City of Leavenworth, Kansas

January 1, 2014 - December 31, 2014

Kansas Permit No: M-MO12-SN01

Federal Permit No: KSR044011

February 26, 2014

CITY OF
LEAVENWORTH

Kansas Stormwater Annual Report Form for Municipal Separate Storm Sewer Systems (MS4s)
January 1, 2014 – December 31, 2014

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Section A
Local Government Information

KANSAS STORMWATER 2014 ANNUAL REPORT FORM FOR MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4s)

Check box if this is a new name, address, phone, etc.

Permittee Information and Reporting Period

Permittee (Agency Name):	City of Leavenworth, Kansas	☐
Mailing Address:	100 N. Fifth Street	☐
City:	Leavenworth	☐
State:	Kansas	☐
Zip Code:	66048	☐
Contact person:	Michael G. McDonald	☐
Contact E-Mail address:	mmcdonald@firstcity.org	☐
Contact Phone Number:	913-684-0375	☐
Kansas Permit Number:	M-M012-SN01 (Example) M-MC21-SU01	

Reporting period covers activities from January 1, 2014 through December 31, 2014.

This annual report must be submitted to the Kansas Department of Health and Environment (KDHE) / February 28, 2015. This annual report must be submitted as a word or PDF file to KDHE on a standard compact disk (CD). A paper copy of the report may, in addition to the CD, be submitted if the permittee so desires but is not required.

The permit establishes several reporting requirements, please review "PART V REPORTING" within the permit and ensure the various items which must be reported with the annual report are included with the report.

B. Executive Summary

Append an executive summary to this report which briefly covers the major aspects of the MS4 stormwater management program enacted during the year. In completing the executive summary, the preparer should address the following questions:

1. Were there any aspects of the program that appeared especially effective at reducing pollutants in your stormwater discharge?
2. Were there any aspects of the program that provided unsatisfactory results?
3. What was the most successful part of the program?
4. What was the most challenging aspect of the program?

The executive summary does not need to be extensive and detailed. It is anticipated the executive summaries will range from one half of a page to two pages in length depending on the scope of the program.

Section B
Executive Summary

CITY OF LEAVENWORTH
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SECTION 1: EXECUTIVE SUMMARY

To satisfy of the requirements of 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 2014, and examining publications made available to the citizens of Leavenworth. These discussions with office and field personnel from the Public Works Department highlighted the key aspects and defined the current state of the stormwater management plan and provided insight into future improvements to the stormwater quality standards.

City staff communicated the awareness of water quality with increased efforts in several areas during 2014. This increased level of activity was a result of comments from the 2013 EPA inspection as well as a product of staff awareness through training and education. The importance of construction site runoff control was communicated by staff to developers and contractors during plan development and during construction activities. A related result of this increased awareness is improved clean-up of Sanitary Sewer Overflow (SSO) situations on both public and private property. An additional benefit has been a more aggressive commercial grease trap inspection program by the building inspectors.

The city developed a sampling program to meet the new program requirements. Four storms were sampled 2014. The most challenging part of the sampling program was determining when to send the employees into the field. The nature of the run-off patterns in Leavenworth are that the streams are quick to rise and fall in response to rain fall, and with the short duration events in 2014 it was not always possible to sample within the "rising stream" as required. Several local governments in Leavenworth County share weather information from local weather stations. This information is often compiled into charts and graphs that provide insight to the local weather patterns and distributed via email to those who have expressed an interest.

Stormwater quality and runoff control continue to be addressed during the planning phase of projects. This begins at the review by the "Development Review Committee", which provides general advice and guidance to applicants and other staff on most projects prior to the design process. Stormwater quantity and quality issues are discussed. Construction drawing reviews have proven especially effective at reducing pollutants in stormwater by ensuring large and small projects attempt some measure of action. Plan reviews include evaluations of both the construction site erosion control plan and the drainage plan of the development. Addressing stormwater issues early in the design process has ensured that Best Management Practices (BMPs) are well suited for the site and adequate information is included in the plans for construction.

Leavenworth has been focused on incorporating BMPs such as native plantings and filter strips into construction plans as most developments occupy existing lots with existing drainage systems. Public

Works staff has encouraged the use of filter strips, roughened textures on concrete drainage channels and similar work on multiple development projects. This results in effective pollutant removal, low costs and low-cost maintenance efforts being required.

One of the least effective parts of the stormwater management plan lies with managing existing BMPs on private developments. Lack of maintenance to detention ponds by Home Associations continues to be a concern by both the HOA's and the City. Failure to maintain these systems can decrease the functionality of these critical stormwater infrastructure components over time and adversely impact water quality as well. In response the city will formally contact owners of these facilities to reinforce the importance of their responsibility to properly maintain these ponds.

Efforts to reach out and educate the citizens of Leavenworth through media such as the city website, the local cable television station (Channel 2), Facebook, and Twitter have increased public awareness of environmental issues in general. The Adopt-A-Park program has been a very popular way to increase public awareness. Staff has been contacted by Boy Scouts and schools regarding appropriate projects with some being followed through to completion.

Stormwater guidelines for distribution to developers, contractors, citizens and staff were completed by staff in 2014 and reviewed by the City Commission in February 2015. The guidelines are based on regulations from KC APWA section 5600, the Mid America Regional Council (MARC) BMP manual, and several municipalities including the City of Overland Park. These guidelines highlight simple water quality BMPs such as filter strips that city staff has come to believe are most suitable in the city of Leavenworth due to the existing soil types, maintenance requirements, and economy. They also rely upon the regional design guides to address technical design issues.

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Stormwater Management Program (Section C-E)

C. Stormwater Management Program

	Yes	No	Not Applicable
	Place a check mark in the appropriate box.		
1. Has the Stormwater Management Program (SMP) been developed?	☒	☐	
2. Has the SMP been modified during this reporting period?	☐	☒	
3. If the answer to question 2 above was "yes", has the modified SMP been submitted to KDHE for review?	☐	☐	☒

If the answer to item 3 is "No" a copy of the modified 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

D. Total Maximum Daily Load (TMDL) Best Management Practices

	Yes	No	Not Applicable
	Place a check mark in the appropriate box.		
1. Were any best management practices (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.	☐	☐	☒

2. List all of the BMPs intended to attenuate the discharge of TMDL regulated pollutants as identified in the SMP and provide the requested information on the following table on the following pages

D. Total Maximum Daily Load (TMDL) Best Management Practices (Table)

BMP ID NUMBER	Brief BMP Description	Regulated TMDL Parameter	Measurable Goal(s)	Progress Achieving Goal(s) (Measured Result)
		TDML TABLE		
		N/A		

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

1. Public Education and Outreach (Table)

List all of the public education and outreach 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)
1.1	Maintain a Library of Stormwater Educational Materials.	Provide copies of the Stormwater Master Plan for viewing at the Public Library.	The Stormwater Master Plan has remained available to the public at the Leavenworth Public Library.
1.2	The Stormwater Master Plan has remained available to the public at the Leavenworth Public Library.	Distribute brochures and make them available to the public.	This year's "City Connection" newsletters have highlighted Adopt-a- Park Program, Legacy Tree Program and the construction of detention basins. Parks Department has increased visibility and enforcement of the "dog doo" rules at parks and reports it has been a successful program.
1.3	Provide Information to Citizens regarding the City of Leavenworth Solid Waste Division.	Distribute trash bags to citizens with proper disposal handout.	Trash bags are distributed twice per year with additional bags available at the City offices. Flyers available through the City advertise the brush site, the recycling center, Free First Saturdays, and trash regulations.
1.4	Issue Press Release Regarding Local Stormwater Issues	Complete and send out monthly Press Releases to local media outlets.	Information regarding solid waste collection scheduling, snow removal operations, the Spring Clean Up, leaf collection program and general updates on stormwater issues are now also being released through social media such as Twitter and Facebook in addition to Leavenworth Residents.

1.5	Show Stormwater Information on Local TV Station	Broadcast community forums, in which continued water quality discussions take place	The City website provides access to the City Connection Newsletter mentioned earlier, links to First City Focus episodes on YouTube, as well information on the Public Works Department for easy access to work schedules and regulations. Items incorporated into the updated Stormwater Design Manual will be highlighted upon adoption.
1.6	Provide Educational Stormwater Information on City Website.	Establish a series of informational articles addressing topics on Stormwater education.	The City website provides access to the City Connection Newsletter mentioned earlier, links to First City Focus episodes on YouTube, as well information on the Public Works Department for easy access to work schedules and regulations. Items incorporated into the updated Stormwater Design Manual will be highlighted upon adoption.

2. Public Involvement and Participation (Table)

List all of the public involvement and participation 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)
2.1	Hold Public Meetings Regarding Stormwater Issues.	Provide the public an opportunity to discuss related Water Quality topics.	On-going stormwater issues are discussed at City Planning Commission and City Council Meetings in an Open Forum Environment.
2.2	Improve Lines of Communication with the Public.	Integrate contemporary methods of providing and receiving information to the Public.	The City Information Officer has opened up accounts with Facebook, Twitter, and Youtube which distribute information regarding City services, current City projects, and educational material. City staff email addresses and phone numbers are available on the City website.
2.3	Develop a Stormwater Stenciling Program.	Advertise to the Public the importance of Stormwater Management and the need for storm drain stenciling within the City.	Local volunteers such as the Boy Scouts have helped stencil storm inlets in the past throughout the City in the past. City has received contact from at least one group seeking to pursue such programs ain 2014 although no programs were completed in 2014. City has revised specifications for inlets to now require "stenciling" be stamped into the concrete tops.
2.4	Continue to Maintain and Clean Trash and Debris from Local Streams.	Establish an Adopt a Stream program	City crews continue to clean streams on public property throughout the City. Volunteers have been especially effective on the Annual Spring Clean Up day at removing Trash from City Property. Additional parks (8 total) have been adopted through the Adopt a Park program which provides organizations the opportunity to clean and keep specific parks. Two large scale creek clean-up events in August and September were coordinated by the Parks Department.

2.5	Establish a Reforestation Program	Continue to promote Arbor Day to increase community inovlvement.	The City of Leavenworth continues to be part of the Tree City USA program sponsored by the Arbor Day Foundation. The Legacy Tree Program allows for a tree to be planted and dedicated in public spaces. Arbor Day is celebrated yearly. 17 Legacy trees were planted in 2013.
2.6	Collect rainfall and streamflow data to analyze citizen complaints	Increase data sources to include more streamflow data and weather stations	Davis Pro Weather stations have been installed at 4 locations citywide. The data is available to all on the internet. This information has been used to assist in evaluating runoff for projects and citizen concerns. Increased data allows for City staff to better analyze flooding events and address the concerns of the public. The City also has 4 portable digital depth recorders used to monitor performance of streams and detention basins. City has coordinated weather collection data with Leavenworth County, Lansing and Basehor.

2. Illicit Discharge Detection and Elimination

Place a check mark in the appropriate box.

		Yes	No	Not Applicable
1.	Has a program/plan been developed and is it presently implemented to detect and address illicit/prohibited discharges into the MS4?	☒	☐	
2.	Some permits require the permittee enact ordinances resolutions or regulations. Have any ordinances, resolutions or regulations to prohibit non-stormwater discharges into the MS4 been enacted?	☒	☐	☐
	Effective Date: _____			
	Has the ordinance, resolution or regulation been modified?			
	Effective Date: _____			
3.	Have the ordinances, resolutions or regulations and/or modifications been submitted to KDHE for review?	☐	☒	
4.	Have public employees, businesses, and the general public been informed of the hazards associated with illegal discharges and improper disposal of waste?	☒	☐	
5.	Have stormwater inlets & detention ponds been inspected?	☒	☐	
6.	Are restaurant waste grease areas inspected?	☒	☐	
7.	Are septic systems inspected?	☒	☐	
8.	Are the streets swept frequently?	☑	☐	
9.	Is there a yard waste management program?	☒	☐	
10.	Are snow removal activities inspected?	☒	☐	

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

3. Illicit Discharge Detection and Elimination (Table)

BMP ID Number	Brief BMP Description	Measurable Goal(s)	Progress Achieving Goal(s) (Measured Result)
3.1	Stormsewer Mapping	Continue to update existing stormsewer structures as well as add new development structures to the city mapping systems.	An updated map of the existing storm sewer network is being developed by the city. Data is collected utilizing a GPS receiver and invert information is collected by opening all manholes. The GIS system now has location information on essentially all of the facilities, (structures, ponds, outfalls, etc.) with 69% of the system having been physically verified with GPS equipment. Detailed technical information is verified by field measurement and is about 36% complete. Substantial additional work anticipated in 2015. The map and GIS database are available to city users and design engineers.
3.2	Stormsewer Maintenance and Inspection	Provide dry weather storm sewer inspection.	A 2 Person Crew is devoted to storm sewer inspection Full-time. The crew provides on-going review of storm infrastructure, assists with GPS inspection, responds to public complaints, and provides maintenance for the storm system.
3.3	Inspection of Sanitary Sewer Systems	Inspect residential and commercial sanitary systems for improper discharge into storm drains.	The city purchased an upgraded Sewer TV system with better quality camera, and has integrated TV inspection into the GIS. City purchased a "pole camera" to provide better and quicker images of storm and sanitary sewer piplines in 2013. City completed a substantial flow monitoring study for I/I reduction efforts, and has trained staff to perform smoke testing. I/I projects and inspection efforts are on-going. City has increased the enforcement level of commercial grease traps through contact and inspection

3.4	Procedural Training for City Staff	City inspectors shall attend annual continuing educational programs.	City inspection staff attends continuing educational programs as required. City forces (Parks and Public Works) attend certification courses for herbicides and pesticides. Recent contact with EPA has identified additional training and procedures are necessary to adequately inspect construction sites. Additional training will take place throughout 2015.
3.5	Establish a Program for Household Hazardous Waste Disposal.	Provide pick up for household hazardous waste on a regular Basis	Used motor oil may be dropped off at the City's Recycling Center and all other household hazardous-waste may be dropped off at the Leavenworth County Transfer Station.

3. Illicit Discharge Detection and Elimination

Place a check mark in the appropriate box.

		Yes	No	Not Applicable
1.	Some permits require the permittee to enact ordinances, resolutions or regulations. Has an ordinance, resolutions or regulation to address construction site runoff from new development and redevelopment projects been enacted? Effective Date:	☐	☒	☐
2.	Has a copy of the ordinance, resolution or regulation been submitted to KDHE for review?	☐	☒	
3.	Has a procedure or program been developed requiring construction site owners and/or operators to implement appropriate erosion and sediment control best management practices?	☑	☐	
4.	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 at construction sites likely to cause adverse impacts to water quality?	☑	☐	
	Has a procedure been developed and implemented requiring site plan approval of erosion control and debris container locations incorporating consideration of potential water quality impacts?	☑	☐	
6.	After approval, is a construction site permit issued?	☐	☒	
7.	Has a procedure been developed for the receipt and consideration of information submitted by the public?	☑	☐	
8.	Has a procedure been developed and implemented for construction site inspection and enforcement of the control measures?	☑	☐	
9.	Are construction site inspection and enforcement actions successful?	☑	☐	
10.	Are site owners and/or operators provided instruction on proper construction site erosion and waste control?	☑	☐	

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

4. Construction Site Stormwater Runoff Control (Table)

BMP ID Number	Brief BMP Description	Measurable Goal(s)	Progress Achieving Goal(s) (Measured Result)
4.1	Construction Specifications and Standard Details.	Continue to develop and update the City specifications and design criteria.	Public Works staff submitted draft of stormwater guidelines to City Commission in February 2015. Staff currently uses APWA and MARC guidelines as an interim document. Adoption of guidelines is anticipated in 2015.
4.2	BMP Fact Sheet	Develop BMP Guidelines and Distribute Materials to Developers.	The MARC BMP Manual and APWA design guidelines are readily available online. The draft stormwater guidelines has been made available to consulting engineering firms. Additional details on BMP specifics and other stormwater issues will be developed by staff in 2015.
4.3	Construction Drawing Review	Require City review of all construction projects to ensure design addresses stormwater concerns.	All new residential and commercial developments are reviewed by City staff for stormwater concerns. BMPs have been incorporated into new development by consulting firms. NOI permits are required on projects that disturb areas in excess of 1 acre or require that a Storm Water Pollution Prevention Plan (SWPPP) be developed.
4.4	Pre-Construction Meetings with Owner and Contractor.	Require meetings with owner and contractor prior to commencement of grading operations.	Pre-construction meetings have been conducted by City staff with contractors and developers on all new developments to discuss the implementation of proper erosion controls.

4.5	Construction Site Inspection and Enforcement	Increase the frequency of inspections and develop a site checklist	City inspection staff checks construction sites a minimum of once a week. In addition, after a half inch or greater rainfall the site's BMPs functionality are checked. Stop work orders are issued if site erosion control measures are not in compliance and remedied in a timely manner. Temporary controls remain onsite until an acceptable grass stand is established. EPA visit in 2013 identified a need to improve staff understanding of current regulations. Training occurred in 2014 and will occur in 2015.
4.6	Staff Training	Conduct monthly meetings with inspection staff and provide training to new staff	EPA visit in 2013 identified that additional staff training related to construction practices and Inspection activities is necessary. Expectations have been reviewed with staff. Training occurred in 2014 and is discussed with inspectors. New inspection staff members would be trained by experienced in-house inspection staff. Assitional training will occur in 2015

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

Place a check mark in the appropriate box.

	Yes	No
1. The permit requires the permittee to enact a program to address post-construction site stormwater runoff from new development and redevelopment. The program developed to manage stormwater in new development and redevelopment projects must include the following elements: a. Strategies which include a combination of structural and/or Non-structural BMPs, b. Measures to ensure adequate long-term operation and maintenance of BMPs, c. Site Owner or operator name and telephone number Responsible to ensure adequate long-term operation Maintenance of BMPs, d. BMPs to prevent or minimize adverse water impacts.		
2. Has a post-construction stormwater runoff program been Implemented?	☒	☐
3. Have post-construction sites been inspected?	☒	☐
4. Have there been post-construction violations?	☐	☐

5. 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 table on the following pages.

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

BMP ID Number	Brief BMP Description	Measurable Goal(s)	Progress Achieving Goal(s) (Measured Result)
5.1	Construction Site Inspection and Maintenance of Long Term Controls.	Increase inspections	Sites are inspected on a bi-weekly schedule following construciton to ensure BMP's such as gutter-buddies remain in working order. City has been working on informing detention pond owners on their responsibility of maintaining permanent facilities.
5.2	Protect sensitive areas, such as wetlands and riparian areas	Maintain or increase open space.	The City has purchased additional properties in flood prone areas in 2014. As part of the draft Stormwater Guidelines, stream buffers along creeks within the City would decrease the encroachment of developments into riparian areas, and these acquired properties act to improve water quality.
5.3	Promote non-structural best management practices.	Minimize impervious surfaces and disturbance of soils and vegetation.	City staff have focused on encouraging developers to minimize grading impacts, provide tree preservation, and address project BMP's early in the plan review process.
5.4	Construction Drawing Review.	Require city review of all construction projects to ensure design addresses post construction storm water concerns.	All new residential and commercial developments are reviewed by City Staff. Additional measures addressing Stormwater Quality will be incorporated into the updated City specifications.
5.5	Analyze Existing Structural BMP Performances.	Evaluate local detention pond performances.	The City is utilizing 4 level recorders to evaluate the performance of selected detention ponds during storm events.

