

Blues
Stinnett
Gorton
Farmer
Martin
Henson
Lane

A G E N D A

Environmental Quality Committee

May 3, 2011

3:00 P.M.

- 1. Constituent Comments: Ed Kusche**
- 2. Remedial Measures Plan – SSO Baseline Recommendations (1-15)**
- 3. Private Property Issues – Responsibilities & Authority (1-4, 8-15)**
- 4. Acute Problem Grant Program**
- 5. June 2011 Special Meeting**
- 6. Items Referred to Committee**

“Environmental Quality Committee, to which shall be referred matters relating to the Department of Environmental Quality and its divisions, and any related partner agencies.”

-Council Rules & Procedures, Section 2.102(1)
Effective January 1, 2011. Adopted by Urban County Council October 14, 2010

Committee Schedule. 3:00 PM except noted
April 19 (11:00 AM)
May 3
September 20
November 29

Remedial Measures Plans Status and Direction



Presentation to
Lexington-Fayette Urban
County Government
Environmental Quality
Committee

April 18, 2011



Agenda



- Summarize recent public involvement and input received
- Discuss impacts of illicit connections on private property
- Provide initial cost estimates for required improvements
- Address critical issues needing decisions
 - Illicit stormwater from private property
 - Magnitude of rainfall event used in designs

Recent Public Involvement



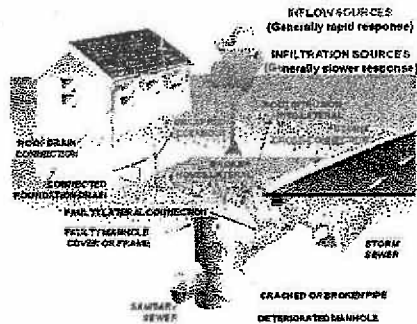
- LFUCG Council, EQC Committee, Staff
- Stakeholder groups
 - Commerce Lexington (with UK and LBAR)
 - Homebuilders Association
 - Fayette County Public Schools
- Media, GTV-3
- Fayette County Neighborhood Council
- Public Meetings
 - March 7 at Fayette County Extension Office
 - March 14 at Victory Baptist Temple
 - March 21 at Tates Creek Christian Church

Primary Concerns of Residents (as stated in public meetings)



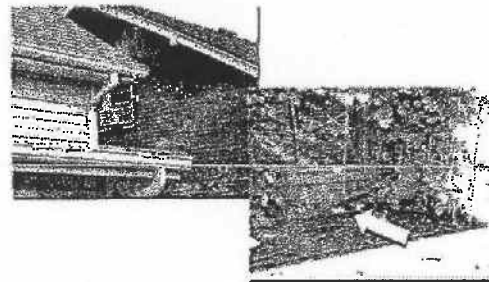
- Portion of the wet weather problems that can be attributed to private property
 - Fixing only public system won't solve problems
 - All residents must pay for solutions
 - Eliminate illicit connections (i.e. sump pumps)
 - Those with illicit connections should pay more
- Want SSOs eliminated, but concerned about costs

Typical Infrastructure Elements



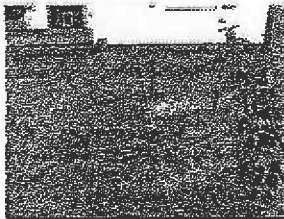
Typical Private Property Defects

- Roof downspouts connected to sewers



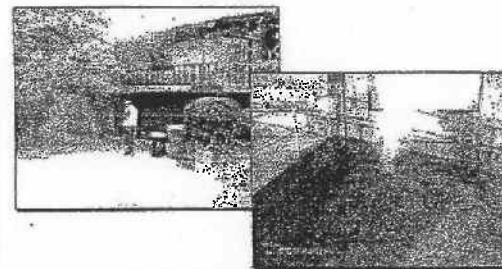
Typical Private Property Defects

- Sump pumps connected to sewers - eight sump pumps can fill up an 8" sewer line
- Broken sewer laterals



