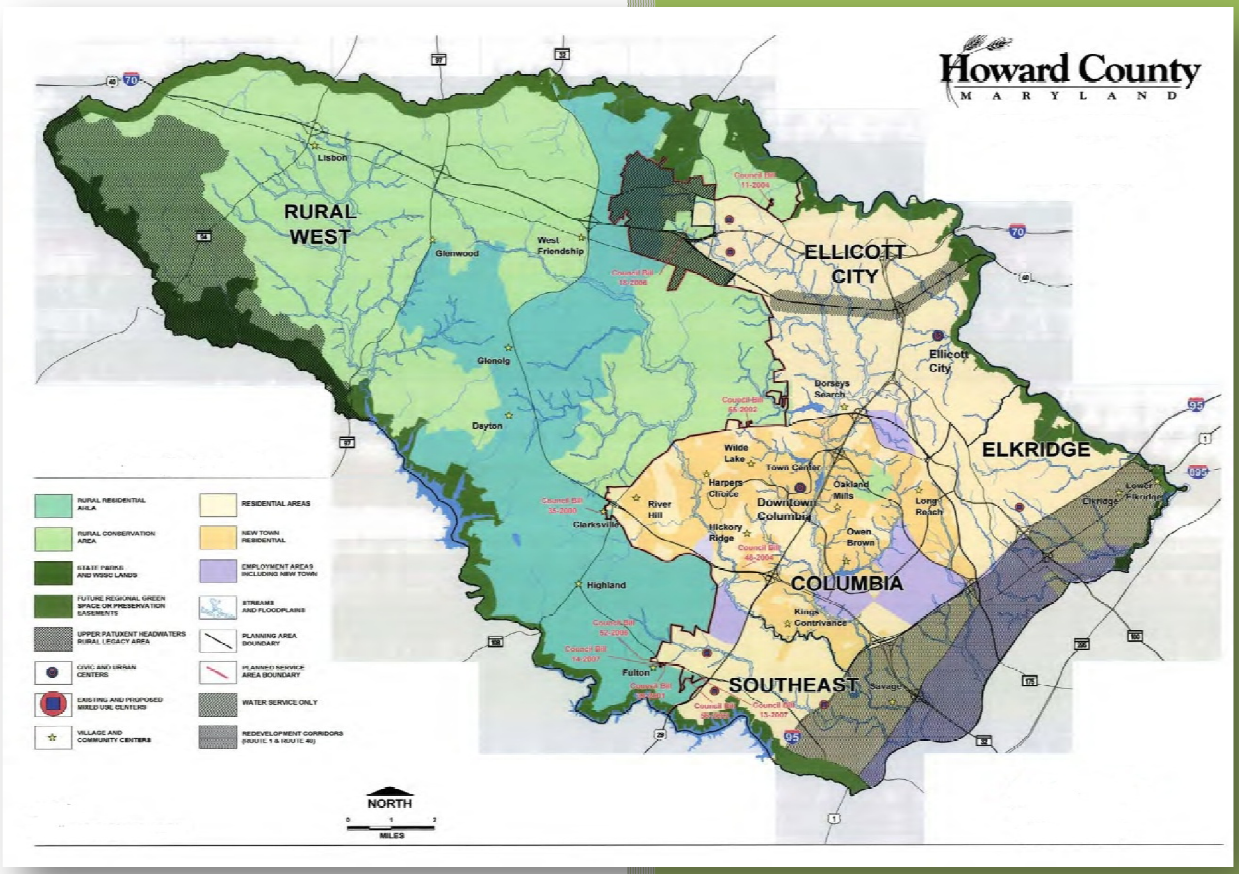
January - December 2011

CMOM Audit Report No. 1



Complaint and Settlement Agreement between Howard County, Maryland and the Maryland Department of the Environment CO-10-1116

June, 2012

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future

CMOM Audit Report No. 1

January, 2011

Through

December, 2011

Complaint and Settlement Agreement between Howard County, Maryland and the Maryland Department of the Environment
CO-10-1116

June, 2012

This Self-Audit Report is a requirement of "Paragraph C, CMOM Audit" of the Complaint and Settlement Agreement. One year after the commencement of implementation of the approved CMOM Program, and annually thereafter until termination of this Agreement, the County shall conduct a performance assessment audit to evaluate the CMOM Program and submit a report to MDE certifying and describing:

A. All CMOM tasks completed within approved schedules/milestones and providing an explanation for CMOM work not performed as required;

B. The effectiveness of the CMOM Program in preventing and minimizing the adverse impacts of Overflows and Building Backups; and

C. The number and causes of Overflows and known Building Backups that have occurred in each sewer shed for the previous year; and

D. Actions planned and/or implemented to respond to any failures to perform scheduled CMOM tasks;

E. Any Collection System deficiencies identified during inspections performed pursuant to the CMOM and actions planned or implemented to address them;

F. Whether the County has adequately prioritized rehabilitation work to maximize the reduction of Overflows.

The Howard County CMOM manual was approved by MDE on June 30th, 2011, and was posted on the County's website with the approval letter from MDE received on July 1st, 2011. This report is to address the first CMOM program Self-Audit, compliant with the schedule and procedure described in the Howard County CMOM Manual, dated December 2010.

A. All CMOM Tasks Summary in 2011

In order to guide the overall tracking and management of an effective and efficient CMOM program, the County intends to meet the following "General Standards" consistent with the EPA's CMOM requirements:

- Take all feasible and cost-effective steps, as appropriate, to prevent sanitary sewer overflows and to minimize the impact of sanitary sewer overflows when they do occur.
- Properly manage, operate, and maintain all parts of the sewage collection system operated by or under the control of Howard County.
- Identify sewer system capacity needs and deficiencies to provide adequate collection system capacity to convey base and peak flows.
- Establish a chain for communication for sharing information within County departments, State authorities, and community stakeholders.

As is described in the CMOM manual, the County's quantitative short-term and intermediate-term and long-term goals are to:

- Inspect manholes once every five years.
- Clean sewer mains which do not have self-cleaning flow characteristics once every 5 years.
- Perform routine CCTV inspection on approximately 5% of the sewer collector mains each year.
- Enhance the efficiency of maintenance crews to achieve an average response time to routine sewer problems of 1 hour or less.

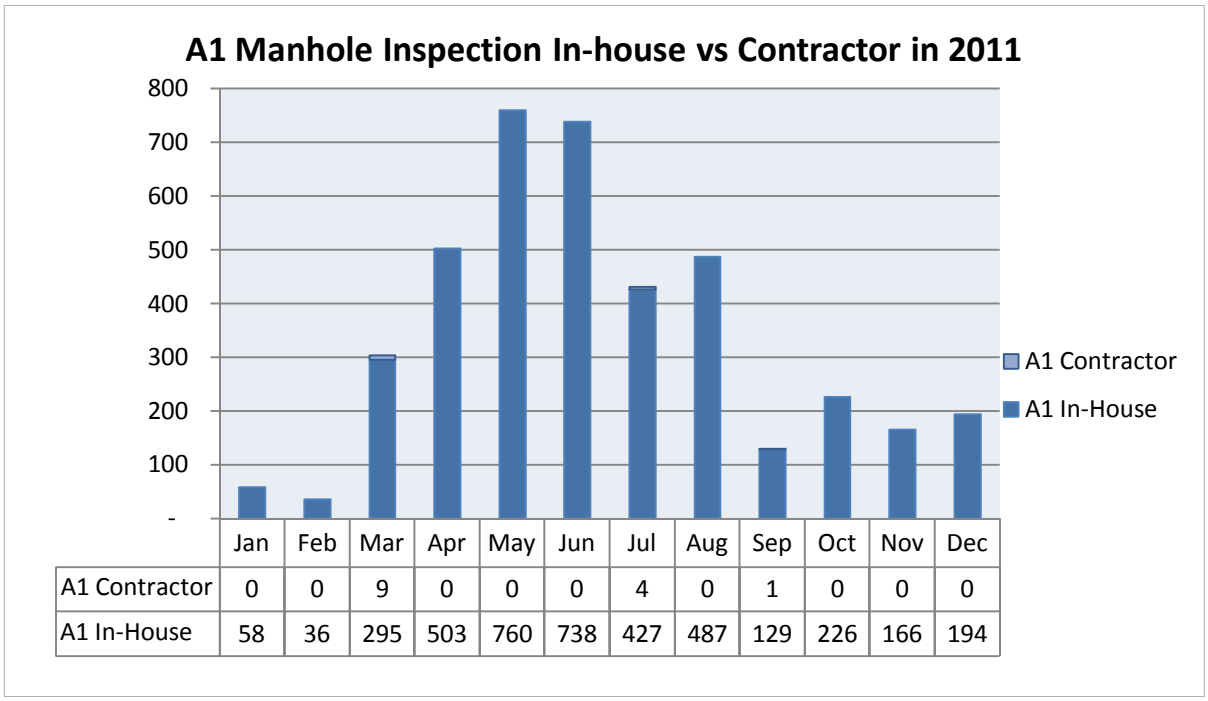
The County's collection system is served by 30 pumping stations and approximately 975 miles of sewer ranging in size from 4 to 48 inches in 2011. The total population is 282,169. The average annual flow to the Little Patuxent Wastewater Reclamation Plant (LPWRP) for 2011 was 16.7 MGD. Total numbers of manholes are roughly 30,000. According to the given assumption, the County's quantitative goals in 2011 could be interpreted as:

- Inspect 6,000 manholes.
- Clean 195 miles of sewer mains.
- Perform routine CCTV inspection on approximately 48.75 miles (257,400 ft) of sewer collector mains.
- Enhance the efficiency of maintenance crews to achieve an average response time to routine sewer problems of one (1) hour or less.

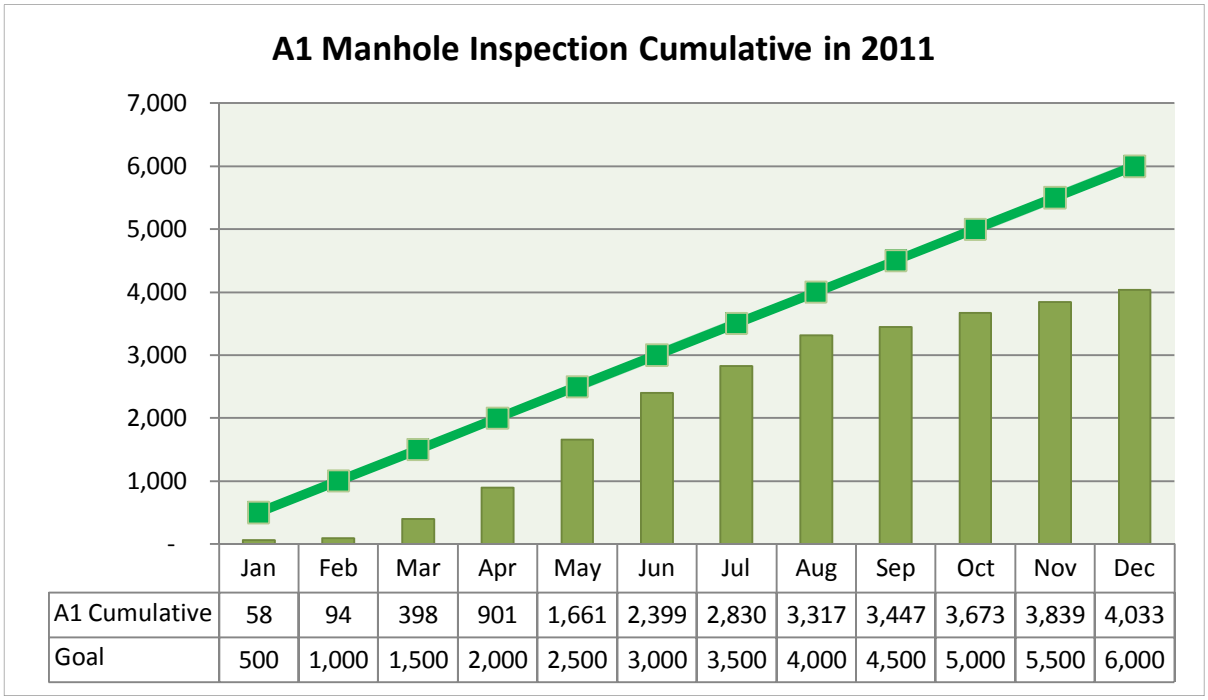
To achieve the CMOM goals, the County has implemented an enhanced collection system maintenance program, with different CMOM components listed in the below charts by

month from January through December 2011. Assuming the life span to be 100 years, the County will repair/replace 1% of the sewer collection system each year; that is, to repair/replace 9.75 miles (51,480 ft) of the sewer mains and 300 manholes.