6. Municipal Pollution Prevention/Housekeeping.

Place a check mar in the appropriate box.

		Yes	No
1.	The permit requires the permittee to enact a program to address Pollution Prevention/Good Housekeeping for Municipal Operations.		
2.	Has an operation & maintenance program to reduce Pollutant runoff and an audits /inspection program been adopted?	☐	☒
3.	Has a municipal employee training program been established?	☒	☐
4.	Are oil, hazardous wastes, chemicals and municipal debris properly deposed?	☒	☐
5.	Are snow and ice removal material and chemicals properly managed to prevent runoff?	☒	☐
6.	Are municipal streets swept on a regular basis?	☒	☐
7.	Are municipal stormwater inlets and drains inspected and cleaned?	☒	☐
8.	Do municipal snow piles have controlled drainage to prevent runoff pollution?	☐	☒

List all the Municipal Pollution Prevention/Housekeeping BMPs as identified in the SMP and provide the requested information in the table on the following pages.

7. ***PHASE I OPERATORS ONLY*** - Monitoring Industrial and High Risk Run-off

Place a check mark in the appropriate box.

		Yes	No
1.	Has the permitee developed and maintained a list of the municipal industrial facilities contributing to the pollutant loading to the municipal storm sewer system?	☐	☐
2.	Has at least two municipal industrial facilities on the list had an inspection and sampling conducted?	☐	☐

If the answer to items 1 and 2 is "No" provide a statement on the Phase I operator form Appendix B as to why monitoring and control has not occurred.

Complete Monitoring form in Appendix B.

6. Municipal Pollution Prevention/Housekeeping Table

BMP ID Number	Brief BMP Description	Measurable Goal(s)	Progress Achieving Goal(s) (Measured Result)
6.1	Storm Sewer and Catch Basin Cleaning.	Inspect and clean all storm sewer inlets on a quarterly basis.	Two Full Time employees utilize the City's vacuum truck to remove debris from storm sewer inlets and performed several inlet repair projects . The City has contracted for repairs to several storm structures.
6.2	Street Sweeping	Increase street sweeping rotations throughout the City.	Arterial streets are required to be cleaned on a monthly basis, and residential streets must be swept twice per year. Leavenworth's crews have met these goals and have cleaned ALL streets a minimum of 4 times in 2014. GPS tracker installed in two street sweepers
6.3	Snow Removal Operations.	Upgrade the City's Snow removal equipment.	The salt trucks are ground speed controlled which allows for a more precise application rate of the salt/sand mix. Mix ratio is modified to reduce the materials applied to the roadways. City has moved toward more salt/sand rather than all salt for most storms. Review of application rates finds that they are within guidelines. Staff is also becoming more familiar with the controls of the spreaders to ensure proper application of sand and salt. GPS trackers installed in four key snow removal vehicles. All salt and sand is stored in covered structures.
6.4	Leaf Pick Up.	Establish a City wide program offering leaf pick up.	Leaf collection is scheduled in half of the City each year (alternating). Other disposal options are available to the public - free brush site use and regular refuse collection.

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Record Keeping and Reporting (Section F, Items 1-5)

F. Recordkeeping and Reporting

Attach a report which addresses the following subjects:

1. A general assessment of the appropriateness of the various BMPs included for each of the major program elements as follows:
   a. TMDL regulated pollutants (Appendix A contains TMDL Report Forms)
   b. Public Education and Outreach
   c. Public Involvement and Participation
   d. Illicit Discharge Detection and Elimination
   e. Construction Site Stormwater Runoff Control
   f. Post-Construction Site Stormwater Management in New Development and Redevelopment
   g. Pollution Prevention/Good Housekeeping for Municipal Operations

   Issues which may be addressed include:
   a. Are the BMPs appropriate for local population?
   b. Are the BMPs appropriate for the pollution sources?
   c. Are there specific concerns related to the local receiving waters that may justify a change in BMPs?

2. An assessment of the effectiveness of the BMPs towards achieving the statutory goal of reducing the discharge of pollutants to the Maximum Extent Practicable (MEP).

3. Provide a summary of results of information collected and analyzed, if any, during the reporting period, including any monitoring data used to assess the success of the SMP.

4. Provide a summary of the planned changes in stormwater activities which are scheduled to be undertaken during the next annual reporting cycle. This should address the implementation of new BMPs and/or the deletion of BMPs and include a projected schedule for the month or quarter when the BMP will be either implemented or discontinued. Please note a revised SMP document should be submitted for KDHE review if BMPs are revised.

5. Provide a list of other municipalities/contractors, if any, which will be responsible for implementing any of the program areas of the SMP.

The various documents which are required to be included in the annual report may be attached as appendices with this Annual Report document. The permit requires various monitoring results be reported. The additional Water Monitoring Results documents found in Appendices A and B include report forms to be used for this Annual Report. Appendix A is to be used by both Phase I and Phase II MS4s. Appendix B is to be used by Phase I MS4s. Additional copies of the forms may be generated as necessary to provide reports of all results. Include the annual report file along with all appendices and other required documents on the CD submission of) Annual Report. The permit establishes several reporting requirements, please review "PART V PORTING" within the permit and ensure the various items which must be reported with the annual report are included with the report. Updated Stormwater Management Program documents, i.e., the plan or SMP, must be submitted with the Annual Report.

Section F: Recordkeeping and Reporting

1. *A general assessment of the appropriateness of the various BMPs included for each of the major program elements as follows:*
   a. **TMDL Regulated Pollutants.** Not Applicable

   b. Public Education and Outreach. Stormwater information is disseminated to the public through numerous channels such as the city newsletter, press releases, posting documents on the city website, and placing reference material at the Public Library. For news and distribution of relevant material associated with storm debris collection or flood recovery efforts, Facebook, Twitter, television and YouTube are being utilized by the Public Information Officer to reach a larger population in a timely manner. Considering all of these avenues to reach the public, the city's attempt to provide its citizens with updated material is very effective. Updated videos and information would increase the effectiveness of this means of communication. A review of materials placed at the library showed that there had been little to no use of them.

   c. **Public Involvement and Participation.** The city engages the public by calling for volunteers to work on local initiatives through the several lines of communication discussed earlier. The Annual Spring Clean Up has been effective in reducing pollution as well increasing the public awareness of stormwater BMPs and other city programs. Free drop-off of large items on Free Saturdays continues to be a popular program. Calls for civic organizations to clean and make improvements to city parks throughout the year are being made through an established Adopt-a-Park program with twenty-one parks currently adopted. Arbor Day is observed yearly and the city continues to be part of the Tree City USA program. An Adopt-a-Stream program has not been established however cleaning along streams has occurred in public spaces through the Spring Clean-up and spontaneous citizen efforts coordinated with through the Parks Department. Brochures and newsletters are published throughout the year that include code enforcement information and more information about any discarded debris and the proper place to discard it.

   City receives occasional calls from groups such as Boy Scouts related to public service projects. One of these projects removed a significant amount of debris between 6th Street and 7th Street along Three-Mile Creek as a result. The City partnered with Missouri River Relief in 2014 and assisted with a significant clean-up effort of the Missouri River between Weston and Leavenworth.

   Related activities in 2014 included the Annual Spring Clean-up Program held April 5, 2014 which had an increased number of participants with 10 new groups in 2014 with a

total of around 1,200 volunteers picking up trash throughout the City, the Legacy Tree Program saw an additional twelve trees planted in 2014, and the city participated in the County-wide clean-up effort on October 17, 2014

In addition - The Leavenworth Times newspaper published an article informing the public on green ways of household hazardous waste collection and informing them of the Recycling Center to keep waste from "dumping down the drains" and the importance of it not entering our water.

d. **Illicit Discharge Detection and Elimination.** In order to control improper disposal of waste to the storm sewer system, the City of Leavenworth makes material available through flyers and online regarding household hazardous waste and its proper disposal. Wastewater Superintendent has worked with Public Information Officer and representatives of Fort Leavenworth to distribute information for disposal of outdated medicines. This has also been posted to the Webpage. Parks Department reports that the "Pick up Your Dog Doo" plan continues to be a very effective at the parks where it has been implemented.

Storm sewers are examined with the city's camera truck which allows for sewer lines to be videotaped and searched for improper connections or line failures. The purchase of a "Pole Cam" in 2014 facilitates a much quicker inspection time. The city continues to devote resources to updating the storm sewer map with current information through use of hand held GPS to locate all storm structures, ponds, and outfalls in the storm sewer network and opening all manholes for measurements and inspection. The final database will include horizontal location as well as invert and top elevations for all storm structures.

The city has an ongoing cleaning and CCTV program for the sanitary sewer lines. This work has identified several projects that are repaired as part of the current effort to reduce Inflow and Infiltration. The twenty-six creek crossings by the sanitary sewer system are inspected at least three times each year.

The City has contacted commercial facilities with grease traps as well as those that might have grease traps. This is an effort to ensure that the grease traps are properly maintained which helps to prevent blocked sewer lines. This has resulted in at least one institution installing the correct grease trap, and others increasing their maintenance effort. Additional follow-up work is necessary to ensure that grease traps are being operated correctly.

City employees are reminded at staff meetings and safety meetings to report any activity that is questionable to their supervisor and/or the City Engineer Office. The maps are believed to identify nearly all storm water facilities, and specific location data has been field verified in seventy-percent of all known locations.

e. **Construction Site Stormwater Runoff Control.** Plan review and construction site inspection are the city's first line of defense in protecting water quality in developing areas. The initial planning process for large and small developments includes a formal focus on stormwater quantity, quality and control measures as part of the Development Review Committee meeting with project sponsors and developers. Weekly meetings are held in the Public Works office to review stormwater issues on current city and developer projects both in the design and construction phase.

The city has created guidelines related to stormwater quantity and quality in 2014. These guidelines are expected to be approved by the City Commission in early 2015. They rely upon the technical work completed in other documents – particularly the MARC BMP Manual, APWA Section 5600 and City of Leavenworth Stormwater Master Plan 1995.

The 2013 EPA inspection identified that staff should become more familiar with the rules and regulations to ensure proper enforcement of any violations. Both field staff and administration staff took advantage of local courses and events to increase knowledge and skills in 2014. City staff has informed developers and contractors of the increased scrutiny related to stormwater.

f. **Post-Construction Site Stormwater Management in New Development and Redevelopment.** The City of Leavenworth has increased the actions necessary to improve stormwater quality from developed sites. First (on City funded projects), in order to reduce erosion from recently developed sites, contractors are responsible for landscaping for 2 years following construction rather than the previous period of one year. This practice ensures that an acceptable grass stand is established in the area to stabilize soils and increase infiltration by reducing runoff velocity. Also, the city has notified several detention pond owners in order to inform them of proper maintenance procedures and requirements. The City has increased periodic inspection of post-construction sites to ensure compliance with the regulations by reviewing the status of active projects at weekly staff meetings.

g. **Pollution Prevention/Good Housekeeping for Municipal Operations.** The leaf collection program continues in the Fall (curbside pick-up has been reduced to one-half of the city each year), more efficient application of salt and sand to the roadways through better equipment, street sweeping operations, and extended sweeping season are all effective in decreasing pollutants from entering the storm sewer system. Beyond these steps the city has 2 full time employees dedicated to the cleaning of storm inlet structures with a vacuum truck. At least 160 inlets were inspected and cleaned in 2014. The addition of the ground speed control systems on the spreaders has improved consistency of application rates and they remain within the recommended rates of application. The street sweeping program has exceeded performance standards. City ensures chemicals (including salt) are stored in covered facilities, and that all personnel using herbicides/pesticides are trained appropriately. The City offers free disposal of grass and leaves, and free drop-off of recyclable goods is available.

Further Discussion of BMP's in general

City opinion is that the BMP approach to the current level of stormwater activity in Leavenworth is entirely appropriate. They address the main concerns of the city; water quality and construction site run-off. The aggressive street sweeping program catches much of the salt and sand from winter operations before the spring rains. Staff is aware of the significance of the stormwater issues reviewed by KDHE and seeks to ensure compliance by having an empowered staff and opportunities for the public to comment or become involved.

2. ***An assessment of the effectiveness of the BMP's towards achieving the statutory goal of reducing the discharge of pollutants to the Maximum Extent Practicable (MEP).***

The City of Leavenworth has evaluated the functionality of various types of BMPs in Leavenworth while preparing for the adoption of an updated stormwater design manual. BMP overall effectiveness, economy, and general upkeep needs will drive BMP selection on future developments in Leavenworth. For instance, most in-situ soils in Leavenworth have low permeability which has led the Public Works staff to favor BMPs focused more on pollutant removal rather than stormwater infiltration. Recently constructed detention basins and bank stabilization projects have proven stable in recent rains – but have not been tested during high rainfall events for effectiveness. The successful operation of ground speed control on salt spreaders and performance of the street sweeping program have improved water quality of discharges to the creeks and rivers. The increased focus on the construction site monitoring program has been generally effective will need additional documentation and communication to ensure compliance levels by all parties.

3. ***Provide a summary of results of information collected and analyzed, if any, during the reporting period used to assess the success of the SMP.***

   Stormwater from the MS4 has been tested during four events in 2014. Testing dates were April 24, May 12, October 1, and October 2.

   A summary of the results is included in the Appendix A along with several detailed graphs and charts in Appendix C.

   The city also monitored several detention basins to evaluate performance. This information is communicated back to the designer in most cases, and adjustments made if necessary to the outfall structure.

   In general the city observed the following during this process

   1. The stream stage is extremely sensitive to rainfall intensity and duration. It was difficult to have all of the samples taken during a "rising Stream" stage.
   2. It appears that in some cases water quality leaving the city is better than the water quality entering the city.

4. ***Provide a summary of the planned minor changes in stormwater activities to accomplish the SMP designated goals that are scheduled to be undertaken during the next annual reporting cycle.***

   The City expects to perform the following changes in 2015:

   1. City Commission to adopt the "Stormwater Guidelines" prior to June 1. These will continue to be available on the web-page and distributed to developers and engineers as necessary.
   2. Detention pond owners will be contacted directly to promote the importance of functioning detention facilities and proper maintenance to local home associations to improve pond operation and reduce erosion. Initial contact will be by mail prior to June 1.
   3. City will intensify the commercial grease trap program. This will be by additional formal contact by June 1. The goal is to establish formal maintenance requirements as appropriate to the size of the business.
   4. City will continue to observe performance of selected detention ponds and related facilities during the heavy rainfall season. Additional depth recording devices to measure stream and/or pond levels during high rainfall events will be purchased by April 1

5. Increase staff training related to construction site inspection and post construction inspection activities throughout the year. Increase exposure of related staff members from building inspection and code enforcement to stormwater issues.
6. Seek opportunities with community groups to improve awareness of stormwater issues

5. ***Provide a list of other municipalities/contractors, if any, which will be responsible for implementing any of the program areas of the SMP.***
   None

G. 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 designed 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 violations."

Signature of Permittee: _____ Date Signed: 2-27-15
(Legally responsible person)

Name (Printed): J. Scott Miller Title: City Manager

40 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.
Submit this report to:

KANSAS DEPARTMENT OF HEALTH & ENVIRONMENT
Municipal Programs Section
1000 SW Jackson Street, Suite 420
Topeka, Kansas 66612-1367

Appendix A
Summary of Sampling Data

Appendix A
Summary of Sampling Data

- **Summary of Water Quality Data (four storms)**
- **Channel Bottom reference sheet for rating curves**
- **Flow Observation Summary**
- **Water Quality Monitoring Sheets**
- **Stream Rating Sheets**

City of Leavenworth

2014 Stormwater Sampling Summary

Three Mile Creek		April 24 2014		May 12 2014		October 1 2014		October 2 2014	
		Upstream	Downstream	Upstream	Downstream	Upstream	Downstream	Upstream	Downstream
	CFS	200	190	200	190	200	190	3100	265
Total Phosphorus	mg/l	0.32	0.55	0.42	0.61	1.5	0.79	1.5	1.1
Ortho Phosphate	mg/l					0.19	0.2	0.24	0.22
Nitrate+Nitrite	mg/l	0.5	0.42	0.69	0.69	0.56	0.57	0.32	0.41
Total Kjeldahl Nitrogen	mg/l	1	1.1	0.7	2.4	2.8	2.6	4.4	3
Total Suspended Solids	mg/l	303	242	165	440	1370	508	1510	1480
Turbidity	NTU	294	112	276	274	530	260	488	438
E.Coli	col/100ml	12997	3448	10500	14100	19863	72700	63100	59100
Dissolved Oxygen	mg/l	6.3	3.3	6.1	4.6				

Five Mile Creek		April 24 2014		May 12 2014		October 1 2014		October 2 2014	
		Upstream	Downstream	Upstream	Downstream	Upstream	Downstream	Upstream	Downstream
	CFS	1020	800	880	660	1100	800	3100	265
Total Phosphorus	mg/l	0.13	0.54	0.34	0.28	0.66	0.63	1.5	1.1
Ortho Phosphate	mg/l					0.2	0.18	0.24	0.22
Nitrate+Nitrite	mg/l	0.21	0.34	0.29	0.32	0.3	0.5	0.32	0.41
Total Kjeldahl Nitrogen	mg/l	0.69	0.56	1.8	1.6	1.3	1.3	4.4	3
Total Suspended Solids	mg/l	54	485	300	226	356	472	1510	1480
Turbidity	NTU	22.5	261	199	193	241	263	488	438
E.Coli	col/100ml	1872	3255	8660	8660	88600	30900	63100	59100
Dissolved Oxygen	mg/l	6.7	4.9	5.5	5.1				

Mike McDonald

rom: Manuel Carrera
Sent: Monday, February 23, 2015 2:27 PM
To: David Griffith; Mike McDonald
Cc: Tim Guardado; Chuck Staples
Subject: creek channels

3 mile east 25' 4" 25.33 ft
3 mile west 20'2" 20.17 ft
5 mile east 18' 10.5" 18.88 ft
5 mile west 23'1.5" 23.13 ft

} DEPTH TO CHANNEL BOTTOM

City of Leavenworth
Water Sampling Dates
Flow Quantities
Feb-15

Location: 3 Mile Creek East		25.33 Dist to bottom					
Date	Ref Elevation (ft)	Distance to WS (ft)	WS Elevation (ft)	Depth	Obs. Velocity (ft/sec)	**Q(Rating Table)**	Q (Calc)
4/24/2014	773.5	23.75	749.75	1.58	3.01	**190**	
5/12/2014	773.5	23.75	749.75	1.58	4.39	**190**	
10/1/2014	773.5	23.67	749.83	1.66	6.63	**200**	
10/2/2014	773.5	22.5	751	2.83	1.79	**750**	

