CONSOLIDATED TMDL IMPLEMENTATION PLAN & REVISED MONITORING FRAMEWORK

(STAKEHOLDER GROUP MEETING)

MEETING MINUTES

Meeting Date: August 7, 2014

Meeting Location: DDOE

Approval: FINAL

1 ATTENDANCE

Name	Organization	Present
Jeff Seltzer	DDOE	Y
Jonathan Champion	DDOE	Y
Hamid Karimi	DDOE	Y
Brian Van Wye	DDOE	N
Martin Hurd	DDOE	Y
Mary Searing	DDOE	N
Nicoline Shulterbrandt	DDOE	Y
Shah Nawaz	DDOE	Y
Mohsin Siddique	DC Water	N
Anouk Savineau	LimnoTech	Y
Dan Herrema	LimnoTech	Y
Michael Sullivan	LimnoTech	N
Tim Schmitt	LimnoTech	Y
Kat Ridolfi	LimnoTech	Y
Chancee Lundy	Nspiregreen	Y
Veronica Davis	Nspiregreen	Y
Tim Fields	MDB, Inc	Y
Ryan Campbell	MDB, Inc	Y
Becky Hammer	NRDC	Y
Kaitlyn Bendik	EPA Region 3	Y
Meredith Upchurch	DDOT	Y
Jenny Molloy	EPA	N
Karl Berger	MWCOG	Y
Kate Rice	DC BIA	Y
Sarah Rispin	Potomac Riverkeeper	N
Mike Bolinder	Anacostia Riverkeeper	Y
Ross Mandel	ICPRB	Y
Hye Yeong Kwon	CWP	Y

Attendance sheet is attached (Attachment A)

2 MEETING PURPOSE

The purpose of this Stakeholder meeting was to introduce the revised monitoring program, discuss the gap analysis, and present the plan for Implementation Plan (IP) scenario development.

3 MEETING LOCATION

Building: District Department of Environment

Conference Room: 612

4 MEETING START

Meeting Actual Start: 10:04 AM

5 AGENDA

Welcome

Jonathan Champion, DDOE, welcomed everyone to the meeting.

- **Introductions:** Everyone stated their name, and the organization they represent.

- **Overview of the Agenda:** Mr. Champion provided an overview of the meeting agenda and the purpose of the meeting.

Presentation (Attachment B – Presentation)

Revised Monitoring Program
Ms. Kat Ridolfi, LimnoTech, provided an introduction and overview of the revised monitoring program. The U.S. Environmental Protection Agency shifted the emphasis of the District's MS4 permit between the last permit (issued 2004) and the updated permit (issued 2011, modified 2012). The focus of the MS4 monitoring included in the 2004 permit was characterization of MS4 discharges. The focus of the MS4 monitoring shifted for the 2011 permit to include: develop trends in water quality, include biological and physical monitoring, evaluate the MS4 program, increase emphasis on watershed scale analyses, and determine the health of the receiving waters.

Mr. Dan Herrema, LimnoTech, stated the revised monitoring program is being developed in tandem with the Implementation Plan to ensure they are coordinated and aligned with each other.

- **Permit Differences - Outfall Monitoring Program 2000-2013:** Under the old permit in force from 2000-2011, there were 8-9 MS4 monitoring sites per basin (i.e., Anacostia, Potomac, Rock Creek). The sites were monitored using a rotating basin approach (i.e., all sites in one basin monitored in one year). Under the interim program (2012-2013) there are 6 sites total (2 per watershed), and each site is monitored every year (no longer a rotating basin approach). The purpose of reducing sites was to streamline DDOE's monitoring efforts while the revised monitoring framework is being developed. In addition to a reduction in sites, the number of parameters required to be sampled was dramatically reduced between the 2000-2011 monitoring period and the interim period (2012-2013).
- **Overview of the MS4 Permit Elements:** Ms. Ridolfi provided an overview of the requirements of the monitoring program under the revised monitoring framework. The two major components are still wet weather monitoring and dry weather screening of outfalls. New components include tracking progress towards meeting waste load allocations (WLAs), incorporating source identification into dry weather screening, evaluating the health of receiving waters, collecting statistically significant and interpretable data, and evaluating the quality of the stormwater program.
    - Dr. Hamid Karimi, DDOE, asked for clarification regarding the permit requirement to evaluate the quality of the stormwater program. Ms. Ridolfi stated that the language from EPA is open to interpretation. The project team proposes fulfilling this requirement by evaluating the whole MS4 program,

including BMPs. Mr. Jeff Seltzer stated that the proposed evaluation will be in the form of a report card for the program to examine if DDOE is putting its resources in the right places.

- **Revised Monitoring Program Approach:** The approach to the meeting the permit requirements to develop a revised monitoring program is to summarize the existing monitoring programs for MS4 and non-MS4 purposes, compare existing programs to the permit requirements, identify the data gaps and program redundancies, and develop a revised monitoring program.
- **Timeline:** The project team has completed the summary of existing programs, which includes interviews with DDOE staff and assessment of other monitoring programs from other agencies in the DC region (e.g. the National Park Service). In July 2014, the project team submitted the Crosswalk Comparison report to DDOE. The report concludes that all major elements of the required monitoring programs are currently in place, but there are some data gaps between the existing monitoring program and what is required under the MS4 permit. For the most part, these gaps can be filled through better coordination of existing monitoring activities. In February/March 2015, the project team will submit a draft Revised Monitoring Program report to DDOE, followed by the draft final report in May 2015. The draft final report will be submitted for public comment and to EPA for approval. Mr. Mike Bolinder, Anacostia Riverkeeper, asked for an explanation of the process for the timing of public comment in the Revised Monitoring Program. Mr. Champion stated that the public comment period would run concurrent to EPA review.
- **Crosswalk Comparison Report:** The crosswalk analysis compares the MS4 permit requirements with existing monitoring programs, identifies needed refinements and redundancies, and provides recommendations. The crosswalk report was submitted to DDOE for review. Once the project team receives DDOE's comments, the report will be made available to the Stakeholder Group. Mr. Champion stated that this Crosswalk Comparison will be posted on the stakeholder website as soon as possible
- **Preliminary Findings:** Ms. Ridolfi provided an overview of the preliminary findings from the Crosswalk Comparison. The major monitoring components are being implemented currently. However, the responsibilities of the monitoring program span multiple divisions within DDOE. There is an opportunity to coordinate monitoring efforts and data management/sharing to maximize efficiency across the program.
- **Areas for Refinement:** Ms. Ridolfi stated that the areas identified for refinement in the crosswalk analysis consist predominantly of new requirements that need to be implemented. The identified areas for refinement of the existing monitoring program are to collect sufficient data to allow statistically significant analysis, evaluate the quality of the stormwater program, monitor for source identification and WLA tracking, evaluate the health of the receiving waters, measure dry weather discharges and provide better documentation of monitoring activities in the stormwater annual reports.
    - Dr. Karimi asked if collecting sufficient data to allow for statistical analysis is related to the quality assurance document that goes with the data. Ms. Ridolfi stated that there are no deficiencies in the current monitoring program. Collecting sufficient data to allow statistical analysis is a new requirement for assessing long-term trends in data. The crosswalk report includes a more detailed discussion on the areas for refinement. Mr. Herrema stated the goal is to leverage what is already being

implemented. The objective is to refine existing activities versus developing something new.

- Karl Berger, MWCOG, asked if it was outside of the scope of this project to look at monitoring programs in Montgomery and Prince George's County, Maryland. Ms. Ridolfi stated that for the purpose of this project, the team focused on outfalls in the District. Anouk Savineau, LimnoTech, stated that the project team does have data that outlines the ambient water quality contributions from Maryland versus the contribution from DC. There are ambient water quality monitoring stations in DC at the boundaries with Maryland.
    - Mr. Bolinder stated that the lack of monitoring in Montgomery and Prince George's County is the reason for pending litigation against the Maryland Department of the Environment over permits for both counties.

