Wet Weather Team Project Meeting Materials

Summer 2007–Spring 2008

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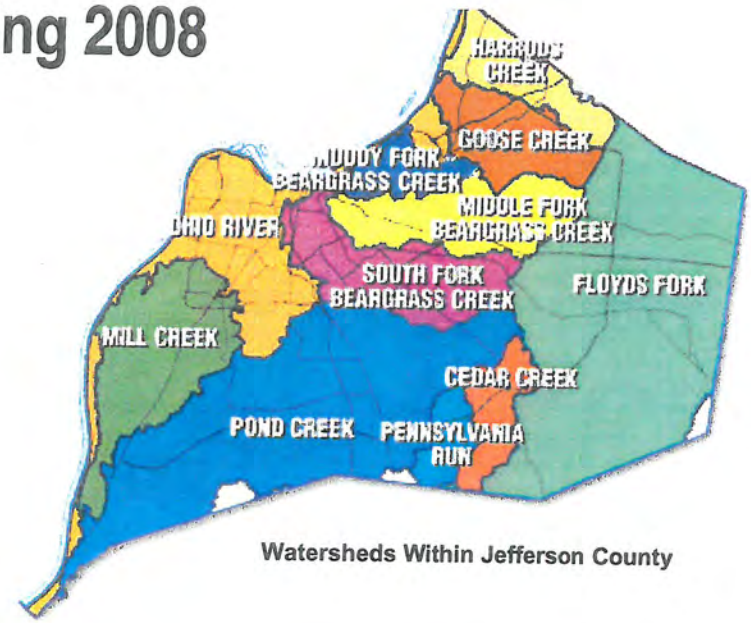
WWT Stakeholders Meeting # 24 1/29/2010

MSD

Louisville and Jefferson County
Metropolitan Sewer District



Watersheds Within Jefferson County

Agenda

Stakeholder Group Agenda
January 28, 2010
5:00 PM – 7:30 PM

5:00 – 5:15	Integrated Overflow Abatement Plan Approval Status
5:15 – 5:30	Project WIN Public Information and Outreach
5:30 – 6:00	Green Infrastructure Update
6:00	Dinner
6:15 – 6:30	Jeffersontown Blending Elimination
6:30 – 7:00	Construction Status and Progress
7:00 – 7:15	6 Month Look Ahead
7:15 – 7:30	Meeting Wrap Up and Closing Remarks

Meeting Summary
Integrated Overflow Abatement Plan
Stakeholders Group Update
Thursday, January 28, 2010
MSD Main Office, Louisville

A group of stakeholders involved in the development of the Louisville and Jefferson County Metropolitan Sewer District's Integrated Overflow Abatement Plan (IOAP) to control sewer overflows—former members of the MSD-chartered Wet Weather Team—met on January 28, 2010, at MSD's main office. The objectives of the meeting were to:

- Update the group on the status of IOAP approval and implementation.
- Describe some of the implementation challenges ahead, and seek input on ways to overcome those challenges.
- Present the path forward for the next 6 months.

Integrated Overflow Abatement Plan Approval Status

Angela Akridge presented the status of the IOAP approval process as follows:

- MSD received conditional approval of the Plan from EPA and KDEP.
- The Plan was put out for public comment as part of the Court's process for accepting the Plan and incorporating the plan into an attachment to the Amended Consent Decree. No comments were received.
- Final acceptance by the Court is expected shortly. [Note: Final approval was received February 12, 2010.]

Green Infrastructure Update

Bud Schardein distributed a presentation he gave to the US Conference of Mayors regarding green infrastructure. During the subsequent discussion the following points were raised:

- MSD's green infrastructure credits program is almost ready to present to the MSD Board for consideration. The credits program is a key element of MSD's strategy to involve public and private partners in green infrastructure projects. As currently proposed the credits program includes:
  - to subsidize rain barrel and rain garden programs for these customers.
  - MSD is working on revisions to its Design Manual to provide design guidance for For public agencies that do not pay stormwater fees, up front participation in the construction cost of green infrastructure projects, to the level supported by the "business case" developed as part of the IOAP.
  - For private property owners, a combination of up front participation in construction costs and the granting of partial credit towards future stormwater fees, to incentivize proper long-term maintenance.
- No stormwater credit incentives are currently envisioned for single-family residences, but MSD will continue common green infrastructure techniques, and recommendations relative to review and approval of green infrastructure components in land development reviews.
- Green infrastructure initiatives that are part of the IOAP are primarily focused on runoff quantity in the combined sewer area. Water quality issues related to stormwater runoff will be part of the enhanced MS4 program that will be required by the new MS4 permit.

- Considerable discussion about participation by individual homeowners. MSD will continue to subsidize programs for individual homeowners such as rain barrels and rain gardens. Stormwater credits for homeowners is not deemed cost effective, and is not part of the program at this time.

Jeffersontown Blending Elimination

Gary Swanson of CH2M HILL summarized the requirements of the Amended Consent Decree relative to eliminating blending at the Jeffersontown WQTC. Three alternatives to the elimination plan presented in the IOAP have been developed and are being evaluated using the same benefit/cost evaluation process used to select IOAP projects. To differentiate between the benefits of these alternatives some modifications are being made to the performance measures for environmental enhancement. Since this is only being used to compare alternatives for Jeffersontown blending elimination, these modifications do not affect the scoring for IOAP alternative selection.

MSD will complete the benefit/cost evaluation of the alternatives, and present the alternatives and the proposed recommendation to the public at two "open house" forum meetings in mid-March. MSD will submit a final elimination plan by the March 31, 2010 milestone.

Construction Status and Progress

Mark Johnson presented an overview of IOAP projects currently being implemented. All projects associated with the ISSDP are either in design or under construction. Two LTCP storage basin projects are in design. MSD visited similar facilities operated by the Detroit Water and Sewerage Department to get a first hand view of design features that will be considered for MSD's basins. Several of the Flood Pump Station projects are also in design as are a variety of SSDP projects, both large and small.

John Loechle presented an overview of the status of Sewer System Evaluation Surveys that are underway. SSES projects are underway in the following areas:

- Camp Taylor,
- LeeAnn Way Pump Station,
- Parkview Estates
- Gunpowder Pump Station
- Fox Harbor Pump Station
- Fairway View Pump Station

Twelve additional SSES projects are under development.

6-Month Look-Ahead

Justin Gray presented a 6-month look ahead of IOAP activities anticipated. It is anticipated that field work will begin on 12 SSES projects, and associated sewer rehabilitation will also begin on high-priority locations. Additional flow monitors will be installed as part of the Post Construction Compliance Monitoring program, and pre-construction monitoring of the green infrastructure demonstration sites will be given a high priority for early installation.

Design will be completed and construction initiated for 12 of the green infrastructure demonstration projects. MSD has been in contact with the EPA Office of Research and Development, relative to potential partnering opportunities in monitoring water quality benefits of MSD's green infrastructure projects.

MSD will be close to substantial completion on the Beechwood Village projects, and will be under construction for all phases of the Northern Ditch Diversion Interceptor, Phase 1 of the Hikes Lane Interceptor, and all three projects at the Derek R. Guthrie WQTC. Seventeen additional projects will be in various stages of implementation, in accordance with the IOAP schedule.

Wrap Up and Next Steps

- MSD will post the presentations and this meeting summary to the Project WIN website
- MSD will post a pdf of the customer survey results and summary presentation to the Project WIN website.
- MSD will schedule two open house meetings to review the Jeffersontown blending elimination alternatives and recommended approach.
- Bruce Scott and Lisa Santos expressed interest in participating in discussions regarding the final location of the I64 & Grinstead Storage Basin.
- The next update meeting will be scheduled for sometime in August or September, 2010.

Meeting Participants

Wet Weather Team Stakeholders

Steve Barger – Labor
Tom Herman, Zeon Chemicals
Rick Johnstone, Louisville Metro Mayor's Office
Bob Marrett, CMB Development Company
Kurt Mason, Jefferson County Soil and Water Conservation District
Kim Mims, Louisville Metro Planning & Design Services (replacing Charles Cash)
Lisa Santos, Irish Hill Neighborhood Association
Bruce Scott, Kentucky Waterways Alliance
David Tollerud, University of Louisville, School of Public Health and Information Sciences
David Wicks, Jefferson County Public Schools (retired)

MSD Personnel

Angela Akridge, MSD Regulatory Policy Manager
Mark Johnson, MSD Director of Engineering and Chief Engineer
Bud Schardein, MSD Executive Director

Technical Support

Gary Swanson, CH2M HILL

Meeting Observers

Phyllis Croce, MSD
John Loechle, MSD
Kristen Crumpton, URS
Justin Gray, MSD
Sue Green, MSD
Wes Syndor, MSD
Dave Schaftlein, MSD
Steve Emly, MSD
Julia Muller, MSD
Tim Kraus, OBG
Steve McKinley, URS

Handouts

MSD Public Phone Survey - 2009

Purpose of Survey

- Set baseline for measuring the progress of *Public Education, Outreach, Participation and Learning Experiences (PEOPLE)* efforts
- Measure Knowledge, Attitudes, Behavior and Means of Effective Communication
- Plan to re-administer the survey every two years

Survey Development & Administration

- Telephone Interview (~12-minutes)
- 1,200 Adults Residents of Jefferson County
- 20 Questions (49 including sub-questions)
- Margin of Error: ± 2.8 percentage points at 95% confidence
- Sample Design: A probability sample of landline telephone households using a random-digit-dialing (RDD) methodology, giving equal probability of selection to both listed and non-listed households in the survey area.
- Population Projection: 534, 244 adult residents of Jefferson County, KY
- Performed by The Cubero Group / Thoroughbred Research Group
- November 30, 2009 through December 7, 2009
- Results available on Project WIN web site

Analysis Group	*No. of Interviews*	*Max Margin of Error at 95% Confidence*
Males	516	± 4.3 percentage points
Females	684	± 3.7 percentage points
Age 18 to 34	96	± 10.0 percentage points
Age 35 to 54	559	± 4.1 percentage points
Age 55 +	536	± 4.2 percentage points
Total Sample	1,200	± 2.8 percentage points

Sample of Compiled Results

Destination of Polluted Stormwater

Q. How much do you agree or disagree that...?

	Total	Males	Females	Age 18-34	Age 35-54	Age 55 +
Pollution picked up by storm water flows to a sewage treatment plant (FALSE)						
• Rated 5 – Completely Agree	36%	31%	41%	37%	33%	40%
• Rated 4	18%	16%	19%	15%	20%	16%
• Rated 3	28%	28%	28%	36%	27%	22%
• Don't Know	2%	1%	2%	2%	1%	3%
Sub-total Incorrect	83%	76%	89%	89%	81%	81%
Pollution picked up by storm water flows to local creeks or streams (TRUE)						
• Rated 1 – Completely Disagree	4%	5%	3%	3%	3%	6%
• Rated 2	4%	7%	2%	6%	3%	4%
• Rated 3	17%	21%	14%	26%	15%	12%
• Don't Know	+	1%	+	1%	+	+
Sub-total Incorrect	25%	33%	19%	36%	20%	22%

Base: All respondents + indicates a response of less than 0.5%

Significantly higher levels of incorrect responses are highlighted in RED.

Greenversations

Greenversations - the official blog of US EPA

« When In Doubt, Throw It Out!

Louisville Turns Over a Green Leaf

Posted on January 22nd, 2010 - 10:30 AM

Growing up in Louisville I was accustomed to a home town with a few things that were world class: college basketball, a premier horse racing event, a great bluegrass festival, and even good bratwurst at Oktoberfest. Meanwhile, Louisville was hardly known for progressive environmental protection. In fact, Louisville was rather notorious on the water quality scene, better recognized for disaster than innovation. I grew up in the Beargrass Creek Watershed, which was permanently posted as unsafe for body contact activities because of sewer overflows. We played in the creek anyway, and in retrospect I wonder if any of those 'stomach bugs' we occasionally suffered were related to exposure to pathogens in untreated wastewater. I was in high school in 1977 when Kentucky Liquid Recycling dumped a toxic mix of chemicals into the sewer system effectively shutting down city-wide wastewater treatment; untreated sewage was discharged directly to the Ohio River for months while the plant and the sewer system were decontaminated. I was at the University of Louisville in 1981when Ralston Purina released hexane into the sewer system and blew up miles of streets in the downtown area, including on campus directly in front of the dorm in which I was living. I still recall being awakened by the explosion, and sitting in a dark hallway with the rest of the woman on my floor anxiously speculating about what had happened.

I'm happy to say that I can now be cautiously optimistic, a little proud even, of how Louisville is responding to their federal and state mandates to finally resolve their water quality problems. While most cities with combined and sanitary sewer overflows continue to take traditional grey infrastructure approaches by building large storage, conveyance and end-of-pipe treatment systems, Louisville is among a few notable cities who have decided to "go green". Unlike grey technologies, green approaches provide a multitude of benefits in addition to water quality improvement. They generally are also more cost-effective over the long-term. However, because most wastewater engineers are still tentative about technologies other than pipes, pumps, filters and flocculants, green approaches still aren't mainstream. Louisville has undertaken the necessary environmental and economic analyses, and determined that green infrastructure makes a lot more sense for the community. They have committed to spend millions of dollars on wide-spread implementation of green roofs, green streets, urban reforestation, and other elements of a comprehensive green infrastructure program. Yes, that's lots of money, but consider that they've determined that these solutions will actually SAVE them millions of dollars compared to grey technologies, while providing ancillary benefits that pumps and pipes could not. Though I'm not necessarily expecting to see a vegetated roof on the twin spires of Churchill Downs the next time I visit (though how cool would that be), I do expect to see Louisville transform itself with greener streets, campuses, roofs, parks, and alleys over the next decade or so. That's good news for Beargrass Creek and the Ohio River, and great for the Louisville community as well.