Typical Private Property Defects

- Area drains connected to sewers



Recent LFUCG Initiatives



- Disconnected 430 sump pumps since 2008
- Extensive repairs made to system since 2008 – approximately \$5.2 million
- Currently focused on WR-2 (Garden Springs area)
- Preparing scope for FY12 initiatives

Summary of Private Property Issues



- Need task force or subcommittee focused on developing effective program, with enabling legislation
 - Expand voluntary program (LFUCG pays for disconnections)
 - Initiate mandatory inspections during real estate transactions – property owner pays for disconnection
- Provide reasonable outlet for redirected connections – may require stormwater improvements

Primary Concerns of Residents (as stated in public meetings)



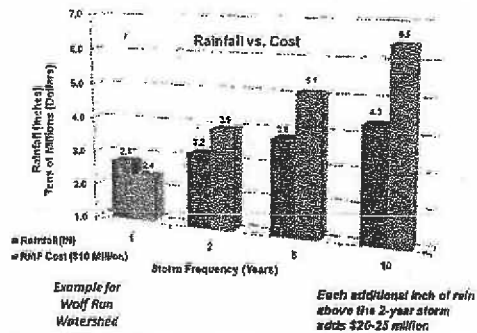
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Potential Costs for Various Storm Events

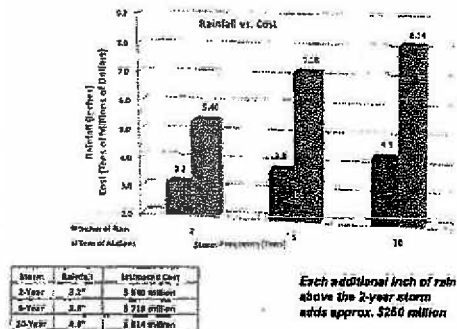


- Current estimates are based on general concepts, not detailed engineering
- Costs developed for following storm events:
 - 2-year storm (3.2 inches of rain in 24 hours)
 - 5-year storm (3.8 inches in 24 hours)
 - 10-year storm (4.3 inches in 24 hours)
- Rate impacts based on financing capital improvements for 20 years at 3%, spread to 106,000 customer accounts

Design Storm – Cost Relationship (Wolf Run Example)



Design Storm – Cost Relationship (All 7 Sewersheds)



Potential Monthly Rate Impacts

Storm	Rainfall	Estimated Cost	Rate Impacts *
2-Year	3.2"	\$540 million	\$28.25
5-Year	3.8"	\$718 million	\$37.57
10-Year	4.3"	\$814 million	\$42.59

*Potential monthly rate increase based on financing capital improvements for 20 years at 3%, spread to 106,000 customer accounts

Related Issues

- 2-year storm is likely the smallest storm EPA would consider
- Selection of 2-year storm would result in lowest cost and lowest rate increases
- Selection of larger storm event would have higher costs, but would have less SSOs, less residential impacts, and less regulatory fines
 - Building improvements for the 2-year storm would result in an estimated 13 SSOs during a 5-year storm, and 53 SSOs during a 10-year storm

Potential Regulatory Penalties



- Fines
 - Any SSO after its elimination deadline
 - \$1000 to \$5000 depending on volume
- Frame of reference: 2008-2010
 - Average 460 SSOs per year
 - Financial penalties would have ranged from \$480,000 to \$2,400,000

Decisions Required



- LFUCG must select design storm while considering:
 - Capital costs and rate impacts
 - Environmental protection
 - Property impacts
 - Economic development
- Unless directed otherwise by Council, DWQ will proceed with planning Remedial Measures based on the 2-year storm.

Questions?



