A Confidential Study of Fayette Countians' Attitudes Regarding Stormwater Issues

Conducted on behalf of

Tetra Tech
&
Lexington-Fayette Urban County Government

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Survey Design & Methods

Background & Administration

In the summer of 2009, Tetra Tech commissioned Preston-Osborne to conduct a baseline attitudinal study of Fayette County residents and businesses regarding stormwater issues. The results of this study will be used to help shape a stormwater education and outreach program in Fayette County.

Three distinct audiences were identified to be surveyed for this project: residential members of the community, businesses that operate here, and businesses that are heavily involved in construction and development. (As a subset of the business survey, lawn care and landscaping companies were targeted with a slightly different version of the survey.)

Data collection, tabulation, and analysis for all three audiences were conducted by Preston-Osborne of Lexington, Kentucky. Survey findings in this report are expressed in percentages unless otherwise indicated. In some instances, totals may not equal 100 due to rounding or when multiple responses were permitted. Throughout this report, all "no responses" have been excluded. All data that appear in charts and tables have been rounded to the nearest whole number.

Below is a brief description of the methodology used for each audience.

Residential survey

Between August 5 and August 31, a survey of 800 Fayette County residents was conducted. The sample size results in a maximum margin of error of $\pm$3.46 percentage points at the 95 percent confidence level. To ensure appropriate representation among all age and ethnic groups, the survey consisted of two data collection methods: telephone surveys and intercept interviews. Telephone survey participants were selected at random from a list that was purchased from a sample vendor. The intercept interviews were designed to target area residents under the age of 35 and Hispanics. They were conducted at Fayette Mall, Thursday Night Live, the Cardinal Valley Center, and the Lexington Public Library Village Branch.

Business survey

Between August 12 and September 3, a telephone survey of 400 Fayette County businesses was conducted. The sample size results in a maximum

margin of error of ±4.90 percentage points at the 95 percent confidence level. Respondents were randomly selected from a list of all businesses operating in Fayette County, excluding those identified as part of the builder/developer community and those identified as lawn care or landscape service providers. The list also excluded businesses that were known to be home-based.

Development community survey

Using SIC code descriptions, Tetra Tech and LFUCG identified 577 businesses (from the list of all businesses in Fayette County) that were potentially a part of the construction/development community, which was defined as a company that **oversees** new building construction projects or development projects. Between August 19 and September 11, attempts were made to contact all of these businesses. Based on these efforts, 212 businesses were eliminated from the list after determining that the nature of their work made them ineligible for the study. Additionally, 76 businesses had phone numbers that were disconnected, 15 listings were duplicates, and 55 respondents declined to participate in the study. Despite multiple attempts, including leaving messages asking for a return call, the balance of businesses on the list (118 companies) could not be reached for the study. A total of 101 businesses—a list of which supplements this report—participated in the study. **Please note that, for the ease of reporting, this audience is simply referred to throughout this report as "builders."**

Secondary research

In addition to the quantitative research Preston-Osborne conducted, secondary research regarding stormwater issues and water quality was gathered from other communities in Kentucky, as well as similarly sized cities throughout the nation. This research began with the task of compiling a master list of city engineering departments, city managers, and community water divisions in all first through third class cities in Kentucky and in cities similar in size to Lexington in neighboring states, as well as the Environmental Protection Agency's Southeast Region 4 office in Atlanta, Georgia.

Of the 72 cities identified to contact, Preston-Osborne successfully spoke with one or more individuals from 57 cities—a 79 percent response rate. While, generally speaking, it was found that nearly all of the cities that

had implemented a stormwater fee program did so **without** any baseline research of their local residents and/or businesses, it was determined that three of the 57 cities **had** conducted the necessary research, and these results were provided to Preston-Osborne.

In addition to the 72 cities contacted, online research was conducted to locate any additional stormwater research publicly available. Further, in conversations with cities that appeared on the master list, if references were made to a study conducted by another city or state which did not appear on the list, efforts were made to obtain the research findings. Subsequently, the secondary research compiled includes data from cities and states *throughout* the United States.

The full results of the secondary research effort are reported in a separate document; however, key findings are included in the executive summary of this report.

Results at a Glance

Survey Highlights

The key findings from the survey are summarized below.