About the Author: Jenny Molloy is an aquatic biologist currently working in Washington DC as USEPA's green infrastructure coordinator. She was raised in Louisville, Kentucky.

Tags: wastewater treatment, Water

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One Response to "Louisville Turns Over a Green Leaf"

1. *Al Bannet* Says:
   January 22nd, 2010 at 2:33 pm

   Is the population of Louisville growing? How is the city dealing with its trash collection? What percentage is being recycled into usable products?

   [Reply]

Leave a Reply

Name (why do we ask for this?)

Email (will not be published)

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Comments submitted after hours or on weekends will be posted as early as possible the next business day.

Project WIN

Stakeholder Update January 2010

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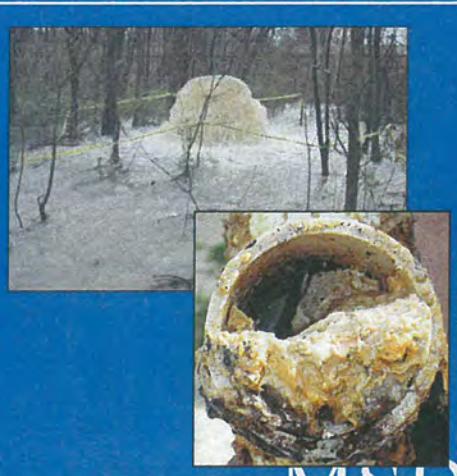
Meeting Objectives

- Update Status
- Define Challenges Ahead
- Seek Input on Overcoming Challenges
- Present Path Forward



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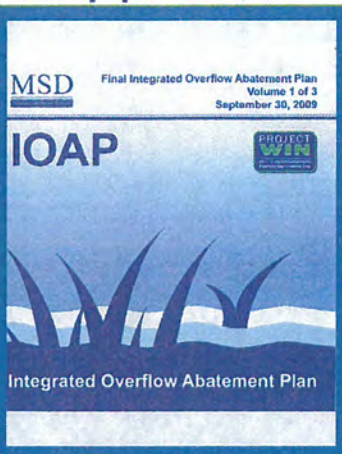
IOAP Approval Status



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IOAP Approval Process

- Submittals
  - Resubmittal dated June 19, 2009
  - Minor clarifications dated August 21, 2009
  - Final submittal dated September 30, 2009
- Modifications since June 2009
  - Facts and figures consistency across the 3 volumes
  - Minor schedule adjustments
  - Technical clarifications
  - No significant changes to projects, schedules or budgets

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IOAP Approval Process

Status

- Conditional approval granted by EPA and KDEP
  - Letter references "MSD"s cooperation and close communication"
  - Stakeholder involvement level and decision process documentation praised by EPA
- EPA/KDEP forwarded to Federal Court with recommendation to approve
- Public comment period closed on January 17, 2010
- No public comments received by EPA
- Awaiting EPA to perform final transmittal to Federal Court for approval

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Project WIN
Public Outreach Program





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Project WIN Communications
Notification, Outreach & Education

Notification

- Interpretive signage installed at Big Rock. Installations scheduled for Lexington at Grinstead.
- 6000+ Project WIN Packets mailed to customers since July 2009
- Annual overflow advisory notification to community by May 1, 2010

Big Rock Interpretive Sign

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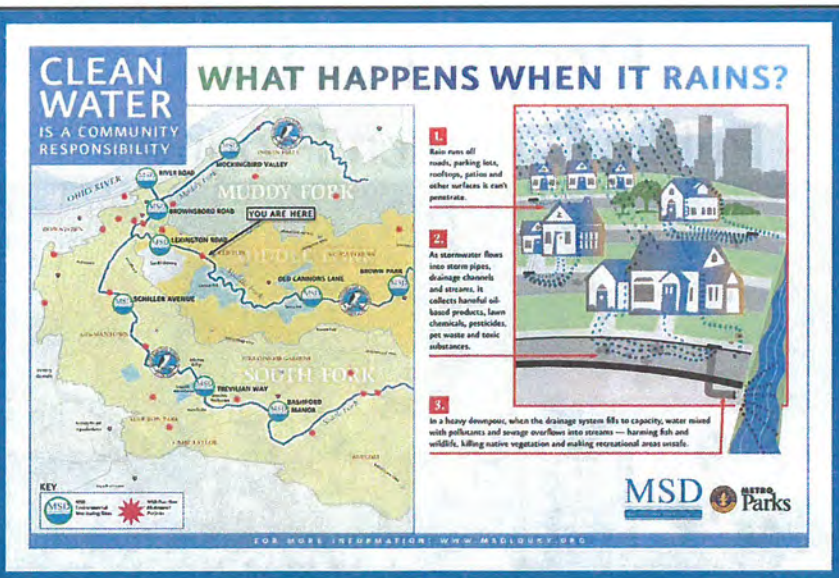

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Project WIN Communications
Notification, Outreach & Education

Outreach

- Radio and TV Activities
  - Living Better with Cindy Sullivan
  - Commercials on WHAS Radio
  - Webstreaming on WHAS Radio
  - WAVE TV Troubleshooter Spots
  - WLKY TV Spots
  - Metro TV Spots on MSD Activities
- Printed Media Activities
  - Business First, Today's Woman, Louisville Magazine, Her Magazine
  - Rain Garden Manual printings

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Project WIN Communications
Notification, Outreach & Education

Education
- Green Infrastructure Activities
  - Main Office Rain Garden Planting in Fall 2009
  - Rain Garden workshops scheduled across the county
- Clean Streams Activities
  - X-Stream Clean Sweep scheduled for March 27, 2010
- Children's Education Activities
  - Professional development classes for teachers
  - EcoDrama
  - Magnet Programs at middle and high school level

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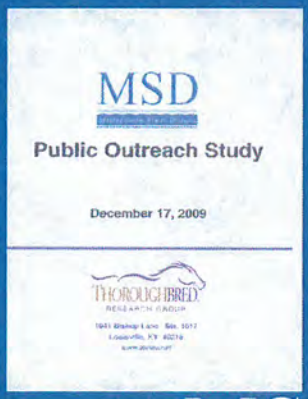
Customer Survey
Baseline Data to Measure Outreach and Education Effectiveness

- 1200 person random sampling
- Addressed stormwater, sewer overflow and general water quality understanding



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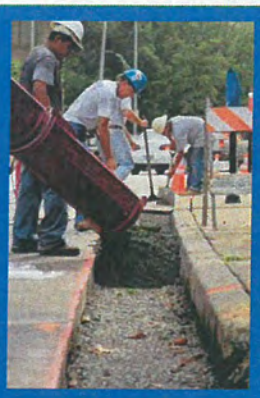
Green Infrastructure Update

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Bud's slides

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Dinner Break

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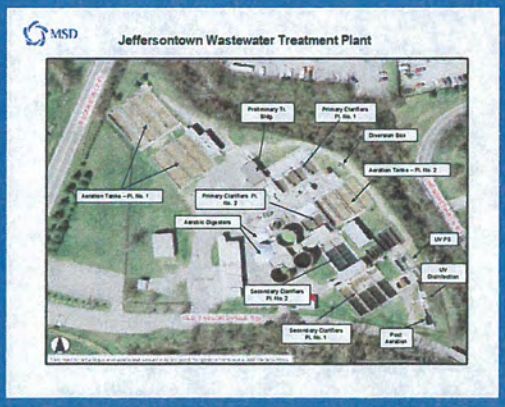
Jeffersontown WWQT Blending



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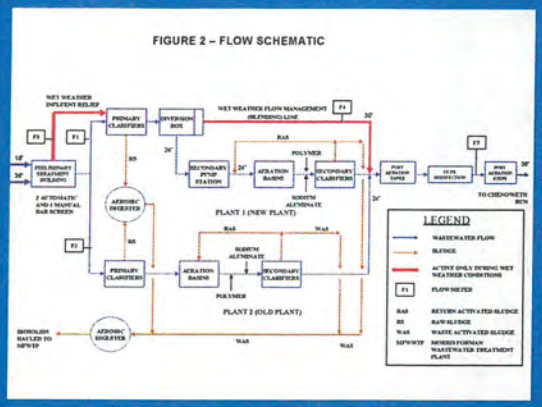
Jeffersontown Blending Eliminaiton

- Amended Consent Decree requires elimination of "blending" at Jeffersontown WQTC by December 31, 2015
- Reporting requirement to submit elimination plan by March 31, 2010
  - Eliminate Jeffersontown WQTC, or;
  - Upgrade plant "should elimination be infeasible"



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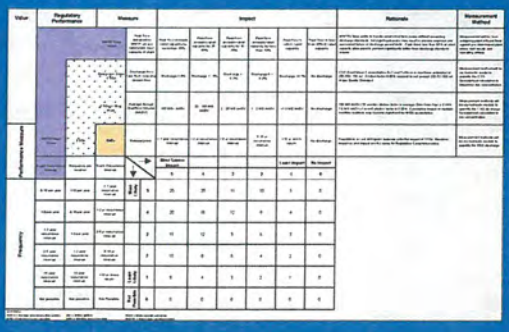
Decision Process to Follow Successful IOAP Approach

- Benefit/Cost Ratio
- Benefits based on value protection
  - Regulatory Performance
  - Environmental Enhancement
  - Public Health Protection
  - Asset Protection
  - Eco-Friendly Solution



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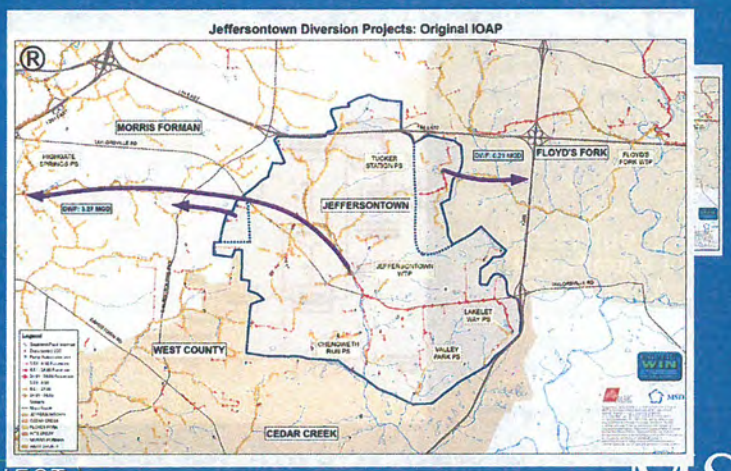
IOAP "Strawman" Solution



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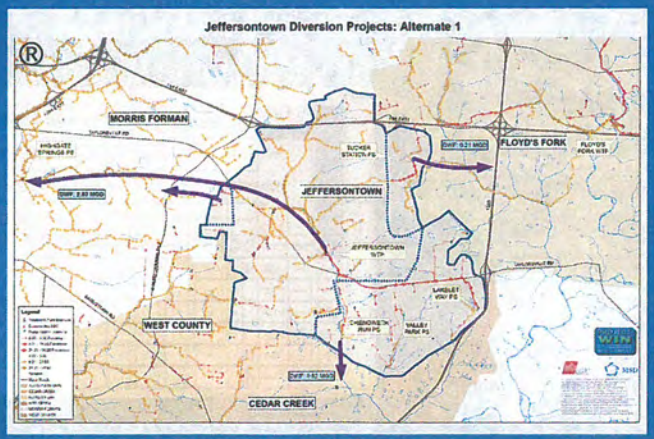
Alternative 1



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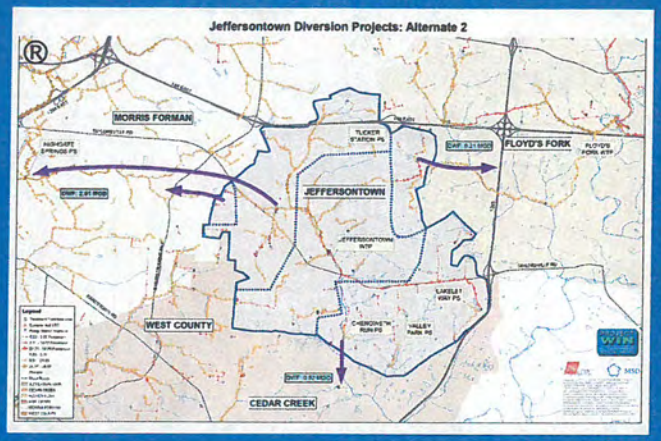
Alternative 2



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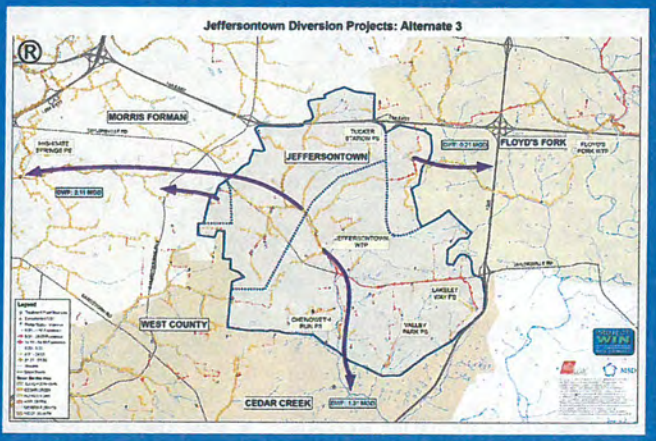
Alternative 3



