Road to Resiliency: Integrated Stormwater Management Planning and Funding

Prabha Kumar, Director
Brian Merritt, Manager
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Agenda

I. Stormwater Utility Concept & Trends
II. Stormwater Utility Feasibility & Implementation Overview
III. Stormwater Stakeholder Engagement
IV. Wrap-Up
PART I – STORMWATER UTILITY CONCEPT & TRENDS
Part I - Discussion

Definition of the Concept
Goals & Drivers
Major Benefits
Common Perceptions
Industry Trends
What is a Stormwater Utility?

- Holistic Program
- Adequate Organization
- Effective Funding
What Drives Communities to Establish a Stormwater Utility?

Common drivers:

• Flooding
• Water Quality
• Deferred maintenance
• Inadequate capital investment
• Regulatory compliance needs
• Strained resources (personnel, equipment, etc.)

• Unclear responsibilities and service requirements
• Insufficient funding
• Lack of dedicated funding source
• Inequitable cost recovery
Program Goal: Build a Resilient Stormwater Program

**Stormwater Goals**

- Infrastructure and Level of Service
- Community
- Regulatory Compliance

**Objectives**

A stormwater program that:

- Addresses multiple needs
- Balances service demands and available resources
- Provides a targeted level of service
Organizational Goal: Build Service Capacity

Organizational Objectives:

• A clear organizational structure with defined services
• Skilled workforce
• Community partnerships
• Enabling technology
Funding Goal: Establish Adequate and Dedicated Funding

Adequacy:
- Stormwater Funding
- Total Stormwater Program Needs

Equity:
- Customer Class Cost Recovery
- Customer Class Demand Responsibility

Transparency:
- Stormwater Costs Embedded in Other Utilities
  - Water Budget → (Water Charges)
  - Sewer Budget → (Sewer Charges)
  - Streets or Transportation Budget → (Taxes)
Benefits of a Holistic Stormwater Utility Concept

Transparency & Understanding of Program Costs
- Level of Service Assessment
- Regulatory Compliance
- Capital Program
- Green / Community Initiatives

Defensible Policies
- Revenue Requirements
- Cost Recovery Basis
- Accounting Practices
- Billing & Collections

Address both Utility Obligations & Customer Needs
- Funding Resiliency
- Flooding & Water Quality
- Public Health & Safety
- Neighborhood & Economic Enhancements
- Community Based Partnerships (CBP3s)

Sustainable & Dedicated Funding
- Revenue Stability
- Scalable Funding Structure
- Equitable Cost Recovery
- Incentivizes Best Management Practices
Let’s Look at Some Common Perceptions about Stormwater User Fee

➢ “Every time it rains – we’re going to get billed.”  ❌

➢ “Tax-Exempt properties don’t have to pay stormwater fees.”  ❌

➢ “Stormwater user fee is a fee for service similar to water and sewer charges.”  ✔

➢ “I have stormwater management on my property – I shouldn’t have to pay.”  ❌

➢ “A stormwater utility will address all of our flooding.”  ❌

➢ “We already pay for all of our stormwater costs through stormwater permit fees.”  ❌
Let’s Clear the Myth: Stormwater “User Fee” is NOT a “Rain Tax”

Services Provided

Annual Costs Incurred

Key Tests of a User Fee

- Fee is assessed to address a regulatory purpose?
- Fee is in exchange for benefits received by the general public?
- Fee has reduction opportunities?
- Fee is a fair approximation of costs incurred in providing services?

