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Municipal Role in Water Quality

2016 NEW JERSEY SUSTAINABLE SUMMIT

PRESENTERS

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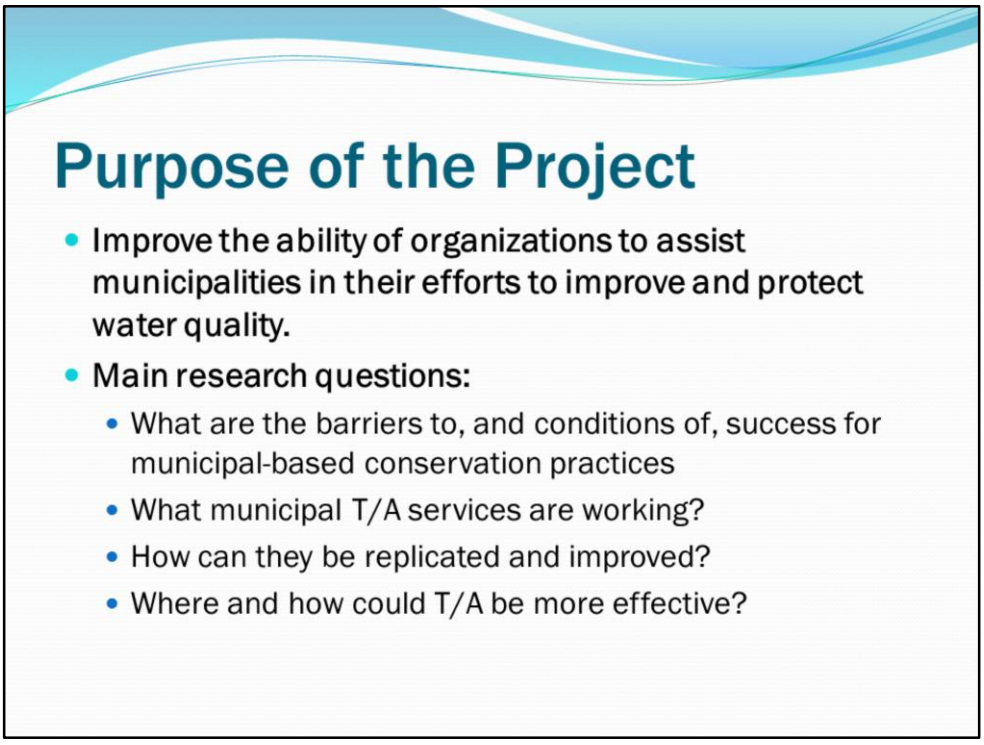
2016 New Jersey Sustainability Summit @SJ_Program | #SustainableStateNJ

I'd like to speak to you today about a current DVRPC project to understand and improve municipal actions to protect water quality.

The project was funded by a $300k grant from the WPF. It is both an intensive research and stakeholder engagement effort.

Our geographical area is the entire DRW which includes parts of 4 states and over 800 municipalities.

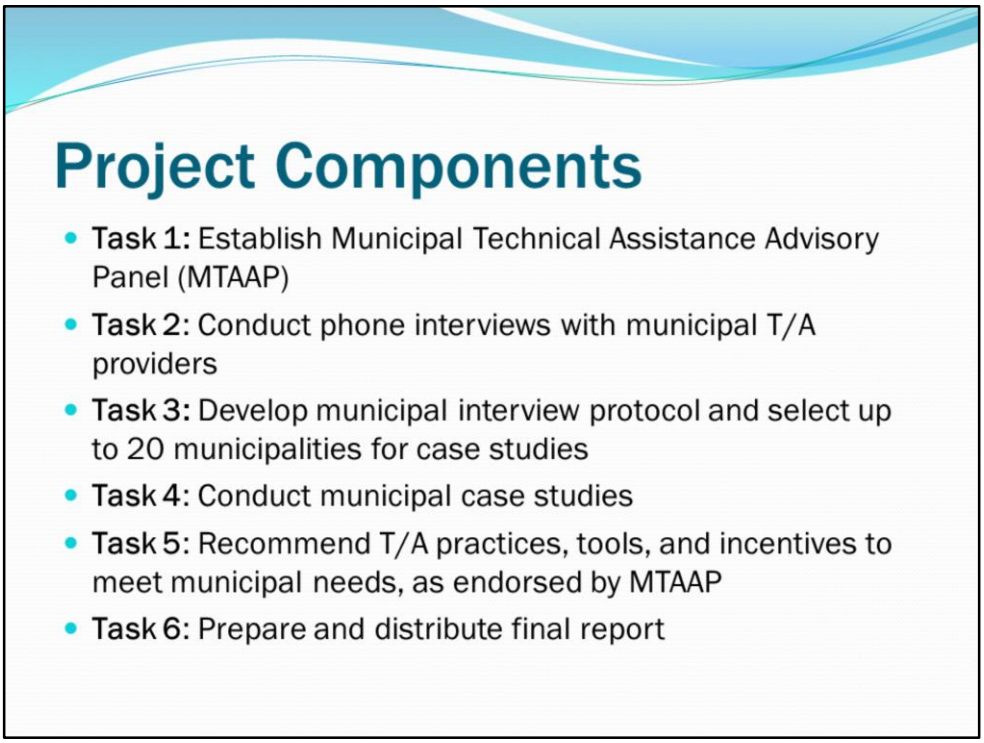
I'm one of 5 team members on the project and the effort has been led by Alison Hastings of our office. As such, I am going to provide you with a broad overview of the initiative.