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Benefit Evaluation Factors

- Regulatory Performance
  - No difference between alternatives in SSO elimination effectiveness
  - All alternatives eliminate blending per requirement
  - Plant elimination alternatives eliminate KPDES discharge
    - Performance measures must be modified to recognize this benefit

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Benefit Evaluation Factors

- Asset Protection
  - No difference among alternatives
- Public Health Protection
  - No difference among alternatives
- Eco-Friendly Solutions
  - Plant elimination alternatives restore property to multi-use
  - Plant elimination alternatives restore site to neighborhood compatible use

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Benefit Evaluation Factors

- Environmental Enhancement
  - Plant elimination alternatives reduce pollutant load on Chenoweth Run more than plant upgrade alternative
  - Diversion alternatives transfer load to different receiving water
    - Ohio River
    - Cedar Creek/Floyd's Fork
    - Salt River (maybe someday)

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Next Steps

- Complete Benefit/Cost evaluation
- Identify preferred alternative
- Present to public for comment
  - Open house format
    - Jeffersontown area
    - Southwest Jefferson County
- Make final decision, prepare report for submittal

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Project WIN
Capital Improvement Program

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ISSDP Status
The "Big 4" SSOs

The "Big 4" SSO's make up almost 80%, by volume, of the total annual SSO's in the MSD separate sewer system. These locations are:

- Pumped SSO's in Beechwood Village
- Pumped SSO's in Hike Point
- Highgate Springs Pump Station
- SSO at existing Southeast Diversion

The following summary of projects are those required to eliminate these SSO's

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ISSDP Status
The "Big 4" SSOs

Derek R Guthrie WQTC Wet Weather Treatment Facility

- Wet weather pumping and screening
  - $50 million budget
  - Advertise for bids Jan 29, open bids March 3
- Flow equalization basin
  - $2.5 million budget
  - Design 60% complete, easement acquisition
- Wet weather treatment process
  - $30 million budget
  - Advertise for bids Jan 29, open bids March 17

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ISSDP Status
The "Big 4" SSOs

Northern Ditch Diversion Interceptor - Phase I

- Construction NTP issued 6/15/09
- 84" Pipe installation began 10/2/09
- 1,774 of 84" pipe laid as of 1/19/10
- Scheduled completion of 84" pipe is 9/1/10

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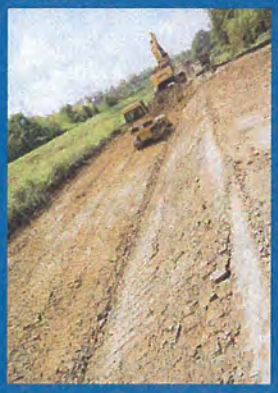
ISSDP Status
The "Big 4" SSOs

Northern Ditch Diversion Interceptor - Phase II

- Construction NTP issued 11/30/09
- Includes diversion structure at existing 72" Northern Ditch Interceptor
- Scheduled completion is Feb. 2011



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ISSDP Status
The "Big 4" SSOs

Hikes Lane Area – Highgate Springs Pump Station and Southeast Diversion SSO elimination

- Buechel Basin – Negotiating Design Contract
- Southeast Relief Sewer – 60% design complete
- New Southeast Diversion Structure – 90% design complete
- Hikes Lane Interceptor – Phase I – Advertise for bid Feb. 2010
- Hikes Lane Interceptor – Phase II – easement acquisition
- Hikes Lane Relief Sewer – design 90% complete
- Carson Ribble Relief Sewer – construction complete Dec. 2009

All projects scheduled for construction completion prior to December 2013

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ISSDP Status
The "Big 4" SSOs

Beechwood Village East

- 15,000 LF sewer lining complete 6/26/09
- 121 illicit sump pumps disconnected
- 3 outside yard drains and downspouts from house removed from sewer
- 300 interior home plumbing modifications
- 336 Public/private PSC's replaced

Beechwood Village West

- 8,400 ft of main sewers lined by 10/23/09
- Remainder of plumbing/PSC work to begin this spring

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ISSDP Status
The "Big 4" SSOs

Beechwood Village

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ISSDP Status
The "Big 4" SSOs

Sinking Fork Interceptor Relief

- Relief sewer for Beechwood Village Subdivision
- Construction substantially complete and receiving flow 11/20/09

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ISSDP Status
The "Big 4" SSOs

Sinking Fork Interceptor Relief

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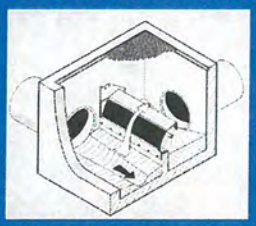
IOAP Status
CSO LTCP Projects

Gray Infrastructure Projects in Planning/Design

- CSO 206 Downspout Disconnections
- CSO 108 Dam Modification



CSO 108 Bending Weir

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IOAP Status
CSO LTCP Projects

Gray Infrastructure Projects in Planning/Design

- I-64 and Grinstead Storage Basin
- Logan Street Basin

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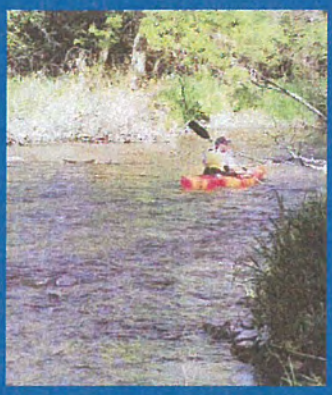
Clinton River



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Odor Control

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Control Room

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Underground Storage Basin

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Screening

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Pumping Station

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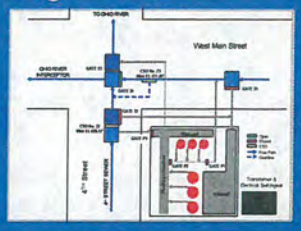
IOAP Status
CSO LTCP Projects

Gray Infrastructure Projects in Planning/Design

- 34th Street Flood Pump Station Modifications
- 4th Street Flood Pump Station Modifications
- 27th Street Flood Pump Station Modifications
- Shawnee Flood Pump Station Modifications



Gate Automation Project

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IOAP Status
SSDP Projects

Planning Projects in Progress

- Camp Taylor SSES and Sewer Replacement
- Lea Ann Way SSES and Sewer Replacement
- Parkview Estates I&I Investigation/Rehabilitation SSES
- Gunpowder Pump Station In-Line Storage Project SSES
- Fox Harbor Pump Station In-Line Storage Project SSES
- Fairway View Pump Station Improvements SSES

Lea Ann Way PSC

Camp Taylor ICA Photos

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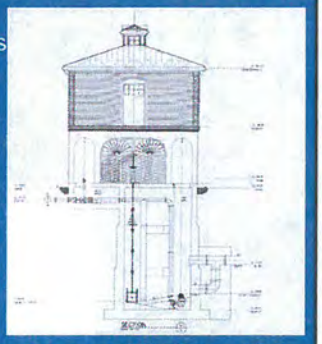
IOAP Status
SSDP Projects

Projects in Planning/Design

- Woodland Hill Pump Station Diversion
- Raintree and Marian Court Pump Station Eliminations
- Upper Middle Fork Buechel Basin
- Hurstbourne I&I Investigation and Rehabilitation
- Beargrass Interceptor Rehabilitation Phase 2
- Charleswood Interceptor #23
- Government Center Pump Station Elimination
- Mellwood Pump Station and Force Main
- Prospect WQTC Elimination
- East Rockford Lane Pump Station Relocation
- Shively Interceptor (Pump Station Eliminations)
- Anchor Estates Pump Station 1 & 2 Eliminations SSES



Proposed Mellwood PS

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IOAP Status
SSDP Projects

Anchor Estates Pump Station 1 & 2 Eliminations SSES

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IOAP Status
SSDP Projects

Projects under Construction

- Running Fox Pump Station Elimination
- Ashburton Pump Station Improvements and Diversion
- Avanti Pump Station Elimination

Ashburton Pump Station Improvements

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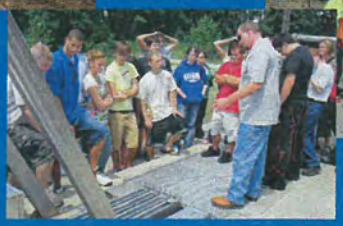
Project WIN
6-Month Lookahead



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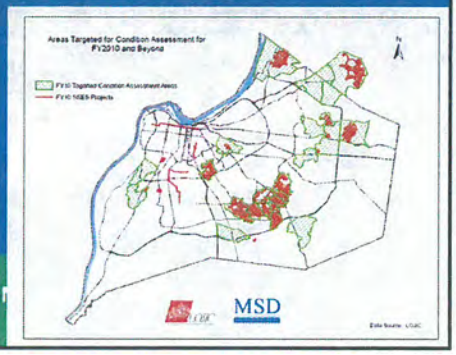
6-Month Lookahead
SSES Projects

- Little Cedar Creek Interceptor SSES
- Floydsburg Road Pump Station I&I Investigation SSES
- Meadow Stream Pump Station In-Line Storage SSES
- Kavanaugh Road Pump Station Improvement SSES
- Eden Care Pump Station SSO Investigations SSES
- Sonne Pump Station I&I Investigation and Rehabilitation SSES
- Hazelwood Pump Station I&I Investigation and Rehabilitation SSES
- Lantana Pump Station Investigation and Rehabilitation SSES
- Edsel Pump Station I&I Investigation and Rehabilitation SSES
- Lake Forest Pump Station SSO Investigation SSES
- Riding Ridge Pump Station Improvements SSES
- ICA Phase III & IV
- Collection System Condition Assessment

Rehabilitation and Cleaning

- Retain capacity
- Remove I/I
- Improve structural integrity



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6-Month Lookahead
Post Construction Compliance Monitoring

- Environmental Data Integration
- Event Notification Testing
- Quality Assurance and Quality Control Program development
- Green Demonstration Pre-Construction Monitoring
- Sewer Model Calibration and Integration
- Water Quality Sampling around "Big 4" construction projects
- Continued sewer flow monitoring network expansion
- Routine flow and water quality monitoring, rain gauge and radar rainfall data collection
- Algae Tile Surveys

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6-Month Lookahead
Green Infrastructure

- Continue or begin construction of 12 green infrastructure demonstration projects – initiate design of 7 others
- Initiate discussions with EPA Region 4 regarding dry well infiltration system permitting issues
- Collaboration with EPA Office of Research & Development
- Complete green partnership incentives program and begin cost-sharing with partners, if approved by MSD Board
- Green infrastructure design guidance completion, review Land Development Code and recommend green infrastructure-related changes in development review process
- Identify additional partnering opportunities and implement

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6-Month Lookahead
ISSDP Projects

- Substantially complete Beechwood Village construction
- Bid and award Phase 1 of the Hikes Lane Interceptor, continue easement acquisition for Phase 2
- Complete design of Southeast Interceptor Relief Sewer (pending acquisition of all easements)
- Substantially complete Phase 1 of the Northern Ditch Diversion Interceptor, and continue construction on Phase 2
- Bid, award, and begin construction on all three projects at the DRG WQTC

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6-Month Lookahead
IOAP Projects

- Begin (or continue) design of the following:
  - Adams Street Storage Basin
  - Paddy's Run Wet Weather Treatment
  - I-64 and Grinstead Storage Basin
  - Logan Street Storage Basin
  - Upper Middle Fork Storage Basin (Buechel Basin)
  - Mellwood Pump Station and Force Main
  - Four flood pump station modification projects
- Begin or continue construction of the following:
  - Beargrass Interceptor Phase 1 rehabilitation
  - River Road Interceptor (part of Prospect Plant Elimination)
  - Woodland Hills PS Diversion
  - Government Center Pump Station Diversion
  - East Rockford Lane PS Relocation
  - Shively Interceptor
- Substantially complete construction of the following:
  - Running Fox PS elimination
  - Ashburton Pump Station Improvements and Diversion

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MH 13946
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MH 51240
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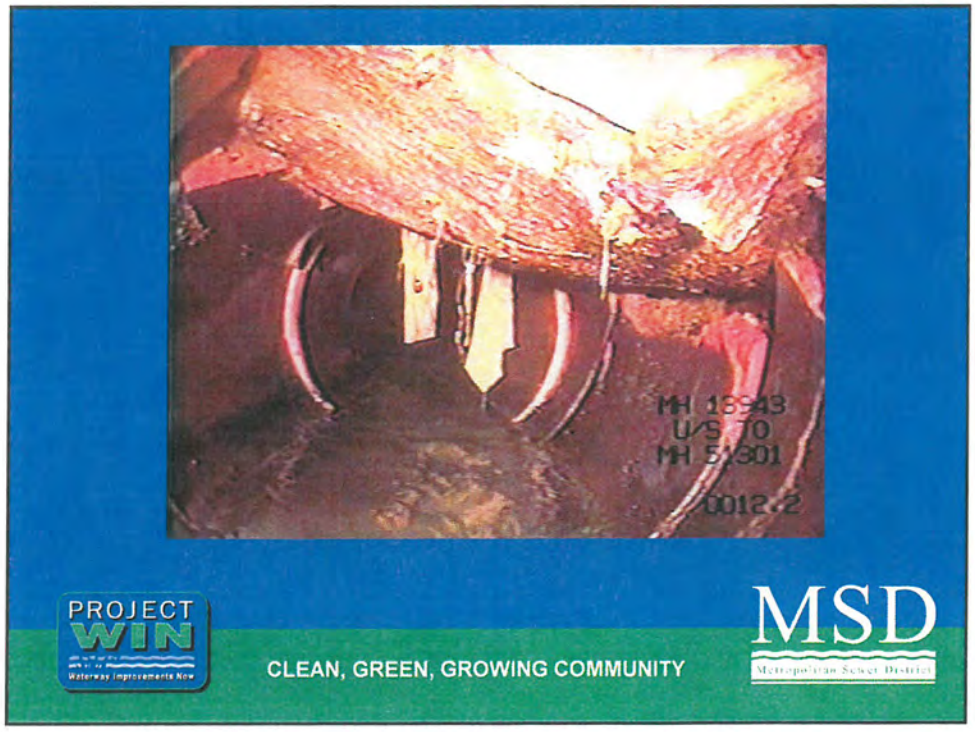
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Public Outreach Study

December 17, 2009

THOROUGHBRED™
RESEARCH GROUP

1941 Bishop Lane Ste. 1017
Louisville, KY 40218
www.torinc.net

Research Methodology

1,200 telephone interviews were conducted with a random selection of adult residents of Jefferson County, KY.