A1. Manhole Inspections:

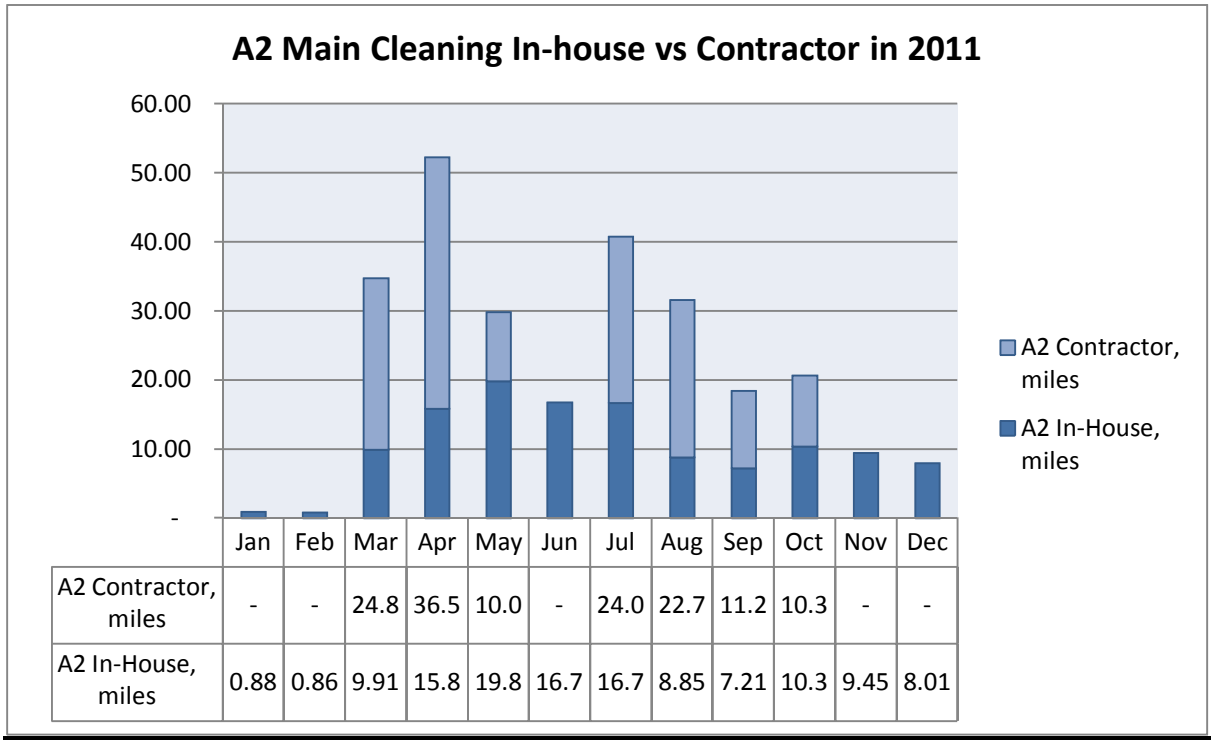


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
A1 Contractor	0	0	9	0	0	0	4	0	1	0	0	0
A1 In-House	58	36	295	503	760	738	427	487	129	226	166	194

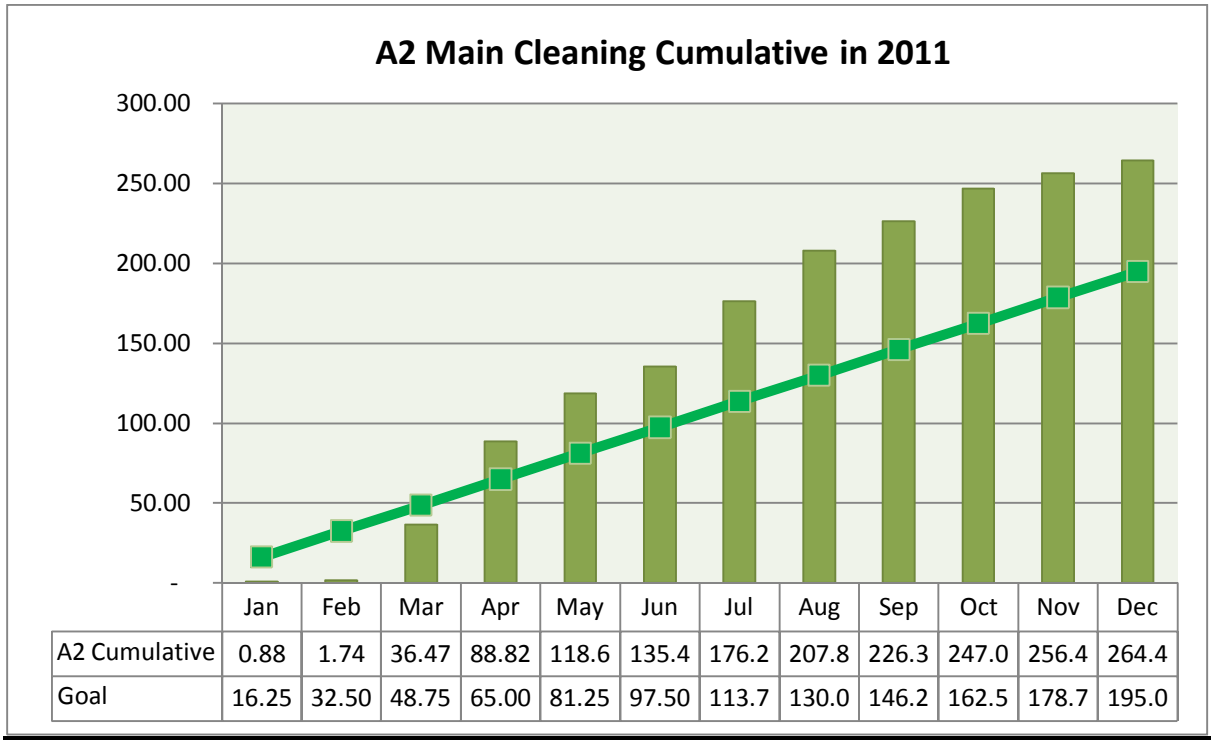


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
A1 Cumulative	58	94	398	901	1,661	2,399	2,830	3,317	3,447	3,673	3,839	4,033
Goal	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	5,500	6,000

A2. Sewer Cleaning:

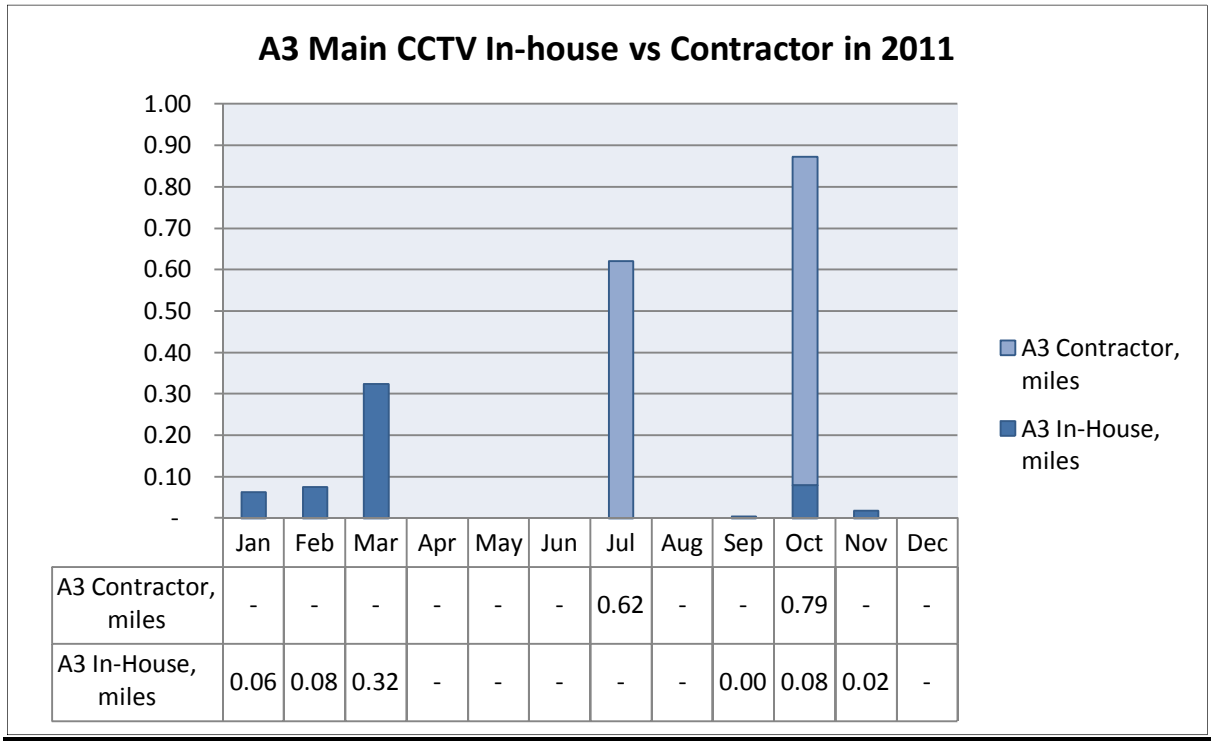


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
A2 Contractor, miles	-	-	24.8	36.5	10.0	-	24.0	22.7	11.2	10.3	-	-
A2 In-House, miles	0.88	0.86	9.91	15.8	19.8	16.7	16.7	8.85	7.21	10.3	9.45	8.01

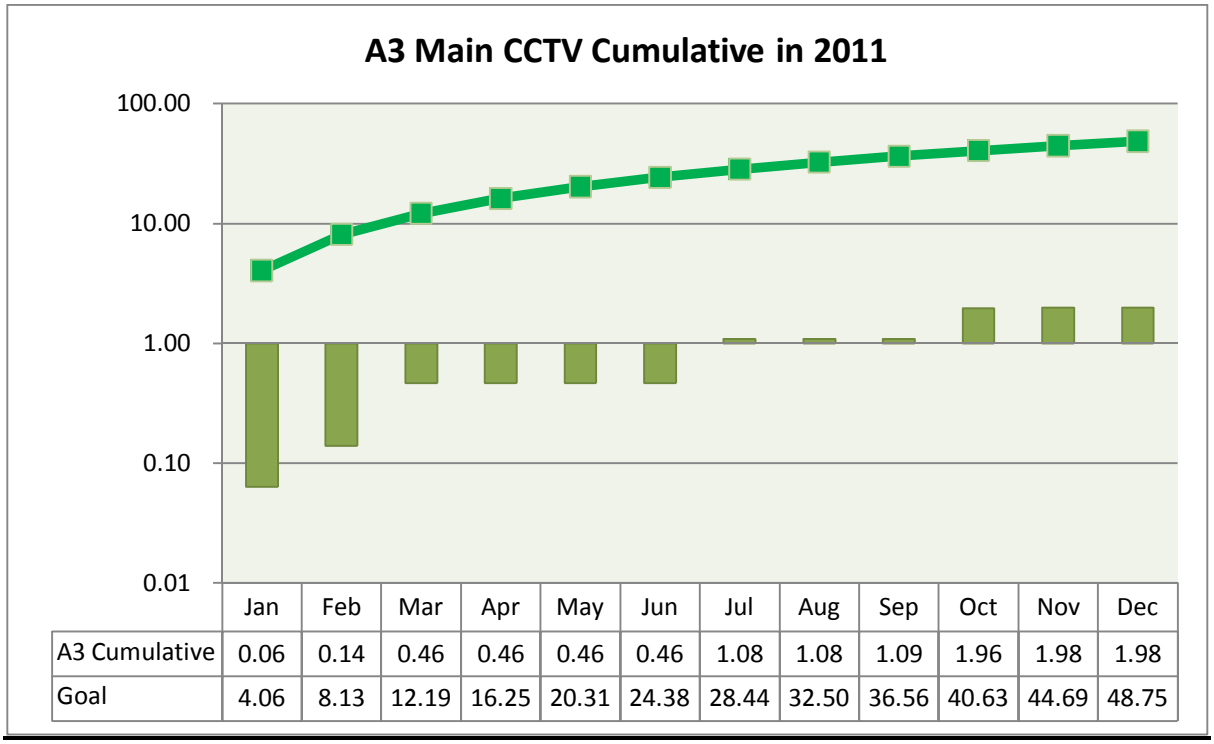


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
A2 Cumulative	0.88	1.74	36.47	88.82	118.6	135.4	176.2	207.8	226.3	247.0	256.4	264.4
Goal	16.25	32.50	48.75	65.00	81.25	97.50	113.7	130.0	146.2	162.5	178.7	195.0