Services Received

Costs Recovered through User Fees
Stormwater Utility Trends
The Context – Western Kentucky Survey

Source: Western Kentucky University Survey - 2018
The Context

• We conduct a biennial survey of stormwater utilities in the United States
  • Our focus: Municipalities that have implemented a stormwater user fee funding mechanism

• Share key findings and trends from our 2018 Stormwater Survey

27 Years Since We Launched Our First Survey!
The Survey Spans Six Focus Areas

1. Organization & Operations
2. Planning
3. Finance & Accounting
4. Stormwater Rate Structure & Billing
5. Stormwater Credits & Incentives
6. Public Information / Education
Planning: Investment Priorities

INVESTMENT PRIORITIES

<table>
<thead>
<tr>
<th>Priority</th>
<th>Score</th>
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<tbody>
<tr>
<td>Stormwater Conveyance and Drainage Capacity</td>
<td>4.3</td>
</tr>
<tr>
<td>Flood Control</td>
<td>4.3</td>
</tr>
<tr>
<td>Regulatory Compliance (MS4 and/or CSO LTCP)</td>
<td>4.1</td>
</tr>
<tr>
<td>Safety and Reliability</td>
<td>4.1</td>
</tr>
<tr>
<td>Critical Emergency Resilience</td>
<td>3.5</td>
</tr>
<tr>
<td>Waterways/Habitat Restoration</td>
<td>3.4</td>
</tr>
<tr>
<td>Green Infrastructure Initiatives</td>
<td>2.8</td>
</tr>
</tbody>
</table>

89% Separate Storm Sewer System

11% Mix of Combined Sewer and Separate Storm Sewer Systems
0% Combined Sewer System Only
Funding: Key Highlights

Funding Gap has increased over time

- 2002: 61% of the participants indicated funding adequacy
- 2018: Only 45% of the participants indicated funding adequacy

Median Annual Residential Fee = $65.00
Median Monthly Residential Fee = $5.48
### Rate Structure: Fee Basis

**Impervious Area** is increasingly becoming the prevalent basis for stormwater fees.

<table>
<thead>
<tr>
<th>Year</th>
<th>Impervious Area</th>
<th>Gross Area</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>92%</td>
<td>18%</td>
<td>3%</td>
</tr>
<tr>
<td>2016</td>
<td>77%</td>
<td>33%</td>
<td>0%</td>
</tr>
<tr>
<td>2014</td>
<td>79%</td>
<td>37%</td>
<td>3%</td>
</tr>
</tbody>
</table>
Part 1 - Q&A
Part II - Discussion

Roadmap to Integrated Planning and Stormwater Utility Development

Stormwater Utility Framework

Program Needs Review

Segment A: Utility Organization & Policies

Utility Funding

Segment B: Billing Mechanisms Evaluation

Credits and Incentives

Implementation Tasks
Potential Roadmap to Integrated Planning and Stormwater Utility Development

A phased approach supports successful execution

Benefit:
Adequate resources;
Phased budgeting;
Effective outreach

Phase 1
Feasibility/Planning

Major Tasks:
1. Program Definition
2. Financial Planning
3. Rate Structure Definition

Phase 2
Implementation

Major Tasks:
1. Enabling Ordinances
2. Business Process Development
3. Billing & Integration
4. Staff Training
5. Customer Notifications

Go-Live

Major Tasks:
1. Bill Issuance
2. Customer Service
### Key Components in Stormwater User Fee Development

- Program and Costs
- Stormwater Legislation & Policies
- Financial Plan & Rate Structure
- Parcel Data Management & Billing Mechanism
- Customer Credits & Incentives Program
- Stakeholder Engagement
Segment 1

Program Needs Review

Utility Organization & Policies

Utility Funding
Program Needs Review: Systems Types

(Examples: Newark; Perth Amboy; Gloucester)

Combined Sewer System

Downspout Runoff

Surface Runoff

Sewage and stormwater

Wier

CSO Outfall

Flows to Wastewater Treatment Plant

(Examples: New Brunswick; Princeton)

Separate Sewer Systems

Downspout Runoff

Surface Runoff

Stormwater

Sewage

Flows to Wastewater Treatment Plant

Source: Philadelphia Water Department Advisory Committee Meeting Presentation
Program Needs Review
Stormwater Program Components