Location: 3 Mile Creek West		20.17 Dist to bottom					
Date	Ref Elevation (ft)	Distance to WS (ft)	WS Elevation (ft)		Obs. Velocity (ft/sec)	**Q(Rating Table)**	Q (Calc)
4/24/2014	847	19.33	827.67	0.84	0.17	**200**	
5/12/2014	847	19.33	827.67	0.84	1.74	**200**	
10/1/2014	847	19.5	827.5	0.67	1.89	**40**	
10/2/2014	847	19.42	827.58	0.75	3.49	**45**	

Location: 5 Mile Creek East		18.88 Dist to bottom					
Date	Ref Elevation (ft)	Distance to WS (ft)	WS Elevation (ft)	Depth	Obs. Velocity (ft/sec)	**Q(Rating Table)**	Q (Calc)
4/24/2014	767.1	22.25	744.85	3.37	1.1	**800**	
5/12/2014	767.1	21.83	745.27	2.95	1.77	**660**	
10/1/2014	767.1	22	745.1	3.12	1.36	**800**	
10/2/2014	767.1	20.67	746.43	1.79	2.89	**265**	

Location: 5 Mile Creek West		23.13 Dist to bottom					
Date	Ref Elevation (ft)	Distance to WS (ft)	WS Elevation (ft)	Depth	Obs. Velocity (ft/sec)	**Q(Rating Table)**	Q (Calc)
4/24/2014	843.5	16.5	827	6.63	5.25	**1020**	
5/12/2014	843.5	16.75	826.75	6.38	3.9	**880**	
10/1/2014	843.5	16.08	827.42	7.05	6.32	**1100**	
10/2/2014	843.5	12.42	831.08	10.71	6.96	**3100**	

APPENDIX A WATER MONITORING RESULTS

Additional Sites Monitored (Either surface waters, ground waters or flow within MS4)

Site Name: 3 Mile West

Site Number: _____

Event Rainfall Total: 1.18 Inches

Lake: ☐ Stream: ☒

Estimated Stream Flow: ~~190~~ 200 CFS

Stream Level Conditions: Steady (Rising, Falling, Steady)

Stream Velocity Conditions: Normal (Rapid/Normal, Still (backwater))

Sample Date: 4/24/2014

Parameters & Units Required	Results*	Sample Type Grab	Sample Type Composite
Total Phosphorus (mg/l)	0.32	☒	☐
Ortho-Phosphate		☐	☐
Nitrate + Nitrite (mg/l)	0.50	☒	☐
Total Kjeldahl Nitrogen (mg/l)	1.0	☒	☐
Total Suspended Solids (mg/l)	303	☒	☐
Trubidity(NTU)	294	☒	☐
Secchi Disk (feet)		☐	☐
E. coli (col/100ml)	12997	☒	☐
Other Dissolved Oxygen(mg/l)	6.3	☒	☐
Other		☐	☐

Comments: _____

Footnotes and comments

* Any result shown in analytical report to be ND (non-detect) must be shown as < with the reporting/detection limit by the certified laboratory.

This form, Water Quality Results for Additional Sites Monitored, is intended for use by both Phase I and Phase II MS4s.

NPDES permitted Phase I MS4s included Topeka: Unified Government of Wyandotte County and Kansas City, ansas; and Wichita. All other NPDES permitted MS4s in Kansas are Phase II MS4s

APPENDIX A WATER MONITORING RESULTS

Additional Sites Monitored (Either surface waters, ground waters or flow within MS4)

Site Name: 3 Mile East

Site Number:

Event Rainfall Total: 1.11 Inches

Lake: ☐ Stream: ☒

Estimated Stream Flow: 190 CFS

Stream Level Conditions: Up, Steady (Rising, Falling, Steady)

Stream Velocity Conditions: Rapid (Rapid/Normal, Still (backwater))

Sample Date: 4/24/2014

Parameters & Units Required	Results*	Sample Type Grab	Sample Type Composite
Total Phosphorus (mg/l)	0.55	☒	☐
Ortho-Phosphate		☐	☐
Nitrate + Nitrite (mg/l)	0.42	☒	☐
Total Kjeldahl Nitrogen (mg/l)	1.1	☒	☐
Total Suspended Solids (mg/l)	242	☒	☐
Trubidity(NTU)	112	☒	☐
Secchi Disk (feet)		☐	☐
E. coli (col/100ml)	3448	☒	☐
Other Dissolved Oxygen (mg/l)	3.3	☒	☐
Other		☐	☐

Comments:

Footnotes and comments

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APPENDIX A WATER MONITORING RESULTS

Additional Sites Monitored (Either surface waters, ground waters or flow within MS4)

Site Name: 5 Mile West

Site Number:

Event Rainfall Total: 1.17 Inches

Lake: ☐ Stream: ☒

Estimated Stream Flow: 1020 CFS

Stream Level Conditions: Steady (Rising, Falling, Steady)

Stream Velocity Conditions: Normal (Rapid/Normal, Still (backwater))

Sample Date: 4/24/2014

Parameters & Units Required	Results*	Sample Type: Grab	Sample Type: Composite
Total Phosphorus (mg/l)	0.13	☒	☐
Ortho-Phosphate		☐	☐
Nitrate + Nitrite (mg/l)	0.21	☒	☐
Total Kjeldahl Nitrogen (mg/l)	0.69	☒	☐
Total Suspended Solids (mg/l)	540	☒	☐
Trubidity(NTU)	22.5	☒	☐
Secchi Disk (feet)		☐	☐
E. coli (col/100ml)	1872	☒	☐
Other Dissolved Oxygen (mg/l)	6.7	☒	☐
Other		☐	☐

Comments:

Footnotes and comments

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APPENDIX A WATER MONITORING RESULTS

Additional Sites Monitored (Either surface waters, ground waters or flow within MS4)

Site Name: 5 Mile East

Site Number:

Event Rainfall Total: 1.3 Inches

Lake: ☐ Stream: ☒

Estimated Stream Flow: 800 CFS

Stream Level Conditions: Up, steady (Rising, Falling, Steady)

Stream Velocity Conditions: Rapid (Rapid/Normal, Still (backwater))

Sample Date: 4/24/2014

Parameters & Units Required	Results*	Sample Type Grab	Composite
Total Phosphorus (mg/l)	0.54	☒	☐
Ortho-Phosphate		☐	☐
Nitrate + Nitrite (mg/l)	0.34	☒	☐
Total Kjeldahl Nitrogen (mg/l)	0.56	☒	☐
Total Suspended Solids (mg/l)	485	☒	☐
Trubidity(NTU)	261	☒	☐
Secchi Disk (feet)		☐	☐
E. coli (col/100ml)	3255	☒	☐
Other Dissolved Oxygen (mg/l)	4.9	☒	☐
Other		☐	☐

Comments:

Footnotes and comments

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APPENDIX A WATER MONITORING RESULTS

Additional Sites Monitored (Either surface waters, ground waters or flow within MS4)

Site Name: 3 Mile West

Site Number:

Event Rainfall Total: 1.13 Inches

Lake: ☐ Stream: ☒

Estimated Stream Flow: 200 CFS

Stream Level Conditions: steady (Rising, Falling, Steady)

Stream Velocity Conditions: Normal (Rapid/Normal, Still (backwater))

Sample Date: 5/12/2014

Parameters & Units Required	Results*	Sample Type: Grab	Sample Type: Composite
Total Phosphorus (mg/l)	0.42	☒	☐
Ortho-Phosphate		☐	☐
itrate + Nitrite (mg/l)	0.69	☒	☐
Total Kjeldahl Nitrogen (mg/l)	0.70	☒	☐
Total Suspended Solids (mg/l)	165	☒	☐
Trubidity(NTU)	276	☒	☐
Secchi Disk (feet)		☐	☐
E. coli (col/100ml)	10500	☒	☐
Other Dissolved Oxygen (mg/l)	6.1	☒	☐
Other		☐	☐

Comments:

Footnotes and comments

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APPENDIX A WATER MONITORING RESULTS

Additional Sites Monitored (Either surface waters, ground waters or flow within MS4)

Site Name: 3 Mile East

Site Number:

Event Rainfall Total: 1.23 Inches

Lake: ☐ Stream: ☒

Estimated Stream Flow: 190 CFS

Stream Level Conditions: Up, steady (Rising, Falling, Steady)

Stream Velocity Conditions: Rapid (Rapid/Normal, Still (backwater))

Sample Date: 5/12/2014

Parameters & Units Required	Results*	Sample Type Grab	Sample Type Composite
Total Phosphorus (mg/l)	0.61	☒	☐
Ortho-Phosphate		☐	☐
Nitrate + Nitrite (mg/l)	0.69	☒	☐
Total Kjeldahl Nitrogen (mg/l)	2.4	☒	☐
Total Suspended Solids (mg/l)	440	☒	☐
Trubidity(NTU)	274	☒	☐
Secchi Disk (feet)		☐	☐
E. coli (col/100ml)	14100	☒	☐
Other Dissolved Oxygen (mg/l)	4.6	☒	☐
Other		☐	☐

Comments:

Footnotes and comments

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APPENDIX A WATER MONITORING RESULTS

Additional Sites Monitored (Either surface waters, ground waters or flow within MS4)

Site Name: 5 Mile West

Site Number:

Event Rainfall Total: 1.1 Inches

Lake: ☐ Stream: ☒

Estimated Stream Flow: 880 CFS

Stream Level Conditions: Up, steady (Rising, Falling, Steady)

Stream Velocity Conditions: Normal (Rapid/Normal, Still (backwater))

Sample Date: 5/12/2014

Parameters & Units Required	Results*	Sample Type Grab	Sample Type Composite
Total Phosphorus (mg/l)	0.34	☒	☐
Ortho-Phosphate		☐	☐
Nitrate + Nitrite (mg/l)	0.29	☒	☐
Total Kjeldahl Nitrogen (mg/l)	1.8	☒	☐
Total Suspended Solids (mg/l)	300	☒	☐
Trubidity(NTU)	199	☒	☐
Secchi Disk (feet)		☐	☐
E. coli (col/100ml)	8660	☒	☐
Other Dissolved Oxygen (mg/l)	5.5	☒	☐
Other		☐	☐

Comments:

Footnotes and comments

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APPENDIX A WATER MONITORING RESULTS

Additional Sites Monitored (Either surface waters, ground waters or flow within MS4)

Site Name: 5 Mile East

Site Number:

Event Rainfall Total: 1.66 Inches

Lake: ☐ Stream: ☒

Estimated Stream Flow: 660 CFS

Stream Level Conditions: Up, Steady (Rising, Falling, Steady)

Stream Velocity Conditions: Rapid (Rapid/Normal, Still (backwater))

Sample Date: 5/12/2014

Parameters & Units Required	Results*	Sample Type Grab	Composite
Total Phosphorus (mg/l)	0.28	☒	☐
Ortho-Phosphate		☐	☐
Nitrate + Nitrite (mg/l)	0.32	☒	☐
Total Kjeldahl Nitrogen (mg/l)	1.6	☒	☐
Total Suspended Solids (mg/l)	226	☒	☐
Trubidity(NTU)	193	☒	☐
Secchi Disk (feet)		☐	☐
E. coli (col/100ml)	8660	☒	☐
Other Dissolved Oxygen (mg/l)	5.1	☒	☐
Other		☐	☐

Comments:

Footnotes and comments

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APPENDIX A WATER MONITORING RESULTS

Additional Sites Monitored (Either surface waters, ground waters or flow within MS4)

Site Name: 3 Mile West

Site Number:

Event Rainfall Total: 1.84 Inches

Lake: ☐ Stream: ☒

Estimated Stream Flow: 200 CFS

Stream Level Conditions: Steady (Rising, Falling, Steady)

Stream Velocity Conditions: Normal (Rapid/Normal, Still (backwater))

Sample Date: 10/1/2014

Parameters & Units Required	Results*	Sample Type: Grab	Sample Type: Composite
Total Phosphorus (mg/l)	1.5	☒	☐
Ortho-Phosphate	0.19	☒	☐
Nitrate + Nitrite (mg/l)	0.56	☒	☐
Total Kjeldahl Nitrogen (mg/l)	2.8	☒	☐
Total Suspended Solids (mg/l)	1370	☒	☐
Trubidity(NTU)	530	☒	☐
Secchi Disk (feet)		☐	☐
E. coli (col/100ml)	19863	☒	☐
Other		☐	☐
Other		☐	☐

Comments:

Footnotes and comments

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APPENDIX A WATER MONITORING RESULTS

Additional Sites Monitored (Either surface waters, ground waters or flow within MS4)

Site Name: 3 Mile East

Site Number:

Event Rainfall Total: 2.2 Inches

Lake: ☐ Stream: ☒

Estimated Stream Flow: 190 CFS

Stream Level Conditions: UP, steady (Rising, Falling, Steady)

Stream Velocity Conditions: Rapid (Rapid/Normal, Still (backwater))

Sample Date: 10/1/2014

Parameters & Units Required	Results*	Sample Type Grab	Composite
Total Phosphorus (mg/l)	0.79	☒	☐
Ortho-Phosphate	0.20	☒	☐
itrate + Nitrite (mg/l)	0.57	☒	☐
Total Kjeldahl Nitrogen (mg/l)	2.6	☒	☐
Total Suspended Solids (mg/l)	508	☒	☐
Trubidity(NTU)	260	☒	☐
Secchi Disk (feet)		☐	☐
E. coli (col/100ml)	72700	☒	☐
Other		☐	☐
Other		☐	☐

Comments:

Footnotes and comments

* Any result shown in analytical report to be ND (non-detect) must be shown as < with the reporting/detection limit by the certified laboratory.

This form, Water Quality Results for Additional Sites Monitored, is intended for use by both Phase I and Phase II MS4s.

NPDES permitted Phase I MS4s included Topeka: Unified Government of Wyandotte County and Kansas City, ısas; and Wichita. All other NPDES permitted MS4s in Kansas are Phase II MS4s

APPENDIX A WATER MONITORING RESULTS

Additional Sites Monitored (Either surface waters, ground waters or flow within MS4)

Site Name: 5 Mile West

Site Number:

Event Rainfall Total: 2.0 Inches

Lake: ☐ Stream: ☒

Estimated Stream Flow: 110 CFS

Stream Level Conditions: Steady (Rising, Falling, Steady)

Stream Velocity Conditions: Normal (Rapid/Normal, Still (backwater))

Sample Date: 10/1/2014

Parameters & Units Required	Results*	Sample Type Grab	Composite
Total Phosphorus (mg/l)	0.66	☒	☐
Ortho-Phosphate	0.2	☒	☐
itrate + Nitrite (mg/l)	0.3	☒	☐
Total Kjeldahl Nitrogen (mg/l)	1.3	☒	☐
Total Suspended Solids (mg/l)	356	☒	☐
Trubidity(NTU)	241	☒	☐
Secchi Disk (feet)		☐	☐
E. coli (col/100ml)	88600	☒	☐
Other		☐	☐
Other		☐	☐

Comments:

Footnotes and comments

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APPENDIX A WATER MONITORING RESULTS

Additional Sites Monitored (Either surface waters, ground waters or flow within MS4)

Site Name: 5 Mile East

Site Number:

Event Rainfall Total: 1.83 Inches

Lake: ☐ Stream: ☒

Estimated Stream Flow: 800 CFS

Stream Level Conditions: Up, Steady (Rising, Falling, Steady)

Stream Velocity Conditions: Rapid (Rapid/Normal, Still (backwater))

Sample Date: 10/1/2014

Parameters & Units Required	Results*	Sample Type Grab	Sample Type Composite
Total Phosphorus (mg/l)	0.63	☒	☐
Ortho-Phosphate	0.18	☒	☐
trate + Nitrite (mg/l)	0.50	☒	☐
Total Kjeldahl Nitrogen (mg/l)	1.3	☒	☐
Total Suspended Solids (mg/l)	472	☒	☐
Trubidity(NTU)	263	☒	☐
Secchi Disk (feet)		☐	☐
E. coli (col/100ml)	30900	☒	☐
Other		☐	☐
Other		☐	☐

Comments:

Footnotes and comments

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APPENDIX A WATER MONITORING RESULTS

Additional Sites Monitored (Either surface waters, ground waters or flow within MS4)

Site Name: 3 Mile West

Site Number:

Event Rainfall Total: 0.55 Inches

Lake: ☐ Stream: ☒

Estimated Stream Flow: 45 CFS

Stream Level Conditions: Up, Steady (Rising, Falling, Steady)

Stream Velocity Conditions: Rapid (Rapid/Normal, Still (backwater))

Sample Date: 10/2/2014

Parameters & Units Required	Results*	Sample Type Grab	Sample Type Composite
Total Phosphorus (mg/l)	0.60	X	☐
Ortho-Phosphate	0.16	X	☐
trate + Nitrite (mg/l)	0.30	X	☐
Total Kjeldahl Nitrogen (mg/l)	2.1	X	☐
Total Suspended Solids (mg/l)	480	X	☐
Trubidity(NTU)	313	X	☐
Secchi Disk (feet)		☐	☐
E. coli (col/100ml)	9208	X	☐
Other		☐	☐
Other		☐	☐

Comments:

Footnotes and comments

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APPENDIX A WATER MONITORING RESULTS

Additional Sites Monitored (Either surface waters, ground waters or flow within MS4)

Site Name: 3 Mile East

Site Number:

Event Rainfall Total: 0.9 Inches

Lake: ☐ Stream: ☒

Estimated Stream Flow: 750 CFS

Stream Level Conditions: Up, Steady (Rising, Falling, Steady)

Stream Velocity Conditions: Rapid (Rapid/Normal, Still (backwater))

Sample Date: 10/2/2014

Parameters & Units Required	Results*	Sample Type Grab	Sample Type Composite
Total Phosphorus (mg/l)	0.67	☒	☐
Ortho-Phosphate	0.19	☒	☐
Nitrate + Nitrite (mg/l)	0.73	☒	☐
Total Kjeldahl Nitrogen (mg/l)	2.5	☒	☐
Total Suspended Solids (mg/l)	465	☒	☐
Trubidity(NTU)	239	☒	☐
Secchi Disk (feet)		☐	☐
E. coli (col/100ml)	37900	☒	☐
Other		☐	☐
Other		☐	☐

Comments:

Footnotes and comments

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APPENDIX A WATER MONITORING RESULTS

Additional Sites Monitored (Either surface waters, ground waters or flow within MS4)

Site Name: 5 Mile West

Site Number:

Event Rainfall Total: 1.11 Inches

Lake: ☐ Stream: ☒

Estimated Stream Flow: 3100 CFS

Stream Level Conditions: up, steady (Rising, Falling, Steady)

Stream Velocity Conditions: Rapid (Rapid/Normal, Still (backwater))

