. (in)	PRESSURE (in Hg)		WIND SPEED = mph DIR = DEGREES							
														WIND MAX				
														INSTANT		ARCHIVE		
Date	MAXIMUM	MINIMUM	AVERAGE	AVERAGE DEW PT	AVERAGE WET BULB	HEATING	COOLING	WATER EQUIV	AVERAGE STATION	AVERAGE SEA LEVEL	RESULTANT SPEED	RES DIR	AVERAGE SPEED	SPEED	DIR	SPEED	DIR	Date
01	50	18	34	21	27	31.274	0.000	0.00	29.23	30.14	3	100	3	18	112	10	112	01
02	50	25	37	23	30	28.459	0.000	0.00	29.40	30.32	1	359	1	11	360	7	45	02
03	43	29	34	25	30	30.506	0.000	0.00	29.35	30.27	2	326	2	13	315	8	315	03
04	55	28	39	28	33	25.828	0.000	0.00	29.21	30.13	2	252	1	13	270	7	270	04
05	50	29	38	30	34	26.565	0.000	0.00	29.27	30.18	2	311	2	13	315	8	338	05
06	47	32	38	30	34	27.293	0.000	0.00	29.24	30.15	4	316	3	15	315	8	360	06
07	55	29	39	31	35	26.002	0.000	0.00	29.23	30.14	1	268	2	11	315	5	315	07
08	59	26	41	29	34	24.047	0.000	0.00	29.21	30.12	1	219	1	13	248	8	248	08
09	68	37	51	31	39	14.445	0.225	0.00	29.09	30.00	1	291	1	13	338	7	338	09
10	68	33	48	34	40	17.340	0.215	0.00	28.99	29.90	0	276	1	11	315	6	180	10
11	44	38	41	37	39	23.955	0.000	0.02	28.90	29.81	3	324	4	16	68	9	68	11
12	38	31	34	30	32	31.307	0.000	0.00	29.11	30.02	5	317	5	18	338	10	315	12
13	32	24	29	25	27	35.815	0.000	0.00	29.39	30.30	4	317	4	17	338	8	315	13
14	34	21	27	19	24	38.188	0.000	0.00	29.47	30.39	1	36	2	11	45	7	68	14
15	29	21	25	20	23	39.638	0.000	0.00	29.34	30.26	4	47	4	14	45	8	45	15
16	32	22	26	21	24	38.596	0.000	0.00	29.23	30.15	1	338	2	12	248	6	270	16
17	50	24	34	26	30	31.095	0.000	0.00	29.24	30.15	2	198	2	11	202	6	202	17
18	55	31	45	33	38	20.494	0.000	0.00	29.13	30.04	6	175	7	36	158	19	180	18
19	42	28	33	26	30	31.503	0.000	0.00	29.22	30.13	3	294	3	15	315	8	315	19
20	53	27	40	27	33	24.856	0.000	0.00	29.06	29.97	2	249	3	19	180	11	202	20
21	59	36	49	29	37	16.463	0.000	0.00	29.12	30.04	5	266	5	25	225	12	225	21
22	64	28	48	33	38	17.418	0.000	0.00	29.07	29.98	6	155	6	36	158	17	180	22
23	58	22	39	28	34	25.839	0.000	0.00	28.84	29.74	9	244	12	45	248	20	225	23
24	24	12	18	6	14	46.930	0.000	0.00	29.28	30.20	7	304	7	34	338	13	292	24
25	38	8	22	11	18	42.768	0.000	0.00	29.29	30.21	2	198	3	15	158	8	202	25
26	57	22	37	26	31	28.312	0.000	0.00	29.03	29.94	1	117	1	13	158	7	112	26
27	50	33	42	29	35	23.135	0.000	0.00	28.96	29.87	3	285	5	27	315	12	315	27
28	37	27	31	21	27	34.060	0.000	0.00	29.52	30.44	3	337	3	16	315	8	315	28
29	33	28	30	27	29	34.675	0.000	1.14	29.27	30.18	7	74	3	21	90	13	90	29
30	34	23	31	26	29	34.200	0.000	0.03	29.28	30.19	3	299	3	18	315	11	315	30
31	33	18	25	22	24	39.627	0.000	0.00	29.35	30.27	2	41	2	13	22	8	22	31
	47	26	36	26	31	29.375	0.220		29.20	30.12	3	236.44	3	< Monthly Avg				

NUMBER OF DAYS WITH: >
Maximum Temp ≥ 90: 0
Maximum Temp ≤ 32: 4
Minimum Temp ≤ 32: 25
Minimum Temp ≤ 0: 0
Precipitation ≥ 0.01 inch: 3
Precipitation ≥ 0.10 inch: 1
Greatest 24 – hr precipitation: 1.17 Date: 29-30
Monthly Total Precipitation: 1.19

SEA LEVEL PRESSURE: >
MAXIMUM: 30.54 DATE 28 TIME 22:45
MINIMUM: 29.40 23 05:35

DEGREEE DAYS: >
HEATING: MONTHLY TOTAL 910.629 SEASON TO DATE TOTAL 2596.605
COOLING: 0.441 0.000

Appendix B
TMDL
N/A

No TMDL monitoring required. Stream monitoring information not required in 2020.

Appendix D

Selected Supporting Documentation for Stormwater Management Program (Stormwater Annual Report - Section E) (BMP Numbers 1 & 2)

BMP 1 - Public Education and Outreach & **BMP 2** - Public Involvement and Participation

- Public Information
  - City Newsletter Articles - Stormwater-Related Articles
  - Examples of Stormwater-Related Facebook Postings
  - City Commission Agenda - Table of City Commission Policy Reports and Minutes Related to Stormwater Management Program, KDHE Annual Stormwater Report, and City Stormwater Projects.

    Individual Documents can be found at:
    http://www.leavenworthks.org/publicworks/page/engineering
  - Erosion-Control and Informational Brochures can be found at:

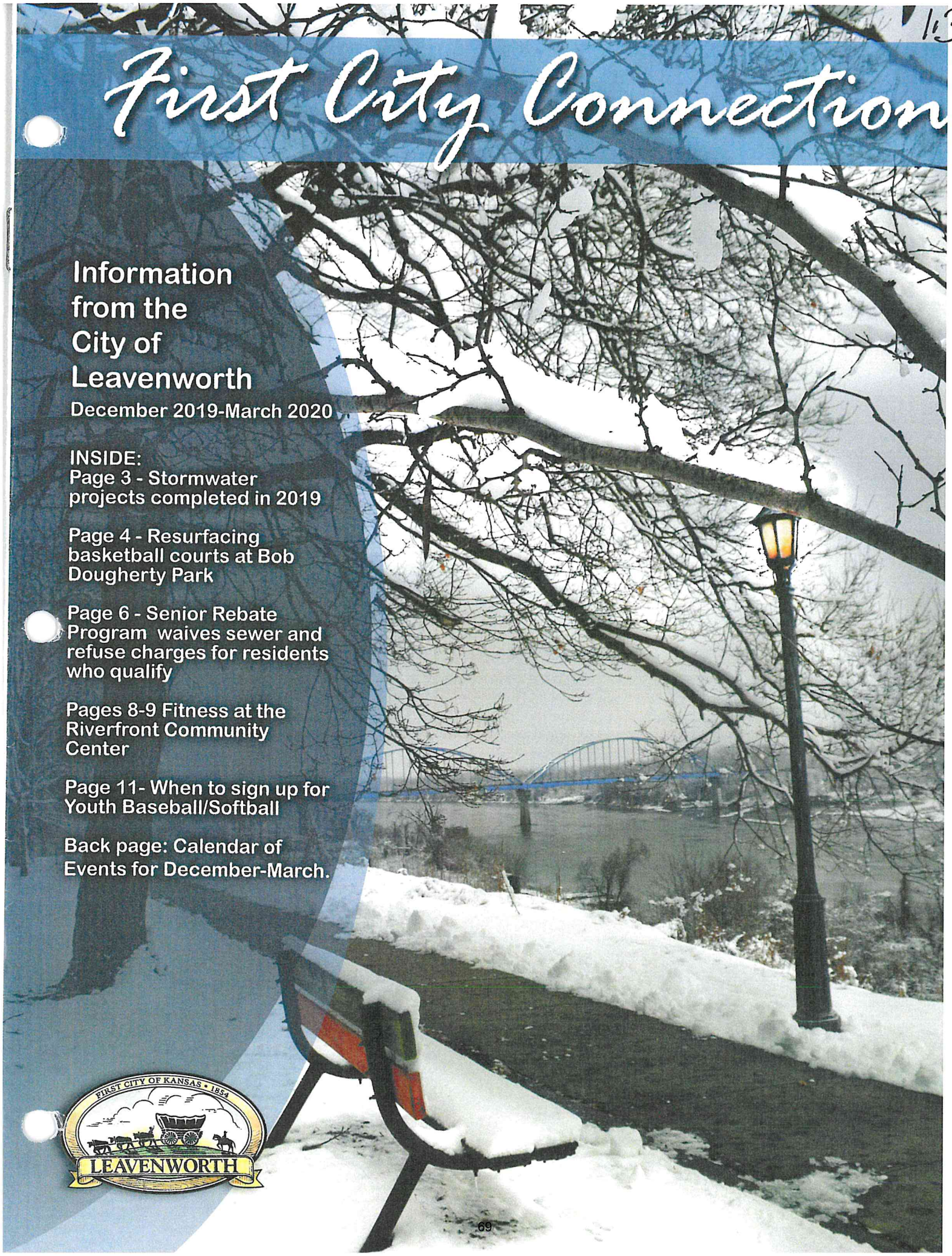
    https://www.leavenworthks.org/publicworks

    a. Solid Waste Services Brochure

    b. KSU ISC (International Student Center) Rain-Garden Project Guidebook

    c. Brochures Listing Steps to Slow Down or Stop Soil Erosion can be found at **https://www.leavenworthks.org/publicworks/page/engineering**

First City Connection



Information from the City of Leavenworth

December 2019-March 2020

INSIDE:

YEAR 1: STORMWATER PROJECTS

ABOVE PHOTO: Emergency repairs were completed on Limit Street near the Guidance Center in 2019 because of stormwater structural failure that damaged the road.

At the June 12, 2018 City Commission meeting, a new stormwater fee was approved to provide funding for needed stormwater repairs.

With an aging stormwater system that often meant collapsed pipes or sinkholes throughout the city, it was estimated $83 million worth of repairs were needed. Although the city can't make the repairs all at once, the program provides funding to adddress several problems throughout the year. The stormwater repair program helps address safety issues with sinkholes showing up throughout the city, helps improve and reduce stormwater runoff and prevents the city from unnecessarily treating stormwater in our sewage treatment system.

Many projects like this one at Second and Chestnut streets are in residential areas where sinkholes have shown up because of collapsed stormwater infrastructure. The City plans several stormwater repairs each year.

In 2019, the City completed nearly $1 million worth of stormwater projects. These are completed construction costs:

- 16th Terrace and Thornton - $186,527
- 500 Limit Street repairs (emergency project to fix stormwater piping under road) $120,945
- Stormwater No. 1 pack (Several small projects)- $153.355.25
  - ⇨1013 17th Street Terrace
  - ⇨509 S. 17th St.
  - ⇨900 Klemp St.
  - ⇨Fifth and Elm Street
  - ⇨1200 Cherokee St.
  - ⇨330 20th Street Terrace

Another project at 14th and Pawnee streets partially utilized the stormwater project funding at a total cost of $552,393. An Independence Court Bank Stabilization Study was completed in 2019 for $14,450, which prepares for a project in 2020.

In 2020, the city has plans for completing approximately $3 million worth of stormwater projects. The project costs will depend on bids. Larger projects must be approved by the City Commission.

- Project for Independence Court
- 16th Terrace and Thornton Phase 2 - $285,000
- Stubby Park - $550,000
- Second and Chestnut - $1.8 million
- Stormwater No. 2 pack - $405,000
  - ⇨ 1316 Kansas
  - ⇨ 1210 Washington Street
  - ⇨ 637 McDonald Road
  - ⇨ 908 Park Avenue

See an updated list on our website, www.leavenworthks.org.

First City Connection

1.3

Information from the
City of Leavenworth
Summer 2020
INSIDE:

FIRST CITY OF KANSAS • 1854
LEAVENWORTH

Continued from previous page.

During its inaugural last year, more than 9,000 people attended. Goals in 2020 are to double attendance and increase the entertainment value.

Leavenworth is redoubling its outreach efforts. A new City website, launched in 2019, helps bring a virtual City Hall to citizens who may not be able to access services during normal business hours. Software and hardware upgrades have been made in the City Chambers. They will improve the sound and visual quality of meetings and Channel 2 broadcasts. By the time this letter is published, I will have held my first virtual town hall via Facebook Live. I will learn from this first one and conduct others later in 2020.

Please let the City Manager and/or I know if you have ideas about Leavenworth, or of any concerns you may have regarding your City government.

ASK
the City Manager

Do you:

- **Have a question about a City project?**
- **Want to know how different city operations are funded?**
- **Want to share your ideas?**

If you have questions about the City, ask City Manager Paul Kramer, pkramer@firstcity.org or call 913-680-2600.

THORNTON PROJECT CONTINUES

Work continued on the eastern portion of the City's major Thornton Street project near Anthony Elementary School in the winter of 2019-2020. These double reinforced concrete boxes to handle stormwater runoff. The next phase, set to begin in early summer, will close a portion of Thornton Avenue from 10th Avenue near Leavenworth High School heading east.

Stormwater fee continues to provide a way forward for new projects

Thanks to a new stormwater fee that was added to property tax assessments in 2018, the City of Leavenworth has been able to complete 13 projects and an emergency street repair along Limit Street near the Guidance Center.

Prior to 2018, significant failures of the City's stormwater collection system had caused sinkholes throughout the community -- on private property, next to public walkways and even underneath streets. Many were marked off with orange fences for safety. Staff are continuing to make their way through the many projects residents and businesses have reported to us.

In 2020, these projects include:

- 1316 Kansas Avenue - a rusted out corrugated metal pipe was replaced in a backyard, soil was added and re-seeded.
- 210 Washington - replaced rusted out corrugated metal pipe across a street, regraded banks, added rip-rap and an area inlet, added compact soil and re-asphalted the road.
- 637 McDonald replaced a rusted out pipe cross a street, regraded banks, added rip-rap, added compact soil and re-asphalted the road.
- 908 Park Avenue - As of the writing of this article, contractors were preparing for this project in early March. It will replace an area inlet, add a junction box, replace a rusted out pipe and regrade and re-seed a backyard and remove and replace fences.

The Public Works Department is preparing for two more projects to be completed in 2020 at 746 Spruce Street and 715 Sixth Ave.

An ongoing list of projects can be found on the City's website under "Stormwater Projects."

Leavenworth takes preventative measures during worldwide viral outbreak

As of the writing of this in mid-March, information has been changing rapidly regarding the community response to prevent viral infections of the COVID-19, known as the coronavirus. Please check our website or stay tuned to Channel 2 for the latest information.
The Kansas Department of Health and Environment has a phone number for general inquiries about the virus.
The number is:
1-866-534-3463
This phone number is staffed Monday - Friday 8 a.m. - 7 p.m.
An e-mail is also set up for inquiries:
COVID-19@ks.gov
Recommendations are for people who are feeling ill to stay home and call their healthcare provider.

To reduce risk, everyone should:
- Wash hands with soap and water for at least 20 seconds or use a hand sanitizer that contains at least 60 % alcohol.
- Avoid touching eyes, nose and mouth with unwashed hands.
- Stay home if you are sick.
- Cover coughs and sneezes.
- Clean and disinfect surfaces daily.

At the time of this writing, City Hall, the Riverfront Community Center and other city facilities are closed based on recommendations from health experts that include eliminating gatherings where there are groups of people. Several event cancellations are taking place.

City Clerk's Office

Use of an Alarm System in the City of Leavenworth requires a permit. Alarm User Permits are $15 annually and expire June 30 each year.
As a reminder, if the alarm user permit is not renewed on time, permit fee will be $35. If you have a false alarm and the alarm permit has not been renewed, you will be assessed a $150 response fee. Call the City Clerk's Office for more information, 913-682-9201.
Residents who have rental property in the City of Leavenworth are required to register that property as a rental. There is a one-time fee of $20 per owner of all property. Stop by the City Clerk's Office at City Hall, 100 N. 5th St., or call for more information at 913-682-9201.
- Thinking of having a tree trimmed or removed? If so please make sure the professional tree trimmer is licensed with the City by asking to see their City Permit or call the City Clerk's Office at 913-682-9201. A list of licensed tree trimmers is available on the city website.
- Per City Ordinance, door to door peddlers and solicitors are required to obtain a City permit. Peddlers and solicitors are issued badges which are required to be worn by the permittee in such a way as to be conspicuous at all times while the permittee is peddling or soliciting in the City. If they do not have a permit/badge please call the City Clerk's office during regular business hours at 913-682-9201. If it is after regular business hours contact the Leavenworth Police Department non-emergency phone number at 913-682-4411. It is unlawful for any peddler or solicitor to engage in the business of peddling or soliciting within the City between the hours of one half-hour before sunset and 8 a.m. the following morning, or at any time on Sundays, except by specific appointment with or invitation from the prospective customer. Some exclusions to the permit requirement such as religious, charitable, non-profit and political candidates may apply.
Garage sales require a permit. The permit fee is $5 for up three consecutive days. Garage sales are limited to one per calendar quarter.
-Trash bags can be purchased at the City Clerk's Office. Price is $7 per roll.

STUBBY PARK 2020 UPGRADE

Stubby Park: Crews have removed old playground equipment at this park. It will be replaced later in the spring. A video of Parks and Recreation Director Steve Grant presenting the new playground to the City Commission on Jan. 14 can be found on our YouTube page.
An additional project was completed this winter to improve stormwater runoff in the park and in this area. A contractor made above ground improvements known as an under-drain system, or a dry pond. It will only have water when it rains. The project included lining the current underground storm drains with concrete lining. Previously this area continually flooded, even reaching the playground equipment.

City requires tags for dogs living in Leavenworth

City required registration for all dogs 4 month of age and older that reside in the City of Leavenworth.
Proof of rabies vaccination and proof of spay or neutering is required. License fees are $10.00 for spayed or neutered dogs and $20.00 if unaltered. After March 31 a late fee will apply.
Contact the City Clerk's Office at 913-682-9201 or Animal Control at 913-682-0268 for more information.
Dog licenses may be obtained from any of the following locations:
- City Clerk's Office, 100 N. 5th St.
- Animal Control, 2019 S 3rd St.
- Dog & Cat Clinic, 1101 N. 5th St.
- Pioneer Animal Hospital, 3525 S. 4th St.
- Kansas Country Store, 728 Cherokee St.
- Lowemont Veterinary Clinic, 33511 Santa Fe Trail, Easton, KS.

City of Leavenworth
Facebook Posting Example
May 22, 2020

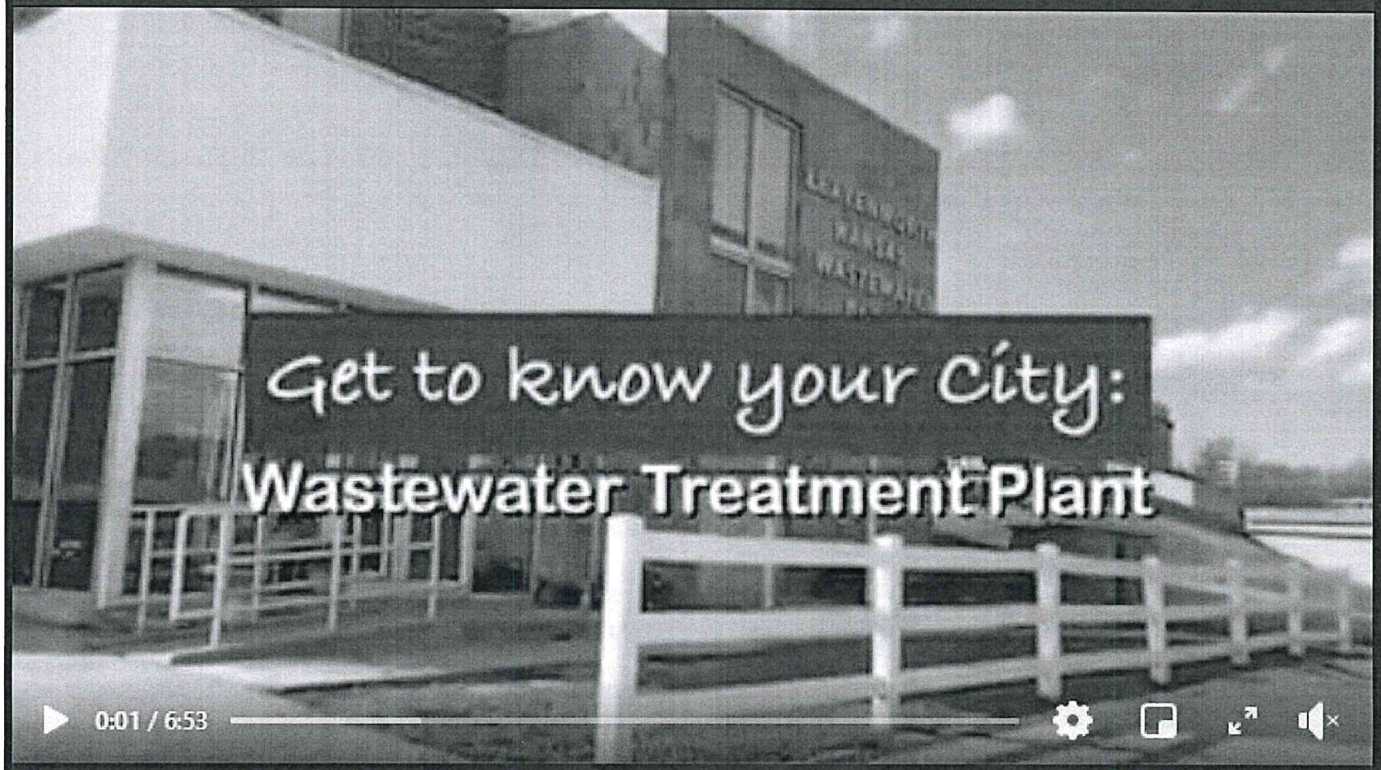
1.4

City of Leavenworth, Kansas Government posted a video to playlist **Informational videos.**

Published by Melissa Bower · November 4, 2020 ·

City's Wastewater Treatment Plant treats sewer water from Leavenworth, Fort Leavenworth, the Bureau of Prisons and the Dwight D. Eisenhower Veterans Affairs Medical Center campus. It goes through various stages of cleaning and is lab-tested prior to release into the Missouri River. The City of Leavenworth maintains a permit administered by the Kansas Department of Health and Environment for this release procedure.

You can help keep our plant operate more efficiently by:
- Calling Water Pollution Control, 913-682-1090 anytime 24/7, when there is a sewer leak or suspected sewer leak or leaking manhole.
- Never dump Household Hazardous Waste down the drain. This includes cleaners, solvents, paints, fertilizers, automotive chemicals, pesticides and many others. To dispose of Household Hazardous Waste, contact the Leavenworth County Transfer Station, (913) 727-2858.



1,006
People Reached

83
Engagements

Boost Post

City of Leavenworth
Facebook Posting Example
November 4, 2020

h.1

1.69 2.1

City of Leavenworth, Kansas 2020 Stormwater-Related Policy Reports (which can be found at this link: www.leavenworthks.org/publicworks/page/engineering)			
No.	**Date**	**Type**	**Subject**
1	2/4/2020	Policy Report	No. 20-09 Consider Design Options for 2nd & Chestnut Street Stormwater Repair Project
2		City Commission Minutes	Consider Design Options for 2nd & Chestnut Repair Project - February 4, 2020
3	2/11/2020	Policy Report	No. 20-10 Review Draft 2019 KDHE Stormwater Annual Report
4		City Commission Minutes	Review Draft 2019 KDHE Annual Report for Stormwater
5	2/11/2020	Policy Report	No. 20-11 Consider Design Contract with Wilson & Company for the 2nd & Chestnut Project
6		City Commission Minutes	Consider Design Contract with Wilson & Company for 2nd & Chestnut Project
7	2/25/2020	City Commission Minutes	Resolution No. B-2245 2019 KDHE Annual Report for Stormwater
8		Resolution No. B-2245	Resolution No. B-2245 Approving the KDHE Annual Report for Stormwater
9		Policy Report	Review Draft 2019 KDHE Stormwater Annual Report (Resolution B-2245 Adoption)
10		First Consideration Ordinance	Authorizing Construction of Stormwater Utility System Improvements and Financing the Cost with Temporary Financing
11		City Commission Minutes	First Consideration Ordinance - Construction & Financing of Stormwater Utility Improvements
12		Policy Report	No. 20-13 Review Draft 2019 KDHE Annual Report for Stormwater
13		City Commission Minutes	Adopt Resolution No. B-2245 2019 KDHE Annual Report for Stormwater
14		Draft Report	2019 KDHE Annual Report for Stormwater
15	3/10/2020	Policy Report	Second Consideration Ordinance No. 8124 Authorizing Construction of Stormwater Utility System Improvements and Financing the Cost with Temporary Financing and or General Obligation Bonds
16		Ordinance No. 8124	Authorizing the Construction of Certain Stormwater Utility System Improvements, together with all Things Necessary and Incidental Thereto, and the Financing of the Costs Thereof, all Pursuant to K.S.A 12-631r, 12-631s, 13-1055a, and 13-1055b, all as Amended
17		City Commission Minutes	Second Consideration Ordinance No. 8124 - Authorizing Construction of Stormwater Utility System Improvements and Financing the Cost with Temporary Financing and or General Obligation Bonds
18	3/24/2020	Policy Report	No. 20-16 Consider Bids for 9th Street & Ottawa Street Stormwater Emergency Repair Project
19		City Commission Minutes	Consider Bids for 9th and Ottawa Street Stormwater Emergency Repairs
20	4/14/2020	Policy Report	No. 20-18 Consider Approval of Low Bid for the Independence Court Bank Stabilization Project
21		City Commission Minutes	Consider Bid for Independence Court Bank Stabilization Project
22	4/21/2020	Policy Report	No. 20-19 Review Status of Identified Stormwater Projects
23		City Commission Minutes	Review Status of Identified Stormwater Projects
24		Policy Report	No. 20-20 Review 2020-2024 KDHE Stormwater Permit & Stormwater Management Program (SMP)
25		City Commission Minutes	Review 2020-2024 KDHE Stormwater Permit and SMP
26	6/2/2020	Policy Report	No. 20-25 Review 2020-2024 Draft SMP for the KDHE Stormwater Permit
27		City Commission Minutes	Review 2019-2024 KDHE Stormwater Permit and SMP
28	6/23/2020	Policy Report	No. 20-32 Consider Bids for the Cody Park Sewer Crossing & Streambank Stabilization Project
29		City Commission Minutes	Consider Bids for Cody Park Sewer Crossing & Bank Stabilization Project
30	7/28/2020	Policy Report	No. 20-34 Consider Bids for the 2020 Stormwater Project
31		City Commission Minutes	Consider Bids for 2020 Stormwater Project 2019-921
32	9/8/2020	Policy Report	No. 20-43 Purchase of 711 S. 3rd Street & 226 Olive Street
33		City Commission Minutes	Consider Purchase of 711 S. 3rd Street & 226 Olive Street
34	10/27/2020	Policy Report	No. 20-48 Adoption of 2021-2024 KDHE Stormwater Management Program
35		Resolution No. B-2267	Adopting the 2020-2024 SMP as the Official SMP & Replacing the 2016 SMP
36		City Commission Minutes	Adopt Resolution No. B-2267 Adopt the 2020 SMP
37			City of Leavenworth Stormwater Management Program
38	12/15/2020	Policy Report	No. 20-57 Review Proposed Changes to the Leavenworth City Code Referencing Stormwater Detention, Retention, and Stormwater Treatment Facility Maintenance
39		City Commission Minutes	Review Stormwater Detention, Retention and Stormwater Treatment Facility Maintenance

BRUSH SITE
1803 S 2ND Street

The City of Leavenworth Solid Waste Division operates a Brush Site for residents to drop off organic materials, tree limbs, grass clippings, straw, hay, leaves and other organic materials from general yard waste. Trees must be free of dirt and less than 12-inches in diameter.

The Brush Site supplies free mulch, compost, wood chips & free firewood to residents. To pick up mulch, wood chips & compost, residents need to arrive at the Brush Site in a vehicle that can support the weight and the vehicle must have sides. The staff will use a bobcat to place the materials requested in your vehicle once a waiver is signed releasing the City of Leavenworth of any liability. Residents are welcome to load their vehicles by hand with their own tools. Leaves and grass clippings are always accepted free-of-charge. All other organic materials are accepted according to the **fee schedule** below:

BRUSH SITE FEES

Car or Van	$2.00
Pickup Truck	$5.00
Flatbed/Single Axle Dump Truck	$15.00
Dual Axle Dump Truck/Chipper Box	$25.00
Trailers:	
1' to 8'	$5.00
8' to 16'	$10.00
Over 16'	$10.00
(plus $1.00 for each foot over 16')	

On the 1st Saturday of each month, the Brush Site is free to City of Leavenworth residents. Commercial contractors will still need to pay.