- **Key Recommendations:** Ms. Ridolfi provided a brief overview of the key recommendations for improving the revised monitoring program, which included improving coordination and data sharing amongst multiple DDOE divisions, the creation of a DDOE interdepartmental task force on this issue, and evaluating the representativeness of monitoring stations. The complete recommendations will be included in the updated Crosswalk Comparison.

- **Discussion on the Revised Monitoring Program**
    - Dr. Karimi stated that in a year or so DDOE will be discussing a new MS4 permit. EPA was thoughtful about working with DDOE to ensure resources are allocated efficiently and in the right programs to get useful information. Does DDOE need to reallocate resources? The concern is the monitoring data is not user-friendly to help citizens understand the return on investment in stormwater programs.
        - Ms. Ridolfi stated that the Revised Monitoring Program can be tailored based on the information to meet DDOE's goals. For example, if allocation of resources is important, the project team can develop a monitoring program that provides that information.
    - Mr. Bolinder asked for an explanation of the difference between illicit discharge detection and elimination (IDDE) screening and monitoring the outfalls during dry weather.
        - Ms. Ridolfi stated the IDDE screening monitors all the outfalls in the District every 3 to 5 years and the analysis is qualitative in nature—for example, is there flow or not. The dry weather outfall monitoring occurs at the same locations as the current wet weather outfall monitoring, except in dry weather, and also analyzes the samples for a very large range of pollutants including organics, metals, and conventional pollutants. If there is dry weather discharge it may be an illicit discharge, but it could also come from other sources like residential car wash run off, groundwater infiltration, or the discharge could be an older piped stream. Mr. Bolinder stated that he would not want to see DDOE lose the opportunity to have enforcement.

Gap Analysis

- At the June 26, 2014 Stakeholder meeting, Ms. Savineau provided a detailed overview of the IP Modeling Tool. There was a brief introduction of the gap analysis. The

presentation at the August 7 Stakeholder meeting provided more details on the gap analysis.

- **Overview of the Gap analysis**: The "gap" is the difference between the WLAs and the current conditions with best management practices (BMPs). The gap will be addressed by the IP.
- **Matrix:** Ms. Savineau stated that the team has created a matrix for each of the WLAs. Based on the current findings, there are many gaps. There are 385 annual, 9 seasonal, and 22 daily WLAs. Each individual gap will be documented in the baseline report. It will be available to the Stakeholders by late August/early September 2014.
- **Results**:
  - One way of looking at the gap analysis in aggregate (i.e., rather than discussing all 385 gaps in this meeting) is to look at percent reduction in pollutant load needed from existing load to meet WLAs, rather than looking at absolute pounds of load reduction needed. This shows the magnitude of work that needs to be done to meet the WLAs.
  - Current results show:
    - 43 WLAs have been achieved and are in compliance
    - 142 WLAs (about a third of all WLAs) require greater than 90% load reduction
    - Some WLAs may be eliminated in the future as TMDLs are re-visited, but as of now there are targets so the IP plan will address them
  - **Discussion:**
    - Dr. Karimi asked if the project team looked at the possibility that the baseline was categorized incorrectly. Ms. Savineau stated the team looked at the event mean concentrations (EMCs) and monitoring data over the last 20 years. Based on these data, the project team developed new EMCs. In some cases there were big differences between the older data and the current data, which lead to differences in pollutant loads.
    - Dr. Karimi stated that he wants to make sure to characterize things as accurately as possible. If some of those assumptions are questionable, DDOE would like to go back to look at them. Tim Schmitt, LimnoTech, stated that the WLAs are determined by the water quality modeling and are not directly related to the baseline conditions. Therefore, re-evaluating baseline conditions will not impact meeting WLAs.
    - Meredith Upchurch, DDOT, asked how this project relates to the monitoring being done by TetraTech.
      - Mr. Champion stated that the monitoring by TetraTech is a separate process that is being funded by EPA and DDOE. They are collecting data to confirm impairments in a number of waterbodies and, where necessary develop daily loads for TMDLs. This may result in changes to existing TMDLs in the future.

- **Percent Load Reductions:** Ms. Savineau passed out a graphic that shows WLAs by waterbody (see Attachment C). The left side of the table is all waterbodies that have total maximum daily loads (TMDLs) and on the bottom are the pollutants that have WLAs. If there is no box, then it means there is no WLA. Ms. Savineau highlighted some findings from the table. For example:
    - Three-ring polycyclic aromatic hydrocarbons (PAHs) require over 90% reduction across all waterbodies where there are PAH WLAs.
    - Lower Beaver Creek is shown as meeting WLAs. This is due to correcting the drainage delineation for Lower Beaver Creek from the original TMDL, which shifted the load to an adjacent watershed. Although the load is now lower in Lower Beaverdam Creek, it is now correspondingly higher in the adjacent watershed, because mass (and pollutant load) is conserved in the model.
    - In Rock Creek there are examples where the TMDLs for tributaries are included in the waterbody. For example, the fecal coliform WLAs for the mainstem include the tributaries.
    - **Discussion:**
        - Mr. Berger asked if the WLAs for the Chesapeake Bay include inside and outside of DC. Ms. Savineau stated that even though the delineation is for MD and DC, the project team is using the specific WLA for DC.
- **Gap Analysis Example:** Ms. Savineau provided some examples of the gap analysis. The current load is based on the IP Modeling Tool. The tables will be included in the Comprehensive Baseline Analysis Report. All the numbers will be available for the stakeholders to review. Examples of the gap:
    - Upper Potomac (POTTF_DC)
        - For Total Nitrogen (TN) the gap needed to meet the WLAs is 87,900 lbs/year or 69% load reduction.
        - For Total Suspended Solids (TSS), the gap shows compliance with the WLAs
        - DDOE will have to implement BMPs to reduce TN, which will also reduce TSS. Showing compliance for one pollutant does not mean there will not be implementation or additional load reductions in that waterbody in the future, because all waterbodies have more than one pollutant in them.

- **Summary:** The project team used the consolidated approach for modeling the baseline conditions and the gap between the current conditions with BMPs and the WLAs. The draft Comprehensive Baseline Analysis Report is on the project website. Stakeholders should submit any feedback on the draft report by August 15th. The report will be updated based on feedback from DDOE and any feedback from the stakeholders. The update will also include the gap analysis. A revised report will be submitted to DDOE by the end of the month.

Scenario Modeling

- Ms. Savineau provided an introduction to the scenario modeling. The purpose of the scenario modeling is to develop different scenarios to reduce the gap, and see the

impact on load reductions. The project team will use the IP Modeling Tool to run variations of each scenario, such as increasing funding to speed up the rate of implementation of stormwater programs.

