

Fort Sumter Drive Stormwater Project Preliminary Engineering Report Lexington-Fayette Urban County Government April 2012



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Preliminary Engineering Report

Ft Sumter Drive Stormwater Project

Lexington, Kentucky

April 10, 2012



Prepared for:
Lexington-Fayette Urban County Government
Division of Water Quality



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Executive Summary

This preliminary engineering report develops alternatives to mitigate flooding of homes near the Eastland Park Tributary at the Eastland Parkway crossings.

On August 16, 2011 GRW sent questionnaires to 116 residences in the Eastland Park neighborhood to determine the extent and causes of flooding in the neighborhood. Numerous replies were received and residents generally indicated flooding due to stormwater and sanitary sewer related issues.

A topographical survey of the area was conducted to establish road centerline elevations, grade adjacent to homes, and storm structure inverts. The survey and LFUCG mapping were used to create a hydrologic and hydraulic model of the area using xpSWMM software.

A storm event on September 23, 2006 was used to calibrate the model, and another storm event from August 31, 2005 was used to validate the model. The 25-year, 24-hour was then analyzed using xpSWMM to determine how many houses were within the model predicted 25-year, 24-hour floodplain. The results of the model are shown below.

Model Results

Event	Flooding	Comment
	No. of Homes	
25-year, 24 hour	12	Inadequate channel capacity

The existing channel does not have adequate capacity to convey the stormwater runoff of a 25-year storm in the area. Additional capacity must be added or peak flows must be reduced to remedy the flooding.

Alternatives to mitigate the flooding were developed and tested by the model. The recommended alternative involves regrading the yards of two flooded homes and the purchase of ten houses with yards not suitable for regrading. The estimated project cost is \$1.7 million.

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1. SCOPE OF WORK

The project is listed as “Ft Sumter Drive” on the Lexington Fayette Urban County Government Division of Water Quality Stormwater Priority Projects Master List. The following information was taken directly from the Stormwater Priority Project Master List.

Project Priority and Name		Water-shed	Council District	Severity Score	CPI Adjusted Estimate	Efficiency Value	Comments
61.5	Ft Sumter Drive	NE	6	876	875,000	\$999 Per Severity Point	Two houses removed on Ft. Sumter & Gayle using FEMA grant - second grant application approved by FEMA. Current Expenditures: \$ 409,000

Scope

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”).

The SEP is detailed in Appendix K-2 of the Consent Decree; it discusses the use of a portion of the stormwater management fee for flooding projects, specifically, \$30 million over 10 years. It also includes a requirement to evaluate the priority list methodology. GRW’s scope of work is:

- (1) identify near-term flood relief or elimination actions that result in at least \$3.0 million in capital flood mitigation projects;
- (2) evaluation of the priority list methodology; and
- (3) develop a Master Planning Work Plan to guide the development of watershed based master plans for stormwater capital improvements.

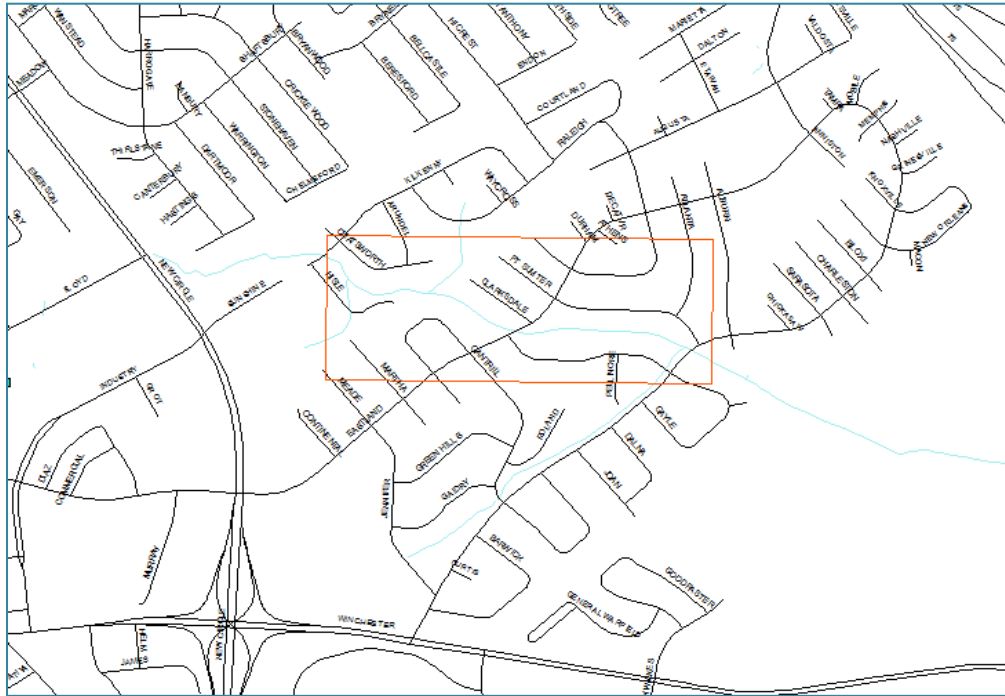
The deliverables for item (1) of the scope of work are preliminary engineering reports for the highest ranking projects listed on the Stormwater Priority Projects Master list. Fort Sumter Drive is number five on the list. This preliminary engineering report includes a description of the flooding problem, documentation of resident’s concerns (gathered from questionnaires and meetings), viable mitigation alternatives, identification of pitfalls such as easement acquisition, and estimated costs for final design, easement acquisition, and construction.

The LFUCG criterion for determining flooding problems and flood mitigation projects is the 25-year, 24-hour storm.

General Location

The project area is located in eastern Lexington, west of the I-75 and I-64 interchange and northeast of the intersection of New Circle Road and Winchester Road.

The project area is entirely within Council District 6. The project is located in the Eastland Park Neighborhood and within the North Elkhorn watershed.



Background

Questionnaires were sent to residents of the project area by the LFUCG Division of Engineering shortly after a flood event on September 23, 2006. These questionnaires were received as early as November 2006. Residents expressed concerns over flooding and sanitary sewer issues.

The LFUCG currently owns three properties on Ft. Sumter Drive (1612, 1614, and 1700) and two properties on Gayle Drive (1657 and 1661). The homes located at 1614 Ft. Sumter Drive and 1657 Gayle Drive have been demolished as a result of being purchased by the LFUCG, using FEMA grant money. One condition of the grant is that the homes must be demolished and each lot is never to be built on.

2. PROJECT LOCATION

Study Boundary

The extent of the detailed study area follows the Eastland Park Tributary. The studied section of the tributary begins at Kilkenny Drive and ends approximately 475 feet east of the downstream (lower) Eastland Parkway crossing. Flow in the tributary travels from west to east. Since stormwater drainage extends outside of the study boundary, the hydrology of the drainage areas was examined to determine flow within the studied section of the Eastland Park Tributary. The study area is part of the North Elkhorn Creek watershed.

General Topography

The project area includes the Eastland Park Tributary of North Elkhorn Creek. The drainage area consists of commercial use buildings, residential lots, and Yates Elementary School.

A topographical map of the area is shown in Exhibit 1.

Project Area Soils

The project area contains soils classified as hydrologic soil groups B and C. Soil group B consists of soils composed primarily of shallow loess and sandy loam. Soil group C contains soils composed of clay loams, shallow sandy loams, soils low in organic content, and certain saline soils (McCuen 2005).

Existing Infrastructure

Existing infrastructure for the study area includes:

Curb inlets located throughout the Eastland Park neighborhood carry stormwater to the Eastland Park Tributary.

Double 5' x 11.5' Box Culverts at each Eastland Parkway Crossing of the Eastland Park Tributary.

4' x 8' Box Culvert located at the lower Gayle Drive and Eastland Parkway intersection.

Storm structures in the Fort Sumter project area have been mapped by the LFUCG Division of Water Quality.

Drainage Areas

Commercial lots in the western portion of the drainage area flow east through storm sewers. The stormwater from the commercial lots is routed through a low-lying area behind Yates Elementary School. This stormwater then flows into the Eastland Park Tributary. Throughout the residential areas adjacent to the Eastland Park Tributary, stormwater is captured by curb inlets and travels through storm sewers into the Eastland Park Tributary.

Eastland Parkway Tributary drainage areas are shown on Exhibit 2.

3. DATA COLLECTION

Existing Mapping

Storm structures in the area have been mapped by the LFUCG Division of Water Quality. Aerial mapping from 2010 contours.

A Flood Insurance Study (FIS) was conducted by FEMA in 1979, and later revised in 1992 and 2008. The FEMA FIS provided profiles and cross-sections of the Eastland Park Tributary. FEMA later used the stream profiles and current contour data to create the flooding insurance rate map (FIRM) # 210067, dated September 17, 2008 Panel 0137D.

The FEMA flood hazard areas are shown in Exhibit 3.

Survey

Two surveys have been completed in the Fort Sumter project area. The LFUCG contracted *2020 Land Surveying* in October 2007 to collect low grade elevations at 16 residences.

As part of this study, Integrated Engineering conducted a survey of the project area. Information including road centerlines, cross-sections of roads at sag points, storm structures, and grade elevations at low points of buildings were collected. The data collected are provided in Appendix A.

Field Reconnaissance

Field reconnaissance was conducted by Integrated Engineering as survey information was collected. GRW made visits to the site to collect additional measurements and observe the channel conditions to better determine roughness factors used in the modeling process.

4. QUESTIONNAIRES

Previous Questionnaires

In 2006 questionnaires were sent to residents in the area following a storm event substantially larger than a 25-year rainfall event. Several residents indicated flooding in their homes and streets. At the time, several residents also indicated that they had witnessed evidence of sewage within the flood water. The questionnaire information could not be used to determine water surface elevations for the 25-year rainfall event.

The answered questionnaires from 2006 can be found in Appendix B.

New Questionnaires

On August 16, 2011 GRW mailed 116 questionnaires. At the time of this writing 41 responses have been received. A short form questionnaire was used. Residents whose homes were located in, or bordered, the estimated 25-year floodplain were asked if their homes had ever experienced flooding. Residents were also asked whether they had experienced flooding on their street, if vehicles could pass on the street, and if they had witnessed evidence of sewage within the flood water.

Exhibit 4 is a map of the responses to the questionnaires as of November 4, 2011. Residences that have and have not experienced flooding have been mapped.

- 18 residents have indicated house flooding in their questionnaire answer
- 22 have indicated no home flooding
- 7 have indicated flooding due to stormwater
- 7 have indicated flooding due to groundwater
- 4 have indicated flooding due to sanitary sewer backup
- 12 have indicated sanitary sewer odors or debris in the water

Table 1 shows a summary of the questionnaires received from residences that have experienced house flooding. All answered questionnaires from 2011 are located in Appendix C.

Table 1
Questionnaire Summary

Address	Flooding Reported		Comment
	House	Street	
1500 CLARKSDALE CT	Yes	Yes	Stormwater
1503 CLARKSDALE CT	Yes	Yes	Sanitary Sewer
1511 CLARKSDALE CT	Yes	No	Sanitary Sewer
1512 CLARKSDALE CT	Yes	No	Stormwater
1502 FT SUMTER CT	Yes	No	Stormwater
1513 FT SUMTER CT	Yes	No	Stormwater
1601 FT SUMTER DR	Yes	No	Sanitary Sewer
1602 FT SUMTER DR	Yes	No	Groundwater
1606 FT SUMTER DR	Yes	No	Groundwater
1702 FT SUMTER DR	Yes	Yes	Stormwater
1609 GAYLE DR	Yes	No	Groundwater
1629 GAYLE DR	Yes	No	Groundwater
1633 GAYLE DR	Yes	No	Groundwater
1649 GAYLE DR	Yes	Yes	Groundwater
1653 GAYLE DR	Yes	No	Stormwater
1669 GAYLE DR	Yes	Yes	Stormwater
1801 GAYLE DR	Yes	Yes	Groundwater
1510 RALEIGH CT	Yes	No	Sanitary Sewer

Eighteen questionnaires were returned unopened: Undeliverable. These were 1804, 1820, 1842, 1848, and 1860 Chatsworth Drive; 1605, 1612, 1614, and 1618 Fort Sumter Drive; 1805, 1809, 1817, 1821, 1825, and 1833 Hisle Way; 1657 and 1817 Gayle Drive; 1600 Raleigh Drive. 1612 and 1614 Fort Sumter Drive had already been purchased by the LFUCG.

5. Hydrologic and Hydraulic Analysis

A hydrologic and hydraulic analysis of the project area was conducted to determine the extent of flooding due a 25-year, 24-hour storm. This storm was selected by LFUCG as the benchmark for determination of flooding. Discussions with residents were also considered in the analysis. For example, high water marks at 1606 Fort Sumter Drive and 1500 Clarksdale Court were marked by residents and used in part to calibrate the model.

In order to determine the flow and water surface elevation of the Eastland Park Tributary during a 25-year rainfall event, several hydrologic and hydraulic parameters had to be determined. The hydrologic parameters for each drainage area include percentage of impervious area, time of concentration, and the total amount of rainfall for the storm event. Hydraulic parameters include channel roughness, slope, and shape. Each of these hydrologic and hydraulic parameters were estimated and used to create a model of existing conditions using xpSWM modeling software. Flood mitigation alternatives were modeled and compared to the existing model.

Hydrologic Analysis

The stormwater flowing to the section of the Eastland Park Tributary located within the project boundary comes from six major drainage areas. Attributes for each drainage area can be seen in the table below. The extent of each drainage area is shown on Exhibit 2.

Table 2
Hydrologic Parameters

Drainage Area	Acres	Impervious %	Pervious Curve Number	Time of Concentration (min)	25-year Storm Peak Flow (cfs)
1	77.7	69.8	70	24.4	327
2	399	61.5	70	47.8	900
3	99.5	38.6	70	46.1	228
4	80.6	39.4	70	36.7	215
5	62.7	41.8	70	55.1	129
6	344	57.3	70	84.6	487

A Soil Conservation Service (SCS) Type II rainfall event distribution was used. The 25-year 24-hour total rainfall for the area was given as 5.19 inches by the National Weather Service. The peak stormwater runoff for each drainage area was calculated by the model using the above parameters, and is shown in the table above.

Hydraulic Analysis

After the peak stormwater runoff for each drainage area was calculated, the water surface elevations during a 25-year storm event were modeled.

The hydraulic component of the model consists of the Eastland Park Tributary open channel and two double box culverts at each Eastland Parkway Crossing of the Eastland Park Tributary. The

Eastland Park Tributary was divided into several smaller links of stream. Each link of stream had a specific roughness number, slope, and cross-section. The details for each link of stream can be seen in Appendix D.

A digital terrain model (DTM) was created in xpSWMM using contour mapping from the LFUCG. The DTM was used to create stream cross-sections and calculate ground elevations at nodes. Nodes connect links of the stream together in the xpSWMM model. Rainfall runoff from catchments in the xpSWMM model can enter the hydraulic model at nodes. Each node has an invert elevation and a spill crest elevation that matches the invert and spill crest of the links upstream and downstream of the node.

Node and conduit data for the xpSWMM input was based on LFUCG mapping and supplemented with previously collected data for the North Elkhorn Watershed XP-SWMM Model Summary Report (Tetra Tech 2008). xpSWMM node and conduit data are provided in Appendix D.