OPEN: March-November Tues, Wed, Fri & Sat.
8:00am-4:00pm
Last load accepted at 3:50pm

Closed Weekdays: December-February
But Open on Saturdays 8:00am-4:00pm
Open regular hours two weeks following Christmas for free Christmas tree recycling.

Hazardous Waste, Paint and Propane tanks are accepted at the County Transfer Station. For additional information about the **County Transfer Station**, please call 913/727-2858 or 913/727-3000. The County Transfer Station's operational hours are Tues. ~ Fri. 8am to 4pm and Sat. 8am to 2pm. (13523 Gilman Rd Lansing) www.leavenworthcounty.org

Light bulbs and batteries can be dropped off at the Courthouse basement in kitchen (300 Walnut St. Leav.)

For Brush Site & 1st Saturdays

PROOF OF RESIDENCY:

1. VALID DRIVER'S LICENSE WITH LEAVENWORTH ADDRESS
2. FOR OUT-OF-STATE LICENSE PLEASE BRING CURRENT UTILITLY BILL

Contractors working for City residents should have work order ready to show the location of job. County residents and Commercial Contractors working in the County, can dispose of brush at the Leavenworth County Transfer Station, 13523 Gilman Rd Lansing

The City of Leavenworth operates a Recycling Center one block west of the Municipal Service Center, 790 Thornton, at the intersection of Lawrence & Halderman Streets.

The Recycling Center is open Tuesday through Saturday 8:30 a.m. to 12:30 p.m.

The Recycling Center is always free.

The Recycle Center accepts the following items:

- ***Tin & aluminum cans***
- ***Car Batteries***
- ***Rechargeable Batteries*** (i.e. 9-volt batteries and batteries from hand tools)

**Battery sizes D, C, A, AA and AAA batteries are accepted at the Leavenworth County Transfer Station on Gilman Rd in Lansing.

- ***E-Waste***—electronic waste
- ***Used Automotive Oil***
- ***Plastics***—We cannot accept motor oil bottles, pesticide/herbicide bottles, automotive product bottles (brake fluid, windshield washer fluid, etc), plastic bags, plastic toys, expanded #6 polystyrene materials (packing materials such as peanuts or packaging sheets/blocks), PVC pipe or plastic sheet materials.
- ***Glass***—clear, brown or green
- ***Paper products*** (cardboard, magazines, paper, etc.)

We ask that you remove all lids and neck rings and clean and rinse any cans, plastic bottles and glass items.

CITY OF LEAVENWORTH

Solid Waste Services

Trash Services, Recycling Center, Brush Site, & Free Saturday Program

Pick up day is provided once each week (Mon-Fri)

Bags must be on curb by 7:00 A.M.

City of Leavenworth Solid Waste Services

WEEKLY REFUSE PICK UP

- Residential pick-up by City crews is provided once each week, Monday-Friday.
- Household trash cannot be left in the yard and must be disposed of properly, including auto parts, appliances, furniture, building materials, tires, cardboard, plastics, or any other items.
- Tree trimming and fallen limbs must be disposed of within a week.
- The charge for the trash service appears on the water bill each month. Please review your water bill to ensure you are paying for the appropriate number of units.
- **DO NOT SIT OUT TRASH PRIOR TO 24 HOURS IN ADVANCE OF YOUR REGULAR TRASH DAY**

BAGS ONLY!

Please place refuse in disposable bags, securely tied and sit next to the curb line by 7:00am on your collection day to ensure pickup on that day.

Trash cans are not allowed on the curb. Trash bags will not be picked up out of trash cans. To throw away a container, boldly mark it "to be thrown away" and make sure it weighs less than 60 pounds.

Bags: A roll of 50 bags (30 gal) is furnished & delivered to your home twice a year (last Sat in March & Sept.) Anytime in between bag delivery you may purchase the roll of bags at City Clerk's Office, City Hall, 100 N 5th St.

Got Critters? Dogs, cats & wild animals might tear up the bags. You may spray bleach or ammonia on the INSIDE of the trash bags to stop them from doing so!!!

OBSERVED HOLIDAYS

City offices are closed and trash is delayed on the following holidays:

New Year's Day, President's Day, Martin Luther King Jr Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day.
WE DO NOT OBSERVE COLUMBUS DAY!

If the holiday occurs Monday, Tuesday, Wednesday, Thursday, or Friday the normal trash collection day will move one day later. If on a Saturday or Sunday, there is no change.

BUNDLED ITEMS: Brush, tree limbs, wood and carpet will be collected with your refuse; however, these items must be cut into five foot lengths and either boxed, bagged or tied into bundles of less than 60 pounds.

TIRES: The City will collect up to five automobile tires per household (maximum ten tires per year) when left at the curb.

BOXES: If you have hired a moving, ask them if they will return to pick up the packing boxes. If not, you may put them out with your regular refuse– please, we ask that you break down as many as possible and tie them into bundles or take to the Recycling Center.

DISPOSAL OF SYRINGES, BROKEN GLASS OR OTHER SHARP OBJECTS:

Replace the protective cover on syringes after use and place them or other sharp items in a sealed container and/or box—mark "SHARP OBJECTS". Place beside the bags a the curb for collection. You may call the Service Center the day prior to your collection & we will post a notice for the crew.

BULK ITEM PICK UP
on regular collection day —The City of Leavenworth will pick up most furniture items, TV's, mattresses and box springs with the regular trash.

SPECIAL PICKUP BY APPOINT—FRIDAYS ONLY—Large metal items such as appliances, metal desks and miscellaneous heavy metal items will be picked up on Fridays. To schedule a pick up, please call the Service Center no later than 3:00 pm on

FREE SATURDAY

On the FIRST Saturday of each month, the City of Leavenworth offers "FREE Saturdays." This event is an excellent opportunity for residents to utilize the City's services at no charge. On FREE Saturdays the Brush Site is open from 8:00 am to 4:00 pm. At the Recycling Center, dumpsters are provided for residents at the north entrance (Pennsylvania and Lawrence) to drop off materials such as large appliances, furniture, trash and tires, between the hours of 8:30 am to 12:30 pm,. The Recycling Center is always free and is open normal hours from 8:30 am to 12:30 pm for drop off of recyclable items. Any time the FREE First Saturday falls on a holiday it will be held on the 2nd Saturday of that month.

For questions regarding your weekly trash pick up, call the Municipal Service Center at 913/682-0550

Purchasing additional rolls of bags:

City Clerk's Office 100 N 5th St

$7.00 per roll (50 - 30 gallon bags in a roll)

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2.3

Rain-Garden Design and Implementation for Kansas Property Owners

With a Discussion of Lessons Learned from Kansas State University's International Student Center Rain-Garden Design-Build Demonstration Project in Manhattan, Kansas

Introduction
What a rain-garden looks like and how it functions
Why rain-gardens are needed and valued
Other stormwater management options

Steps to Create a Successful Rain-Garden
1. Understanding Your Property and Its Context
2. Locating and Sizing a Rain-Garden
3. Preparing a Place-Specific Rain-Garden Planting Design
4. Excavating and Preparing Soil for the Rain-Garden
5. Installing and Watering Plants
6. Monitoring and Caring for Your Rain-Garden

Common Rain-Garden Questions & Answers

Appendices (Case Studies, including designs and plant list for the KSU-ISC Rain-Garden)

The Kansas Department of Health and Environment (KDHE) provided financial assistance to the KSU-ISC Rain-Garden Project through EPA Section 319 Nonpoint Source Pollution Control Grant #C9007405-12. Three WaterLINK (Water Quality Restoration and Protection Service Learning Mini-Grants awarded to KSU by KDHE utilizing EPA funds) provided financial assistance for the Fall 2006 KSU Campus Creek Planning/Design Charrette, Spring & Summer 2007 KSU-ISC Rain-Garden Construction, and Fall 2007 rain-bowl designs for the KSU-ISC Rain-Garden. A Spring 2008 WaterLINK Grant, also awarded to KSU by KDHE using EPA funds, helped secure plants and pay for travel associated with the Rossville Rain-Garden project. Many KSU faculty, staff, and students assisted with design and implementation efforts. Professor Lee R. Skabelund served as Principal Investigator, Designer, and Projects Coordinator. Cary Thomsen was Lead Designer for the KSU-ISC Rain-Garden, with advice on plantings provided by Tor Jansen and Tim Keane, and the level-spreader designed by Dennis Day. Brett Tagtmeyer and Aarthi Padmanabhan were lead designers for the Rossville Rain-Garden.

Primary References:

Blue Thumb Guide to Raingardens: Design and Installation for Homeowners in the Upper Midwest.
Authors: Rusty Schmidt, Dan Shaw, David Dods. 2007 Waterdrop Innovations, LLC.
Provides a very readable discussion of how to create rain-gardens in different contexts on residential properties and includes a guide for planting in USDA Zones 3, 4, and 5. Many excellent ideas are presented in this guide, and have been adapted in the following pages.

Rain Garden Handbook for Western Washington Homeowners
http://www.pierce.wsu.edu/Water_Quality/LID/Raingarden_handbook.pdf
Discusses a four-step process for creating rain-gardens, with excellent supporting graphics.

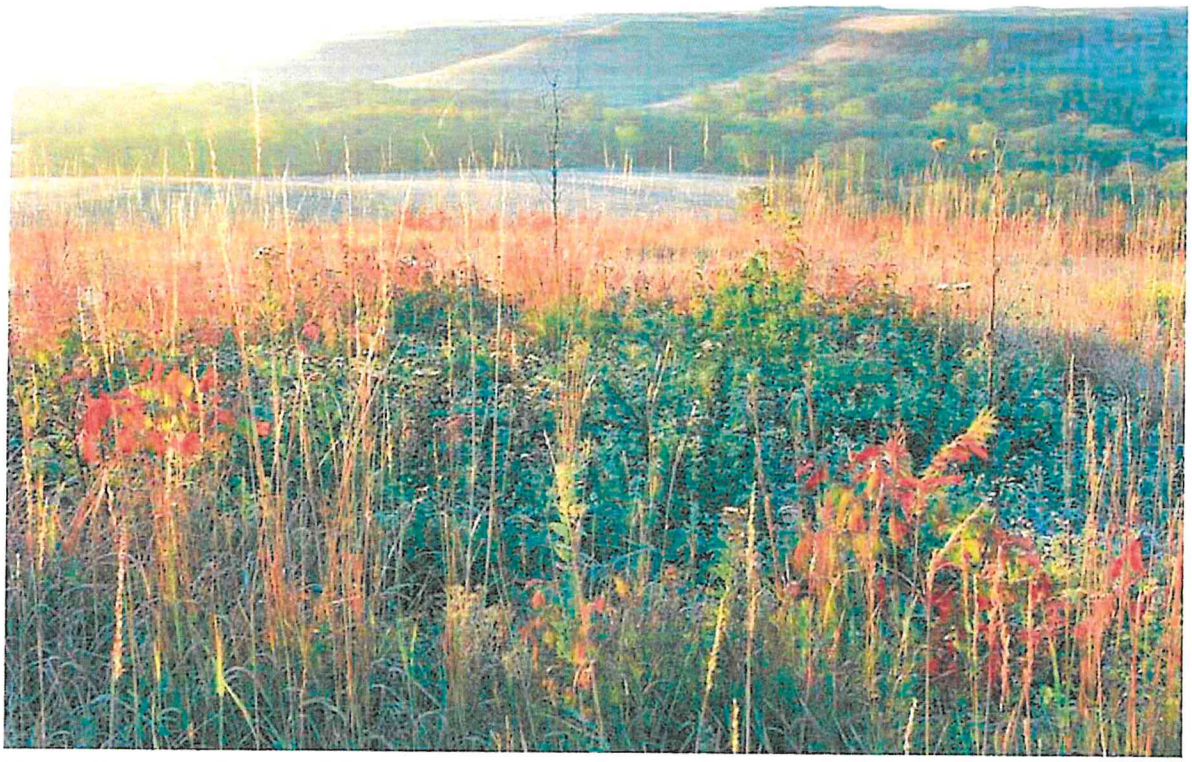
Introduction

What a Rain-Garden Looks Like and How It Functions

In the Flint Hills Eco-region and other parts of Kansas where prairie is the dominant historic vegetative community, rain-gardens can look and function much like a perennial garden.

The difference is that rain-gardens are intentionally designed to absorb the first inch or so of stormwater runoff from rooftops, pavement, and other impermeable surfaces of land. If a rain-garden holds more or less than the first inch of precipitation that is fine. What matters is that we try to reduce negative stormwater impacts on our aquatic resources, and rain-gardens can help!

Using native prairie species makes rain-gardens well adapted to our harsh Kansas climate, but other kinds of plants can also be used. However, please avoid invasive species!



Konza Prairie – October 25, 2005 photo by Lee Skabelund

Why are rain-gardens needed and valued?

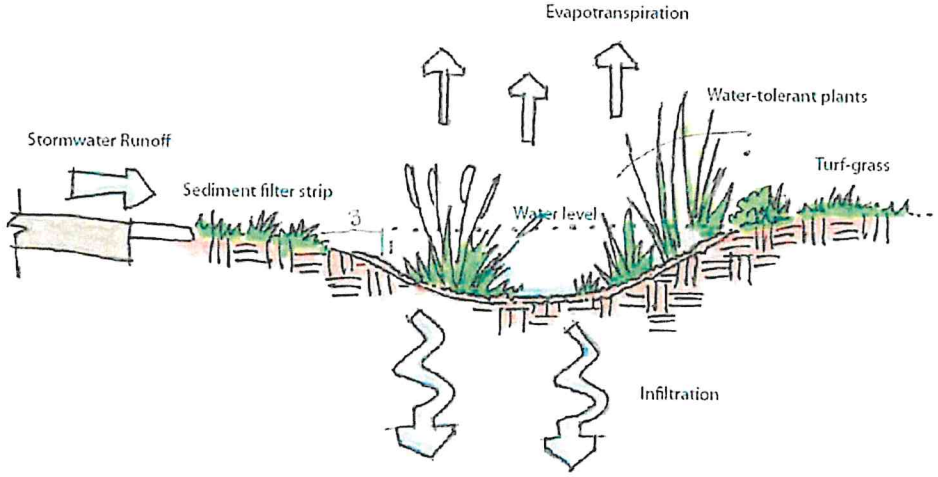
In most urban and suburban areas, and almost everywhere we have built homes, driveways, and streets, untreated stormwater flows directly across rooftops, pavements and lawns, into ditches or inlets and pipes, and is then quickly conveyed to local creeks, streams and rivers.

This process, called *stormwater runoff*, creates dispersed (or non-point-specific) water pollution, and is a leading cause of degraded streams, rivers, lakes, estuaries, and other aquatic ecosystems.

In fact, the US-EPA indicates that stormwater runoff is the most significant threat to water quality in lakes and streams – as well as to the Gulf of Mexico and other estuaries.

In recent years, rain-gardens and other "best management practices" (BMPs for short) have been designed and implemented in an attempt to slow, hold, filter and infiltrate stormwater as near as possible to the places where rain and other forms of precipitation fall to the earth.

Rain-gardens are a solution that can be readily adapted to capture and infiltrate stormwater on nearly every property, no matter the type of soils or slopes.



Rain-Garden sketch by Tim Merklein (KSU-LA/RCP 2008)
Residential Stormwater Retrofitting: An Educational Guidebook for Pottawatomie County, Kansas
Timothy Merklein, Dept. of Landscape Architecture / Kansas State University - Capstone 2008 (pg 32).

Why is effective stormwater management important?

If stormwater is allowed to move too far and too rapidly this flowing water will accumulate and create larger more concentrated flows, typically causing soil erosion in our upland landscapes, as well as excessive streambank erosion and sedimentation along our creeks, streams, and rivers.

How do we stop stormwater from concentrating?

There are many ways to slow, hold, filter and/or infiltrate stormwater. Options include, but are not limited to the following: temporarily **storing water on rooftops** (generally not favored due to concerns about preserving waterproofing membranes atop buildings), **creating green roofs** to capture and use a portion of the precipitation that lands on a roof during storm events for watering vegetation (an increasingly popular but more expensive way to treat stormwater given the need for adequate structural support, excellent rooftop waterproofing, and other technical requirements), **using cisterns and/or rain barrels** to store rooftop or other surface water runoff, **creating dry wells** (holes in the ground filled with gravel) to move stormwater into the earth, **creating bio-retention cells** (areas typically having a combination of engineered soils, plants and mulch), **installing porous pavement** atop a compacted washed gravel base; and **implementing rain-gardens** (shallow depressions that collect water from nearby impervious surfaces and then infiltrate the water into existing, plant-mediated soils).

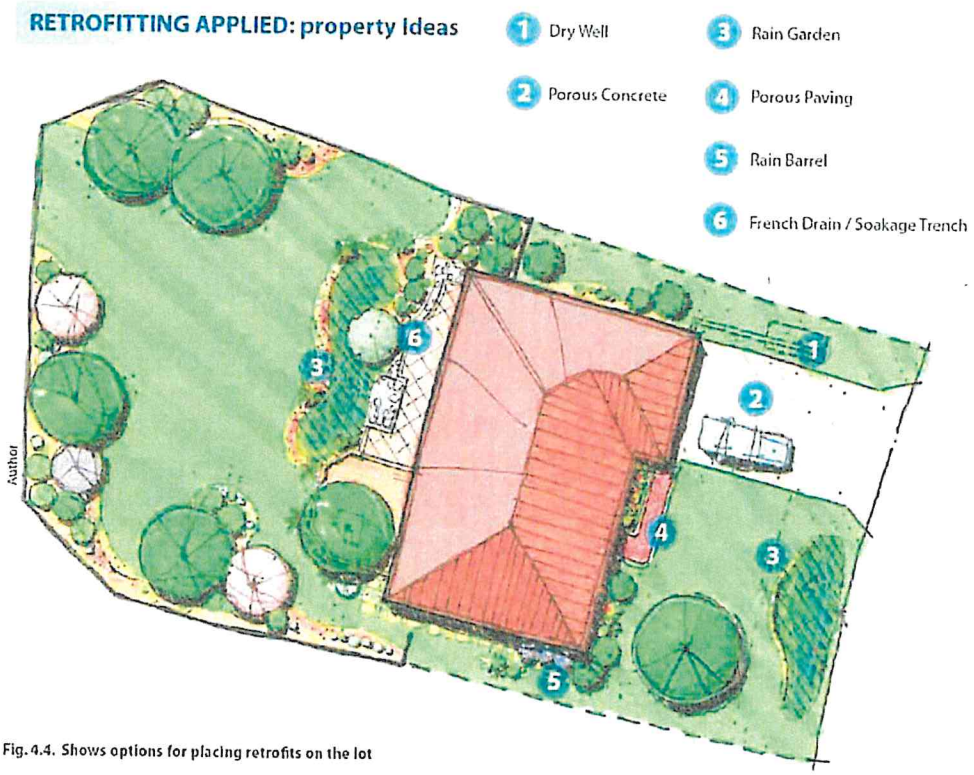


Fig. 4.4. Shows options for placing retrofits on the lot

recommendations / CAPSTONE 2008 43

Stormwater Retrofitting Ideas by Tim Merklein (KSU-LA/RCP 2008)
Residential Stormwater Retrofitting: An Educational Guidebook for Pottawatomie County, Kansas
Timothy Merklein, Dept. of Landscape Architecture / Kansas State University - Capstone 2008 (pg. 43).

Steps to Create a Successful Rain-Garden

In some ways creating a rain-garden can be as simple as A-B-C.

A) Look for a good location;
B) Dig a shallow depression to collect water from part of a rooftop, patio or driveway; and
C) Plant vegetation that is well-adapted to the particular soils, climate/micro-climate, as well as the amount of water likely to be received by the garden.

However, to make sure that you create a garden that relates well to its local and regional context and that will also last a good long time—we suggest that you thoughtfully consider the following six steps in your process of designing and then creating a rain-garden.

The first three steps relate to carefully planning your garden while the second three relate to successfully implementing your plans.

1. **Understand Your Property and Its Context**

2. **Locate and Size Your Rain-Garden**

3. **Prepare a Place-Specific Rain-Garden Planting Design**

4. **Excavate and Prepare Soil for the Rain-Garden**

5. **Install and Water Plants**

6. **Monitor and Care for Your Rain-Garden**

The following pages of this guidebook describe important ideas related to these six steps.

Adapting the ideas in this guidebook to your specific context will help you address the issues relevant to your property and thus create a rain-garden that responds to the unique soils, micro-climate, and other factors associated with your community and bio-region.

We wish you the very best in your effort to reduce negative stormwater impacts while also creating habitat for birds, butterflies, people, and other fascinating creatures!

Appendix D (Continued)

Selected Supporting Documentation for Stormwater Management Program

(Stormwater Annual Report - Section E)

(BMP Number 3)

BMP 3 - Illicit Discharge Detection and Elimination (IDDE)

- Employee Training
- Grease Trap Prevention Program Summary
- Municipal Service Center Household Hazardous Waste Cleanup Data

2020 City of Leavenworth Employee Training			
No.	**Training**	**Employee Name**	**Date Completed**
	City Hall		
1	Rainwater & Resilient Communities - A Green Infrastructure Workshop	Mike Stephan	February
2	Geoweb - Repair & Prevent Slope Erosion	Justin Stewart	
3	The Environmental Benefits of High Performance Turf Reinforcement Mats		
4	Tensar TriAx Geogrid Basics		March
5	Kansas Dam Safety Conference 2020	Mike Stephan	
6	Fixing Damaged Culverts and Pipes In-Place	Mike Stephan, Justin Stewart	
7	Prepackaged Pump Stations Provide Optimal Solutions for Wastewater, Stormwater and Industrial Applications	Justin Stewart	June
8	Environmental Ethics for Engineers	Justin Stewart	July
9	Reduce Stormwater Infrastructure		
10	Designing Manufactured Treatment Devices (MTDs) with Maintenance in Mind		August
11	StormCon Direct Virtual Event	Mike Stephan, Justin Stewart	September
12	An Engineer's Responsibility	Justin Stewart	October
13	Critical Considerations for MSE Wall Design		
14	Introduction to Mechanically Stailized Earth Structures		
15	Geopier® Ground Improvement Solutions Using Rigid Inclusion Technology		November
16	Design & Application of a Pressure Sewer System		
17	Subgrade Stabilization with Geogrid		
18	Extending Asphalt Pavement Life with Geosynthetic Interlayers		
19	Trenchless Technology		

3.8

KANSAS RURAL WATER association
Quality water, quality life

Roots + I + I

LUNCH + LEARN

CITY OF LEAVENWORTH

Name	Title	Email	Phone
MIKE STEPHAN	PROJECT MANAGER	mstephan@firstcity.org	913-684-0392
Samuel Harrison	WPC operator 2		913-705-0354
Patrick Fuimaono	WPC II		(808) 688-8447
Mike McDonald	PWD		684-0375
Hal Budde	Chief Building Inspector	hbudde@firstcity.org	913/684-0372
MIKE HOOPER	DEP. PUB. WORKS DIR	mhooper@firstcity.org	913-684-0392
JUSTIN STEWART	ENGINEERING TECH II	JSTEWART@FIRSTCITY.ORG	
Tim Guevara	WPC	TGuevara@firstcity.org	913-684-0375
			913 682. 1020

BROWN

SCOTT COTY

NATHAN

3.8

Date:	Project/Meeting Name:		Project No.	
1 OCT 20	STORMWATER PUBLIC MTG			
Name	**Company**	**Phone**	**Email**	**Initials**
Mike McDonald	City of Leavenworth	913.684.0375	mmcdonald@firstcity.org	
Mike Hooper			mhooper@firstcity.org	
Mike Stephan			mstephan@firstcity.org	
Justin Stewart			jstewart@firstcity.org	
Barry Smith			bsmith@firstcity.org	
Billy Daniels			billydaniels@geigerreadymix.com	

City of Leavenworth
Grease Prevention Program
2020 Summary

January 29, 2021

The City of Leavenworth's Building Inspections Office continues to oversee a grease trap/interceptor inspection and maintenance program as part of the effort to prevent backups in the sewer lines. This effort is expecting to reduce the number of instances where the contents of the sanitary sewer overflows into homes, yards or streets.

The ongoing efforts include the following general activity:

1. Contact property owners and tenants whose buildings require a grease trap/interceptor with a letter informing them that the devices are required and that the devices require routine maintenance to operate properly.
2. Perform annual inspections of the grease traps/interceptors to ensure that they are installed and maintained correctly.
3. Communicate the need for routine maintenance by sending letters, requesting copies of maintenance records.

Utilizing records from 2019, there were 71 businesses identified at the beginning of 2020 that staff believed may require a grease trap/interceptor.

The program goal was to send five letters each month requesting copies of maintenance records, and five letters each month requesting that the establishment contact the Building Inspection Office and schedule an inspection of the grease trap/interceptor at their location. Approximately 71 letters were sent in 2020.

As a result of the response from the letters, staff determined that there are now 70 businesses that may require grease trap/interceptors. Six establishments were removed from the list after additional information was received.

Staff performed 44 documented inspections on grease traps in 2020. One establishment that was required to, but did not have a grease trap/interceptor previously, hired a plumbing contractor and had a grease trap installed in 2020.

Additional businesses were visited to verify grease interceptors were in place, but no actual inspections were performed on these devices due to the design of the devices.

There were five establishments that did not respond to the request for on-site inspections.

As other establishments are built or identified as needing to have a grease trap/interceptor, the establishment will be added to the program's records.

An adequate response related to copies of inspection records has been received, although multiple requests are necessary at times. Staff received copies of maintenance records from 22 of the businesses identified.

There will be changes made to the program in 2021. The City Commission has approved a plan that will include an annual grease trap/interceptor license that will be issued to each establishment. An annual inspection and copies of maintenance records for the previous year will be required before the license can be issued or renewed. There will also be fines for operating the devices without a license and not maintain the devices in proper working conditions. Establishments will be sent notification of the new policies and given adequate time to adhere to them once all of the details have been worked out at the staff level.

YTD – Grease Trap/Interceptor Survey

12/31/2020

No.	Item	Amount
1.	Number of Businesses Contacted	71
2.	Inspections or Record Request letter mailed out	71
3.	Number of Businesses that require traps/Interceptors	70
4.	Businesses exempt from grease equipment	1
5.	Businesses not yet inspected	11
6.	Number of Site Inspections of Grease Trap	44
7.	Number of maintenance Records received	22

Leavenworth City Household Hazardous Waste Clean-up

Saturday September 5, 2020

Household Hazardous Waste Participation by Materials

Latex Paint – 3,420 lbs.

Oil Base paint – 32 lbs.

Flammable Liquids – 440 lbs.

Poisons – 96 lbs.

Corrosives – 48 lbs.

Aerosols – 22 lbs.

Antifreeze – 72 lbs.

Car battery – 180 lbs.

Total Weight – 4,310 lbs.

Customers Serviced

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Appendix D (Continued)

Selected Supporting Documentation for Stormwater Management Program

(Stormwater Annual Report - Section E)

(BMP Number 4)

BMP 4 - Construction Site Stormwater Runoff Control

Examples of:

- Erosion and Sediment Control Inspection Report Forms
- Detention Basin Inspection Form Samples
- Land Disturbance Permit Applications

SWPPP INSPECTION

Project Information	
Name/Location	**West Glen 2**
Contractor	**LEXECO**
Inspection Information	
City Inspector	**BARRY SMITH**
Inspection Date	**10-22-2020**
Weather Information	
Rain Gauge: .00	
Current Weather at time of this inspection: RAINING/ICE/SNOW MIX	
Weather Forecast at time of this inspection: (when is next precipitation or wind event anticipated?)	
EMAIL SENT TO JOAN FOR CORRECTIVE ACTION.	