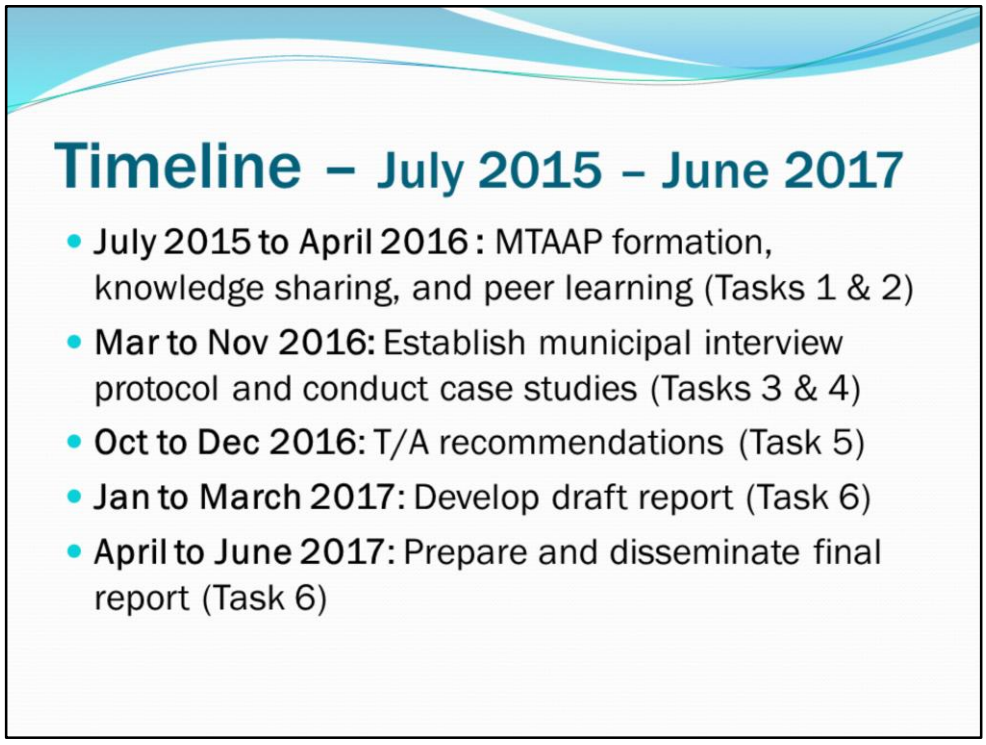
At its most basic, the project is aimed at improving the ability of organizations to help municipalities improve and protect water quality.

For this project we refer to these organizations as “technical assistance provides”.

We are also looking to raise awareness among municipalities about their roles and responsibilities in protecting water quality.

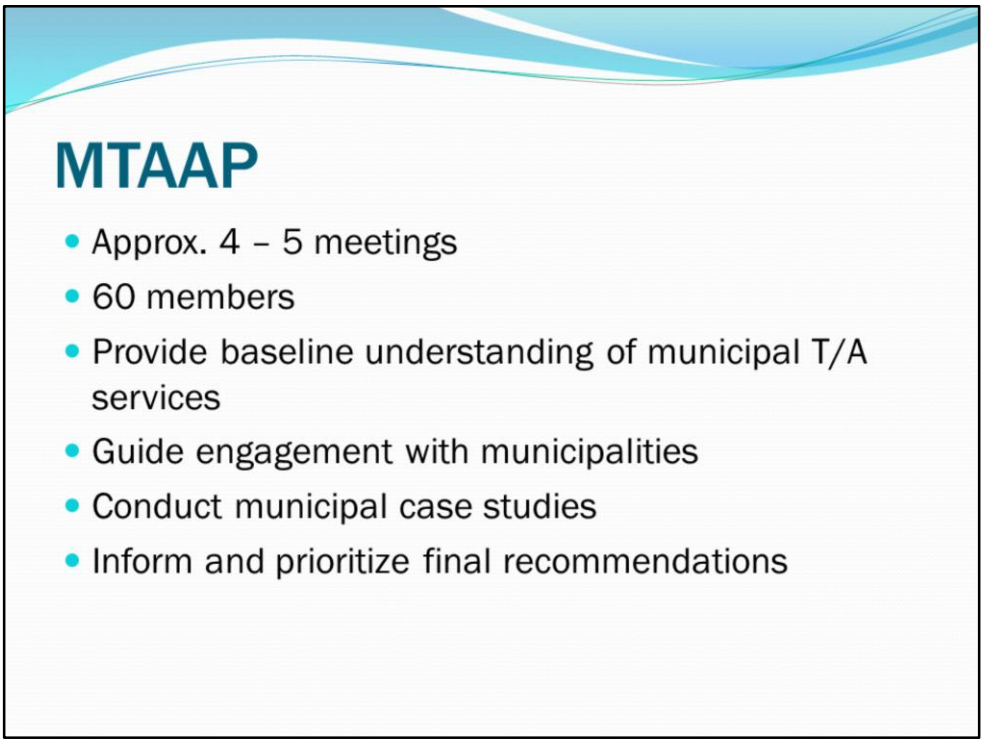


The main project components include: 1)