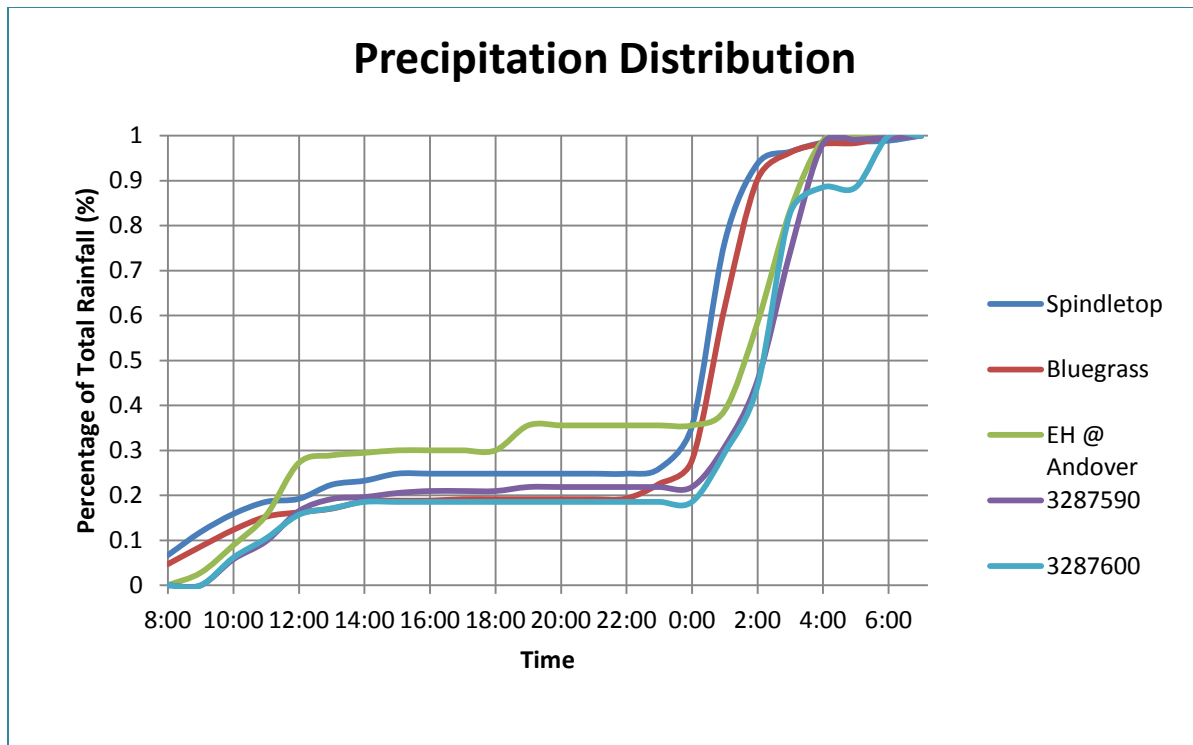
Model Calibration

GRW calibrated the model to the September 23, 2006 storm event. The September 23, 2006 storm is considered by the LFUCG to be greater than a 25-year storm event. Due to inconsistent data and varying rainfall amounts, GRW used engineering judgment to determine a rainfall amount that best calibrated the existing model. After examining the rainfall totals and distributions at five rainfall gauges in the county, it was determined that the precipitation distribution for the storm changed very little as the storm passed through the county, but the rainfall totals varied. Due to the range of measured rainfall depths throughout the area during the September 23, 2006 storm, the distribution from the Bluegrass Airport was used and the model was run using several rainfall depths to determine which rainfall depth best calibrated the model. The precipitation distribution collected at the Blue Grass Airport for the September 2006 storm is provided in Appendix D.

The range of measured rainfall totals and the similarity in rainfall distributions are shown below.

Rainfall Information		
Maximum 24-hour Rainfall Period of Sept 22-23, 2006 Storm Event		
	Distance from Ft Sumter	Sep-06
		8 am to 8 am
USGS North Elkhorn @ Winchester Rd 3287590 ¹	1.9 miles SE	2.25"
USGS North Elkhorn @ Bryan Station 3287600 ¹	2.5 miles NE	2.11"
USGS East Hickman @ Andover¹	4.0 miles S	1.82"
Gage at CTI (period unknown)	5.6 miles SW	6.83"
Spindletop	7.0 miles NW	4.47"
Blue Grass Airport	8.4 miles W	6.16"

¹ Rainfall record during the most intense portion of the storm is incomplete for the USGS gages.



Water surface elevations were measured during the September 23, 2006 storm event by a LFUCG contractor as a part of the North Elkhorn watershed study. The water surface elevations were measured at several places in the watershed, including at the upstream faces of Box 1 and Box 2. Residents at 1700 Clarksdale Court and 1606 Fort Sumter Drive also marked high water surface elevations during the September 23, 2006 storm event. A resident at 1700 Clarksdale Court measured a water surface elevation of 17 inches in the garage of the home, and the resident at 1606 Fort Sumter Drive placed a stake in the yard to mark the highest water surface elevation at the time. Because these two measurements were taken at the time of the storm, they were used to help calibrate the model to the September 23, 2006 storm.

The total rainfall depth of 4.3 inches was chosen as the total rainfall depth that would result in the closest match to measured stream stages after adjusting all hydrologic parameters within accepted ranges using best judgment. The total rainfall depth of 4.3 inches and the precipitation distribution from the airport were input into xpSWMM to determine the runoff from each catchment in Exhibit 2. The calibration between the measured water surface elevations and the modeled water surface elevations are shown in Table 3.

The Manning's "n" value was determined to be 0.04 throughout the channel.

Table 3
Model Calibration
September 22- 23, 2006 Storm Event

Location	Node	Measured Water Elevation (feet)	Model WSEL	Difference (Feet)
Upstream Face of Box 1	6	943.2	943.1	-0.09
High Water Mark on Stake at 1606 Ft Sumter	16	947.2	946.3	-0.9
Upstream Face of Box 2	24	949.1	949.9	0.8
High Water Mark in Garage at 1500 Clarksdale	32	953.8	953.5	-0.3

Box 1 is the downstream box culvert; Box 2 is the upstream box culvert. Both are under Eastland Parkway.

The model was validated using rainfall data and measured water surface elevations from another storm, August 31, 2005. This storm produced 1.71 inches of rainfall. The actual water surface elevation at the upstream face of Box 2 was compared to the modeled water surface elevation. The difference between the two elevations for this storm event was approximately 1 foot, approximately the same difference as the September 2006 calibration. The August 31, 2005 modeled and measured water surface elevations are shown in Table 4.

Table 4
Model Validation
August 31, 2005 Storm Event

Node	Model WSEL	Measured Water Elevation (feet)
Upstream Face of Box 2 (Node 24)	945.6	946.6

Model Results

After the model was calibrated and validated using the September 23, 2006 rainfall event and the August 31, 2005 rainfall event, the calibrated model was used to predict a 25-year rainfall event with a SCS Type II rainfall Distribution and a total rainfall depth of 5.19 inches. The 25-year total rainfall depth of 5.19 inches was given by the National Weather Service (NWS) website, and can be seen in Appendix D.

The water surface elevations predicted by the 25-year rainfall event model were compared to the Lowest Adjacent Grade (LAG) elevations at homes to determine how many homes were in the 25-year floodplain. Twelve homes have LAGs lower than the predicted 25-yr floodplain in their area. The 12 homes expected to flood are shown in Table 5.

Table 5
Model Results: Flooded Homes

Address	LAG	25-year Existing Conditions Model
1500 CLARKSDALE	952.40	954.3
1504 CLARKSDALE	952.04	953.5
1506 CLARKSDALE	952.13	952.8
1508 CLARKSDALE	950.78	951.6
1510 CLARKSDALE	950.82	951.4
1512 CLARKSDALE	949.67	951.2
1514 CLARKSDALE	950.42	951.2
1665 GAYLE	945.03	945.4
1602 FT SUMTER	948.50	948.8
1604 FT SUMTER	947.81	947.9
1616 FT SUMTER	945.10	945.5
1618 FT SUMTER	945.29	945.4

The questionnaire sent to 1618 Ft. Sumter was returned: Undeliverable.

Street flooding also occurs during the 25-year storm event on Eastland Parkway at Box 2. Street flooding does not occur on Eastland Parkway at Box 1. The extent of the street flooding is shown on Exhibit 5 and the table below shows the length of Eastland Parkway flooded during the 25-year storm event.

Table 6
Model Results: Road Flooding

Street	25-year Estimated Water Surface Elevation	Minimum Roadway Elevation	Approximate Length of Street Flooded (feet)
Eastland Parkway @ Box 1	944.1	945	0
Eastland Parkway @ Box 2	951.2	950.6	300

The 25-year floodplain and the homes located within the floodplain are shown in Exhibit 5. Exhibit 5 also shows the homes flooded during the 25-year rainfall event, and illustrates the three areas of home flooding along the channel.

Flooding in the channel has two main causes. First, the channel dimensions are inadequate to convey the stormwater during a 25-year storm event. To verify whether the channel size was inadequate, Manning's equation was used to calculate the stormwater flow in the channel required to give a water surface elevation at which no homes would flood. This analysis was applied to several links of channel and it was determined that the channel is adequate upstream of the tributary that runs between Chatsworth Drive and Clarksdale Court, and inadequate

downstream of that point. The estimated peak flow from the 25-year storm of drainage areas 1 and 2 is approximately 1225 cfs and can be conveyed by the channel, however the combined estimated stormwater runoff flow below the tributary is approximately 1675 and cannot be completely conveyed by the channel. Portions of the channel below the tributary are adequate, such as the area behind the homes between 1606 and 1614 Fort Sumter Drive. The main cause of home flooding along the channel is stormflow exceeding the banks of the channel.

The question of flooding caused by the box culverts was evaluated. The water surface elevations of a model with both box culverts was run and compared to the water surface elevations of a model with no box culverts. The water surface elevations upstream of Box 2 were very close and it appeared that Box 2 had no effect on the water surface elevations upstream. However, Box 1 did have an effect on the water surface elevations immediately upstream of the box. The water surface elevations for the model with box culverts were up to 1 foot higher for the first 300 feet upstream of Box 1 than the water surface elevations of the model with no box culverts. However, homes within 300 feet upstream of the culvert are either already owned by LFUCG or above the floodplain. Therefore flooding at the box culvert does not appear to contribute to home flooding.

6. ALTERNATIVE ANALYSIS

Evaluation Criteria

Each alternative was modeled and the results were compared to the existing conditions model. This comparison of various alternatives to the existing conditions showed each alternative's ability to lower the water surface elevation. Each alternative was also evaluated based on cost, and effectiveness at removing homes from the 25-year floodplain.

As previously mentioned, the main cause of flooding is the channel being inadequately sized to handle the 25-year storm runoff. There are several alternatives that have the potential to remove homes from the 25-year floodplain.

Detention upstream was evaluated as a possible alternative to remove homes from the 25-year floodplain. If large enough, a detention basin could reduce the peak flow in the channel to a level below a level that floods homes. The detention basin would need to hold 60 acre-ft of storm runoff to remove all homes from the 25-year floodplain. GRW visited the area and determined that this amount of surface storage was not available upstream.

Another potential alternative, that could give the channel a greater capacity, would be to make channel improvements. Channel improvements could include mowing the grass along the channel and removing some vegetation. This would give the channel a lower roughness factor and would allow the channel to convey more water. Another channel improvement could be to make the channel larger by excavating. Although both of these improvements could give the channel greater flow capacity, neither of these improvements are a viable alternative because the channel is a protected Greenway and channel improvements cannot be made.

Although it does not appear to contribute to home flooding, diverting some of the flow from Box 1 was evaluated. The secondary tributary that enters into the main channel from Drainage Area 5 just upstream of Box 1 could be rerouted downstream of Box 1 by an additional culvert barrel. This would allow the storm runoff flowing through the channel to pass through Box 1 and not backup upstream of the structure. This reduces the flooding in the area but is not a viable alternative because no flooded homes benefit from rerouting the tributary.

Another potential alternative that could remove homes from the floodplain would be to regrade the yards of homes with Lowest Adjacent Grades (LAGs) less than six inches below the 25-year floodplain. Regrading the ground surface would prevent flood waters from reaching the homes. The yards of homes cannot be regraded if openings to the rear of the homes are less than six inches above the ground surface elevation. If obstacles such as driveways, garage doors, basements windows, or doors are present, the home's yard would not be able to be regraded.

Finally, all homes can be purchased and removed from the 25-year floodplain. The homes that cannot be removed by any of the other alternatives could be purchased and removed from the 25-year floodplain. This alternative would be costly, but effective at removing homes from the 25-year floodplain.

Each of these alternatives has been modeled individually and in combination with one another. The alternatives that best remove homes from the 25-year floodplain are discussed below.

Alternative 1

Alternative 1 would regrade the yards of the homes where the Lowest Adjacent Grade (LAG) is within six inches below the 25-year floodplain, and buy all remaining homes with LAGs more than six inches below the 25-year floodplain. To increase the yard elevations six inches near the homes, soil could be borrowed from offsite areas. Fill within the floodplain is in inches and the effect on the floodplain shape is less than modeling standards.

An arbitrary elevation difference of six inches was chosen because it would require little effort to regrade the surface. The LFUCG may choose a larger elevation difference for regrading. The numbers of homes at each elevation interval below the 25-year floodplain are shown in the table below. The homes are independent of one another and the LFUCG can regrade the yards on an individual basis.

Elevation of LAG below the 25-year Floodplain (ft)	Number of Homes within each Elevation Interval Below the 25-year Floodplain (Excluding LFUCG Owned Properties)
0	
0 to 0.5	5
0.5 to 1	4
1 to 1.5	1
1.5 to 2	2
Greater than 2	0

For the five homes with LAG no more than six inches below the flood level, three of these are not suitable candidates for regrading since they have driveways behind the home. The other two may be regraded. The remainder of the homes flooded have LAG more than six inches below the flood level.

Address	Flood Level - LAG	Mitigation
1500 CLARKSDALE	1.9	Purchase
1504 CLARKSDALE	1.5	Purchase
1506 CLARKSDALE	0.7	Purchase
1508 CLARKSDALE	0.6	Purchase
1510 CLARKSDALE	0.6	Purchase
1512 CLARKSDALE	1.5	Purchase
1514 CLARKSDALE	0.8	Purchase
1665 GAYLE	0.4	Purchase
1602 FT SUMTER	0.3	Regrade
1604 FT SUMTER	0.1	Regrade
1616 FT SUMTER	0.4	Purchase
1618 FT SUMTER	0.1	Purchase

This alternative would remove all homes from the 25-year floodplain, but would not remedy

street flooding. No easements would be needed for this alternative. The areas to be regraded are shown on Exhibit 5.

Estimated cost of regrading and property acquisition = \$1.87M. See Appendix E for details on the probable opinion of project cost.

Alternative 2

Alternative 2 is the purchase of 12 homes within the 25-year floodplain. A total of four houses on Ft. Sumter Drive, seven on Clarksdale Court, and one on Gayle Drive are located within the 25-year floodplain and would be purchased by the LFUCG in this alternative. Assessed property values were found in the PVA records. The costs for these acquisitions are shown in Appendix E. This alternative would remove all homes from the 25-year floodplain, but would not remedy street flooding.

Estimated Cost of Property Acquisition = \$2.22M

Construction Constraints

The sanitary sewer runs along both sides of the Eastland Park Tributary, and a gas line crosses the Eastland Park Tributary at Box 1. Columbia Gas, Kentucky American Water Company, AT&T, Insight Communications, Windstream and others all provide service to the area. These utilities can be located by calling 811 (Before You Dig).

Public Review of Alternatives

There will be a public meeting to present the findings of this report to the neighborhood. A date has not yet been set.

7. CONCLUSIONS

GRW recommends Alternative 1: regrade the yards of the homes where the Lowest Adjacent Grade (LAG) is less than six inches below the 25-year floodplain, and purchase the remaining homes. Alternative 1 would remove two homes by regrading; 1602, and 1604 Fort Sumter Drive. The remaining 10 homes within the 25-year floodplain would need to be purchased.

Alternative 1 would cost approximately \$1.87M. An opinion of probable project cost is provided in Appendix E.

Table 7
Recommended Alternative

	Alternative 1
Project Description	Regrade and Purchase
Number of ERUs mitigated	12
Property Damage	<i>Moderate damage reported, estimate of \$50,000</i>
Frequency	<i>Frequency about 5 times in 10 years</i>
Number of Easements	0
Number of MOUs Obtained	0
Utility Relocation	No
Cost in thousands, K	\$1,870K
Cost per ERU/mitigated	\$156K

8. REFERENCES

McCuen, Richard, H. (2005). *Hydrologic Analysis and Design*. (Third ed.). Upper Saddle River, NJ: Prentice Hall.

Tetra Tech. 2008. North Elkhorn Watershed XP-SWMM Model Summary Report.