A3. Sewer CCTV Inspection



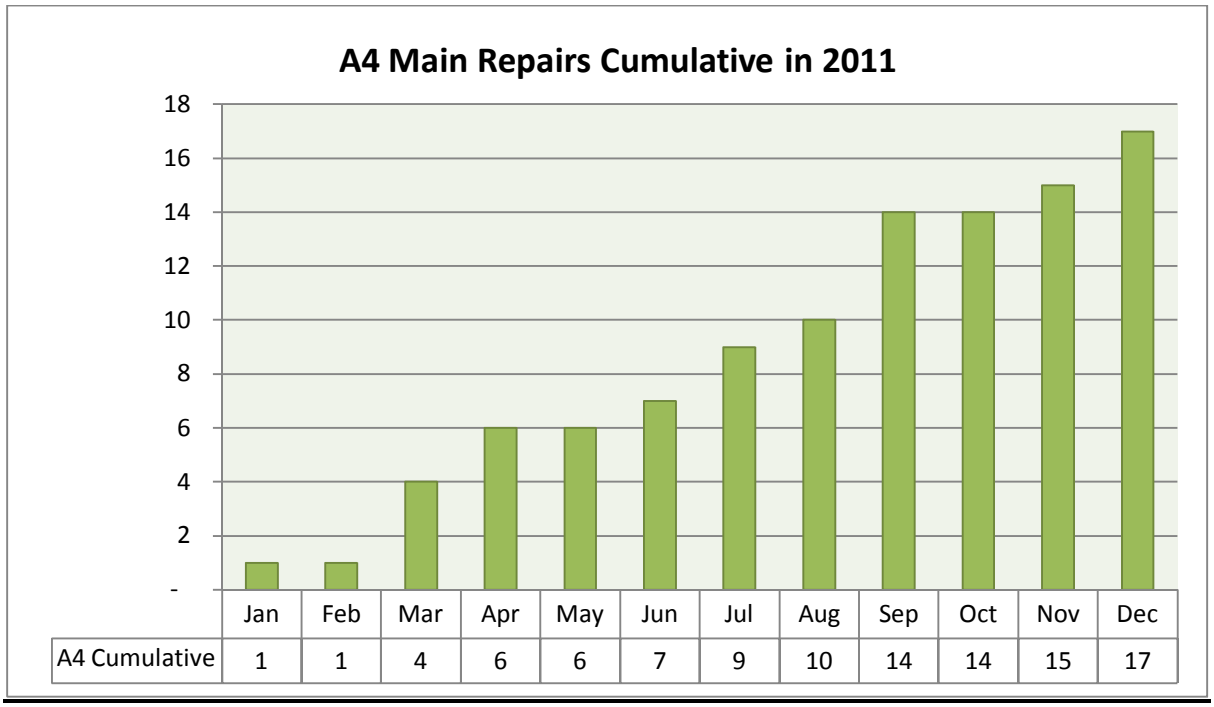
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
A3 Contractor, miles	-	-	-	-	-	-	0.62	-	-	0.79	-	-
A3 In-House, miles	0.06	0.08	0.32	-	-	-	-	-	0.00	0.08	0.02	-



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
A3 Cumulative	0.06	0.14	0.46	0.46	0.46	0.46	1.08	1.08	1.09	1.96	1.98	1.98
Goal	4.06	8.13	12.19	16.25	20.31	24.38	28.44	32.50	36.56	40.63	44.69	48.75

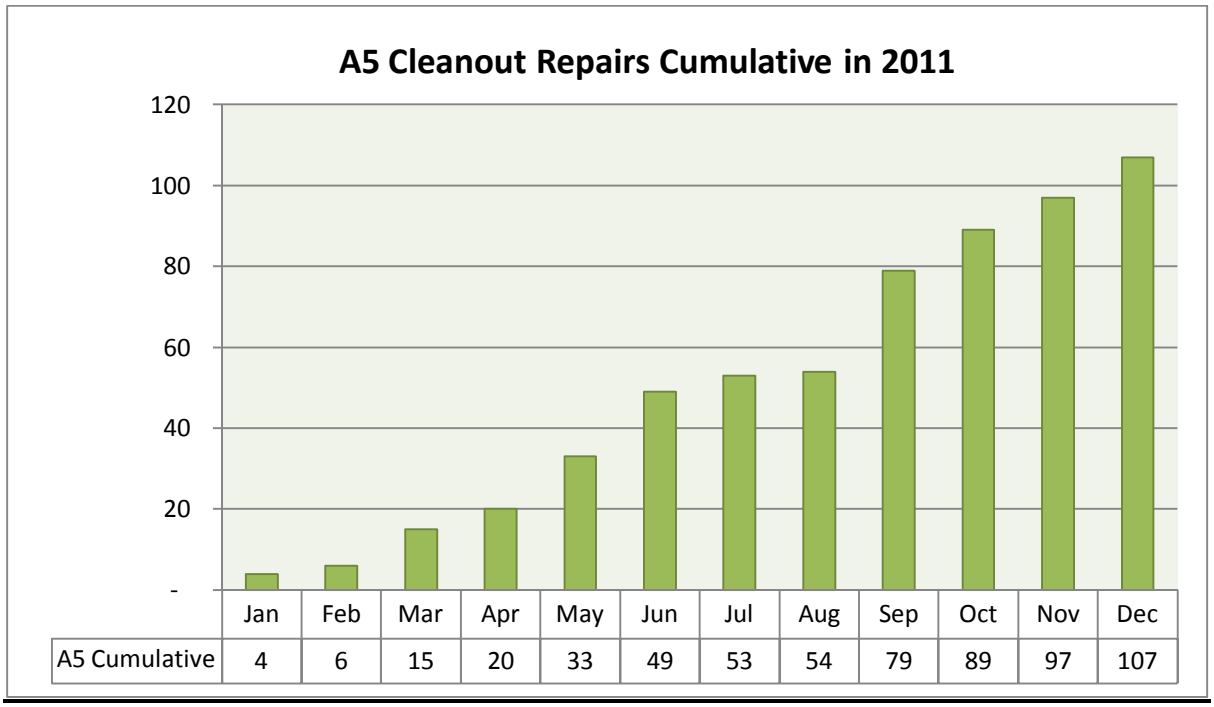
A4. Sewer Main Repairs

The County performed the sewer main repair/replacement on an As-Needed basis. 17 sewer mains were repaired by County's in-house staff in 2011, totaled 3,400 ft.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
A4 Cumulative	1	1	4	6	6	7	9	10	14	14	15	17

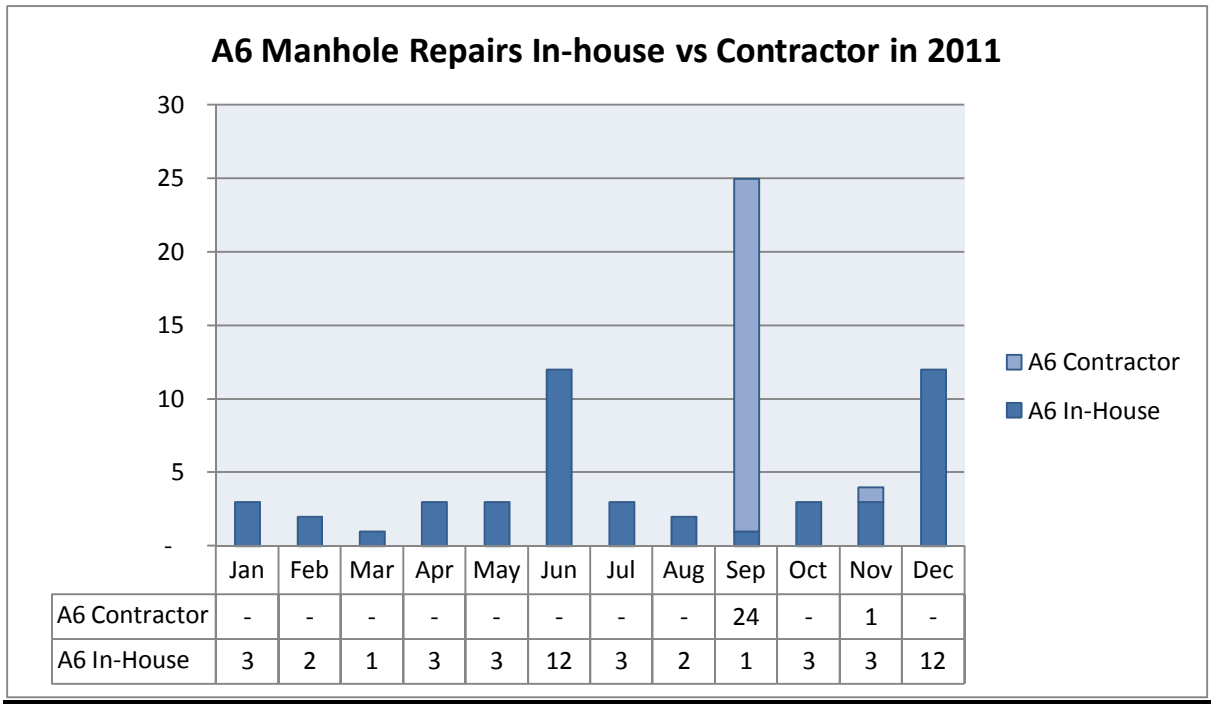
A5. Sewer Cleanout Repairs



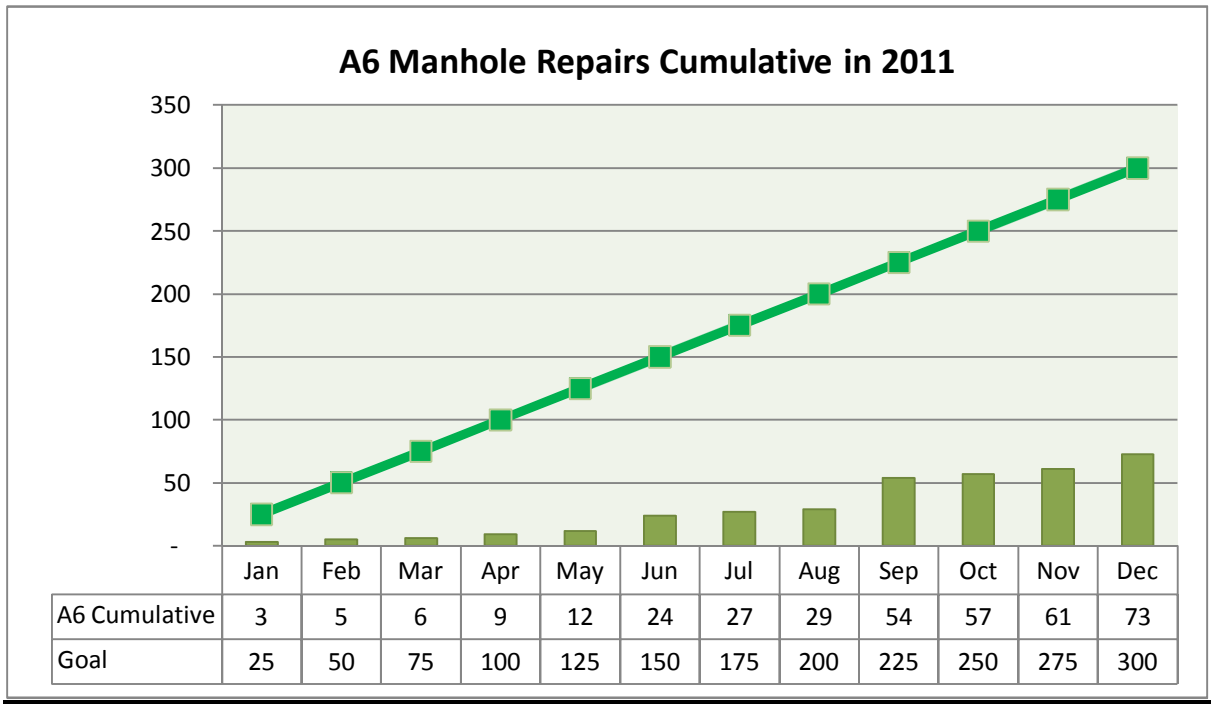
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
A5 Cumulative	4	6	15	20	33	49	53	54	79	89	97	107