The project will take place two years. In the first phases of the project we established our advisory panel and conducted outreach to almost 70 municipal T/A providers.

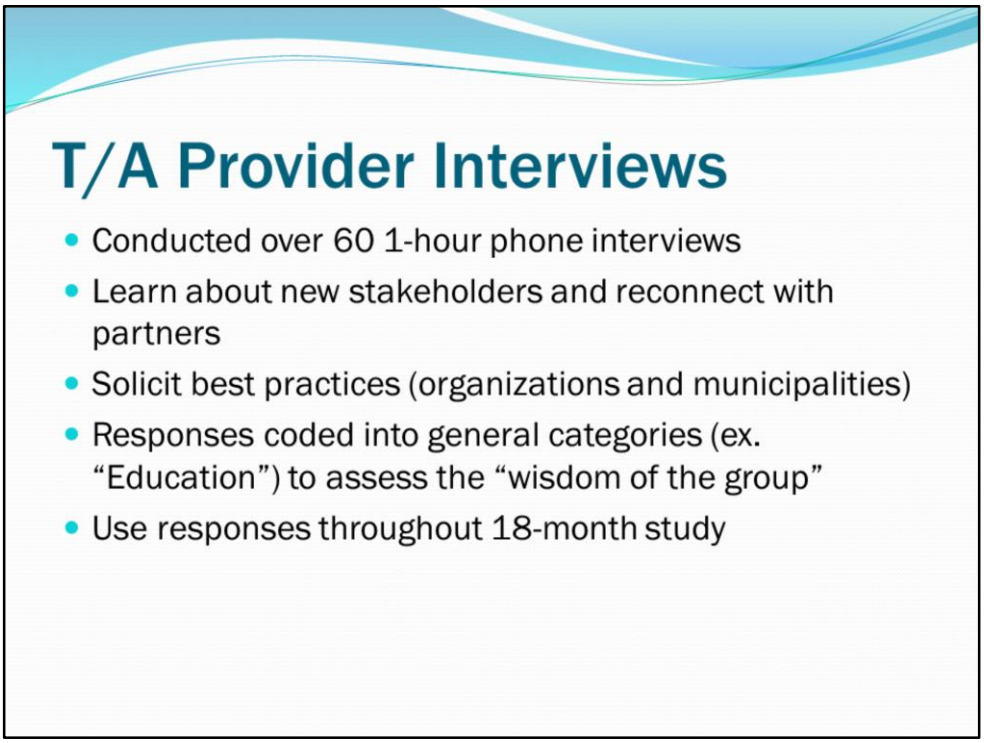
We are currently gearing up for the municipal case study phase of the project and will develop recommendations and a final report in the first half of 2017.



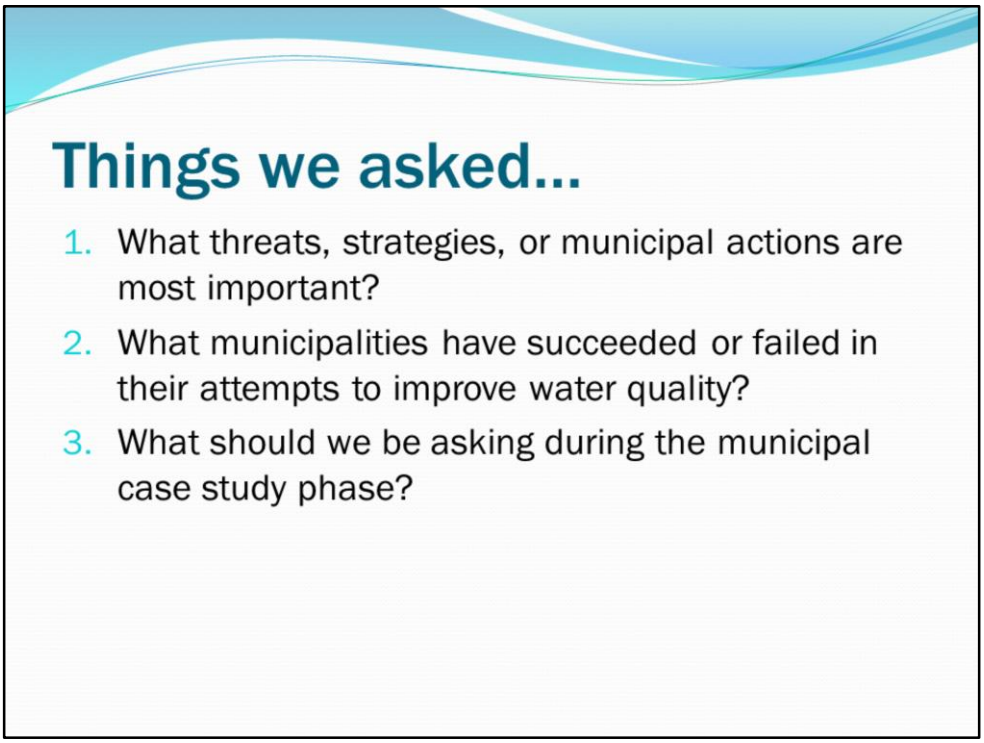
Our core stakeholder group is called the MTAAP and includes approx. 60 members (including some of you in this room). Approx. 35 members attended our first two meetings.