EROSION AND SEDIMENTATION BMP INSPECTION	Installed & Operating correctly?	CORRECTIVE ACTION
Are **Limits of Disturbance** clearly marked?	N	SILT FENCH IS DOWN EVERYWHERE
Are **natural resource areas** (e.g., streams, wetlands, trees, etc.) protected with barriers or similar BMPs?	N	STREETS NEED SWEPT
Is **construction sequencing** being followed?	N	
Are **structural BMPs** properly installed to control stormwater flow on the construction site?	N	CURB INLETS ARE FULL
Do **unstabilized areas** have appropriate controls in place?	N	STOCK PILES DON'T HAVE PROTECTION
Are all **slopes** protected from concentrated stormwater flow?	N	
Are storm drain **inlets** properly protected?	N	

EROSION AND SEDIMENTATION BMP INSPECTION	Installed & Operating correctly?	CORRECTIVE ACTION
Are storm drain **outfalls** properly protected?	N	
Are **perimeter controls** and sediment barriers adequately installed and maintained?	N	
Are discharge points and **receiving waters** free of sediment deposits?	N	
Is **weather** forecast being checked regularly?	Y	

GOOD HOUSEKEEPING BMP INSPECTION	Installed & Operating correctly?	CORRECTIVE ACTION
Are BMPs effectively limiting **sediment** from being tracked into the street?	N	
Is **trash/litter** from work areas collected and placed in covered containers regularly?	N	
Are on-site **equipment**, vehicles, containers, and storage areas free from leaks?	Y	
Are **materials** that are potential stormwater contaminants stored inside or under cover?	Y	
Are **non-storm water discharges** free from contamination?	Y	
Are **washout facilities** (e.g. paint, concrete) available, clearly marked, and maintained and located at least 50-feet away from natural resources and storm drains?	Y	
Are **vehicle and equipment** fueling, cleaning, and maintenance areas free from leaks and located at least 50-feet away from natural resources and storm drains?	Y	
Is **dust** being controlled on-site?	Y	
Is **sweeping** being used to keep sediment off roads and parking lots?	N	
Are the SWPPP and ALL inspection **reports** being kept at the field?	N	

SWPPP INSPECTION

Project Information	
Name/Location	**West Glen 2**
Contractor	**LEXECO**
Inspection Information	
City Inspector	**BARRY SMITH**
Inspection Date	**11-12-2020**
Weather Information	
Rain Gauge: .0	
Current Weather at time of this inspection: 58 AND CLEAR	
Weather Forecast at time of this inspection: (when is next precipitation or wind event anticipated?) **NO PRECIPITATION FORECASTED**	
EMAIL SENT TO JOAN. SILT FENCE DOWN AND TRASH EVERYWHERE. INLET PROTECTION NEEDS CLEANED OUT.	

EROSION AND SEDIMENTATION BMP INSPECTION	Installed & Operating correctly?	CORRECTIVE ACTION
Are **Limits of Disturbance** clearly marked?	N	
Are **natural resource areas** (e.g., streams, wetlands, trees, etc.) protected with barriers or similar BMPs?	N	
Is **construction sequencing** being followed?	N	
Are **structural BMPs** properly installed to control stormwater flow on the construction site?	N	
Do **unstabilized areas** have appropriate controls in place?	N	
Are all **slopes** protected from concentrated stormwater flow?	N	
Are storm drain **inlets** properly protected?	N	

EROSION AND SEDIMENTATION BMP INSPECTION	Installed & Operating correctly?	CORRECTIVE ACTION
Are storm drain **outfalls** properly protected?	N	
Are **perimeter controls** and sediment barriers adequately installed and maintained?	N	
Are discharge points and **receiving waters** free of sediment deposits?	N	
Is **weather** forecast being checked regularly?	N	

GOOD HOUSEKEEPING BMP INSPECTION	Installed & Operating correctly?	CORRECTIVE ACTION
Are BMPs effectively limiting **sediment** from being tracked into the street?	N	
Is **trash/litter** from work areas collected and placed in covered containers regularly?	N	
Are on-site **equipment**, vehicles, containers, and storage areas free from leaks?	Y	
Are **materials** that are potential stormwater contaminants stored inside or under cover?	Y	
Are **non-storm water discharges** free from contamination?	Y	
Are **washout facilities** (e.g. paint, concrete) available, clearly marked, and maintained and located at least 50-feet away from natural resources and storm drains?	Y	
Are **vehicle and equipment** fueling, cleaning, and maintenance areas free from leaks and located at least 50-feet away from natural resources and storm drains?	Y	
Is **dust** being controlled on-site?	Y	
Is **sweeping** being used to keep sediment off roads and parking lots?	N	
Are the SWPPP and ALL inspection **reports** being kept at the field?	Y	

4.6

Detention Basin Inspection

Basin Address and Location: CEREAL INGREDIENTS, INC. 4720 SOUTH 13th STREET

Owner Name and Address: LEAVENWORTH, KS 66048

Inspection Date: 1-2-2020 & 1-20-2020

Inspected By: Timothy D. Moore

	Y	N	N/A	Last Maintenance Date
Are inlet/outlet structures free of debris, trash, sediment, and leaves?	☑	☐	☐	1-2-20
Repairs/Comments:				
Is rip rap in place and free of sediment?	☒	☐	☐	1-2-20
Repairs/Comments:				
Are embankments and structures free of trees?	☑	☐	☐	1-20-20
Repairs/Comments:				
Are embankments and structures damaged or eroded?	☐	☒	☐	1-20-20
Repairs/Comments:				
Is the facility mowed and free of trash?	☑	☐	☐	1-20-20
Repairs/Comments:				
Is there excess sediment in the basin?	☐	☒	☐	1-20-20
Repairs/Comments:				
Is the trickle channel damaged by erosion?	☐	☒	☐	1-20-20
Repairs/Comments:				
Is the out flow of water causing damage to adjacent property?	☐	☒	☐	1-20-20
Repairs/Comments:				
Is there exposed soil with no vegetation growing?	☐	☒	☐	1-20-20
Repairs/Comments:				
Is the facility draining properly according to as built plans?	☑	☐	☐	1-20-20
Repairs/Comments:				

Detention Basin Inspection

Basin Address and Location: SHENANDOAH - CLAYTON DR - PHASE II

Owner Name and Address: SHENANDOAH NO A PO. BOX 373 LEAVENWORTH, KS 66048

Inspection Date: 9 FEB 2020

Inspected By: BRIAN BAXTON

	Y	N	N/A	Last Maintenance Date
Are inlet/outlet structures free of debris, trash, sediment, and leaves?	☒	☐	☐	

Repairs/Comments: THERE ARE COUPLE OF BRANCHES W/ NO LEAVES NEXT TO THE OUTLET. THESE WILL BE REMOVED WHEN THE TEMPERATURE GET WARMER

Is rip rap in place and free of sediment?	☒	☐	☐	

Repairs/Comments: THERE ARE FOUR BIG STONES THAT ARE ROCKING/SPLIT. NO DANGER OF FALLING IN. THERE IS SOME AREAS OF EROSION BETWEEN STONES

Are embankments and structures free of trees?	☐	☒	☐	

Repairs/Comments: THERE ARE NO TREES ON THE DAM. THERE ARE SOME TREES ON THE HIGH GROUND SURROUNDING THE DETENTION BASIN.

Are embankments and structures damaged or eroded?	☒	☐	☐	

Repairs/Comments: WEAK AREAS WILL BE REINFURCED LATE SPRING/SUMMER

Is the facility mowed and free of trash?	☒	☐	☐	

Repairs/Comments: THERE IS SOME TRASH IN THE BASIN. IT WILL BE COLLECTED WHEN THE WEATHER WARMS UP

Is there excess sediment in the basin?	☐	☒	☐	

Repairs/Comments:

Is the trickle channel damaged by erosion?	☐	☒	☐	

Repairs/Comments:

Is the out flow of water causing damage to adjacent property?	☐	☒	☐	

Repairs/Comments:

Is there exposed soil with no vegetation growing?	☐	☒	☐	

Repairs/Comments:

Is the facility draining properly according to as built plans?	☒	☐	☐	

Repairs/Comments:

Detention Basin Inspection

Basin Address and Location: SHENANDOAH - GETTYSBURG DR - PHASE IV

Owner Name and Address: SHENANDOAH HOA P.O. BOX 373 LEAVENWORTH, KS. 66048

Inspection Date: 9 FEB 2020

Inspected By: BRIAN PAXTON, JERRY JEFFERS, TAB HUNTER

	Y	N	N/A	Last Maintenance Date
Are inlet/outlet structures free of debris, trash, sediment, and leaves?	☒	☐	☐	
Repairs/Comments:				
Is rip rap in place and free of sediment?	☒	☐	☐	
Repairs/Comments:				
Are embankments and structures free of trees?	☒	☐	☐	
Repairs/Comments:				
Are embankments and structures damaged or eroded?	☒	☐	☐	
Repairs/Comments: EVIDENCE OF MUSKRAT DAMAGE. FILLED IN HOLE. WILL RECHECK				
Is the facility mowed and free of trash?	☒	☐	☐	
Repairs/Comments:				
Is there excess sediment in the basin?	☒	☐	☐	
Repairs/Comments: MONITORING UNTIL DEPTH REACHES 6 FEET				
Is the trickle channel damaged by erosion?	☒	☒ ##	☐	
Repairs/Comments: WORKING W/ PROPERTY OWNER TO FIX ESTIMATED TIME OF REPAIR APR-MAY WHEN WEATHER IS BETTER				
Is the out flow of water causing damage to adjacent property?	☒	☐	☐	
Repairs/Comments:				
Is there exposed soil with no vegetation growing?	☐	☒	☐	
Repairs/Comments:				
Is the facility draining properly according to as built plans?	☒	☐	☐	
Repairs/Comments:				

City of Leave[illegible]h, Kansas

2020 Detention Basin Inspections / Inspector: Barry Smith

Date & Time	Structure ID	Are Inlet/Outlet Structures Free of Debris, Trash, Sediment and Leaves?	Repair/Comments	Is RIP RAP in Place and Free of Sediment?	Are Embankments & Structures Damaged or Eroded?	Repairs/Comments	Is the Trickle Channel Damaged by Erosion?	Repairs/Comments	Is the Outflow of Water Causing Damage to Adjacent Property?	Repairs/Comments	Is there Exposed Soil with No Vegetation Growing?	Repairs/Comments	Is the Facility Draining Properly According to Plans?	Repairs/Comments
4/15/2020, 8:45 AM	bio_001	Yes		Not Applicable	No		No		No		No		Yes	
4/15/2020, 8:46 AM	bio_002	Yes		Yes	No		No		No		No		Yes	
4/15/2020, 8:47 AM	bio_003	Yes		Yes	No		No		No		No		Yes	
2/24/2020, 1:30 PM	bio_004	No	The curb inlet is clogged with leaves, trash, and sediment.	Not Applicable	No		Not Applicable		No		No		Yes	
2/24/2020, 1:28 PM	bio_005	No	The curb inlet is clogged with leaves sediment and trash.	Not Applicable	No		Not Applicable		No		No		Yes	
4/14/2020, 2:47 PM	bio_006	No	The drain is clogged with leaves and sediment.	Not Applicable	No		No		No		No		No	
4/14/2020, 2:39 PM	bio_007	No	The drain is clogged with sediment.	No	No		No		No		No		No	
4/14/2020, 2:36 PM	bio_007	Not Applicable		Not Applicable	No		No		No		No		Yes	
4/14/2020, 2:43 PM	bio_008	No	The drain is clogged with sediment.	No	No		No		Yes		No		No	
4/14/2020, 2:28 PM	bio_009	No	Full of sediment and trash.	Not Applicable	No		No		No		No		No	
4/14/2020, 2:31 PM	bio_010	No	Needs sediment and leaves removed.	Not Applicable	No		No		No		No		No	
4/14/2020, 2:24 PM	bio_011	No	Needs leaves and trash removed.	Not Applicable	No		No		No		No		Yes	
4/14/2020, 1:56 PM	bio_012	No	The sidewalk and curb is broken. Basin and inlet full of silt.	Not Applicable	Yes		Yes		No		Yes		No	
4/14/2020, 1:53 PM	bio_013	No	Needs sediment removed and regraded, and new seed planted.	Not Applicable	Yes		Yes		No		No		No	Needs sediment removed.
4/15/2020, 1:52 PM	swb_001	Yes		Not Applicable	No		Not Applicable		No		No		Yes	
4/15/2020, 2:20 PM	swb_002	Yes		Not Applicable	No		Not Applicable		No		No		Yes	
4/15/2020, 1:38 PM	swb_003	Yes		Yes	No		No		No		No		Yes	
4/14/2020, 1:09 PM	swb_004	No		Yes	No		No		No		No		Yes	
4/15/2020, 3:53 PM	swb_007	Yes		Yes	No		No		No		No		Yes	
2/24/2020, 10:37 AM	swb_009	Yes		Yes	No		No		No		No		Yes	
2/24/2020, 12:47 PM	swb_010	Not Applicable	Small trees are growing around the outlet in the basin.	Not Applicable	Yes	Its hard to tell. but some of the embakments might have damage that can't be seen because it needs to be mowed and trees are growing.	Yes	The pond does not drain properly. Dan Volle said they had intentions to make repairs this winter, but it never got cold enough long and enough to access the areas that needs to be maintained. He plans to talk to the warden this week to make a new plan.	No		No		No	The pond stays swampy year round making it impossible to mow the center. The pond needs to be regraded to channel the water to the outlet pipe. I spoke with Dan Volle today at approximately12:30 pm. We discussed the drainage issues and trees.
2/24/2020, 12:17 PM	swb_011	Yes	Needs some mowing.	Yes	No		No		No		No		Yes	
4/14/2020, 2:33 PM	swb_012	Yes		Not Applicable	No		No		No		No		Yes	
2/24/2020, 11:30 AM	swb_015	No	There is some trash at the west inlet pipe and a little bit of litter throughout the basin.	Yes	No		No		No		No	There is a bare spot along the side and at the top of the embankment just north of the area drain. No erosion damgae. I will moniter to see if vegetation establishes itself this spring.	Yes	
4/15/2020, 3:24 PM	swb_016	No	The trash rack on the outlet structure has leaves and stems in it.	Not Applicable	Yes		Yes		No		No		Yes	
4/14/2020, 1:40 PM	swb_017	No	Trees, silt and limbs need to be removed.	Not Applicable	Yes	Trenches forming in the west center embankment.	No		No		No		Yes	
2/24/2020, 1:12 PM	swb_019	No	The curb inlet at the NW corner of the basin is collecting sediment and needs to be cleaned	Not Applicable	No		No		No		No	I will check again in the spring.	Yes	The drain grate is falling off the outlet pipe. It just to be needs slid back on.
2/24/2020, 12:26 PM	swb_020	Yes		Not Applicable	Yes	North and west embankments have severe erosion. South embankment has a bare patch that will start to erode if not repaired.	No		No		Yes	South emankment. No erosion damge yet.	Yes	
6/5/2020, 8:27 AM	swb_021	Yes		Not Applicable	No		No		No		No		No	Needs to be mowed. Catails and small treess need to be cut.
4/15/2020, 3:32 PM	swb_022	Yes		Yes	No		No		No		No		Yes	

City of Leavenworth, Kansas

2020 Detention Basin Inspections / Inspector: Barry Smith

Date & Time	Structure ID	Are Inlet/Outlet Structures Free of Debris, Trash, Sediment and Leaves?	Repair/Comments	Is RIP RAP in Place and Free of Sediment?	Are Embankments & Structures Damaged or Eroded?	Repairs/Comments	Is the Trickle Channel Damaged by Erosion?	Repairs/Comments	Is the Outflow of Water Causing Damage to Adjacent Property?	Repairs/Comments	Is there Exposed Soil with No Vegetation Growing?	Repairs/Comments	Is the Facility Draining Properly According to Plans?	Repairs/Comments
2/24/2020, 11:50 AM	swb_023	Yes		Yes	No		Yes	There is a trickle channel that feeds into the pond at the south west corner. It isn't bad yet, but needs maintenance or maybe rip rap.	No		No		Yes	
2/24/2020, 11:25 AM	swb_024	Yes	There is a small amount of trash in the bottom of the basin.	Yes	No		No		No		No		Yes	
4/15/2020, 1:08 PM	swb_025	Yes		Yes	No		No		No		No		Yes	
2/24/2020, 10:55 AM	swb_026	Yes	There is some trash in the basin area. It does not appear to be affecting the function of the basin right now.	Not Applicable	No	Is looks like there has been recent maintenance to remove trees embankment. There is no erosion damage.	No	The basin bottom needs to be mowed and trash removed.	No		Yes	Recent maintenence to remove trees caused bare spot. We should reinspect in the spring for established vegetation.	Yes	
2/24/2020, 10:42 AM	swb_027	Yes	There is there is some sediment and trash in the concrete trickle channel. The sediment appears to be from the granite seal project.	Yes	No	There are some bare spots on the embankment, but no erosion.	No	There's an area that had some erosion damage, but it has been repaired with riprap.	No		Yes	There is bare grass along the sides of the West embankment. Tgeee is bare grass at the top of the East embankment. No erosion damage.	Yes	
2/24/2020, 12:06 PM	swb_028	Yes		Yes	No		Not Applicable		No		No		Yes	
4/14/2020, 1:17 PM	swb_037	Yes		Not Applicable	No		No		No		No		Yes	
4/15/2020, 1:32 PM	swb_038	No		No	Yes		No		No		Yes		Yes	
4/15/2020, 1:29 PM	swb_038	No	Some trash and sediment from erosion.	Not Applicable	Yes		Yes		No		Yes		No	It stays soggy in the middle.
2/24/2020, 11:41 AM	swb_039	No	A dam of limbs has formed at the outlet and causing the dry pond to retain water longer.	Not Applicable	Yes	The embankments cant be inspected because the basin needs to be mowed.	Yes	A tricklel channel has formed seperate from the concrete one.	No		No		No	Limbs have formed a dam at the outlet.
6/5/2020, 8:51 AM	swb_040	No	Log jam at the outlet pipe.	Yes	No		Yes		No		No		Yes	
2/24/2020, 1:19 PM	swb_041	Yes		Not Applicable	Yes		Not Applicable		No		No		Yes	
2/24/2020, 1:25 PM	swb_042	Not Applicable		Not Applicable	Not Applicable		Not Applicable		No		Not Applicable		Yes	This is pervious pavement. I observed sand on top of the pavement. The lot should be vacuumed to mantain its design function.
4/15/2020, 11:10 AM	swb_043	No	There is some sediment build up from a severe erosion problem.	No	Yes	Severe erosion problems all around the basin.	Yes		Yes	Some silt built up from the erosion.	Yes		No	
4/15/2020, 11:17 AM	swb_044	No	Severe erosion is causing sediment build up.	No	Yes	Very damaged all the way around the basin.	Yes		No		Yes		No	
4/15/2020, 3:00 PM	swb_047	Yes		Yes	Yes	There is erosion damage on the east bank.	No		No		Yes	I will continue to watch for growth.	Yes	

4.4

City of Leavenworth

LAND DISTURBANCE PERMIT APPLICATION

(Fill Permits Require An Additional Application)

City of Leavenworth Public Works
100 N. 5th Street
Leavenworth, KS. 66048
913 684 0378

Date 08-02-19

Applicant Name: Jay Watters Phone: 816-569-0825

Complete Mailing Address: 817 Wyandotte, Kansas City, MO 64105

Email: jwatters@gastingerwalker.com

Project Type

____ Single Family Home	____ Utility Extension
X Commercial/Mutli-family	____ General Grading/Filling
____ Single Family Subdivision	____ Public Improvement Project
____ Building Addition	____ Other: explain Below

Project Location

Property Address: 3400 South 4th St

Name of Project or Subdivision: CommunityAmerica Credit Union - Leavenworth

Owner of Record : CommunityAmerica Credit Union Phone number: 913-905-8266

Work Schedule Start Date: 09-02-2019 End Date: 04-09-2020

Total Site Area: 0.95 Acres/or 41,528 Sq. Feet

Total Area of Land Disturbance: 0.88 Acres/or 38,332 Sq. Feet

Revised: September 10, 2015

City of Leavenworth

LAND DISTURBANCE PERMIT APPLICATION

Parties Responsible for Maintaining Erosion Control

Check one: Contractor X Or Property Owner _____

Name: Casey McBride - A.L. Huber General Contractor

Mailing Address: 10770 El Monte, Overland Park, KS 66211

Business Phone : 913-341-4880 Cell Phone 913-951-1626

Email: cmcbride@alhuber.com

General Contractor contact information

Company Name: Casey McBride - A.L. Huber General Contractor

Mailing Address: 10770 El Monte, Overland Park, KS 66211

Business Phone: 913-341-4880 Cell Phone: 913-951-1626

Email: cmcbride@alhuber.com

Does work include any construction activity in the FEMA regulated floodplain?

Yes ____ No X

Note; Additional permits for work in floodplain are required. Attach any additional information to this permit application.

City of Leavenworth

LAND DISTURBANCE PERMIT APPLICATION

Applicant knowledges they have provided the following documents and have been advised of inspection requirement. *(Initial next to each item)*

JW Completed Land Disturbance Application
JW Attached site specific Erosion Control Plan
JW Attached site specific grading plan
JW Schedule for duration of land disturbance
____ This is a single family building project or home addition and I as applicant will follow the attached "Single Family Lot Erosion and Sediment Control Plan"

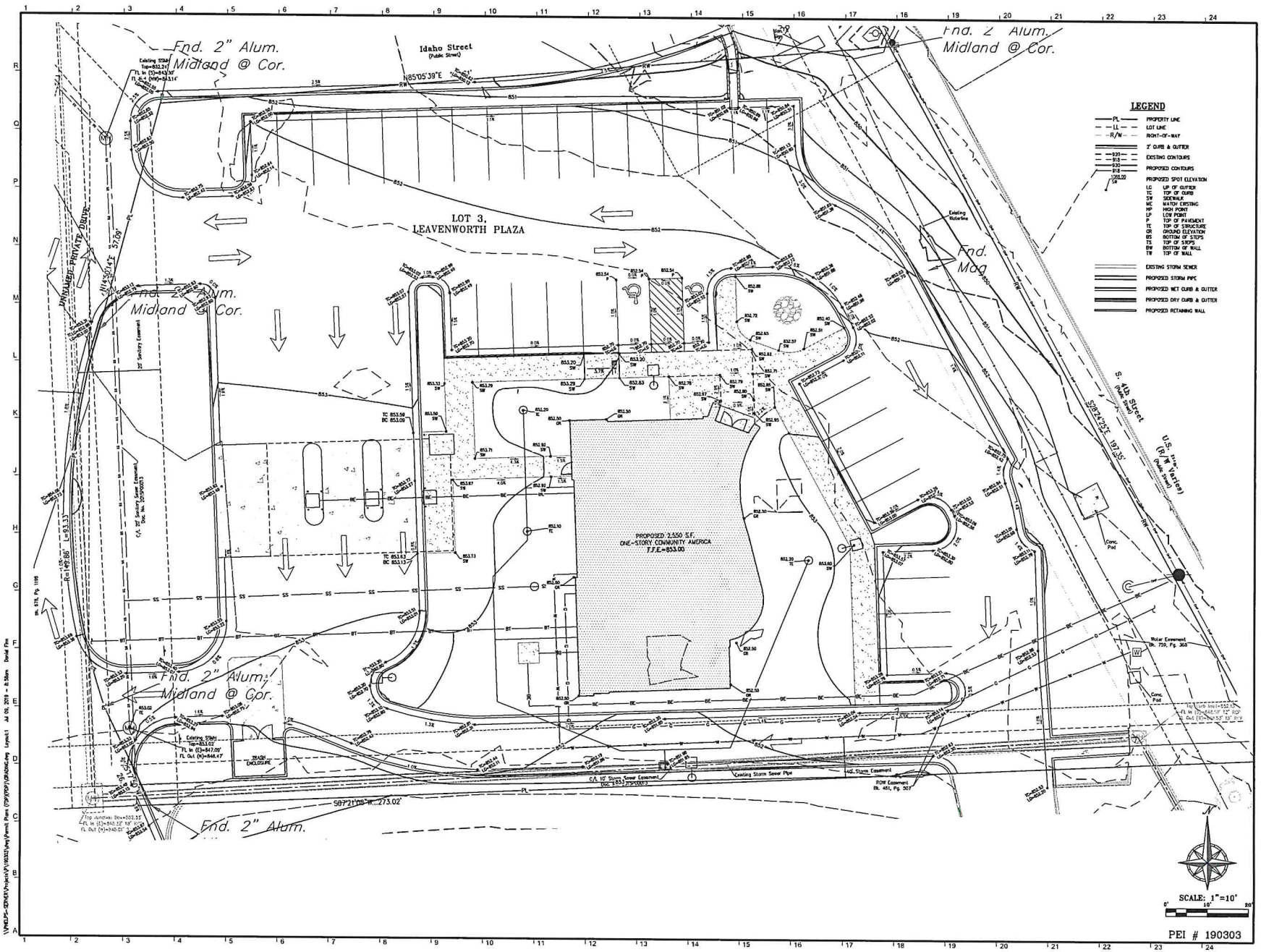
JW The applicant by submitting this application does agree to perform all necessary work to include bi-weekly inspections and inspections after each ½" rain event (24 hour). The applicant will supply the City of Leavenworth with all inspection records upon request, and copies must be provided in order to obtain a Compliance Certificate.

The applicant fully understands that the responsible party shall comply with this permit and repair all substandard erosion control within a 24 hour period after notification of failure to comply with the plan. Failure to comply within the allotted time frame is a violation and shall be reason for the City of Leavenworth to issue a **Stop Order** on all work, repair the damaged erosion control, and clean all surrounding grounds. The contractor/owner shall be held responsible for all expense incurred to remedy the violation and may be charged with a Nuisance Complaint in Municipal Court. Contractors will be required to submit copies of BMP Inspections prior to a certificates of occupancy being issued.

Applicant Signature: _____

Owner Signature: _____

Revised: September 10, 2015



GastingerWalker &

Architects | Interior Designers | Construction Managers
817 Wyandotte Kansas City Missouri 64105 816.421.8200 gastingerwalker.com

PEI PLANNING ENGINEERING IMPLEMENTATION

PHELPS ENGINEERING, IN
1270 N. Winchester
Olathe, Kansas 66061
(913) 393-1155
Fax (913) 393-1155
www.phelpsengineering.com

Civil Engineer
Phelps Engineering, Inc.
1270 N. Winchester
Olathe, KS 66061
913.393.1155
MEP Engineer
Lankford | Fendler + Associates
1730 Walnut St.
Kansas City, MO 64108
Structural Engineer
Bob D. Campbell & Company
4338 Bellevieve Rd.
Kansas City, MO 64111
816.531.4144
Landscape Architect
Vireo
929 Walnut Suite 700
Kansas City, MO 64106
816.756.5690

CommunityAmerica Credit Union - Leavenworth

3400 South 4th Street
Leavenworth, KS 66048

CommunityAmerica Credit Union
9777 Ridge Drive
Lenexa, KS 66219
913.905.8266

ISSUED FOR:

DRC Review	13 June 2019
Permit Set	09 July 2019

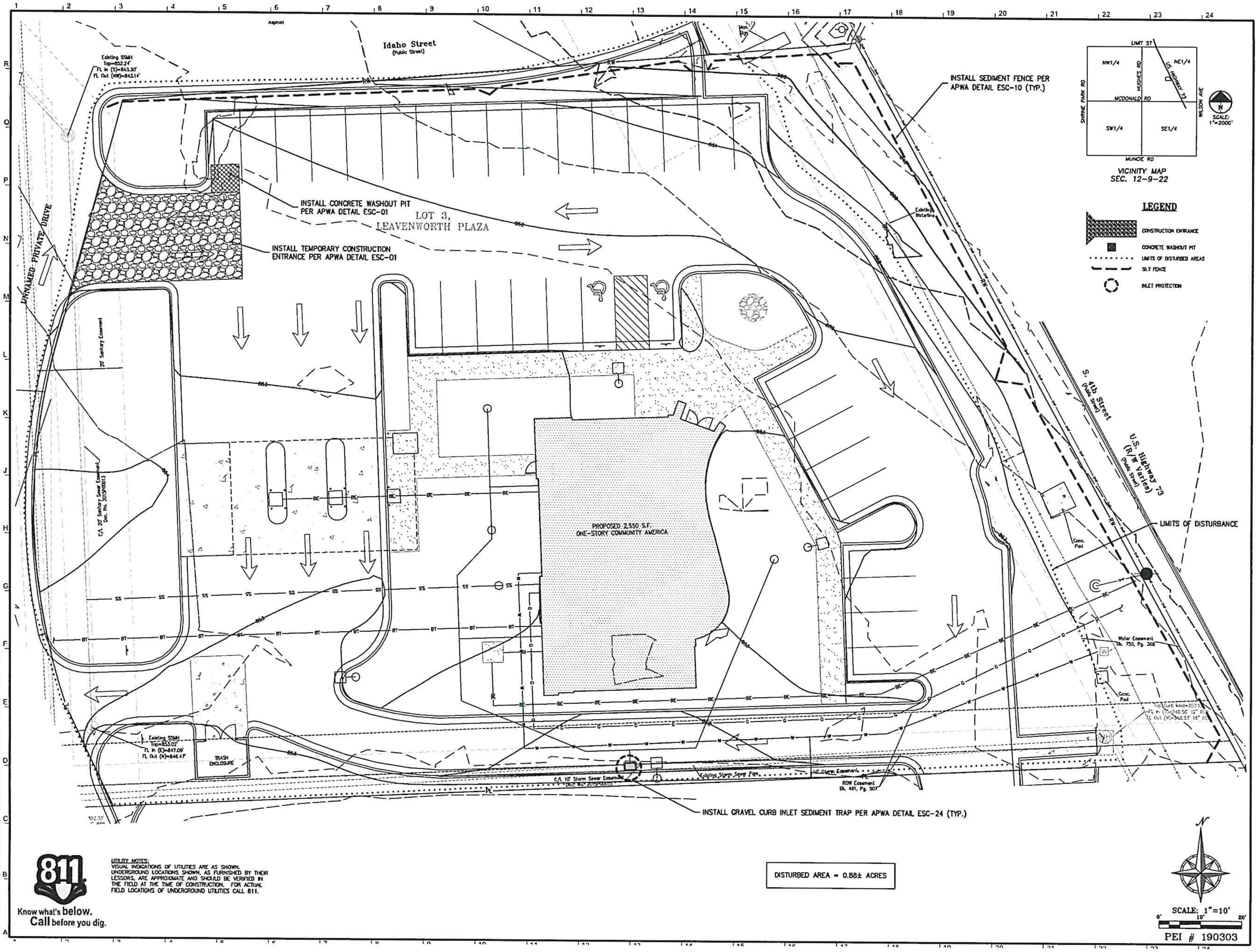
DANIEL A. [illegible] LICENSED PROFESSIONAL ENGINEER
7/9/19

Drawn By: Author
Checked By: Checked

Grading Plan

10.05

Project Number: Project



GastingerWalker&

Architects | Interior Designers | Construction Managers
817 Wyandotte Kansas City Missouri 64105 816.421.8200 gastingerwalker.com

PEI
PLANNING
ENGINEERING
IMPLEMENTATION

PHELPS ENGINEERING, INC.