Sample Date: 10/2/2014

Parameters & Units Required	Results*	Sample Type Grab	Sample Type Composite
Total Phosphorus (mg/l)	1.5	X	
Ortho-Phosphate	0.24	X	
trate + Nitrite (mg/l)	0.32	X	
Total Kjeldahl Nitrogen (mg/l)	4.4	X	
Total Suspended Solids (mg/l)	1510	X	
Trubidity(NTU)	488	X	
Secchi Disk (feet)			
E. coli (col/100ml)	63100	X	
Other			
Other			

Comments:

Footnotes and comments

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APPENDIX A WATER MONITORING RESULTS

Additional Sites Monitored (Either surface waters, ground waters or flow within MS4)

Site Name: 5 Mile East

Site Number:

Event Rainfall Total: 1.38 Inches

Lake: ☐ Stream: ☒

Estimated Stream Flow: 265 CFS

Stream Level Conditions: Up, Steady (Rising, Falling, Steady)

Stream Velocity Conditions: Rapid (Rapid/Normal, Still (backwater))

Sample Date: 10/2/2014

Parameters & Units Required	Results*	Sample Type Grab	Composite
Total Phosphorus (mg/l)	1.1	☒	☐
Ortho-Phosphate	0.22	☒	☐
trate + Nitrite (mg/l)	0.41	☒	☐
Total Kjeldahl Nitrogen (mg/l)	3.0	☒	☐
Total Suspended Solids (mg/l)	1480	☒	☐
Trubidity(NTU)	438	☒	☐
Secchi Disk (feet)		☐	☐
E. coli (col/100ml)	59100	☒	☐
Other		☐	☐
Other		☐	☐

Comments:

Footnotes and comments

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3 Mile Creek - Pedestrian Bridge Stream Gauge
City of Leavenworth

~~UPSTREAM~~ DOWNSTREAM

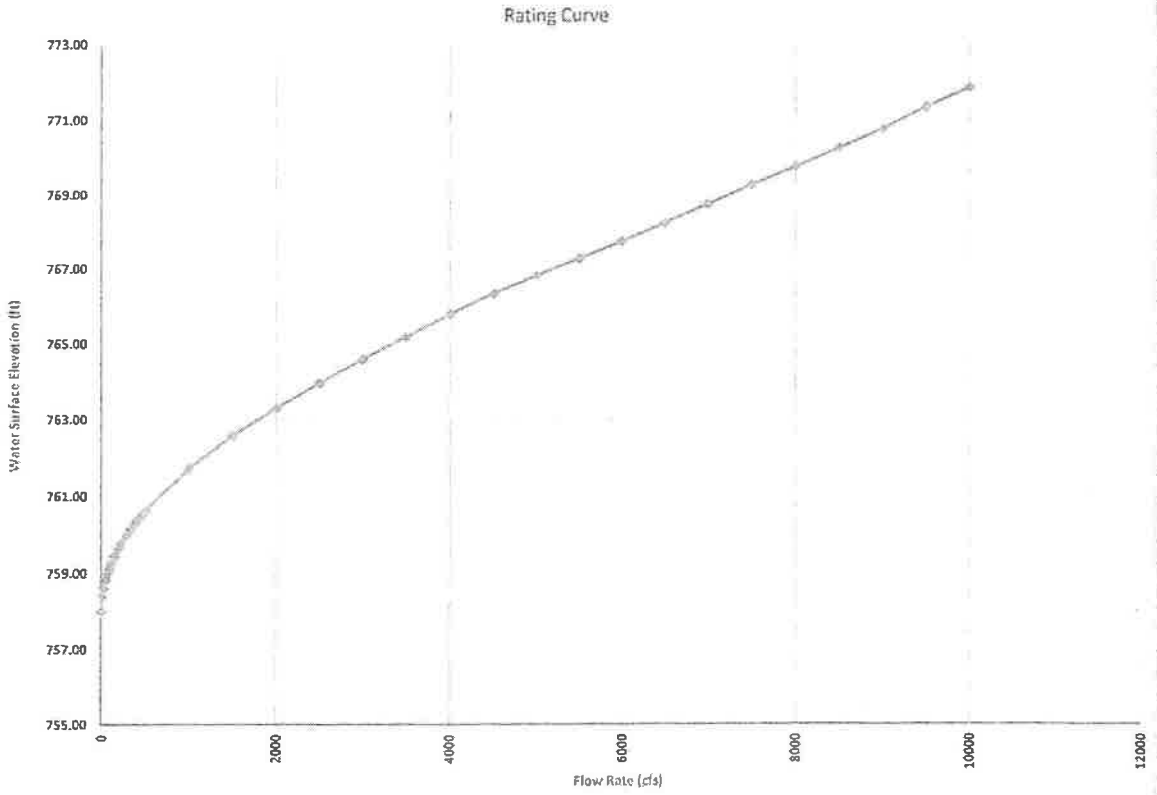
Notes:

1. The stream gauge is located at upstream side of the pedestrian bridge over 3 Mile Creek near Esplanade Drive. A HEC RAS model was created that extend a couple hundred feet upstream and downstream of the pedestrian bridge to estimate the water depth at multiple flow rates. The cross sections for the HEC RAS model were cut in ArcMap using the City of Levenworth 2' contours. Manning's roughness values were estimated using 2008 aerial photos provided by the City. The results of the HEC RAS model are used to create a rating curve at the stream gauge location.

2. Prepared By:
   Water Resources Solutions
   8800 Linden Drive
   Prairie Village, Kansas 66207
   February 2015

Channel Elevation (ft)	Water Depth (ft)	WSEL (ft)	Flow rate (cfs)
758.00	0.00	758.00	0
758.00	0.41	758.41	10
758.00	0.63	758.63	25
758.00	0.83	758.83	45
758.00	0.99	758.99	65
758.00	1.06	759.06	75
758.00	1.15	759.15	90
758.00	1.27	759.27	110
758.00	1.45	759.45	145
758.00	1.65	759.65	190
758.00	1.78	759.78	225
758.00	1.97	759.97	275
758.00	2.13	760.13	325
758.00	2.30	760.30	380
758.00	2.47	760.47	440
758.00	2.59	760.59	485
758.00	2.63	760.63	500
758.00	3.72	761.72	1000
758.00	4.57	762.57	1500
758.00	5.30	763.30	2000
758.00	5.97	763.97	2500
758.00	6.59	764.59	3000
758.00	7.18	765.18	3500
758.00	7.78	765.78	4000
758.00	8.34	766.34	4500
758.00	8.82	766.82	5000
758.00	9.28	767.28	5500
758.00	9.75	767.75	6000
758.00	10.24	768.24	6500
758.00	10.74	768.74	7000
758.00	11.26	769.26	7500
758.00	11.76	769.76	8000
758.00	12.26	770.26	8500
758.00	12.77	770.77	9000
758.00	13.35	771.35	9500
758.00	13.87	771.87	10000

Stream Gauge Elevation	770.00
Flow Rate	8240.00



3 Mile Creek - 20th Street Bridge Stream Gauge

City of Leavenworth UPSTREAM

Notes:

1. The stream gauge is located at upstream side of the 20th Street bridge over 3 Mile Creek. A HEC RAS model was created that extend a couple hundred feet upstream and downstream of the 20th Street bridge to estimate the water depth at multiple flow rates. The cross sections for the HEC RAS model were cut in ArcMap using the City of Levenworth 2' contours. Manning's roughness values were estimated using 2008 aerial photos provided by the City. The results of the HEC RAS model are used to create a rating curve at the stream gauge location.

2. Prepared By:

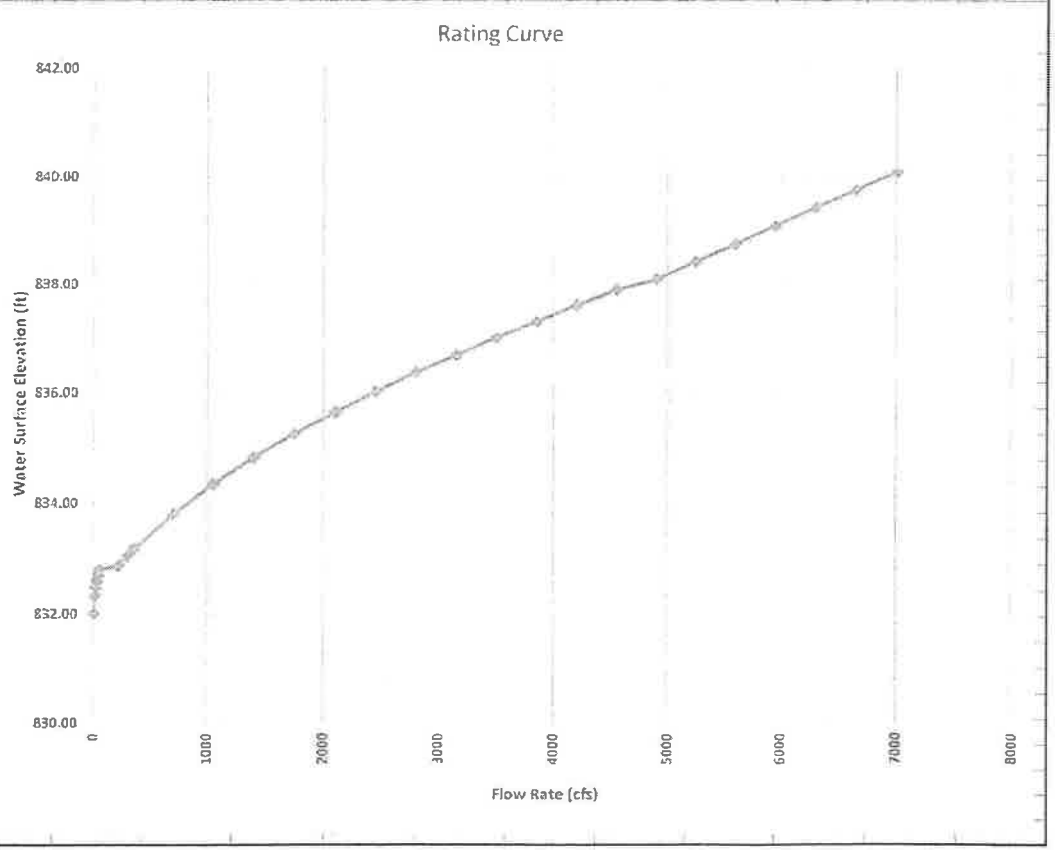
Water Resources Solutions

8800 Linden Drive

Prairie Village, Kansas 66207

February 2015

Channel Elevation (ft)	Water Depth (ft)	WSEL (ft)	Flow rate (cfs)
832.00	0.00	832.00	0
832.00	0.33	832.33	10
832.00	0.48	832.48	20
832.00	0.59	832.59	30
832.00	0.70	832.70	40
832.00	0.79	832.79	50
832.00	0.88	832.88	225
832.00	1.05	833.05	300
832.00	1.16	833.16	350
832.00	1.80	833.80	700
832.00	2.34	834.34	1050
832.00	2.82	834.82	1400
832.00	3.25	835.25	1750
832.00	3.64	835.64	2100
832.00	4.01	836.01	2450
832.00	4.36	836.36	2800
832.00	4.68	836.68	3150
832.00	5.00	837.00	3500
832.00	5.30	837.30	3850
832.00	5.60	837.60	4200
832.00	5.89	837.89	4550
832.00	6.08	838.08	4900
832.00	6.41	838.41	5250
832.00	6.74	838.74	5600
832.00	7.08	839.08	5950
832.00	7.42	839.42	6300
832.00	7.75	839.75	6650
832.00	8.08	840.08	7000
Stream Gauge Elevation		839.00	
Flow Rate		5867.65	



5 Mile Creek - Pedestrian Bridge Stream Gauge
City of Leavenworth

UPSTREAM

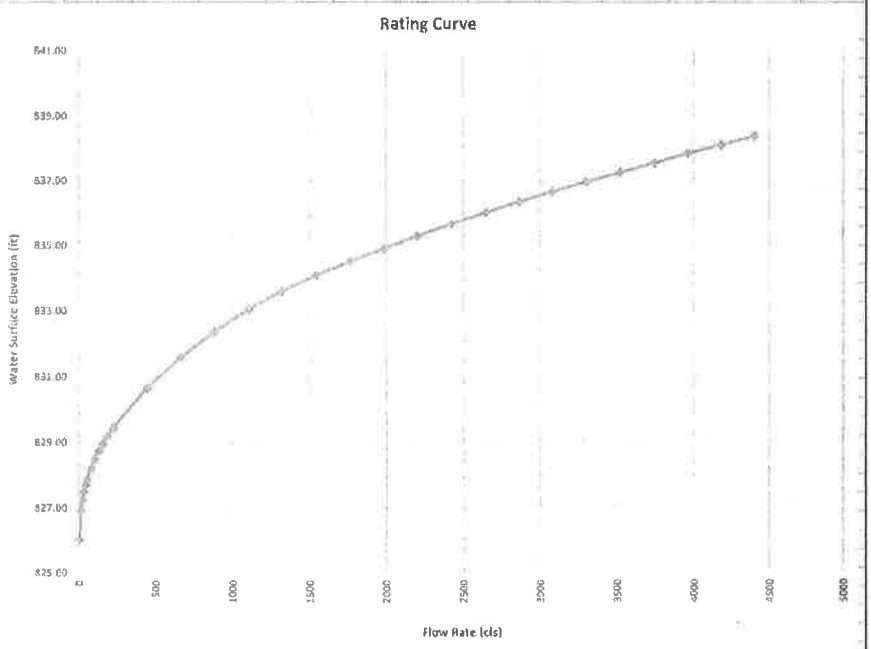
Notes:

1. The stream gauge is located at upstream side of the pedestrian bridge over 5 Mile Creek near Candlewood Drive. A HEC RAS model was created that extend a couple hundred feet upstream and downstream of the pedestrian bridge to estimate the water depth at multiple flow rates. The cross sections for the HEC RAS model were cut in ArcMap using the City of Levenworth 2' contours. Manning's roughness values were estimated using 2008 aerial photos provided by the City. The results of the HEC RAS model are used to create a rating curve at the stream gauge location.

2. Prepared By:
   Water Resources Solutions
   8800 Linden Drive
   Prairie Village, Kansas 66207
   February 2015

Channel Elevation (ft)	Water Depth (ft)	WSEL (ft)	Flow rate (cfs)
826.00	0.00	826.00	0
826.00	0.90	826.90	10
826.00	1.24	827.24	20
826.00	1.48	827.48	30
826.00	1.68	827.68	40
826.00	1.85	827.85	50
826.00	2.20	828.20	75
826.00	2.48	828.48	100
826.00	2.72	828.72	125
826.00	2.93	828.93	150
826.00	3.16	829.16	180
826.00	3.43	829.43	220
826.00	4.64	830.64	440
826.00	5.58	831.58	660
826.00	6.35	832.35	880
826.00	7.03	833.03	1100
826.00	7.59	833.59	1320
826.00	8.07	834.07	1540
826.00	8.49	834.49	1760
826.00	8.89	834.89	1980
826.00	9.28	835.28	2200
826.00	9.65	835.65	2420
826.00	10.00	836.00	2640
826.00	10.34	836.34	2860
826.00	10.65	836.65	3080
826.00	10.95	836.95	3300
826.00	11.24	837.24	3520
826.00	11.54	837.54	3740
826.00	11.83	837.83	3960
826.00	12.10	838.10	4180
826.00	12.37	838.37	4400

Stream Gauge Elevation	827.00
Flow Rate	12.94



5 Mile Creek - 2nd Street Bridge Stream Gauge

City of Leavenworth

DOWNSTREAM

Notes:

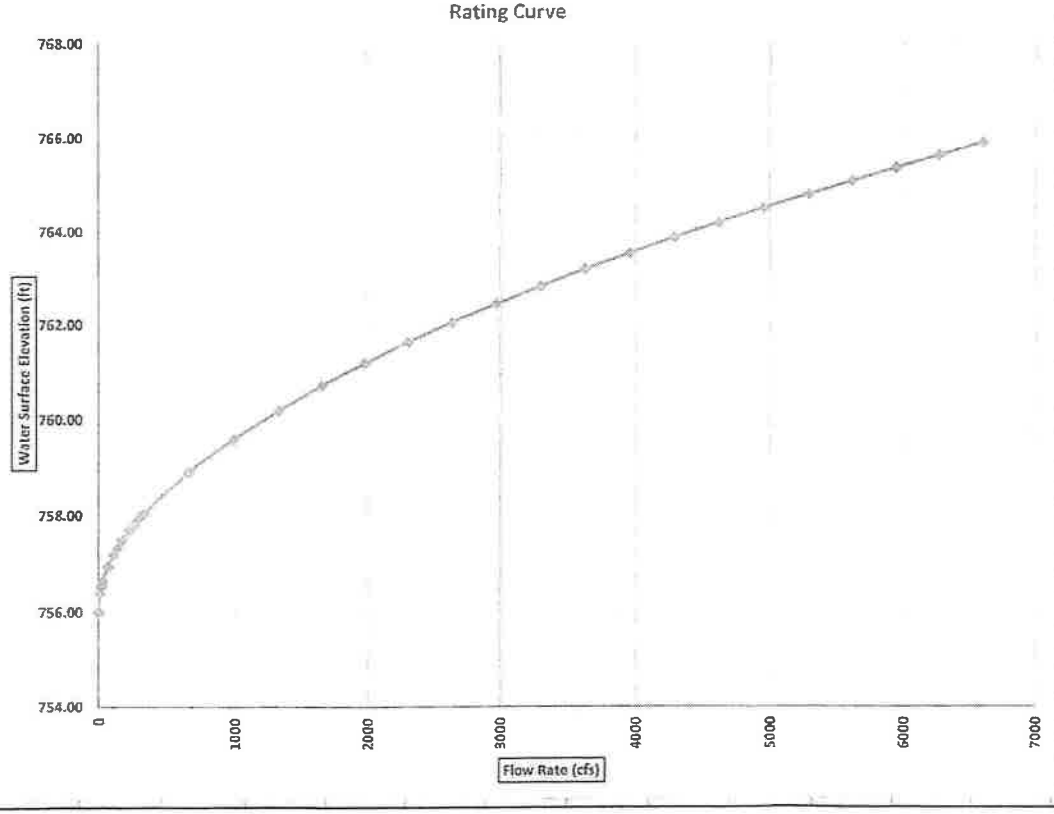
1. The stream gauge is located at upstream side of the 2nd Street bridge over 5 Mile Creek. A HEC RAS model was created that extend a couple hundred feet upstream and downstream of the 2nd Street bridge to estimate the water depth at multiple flow rates. The cross sections for the HEC RAS model were cut in ArcMap using the City of Levenworth 2' contours. Manning's roughness values were estimated using 2008 aerial photos provided by the City. The results of the HEC RAS model are used to create a rating curve at the stream gauge location.