The MTAAP will inform and assist with all phases of the project.

The most intensive part of the project to date has been the stakeholder interviews. These took place between last September and April.

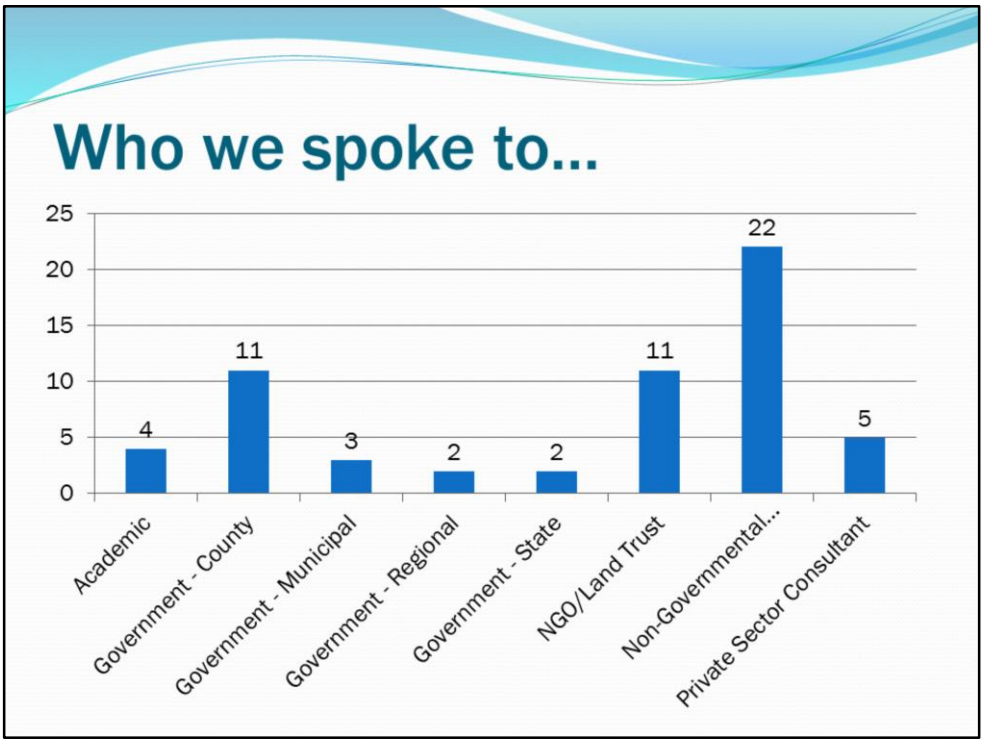


We conducted over 60 1-hour phone interviews with T/A providers. Each interview followed an identical script so that in the end we could "code" the responses to assess the wisdom of the group.

