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"Science. Equity. Resilience. Justice."

Stormwater Funding and Equity

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National Governor's Association meeting of the Delaware River Basin States - April 29, 2021

Summary of My Talk

- Preface
- The Public Message
- Philadelphia Water Stormwater Management
- Discussion: Other Ways States Can Help
  - policies, programs, SRF's, funding, TA, permit flexibility, messaging

Preface

- Parcel-based SW billing
  - Turns rainwater from waste product to commodity
  - Helps keep runoff out of the sewer and the river
    - Promotes reuse, recycle, infiltrate, delay
  - Manages flooding
  - Funding to maintain your pipes and facilities
  - Must keep rates “affordable”

Preface

- Stormwater funding equity ≠ fair and equitable tariffs
- Stormwater utilities are needed almost EVERYWHERE IT RAINS
- Stormwater does not respect political, CSO, MS4 nor “other” boundaries
- Minimizing rainwater entering the sewer system (or stream) is the key
  - CSOs, MS4s, and SSOs

The Public Message

We are adapting Urban Water Policy

to balance our CWA / SDWA goals

with our community needs such as:

environmental justice, resilience and sustainability

Raising our customers' awareness that the rain

is now more than just a nuisance

to be shunted away to the closest river;

it is a major environmental, economic and social

justice responsibility for our cities.

The shifting role of water utilities from resource provision → resource stewardship

This transition will require a greater emphasis on community engagement, industry partnerships and investment decisions that consider the social, economic and environmental costs in an ever-changing environment and climate.

- International Water Association (IWA)

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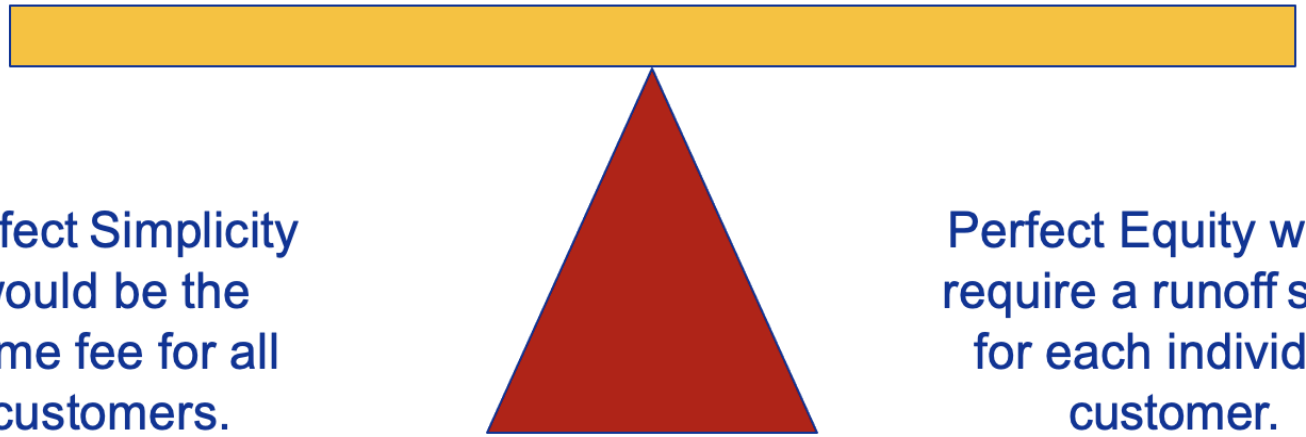
Tradeoffs



Perfect Simplicity would be the same fee for all customers.

Perfect Equity would require a runoff study for each individual customer.

Goal – Reasonable Equity

Ann Casey
CDM Smith, 2017

SW costs have risen significantly over the past seventy years

- 1960's –SW Utility fees are set as a function of meter size.
  - Not a good surrogate, but the best available
  - Considered fair and equitable

- 1980's – SW fee begins to rise.
  - The differential in costs based on meter size becomes substantial.
  - Large water users pay most of the SW fees, irrespective of property size/type.
  - No longer fair and equitable.

