AGENDA

1. Welcome & Introductions (*Mark Land*)

2. Fourmile Creek Watershed – Past and Present (*Mark Land & Jennifer Welch*)

3. Fourmile Creek Watershed Management Authority Formation (*Mark Land*)

4. Watershed Management Plan (*Mark Land*)

5. Focus Group Open Discussion (*Group Participation*)

6. Adjourn
FOURMILE CREEK WATERSHED STUDY

- May 2011-December 2013
- Purpose:
  - Develop new models to assess flood risk and evaluate watershed management alternatives
  - Identify strategies to improve water quality and reduce flooding
  - Engage the public and stakeholders
  - Develop framework for prioritizing, planning, and implementing watershed improvement activities
## NEW HYDROLOGY

<table>
<thead>
<tr>
<th>Event</th>
<th>Year</th>
<th>Source</th>
<th>Flow (cfs)</th>
<th>Percent Increase (%)</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Updated 1% Annual Exceedance Probability Flow</td>
<td>2004</td>
<td>U.S. Army Corps of Engineers</td>
<td>8,290</td>
<td>-</td>
<td>Easton Boulevard</td>
</tr>
<tr>
<td>Updated 1% Annual Exceedance Probability Flow</td>
<td>2012</td>
<td>Snyder and Associates</td>
<td>11,300</td>
<td>36.3</td>
<td>Easton Boulevard</td>
</tr>
<tr>
<td>Flood Event</td>
<td>2008</td>
<td>USGS Gauging Station</td>
<td>6,810</td>
<td>-</td>
<td>Easton Boulevard</td>
</tr>
<tr>
<td>Flood Event</td>
<td>2010</td>
<td>USGS Gauging Station</td>
<td>9,620</td>
<td>-</td>
<td>Easton Boulevard</td>
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</tbody>
</table>
CURRENT AND FUTURE (2030) LAND USE PLANS
STORAGE AT POTHOLES (DEPRESSIONS)
REGULATE FLOWS TO FOURMILE CREEK

- Depressional areas in Fourmile Creek Watershed:
  - Cover 2,700-3,700 acres (3.6-5% of the watershed area)
  - Provide 5,000-8,800 acre-feet of storage volume (0.9-1.4 watershed inches)

Pothole identified with LiDAR elevation data
DRAIN TILES...

- Drain tiles that connect potholes to the stream:
  - Increase runoff volume reaching the stream
  - Can reduce peak flows by restoring depressional storage between rains
- Subsurface drainage:
  - Increases soil water storage available for rains, reducing overland flow volume and peak
    (Source: Agricultural Drainage, Agronomy Monograph No. 38)
  - Designed to drain about 0.5 inch per day
FLOOD PERCEPTIONS

PRECIPITATION

14-Day Precipitation
(ending 8 a.m., EDT, June 12, 2008)
2010 FLOODS - RECAP

- Precipitation - Increasing Trend
HYDRAULICS

- HEC-RAS Modeling
- Inundation Mapping
VISION PLAN - OVERVIEW

• Stormwater Management Master Plan Poster

To foster land stewardship and sustainable watershed management that reduces flood risk, improves water quality, and supports socioeconomic and environmental functions.

Guiding Principles:

Healthy Watershed Stewardship Approach | Sustainable Land Stewardship | Stakeholder and Multi-Jurisdictional Cooperation

Stormwater Management Goals:

Improve Water Quality | Increase Safety | Support Healthy Streams | Protect Infrastructure | Support Productive Land Use

5 Components of the Stormwater Management Plan - Strategies:

Sustainable Rural Land Management
- Provide watershed education
- Support existing programs for conservation farming practices
- Maintain and enhance hydrologic function of prairie potholes
- Enhance, restore, and create wetlands
- Restore soil quality

Sustainable Urban Land Management
- Promote sustainable landscaping and landscaping
- Rain gardens, biofiltration systems, bioswales
- Trees and shrub plantings
- Native plantings and ecologically-friendly systems
- Soil quality restoration

Sustainable Land Development
- Develop land-based approaches that contribute to a healthy watershed and high quality of life environment
- Integrates practices that reduce stormwater volume and dislocate peakflows
- Establish stormwater practices that meet water quality, channel and flood protection objectives

Stormwater Detention
- Establish multi-purpose stormwater detention facilities ranging from dry to wet basins
- Integrate pond with urban development and existing land uses
- Retrofit existing infrastructures to optimize stormwater management

Stream Corridors
- Establish stream corridors that support floodplain functions, passive and active recreation, and aquatic and terrestrial habitat
- Restore healthy stream conditions
- Stabilize streambanks
- Reduce vulnerability to flooding and climate variability
MORE INFORMATION

http://www.fourmilecreekwatershed.org/

Fourmile Creek Final Report (December 2013):

Executive Summary (1.3 Mb)
Final Report With Executive Summary (9.3 Mb)
Thematic Maps 1-11 (10.8 Mb)
Inundation Map - 2010 Land Use (Maps 12.0 - 12.24) (16.4 Mb)
Inundation Map - 2030 Land Use (Maps 13.0 - 13.24) (16.4 Mb)
Appendices (7.0 Mb)
WATERSHED MANAGEMENT AUTHORITY

- Fourmile Creek Watershed Management Authority
- Formed - 2012
- Planning Grant Awarded - 2013

Members:
- Polk County
- Story County
- Boone County
- City of Ankeny
- City of Des Moines
- City of Pleasant Hill
- City of Altoona
- City of Bondurant
- City of Slater
- City of Alleman
- City of Elkhart
- City of Sheldahl
- Polk County SWCD
- Story County SWCD
- Boone County SWCD