US Department of Agriculture. 1996. Urban Hydrology for Small Watersheds. Technical Release 55 (TR-55).

9. Exhibits

Exhibit 1

Site Topography

Exhibit 2

Drainage Areas

Exhibit 3

FEMA Flood Hazard Areas

Exhibit 4

Questionnaire Response Map

Exhibit 5

25 year, 24 hour Floodplain

10. APPENDICES

Appendix A

Survey Data

Appendix B

2006 Questionnaires

Appendix C

2011 Questionnaires

Appendix D

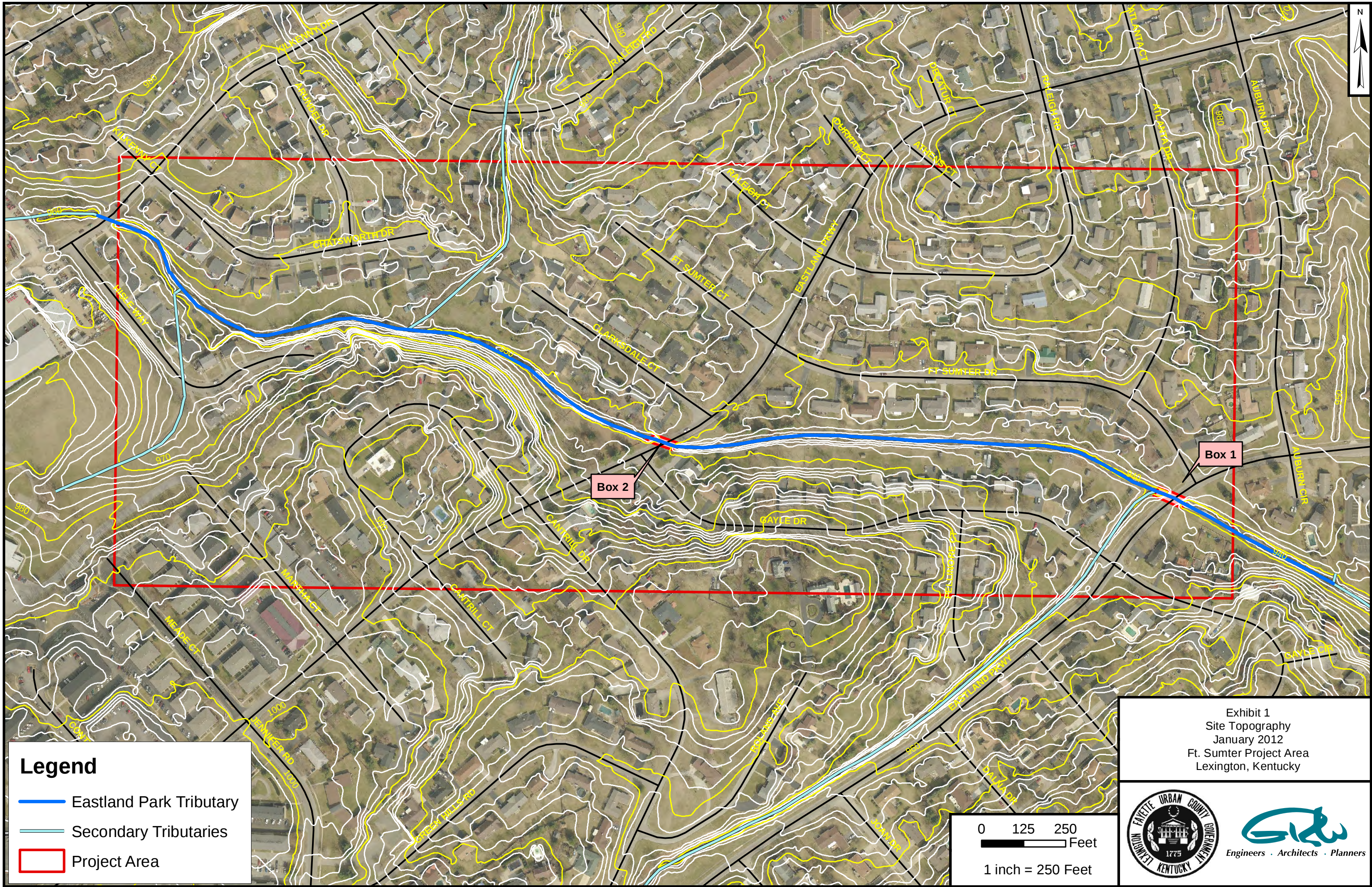
xpSWMM Link and Node Information

September 23, 2006 Rainfall Distribution

NWS NOAA Rainfall Table for Fort Sumter Project Area

Appendix E

Cost Estimates



Legend

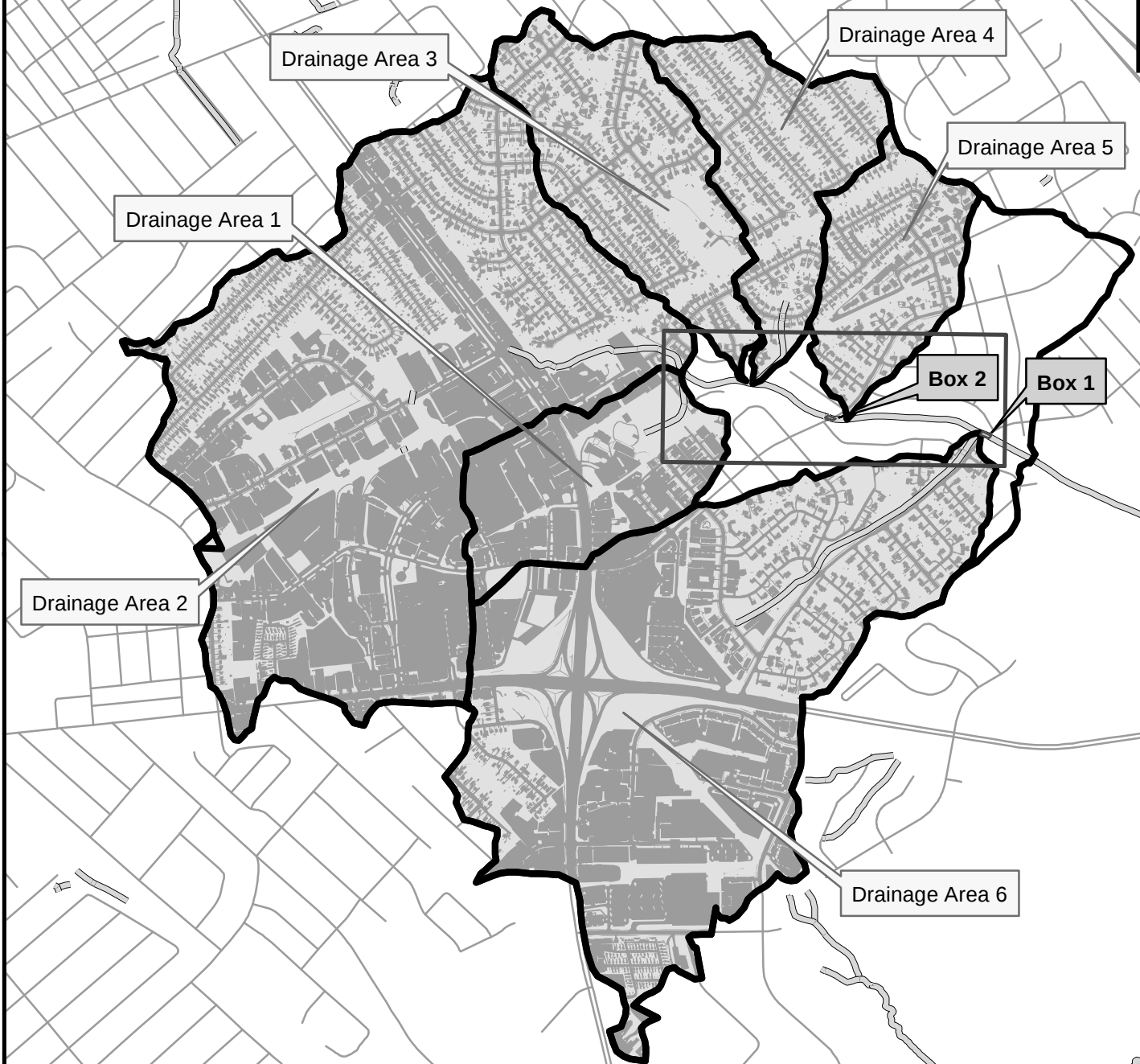
- Eastland Park Tributary
- Secondary Tributaries
- Project Area

Exhibit 1
Site Topography
January 2012
Ft. Sumter Project Area
Lexington, Kentucky



G&W
Engineers • Architects • Planners

Note: Impervious areas are the darker shaded colors while the Pervious areas are the lighter shade.



0 1,500 3,000
Feet

1 inch = 1,500 feet



Engineers · Architects · Planners



Exhibit 2
Drainage Areas
January 2012
Ft. Sumter Project Area
Lexington, Kentucky

Map Document: (U:\4008-LFUCG Stormwater\05-SEP Projects\Dept\Folders\Ft Sumter\GIS\FtSumter_FloodplansEx2.mxd) 12/19/2011 -- 11:12:13 AM



Legend

-  10-year FEMA Floodplain
-  25-year Interpolated Floodplain
-  100-year FEMA Floodplain

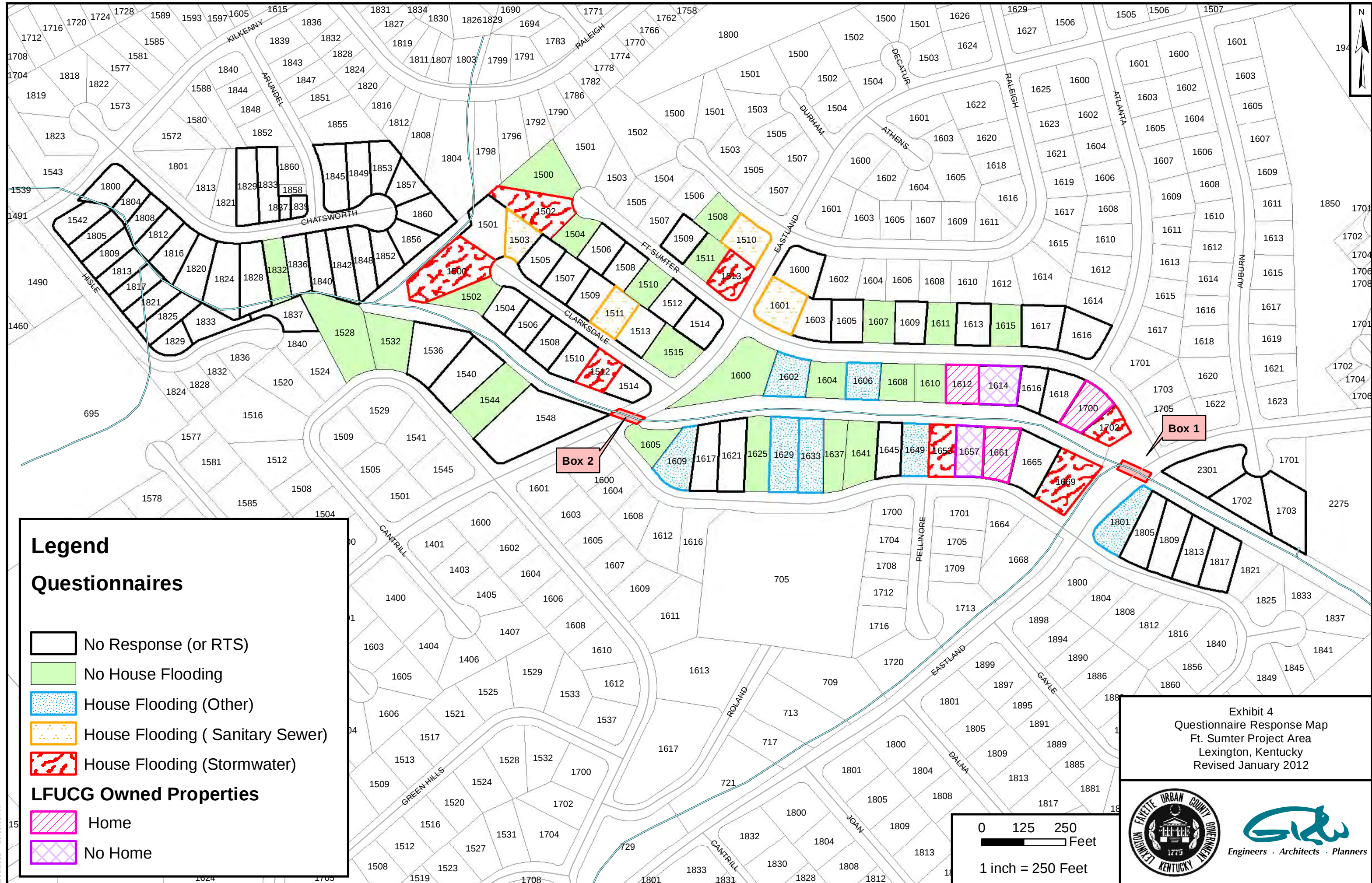
0 125 250 Feet
1 inch = 250 Feet

Exhibit 3
Flood Hazard Area
January 2012
Ft. Sumter Area
Lexington, Kentucky



Engineers • Architects • Planners

Map Document: (U:\4008-LFUCG Stormwater\05-SEP Projects\GIS\Ft Sumter\GIS\Ft Sumter_QuestionnairesEx4.mxd)
3/30/2012 -- 10:58:05 AM



Legend

Questionnaires

- No Response (or RTS)
- No House Flooding
- House Flooding (Other)
- House Flooding (Sanitary Sewer)
- House Flooding (Stormwater)

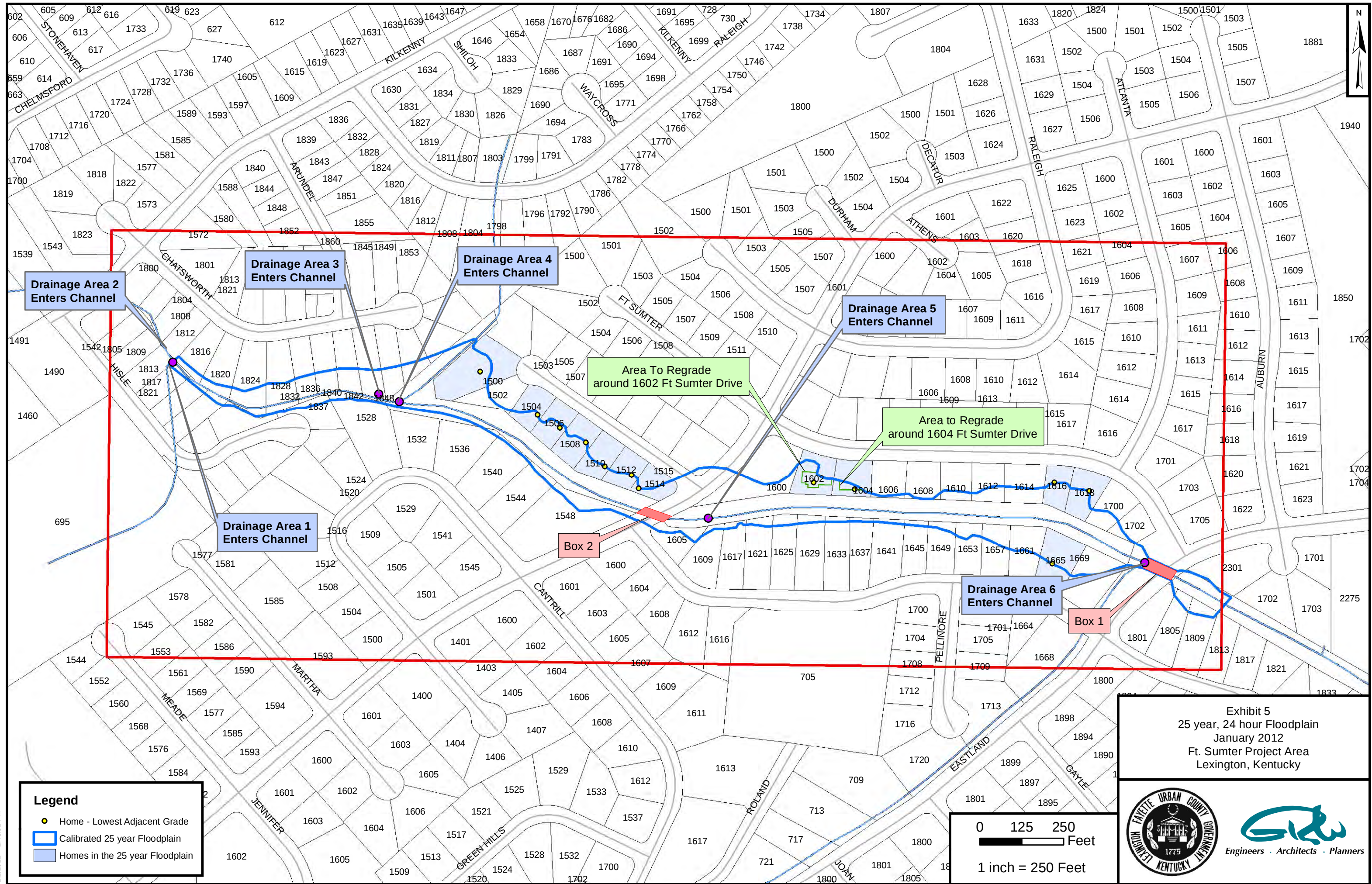
LFUCG Owned Properties

- Home
- No Home

Exhibit 4
Questionnaire Response Map
Ft. Sumter Project Area
Lexington, Kentucky
Revised January 2012