Analysis Group	# of Interviews	Max Margin of Error at 95% Confidence
Males	516	+/- 4.3 percentage points
Females	684	+/- 3.7 percentage points
Age 18-34	96	+/- 10.0 percentage points
Age 35-54	559	+/- 4.1 percentage points
Age 55 +	536	+/- 4.2 percentage points
Total Sample	1,200	+/- 2.8 percentage points

- Interviews averaged 12 minutes in length
- Research dates: November 30, 2009 through December 7, 2009
- Survey data is weighted to actual demographic distribution of population.

Demographic Profile

	Total
Males	47%
Females	53%
Average Age	45.9
% 4-year College Degree	39%
Average HH Income	$63,900

Base: All respondents

About This Presentation

Parts of the survey asked respondents to indicate their level of agreement or disagreement to a series of statements (some of the statements being true, and some being false). This presentation of the survey data will focus on the percentage of the adult population with "incorrect" knowledge – the percentage that future communication efforts will need to reach and educate.

For "true" statements, the incorrect responses are those who responded ***3 or lower*** on the five-point scale shown below, plus the "Don't Know" responses.

For the "false" statements, the incorrect responses are those who responded ***3 or higher*** on the five-point scale shown below, plus the "Don't Know" responses.

	True Statements	False Statements
5 – Completely Agree		✓
4		✓
3	✓	✓
2	✓	
1 – Completely Disagree	✓	
Don't Know	✓	✓

Correct Answer

Incorrect Answer

Attitudes About Stormwater Pollution

Q. How much do you agree or disagree that…?

	Total	Males	Females	Age 18-34	Age 35-54	Age 55 +
Stormwater that flows into streams, drains, or ditches negatively affects stream water quality (TRUE)						
• Rated 1 – Completely Disagree	9%	10%	9%	7%	10%	11%
• Rated 2	8%	10%	6%	9%	8%	6%
• Rated 3	24%	28%	20%	36%	22%	16%
• Don't Know	1%	1%	1%	2%	1%	1%
Sub-total Incorrect	42%	50%	35%	55%	40%	34%
Stormwater may be polluted from lawn or yard chemicals (TRUE)						
• Rated 1 – Completely Disagree	6%	9%	3%	7%	3%	8%
• Rated 2	7%	11%	3%	12%	6%	4%
• Rated 3	17%	20%	15%	18%	18%	16%
• Don't Know	+	-	1%	-	-	1%
Sub-total Incorrect	30%	40%	21%	37%	27%	28%

Base: All respondents

+ indicates a response of less than 0.5%

Significantly higher levels of incorrect responses are highlighted in RED.

Attitudes About Stormwater Pollution

Q. How much do you agree or disagree that…?

	Total	Males	Females	Age 18-34	Age 35-54	Age 55 +
Stormwater may be polluted from sediment, petroleum or untreated sewage (TRUE)						
• Rated 1 – Completely Disagree	4%	4%	4%	2%	4%	6%
• Rated 2	7%	8%	6%	8%	7%	6%
• Rated 3	15%	18%	12%	15%	18%	11%
• Don't Know	1%	2%	+	2%	+	1%
Sub-total Incorrect	26%	32%	22%	27%	29%	24%
Stormwater may be polluted from litter (TRUE)						
• Rated 1 – Completely Disagree	5%	8%	4%	3%	6%	7%
• Rated 2	7%	10%	3%	8%	5%	8%
• Rated 3	16%	18%	14%	18%	15%	16%
• Don't Know	+	+	+	-	-	1%
Sub-total Incorrect	29%	36%	22%	29%	26%	32%

Base: All respondents

+ indicates a response of less than 0.5%

Significantly higher levels of incorrect responses are highlighted in RED.

Hard Surfaces and Stormwater

Q. How much do you agree or disagree that…?

	Total	Males	Females	Age 18-34	Age 35-54	Age 55 +
Hard surfaces like concrete and rooftops reduce the amount of water and pollutants that flow into storm drains and ditches (FALSE)						
• Rated 5 – Completely Agree	13%	12%	13%	14%	10%	16%
• Rated 4	11%	10%	12%	13%	9%	10%
• Rated 3	32%	24%	39%	35%	35%	27%
• Don't Know	3%	2%	3%	2%	1%	5%
Sub-total Incorrect	58%	48%	67%	64%	55%	58%

Base: All respondents

+ indicates a response of less than 0.5%

Significantly higher levels of incorrect responses are highlighted in RED.

Impact of Pet Waste

Q. How much do you agree or disagree that…?

	Total	Males	Females	Age 18-34	Age 35-54	Age 55 +
Leaving pet waste on the ground can pollute creeks and streams when it rains (TRUE)						
• Rated 1 – Completely Disagree	14%	19%	10%	12%	15%	14%
• Rated 2	11%	16%	7%	7%	16%	10%
• Rated 3	23%	26%	21%	27%	25%	19%
• Don't Know	1%	1%	1%	2%	1%	1%
Sub-total Incorrect	50%	63%	39%	48%	57%	44%
Stormwater may be polluted from pet waste (TRUE)						
• Rated 1 – Completely Disagree	12%	17%	8%	11%	13%	12%
• Rated 2	12%	14%	9%	6%	15%	11%
• Rated 3	23%	25%	21%	22%	26%	20%
• Don't Know	1%	2%	+	2%	+	1%
Sub-total Incorrect	48%	59%	38%	41%	54%	45%

Base: All respondents

+ indicates a response of less than 0.5%

Significantly higher levels of incorrect responses are highlighted in RED.

Impact of Pet Waste

Q. How much do you agree or disagree that...?

	Total	Males	Females	Age 18-34	Age 35-54	Age 55 +
Leaving pet waste on the ground has no impact on public health (FALSE)						
• Rated 5 – Completely Agree	15%	12%	17%	9%	13%	21%
• Rated 4	12%	11%	13%	14%	12%	9%
• Rated 3	19%	24%	15%	20%	20%	17%
• Don't Know	+	+	+	-	+	1%
Sub-total Incorrect	46%	47%	45%	44%	46%	47%

Base: All respondents

+ indicates a response of less than 0.5%

Significantly higher levels of incorrect responses are highlighted in RED.

Impact of Pet Waste

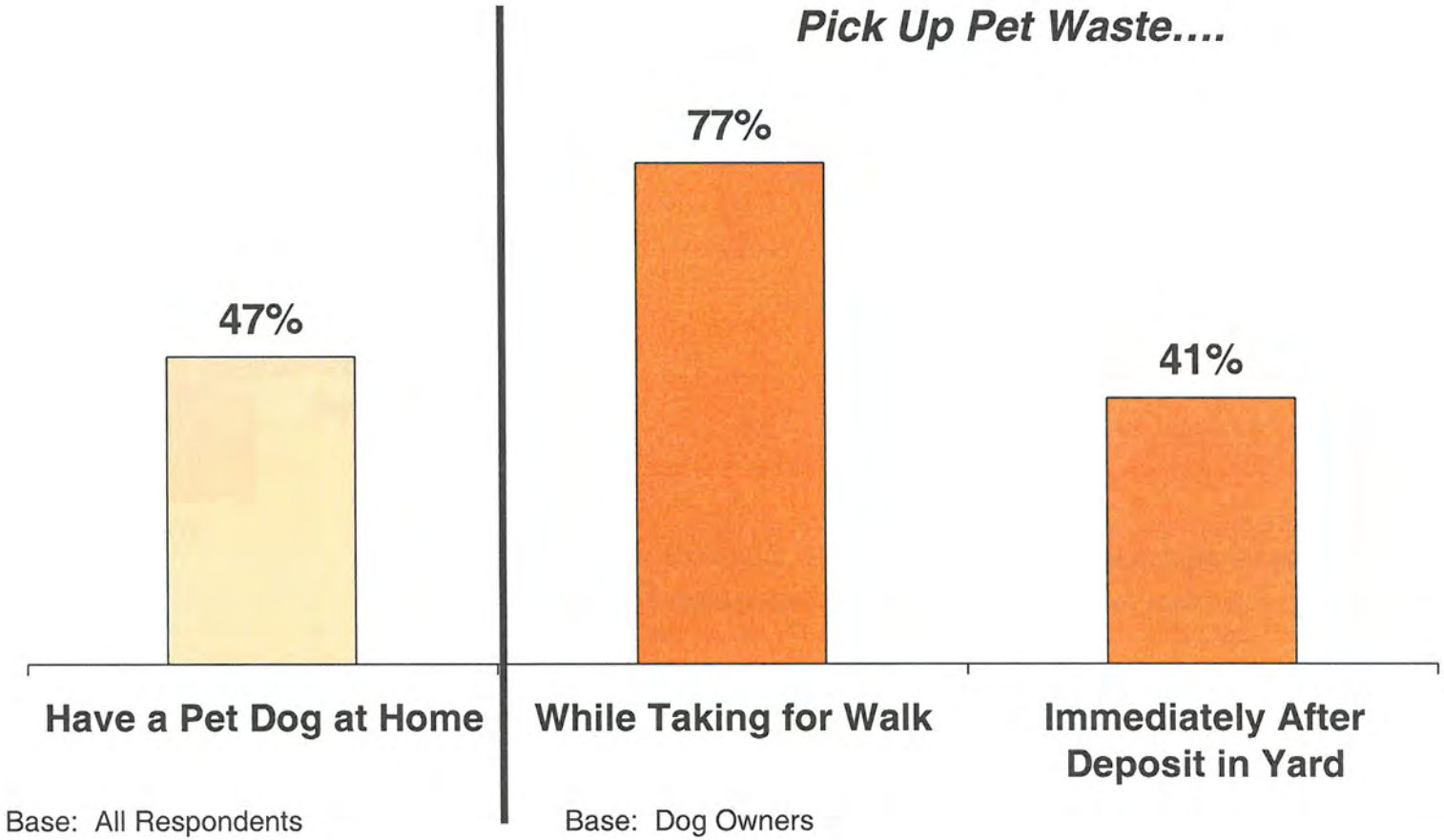
Q. How much do you agree or disagree that…?

	Total	Dog Owners	Non-Owners
Leaving pet waste on the ground can pollute creeks and streams when it rains (TRUE)			
• Disagree (Rated 1/2)	25%	30%	22%
• Neutral/Don't Know	25%	24%	25%
Sub-total Incorrect	50%	54%	47%
Stormwater may be polluted from pet waste (TRUE)			
• Disagree (Rated 1/2)	24%	26%	22%
• Neutral/Don't Know	24%	23%	24%
Sub-total Incorrect	48%	50%	46%
Leaving pet waste on the ground has no impact on public health (FALSE)			
•Agree (Rated 5/4)	26%	28%	25%
• Neutral/Don't Know	20%	19%	20%
Sub-total Incorrect	46%	46%	46%

Those who own pet dogs are no more likely to be knowledgeable about the potential impact of pet waste on water quality than are those who do not have pet dogs.

