Lexington’s Stormwater Quality Projects Incentive Grant Program

PRESENTED BY:

Gregory S. Lubeck, P.E., CFM,
ENGINEERING SECTION MANAGER
LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT

livegreenlexington
Discussion Topics

- EPA Consent Decree
  - Background
  - SEP’s
  - Grant Program

- LFUCG STORMWATER QUALITY PROJECTS INCENTIVE GRANT PROGRAM
What is it?

• Legal Document

• Result of EPA/KY enforcement action for violations of the Clean Water Act

• Lexington is not alone – Louisville, Cincinnati, Northern KY, Winchester, Knoxville, Nashville……
Consists of Three Parts

Consent Decree
(Purpose – Achieve Compliance with Clean Water Act)

Sanitary Sewer System
Eliminate SSOs
Sewer System Studies
Construction Projects
Maintenance Operations

Storm Sewer System
Control Urban Runoff
New Ordinances
Construction Sites, New Development, Industries
Monitoring

People’s Behavior
Contractors, Industries, Developers, Businesses, Citizens

Supplemental Environmental Projects
Coldstream Park
Greenway Plan

Green Infrastructure
Blue Sky WWTP

Flood Mitigation
Why the fee $

LFUCG shall “establish a storm water management fee funding mechanism that will charge and collect fees for storm water management services” (Consent Decree VI.13).

- ERU = Equivalent Residential Unit or 2,500 sq ft of impervious area
- Fee for 1 ERU = $4.49/Month
- Residential and Farm Parcels = 1 ERU
- All Other = ERU’s based on impervious surface area.

Programs + SEP’s + Stormwater Quality Incentive Grants
DISCLAIMER

- This project was undertaken in connection with the settlement of an enforcement action under the Clean Water Act, United States et al, v. Lexington-Fayette Urban County Government, brought on behalf of the U.S. Environmental Protection Agency. This project is a Supplemental Environmental Project (“SEP”) to be funded by LFUCG as part of the Consent Decree entered on January 3, 2011 styled United States & Commonwealth of Kentucky v. Lexington-Fayette Urban County Government, United States District Court for the Eastern District of Kentucky, Civil Action No. 5:06-cv-386-KSF (the “Consent Decree”).
LFUCG STORMWATER QUALITY PROJECTS INCENTIVE GRANT PROGRAM

- PROGRAM STRUCTURE
- PROJECTS AND RESULTS
- SEP PROJECTS
- LESSONS LEARNED
The Stormwater Quality Projects Incentive Grant Program

Background and Development

• **Initial Fee Discussion**
  – Promote **Green Infrastructure** Projects?
  – Existing and Proposed “Green Projects”?
  – Water Quality Credits?

• **10% of revenue of Water Quality Management Fee**

• **$1.2 million/year**

• **Provides financial assistance to non-LFUCG projects that:**
  – improve water quality
  – reduce stormwater runoff, and/or
  – involve or educate the public on these issues
The Stormwater Quality Projects Incentive Grant Program

Structure

- For project components above and beyond local, state, federal requirements
- Administered by LFUCG Division of Water Quality
- Water Quality Fees Board oversees program and determines recipients
- Competitive
- Must be current on fee payment and no outstanding city violations
- Urban County Council approves selected grants
- Contract Agreement with budget and schedule
Types of Grants

1. Class A (Neighborhood)

2. Class B (Education)

3. Class B (Infrastructure)
   A. Feasibility Only (for long range planning)
   B. Design and Construction
   C. Construction Only
CLASS A (Neighborhood) Project Grants

• Typical Project – completed within 12 to 18 months

• Applicant contributes at least 20% of Total Project Cost
  – Sweat-equity (volunteer hours)
  – Cash expenditures

• Types of projects:

  Rain Barrels
  Rain Garden
  Pond Enhancement for Water Quality
  Stream Cleaning
### Water Sample Test Results

