
PHILADELPHIA WATER DEPARTMENT
DEVELOPMENT SERVICES
COMMITTEE MEETING
March 27, 2014
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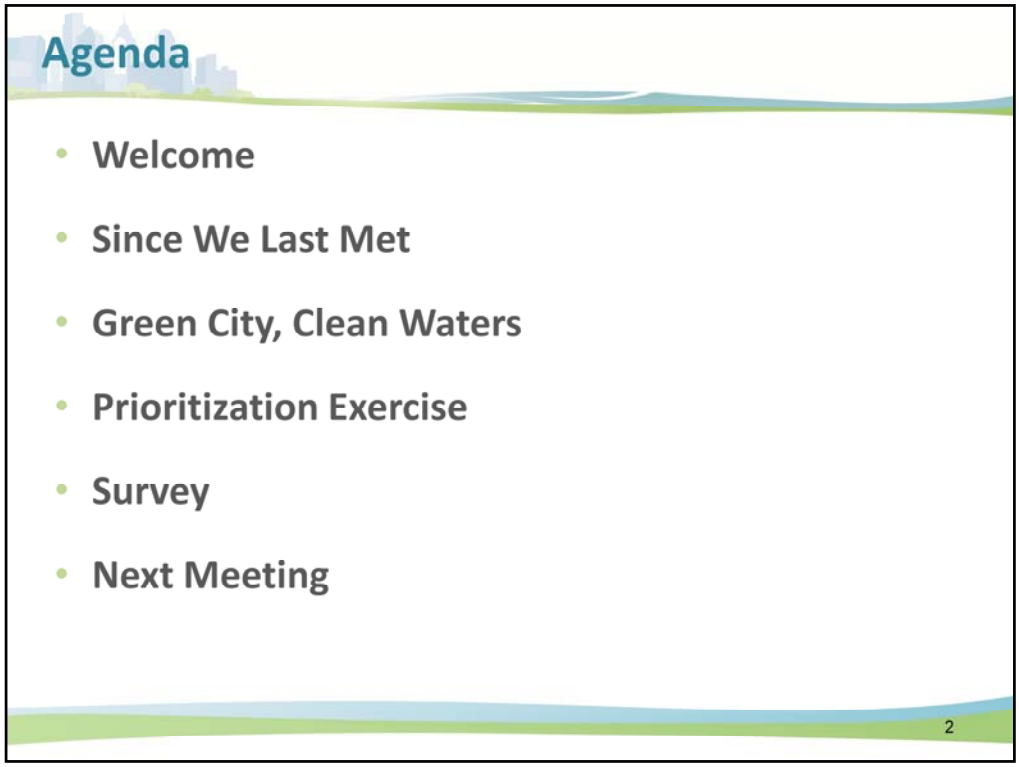
Agenda
Welcome
Since We Last Met
Green City, Clean Waters
Prioritization Exercise
Survey
Next Meeting
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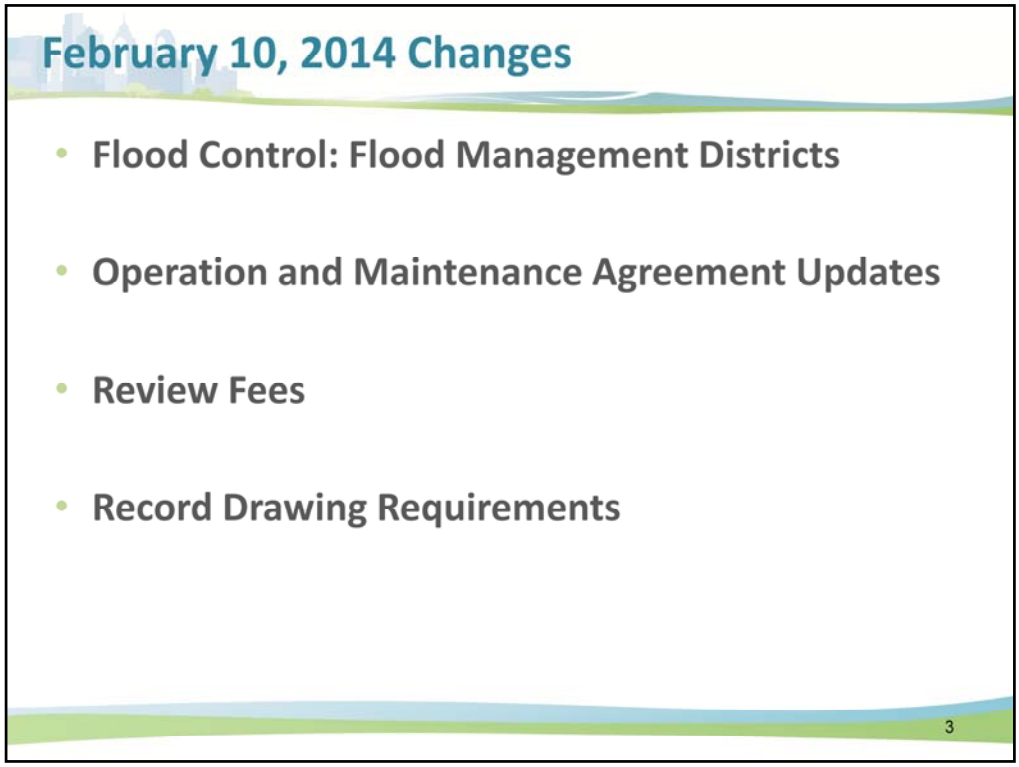


On February 10, 2014, PWD implemented a number of changes to the stormwater management regulations and the review and approval process.

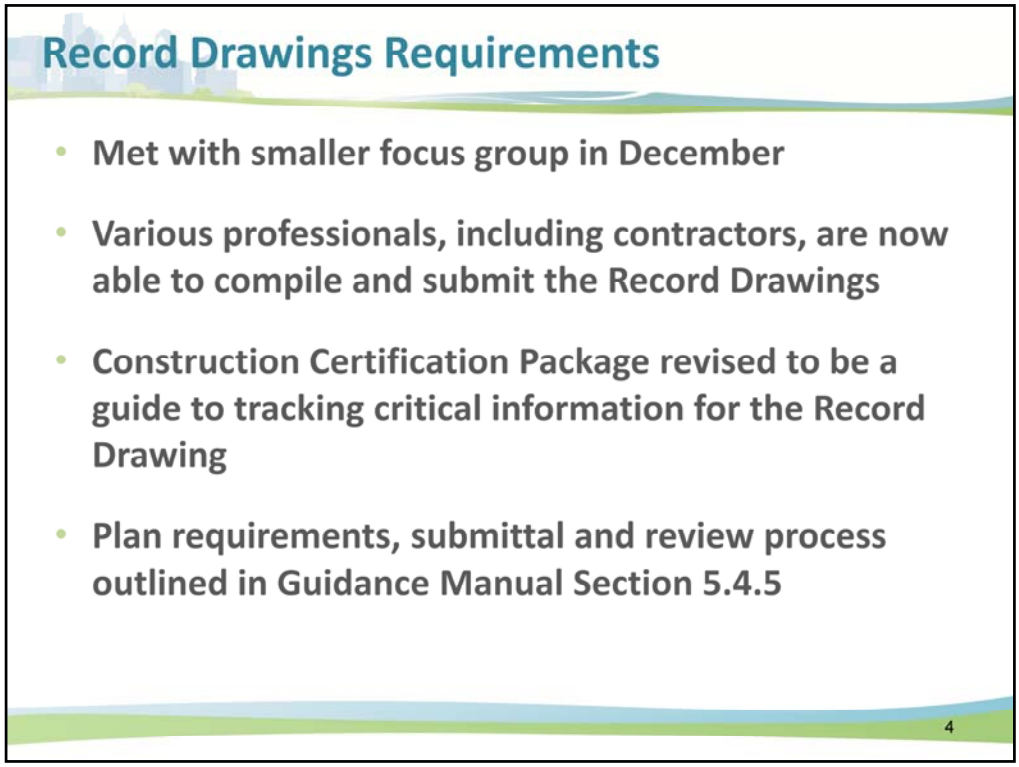
Updated Flood Control Management Districts were implemented for the Pennypack, Poquessing, and Tacony-Frankford Watersheds to better manage extreme rainfall and flooding events.

The Operation and Maintenance Agreement process has been refined. New language is more standardized and specific references to stormwater management practice (SMP) locations have been replaced with an inventory of SMPs. These changes should allow for quicker execution of the agreements.

