PUBLIC MEETING
WHITEHEAD CREEK
STORMWATER SEPARATION
PROJECT

ALTERNATIVE PLANS
FEBRUARY 10, 2011
6:00PM
Agenda

- Introductions
- Water Protection Program Overview
- Project Purpose
- Alternative Plans
- Recommended Plan
- Questions/Discussion
Introductions

- City of St. Joseph
  - Bruce Woody, Public Works Director

- Burns & McDonnell
  - Steve Yonker, Project Manager
  - David Silverstein, Assistant Project Manager
Purpose of Meeting

- Summary of Overall Water Protection Program
- Review of Whitehead project
- Discuss Alternative Plans
- Receive your Input
St. Joseph’s Water Protection Utility

- The utility is maintained and operated by the City of St. Joseph to treat wastewater.
- The utility is managed by the Public Works & Transportation Department Water Protection Division.
Water Protection Goals

- Meet Regulatory Requirements
- Protect Water Quality
- Protect Missouri River as a recreational resource
- Accommodate Development and Redevelopment
- Integrate Community Benefits
Water Protection Responsibilities

- The operation, maintenance, and expansion of the city’s water protection facilities
- The citywide conveyance network of sewer lines and pump stations
- Laboratory sampling and analysis
- Managing the airport lagoon system
St. Joseph Sewer System

- 2 Types of Sewer Systems
  - Separate Sewer System (Eastside)
  - Combined Sewer System (Westside)

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Combined Sewer System

- Designed to convey both stormwater and wastewater in the same pipe.

- During rainfall events, the pipes may get too full and start to overflow into the Missouri River.
  
  - Combined sewer overflow (CSO)
  
  - The City has overflows with rainfall events as little as ¼ inch
What are the Combined Sewer System problems?

- Aging infrastructure
- Sewers undersized for peak flows when it rains
- Water quality impacts for receiving streams
  - Stormwater Runoff
  - Sewer Overflows
Why is it a problem?

- Can’t effectively convey and treat flows
- Health risks and threats to aquatic life
Why is it a problem?

- St. Joseph is required to control the frequency and quantity of sewer overflows as regulated by:
  - Clean Water Act
  - Missouri Department of Natural Resources (MDNR) and the U.S. Environmental Protection Agency (EPA)
REVIEW OF WHITEHEAD PROJECT
Whitehead Creek Stormwater Separation

- Overview of Whitehead Creek Basin
- Project Purpose
- Description of Alternatives
- Alternatives Costs
- Recommended Plan
- Schedule
Whitehead Creek Basin

- 5,220 acres
- Three sub-basins
  - North
  - Middle
  - South
- Middle and South Basins are part of the project
Project Purpose

New pipe to:

- Remove creek flows from combined sewer system
  - Dry weather flow of 2 million gallons per day
  - For rainfall of 1.8” or less

continued
Project Purpose, continued

New pipe to:

- Increase wet weather flow capture to 60%
- Eliminate dry weather overflows when Missouri River is high
ALTERNATIVE PLANS
Alternatives

- New pipe to convey creek flows
  - Four alignments
- Detention Basin
  - Minimize pipe size
  - Provide opportunities for community amenities
Alternative A- Pipe in Pipe
(new pipe inserted in existing pipe)
Alternative C – North Route
Detention Alternative

- Flood Control Facility
  - Two sizes for two different storm events: 25-year, 100-year
  - Minimize downstream flooding
  - Reduced pipe size following Alternative B alignment
  - Provide opportunities for community amenities

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## Alternatives Costs

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Estimated Cost</th>
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</thead>
<tbody>
<tr>
<td>A- Pipe in Pipe</td>
<td>Dropped from consideration due to constructability issues</td>
</tr>
<tr>
<td>B- South Route</td>
<td>$21.3 million</td>
</tr>
<tr>
<td>C- North Route</td>
<td>$23.6 million</td>
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<tr>
<td>D- New CSO Pipe</td>
<td>Dropped from consideration due to constructability issues</td>
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<tr>
<td>Detention and Smaller Alternative B Pipe</td>
<td>$34.1 million</td>
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</tbody>
</table>
Recommended Alternative B

Legend
- Alignment B
- Possible Alternatives
- Manhole
- Existing Sewer
Schedule

- Preliminary Design Complete- July 2011
- Final Design Complete- February 2012
- Construction Bids Received- Late 2012
- Construction- Late 2012 to Late 2014