0 125 250
Feet
1 inch = 250 Feet



GRW_PT_NUM	X	Y	Z	TYPE	LOCATION
1	200165.92	1585559.25	945.44	NAIL/BRIDGE	
2	200305.89	1586007.42	948.27	19-2-AZI	
150	200165.883	1585559.232	945.349	CHK	NAIL/BRDGE
151	200305.89	1586007.42	948.27	CHK	MNT 0019
200	199954.482	1585390.194	946.301	CL	EASTLAND
201	199999.363	1585420.794	945.801	CL	EASTLAND
202	200040.444	1585452.101	945.437	CL	EASTLAND
203	200067.263	1585456.049	943.705	INLET	
204	200077.602	1585486.069	944.475	CL	EASTLAND
205	200113.852	1585525.506	944.745	CL	EASTLAND
206	200145.146	1585564.435	945.021	CL	EASTLAND
207	200174.565	1585606.728	945.029	CL	EASTLAND
208	200200.45	1585651.321	945.574	CL	EASTLAND
209	200225.536	1585703.829	946.074	CL	EASTLAND
210	200243.71	1585751.636	946.395	CL	EASTLAND
211	200247.972	1585765.289	946.494	CL	EASTLAND
212	200152.894	1585794.147	947.129	LAG	2301 EASTLAND
213	200051.442	1585962.086	943.952	LAG	1703 AUBURN
214	200056.055	1585912.173	947.425	LAG	1702 AUBURN
215	199945.174	1585514.422	944.958	LAG	1801 GAYLE
216	199961.28	1585617.218	943.108	LAG	1805 GAYLE
217	199934.028	1585630.4	943.989	LAG	1809 GAYLE
218	199916.518	1585697.206	944.948	LAG	1813 GAYLE
219	200047.2	1585478.198	943.612	CL	CB/FC
220	200191.232	1585635.104	945.517	CL	EASTLAND
221	200234.53	1585611.323	945.608	CL	FT SUMTER
222	200278.736	1585586.564	946.162	CL	FT SUMTER
223	200322.81	1585561.608	946.655	CL	FT SUMTER
224	200363.481	1585533.485	947.069	CL	FT SUMTER
225	200400.929	1585498.73	947.662	CL	FT SUMTER
226	200431.666	1585460.892	948.038	CL	FT SUMTER
227	200455.505	1585421.102	948.506	CL	FT SUMTER
228	200488.679	1585328.816	949.149	CL	FT SUMTER
229	200494.786	1585286.145	949.019	CL	FT SUMTER
230	200497.458	1585236.168	948.907	CL	FT SUMTER
231	200498.653	1585186.062	948.449	CL	FT SUMTER
232	200500.133	1585137.221	948.404	CL	FT SUMTER
233	200501.416	1585088.153	947.946	CL	FT SUMTER
234	200502.708	1585039.614	947.72	CL	FT SUMTER
235	200503.951	1584989.687	947.557	CL	FT SUMTER
236	200505.182	1584940.839	947.472	CL	FT SUMTER
237	200506.42	1584892.138	947.494	CL	FT SUMTER
238	200492.049	1584915.326	946.786	CL	FC/CB
239	200518.843	1584916.428	946.478	CL	FC/CB
240	200507.884	1584842.938	947.5	CL	FT SUMTER

GRW_PT_NUM	X	Y	Z	TYPE	LOCATION
241	200509.06	1584792.124	947.547	CL	FT SUMTER
242	200510.144	1584743.165	947.827	CL	FT SUMTER
243	200511.328	1584694.791	948.125	CL	FT SUMTER
244	200513.179	1584646.089	948.518	CL	FT SUMTER
245	200518.548	1584598.244	949.014	CL	FT SUMTER
246	200528.219	1584552.157	949.236	CL	FT SUMTER
247	200543.261	1584506.024	949.688	CL	FT SUMTER
248	200563.34	1584460.507	950.112	CL	FT SUMTER
249	200586.609	1584419.402	950.708	CL	FT SUMTER
250	200606.914	1584385.222	951.49	CL	FT SUMTER
251	200636.317	1584346.396	951.574	CL	FT SUMTER
252	200650.65	1584364.768	950.681	CL	CB/FC
253	200665.638	1584306.49	952.652	CL	FT SUMTER
254	200696.106	1584266.609	953.676	CL	FT SUMTER
255	200725.459	1584228.119	954.693	CL	FT SUMTER
256	200754.746	1584189.668	955.907	CL	FT SUMTER
257	200784.648	1584151.043	956.885	CL	FT SUMTER
258	200813.635	1584112.992	958.135	CL	FT SUMTER
259	200843.328	1584074.357	958.919	CL	FT SUMTER
260	200873.025	1584035.525	959.988	CL	FT SUMTER
261	200901.831	1583997.192	960.753	CL	FT SUMTER
262	200931.595	1583958.054	961.773	CL	FT SUMTER
263	200960.76	1583919.96	962.468	CL	FT SUMTER
264	200972.975	1583904.162	962.778	CL	FT SUMTER
265	200993.949	1583812.566	967.936	LAG	1500 FT SUMTER
267	200838.659	1583916.441	962.182	LAG	1504 FT SUMTER
268	200794.538	1584000.169	960.002	LAG	1506 FT SUMTER
269	200729.314	1584065.229	959.667	LAG	1508 FT SUMTER
270	200727.188	1584084.493	958.377	LAG	1510 FT SUMTER
271	200717.381	1584379.773	953.705	LAG	1513 FT SUMTER
272	200650.833	1584409.264	951.842	CL	EASTLAND PKWY
273	200696.146	1584434.6	951.947	CL	EASTLAND PKWY
274	200739.717	1584459.331	952.508	CL	EASTLAND PKWY
275	200781.484	1584483.064	952.596	CL	EASTLAND PKWY
276	200824.372	1584507.409	952.996	CL	EASTLAND PKWY
277	200829.54	1584528.076	952.27	CL	CB/FC
278	200858.834	1584502.789	952.716	CL	CB/FC
279	200867.365	1584531.448	953.424	CL	EASTLAND PKWY
280	200911.579	1584556.46	953.249	CL	EASTLAND PKWY
281	200887.271	1584565.569	952.291	CL	CB/FC
282	200902.685	1584525.657	952.546	CL	CB/FC
283	200820.929	1584439.694	954.035	LAG	1510 FT SUMTER
284	200566.111	1584360.749	951.239	CL	EASTLAND PKWY
285	200525.072	1584332.285	950.7	CL	EASTLAND PKWY
286	200486.149	1584300.372	950.537	CL	EASTLAND PKWY
287	200413.337	1584225.03	950.607	CL	EASTLAND PKWY

GRW_PT_NUM	X	Y	Z	TYPE	LOCATION
288	200384.249	1584185.449	950.618	CL	EASTLAND PKWY
289	200391.202	1584195.117	950.6	CL	EASTLAND PKWY
290	200357.957	1584144.849	950.845	CL	EASTLAND PKWY
291	200379.242	1584138.154	950.134	CL	CB/FC
292	200335.463	1584103.926	951.503	CL	EASTLAND PKWY
293	200313.654	1584058.499	951.265	CL	EASTLAND PKWY
294	200292.636	1584012.042	951.421	CL	EASTLAND PKWY
295	200292.73	1584012.051	951.398	CL	EASTLAND PKWY
296	200272.558	1583967.862	951.901	CL	EASTLAND PKWY
297	200251.932	1583923.103	952.726	CL	EASTLAND PKWY
298	200230.1	1583876.559	954.195	CL	EASTLAND PKWY
299	200208.046	1583828.563	956.41	CL	EASTLAND PKWY
300	200256.043	1584025.173	950.095	CL	CB/FC
301	200240.907	1583995.014	950.729	CL	CB/FC
302	200248.732	1584010.165	951.576	CL	GAYLE
303	200417.718	1584157.69	950.767	CL	CLARKSDALE
304	200445.216	1584117.449	951.455	CL	CLARKSDALE
305	200474.966	1584074.485	952.147	CL	CLARKSDALE
306	200502.657	1584034.678	952.902	CL	CLARKSDALE
307	200530.611	1583994.603	953.421	CL	CLARKSDALE
308	200587.366	1583914.258	955.545	CL	CLARKSDALE
309	200642.88	1583834.84	956.285	CL	CLARKSDALE
310	200671.048	1583795.691	956.252	CL	CLARKSDALE
311	200727.328	1583716.174	955.807	CL	CLARKSDALE
312	200753.352	1583679.609	955.411	CL	CLARKSDALE
313	200767.36	1583659.757	954.819	CL	CLARKSDALE
314	200763.9	1583657.127	954.583	CL	CB/FC
316	200741.689	1584600.154	953.634	LAG	1600 FT SUMTER
317	201118.257	1582528.376	968.459	CL	KILKENNY
318	201086.013	1582563.559	967.242	CL	CHATSWORTH
319	201053.623	1582599.13	966.392	CL	CHATSWORTH
320	201022.13	1582633.921	965.669	CL	CHATSWORTH
321	200991.369	1582668.151	964.942	CL	CHATSWORTH
322	200959.865	1582703.131	964.147	CL	CHATSWORTH
323	200927.304	1582739.29	963.195	CL	CHATSWORTH
324	200913.805	1582755.172	962.775	CL	CHATSWORTH
325	200901.69	1582745.835	962.149	CL	CB/FC
326	200923.558	1582765.6	962.144	CL	CB/FC
327	200896.572	1582775.776	962.312	CL	CHATSWORTH
328	200872.681	1582818.203	961.756	CL	CHATSWORTH
329	200861.315	1582864.211	961.037	CL	CHATSWORTH
330	200861.384	1582911.145	960.276	CL	CHATSWORTH
331	200868.956	1582958.305	959.543	CL	CHATSWORTH
332	200876.968	1583008.297	958.757	CL	CHATSWORTH
333	200884.326	1583055.928	958.146	CL	CHATSWORTH
334	200892.271	1583104.074	957.972	CL	CHATSWORTH

GRW_PT_NUM	X	Y	Z	TYPE	LOCATION
335	200894.544	1583117.886	958.012	CL	CHATSWORTH
336	200900.438	1583154.41	958.323	CL	CHATSWORTH
337	200908.083	1583200.977	958.383	CL	CHATSWORTH
338	200915.908	1583247.9	958.364	CL	CHATSWORTH
339	200923.278	1583294.758	958.667	CL	CHATSWORTH
340	200930.281	1583337.114	959.289	CL	CHATSWORTH
341	200932.068	1583350.96	959.4	CL	CHATSWORTH
342	200923.698	1583100.562	957.511	CL	CB/FC
343	200927.673	1583139.341	957.949	CL	CB/FC
344	200880.034	1583119.704	957.13	CL	CB/FC
345	200923.315	1583118.121	958.364	CL	ARUNDEL
346	200943.678	1583117.019	958.755	CL	ARUNDEL
347	200991.074	1583114.927	959.615	CL	ARUNDEL
348	201038.322	1583110.822	960.415	CL	ARUNDEL
349	201084.838	1583099.385	961.09	CL	ARUNDEL
350	201126.986	1583080.069	962.229	CL	ARUNDEL
351	201170.3	1583056.805	962.891	CL	ARUNDEL
352	201213.123	1583033.189	963.572	CL	ARUNDEL
353	201256.503	1583010.206	964.296	CL	ARUNDEL
354	201298.273	1582986.33	965.145	CL	ARUNDEL
355	201339.52	1582963.426	965.978	CL	ARUNDEL
356	201374.014	1582944.291	966.656	CL	ARUNDEL
357	200984.568	1583057.556	962.559	LAG	1860 ARUNDEL
358	200937.264	1583065.071	960.511	LAG	1859 ARUNDEL
359	200967.037	1583168.18	962.072	LAG	1845 CHATSWORTH
360	201001.232	1583229.004	963.568	LAG	1849 CHATSWORTH
361	201024.272	1583293.162	966.299	LAG	1853 CHATSWORTH
363	200852.799	1583418.832	957.74	LAG	1856 CHATSWORTH
364	200900.124	1583397.877	960.622	LAG	1860 CHATSWORTH
365	200958.279	1583386.315	965.412	LAG	1857 CHATSWORTH
367	200786.483	1583305.636	955.783	LAG	1852 CHATSWORTH
368	200817.534	1583283.665	956.792	LAG	1848 CHATSWORTH
369	200807.608	1583170.931	958.08	LAG	1842 CHATSWORTH
370	200805.314	1583156.787	957.905	LAG	1840 CHATSWORTH
371	200795.595	1583092.204	958.194	LAG	1836 CHATSWORTH
372	200785.599	1583025.211	958.817	LAG	1832 CHATSWORTH
373	200770.588	1582957.795	959.023	LAG	1828 CHATSWORTH
374	200758.737	1582882.391	959.934	LAG	1824 CHATSWORTH
375	200773.108	1582802.755	961.02	LAG	1820 CHATSWORTH
376	200806.845	1582739.169	962.033	LAG	1816 CHATSWORTH
377	200850.268	1582684.687	963.011	LAG	1812 CHATSWORTH
378	200892.539	1582635.872	964.233	LAG	1808 CHATSWORTH
379	200934.405	1582590.333	964.79	LAG	1804 CHATSWORTH
380	201009.594	1582508.827	966.57	LAG	1800 CHATSWORTH
381	200904.714	1582444.584	964.311	LAG	1542 KILKENNY
382	200873.903	1582445.508	965.024	LAG	1805 HISLE