A6. Manhole Repairs

The County performed the manhole repair/replacement on an As-Needed basis. Sanitary sewer manholes are repaired by County's in-house staff and contractors. There were 73 manholes repaired in 2011, including the 24 manholes identified as problematic in the Little Patuxent Interceptor SSES report.

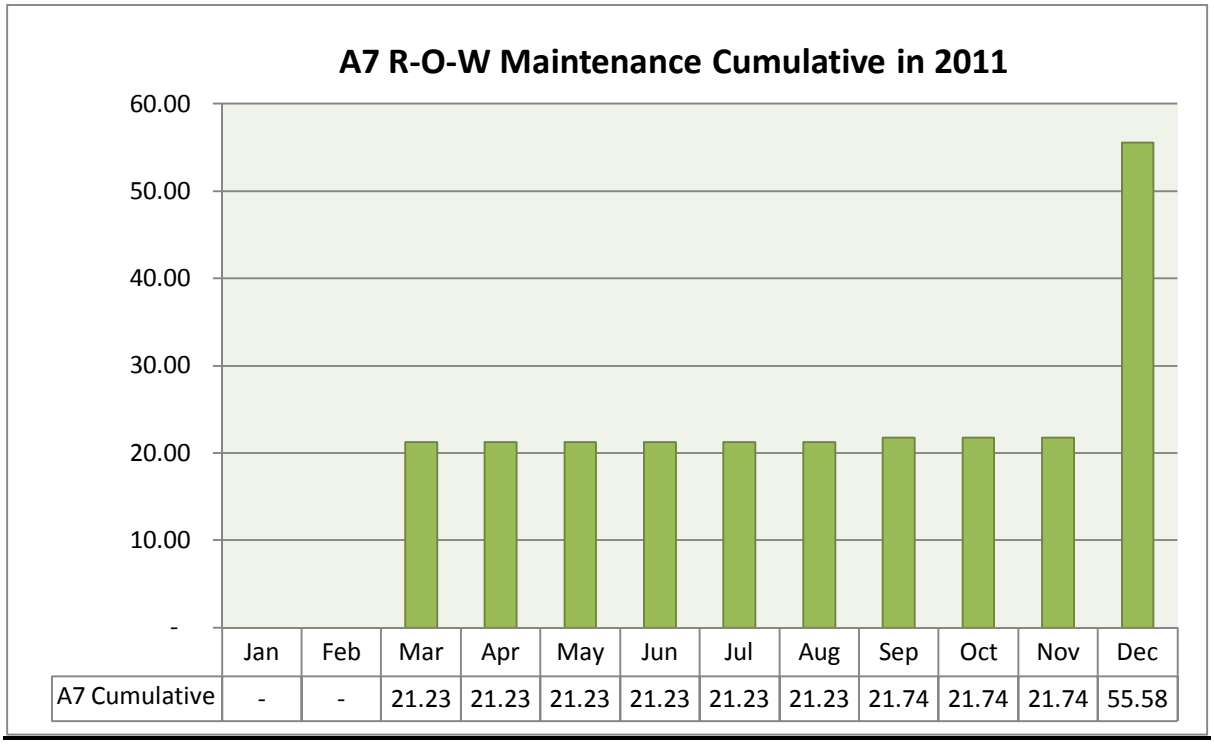


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
A6 Contractor	-	-	-	-	-	-	-	-	24	-	1	-
A6 In-House	3	2	1	3	3	12	3	2	1	3	3	12



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
A6 Cumulative	3	5	6	9	12	24	27	29	54	57	61	73
Goal	25	50	75	100	125	150	175	200	225	250	275	300

A7. Sewer Right of Way Maintenance



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
A7 Cumulative	-	-	21.23	21.23	21.23	21.23	21.23	21.23	21.74	21.74	21.74	55.58

A8. Smoke Testing

In 2011, there was no smoke testing performed by in-house staff. However, there were some smoke and dye tests being conducted as part of the Sewer System Evaluation Survey (SSES) studies in Hammond/Guilford Basin and Patapsco Basin, which have been summarized in the two SSES reports respectively.

The County has contracted George, Miles & Buhr (GMB) and Flow Assessment Services, LLC (FAS) to provide engineering services with smoke testing the North Laurel Area in 2012. The intent of this project is to identify the specific locations where the system defects exist to reduce the quantity of extraneous inflow from entering the North Laurel Pump Station.

A9. Sewer Pumping Station Inspections

The Howard County sewer pumping station program, as outlined in the CMOM, provides for station checks of each sewer pumping station twice per week.

A10. Root Treatment

In 2011, the County has performed root treatment in 32 sewer mains (5,955 ft), 43 Sewer House Connections, and 6 manholes.

A11. FOG Program

The County has 740 permitted Food Service Establishments (FSEs), 576 of them have grease interceptors, both indoor and outdoor.

The County's FOG program inspections consist of:

- Pretreatment staff inspections on Best Management Practices (BMPs), grease interceptors, used cooking oil handling and collection, solid waste handling and disposal; and other activities
- Inspections conducted by the FSEs through their self-monitoring reports
- Inspections conducted by the waste haulers when they pump the interceptors

Typically, all permitted FSEs are inspected twice each year, more frequently if there is a concern. A sample FSE inspection checklist is attached in Appendix A-1. Those 164 who don't have grease interceptors are also inspected and are required to implement BMPs in handling food wastes.

On a semi-annual basis, FSEs are required to submit their self-monitoring reports. See sample semi-annual operation and maintenance report in Appendix A-2. This report shows the dates when the pump outs occurred and when the grease barrels were collected. 408 reports have been received from FSEs in 2011.

Also attached in Appendix A-3 is a sample Waste Hauler report. This report contains the condition assessment of the interceptors when they were pumped. The owners or managers of the FSEs make the determination for the pumping frequency. Typically the outdoor grease interceptors are pumped by waste haulers every 4 to 8 weeks. The indoor grease interceptors are self-cleaned from every 2 days to 14 days, depending on type and size of food service facility.

As far as the inspections, reporting requirements, and enforcement actions go, they are consistent with the County's current sewer use ordinance and draft FOG POLICY, which will soon be up on the County Council's agenda to vote on with the proposed amendments for the Sewer Use Ordinance

A12. Pretreatment

The Howard County Pretreatment staff is based at the County's LPWRP and is responsible for the implementation of the County's Pretreatment program, including limiting the discharge of fats, oils, and grease (FOG) into the County's collection system. On January 19th, 2012, the County received an excellent remark on the pretreatment program from MDE for the annual Pretreatment Compliance Inspection (PCI) conducted on July 19th, 2011.

The County is in the process of upgrading their Asset Management System from Hansen 7.7 to Hansen 8. After the integration is done, the County will utilize the new Hansen 8 to track the progress of all CMOM activities.

B. The Effectiveness of the Approved CMOM Program

B1. CMOM Programs Recent Performance Summary

The County's CMOM program has been fully implemented starting January 2011. As of today, the County has submitted 4 semi-annual progress reports, under the requirement of "Paragraph F, Reporting" of the Complaint and Settlement Agreement with MDE.

Mr. Anthony Rocco was promoted as the County's CMOM Program Manager to oversee the activities of the CMOM program, coordinate day to day activities of the existing in-house maintenance staff as well as direct the performance of outside contractors.

Johnson Mirmiran & Thompson Inc. (JMT) has been engaged in the service of on-site engineering support and contractor management to assist the implementation of the CMOM program. This on-site level of effort is in conjunction with JMT Technology Group's efforts in developing a Geographic Information System (GIS) for the County's sanitary collection system and water distribution system. It is the intent for the two components to integrate and be an effective and efficient vehicle available to the County to achieve compliance.

Starting January 2011, the two County's on-call contractors, Video Pipe Service (VPS) and TRB Specialty (TRB) have been performing collection system repair/restore/replacement activities concurrently with Bureau of Utilities maintenance crews to meet the CMOM goals.

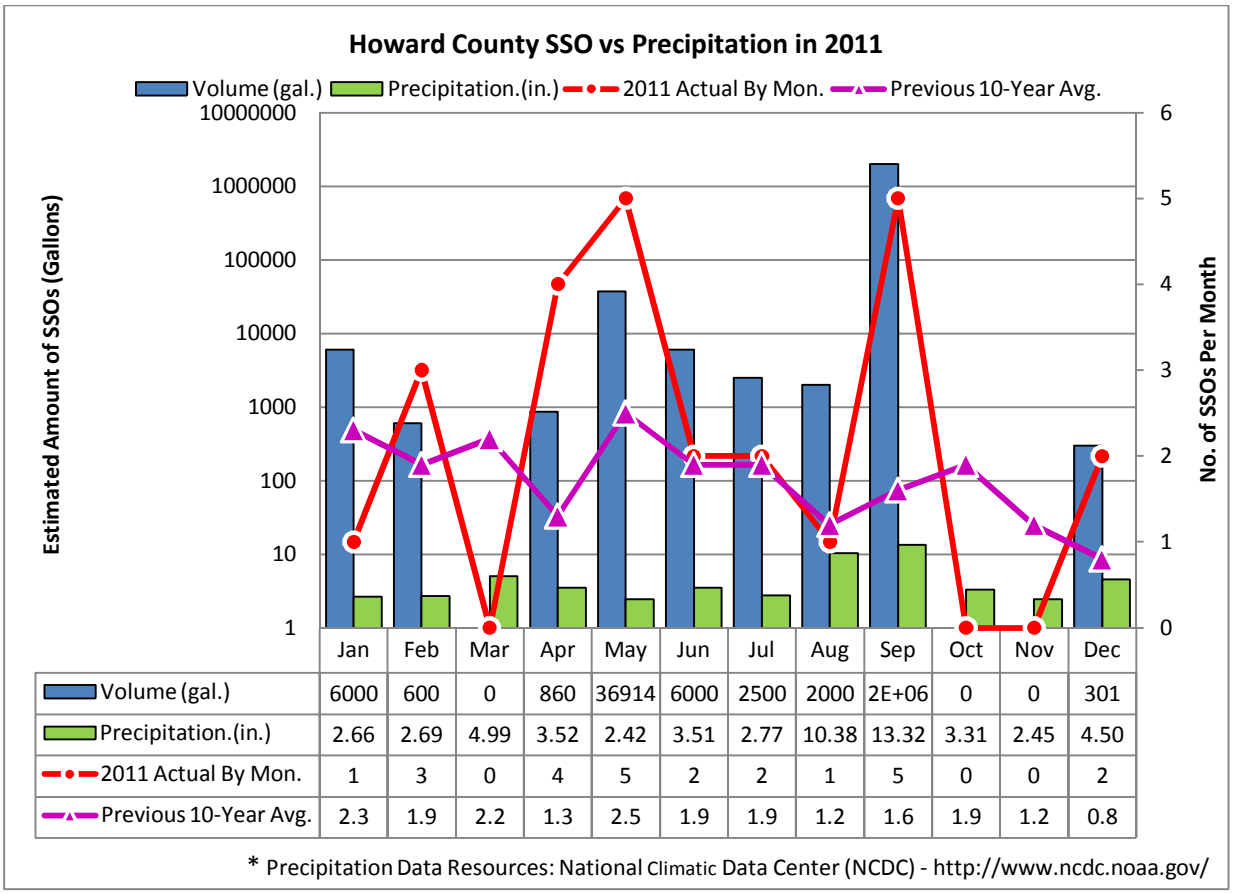
The Self-Audit process involves interviewing the various personnel, observance of field activities, field inspection of equipment and resources, and review of pertinent records and management information systems. Specific audit components include audit findings (program deficiencies), audit responses (steps to correct each deficiency), and schedules to implement audit responses. In order to assist the Self-Audit process, the County will utilize a CMOM Self-Audit Checklist as shown in Appendix B-1 to track the audit findings and audit responses. The checklist is also listed in CMOM Manual Appendix 9.