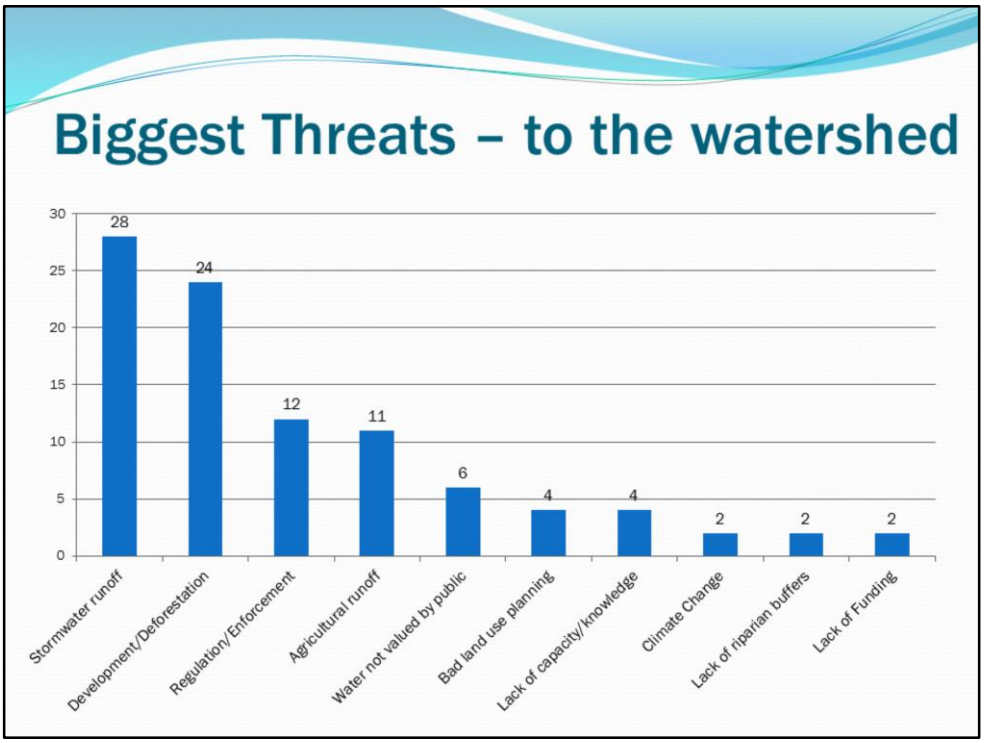


The questions were about threats, strategies, limitations and recommendations and municipal actions are most important and on specific municipalities that have succeeded or failed in protecting water quality and why.

The end goal is to inform the municipal outreach phase of the project.



We talked to lots of folks thought they primarily non-profits, land trusts, and county agencies including soil conservation districts.



We categorized the responses to the questions we asked into general categories. The responses themselves varied in tone, emphasis and substance, but they could be grouped into categories. Of course, it should be noted that this categorization was a subjective exercise on our part.

Frankly, for the most part, what I would call an exhaustive interview process revealed what we already knew.

Not surprisingly, stormwater runoff from developed areas, agricultural runoff and continued deforestation and development were the most frequent responses.

The responses also showed that folks were all getting at the same thing from different angles: In other words, a lack of political will and public understanding leads to poor land use planning which leads to deforestation, fragmentation and bad development, which in turn leads to stormwater runoff and the attendant problems with nutrients, sedimentation and pollution.

Looking at the top responses,

We heard a lot about stormwater runoff in urban and developed areas, the growing volume of nonpoint source pollution, and the impacts on rivers and streams.

We also heard a lot about development, deforestation and fragmentation, but perhaps more interesting that the categorization is the actual responses we heard:

“Fragmentation and loss of land however it occurs, whether it be from infrastructure improvements, pipeline construction, development of forest lands, or poor land management on private lands.”

“Runoff in general and all that it brings with it (sediment load, fertilizer, etc.)”

“It depends on where you’re at. Upper basin: forest; Lehigh county: ag; downstream: stormwater runoff”

“Stormwater runoff is the biggest threat because despite the rules and regs, munis don’t do a good job of carrying them out.”

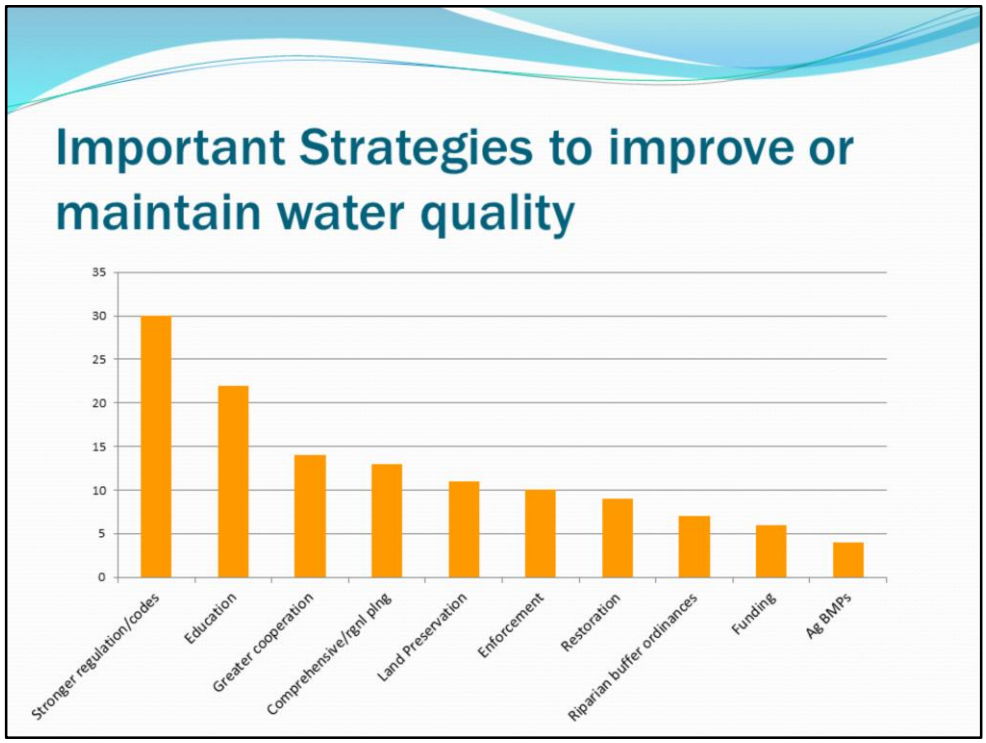
“Non Point Source pollution. Behavioral changes will be needed. Root cause is lack of awareness and appreciation for water resources and what it takes to manage them.”