GRW_PT_NUM	X	Y	Z	TYPE	LOCATION
383	200811.528	1582478.828	964.154	LAG	1809 HISLE
384	200704.693	1582525.294	964.684	LAG	1813 HISLE
385	200695.841	1582531.78	964.804	LAG	1817 HISLE
386	200643.636	1582577.294	964.888	LAG	1821 HISLE
387	200623.803	1582647.658	964.194	LAG	1825 HISLE
388	200553.097	1582728.909	963.906	LAG	1829 HISLE
389	200588.91	1582793.739	963.927	LAG	1833 HISLE
390	200245.147	1583688.28	968.351	LAG	1548 CANTRILL
391	200370.523	1583617.135	969.253	LAG	1544 CANTRILL
392	200436.845	1583554.126	975.342	LAG	1540 CANTRILL
393	200482.897	1583515.279	975.608	LAG	1536 CANTRILL
394	200542.581	1583389.803	977.691	LAG	1532 CANTRILL
395	200534.899	1583220.469	978.019	LAG	1528 CANTRILL
396	200264.977	1584129.95	950.963	LAG	1605 GAYLE
397	200199.45	1584165.158	953.73	LAG	1609 GAYLE
398	200152.572	1584235.698	959.913	LAG	1617 GAYLE
399	200187.664	1584693.789	955.495	LAG	1637 GAYLE
400	200196.336	1584712.752	952.556	LAG	1641 GAYLE
401	200211.161	1584855.818	949.836	LAG	1645 GAYLE
402	200223.007	1584917.479	947.638	LAG	1649 GAYLE
410	200305.89	1586007.42	948.27	CHK	MON 19
411	200220.321	1585005.112	946.103	LAG	1653 GAYLE
412	200193.781	1584563.163	957.629	LAG	1633 GAYLE
413	200184.093	1584542.908	960.644	LAG	1629 GAYLE
414	200192.161	1584396.088	961.705	LAG	1625 GAYLE
415	200650.3	1584562.995	951.811	LAG	1601 FT SUMTER
416	200586.334	1584650.192	951.041	LAG	1603 FT SUMTER
417	200608.712	1584671.351	951.567	LAG	1605 FT SUMTER
418	200595.374	1584753.623	950.255	LAG	1607 FT SUMTER
419	200613.556	1584925.958	951.411	LAG	1609 FT SUMTER
420	200604.15	1585028.877	950.589	LAG	1611 FT SUMTER
421	200594.316	1585122.679	952.084	LAG	1613 FT SUMTER
422	200765.808	1584314.049	954.362	LAG	1511 FT SUMTER
423	200817.056	1584243.156	955.678	LAG	1509 FT SUMTER
424	200702.881	1584180.015	953.995	LAG	1512 FT SUMTER
425	200575.903	1584293.295	953.7	LAG	1514 FT SUMTER
426	200906.689	1583822.84	959.923	LAG	1502 FT SUMTER
427	200880.982	1584360.019	955.388	LAG	1508 RALEIGH
428	200456.238	1584250.028	949.638	INLET	
429	200445.144	1584261.06	950.475	CL	EASTLAND
430	200434.0468	1584272.095	949.638	INLET	
431	200496.716	1584216.917	952.611	LAG	1515 CLARKSDALE
432	200558.538	1584126.842	954.154	LAG	1513 CLARKSDALE
433	200591.068	1584041.61	955.611	LAG	1511 CLARKSDALE
434	200639.203	1583962.125	957.27	LAG	1509 CLARKSDALE
435	200699.181	1583893.317	958.035	LAG	1507 CLARKSDALE

GRW_PT_NUM	X	Y	Z	TYPE	LOCATION
436	200744.591	1583788.414	958.216	LAG	1505 CLARKSDALE
437	200804.197	1583749.611	958.177	LAG	1503 CLARKSDALE
438	200808.052	1583613.415	957.561	LAG	1501 CLARKSDALE
439	200742.846	1583534.371	952.396	LAG	1500 CLARKSDALE
440	200676.858	1583577.812	955.182	LAG	1502 CLARKSDALE
441	200614.64	1583706.338	952.041	LAG	1504 CLARKSDALE
442	200575.985	1583772.133	952.131	LAG	1506 CLARKSDALE
443	200517.283	1583996.739	953.289	TEMP	TRAV 443
444	200395.955	1584146.608	950.664	TEMP	TRAV 444
445	200558.5375	1583954.686	954.66889	CL	CLARKSDALE
446	200431.1928	1583890.574	950.02956	TEMP	TRV 446
447	200394.5424	1584007.74	950.42042	LAG	1514 CLARKSDALE
448	200434.8124	1583986.37	949.67239	LAG	1512 CLARKSDALE
449	200460.3422	1583906.517	950.82215	LAG	1510 CLARKSDALE
450	200531.7376	1583849.708	950.78434	LAG	1508 CLARKSDALE
451	199800.376	1585704.308	955.577	TEMP	TRAV 451
452	199848.291	1585612.619	949.755	TEMP	TRAV 452
453	199892.7031	1585776.434	950.84012	LAG	1817 GAYLE
454	200333.2454	1584138.408	950.66842	TEMP	TRAV 454
455	200154.8218	1584318.728	965.46768	LAG	1621 GAYLE
456	200582.789	1583021.073	966.536	LAG	1837 HISLE

Clarksdale CT

Resident Questionnaire Storm water Drainage Issues

(Please complete and return in the enclosed stamped envelope as soon as possible.)

First Name: Bonnie E. Sherry Last Name: Ingram
Street Address (specify if mailing address is different):
1500 Clarksdale Ct.
City: Lexington State: Ky Zip: 40505
Telephone: Work: () Home: (859) 293-0096

General Information:

1. How long have you lived at this address? 21 yrs this June
2. Has storm water ever flooded your property? Yes ☒ No ☐

If Yes,

3. What were the limits of flooding? (Check all that apply)
- | | | |
|-----------|---|-----------------------------|
| In Yard | Yes ☒ | No ☐ |
| In Street | Yes ☒ | No ☐ |
| In House | Yes ☒ | No ☐ |
4. In the last ten years, how many times has your home flooded to some extent?
1 time: ☐ 2 times: ☒ 5 times: ☐ 10 or more times: ☐
5. Can you recall the month and year of any storm water flooding events? If so, please indicate them below;
Sept 22 & 23, 2006
6. When did the worst storm water flooding event occur? Month: Sept Year: 2006
7. During this event, how long did it take for the water to drain after the highest level was reached?
4 hours: ☐ 12 Hours: ☒ 1 day: ☐ 2 days or more: ☐
8. After this event, how long did water stand in.....
- | | | | | |
|----------|-----------------------------------|---|--|--|
| Streets? | 4 hours: ☐ | 12 hours: ☒ | 1 day: ☒ | 2 days or more: ☐ |
| Yard? | 4 hours: ☐ | 12 hours: ☐ | 1 day: ☒ | 2 days or more: ☐ |
9. Do you have any photographs or videos of your flooding property or neighborhood?
Yes ☐ No ☒
10. If yes, would you allow us to review and copy these photos and/or videos?
Yes ☐ No ☐
11. Are storm drains or ditches located on your property? Yes ☐ No ☐

12. Are there existing drainage easements on your property? Yes ☐ No ☒
13. Have you observed stream flooding in the vicinity of your house? Yes ☒ No ☐
14. If yes, what month and year? 9-06
15. Have you ever observed manholes overflowing in the vicinity of your house?
Yes ☒ No ☐
16. Have you contacted LFUCG previously about this problem? Yes ☒ No ☐
If yes, when: ?
With whom did you speak? Cristy (came out on one occ + spoke w/ her)
SKIP Blakeman (see back)
17. Has any activity such as new construction, landscape, etc. occurred over the years that may have caused or increased your drainage problem? Yes ☐ No ☒
If yes, describe

18. Do you have a sump pump? Yes ☒ No ☐
19. Where does the sump pump discharge? Yard ☐ Storm Sewer ☒
Sanitary Sewer ☐ Not Sure ☐
If other, please describe into the creek behind house.
20. Have you experienced any sanitary sewer backups (through sinks, toilets, etc)?
Yes ☒ No ☐
21. Have you noticed sanitary sewer odors during flooding events? Yes ☒ No ☐

Structural Flooding:

If water entered your house.....

22. What area of your house flooded?
Basement: ☒ Crawl Space ☐ First Floor ☐ Garage ☒
23. How did it enter? (Check all that apply)
Through door: ☒ Through walls and/or cracks: ☒
Through window: ☐ Sewer back-up (through toilet/sinks): ☐
Floor drain: ☒ Other: Sump pump ☒

Street Flooding:

24. During street flooding events have you witnessed the following:

- a. Automobiles stalled in water? Yes ☒ No ☐
b. Emergency vehicles unable to pass? Yes ☐ No ☒

If yes, how many times and approximately when?

my car was parked in garage when 17" of water came in

Flooding Sketch:

The drawing on the attached sheet is a picture of the general area in which we believe your property is located. On the drawing please locate your house by the street address number and follow the instructions on how to sketch your flooding problems.

1. Outline and shade in the areas on your property and the adjacent properties where you recall flooding to have occurred during the worst storm event you can remember.
2. If stormwater entered your house, please place a big dot or star where you believe the water entered your house and name the "opening" through which it came (i.e. basement window, back basement door, floor drain, etc.....)

Remember to sketch....

Where the highest level to which water has flooded on your property is located?

Please refer to a fixed object like a tree or part of the house and indicate how high the water rose (i.e. "The water was 2" deep on the big tree in my back yard.").

*there is no drawing attached
to these papers.*

Briefly describe drainage problems: Every time that it starts raining I start running and watching my sump pump and my outside drains because it does not take long for me to have a problem with them overflowing into my basement and garage and when my electricity goes off to the sump pump we are doomed to flooding. In 2006 we lost just about everything that was in our basement and garage it even got up into my wife's car and ruined the computer in the car and since we didn't have flood insurance we didn't get any help on anything including 3 rooms of carpet. There is a drain that runs from the court to the creek and when it rains hard it causes the court to really fill up with water and it comes right on up into the yard and driveway

THANK YOU FOR YOUR TIME!

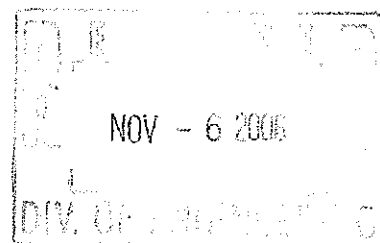
#16 @ 1504 Clarksdale Ct. She informed us that nothing could be done to help us.



Large shaded area is largest part of our back yard

- door - Outside basement door
(storm drainage in front of door)
- Storm drain - Drain located in washroom above with sump pump.

17" water on garage door



Mayor Teresa Ann Isaac

LEXINGTON - FAYETTE URBAN COUNTY GOVERNMENT
Division of Engineering
Storm Drainage & Flooding Questionnaire

Dear Resident:

On September 23, 2006, Lexington suffered from a record rainstorm. Either you or your neighbor notified us that your property may have flooded. Please help us by completing the form below and return it in the enclosed envelope as soon as possible. Please make sure that you sign and date the form. Thank you for your assistance.

Name: Glenda Walden
Complete Address: 1515 Clarksdale Ct. Wex, KY 40505
Daytime Telephone Number: 859-299-2242
How long have you lived at this address? 24 years -

Did the inside of your home flood during the storm of September 23, 2006? Yes ☒ No ☐

Has the home's inside ever flooded during a storm before September 23, 2006? Yes ☒ No ☐

If so, list the dates that as best as you can remember. A backflow was installed approx 10 years ago but sewer back up still has gotten in approx 3 times

What part of the home flooded on September 23? (basement? first floor? crawl space?) Please be specific 1st floor - coming in a handicap "roll in" shower, on the bathroom floor and into the bedroom (carpet)

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup) Please be specific. Sewer drain back up.

Did the water have an odor like sewage? Yes ☒ No ☐

Did you see sewage debris (toilet paper, etc) in the water? Yes ☒ No ☐

Did the street flood on September 23? Yes ☐ No ☐

If so, were cars flooded? Yes ☐ No ☐

Do you think that a fire truck could have driven down the street during the storm? Yes ☒ No ☐

I was out of town
The sewer back up also got into the tub in another bathroom
I have had to replace linoleum in the bathroom and
have to replace carpeting in the bedroom.

Signature and Date

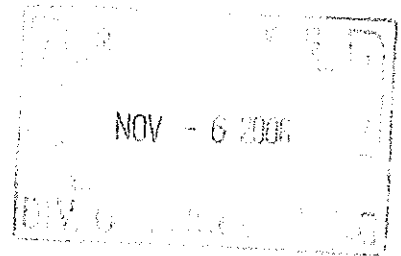
Glenda Walden NOV 3, 2006

I have maintenance to the backflow but wonder if the "flap" is getting stuck in a slightly open position?

HORSE CAPITAL OF THE WORLD

101 East Vine Street 4th Floor Lexington, KY 40507 Ph: (859) 258-3410 Fax: (859) 258-3458 www.lfucg.com

I also have a man hole in the backyard - That is



Mayor Teresa Ann Isaac

LEXINGTON - FAYETTE URBAN COUNTY GOVERNMENT

Division of Engineering

Storm Drainage & Flooding Questionnaire

Dear Resident:

On September 23, 2006, Lexington suffered from a record rainstorm. Either you or your neighbor notified us that your property may have flooded. Please help us by completing the form below and return it in the enclosed envelope as soon as possible. Please make sure that you sign and date the form. Thank you for your assistance.

Name: DONNA RENO
Complete Address: 1501 CLARKDALE CT. - LEXINGTON, KY 40506
Daytime Telephone Number: 859-297-8989
How long have you lived at this address? 14 yrs.

Did the inside of your home flood during the storm of September 23, 2006? Yes ☒ No ☐
Has the home's inside ever flooded during a storm before September 23, 2006? Yes ☒ No ☐
If so, list the dates that as best as you can remember. MARCH 2-3, 1997

What part of the home flooded on September 23? (basement? first floor? crawl space?) Please be specific CRAWL SPACE - KNOCKED OUT FURNACE

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup) Please be specific. DRAIN - EXCESS

Did the water have an odor like sewage? Yes ☐ No ☒
Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☒

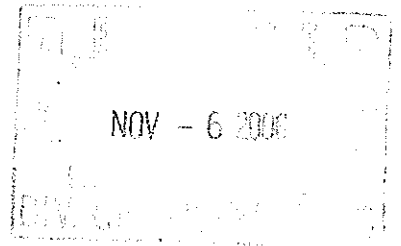
Did the street flood on September 23? Yes ☒ No ☐
If so, were cars flooded? Yes ☒ No ☐

Do you think that a fire truck could have driven down the street during the storm? Yes ☒ No ☐

Donna Reno 11-3-06
Signature and Date

FURNACE COST APPROX.
\$890.00 - INSURANCE WOULD NOT
COVER. I KNOW OF 3 OTHER
HOMES ON MY STREET AFFECTED.

HORSE CAPITAL OF THE WORLD



Mayor Teresa Ann Isaac

LEXINGTON - FAYETTE URBAN COUNTY GOVERNMENT

Division of Engineering

Storm Drainage & Flooding Questionnaire

Dear Resident:

On September 23, 2006, Lexington suffered from a record rainstorm. Either you or your neighbor notified us that your property may have flooded. Please help us by completing the form below and return it in the enclosed envelope as soon as possible. Please make sure that you sign and date the form. Thank you for your assistance.

Name: Barbara T. Hacker
Complete Address: 1609 Clerksdale CT
Daytime Telephone Number: 294-0348
How long have you lived at this address? 19 yrs (Apr. 1987)

Did the inside of your home flood during the storm of September 23, 2006? Yes ☐ No ☒
Has the home's inside ever flooded during a storm before September 23, 2006? Yes ☒ No ☒
If so, list the dates that as best as you can remember. See below

What part of the home flooded on September 23? (basement? first floor? crawl space?) Please be specific Spring 2006 water in crawl space

destroyed our furnace - our man hole clogged
How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup) Please be specific. _____

Did the water have an odor like sewage? Yes ☐ No ☐
Did you see sewage debris (toilet paper, etc) in the water? Yes ☒ No ☐

Did the street flood on September 23? Yes ☐ No ☒
If so, were cars flooded? Yes ☐ No ☐

Do you think that a fire truck could have driven down the street during the storm? Yes ☒ No ☐

Barbara T. Hacker 11-3-06
Signature and Date

flooded our yard with debris - sewage etc.

HORSE CAPITAL OF THE WORLD



Mayor Teresa Ann Isaac

LEXINGTON - FAYETTE URBAN COUNTY GOVERNMENT

Division of Engineering

Storm Drainage & Flooding Questionnaire

Dear Resident:

On September 23, 2006, Lexington suffered from a record rainstorm. Either you or your neighbor notified us that your property may have flooded. Please help us by completing the form below and return it in the enclosed envelope as soon as possible. Please make sure that you sign and date the form. Thank you for your assistance.