B2. Sewer System Overflows (SSO's) in the Previous Year

For the period of January through December 2011, there were twenty-five (25) SSO's within the Howard County Sanitary Sewer Collection system for a total of 2,067,175 gallons. See Appendix C for a detailed break-down with probable causes in 2011.

There was one SSO occurrence at 7235 Lyndsey Way, Elkridge, which is caused by pipe failure during Hurricane Irene and is the account for 97% of the total volume. The County has taken an immediate action to repair the ruptured 18" sewer main as soon as the resident reported the overflow.

Based on a 2004 EPA report to Congress, Howard County is 58% below the national average for sewer overflows. The national average for SSO is 4.5 per 100 miles of sewer. Howard County's average for SSO is 2.6 per 100 miles of sewer.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Volume (gal.)	6000	600	0	860	36914	6000	2500	2000	2E+06	0	0	301
Precipitation.(in.)	2.66	2.69	4.99	3.52	2.42	3.51	2.77	10.38	13.32	3.31	2.45	4.50
2011 Actual By Mon.	1	3	0	4	5	2	2	1	5	0	0	2
Previous 10-Year Avg.	2.3	1.9	2.2	1.3	2.5	1.9	1.9	1.2	1.6	1.9	1.2	0.8

* Precipitation Data Resources: National Climatic Data Center (NCDC) - http://www.ncdc.noaa.gov/

The County's numbers of SSO occurrence have been plotted by month in the above chart. As is shown in the chart, September, when Hurricane Irene and Tropical Storm Lee occurred, has the greatest amount of precipitation, numbers of SSO occurrence and volume in 2011.

Tropical Storm Lee contributed to record rainfall in the Mid-Atlantic, an area already severely affected by rainfall from Irene. The combined storms killed 114 people and caused greater than $20 billion USD in damage.

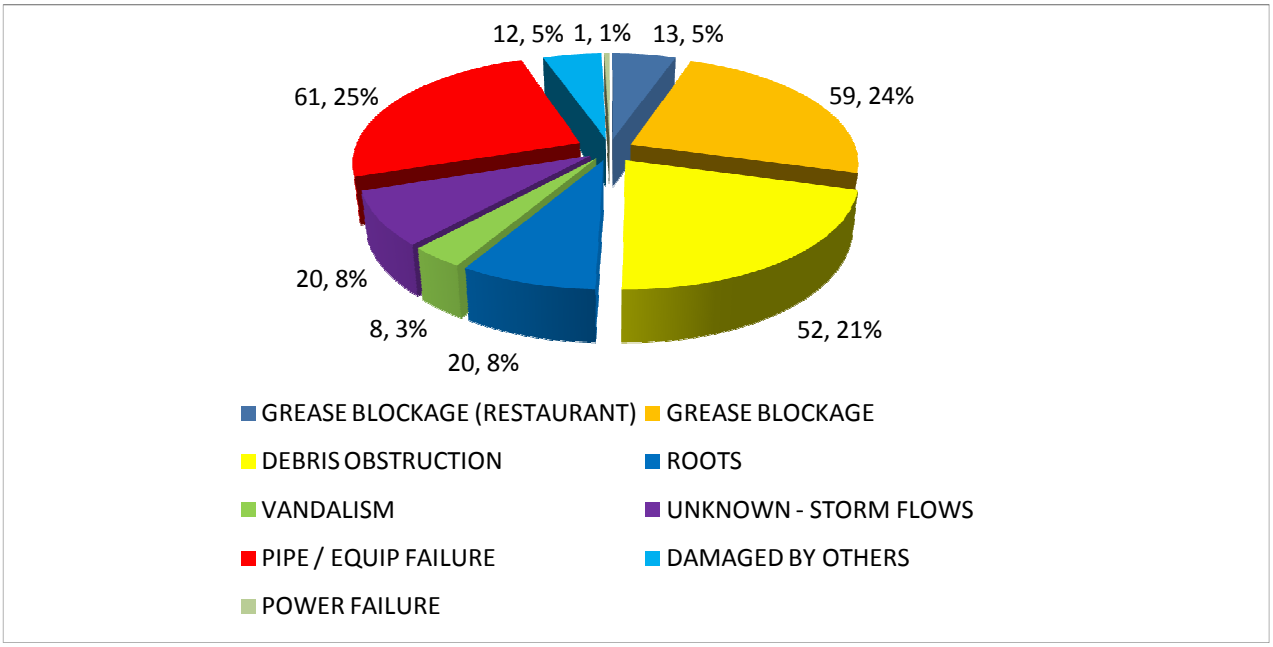
C. The Number and Causes of Overflows and Known Building Backups

As is described in Section B2, 97% of the total overflow volume was caused by Hurricane Irene and/or Tropical Storm Lee. Except for the incident at 7235 Lyndsey Way, the total overflow quantity was about the same level as the previous 2 years record. In the CMOM Self-Audit Checklist, the causes of overflows have been categorized into:

Category	Notes
Capacity Related	SSO's are storm related
Maintenance Related	SSO's due to debris obstruction and roots
Operations Related	SSO's due to power failure
Caused By FOG	SSO's due to restaurant grease blockage
Caused By Sources Other Than FOG	
Caused By Pipe/Equipment Failures	
Caused By Damage	SSO's due to vandalism, contractor misconduct, etc.

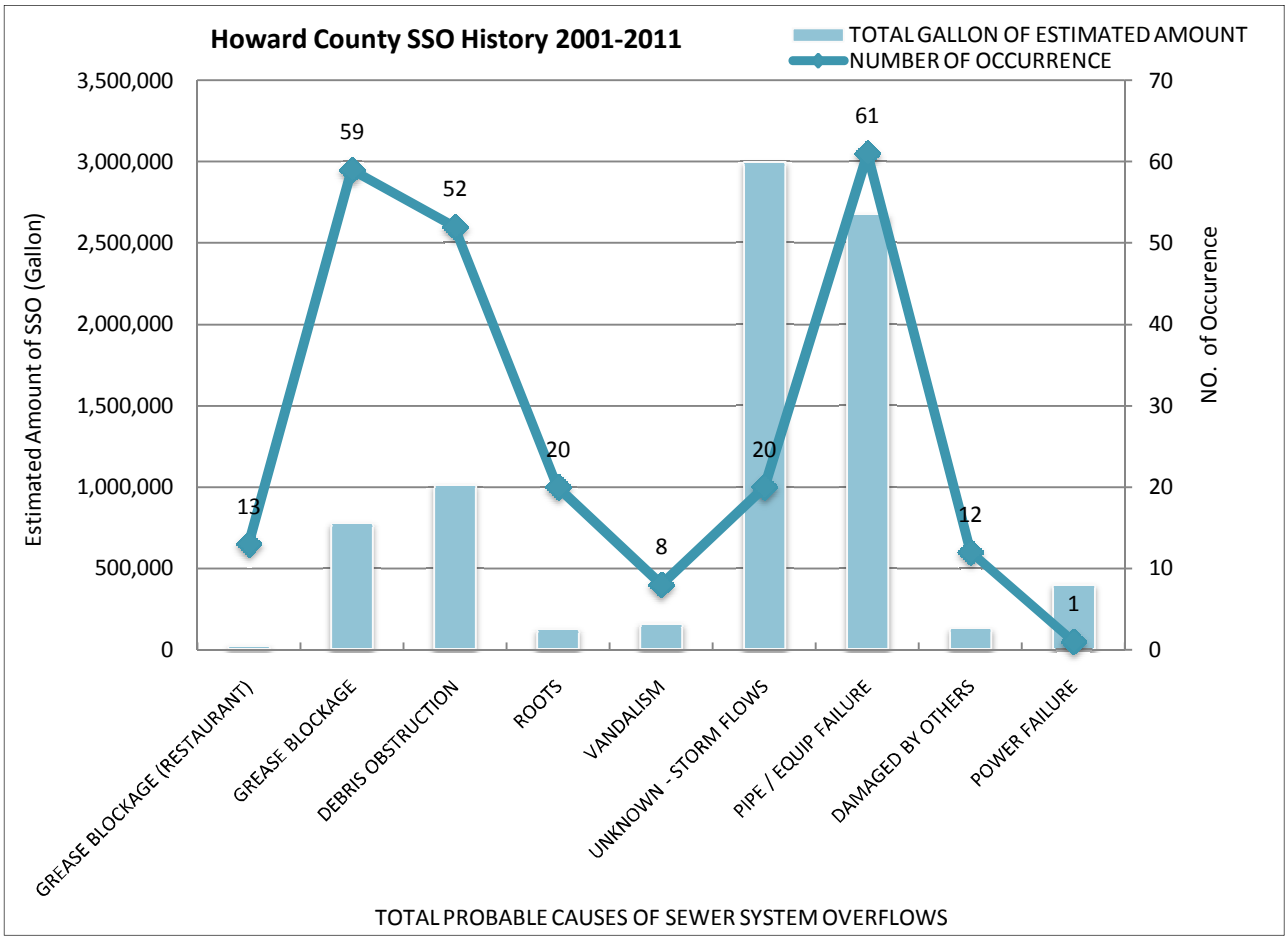
The number and probable causes of SSO's and building backups in 2011 have been illustrated in Appendix C.

To take a further step into the long-term investigation, the County researches the causes and numbers of SSO occurrence from 2001 to 2011.



As is shown in the above chart, the top 3 causes of overflows county-wise are: pipe/equipment failure, grease blockage and debris obstruction.

Taking the estimated overflow amount into consideration, storms, pipe and equipment failures rank the highest of the total SSO volume contribution.



Unlike many municipalities that are struggling to control overflows and maintain an aging infrastructure system, Howard County's collection system is comparatively young and sized to avoid most capacity issues. Howard County has positioned itself with sufficient resources to adequately maintain the existing sanitary sewer collection in the sanitary sewage system and keep pace with current needs. The area of greatest need with regard to the collection system is to control the County's SSO's which are caused by grease, debris, blockages, and roots.

D. Actions Planned and/or Implemented to Respond to Any Failures

D1. Successes and Failures in Achieving the Goals in 2011

As is shown in the Section A, among all CMOM tasks completed in 2011, item A2 – Main Cleaning, achieves the County's goal. The Overflow Emergency Response Plan, due ninety days (June 9th, 2010) from the execution of the Agreement, was submitted as part of the Draft CMOM submission on March 25th, 2010. MDE approved the Overflow Emergency Response Plan in its August 31st, 2010 letter.

