



# Stormwater Substantial Plan Report

BARTLETT & WEST

## **Executive Summary**

The City of Kirksville has experienced stormwater flooding and subsequent damage on public right-of-ways and private properties in recent years. In April 2010, voters within the City decided to pass a bond issue for stormwater improvements which will facilitate up to \$2,274,000 of investment to be paid back through monthly stormwater utility bills. These bonds were made available through the federal stimulus bill, the American Recovery and Reinvestment Act, and are allocated through the Missouri Department of Economic Development as Economic Development Recovery Zone Bonds.

This report summarizes the Substantial Plan phase of the stormwater management plan enabled by the initiation of improvements passed by the bond issue. The Substantial Plan is an initial study effort to identify projects, costs, and priorities within 8 initial known problem areas throughout the City, which were communicated to residents prior to the bond election. It does not address stormwater problems throughout the City in other areas, though more challenges exist, as evidenced by the study team while making field visits or through comment forms received in the public involvement process. There are other significant issues to be addressed, but at this time it is unknown what the extent or costs of further improvements would be.

The Substantial Plan phase also included public involvement activities such as on-site meetings with property owners and public open house meetings. The two public open houses were held on July 12 and July 20, 2010. The first meeting was attended by 65 residents and the second meeting was attended by 92 residents. A comment form was prepared and distributed at the open houses. See Appendix C of this report. The form requested information with regard to performance of the stormwater system, history of flooding on their properties, and perceived improvements needed. One hundred-nine comment forms were submitted either during the open houses or sent to the City. Also, twelve e-mails or other forms of communications were provided by the public. Of those comment forms submitted, 75 were from the initial 8 known problem areas.

The 8 known problem areas were reviewed in the field with the consultant and City team and divided into 21 distinct project sites that could become independent projects. However, some of the sites are within the same watershed and can be combined (or separated further) as the project priority and funding will allow. The Substantial Plan was developed in a way to prioritize the projects so that a plan could be developed to appropriately assign the funds available to the projects that are the highest priority, creating the most benefit at the best value. This Substantial Plan proposes solutions for 20 of the 21 sites identified, with the one project without a proposed solution being SC3-New Street-Florence. The problems in this watershed appear to be primarily from sanitary sewer backups, which may be caused by blockages in the sanitary sewers, high volumes of flow from inflow and infiltration in the sanitary sewers, or a combination of both. This watershed should be studied for solutions to these problems, as it is evident from the City complaint files and the public open house meetings and comment forms that there are repeated backups for multiple residences in this area.

The 20 proposed projects identified in this report total approximately \$6.04 million. The Project Evaluation Matrix shown in Table 24 on page 80 of this report shows the projects in their priority

ranking. Obviously, there are more needs than there are funds available from the bond issue. Therefore, a detailed evaluation ranking process was developed to assess which project brought the highest benefits at the best value. There are other potential sources of revenue, which are discussed in the Project Evaluation and Recommendations section of this report beginning on page 78, which may extend the City's ability to accomplish as many projects as possible within the priority list. Because there may be other sources of funding to assign to these projects, the following recommendations were developed, which go beyond the bond issue amount of \$2.274 million.

## **Recommendations**

Available funding, timing of the funding, and project sequencing affect overall decisions about which projects are funded first. We recommend that a list beyond the top seven projects (fitting with the \$2.27 million bond issue) be set as the priority list to work from. We recommend that the City of Kirksville focus on the Top Ten projects of the Evaluation Matrix for consideration of finding alternative funding sources or moving ahead to final design and construction. This Top Ten List allows the City some flexibility in accomplishing these projects on appropriate timelines and utilizing all of the funding that may be available. The Top Ten List is as follows:

Table 1: Recommended Top Ten List

<b>Rank</b>	<b>Project Name</b>	<b>Project Cost (k)</b>
1	FC2-Suburban-Monte Carlo	\$505
2	SC2-Lewis & Harrison	\$361
3	SC2-Lincoln & Normal	\$20
4	BC10-Normal Avenue	\$89
5	SC3-Pintail and Gadwell	\$176
6	SC3-Greenway and Canvasback	\$226
7	SC2-Lincoln Square	\$909
8	SC7-Elson South of Potter	\$247
9	SC2-Bradford to Manor	\$1,048
10	BC4-Garrett Drive	\$68
<b>Total Costs</b>		<b>\$3,649</b>

The City plans to construct these projects during the 2011 and 2012 construction seasons. Considering the potential for other funding sources and upstream/downstream project sequencing considerations, we recommend City move forward into final design and develop construction plans and specifications for the top six projects immediately. The top six projects total about \$1,377,000, which is about 60% of the available bond issue funding. The tenth ranked project (BC4- Garrett Drive) is also similar to the top six projects in nature, but given its priority level, it may be best to delay it to 2012 while working through the funding options on the 7<sup>th</sup>, 8<sup>th</sup>, and 9<sup>th</sup> ranked projects.

The 7<sup>th</sup>, 8<sup>th</sup>, and 9<sup>th</sup> ranked projects are good candidates for 2012 construction as they have the possibility of funding through MoDOT or FEMA/SEMA Mitigation or even private partnerships/collaboration. These funding opportunities should be moved forward immediately, but it

is likely that these projects will be delayed due to funding or other coordination, so they are best put on the 2012 construction list. Therefore, the recommended schedule for the top ten projects would be as follows:

Table 2: Recommended Schedule for Projects

<b>2011 Construction Projects</b>		
<b>Rank</b>	<b>Project Name</b>	<b>Project Cost (k)</b>
1	FC2-Suburban-Monte Carlo	\$505
2	SC2-Lewis & Harrison	\$361
3	SC2-Lincoln & Normal	\$20
4	BC10-Normal Avenue	\$89
5	SC3-Pintail and Gadwell	\$176
6	SC3-Greenway and Canvasback	\$226
<b>Total Costs (2011)</b>		<b>\$1,377</b>
<b>2012 Construction Projects (as funding allows)</b>		
7	SC2-Lincoln Square	\$909
8	SC7-Elson South of Potter	\$247
9	SC2-Bradford to Manor	\$1,048
10	BC4-Garrett Drive	\$68
<b>Total Costs (2012)</b>		<b>\$2,272</b>

**Recommendation No. 1** – Conduct an overall Stormwater Management Plan study to identify further stormwater improvements throughout the community (beyond the Substantial Plan areas).

**Recommendation No. 2** – Consider and apply for potential alternative funding sources for the identified projects. It is understood that CDBG and FEMA/SEMA funds are already being sought. MoDOT funding options for the two projects within MoDOT right-of-way should be initiated as soon as possible.

**Recommendation No. 3** – Move forward with a focus on the Top Ten List. More specifically, initiate final design on the top six projects with the intention of constructing these projects in 2011. Based on funding availability and coordination with other agencies, move forward with 2012 projects.

**Recommendation No. 4** – We recommend continued public involvement activities during the final design phase and with respect to Recommendation No. 1 above as well. Continued public support will be required for the long term strategy to improve stormwater systems throughout the City. The total scope and costs of community-wide improvements is unknown, but is likely substantial. Therefore, it is critical to maintain momentum and progress to keep public confidence in this investment.

**Recommendation No. 5** – Proceed with the BC9 – Wall Street and BC9 – George Street projects as other funding sources (CDBG and/or FEMA/SEMA funds) become available.

**Recommendation No. 6** – Seek funds for proposed buyouts on each of these four projects- BC9-George Street, FC2-Pheasant Drive, SC2-Lincoln Square and SC2-Bradford to Manor projects.