- Generally speaking, those interviewed proved to be only mildly informed about stormwater issues, and as a result, are not too concerned about how issues of stormwater runoff affect water quality throughout Fayette County. A lack of education is obvious across the board—respondents are not quite sure what watersheds are, how sewer systems work, how topography plays a role, or how everyday activities can affect our water quality.
- Only 24 percent of residents and 27 percent of businesses knew that water that is flushed down toilets and drains, and water that goes down storm drains, do not go down the same underground pipes.
- In fact, the majority of the City's citizens surveyed said, "I don't know" when asked whether the water that is flushed down toilets and drains goes into the same underground pipes as water that goes down street storm drains. When compared to surveys done by other cities, only studies done in two other areas showed a higher percentage of respondents answering "do not know" to this question.
- Lexingtonians are both unfamiliar with the term "watershed" and the fact that all residents live in a watershed. Only 1 out of 20 people surveyed were able to correctly identify the watershed in which they lived. Similar results were found in other areas of the country when residents were asked the same question.
- When asked to rate how much of an impact they consider several items to be on our streams and creeks, residents perceived a greater impact on water quality with items like "wastewater from manufacturing plants," "motor oil that enters the storm drains," and "pesticides and fertilizers". When it comes to items like "soapy water from washing vehicles at home," "leaves or grass that enter the storm drain," and "pet waste on the ground," the perceived impact is considerably less. These findings suggest that education is necessary to show people how much even the simplest of tasks or the most innocent of oversights may impact water quality in Lexington.
- The majority (84 percent) of residents who have school-age children said they do not recall their child ever coming home and telling them something they learned about stormwater or stormwater pollution.
- By the nature of their professions and the regulations they must follow on a daily basis, those in the construction and development industry seem to be the group most educated about stormwater, and also the group most likely to enact change.
- When asked how interested they would be in having someone attend a seminar to learn about how to reduce stormwater runoff at their place of business, 18 percent of businesses and 67 percent of all builders/developers expressed interest.
- More than 8 out of 10 builders and developers said they would be likely to incorporate green infrastructure in their projects if financial incentives were offered, while nearly half of businesses said they would be likely to employ stormwater controls if financial incentives were offered.

Executive Summary

All survey findings are discussed in detail in this report. An overview of these findings is included below.

- Generally speaking, those interviewed proved to be only mildly informed about stormwater issues, and as a result, are only less than concerned about how issues of stormwater runoff affect water quality throughout Fayette County. A lack of education is obvious across the board—respondents are not quite sure what watersheds are, how sewer systems work, how topography plays a role, or how everyday activities can affect our water quality. However, by nature of their profession and the regulations they must follow on a daily basis, builders seem to be the group most educated about stormwater, and also the group most likely to enact change.
- When looking at the survey findings as a whole, especially among residents, those living in the Town Branch watershed are particularly concerned about their water and stormwater issues.
- When asked to rate their level of concern about the quality of *drinking* water in Fayette County, the majority of respondents were **less than concerned** (56 percent of residents, 57 percent of businesses, and 57 percent of builders; scores of 1 through 3 combined on a 5-point scale).
- Concern increased among the three audiences when asked to rate their concern about the safety of water in Fayette County creeks, streams, rivers, and lakes *for swimming or wading.* At 61 percent and 58 percent, respectively, builders and residents expressed only slightly more concern about this issue of water quality than businesses in general (53 percent).
- When asked to rate their level of concern about *stormwater issues* in Fayette County, concern was consistent across the three groups, as 58 percent of residents, 59 percent of businesses, and 61 percent of builders expressed concern about this issue (scores of 4 and 5 combined on a 5-point scale).
- Only 24 percent of residents and 27 percent of businesses knew that the water that is flushed down toilets and drains in their homes, and the water that goes down storm drains in their neighborhoods, do not go down the same underground pipes.
- When asked if they live in a watershed, and if so, which one, 56 percent of residents said they did not know if they lived in a watershed or not; 29 percent said they do not live in a watershed; and 8 percent said they did live in a watershed but admitted they did not know which one.