As previously noted, the new review fees have been put into place. They are as follows:

- New Conceptual Approval Fee: $600
- New PCSMP Submittal Fee: $600
- New PCSMP Hourly Fee: $90/hour

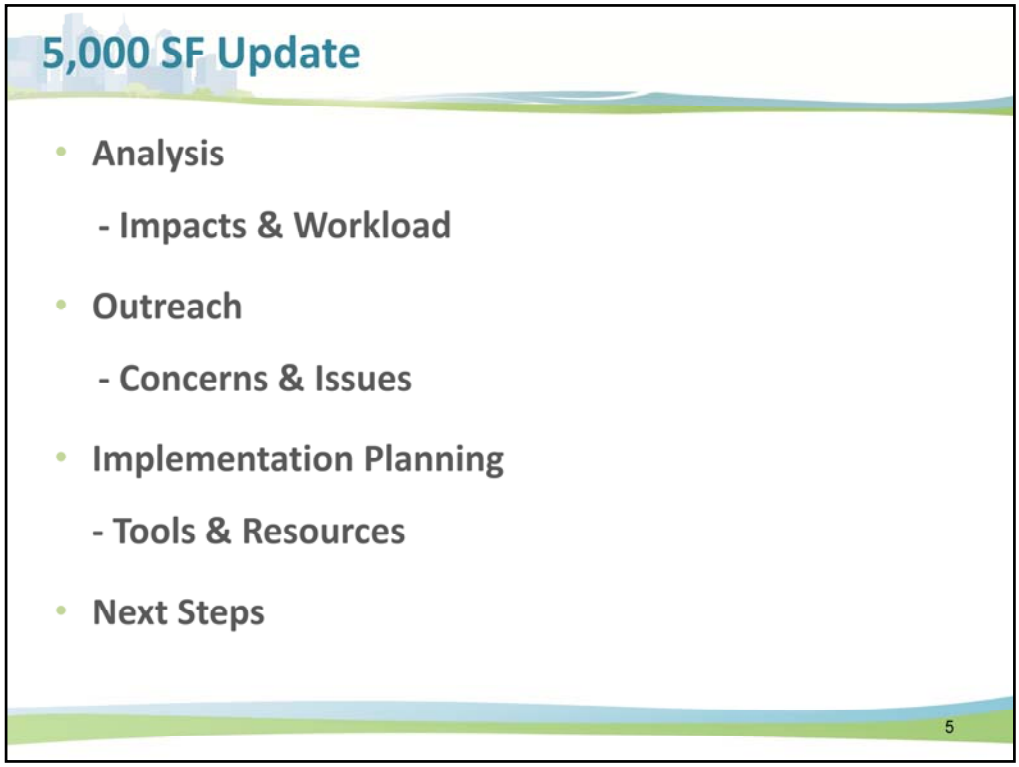
In addition, the record drawings requirements have been updated – the approach was further refined following the last Development Services Committee (DSC) Meeting.



Over the course of 2013, the DSC spent time discussing potential improvements to the record drawing process. Following the December 2013 DSC Meeting, it was clear that committee members still had concerns about the process and further refinement was needed. As such, PWD convened a small ad hoc group to help work through and improve the proposed changes to develop a workable solution. Overall, PWD desires to obtain both more record drawing submittals in general as well as more accurate information regarding the final installation of the approved SMPs. Based upon feedback provided by the DSC, PWD is looking to advance and expand who could be responsible for developing record drawings. In this instance, PWD was looking to allow a large portion of the contracting community the ability to track and create record drawings. This does not mean that the engineer can no longer be involved in the record drawing process as PWD does not want to lose this option. Rather, the new requirements offer additional flexibility to the development community to assign responsibility of record drawings to various professionals based upon what works best for the development team.

In addition, the Construction Certification Package has been revised to include clear guidance on the specific information PWD will want to see with record drawing submissions, such as elevations, photos, etc. PWD's hope is that this can be utilized in lieu of the previous submittal requirements. Overall, the Construction Certification Package can be customized and adjusted for each specific project further increasing flexibility, and offering clarity on what needs to be done and when.

With these changes, PWD hopes to provide clearer guidance and increased flexibility. PWD recognizes that additional tweaks may be necessary in the future, and would like to see how effective these updates are before making further adjustments to the process.



At previous meetings, the DSC has discussed PWD's efforts to understand the potential impacts of moving the earth disturbance total triggering stormwater management requirements from the current 15,000 SF threshold to 5,000 SF and the challenges with managing stormwater for the projects of this scale. The L&I Data Analysis also provided PWD with information on both the number and types of project which PWD could expect to see with this change. Overall, this data analysis provided a sense of the potential impact and workload associated with having to accommodate these projects as part of PWD's stormwater review process.

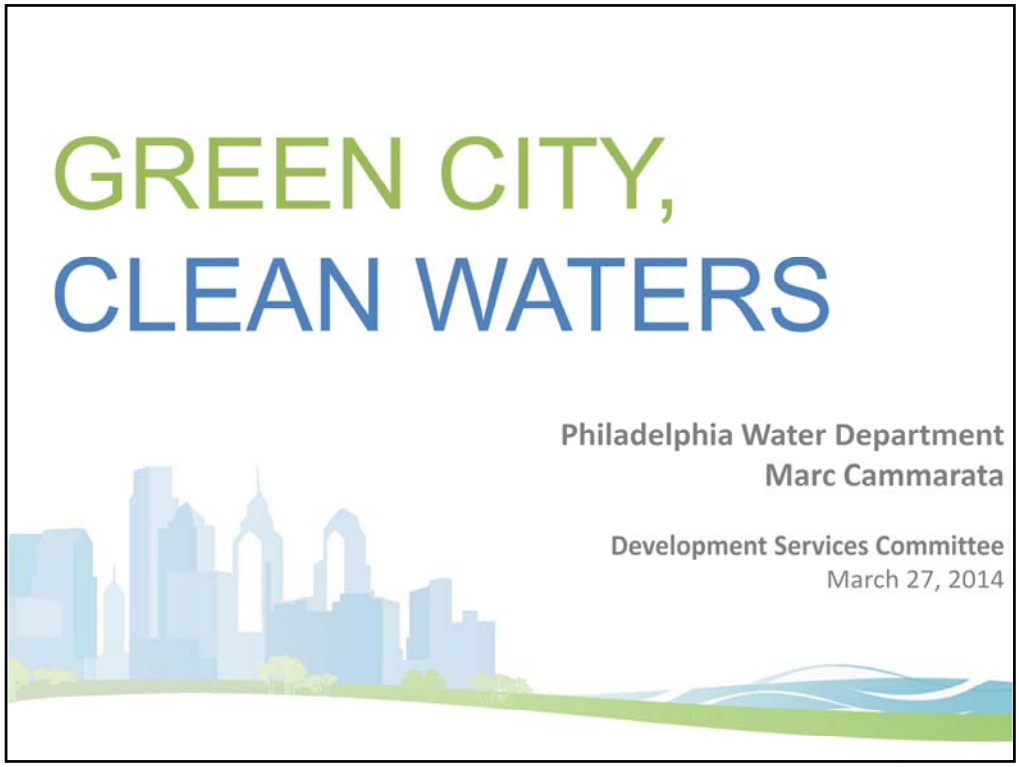
Since that meeting, PWD has continued to evaluate the potential change. The DSC has provided valuable feedback on the topic regarding the various opportunities and constraints associated with smaller projects. To gain additional feedback and hear potential concerns and issues from the perspective of other members of the development community, PWD staff presented to and met with representatives from the Sustainable Business Network (SBN) and the Philadelphia Building Industry Association (BIA). PWD also looked to gain insight on how best to implement the change.

Based upon review of this information, PWD has developed an internal strategy to focus on providing the dedicated resources and tools necessary to help what amounts to a new development class, which will have to address stormwater management. In short, PWD has chosen to delay the implementation of the City-Wide 5,000 SF earth disturbance threshold until after 2015.

PWD has also reached at to the Pennsylvania Department of Environmental Protection, to verify the delay is not in conflict with any regulatory requirements the City may be held to and make necessary adjustments to the draft Act 167 plans to reflect this approach.

PWD will refocus efforts on the 5,000 SF update after July 2015 to dedicate the necessary resources and develop the right tools to implement this change in a business friendly way. Allowing for sufficient time for appropriate public outreach and engagement to occur well ahead of the update is also a critical component of PWD's strategy. As such, PWD will be looking to engage additional members of the development community who might be impacted by these changes and engage them in the discussion. PWD would welcome any suggestions from the DSC on further outreach approaches or even potential members to be included in the DSC to better represent this sub-set of the development community.