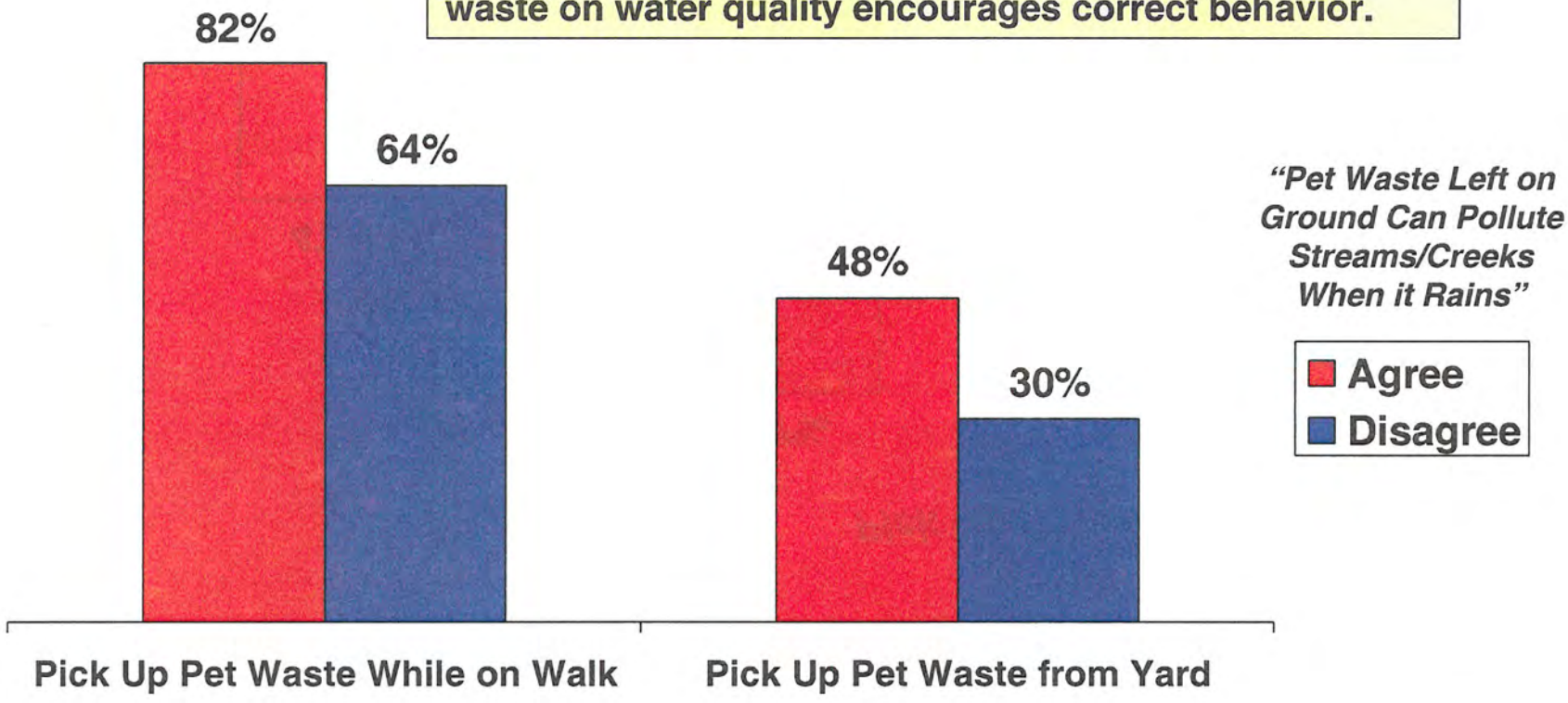
Base: All respondents

Dog Ownership and Pet Waste



Impact of Awareness on Dog Owners' Behavior

Among pet dog owners, awareness of the impact of pet waste on water quality encourages correct behavior.



Base: Dog Owners

Lawn Chemicals

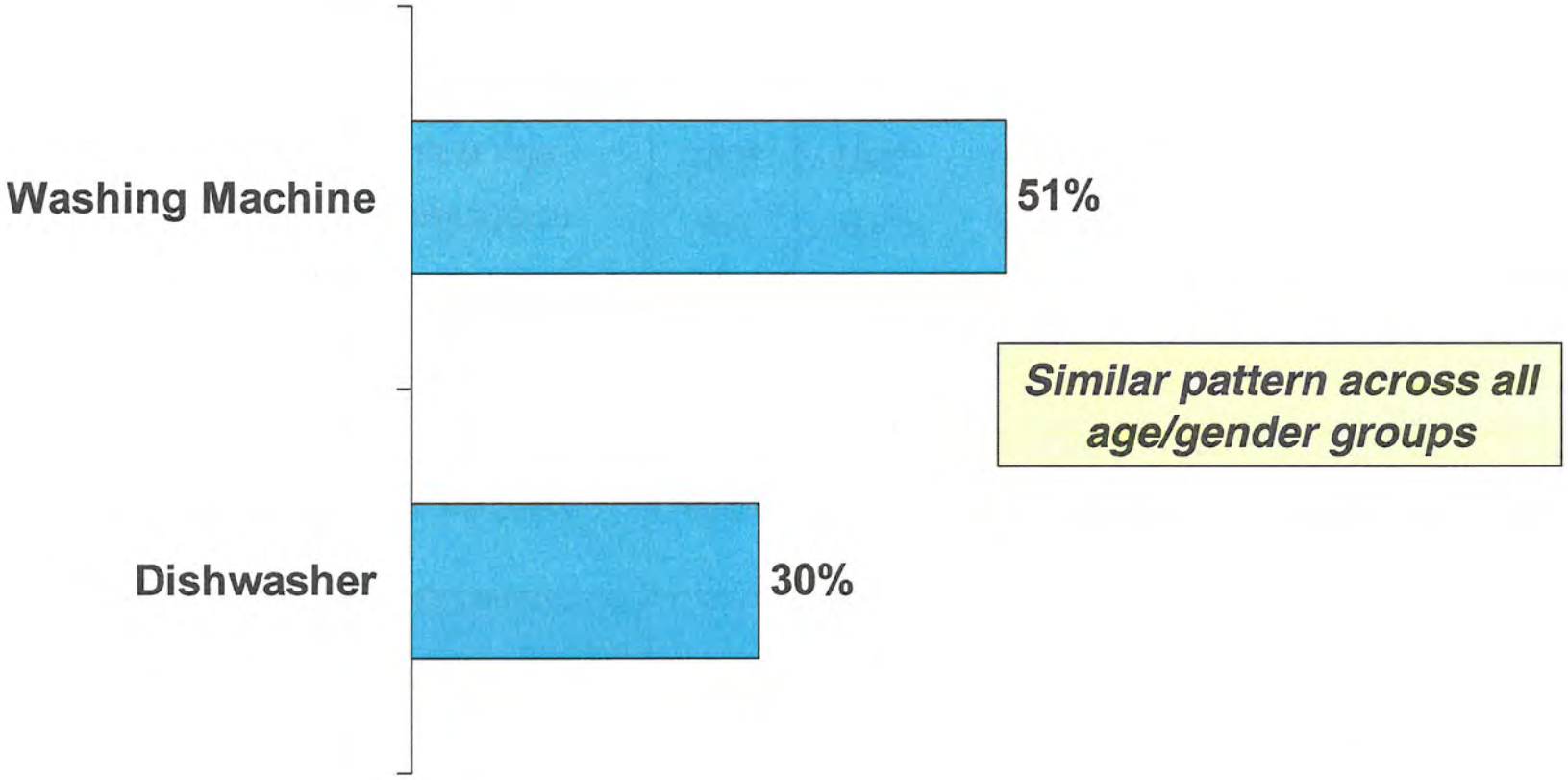
	Total	Males	Females	Age 18-34	Age 35-54	Age 55 +
Use Lawn Chemicals on Yard	**41%**	**49%**	**35%**	**28%**	**47%**	**46%**
Typically Apply Lawn Chemicals…						
• Before a rainstorm	23%	23%	24%	21%	24%	24%
• Immediately after a rainstorm	4%	6%	2%	6%	3%	4%
• At least 48 hours after a rain	19%	19%	19%	12%	24%	18%
• Rain not a consideration	47%	46%	50%	51%	47%	46%
• Don't know/No answer	6%	7%	5%	10%	2%	8%

Base: All respondents / Those who use lawn chemicals

Significantly lower levels of use highlighted in **BLUE**.

Appliance Use During Rainstorms

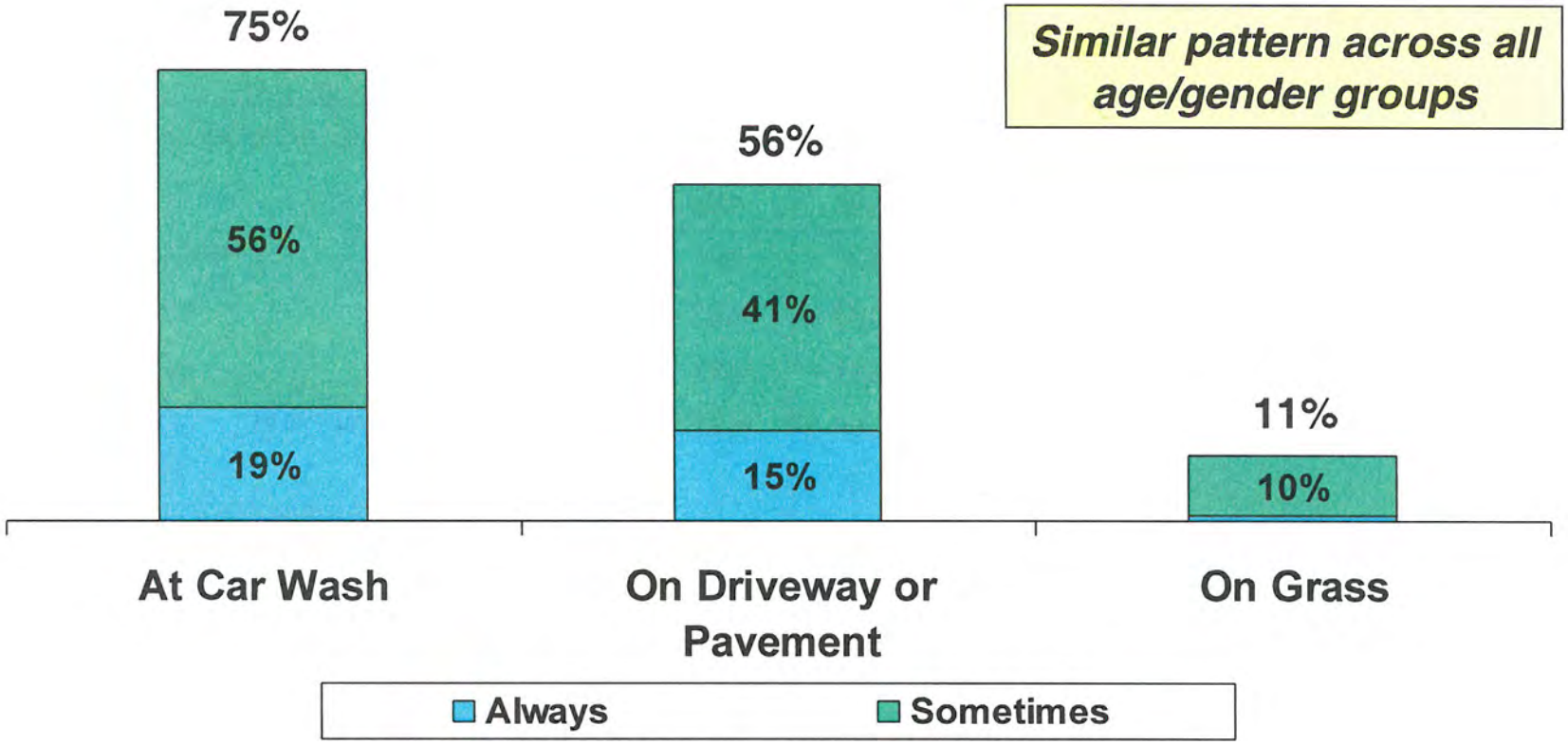
Q. Do you run your ___ during a rainstorm?



Base: All Respondents

Car Washing Habits

Q. How often do you wash your car at a car wash? On the driveway or pavement? On grass?



Base: All Respondents

Destination of Polluted Stormwater

Q. How much do you agree or disagree that…?

	Total	Males	Females	Age 18-34	Age 35-54	Age 55 +
Pollution picked up by storm water flows to a sewage treatment plant (FALSE)						
• Rated 5 – Completely Agree	36%	31%	41%	37%	33%	40%
• Rated 4	18%	16%	19%	15%	20%	16%
• Rated 3	28%	28%	28%	36%	27%	22%
• Don't Know	2%	1%	2%	2%	1%	3%
Sub-total Incorrect	83%	76%	89%	89%	81%	81%
Pollution picked up by storm water flows to local creeks or streams (TRUE)						
• Rated 1 – Completely Disagree	4%	5%	3%	3%	3%	6%
• Rated 2	4%	7%	2%	6%	3%	4%
• Rated 3	17%	21%	14%	26%	15%	12%
• Don't Know	+	1%	+	1%	+	+
Sub-total Incorrect	25%	33%	19%	36%	20%	22%

Base: All respondents

+ indicates a response of less than 0.5%

Significantly higher levels of incorrect responses are highlighted in **RED**.

Disposal of Paints and Household Cleaners

Q. How often do you dispose of paints or household cleaners by...?

	Total	Males	Females	Age 18-34	Age 35-54	Age 55 +
Taking them to a chemical drop off						
• Always	31%	30%	32%	15%	36%	39%
• Sometimes	25%	30%	20%	18%	28%	25%
• Never	44%	40%	48%	67%	36%	36%
Putting them in the trash						
• Always	15%	16%	15%	22%	14%	11%
• Sometimes	29%	30%	28%	25%	33%	28%
• Never	56%	54%	57%	53%	53%	61%
Running them down a sink drain						
• Always	4%	2%	6%	8%	3%	2%
• Sometimes	14%	15%	13%	20%	15%	9%
• Never	82%	83%	81%	72%	82%	89%

Base: All respondents Significantly higher levels of incorrect responses are highlighted in RED.