Civil Engineer
Phelps Engineering, Inc.
1270 N. Winchester
Olathe, KS 66061
913.393.1155

MEP Engineer
Lankford | Fendler + Associates
1730 Walnut St.
Kansas City, MO 64108

Structural Engineer
Bob D. Campbell & Company
4338 Belleview Rd.
Kansas City, MO 64111
816.531.4144

Landscape Architect
Vireo
929 Walnut Suite 700
Kansas City, MO 64106
816.756.5690

CommunityAmerica Credit Union - Leavenworth

3400 South 4th Street
Leavenworth, KS 66048

CommunityAmerica Credit Union
9777 Ridge Drive
Lenexa, KS 66219
913.905.8266

ISSUED FOR:

DRC Review	13 June 2019
Permit Set	09 July 2019

7/9/19

Erosion Plan

10.10


Cinema 6
Hardware

City of Leavenworth

100 N. 5th St.
Leavenworth, KS 66048
(913)684-0378

Building Permit

Application Number	**6206**
Date	08/15/2019
Permit Type	LAND DISTURBANCE PERMIT

PARCEL NUMBER	STREET ADDRESS
1011201003001050	3400 SOUTH 4th STREET
ZONE CODE	**JURISDICTION**
GBD	LEAVENWORTH

OWNER INFORMATION

NAME: LEAVENWORTH MALL LLC
ADDRESS: Attn: GJ REALTY ATTEN: G JEIDEL
49 W 37TH ST
NEW YORK, NY 10018
PHONE:

APPLICANT INFORMATION

NAME: JAY WATTERS GASTINGER WALKER
ADDRESS: 817 WYANDOTTE
PHONE: 816-569-0825

CONTRACTOR INFORMATION

NAME: A.L. HUBER GENERAL CONTRACTOR
ADDRESS: 10770 EL MONTE
PHONE:

LICENSE NUMBER:
LICENSE EXP. DATE:
INSURANCE EXP. DATE:

BUILDING INFORMATION

PROPOSED USE:
CONSTRUCTION TYPE:
NUMBER OF STORIES:
ESTIMATED COST OF CONSTRUCTION:

HEATED SQ. FT:
UNHEATED SQ. FT:
GARAGE SQ. FT:
NUMBER OF STORIES

PROJECT DESCRIPTION

LAND DISTURBANCE PERMIT

SCOPE OF WORK

COMMUNITY AMERICA CREDIT UNION
app 6030

PERMIT DETAILS:

I, the undersigned, hereby agree to comply with all applicable laws regulating the work. I have also received a copy of this document and understand that it is my responsibility to inform this office of any change of contractor by completing and submitting a change of contractor form if necessary. Separate permits are required for electrical, plumbing, heating, ventilating or air conditioning. It is the responsibility of the owner/applicant to identify and abide by all easements, covenants and other regulations related to land use that may be affected by the construction work for which this permit is issued.

ANY PERMIT ISSUED EXPIRES 180 DAYS AFTER ISSUANCE IF NO WORK HAS COMMENCED.
ANY PERMIT ISSUED SHALL EXPIRE 180 DAYS AFTER ISSUANCE IF THE WORK IS DISCONTINUED FOR 180 DAYS.

Signature of Owner/Contractor

Signature of Approving Official

ORIGINAL COPY

Permit Number 7167

Total Fees

Job Address: 3400 S 20th

Job description NEW BANK

Initial Inspection of Erosion and Sediment Control

App# 6206 Owner/Contractor AL HUBER

Date issued 8-15-19 Inspection date 9/10/19 Inspector BILL CORBET

A. Project Overview

- How Many Acres Total Does the Project Disturb? <1
- Project Start Date: Project End Date:
- Phase I start date?_____

B. Paperwork

• *Does the project have a Land Disturbance Permit?	Yes	No	N/A
• *Is the SWPPP Notebook onsite?	Yes	No	N/A
• * Is the Inspection log on site?	Yes	No	N/A

C. Site Preparation

• *Has the contractor installed temporary construction entrance(s) and are the vehicles using it?	Yes	No	N/A
• *Is there a place for concrete wash-out, is it clearly marked and do concrete trucks appear to be using it?	Yes	No	N/A
• *Is the site largely free of construction trash? (cups, lunch sacks, material packaging, etc.)	Yes	No	N/A
• *Have perimeter sediment controls been installed?	Yes	No	N/A
• *Have pre-construction controls been installed per the plan?	Yes	No	N/A
• *Have easily recognizable indications of the construction limits been installed? (fencing, staking, physical barriers)	Yes	No	N/A

* Must be "yes" or N/A in order for inspection to be "satisfactory".

D. Approval

City staff initial for approval:

_____ Land disturbance work **will** proceed, as this site has met all the initial standard requirements of the City of Leavenworth's General Guidelines for Stormwater and Drainage measures.

_____ Land disturbance work **will not** proceed as this site has not met all the initial standard requirements of the City of Leavenworth's General Guidelines for Stormwater and Drainage measures. The deficiencies below must be corrected in order to have a satisfactory inspection:

1. _____
2. _____
3. _____

PROJECT INSPECTION LOG FORM

Location 3400 54th **Project:** BANK **APP#** 6206 **Issued**

Owner:

Contractor:

Day	YEAR: 2020											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
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PROJECT INSPECTION LOG FORM

Location 3400 S. 4th St **Project:** CACU Bank **APP#** 10206 **PERMIT#** 7167 **Issued:** 8/15/19

Owner:

Contractor:

Day	YEAR: 20 19											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
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Erosion and Sediment Control Inspection Report Form

Project Name and Location: 3400 54th BANK ***LDP#*** 6296

Weather: 57 SUNNY

Rain in last 24 hrs (inches): 0

Owner / Permittee:

A. Current Construction / Active Areas:

Pollution Control Measures (BMP) Checklist:

- X Inlet Barrier (i.e.: gravel bags)
- X Sediment Barriers (i.e.: ditch checks)
- ___ Erosion Blankets, Hydromulch / Seed, etc
- ✓ Stabilized Construction Entrance
- ___ Stream Crossings
- ___ Seed / Sod Areas
- ___ Sediment Basins & Discharge Locations
- ___ Borrow Areas
- ___ General Site Condition (trash, etc)

B. Problem Areas / Special Observations(*Note problem areas ONLY below*):

BMP	Location	Observations, Effectiveness, & Corrective Actions Ordered

C. Listing of Areas where construction operations have permanently or temporarily stopped; stabilization measures initiated.

D. Have items noted on last inspection been corrected? Yes No (if No, Explain:)

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 24 hours, unless otherwise noted. All other BMP's on site are considered to be in good working condition.

4-21-2025

Date of Inspection

Inspector Signature

6 Goals • No Sediment Leaves the Site • Lines of Defense Everywhere & Always • Cover Quickly • Protect the Swale, Ditch ,and Channel • Keep Clean Water Clean • Inspect, Clean & Fix

Erosion and Sediment Control Inspection Report Form

Project Name and Location: 3900 S 4th BANK ***LDP#*** 624

Weather: 52 CLOUDY

Rain in last 24 hrs (inches): 0

Owner / Permittee:

A. Current Construction / Active Areas:

Pollution Control Measures (BMP) Checklist:

- X Inlet Barrier (i.e.: gravel bags)
- X Sediment Barriers (i.e.: ditch checks)
- ___ Erosion Blankets, Hydromulch / Seed, etc
- ___ Stabilized Construction Entrance
- ___ Stream Crossings
- ___ Seed / Sod Areas
- ___ Sediment Basins & Discharge Locations
- ___ Borrow Areas
- ___ General Site Condition (trash, etc)

B. Problem Areas / Special Observations(*Note problem areas ONLY below*):

BMP	Location	Observations, Effectiveness, & Corrective Actions Ordered

C. Listing of Areas where construction operations have permanently or temporarily stopped; stabilization measures initiated.

D. Have items noted on last inspection been corrected? Yes No (if No, Explain:)

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 24 hours, unless otherwise noted. All other BMP's on site are considered to be in good working condition.

9-5-2024

Date of Inspection

Inspector Signature

6 Goals • No Sediment Leaves the Site • Lines of Defense Everywhere & Always • Cover Quickly • Protect the Swale, Ditch ,and Channel • Keep Clean Water Clean • Inspect, Clean & Fix

Erosion and Sediment Control Inspection Report Form

Project Name and Location: 3400 S4th PHARMACY ***LDP#*** 6246

Weather: 46 Cloudy

Rain in last 24 hrs (inches): 0

Owner / Permittee:

A. Current Construction / Active Areas:

Pollution Control Measures (BMP) Checklist:

___ Inlet Barrier (i.e.: gravel bags)
_X_ Sediment Barriers (i.e.: ditch checks)
___ Erosion Blankets, Hydromulch / Seed, etc
_X_ Stabilized Construction Entrance
___ Stream Crossings
___ Seed / Sod Areas
___ Sediment Basins & Discharge Locations
___ Borrow Areas
___ General Site Condition (trash, etc)

B. Problem Areas / Special Observations(*Note problem areas ONLY below*):

BMP	Location	Observations, Effectiveness, & Corrective Actions Ordered

C. Listing of Areas where construction operations have permanently or temporarily stopped; stabilization measures initiated.

D. Have items noted on last inspection been corrected? Yes No (if No, Explain:)

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 24 hours, unless otherwise noted. All other BMP's on site are considered to be in good working condition.

3-24-24

Date of Inspection

Inspector Signature

6 Goals • No Sediment Leaves the Site • Lines of Defense Everywhere & Always • Cover Quickly • Protect the Swale, Ditch ,and Channel • Keep Clean Water Clean • Inspect, Clean & Fix

Erosion and Sediment Control Inspection Report Form

Project Name and Location: 340054th BANK ***LDP#*** 62[illegible]

Weather: 50 CLOUDY

Rain in last 24 hrs (inches): .2

Owner / Permittee:

A. Current Construction / Active Areas:

Pollution Control Measures (BMP) Checklist:

- ✓ Inlet Barrier (i.e.: gravel bags)
- ✓ Sediment Barriers (i.e.: ditch checks)
- ___ Erosion Blankets, Hydromulch / Seed, etc
- ✓ Stabilized Construction Entrance
- ___ Stream Crossings
- ___ Seed / Sod Areas
- ___ Sediment Basins & Discharge Locations
- ___ Borrow Areas
- ___ General Site Condition (trash, etc)

B. Problem Areas / Special Observations(*Note problem areas ONLY below*):

BMP	Location	Observations, Effectiveness, & Corrective Actions Ordered

C. Listing of Areas where construction operations have permanently or temporarily stopped; stabilization measures initiated.

D. Have items noted on last inspection been corrected? Yes No (if No, Explain:)

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 24 hours, unless otherwise noted. All other BMP's on site are considered to be in good working condition.

3-10-2020

Date of Inspection

Inspector Signature

6 Goals • No Sediment Leaves the Site • Lines of Defense Everywhere & Always • Cover Quickly • Protect the Swale, Ditch ,and Channel • Keep Clean Water Clean • Inspect, Clean & Fix

Erosion and Sediment Control Inspection Report Form

Project Name and Location: 3400 Block Bank ***LDP#*** 62[illegible]

Weather: 37 Cloudy

Rain in last 24 hrs (inches): .1

Owner / Permittee:

A. Current Construction / Active Areas:

Pollution Control Measures (BMP) Checklist:

___ Inlet Barrier (i.e.: gravel bags)
X Sediment Barriers (i.e.: ditch checks)
___ Erosion Blankets, Hydromulch / Seed, etc
X Stabilized Construction Entrance
___ Stream Crossings
___ Seed / Sod Areas
___ Sediment Basins & Discharge Locations
___ Borrow Areas
___ General Site Condition (trash, etc)

B. Problem Areas / Special Observations(*Note problem areas ONLY below*):

BMP	Location	Observations, Effectiveness, & Corrective Actions Ordered

C. Listing of Areas where construction operations have permanently or temporarily stopped; stabilization measures initiated.

D. Have items noted on last inspection been corrected? Yes No (if No, Explain:)

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 24 hours, unless otherwise noted. All other BMP's on site are considered to be in good working condition.

2-25-2020
Date of Inspection

Inspector Signature

6 Goals • No Sediment Leaves the Site • Lines of Defense Everywhere & Always • Cover Quickly • Protect the Swale, Ditch ,and Channel • Keep Clean Water Clean • Inspect, Clean & Fix

Erosion and Sediment Control Inspection Report Form

Project Name and Location: 3900 S 4th BANK ***LDP#*** 6206

Weather: 30 CLOUDY

Rain in last 24 hrs (inches): 0

Owner / Permittee:

A. Current Construction / Active Areas:

Pollution Control Measures (BMP) Checklist:

- X Inlet Barrier (i.e.: gravel bags)
- ✓ Sediment Barriers (i.e.: ditch checks)
- ____ Erosion Blankets, Hydromulch / Seed, etc
- ____ Stabilized Construction Entrance
- ____ Stream Crossings
- ____ Seed / Sod Areas
- ____ Sediment Basins & Discharge Locations
- ____ Borrow Areas
- ____ General Site Condition (trash, etc)

B. Problem Areas / Special Observations(*Note problem areas ONLY below*):

BMP	Location	Observations, Effectiveness, & Corrective Actions Ordered

C. Listing of Areas where construction operations have permanently or temporarily stopped; stabilization measures initiated.

D. Have items noted on last inspection been corrected? Yes No (if No, Explain:)

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 24 hours, unless otherwise noted. All other BMP's on site are considered to be in good working condition.

1-28-2020

Date of Inspection

Inspector Signature

6 Goals • No Sediment Leaves the Site • Lines of Defense Everywhere & Always • Cover Quickly • Protect the Swale, Ditch ,and Channel • Keep Clean Water Clean • Inspect, Clean & Fix

Erosion and Sediment Control Inspection Report Form

Project Name and Location: 34 OSAN BANK ***LDP#*** 6206

Weather: 44 CLOUDY

Rain in last 24 hrs (inches): 0

Owner / Permittee:

A. Current Construction / Active Areas:

Pollution Control Measures (BMP) Checklist:

- X Inlet Barrier (i.e.: gravel bags)
- X Sediment Barriers (i.e.: ditch checks)
- ___ Erosion Blankets, Hydromulch / Seed, etc
- X Stabilized Construction Entrance
- ___ Stream Crossings
- ___ Seed / Sod Areas
- ___ Sediment Basins & Discharge Locations
- ___ Borrow Areas
- ___ General Site Condition (trash, etc)

B. Problem Areas / Special Observations(*Note problem areas ONLY below*):

BMP	Location	Observations, Effectiveness, & Corrective Actions Ordered

C. Listing of Areas where construction operations have permanently or temporarily stopped; stabilization measures initiated.

D. Have items noted on last inspection been corrected? Yes No (if No, Explain:)

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 24 hours, unless otherwise noted. All other BMP's on site are considered to be in good working condition.

1-23-2020

Date of Inspection

Inspector Signature

6 Goals • No Sediment Leaves the Site • Lines of Defense Everywhere & Always • Cover Quickly • Protect the Swale, Ditch ,and Channel • Keep Clean Water Clean • Inspect, Clean & Fix

Erosion and Sediment Control Inspection Report Form

Project Name and Location: 3400 54th BANK ***LDP#*** 6246

Weather: 39 CLEAR

Rain in last 24 hrs (inches): 0

Owner / Permittee:

A. Current Construction / Active Areas:

Pollution Control Measures (BMP) Checklist:

- ✓ Inlet Barrier (i.e.: gravel bags)
- ✓ Sediment Barriers (i.e.: ditch checks)
- ___ Erosion Blankets, Hydromulch / Seed, etc
- ✓ Stabilized Construction Entrance
- ___ Stream Crossings
- ___ Seed / Sod Areas
- ___ Sediment Basins & Discharge Locations
- ___ Borrow Areas
- ___ General Site Condition (trash, etc)

B. Problem Areas / Special Observations(*Note problem areas ONLY below*):

BMP	Location	Observations, Effectiveness, & Corrective Actions Ordered

C. Listing of Areas where construction operations have permanently or temporarily stopped; stabilization measures initiated.

D. Have items noted on last inspection been corrected? Yes No (if No, Explain:)

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 24 hours, unless otherwise noted. All other BMP's on site are considered to be in good working condition.

1-2-20

Date of Inspection

Inspector Signature

6 Goals • No Sediment Leaves the Site • Lines of Defense Everywhere & Always • Cover Quickly • Protect the Swale, Ditch ,and Channel • Keep Clean Water Clean • Inspect, Clean & Fix

Erosion and Sediment Control Inspection Report Form

Project Name and Location: 3400 S 4th BRNX ***LDP#*** 6206

Weather: 19 Cloudy

Rain in last 24 hrs (inches): 0

Owner / Permittee:

A. Current Construction / Active Areas:

Pollution Control Measures (BMP) Checklist:

- X Inlet Barrier (i.e.: gravel bags)
- X Sediment Barriers (i.e.: ditch checks)
- ___ Erosion Blankets, Hydromulch / Seed, etc
- ___ Stabilized Construction Entrance
- ___ Stream Crossings
- ___ Seed / Sod Areas
- ___ Sediment Basins & Discharge Locations
- ___ Borrow Areas
- X General Site Condition (trash, etc)

B. Problem Areas / Special Observations(*Note problem areas ONLY below*):

BMP	Location	Observations, Effectiveness, & Corrective Actions Ordered

C. Listing of Areas where construction operations have permanently or temporarily stopped; stabilization measures initiated.

D. Have items noted on last inspection been corrected? Yes No (if No, Explain:)

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 24 hours, unless otherwise noted. All other BMP's on site are considered to be in good working condition.

12-17-19

Date of Inspection

Inspector Signature

6 Goals • No Sediment Leaves the Site • Lines of Defense Everywhere & Always • Cover Quickly • Protect the Swale, Ditch, and Channel • Keep Clean Water Clean • Inspect, Clean & Fix

Erosion and Sediment Control Inspection Report Form

Project Name and Location: 3400 S 4th BMC **LDP#** 628

Weather: 41 CLEAR

Rain in last 24 hrs (inches): 0

Owner / Permittee:

A. Current Construction / Active Areas:

Pollution Control Measures (BMP) Checklist:

- X Inlet Barrier (i.e.: gravel bags)
- X Sediment Barriers (i.e.: ditch checks)
- ___ Erosion Blankets, Hydromulch / Seed, etc
- X Stabilized Construction Entrance
- ___ Stream Crossings
- ___ Seed / Sod Areas
- ___ Sediment Basins & Discharge Locations
- ___ Borrow Areas
- X General Site Condition (trash, etc)

B. Problem Areas / Special Observations(*Note problem areas ONLY below*):

BMP	Location	Observations, Effectiveness, & Corrective Actions Ordered

C. Listing of Areas where construction operations have permanently or temporarily stopped; stabilization measures initiated.

D. Have items noted on last inspection been corrected? Yes No (if No, Explain:)

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 24 hours, unless otherwise noted. All other BMP's on site are considered to be in good working condition.

12-3-19

Date of Inspection

Inspector Signature

6 Goals • No Sediment Leaves the Site • Lines of Defense Everywhere & Always • Cover Quickly • Protect the Swale, Ditch ,and Channel • Keep Clean Water Clean • Inspect, Clean & Fix

Erosion and Sediment Control Inspection Report Form

Project Name and Location: 3400 54th BANK ***LDP#*** 6294

Weather: 50 CLEAR

Rain in last 24 hrs (inches): 0

Owner / Permittee:

A. Current Construction / Active Areas:

Pollution Control Measures (BMP) Checklist:

- ✓ Inlet Barrier (i.e.: gravel bags)
- ✓ Sediment Barriers (i.e.: ditch checks)
- ✓ Erosion Blankets, Hydromulch / Seed, etc
- ✓ Stabilized Construction Entrance
- ___ Stream Crossings
- ___ Seed / Sod Areas
- ___ Sediment Basins & Discharge Locations
- ___ Borrow Areas
- ___ General Site Condition (trash, etc)

B. Problem Areas / Special Observations(*Note problem areas ONLY below*):

BMP	Location	Observations, Effectiveness, & Corrective Actions Ordered

C. Listing of Areas where construction operations have permanently or temporarily stopped; stabilization measures initiated.

D. Have items noted on last inspection been corrected? Yes No (if No, Explain:)

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 24 hours, unless otherwise noted. All other BMP's on site are considered to be in good working condition.

11-19-19

Date of Inspection

Inspector Signature

6 Goals • No Sediment Leaves the Site • Lines of Defense Everywhere & Always • Cover Quickly • Protect the Swale, Ditch ,and Channel • Keep Clean Water Clean • Inspect, Clean & Fix

Erosion and Sediment Control Inspection Report Form

Project Name and Location: 3400 S 4th Bank ***LDP#*** 6296

Weather: 43 CLOUDY

Rain in last 24 hrs (inches): 0

Owner / Permittee:

A. Current Construction / Active Areas:

Pollution Control Measures (BMP) Checklist:

- ___ Inlet Barrier (i.e.: gravel bags)
- ___ Sediment Barriers (i.e.: ditch checks)
- ___ Erosion Blankets, Hydromulch / Seed, etc
- ___ Stabilized Construction Entrance
- ___ Stream Crossings
- ___ Seed / Sod Areas
- ___ Sediment Basins & Discharge Locations
- ___ Borrow Areas
- ___ General Site Condition (trash, etc)

B. Problem Areas / Special Observations(*Note problem areas ONLY below*):

BMP	Location	Observations, Effectiveness, & Corrective Actions Ordered

C. Listing of Areas where construction operations have permanently or temporarily stopped; stabilization measures initiated.

D. Have items noted on last inspection been corrected? Yes No (if No, Explain:)

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 24 hours, unless otherwise noted. All other BMP's on site are considered to be in good working condition.

11-5-19

Date of Inspection

Inspector Signature

6 Goals • No Sediment Leaves the Site • Lines of Defense Everywhere & Always • Cover Quickly • Protect the Swale, Ditch ,and Channel • Keep Clean Water Clean • Inspect, Clean & Fix

Erosion and Sediment Control Inspection Report Form

Project Name and Location 3400 S 4th Bank 62nd

Weather: 48 sunny

Rain in last 24 hrs (inches): .2

Owner / Permittee:

A. Current Construction / Active Areas:

Pollution Control Measures (BMP) Checklist:

- ✓ Inlet Barrier (i.e.: gravel bags)
- ✓ Sediment Barriers (i.e.: ditch checks)
- ___ Erosion Blankets, Hydromulch / Seed, etc
- ✓ Stabilized Construction Entrance
- ___ Stream Crossings
- ___ Seed / Sod Areas
- ___ Sediment Basins & Discharge Locations
- ___ Borrow Areas
- ___ General Site Condition (trash, etc)

B. Problem Areas / Special Observations(*Note problem areas ONLY below*):

BMP	Location	Observations, Effectiveness, & Corrective Actions Ordered

C. Listing of Areas where construction operations have permanently or temporarily stopped; stabilization measures initiated.

D. Have items noted on last inspection been corrected? Yes No (if No, Explain:)

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 24 hours, unless otherwise noted. All other BMP's on site are considered to be in good working condition.

10-21-19

Date of Inspection

Inspector Signature

6 Goals • No Sediment Leaves the Site • Lines of Defense Everywhere & Always • Cover Quickly • Protect the Swale, Ditch ,and Channel • Keep Clean Water Clean • Inspect, Clean & Fix

Address 3426 S 4th

Final Inspection of Erosion and Sediment Control

Application# 6246 Description BANK Owner/Contractor AL HUBER
Permit# Issued 8-15-19 Inspection Date 5-4-2020 City Inspector: BILL CORBET

Project Overview

- How Many Acres Total Does the Project Disturb? LESS THAN ONE
- Project Start Date Project End Date

Paperwork

- Is the SWPPP Notebook onsite? Yes No N/A
- Has a copy of the SWPPP been given to City staff Yes No N/A

Final Site Preparation*

- Has the concrete wash-out area been cleaned? Yes No N/A
- Is the site free of construction trash? (cups, lunch sacks, material packaging, wood debris, etc.) Yes No N/A
- Have perimeter sediment controls been taken down? Yes No N/A
- Have indications of the construction limits been taken down? (fencing, staking, physical barriers) Yes No N/A
- Has all the dirt on the site been covered? Yes No N/A
- Have appropriate grasses/sod/trees been planted? Yes No N/A
- Have the plants accepted? Yes No N/A
- Have gutters and streets been cleaned of soil/trash? Yes No N/A
- Have all erosion controls been removed? Yes No N/A
- Has all erosion control has been removed from City Right of way Yes No N/A

* Must be "yes" or N/A in order for inspection to be "satisfactory".

Approval

City staff initial for approval: BL

_____ A Compliance Certificate **will be** submitted, as this site has met all the requirements of the City of Leavenworth's General Guidelines for Stormwater and Drainage standards.

_____ A Compliance Certificate will **not be** submitted until all above requirements of the City of Leavenworth's General Guidelines for Stormwater and Drainage standards have been met. The items below must be completed in order to have a satisfactory inspection:

1. _____
2. _____
3. _____
4. _____

City of Leavenworth

LAND DISTURBANCE PERMIT APPLICATION

(Fill Permits Require An Additional Application)

City of Leavenworth Public Works
100 N. 5th Street
Leavenworth, KS. 66048
913 684 0375

Date 9/4/19

Reviewed By: _____

Applicant Name: Reilly Homes LLC Phone: 913-727-6400/913-683-3077

Address: P.O. Box 9 Leavenworth Zip Code: 66048

Email: joan@reillyhomesinc.com Fax: 913-727-5757

Project Type

- [x] Single Family Home
- [ ] Commercial/Mutli-family
- [x] Single Family Subdivision
- [ ] Building Addition
- [ ] Utility Extension
- [ ] General Grading/Filling
- [ ] Public Improvement Project
- [ ] Other: explain Below

Project Location

Property Address: 1701 West Glen Dr

Name of Project or Subdivision: West Glen Subdivision

Owner of Record : _____ Phone number: 913-727-6400

Proposed Land Use: _____

Total Site Area: _____ Acres/or _____ Sq. Feet

Total Area of Land Disturbance: _____ Acres/or _____ Sq. Feet

Describe the Proposed work: New Home Construction

City of Leavenworth

LAND DISTURBANCE PERMIT APPLICATION

Does work include any construction activity in the FEMA regulated floodplain?

Yes ____ No X

Note; Additional permits for work in floodplain are required. Attach any additional information to this permit application.

LAND DISTURBANCE APLLICANT CHECK LIST

- X Completed Land Disturbance Application
- ____ Attached site specific Stormwater Pollution Prevention Plan (SWPP Plan)
- X Attached site specific Erosion Control Plan
- ____ Attached site specific grading plan
- X Attached Schedule for duration of land disturbance
- ____ Attached NOI if required (over 1 acre-SWPP required)
- X This is a single family building project or home addition and I as applicant will follow the attached "Single Family Lot Erosion and Sediment Control Plan"

X The applicant by submitting this application does agree to perform all necessary work to include bi-weekly inspections and inspections after each ½" rain event (24 hour). The applicant will supply the City of Leavenworth with all inspection records upon request, and copies must be provided in order to obtain a Compliance Certificate.