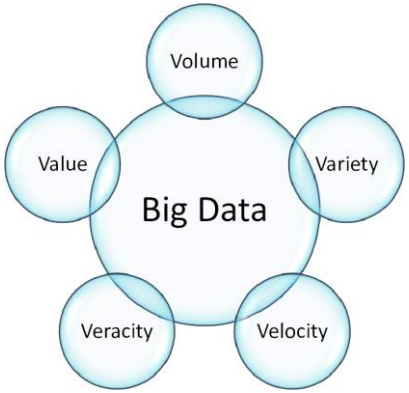
• NO METER	NO FEE
• 5/8 inch meter	$ 9.12
• ¾ inch meter	$ 74.47
• 1 inch meter	$ 124.12
• 1 ½ inch meter	$ 248.24
• 2 inch meter	$ 397.19
• 3 inch meter	$ 744.71
• 4 inch meter	$ 1,241.20
• 6 inch meter	$ 2,482.40
• 8 inch meter	$ 3,971.84
• 10 inch meter	$ 5,709.52
• 12 inch meter	$ 10,674.33

Pre-2010 Stormwater Monthly Fee Charges (based on Meter Size)

1996 Stormwater Fee “Reallocation” Citizen Advisory Council

- Create fair and equitable distribution of SW costs across classes
- Parcel-based SW fee system for non-residential classes
- Flat rate for all residential properties
- Equivalent Dwelling Unit of 2090 sq ft GA and 1060 sq ft IA
- Implemented residential shift in 2002
- Insufficient parcel data to implement non-residential until 2010

City Data that needed to be integrated



Water / Sewer Billing Data Base

County/City Parcel Tax Data (BRT)

Property Deeds (US Land Records)

Orthographic / GIS

Onsite Inspections as needed

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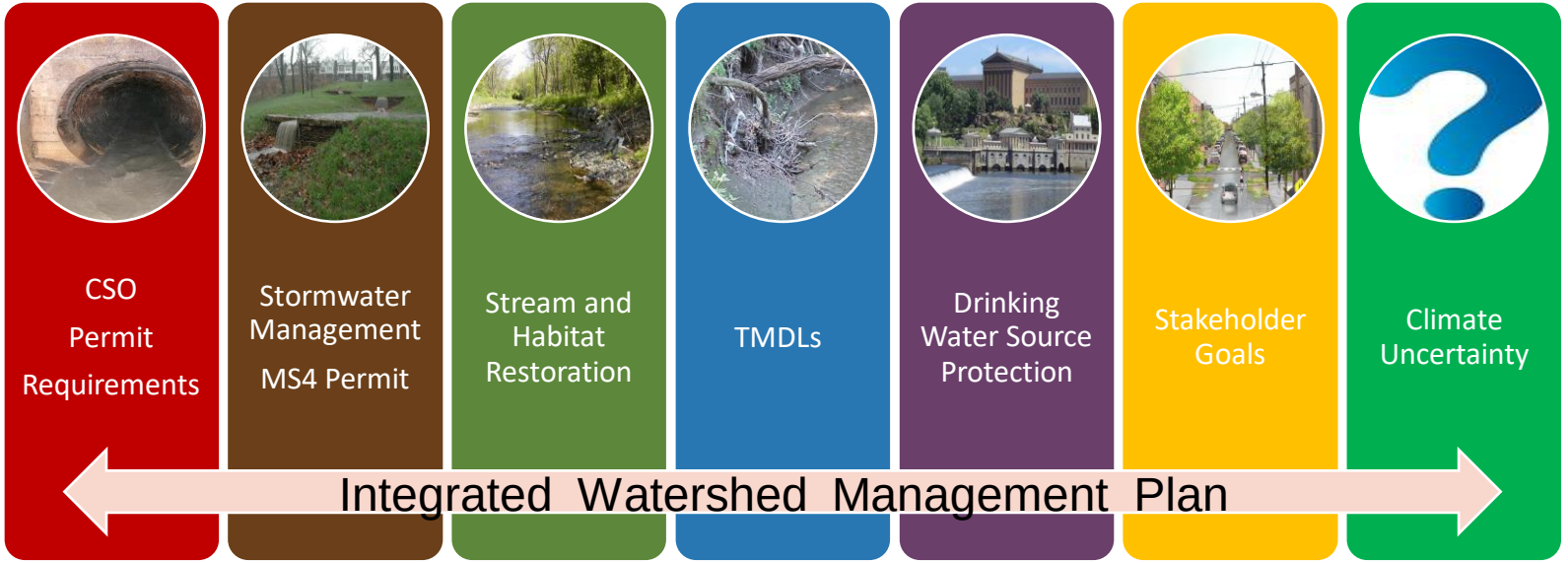
The Office of Watersheds – 1996-1999