<table>
<thead>
<tr>
<th>Date</th>
<th>Project</th>
<th>Sample ID</th>
<th>Weather</th>
<th>Temp</th>
<th>Flow/Clarity</th>
<th>Wide Range PH</th>
<th>Nitrate (NO₃⁻ ppm)</th>
<th>Ammonia (NH₃/NH₄⁺ ppm)</th>
<th>Nitrite (PO₄³⁻ ppm)</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/5/2010</td>
<td>Hartland RG</td>
<td>Existing Creek</td>
<td>Overcast</td>
<td>78</td>
<td>None / Clear</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>0.25</td>
<td>12:30 PM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yard Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>H.W. Outlet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Below Swale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11/10/2010</td>
<td>Hartland RG</td>
<td>Existing Creek</td>
<td>Rain</td>
<td>82</td>
<td>Medium / Monkey</td>
<td>7</td>
<td>0</td>
<td>0.3</td>
<td>0.25</td>
<td>4:06 PM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yard Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>H.W. Outlet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Below Swale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/23/2011</td>
<td>Hartland RG</td>
<td>Existing Creek</td>
<td>Sunny</td>
<td>48</td>
<td>Normal / Clear</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>0.25</td>
<td>4:15 PM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Water into RO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Existing RO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>into Creek</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/15/2011</td>
<td>Hartland RG</td>
<td>Existing Creek</td>
<td>Partly Cloudy</td>
<td>41</td>
<td>Normal / Clear</td>
<td>8</td>
<td>0</td>
<td>0.25</td>
<td>0.25</td>
<td>1:00 PM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Leaving Upper</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Downstream</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Existing RO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/22/2011</td>
<td>Hartland RG</td>
<td>Existing Creek</td>
<td>Rain</td>
<td>58</td>
<td>Medium Turbulent</td>
<td>7.25</td>
<td>0</td>
<td>0.15</td>
<td>0.4</td>
<td>9:15 AM</td>
</tr>
<tr>
<td>6/6/2011</td>
<td>Hartland</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Stormwater Quality Facility

**Inspection and Maintenance Checklist**

**Facility Address:** 5005 Hvybridge Drive  
**Facility Owner:** Gardens of Hartland HOA

**Description:** Rain Garden  
**Date of Inspection:** Jun 6th, 2011  
**Type of Inspection:** Pre-Wet Season

**Inspector(s):** Anthony

**Maintenance Needed**: Y/N

**Maintenance Needed? (Y/N)**: Y/N

**Comments** (Describe maintenance completed and if needed maintenance was not conducted, note when it will be done):

1. **Standing Water**
   - Conditions: When water stands in the infiltration area for more than three days after rainfall.
   - Maintenance Needed: Yes, Routine Cleaning of inlet basket of debris.
   - Comments: New installed trenching works well, minimal water in inlet box due to upflow of drain still draining ground water. (2 ½ weeks steady flow)

2. **Trash and Debris Accumulation**
   - Conditions: Trash and debris accumulated in the catchment area.
   - Maintenance Needed: Yes
   - Comments: Minimal debris in basket - removed. Mosquito Control waters wired to basket & 2 yard inlet boxes.

3. **Sediment**
   - Conditions: Evidence of sedimentation in catchment or infiltration area.
   - Maintenance Needed: No
   - Comments: No buildup on visit.

4. **Erosion**
   - Conditions: Channels have formed around inlets & there are areas of bare soil, and/or other evidence of erosion.
   - Maintenance Needed: No
   - Comments: Good germination.

5. **Vegetation**
   - Conditions: Vegetation is dead, diseased and/or overgrown.
   - Maintenance Needed: No
   - Comments: Plants thriving, some weeds which will be removed shortly. Heat stress but some blooming

6. **Other**
   - Conditions: Any other areas needing inspection.
   - Maintenance Needed: No
   - Comments: Trees and shrubs

**Results Expected When Maintenance Is Performed**

- There should be no areas of standing water once inflow has ceased. Any of the following may apply: sediment or trash blockages removed, or under drain flushed.
Channel Erosion Abatement

New wider, turf-reinforced channel improves water quality through erosion control, reduced volume and pollutant capture.
Rain Gardens & Rain Barrels

Reduce runoff and the pollutants it carries downstream
Permeable Paver Installation
CLASS A (Neighborhood) Grants

FY 2011 - $260,000 budget
- 20 applications received requesting $349,358
- 15 grants awarded totaling $239,258
- 20% cost share required
- Maximum grant award = $50,000

FY 2012 - $200,000 budget
- 11 applications received requesting $279,970
- 10 grants awarded totaling $197,565
- 20% cost share required
- Maximum grant award = $50,000

FY 2013 - $200,000 budget
- 4 applications received – pending review
- 20% cost share required
- Maximum grant award = $100,000
CLASS B (Education) Grants

- Projects typically 18 months
- First $2,500 – covered 100% by grant
- Above $2,500 – 50% match required
- Grant Eligible Expenses – Equipment & Supplies, Consulting Fees, Personnel (teacher stipends), etc.
FY 2011 CLASS B (Education) Grants

WATER QUALITY IS EVERYONE'S RESPONSIBILITY
CLASS B (Education) Grants

FY 2011 - $248,000 budget
- 6 applications received requesting $382,380
- 6 grants awarded totaling $248,000
- 50% cost share required above first $2,500
- Maximum grant award = none

FY 2012 - $63,000 budget
- 8 applications received requesting $112,495
- 6 grants awarded totaling $63,000
- 50% cost share required above first $2,500
- Maximum grant award = $35,000