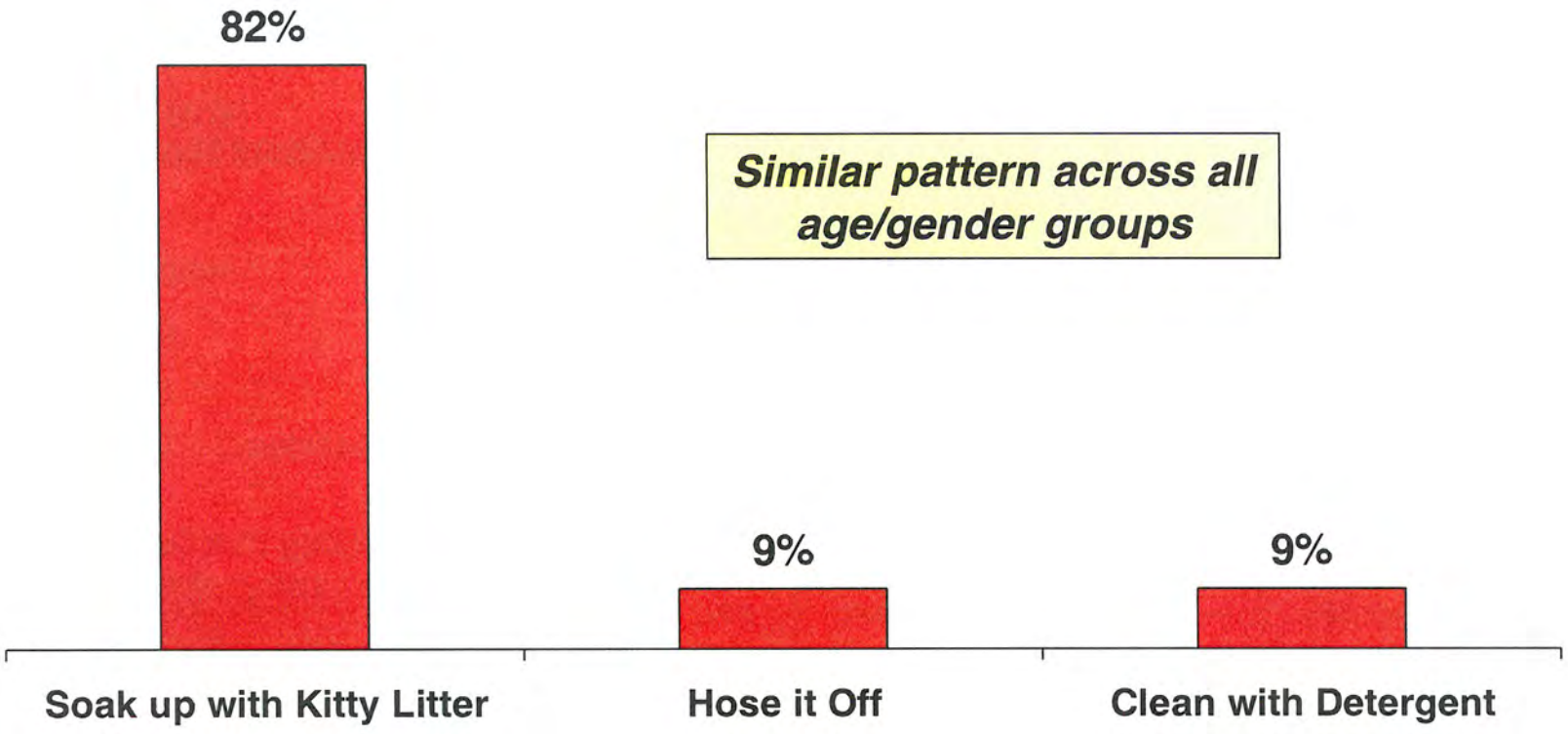
Disposing of Fats, Oils and Grease

Q. How often do you dispose of fats, oils, and grease by…?

	Total	Males	Females	Age 18-34	Age 35-54	Age 55 +
Scraping them off into the trash						
• Always	44%	37%	50%	37%	48%	46%
• Sometimes	41%	46%	37%	45%	41%	38%
• Never	15%	17%	13%	17%	12%	6%
Running hot water/dish soap and running them down the drain						
• Always	7%	6%	8%	10%	7%	4%
• Sometimes	34%	39%	29%	39%	37%	27%
• Never	59%	55%	63%	50%	56%	70%
Flushing them down the toilet						
• Always	2%	3%	2%	7%	1%	1%
• Sometimes	8%	7%	8%	8%	8%	7%
• Never	90%	90%	90%	85%	91%	92%

Base: All respondents

Best Way to Clean Oils, Chemicals or Gasoline that Spills Outdoors



Base: All Respondents

Awareness of Ways to Reduce Water Run-Off

Q. How much do you agree or disagree that you can reduce the amount of water that flows into creeks of streams by…?

	Total	Males	Females	Age 18-34	Age 35-54	Age 55 +
Capturing and Storing Stormwater (TRUE)						
• Rated 1 – Completely Disagree	10%	11%	10%	15%	7%	11%
• Rated 2	7%	10%	5%	10%	6%	7%
• Rated 3	25%	25%	26%	35%	23%	20%
• Don't Know	1%	1%	1%	2%	+	2%
Sub-total Incorrect	44%	47%	42%	62%	36%	39%
Redirecting stormwater to grassy areas (TRUE)						
• Rated 1 – Completely Disagree	9%	9%	8%	17%	5%	7%
• Rated 2	6%	9%	3%	8%	5%	4%
• Rated 3	24%	21%	26%	31%	22%	20%
• Don't Know	2%	3%	1%	3%	+	2%
Sub-total Incorrect	40%	42%	38%	59%	32%	33%

Base: All respondents

+ indicates a response of less than 0.5%

Significantly higher levels of incorrect responses are highlighted in **RED**.

Awareness of Ways to Reduce Water Run-Off

Q. How much do you agree or disagree that you can reduce the amount of water that flows into creeks of streams by…?

	Total	Males	Females	Age 18-34	Age 35-54	Age 55 +
Changing your landscaping (TRUE)						
• Rated 1 – Completely Disagree	9%	12%	7%	11%	7%	11%
• Rated 2	8%	9%	7%	14%	6%	5%
• Rated 3	20%	21%	19%	25%	18%	19%
• Don't Know	1%	2%	1%	2%	+	2%
Sub-total Incorrect	39%	44%	34%	52%	31%	38%

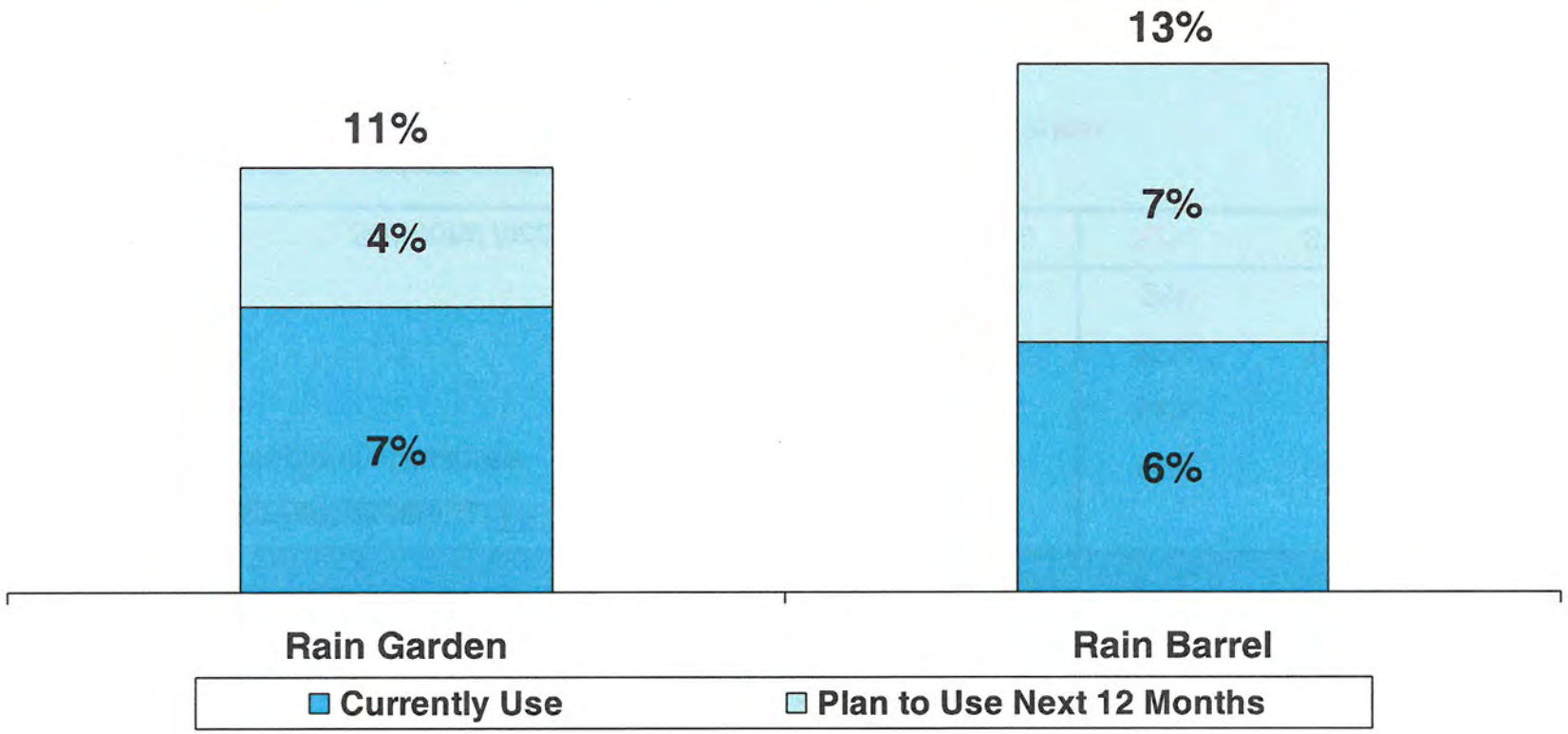
Base: All respondents

+ indicates a response of less than 0.5%

Significantly higher levels of incorrect responses are highlighted in RED.

Use of Rain Gardens and Rain Barrels

Similar pattern across all age/gender groups



Base: All Respondents

Awareness of Uses of Water Barrels

Q. How much do you agree or disagree that rain barrels can collect stormwater from...?

	Total	Males	Females	Age 18-34	Age 35-54	Age 55 +
Your Yard (FALSE)						
• Rated 5 – Completely Agree	27%	25%	29%	29%	27%	27%
• Rated 4	10%	11%	9%	11%	11%	7%
• Rated 3	21%	16%	25%	25%	21%	17%
• Don't Know	1%	1%	2%	-	1%	3%
Sub-total Incorrect	59%	53%	65%	65%	60%	54%
Your Driveway (FALSE)						
• Rated 5 – Completely Agree	19%	17%	21%	22%	17%	5%
• Rated 4	7%	8%	6%	10%	7%	20%
• Rated 3	22%	17%	26%	25%	24%	18%
• Don't Know	1%	1%	1%	-	2%	2%
Sub-total Incorrect	49%	43%	55%	57%	50%	44%

Base: All respondents

+ indicates a response of less than 0.5%

Significantly higher levels of incorrect responses are highlighted in RED.

Awareness of Uses of Water Barrels

Q. How much do you agree or disagree that rain barrels can collect stormwater from…?

	Total	Males	Females	Age 18-34	Age 35-54	Age 55 +
Your Roof (TRUE)						
• Rated 1 – Completely Disagree	9%	10%	9%	18%	4%	9%
• Rated 2	3%	4%	3%	6%	2%	3%
• Rated 3	13%	11%	15%	19%	13%	10%
• Don't Know	1%	+	1%	-	+	1%
Sub-total Incorrect	26%	25%	27%	43%	19%	23%

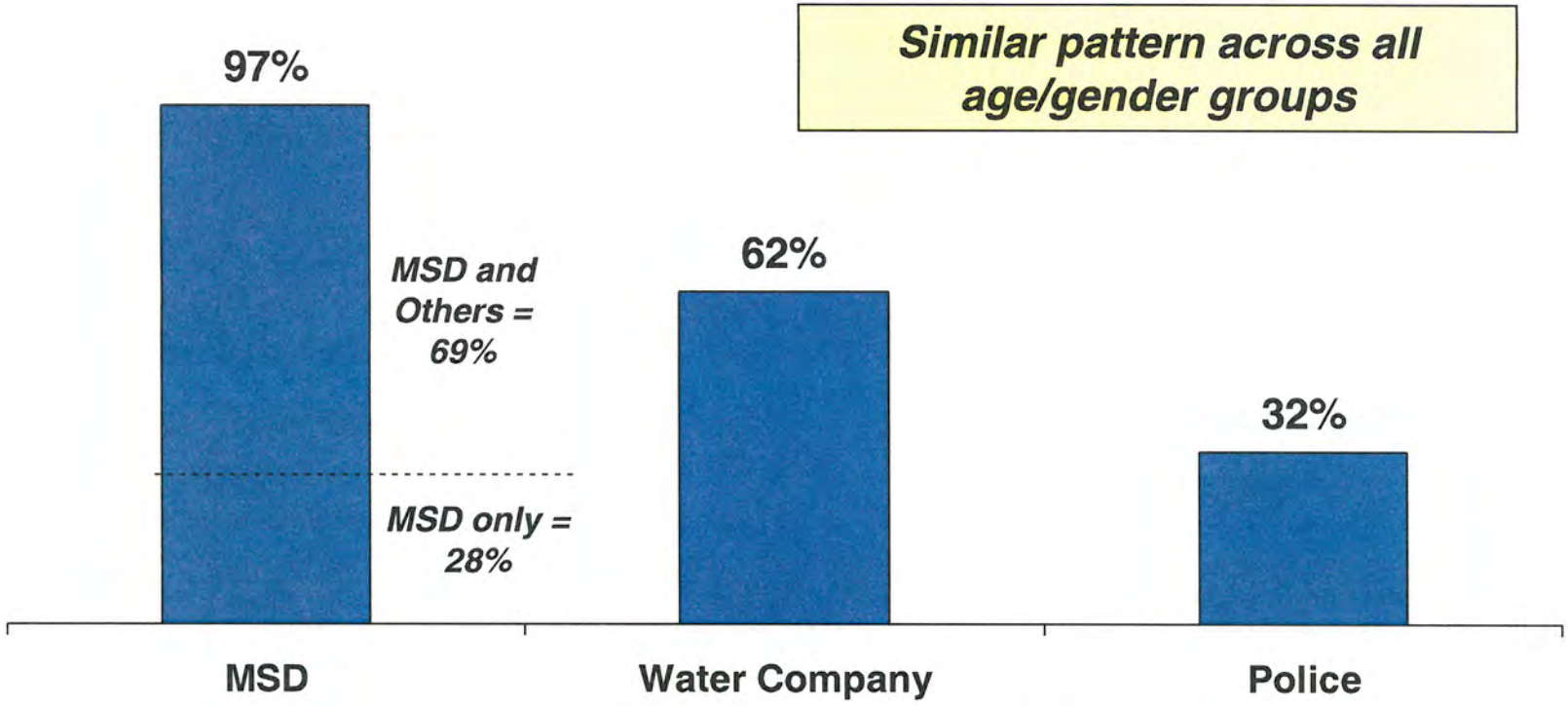
Base: All respondents

+ indicates a response of less than 0.5%

Significantly higher levels of incorrect responses are highlighted in RED.