Fishable * Swimmable * Drinkable

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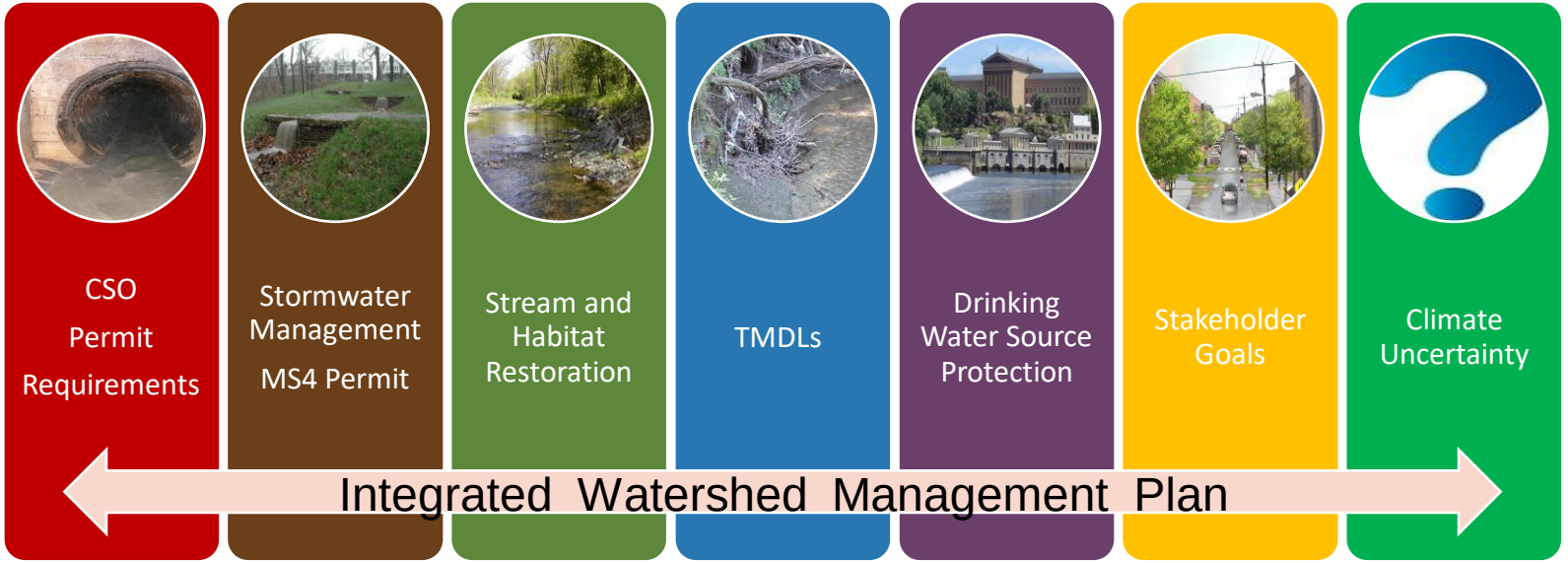
The Office of Watersheds – 1996-1999