“People! Communities are built-out, and damage is done. It will take PWD-like actions to fix the water quality problems in the built-out upstream Philly areas, but without an EPA like edict, how will that happen?”

“Poor land use- once you disturb the land, create a host of problems and water quality issues”

“Lack of awareness of water quality issues, people not knowing the impact of their actions on the watershed and how their actions in one part of a the landscape affect another.”

“Agriculture is the biggest threat, because the region has some of the most fertile soils in the nation and farming is a BIG, unregulated industry that creates a lot of non-point source pollution.”



The “strategies” question yielded a similar story with an emphasis on better regulation and enforcement, education, preservation, restoration, collective approaches, and riparian buffers.

The biggest response here was better regulations and ordinances, including updating and adopting ordinances to implement the comp plan, making ordinances more impactful (for example, increase stream buffer from 50' to 100'), and having state enabling legislation to empower municipalities to establish stormwater authorities and/or fees.

We heard things like:

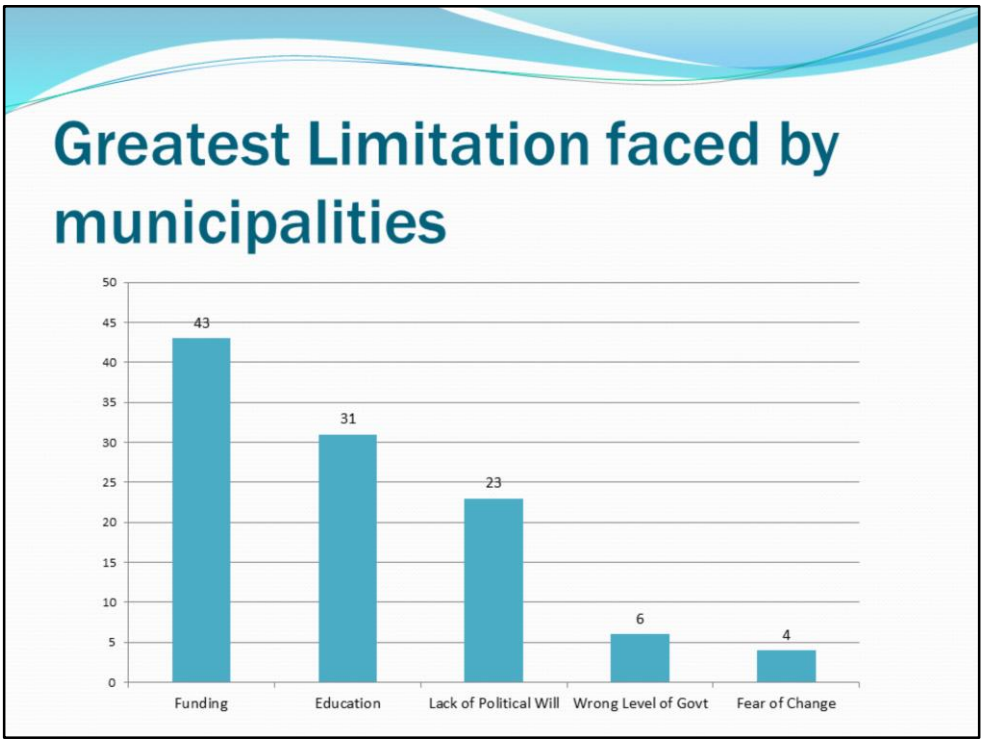
"Policy and regulation complemented with incentives. Property owners and the private sector needs to be regulated – "unless you tell us to do it, we're not going to do it."

And

"You can't protect everything, so you have to rely on municipalities to set up ordinances for incoming development to ensure that minimal impact development occurs."

As for what municipalities can do it was a similar refrain: regulation and enforcement, educating municipal staff and officials, leading by example, retrofitting existing development and adopting stormwater fees.

Quote: "Municipalities can lead by example, such as by doing several high profile projects themselves (e.g., retrofitting a basin). If they're not doing it themselves, they can't get their residents to do protect water quality too."



With regard to limitations, respondents emphasized funding, which includes a lack of professional capacity, public opinion and political will that supports municipal actions, and the fact that the municipalities might just be inherently too small in scale to take effective action on water quality.