Concept	Description	Notes	Action Taken
1	Cleanout Cap Replacement Create a policy to allow sewer maintenance workers to replace missing or broken cleanout caps. Prevents inflow and provides access for cleanout and inline inspections.	Sec. 16-42. Discharge of storm water and unpolluted drainage. (1) No person shall discharge or cause to be discharged any storm water, surface water, groundwater, roof runoff, subsurface drainage, cooling water or unpolluted industrial process water to any sanitary sewer. (2) Storm water and all other unpolluted drainage shall be discharged to such sewers as are specifically designated as storm sewers, or to a natural outlet approved by the urban county engineer. Industrial cooling water or unpolluted process water may be discharged, upon approval of the urban county engineer, to a storm sewer or natural outlet.	Recommend that cap replacement policy be formalized either by division policy or by ordinance. The Division is working to bring a vendor(s) on line to begin this work this Spring.
2	Positive Foundation Drain Require and better enforce foundation drain design during new construction.	Positive Foundation Drains simply mean that the house is built in such a way as to assure that the water drains away from the house. Our building codes require that habitable living space below grade have positive foundation drains which can include sump pumps. Slabs don't have this requirement, and crawl spaces are simply required to be dry which allows for sump pumps if necessary. Please see attached for actual regulation. Flood proofing program will not pay for pumps since they regard that as a failure of a flood proofing plan. Pumps remove water after it has already entered the structure, while successful flood proofing keeps the water from entering in the first place.	Ask Director of Building Inspection to draft a memo to his staff to make sure that appropriate follow-through on review and inspection during the construction process is taking place. Done.

Concept	Description	Notes	Action Taken
3 Lateral Abandonment	Develop a lateral abandonment policy, set up a way to implement, inspect and enforce. For example, make it a part of the Demolition Permit process.	Sec. 16-42. Discharge of storm water and unpolluted drainage. (3) To prevent the intrusion of groundwater into abandoned services lines, the division of building inspection shall issue a demolition permit only after the applicant has acquired a sewer plug permit for each sewer service to the building. The applicant must agree to properly plug the connections prior to completion of the wrecking project. Plug permits may be obtained from the division of engineering. (4) A refundable deposit of two hundred fifty dollars (\$250.00) shall be submitted to the division of engineering prior to issuance of the sewer plug permit referenced above. When the applicant has completed the sanitary sewer connection plug and the division of engineering has confirmed that the work has been properly completed, the deposit shall be refunded to the applicant. In the event the applicant has not completed the work within ninety (90) days of issuance of the permit, the deposit shall be forfeited and the work shall be completed by the urban county government.	It is currently required by ordinance that no demolition permits be issued until the Division of Engineering has confirmed that the lateral has been appropriately plugged. According to the Tap-on Desk, this is being done appropriately now. Done.

	Concept	Description	Notes	Action Taken
5A	Property Owner Line Fee	Fee that provides funds for LFUCG to maintain and repair laterals, probably to within a few feet of the structure. Allows access for repair, inspection and maintenance. Allows for cleanout installation and cap replacement.	Funding mechanism for the above issue.	See above.
6	Point of Sale	Inspect properties during the sales process to identify and correct private property inflow and infiltration sources and defective sewer laterals. Also, install a cleanout at the right-of-way to provide access for internal inspection and cleaning.	Who would be responsible for doing inspections?	Forward to Sanitary Sewer Oversight Committee (SSOC) ???
7	Private Inflow and Infiltration Source Removal Program	Develop a program to identify and correct private property inflow and infiltration sources such as roof leaders, area drains, driveway drains and other sources of inflow.		Concept is the same as the Sump Pump Redirection Program. To be revisited once investigatory work is completed. Waiting for SSA completion.
8	Sump Pump Disconnection Program	Refine the existing sump pump disconnection program's prioritization process and ensure adequate stormwater conveyance facilities exist prior to disconnecting sump pumps from the sanitary sewer.		Combine with above and send to SSOC with a recommendation to implement. Waiting for SSA completion.
9	Tree Ordinance Update	Restrict placement and type of tree in an effort to reduce root damage to laterals and main lines.	Should probably get information and help from the Urban Forester and Tree Board. Julian Beard indicated that this goes back to the lateral line inventory since homeowners can plant inappropriate trees and shrubs over their laterals without knowing that they are doing so.	Direct Chair of SSOC to go to Tree Board to request assistance. I do not know if he did this. I will follow-up on it.
10	Education Plan	Public awareness campaign. Concept, design and media implementation. Could include "proper use and care of lateral" and "I/I source disconnection" as well as detailed information regarding SSOs and Consent Order requirements.	Research indicates that this program is estimated to cost \$250,000. The design and one year's advertising for a campaign to educate the public related to sanitary sewers, storm sewers or water quality in general.	Forward to SSOC We are working on our outreach through the new Division of Environmental Policy.