Fishable * Swimmable * Drinkable

Safe * Attractive * Accessible * Resilient

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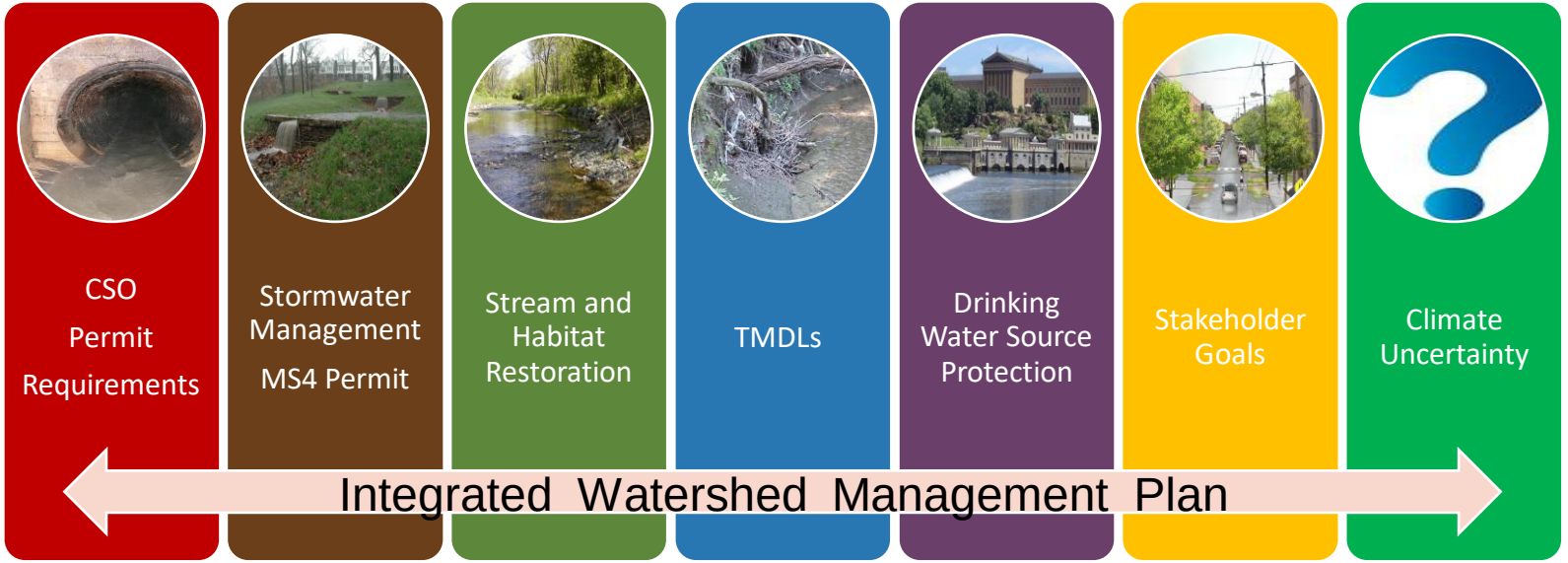
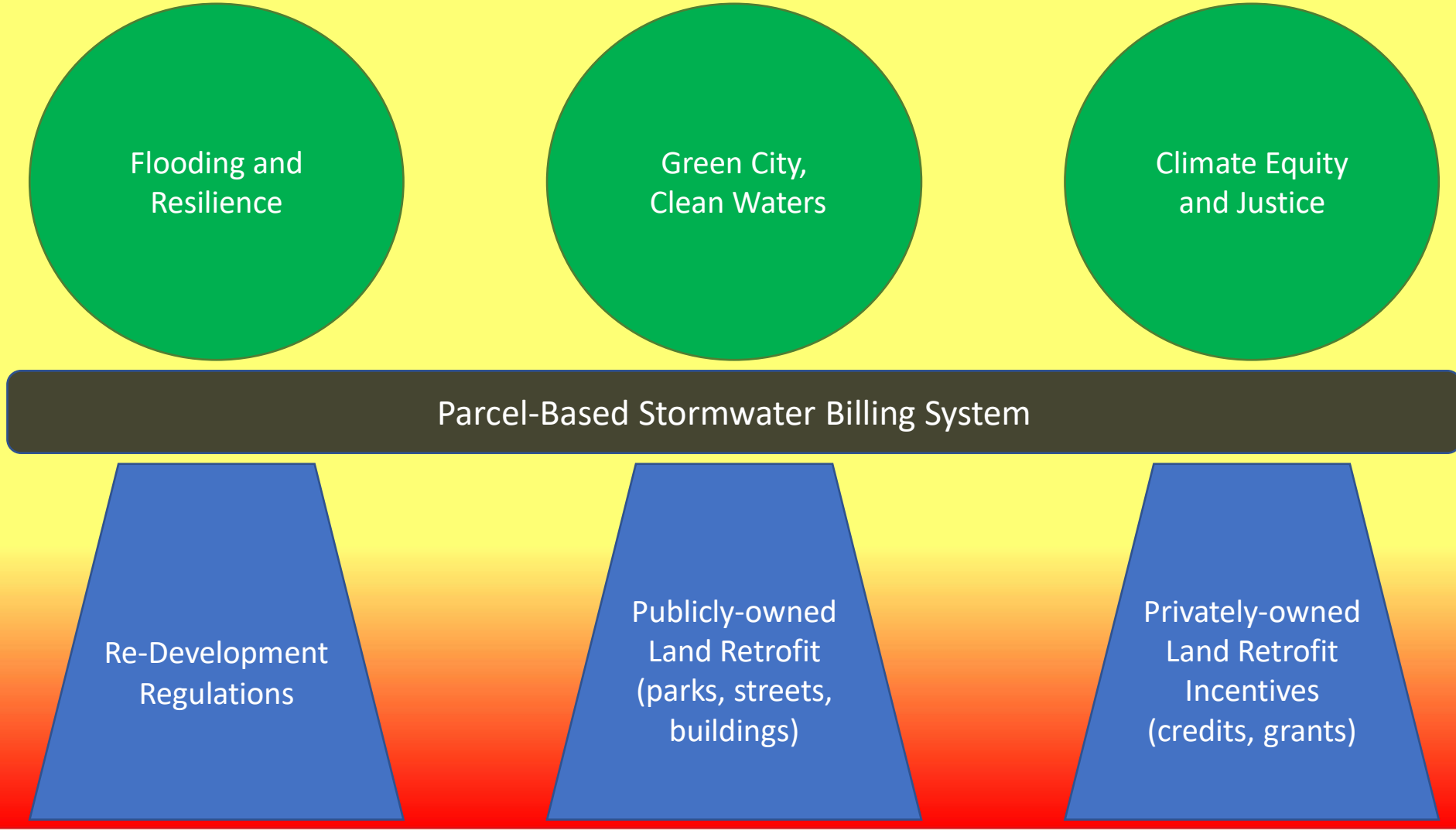