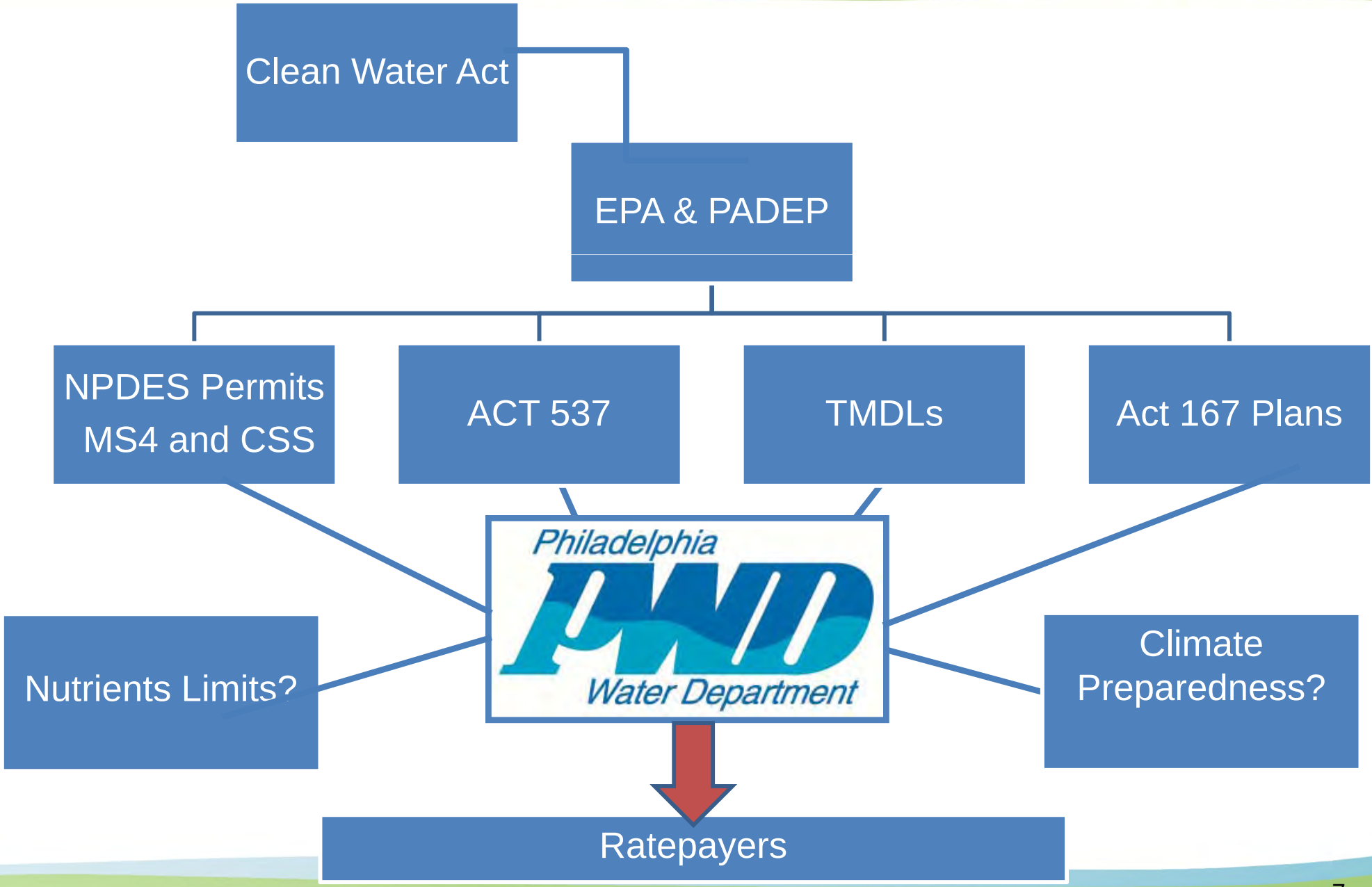
While a clear schedule is unavailable at this time, PWD will continue to provide the DSC any relevant updates on the topic and will look to re-engage the DSC at a later time, likely after July 2015, on the implementation efforts.



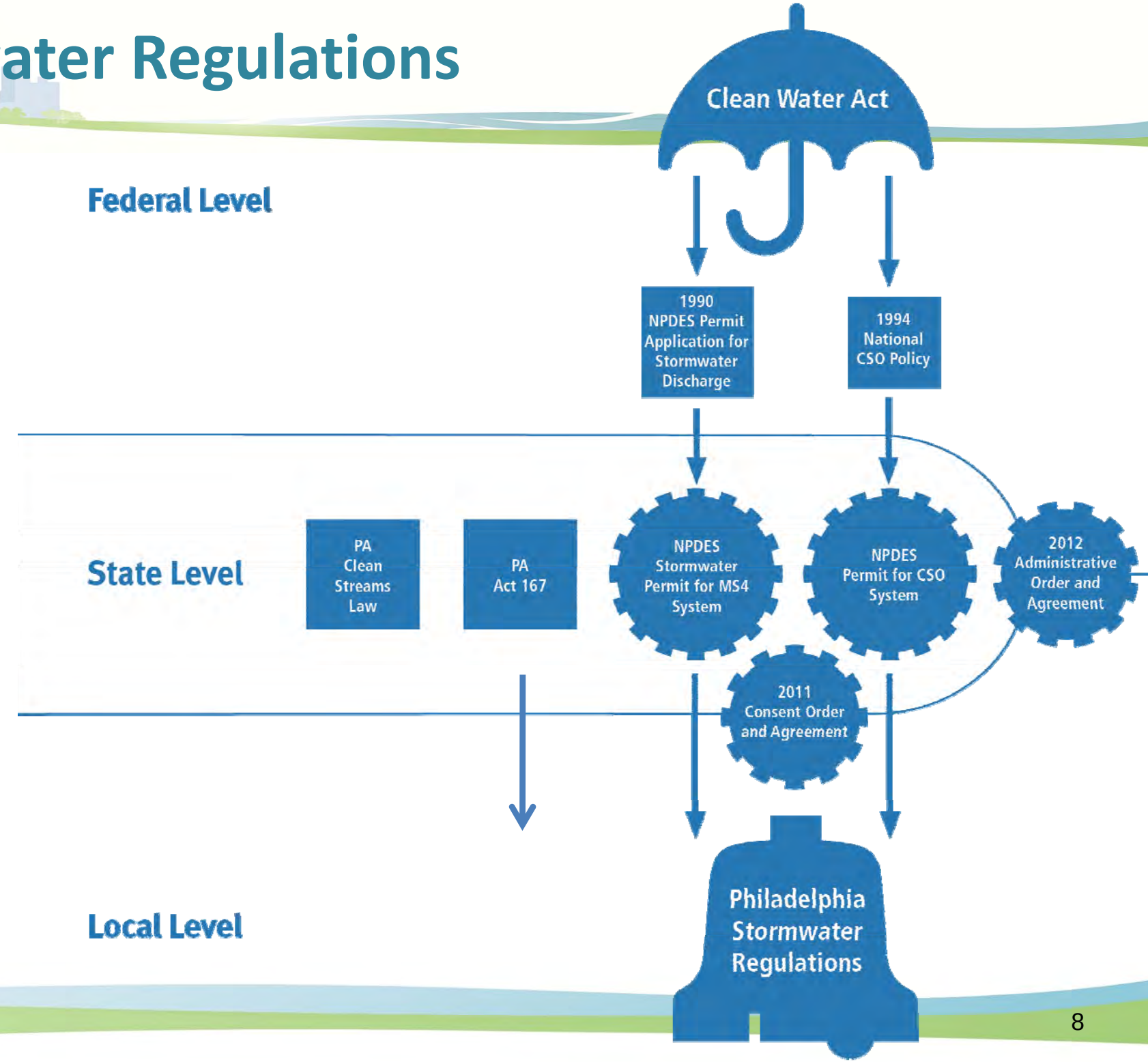
Since PWD has deprioritized the analysis and investigation of 5,000 SF disturbance threshold, the focus will now shift to investigating updates to the regulatory requirements for sites greater than 15,000 square feet. To kick off that discussion, Marc Cammarata from PWD Office of Watersheds provided an overview presentation of PWD's Green City, Clean Waters (GCCW) program. This program will serve as a regulatory base for moving the private development program forward. It's important to note that the standards to which the City must adhere to under the Consent Order and Agreement with the Pennsylvania Department of Environmental Protection and the U.S. Environmental Protection Agency are not the same as what is currently required of the private development community under the City's current stormwater management regulations.

The GCCW program provides background on the overall the regulatory requirements, the performance metrics the City will need to meet as a whole as well as the added benefits and advantages a green approach offers over more traditional approaches to combined sewer overflow abatement programs.

Regulatory Context



Stormwater Regulations



Wynnefield (52nd & Lebanon), photo by Andrew Dobshinsky

Southeast Philadelphia (10th & Moyamensing), photo by Andrew Dobshinsky

Urban Watershed Issues Identified

- Water Quality Issues
- Odors
- Low Dissolved Oxygen
- Bank Erosion
- Lack of Channel Habitat and Biological Diversity
- Wetland Degradation
- Poor Public Access to Streams
- Dumping and Trash
- Vandalism

National CSO Policy of 1994

821 CSO communities in 32 states

Integrated and Long-Term Planning

Integrating PWD regulatory requirements to achieve long-term health and aesthetics of our environment

Green Stormwater Infrastructure

A range of soil-water-plant systems that ***intercept*** **stormwater**, ***infiltrate*** a portion of it into the ground, ***evaporate and transpirate*** a portion of it into the air, and in some cases ***slowly release*** a portion of it back into the sewer system.


Cliveden Park

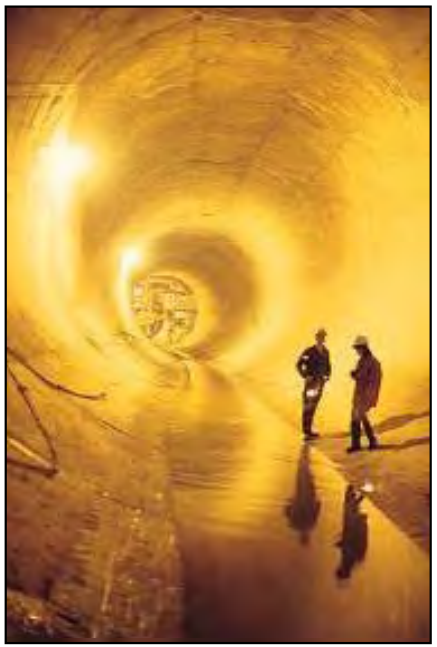

Herron Playground


Free Library of Philadelphia

Acknowledges the symbiotic relationship between land use and water resources.