Concept	Description	Notes	Action Taken
11 Basement Sewage Backup Program	Funding and program to provide property owners with basic cleanup and repairs when sewage backup occurs within structure.	Educate the public about riders available through homeowners' insurance policy (about \$35) to help repair homes after back-ups related to non-resident owned problems. 2. Educate the SSOC about the issue so that as the UCG moves forward, we will be more prepared to handle. ????	1. Educate the public about riders available to homeowners' insurance policy (about \$35) to help repair homes after back-ups related to non-resident owned problems. 2. Educate the SSOC about the issue so that as the UCG moves forward, we will be more prepared to handle.
12 Unsewered Area Assistance	Provide centralized sewers to unsewered areas with failing on-site home sewage treatment systems		Cassie Felty to continue research for financing on this matter. We continue to chip away at these.
13 Inflow and Infiltration Reduction Credits Program	Establish a credit system that prevents additional flow from new sewer taps aggravating or increasing the quantity of discharge at downstream recurring SSOs. Under an I/I credits program, Lexington would be required to complete rehabilitation that resulted in I/I removal and created a credit of available downstream capacity prior to authorizing any additional flow to the system through new sewers, sewer extensions, or service connections associated with new development.	Defer until more system study is done, then reconsider.	Recommend to SSOC that this program is a good idea to be filled out when system investigatory work has been completed. Waiting until investigation work done.
14 Sensitive Watershed Policy	Establish a policy that requires strict design, construction and inspection standards for new and replacement sewers and pump stations in sensitive watersheds.	San Antonio has a policy in place for this – Laurie Chase can get a copy for us. Table for research – figure out who to ask.	Nothing has been done on this.
15 Easement Encroachment Policy	Review existing policies and enforcement capability of addressing easement encroachment.	Done.	To SSOC – Revisit after mapping study completed

	Concept	Description	Notes	Action Taken
16	Subdivision Regulations	Review existing policies and standards for erosion control requirements associated with subdivisions	Done.	Recommend as a group to hire more inspectors in order to upgrade the level of work. Given the economic situation, new hires are unlikely for a while. However, the Division is working hard on this issue with current staffing.
17	Grant and Loan Funding Task Force	Form a task force charged with identifying sources of grants, low/no-interest loans and other sources of funding to pay for infrastructure and water quality improvements projects. Work with legislators, NACWA and other industry advocates to establish funding assistance programs.	This is a smart thing our staff should be doing already. Maybe consider adding a grant coordinator for the Division of Water and Air Quality. There are not that many grants actually available, so a current position should probably be responsible for keeping an eye on possible funding sources.	Communicate a concern to SSOC- going forward, grants and low interest loans are going to be more and more important to help pay for required capital projects. Work should begin on identifying alternative financing for these projects immediately by having Director address this through management of the Division. We are actively working on this and have been successful in finding and obtaining some assistance of this type. The Department of Environmental Quality will continue to improve our ability to find and obtain more of this type of funding.
18	Stormwater Outfall Mapping and Sampling	Create a system inventory that includes Geographic Information System technology capturing stormwater outfall location and attribute data. The creation of the inventory will help identify sampling points. The geodatabase can be used to track work performed associated with the structures.	This is being done currently, and will be improved upon as part of the Consent Decree.	Actively working on this.