- **Example Scenarios:** The project team will evaluate development/redevelopment projects forecasted by the DC Office of Planning, Department of General Services (DGS), and DDOT; BMPs/green infrastructure (GI) implementation, and projects identified in existing Watershed Improvement Plans (WIPs). Existing BMP implementation from the DDOE's Riversmart program, DGS, and DDOT will be reviewed.
- **Discussion:**
    - Ms. Becky Hammer, NRDC, asked how implementation of offsite stormwater retention through the credit trading program would be included in the development/redevelopment forecasting. Ms. Savineau stated that the project team is assuming that all stormwater retention is happening onsite. Mr. Seltzer stated that DDOE is committed to tracking all trades, however, currently, DDOE is seeing people attempting to retain stormwater onsite.
    - Ms. Veronica O. Davis, Nspiregreen, stated the MS4 area is very residential (zoned as R1/R2/R4). The development being forecasted for the MS4 area are the larger projects such as St. Elizabeth's, Walter Reed, and properties owned by DC Housing Authority like Barry Farm. The city either owns the land and/or is providing funding so there is the opportunity to perhaps do more stormwater retention on those sites.
    - Ms. Savineau stated the project team is talking with agencies to understand their master plans and inclusion of BMPs/GI implementation.
    - Mr. Berger asked if implementation of green roofs would be included as a BMPs/GI implementation. Ms. Savineau affirmed they would be included as BMPs/GI implementation.
    - Ms. Upchurch asked which BMPs could help with reducing the unconventional pollutant loads like the organics. Ms. Savineau stated that for some BMPs, the project team will calculate the runoff they reduce through infiltration, and apply an EMC to that runoff to obtain the corresponding pollutant load reduction. Mr. Champion stated the project team did research on partitioning coefficients to model capture of non-traditional pollutants (e.g., toxics).
    - Ms. Hammer asked for clarification for what happens after the scenario analysis. Ms. Savineau stated the IP Modeling Tool would provide the results of each scenario. Mr. Champion stated the IP Modeling Tool will assist with prioritizing programs for the IP.
    - Ms. Hammer stated that she is impressed with the modeling. She asked if the scope of this project includes going out in the field to identify specific places where there are opportunities for implementation. Mr. Champion stated the projections themselves would allow DDOE to identify areas for targeted direct investment and implementation. Mr. Seltzer stated that the IP would provide information on how much DDOE needs to invest within the watershed. At some point, DDOE would need to go out in the field to identify opportunities. Ms. Upchurch stated that DDOT is working with DDOE to do some pre-analysis in defined areas to do BMPs/GI projects.
    - Mr. Bolinder how the retrofits identified in the Anacostia Watershed Restoration Partnership (AWRP) are included in the scenario modeling. Mr. Schmitt stated they are part of the WIPs that have been reviewed for the project.

- Mr. Bolinder stated there are do-gooders in DC that want to implement GI like rain gardens in the community. He asked if the information from the IP will be distilled to help the general public identify locations were they could invest their own money. Mr. Seltzer stated that DDOE will develop a preliminary design portfolio. As people are looking for credits, there will be a menu of 30% design ready projects.
- Ms. Upchurch stated this process should identify the high priority areas.

Next Steps/Timeline

- August: the project team will submit the updated Comprehensive Baseline Analysis Report with gap analysis and continue data collection for scenario development.
- September/October: The stakeholder meeting will focus on scenarios and preliminary results from the scenarios.
- November/December: The project team will refine scenarios and develop the draft IP document.
- Early 2015: The project team will submit a Draft Implementation Plan and Draft Revised Monitoring Program to DDOE.

6 POST MEETING ACTION ITEMS

Action	Assigned To	Deadline
Send the meeting minutes, presentation, and list of attendees out to participants	Chancee` Lundy	August 18th
Update the project website	Chancee' Lundy	August 18th

7 DECISIONS MADE

- None

8 NEXT MEETING

Next Meeting: September/October 2014

9 MEETING END

Meeting End: 11:45 AM

10 ATTACHMENTS

- A – Sign-in Sheet
- B – Presentation with Agenda
- C – Pollutant WLA by Water Segment Handout

ROOM 612 AUG 7, 2014

CONSOLIDATED TMDL STAKEHOLDERS MEETING

NAME	ORGANIZATION	E-mail.
Jonathan Champion	DDOE	jonathan.champion@dc.gov
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Tim Schmitt	LimnoTech	tschmitt@limno.com
Dan Herrema	LimnoTech	—
MIKE BOLINDER	Anacostia Riverkeeper	Riverkeeper@anacostiariverkeeper.org
Becky Hammer	NRDC	rhammer@nrdc.org

- Kaitlyn Bendik and Hye Yeong Kwon joined via phone -

Monitoring, Gap Analysis, and Scenario Development

District Consolidated TMDL Implementation Plan and Monitoring Program

August 7th, 2014

DISTRICT DEPARTMENT OF THE ENVIRONMENT

GOVERNMENT OF THE DISTRICT OF COLUMBIA

PURPOSE OF MEETING

- Introduction to revised monitoring program
- Discussion of gap analysis
- Presentation of IP scenario development

REVISED MONITORING PROGRAM

DISTRICT DEPARTMENT OF THE ENVIRONMENT

GOVERNMENT OF THE DISTRICT OF COLUMBIA

MS4 Permit: EPA's Shift in Emphasis

2004 MS4 permit

- Focus on discharge characterization

2011 permit (Revised Monitoring Program)

- Develop trends in water quality
- Include biological and physical monitoring
- Evaluate MS4 program
- Increase emphasis on watershed scale analyses
- Determine the 'health of the receiving waters'

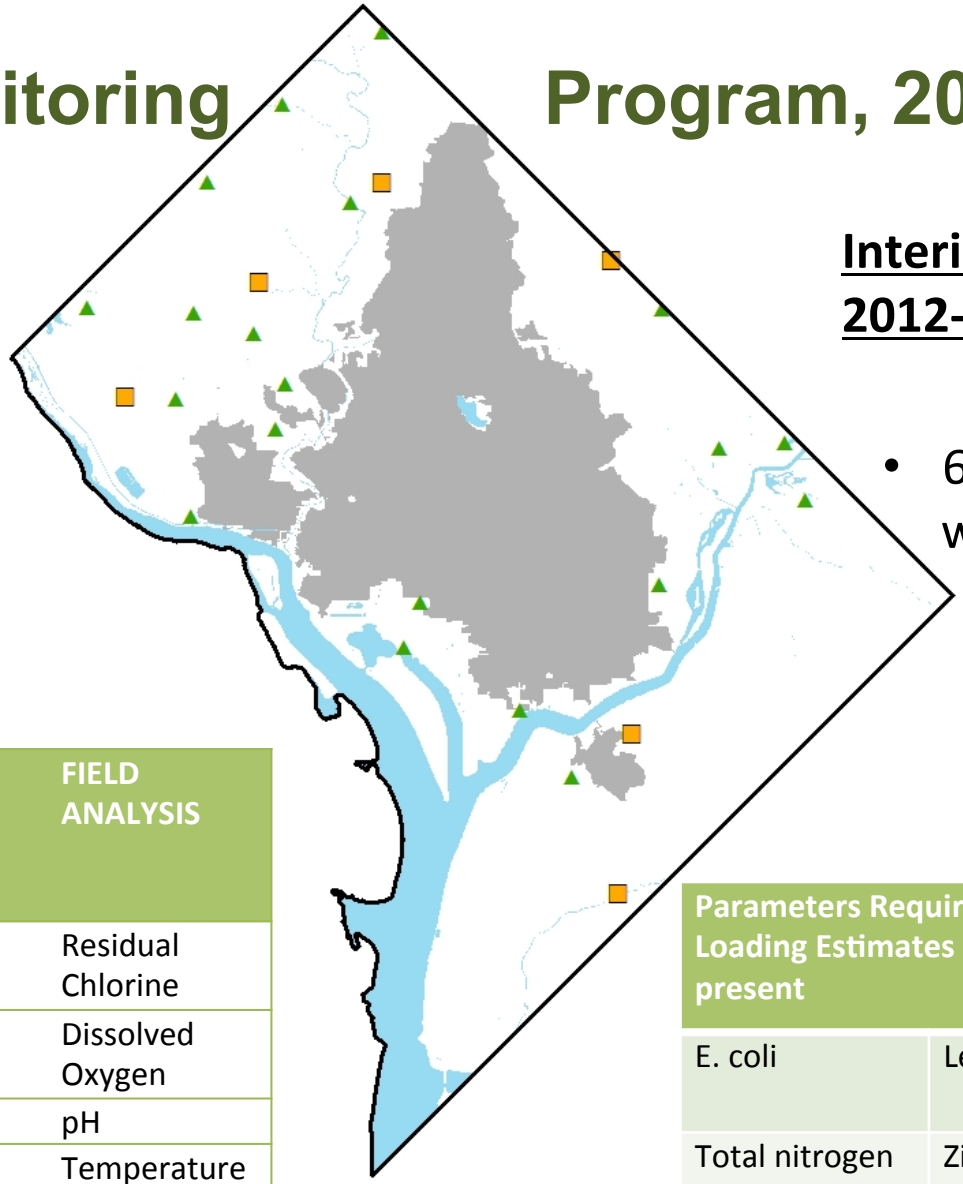
Outfall Monitoring Program, 2000-2013

Old Permits, 2000-2011

- Rotating basins, 8-9 sites per watershed
- Wide range of parameters analyzed

Interim Program 2012-2013

- 6 sites, 2 per watershed
  - Reduced parameter list



Note: For 2000-2011 MS4 monitoring included the Interim and other sites.