Name: DONALD PARKER
Complete Address: 1512 CLARKSDALE CT
Daytime Telephone Number: 859/299-6549
How long have you lived at this address? 43 YEARS

Did the inside of your home flood during the storm of September 23, 2006? Yes No ✓
Has the home's inside ever flooded during a storm before September 23, 2006? Yes ✓ No
If so, list the dates that as best as you can remember. Approx 1998/02 1999

What part of the home flooded on September 23? (basement?) first floor? crawl space?) Please be specific

How did the water enter the home? (door?) window? floor drain? seeped through walls? toilet or drain backup) Please be specific. Flooded yard and came in through Garage Door & PERSONNEL DOOR

Did the water have an odor like sewage? Yes No ✓

Did you see sewage debris (toilet paper, etc) in the water? Yes No ✓

Did the street flood on September 23? Yes No ✓

If so, were cars flooded? Yes No ✓

Do you think that a fire truck could have driven down the street during the storm? Yes ✓ No

Donald Parker 1/30/2007
Signature and Date

HORSE CAPITAL OF THE WORLD

101 East Vine Street 4th Floor

Lexington, KY 40507

Ph: (859) 258-3410

Fax: (859) 258-3458

FEB 01 2007

ENGINEERING

www.lfucg.com



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: Alan Shely
Complete Address: 1528 Cantrill Dr. Lexington, KY 40505
May we call you? Best Number to Reach You: 859-806-4686
How long have you lived at this address? 16yrs

Has the inside of your home ever flooded during or after a storm? Yes ☐ No ☒

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)
Please be specific.

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☐ 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☐ No ☐

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☐

Does your street flood? Yes ☐ No ☒

If so, can cars pass? Yes ☐ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

(Add any additional comments on the back of this page.)

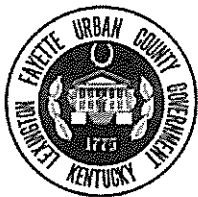
If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you?

Alan Shely
Signature

8/19/11
Date

Note: All information submitted is public and is available for public review.

Sent: August 16, 2011



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: Charles Nicholson

Complete Address: 1532 Cartmill Dr., Lexington, Ky. 40505

May we call you? Best Number to Reach You: 859 293 2142

How long have you lived at this address? 19 yrs

Has the inside of your home ever flooded during or after a storm? Yes ☐ No ☒

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. _____

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☐ 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☐ No ☐

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☐

Does your street flood? Yes ☐ No ☒

If so, can cars pass? Yes ☐ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? _____

Charles Nicholson
Signature

8/26/11
Date



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: Loys Mather
Complete Address: 1544 Cantrill Dr.
May we call you? Best Number to Reach You: 859 299 8569
How long have you lived at this address? 28 yrs

Has the inside of your home ever flooded during or after a storm? Yes ☐ No ☒

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. _____

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☐ 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage?

Yes ☐

No ☒

Did you see sewage debris (toilet paper, etc) in the water?

Yes ☐

No ☐

Does your street flood?

Yes ☐

No ☒

If so, can cars pass?

Yes ☐

No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? phone - most any time during day or early evening

Signature Loys Mather

Date 8-17-2011



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: SCOTT & BRENDA FORD

Complete Address: 1832 A- CHATSWORTH DR. LEX. KY 40505

May we call you? Best Number to Reach You: (859) 552-0136

How long have you lived at this address? 6 yrs.

Has the inside of your home ever flooded during or after a storm? Yes ☐ No ☒

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. _____

While you have lived there, how many times has your home flooded? 0

Once: ☐ Twice: ☐ 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☐ No ☐

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☐

Does your street flood? Yes ☐ No ☒

If so, can cars pass? Yes ☐ No ☒

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

(Add any additional comments on the back of this page.) ➔

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? phone listed above.

Brenda Ford

Signature

8/18/11
Date

We have a creek behind Duplex, Sometimes it
overflows after a lot of rain, it sometimes goes all the
way up with water to the sewage and overflows.



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: Ronnie & Sherry Ingram

Complete Address: 1500 Clarksdale Ct Lexington, Ky 40505

May we call you? Best Number to Reach You: 859 293-0096 Cell 492-1229

How long have you lived at this address? 23 yrs

Has the inside of your home ever flooded during or after a storm? Yes ☒ No ☐

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

Basement always

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. thru Sump Pump and thru floors & walls

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☐ 5 times: ☐ 10 or more times: ☒

Does the flood water have an odor like sewage? Yes ☐ No ☒

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☒

Does your street flood? Yes ☒ No ☐

If so, can cars pass? Yes ☐ No ☒ not in the court end.

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

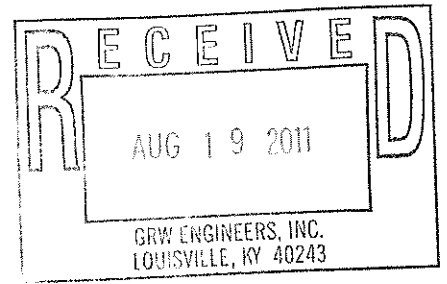
(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way

and time to reach you? 859 293-0096 any day of wk wife does not work or 492-1229

Ronnie Ingram
Signature

8-17-2011
Date



Our Basement Keeps flooding long after the storm is over.



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: Helen P. Brown

Complete Address: 1502 Clarksdale Court, Lexington, Ky. 40505

May we call you? Best Number to Reach You: 859-299-7300

How long have you lived at this address? 47 years

Has the inside of your home ever flooded during or after a storm? Yes ☐ No ☒

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. _____

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☐ 5 times: ☐ 10 or more times: ☐ None

Does the flood water have an odor like sewage? Yes ☐ No ☐

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☐

Does your street flood? Yes ☐ No ☒

If so, can cars pass? Yes ☐ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? _____

Helen P. Brown

Signature

August 18, 2011

Date

Note: All information submitted is public and is available for public review.

Sent: August 16, 2011



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: ELOYD HORSLEY

Complete Address: 1503 CLARKSDALE CT.

May we call you? Best Number to Reach You: 859-576-9498

How long have you lived at this address? 4 yrs

Has the inside of your home ever flooded during or after a storm? Yes ☒ No ☐

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

CRAWL SPACE & FIRST FLOOR

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. Toilet & Tub in 2 bathrooms

While you have lived there, how many times has your home flooded? 2

Once: ☐ Twice: ☒ 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☒ No ☐

Did you see sewage debris (toilet paper, etc) in the water? Yes ☒ No ☐

Does your street flood? Yes ☒ No ☐

If so, can cars pass? Yes ☒ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

(Add any additional comments on the back of this page.) I hope it's negligible

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? Anytime - I'm retired

E E Horsley

Signature

8/16/2011

Date

1. The LFVCG was called both times my house flooded, and should have records. The first time I used hose siphons to remove the sewage and removed the MH cover from the back yard MH at 2085 Glenwood Ct. to relieve the pressure. The flooding began about 3 hrs after a hard rain began and lasted about 10 hrs. The LFVCG installed a backflow valve between the sewer and my house last summer.

2. The second time it rained hard last fall I removed the caps on the backflow valve and the lateral clean out. The backflow valve did not work. I think it is not installed correctly. It is not vertical. This allowed the sewer to overflow in my back yard and relieve pressure and prevented flooding my house.

3. It seems like it takes a very intense rain storm at a very wet period to cause sewer surcharging of the magnitude to cause backup in my house.

[REDACTED]

It's possible that the infiltrator is from a wet weather stream rising to enter the sewer through an opening or maybe a missing MH lid. The sewer across the street was recently replaced but it ties into my sewer downstream.



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: Patsy A Wilson

Complete Address: 1511 Clarkdale Ct 40505

May we call you? Best Number to Reach You: _____

How long have you lived at this address? 42 yrs

Has the inside of your home ever flooded during or after a storm? Yes ☒ No ☐

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

Bath tub, Garage

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. Backed up in tub, Entered garage thru drain-seeped into utility Room etc

While you have lived there, how many times has your home flooded?

Once: ☒ Twice: ☐ 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☒ No ☐

Did you see sewage debris (toilet paper, etc) in the water? Yes ☒ No ☐

Does your street flood? Yes ☐ No ☒

If so, can cars pass? Yes ☐ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? 10^{AM} - 4 pm 859 299 1743

Patsy A. Wilson
Signature

August 22 2011
Date

Note: All information submitted is public and is available for public review.

Sent: August 16, 2011

This happened when Pam Miller was mayor



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: Tracy Parker

Complete Address: 1512 Chesapeake Ct.

May we call you? Best Number to Reach You: 513 314-1801

How long have you lived at this address? 40 yr

Has the inside of your home ever flooded during or after a storm? Yes ☒ No ☐

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

Basement

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. _____

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☒ 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☐

No ☒

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐

No ☒

Does your street flood? Yes ☐ No ☒

If so, can cars pass? Yes ☐ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? _____

Tracy Parker
Signature

8-22-11
Date



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: Steven Hayes

Complete Address: ~~755~~ 1515 Clarksdale Ct. Lexington KY 40508

May we call you? Best Number to Reach You: No

How long have you lived at this address? 1 week

Has the inside of your home ever flooded during or after a storm? Yes ☐ No ☒

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. _____

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☐ 5 times: ☐ 10 or more times: ☐

Zero: ☒

Does the flood water have an odor like sewage? Yes ☐ No ☐

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☐

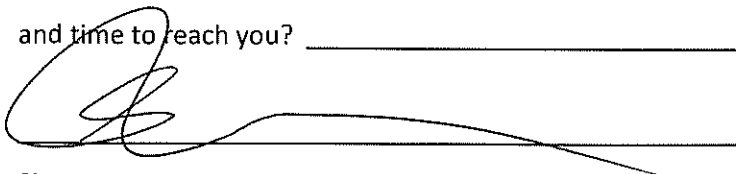
Does your street flood? Yes ☐ No ☐

If so, can cars pass? Yes ☐ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☐ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? _____



Signature

8/15/2011
Date



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: Doug Whitlock
Complete Address: 1500 Ft Sumter Ct, Lex, Ky 40505
May we call you? Best Number to Reach You: 755-983-0537
How long have you lived at this address? 11 yrs

Has the inside of your home ever flooded during or after a storm? Yes ☐ No ☒

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)
Please be specific.

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☐ 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☐ No ☐

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☐

Does your street flood? Yes ☐ No ☒

If so, can cars pass? Yes ☐ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☐ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you?

[Signature]
Signature

8-19-11
Date



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: Barbara H Miller

Complete Address: 1502 Ft Sumter Ct, Lexington, KY 40505

May we call you? Best Number to Reach You: 859-299-6196

How long have you lived at this address? 44 years

Has the inside of your home ever flooded during or after a storm? Yes ☒ No ☐

If yes, what part of the home floods? (basement?) first floor? crawl space?) Please be specific.

3 times - 1st + 2nd times window

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. 3rd time through floor drain in garage

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☐ 3 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage? last time Yes ☒ No ☐

Did you see sewage debris (toilet paper, etc) in the water? Yes ☒ No ☐

Does your street flood? Yes ☐ No ☒

If so, can cars pass? Yes ☒ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? Phone after 7:00 PM

Barbara H Miller
Signature

9-4-11
Date



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: Shirley Hendrix
1504 Fort Sumter Ct.
Complete Address: Lexington, KY 40505
May we call you? Best Number to Reach You: 859/225-2989
How long have you lived at this address? ~5 yr

Has the inside of your home ever flooded during or after a storm? Yes ☐ No ☒ *

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

*possibly crawl space; I never go down there

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. IF water came in, it would probably have to come in under the front porch

While you have lived there, how many times has your home flooded?

☒ Once: ☐ Twice: ☐ 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☐ No ☒

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☒

Does your street flood? Yes ☐ No ☒

If so, can cars pass? Yes ☐ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? after noons

Shirley P. Hendrix
Signature

8/12/11
Date



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: Daniel R. Leininger

Complete Address: 1510 FORT Sumter Ct

May we call you? Best Number to Reach You: NO!

How long have you lived at this address? 6 yrs

Has the inside of your home ever flooded during or after a storm? Yes ☐ No ☒

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. _____

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☐ 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☐ No ☐

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☐

Does your street flood? Yes ☐ No ☐

If so, can cars pass? Yes ☐ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☐ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you?

[Signature]
Signature

08/22/11
Date

Note: All information submitted is public and is available for public review.

Sent: August 16, 2011



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: Edith A. Smith

Complete Address: 1511 Ft. Sumter Court - Lex. Ky. 40505-2855

May we call you? Best Number to Reach You: 859-299-2567

How long have you lived at this address? April - 1976

Has the inside of your home ever flooded during or after a storm? Yes ☐ No ☒

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

N/A

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific.

N/A

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☐ 5 times: ☐ 10 or more times: ☐

N/A

Does the flood water have an odor like sewage?

Yes ☐

No ☐

does not apply

Did you see sewage debris (toilet paper, etc) in the water?

Yes ☐

No ☐

Does your street flood?

Yes ☐

No ☒

If so, can cars pass?

Yes ☐

No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

(Add any additional comments on the back of this page.)

yes and any other auto - It doesn't flood on this street! water does not stand here or flood

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you?

Edith A. Smith

Signature

Aug. 17, 2011

Date

Note: All information submitted is public and is available for public review.

Sent: August 16, 2011



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: SHIRLEY H BUNDY

Complete Address: 1513 FT. SUMTER CT

May we call you? Best Number to Reach You: 1-859-293-1350

How long have you lived at this address? 15 yrs

Has the inside of your home ever flooded during or after a storm? Yes ☐ No ☒

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

CRAWL SPACE = FURNACE + A.C. IN CRAWLSPACE

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. AROUND FOUNDATION - WATER FLOODED BACK YARD

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☒ 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☒ No ☐

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☒

Does your street flood? Yes ☐ No ☒

If so, can cars pass? Yes ☒ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? Any time before 9pm

Shirley H Bundy
Signature

Aug 19 - 2011
Date



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: Linda Dechtenberg

Complete Address: 1600 Ft. Sumter Drive, Lexington, Ky 40505

May we call you? Best Number to Reach You: _____

How long have you lived at this address? 4 years

Has the inside of your home ever flooded during or after a storm? Yes ☐ No ☒

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)
Please be specific. _____

While you have lived there, how many times has your home flooded? NA

Once: ☐ Twice: ☐ 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☐ No ☐

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☐

Does your street flood? Yes ☐ No ☒

If so, can cars pass? Yes ☐ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☐ No ☐ NA

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? _____

Linda Dechtenberg
Signature

8/17/11
Date



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: John + Lisa Gillem

Complete Address: 1601 Fort Sumter Dr Lexington KY 40505

May we call you? Best Number to Reach You: 859-625-4143

How long have you lived at this address? 5 yrs

Has the inside of your home ever flooded during or after a storm? Yes ☒ No ☐

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

First floor

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. floor drain

While you have lived there, how many times has your home flooded?

Once: ☒ Twice: ☐ 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☒ No ☐

Did you see sewage debris (toilet paper, etc) in the water? Yes ☒ No ☐

Does your street flood? Yes ☐ No ☒

If so, can cars pass? Yes ☐ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☐ No ☐ ?

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? Any time by phone 859-625-4143

Lisa Gillem

signature

8-30-11

Date



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: Lucy Brown

Complete Address: 1602 Ft. Sumter Dr., Lexington, KY. 40505

May we call you? Best Number to Reach You: 859-293-5814

How long have you lived at this address? 27 yrs.

Has the inside of your home ever flooded during or after a storm? Yes ☒ No ☐

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

It has always been the crawl space, never inside the home.

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. Water just gathers in the crawl space.

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☐ 5 times: ☒ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☐

No ☒

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐

No ☒

Does your street flood? Yes ☐ No ☒

If so, can cars pass? Yes ☒ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

(Add any additional comments on the back of this page.)

If you answered yes to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? by phone and anytime.

Lucy W. Brown

Signature

9/3/11
Date



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: Henry B. Spencer
Complete Address: 1604 07th Sumter Dr. Sp. Ky. 40505
May we call you? Best Number to Reach You: 859 299 7263
How long have you lived at this address? 16 years 4 months

Has the inside of your home ever flooded during or after a storm? Yes ☐ No ☒

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)
Please be specific.