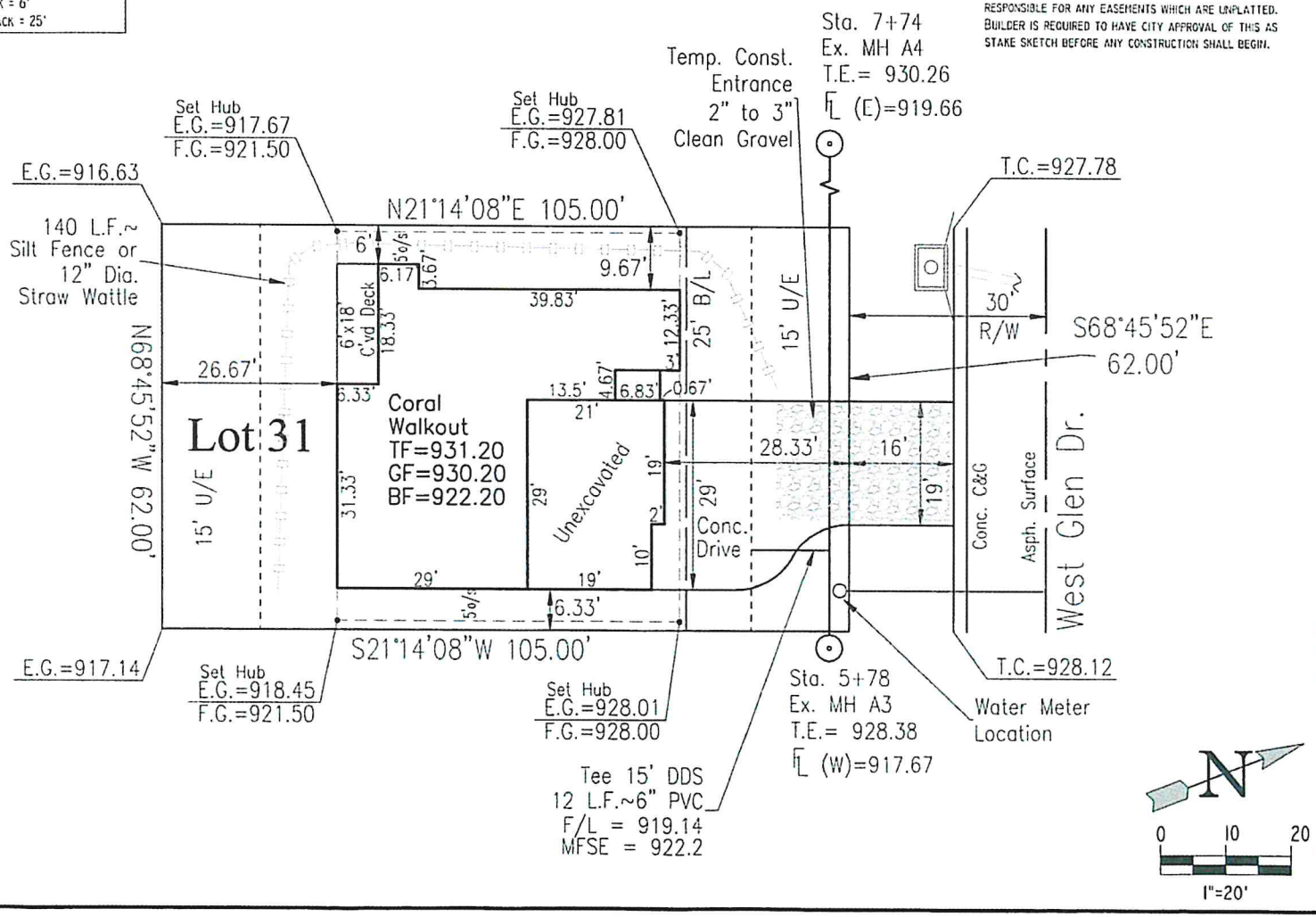
The applicant fully understands that the responsible party shall comply with this permit and repair all substandard erosion control within a 24 hour period after notification of failure to comply with the plan. Failure to comply within the allotted time frame is a violation and shall be reason for the City of Leavenworth to issue a **Stop Order** on all work, repair the damaged erosion control, and clean all surrounding grounds. The contractor/owner shall be held responsible for all expense incurred to remedy the violation and may be charged with a Nuisance Complaint in Municipal Court.

Applicant Signature: Joan Bostock

Owner Signature: _____

General Notes:
1. There must be 2 ft between any structure and the interior property line.
2. Rear Setback Line = 25'
3. Side Yard Setback = 6'
4. Front Yard Setback = 25'

Note: This as staked sketch was prepared for construction of foundation only. Builder shall verify all dimensions and all grades shown to insure adequate fall to sewer and profer drainage of lot. No title information was provided for this drawing. Not responsible for any easements which are unplatted. Builder is required to have city approval of this as stake sketch before any construction shall begin.



Plot Plan

Lot 31
West Glen
1st Plat
1701 West Glen Dr.
Leavenworth, KS 66048

Reilly Homes
c/o Mike Reilly
P.O. Box 9
Leavenworth, KS 66048
(913) 682-1234

NAPIER
ENGINEERING, LLC
207 S. 5th Street
Leavenworth, Kansas 66048
913.375.0482
brett@napiereng.com

Brett A. Napier
Licensed
Professional Engineer
17507
8/28/19
Kansas

I certify that this plot plan has been field verified, and is in compliance with the approved subdivision grading plan unless otherwise noted.

Date of Preparation:
August 27, 2019


1701 WEST GLEN
LDP APP 6394
11/21/19

PROJECT INSPECTION LOG FORM

Location 1701 West Glen **Project:** New home **APP#** 6394 **PERMIT#** **Issued:** 9/4/19

Owner:

Contractor:

Day	YEAR: 2019											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
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6394

Erosion and Sediment Control Inspection Report Form

Project Name and Location 1701 WEST GLEN APP 6391

Weather: 35° Cldy.

Rain in last 24 hrs (inches): 0"

Owner / Permittee: Kelley.

A. Current Construction / Active Areas:

VSFR

Pollution Control Measures (BMP) Checklist:

- A — Inlet Barrier (ie: gravel bags)
- NA — Sediment Barriers (ie: ditch checks)
- NA — Erosion Blankets, Hydromulch / Seed, etc
- A — Stabilized Construction Entrance
- NA — Stream Crossings
- — Seed / Sod Areas
- — Sediment Basins & Discharge Locations
- — Borrow Areas
- — General Site Condition (trash, etc)

*B. Problem Areas / Special Observations (*Note problem areas ONLY below*):*

BMP	Location	Observations, Effectiveness, & Corrective Actions Ordered

C. Listing of Areas where construction operations have permanently or temporarily stopped; stabilization measures initiated.

D. Have items noted on last inspection been corrected? Yes No (if No, Explain:)

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 24 hours, unless otherwise noted. All other BMP's on site are considered to be in good working condition.

12/26/19

Date of Inspection

Inspector Signature

6 Goals • No Sediment Leaves the Site • Lines of Defense Everywhere & Always • Cover Quickly • Protect the Swale, Ditch, and Channel • Keep Clean Water Clean • Inspect, Clean & Fix

Erosion and Sediment Control Inspection Report Form

Project Name and Location 1701 WEST GLEN APP 6394

Weather: 45° CLDY.

Rain in last 24 hrs (inches): 0"

Owner / Permittee: ROLLEY

A. Current Construction / Active Areas:

NSFR.

Pollution Control Measures (BMP) Checklist:

- A — Inlet Barrier (ie: gravel bags)
- NA — Sediment Barriers (ie: ditch checks)
- NA — Erosion Blankets, Hydromulch / Seed, etc
- A — Stabilized Construction Entrance
- NA — Stream Crossings
- — Seed / Sod Areas
- — Sediment Basins & Discharge Locations
- — Borrow Areas
- A — General Site Condition (trash, etc)

*B. Problem Areas / Special Observations(*Note problem areas ONLY below*):*

BMP	Location	Observations, Effectiveness, & Corrective Actions Ordered

C. Listing of Areas where construction operations have permanently or temporarily stopped; stabilization measures initiated.

D. Have items noted on last inspection been corrected? Yes No (if No, Explain:)

CONTRACTOR CLEANS STREETS 2X WEEK

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 24 hours, unless otherwise noted. All other BMP's on site are considered to be in good working condition.

12/17/19

Date of Inspection

Inspector Signature

6 Goals • No Sediment Leaves the Site • Lines of Defense Everywhere & Always • Cover Quickly • Protect the Swale, Ditch, and Channel • Keep Clean Water Clean • Inspect, Clean & Fix

Erosion and Sediment Control Inspection Report Form

Project Name and Location 1701 WEST GLEN LDP ASP 6394

Weather: 35° Cld

Rain in last 24 hrs (inches): < ½ "

Owner / Permittee: Kenny.

A. Current Construction / Active Areas:

NSFA.

Pollution Control Measures (BMP) Checklist:

- X Inlet Barrier (ie: gravel bags)
- NA Sediment Barriers (ie: ditch checks)
- NA Erosion Blankets, Hydromulch / Seed, etc
- X Stabilized Construction Entrance
- NA Stream Crossings
- Seed / Sod Areas
- Sediment Basins & Discharge Locations
- Borrow Areas
- X General Site Condition (trash, etc)

*B. Problem Areas / Special Observations(*Note problem areas ONLY below*):*

BMP	Location	Observations, Effectiveness, & Corrective Actions Ordered

C. Listing of Areas where construction operations have permanently or temporarily stopped; stabilization measures initiated.

D. Have items noted on last inspection been corrected? Yes No (if No, Explain:)

CONTRACTOR CLEANS STREETS 2X WEEK

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 24 hours, unless otherwise noted. All other BMP's on site are considered to be in good working condition.

9/27/19

Date of Inspection

Inspector Signature

6 Goals • No Sediment Leaves the Site • Lines of Defense Everywhere & Always • Cover Quickly • Protect the Swale, Ditch, and Channel • Keep Clean Water Clean • Inspect, Clean & Fix

NBP ID# - 46430
FINAL LDP PIC
ATTACHED TO APP.

Address 1701 WEST GLEN

Final Inspection of Erosion and Sediment Control

LDP Number 639A Description USFR Owner/Contractor Rosey.

Date 6/11/20 . Time 1000 City Inspector MARK LEMMON

Project Overview

- How Many Acres Total Does the Project Disturb? 21
- Project Start Date 9/9/19 Project End Date 6/11/20

Paperwork

• Is the SWPPP Notebook onsite?	Yes	No	(N/A)
• Has a copy of the SWPPP been given to City staff	(Yes)	No	N/A

Final Site Preparation*

• Has the concrete wash-out area been cleaned?	(Yes)	No	N/A
• Is the site free of construction trash? (cups, lunch sacks, material packaging, wood debris, etc.)	(Yes)	No	N/A
• Have perimeter sediment controls been taken down?	(Yes)	No	N/A
• Have indications of the construction limits been taken down? (fencing, staking, physical barriers)	(Yes)	No	N/A
• Has all the dirt on the site been covered?	(Yes)	No	N/A
• Have appropriate grasses/sod/trees been planted?	(Yes)	No	N/A
• Have the plants accepted?	(Yes)	No	N/A
• Have gutters and streets been cleaned of soil/trash?	(Yes)	No	N/A
• Have all erosion controls been removed?	(Yes)	No	N/A
• Has all erosion control has been removed from City Right of way	(Yes)	No	N/A

* Must be "yes" or N/A in order for inspection to be "satisfactory".

Approval

City staff initial for approval:

MM A Compliance Certificate will be submitted, as this site has met all the requirements of the City of Leavenworth's General Guidelines for Stormwater and Drainage standards.

_____ A Compliance Certificate will not be submitted until all above requirements of the City of Leavenworth's General Guidelines for Stormwater and Drainage standards have been met. The items below must be completed in order to have a satisfactory inspection:

1. _____
2. _____
3. _____
4. _____

PROJECT INSP[illegible]TION LOG FORM

Location 1701 WEST GLEN **Project:** NSFR **APP#** 6394 **PERMIT#** **Issued:** 9/4/19

Owner: KELLY.

Contractor:

Day	YEAR: 20 20											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1												
2												
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30												
31												

6394

Erosion and Sediment Control Inspection Report Form

Project Name and Location 1701 WEST GLEN - LDP APP - 6394

Weather: 70° cusy

Rain in last 24 hrs (inches): ± ½"

Owner / Permittee: Kenny.

A. Current Construction / Active Areas: NSFA

Pollution Control Measures (BMP) Checklist:

- ✓ Inlet Barrier (ie: gravel bags)
- ✓ Sediment Barriers (ie: ditch checks)
- Erosion Blankets, Hydromulch / Seed, etc
- Stabilized Construction Entrance
- Stream Crossings
- Seed / Sod Areas
- Sediment Basins & Discharge Locations
- Borrow Areas
- ✓ General Site Condition (trash, etc)

*B. Problem Areas / Special Observations (*Note problem areas ONLY below*):*

BMP	Location	Observations, Effectiveness, & Corrective Actions Ordered

C. Listing of Areas where construction operations have permanently or temporarily stopped; stabilization measures initiated.

D. Have items noted on last inspection been corrected? Yes No (if No, Explain:)

CONTRACTOR CLEAN STREETS 2X WEEK
CONCRETE DRIVEWAY COMPLETE
FINAL GRADE COMPLETE

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 24 hours, unless otherwise noted. All other BMP's on site are considered to be in good working condition.

5/28/20
Date of Inspection

Inspector Signature

6 Goals • No Sediment Leaves the Site • Lines of Defense Everywhere & Always • Cover Quickly • Protect the Swale, Ditch, and Channel • Keep Clean Water Clean • Inspect, Clean & Fix

Erosion and Sediment Control Inspection Report Form

Project Name and Location 1701 WEST GLEN LDP APP - 6394

Weather: 70° CLDY.

Rain in last 24 hrs (inches): < 1/2"

Owner / Permittee: Reilly.

A. Current Construction / Active Areas: NSFR.

Pollution Control Measures (BMP) Checklist:

- A Inlet Barrier (ie: gravel bags)
- AA Sediment Barriers (ie: ditch checks)
- Erosion Blankets, Hydromulch / Seed, etc
- Stabilized Construction Entrance
- Stream Crossings
- Seed / Sod Areas
- Sediment Basins & Discharge Locations
- Borrow Areas
- General Site Condition (trash, etc)

*B. Problem Areas / Special Observations(*Note problem areas ONLY below*):*

BMP	Location	Observations, Effectiveness, & Corrective Actions Ordered

C. Listing of Areas where construction operations have permanently or temporarily stopped; stabilization measures initiated.

D. Have items noted on last inspection been corrected? Yes No (if No, Explain:)

CONTRACTOR CLEANS STREETS 2X WEEK
CONCRETE DRIVEWAY COMPLETE
FINAL GRADING COMPLETE

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 24 hours, unless otherwise noted. All other BMP's on site are considered to be in good working condition.

3/4/20
Date of Inspection

[signature]
Inspector Signature

6 Goals • No Sediment Leaves the Site • Lines of Defense Everywhere & Always • Cover Quickly • Protect the Swale, Ditch, and Channel • Keep Clean Water Clean • Inspect, Clean & Fix

Erosion and Sediment Control Inspection Report Form

Project Name and Location 1701 WEST GLEN - LDP APP 6396

Weather: 60° CLR

Rain in last 24 hrs (inches): 0"

Owner / Permittee: Remy.

A. Current Construction / Active Areas:

NSFR

Pollution Control Measures (BMP) Checklist:

- ✓ Inlet Barrier (ie: gravel bags)
- ✓ Sediment Barriers (ie: ditch checks)
- Erosion Blankets, Hydromulch / Seed, etc
- Stabilized Construction Entrance
- Stream Crossings
- Seed / Sod Areas
- Sediment Basins & Discharge Locations
- Borrow Areas
- ✓ General Site Condition (trash, etc)

*B. Problem Areas / Special Observations(*Note problem areas ONLY below*):*

BMP	Location	Observations, Effectiveness, & Corrective Actions Ordered

C. Listing of Areas where construction operations have permanently or temporarily stopped; stabilization measures initiated.

D. Have items noted on last inspection been corrected? Yes No (if No, Explain:)

CONTRACTOR CLEANS STREETS 2X WEEK
CONCRETE DRIVEWAY COMPLETE
FINAL GRADE COMPLETE

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 24 hours, unless otherwise noted. All other BMP's on site are considered to be in good working condition.

4/30/20
Date of Inspection

Inspector Signature

6 Goals • No Sediment Leaves the Site • Lines of Defense Everywhere & Always • Cover Quickly • Protect the Swale, Ditch, and Channel • Keep Clean Water Clean • Inspect, Clean & Fix

Erosion and Sediment Control Inspection Report Form

Project Name and Location 1701 WEST GUEN LDPAPP-6398

Weather: 90° Cudy.

Rain in last 24 hrs (inches): 0"

Owner / Permittee: Kelly

A. Current Construction / Active Areas:

NSFR.

Pollution Control Measures (BMP) Checklist:

- Inlet Barrier (ie: gravel bags)
- Sediment Barriers (ie: ditch checks)
- Erosion Blankets, Hydromulch / Seed, etc
- Stabilized Construction Entrance
- Stream Crossings
- Seed / Sod Areas
- Sediment Basins & Discharge Locations
- Borrow Areas
- General Site Condition (trash, etc)

*B. Problem Areas / Special Observations (*Note problem areas ONLY below*):*

BMP	Location	Observations, Effectiveness, & Corrective Actions Ordered

C. Listing of Areas where construction operations have permanently or temporarily stopped; stabilization measures initiated.

D. Have items noted on last inspection been corrected? Yes No (if No, Explain:)

CONTRACTOR CLEANS STREETS EX WEEK
CONCRETE DRIVEWAY APPROP

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 24 hours, unless otherwise noted. All other BMP's on site are considered to be in good working condition.

4/16/20 — Date of Inspection

Inspector Signature

6 Goals • No Sediment Leaves the Site • Lines of Defense Everywhere & Always • Cover Quickly • Protect the Swale, Ditch, and Channel • Keep Clean Water Clean • Inspect, Clean & Fix

Erosion and Sediment Control Inspection Report Form

Project Name and Location 1701 WEST GLEN LDP APP-6394

Weather: SHOWERS 55° CLOUDY

Rain in last 24 hrs (inches): 2 1/2"

Owner / Permittee: RELIEF

A. Current Construction / Active Areas:

NSFR

Pollution Control Measures (BMP) Checldist:

- A Inlet Barrier (ie: gravel bags)
- NA Sediment Barriers (ie: ditch checks)
- Erosion Blankets, Hydromulch / Seed, etc
- Stabilized Construction Entrance
- Stream Crossings
- Seed / Sod Areas
- Sediment Basins & Discharge Locations
- Borrow Areas
- A General Site Condition (trash, etc)

*B. Problem Areas / Special Observations(*Note problem areas ONLY below*):*

BMP	Location	Observations, Effectiveness, & Corrective Actions Ordered

C. Listing of Areas where construction operations have permanently or temporarily stopped; stabilization measures initiated.

D. Have items noted on last inspection been corrected? Yes No (if No, Explain:)

CONCRETE DRIVEWAY COMPLETE

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 24 hours, unless otherwise noted. All other BMP's on site are considered to be in good working condition.

4/22/20

Date of Inspection

Inspector Signature

6 Goals • No Sediment Leaves the Site • Lines of Defense Everywhere & Always • Cover Quickly • Protect the Swale, Ditch, and Channel • Keep Clean Water Clean • Inspect, Clean & Fix

Erosion and Sediment Control Inspection Report Form

Project Name and Location 1701 WEST GLEN LPPAP 6394

Weather: 60° RAIN

Rain in last 24 hrs (inches): +/- 1"

Owner / Permittee: Remy

A. Current Construction / Active Areas:

NSFR

Pollution Control Measures (BMP) Checklist:

- Inlet Barrier (ie: gravel bags)
- Sediment Barriers (ie: ditch checks)
- Erosion Blankets, Hydromulch / Seed, etc
- Stabilized Construction Entrance
- Stream Crossings
- Seed / Sod Areas
- Sediment Basins & Discharge Locations
- Borrow Areas
- General Site Condition (trash, etc)

*B. Problem Areas / Special Observations(*Note problem areas ONLY below*):*

BMP	Location	Observations, Effectiveness, & Corrective Actions Ordered

C. Listing of Areas where construction operations have permanently or temporarily stopped; stabilization measures initiated.

D. Have items noted on last inspection been corrected? Yes No (if No, Explain:)

CONNECTOR CLEAN STREETS 2X WEEK

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 24 hours, unless otherwise noted. All other BMP's on site are considered to be in good working condition.

3/19/20
Date of Inspection

Inspector Signature

6 Goals • No Sediment Leaves the Site • Lines of Defense Everywhere & Always • Cover Quickly • Protect the Swale, Ditch, and Channel • Keep Clean Water Clean • Inspect, Clean & Fix

Erosion and Sediment Control Inspection Report Form

Project Name and Location 1701 WESTGLEN LDP APP 6394

Weather: 50° CLR

Rain in last 24 hrs (inches): 0"

Owner / Permittee: RENEY

A. Current Construction / Active Areas:

NSFR

Pollution Control Measures (BMP) Checklist:

- Inlet Barrier (ie: gravel bags)
- Sediment Barriers (ie: ditch checks)
- Erosion Blankets, Hydromulch / Seed, etc
- Stabilized Construction Entrance
- Stream Crossings
- Seed / Sod Areas
- Sediment Basins & Discharge Locations
- Borrow Areas
- General Site Condition (trash, etc)

*B. Problem Areas / Special Observations(*Note problem areas ONLY below*):*

BMP	Location	Observations, Effectiveness, & Corrective Actions Ordered

C. Listing of Areas where construction operations have permanently or temporarily stopped; stabilization measures initiated.

D. Have items noted on last inspection been corrected? Yes No (if No, Explain:)

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 24 hours, unless otherwise noted. All other BMP's on site are considered to be in good working condition.

3/5/20

Date of Inspection

Inspector Signature

6 Goals • No Sediment Leaves the Site • Lines of Defense Everywhere & Always • Cover Quickly • Protect the Swale, Ditch, and Channel • Keep Clean Water Clean • Inspect, Clean & Fix

Erosion and Sediment Control Inspection Report Form

Project Name and Location 1701 WEST GLEW LDP APP 6394

Weather: 20° CLR

Rain in last 24 hrs (inches): 0"

Owner / Permittee: HENRY

A. Current Construction / Active Areas:

NEAR

Pollution Control Measures (BMP) Checklist:

- X Inlet Barrier (ie: gravel bags)
- // Sediment Barriers (ie: ditch checks)
- /// Erosion Blankets, Hydromulch / Seed, etc
- X Stabilized Construction Entrance
- /// Stream Crossings
- ___ Seed / Sod Areas
- | Sediment Basins & Discharge Locations
- ___ Borrow Areas
- X General Site Condition (trash, etc)

*B. Problem Areas / Special Observations(*Note problem areas ONLY below*):*

BMP	Location	Observations, Effectiveness, & Corrective Actions Ordered

C. Listing of Areas where construction operations have permanently or temporarily stopped; stabilization measures initiated

D. Have items noted on last inspection been corrected? Yes No (if No, Explain:)

EROSION CONTROL SPOTS 2X WEEK

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 24 hours, unless otherwise noted. All other BMP's on site are considered to be in good working condition.

2/20/20

Date of Inspection

Inspector Signature

6 Goals • No Sediment Leaves the Site • Lines of Defense Everywhere & Always • Cover Quickly • Protect the Swale, Ditch, and Channel • Keep Clean Water Clean • Inspect, Clean & Fix

Erosion and Sediment Control Inspection Report Form

Project Name and Location 1701 WEST GLEN LDD APP 6394

Weather: 25° CLR

Rain in last 24 hrs (inches): 0"

Owner / Permittee: NEWLY.

A. Current Construction / Active Areas:

NSFR

Pollution Control Measures (BMP) Checklist:

- ✓ Inlet Barrier (ie: gravel bags)
- ✓ Sediment Barriers (ie: ditch checks)
- ✓ Erosion Blankets, Hydromulch / Seed, etc
- ✓ Stabilized Construction Entrance
- ✓ Stream Crossings
- Seed / Sod Areas
- Sediment Basins & Discharge Locations
- Borrow Areas
- ✓ General Site Condition (trash, etc)

*B. Problem Areas / Special Observations(*Note problem areas ONLY below*):*

BMP	Location	Observations, Effectiveness, & Corrective Actions Ordered

C. Listing of Areas where construction operations have permanently or temporarily stopped; stabilization measures initiated.

D. Have items noted on last inspection been corrected? Yes No (if No, Explain:)

CONTRACTORS CLEANS STREETS 2X WEEK

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 24 hours, unless otherwise noted. All other BMP's on site are considered to be in good working condition.

2/6/20

Date of Inspection

Inspector Signature

6 Goals • No Sediment Leaves the Site • Lines of Defense Everywhere & Always • Cover Quickly • Protect the Swale, Ditch, and Channel • Keep Clean Water Clean • Inspect, Clean & Fix

Erosion and Sediment Control Inspection Report Form

Project Name and Location 1701 WESTGLEN LDP APP 6398

Weather: 35° CLOUDY

Rain in last 24 hrs (inches): +/- 1/2" RAIN/SNOW

Owner / Permittee: AETNA.

A. Current Construction / Active Areas:

NSFR.

Pollution Control Measures (BMP) Checldist:

- A — Inlet Barrier (ie: gravel bags)
- NA — Sediment Barriers (ie: ditch checks)
- NA — Erosion Blankets, Hydromulch / Seed, etc
- A — Stabilized Construction Entrance
- NA — Stream Crossings
- — Seed / Sod Areas
- — Sediment Basins & Discharge Locations
- — Borrow Areas
- A — General Site Condition (trash, etc)

*B. Problem Areas / Special Observations(*Note problem areas ONLY below*):*

BMP	Location	Observations, Effectiveness, & Corrective Actions Ordered

C. Listing of Areas where construction operations have permanently or temporarily stopped; stabilization measures initiated.

D. Have items noted on last inspection been corrected? Yes No (if No, Explain:)

CONTRACTOR CLEANS STREETS 2X WEEK

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 24 hours, unless otherwise noted. All other BMP's on site are considered to be in good working condition.

1/23/20
Date of Inspection

Inspector Signature

6 Goals • No Sediment Leaves the Site • Lines of Defense Everywhere & Always • Cover Quickly • Protect the Swale, Ditch, and Channel • Keep Clean Water Clean • Inspect, Clean & Fix

Erosion and Sediment Control Inspection Report Form

Project Name and Location 1701 WEST GLEN LOP ADD 6398

Weather: 53° CLDY

Rain in last 24 hrs (inches): 04

Owner / Permittee: KELLY

A. Current Construction / Active Areas:

USAA.

Pollution Control Measures (BMP) Checklist:

- A Inlet Barrier (ie: gravel bags)
- NA Sediment Barriers (ie: ditch checks)
- NA Erosion Blankets, Hydromulch / Seed, etc
- A Stabilized Construction Entrance
- NA Stream Crossings
- Seed / Sod Areas
- Sediment Basins & Discharge Locations
- Borrow Areas
- A General Site Condition (trash, etc)

*B. Problem Areas / Special Observations (*Note problem areas ONLY below*):*

BMP	Location	Observations, Effectiveness, & Corrective Actions Ordered

C. Listing of Areas where construction operations have permanently or temporarily stopped; stabilization measures initiated.

D. Have items noted on last inspection been corrected? Yes No (if No, Explain:)

CONTRACTOR CLEANS STREETS 2X WEEK

Note: Inspection comments above indicate deficiencies only. Deficiencies must be corrected within 24 hours, unless otherwise noted. All other BMP's on site are considered to be in good working condition.