1 System Operations
   • Routine O&M
     o Inspections
     o Cleaning
     o Minor Repairs
   • Customer Complaint Response

2 Compliance Requirements
   • Public Education
   • Illicit Discharge Detection & Elimination (IDDE)
   • Development Related
   • Tracking/Reporting
   • Water quality monitoring

3 System Planning
   • Asset Inventory
   • Modeling
   • Asset Management

4 Capital Improvements
   • Flood Mitigation
   • Rehab & Replacement
   • CSO / Inflow & Infiltration Abatement
   • Green Infrastructure
Program Needs Review

Cost Estimation & Defensible Cost Delineation

Program Needs Assessment
(Combined Sewer, Storm Sewer, Separate Sanitary, Green Initiatives)

- WASTEWATER SYSTEM COSTS (O&M and Capital)
- SEPARATE STORM SYSTEM COSTS (MS4) (O&M and Capital)

- SANITARY SEWER COSTS
- STORMWATER COSTS
Organizational Aspects

1. Organizational Roles & Responsibilities
   - New Department?
   - Separate utility/authority?
   - Re-organization or consolidation?
   - Delineation of Responsibilities

2. Jurisdictional Issues
   - Asset ownership
   - Service area
   - Service delivery and compliance authority

3. Utility Policies
   - Program, Funding, and Administration Policies & Procedures

4. Resources
   - Technology systems
   - Staffing resources & skill sets

5. Legislation & Charter
   - Enabling legislation & charter
   - Stormwater & Rate Ordinances
Organizational capacity influences level of service

**Public Works**
All stormwater responsibilities reside within this department; no water or sewer responsibilities
- Example: New London, CT

**Utilities**
Stormwater responsibilities are an integral part of water, sewer, and stormwater functions
- Example: Newark, NJ; Philadelphia Water Department, PA; Wilmington, DE

**Shared**
Stormwater responsibilities are shared among multiple entities
- Example: Pittsburgh Water and Sewer Authority and City of Pittsburgh; DC Water & District of Columbia
User Fee Funding: Three Key Steps

1. Annual Stormwater Revenue Requirements

2. Impervious Area Units (Billable Units)

3. Stormwater User Fee Rate ($ / Billable Unit)
1. Projection of Annual Revenue Requirements

*What should be included?*

- Annual O&M costs
- Annual existing and future debt service
- Annual cash financing of capital
- Annual O&M reserve requirements
- Annual mandatory transfers, if any

**Task Output:** Multi-year Financial Plan
Fee Basis: Impervious Area

What is impervious area?

Surfaces that restrict stormwater from absorbing into the ground – leading to runoff & pollution.

Examples:

Building, driveways, patios, asphalt and paved surfaces, and other graveled, graded, compacted surfaces, etc.
How Can We Determine Impervious Area (IA)?

Combination of approaches can be used

• Determine using the footprint of buildings, other structures, and hardscaped areas
  • Data Source: County Tax Assessment Data

• Measure impervious area through digitization
  • Data Source: Aerial Imagery; Spatial Technology Tools

• Estimate IA using the runoff factor approach
  • Data Source: Tax Assessment Data; Industry Accepted Runoff Factors

Source: Black & Veatch 2018 Stormwater Utility Survey
Factors to Consider in Developing Impervious Area (IA)

- **Data Availability**
  - Planimetric data
  - Aerial / infra-red imagery
  - Tax Assessment Data
  - Spatial Data

- **Data Reliability & Development Cost**
  - Ease of compilation
  - Accuracy & Consistency of data
  - Cost of developing the IA data

- **Ongoing Data Management**
  - Parcel data updates
  - Ease of generating billing units
# System-wide Stormwater Rate