Conclusions

- Cross-cutting Themes:
  - Regulations – adopt them; update them; enforce them; assess them (repeat)
  - Education – the public, elected officials, professional staff
  - Municipalities have opportunity to lead by example
- Undercutting Limitations:
  - Funding – Where's the revenue? Lots of expenditures: education, staff time, and projects
  - Political buy-in and public will need for funding mechanisms, regulations, and prioritization

Municipal Outreach Phase

Municipal Outreach Phase

- Which municipalities should we reach out to?
- Municipal Case Study Methodology
  - What do we want to learn?
  - Which tools are most effective for protecting water quality and why?
  - What factors lead to success or failure
  - How can we encourage or incentivize municipalities to replicate successes?
  - What do municipalities need from the T/A community?

How do we select which municipalities to interview?

- Diverse cross section of municipalities
- Geography/States
- Population Density
- Wealth
- Land Use
  - % Forested
  - % Developed
  - % Agricultural

New Jersey Potential Case Study Municipalities

NAME	State	Pop Density	MedianHHI	Percent Ag	Percent Developed	Percent Forested	County
Evesham township	NJ	1,555.06	88,980	4.71%	46.11%	18.85%	Burlington
Pilesgrove township	NJ	115.26	87,083	69.13%	10.77%	8.34%	Salem
Camden city	NJ	8,669.60	27,027	0.36%	94.93%	1.55%	Camden
Lambertville city	NJ	3,386.06	71,532	1.60%	64.07%	29.46%	Hunterdon
Hamilton township	NJ	2,240.20	72,026	11.38%	61.43%	8.34%	Mercer
Hammonton Township	NJ						Atlantic

Next Steps

Municipal Interviews and Case Studies

- Finalize municipal overview interview protocol
- Interview ~50 municipalities
- Select 20 municipalities for case studies
- Aim for 15+ completed case studies

Municipal Case Studies

- Where does water quality fall on the municipal priority list?
- Do they see water quality as their responsibility?
- Understand barriers and motivations
- Gather and test out recommendations
- Understand how to implement recommendations
- Determine which types of T/A are most useful

Example Recommendations

- Establish legal fund for municipalities that change land use and zoning ordinances to support water quality goals
- Create matching fund for municipal staff training and/or continuing education credits
- Include (and resource) County Conservation Districts and Planning Commissions in WPF cluster proposals
- Work with PSATS, PSABS, NJ League and other one-stop shops for municipalities to raise awareness re: water quantity and promote municipal tools

For More Information

www.dvrpc.org/Environment/water/MunicipalActions/

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Municipalities' Important Role in Stormwater

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Presented at 2016 New Jersey Sustainability Summit

Stormwater and nonpoint source pollution is considered to be the major contributing source of pollution to our waterbodies.

Municipalities play a key role in managing stormwater and protecting and improving water quality

NJPDES stormwater program rules and program have been in effect since 2004

In the last several years the general perspective on stormwater is shifting from stormwater being viewed as an inconvenience, a burden, or nuisance

to now being seen as a valuable resource.

Part of this shift is to manage stormwater closer to the location it was generated and to implement stormwater infrastructure that has additional benefits such as: community beautification, shade, habitat, local job creation, water reuse, environmental education and engagement, and even public art.

Stormwater management can be a key component of a municipality's overall sustainability objectives and actions.

Atlanta Georgia built a unique park with stormwater features that not only manage the storm water but also enhance the park experience through features such as water fountains.

Municipalities undertake many actions to manage stormwater…

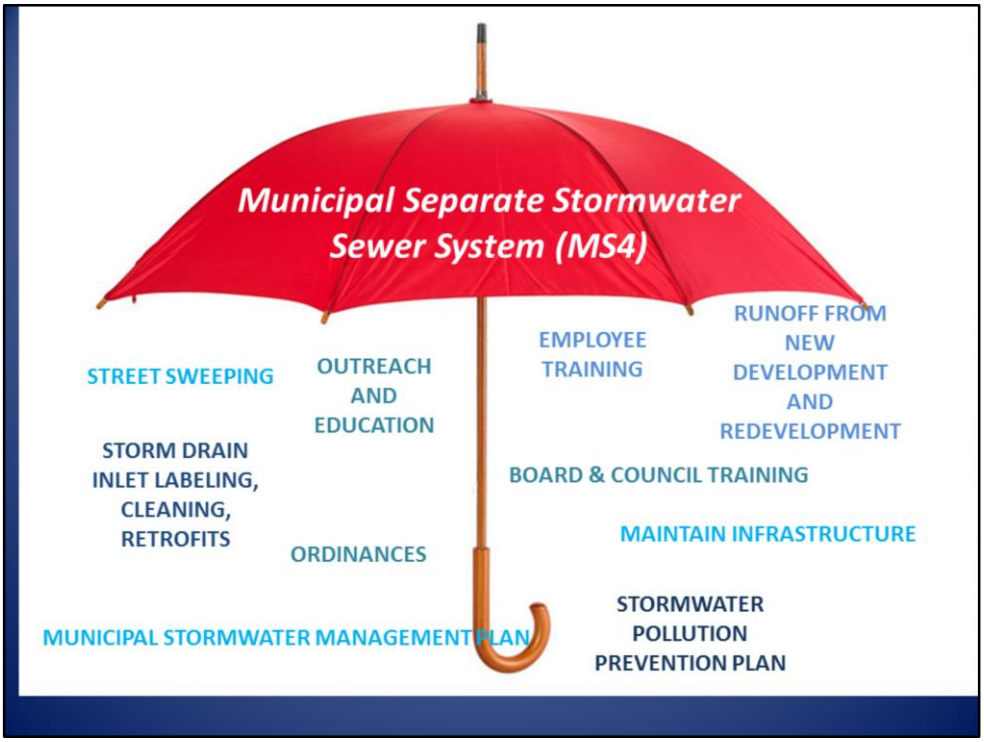
review designs for new and redevelopments

Maintain infrastructure

Street Sweeping

Helping to educate the public

Adopting ordinances that incorporate best management practices.