Conventional Approach to CSO Control

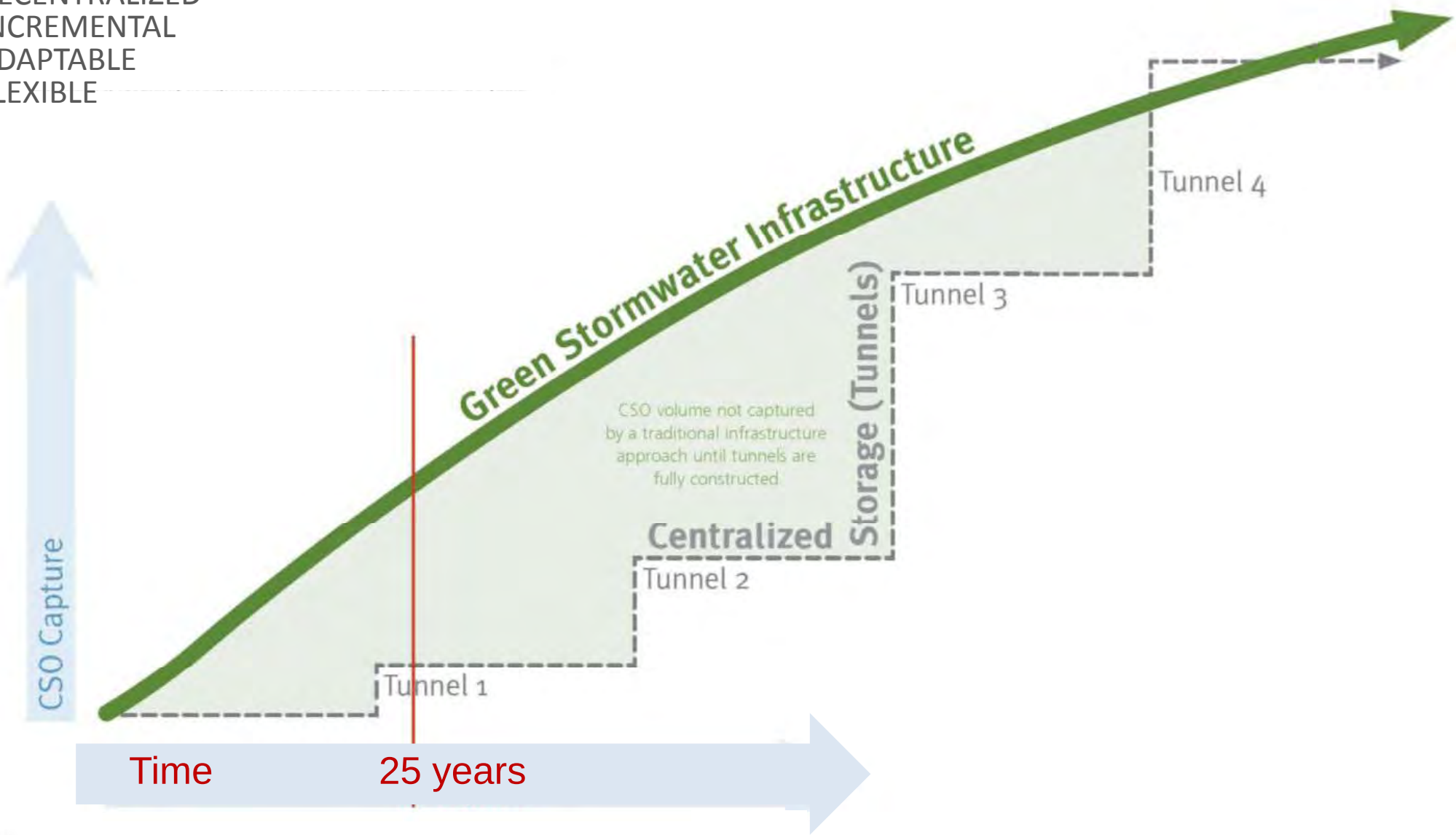
- Store sewage/stormwater in deep tanks & tunnels and pump back into the sewer system after rain events



The Right Investment with Limited Funding

Maximizing Benefits

DECENTRALIZED
INCREMENTAL
ADAPTABLE
FLEXIBLE



Triple Bottom Line

Short and Long-term Benefits

Economic Benefits

- Property Values
- Job Creation
- City Competitiveness

Environmental Benefits

- Fish in Streams
- Swimmable Streams
- Habitat Quality
- Air Quality
- Energy Savings
- Carbon Footprint

Social Benefits

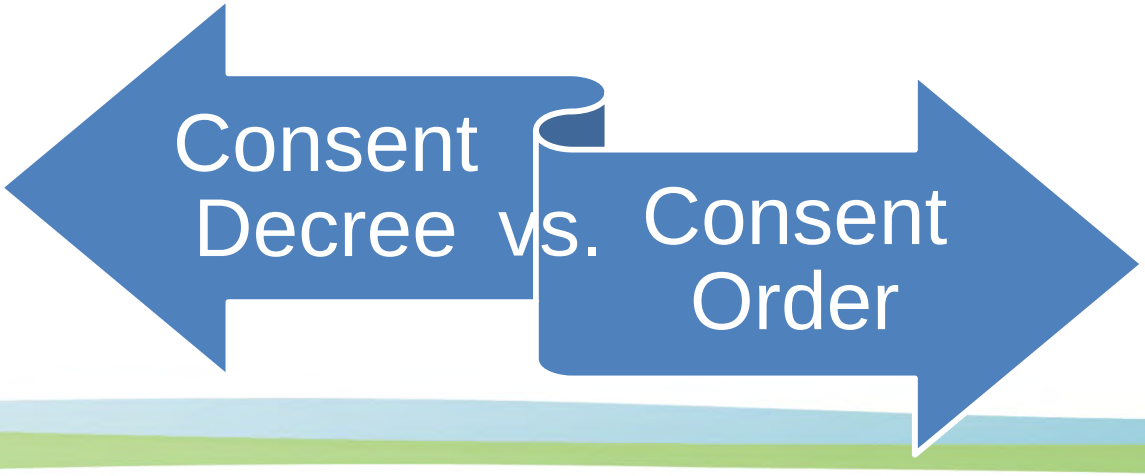
- Safe and Accessible Streams
- Recreation
- Aesthetics
- Public Health
- Social Equity
- Crime Reduction

Happy, Healthy City → Happy, Healthy Ratepayer → Happy, Healthy Utility

Memorialized by Regulatory Agreements

- 2011 Consent Order and Agreement (COA) with the PA Department of Environmental Protection
  - Reduce CSO Volume
  - Pollutant Removal
  - 34.5%+ 'Greening'
  - Proof of Concept
  - Adaptive Management

- 2012 Landmark Partnership Agreement and Administrative Order for Compliance on Consent with the US Environmental Protection Agency



Water Quality Based Effluent Limit

Metric	Units	Cumulative amount as of Year 25 (2036)
NE / SW / SE WPCP upgrade: Design & Construction	Percent complete	100%
Miles of interceptor lined	Miles	14.5
Overflow Reduction Volume	Million Gallons per year	7,960
Equivalent Mass Capture TSS / BOD / Fecal Coliform	Percent	85%
Total Greened Acres	Greened Acres	9,564