GRAB SAMPLES	COMPOSITE SAMPLES	FIELD ANALYSIS
VOCs	SVOCs	Residual Chlorine
Cyanide	Pesticides and PCBs	Dissolved Oxygen
Total Phenols	Metals	pH
Oil & Grease	Nutrients	Temperature
Fecal Coliform	BOD5, Chlorophyll a	Flow
Fecal Streptococcus	TSS, TDS, Hardness, TOC	
E-Coli	Dioxin	

Parameters Required to be Assessed for Loading Estimates During Wet Weather, 2012-present		
E. coli	Lead	Total Suspended Solids
Total nitrogen	Zinc	Cadmium
Total phosphorus	Trash	Copper

Overview of the MS4 Permit Elements

- Monitor at outfalls during wet weather
  - Track progress towards meeting WLAs
- Conduct dry weather screening
  - Source identification
- Evaluate health of receiving waters
  - Include biological and geomorphic monitoring indicators
- Collect data that are "statistically significant and interpretable" for long-term trend determinations
- Evaluate the quality of the stormwater program

DISTRICT DEPARTMENT OF THE ENVIRONMENT

GOVERNMENT OF THE DISTRICT OF COLUMBIA

Revised Monitoring Program Approach

Summarize existing monitoring programs (MS4 and non-MS4)

- Review documentation
- Interview DDOE staff

Compare to permit requirements

Identify data gaps and program redundancies

Develop Revised Monitoring Program

Revised Monitoring Program Timeline

November
MS4 Permit modification establishing 30 month deadline

March
Needs and requirements and existing monitoring program summary

Feb/March
Draft Revised Monitoring Program to DDOE

2012 | 2013 | 2014 | 2015

October
Begin process to develop Revised Monitoring Program

July
Crosswalk between existing monitoring and required/needed monitoring

May
Revised Monitoring Program to EPA for approval and public comment

Crosswalk Objectives

- Compare MS4 permit requirements with:
  - Existing MS4 monitoring programs
  - Non-MS4 monitoring programs
- Identify needed refinements
- Identify redundancies
- Provide recommendations

Preliminary Findings

Major monitoring components in place

- Responsibilities span multiple divisions

Ample opportunity to coordinate monitoring efforts to maximize efficiency

Need for data management/sharing among programs

Areas for Refinement

- Collect data that is “statistically significant and interpretable” to detect trends
- Evaluate “Quality of the stormwater program”
- Monitor for source identification and WLA tracking
- Assess WQ exceedance and receiving water impairments
- Measure dry weather discharges and environmental impact
- Provide additional documentation in Stormwater Annual Report

Key Recommendations

- Develop/revise program objectives
- Develop data sharing and management plan
- Identify opportunities for internal coordination
  - Interdepartmental Task Force
- Coordinate monitoring program with TMDL IP
  - modify wet weather monitoring protocols
- Re-evaluate dry weather outfall monitoring
- Evaluate current MS4 monitoring locations for representativeness

Next Steps

Work with DDOE staff to follow up on Crosswalk findings

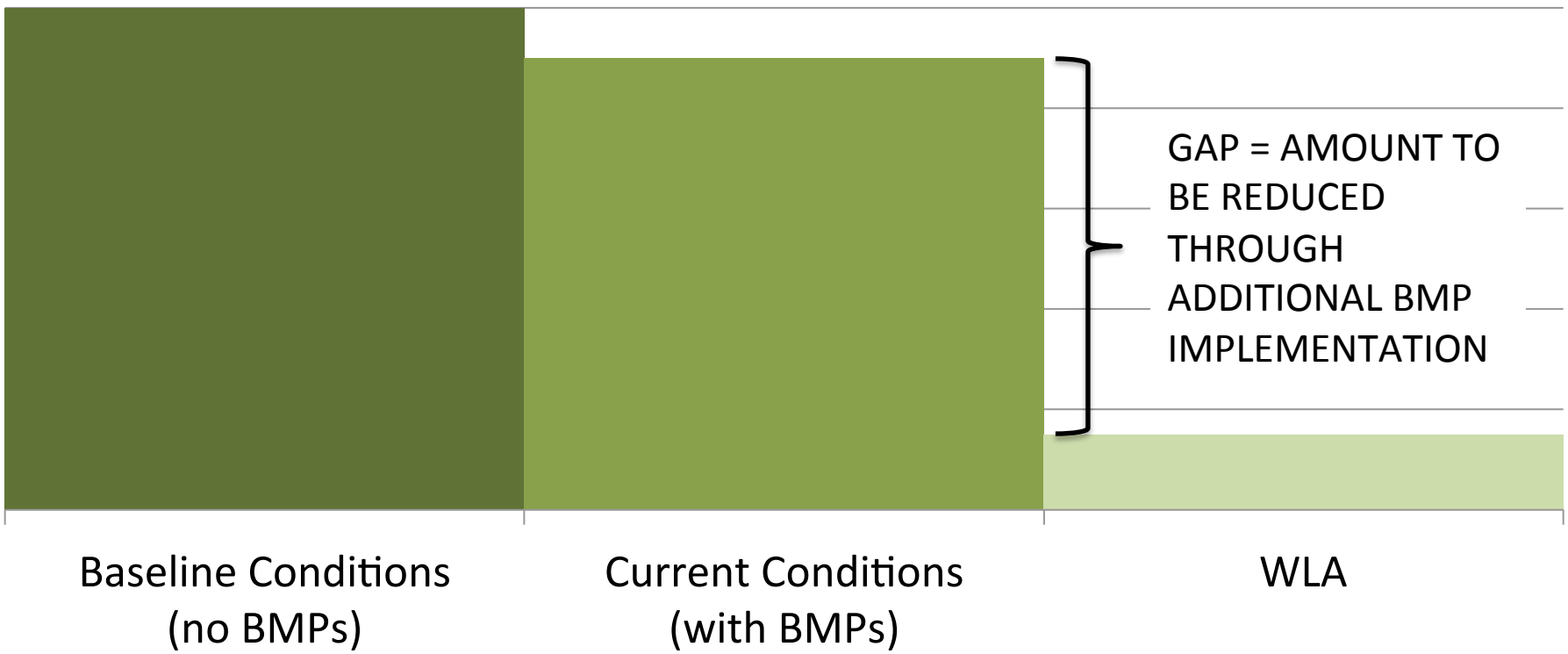
Develop draft Revised Monitoring Program