<table>
<thead>
<tr>
<th>Basis of Fee</th>
<th>Water Usage</th>
<th>Impervious Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit of Measure</td>
<td>100 Cubic Feet (CCF)</td>
<td>500 Square Feet of IA</td>
</tr>
<tr>
<td></td>
<td>1,000 Gallons</td>
<td>ERU: Equivalent Residential Unit</td>
</tr>
<tr>
<td>Rate Structure</td>
<td>Rates by customer classes</td>
<td>Rates by customer classes</td>
</tr>
<tr>
<td></td>
<td>Tiered Rates</td>
<td>Tiered Rates</td>
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</table>

**Enables Equitable Cost Recovery**

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<table>
<thead>
<tr>
<th>Impervious Area (Sq. Ft.)</th>
<th>ERUs</th>
<th>Quarterly Fee</th>
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<tbody>
<tr>
<td>0 to 799</td>
<td>1.00</td>
<td>$8.14</td>
</tr>
<tr>
<td>800 to 1,299</td>
<td>1.45</td>
<td>$11.80</td>
</tr>
<tr>
<td>1,300 to 2,399</td>
<td>2.48</td>
<td>$20.19</td>
</tr>
<tr>
<td>2,400 and over</td>
<td>4.40</td>
<td>$35.82</td>
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User Fee Funding: The Basic Equation

1. Annual Stormwater Revenue Requirements

   Annual Need = $960,000
   Monthly Need = $80,000

2. Impervious Area Units (Billable Units)

   IA = 10,000,000 sf
   Billable Units = 20,000 (10,000,000 / 500)

3. Stormwater User Fee Rate ($ / Billable Unit)

   $4.00 per 500 sf per month
Part 2 (Segment 1) - Q&A
Segment 2

Billing Mechanism Evaluation

Credits & Incentives

Implementation Tasks
Billing Mechanisms Evaluation

<table>
<thead>
<tr>
<th>THREE PRIMARY OPTIONS</th>
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<tbody>
<tr>
<td>ISSUE A STANDALONE SW BILL</td>
</tr>
<tr>
<td>ADD TO EXISTING UTILITY BILL</td>
</tr>
<tr>
<td>ADD TO PROPERTY TAX BILL</td>
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Decisions on selecting a Billing Mechanism involves the following considerations:

- Ability to easily leverage existing billing/cashiering administration processes
- Ease of Collections and Delinquency Enforcement
- Cost/Benefit of Billing Software (modification programming versus new software)
- Ease of ongoing Billing System/Interface Management
Credits & Incentives

**Stormwater Credits**

**Ongoing fee reduction provided to the customer**

- Demand reduction through onsite stormwater management
- Utility’s cost reduction by other entities performing certain stormwater related activities

**Stormwater Incentives**

**One-time monetary assistance**

- Grants / loans
- Design / engineering / consulting assistance
- Resource sharing
Benefits of a Credit Program

**Economic benefits**
- Provides a mechanism for offering economic incentives to reduce charge
  - Enables a reasonable nexus between impact reduction and reduction in charge
  - Facilitates “buy-in” for the stormwater charge concept

**Environmental benefits**
- Fosters eco-friendly green initiatives
- Promotes sustainable land use / development
- Enhances aesthetic appeal
- Encourages BMP Retrofits
Key Implementation Tasks

- Credit & Appeals Program Design
- Billing Database Development and Integration
- Business Process Workflows
- Public Notifications & Education Info
- Operations & Credit Manuals & Customer FAQs
- Staff Training & Customer Service
- Go-Live Plan
Part 2 (Segment 2) - Q&A
PART III – STORMWATER STAKEHOLDER ENGAGEMENT
Part III - Discussion

Benefits of Stakeholder Engagement
Decision and Approval Process
Role of Stormwater Stewards
The Outreach Balancing Act
Consistent Messaging
Why is Stakeholder Engagement Process a Vital Component?