267 Million bathtubs / 660 Thousand Olympic Swimming Pools / 320 Million Showers

Green City, Clean Waters

Green Stormwater Infrastructure

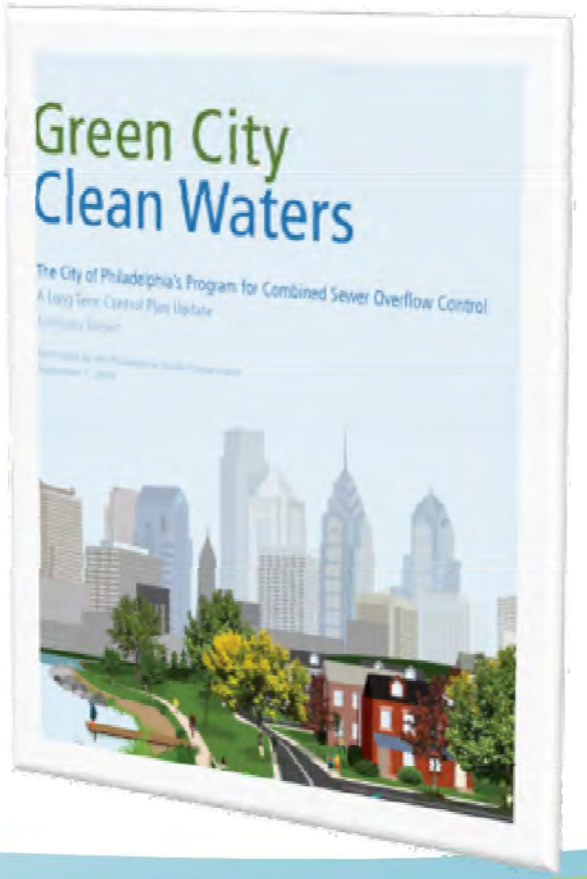
$1.67 billion

Wet Weather Treatment Plant Upgrades

$345 million

Adaptive Management

$420 million



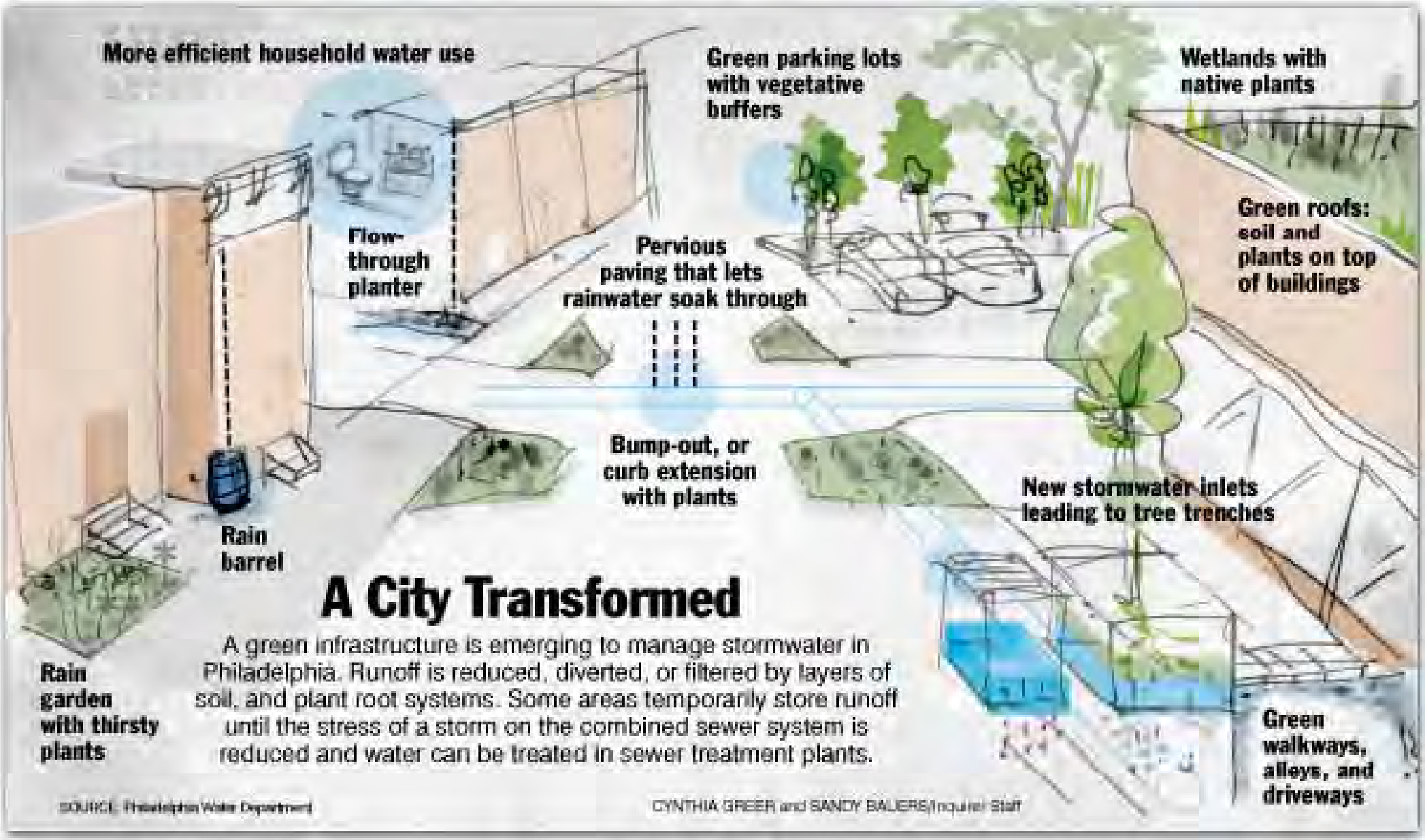
Green Stormwater Goals

25-Year Implementation of Green City, Clean Waters

Year	Greened Acres	Square Miles	% Impervious cover removed
5	750	1	3%
10	2,100	3	8%
15	3,800	6	14%
20	6,400	10	23%
25	9,600	15	34%

Green City, Clean Waters

Combined Sewer Overflow (CSO) Long Term Control Plan

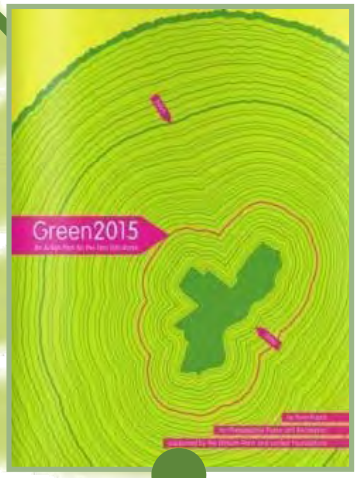


One Water, One City, Many Places

- Communities
- Transit
- Rivers & Streams
- Parks
- Schools
- Streets
- Businesses
- Parking lots
- Universities

City-wide Planning Initiatives

ZONING Matters



GREENWORKS
PHILADELPHIA

PHILADELPHIA 2035 COMPREHENSIVE PLAN

Multiple Benefits of Green Stormwater Infrastructure Investment

- Resilience to Extreme Weather / Climate Change
- Provide Green, Open Space
- Advance Livability and Public Health
- Increase Market Values and Attractiveness
- Reduce Stream Pollutant Loads
- Create Local, Green Economy
- Support Urban Revitalization
- Enhance the Infrastructure Network
- Advance City-wide Sustainability Programs
- Transform River and Stream Corridors
- Preserve and Restore Habitat
- Maximize Return on Every Dollar Spent

Green Stormwater Infrastructure

Surface: WQ

- Vegetation
- Soil Profile

Sub-surface : Volume

- Infiltration
- Storage

PWD Initiatives: Focus of First Five Years

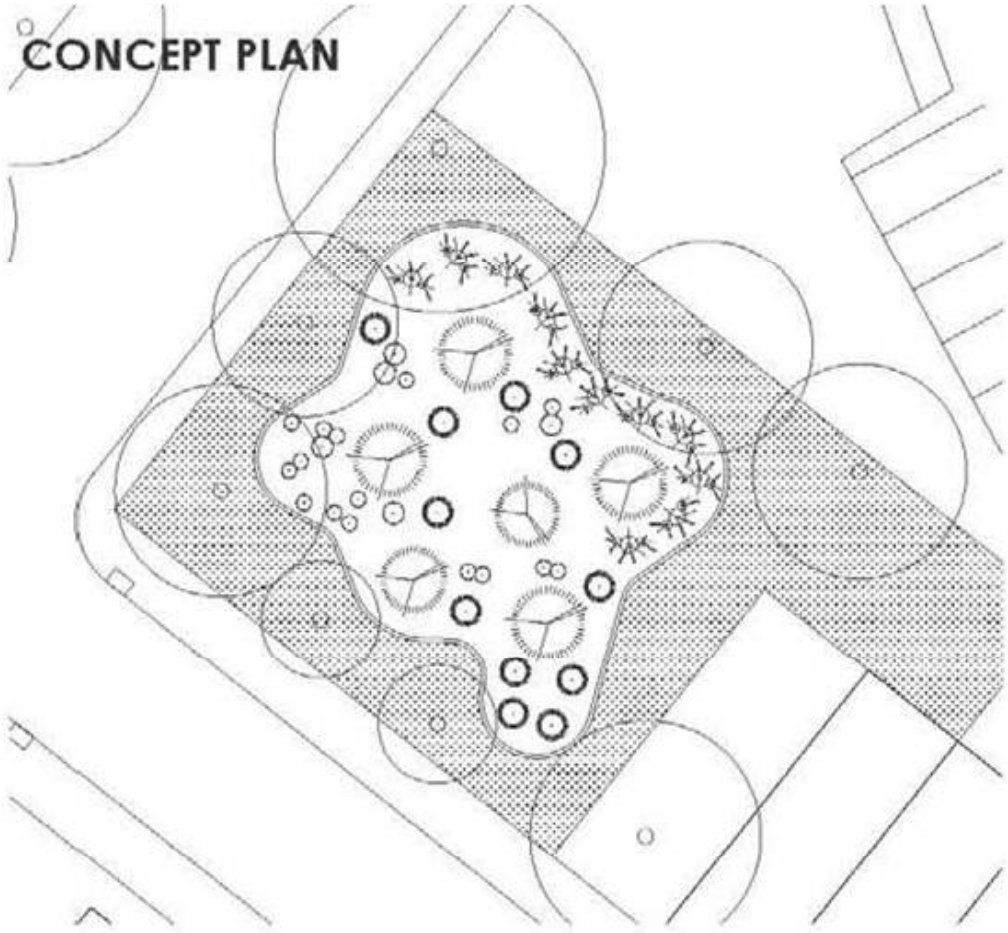
- PWD Facilities
- Green Parks & Recreation Centers
- Green Schools and Schoolyards
- Publicly Owned Parking Facilities
- Green Streets
- Green Campus
- Vacant Lands
- Green Homes

Green Streets

- Traffic Calming
- Neighborhood Re-investment and Revitalization
- Increase in Property Value
- Regular Maintenance Shows Commitment to Investment

Vacant Lot Strategy

- PWD Investment on City-Owned Parcels with Low Potential for Development
  - Small or Oddly-Shaped Lots
  - Low Market Value
- Greening to Cover Entire Site
- Creating a Community Asset
- Regular Maintenance Deters Short Dumping
- Contributing to Beautification And Property Value Increase