FY 2013 - $75,000 budget
- 3 applications received requesting $67,260
- 3 applications selected for $67,260
- 50% cost share required above first $2,500
- Maximum grant award = $35,000
CLASS B (Infrastructure) Grants

1. Feasibility Only (for long-term planning)

2. Design & Construction

3. Construction Only
   - Design Review Submittals and Reporting Requirements
   - Maintenance Agreement
     1. Owner maintains for service life
     2. Service Life of 15 or 20 years – Owner must pay back Remaining Value per straight-line depreciation to LFUCG if a facility is taken out of service prior to end of Service Life

   - Grant Eligible Expenses – Equipment & Supplies, Consulting Fees, Construction Costs, Personnel, etc.

   - Upgrades of new development eligible. Base costs not eligible.
CLASS B (Infrastructure) Projects

- Types of projects:

  - Permeable pavement
  - Bio-filtration
  - Proprietary Devices
  - Vegetated Roof
CLASS B (Infrastructure) Grants

**FY 2011 - $992,000 budget**
- 19 applications received requesting $3,306,336
- 6 grants awarded totaling $986,619
- No cost share required
- Maximum grant award = $500,000

**FY 2012 - $937,000 budget**
- 17 applications received requesting $2,385,978
- 6 grants awarded totaling $937,000
- 25% cost share required for Feasibility Only projects
- Maximum grant award = $150,000 (new projects)

**FY 2013 - $925,000 budget**
- 21 applications received requesting $4,942,067
- 10% cost share required for Feasibility and Design Phase Costs
- Maximum grant award = $350,000
PROPOSED PERMEABLE ASPHALT
PROPOSED PERMEABLE CONCRETE
DISCONNECT DOWNSPOUTS

PROPOSED RAIN GARDENS (2)
PROPOSED BIOFILTRATION SWALE

RONALD MCDONALD HOUSE
LFUCG Incentive Grant Application
<table>
<thead>
<tr>
<th>Type</th>
<th>Number</th>
<th>Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class A (Neighborhood)</td>
<td>25</td>
<td>$437 K</td>
</tr>
<tr>
<td>Class B (Education)</td>
<td>12</td>
<td>$311 K</td>
</tr>
<tr>
<td>Class B (Infrastructure)</td>
<td>13</td>
<td>$1.92 M</td>
</tr>
<tr>
<td>Totals (2010-2012)</td>
<td>50</td>
<td>$2.67 M</td>
</tr>
</tbody>
</table>
The Stormwater Quality Projects Incentive Grant Program

Results

• Improved Water Quality
• Reduced Flooding
• Fix Issues Not Typically Addressed by Govt.
• Educational Benefits (Community and Government)
• Community Partnerships
• Possible Fee Reduction
• Meet Consent Decree Green Infrastructure SEP?
Consent Decree Progress  
Supplemental Environmental Project #2  
Green Infrastructure

• Spend at least $230,000 to implement one or more green infrastructure projects.
• July 2011 – Four previously approved Incentive Grant funded projects submitted to meet the SEP.
• August 2011 – USEPA endorsed DWQ’s recommendation.
Green Infrastructure SEP Project
Coca-Cola Refreshments USA, Inc

- 8,500 square foot rain garden, bio-retention system.
- 12,500 gallon infiltration chamber.
- 10,000 gallon rainwater harvesting tank.
- SEP value - $189,090.
Water Re-use
Bio-retention Facility
Ross Tarrant Architects Pervious Concrete Parking Lot Retrofit (10,000 sq ft)

SEP Value - $109,000
Ross Tarrant Architects Pervious Concrete Parking Lot Retrofit
Previous Impervious Area
8 ERU
Post Impervious Area
3 ERU
Consent Decree Appendix J-2
Supplemental Environmental Project Completion Report

- Submitted on June 29, 2012
- Documented $293,090 in green infrastructure improvements
- AI E Properties / Ross Tarrant Architects
- Coca-Cola Refreshments USA, Inc.

** These projects were undertaken in connection with the settlement of an enforcement action under the Clean Water Act, United States et al. v. Lexington-Fayette Urban County Government, brought on behalf of the U.S. Environmental Protection Agency. These projects includes “green infrastructure” components for management of wet weather flows in urban areas of Fayette County, and have been identified as a “Supplemental Environmental Projects” required by the Consent Decree entered on January 3, 2011 between the United States of America and the Commonwealth of Kentucky and the Lexington-Fayette Urban County Government.
The Stormwater Quality Projects Incentive Grant Program

Lessons Learned

• Management

• Time/Personnel Commitment
  – DWQ
  – Grantee

• Accountability

• Education
Questions?

For more information, please visit the Division of Water Quality website at:

www.lexingtonky.gov