1/3/20

Date of Inspection

Inspector Signature

6 Goals • No Sediment Leaves the Site • Lines of Defense Everywhere & Always • Cover Quickly • Protect the Swale, Ditch, and Channel • Keep Clean Water Clean • Inspect, Clean & Fix

Job Address: 1701 WEST GLEN

Job description SFR

Initial Inspection of Erosion and Sediment Control

LDP Number 6394 APP# 6353 Owner/Contractor Kelly

Date 9/11/19 Time 1000 City Inspector Mark Kramer

A. Project Overview

- How Many Acres Total Does the Project Disturb? <1
- Project Start Date: 9/11/19 Project End Date: N/A
- Phase I start date? 9/11/19

B. Paperwork

*Does the project have a Land Disturbance Permit?	Yes (circled)	No	N/A
*Is the SWPPP Notebook onsite?	Yes	No	N/A (circled)
* Is the Inspection log on site?	Yes	No	N/A (circled)

C. Site Preparation

*Has the contractor installed temporary construction entrance(s) and are the vehicles using it?	Yes (circled)	No	N/A
*Is there a place for concrete wash-out, is it clearly marked and do concrete trucks appear to be using it?	Yes (circled)	No	N/A
*Is the site largely free of construction trash? (cups, lunch sacks, material packaging, etc.)	Yes (circled)	No	N/A
*Have perimeter sediment controls been installed?	Yes	No	N/A (circled)
*Have pre-construction controls been installed per the plan?	Yes	No	N/A (circled)
*Have easily recognizable indications of the construction limits been installed? (fencing, staking, physical barriers)	Yes	No	N/A (marked)

* Must be "yes" or N/A in order for inspection to be "satisfactory".

D. Approval

City staff initial for approval:

MK (initials) Land disturbance work **will** proceed, as this site has met all the initial standard requirements of the City of Leavenworth's General Guidelines for Stormwater and Drainage measures.

_________ Land disturbance work **will not** proceed as this site has not met all the initial standard requirements of the City of Leavenworth's General Guidelines for Stormwater and Drainage measures. The deficiencies below must be corrected in order to have a satisfactory inspection:

1. __________
2. __________
3. __________
4. __________

Appendix D (Continued)

Selected Supporting Documentation for Stormwater Management Program (Stormwater Annual Report - Section E) (BMP Number 5)

BMP 5 - Post-Construction Site Stormwater Management in New Development and Redevelopment

- Detention Basin Documents for Annual Meeting
  a. Sample Letter
  b. Public Meeting Agenda
  c. Sign-In Sheet
  d. City Listing of BMP Stormwater Facilities
  e. Contamination Action Plan
  f. Sample Checklist for Contamination Spills
  g. Basin Information Pamphlets
  h. Detention Basin Inspection Sample Form
  i. Stormwater Treatment Facilities Overview
  j. Erosion Control Brochures

COPY 5.4

January 8, 2020

Leavenworth Hotel Partners LP
1 Victory Dr. STE 200
Liberty, MO 64068

Subject: Detention Basin – Annual Meeting January 30, 2020

Dear Property Owners,

Our records indicate that you own or are responsible for operating and/or maintaining a detention basin or similar installation within the City of Leavenworth.

The City of Leavenworth has hosted a public information meeting annually regarding the function and maintenance of detention basins and "Best Management Practice" (BMP) installations within the City. This year the City is requesting that you attend this very important meeting on **Thursday, January 30, 2020, 4:00 p.m. to 6:00 p.m. at the City Hall Commission Room.**

This is an informal meeting and the City is prepared to discuss these topics:

1. The operation and maintenance procedures of the BMPs.
2. Annual certification of detention basins.
3. Proposed fines and abatement fees related to noncompliance of polices.
4. Distribution of new material related to detention basins.

The City is also requesting that you verify ownership contact information and submit all records of maintenance for BMPs from 2019. This can be accomplished at the annual meeting or via mail.

If you have any questions regarding the basin inspection or maintenance reports or cannot attend the meeting, please email them to the City for review at bsmith@firstcity.org, or mail them to 100 N. 5th Street, ATTN: Public Works Department, Leavenworth, KS 66048.

Sincerely,

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

Cc: Paul Kramer, City Manager

5.4

DETENSION BASIN OWNER'S INSPECTIONS AND MAINTENANCE PUBLIC MEETING AGENDA

January 30, 2020
4:00 to 6:00 pm

CITY OF LEAVENWORTH CONTACTS:

- Michael McDonald, Director of Public Works
  1-913-684-0375, (mmcdonald@firstcity.org)
- Mike Hooper, Deputy Director of Public Works
  1-913-684-0375, (mhooper@firstcity.org)
- Mike Stephan, Project Manager – Public Works Engineering
  1-913-684-0375, (mstephan@firstcity.org)
- Barry Smith, Engineering Technician – Public Works Engineering
  1-913-684-0375, (bsmith@firstcity.org)

TYPES OF BASINS:

- Detention Basin/Pond (Dry Pond)
  - Designed to hold back or detain storm water for a short period of time.
  - Helps prevent/reduce flooding.
- Retention Basin/Pond (Wet Pond)
  - Designed to continually hold or retain storm water for extended period of time.
  - This type will be "wet" all of the time.

OTHER TYPES OF BMP'S:

- Pervious Pavement
  - Porous concrete pavement that allows run-off water to leave a site quickly.
  - Designed to detain storm water in a clean gravel pit.
  - This is constructed under the pavement.
- Bio-Swales
  - Designed to detain storm water for a short time.
  - Uses a grate, which will take high flows.
  - Low flows will soak through special soil mix and into storm drain.
- Underground Detention Systems
  - Designed to detain storm water underground.
  - Allows site footprint to be used as parking lot or other similar uses.
  - Low flows will soak through gravel drainage bed and into the ground.
  - High flows will drain into the storm sewer when gravel drainage bed is full.

TOPICS OF CONCERN REGARDING INSPECTION & MAINTENANCE:

- Weed Control
- Brush Control
- Erosion Control
- Plan of Action for Contaminated Spills
- Inspections Completed and Reported
- Remove trash from the basin
- Inlet & Outlet Maintenance (Keeping Clear of Growth and Debris)
- Future Fees and/or Penalties
- Possible future Engineer Stamp requirement. (Stamp is presently required on new construction)

CHANGES ARE COMING. WHAT?

- Maintenance Schedule Required.
- Maintenance records must be kept for 5 years.
- Annual maintenance report due by December 31.
- Failure to submit records can result in a fine.
- 3 year certification – by a licensed engineer certifying the facility has full storage capacity, all inlet/outlet structures are fully functional, and the facility is functional in accordance with the approved plans and specifications.
- Failure to comply.
- City can initiate repairs and assess all costs to the owner.
- City can file a complaint in court and assess fines.

2020 DETENTION BASIN INFORMATION MEETING

Project:	Detention Basin Owners Meeting	**Meeting Date:**	1/30/2020 4:00pm
Facilitator:	City of Leavenworth	**Place/Room:**	Commission Room

Name	Organization	Phone	E-Mail
Mike McDonald	Public Works Director	913-684-0375	MMCDONALD@FIRSTCITY.ORG
Mike Hooper	Deputy Director		MHOOPER@FIRSTCITY.ORG
Mike Stephan	Project Manager		MSTEPHAN@FIRSTCITY.ORG
Barry Smith	Engineer Technician		BSMITH@FIRSTCITY.ORG
Justin Stewart	Sr. Engineer Technician		JSTEWART@FIRSTCITY.ORG
BRIAN PAXTON	SHENANDOAH HOA	913 544 8123	PAXTNBRANK@GMAIL.COM
KYLE Denny	Calvary Baptist church	816 365 8186	KYLE.Denny@markone.com
DAVID WOLK	Armed Forces Ins	913-727-4482	david.wolk@afi.org
Joshua Smith	Core civic	913-547-6319	Joshua.Smith@corecivic.com
JONATHAN KIRBY	U. of Saint Mary	913-758-6173	Kirby88@stmary.edu
DANIEL	Core civic	913-6806880	Daniel.Idle@corecivic.com

5.4

SHENANDOAH NOA
PO BOX 373
LEAVENWORTH, KS
66048

SHENANDOAHNOAPRESIDENT@GMAIL.MAIL

City of Leavenworth 2020 Detention Basins					
Listing of BMP Stormwater Facilities City Wide as of December 31, 2020					
	Name	Location	Owner/Adress	Type	Notes
1	Core Civic	South of Facility	100 Highway Terrace	Dry Basin	
2	Townplace Suites	1001 N. 4th St.	300 Wyandotte KC, MO	Underground Basin	
3	Crown Estates 2	SE of Randolph Ct.	Jeff Dedeke	Dry Basin	Emailed Jeff for contact verification
4	Casey's 10th & Eisenhower	Casey's 10th & Eisenhower	Carol Bohannon	Dry Basin	
5	Zeck Ford	Behind Overflow Parking Lot	Zech Bros Development	Dry Basin	
6	Armed Forces Insurance	550 Esienhower Rd.	Armed Forces Insurance	Wet Basin	
7	Calvary Baptist Church	SE of Church Parking Lots	Calvary Baptist Church	Dry Basin	
8	Southwind Subdivision	841 Meadow	Charles O. Thomas	Dry Basin	
9	Animal Control	North of Parking Lot	City of Leavenworth	Rain Garden	Managed by Police Dept
10	Business & Technology Park	North Basin	City of Leavenworth	Dry Basin	
11	Business & Technology Park	South Basin	City of Leavenworth	Dry Basin	
12	Stubby Park	4th and Poplar	City of Leavenworth	Dry Basin	
13	16th Terr DB	End of Dead End Street	City of Leavenworth	Dry Basin	
14	Ottawa St.	North Side	City of Leavenworth	Bioswale	
15	Ottawa St.	South Side	City of Leavenworth	Bioswale	
16	Kiowa	South Side	City of Leavenworth	Bioswale	
17	Dakota	North Side	City of Leavenworth	Bioswale	
18	Dakota	South Side	City of Leavenworth	Bioswale	
19	Kickapoo	South Side	City of Leavenworth	Bioswale	
20	Miami	South Side	City of Leavenworth	Bioswale	
21	West City Hall Parking Lot N	North Side	City of Leavenworth	Bioswale	
22	West City Hall Parking Lot S	South Side	City of Leavenworth	Bioswale	
23	2nd & Cherokee City Parking Lot	East Side	City of Leavenworth	Bioswale	
24	3rd & Cherokee City Parking Lot	West Side	City of Leavenworth	Bioswale	
25	7th St. & Thornton	End of Dead End Street	City of Leavenworth	Bioswale	
26	CDS Trash Collector	667 Thornton	City of Leavenworth	CDS Trash Collector	New
27	CDS Trash Collector	Anthony School	City of Leavenworth	CDS Trash Collector	New
28	6th & Cherokee Parking Lot	West Center	City of Leavenworth	Bioswale	
29	7th & Cherokee Parking Lot	Center with Swale	City of Leavenworth	Detention Basin	
30	8th & Cherokee Parking Lot	East Side	City of Leavenworth	Bioswale	
31	Fraternal Order of Eagles	20th and Shawnee	City of Leavenworth	Dry Basin	
32	Dillon's NE Parkng Lot	NE Side	Dillons Food Stores	Underground Basin	
33	Dillon's SW Parking Lot	SW Side	Dillons Food Stores	Underground Basin	
34	Ben Day Lofts	1100 3rd Ave.	Exact Properties	Dry Basin	6757 N. National Dr. Parkville, MO
35	Fortgate Shopping Center	7th and Metropolitain	Fort Gate Properties	Underground Basin	Verified from GIS
36	Hampton Inn	SE Corner of Parking Lot	Hampton Inn	Dry Basin	Verified
37	Shenandoah Heights SD	Clayton Ct. & Gettysburg	HOA	Wet Basin	Emailed Brian Paxton 1/08/21
38	Shenandoah Heights SD	3700 Blk Clayton Ct.	HOA	Wet Basin	
39	Highland Pointe SD	SW Corner of Park Lane & Muncie	HOA	Dry Basin	Emailed Chris Pankow
40	Pine Meadow Place SD	4800 Block Parkway Drive	James Perry	Dry Basin	Verified
41	1028 Madison St.	1028 Madison St.	Joseph J. Marcec	Dry Basin	Patricia J. Douthitt, 1028 Madison
42	LVN Elementary	West Side of School Property	LVN Public Schools	Dry Basin	
43	Lawson Elementary	820 N. 5th St.	LVN Public Schools	Dry Basin	
44	Leavenworth High	2012 10th Avenue	LVN Public Schools	Dry Basin	
45	Nettie Hartnett	Nettie Hartnett School	LVN Public Schools	Dry Basin	
46	Anthony Elementary	570 Evergreen St.	LVN Public Schools	Dry Basin	
47	Anthony Elementary	Anthony Elementary	LVN Public Schools	Dry Basin	
48	David Brewer Elementary		LVN Public Schools	Dry Basin	
49	LVN Elementary	NE Corner of School Property	LVN Public Schools	Dry Basin	
50	Warren Middle School	East Side of School	LVN Public Schools	Dry Basin	
51	Leintz Funeral Home	4701 10th Avenue	Leintz Funeral	Dry Basin	Verified
52	Home 2 Suites	250 Delaware	Leavenworth Land LLC	Pervious Pavement	Emailed Kevin Chapman 01/08/21
53	Woods on Muncie	SE of Grand Ave/Wallis Lane	No HOA	Dry Basin	Nobody knows
54	Woods on Muncie	West of Ironwood Cul-de-sac	No HOA	Dry Basin	POB 181 Gardner, KS
55	Stove Factory Lofts	NE Corner of Property	Stove Factory Lofts	Underground Basin	603 East St, Parkville, MO
56	Home Depot	SW Corner of Property	The Home Depot	Dry Basin	Verified Tom Ebers
57	Cereal Ingredients	North Side	Tim Moore	Dry Basin	Add Steve Lacey to contact info
58	Cereal Ingredients	South	Tim Moore	Dry Basin	
59	The Branches SD	2100 Blk Birch St.	Triple R. Properties	Wet Basin	Verified
60	University of St. Mary	McDonald and Hughs Rd.	University of St. Mary	Dry Basin	
61	University of St. Mary	McDonald and Hughs Rd.	University of St. Mary	Dry Basin	Verified
62	University of St. Mary	McDonald and Hughs Rd.	University of St. Mary	Dry Basin	
63	University of St. Mary	McDonald and Hughs Rd.	University of St. Mary	Dry Basin	
64	University of St. Mary	McDonald and Hughs Rd.	University of St. Mary	Dry Basin	
65	US Army Reserve Center	20th St. & Metropolitan	US Army Reserve Center	Dry Basin	
66	Wal-Mart	5000 10th Ave.	Wal-Mart	Dry Basin	
67	Westside Family Church	Pond behind Church	Westside Family Church	Wet Basin	New contact: Michelle Wicker LV, KS

5.4

CONTAMINATION ACTION PLAN!

The City of Leavenworth is required to evaluate the effectiveness of facilities constructed to address stormwater runoff within the city. Maintenance and operation of ponds and detention basins are regulated by the Environmental Protection Agency (EPA), Kansas Department of Health and Environment (KDHE), and the City of Leavenworth, Kansas. Inspection and maintenance of the facility is typically provided by the property owner and/or a home owner's association.

Owners of ponds are expected to be prepared to react in the event of a chemical spill or other contamination that impacts the water in their pond. The City of Leavenworth is requesting that you submit inspection reports and an action plan showing how you will report, contain, and protect the City stormwater system in case your detention basin is contaminated by chemical spills, sanitary sewer overflows, or other forms of contamination.

If contamination occurs within the detention basin, action needs to be taken to mitigate pollution to the water and soil within the City stormwater system. The KDHE website list actions to be taken at: www.kdheks.gov/spill/download/KS_Spill_Reporting.pdf . Below is a list of recommended immediate actions to be taken and phone numbers of authorities to be contacted.

- ✓ Containing the spillage by means of the safest practical way possible by blocking the outflow of the structure or downstream.

- ✓ If the release is not contained or threatens the health or safety of the local population **dial 911**.

- ✓ Contact the City **Water Pollution Control** 24/7: **913-682-1090**.

- ✓ If a spill exceeds the reportable quantities of federally-listed hazardous materials,
  - ➢ **dial 911**
  - ➢ **Contact Leavenworth County Emergency Management:**
    - i. **913-684-0455 or**
    - ii. **Sheriff Office 913-682-1313**
  - ➢ Work with the authorities to contain contaminants.
  - ➢ **The Kansas Commission on Emergency Planning & Response (CEPR) – 785-274-1394 –** requires verbal notification and a follow-up written report within seven days after the verbal report.

- ✓ Whenever a spill exceeds the reportable quantities of federally-listed hazardous materials, it must also be reported to the National Response Center (NRC). Federal law also requires any oil spill that has impacted or threatens a waterway must be reported to the NRC. EPA Region 7 Emergency Response Branch personnel monitor the NRC reports and may call the spiller back for more information. **NRC's 24-hour number is: 800-424-8802**.

- ✓ Immediately make verbal notification to the Kansas Department of Health and Environment. The **Kansas Spill Reporting Number is: (24/7) 785-291-3333**.

SAMPLE CHECKLIST FOR CONTAMINATION SPILLS

It's a good idea to have the basic checklist, a map of the stormwater system, and a list of responsible party contact information conveniently available in the case of an emergency. Below is a basic checklist for use as an example.

- ✓ Contact the authorities and identify basic information on the spill:
  - ➢ Quantity and location of the spill.
  - ➢ Type of contaminants.
  - ➢ Time of spill.
  - ➢ Whether injuries have occurred.
  - ➢ Status of containment efforts.

- ✓ Implement the immediate action plan:
  - ➢ Obtain medical assistance if there has been an injury.
  - ➢ Prevent sources of ignition for flammable materials.
  - ➢ Contain the spill.

- ✓ Notification of governmental authorities and others may be required:
  - ➢ Identify applicable reporting requirements from laws, rules, and permits.
  - ➢ Make notification as required by law, and notify neighbors if appropriate.

- ✓ Respond and clean up as required by law:
  - ➢ Call an outside contractor?
  - ➢ Manage waste materials in accordance with the law.

- ✓ Document events, notifications, and response actions through photographs, written summaries, copies of documents, etc.

- ✓ Make written follow-up reports to government agencies and others as required by law.

- ✓ Review spill to determine root cause and opportunities for prevention of similar spills.

BASINS

INTRODUCTION

Your detention basin is a storm water best management practice (BMP) designed to temporarily capture and hold storm water runoff during periods of heavy rain, and slowly release this flow over a period of one or two days so it minimizes flooding and streambank erosion problems downstream. They also help remove sediments from storm water runoff, which helps improve the quality of local streams. Like most other things, a detention basin may not function properly or it may fail prematurely if not properly maintained. Once a detention basin fails, it is often very expensive to correct.

Many detention basins are located on private property, including parcels of land owned and maintained by a homeowners association (HOA). Local governments do not have the authority to maintain detention basins on private property. Rather, these are the responsibility of the lot owner to maintain.

Whether you are an individual property owner, a homeowner's association representative, or a residential/commercial property manager, this Guidebook will help answer questions and provide you with instructions for basin maintenance activities. Routine maintenance will prolong the life of your detention basin, improve its appearance, help prevent flooding and property damage, and enhance local streams and lakes.

WHAT ARE DETENTION BASINS AND WHY ARE THEY IMPORTANT?

When land is altered to build homes and other developments, the natural system of trees and plants over relatively spongy soil is replaced with harder surfaces like sidewalks, streets, decks, roofs, driveways and even lawns over compacted soils. As a result, less rain water soaks into the ground and more rain water, also known as storm water, flows off the land at a faster rate. This can lead to streambank erosion and possibly cause downstream flooding.

A detention basin is a man-made depression that collects and temporarily holds storm water runoff. Your detention basin (along with others in the area) helps to slow the rate of storm water runoff from the neighborhood and improve the quality of the storm water leaving the detention basin. Your detention basin is important because:

- it collects and detains storm water
- it helps settle out and hold sediment
- it protects local creeks and private property
- it reduces downstream flooding

There are different types of storm water management basins. Some basins are dry and have mowed turf grass in the bottom of them. These are referred to as dry detention basins, or simply detention basins. Others are designed to have a permanent pool of water and are commonly called wet ponds or retention basins. These wet ponds hold water throughout the year, but also have extra storage space that fills with water after a storm.

DRY BASIN

WET BASIN

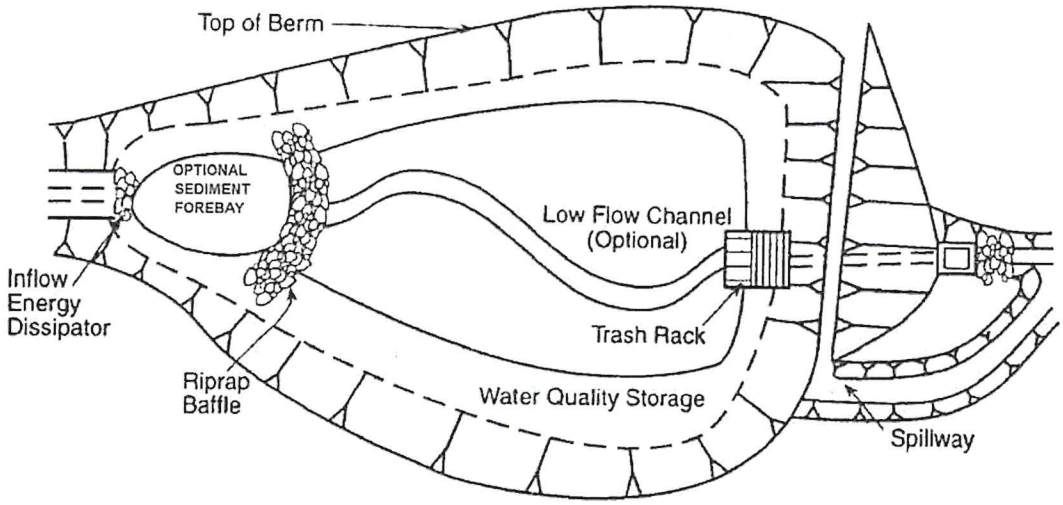
BASIN COMPONENTS

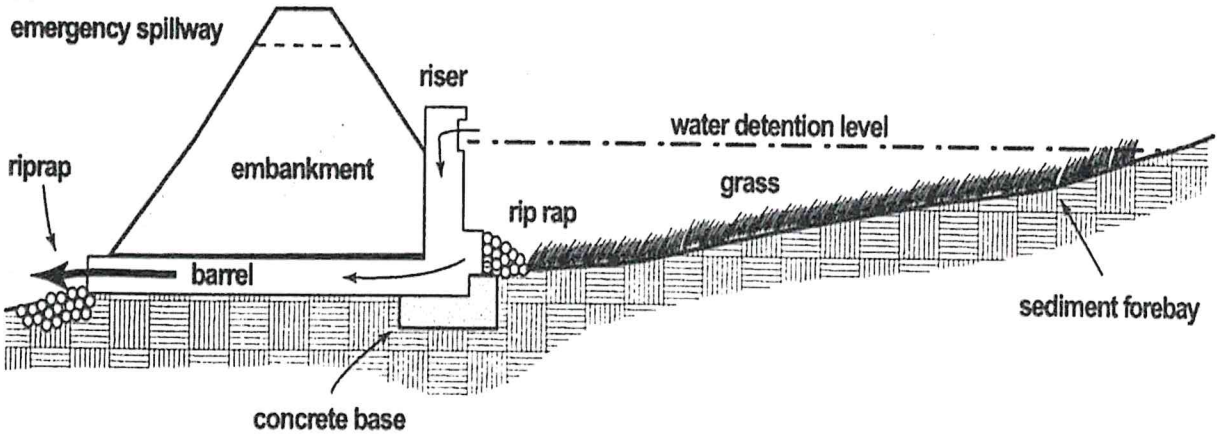
Basin Outlet Structure

A detention basin contains different components, including inlet pipes (there may be one or multiple inlets), the side slopes and bottom, a low flow channel, the outlet structure, the outlet pipe, an embankment and emergency spillway, and rip rap that is usually placed around pipes where they enter and exit to prevent erosion.

Outlet structures vary from basin to basin, but all will include a minimum of two outlets - a small diameter outlet and a larger diameter overflow. Outlets may be covered by a trash rack or metal grate.

Newer, more advanced detention basins may include a *forebay*, which is a settling pool located at the inlet to a basin, and is separated from the rest of the basin by a level dike. The purpose of the forebay is to collect sediment before it enters the main basin. By concentrating sediment in the forebay, it becomes much easier (and less expensive) to clean the sediment out. Some detention basins may also include a *micropool*, which is a small, shallow, permanent pool of water near the outlet designed to prevent re-suspension of sediment and clogging of the outlet.





BASIN MAINTENANCE

A consistent maintenance program is the best way to ensure that a detention basin will continue to perform its water quality functions. In general, a maintenance program should contain the following components:

- Maintain access for inspection and maintenance
- Regular inspections
- Debris and litter control
- Vegetation management
- Embankment and outlet stabilization
- Sediment removal

MAINTAINING YOUR DETENTION BASIN

The first step in a maintenance program is to obtain a copy of the detention basin design. Review the engineering design!

Basin Access

Insure that you have proper access to the basin for regular inspection and maintenance activities. Access should be wide enough for heavy equipment that may be needed for dredging or major repairs. Consider HOA prohibition against homeowners placing fences, outbuildings, landscaping or anything which might interfere with proper access.

Record Keeping

It is important to keep records of all inspections, maintenance activities, repairs and associated costs.

Management Costs

An effective detention basin management program does come with costs, and detention basin owners should plan accordingly. The Center for Watershed Protection has estimated that the annual cost of routine maintenance is typically about 3 to 5% of the construction cost. With good record keeping, the owner can determine annual costs more accurately. Owners should set aside money for routine maintenance as well as the occasions when outside expertise or equipment is needed to maintain, upgrade or repair a basin.

Eagles Hall Dry

Eagles Hall Detention Basin After a High Rate of Rain

A Controlled Burn May Be Necessary If The Basin Can't Be Accessed With Mowers

VEGETATION MANAGEMENT

Vegetation should be maintained throughout the basin to prevent erosion, including the basin bottom, side slopes, and both sides of the dam. Turf grass is the most common groundcover, although other vegetation, such as deep-rooted native plants, can be used to improve basin performance by allowing more water to infiltrate (to soak into the soil). If something other than turf grass is used in the basin bottom, care should be taken to use plants that can withstand temporary inundation and wet soils as well as periods of extended dryness.

If vegetation in a basin is not managed, problems can result. To stay ahead of problems:

- In the spring and fall, inspect the vegetation along the side slopes and basin bottom.
- Re-seed any barren or eroded areas which have developed.
- Any small erosion gullies which have appeared should be completely filled with well-compacted soil, re-seeded, and monitored for recurrence.

- In the spring, remove decomposing vegetation if it is clogging pipe openings.
- Mow at least twice a year if turf grass is used as the groundcover in the basin to prevent trees and woody plants from becoming established. The basin may be mowed more frequently for aesthetic purposes. It is recommended that a grass height of 2 inches be maintained.

No trees or shrubs should be planted or allowed to grow within 15 feet of inlet or outlet pipes or manmade drainage structures such as spillways or earthen embankments. Plants with roots that seek water, such as willow or poplar, should not be used within 50 feet of pipes or manmade structures.

Once a year, the detention basin should be inspected for the appearance of invasive species, including honeysuckle, Callery pear, autumn olive, buckthorn (common & glossy), purple loosestrife and phragmites. Vines can also be a nuisance around the inlet and outlet structures.

https://www.kansasforests.org/forest_health/invasivespecies.html

There are good and bad points about the common cattail. On the plus side, the common cattail (*Typha latifolia*) is a native species and is effective in removing excess nutrients from storm water runoff. On the down side, cattails have a tendency to invade and grow quickly, crowding out other desirable species. Many people also feel they are aesthetically unpleasing. If you choose to allow cattails to grow in the basin, there are some important things to keep in mind. Cattails should be kept clear of the outlet structure, as they can cause blockages. Cattails should also be kept away from the dam area. Cattails can encourage muskrats, and their burrows can affect the integrity of the dam. If you wish to eliminate the cattails in the future, it is important to note that cattails can be very difficult to remove, and special equipment may be needed.

CITY ORDINANCES AND CODE ENFORCEMENT

ARTICLE V. - CUTTING OF WEEDS AND VEGETATION

Sec. 28-122. - Weeds to be removed.

It shall be unlawful for any owner, agent, lessee, tenant, or other person occupying or having charge or control of any premises to permit weeds to remain upon said premises or any area between the property lines of said premises and the centerline of any adjacent street or alley, including, but not specifically limited to, sidewalks, streets, alleys, easements, rights-of-way and all other areas, public or private. All weeds as hereinafter defined are hereby declared a nuisance and are subject to abatement as hereinafter provided. More information concerning the code of ordinances is available at the city website.

https://library.municode.com/ks/leavenworth

REGULAR INSPECTIONS/MAINTENANCE:

THE KEY TO KEEPING A WELL MAINTAINED BASIN

The following maintenance and inspection tasks should be conducted for basin structures. Please also refer to the inspection schedule at the back of this Guidebook.

Outlet structure blocked with sediment and debris

Monthly and after major storms:

- *Inspect for sediment, trash or other debris that may be blocking the inlet or outlet pipes, as well as the spillway.* Debris and sediment commonly clog detention basins and reduce the basin's overall effectiveness. Additionally, improperly maintained basins can harbor breeding areas for mosquitoes. Any sediment or debris found to be blocking the inlets or outlet structure, even partially, should be removed. Remove accumulated sediment with a shovel and wheelbarrow if it is blocking water flow. Small amounts of removed sediment can be spread evenly on upland areas and seeded. All trash and debris throughout the basin should also be removed.