Who to Contact to Report Violations

Q. To report the draining or dumping of pollutants into storm drains or ditches, should you contact…?



Base: All Respondents

Materials that Wash Off Vehicles

Q. How much do you agree or disagree that materials that wash off of vehicles onto roads and driveways…?

	Total	Males	Females	Age 18-34	Age 35-54	Age 55 +
Have no effect on stream water quality (FALSE)						
• Rated 5 – Completely Agree	11%	11%	12%	12%	8%	15%
• Rated 4	8%	10%	7%	12%	6%	8%
• Rated 3	20%	22%	19%	22%	20%	20%
• Don't Know	1%	1%	1%	2%	+	1%
Sub-total Incorrect	41%	43%	39%	48%	34%	43%
Are cleaned before reaching creeks or streams (FALSE)						
• Rated 5 – Completely Agree	9%	9%	10%	8%	7%	12%
• Rated 4	9%	10%	8%	15%	7%	6%
• Rated 3	22%	24%	20%	20%	22%	22%
• Don't Know	+	+	1%	-	-	1%
Sub-total Incorrect	40%	43%	38%	43%	37%	42%

Base: All respondents

+ indicates a response of less than 0.5%

Significantly higher levels of incorrect responses are highlighted in **RED**.

Materials that Wash Off Vehicles

Q. How much do you agree or disagree that materials that wash off of vehicles onto roads and driveways…?

	Total	Males	Females	Age 18-34	Age 35-54	Age 55 +
End up in creeks or streams (TRUE)						
• Rated 1 – Completely Disagree	6%	5%	6%	5%	5%	7%
• Rated 2	10%	14%	6%	18%	8%	6%
• Rated 3	20%	22%	18%	23%	19%	20%
• Don't Know	1%	1%	+	2%	+	1%
Sub-total Incorrect	37%	44%	31%	48%	32%	33%

Base: All respondents

+ indicates a response of less than 0.5%

Significantly higher levels of incorrect responses are highlighted in RED.

Excess Pesticides, Weed Killers and Yard Chemicals

Q. How much do you agree or disagree that excess pesticides, weed killers and other lawn chemicals…?

	Total	Males	Females	Age 18-34	Age 35-54	Age 55 +
Soak into the ground (FALSE)						
• Rated 5 – Completely Agree	40%	34%	45%	34%	39%	47%
• Rated 4	20%	25%	16%	20%	25%	15%
• Rated 3	26%	29%	24%	28%	25%	25%
• Don't Know	+	+	+	-	-	1%
Sub-total Incorrect	86%	88%	85%	72%	88%	87%
Remain in the Yard (TRUE)						
• Rated 1 – Completely Disagree	17%	14%	19%	14%	17%	20%
• Rated 2	16%	16%	15%	23%	13%	13%
• Rated 3	31%	34%	28%	26%	36%	28%
• Don't Know	+	1%	+	-	-	1%
Sub-total Incorrect	64%	65%	63%	63%	66%	62%

Base: All respondents + indicates a response of less than 0.5%

Excess Pesticides, Weed Killers and Yard Chemicals

Q. How much do you agree or disagree that excess pesticides, weed killers and other lawn chemicals…?

	Total	Males	Females	Age 18-34	Age 35-54	Age 55 +
Are carried away with stormwater into drains and ditches (TRUE)						
• Rated 1 – Completely Disagree	5%	6%	4%	6%	3%	5%
• Rated 2	8%	12%	4%	11%	7%	7%
• Rated 3	20%	23%	17%	20%	21%	19%
• Don't Know	+	+	+	-	-	1%
Sub-total Incorrect	33%	42%	25%	36%	32%	32%

Base: All respondents

+ indicates a response of less than 0.5%

Significantly higher levels of incorrect responses are highlighted in **RED**.

Proper Placement of Roof Gutters and Downspouts

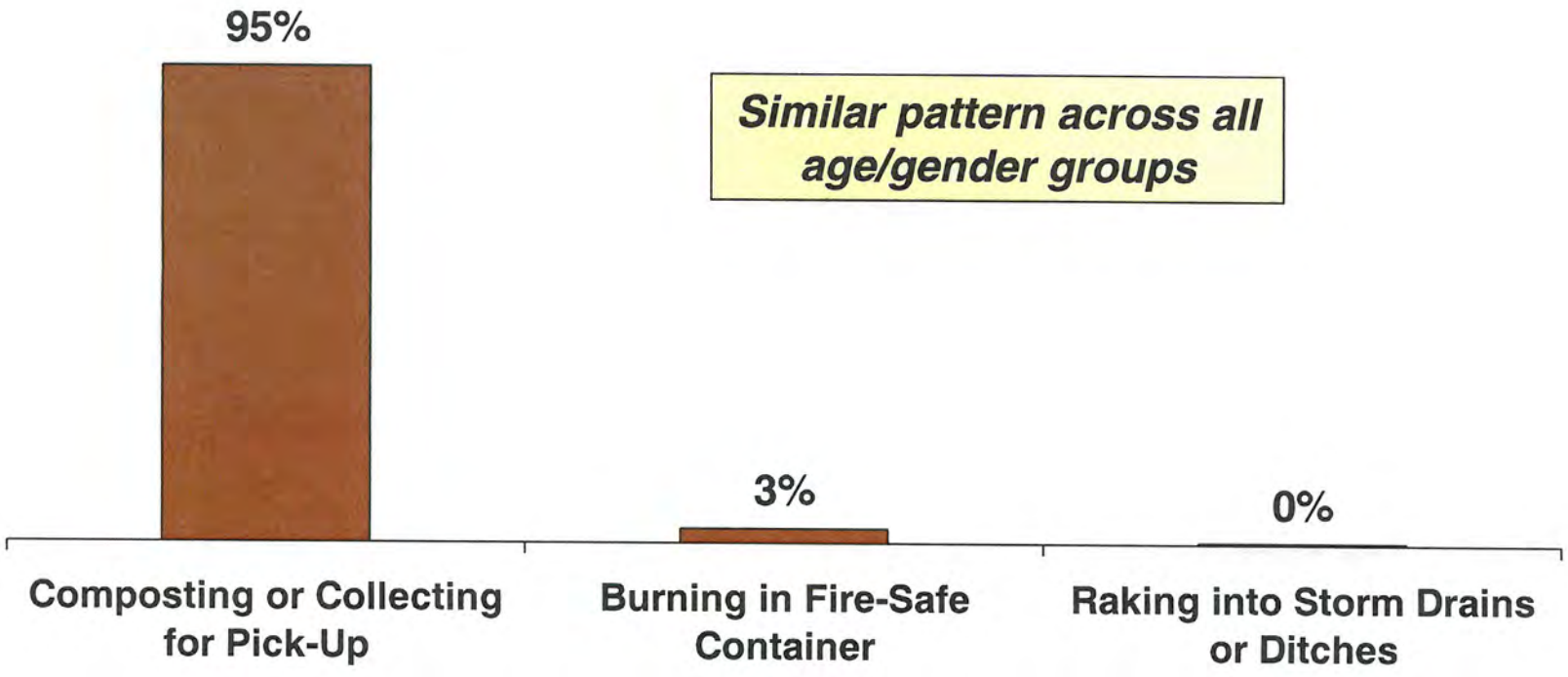
Q. In your opinion, should roof gutters and downspouts drain…?

	Total	Males	Females	Age 18-34	Age 35-54	Age 55 +
Onto a paved surface where water runs off	7%	5%	10%	9%	7%	7%
Onto a lawn or garden where water can soak into the yard	63%	67%	59%	49%	69%	67%
Directly into a storm drain or ditch	12%	13%	12%	17%	12%	9%
Directly into the sewer	16%	13%	18%	22%	11%	16%
Don't know//No answer	2%	3%	1%	3%	1%	2%

Base: All respondents

Proper Disposal of Leaves and Grass Clippings

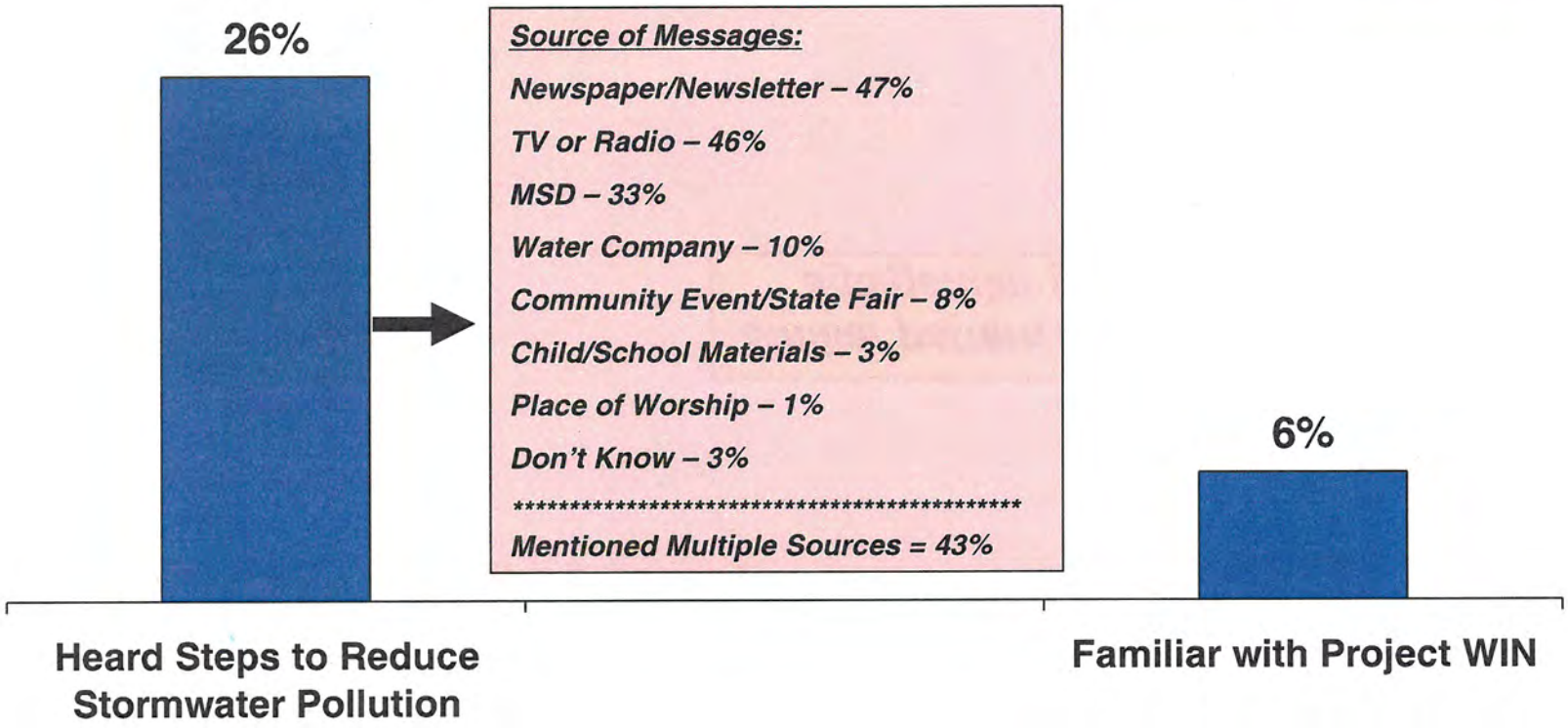
Q. In your opinion, should leaves and grass clippings be disposed of by...?