Green Schools

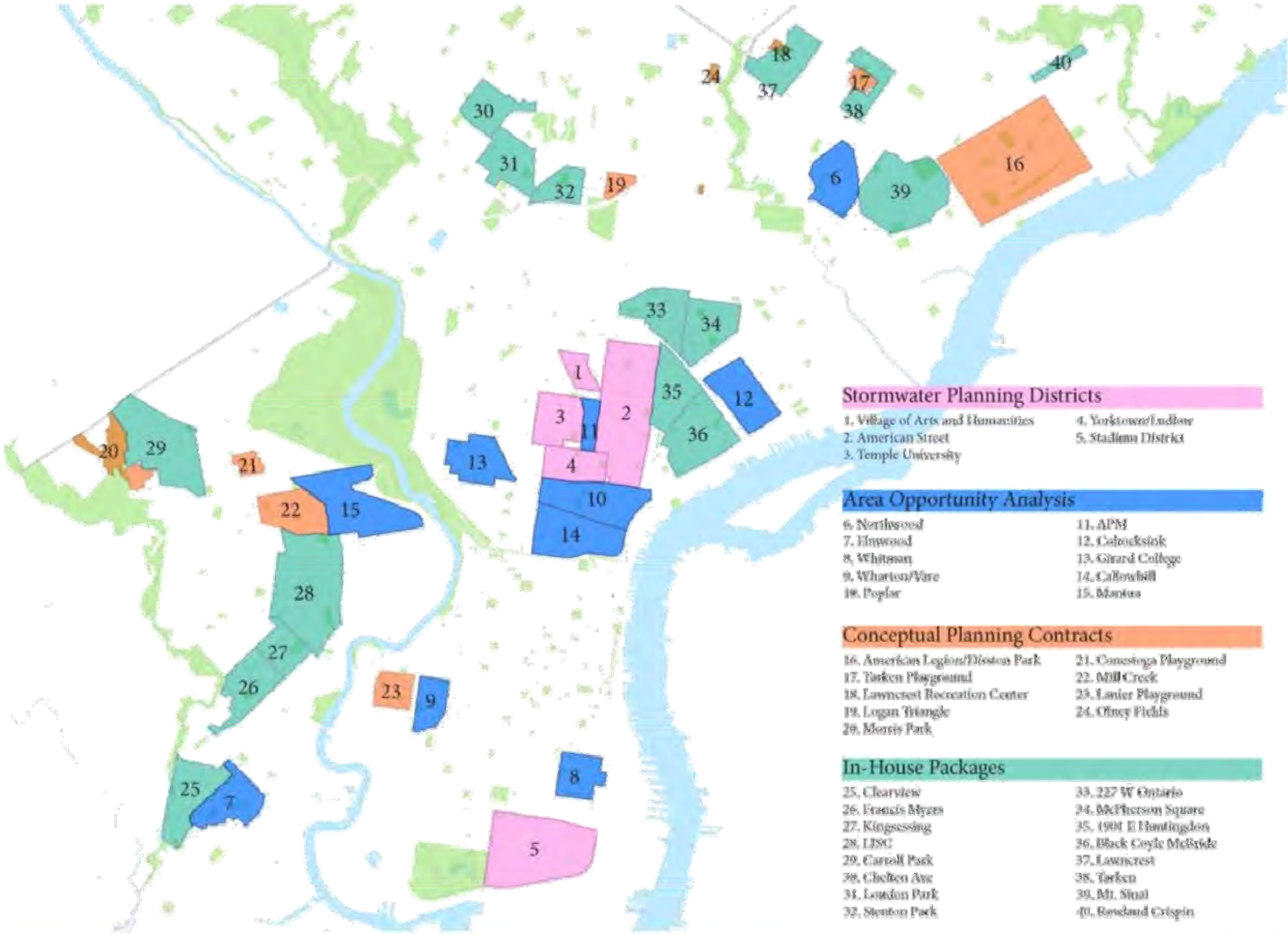
- PWD Investment in Public Schools
- Educate Next Generation on Sustainability and Infrastructure
- Attracting New Partnerships
- Greening Neighborhood Anchors
- Successful Cost Sharing Model
- 16 Schools Completed or Planned
- 550 Greened Acres of School Opportunities

Investments throughout the Lifecycle

Planning

Current GSIIP Planning Projects

March 2014



Design

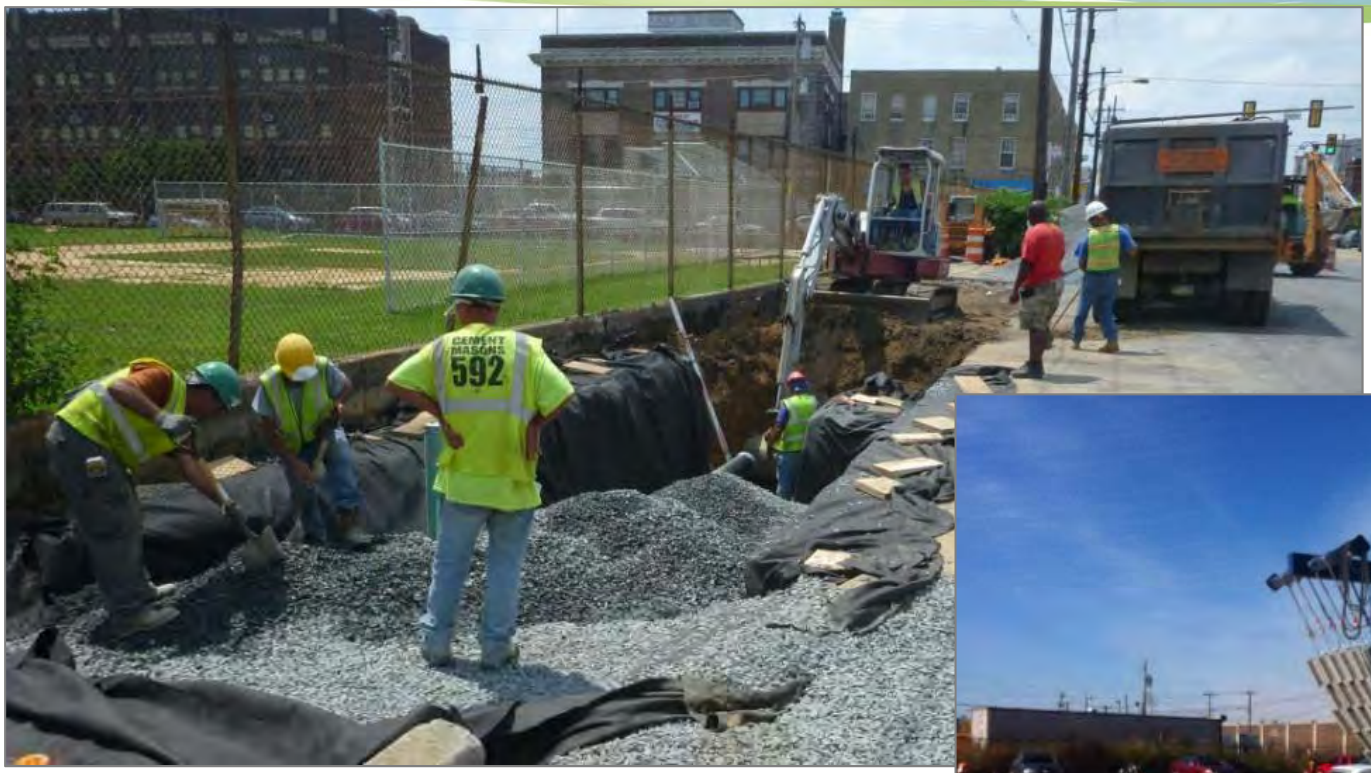
Tools:

- Evaporation
- Transpiration
- Infiltration
- Water Harvesting
- Interception
- Storage

Streets Manual

Off-Street Manual

Construction



- Material Availability and Integrity
- Landscaping
- GSI Pipe Installation

- Soil Compaction
- Isolation of All Stormwater Management Structures
- Prime/Sub Supervision and Communication

Maintenance and Monitoring

Inspection:

- Visual/Photographic
- Record Condition of Vegetative
- Structural Features
- Measure Sediment and Water Levels

Maintenance:

- Trash and Sediment Removal
- Weeding, Pruning, Reseeding, Watering
- Structural Repairs
- Erosion Control

Reporting:

- Labor Effort
- Materials

Creating Standards and Protocols:

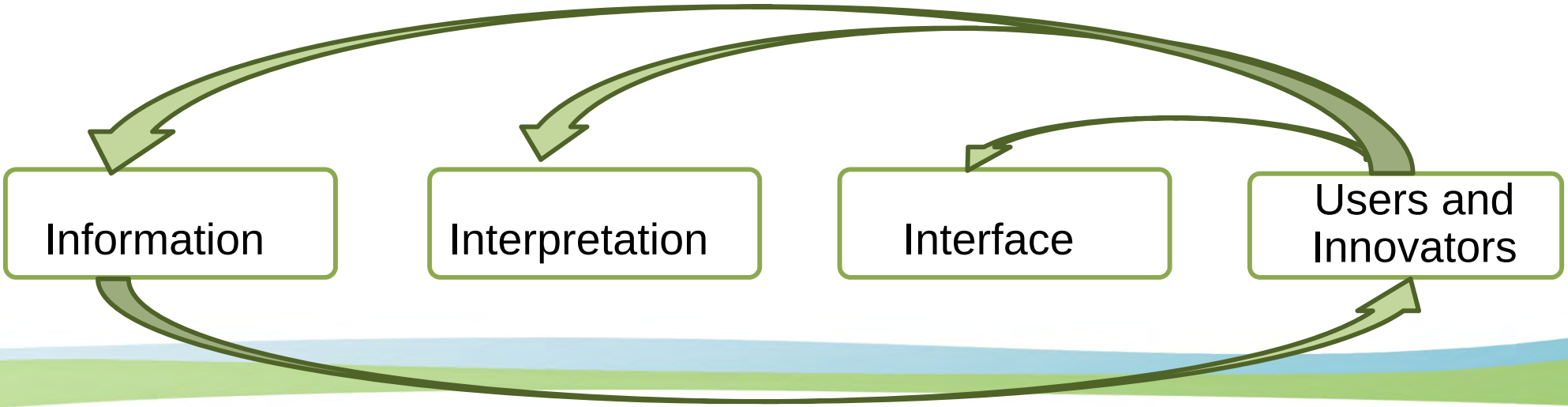
- Required Tools and Crew Size
- Frequency of Visits
- Responsible Party
- Manual Development - 6/1/2014