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☐ 5 times: ☐ 10 or more times: ☐ NONE

Does the flood water have an odor like sewage? Yes ☐ No ☐

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☒

Does your street flood? Yes ☐ No ☐

If so, can cars pass? Yes ☐ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? nights

Henry B. Spencer
Signature

8-20-11
Date



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: Alfred J. Hieb, Jr. & Jean D. Hieb

Complete Address: 1606 Fort Sumter Drive Lexington, KY 40505

May we call you? Best Number to Reach 859-269-1440

How long have you lived at this address? 6 years

Has the inside of your home ever flooded during or after a storm? Yes ☒ No ☐

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

Crawl Space

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. Seeped thru walls & Ground seepage

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☐ 5 times: ☒ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☐ No ☒

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☒

Does your street flood? Yes ☐ No ☒

If so, can cars pass? Yes ☒ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? 9:00 A. M. Thru 4: P. M. Week days

Signature _____

29 Aug 11

Date



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: David W. Estes

Complete Address: 1607 Fort Sumter Dr

May we call you? Best Number to Reach You: Cell 859-351-1964 Yes 4:00 am call

How long have you lived at this address? Since 1961

Has the inside of your home ever flooded during or after a storm? Yes ☐ No ☒

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)
Please be specific. _____

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☐ 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☐ No ☐

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☐

Does your street flood? Yes ☒ No ☐

If so, can cars pass? Yes ☒ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? evening 859-293-0719

David W. Estes

Signature

8-21-11

Date

Note: All information submitted is public and is available for public review.

Sent: August 16, 2011



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: Joe Towles

Complete Address: 1608 Ft. Sumter Drive

May we call you? Best Number to Reach You: 859-299-9420

How long have you lived at this address? 19 yrs

Has the inside of your home ever flooded during or after a storm? Yes ☐ No ☒

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. _____

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☐ 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☐ No ☐

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☐

Does your street flood? Yes ☐ No ☐

If so, can cars pass? Yes ☐ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☐ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? _____

Joe Towles
Signature

8/20/11
Date



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: Martha C Hall

Complete Address: 1609 Ft Sumter Dr., Lexington, KY 40505

May we call you? Best Number to Reach You: 859-299-8950

How long have you lived at this address? 4 yrs 2011

Has the inside of your home ever flooded during or after a storm? Yes ☐ No ☐

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. _____

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☐ 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☐ No ☐

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☐

Does your street flood? Yes ☐ No ☐

If so, can cars pass? Yes ☐ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☐ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? _____

Martha C Hall *

signature

Date

Note: All information submitted is public and is available for public review.

Sent: August 16, 2011

*We get a bad odor coming through the sink in the kitchen at times! We've spent a lot on plumbing since at this address.



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: John L. Roberts

Complete Address: 1610 FT SUMTER DR.

May we call you? Best Number to Reach You: 293-0029

How long have you lived at this address? 30 years

Has the inside of your home ever flooded during or after a storm? Yes ☐ No ☒

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. _____

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☐ 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☐

No ☒

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐

No ☒

Does your street flood? Yes ☒ No ☐

If so, can cars pass? Yes ☒ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? 293-0029

Signature

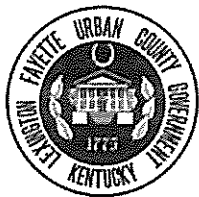
John L. Roberts

Date

8/17/11

Note: All information submitted is public and is available for public review.

Sent: August 16, 2011



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: RANDY D. WILLIAMS

Complete Address: 1611 FORT SUMTER DR, LEX, KY 40505

May we call you? Best Number to Reach You: 859-299-4009

How long have you lived at this address? 5 yr

Has the inside of your home ever flooded during or after a storm? Yes ☐ No ☒

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. _____

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☐ 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☐ No ☐

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☐

Does your street flood? Yes ☐ No ☒

If so, can cars pass? Yes ☐ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? _____

Randy D. Williams

8-23-11

Signature

Date

Note: All information submitted is public and is available for public review.

Sent: August 16, 2011



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: James Larry Mitchell
Complete Address: 1615 Fort Sumter Dr. Lexington, Ky. 40505
May we call you? Best Number to Reach You: 859-552-4301
How long have you lived at this address? 38 yrs

Has the inside of your home ever flooded during or after a storm? Yes ☐ No ☒

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)
Please be specific.

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☐ 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☐ No ☐

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☐

Does your street flood? Yes ☐ No ☒

If so, can cars pass? Yes ☐ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☐ No ☐

(Add any additional comments on the back of this page.) I live on the opposite side of the street from the water way. On the S. side of the street where the water way is there has been very few homes that has flooded. (SEE BACK)

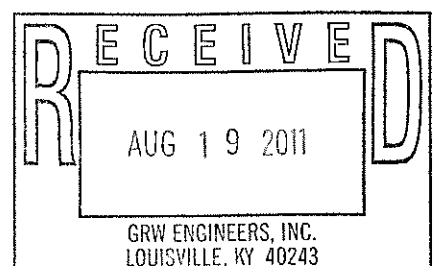
If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? _____

James Larry Mitchell
Signature

8/18/2011
Date

When the water way has been cleaned out NONE of the houses on the side of the water way got flooded. The bridge on Eastland NEED to be replaced it is too small, and BACK UP water in the water way. ~~AND~~ The cleaning out of the waterway AND The bridge could have been replaced at a fraction of the cost of buying out homes, and DESTROYING our neighborhood, Buying homes, and TAKING them down is another waste of OUR TAX MONEY buy GOVERNMENT,

I DO NOT live in a Flood zone. NONE of the houses on my side of the street has NEVER been flooded in the 38 years that I have lived here.





Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

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Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: Genne R. Gumm - The Estate

Complete Address: 1702 Fort Sumter Drive

May we call you? Best Number to Reach You: 859-321-5653 - Daughter

How long have you lived at this address? 20 years

Has the inside of your home ever flooded during or after a storm? Yes ☐ No ☐

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

Under the house - Crawl space

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. _____

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☐ 5 times: ☐ 10 or more times: ☒

Does the flood water have an odor like sewage? Yes ☒ No ☐

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ ? No ☐

Does your street flood? Yes ☒ No ☐ on the corner -

If so, can cars pass? Yes ☐ No ☒ some times it'll seem when the street was close.

Do you think a fire truck could have driven down the street during the storm? Yes ☐ No ☒

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? by phone 859-321-5653

Patricia J. Wesley (Daughter)
signature of Genne R. Gumm

Sept 1 - 11
Date



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: LIONEL GUMM

Complete Address: 1605 GAYLE Dr Lexington KY 40505

May we call you? Best Number to Reach You: 859-299-0872

How long have you lived at this address? 35 yr

Has the inside of your home ever flooded during or after a storm? Yes ☐ No ☒

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. _____

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☐ 5 times: ☐ 10 or more times: ☐ 0

Does the flood water have an odor like sewage? Yes ☐ No ☒

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☒

Does your street flood? Yes ☐ No ☒

If so, can cars pass? Yes ☐ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? _____

Lionel Gumm

Signature

8-20-11

Date



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: JACK & CATHY BARNETT
Complete Address: 1609 Gayle Dr Lexington, Ky 40505
May we call you? Best Number to Reach You: 293-5570
How long have you lived at this address? 22 years

Has the inside of your home ever flooded during or after a storm? Yes ☒ No ☐

If yes, what part of the home floods? (basement) first floor? (crawl space) Please be specific.

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. APPEARS to be ground water pressure

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☒ 5 times: ☐ 10 or more times: ☐

3-4 Times

Does the flood water have an odor like sewage? Yes ☐ No ☒

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☒

Does your street flood? Yes ☐ No ☐

If so, can cars pass? Yes ☒ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? 293-5570

Jack Barnett
Signature

8.25-11
Date



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: Thomas O'Daniel

Complete Address: 1625 Gayle Dr 40228

May we call you? Best Number to Reach You: 859-299-4142

How long have you lived at this address? 35 yrs

Has the inside of your home ever flooded during or after a storm? Yes ☐ No ☒

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. _____

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☐ 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☐ No ☐

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☐

Does your street flood? Yes ☐ No ☒

If so, can cars pass? Yes ☐ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? _____

Thomas O'Daniel

Signature

8-17-2011

Date



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: Larry + Barbara Jones

Complete Address: 1629 Gayle Dr. Lex. 40505

May we call you? Best Number to Reach You: 859-299-0742

How long have you lived at this address? 24 yrs

Has the inside of your home ever flooded during or after a storm? Yes ☒ No ☐

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

basement

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. seeped through walls

While you have lived there, how many times has your home flooded?

Once: ☒ Twice: ☐ 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☐

No ☒

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐

No ☒

Does your street flood? Yes ☐ No ☒

If so, can cars pass? Yes ☐ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? 299-0742 9:00 a.m. - 6:00 pm

Barbara B. Jones
Signature

8/17/11
Date

Note: All information submitted is public and is available for public review.

Sent: August 16, 2011



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: Barbara Clark
Complete Address: 1633 Gayle Dr
May we call you? Best Number to Reach You: 277-4967
How long have you lived at this address? 42 yrs

Has the inside of your home ever flooded during or after a storm? Yes ☐ No ☐

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

I think it was 1997 (when Cynthia flooded)

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. underground water very close under 1 basement room

While you have lived there, how many times has your home flooded?

Once: ☒ Twice: ☐ 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☐ No ☒

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☒

Does your street flood? Yes ☐ No ☒

If so, can cars pass? Yes ☐ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? any

Barbara E. Clark

8/18/11

Signature

Date

Note: All information submitted is public and is available for public review.

Sent: August 16, 2011



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

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Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: Judy Wright

Complete Address: 1637 Gayle Dr

May we call you? Best Number to Reach You: 299-1895

How long have you lived at this address? 32 years

Has the inside of your home ever flooded during or after a storm? Yes ☐ No ☒

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. _____

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☐ 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☐ No ☐

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☐

Does your street flood? Yes ☒ No ☐

If so, can cars pass? Yes ☒ No ☐ I think so

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? by phone or mail - Not home during the middle of the day

Judy Wright
Signature

Sept 1, 2011
Date



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: Henry and Ruth Keizer

Complete Address: 7641 Gayle Dr

May we call you? Best Number to Reach You: Yes 859-492-2306

How long have you lived at this address? 4 1/2 years

Has the inside of your home ever flooded during or after a storm? Yes ☐ No ☒

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. _____

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☐ 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☐ No ☐

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☐

Does your street flood? Yes ☐ No ☒

If so, can cars pass? Yes ☐ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☐ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? _____

Ruth Keizer

Signature

8/19/11

Date

Note: All information submitted is public and is available for public review.

Sent: August 16, 2011



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

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Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: JACK & CATHY BARNETT
Complete Address: 1649 GAYLE DR. LEXINGTON, KY 40505
May we call you? Best Number to Reach You: 859-293-5570
How long have you lived at this address? 24 YEARS

Has the inside of your home ever flooded during or after a storm? Yes ☒ No ☐

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

BASEMENT, GARAGE, ATTACHED ROOM FOR HOT TUB

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. FLOOR DRAINS, THROUGH WALLS, THROUGH HOT TUB FLOOR

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☐ 5 times: ☒ 10 or more times: ☐
OR MORE

Does the flood water have an odor like sewage?

Yes ☒ - SOMETIMES No ☐

Did you see sewage debris (toilet paper, etc) in the water?

Yes ☒ - TWICE No ☐

Does your street flood?

Yes ☒ No ☐

If so, can cars pass?

Yes ☒ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

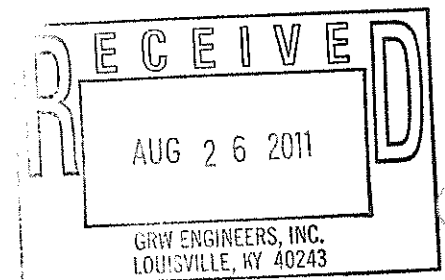
(Add any additional comments on the back of this page.) *

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? PHONE NUMBER ABOVE - MORNINGS

Cathy Z. Barnett
Signature

8-23-11
Date

* When it rains very hard, there is always an odor in our home. Smells like sewage. Sometimes even when it hasn't rained hard our ~~the~~ interior drains smell like sewage when we run water in them.





Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

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Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: Boydton L. Goldston
Complete Address: 1653 Gayle Dr, Lex, Ky. 40505
May we call you? Best Number to Reach You: 859 296 9838
How long have you lived at this address? 7 yrs

Has the inside of your home ever flooded during or after a storm? Yes ☒ No ☐

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

Basement

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. Garage Doors

While you have lived there, how many times has your home flooded?

Once: ☒ Twice: ☐ 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☐ No ☒

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☒

Does your street flood? Yes ☐ No ☒

If so, can cars pass? Yes ☒ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? Phone 859-296 9838 AFTER 1 pm

Boydton L. Goldston

Signature

10-24-11

Date

Note: All information submitted is public and is available for public review.

Sent: August 16, 2011



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: BETTY F MOSES

Complete Address: 1669 GAYLE DR.

May we call you? Best Number to Reach You: 859-299-6057

How long have you lived at this address? See other side #1.

Has the inside of your home ever flooded during or after a storm? Yes ☐ No ☒ Not in Living Space

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.
Crawl space - 4" of water. See other side. Sump pump runs during rains.

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. No idea

While you have lived there, how many times has your home flooded? Living space - 0
yard + crawl space - yes

Once: ☐ Twice: ☐ 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage? Urine odor comes thru vents at times. Yes ☐ No ☐

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☒

Does your street flood? Yes ☒ No ☐ Some water stands out 15" wide into the street from the curb after a storm, but goes into a drain when storm stops.

If so, can cars pass? Yes ☒ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

(Add any additional comments on the back of this page.) Recently, I heard a loud, sucking-type noise in my yard. I was very frightened. Then I saw some water coming from a tree roots located about 8'-10' from the creek. If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way

and time to reach you? 859-299-6057 - Evenings at the edge of my yard

7:00 - 10:00 PM the noise stopped.

Betty F Moses 8-18-11

signature Date

I moved into this house for 2 years. My husband entered VA Hospital Sept. 2005 + died 12-2-05. He insisted I move back to our home at 1065 St Anthony Dr just before he died. I returned to 1069 Gayle Dr after he died, a few months later.

The flood water in my crawl space⁴ happened during the time we were installing new flooring in our kitchen. ^{That's why we were aware of it.} I have never gone under this house ^{before} since then. Puddles form all over my yard everytime it rains. I have a storage shed at the rear of my lot + water rose to a height of 36" at one time, ruining a \$700⁰⁰ snow plow. A neighbor gave me a picture she took during a storm showing water surrounding my house. This ^{could have happened} while I was at work (L.F.U.C. ^{LOUISIANA FAYETTE URBAN CO-OPERATIVE} 36 years - retired). My floor makes creaking noises in places. This has started in the last 2-3 years. I do smell a urine odor coming thru the heat vents at times, a few hours to shorter times. I use sprays for this odor. I occasionally have to clean my yard of debris after a storm if the creek, which extends across one end of my lot + entirely across the front, overflows its banks. The creek is on 2 sides of this property.

My home is a beautiful home, large lot + we added a large room to it. I keep my yard and house in as good condition as I am able, doing my own mowing. We added ^{new} insulation, completely re-did both bathrooms, + totally re-did the kitchen, + the hardwood floors since moving here.



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: CARL GRIPSHOVER
Complete Address: 1801 GAYLE DR. LEX. KY 40505
May we call you? Best Number to Reach You: 309-1241
How long have you lived at this address? 15 yrs

Has the inside of your home ever flooded during or after a storm? Yes ☒ No ☐

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. SUMP HOLE IN BASEMENT FLOOR

While you have lived there, how many times has your home flooded? FLOODED DURING POWER OUTAGE

Once: ☐ Twice: ☒ 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☐ No ☒

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☒

Does your street flood? Yes ☒ No ☐

If so, can cars pass? Yes ☒ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? DAY TIME - PHONE

C. Brij

Signature

8/18/11

Date



Storm Drainage & Flooding Questionnaire Ft. Sumter Area



Dear Resident:

GRW has been hired by the City of Lexington to investigate flooding problems in your neighborhood. You may have been contacted in the past, so please bear with us as we determine the current situation. Your response is important to solving the flooding issues, even if you are not affected.

Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: Hal + Mary R. Clark

Complete Address: 1508 Raleigh Ct.