	Concept	Description	Notes	Action Taken
19	FEMA Flood Mitigation Assistance	Investigate County's ability to qualify for Pre-Disaster Mitigation and Flood Mitigation Assistance grant funding, identify applicable projects and request funding assistance. If needed, update the Countywide All-Natural Hazards Mitigation Plan to comply with FMA requirements.	LFUCG does have an All-Natural Hazards Mitigation Plan which is administered by Planning. The TF is unclear as to whether it is FMA compliant. If it is NOT FMA compliant, we need to request that this happens.	We are currently doing this.
20	Stream Restoration/Riparian Corridor Restoration Projects	Improve in-stream and riparian corridor habitat by addressing erosion, habitat degradation and other water quality impairment sources.		Agree with the conservation easement approach given the legal authority. For new development, recommend that all streams have a buffer easement to allow the government access when necessary and to assure that buildings are not located too close. The Law Department is currently studying the legal aspects of this approach.
21	Stakeholder Group Involvement	Establish and support local stream stakeholder groups. Supporting these groups and asking for feedback/alerts will help build public trust, spread the word regarding good housekeeping practices, and to efficiently spot water quality offenses/offenders. "Adopt a Creek"		I do not know where this is. Link this to the education plan in #10 above.

	Concept	Description	Notes	Action Taken
22	Green Infrastructure Best Management Practices	Adopt green infrastructure BMPs in building/development practices and identify retrofit opportunities that will result in water quality improvements.		Send recommendation to SSOC that Engineering Manual should be updated to include best management practices for green infrastructure, i.e. rain gardens, etc. so that neighborhoods do not need to ask for as many variances when they want to do creative drainage. I do not know the status of this. Will check on it and get back to you.

For Information Purposes

Section R405 – Foundation Drainage

R405.1 Concrete or masonry foundations. Drains shall be provided around all concrete and masonry foundations that retain earth and enclose habitable or usable spaces located below grade. Drainage tiles, gravel or crushed stone drains, perforated pipe or other approved systems or materials shall be installed at or below the area to be protected and shall discharge by gravity or mechanical means into an approved drainage system. Gravel or crushed stone drains shall extend at least 1 foot (305 mm) beyond the outside edge of the footing and 6 inches (152 mm) above the top of footing and be covered with an approved filter membrane material. The top of the open joints of drain tiles shall be protected with strips of building paper, and the drainage tiles or perforated pipe shall be placed on a minimum of 2 inches (51 mm) of washed gravel or crushed rock at least one sieve size larger than the tile joint opening or perforation and covered with not less than 6 inches (152 mm) of the same material.

Exception: A drainage system is not required when the foundation is installed on well-drained ground or sand-gravel mixture soils according to the Unified Soil Classification System, Group I Soils, as detailed in Table R-405.1.

The **KY State Plumbing Code** (current edition) identifies where clean-outs are to be located at the building end of the lateral (for new construction). **815 KAR 20:110. Traps and Clean-Outs**

Section 8. Required Pipe Clean-outs.

- (1) In a building served by a stack over forty-five (45) feet in height, a clean-out shall be provided at the base of each vertical waste or soil stack.
- (2) There shall be at least one (1) clean-out in the building drain with a full-size branch inside the wall or outside the building at a point not to exceed two (2) feet from the foundation wall. This clean-out shall be a two (2) directional fitting or a combination of sanitary tees or tee wyes to allow cleaning in both directions.
- (3) If located outside the building, the clean-out shall be extended to the finished grade for accessibility.
- (4) A clean-out shall be of the same nominal size as the pipe it serves up to four (4) inches and shall not be less than four (4) inches for larger pipe.
- (5) A clean-out installed on a four (4) inch sewer shall be a two (2) directional fitting or a combination of sanitary tees or tee wyes to allow cleaning in both directions.

From the **LFUCG Sanitary Sewer Pumping Station Manual** (current edition) the following is stated regarding cleanout locations.

Six inch diameter laterals serving single family residential units shall be constructed with a cleanout at the end of the lateral where it enters the lot (i.e. at the edge of the public right of way). These laterals shall be shown on the record drawings and shall be subject to the sewer testing requirements in Section 3.2. (Note that a 6-inch lateral is required for any lateral longer than 5 feet in length).