SCOTTSWOOD AREA WETLAND PROJECT

FOR THE

ILLINOIS ASSOCIATION FOR FLOODPLAIN AND STORMWATER MANAGEMENT CONFERENCE
MARCH 2011

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OAKBROOK TERRACE, IL 60181
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www.LIVINGWATERSCONSULTANTS.COM
PROJECT WATERSHED BOUNDARY
THE PROBLEM

• FREQUENT FLOODING
  ( $200,000 DAMAGE PER YEAR )
• LACK OF AN OUTLET – NO DETENTION
• UNDERSIZED STORM SEWERS
• INADEQUATE INLET CAPACITIES
• POOR SURFACE DRAINAGE SYSTEMS
• INCOMPLETE DRAINAGE SYSTEM
• UPSTREAM WATERSHED OVERLOOKED
• SANITARY SEWER BACKUPS
AREAS OF FLOODING
CITY OF URBANA 2000 STUDY

• OUTLET STORM SEWERS
• STORMWATER DETENTION
• INLET IMPROVEMENTS
• STORM SEWER EXTENSIONS
• $800,000 COSTS FOR CONSTRUCTION
CHANGES AND OPPORTUNITIES

- SUNNY ESTATES SUBDIVISION
- WASHINGTON STREET BRIDGE
- CHAMPAIGN COUNTY NURSING HOME
- URBANA PARK DISTRICT
  WEAVER PARK
PROJECT WATERSHED BOUNDARY
9 COOPERATING AGENCIES

• URBANA TOWNSHIP
• URBANA TOWNSHIP ROAD DISTRICT
• CITY OF URBANA
• URBANA PARK DISTRICT
• URBANA SCHOOL DISTRICT #116
• CHAMPAIGN COUNTY
• ST. JOSEPH DRAINAGE DISTRICT #3
• COUNTY REGIONAL PLANNING COMMISSION
• ILLINOIS DEPARTMENT OF COMMERCE AND ECONOMIC OPPORTUNITY
PROJECT PURPOSES

• ALLEVIATE ANNUAL FLOODING OF SCOTTSSWOOD SUBDIVISION AREA ( $200,000 DAMAGE PER YEAR )

• PROVIDE RESIDENTS WITH A RECREATION PARK AND WILDLIFE AREA

• SERVE THE NEW CHAMPAIGN COUNTY NURSING HOME STORMWATER MANAGEMENT NEEDS
URBANA PARK DISTRICT
WEAVER PARK PARK COORDINATION

• UPD MASTER PLAN

• WETLAND BASIN DESIGN

• BALL FIELD GRADING

• COUNTY NURSING HOME DRAINAGE
PROJECT IMPROVEMENTS

• 3,000 LINEAL FEET OF OUTLET STORM SEWER
• INTERSECTION DRAINAGE IMPROVEMENTS
• 13 ACRE-FOOT WETLAND BASIN
• BALL FIELD SITE GRADING
• BIO-SWALE INSTALLATION
• ENNIS LANE OUTLET STORM SEWERS
• ILLINOIS STREET OUTLET STORM SEWERS
WEST PROJECT AREA
STORMWATER ENGINEERING

- Goal = Provide Maximum Flow Reduction in 50-Year Event due to Low Downstream Conveyance Capacity
- TR-20 & TR-55
- SCS Type II Rainfall Distribution
- 3 Drainage Areas
- Total Drainage Area = 113 Acres
- 50-Yr Target Storage Volume = 13.6 acre-feet
- 100-Yr Storage Volume = 16.0 acre-feet
WATER QUALITY DEVICE
SEEDING PLAN - NATIVE PLANT SPECIES
HYDRIC SOILS - DRUMMER SILTY CLAY LOAM
<table>
<thead>
<tr>
<th>Design Storm Return Period</th>
<th>Peak Inflow (cfs)</th>
<th>Peak Outflow (cfs)</th>
<th>Peak Storage (ac-ft)</th>
<th>HWL (ft)</th>
<th>Duration Above 718.5 ft (hr)</th>
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<tr>
<td>6-Month</td>
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<td>40</td>
<td>16.0</td>
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CONSTRUCTION LAYOUT

9-20-06
WETLAND GRADING = 51,000 CY
DUAL STAGE OUTLET CONTROL STRUCTURES

- NWL / Stage 1 = 718.0 ft
- Stage 2 = 719.25 ft
STAGE 1 – IN-LINE WATER LEVEL CONTROL STRUCTURE

1/2 INCH THICKNESS PVC STOPLOG WITH STAINLESS STEEL LIFT HOOPS AND WATER TIGHT RUBBER SEALS (TYPICAL)

ENCASE LOWER 2 FEET IN CONCRETE

ANODIZED ALUMINUM CORNER EXTENSION (TYPICAL)

STAINLESS STEEL FASTENERS TO BE USED IN ASSEMBLY

FRONT VIEW

INLET WATER LEVEL CONTROL STRUCTURE

NO SCALE
SEEDBED PREPARATION

12 INCHES HYDRIC SOIL
CHISEL PLOW DEPTH 18 INCHES
EROSION BLANKET STABILIZATION
NATIVE SEEDING AREA = 4.2 ACRES

1.6 AC WETLAND SEED
2.6 AC PRAIRIE SEED
STORAGE CAPACITY = 16 ACRE-FEET
LOG HABITAT STRUCTURES
30,000 NATIVE PLANT PLUGS

13,000 PRAIRIE PLUGS
13,000 WETLAND PLUGS
4,000 SHORELINE PLUGS
NATIVE PLANT MAINTENANCE - IRRIGATION
COVER CROP EMERGENCE
PLANT PLUG SURVIVAL
WETLAND GROWTH
EARLY FLOOD CONTROL (10-YEAR EVENT)
TOLERANCE OF FLOODING CONDITIONS
WATER QUALITY IMPROVEMENT

10-5-07
BIOSWALE STABILIZATION
BIOSWALE STORMWATER CONVEYANCE
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<tr>
<th>Description</th>
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QUESTIONS ?