Fishable * Swimmable * Drinkable

Safe * Attractive * Accessible * Resilient

Affordable * Equitable * Sustainable * Just * Inclusive


Flooding and Resilience
Green City, Clean Waters
Climate Equity and Justice
Parcel-Based Stormwater Billing System
Re-Development Regulations
Publicly-owned Land Retrofit (parks, streets, buildings)
Privately-owned Land Retrofit Incentives (credits, grants)

2006 Stormwater (Re)Development Regs

- Manage first 1-inch of rainfall
- Provide Channel Protection and Flood Control
- 2006: 1 square mile of re-development
- = 18 MG of runoff kept out of sewer per 1 inch storm
- 0.4% annual re-development
- 2012: Updated reg to manage first 1 1/2-inch of rainfall
- Expedited review for GSI

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2010 Non-Res, Parcel-Based SW Billing

- Phase in over 4 years
- Shift costs to high impact properties
- Keep Revenue Neutral
- Make Fair and Equitable
- Base on True Cost of Service Calculations
- Employ Credit system to encourage BMP Retrofits

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General Rule of Thumb on Impacted Stakeholders

- Big meters(s) + big land mass = deminimis
- Small meter(s) + big land mass = increase
- Big meter(s) + small land mass = decrease
- Small meter(s) + small land mass = deminimis

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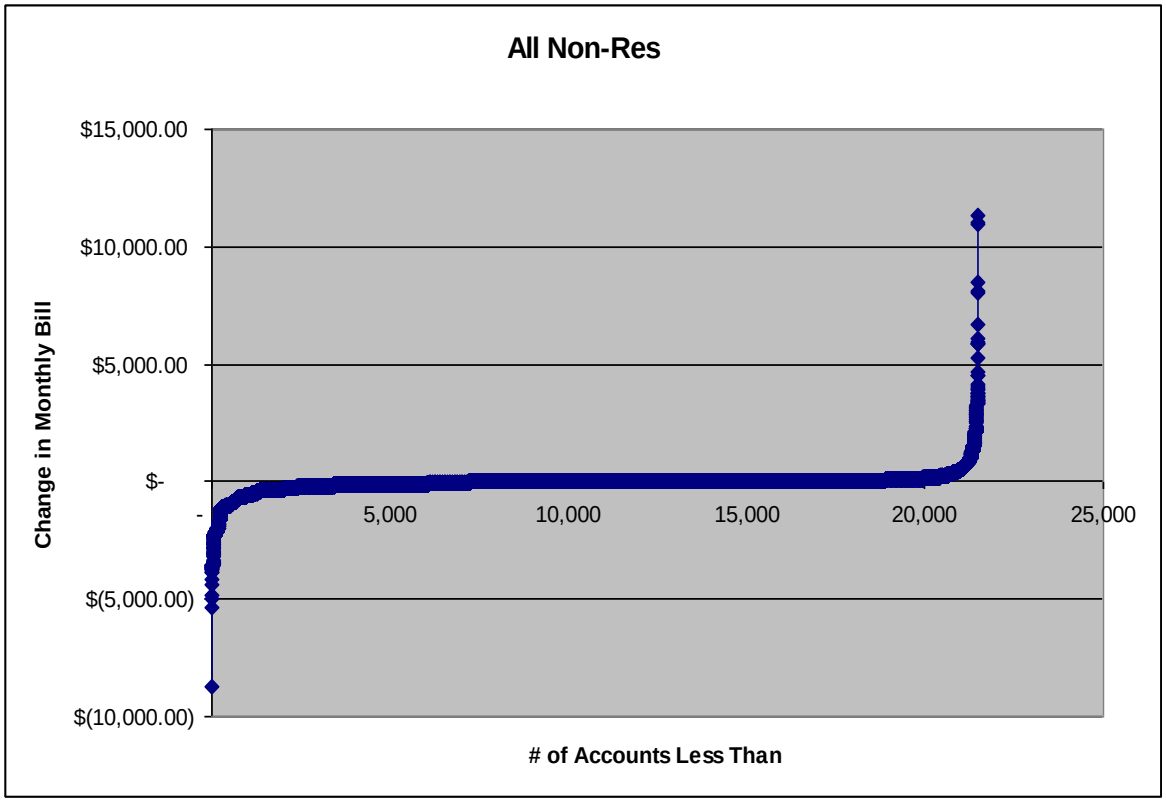