Early spring, fall and after major storms:

- *Inspect the entire basin for debris in early spring, fall, and after major storms.* If necessary, clear large limbs and other debris that may ultimately block the outlet structure. Dead vegetation should be raked out in early spring. If the spillway structure is frequently found to be clogged or partially clogged, debris within the basin area should be cleared on a more frequent basis.
- *Check for standing pools of water*, especially in the low flow channel. Eliminate these as they are found, either by filling in low spots and seeding, or by re-grading the problem area.

Twice a year and after major storms:

- Inspect riprap at the inlet and outlet pipes. Check for erosion around the pipe. Replace riprap when missing or clogged with sediment and debris.

Annually:

- *Inspect the inlet pipes and outlet pipe for structural integrity* - check inlet/outlet pipes to ensure they aren't crumbling or broken. Do not enter any pipes to complete inspection (such as the outlet pipe under the embankment). Many local contractors have camera equipment that can be used to inspect these pipes.
- *Inspect for excess sediment accumulation in the basin* - Remove every 5-10 years or when 6-12 inches of sediment has accumulated.
- Inspect any safety-related structures, including fences and gates, for problems or defects. Correct as necessary.

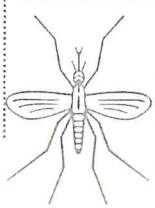
SEDIMENT REMOVAL

Excess silt and sediment can collect over time and reduce the storage capacity of the detention basin. In addition, sediment tends to collect around the outlet structure and may block the outlet. To prevent too much sediment from building up:

- Inspect the basin for sediment accumulation annually
- Remove excess sediment when six inches of sediment has accumulated in the basin, or approximately every 5-10 years.
- If the basin has a forebay, remove sediment when the forebay capacity has been decreased by 50%.

Sediment removal is fairly simple if access is available for the equipment. Front-end loaders or backhoes can be used to remove the accumulated sediment. Sediment removal should be done under the dry weather/dry soil conditions, otherwise, de-watering of the sediments might be necessary. Waste sediments are typically treated as uncontaminated soils and can be used as fill material; however, if soil is contaminated and deemed to be hazardous, it must be disposed of in a hazardous waste landfill.

MANAGING FOR MOSQUITOES



Mosquito problems may occur in detention basins that are not functioning properly and are not maintained. The best control technique is to ensure that stagnant pools of water do not develop. There are a variety of other things you can do to reduce the number of mosquitoes in your environment:

- Install bird houses or bat boxes near the basin.
- Cattails and bulrushes attract dragonflies and other mosquito-eating insects.
- Dense shrubs and brush often provide a habitat for birds and mosquito-eating insects.

BASIN MANAGEMENT

WHAT CAN THE HOMEOWNER DO:

INDIVIDUAL PROPERTY MANAGEMENT WITHIN THE DRAINAGE AREA

There are many steps that property owners can take to ensure that the detention basin functions properly and to minimize long- term maintenance. A number of these activities are described below:

- Do not place yard waste such as leaves, grass clippings or brush in the detention pond, drainage ways, or in the storm drains located in the streets. Yard waste can block basin inlet and outlet pipes. This material also releases excess nutrients as it decomposes. Nutrients, such as nitrogen and phosphorus, are among the most significant pollutants of concern in local lakes and streams.
- Do not dump any materials, such as motor oil, into the storm sewer system. Improperly disposed of materials will pollute the basin. It is also illegal.
- Do not use unapproved or unnecessary amounts of pesticides, herbicides, or fertilizers. These products will wash from the basin into local streams and rivers. In addition, these chemicals can be harmful to the wildlife, such as bees, frogs, toads, fish, and dragonflies.
- If you use fertilizers, test your soil first to find out what nutrients are lacking, and apply only what is needed. Use low-phosphorus, slow-release varieties. Keep fertilizers on the lawn and not on paved areas. Fertilize after and not before a rain storm. Never fertilize when heavy rain is predicted
- Pick up and properly dispose of pet waste.
- Mow high, and avoid mowing directly to the edge of lakes and streams. Sweep grass clippings from sidewalks and curbs and either compost or bag. Do not hose off clippings from driveways and sidewalks into the storm sewer system. Grass clippings can get into the water and add excess nutrients as they break down.
- Educate your neighbors. Share information and management tips with them. If your community has a web site or social media page, post helpful tips on these.

SAMPLE INSPECTION SCHEDULE

Activity	Frequency
Inspect inlet/outlet pipes and spillway for debris, sediment accumulation or other blockages	Monthly and after major storms
Inspect side slopes for barren or eroded areas	Early spring and fall
Inspect/clear pond of debris, tree limbs, dead vegetation, etc.	Early spring, fall, and after major storms
Rip rap inspection, replace as needed	Early spring, fall, and after major storms
Check for standing pools of water, eliminate when found	Early spring, fall, and after major storms
Mowing	At least twice annually
Inspect inlet/outlet pipes for structural integrity	Annually*
Inspect safety-related structures (e.g., fences, gates) for defects	Annually
Inspect Integrity of Dam	Annually*
Inspect for invasive plant species	Annually
Inspect for sediment accumulation	Annually
Clean excess sediment from pond	When 6-12 inches has accumulated, roughly every 5-10 years.

** If indications of failure are observed, immediately seek advice from a professional engineer.*

5.4

Detention Basin Inspection

Basin Address and Location: _____

Owner Name and Address: _____

Inspection Date: _____

Inspected By: _____

	Y	N	N/A	Last Maintenance Date
Are inlet/outlet structures free of debris, trash, sediment, and leaves?	☐	☐	☐	_____
Repairs/Comments: _____				
Is rip rap in place and free of sediment?	☐	☐	☐	_____
Repairs/Comments: _____				
Are embankments and structures free of trees?	☐	☐	☐	_____
Repairs/Comments: _____				
Are embankments and structures damaged or eroded?	☐	☐	☐	_____
Repairs/Comments: _____				
Is the facility mowed and free of trash?	☐	☐	☐	_____
Repairs/Comments: _____				
Is there excess sediment in the basin?	☐	☐	☐	_____
Repairs/Comments: _____				
Is the trickle channel damaged by erosion?	☐	☐	☐	_____
Repairs/Comments: _____				
Is the out flow of water causing damage to adjacent property?	☐	☐	☐	_____
Repairs/Comments: _____				
Is there exposed soil with no vegetation growing?	☐	☐	☐	_____
Repairs/Comments: _____				
Is the facility draining properly according to as built plans?	☐	☐	☐	_____
Repairs/Comments: _____				

5.4

CITY OF LEAVENWORTH, KANSAS

2020 OVERVIEW OF STORMWATER TREATMENT FACILITIES

In 2020 new stormwater treatment facilities were added to the City`s assets. There are currently 68 stormwater treatment facilities. This includes bio-swales/inlets, dry/wet basins, underground basins, pervious pavement, and trash collectors. All the facilities appear to be functioning as designed.

65 hours were spent this year inspecting and managing all stormwater facilities. 1 to 2 inspections a year.

40 hours were spent creating a BMP contamination plan with maintenance plans for City-owned BMPs.

2020 SWPPP/LDP INSPECTIONS FOR CONSTRUCTION PROJECTS

West Glenn Sub 2nd Plat 2018-889.....12 inspections
Fort Gate 2020-941 .....10 inspections
Stubby Park 2019-912.....15 inspections
Moonlight Lake Sub 2020-925.....16 inspections
Cody Park 2017-858..... 8 inspections

What Steps CAN HELP?

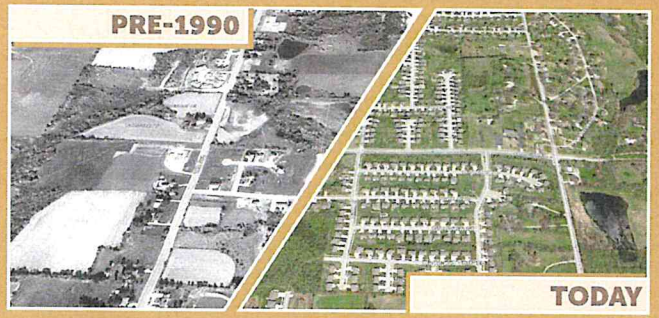
GOOD Rather than mowing to the water's edge, let the stream's natural vegetation grow wild. Thicker, taller vegetation can slow erosion by reducing both the amount and the speed of water running off into the stream. It helps protect bare soil from raindrop impact, slows the water flow, traps sediment, and even offers bird and wildlife habitat. On flat benches and gentle slopes, replacing sod with groundcovers like mulch and small stones can also help control erosion, conserve soil moisture and lower summer soil temperatures, and reduce mowing, edging and other lawn maintenance requirements.

BETTER Selectively remove non-native and other invasive plant species. Replant native vegetation to replace them. Native species have evolved deeper root systems that help naturally hold the streambank in place. Consider thinning back treelines from the streambed to open up the canopy and encourage healthier growth of lower-growing bushes and grasses. Create a mix of overlapping and complementary plantings.

BEST Although groundcover and plantings are generally the most cost-effective erosion control, for steep or severely undercut slopes, regrading, terracing, placing blocks or rock, or installing drain pipes may be necessary. Generally speaking, streambanks steep enough to require extra effort to climb (more than a 1-foot rise for every 3 feet of horizontal run) will likely require longterm engineering beyond plantings. Those solutions may r re regrading to a gentler slope and protective plantings.

WHY?
is my Creek Changing?

The problem of stream erosion is not unique to Leavenworth. Across Kansas and the nation, small streams and rivers evolved to gradually drain only the overflow that vast areas of porous wild grasslands and forests didn't absorb. Today, those streams are being asked to handle abnormal runoff from rooftops, parking lots, streets and other hard surfaces that come with increasing urbanization.



A 1-inch rain across Leavenworth's 2,000-plus acres of impervious surfaces creates more than *54 million gallons* of rainwater with nowhere to go but into the small streams that drain the city. That increased volume means increased water speed within those streams. Increased water speed means more soil erosion, and more erosion means not just loss of property along the stream, but sediment and pollution downstream, as well.

Today, building designers and city planners take this runoff into account, but older homes and buildings may not be so carefully sited. If your property is losing yardage in large or small chunks during and immediately after storms, it's important to take action now, before the problem threatens structures and other valuable infrastructure.

Need more assistance?

Leavenworth Public Works
(913) 684-0375

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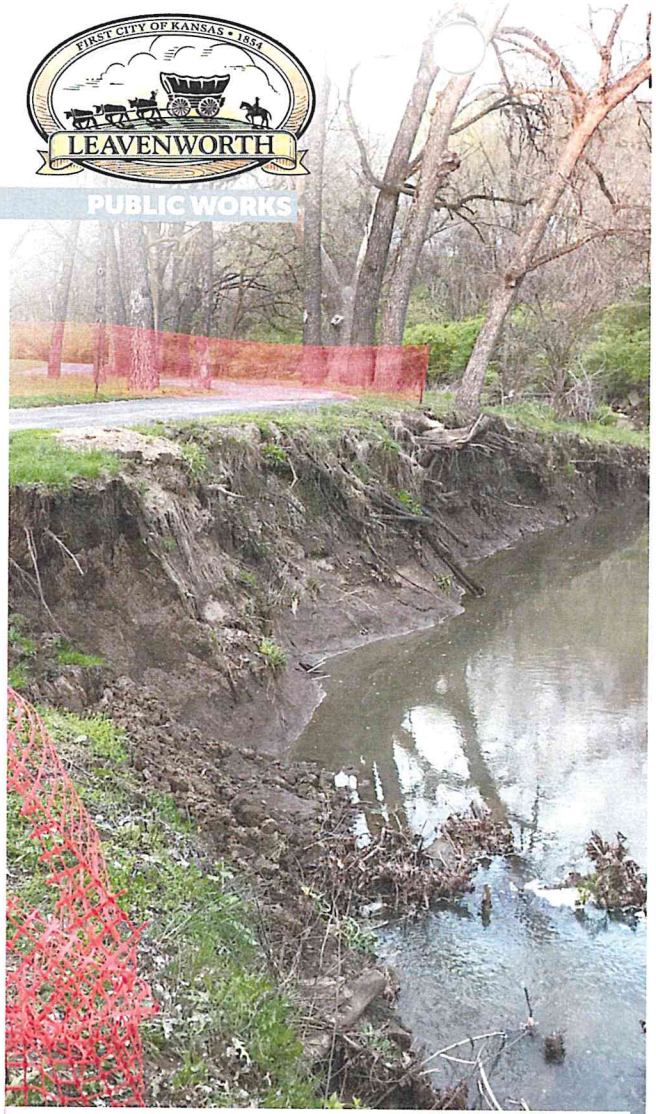
LEAVENWORTH
PUBLIC WORKS

FIRST CITY OF KANSAS • 1854
LEAVENWORTH
PUBLIC WORKS



Disappearing YARD by YARD?

How to slow or stop
gradual loss of soil to stream erosion

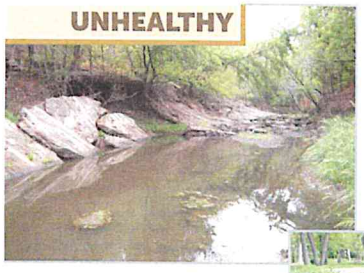
Residential yard and other land loss to stream erosion has become a common problem in the city. Here are steps you can take to pro your property.

Do I Have a PROBLEM?

Soil erosion is a natural process in which rainfall detaches soil particles and carries them away (along with your lawn's nutrients and organic material). But when does a little erosion become a big problem?

- ❑ Heavy rains exposing more tree roots or stones?
- ❑ Small rills or gullies creeping up the banks?
- ❑ Silt building up in low areas?
- ❑ Rainfall splashing soil up on windows and walls?
- ❑ Stream channel widening or deepening?
- ❑ Holes appearing at the top of high stream banks?
- ❑ Banks growing too steep to mow safely?
- ❑ Whole sections of a bank sliding away or slumping?

What's the end goal of erosion control? Stream stability. Urban streams can be healthy and stable or unhealthy and unstable. How to tell the difference:



- ✗ Steep bank slopes
- ✗ High banks
- ✗ Exposed bare dirt
- ✗ Exposed tree roots
- ✗ Straight channel
- ✗ Murky water

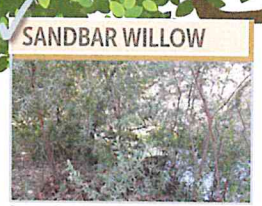
- ✓ Gentle bank slopes
- ✓ Little to no bare dirt
- ✓ Diverse native plants/trees
- ✓ Alternating pools and gentle rapids

What Should I REMOVE?

- ✗ Weak, thin, spindly trees
- ✗ Invasive plant species
- ✗ Non-native plant species
- ✗ Landscaping timbers below the high-water mark
- ✗ Grass and sod at the water line
- ✗ Trees/plants spaced too tightly to thrive

What Should I Keep and ENCOURAGE?

- ✓ Healthy native trees
- ✓ Native shrubs and grasses
- ✓ Groupings of plants and trees that compliment and shelter one another
- ✓ Gradual and low-sloping banks



Do I Need a PERMIT?

In most cases, no. Unless you're damming, diverting, deepening, filling, adding large rock and other material that could be washed away, or otherwise changing the flow of the stream, simple plant-based erosion controls likely won't need regulatory oversight. Specific questions about the need for a regulatory permitting can be answered or reviewed by personnel in the Leavenworth Public Works Department.

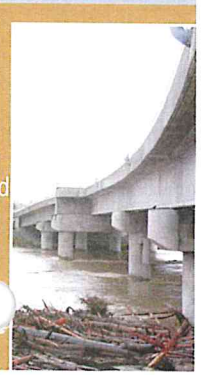
Why Pick a Native SPECIES?

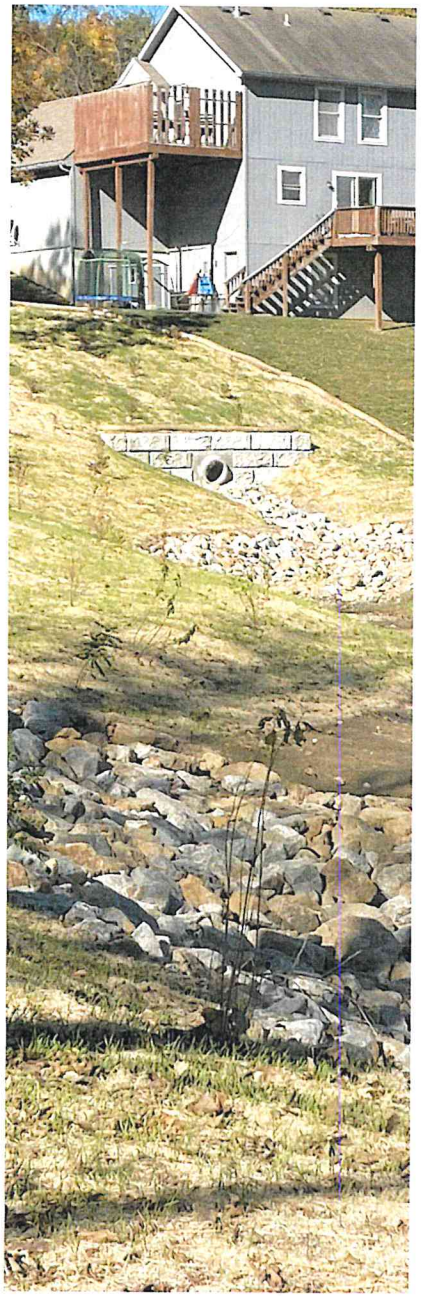
Successful plant-based erosion controls require plants that are not only attractive, but hardy, deep-rooted, deer-resistant and vigorous. Better-adapted to the particular regional climate of northeast Kansas than typical nursery plants, most native plants fill that bill. Once established, they generally need less water and less maintenance.

For more information: GrowNative.org or PlantsOfMerit.org

Why not Landscape TIMBERS?

Because they are prone to eventually washing away, landscape timbers are not recommended for retaining walls or bank protection. Washed away, floating timbers can contribute to brush and log jams that may plug culverts and drainage and could threaten bridge structures. Better options are interlocking stacked stones or riprap boulders.





THIS PROJECT NEEDS YOU!

CITY PROJECT 2018-096
NOVEMBER 30, 2020

WON'T YOU HELP US GUARD YOUR YARD?

The city has invested in an engineering project behind your home to help protect it from destructive streambank erosion. To the untrained eye, it could look like an unkempt weed patch. It's not. In fact, it's a carefully and strategically engineered natural protective environment. We have planted the re-shaped streambanks with a specific combination of native plants, shrubs, and trees. Why? Unlike ornamental or invasive plants that didn't originate under our region's conditions, the native plants we used have evolved over centuries to stretch their root system deep into the stream-side soil. The deep and tangled root web they form creates a natural mesh, holding the soil particles in place, strengthening the bank against washing away.

IT IS VULNERABLE!

Those "bio-engineered" plantings need your help. In their early stages of establishment, they can be stunted or killed by mismanagement or by competition from faster-growing non-native landscaping. We understand these plants may not be your first choice in landscaping. But these plants nevertheless play a critical role in the success or failure of the engineering project. We need you to help us protect this cost-effective and natural solution to preserving your property.

HOW YOU CAN HELP

- ✓ REMOVE INVASIVE PLANTS
- ✓ REMOVE DEAD BRANCHES
- ✓ REMOVE TRASH & LITTER
- ✓ TRIM OVERHANGING TREES
- ✗ DON'T DUMP YARD WASTE
- ✗ DON'T MOW THE PLANTINGS OR STEEP CREEK BANKS
- ✗ DON'T ADD LANDSCAPING
- ✗ DON'T FERTILIZE THE PLANTINGS
- ✗ AVOID WEED KILLER DRIFT
- ✗ KEEP VEHICLES OFF THE BANKS

QUESTIONS? WE'RE HERE TO HELP

LEAVENWORTH PUBLIC WORKS DEPT
913.684.0375

FOR MORE: WATER RESOURCES SOLUTIONS | 913.302.1030 | WWW.WRS-RC.COM | PRAIRIE VILLAGE, KS

Appendix D (Continued)

Selected Supporting Documentation for Stormwater Management Program (Stormwater Annual Report - Section E) (BMP Number 6)

BMP 6 - Municipal Pollution Prevention/Housekeeping

Note: City created stormwater utility fee in 2018 (documents are in BMP 1 & BMP 2)

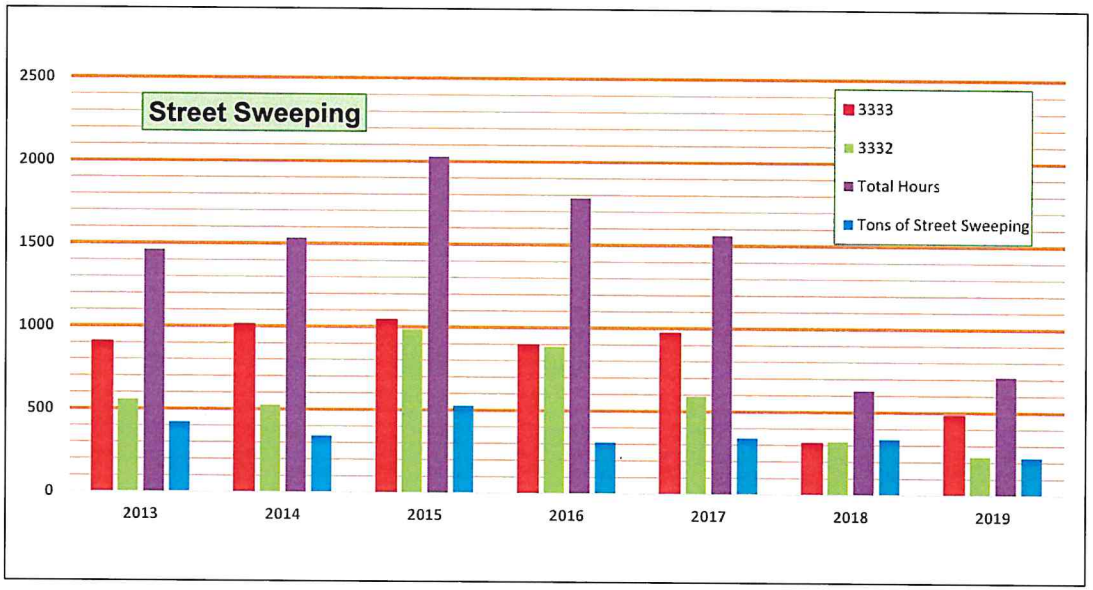
- Street Sweeping
- Salt Use
- **Ordinance No. 8124** Authorizing the Construction of Certain Stormwater Utility System Improvements, together with all Things Necessary and Incidental Thereto, and the Financing of the Costs Thereof, all Pursuant to K.S.A 12-631r, 12-631s, 13-1055a, and 13-1055b, all as Amended (March 10, 2020)

City of Leavenworth - Municipal Service Center

2020 Street Sweeping Data

Street Sweeping				
Year	3333	3332	Total Hours	Total Tons
2013	907	555	1462	419
2014	1012	522	1534	338
2015	1043	985	2028	525
2016	896	886	1782	308
2017	972	589	1561	338
2018	311	320	631	334
2019	483	232	715	226
			Total Miles	
2020			2,400	532.67

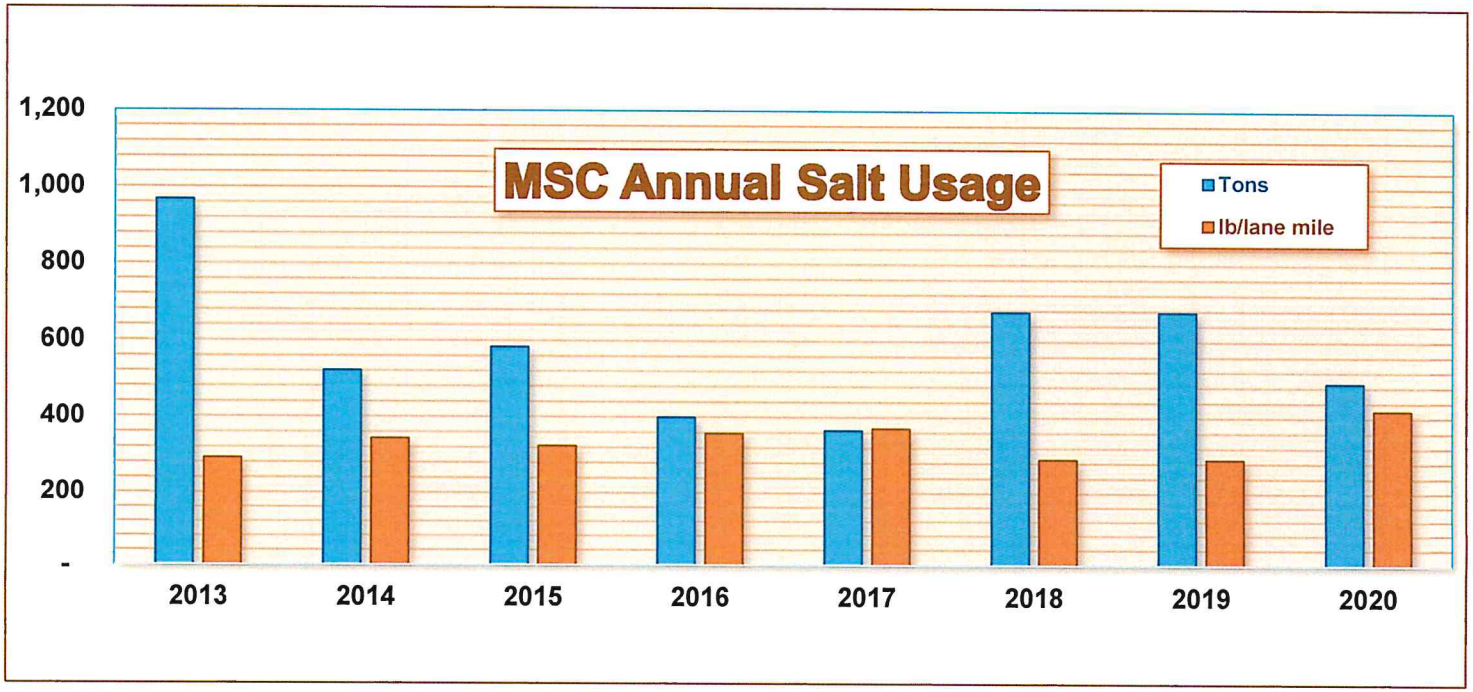
2020 - the City does not track hours - maintenance is tracked by mileage.



6.2

City of Leavenworth - Municipal Service Center (MSC)
2020 Salt Usage Data

Annual Salt Usage		
Year	Tons	lb/lane mile
2013	967	291
2014	520	342
2015	582	323
2016	398	356
2017	364	370
2018	675	289
2019	675	289
2020	490	419



(Published in The Leavenworth Times on March 13, 2020.)

ORDINANCE NO. 8124

AN ORDINANCE OF THE CITY OF LEAVENWORTH, KANSAS, AUTHORIZING THE CONSTRUCTION OF CERTAIN STORMWATER UTILITY SYSTEM IMPROVEMENTS, TOGETHER WITH ALL THINGS NECESSARY AND INCIDENTAL THERETO, AND THE FINANCING OF THE COSTS THEREOF, ALL PURSUANT TO K.S.A. 12-631r, 12-631s, 13-1055a, AND 13-1055b, ALL AS AMENDED.

WHEREAS, the City of Leavenworth, Leavenworth County, Kansas, (the "City") is a municipality as defined by K.S.A. 10-101; and

WHEREAS, the City has in accordance with applicable law established a stormwater utility for the City and provided for and heretofore constructed stormwater utility system improvements to serve the citizens and residents of the City (the "Stormwater Utility"); and

WHEREAS, the City has the authority pursuant to K.S.A. 12-631r, 12-631s, 13-1055a, and 13-1055b, all as amended, (collectively, the "Act") to both construct, install, and otherwise complete Stormwater Utility improvements, including but not limited to storm sewers, drains, channels, retention basins, and all other things necessary and incidental thereto, to provide for the controlled drainage, retention, and disposition of storm water runoff in and throughtout the City and finance the costs thereof from the proceeds of legally available funds of the City including the proceeds of general obligation bonds of the City issued pursuant to the authority of the Act for such purposes; and

WHEREAS, the City in the exercise of the authority granted to it pursuant to the Act has found it necessary and does hereby determine to issue general obligation bonds, including temporary notes of the City, in the estimated maximum principal amount of $3,165,000 to finance the estimated total cost (i.e., $3,165,000) of designing, rebuilding, rehabilitating, constructing, and reconstructing certain Stormwater Utility System improvements, together with the demoltion, replacement, and reconstruction of existing site infrastructure, including but not limited to, sidewalk, pavement, and curb and gutter repairs as required by such Stormwater Utility System improvements at Independence Court and 2nd and Chestnut in the City (collectively, the "Project"); and

WHEREAS, the costs of the Project are pursuant ot the Act payable from any legally available and unencumbered funds of the City, from the City issuing general obligation bonds of the City, or a combination thereof.