- Twenty-six percent of residents and 38 percent of businesses consider stormwater runoff to be water that runs from various locations and eventually reaches the storm drains.
- All three groups interviewed—residents, businesses, and builders alike—think the local government's performance regarding the control of stormwater runoff and drainage is less than ideal. Only 32 percent of residents, 27 percent of businesses, and 30 percent of builders offered highly positive scores (scores of 4 and 5 combined on a 5-point scale).
- At 46 percent, builders perceive a much greater problem with flooding due to stormwater runoff than either residents or businesses (20 and 21 percent, respectively).
- Similarly, at 42 percent, builders believe pollution in stormwater runoff to be more of a problem than residents and businesses (22 percent and 15 percent, respectively).
- Sixty-nine percent of builders are aware of the 2010 water quality management fee, while only 45 percent of businesses are aware of it.
- When businesses and builders who were aware of the water quality fee were asked where they had seen, heard, or read about it, the most popular response was newspaper articles (54 percent and 59 percent, respectively).
- When asked to rate how much of an impact they consider several items to be on our streams and creeks, residents perceived a greater impact on water quality with items like "wastewater from manufacturing plants" (59 percent), "motor oil that enters the storm drains" (59 percent), and "pesticides and fertilizers" (58 percent). When it comes to items like "soapy water from washing vehicles at home" (20 percent), "leaves or grass that enter the storm drain" (29 percent), and "pet waste on the ground" (33 percent), the perceived impact is considerably less.
- Interestingly, none of the lawn care and landscaping companies interviewed (n=6) believe that grass clippings or leaves that enter the storm drains have a significant impact on water quality.
- Among residents who have a lawn, 94 percent said they either leave their grass clippings on the ground, bag them up, mulch or compost them, or put them in their Lenny recycling cart; only 1 percent said they blow them to the street. Among lawn care businesses who were asked this question, none said they blew clippings to the street. Just over two-thirds of businesses that have grass and/or landscaping that needs to be mowed and maintained said they disposed of grass clippings properly; only 1 percent said they blow them to the street and the balance were unsure of how this was handled.

- Residential respondents who have a yard were also asked how they typically dispose of leaves in the fall, to which 84 percent said they leave them on the ground, bag them up, mulch or compost them, or put them in their Lenny recycling cart. Seven percent blow them to the *edge* of the yard for pick up, while 5 percent said they blow them *over the curb* into the street for pick up.
- Just over half of Lexington residents who have a lawn—51 percent—said they either do not fertilize their lawn or they do not do anything on a scheduled basis. Nearly one-fourth of residential respondents said they apply pesticides and/or fertilizers themselves, and 21 percent said they use a lawn care service for these tasks.
- Of those residents who have a car, 76 percent said they wash their car(s) at a car wash; 80 percent of business respondents who have a company-owned vehicle said the same.
- When asked where they change their vehicles' oil, 93 percent of residents who have a car and 90 percent of business respondents who have a company-owned vehicle said they take it to a garage or instant oil location.
- Among those businesses that have a parking lot, 33 percent said they do not clean it at all. An additional 30 percent said they are not sure how their parking lot is cleaned because someone else is responsible for this task. The balance clean their lots in a variety of ways, with the most commonly used method being a sweeper or vac truck (16 percent).
- Recall of stormwater messages among residents about ways people can personally prevent pollution of water that flows into storm drains, streams, rivers, or lakes is low (38 percent).
- When those who said they recalled seeing, hearing, or reading something about pollution reduction were asked where they encountered this information, the two most popular media sources were newspapers (46 percent) and TV news (29 percent).
- Ninety percent of residents said they have never seen a logo or heard a slogan in their community specifically related to stormwater.
- Eighty-four percent of residents who have school-age children said their child has never come home and told them something they learned about stormwater or stormwater pollution; or, they do not recall if they had.
- When asked which of several stormwater control measures, if any, they employ at their place of business, 38 percent of business respondents said they do not employ any. The most commonly mentioned practice mentioned was storm drain and inlet protection, such as drain covers, inserts, or filters (40 percent). Trailing in second place was detention basins (13 percent).

- Generally speaking, builders employ a number of stormwater control measures on their construction sites and in their recommendation for site development. Three measures were particularly popular among builders: 95 percent said they use storm drain & inlet protection; 93 percent said they use detention basins; and 79 percent said they use retention ponds or wetlands.
- Two-thirds of businesses do not have a stormwater discharge permit, and 84 percent of businesses do not have a written or formal stormwater pollution prevention plan.
- When asked how often they inspect their construction sites as part of their best management practices, 23 percent of builders said this did not apply to them. Among those to which the question did apply, 28 percent said they check their sites daily; 18 percent said they check them weekly AND after every rain; and 14 percent just said weekly.
- Sixty-three percent of builders said they were aware of the City's stormwater manual. Of those, 61 percent said the manual's standards are effective in protecting water quality in Fayette County (scores of 4 and 5 combined on a 5-point scale). Of those critical of the manual's standards (scores of 1 through 3), nearly two-thirds said they would be willing to assist with revising a future version of the manual.
- When asked how supportive they think LFUCG is in implementing environmentally friendly, sustainable, or "green" building practices, 68 percent of builders and 56 percent of businesses thought the City was **less than supportive** (scores of 1 through 3 on a 5-point scale).
- Nearly 7 out of 10 builders (69 percent) said they have or someone in their organization has attended a seminar or workshop to learn more about green infrastructure.
- Sixty percent of builders said they had not received any mailings from the City concerning green infrastructure.
- When asked to rate how much value the installation of green infrastructure to reduce stormwater runoff adds to their construction projects, 58 percent said the value is low (scores of 1 through 3 on a 5-point scale).
- Seventy-six percent of businesses said they have never attended a seminar or workshop to learn more about stormwater control.
- When asked how interested they would be in having someone attend a seminar to learn about how to reduce stormwater runoff at their place of business, 18 percent of businesses whose company has not attended a seminar and 67 percent of all builders expressed interest (scores of 4 and 5 combined using a 5-point scale).