Solicit stakeholder input

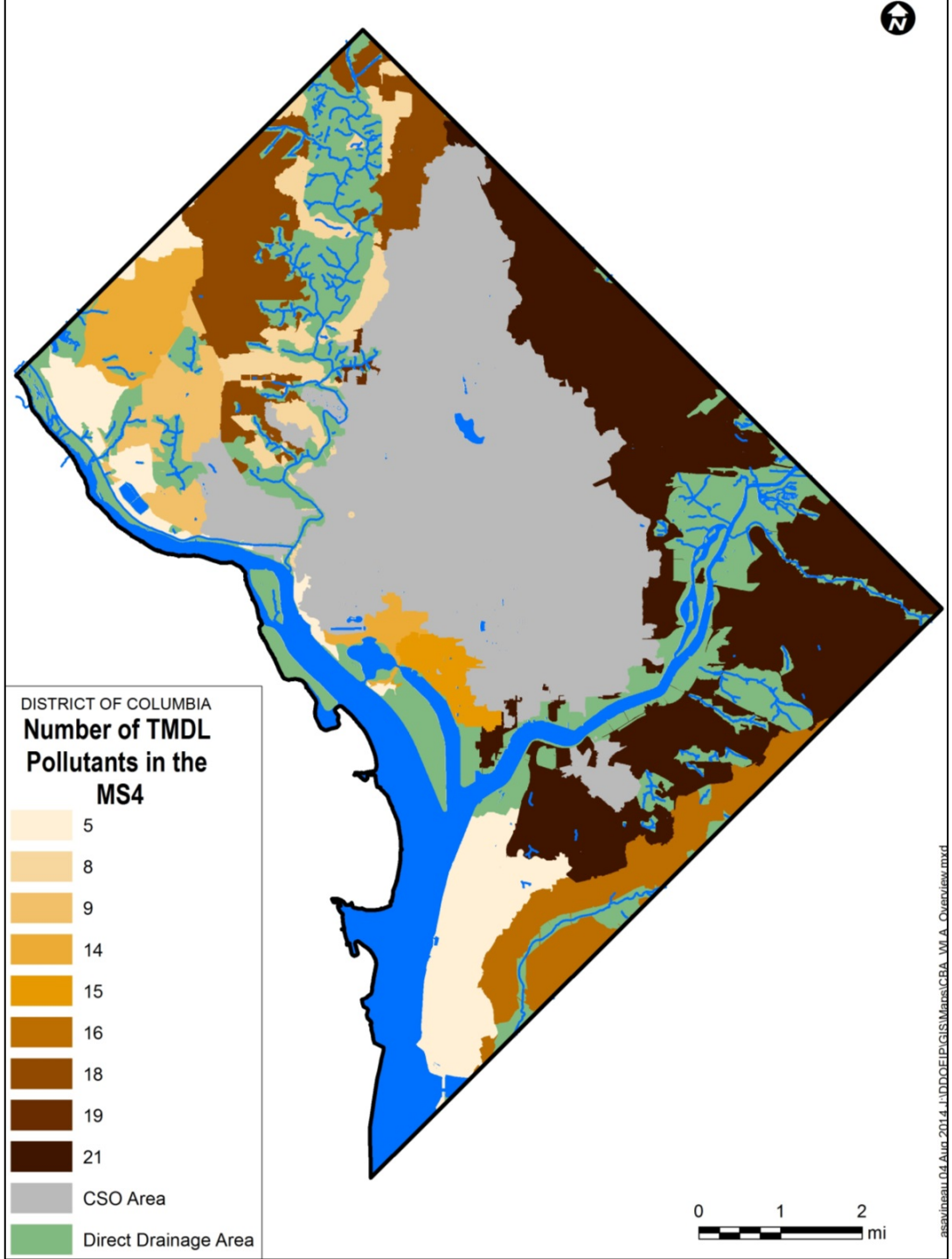
GAP ANALYSIS

Overview of the Gap Analysis

Gap = Modeled Current Load – Original TMDL WLA



Some Context:



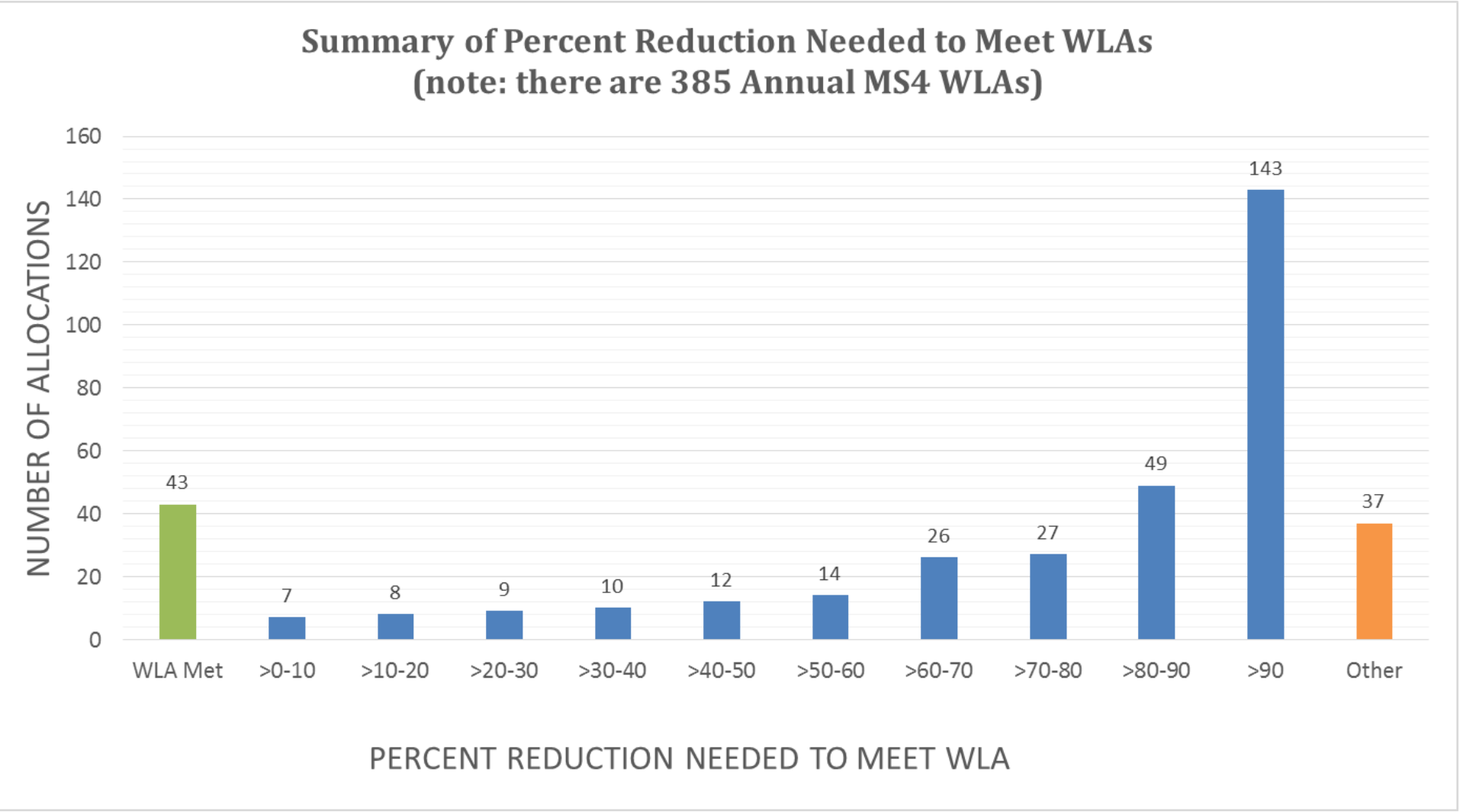
There are many gaps!