although these changes are – in macro scale - revenue neutral – they are anything but cost-neutral to those customers that are experiencing an increase – sometimes a significant increase - in their stormwater charges.

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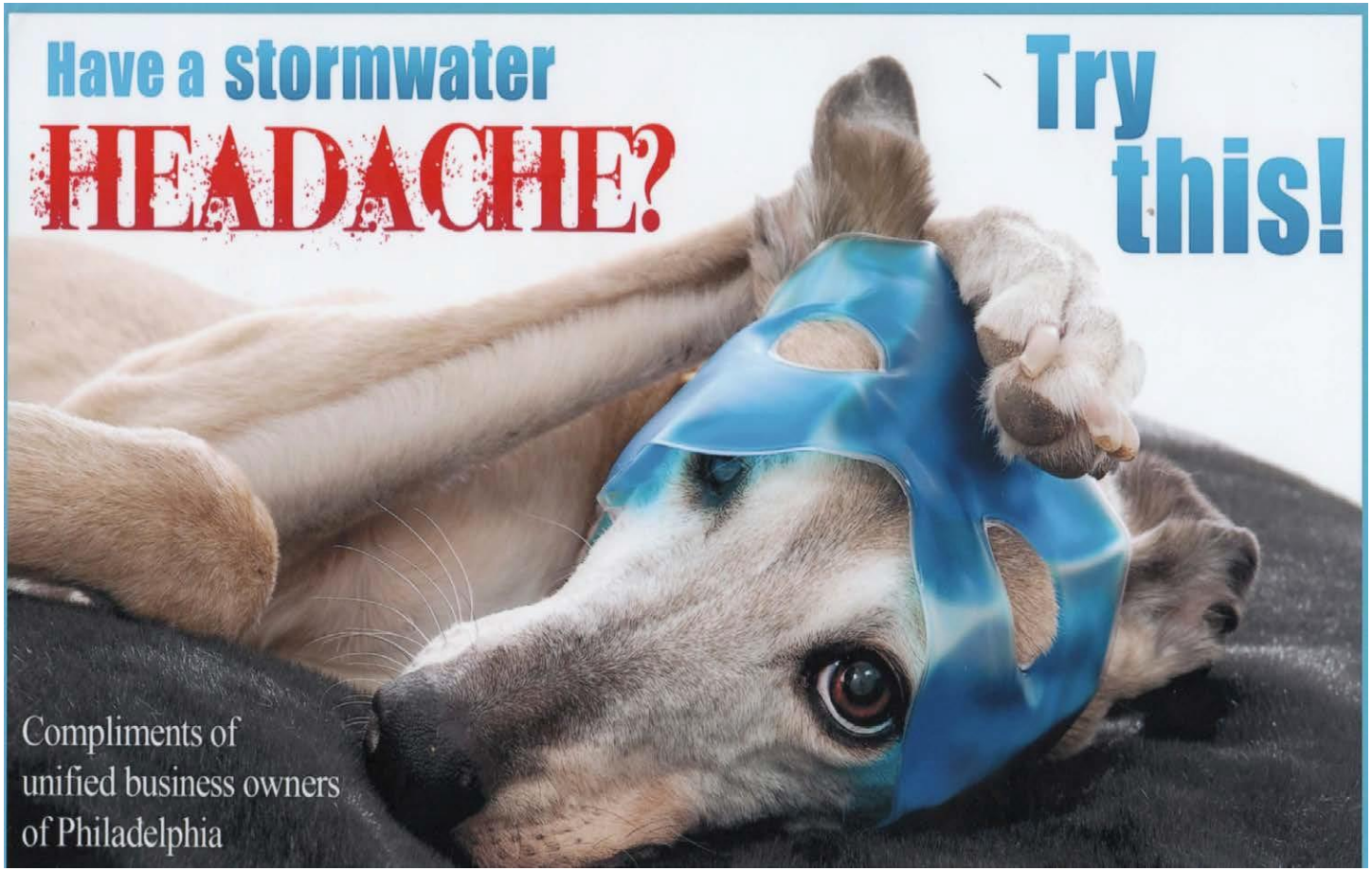