Items A1 – Manhole Inspections, A3 – Main CCTV Inspections fail to achieve the CMOM goal. Items A4 – Mains Repair/Replacement and A6 – Manholes Repair/Replacement are conducted on an as-needed basis.

D2. Action Planned and/or Implemented in Achieving the Goals for 2012

The collection system repair/replacement is conducted on an as-needed basis. The County has planned more CCTV main inspections-A3, and smoke testing-A8 in 2012. The cleaning, CCTV and smoke testing activity progress has been illustrated in Figure D1, D2 and D3 respectively in the Appendix D.

E. Collection System Deficiencies Identified and Actions Planned or Implemented

E1. Collection Systems Deficiencies Identified under CMOM

As we concluded in Section C, the area of greatest need with regard to the collection system is to control the County's SSO's which are caused by blockages (grease, debris, and roots). The County has programmed various CMOM components to be performed in order.

The cleaning team will be scheduled to go first. Based on the notes taking by the cleaner, the County is able to identify the problematic area with grease, roots, debris and other obstructions. Then the County will engage the CCTV contractor to conduct a NASSCO PACP certified condition assessment. Therefore, the engineers could decide the rehabilitation method according to the defects qualified and quantified during CCTV inspections. The County also schedules the comprehensive smoke testing projects. The contractors are looking for locations such as roof drains or storm drain inlets directly to the sewer collection system, as well as defective mains and cleanouts caps. The final steps will be rehabilitation design and construction.

According to a recent CCTV inspection performed in Tiber Branch and Route 40 SPS, the following rehabilitation activities are scheduled to be performed by both contractors and in-house staff.

- Air Test and Seal, Chemical Grouting, 6 mains.
- Run Root Cutter, 4 mains.
- Chemical Root Treatment, 10 mains.

E2. Collection Systems Deficiencies Identified under SSES

The SSES report for the Little Patuxent was submitted to MDE on May 25th, 2010 in accordance with the Agreement. The contractor completed the necessary improvements

listed in the SSES report Table 5-1 and Table 5-3, 11 manhole repairs altogether, by November 2011. Three progress reports have been submitted to MDE to describe the activity/action taken to reduce the I&I along the Little Patuxent Interceptor. The first progress report was submitted on March 24th, 2011, the second was submitted on June 2nd, 2011 and the third progress report was submitted to MDE on January 3rd, 2012.

The SSES Reports for the Patapsco Basin and Hammond/Guilford Basin were due to MDE by December 31st, 2011 per the Agreement. The SSES reports were delivered to MDE on December 7th, 2011. The County has started to investigate the rehabilitation activities recommended in the SSES reports.

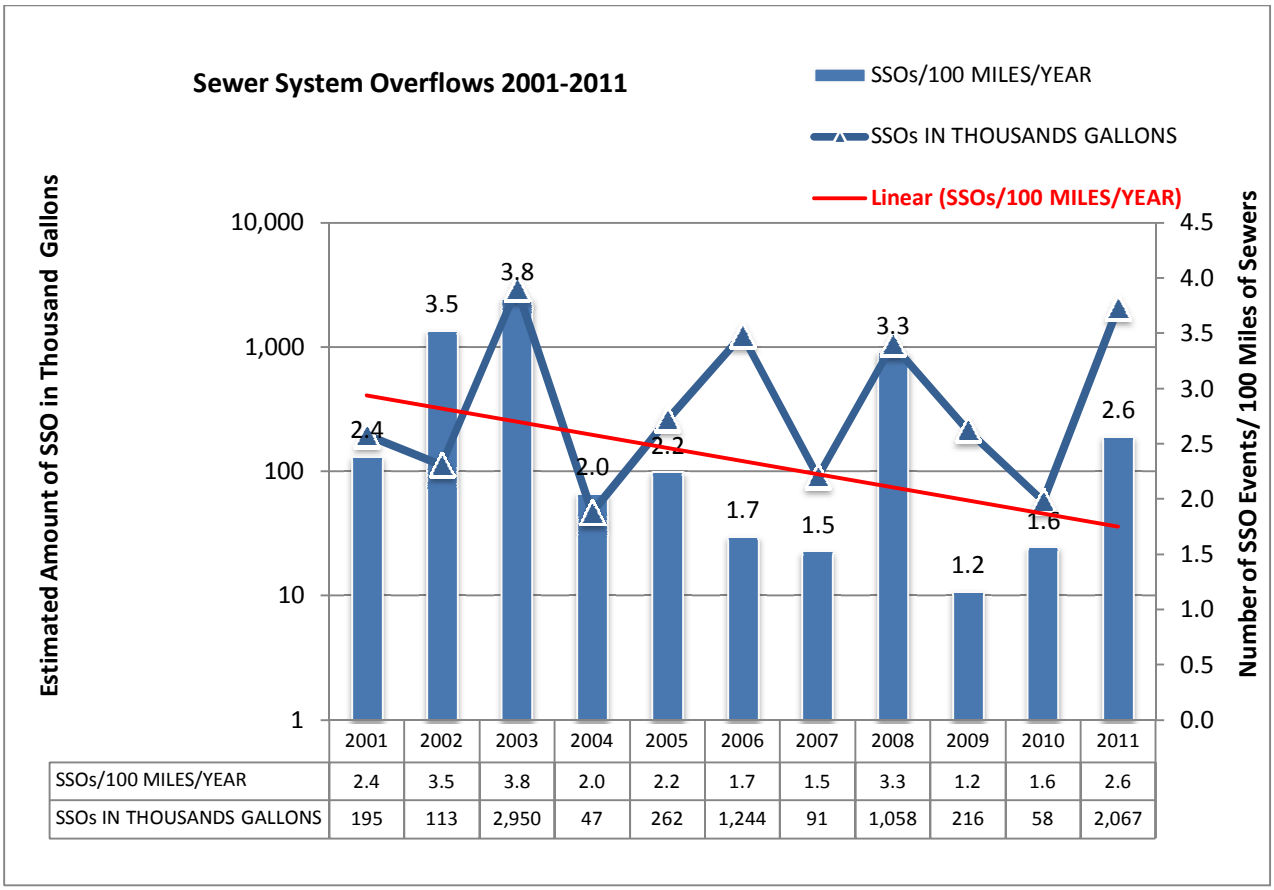
E3. Collection Systems Deficiencies Identified during Routine Preventive O&M

The County's in-house staff implements a preventive O&M program, which is to investigate the collection system on a regular basis and rehabilitate the deficiencies as needed. The County's in-house staff also takes care of the customer complaints and responds to the overflow emergencies.

F. Whether the County has adequately prioritized rehabilitation work to maximize the reduction of Overflows

Since sanitary sewer systems are subject to harsh and corrosive conditions, the CMOM program is required to assess the structural condition of the system through field investigations including CCTV inspections. The results of the assessments lead to identifying and ranking the long-term and short-term rehabilitation actions to correct the problems.

Regarding the rehabilitation actions recommended in the SSES reports of Little Patuxent, Patapsco, Guilford/Hammond Basins, the consultants use the combined results not only from the field investigation, including manhole inspections, CCTV sewer main condition assessment, flow monitoring, but also the hydraulic model to prioritize the work to maximize the reduction of overflows.



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
SSOs/100 MILES/YEAR	2.4	3.5	3.8	2.0	2.2	1.7	1.5	3.3	1.2	1.6	2.6
SSOs IN THOUSANDS GALLONS	195	113	2,950	47	262	1,244	91	1,058	216	58	2,067

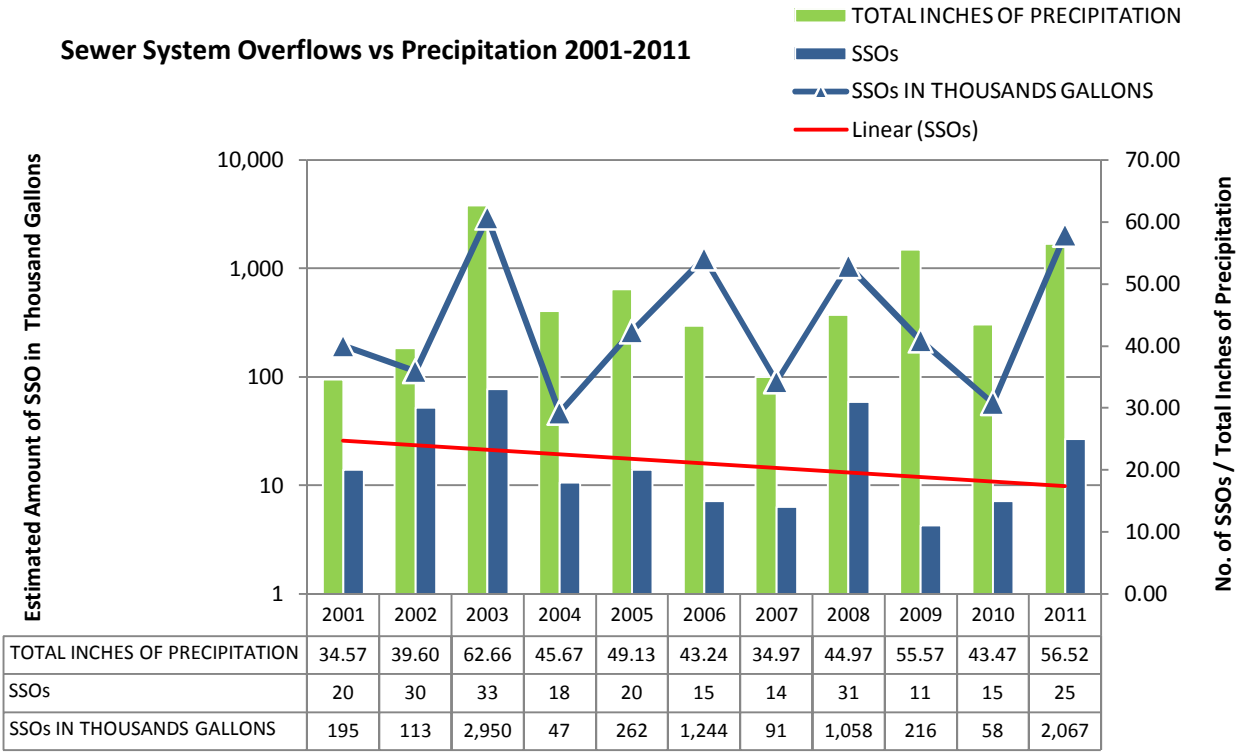
As is shown in the above chart, over the past 11 years from 2001 to 2011, the County has the SSOs/mile/year ranging from 1.2 to 3.8, while the national average posted by EPA in 2004 is 4.5. What's more, the County's overall trend of SSOs/mile/year is downward. Over the past 11 years, the County's total volume of SSO's ranges from 47,000 to 2,950,000 gallons.

To further investigate the correlation between numbers of SSO occurrence to the total amount, the 11 years' precipitation data is plotted in the below chart. Although the numbers of SSO occurrence over the years keep a downward trend, the total overflow amount not only affected by the numbers of SSO occurrence, but also the total precipitation of the year.

This report serves for the purpose of the County's initial self-auditing. The County will continue to monitor the performance of the CMOM program annually to make sure the County

- Properly manage, operate, and maintain, at all times, the parts of collection system that they own or have operational control.
- Provide adequate capacity to convey base flows and peak flows.

- Take all feasible steps to stop and minimize the impact of sanitary sewer overflows.
- Provide notification to parties with a reasonable potential for exposure to pollutants associated with an overflow event.
- Develop a written summary of their CMOM program and make it available to the public upon request including self-audits.