Financing and Funding

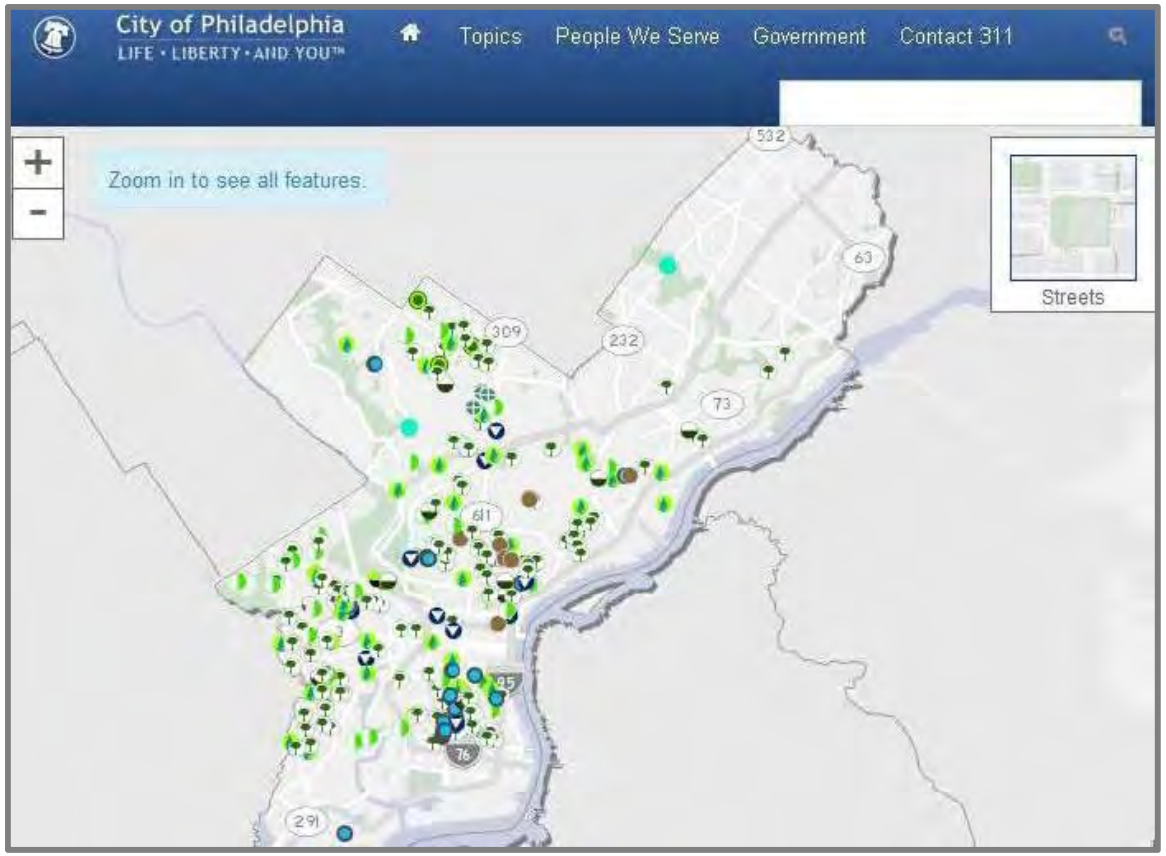
- Traditional Financing
- Credit Program for Parcel Based Billing
- Stormwater Management Incentive Program
- Potential Pay for Performance Program
- Use Of Federal /State and Foundation Dollars as Seed Money for Innovation
- Existing Business Incentives
  - Green Roof Tax Credit
- Green Homes Incentives
  - Rain Barrel Workshops
  - Rain Check
  - Rebuilding Together Philadelphia Green Practices on Low Income Homes

Innovation

- Data Sharing and Distribution
- Improve Program Transparency
- Green Infrastructure as a Catalyst for Neighborhood Revitalization and Attraction
- Reduce Costs of Infrastructure
- Investment and Technology Hub
- Improve Technology
- Support Research Institutions



Public Investment Progress - Big Green Map



PWD has completed or is in the process of designing:

- 190 Stormwater Tree Trenches
- 19 Stormwater Planters
- 22 Stormwater Bumpouts
- 50 Rain Gardens
- 4 Stormwater Basins
- 61 Infiltration/Storage Trenches
- 47 Porous Paving Projects
- 13 Swales
- 2 Stormwater Wetlands
- 1 Cistern
- 33 Downspout Planters
- 17 Other Projects

http://www.phillywatersheds.org/biggreenmap

Private Investment Progress

- Since 2006, **638 projects** representing **1,466 acres** of private development, have been approved city-wide.

- This is approximately the size of Center City, River to River, Vine to South St.

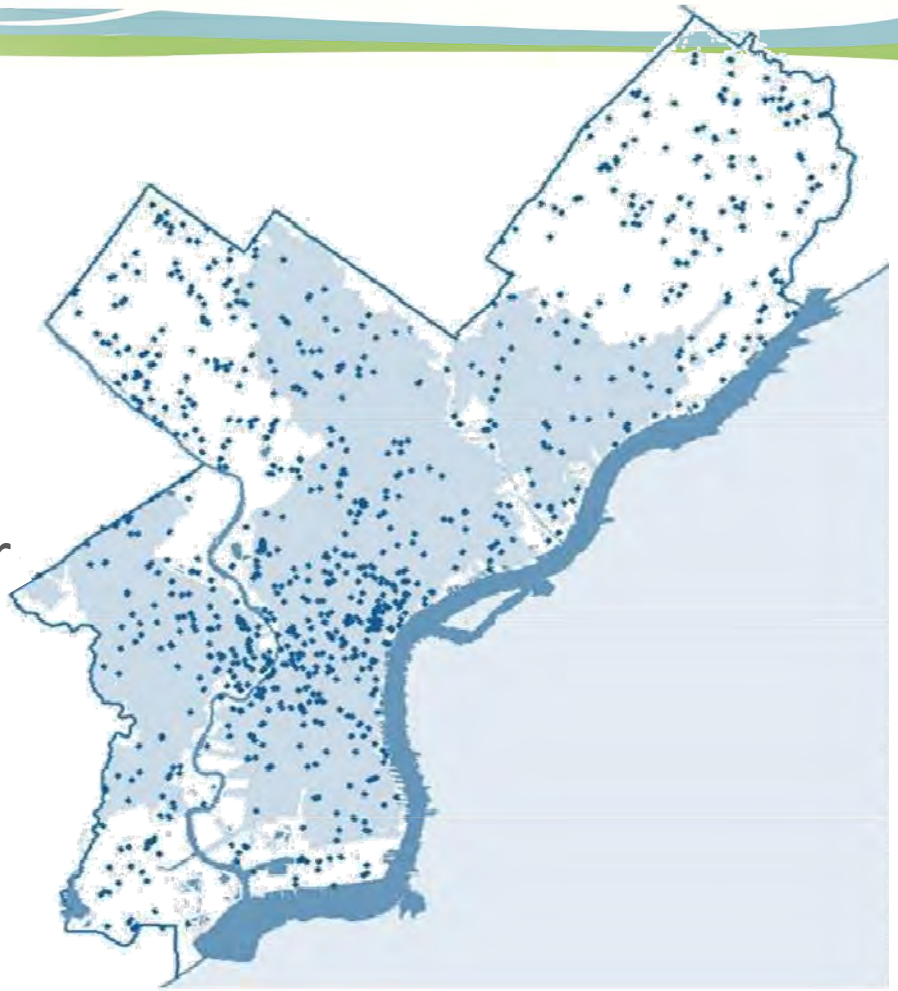






Photo credit: WRT

Investments in Partnerships

- Soak It Up Design Competition
- PWD Contractor Workshop
- Neighborhood Parks
- Adoption Program
- Green 2015
- RainCheck
- Phila2035

Harnessing Resources Through Partnerships: Coordination is key

- Other City Departments and Agencies
- Public and Private Landowners
- Development Community
- New or Re-aligned Not-for-Profit Groups
- Foundations and Philanthropic Organizations
- Financial Institutions
- Federal / State Agencies
- Community
- Other Cities

KENSINGTON CREATIVE + PERFORMING ARTS HIGH SCHOOL

PHILADELPHIA WATER DEPARTMENT

DEPARTMENT OF PARKS + RECREATION

PHILADELPHIA STREETS DEPARTMENT

PENNSYLVANIA HORTICULTURAL SOCIETY

NEW KENSINGTON CDC

MURAL ARTS

SEPTA

Public

DEVELOPMENT

Private

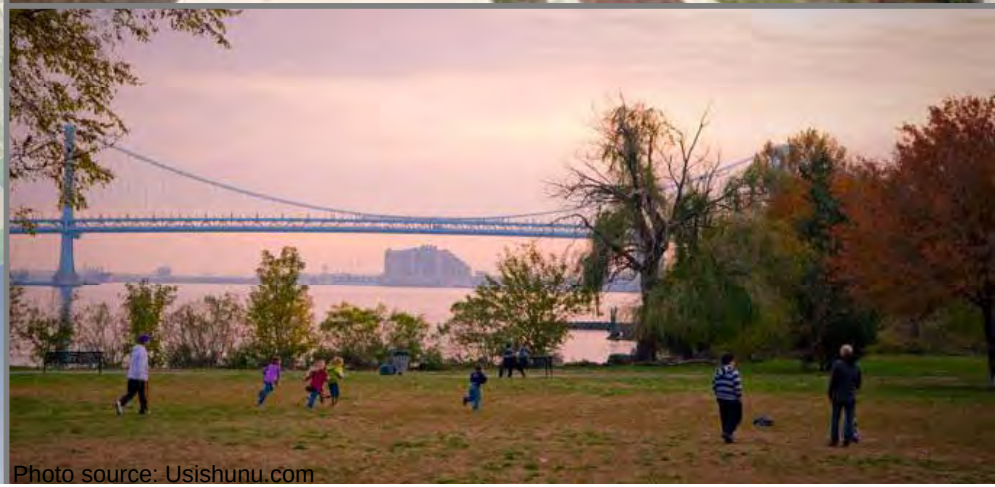


Photo source: Usishunu.com

Green City, Clean Waters

www.phillywatersheds.org

With the shift in focus from 5,000 SF to other potential July 2015 changes, PWD is looking for the DSC's input on

1. How best to discuss technical topics with the committee and to what degree; and
2. Prioritization of the procedural topics which are of most interest and value to the DSC moving forward.