2. Prepared By:

Water Resources Solutions
8800 Linden Drive
Prairie Village, Kansas 66207
February 2015

Channel Elevation (ft)	Water Depth (ft)	WSEL (ft)	Flow rate (cfs)
756.00	0.00	756.00	0
756.00	0.38	756.38	10
756.00	0.53	756.53	20
756.00	0.64	756.64	30
756.00	0.95	756.95	70
756.00	1.19	757.19	110
756.00	1.31	757.31	135
756.00	1.49	757.49	175
756.00	1.69	757.69	225
756.00	1.83	757.83	265
756.00	1.96	757.96	305
756.00	2.04	758.04	330
756.00	2.91	758.91	660
756.00	3.59	759.59	990
756.00	4.17	760.17	1320
756.00	4.70	760.70	1650
756.00	5.18	761.18	1980
756.00	5.62	761.62	2310
756.00	6.04	762.04	2640
756.00	6.43	762.43	2970
756.00	6.81	762.81	3300
756.00	7.17	763.17	3630
756.00	7.51	763.51	3960
756.00	7.85	763.85	4290
756.00	8.17	764.17	4620
756.00	8.48	764.48	4950
756.00	8.78	764.78	5280
756.00	9.07	765.07	5610
756.00	9.35	765.35	5940
756.00	9.62	765.62	6270
756.00	9.89	765.89	6600

Stream Gauge Elevation	757.00
Flow Rate	78.33



Appendix B – N/A

APPENDIX B WATER MONITORING RESULTS

N/A

PHASE I OPERATOR (Industrial & high risk run-off control pollutants within the MS4)

Site Name: _____

Site Number: _____

Event Rainfall Total: _____ Inches

Lake: ☐ Stream: ☐

Estimated Stream Flow: _____ CFS

Stream Level Conditions: _____ (Rising, Falling, Steady)

Stream Velocity Conditions: _____ (Rapid/Normal, Still (backwater))

Sample Date: _____

Parameters & Units Required	Results*	Sample Type Grab	Composite
Oil & Grease (mg/l)		☐	☐
Chemical Oxygen Demand (mg/l)		☐	☐
pH (S.U.)		☐	☐
Biochemical Oxygen Demand (5-day)		☐	☐
Total Suspended Solids (mg/l)		☐	☐
Total Phosphorus (mg/l)		☐	☐
Total Kjeldahl Nitrogen (mg/l)		☐	☐
Nitrate + Nitrite (mg/l)		☐	☐
Other Pollutant in Guidelines		☐	☐
Other Pollutant In permit		☐	☐
Other		☐	☐
Other		☐	☐

Comments: _____

Footnotes and comments

* Any result shown in analytical report to be ND (non-detect) must be shown as < with the reporting/detection limit by the certified laboratory.

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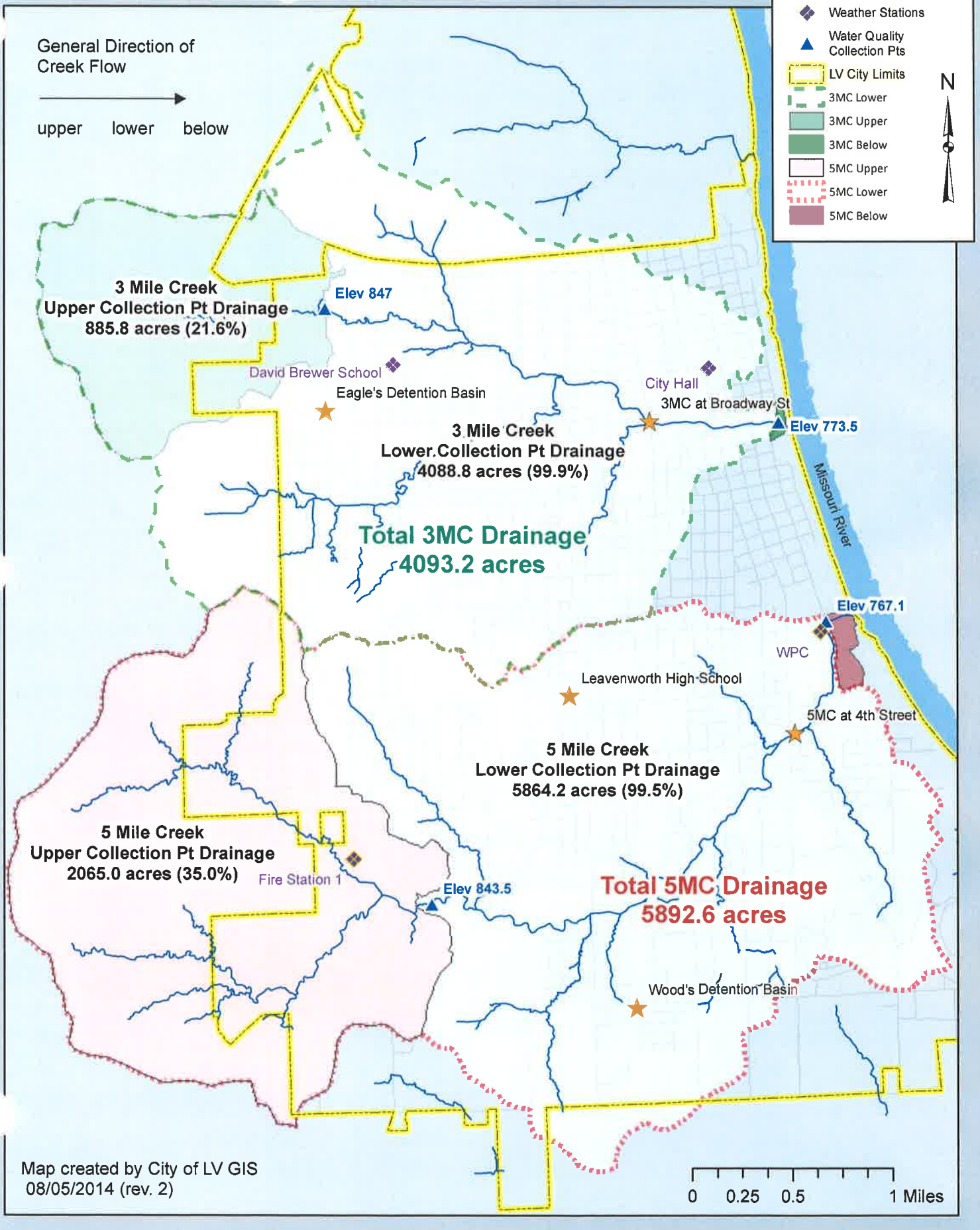
Appendix C
Selected Maps and Charts related to measurement of rainfall and stream stage with comments

- **Overview map of drainage basins, water quality sampling points, rain gauges and detention basins**
- **Selected graphs of Three-Mile and Five-Mile Creek with comments**
- **Selected Graphs of detention basins with comments**

City of Leavenworth, KS
Stormwater Management Data Collection



City of Leavenworth

February 27, 2014

Observations – Detention Basins and Rainfall

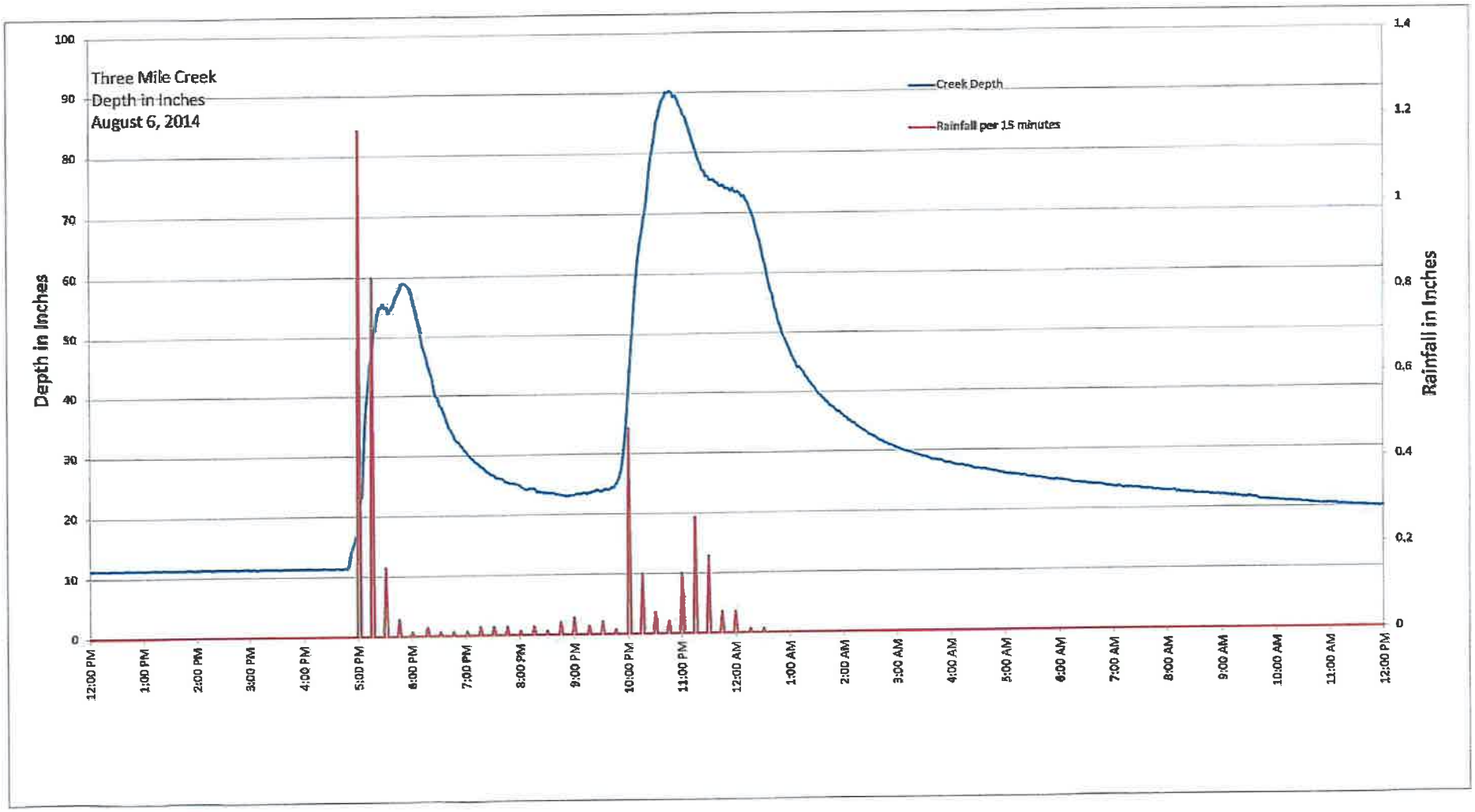
City maintains four rain gauges throughout the year. The detention basins measurements are obtained from portable devices installed in the Spring and removed in the Fall. Locations may vary depending on local concerns or an effort to evaluate the effectiveness of the basins.

All rainfall and all depth are stored on city computers, and simple graphs created to be evaluated by staff and interested outside parties (engineers, contractors, other local governments)

The detention basins were rarely tested in 2014 as there were no rains to fill the basins to any great capacity. What was noticed is that the outfalls are generously designed which staff believes contributes to a general public perception that the basins are ineffective. The recordings have demonstrated to several citizens that there is storage in the basins, but it does not last long.

The recorded data was used at the "Eagles Site" (20th and Shawnee) to assist with modifications to ensure proper drainage during non-rainy periods. By using the data and working with the designer a satisfactory adjustment was completed.

Staff has had general discussions with engineers on revising the criteria used for detention basins to be more effective on smaller storms. This will be used in design of future installations.


Three Mile Creek
Depth in Inches
August 6, 2014
Creek Depth
Rainfall per 15 minutes
Depth in Inches
Rainfall in Inches
100
90
80
70
60
50
40
30
20
10
0
1.4
1.2
1
0.8
0.6
0.4
0.2
0
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
12:00 AM
1:00 AM
2:00 AM
3:00 AM
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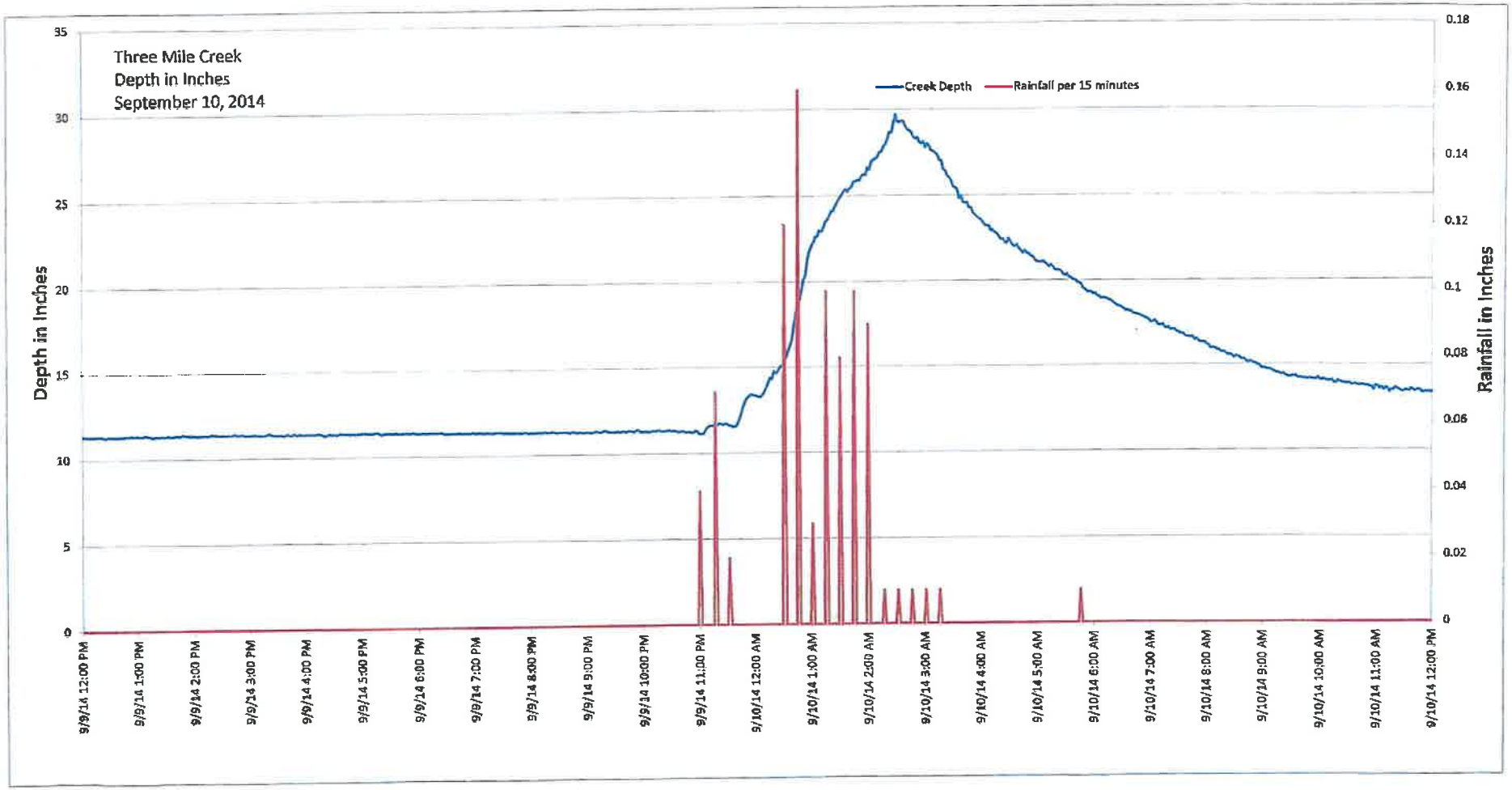
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM


Three Mile Creek
Depth in Inches
September 10, 2014
Creek Depth
Rainfall per 15 minutes
Depth in Inches
Rainfall in Inches
35
30
25
20
15
10
5
0
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
9/9/14 12:00 PM
9/9/14 1:00 PM
9/9/14 2:00 PM
9/9/14 3:00 PM
9/9/14 4:00 PM
9/9/14 5:00 PM
9/9/14 6:00 PM
9/9/14 7:00 PM
9/9/14 8:00 PM
9/9/14 9:00 PM
9/9/14 10:00 PM
9/9/14 11:00 PM
9/10/14 12:00 AM
9/10/14 1:00 AM
9/10/14 2:00 AM
9/10/14 3:00 AM
9/10/14 4:00 AM
9/10/14 5:00 AM
9/10/14 6:00 AM
9/10/14 7:00 AM
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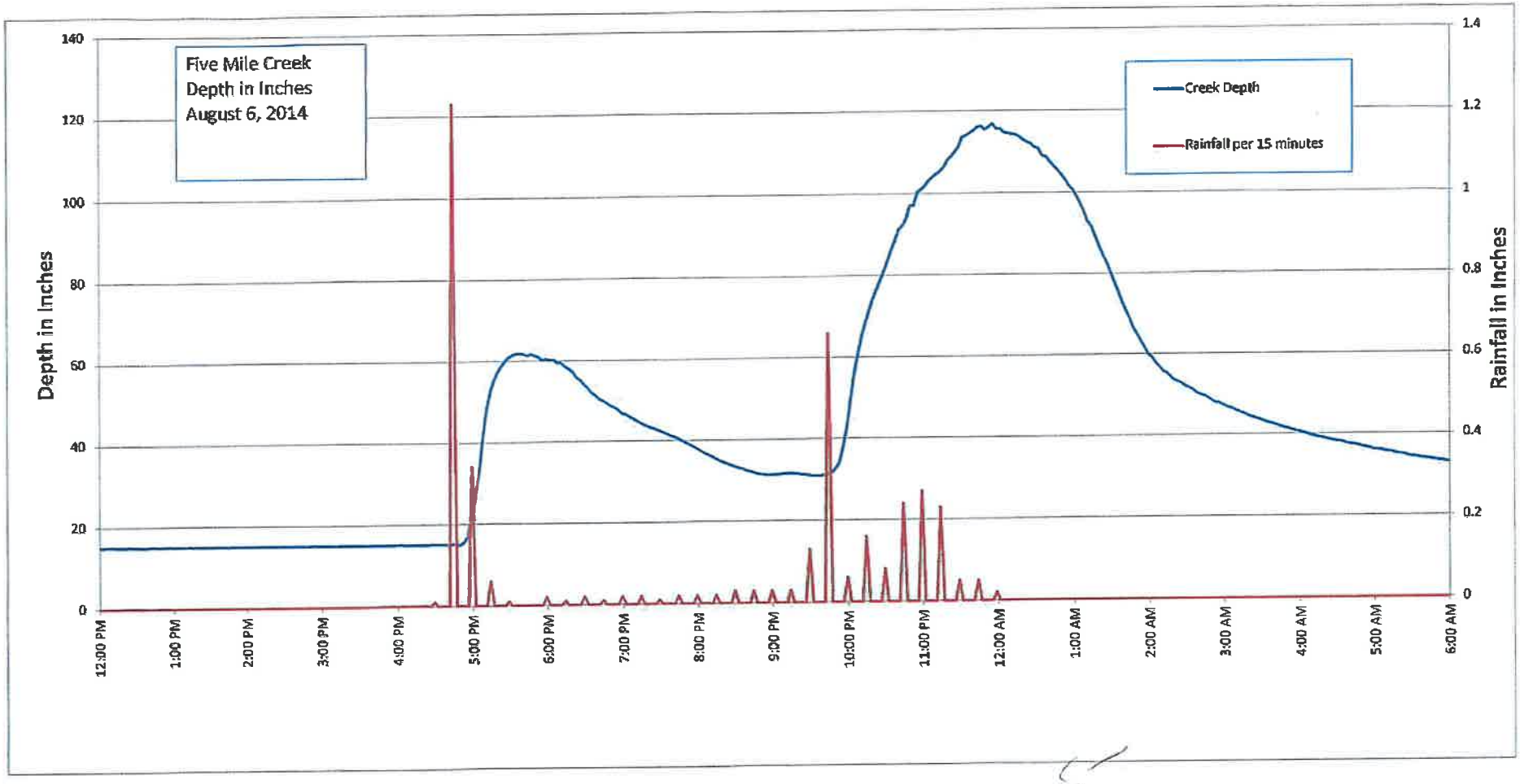
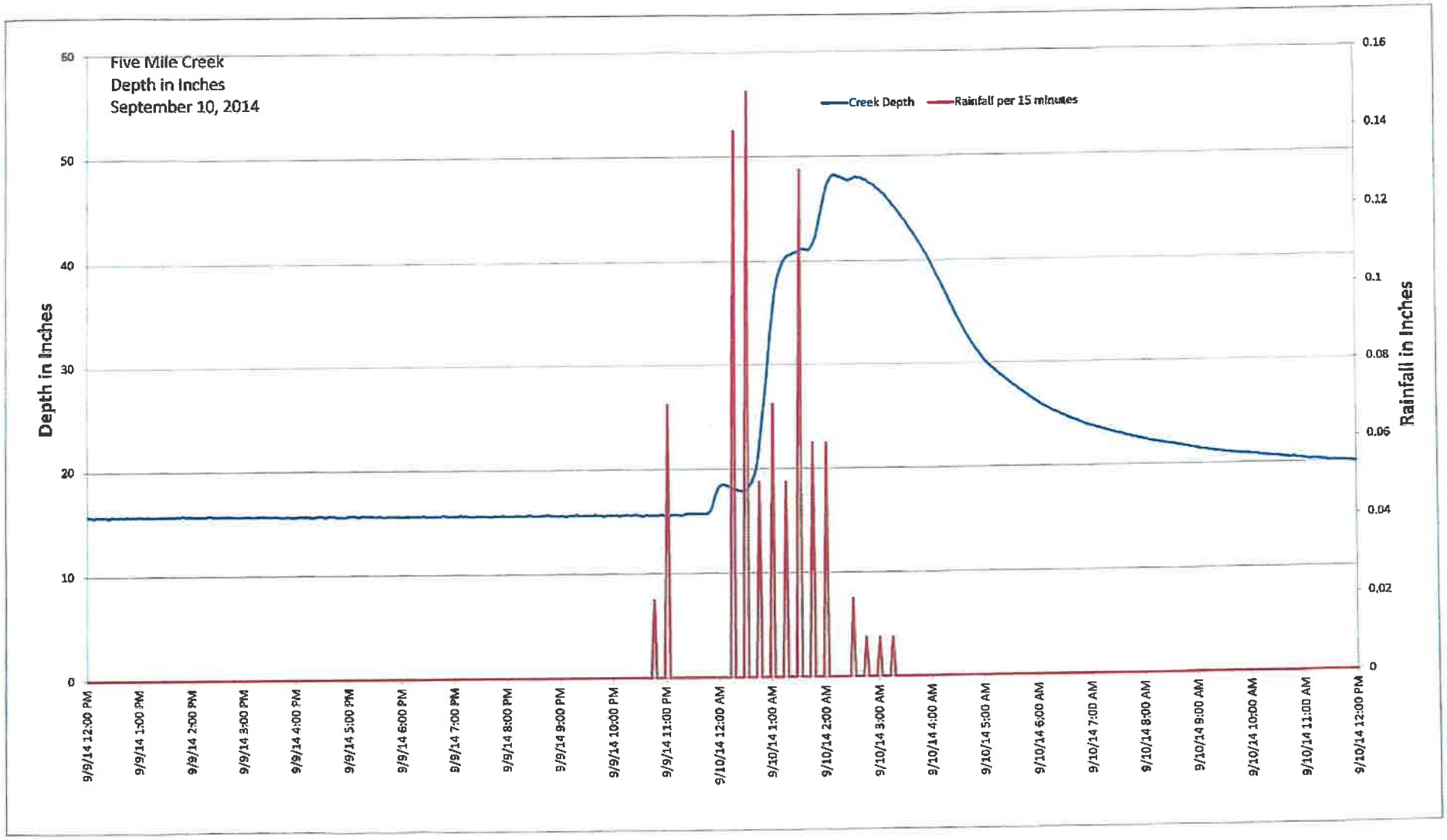
9/10/14 9:00 AM
9/10/14 10:00 AM
9/10/14 11:00 AM
9/10/14 12:00 PM


Five Mile Creek
Depth in Inches
August 6, 2014
Creek Depth
Rainfall per 15 minutes
Depth in Inches
Rainfall in Inches
140
120
100
80
60
40
20
0
1.4
1.2
1
0.8
0.6
0.4
0.2
0
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM


Five Mile Creek
Depth in Inches
September 10, 2014
Creek Depth
Rainfall per 15 minutes
Depth in Inches
Rainfall in Inches
60
50
40
30
20
10
0
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
9/9/14 12:00 PM
9/9/14 1:00 PM
9/9/14 2:00 PM
9/9/14 3:00 PM
9/9/14 4:00 PM
9/9/14 5:00 PM
9/9/14 6:00 PM
9/9/14 7:00 PM
9/9/14 8:00 PM
9/9/14 9:00 PM
9/9/14 10:00 PM
9/9/14 11:00 PM
9/10/14 12:00 AM
9/10/14 1:00 AM
9/10/14 2:00 AM
9/10/14 3:00 AM
9/10/14 4:00 AM
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9/10/14 7:00 AM
9/10/14 8:00 AM
9/10/14 9:00 AM
9/10/14 10:00 AM
9/10/14 11:00 AM
9/10/14 12:00 PM

City of Leavenworth

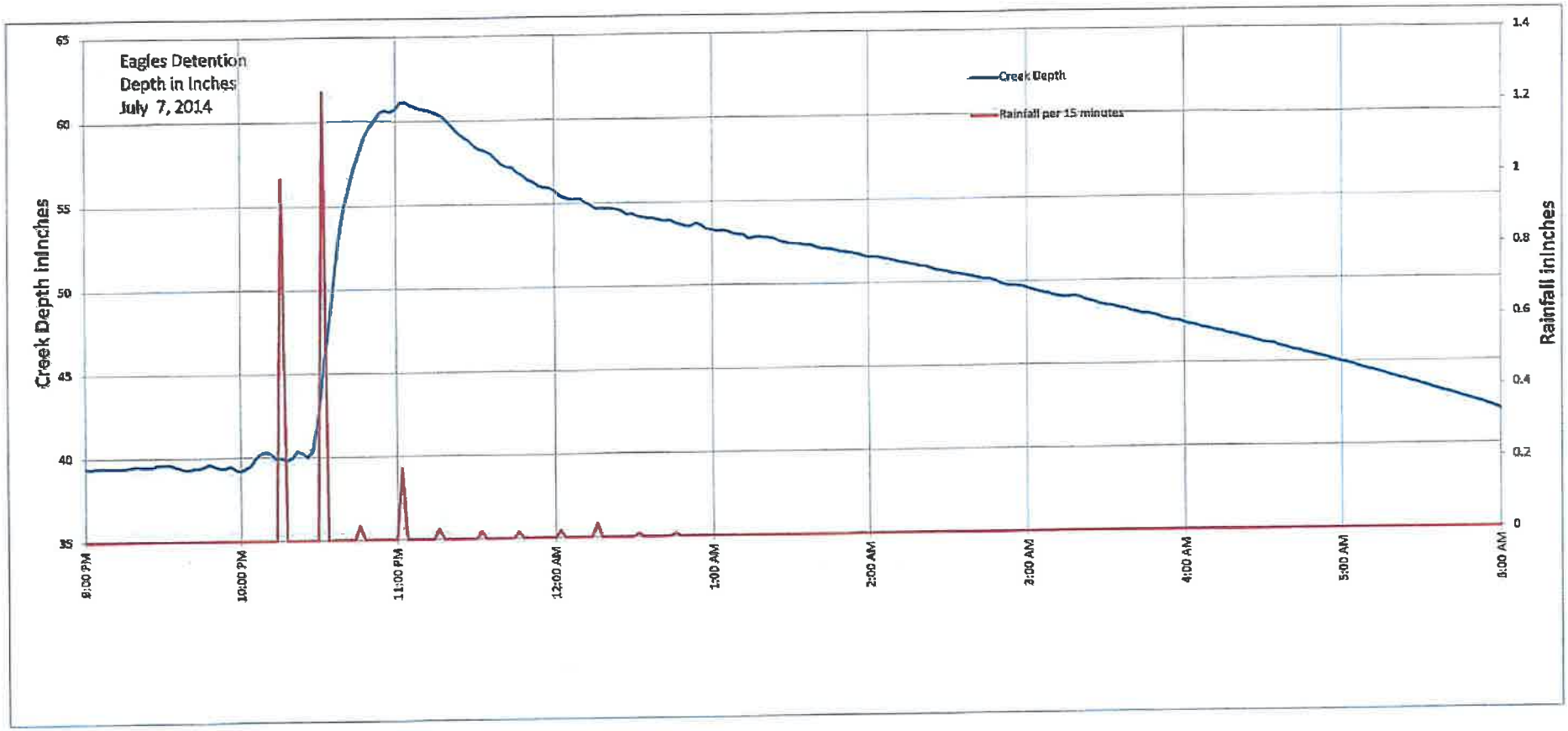
February 27, 2014

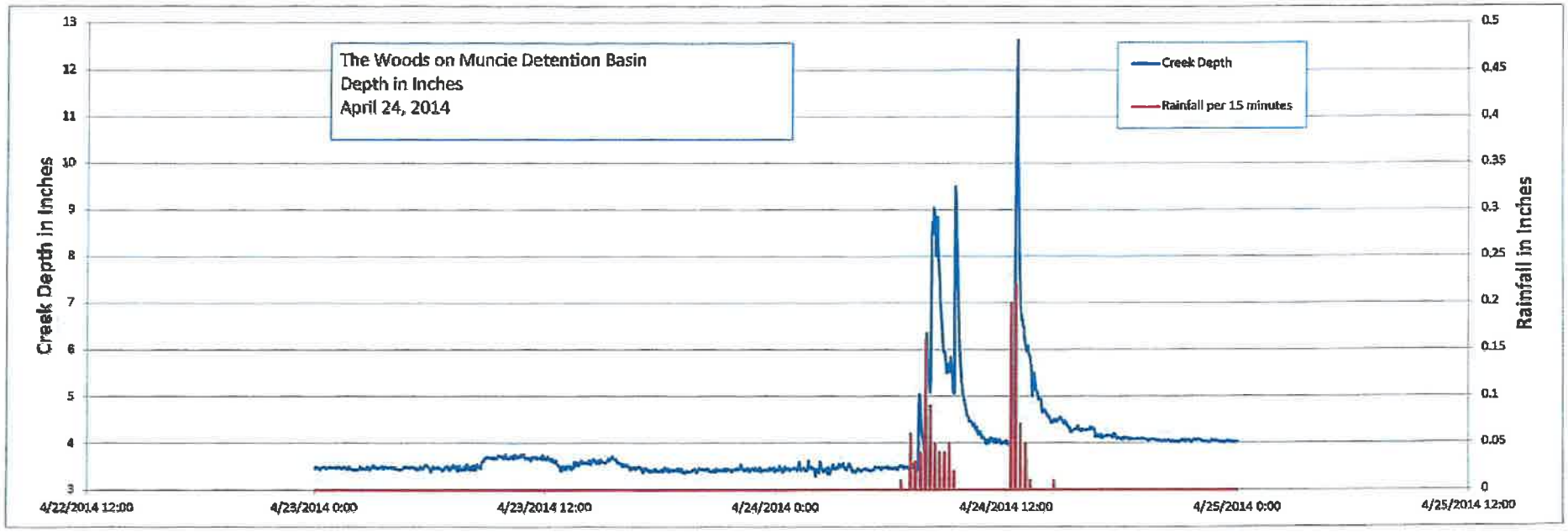
Observations - Stream Stage and Rainfall

City maintains four rain gauges throughout the year. The stream measurements and detention basin measurements are obtained from portable devices installed in the Spring and removed in the Fall. All rainfall and all stage data are stored on city computers, and simple graphs created to be evaluated by staff and interested outside parties (engineers, contractors, other local governments)

The following charts are only a sample of the entire recorded weather for the year 2014. They show the close relationship between rainfall and stream stage. The stream measuring stations are shown on the overall map near the lower limits of each stream. The rainfall shown is from the closest guage to the measurement station.

The response of both 3-Mile Creek and 5-Mile Creek are extremely sensitive to rainfall, and rise rapidly. This creates difficulty in knowing when to respond for sampling events, especially after hours.


Eagles Detention
Depth in Inches
July 7, 2014
Creek Depth
Rainfall per 15 minutes
Creek Depth inInches
Rainfall inInches
65
60
55
50
45
40
35
1.4
1.2
1
0.8
0.6
0.4
0.2
0
9:00 PM
10:00 PM
11:00 PM
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM


The Woods on Muncie Detention Basin
Depth in Inches
April 24, 2014
Creek Depth
Rainfall per 15 minutes
Creek Depth in Inches
Rainfall in Inches
13
12
11
10
9
8
7
6
5
4
3
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
4/22/2014 12:00
4/23/2014 0:00
4/23/2014 12:00
4/24/2014 0:00
4/24/2014 12:00
4/25/2014 0:00
4/25/2014 12:00

Appendix D
Examples of Public Information and Involvement

Appendix D
Examples of Public Information and Involvement

• Spring 2014	City Newsletter
• April 3, 2014	Leavenworth Times "green" article
• April 5, 2014	Spring Clean-up Flyer
• April 2014	Spring Clean-up Summary
• April 13, 2014	Grease Trap Letter (126 sent)
• June 4, 2014	Grease Trap Follow-up Letter
• June 7, 2014	Missouri River Relief Event
• July 24, 2014	Storm Debris Disposal Summary
• October 17, 2014	County Wide Clean-up Effort

Know the code

From the Leavenworth Planning and Zoning Department
Call 913-680-2626 to report a violation or visit www.lvks.org.

rd Maintenance
l drainage ditches on the property must be kept clear of all sh, brush and leaves. Snow removal is the responsibility of the ›perty owners/occupants and all sidewalks -- including the blic sidewalk -- must be kept free of all snow and ice.

rbage and Trash
efuse, rubbish, garbage and household trash cannot be left he yard and must be disposed of properly. This includes auto ts, appliances, furniture, building materials, tires, cardboard, stics or any other collected materials. Tree trimming and en limbs must be disposed of within a week.

ık on Private Property
ty ordinance states: It shall be unlawful to park, store, leave or mit the parking, storing or leaving of any vehicle, machinery, oliances, implements or equipment, including abandoned, carded or unused objects or equipment such as automo-es, furniture, stoves, refrigerators, freezers, cans or contain-, lumber, junk, trash or other debris, which is in a wrecked, ıked, partially dismantled, inoperative, unsafe or abandoned ıdition on private property in the City, so located upon the es as to be visible from any public place or any surround-ivate property, unless it is in connection with a business terprise properly operated in the appropriate business zone rsuant to the zoning laws and other ordinances of the City.

hicles
All vehicles must be operable and legally licensed or stored in enclosed structure. All cars not enclosed must be parked in an proved driveway or parking area. Vehicles may not be parked any lawn/ yard area. All vehicle parking spaces shall be paved. ıvel is only allowed off an alley and as a parking pad and must ve a border around all four sides to contain the gravel.
RV's, boats, and campers may be parked for no more than 72 urs per month in the front or side yards, but may be parked in back yard on a paved or aggregate block surface definitely.

- No commercial vehicles or trailers (12,000 Gross Vehicle Weight), including but not limited to panel trucks, large equipment trailers, semi-trailers, etc., can be parked overnight in a residential area.
- Small utility trailers may be parked on the property (less than 12,000 Gross Vehicle Weight), including small trailers for hauling, leaves, wood or other yard debris.

Storm Damage of Trees
Property owners have three months after a storm to remove all tree damage from a property.

Open Storage
Property may not be parked, stored, or left inoperable in view of the public or neighboring properties. This includes abandoned, discarded or unused objects or equipment such as automobiles, furniture, appliances, cans or containers, construction materials, junk, trash, or other debris.

Building Maintenance
The maintenance of a structure is the responsibility of the property owner. Exterior surfaces, including out buildings, fences and attached structures must be maintained free of breaks, holes, rotten wood, chipped and peeling paint, broken windows or doors, rust or any other condition that violates health, fire, building or zoning codes or other regulations.

Fences
All fences require a permit before being built. Electric and barbed wire fences are prohibited. Only 4-foot, see-through fences are permitted in front of the house. Six-foot, solid fences may be permitted on the sides and rear of a house. No fences are allowed on public property.

Signs
All commercial signs require a permit before being installed. Each residence may have a single identification sign not to exceed two-square feet on each side. Real estate sale signs shall be kept behind the sidewalk. No sale signs are permitted off site.

.eavenworth Public Library

417 Spruce Street
leavenworthpubliclibrary.org

er the October Zombie Extravaganza, ung Adults can delve into everything m Shakespeare to The Hobbit. Winter ecember 23 – January 4, will be ed ated with indoor activities such strategic board gaming, and puzzle coration.
e Children's Department has a busy iday season planned, from Black Friday-Library Style on November 29, to Saturday with Santa on December 14. We will also have Winter Break activities daily from December 23 – January 4. Plan to spend the holidays with the Leavenworth Public Library!

Leavenworth Public Library
Read. Explore. Connect.

YOUR Library is hosting two GREAT events, one to the end 2013 and the other to launch 2014. To celebrate the end of a remarkable year YOUR Library features our inaugural Gingerbread Creation Event! Creations are due for public display Saturday, December 6 by 10 a.m. Kicking off 2014 YOUR Library celebrates Kansas Day our own way! We ask the community of Leavenworth to capture in film the GREAT state of Kansas with our Kansas Day 2014 Photo Contest. Rules are posted on the Library's website. Be sure to check our website, www.leavenworthpubliclibrary.org, for more programs and events just for YOU! "LIKE" us on Facebook too!