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
TOTAL INCHES OF PRECIPITATION	34.57	39.60	62.66	45.67	49.13	43.24	34.97	44.97	55.57	43.47	56.52
SSOs	20	30	33	18	20	15	14	31	11	15	25
SSOs IN THOUSANDS GALLONS	195	113	2,950	47	262	1,244	91	1,058	216	58	2,067

* Precipitation Data Resources: National Climatic Data Center (NCDC) - http://www.ncdc.noaa.gov/

Appendix A-1

Sample FSE Inspection Checklist

Howard County Government
Food Service Establishment Checklist

1. Facility Name: Domino's Pizza Inspection Date: 05/21/2012
2. Facility Address: 6010 Meadowridge Center Drive, Elkridge, Maryland, 21075
3. Facility Manger: Manuel Sanchez
4. Type of food service operation (café, cafeteria): Pizza Restaurant

I Grease Trap/ Interceptor Size: 1000 Gallons

1. Type (under the sink, in-ground, automatic): Outside
2. Location: In the front of Kupcake & Company/ which is located in the rear of the Building
3. Pump out schedule (monthly, weekly, etc.): Quarterly
4. Pumper/ service provider: Hatfield's Septic Service
5. ☐ Yes ☑ No Maintenance log available on-site
   Note: Management must observe pumping to ensure it is done properly.

II Kitchen Equipment/ Devices

1. ☑ Yes ☐ No Fine mesh strainers are in place in all floor drains and sinks.

Dry Cleanup

1. ☑ Yes ☐ No Are serving wares, utensils or food preparation surfaces wiped clean before washing?
2. ☑ Yes ☐ No Are employees provided the necessary training and tools (rubber scrapers, brooms, absorbent materials for spills) for dry cleanup?
3. ☑ Yes ☐ No Are garbage cans present in pre-wash area?
4. ☑ Yes ☐ No Are floors swept before moped or hosed down?

Employee Awareness Training

1. ☐ Yes ☑ No Is BMP poster on display at the 3 compartment sink? Are employees trained on FOG BMPs and are employees trained on these follow these procedures? I given

Grease Disposal

1. ☐ Yes ☐ No Are outside oil and grease storage bins kept covered?
2. ☐ Yes ☐ No Is there a cooking oil caddie to prevent oil and grease spills while transferring from inside the restaurant to the outside storage bin?
3. ☐ Yes ☐ No Are the outside storage bins located away from storm drains and catch basins?
4. Name of Hauler: N/A Tele No: N/A

Customer Signature: _____

Howard County Government
Food Service Establishment Checklist

1. Facility Name: Cafe' Bagel Inspection Date: 05/23/2012
2. Facility Address: 6010 Marshalee Drive, Elkridge, Maryland, 21075
3. Facility Manger: Andy Lee
4. Type of food service operation (café, cafeteria): Bagel Shop

I Grease Trap/ Interceptor Size: N/A Gallons

1. Type (under the sink, in-ground, automatic): N/A
2. Location: SOLID WASTE PERMIT/ Not required to have trap/interceptor
3. Pump out schedule (monthly, weekly, etc.): N/A
4. Pumper/ service provider: N/A
5. ☐ Yes ☐ No Maintenance log available on-site
   Note: Management must observe pumping to ensure it is done properly.

II Kitchen Equipment/ Devices

1. ☑ Yes ☐ No Fine mesh strainers are in place in all floor drains and sinks.

Dry Cleanup

1. ☑ Yes ☐ No Are serving wares, utensils or food preparation surfaces wiped clean before washing?
2. ☑ Yes ☐ No Are employees provided the necessary training and tools (rubber scrapers, brooms, absorbent materials for spills) for dry cleanup?
3. ☑ Yes ☐ No Are garbage cans present in pre-wash area?
4. ☑ Yes ☐ No Are floors swept before moped or hosed down?

Employee Awareness Training

1. ☑ Yes ☐ No Is BMP poster on display at the 3 compartment sink? Are employees trained on FOG BMPs and are employees trained on these follow these procedures?

Grease Disposal

1. ☐ Yes ☐ No Are outside oil and grease storage bins kept covered?
2. ☐ Yes ☐ No Is there a cooking oil caddie to prevent oil and grease spills while transferring from inside the restaurant to the outside storage bin?
3. ☐ Yes ☐ No Are the outside storage bins located away from storm drains and catch basins?
4. Name of Hauler: N/A Tele No: N/A

Customer Signature: _____

Appendix A-2

Sample Semi-annual Operation and Maintenance Report

Report Must Be Posted Near Grease Trap

SEMI-ANNUAL OPERATIONS AND MAINTENANCE REPORT

Name of Establishment: Royal Farms #54

Facility Address: 8268 Lark Brown Road, Elkridge, Maryland, 21075

Contact Person: Series Peeyush **Title:** Manager

Tel. No.: 410-371-9580 **Fax No:** 410-889-8347

Report Period (please circle one) from: 8/1 to: 1/31 *or* from: 2/1 to: 7/31

GREASE TRAP MAINTENANCE LOG			
When was it last cleaned	When was it last cleaned	When was it last cleaned	When was it last cleaned

When Was the Barrels Picked Up			
When Was the Barrels Picked Up	When Was the Barrels Picked Up	When Was the Barrels Picked Up	When Was the Barrels Picked Up

Name of Rendering Company: _____

Telephone Number of Rendering Company: _____

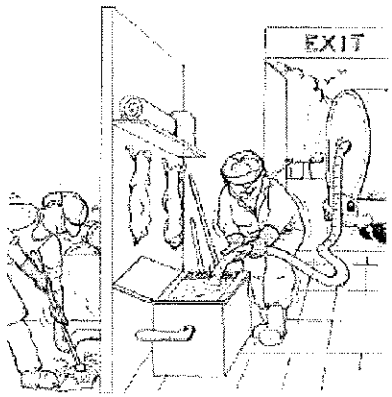
DO ALL SINKS AND FLOOR DRAINS HAVE SCREENS (STRAINERS) IN PLACE? **YES** **NO**

CERTIFICATION: To the best of my knowledge, I certify that the above information is true, complete and correct.

PRINT NAME: _____

SIGNATURE: _____

TITLE: _____ DATE: _____



REPORTS ARE DUE BY: FEBRUARY 1ST AND AUGUST 1ST OF EACH YEAR. **REMEMBER: WE START ACCEPTING FORMS BEGINNING JANUARY AND JULY FOR THE CORRESPONDING CYCLE**

FAX TO: 410-880-5812

REPORT MUST BE POSTED NEAR THE GREASE TRAP

Revised: 7/22/10

Appendix A-3

Sample Waste Hauler Report

Howard County

Department of Public Works
BUREAU OF UTILITIES

Little Patuxent Water Reclamation Plant
8900 Greenwood Place, Savage, Maryland 20763
Tel.: 410-880-5810 Fax: 410-880-5812

Date: 5-4-12
Time: 1:15

Hauler Inspection Report
Facility Information

Name: Copeland's

Address: 10200 Windopin Circle

Hauler Company: VP

Frequency: 4wks **X Per Month** ____ **or Per Year** ____

Interceptor

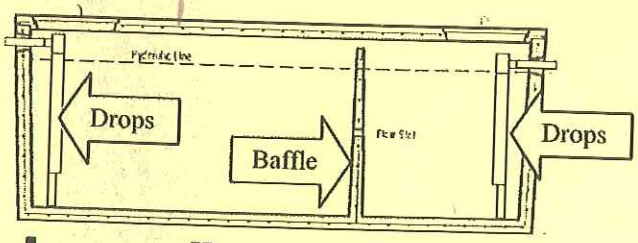
Grease / Used Oil Layer	14 Inches	⇨ Total	27
Solids / Sludge Accumulation:	13 Inches		
Influent / Effluent Drops Intact	Yes____	No ____	
Baffles / Interceptor Intact	Yes____	No ____	
Manholes Accessible	Yes____	No ____	
Cleanouts	Missing Caps ____	Full of Debris ____	

Hauler **Driver Initials:** ____

Requires Immediate Inspection of County Official Yes____ No ✓

Facility Employee Signature: ____

Disposal Location: VP



You May leave yellow copy at Weigh Station

White – Business **Yellow – Agency** **Pink – Hauler**

Appendix B

CMOM Self-Audit Checklist

Appendix B – CMOM Self Audit Checklist

I. CMOM Programs Recent Performance Summary

Performance Measures for Year 2011	Year *2012*		Month *June*
	Goal	**Actual**	**Comment**
A. Number of Customer Complaints	0	920	Plugged sewer service line: 465 Plugged sewer main: 21 Clean out cap and/or panella issue: 112 Leak on sewer line: 2 Sewer gas odor: 32 Sewer manhole repair: 20 Sanitary sewer overflow: 6 TV inspection mains: 41 TV inspection service line: 221
B. Number of NPDES Permit Violations	0	0	
C. Number of Capacity Related Overflows	0	2	SSOs are storm related
D. Number of Maintenance Related Overflows	0	4	SSOs due to debris obstruction and roots
E. Number of Operations Related Overflows	0	0	SSOs due to power failure
F. Number of Overflows Caused By FOG	0	0	SSOs due to restaurant grease blockage
G. Number of Overflows Caused By Sources Other Than FOG	0	8	SSOs due to grease blockage
H. Number of Overflows Caused By Pipe/Equipment Failures	0	9	
I. Number of Overflows Caused By Damage	0	2	SSOs due to vandalism, contractor misconduct, etc.

Appendix B – CMOM Self Audit Checklist

I. CMOM Programs Recent Performance Summary

Performance Measures for Year 2011	Year *2012*		Month *June*
	Goal	**Actual**	**Comment**
J. Monthly Average Treatment Plant Flow Rate (gallon per capita-day [gpcd])	112	119	Goal is based on the Howard County Design Manual Volume II, Page 4-5 Table 4.2A. (112 gpcd = 72 regular + 40 I&I)
K. Number of By-Passes at Treatment Plant	0	0	
L. Volume of Treatment Plant By-Pass	0	0	
M. Miles of Sewer Line CCTV'd	49	2	CCTV Service Contracts Expanding Expected in 2012
N. Miles of Sewer Line Cleaned	195	265	
O. Linear Feet of Sewer Line Repaired	51480	3400	Repair As Needed
P. Number of Manholes Inspected	6000	4033	
Q. Number of Manholes Repaired	300	73	11 Manholes Repaired Dictated By the LPI SSES Reports Others Repair As Needed
R. Number of Grease Interceptors Inspected	1152	1024	1024 = (540 Outside Interceptors + 484 Inside Interceptors)
S. Number of Smoke Tests Performed	N/A	0	No Smoke Tests Planned for 2011 More Activities Expected in 2012
T. Number of Pumps Stations Repaired	N/A	0	Pump Stations Checked Twice Per Week Repair As Needed

Appendix C

2011 Sewer System Overflows (SSO's) Report

PROBABLE CAUSES OF SEWER SYSTEM OVERFLOWS – 2011

LOCATION	DATE	CAUSE:	GREASE BLOCKAGE (RESTAURANT)	GREASE BLOCKAGE	DEBRIS OBSTRUCTION	ROOTS	VANDALISM	UNKNOWN - STORM FLOWS	PIPE / EQUIP FAILURE	DAMAGED BY OTHERS	POWER FAILURE	DURATION in hours	ESTIMATED AMOUNT - GALLONS
Meadowridge Rd & Washinton Blve (Rt1)	01/06/11								X			0.75	6,000
9338 Baltimore National Pike (Rt40)	02/11/11			X								0.75	200
3615 Saint Johns Ln	02/11/11				X							0.75	200
9011 Chevrolet Dr	02/28/11					X						1.25	200
Tamar Drive and Lambskin Lane	04/11/11			X								2.50	300
Little Patuxent Water Reclamation Plant 8900 Greenwood Place	04/12/11								X			2.00	10
Little Patuxent Water Reclamation Plant 8900 Greenwood Place	04/12/11								X			0.75	50
9420 Clocktower Ln	04/28/11			X								1.25	500
7375 Kerry Hill Ct	05/16/11			X								2.50	500
7481 Hickory Log Circle	05/17/11			X								1.00	250
Little Patuxent Water Reclamation Plant 8900 Greenwood Place	05/19/11								X			0.20	5,292
6480 Dobbin RD	05/22/11			X								5.50	25,000
Little Patuxent Water Reclamation Plant 8900 Greenwood Place	05/27/11								X			20.00	5,872
5776 Thunder Hill Rd	06/20/11					X						2.75	4,000
8753 Mary Ln	06/21/11									X		216.00	2,000
North Farm Rd dead end	07/05/11								X			2.00	500
5018 Cobblestone Ct	07/06/11			X								1.00	2,000
6650 Seneca Dr	08/24/11			X								2.00	2,000
Bonnie Branch and Ilchester Rds	09/07/11							X				3.00	6,000
7235 Lyndsey Way	09/07/11								X			8.00	2,000,000