- 385 Annual WLAs
- 9 Seasonal WLAs
- 22 Daily WLAs

WATERBODY	Watershed	Number of WLA	SEDIMENT AND NUTRIENTS			BACTERIA	OTHERS			METALS					ORGANICS									PCBs
			TSS	TN	TP	Fecal Coliform Bacteria	BOD	Oil and Grease	Trash	Arsenic	Copper	Lead	Mercury	Zinc	Chlordane	DDD	DDE	DDT	Dieldrin	Heptachlor Epoxide	PAH1	PAH2	PAH3	TPCB
Anacostia, Lower	ANA	34	5	3	3	1	3	1	2	1	1	1		1	1	1	1	1	1	1	1	1	1	3
Anacostia, Upper	ANA	34	5	3	3	1	3	1	2	1	1	1		1	1	1	1	1	1	1	1	1	1	3
ANATF_DC	ANA	3	1	1	1																			
ANATF_MD	ANA	3	1	1	1																			
Fort Chaplin	ANA	5				1				1	1	1		1										
Fort Davis	ANA	5				1				1	1	1		1										
Fort Dupont	ANA	5				1				1	1	1		1										
Fort Stanton	ANA	15				1				1	1	1		1	1	1	1	1	1	1	1	1	1	1
Hickey Run	ANA	11				1										1	1	1	1	1	1	1	1	1
Kingman Lake	ANA	18	1			1	1			1	1	1			1	1	1	1	1	1	1	1	1	1
Lower Beaverdam Creek	ANA	6	3	1	1		1																	
Northwest Boundary	ANA	5	2	1	1		1																	
Nash Run	ANA	15				1				1	1	1		1	1	1	1	1	1	1	1	1	1	1
Popes Branch	ANA	15				1					1	1		1		1	1	1	1	1	1	1	1	1
Texas Ave. Tributary	ANA	15				1					1	1				1	1	1	1	1	1	1	1	1
Watts Branch	ANA	7	3	1	1		1																	1
Watts Branch, Lower	ANA	12	2			1									1	1	1	1	1	1	1	1	1	
Watts Branch, Upper	ANA	12	2			1									1	1	1	1	1	1	1	1	1	
Upper Potomac	POT	3																						2
Middle Potomac	POT	3				1																		2
Lower Potomac	POT	3				1																		2
POTTF_DC	POT	3	1	1	1																			
POTTF_MD	POT	3	1	1	1																			
Battery Kemble Creek	POT	5				1				1	1	1		1										
Dalecarlia Tributary	POT	11				1									1	1	1	1	1	1	1	1	1	1
Foundry Branch	POT	5				1				1	1	1		1										
Oxon Run	POT	14				1				1	1	1		1	1			1	1	1	1	1	1	2
Tidal Basin	POT	11				1									1	1	1	1	1	1	1	1	1	1
Washington Ship Channel	POT	12				1									1	1	1	1	1	1	1	1	1	2
Upper Rock Creek	RC	5				1					1	1	1	1										
Lower Rock Creek	RC	5				1					1	1	1	1										
Broad Branch	RC	10													1	1	1	1	1	1	1	1	1	1
C&O Canal	RC	1				1																		
Dumbarton Oaks	RC	10													1	1	1	1	1	1	1	1	1	1
Fenwick Branch	RC	10													1	1	1	1	1	1	1	1	1	1
Klingle Valley	RC	10													1	1	1	1	1	1	1	1	1	1
Luzon Branch	RC	10													1	1	1	1	1	1	1	1	1	1
Melvin Hazen	RC	10													1	1	1	1	1	1	1	1	1	1
Normanstone Creek	RC	10													1	1	1	1	1	1	1	1	1	1
Pinehurst Branch	RC	10													1	1	1	1	1	1	1	1	1	1
Piney Branch	RC	14								1	1	1		1	1	1	1	1	1	1	1	1	1	1
Portal Branch	RC	10													1	1	1	1	1	1	1	1	1	1
Soapstone Creek	RC	10													1	1	1	1	1	1	1	1	1	1

Gap Results

- Each individual gap will be documented in the baseline report
  - Available on website at end of August
- In the interest of time (and our sanity), focus will be on "big picture" overview of results


Summary of Percent Reduction Needed to Meet WLAs
(note: there are 385 Annual MS4 WLAs)
NUMBER OF ALLOCATIONS
160
140
120
100
80
60
40
20
0
43
7
8
9
10
12
14
26
27
49
143
37
WLA Met
>0-10
>10-20
>20-30
>30-40
>40-50
>50-60
>60-70
>70-80
>80-90
>90
Other
PERCENT REDUCTION NEEDED TO MEET WLA

WLAs that have been met

- Spans all pollutant categories
- Occurs across three watersheds
- Compliance with WLA occurs because:
  - Updated EMC values
  - Different areas
  - Different runoff methodology
  - Baseline never exceeded WLA in first place

WLAs Requiring >90% Load Reduction

142 WLAs require reductions in excess of 90%:

- 110 WLAs for organics
- 17 WLAs for fecal coliform bacteria
- 8 WLAs for metals
- 7 WLAs for conventional pollutants