NOW, THEREFORE, BE IT ORDAINED BY THE GOVERNING BODY OF THE CITY OF LEAVENWORTH, LEAVENWORTH COUNTY, KANSAS:

Section 1. That the Project be constructed and otherwise completed, including the acquisition of any land and/or easements necessary therefore, all in accordance with the plans and specifications of the City's public works department.

Section 2. That general obligation bonds of the City be issued in accordance with the terms and conditions of the Act and the general bond law of the State of Kansas in an amount not exceeding $3,165,000 to pay all or part of the cost of the Project.

Section 3. That the City both reasonably expects and intends to finance the costs of the Project from the proceeds of general obligation bonds of the City. The City does hereby express its official intent to reimburse any such pre-issuance original expenditures (as defined in Treas. Reg. 1.150-2(c)) made by it on or after the date which is 60 days before the date of this Ordinance from the proceeds of such bonds in the estimated maximum principal amount of $3,165,000. The City will issue such bonds for such purposes and make the reimbursements within eighteen (18) months after the date the expenditure to be reimbursed was paid or, if later, eighteen (18) months after the date on which the property resulting from the expenditure was placed in service. Provided, that, in any event, the City must make the reimbursement allocation within three (3) years after the date the expenditure was paid. This Ordinance, as the expression of the governing body's official intent regarding the matters described herein, will be available for public inspection in the City Clerk's office at City Hall during regular business hours of the City.

Section 4. This Ordinance shall be effective upon its passage and approval by the governing body of the City and its publication in the official City newspaper.

PASSED AND APPROVED this 10th day of March, 2020.

CITY OF LEAVENWORTH, KANSAS

Myron J. "Mike" Griswold, Mayor

ATTEST:

Carla Williamson, CMC, City Clerk

(SEAL)

SEAL OF THE CITY OF LEAVENWORTH KANSAS
CORPORATE SEAL

AFFP

(Published in The Leavenworth

Affidavit of Publication

STATE OF KANSAS } SS
COUNTY OF
LEAVENWORTH }

Tammy Lawson, being duly sworn, says:

That she is Tammy Lawson of the Leavenworth Times, a daily newspaper of general circulation, printed and published in Leavenworth, Leavenworth County, Kansas; that the publication, a copy of which is attached hereto, was published in the said newspaper on the following dates:

March 13, 2020

That said newspaper was regularly issued and circulated on those dates.

SIGNED:

Tammy Lawson

Subscribed to and sworn to me this 16 day of Mar, 20

Rebecca A. Broom

Rebecca A. Broom, , Leavenworth County, Kansas

My commission expires: June 07, 2023

00000105 00037497

Deputy City Clerk
City of Leavenworth - Legals
100 North 5th Street
Leavenworth, KS 66048

REBECCA A. BROOM
Notary Public - State of Kansas
My Appt. Expires 6-7-23

(Published in The Leavenworth Times on March 13, 2020) ORDINANCE NO. 8124 AN ORDINANCE OF THE CITY OF LEAVENWORTH, KANSAS, AUTHORIZING THE CONSTRUCTION OF CERTAIN STORMWATER UTILITY SYSTEM IMPROVEMENTS, TOGETHER WITH ALL THINGS NECESSARY AND INCIDENTAL THERETO, AND THE FINANCING OF THE COSTS THEREOF, ALL PURSUANT TO K.S.A. 12-631r, 12-631s, 13-1055a, AND 13-1055b, ALL AS AMENDED. WHEREAS, the City of Leavenworth, Leavenworth County, Kansas, (the "City") is a municipality as defined by K.S.A. 10-101; and WHEREAS, the City has in accordance with applicable law established a stormwater utility for the City and provided for and heretofore constructed stormwater utility system improvements to serve the citizens and residents of the City (the "Stormwater Utility"); and WHEREAS, the City has the authority pursuant to K.S.A. 12-631r, 12-631s, 13-1055a, and 13-1055b, all as amended, *(collectively, the "Act") to both construct*, install, and otherwise complete Stormwater Utility improvements, including but not limited to storm sewers, drains, channels, retention basins, and all other things necessary and incidental thereto, to provide for the controlled drainage, retention, and disposition of storm water runoff in and throughtout the City and finance the costs thereof from the proceeds of legally available funds of the City including the proceeds of general obligation bonds of the City issued pursuant to the authority of the Act for such purposes; and WHEREAS, the City in the exercise of the authority granted to it pursuant to the Act has found it necessary and does hereby determine to issue general obligation bonds, including temporary notes of the City, in the estimated maximum principal amount of $3,165,000 to finance the estimated total cost (i.e., $3,165,000) of designing, rebuilding, rehabilitating, constructing, and reconstructing certain Stormwater Utility System improvements, together with the demolition, replacement, and reconstruction of existing site infrastructure, including but not limited to, sidewalk, pavement, and curb and gutter repairs as required by such Stormwater Utility System improvements at Independence Court and 2nd and Chestnut in the City (collectively, the "Project"); and *WHEREAS, the costs of the* Project are pursuant ot the Act payable from any legally available and unencumbered funds of the City, from the City issuing general obligation bonds of the City, or a combination thereof. NOW, THEREFORE, BE IT ORDAINED BY THE GOVERNING BODY OF THE CITY OF LEAVENWORTH, LEAVENWORTH COUNTY, KANSAS: Section 1. That the Project be constructed and otherwise completed, including the acquisition of any land and/or easements necessary therefore, all in accordance with the plans and specifications of the City's public works department. Section 2. That general obligation bonds of the City be issued in accordance with the terms and conditions of the Act and the general bond law of the State of Kansas in an amount not exceeding $3,165,000 to pay all or part of the cost of the Project. Section 3. That the City both reasonably expects and intends to finance the costs of the Project from the proceeds of general obligation bonds of the City. The City does hereby express its official intent to reimburse any such pre-issuance original expenditures (as defined in Treas. Reg. 1.150-2(c)) made by it on or after the date which is 60 days before the date of this Ordinance from the proceeds of such bonds in the estimated maximum principal amount of $3,165,000. The City will issue such bonds for such purposes and make the reimbursements within eighteen (18) months after the date the expenditure to be reimbursed was paid or, if later, eighteen (18) months after the date on which the property resulting from the expenditure was placed in service. Provided, that, in any event, the City must make the reimbursement allocation within three (3) years after the date the expenditure was paid. This Ordinance, as the expression of the governing body's official intent regarding the matters described herein, will be available for public inspection in the City Clerk's office at City Hall during regular business hours of the City. Section 4. This Ordinance shall be effective upon its passage and

approval by the governing body of the City and its publication in the official City newspaper. PASSED AND APPROVED this 10th day of March, 2020. CITY OF LEAVENWORTH, KANSAS Myron J. "Mike" Griswold, Mayor ATTEST: Carla Williamson, CMC, City Clerk (SEAL) Published Friday March 13, 2020

Appendix D (Continued)

Selected Supporting Documentation for Stormwater Management Program (Stormwater Annual Report - Section E) (BMP Number 7)

Sample TMDL

N/A for City of Leavenworth

Appendix E

Stormwater-Related Resolutions and Ordinances, and the City of Leavenworth Stormwater Management Program

- Resolution No. B-2267 - Resolution Adopting the 2020-2024 Stormwater Management Program (SMP), Replacing the 2016 SMP (October 27, 2020)
- City of Leavenworth Stormwater Management Program (October 27, 2020)
- Affidavit of Publication for Ordinance No. 8124 (March 16, 2020)
- Ordinance No. 8124 - Ordinance Authorizing the Construction of Certain Stormwater Utility System Improvements (March 10, 2020)
- Resolution No. B-2245 - Resolution Approving the 2019 KDHE Annual Report for Stormwater and Authorizing the City of Leavenworth, Kansas, to Submit the Report to KDHE (February 25, 2020)

RESOLUTION NO. B-2267

A RESOLUTION ADOPTING THE 2020-2024 STORMWATER MANAGEMENT PROGRAM AS THE OFFICIAL STORMWATER MANAGEMENT PROGRAM OF THE CITY OF LEAVENWORTH, KANSAS AND REPLACING THE 2016 STORMWATER MANAGEMENT PROGRAM ADOPTED FEBRUARY 23, 2016.

WHEREAS, the City of Leavenworth, Kansas ('City"), in accordance with requirements by the Environmental Protection Agency (EPA) and Kansas Department of Health and Environment (KDHE) prepared a Stormwater Management Program ("Program") for the City; and

WHEREAS, the adoption of the 2020-2024 Stormwater Management Program will replace the 2016 Stormwater Management Program adopted by Resolution B-2132 on February 23, 2016; and

WHEREAS, to meet federal and state guidelines, the City has implemented the Program in order to reduce pollutants by "the maximum extent practicable; and

WHEREAS, Minimum Control Measures (MCM) have been addressed as required using Best Management Practices (BMP); and

WHEREAS, the City conducted a series of public information meetings, social media posts and newspaper articles to inform the public and address any question by citizens.

NOW, THEREFORE, BE IT RESOLVED BY THE GOVERNING BODY OF THE CITY OF LEAVENWORTH, KANSAS, that the Governing herby adopts the 2020-2024 Stormwater Management Program; and said program shall become the official guiding authority for actions by the Leavenworth City Commission and City Staff unless changed by official action.

BE IT FURTHER RESOLVED that the 2016 Stormwater Management Program and Resolution B-2132 are hereby repealed.

BE IT FURTHER RESOLVED that this Resolution shall take effect and be in force from and after its passage and approval, and an official copy of the "Program" shall be kept on file in the Office of the City Clerk and available for public inspection during normal business hours.

IT IS SO RESOLVED that this Resolution is passed and approved this 27th day of October, 2020.

CITY OF LEAVENWORTH, KANSAS

Myron J. "Mike" Griswold, Mayor

ATTEST:

Carla K. Williamson, City Clerk

(SEAL)

City of Leavenworth
Stormwater Management Program

Adopted by the City Commission October 27, 2020

City of Leavenworth
Stormwater Management Program

October 27, 2020

PROGRAM HISTORY

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

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

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

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

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

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

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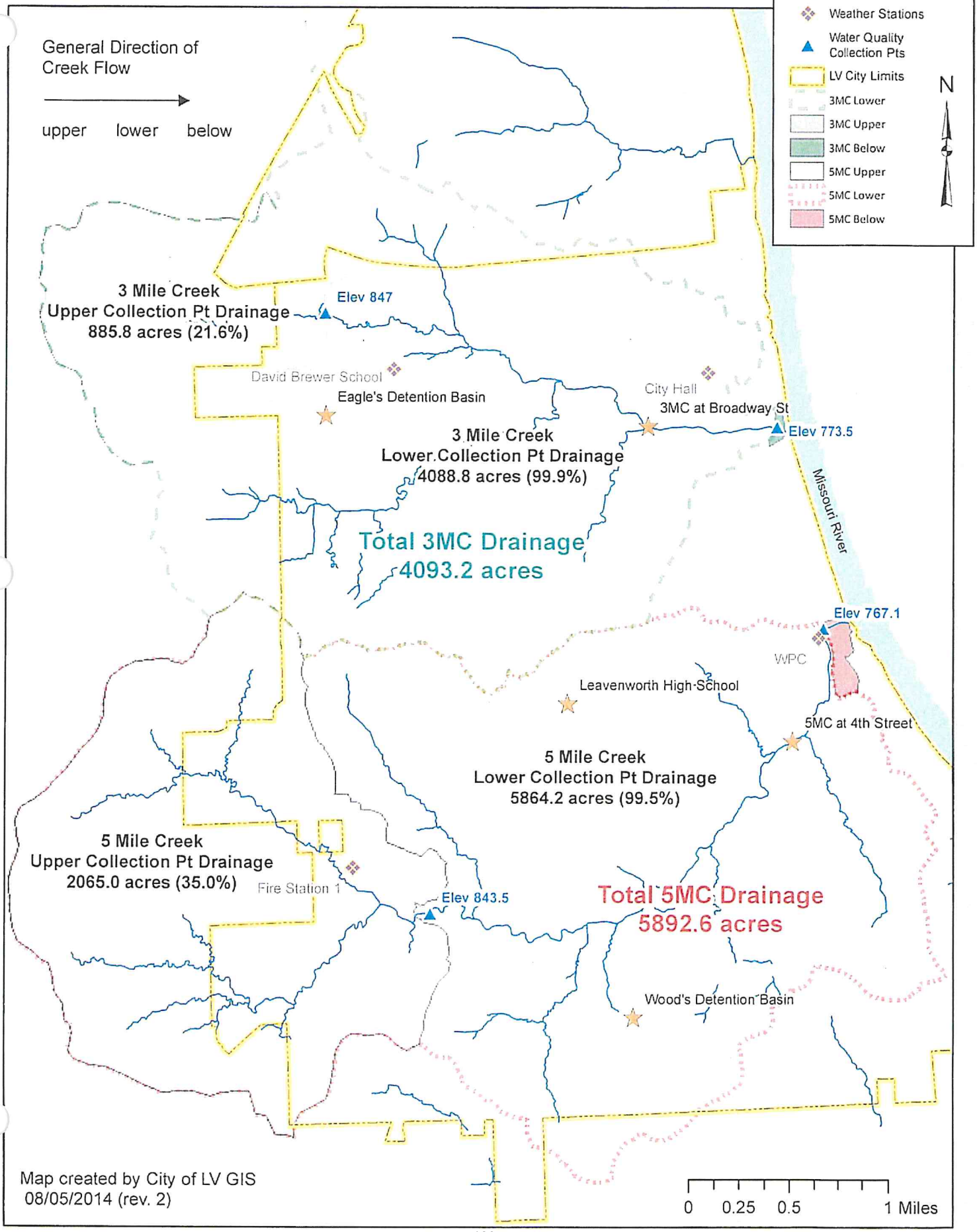
[1] Listing of replaced bridges since 1980 is attached to this report.

City of Leavenworth, KS
Stormwater Management Data Collection



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

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

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

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

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

STORMWATER PROGRAM GOALS

The stormwater program of the City has two goals:

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

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

STAFF

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

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

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

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

PROGRAM TOOLS

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

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

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

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

STORMWATER MANAGEMENT PROGRAM IMPLEMENTATION

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

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

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

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

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

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

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

Attachments

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

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

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

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

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

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

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

LEAVENWORTH COUNTY, KANSAS

AND INCORPORATED AREAS

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

REVISED: July 16, 2015

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER

20103CV000B

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

City of Leavenworth

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

AFFP

(Published in The Leavenworth

Affidavit of Publication

STATE OF KANSAS } SS
COUNTY OF
LEAVENWORTH }

Tammy Lawson, being duly sworn, says:

That she is Tammy Lawson of the Leavenworth Times, a daily newspaper of general circulation, printed and published in Leavenworth, Leavenworth County, Kansas; that the publication, a copy of which is attached hereto, was published in the said newspaper on the following dates:
March 13, 2020

That said newspaper was regularly issued and circulated on those dates.
SIGNED:

Tammy Lawson

Subscribed to and sworn to me this 16 day of Mar, 20

Rebecca A. Broom

Rebecca A. Broom, , Leavenworth County, Kansas

My commission expires: June 07, 2023

00000105 00037497

Deputy City Clerk
City of Leavenworth - Legals
100 North 5th Street
Leavenworth, KS 66048

REBECCA A. BROOM
Notary Public - State of Kansas
My Appt. Expires 6-7-23

(Published in The Leavenworth Times on March 13, 2020) ORDINANCE NO. 8124 AN ORDINANCE OF THE CITY OF LEAVENWORTH, KANSAS, AUTHORIZING THE CONSTRUCTION OF CERTAIN STORMWATER UTILITY SYSTEM IMPROVEMENTS, TOGETHER WITH ALL THINGS NECESSARY AND INCIDENTAL THERETO, AND THE FINANCING OF THE COSTS THEREOF, ALL PURSUANT TO K.S.A. 12-631r, 12-631s, 13-1055a, AND 13-1055b, ALL AS AMENDED. WHEREAS, the City of Leavenworth, Leavenworth County, Kansas, (the "City") is a municipality as defined by K.S.A. 10-101; and WHEREAS, the City has in accordance with applicable law established a stormwater utility for the City and provided for and heretofore constructed stormwater utility system improvements to serve the citizens and residents of the City (the "Stormwater Utility"); and WHEREAS, the City has the authority pursuant to K.S.A. 12-631r, 12-631s, 13-1055a, and 13-1055b, all as amended, *(collectively, the "Act") to both construct*, install, and otherwise complete Stormwater Utility improvements, including but not limited to storm sewers, drains, channels, retention basins, and all other things necessary and incidental thereto, to provide for the controlled drainage, *retention*, and disposition of storm water runoff in and throughtout the City and finance the costs thereof from the proceeds of legally available funds of the City including the proceeds of general obligation bonds of the City issued pursuant to the authority of the Act for such purposes; and WHEREAS, the City in the exercise of the authority granted to it pursuant to the Act has found it necessary and does hereby determine to issue general obligation bonds, *including temporary notes of the City, in the* estimated maximum principal amount of $3,165,000 to finance the estimated total cost (i.e., $3,165,000) of designing, rebuilding, rehabilitating, constructing, and reconstructing certain Stormwater Utility System improvements, together with the demolition, replacement, and reconstruction of existing site infrastructure, including but not limited to, sidewalk, pavement, and curb and gutter repairs as required by such Stormwater Utility System improvements at Independence Court and 2nd and Chestnut in the City (collectively, the "Project"); and *WHEREAS, the costs of the* Project are pursuant ot the Act payable from any legally available and unencumbered funds of the City, from the City issuing general obligation bonds of the City, or a combination thereof. NOW, THEREFORE, BE IT ORDAINED BY THE GOVERNING BODY OF THE CITY OF LEAVENWORTH, LEAVENWORTH COUNTY, KANSAS: Section 1. That the Project be constructed and otherwise completed, including the acquisition of any land and/or easements necessary therefore, all in accordance with the plans and specifications of the City's public works department. Section 2. That general obligation bonds of the City be issued in accordance with the terms and conditions of the Act and the general bond law of the State of Kansas in an amount not exceeding $3,165,000 to pay all or part of the cost of the Project. Section 3. That the City both reasonably expects and intends to finance the costs of the Project from the proceeds of general obligation bonds of the City. The City does hereby express its official intent to reimburse any such pre-issuance original expenditures (as defined in Treas. Reg. 1.150-2(c)) made by it on or after the date which is 60 days before the date of this Ordinance from the proceeds of such bonds in the estimated maximum principal amount of $3,165,000. The City will issue such bonds for such purposes and make the reimbursements within eighteen (18) months after the date the expenditure to be reimbursed was paid or, if later, eighteen (18) months after the date on which the property resulting from the expenditure was placed in service. Provided, that, in any event, the City must make the reimbursement allocation within three (3) years after the date the expenditure was paid. This Ordinance, as the expression of the governing body's official intent regarding the matters described herein, will be available for public inspection in the City Clerk's office at City Hall during regular business hours of the City. Section 4. This Ordinance shall be effective upon its passage and

approval by the governing body of the City and its publication in the official City newspaper. PASSED AND APPROVED this 10th day of March, 2020. CITY OF LEAVENWORTH, KANSAS Myron J. "Mike" Griswold, Mayor ATTEST: Carla Williamson, CMC, City Clerk (SEAL) Published Friday March 13, 2020

(Published in The Leavenworth Times on March 13, 2020.)

ORDINANCE NO. 8124

AN ORDINANCE OF THE CITY OF LEAVENWORTH, KANSAS, AUTHORIZING THE CONSTRUCTION OF CERTAIN STORMWATER UTILITY SYSTEM IMPROVEMENTS, TOGETHER WITH ALL THINGS NECESSARY AND INCIDENTAL THERETO, AND THE FINANCING OF THE COSTS THEREOF, ALL PURSUANT TO K.S.A. 12-631r, 12-631s, 13-1055a, AND 13-1055b, ALL AS AMENDED.

WHEREAS, the City of Leavenworth, Leavenworth County, Kansas, (the "City") is a municipality as defined by K.S.A. 10-101; and

WHEREAS, the City has in accordance with applicable law established a stormwater utility for the City and provided for and heretofore constructed stormwater utility system improvements to serve the citizens and residents of the City (the "Stormwater Utility"); and

WHEREAS, the City has the authority pursuant to K.S.A. 12-631r, 12-631s, 13-1055a, and 13-1055b, all as amended, (collectively, the "Act") to both construct, install, and otherwise complete Stormwater Utility improvements, including but not limited to storm sewers, drains, channels, retention basins, and all other things necessary and incidental thereto, to provide for the controlled drainage, retention, and disposition of storm water runoff in and throughtout the City and finance the costs thereof from the proceeds of legally available funds of the City including the proceeds of general obligation bonds of the City issued pursuant to the authority of the Act for such purposes; and

WHEREAS, the City in the exercise of the authority granted to it pursuant to the Act has found it necessary and does hereby determine to issue general obligation bonds, including temporary notes of the City, in the estimated maximum principal amount of $3,165,000 to finance the estimated total cost (i.e., $3,165,000) of designing, rebuilding, rehabilitating, constructing, and reconstructing certain Stormwater Utility System improvements, together with the demoltion, replacement, and reconstruction of existing site infrastructure, including but not limited to, sidewalk, pavement, and curb and gutter repairs as required by such Stormwater Utility System improvements at Independence Court and 2nd and Chestnut in the City (collectively, the "Project"); and

WHEREAS, the costs of the Project are pursuant ot the Act payable from any legally available and unencumbered funds of the City, from the City issuing general obligation bonds of the City, or a combination thereof.

NOW, THEREFORE, BE IT ORDAINED BY THE GOVERNING BODY OF THE CITY OF LEAVENWORTH, LEAVENWORTH COUNTY, KANSAS:

Section 1. That the Project be constructed and otherwise completed, including the acquisition of any land and/or easements necessary therefore, all in accordance with the plans and specifications of the City's public works department.

Section 2. That general obligation bonds of the City be issued in accordance with the terms and conditions of the Act and the general bond law of the State of Kansas in an amount not exceeding $3,165,000 to pay all or part of the cost of the Project.

Section 3. That the City both reasonably expects and intends to finance the costs of the Project from the proceeds of general obligation bonds of the City. The City does hereby express its official intent to reimburse any such pre-issuance original expenditures (as defined in Treas. Reg. 1.150-2(c)) made by it on or after the date which is 60 days before the date of this Ordinance from the proceeds of such bonds in the estimated maximum principal amount of $3,165,000. The City will issue such bonds for such purposes and make the reimbursements within eighteen (18) months after the date the expenditure to be reimbursed was paid or, if later, eighteen (18) months after the date on which the property resulting from the expenditure was placed in service. Provided, that, in any event, the City must make the reimbursement allocation within three (3) years after the date the expenditure was paid. This Ordinance, as the expression of the governing body's official intent regarding the matters described herein, will be available for public inspection in the City Clerk's office at City Hall during regular business hours of the City.

Section 4. This Ordinance shall be effective upon its passage and approval by the governing body of the City and its publication in the official City newspaper.

PASSED AND APPROVED this 10th day of March, 2020.

CITY OF LEAVENWORTH, KANSAS

Myron J. "Mike" Griswold, Mayor

ATTEST:

Carla Williamson, CMC, City Clerk

(SEAL)

SEAL OF THE CITY OF LEAVENWORTH CORPORATE SEAL KANSAS

RESOLUTION NO. B-2245

A RESOLUTION APPROVING THE 2019 KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT (KDHE) ANNUAL REPORT FOR STORMWATER AND AUTHORIZING THE CITY OF LEAVENWORTH, KANSAS, TO SUBMIT THE REPORT TO KDHE.

WHEREAS, the City of Leavenworth, Kansas is regulated by the Kansas Department of Health and Environment (KDHE) and the US Environmental Protection Agency (EPA) as a Phase II City for stormwater purposes; and

WHEREAS, the City of Leavenworth, Kansas has prepared the Annual Report for Stormwater as required and reviewed such report at the February 11, 2020 City Commission meeting allow time for public review and input prior to approval by the Governing Body.

NOW, THEREFORE, BE IT RESOLVED BY THE GOVERNING BODY OF THE CITY OF LEAVENWORTH, KANSAS:

Section 1. That the 2019 Annual Report for Stormwater reflects the direction, efforts and accomplishments by City of Leavenworth for calendar year 2019. It shall be an official record of these actions to meet the requirements of Kansas Department of Health and Environment (KDHE) for an Annual Report until or unless changed by official action.

PASSED AND APPROVED this 25th day of February 2020.

CITY OF LEAVENWORTH, KANSAS

Myron J. "Mike" Griswold, Mayor

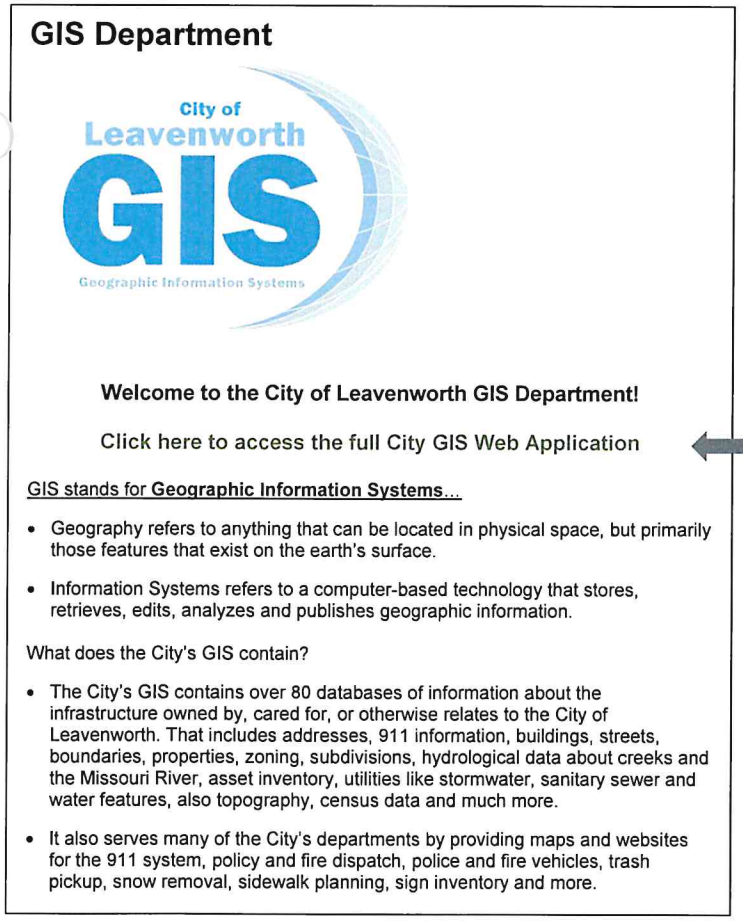
ATTEST:

Carla K. Williamson, CMC, City Clerk

(SEAL) CITY OF LEAVENWORTH KANSAS CORPORATE SEAL

Appendix F
Map Showing Stormwater System and Outfalls

A DVD containing the current Map of the City showing creeks, streams, inlets, outlets, outfalls and other stormwater-related information in PDF format will be mailed with the annual report to Jordan Beck of KDHE on or before February 28, 2021.



GIS Department

City of Leavenworth GIS
Geographic Information Systems

Welcome to the City of Leavenworth GIS Department!

Click here to access the full City GIS Web Application

GIS stands for **Geographic Information Systems**...

- Geography refers to anything that can be located in physical space, but primarily those features that exist on the earth's surface.
- Information Systems refers to a computer-based technology that stores, retrieves, edits, analyzes and publishes geographic information.

What does the City's GIS contain?

- The City's GIS contains over 80 databases of information about the infrastructure owned by, cared for, or otherwise relates to the City of Leavenworth. That includes addresses, 911 information, buildings, streets, boundaries, properties, zoning, subdivisions, hydrological data about creeks and the Missouri River, asset inventory, utilities like stormwater, sanitary sewer and water features, also topography, census data and much more.
- It also serves many of the City's departments by providing maps and websites for the 911 system, policy and fire dispatch, police and fire vehicles, trash pickup, snow removal, sidewalk planning, sign inventory and more.

The current City mapping can be viewed online by searching for

http://gis.firstcity.org/

and selecting "Click here to access the full City GIS Web Application" from the results, and following one of the links, or directly accessing the following address:

https://www.leavenworthks.org/publicworks/page/mapping-gis-division