97%

PROBABLE CAUSES OF SEWER SYSTEM OVERFLOWS – 2011

LOCATION	DATE	CAUSE:	GREASE BLOCKAGE (RESTAURANT)	GREASE BLOCKAGE	DEBRIS OBSTRUCTION	ROOTS	VANDALISM	UNKNOWN - STORM FLOWS	PIPE / EQUIP FAILURE	DAMAGED BY OTHERS	POWER FAILURE	DURATION in hours	ESTIMATED AMOUNT - GALLONS
4054 MacAlpine Rd	09/08/11							X				7.00	2,000
9910 El Dee Dr	09/16/11								X			6.00	1,000
7861 Old Jessup Rd	09/22/11									X		72.00	3,000
9048 Early April Way	12/21/11					X						1.00	1
7112 Walking Dream Knoll	12/22/11								X			1.20	300
		Totals:	0	8	1	3	0	2	9	2	0	361.15	2,067,175

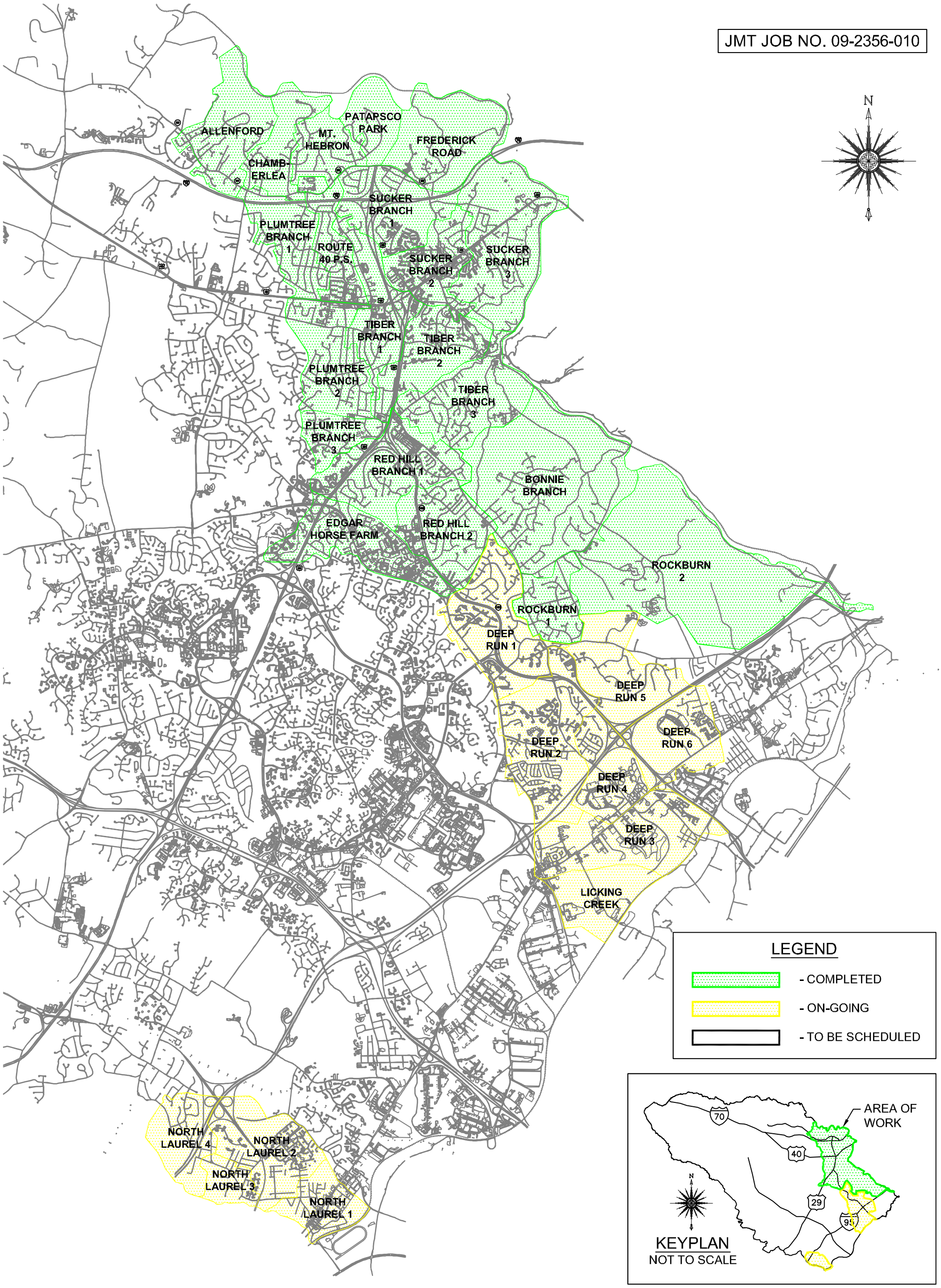
Blockage FOG *Blockage Other* *Maintenance* *Maintenance* *Other* *Capcity* *Pipe/Equipment Failures* *Other* *Operation*

25 Incidents

Appendix D

Action Planned and/or Implemented in 2012

JMT JOB NO. 09-2356-010



N

LEGEND

- COMPLETED
- ON-GOING
- TO BE SCHEDULED

HOWARD COUNTY CMOM PROGRAM

CLEANING SCHEDULE

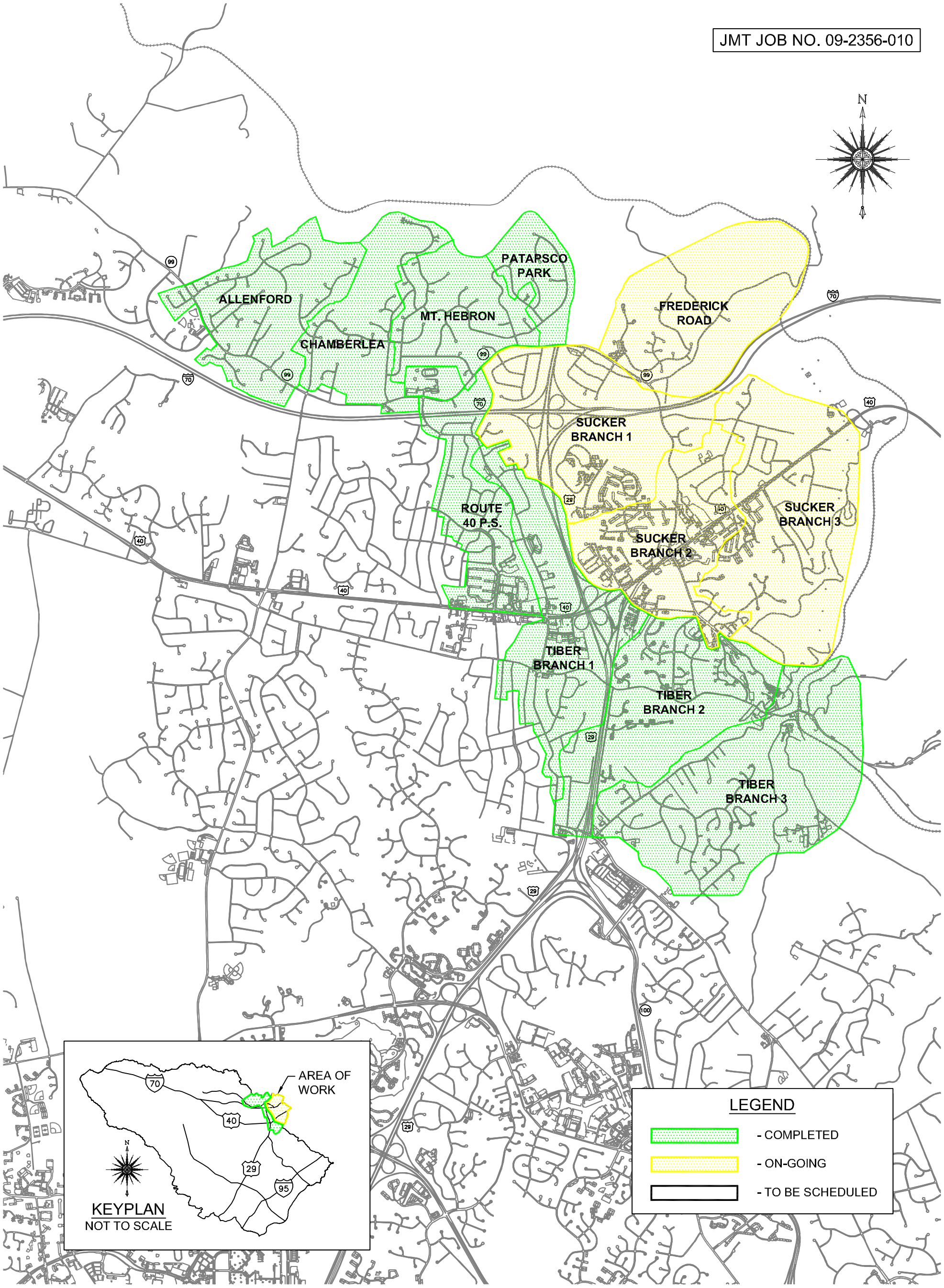
JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®
72 Loveton Circle Baltimore, Maryland 21152-0949

HOWARD COUNTY
DEPARTMENT OF PUBLIC WORKS
BUREAU OF UTILITIES

PRINTED DATE:
6/13/2012

FIGURE D1

JMT JOB NO. 09-2356-010



HOWARD COUNTY CMOM PROGRAM

CCTV SCHEDULE

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®
72 Loveton Circle Baltimore, Maryland 21152-0949

HOWARD COUNTY
DEPARTMENT OF PUBLIC WORKS
BUREAU OF UTILITIES

PRINTED DATE:
6/13/2012

FIGURE D2

JMT JOB NO. 09-2356-010

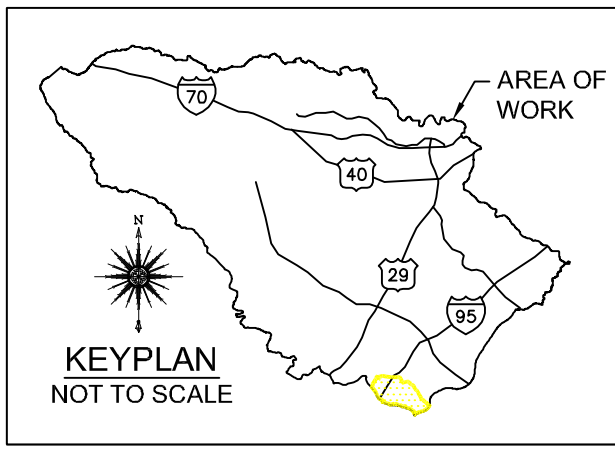
N

NORTH LAUREL 4

NORTH LAUREL 2

NORTH LAUREL 3

NORTH LAUREL 1



KEYPLAN
NOT TO SCALE

LEGEND

- COMPLETED
- ON-GOING
- TO BE SCHEDULED

HOWARD COUNTY CMOM PROGRAM

SMOKE TESTING SCHEDULE

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®
72 Loveton Circle Baltimore, Maryland 21152-0949

HOWARD COUNTY
DEPARTMENT OF PUBLIC WORKS
BUREAU OF UTILITIES

PRINTED DATE:
6/13/2012

FIGURE D3