Base: All Respondents

Message Awareness

Similar pattern across all age/gender groups



Base: All Respondents/Those Aware of Message

MSD

Metropolitan Sewer District

Public Outreach Study

December 17, 2009

THOROUGHBRED™ RESEARCH GROUP

1941 Bishop Lane Ste. 1017

Louisville, KY 40218

www.torinc.net

Mayors Innovation Project

Climate Prosperity

Presented in Washington, DC

January 22-23, 2010

Louisville METRO

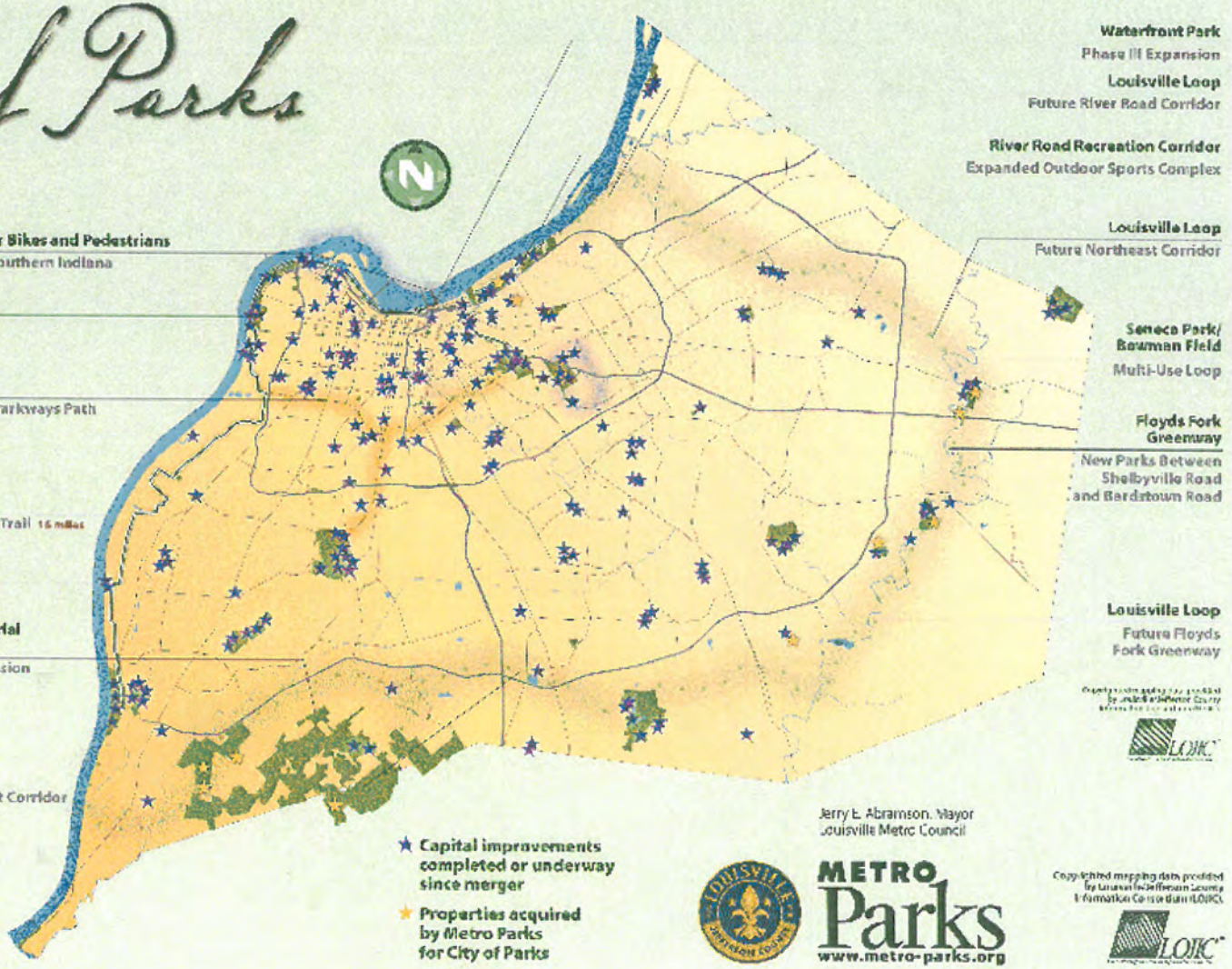
Louisville, Kentucky

- *Possibility City*
- *City of Parks - adding 4,000 of new parks*
- *Louisville Loop - 100 mile loop around the community*
- *Waterfront Park along the Ohio River*

www.louisvilleky.gov

Louisville METRO

City of Parks



The City of Parks initiative – unveiled by Mayor Jerry Abramson in February 2005 – includes:

- Acquisition and development of new park land in the Floyds Fork watershed, Jefferson Memorial Forest and Southwest Louisville Metro.
- A paved multi use loop trail of more than 100 miles.
- A record level of capital investment to improve existing parks.

This multi-million dollar, multi-year initiative to add thousands of acres of park land and protected green space to Louisville Metro's "greenprint" builds upon the groundwork laid by famed landscape architect Frederick Law Olmsted over a century ago, and will complete Louisville's transformation into a City of Parks.

City of Parks Partners

Louisville Metro Government
Metro Parks

Future Fund
Olmsted Parks Conservancy
Trust for Public Land
21st Century Parks

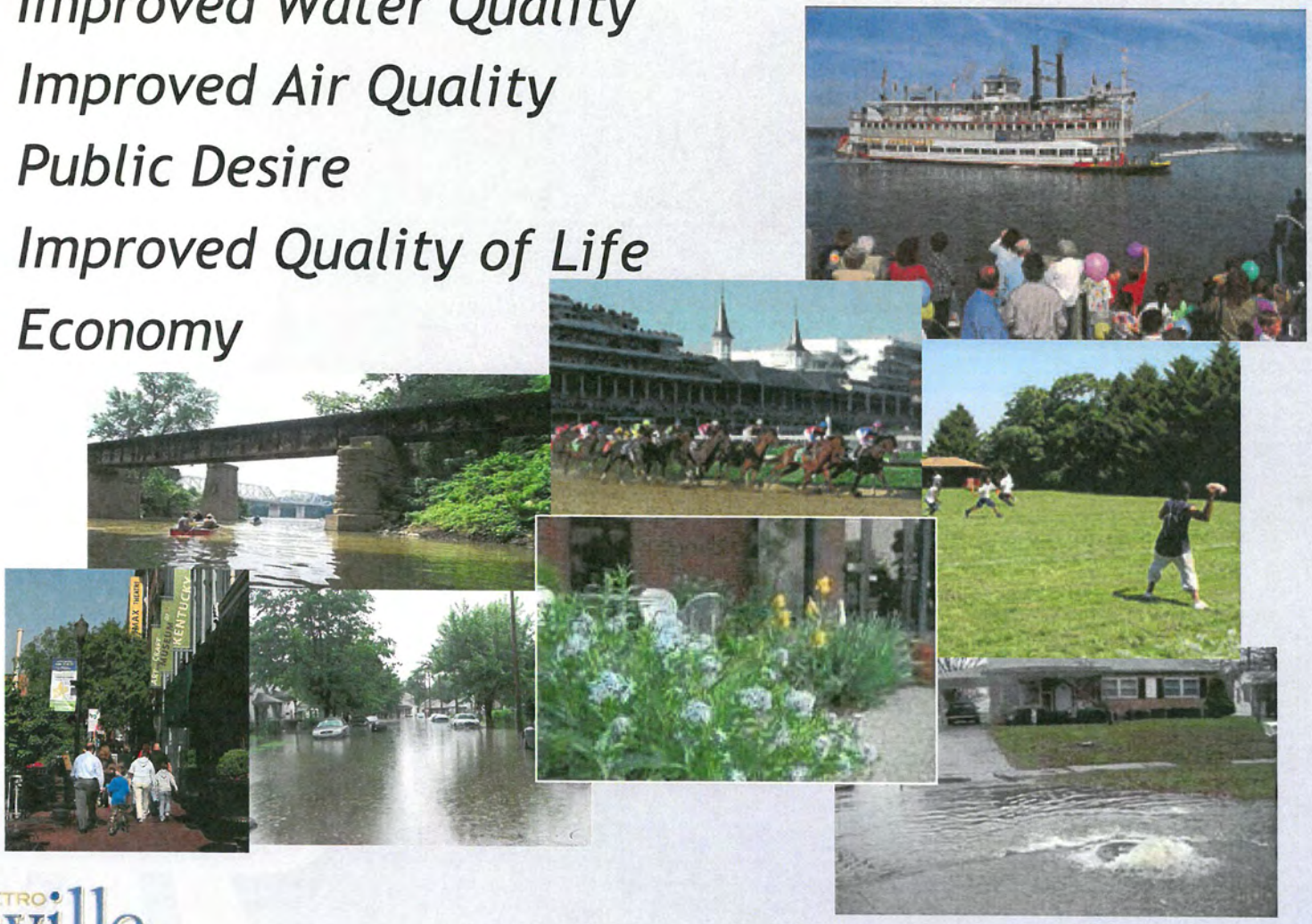
2/09

Copyrighted mapping data provided by Louisville/Jefferson County Information Consortium (LOJIC)

METRO Louisville

Local Green Drivers

- *Improved Water Quality*
- *Improved Air Quality*
- *Public Desire*
- *Improved Quality of Life*
- *Economy*



Louisville METRO

Green Strategic Initiative Vision

- *Take stock of projects underway in city government and the Partnership for a Green City - and develop environmental baseline (or carbon footprint)*
- *Analyze cost-benefit of options to reduce environmental impact and energy consumption*
- *Focus on financially sustainable measures that improve air and water quality, land use and energy efficiency*
- *Establish Louisville Metro as a model employer - from energy-efficient buildings to encouraging transit use - to promote "green" actions from other employers*
- *Energize projects underway that focus on environmentally responsible land-use - including reclamation of brownfields; Community of Trees; conservation subdivisions; incentives for development near public transit.*

Louisville METRO

Green Initiatives

- *Develop a Climate Change Strategy for Metro Community*
- *Develop an Energy Efficiency Strategy for Metro Government*
- *Implement an Environmental Education Program for Metro Government employees*
- *Promote Alternate Transportation Opportunities*
- *Improve Metro's "Green" performance and profile*
- *Improve Metro's Fleet Energy Usage and Fuel Consumption*
- *Develop and Expand Metro's Green Infrastructure*
- *Expand Internal and Community Recycling Programs*

Louisville METRO

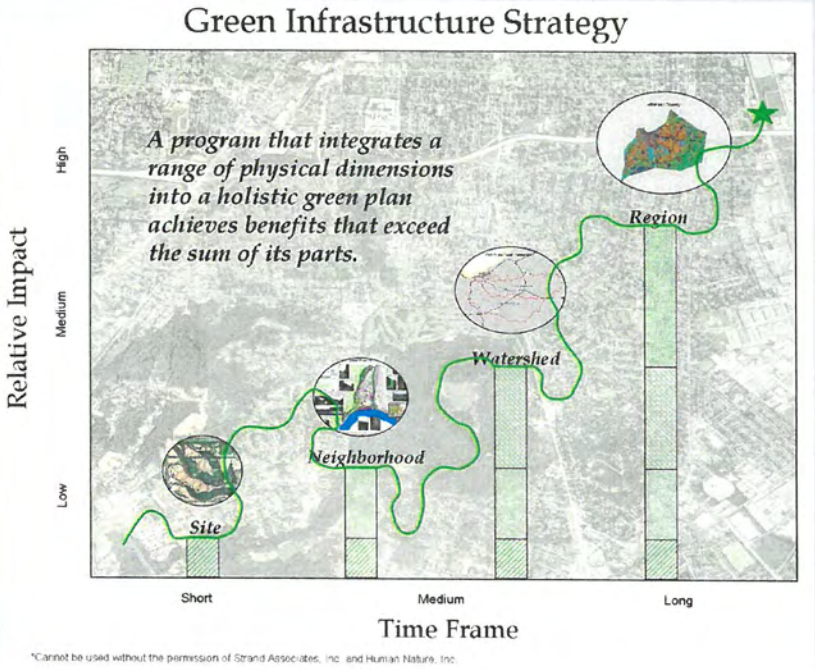
Green Partners

- *Partnership Groups*
  - *Partnership for a Green City*
  - *Community of Trees*
- *Public and Private Partners*
  - *Louisville Metro Government and all Departments*
  - *Louisville and Jefferson County Metropolitan Sewer District*
  - *Jefferson County Public Schools*
  - *University of Louisville*
  - *21st Century Parks*
  - *Olmsted Parks*
  - *General Electric*
  - *Ford Motor Company*
  - *and numerous other commercial and industrial entities*

Louisville METRO

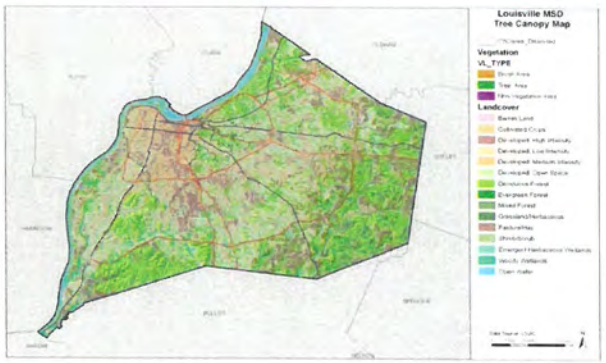
Louisville and Jefferson County Metropolitan Sewer District

- *Primary Services*
  - *Wastewater Collection and Treatment*
  - *Stormwater / Drainage*
  - *Ohio River Flood Protection*
- *225,000 customer accounts (population of 700,000)*
- *780 miles of streams and rivers*
- *3,200 miles of sewer*
- *600 employees*



Green Infrastructure

- *Under Wet Weather Consent Decree to abate sewer overflows*
  - *Technical Approval of Gray / Green Plan*
  - *Total Cost approximately $850M*
  - *Utilizes Green to offset Gray*
  - *Green Projects = $47M, $40 M in first six years*
  - *Ability to move more gray to green if beneficial*
- *Negotiating Updated Water Quality Permit for the Community*
  - *Anticipate additional controls and requirements*



Louisville METRO

Green Infrastructure

- *Green Roads*
- *Green Alleys*
- *Green Parking Lots*
- *Bioinfiltration*
- *Green Roofs*
- *Rain Gardens*
- *Rain Barrels*
- *Downspout Disconnection*
- *Urban Reforestation*








Louisville METRO

Challenges

- *Communication*
- *Cooperation*
- *Maximizing all potential benefits from each initiative*
- *Developing an incentive program to expand private participation*
- *Inventory and Reporting*
- *Maintenance*

Louisville METRO

Contact Information

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Louisville METRO