- Among builders interested in attending a seminar, the majority (63 percent) could not identify a particular topic of interest but, instead, said they were interested in general information.
- More than one-third of builders (34 percent) said they or someone from their organization has attended an LFUCG Partnering Workshop to learn more about best practices for developments and construction sites. Of those who have attended one of these workshops, 59 percent said they found it a valuable experience (scores of 4 and 5 combined using a 5-point scale) and 71 percent said they had incorporated some of the new practices discussed there.
- Only one-quarter of businesses said they would be willing to reduce impervious surfaces at their business in an effort to reduce the impact of stormwater runoff.
- Eighty-one percent of builders said they would be likely to incorporate green infrastructure in their projects if financial incentives were offered, while 46 percent of businesses said they would be likely to employ stormwater controls if financial incentives were offered.

As mentioned in the background section of this document, the full results of the secondary research effort are reported in a separate document; however, a brief overview of how Lexington's stormwater survey results compared to those of similar surveys conducted in other areas of the country is included in the bullets that follow.

- Lexington residents have a slightly greater concern about the quality of their drinking water than people in other areas interviewed. They are, however, generally *less* concerned about the safety of the water in county creeks, streams, rivers, and lakes for swimming and wading.
- A majority of the City's citizens surveyed do not know whether the water that is flushed down toilets and drains goes into the same underground pipes as water that goes down street storm drains. Only surveys done in South Carolina and Kansas City (Ks.) showed a higher number of respondents answering "do not know" to this question.
- The percentage of residents who deal with mowed grass or autumn leaves by leaving them on the ground, bagging them for trash pickup, or mulching/composting them is comparable to other areas surveyed.
- Slightly fewer people in Lexington use pesticides or fertilizers on their lawn on a regularly scheduled basis than in most other areas of the country surveyed.

- Fewer Lexingtonians wash their cars or change their vehicles' motor oil at their residence than do people in most other areas surveyed.
- A clear majority of people living in Lexington do not know whether they live in a watershed. This mirrors results from respondents in other areas asked the same question.
- The problem of pollution in stormwater runoff is generally considered a more serious problem in other areas of the country than it is in Lexington—most notably in Orange County, whose residents said that both urban and ocean waters cause residents concern.
- Regarding items that potentially could influence water quality in their communities, Lexingtonians expressed comparable concern with most other areas of the country when considering a) wastewater that comes from manufacturing plants, b) water that comes from sewage treatment plants, c) rainwater that runs off of roofs, lawns, parking lots and streets, d) rainwater that runs off of farms and agricultural operations, and e) pet waste on the ground.
- When considering dirt from construction sites and its influence on water quality, Lexington residents' concern was slightly higher than that found in surveys done in Bowling Green and the state of Kentucky. It was somewhat lower, however, than that seen in surveys conducted in other areas.
- Lexington residents expressed a greater concern that pesticides and fertilizers could negatively impact water quality than respondents in several areas of the country. However, surveys conducted in South Carolina and many areas of California reflected a greater concern on this issue among its residents.
- Given that few residents wash their cars at their homes, it is no surprise that soapy water is not a great concern among residents asked about its impact on water quality. In fact, Lexingtonians' level of concern is the lowest in any of the surveys included in this study.
- In like manner, Lexingtonians did not seem concerned about the degree to which leaves, grass clippings, or motor oil that enters storm drains could influence water quality. Only one area asked questions related to this—Santa Barbara (Ca.)—and residents there expressed less concern about leaves and grass clippings, while Lexingtonians registered a lower level of concern regarding motor oil.
- Slightly more than one-third of Lexington respondents said they had seen, read, or heard something about ways they could personally prevent water pollution in their area. Of those in other areas that were asked this question, only Santa Barbara residents gave a significantly higher response. All areas cited television ads and newspaper articles as the top sources of such information.