May we call you? Best Number to Reach You: _____

How long have you lived at this address? 5 years

Has the inside of your home ever flooded during or after a storm? Yes ☐ No ☒

If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)

Please be specific. _____

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☐ 5 times: ☐ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☐ No ☐

Did you see sewage debris (toilet paper, etc) in the water? Yes ☐ No ☐

Does your street flood? Yes ☐ No ☒

If so, can cars pass? Yes ☐ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☐ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? _____

Mary R. Clark
Signature

Aug. 18, 2011
Date



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Dear Resident:

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Please complete the survey and return in the stamped envelope by August 29, 2011. Please sign and date the form. Thank you for your assistance.

Name: Tony Wilson (Ann)

Complete Address: 1510 Raleigh Court

May we call you? Best Number to Reach You: 293-1942 After 5:00

How long have you lived at this address? 28 yrs

Has the inside of your home ever flooded during or after a storm? Yes ☒ No ☐ AFTER A PROLONGED RAIN.
If yes, what part of the home floods? (basement? first floor? crawl space?) Please be specific.

How did the water enter the home? (door? window? floor drain? seeped through walls? toilet or drain backup?)
Please be specific. _____

While you have lived there, how many times has your home flooded?

Once: ☐ Twice: ☐ 5 times: ☒ 10 or more times: ☐

Does the flood water have an odor like sewage? Yes ☐ No ☒

Did you see sewage debris (toilet paper, etc) in the water? Yes ☒ No ☐

Does your street flood? Yes ☐ No ☒

If so, can cars pass? Yes ☐ No ☐

Do you think a fire truck could have driven down the street during the storm? Yes ☒ No ☐

(Add any additional comments on the back of this page.)

If you answered yes, to any of these questions, we would like to contact you for more information. What is the best way and time to reach you? phone 293-1942 E-mail

Ann Wilson

Ann.Wilson@FAYETTE.ky.schools.us

8/23/11

Signature

Date

Fort Sumter Project Area
xpSWMM Node Characteristics

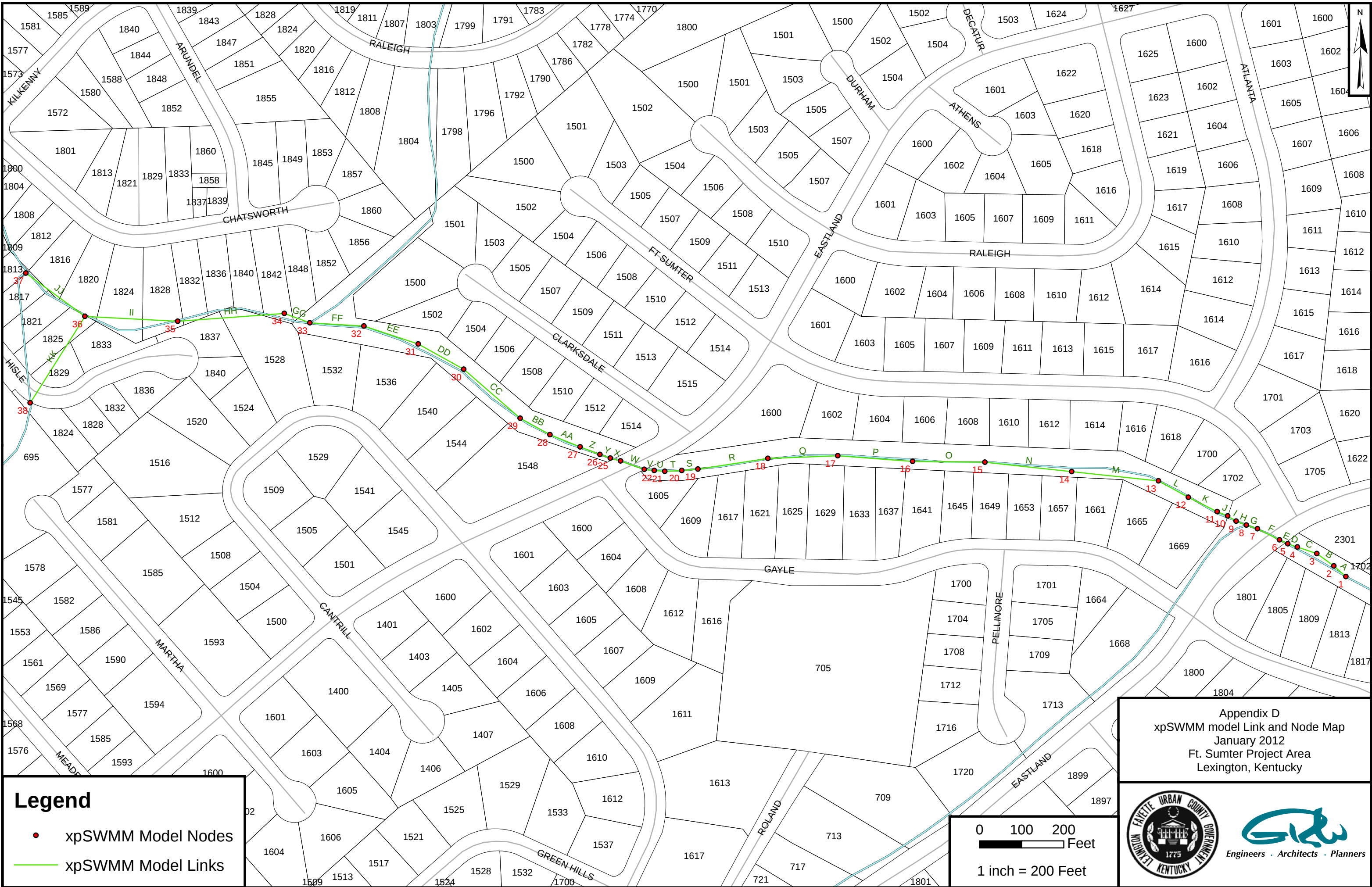
Name	Subcatchment	Max Water Elevation ft	Max Flow cfs	Ground Elevation (Spill Crest) ft	Invert Elevation ft	Pervious Area Curve Number	Impervious Percentage %	Time of Concentration (or Parameter 2) min
1		941.282	0	947.554	937	0	0	0
2		941.896	0	947.554	937	0	0	0
3		942.418	0	948	937.39	0	0	0
4		943.017	0	948.672	937.77	0	0	0
5		943.483	0	949.051	937.95	0	0	0
6		944.107	0	949.788	938.12	0	0	0
7		945.193	0	950.048	938.38	0	0	0
8	1	945.211	487.721	949.105	938.48	74	57.3	84.644
9		945.219	0	950	938.57	0	0	0
10		945.221	0	948.344	938.65	0	0	0
11		945.229	0	948.444	938.75	0	0	0
12		945.229	0	948.931	939.02	0	0	0
13		945.359	0	962.778	939.31	0	0	0
14		945.735	0	971.021	940.05	0	0	0
15		946.175	0	971.751	940.78	0	0	0
16		947.206	0	969.699	941.4	0	0	0
17		948.724	0	972.15	942	0	0	0
18		949.502	0	980.583	942.6	0	0	0
19	1	949.9	128.646	981.193	943.21	74	41.8	55.116
20		950.052	0	965.174	943.34	0	0	0
21		950.352	0	969.559	943.49	0	0	0
22		950.605	0	966.119	943.57	0	0	0
23		951.08	0	980.499	943.66	0	0	0
24		951.186	0	978.401	943.92	0	0	0
25		951.19	0	968.776	944.12	0	0	0

26		951.207	0	971.751	944.33	0	0	0
27		951.257	0	969.699	944.73	0	0	0
28		951.421	0	969.793	945.35	0	0	0
29		951.421	0	984.337	945.99	0	0	0
30		953.528	0	985.747	947.4	0	0	0
31		954.23	0	988.39	948.39	0	0	0
32		954.449	0	989.47	949.47	0	0	0
33	1	955.204	215.777	990.5	950.5	74	39.4	36.668
34	1	955.292	228.154	988.73	950.73	74	38.6	46.082
35		957.031	0	989.66	951.66	0	0	0
36		957.517	0	979.179	952.23	0	0	0
37	1	957.93	900.173	969.559	953.5	74	61.5	47.836
38	1	969.525	327.83	969.525	960	74	69.8	24.376

Fort Sumter Project Area
xpSWMM Link Characteristics

Name	Max Water Elevation ft	Roughness	Number of Barrels	Conduit Slope	Length ft	Downstream Node Name	Upstream Node Name
A	941.895	0.04	1	0	38.02	1	2
B	942.418	0.04	1	0.781	49.94	2	3
C	943.017	0.04	1	0.778	48.85	3	4
D	943.483	0.04	1	0.746	24.12	4	5
E	944.107	0.04	1	0.791	21.49	5	6
Channel3	945.193	0.04	1	0.442	58.81	6	7
Box3	945.193	0.013	2	0.442	58.81	6	7
G	945.211	0.04	1	0.362	27.62	7	8
H	945.219	0.04	1	0.346	26.02	8	9
I	945.221	0.04	1	0.338	23.7	9	10
J	945.229	0.04	1	0.372	26.88	10	11
K	945.228	0.04	1	0.353	76.38	11	12
L	945.358	0.04	1	0.358	81.08	12	13
M	945.735	0.04	1	0.358	206.98	13	14
N	946.174	0.04	1	0.352	207.49	14	15
O	947.205	0.04	1	0.362	171.5	15	16
P	948.723	0.04	1	0.337	178.11	16	17
Q	949.501	0.04	1	0.361	166.2	17	18
R	949.898	0.04	1	0.363	167.85	18	19
S	950.051	0.04	1	0.337	38.6	19	20
T	950.35	0.04	1	0.371	40.46	20	21
U	950.603	0.04	1	0.322	24.85	21	22
V	951.079	0.04	1	0.374	24.05	22	23
Channel	951.162	0.04	1	0.436	59.57	23	24
Box	951.162	0.013	2	0.436	59.57	23	24
X	951.166	0.04	1	0.794	25.2	24	25
Y	951.184	0.04	1	0.801	26.23	25	26
Z	951.234	0.04	1	0.795	50.3	26	27
AA	951.403	0.04	1	0.804	77.14	27	28
BB	951.403	0.04	1	0.791	80.86	28	29
CC	953.525	0.04	1	0.795	177.41	29	30
DD	954.229	0.04	1	0.799	123.84	30	31
EE	954.449	0.04	1	0.796	135.74	31	32
FF	955.204	0.04	1	0.8	128.71	32	33
GG	955.292	0.04	1	0.357	64.37	33	34
HH	957.031	0.04	1	0.366	253.96	34	35
II	957.517	0.04	1	0.258	220.68	35	36
JJ	957.93	0.04	1	0.732	173.55	36	37
KK	969.525	0.04	1	3.197	243.05	36	38

Map Document: (U:\4008-LFUCG Stormwater\05-SEP Projects\Dept Folders\Ft Sumter\GIS\FtSumter_25yr24hrFloodplainEx5.mxd)
1/30/2012 11:17:40 AM



Point precipitation frequency estimates (inches)

NOAA Atlas 14 Volume 2 Version 3

Data type: Precipitation depth

Time series type: Partial duration

Project area: Ohio River Basin

Latitude (decimal degrees): 38.0499

Longitude (decimal degrees): -84.4430

PRECIPITATION FREQUENCY ESTIMATES

by duration for ARI:	1	2	5	10	25	50	100	200	500	1000 years
5-min:	0.36	0.43	0.5	0.56	0.64	0.69	0.75	0.81	0.88	0.94
10-min:	0.57	0.68	0.79	0.88	0.99	1.07	1.15	1.23	1.33	1.41
15-min:	0.7	0.83	0.98	1.09	1.23	1.34	1.44	1.54	1.67	1.76
30-min:	0.94	1.13	1.36	1.55	1.77	1.95	2.13	2.3	2.54	2.71
60-min:	1.16	1.4	1.73	1.98	2.33	2.6	2.88	3.17	3.56	3.87
2-hr:	1.36	1.63	2.02	2.32	2.75	3.09	3.45	3.82	4.34	4.76
3-hr:	1.46	1.75	2.17	2.5	2.98	3.36	3.77	4.2	4.8	5.3
6-hr:	1.78	2.13	2.63	3.04	3.63	4.12	4.63	5.18	5.97	6.63
12-hr:	2.12	2.53	3.12	3.6	4.28	4.85	5.45	6.09	7.01	7.76
24-hr:	2.52	3.01	3.73	4.33	5.19	5.91	6.68	7.51	8.71	9.71
2-day:	2.98	3.57	4.4	5.07	6.03	6.82	7.65	8.54	9.79	10.81
3-day:	3.19	3.82	4.68	5.38	6.35	7.14	7.96	8.83	10.04	11.02
4-day:	3.4	4.07	4.96	5.68	6.67	7.46	8.28	9.13	10.3	11.22
7-day:	4.07	4.85	5.88	6.73	7.93	8.91	9.95	11.03	12.57	13.81
10-day:	4.62	5.49	6.63	7.56	8.87	9.92	11.03	12.18	13.79	15.09
20-day:	6.34	7.51	8.92	10.02	11.5	12.66	13.81	14.98	16.53	17.73
30-day:	7.93	9.36	10.95	12.17	13.77	14.99	16.18	17.35	18.86	19.99
45-day:	10.04	11.8	13.57	14.89	16.51	17.7	18.8	19.83	21.09	21.98
60-day:	12.03	14.11	16.11	17.57	19.39	20.69	21.89	23.01	24.35	25.29

Date/time (GMT): Thu Nov 3 16:50:49 2011

pyRunTime: 0.0277268886566

**Fort Sumter Preliminary
Opinion of Probable Project Cost
Alternative 1 - Regrade 2 Yards, Purchase 10 Homes
30-Jan-12**

ITEM		UNIT COST	UNIT	QUANTITY	COST
Excavate and backfill with topsoil		\$100	Cu Yd	22	\$2,200
Structure and site restoration		\$10,000	Ea	2	\$20,000
Sod		\$3	Sq Ft	600	\$1,800
Subtotal					\$24,000
25% Construction Contingency					\$6,000
Total Opinion of Construction Cost					\$30,000
Non-Construction Costs					
Property Acquisition		10 homes			\$1,835,000
Professional Services*		14.00%	-		\$4,200
Subtotal					\$1,839,200
				TOTAL	\$1,870,000
*No resident observation included					

Address	Removal Method	Total Acquisition Costs
1602 FT SUMTER	Regrade	
1604 FT SUMTER	Regrade	
1616 FT SUMTER	Acquire	\$200,000
1618 FT SUMTER	Acquire	\$200,600
1665 GAYLE	Acquire	\$186,800
1500 CLARKSDALE	Acquire	\$185,000
1504 CLARKSDALE	Acquire	\$185,000
1506 CLARKSDALE	Acquire	\$185,000
1508 CLARKSDALE	Acquire	\$182,600
1510 CLARKSDALE	Acquire	\$182,600
1512 CLARKSDALE	Acquire	\$147,200
1514 CLARKSDALE	Acquire	\$180,200

Fort Sumter Preliminary
Opinion of Probable Cost
Alternative 2 - Acquire 12 homes
30-Jan-12

Acquistion		PVA Value	20%PVA	Acq and Demo	COST
1500 CLARKSDALE		\$132,500	\$26,500	\$26,000	\$185,000
1504 CLARKSDALE		\$132,500	\$26,500	\$26,000	\$185,000
1506 CLARKSDALE		\$132,500	\$26,500	\$26,000	\$185,000
1508 CLARKSDALE		\$130,500	\$26,100	\$26,000	\$182,600
1510 CLARKSDALE		\$130,500	\$26,100	\$26,000	\$182,600
1512 CLARKSDALE		\$101,000	\$20,200	\$26,000	\$147,200
1514 CLARKSDALE		\$128,500	\$25,700	\$26,000	\$180,200
1665 GAYLE		\$134,000	\$26,800	\$26,000	\$186,800
1602 FT SUMTER		\$134,500	\$26,900	\$26,000	\$187,400
1604 FT SUMTER		\$139,000	\$27,800	\$26,000	\$192,800
1616 FT SUMTER		\$145,000	\$29,000	\$26,000	\$200,000
1618 FT SUMTER		\$145,500	\$22,300	\$26,000	\$200,600
Total					\$2,215,200

1618 Ft Sumter

Questionnaire was returned undeliverable