- Build A Shared Vision
- Define Program & Level of Service
- Opportunity for Input
- Fosters Credibility & Trust in the Process

Collaboration
Inclusion

Engage
Empower
Educate
Buy-In
Effective

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Stormwater Utility Journey: Decisions and Approvals

**Pre-Study Phase Decisions**

- Feasibility Study Needed?
- What is an affordable study cost & scope of?
- What resources/expertise do we need and procure for the feasibility study?
- What should be the study timeline?

**Feasibility Study Phase Decisions**

- Is the user fee viable?
- Approve the stormwater rate ordinance & effective date?
- What resources/expertise do we need and procure for implementation management?
- What should be the implementation timeline?

**Implementation Phase Decisions**

- Billing Approach
- Composition of the Implementation Task Team
- Timing of public outreach & notifications
- Fail-safe launch strategies
Pre-Study Phase Engagement

Who are the typical Stakeholders?

Utility/ Municipal Managers

Stakeholders

Community Leaders

Administration & Elected Officials

Some Key Goals for the Stormwater Stewards

i. Learn about the community needs

ii. Learn the facts about User Fee Funding Concept

iii. Examine how other communities have addressed needs & funding

iv. Understand what guidance resources are available

v. Explore opportunities for Multi-community collaboration
Feasibility Phase Engagement

Who are the typical Stakeholders?

- Utility / Municipal Study Task Force
- Stormwater Advisory Committee
- Elected Officials / Decision Makers
- Administration Officials

Key Goals

i. Perform the Due Diligence analysis
ii. Deliberate the findings
iii. Evaluate the pros and cons of alternatives
iv. Develop informed recommendations
v. Decide on “Path forward”
Implementation Phase Engagement

*Who are the typical Stakeholders?*

- The Public (Stormwater Customers)
- SW Advisory Committee & Community Groups
- Implementation Team
- Utility Task Force

**Key Goals**

i. Coordinated execution of tasks
ii. Consistent communication & progress updates
iii. Adequate outreach materials and notifications
iv. Broader community awareness and acceptance
Role of Stormwater Stewards

Pre-Study Phase
- **Understand**: The drivers and risks of inaction
- **Define**: The scope and timeline for a study
- **Support**: Make a Compelling Case for Action & Risks of Inaction

Feasibility Phase
- **Understand**: Study approach and process
- **Collaborate**: To give input into program, policies, strategies
- **Review**: Study findings, cost/benefits
- **Feedback**: SW Mgmt program and funding roadmap
- **Support**: Elected Officials decision

Implementation Phase
- **Understand**: Key Steps in the process
- **Collaborate**: To refine policies & process
- **Communicate**: Help spread information
- **Support**: Champion the cause/benefits
Stakeholder Involvement Challenge

- Premature Conversations
  - Create misperceptions
  - Dissemination of inaccurate or incomplete information
  - Frustration about not having the answers

- Inadequate Communication
  - Create misperceptions
  - Cause skepticism and mistrust about the process
  - Adversely affect ability to understand concerns & potential pitfalls
What are the Consistent Messages for the Community?

Stormwater Management is **NOT** about one property OR one neighborhood

"It is about our entire Community’’

Capital investments are critical to safety and public health

“We pay now or pay a price later”

Deferred Maintenance of the system leads to costly failures

“We are responsible for our Community’s assets”

Stormwater User Fee is **NOT** about just raising money

“It is about equity – each property paying its fair share’’

Other communities have established sustainable funding and program

“We need to collaborate to develop a lasting & reliable solution”
Part 3 - Q&A
PART IV – WRAP-UP
The Road Ahead in New Jersey ..... 

Collaboration among Municipalities/Utilities

- Similar Fee Methodology
- Impervious Area Development
- Sharing of Resources
- Stakeholder Engagement & Public Education
Thank You!

Black & Veatch Management Consulting, LLC

Prabha Kumar
Email: Kumarpn@bv.com
Phone: 302-660-9465

Brian Merritt
Email: merrittbl@bv.com
Phone: 913-458-6720