To collect this information, PWD is requesting the DSC provide feedback via survey to better inform the process and the meetings which will occur over the next year or more.

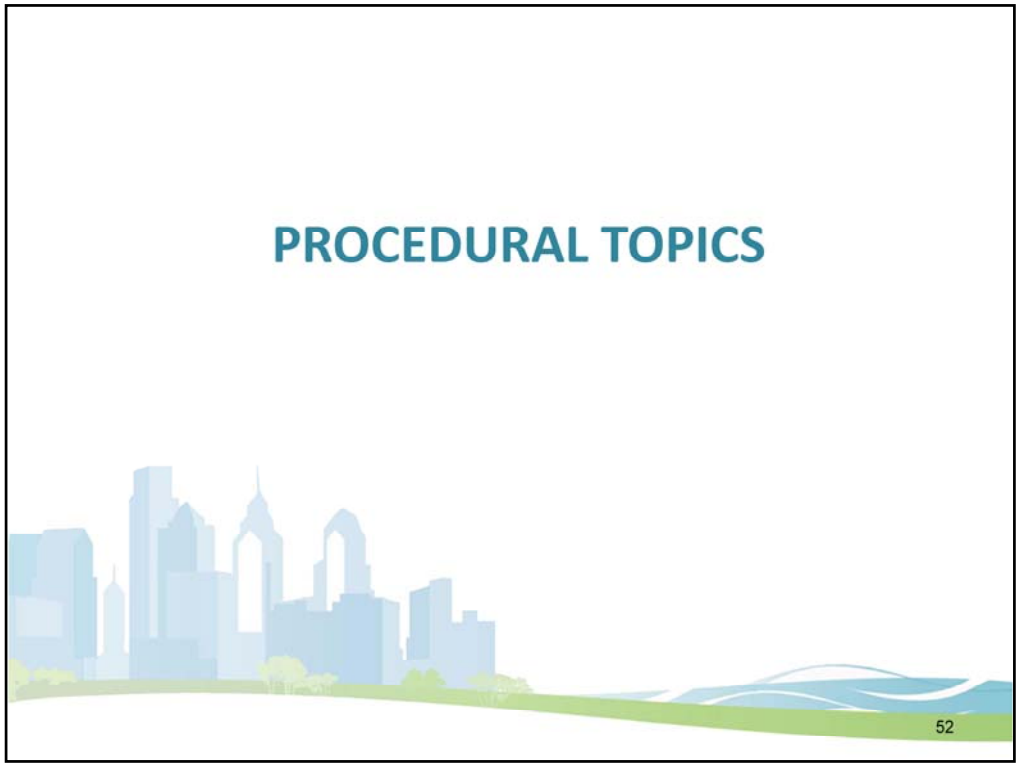
The GCCW plan is being used as a regulatory basis for the City. As such, it has been recommended that PWD align the public and private program goals closer together, which would mean technical design changes for projects greater than 15,000 SF in size. The recommended changes at this time are:

1. Increasing the Water Quality Volume (WQv) requirement from 1" to 1.5“ to meet runoff capture and pollutant removal requirements
2. Lowering the WQv slow release rate from 0.24 cfs/acre to 0.05 cfs/acre Directly Connected Impervious Area. This is the release rate required to balance the sewer regulators and minimize overflow events.
3. Requiring that 100% of non-infiltrated WQv pass through soil vegetation or similar filter device to meet pollutant removal requirements. This would create clear and consistent standards across the CSO and the MS4 area, where this requirement is already in place.

These design criteria have already been piloted on PWD projects. PWD will utilize lessons learned on public projects to better inform the implementation of these requirements.

PWD has already begun to investigate the recommended changes and the impact they could have on >15k SF sites. PWD is planning to discuss this with the DSC in June, and intends to provide an impact analysis similar to what was developed for 5,000 SF. Detailed modeling scenarios and analyses are under development to assess these recommendations, taking the proposed changes from the Macro/City-wide level down to the Micro/Site Specific Level.

At the June meeting, PWD will be looking for feedback on the analysis, as well as potential impacts that were overlooked or not considered that may warrant further evaluation. At this time, PWD is looking for feedback on how detailed to make this discussion and how best to communicate the results of the technical analysis. The DSC represents the broader development community and these topics may have varying appeal amongst the members. Thus, PWD is looking to strike a balance and provide the right level of detail that works best for the overall committee and is respectful of everyone’s time at the DSC Meetings.

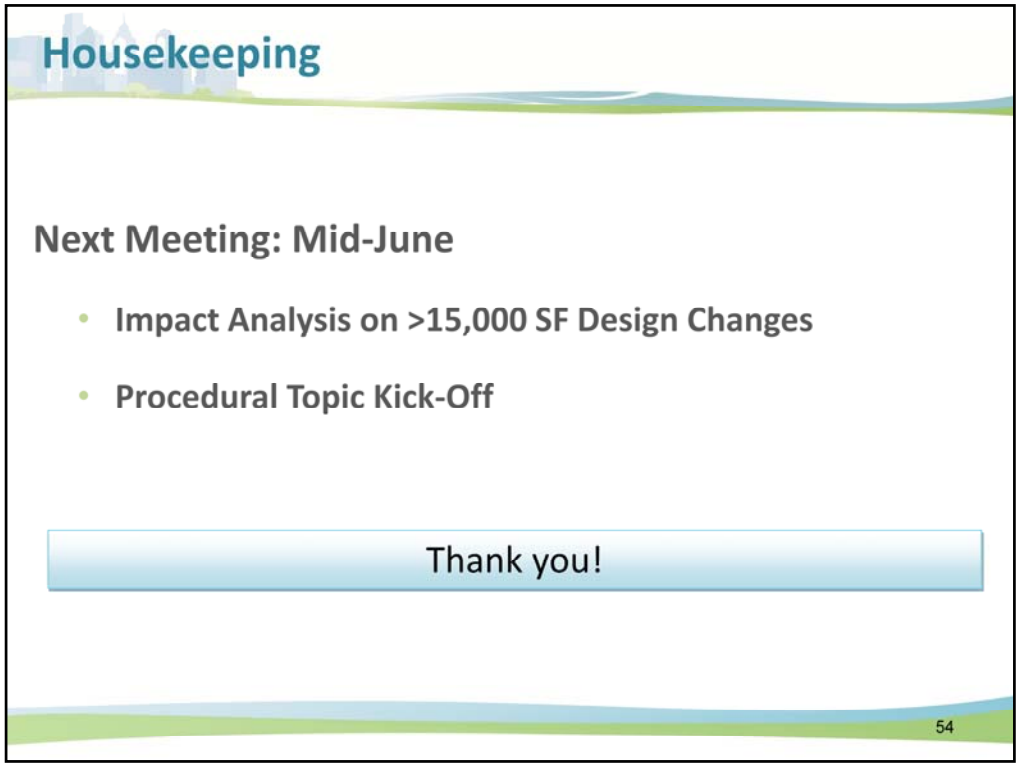


There are a number of procedural topics, which relate to the how the DSC does business with PWD, that PWD would like to discuss with DSC over the next year. These topics run the gambit from updates to the stormwater approval process as well as other programs offered by PWD to assist both the development community and customers alike. More specifically, potential topics include:

- Stormwater Billing Credits and Stormwater Management Incentives Program (SMIP)
- Green Streets Design Manual
- Stormwater Management Guidance Manual Improvements
- Plan Review Website Enhancements
- Infiltration Testing Guidance
- SMP Maintenance
- SMP Inspections
- Innovative SMPs
- Review Process Incentives
- Outreach Techniques
- GSI Public Investment

PWD would like the DSC to help rank and prioritize these topics for discussion at future meetings. If there are other subjects not included on the list, PWD would like the DSC input on those as well.

As provided via email on March 28, 2014, PWD has requested the DSC complete and return a survey to help PWD understand the level of detail to discuss technical topics as well as help in ranking procedural topics for discussion at future DSC Meetings.



The next DSC Meeting is tentatively scheduled for mid-June. Topics to be discussed include:

- The impact of proposed design criteria changes on projects > 15,000 SF and
- A kick-off on the procedural improvements discussion