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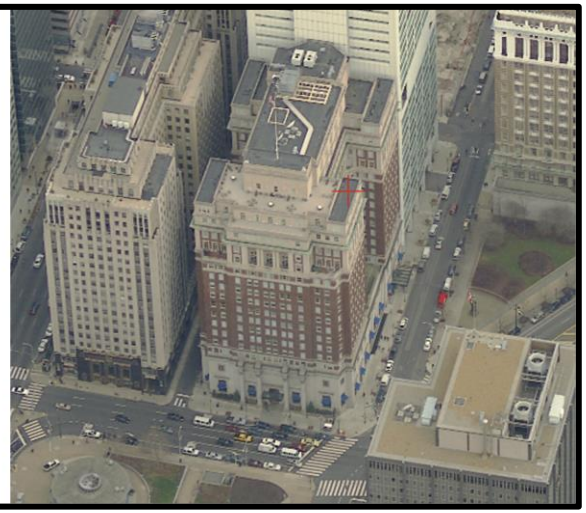
IMAGIC
THE COLOR EXPERTS


Winners
Losers


photo by Andrew Dobshinsky

GA	=	24,338
IA	=	24,338

Old Charge	=	$ 4,703
New Charge	=	$ 120



GA	=	784,266
IA	=	452,644

Existing Charge	=	$ 377
New Charge	=	$ 2,451

SW Fees – 2017 City of Philadelphia

- Nonresidential parcel- based SW Fees
  - GA Charge = 1.26 per 1000 sq ft / month
  - IA Charge = 9.82 per 1000 sq ft / month
  - example
    - 1-acre impervious parking lot = $482/month
    - 1-acre fully managed lot = $ 55/month

- Residential = flat fee = $14.79 per month

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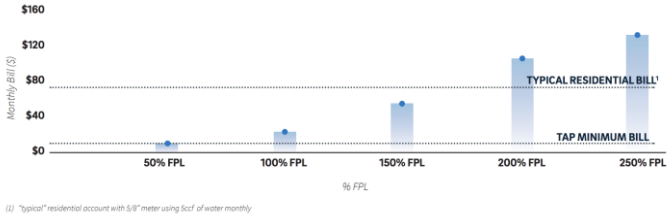
2016 Low-Income Tariff



What is the true number of at-risk households?

Do assistance recipients become good customers?

What are the fiscal impacts of non-payment on your revenues?

Are we helping reduce the number of at-risk households?

With the safety net in place, can we raise rates?

Do these ideas transfer to extremely financially-stressed communities?