Other WLAs

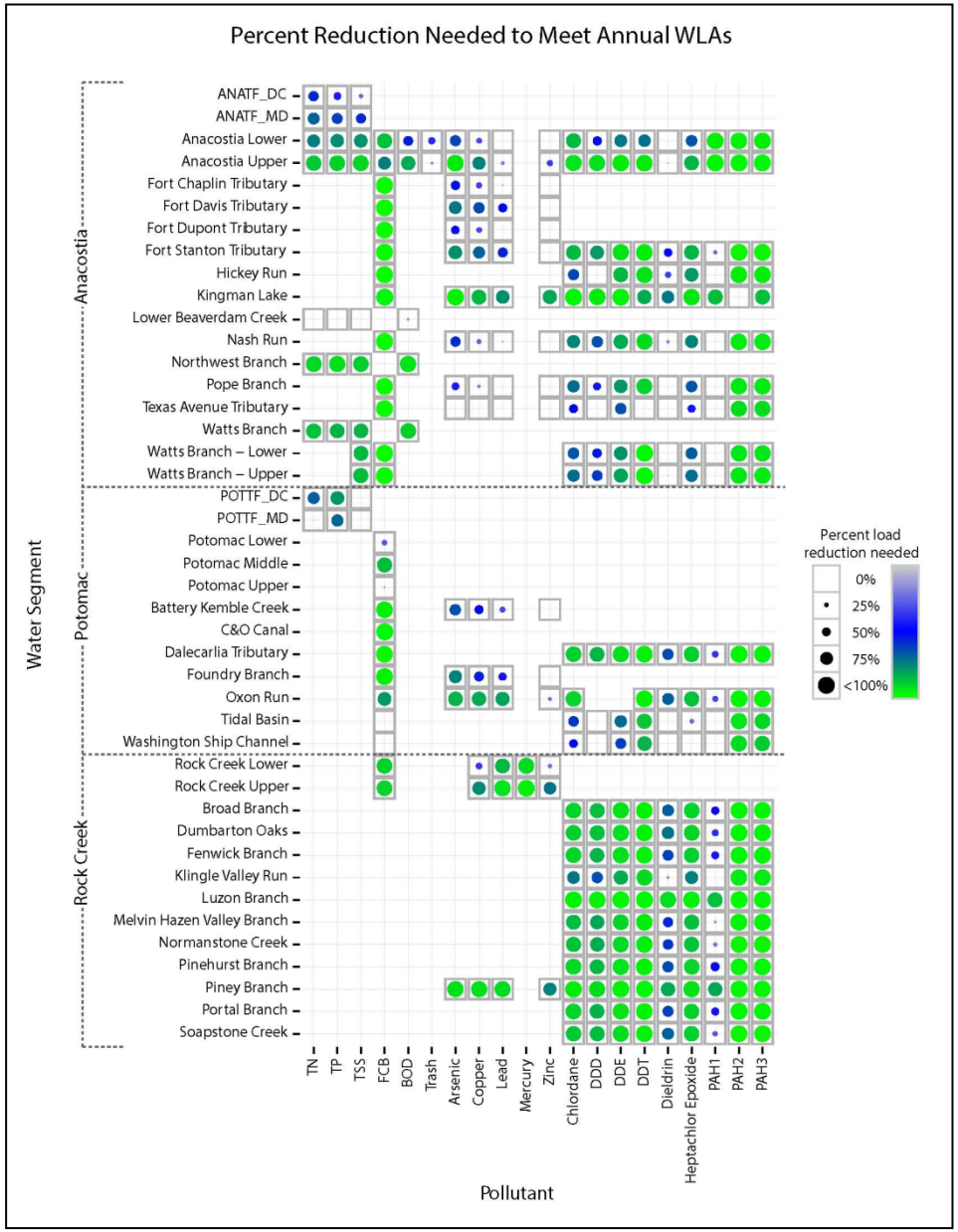
Implementation requires source control

- PCB WLAs

TMDLs updated by 2007/2008 Anacostia River Basin TMDLs

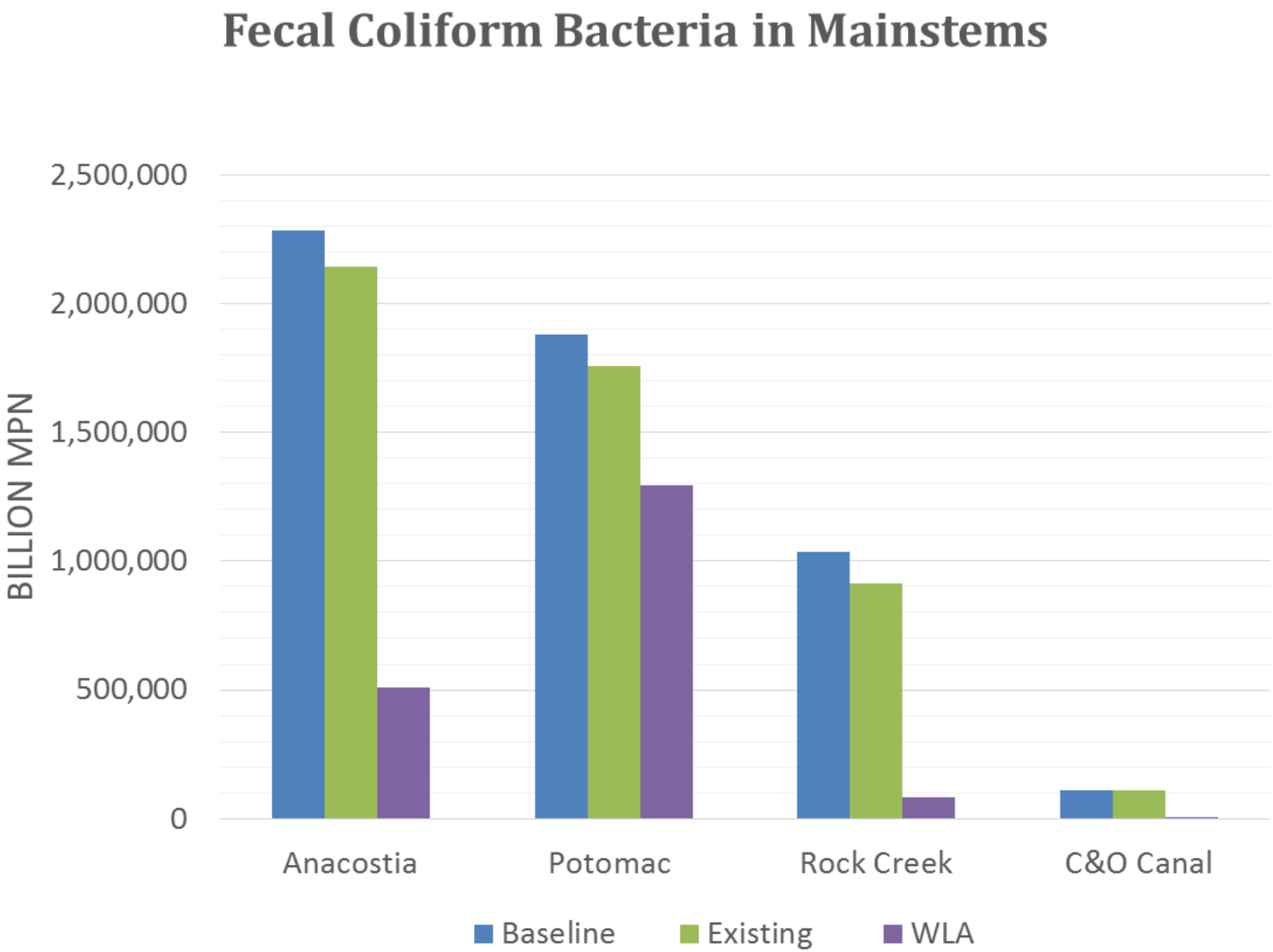
- Original Anacostia TMDL for BOD (2001) (includes TN and TP)
- Original Anacostia TMDL for TSS (2002)

Percent Load Reduction Needed to Meet Annual WLA



Gap Analysis – Example

Water Body	Pollutant	Current Load (lbs/ yr or MPN/ yr)	WLA (lbs/ yr or MPN/ yr)	Gap (lbs/ yr or MPN/ yr)	% Load Reduction Needed
POTTF_DC	TN	127,300	39,400	87,900	69%
POTTF_DC	TSS	1,967,900	3,843,800	0	0%
Upper Rock Creek	Pb	198	10	188	95%
Upper Anacostia	FC Bacteria	1,885,100	467,000	1,418,100	75%


Fecal Coliform Bacteria in Mainstems
BILLION MPN
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
Anacostia
Potomac
Rock Creek
C&O Canal
Baseline
Existing
WLA

Gap Analysis Summary

- Used consolidated modeling approach with consistent set of inputs based on best available data
- Determined baseline and gap using consolidated model
- Details are in the report

Status of Gap Analysis

Wrapping up analysis in August

Revising Draft Comprehensive Baseline Report

- Integrating DDOE feedback

If you have feedback, please provide by August 15th

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SCENARIO MODELING

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Scenario Modeling

- Evaluate storm water management scenarios that will close the gap
- Assess each scenario independently to isolate its impact on load reductions
- Run variations of each scenario (higher/lower level of implementation or cost)
- Forecast scenarios into five year planning periods