City's new Fire Chief brings nearly 40 years' experience to job

Gary Birch began his position as Leavenworth Fire Chief October 24. He was hired after an extensive process that included a hiring committee consisting of local fire leadership.

Birch comes to the City of Leavenworth with nearly 40 years of experience in fire supression. He spent 27 years with the Kansas City, Mo., Fire Department. He also worked for seven years at the Liberty, Mo., fire department before retiring there as Fire Chief in 2010. Birch then moved on to serve fire departments in northwest Arkansas. He decided to move back to the Kansas City area to be closer to family. Birch took over from Acting Fire Chief Mark Nietzke, who resumed his duties as Assistant Fire Chief.

The Leavenworth Fire Department has 57 firefighters who respond to a variety of emergency incidents including medical emergency, hazardous material responses, trench rescues, automobile extractions, electrical emergencies and ice and water rescues. In 2012, the Leavenworth Fire Department responded to more than 2,300 emergency calls, 130 of which were fire-related emergencies. The Fire Department also conducts education and prevention visits to schools and conducts business and daycare inspections. Visit the Fire Department online at www.lvks.org.

First Time Home Buyer Program

The City of Leavenworth has funds available for qualified low- to moderate income first time home buyers who are currently renting in Leavenworth and would like to purchase a home within the city limits. Through the Community Development Block Grant, the City can provide up to $12,000 for interest rate buy down, mortgage rate buy down, and/or down payment assistance. Applicants must be pre-approved for a mortgage and meet income eligibility requirements as defined by HUD guidelines:

Household	Low	Moderate
1	$24,950	$39,900
2	$28,500	$45,600
3	$32,050	$51,300
4	$35,600	$56,950
5	$38,450	$61,550
6	$41,300	$66,100
7	$44,150	$70,650
8	$47,000	$75,200

*Figures are adjusted annually by the Department of Housing and Urban Development; current rates effective as of Dec. 2012 and are subject to change Dec. 2013.

For more information, contact Linda Cooper, Community Development Coordinator, at (913) 680-2628 or email lcooper@firstcity.org.

Leavenworth CDGB provides program to help homeowners make repairs

The City of Leavenworth has funds available to assist qualified low- to moderate-income homeowners through the Community Development Block Grant, administered by the U.S. Department of Housing and Urban Development. The City can provide up to $6,000 for emergency repairs, handicap accessibility, minor exterior rehab projects or weatherization repairs.

Applicants must meet income eligibility requirements as defined by HUD guidelines for low and moderate income. The applicant must be the homeowner and occupant. Insurance and property taxes must be current and the home must be located within the city limits of Leavenworth.

For additional requirements and guidelines or to request an application contact Linda Cooper, Community Development Coordinator, at 680-2628 or e-mail lcooper@firstcity.org.

BRUSH SITE HOURS AND CHRISTMAS TREE DISPOSAL

The Brush Site, 1803 S. 2nd. St, will switch to winter hours beginning in December, open on Saturdays only, 8 a.m. to 4 p.m., through February 2014. The first Saturday of each month is free to residents. Christmas tree disposal is free for two weeks following Christmas: Dec. 26, 27, 28, 31 and Jan. 2, 3, 4, 7, 8, 9, 10 and 11. Regular hours begin March 1.

Your News

SHARE YOUR

NATURE PHOTOS

Send us your nature photos, and we will run some in the newspaper. Send with your name and a daytime phone number to news@leavenworthtimes.com.

READERS PHOTOS

TAKING A BREAK

Leavenworth Times reader Brian Voorhees sent in this photo of a Western Meadowlark. To submit photos for publication, email news@leavenworthtimes.com. SUBMITTED PHOTO

DATEBOOK

Today

■ 3:45 p.m. The **Leavenworth Area Retired School Personnel Association** meets at The Heritage Center, 109 Delaware St. League of Women Voters member Linda Johnson will make a presentation on voter registration. The meeting is open to anyone retired from a Leavenworth County School. Call Sandy at (913) 651-2527.

■ 6 p.m. The **Lansing High School** girls soccer team plays KC Christian at Lansing High School, 220 Lion Lane.

■ 7 p.m. **Taizé prayer** takes place in Annunciation Chapel on the campus of the Mother House of the Sisters of Charity of Leavenworth, 4200 S. Fourth St.

The event is open to the public. Call (913) 680-2342 or visit www.marillacenter.org.

Friday, April 4

■ 8 a.m.-4 p.m. The **Lansing Citywide Garage Sale** takes place in Lansing.

The city advertises each participant by publishing a list of garage sale locations and placing information on the city's website, www.lansing.ks.us.

Email Sundae Holler at holler@lansing.ks.us or call (913) 727-5488.

■ Noon. **The University of Saint Mary** softball team plays Ottawa University in a doubleheader at USM, 4100 S. Fourth St.

■ Noon. **The University of Saint Mary** baseball team plays Ottawa University in a doubleheader at USM, 4100 S. Fourth St.

■ Noon to 1 p.m. **Kansas State Research and Extension-Leavenworth County** hosts Knowledge @ Noon at Leavenworth Public Library, 417 Spruce St.

The event is open to anyone.

■ 3-8 p.m. **"Thunder In the Valley,"** a classic car and bike show benefitting veterans, takes place in Easton.

A swap meet, flea market and a free street dance takes place from 3-11:30 p.m.

Call Chris Blockburger at (913) 683-2419.

■ 6 p.m. The **Lansing High School** girls soccer team plays Tonganoxie at Lansing High School, 220 Lion Lane.

Saturday, April 5

■ 8 a.m.-4 p.m. The **Lansing Citywide Garage Sale** takes place in Lansing.

The city advertises each participant by publishing a list of garage sale locations and placing information on the city's website, www.lansing.ks.us.

Email Sundae Holler at holler@lansing.ks.us or call (913) 727-5488.

■ 8 a.m.-6 p.m. **"Thunder In the Valley,"** a classic car and bike show benefitting veterans, takes place in Easton.

Proceeds benefit Veterans of Foreign Wars, American Legion, Easton Veterans Memorial and Leavenworth Veterans Memorial. Call Chris Blockburger (913) 683-2419.

■ 10 a.m. The **Leavenworth County Special Olympics** track clinic takes place at Leavenworth High School, 2012 10th Ave.

Friday, April 4
629 Meadowlark Rd.
357 Ash Ln.
1200 Joshua Ct.
813 S. Valley

Saturday, April 5
[illegible]bra
[illegible]ne
[illegible] St.

210 E. Connie
101 Timbercreek Cir.
112 Woodland
137 Woodland
220 Valley Dr.
412 Caraway Pl.
131 Brookwood
606 Pebble Beach
670 Hillside Ct.
100 Crestview
118 Crestview
301 Crestview
116 Fernclif[illegible]

Clean out in a safe, green way

Lynn Youngblood | The Green Space

I have a friend who pours used motor oil down the street storm drain.

He tells me that is how he has always done it and it does not really hurt anything. I have explained how it all works.

Whatever someone pours down storm drains, sooner or later will end up in the Missouri River.

That is why Scout groups, school kids, and others, stencil the fish with the saying, "This leads directly to the river." So many people do not get this.

Don't get me wrong, by no means is this older gentleman dumb or stupid, it's just how he's always done it.

Lucky for us, local municipalities are now helping citizens get rid of chemicals and other hazardous materials that have accumulated around their house. These municipalities have chosen April as their annual Household Hazardous Waste (HHW) collection month.

According to past "City Scene" newsletters, a publication of the City of Independence, "...this is the largest collection event sponsored by any city in the region.

In previous years Independence has held the mobile collections, citizens have disposed of more than 343 tons of hazardous waste."

All homes use products for cleaning, painting, yard and garden pesticides/herbicides, and automotive fluids, batteries, etc., but a lot of people just do not pay attention to the print on the container that these items need special disposal.

Most homes do not dispose of hazardous waste containers properly.

Independence officials state, "Chemical-based household products from a single home may seem insignificant, but when millions of homes use similar products, the combined effect becomes a major problem if they are handled, stored or disposed of improperly.

The health and safety of people and animals, as well as the environment, is endangered when this type of product is discarded in the trash, poured down sinks or in storm drains."

Typical hazardous products collected at the drive include, cleaners (lye, drain, toilet and tub, oven, etc.) paint and paint products (aerosol cans, varnish, stripper, thinner, turpentine, etc.) fluorescent light bulbs; rat poison; pesticides and herbicides; automotive fluids (antifreeze, motor oil, brake fluid, transmission fluid.); all battery types; kerosene; mercury thermometers; unused or outdated medicines; household fluids labeled flammable, toxic, corrosive, or reactive; all qualify as household hazardous waste (HHW).

Start looking under your sinks, laundry room, storage area, shed, and garage for all of those chemicals that are old, outdated, or you don't use any longer.

This is the time to clean out in a safe, GREEN way! No more dumping down the drain – It will end up in our water!

Hazardous Waste Collection will be hosted at this site for their residents: Leavenworth: Recycling Center, one block west of the Municipal Service Center (790 Thornton), at the intersection of Lawrence and Halderman Streets. – open Tuesday through Saturday 8:30 a.m. to 12:30 p.m.: 913/682-0650.

Spring CLEAN-UP

Dear Leavenworth residents and businesses,

The City is seeking volunteers to help us meet our goal of cleaning up the entire City of Leavenworth in one day. Scout troops, church groups, social service organizations and even local businesses are asked to sign up to pick up trash for the Citywide Spring Cleanup Saturday, April 5, 2014.

Volunteers who sign up will receive a free T-shirt and one-day pass to Wollman Aquatic Center in Leavenworth.

The event begins with a kick-off 8:30 a.m. April 5 at Richard Warren Middle School, 3501 New Lawrence Road in Leavenworth. Groups will pick up their packages of T-shirts, plastic gloves, trash bags, instructions and a map at the kick-off and can also grab some free doughnuts, coffee and juice. From there, volunteer groups will go to their assigned location, pick up trash, then contact the City of Leavenworth to pick up trash bags.

Other services available on Citywide Spring Cleanup Day are:

- Citizens Savings and Loan free shredding service, taking place at their location, 5151 S. 4th St., from 10 a.m. to 12:45 p.m. and the downtown location, 312 S. 4th St., from 1-2 p.m. Community members may bring documents to shred for free. Cardboard boxes cannot be shredded.
- Leavenworth Brush Site, 1803 S. 2nd St., will be open 8 a.m. to 3:50 p.m. April 5 for free disposal of tree limbs, grass clippings, straw, hay, leaves and other organic materials.
- The Leavenworth Recycling Center, at Lawrence and Halderman streets, will be open 8:30 a.m. to 12:30 p.m. April 5 and accepts old electronics, aluminum cans, most plastic, most glass and paper products. It also accepts used car batteries and household hazardous waste, such as paint or cleaning chemicals that should not be disposed of through regular trash or the sewer system. Check the City's website, **www.lvks.org**, for more information.

Thank you to all who have made this event a success in the past and we look forward to seeing you Saturday, April 5!

Melissa Bower, Public Information Officer,
City of Leavenworth

Thanks for taking pride in your community!

We are proud once again to help sponsor the City of Leavenworth's Annual Spring Clean-Up!

This is our community and it's important for us all to take pride in its appearance.

If you haven't already, please volunteer to be a part of this year's Spring Clean-Up by gathering a group of co-workers, friends, family or other volunteers and contact Melissa Bower at 913-680-2610! Your help picking up trash, bottles, cans, etc., will make a big difference in keeping this community clean.

In addition, Citizens Savings and Loan will host free shredding at our two locations on April 5th. Shredding will take place from 10 a.m. to 12:45 p.m. at 5151 S. 4th St. and from 1 p.m. to 2 p.m. at 312 S. 5th St., so clean our your unwanted documents, tax returns or cancelled checks and unload your boxes at these locations.

It is our hope that this community spirit will spread and our efforts will prevail throughout every day of the year, not just this one day!

This is our City - Let's help keep it clean!

Thanks for your involvement.

Ron Romig, President

Help Keep Leavenworth Clean

Join us on
April 5th, 2014

Brochure sponsored by: Citizens Savings & Loan Association FSB, Member FDIC

City of Leavenworth
Code Enforcement

The City of Leavenworth Planning and Zoning Office is responsible for overseeing that residents in the city comply with the current housing and property maintenance codes.

The City of Leavenworth has three, full-time code enforcement officers. To report problems with private property overgrown grass, weeds and other nuisances or other code violations, phone (913) 680-2626 or send an email to the Code Enforcement Office at ReportViolations@firstcity.org. Also, don't forget that you can now report a code violation online. Visit www.lvks.org for this very easy options!!!

What are the most common code violations?

These are guidelines only. For actual regulations, see the Leavenworth Municipal Code or the Property Maintenance Code.

Yard Maintenance

Grass and weeds must be kept shorter than 12-inches. All ground covers and vines shall be maintained to discourage undesirable creatures. Any noxious weeds are to be removed. Owners/occupants of properties abutting sidewalks, streets or public property shall maintain all vegetation so it does not interfere with travel or sight. Special care should be taken at intersections. Approximately 30% of overall code violations stem from weeds and tall grass violations. The City Commission approved a regulation that allows the City to charge an additional administration penalty per parcel of private land mowed; this is charged per mowing in addition to the cost of mowing.

Vehicles

All vehicles must be operable and legally licensed or stored in an enclosed structure. All cars not enclosed must be parked in an approved driveway or parking area. Vehicles may not be parked on any lawn/yard area. All vehicle parking spaces shall be paved. Gravel is not allowed.

RVs, Boats, Trailers

Recreational equipment shall not be parked in the front or side yard for more than 48 hours in any month. RVs and Trailers may not be used for living space. All such equipment must be located in an approved parking space or drive, not in the yard.

Garbage & Trash

Refuse, rubbish, garbage, and household trash cannot be left in the yard and must be disposed of properly. This includes auto parts, appliances, furniture, building materials, tires, cardboard, plastics, or any other collected materials. Tree trimming and fallen limbs must be disposed of within a week. Residential trash cannot be placed curbside until the evening, prior to scheduled pickup. It is unlawful to burn garbage within the city.

For more information on trash service, the brush site or for special pick ups of larger items, furniture or appliances, please contact the Service Center at 682-0650.

Open Storage

Property may not be parked, stored, or left inoperable in view of the public or neighboring properties. This includes abandoned, discarded or unused objects or equipment such as automobiles, furniture, appliances, cans or containers, construction materials, junk, trash, or other debris.

Building Maintenance

The maintenance of a structure is the responsibility of the property owner. Exterior surfaces, including out buildings, fences, and attached structures, must be maintained free of breaks, holes, rotten wood, chipped and peeling paint, broken windows or doors, rust, or any other condition which violates health, fire, building or zoning codes, or other regulations.

Fences

All fences require a permit before being built. Electric and barbed wire fences are prohibited. Only 4-foot, see-through fences are permitted in front of the house. Six-foot, solid fences may be permitted on the sides and rear of a house. No fences are allowed on public property.

Signs

All commercial signs require a permit before being installed. Each residence may have a single identification sign not to exceed two-square feet on each side. Real estate sale signs shall be kept behind the sidewalk. No sale signs are permitted off site.

Useful Numbers

City of Leavenworth
- Animal Control: 682-0268
- Code Enforcement: 680-2626
- City Clerk: 682-9201
- Fire Department: 682-3346
- Police Department: 651-2260
- Public Works: 684-0375
- Service Center: 682-0650

Leavenworth County
- Recycling Facility: 727-2858

MEMORANDUM

TO: J. Scott Miller, City Manager

CC: Paul Kramer, Assistant City Manager
Michael G. McDonald, Public Works Director
Ed Davis, Superintendent City Operations
Curtis Marks, Sr., Solid Waste Foreman

FROM: Melissa Bower, Public Information Officer

SUBJECT: **SPRING CLEAN UP 2014 – AFTER ACTION REPORT**

The City of Leavenworth Spring Cleanup was held April 5, 2014 with 1,234 volunteers picking up trash throughout the City. This is about the same number of volunteers as the year before, with ten new groups participating this year. Volunteers received T-shirts and pool passes.

Business owner Shae Koonce picks up trash in downtown Leavenworth for the annual Citywide Spring Cleanup.

After some issues last year with Spring Cleanup trash bags being left around the community, we put an extra emphasis on making sure volunteer teams understood that they needed to contact the City to dispatch trash crews to pick up filled trash bags at specified locations. This was a success with three times the requests for pickups on that day than the year before, and very few reports of trash bags left behind. The Service Center switched to gray trash bags for the cleanup so we could identify those left behind by the event.

A group of 88 scouts and parents cleaned up Havens Park again this year, finding many items that appear to be illegally dumped in the City Park, including tires. Last year was the first year we assigned Havens Park as a cleanup site and the same group of scouts cleaned up the area in 2014. They reported seeing about the same amount of items as the year before.

In addition to the volunteer trash pickup, the City provided free limb disposal at the Brush site, free recycling services, free use of dumpsters and miscellaneous trash disposal and free document shredding. Household Hazardous waste, paint, cleaners and poisons were accepted by trained City of Leavenworth Solid Waste and Leavenworth County Transfer Station personnel on-site for proper disposal. The City also accepted E-waste such as old computers, televisions and electronics and sent them to UNICOR for further recycling.

City Staff assist community members with Household Hazardous Waste Disposal at Lawrence and Halderman streets April 5.

Solid Waste Division provided manpower by staffing one event supervisor, three equipment operators, two collectors assisting residents at the drop-off site with two operators working with hazardous material. The Brush site had one additional collector to assist the Brush site Attendant in operations. There was one collector taking count of residential customers at the document shredding locations at Citizens Savings and Loan. The Recycling

Center had its usual staffing with one attendant.

Costs to City (paid through Solid Waste Fund)	Results	Cost in 2013
-$2,005.27 in personnel costs -$560 yield in recycling from Batliner Construction	• Facilitated immediate removal of trash from more than 1,200 volunteers picking up throughout the City. • 251 car count at Recycling Center • 271 utilized miscellaneous trash disposal • 6.08 tons of recycling to Batliner Recycling • 1 ton of e-waste • 95 tires brought in for disposal • 110 gallons of paint, oil and chemicals brought to City for proper disposal • 114 residents visited Brush Site to dispose of 115 cubic yards of brush	$1,709.19 personnel costs (First year we combined Free First Saturday and Spring Cleanup, saving $1,700 in personnel costs.)
$3238.25 tipping fees at the Leavenworth County Transfer station		$770.35 tipping fees in 2013
$550 fees to ProShred Security for four hours of document shredding, split with Citizens Savings & Loan	Shredded and recycled 11,520 pounds of paper	$493.32 to Shred-It for 4 hours
$600 (estimated) for event, requested fewer hours to access school. Warren Middle School Honor Choir and JROTC provided entertainment. 55 dozen doughnuts were not enough.	Encouraged community spirit, distribute gloves, trash bags, incentives and gave last-minute safety precautions which resulted in one team contacting the police when they found an unsafe item.	About $600 for event
T-Shirts for volunteers about $5,000 with significantly lower bid.	1,234 volunteers – 22 less than year before, but 10 brand new groups.	T-Shirts for volunteers about $6,400
FREE- marketing Citizens Savings and Loan paid for the Leavenworth Times to distribute a trifold brochure about Spring Cleanup which included Code Enforcement information.	Several new groups of volunteers contacted us about the event after the brochure was published.	