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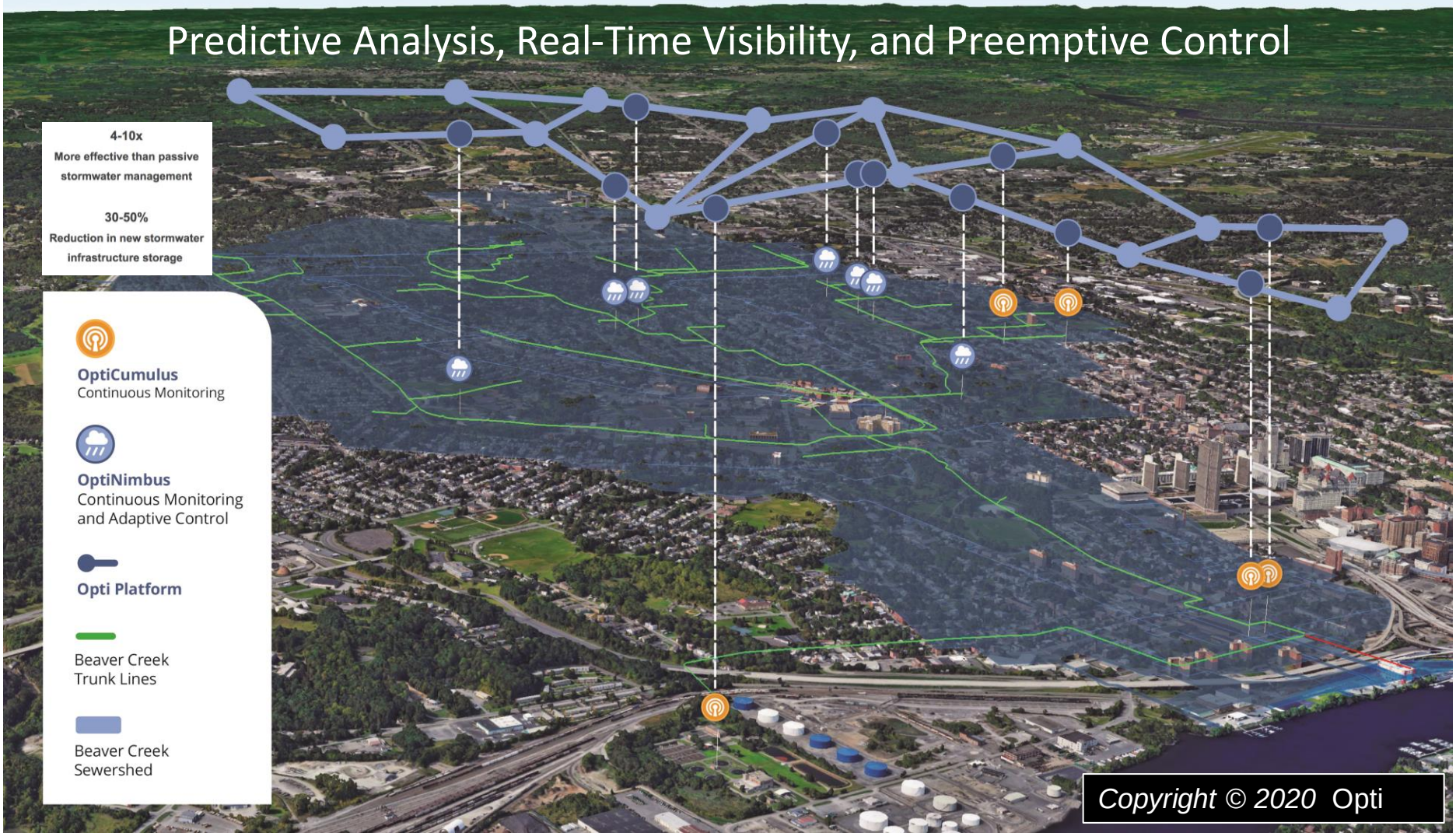
Technical, Financial and Policy Considerations

- Identifying Customer Classes
- Allocating Cost of Service among Customer Classes
- Developing Fee Structure and Credit Program
- Data Management for parcel descriptors and billing
- Operations - Billing and enforcement

Predictive Analysis, Real-Time Visibility, and Preemptive Control



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Community-enabled Lifecycle Analysis of Stormwater Infrastructure Costs (CLASIC)

CLASIC

Purpose of CLASIC

The CLASIC tool is a screening tool utilizing a lifecycle cost framework to support stormwater infrastructure decisions on extent and combinations of green, hybrid green-gray and gray infrastructure practices. Users can create scenarios of stormwater control measures including climate and land use projections to assess lifecycle costs, performance, and co-benefits associated with those scenarios.

CLASIC Functions

CLASIC is a screening tool and is not intended for optimization of design. The scope of CLASIC is shown in Figure 1.

CLASIC will enable users to

- Assess scenarios of stormwater infrastructure via functional unit analysis for robust decision making based on preferences to evaluate:
  - Regulatory compliance
  - Runoff volume reduction
  - Water quality
  - Social and environmental benefits
  - Lifecycle cost
- Couple financial decision with holistic consideration of benefits (primary and secondary)
- Conduct analysis from neighborhood to watershed scale

Analyses not included in CLASIC

- Site specific design of stormwater infrastructure
- Comparison of spatial distribution of infrastructure within sub-unit or subcatchment
- Algorithms for optimization of design

Figure 1. Purpose of CLASIC

THE Water Research FOUNDATION

Sponsored by The Water Research Foundation, US Environmental Protection Agency, and National Science Foundation Urban Water Innovation Network.

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Discussion

- Other Ways States Can Help
  - policies
  - programs
  - SRF's, funding and financing
  - Technical Assistance
  - permit flexibility
  - streamlined applications

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