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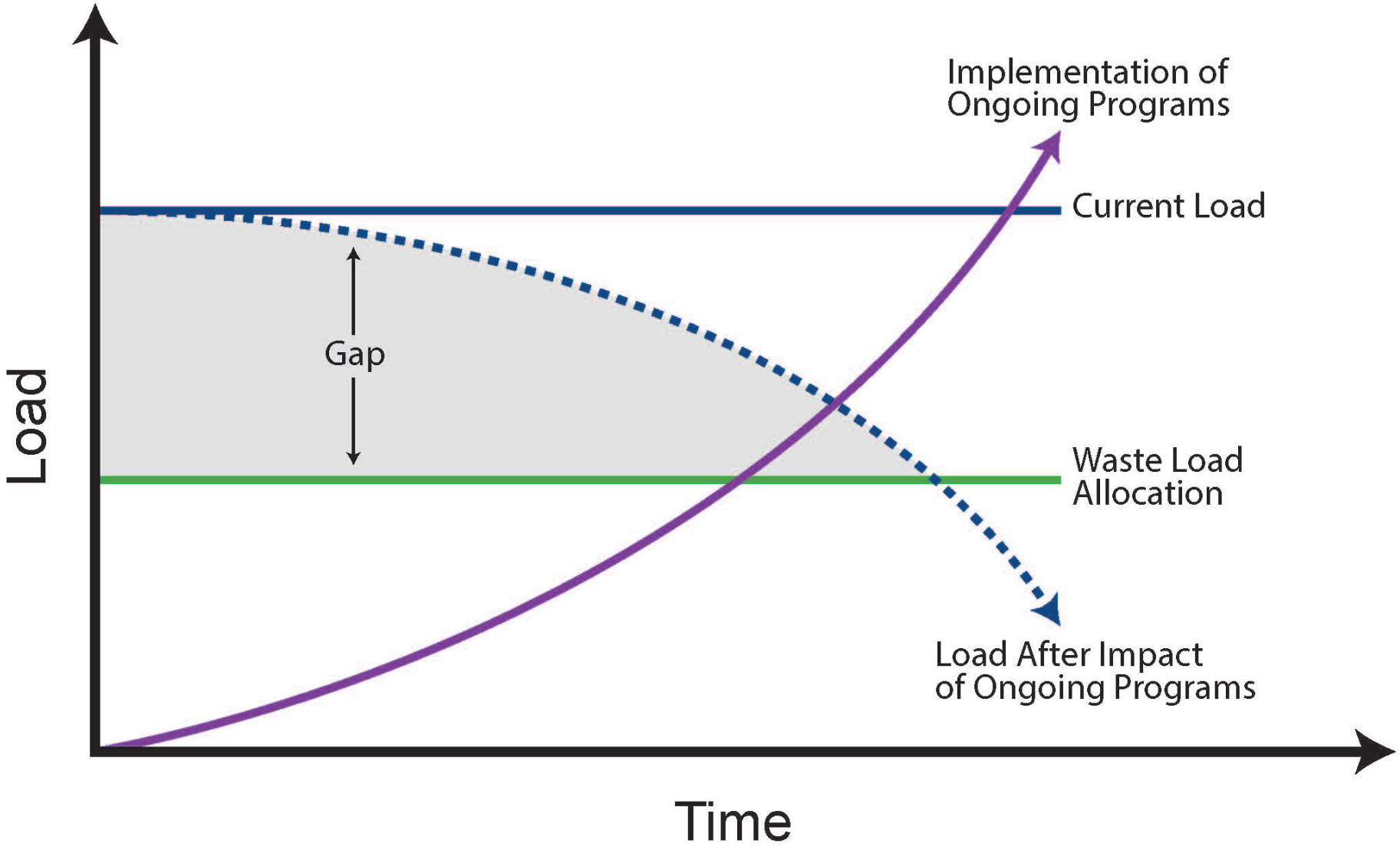
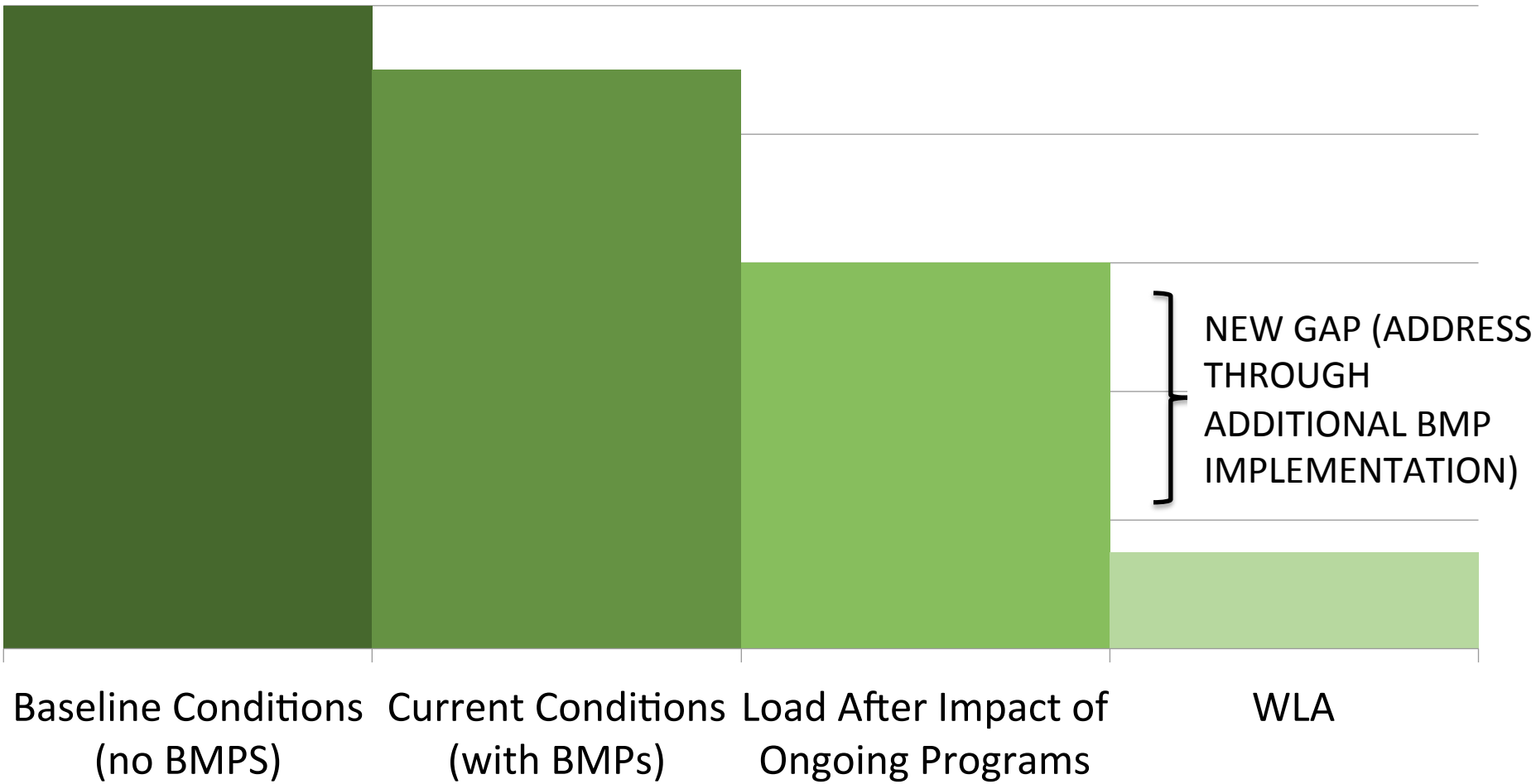
Example Scenarios

Scenario Name	Scenario Explanation	Variations
Development and redevelopment projections	Forecast of new development and redevelopment projects that will trigger the SW regs. Projections based mainly on OP projections but also getting info from GSA, DDOT, and others.	• "Average" projected buildout • Higher projection • Lower projection
Continue current level of BMP/GI implementation	Projections for BMP/GI implementation from DDOT, GSA, DGS, DDOE, and other agencies.	• Current level of BMP/GI implementation • Advanced level of BMP/GI implementation
Projects identified in existing WIPs	Proposed activities under existing WIPs.	• Different levels of commitment/funding


Implementation of
Ongoing Programs
Current Load
Gap
Waste Load
Allocation
Load After Impact
of Ongoing Programs
Load
Time

Application of Scenarios to Recalculate the Gap



NEXT STEPS

Upcoming Deliverables and Timing

August

- Comprehensive Baseline Report with Gap Analysis
- Data collection for scenario development

September-October

- Data collection (continued)
- Initial scenario model runs
- Draft scenario analysis report
- Revised Monitoring Program design

November-December

- Refine scenarios and model runs
- Final scenario analysis report
- Revised Monitoring Program design

Early 2015

- Draft Implementation Plan
- Draft Revised Monitoring Program

Questions/ Comments?

Percent Reduction Needed to Meet Annual WLAs