April 13, 2012

[Property owner]

RE: Grease Interceptors

To whom it may concern,

In recent videotaping of sewer mains, it was determined you restaurant is causing an excessive amount of grease in the lines. Per The 2006 IPC, International Plumbing Code section 1003.3.5, Restaurants shall have automatic grease removal devices, interceptors and separators or grease traps to prevent the discharge of oil, and grease into public sewer. I have provided a copy for you to review.

I realize you may not be aware of such a code, or that there is an issue with the City's main. However, it's an issue that needs to be resolved.

Should you have any questions, please feel free to contact me.

Sincerely,

Mancil A. King
Plumbing Inspector
City of Leavenworth

Cc: Address File

June 4, 2014

Dear Sir or Madam,

Thank you for returning my survey in regards to grease traps and interceptors. According to your reply, neither of these devices is installed at your place of business.

As mentioned in the previous letter, commercial facilities are required by the plumbing code to install grease interceptors or traps in order to reduce the amount of grease being introduced into the public sewer system. Even though the City is not requiring installation of a grease trap/interceptor at this time, we strongly suggest you consider installing one of the above mentioned preventative devices. They can reduce the amount of grease built up in your private lines as well as the City's main lines.

Please note that if you decide to have these devices installed, the work must be performed by a plumbing contractor licensed by The City.

Should you have any questions or concerns, please feel free to contact me.

913-684-0378

Sincerely,

Mancil King

LEAVENWORTH RIVER CLEANUP

WESTON

Free Lunch and a Big Muddy Boat Ride!

WHAT WE'RE DOING: On Saturday, June 7th, volunteers will get a free boat ride to locations along the river to pick up trash on the shores.

CLEAN-UP TIME: 9:00 am - 12:00 pm
Stick around in the afternoon for a free lunch and to help with the big trash haul.

CLEAN-UP HEADQUARTERS: Riverfront Park, Leavenworth, KS 66048.

VOLUNTEERS SHOULD: Wear sturdy boots or shoes (no flip-flops!) and work & weather-appropriate clothes. Bring sunscreen & bug spray.

WHAT WE WILL PROVIDE: T-shirts, work gloves, drinking water, reusable water bottles, life jackets, trash bags, tools, boat rides to clean-up sites.

For more info, contact Missouri River Relief
573-443-0292 or email: kris.mattern@gmail.com.

SIGN UP ONLINE:
www.riverrelief.org

SATURDAY, JUNE 7TH

9:00 AM - 12:00 PM

RIVERFRONT PARK

1201 N. 2nd Street, LV, KS 66048

US Army Corps of Engineers

MISSOURI STREAM TEAM

MISSOURI RIVER RELIEF

LEAVENWORTH
RIVER CLEANUP
WESTON
THANK YOU!
MISSOURI
RIVER
RELIEF
JUNE 7, 2014

City of Leavenworth

Storm Debris Disposal Totals

24-Jul-14

	TUESDAY 7/8/2014	WEDNESDAY 7/9/2014	THURSDAY 7/10/2014	FRIDAY 7/11/2014	SATURDAY 7/12/2014	TUESDAY 7/15/2014	WEDNESDAY 7/16/2014	THURSDAY 7/17/2014	FRIDAY 7/18/2014	Vehicle Total
RESIDENTS/FREE										
Pickup Trucks	55	75	58	57	84	50	48	62	41	530
Cars/Vans/SUV's	3	1	2		3			1		10
8' Trailers	10	7	2	7	11	1	15	8	10	71
9' ~ 16' Trailers	10	13	17	20	14	6	14	6	7	107
17'+ Trailers	1	3	8	3	2					17
Single Axle	5	5								10
Tandem Axle										0
CITY TRUCKS - No Cost										
Pickup Trucks		2	3	2						7
16' Trailers				2						2
Single Axle	17	12				8	7	14	7	65
Tandem Axle	3	5				4	8	5	4	29
COMMERCIAL CONTRACTORS										
Pickup Trucks	7	7	6	9	1	6	6	9	2	53
Cars/Vans/SUV's	1		2	1		2				6
8' Trailers						2				2
9' ~ 16' Trailers	8	6	6	7	1	4	4	6	1	43
17'+ Trailers										0
Flatbed	2							1		3
Single Axle			2			1	2	2	2	9
Tandem Axle										0
Total $ (Commercial)	$105.00	$75.00	$95.00	$85.00	$10.00	$70	$80	$75.00	$40.00	

LEAVENWORTH COUNTY

COMMUNITY CLEAN-UP

All Leavenworth County residents can bring the following items free of charge with an in County ID during our county wide clean-up:

- Household items
- Construction items
- Tires
- Brush
- Electronics
- Household Hazardous Waste
- Documents for Shredding Saturday October 18 only from 8am – 12pm

DATE:
FRIDAY OCTOBER 17, 2014 8AM-4PM
SATURDAY OCTOBER 18, 2014 8AM-2PM

HELD AT:
LEAVENWORTH COUNTY TRANSFER STATION
24967 136TH ST.
LANSING, KS 66043

INFORMATION PHONE #:
913.727.2858

Sponsored by
Leavenworth County

Appendix E
Draft Stormwater Guidelines

- Draft completed in 2014
- Reviewed by City Commission in February 2015
- Expected adoption prior to June 2015
- Currently distributed to project designers

CITY OF LEAVENWORTH
GENERAL GUIDELINES
STORMWATER AND DRAINAGE
December, 2014

City of Leavenworth requires drainage and stormwater systems constructed within the City Limits to address water quality and water quantity in conformance with local, regional, state and federal regulations.

City of Leavenworth Permits Required with approved plans required for at least the following activities:

- **Excavation, fill and site grading (not part of an issued building permit).** Cuts and fills in excess of 1.5 feet from current elevation within 15 feet of any structure or within 15 feet of a property line require permits with an erosion control plan.

- **Subdivision Construction**
  The subdivision process for Major Subdivisions (3 lots or larger) requires complete designed drainage and erosion control plans. Minor subdivisions and other land divisions will be evaluated on a case by case basis for drainage design and erosion control issues. All buildings within a subdivision are required to address erosion.

- **Any project requiring a Notice of Intent" (NOI) from KDHE**
  State requirements are that any land disturbance of 0.5 acre or larger must have a KDHE "Notice of Intent" permit. These NOI permits may overlap with other items noted here, and if not, a permit from the City is required, and erosion control must be addressed.

- **Any project requiring a Stormwater Prevention Plan by KDHE**
  In general includes any excavation activity that disturbs over 0.5 acre require will require a KDHE NOI and **Stormwater Prevention Plan** (SWPP or SWP2), and there are many other circumstances that will require a KDHE SWPP/SWP2 permit.

- **Expansions of commercial and industrial facilities (buildings, drives, parking lots, etc.)**
  The City has determined that any increase of impervious area in excess of 5% of the existing impervious area will require that a permit be submitted for review of the water quality and water quantity issues.

- **Work in the FEMA regulated Floodplain and Floodway**

Additional Information regarding Required Permits:

KDHE Permits:
The executive summary for KDHE "general permits" is attached to this document. In general – any excavation activity that disturbs over 0.5 acre require will require a KDHE NOI and Stormwater Prevention Plan (SWPP or SWP2), and there are many other circumstances that will require a KDHE permit. It is important to have the most current information from KDHE – and the links below are for reference only.

- KDHE notes the **primary requirement of the general permit** is for the permittee to develop and implement a Stormwater Pollution Prevention (SWP2) Plan. The SWP2 Plan must contain certain items that are specified in the general permit including the "Best Management Practices" (BMP) that will be utilized to control erosion, sediment discharges, and reduce the potential of the contamination of stormwater runoff associated with construction activities.

- KDHE has an extensive website that describes their programs and contains their forms: *http://www.kdheks.gov/stormwater/*

- KDHE Stormwater Program – including information on how to create a SWPP *http://www.kdheks.gov/stormwater/#construct*

- General Permit Forms *http://www.kdheks.gov/stormwater/download/Const%20SW%20Issued%203-2-2012%20Packet.pdf*

Other Regulations - State of Kansas, Federal Jurisdiction (Corps of Engineers, EPA, etc.)
Dam or stream obstruction projects can be subject to state or federal jurisdiction and often require a permit, and are covered by various regulations relating to technical and environmental design of the project. To obtain state and federal permits, plans and applications should first be submitted to the City, by the project sponsor for review, and comments. The plans can then be sent to the **Kansas State Board of Agriculture, Division of Water Resources,** and **other agencies for state and federal** review, and approval. **The City of Leavenworth cannot approve plans for construction that are under state or federal jurisdiction until all necessary state and/or federal permits are obtained**.

Designing for Water Quantity and Water Quality In the City of Leavenworth

Design of any project involving stormwater must address both water quantity and water quality as they are closely related to each other.

Water Quality is regulated by EPA and KDHE. KDHE provides extensive background information on their programs at: *http://www.kdheks.gov/stormwater/* and their executive summary is attached to this document.

The following design guideline documents are available as references to assist in this endeavor. There is considerable overlap between these references.
The key City of Leavenworth standards are attached to this guideline.

Water Quantity:

- **APWA Section 5600 Specifications** - and additional related information can be found at the links below:
  - http://kcmetro.apwa.net/content/chapters/kcmetro.apwa.net/file/Specifications/APWA5600.pdf *DOESNOT WORK
  - http://kcmetro.apwa.net/MenuHomepage/99/Specifications

- **Appendix A - Stormwater Drainage Design Criteria,** May 28th 1999 as prepared by Black & Veatch for the City of Leavenworth 1999 Stormwater Master Plan. Link Here

- **Appendix B - New Development Plan Review Policies and Procedures**, May 28th 1999 as prepared by Black & prepared by Black & Veatch for the City of Leavenworth.

- **Section VII - Policy Development,** August 17th, 1999 as prepared by Black & Veatch for the City of Leavenworth 1999 Stormwater Master Plan Link Here

- **Stormwater Master Plan**, August 17th, 1999 as prepared by Black & Veatch for the City of Leavenworth (Four volumes):
  - Report
  - Three-Mile Creek
  - Five-Mile Creek

Water Quality:

- **Manual of Best Management Practices for Stormwater Quality**, August 2009 (or newer) as prepared by MARC and APWA. http://kcmetro.apwa.net/content/chapters/kcmetro.apwa.net/file/Specifications/APWA_BMP_ManualAUG09.pdf

- **KDHE Stormwater Program** - KDHE notes that the **primary requirement of the general permit** is for the permittee to develop and implement a Stormwater Pollution Prevention (SWP2) Plan. The SWP2 Plan must contain certain items that are specified in the general permit including the "Best Management Practices" that will be utilized to control erosion, sediment discharges, and reduce the potential of the contamination of stormwater runoff associated with construction activities.

Water Quality and Erosion Control Efforts:

It is the intent of the City Engineer that all projects address water quality and water quantity through the use of passive and/or active systems. Larger projects shall be designed by an Engineer licensed in the State of Kansas familiar with current stormwater practices. Small projects primarily using passive methods may be submitted by property owners and designers for review by the City. The City may require that small project be designed by an Engineer at the discretion of the City Engineer.

Active systems are those that that actively collect, filter, store and treat and/or reuse water. Storage is often in large tanks (above or below ground) and components such as pumps, filters and UV lights are used in the system. These systems generally require electricity and regular maintenance to run efficiently and effectively.

Passive Systems use no mechanical methods to collect, clean, treat or store stormwater. The intent with passive stormwater management is to create locations that contain or detain water until it can be absorbed naturally into the land (or slowly released to reduce downstream impact), allows contaminants from low flow events to be treated via biological means and/or solar radiation. Vegetative swales, specific landscaping designs, pervious concrete or pavers (where appropriate), roughened concrete surfaces and/or gutter sections are some types of passive systems.

Large Project: Examples of Projects requiring involvement by a licensed engineer:

- Commercial and Industrial Development where the impervious area of a lot is increased by 5% or more from the existing level of impervious area.
- Subdivision Development of any minor or major subdivision.
- Site grading requiring a "Notice of Intent" (NOI) from KDHE.
- Construction of new streets in subdivisions.

Small Project: Examples of Projects that can be reviewed by City staff:

- Construction of additional impervious surfaces (roof, drives, parking lots, etc.) in commercial and industrial zones less than 5% increase over the current level of impervious surface.
- Rezoning of existing facilities (buildings, drives, parking areas) will be reviewed for consideration of water quality and water quantity issues.
- Repaving of existing parking lots for all commercial and industrial properties will be reviewed for consideration of water quality and water quantity issues.

The City expects the following activities to be part of all construction activity:

- **Installation of erosion control devices** (silt fence, curb gutter filters, siltation ponds, etc.) sufficient to prevent run-off from reaching streams, rivers, streets and/or neighboring property. Commercially available products shall be installed in accordance with the manufacturer's instructions and recommendations.

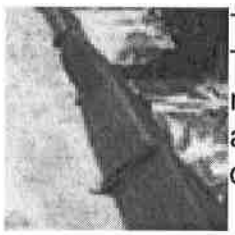
  Typical erosion control effort will include some or all of the following as well as others not shown:

Silt Fence
Silt Fence controls sediment runoff from construction sites where the soil has been disturbed.

Turbidity Barrier
Turbidity barriers control sediment contamination from construction sites into nearby rivers, lakes, or ponds.

Curb Inlet Filter.

Straw Wattles
Filter sediment-laden runoff while reducing hydraulic energy.



Triangular Silt Dike
Triangular Silt Dike is a reuseable, alternative to rock check dams.

- **Seeding of All Disturbed areas** to be graded seeded at the conclusion of the project, or when active use of the site ceases for 60 days. Approval of seeding activity will be by use of KDOT temporary and Final Seeding specifications or as otherwise approved by the City.

General Design Guidance for Drainage Project Design:

Methodology of Analysis:
The following guidance is related to "Large Projects" and may be applied to small projects as well.

In determining the amount of stormwater runoff resulting from a development and the amount of flow at various points throughout the drainage system, it is important for the designer to relate the methodology to be utilized in the calculations to the proportionate size of the tributary watershed areas.

This analysis should include at least the following:

- Narrative of the analysis.
- Review of the current City Stormwater Study for any recommendations.
- Discussion with City Staff for any recommendations.
- Design using standards noted above or as approved by the City Engineer.

Drainage System Evaluation:
All calculations relating to runoff analysis shall be based upon the proposed land use of the subject site. The evaluation shall consider any contributing runoff from developed areas adjacent to and impacting the development site using the current land usage patterns and topographical features unless directed otherwise by the City Engineer. Undeveloped property adjacent to the study area that contributes to the runoff shall be considered as fully developed in accordance with the most probable anticipated future land use. Such land use shall be determined from the city Comprehensive Plan and the city zoning map.

In the event that the future land use of a specific undeveloped property cannot be determined from available information, the average runoff coefficient (C) to be used shall not be less than 0.65 for use in the Rational Method or an appropriate equivalent value as approved by the city engineer for any other method. The most likely flow pattern to be utilized for an undeveloped area shall be based upon existing natural topographical features.

All projects will be designed using good engineering judgment by an engineer licensed in the State of Kansas. The designer shall consider all problem areas of the design and analysis to prevent the transfer of drainage problems from one location to another. All points of drainage outfall shall be designed to preclude creation of downstream flooding problems and hazards to the public. Approval will not be given to any project which involves the construction of any structure or the placement of fill material which will hinder or impair surface or subsurface drainage from surrounding areas.

Some areas that should be considered are:

- Existing runoff flow rates and velocities at locations of discharge from adjacent upstream developments shall be utilized in drainage system design.
- Drainage facilities shall be designed to minimize the velocity of overland flow so as

not to cause erosion damage.

- In areas where excessive velocities exist, adequate dissipating structures shall be provided as required to result in velocities appropriate for the type of drainage system, and in consideration of conditions within existing streams and drainage systems.
- The primary function of roadways within a development shall be reserved for the conveyance of traffic. The use of roadways as a storm runoff storage facility outside of the parameters of the design guides shall be reviewed on a case by case basis by the City Engineer.
- The utilization of on-site or on-stream detention and natural drainage ways is recommended and encouraged where feasible.
- Relocation of existing natural drainage ways will not be approved unless such relocation has been substantiated as a result of a thorough and complete analysis of the resultant consequences and all state and/or federal permits are acquired.
- Use of active and/or passive methods to address water quality is required.

Stormwater Detention:
The Drainage Analysis and recommendations submitted shall be reviewed by the City Engineer to determine whether a proposed plan will cause or increase downstream local flooding conditions. This determination shall be made on the basis of existing downstream development and drainage system capabilities and an analysis of stormwater runoff prior to and after the proposed development.

If the City Engineer determines that the proposed development will cause or increase downstream local flooding conditions during the design storm, provisions to minimize such flooding conditions shall be included in the design of storm drainage improvements and/or the designed controlled detention of stormwater runoff and its regulated discharge to the downstream system.

Generally, stormwater detention basins shall be designed and constructed for the attenuation of the peak rate of runoff to an amount not greater than that occurring prior to development at all levels of storms. Downstream hydrographs should be evaluated to ensure that downstream peak flows are not impacted from the detention facility.

Temporary facilities for the detention of stormwater runoff may be required for any residential, industrial or commercial development until the permanent facilities are operational.

Best Management Practices (BMP) for Stormwater Quality:

The City expects that design engineers will use current best practices and professional judgment in the use of construction methods and materials to address water quality. The Manual of Best Management Practices for Stormwater Quality noted above should be used as a guide rather than as a rule book. The City is interested in working with property owners and engineers on innovative methods to address water quality. Some examples of acceptable passive BMP's are noted below:

- Capture pollutants for degradation from natural UV light.
- Addition of rough textured concrete upstream of curb inlets.
- Extensive use of rumble strips or other textures at lower elevations of parking or drive areas.
- Create gaps in curbing of parking lots to direct low flows onto grass strips
- Decrease impervious areas.
- Reduce number of parking spaces by reviewing actual need with current City requirements.
- Use of permeable parking blocks to grow grass in seasonal or occasional parking as well as some driveways.
- Use of several smaller detention ponds with vegetation to facilitate natural degradation of contaminants.
- Use of permeable concrete to facilitate reduced peak flows as well as provides opportunity for contaminants to be exposed to UV degradation.
- Use of appropriate plantings to address water quality.