The Municipal Separate Stormwater Sewer System (MS4) Permit is the umbrella under which most stormwater activities occur.

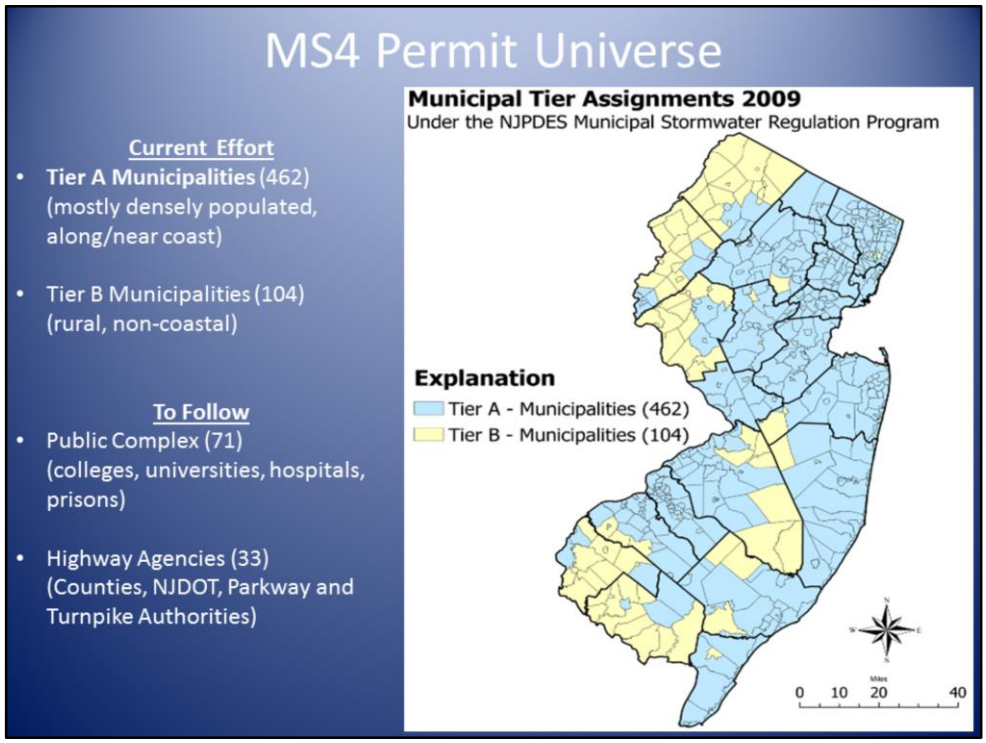
The Goal of the MS4 permit is for "Water Quality Improvements and Reduced Flooding through Proper Stormwater Management."

The Tier A Permit requires that each municipality develop, implement, and enforce a Stormwater Program.

The stormwater management program must be designed to reduce the discharge of pollutants to the maximum extent practicable, protect water quality and satisfy the requirements of the CWA

The stormwater program is described in the municipality's written Stormwater Pollution Prevention Plan (SPPP).

The SPPP describes how your municipality will implement each permit requirement and it provides a place for record keeping, documenting when you met the permit requirements.



Tier A Municipalities: An entire municipality is assigned to Tier A if that municipality: generally:

i. Is located entirely or partially within an urbanized area and has a population of at least 1,000 within an urbanized area;

ii. Has a population density of at least 1,000 per square mile, and a population of at least 10,000 as determined by that Census;

iii. Has a stormwater sewer system discharging directly into the salt waters of Monmouth, Ocean, Atlantic, or Cape May counties (using the N.J.A.C. 7:22A-1.4 definitions of “stormwater sewer system” and “salt waters”).

First issued in 2004, updated 2009

Pre-draft of the Tier A was issued in February; Tier B in March

Extensive Outreach

- For the better part of 2 years MS4 predraft permit has been on multiple agendas at statewide conferences (NJWEA, LOM, Assoc of Counties)
- For the past 6 months we have held workshops in every county for municipal reps. We have tried to reach every municipality either directly or through

an association/organization

- Engaged with:
  - Municipalities and League of Muni (hosted a webinar)
  - Counties and Association of Counties
  - Municipal engineers
  - Mosquito Control Commissions
  - Soil Conservation Districts
  - Environmental Entities

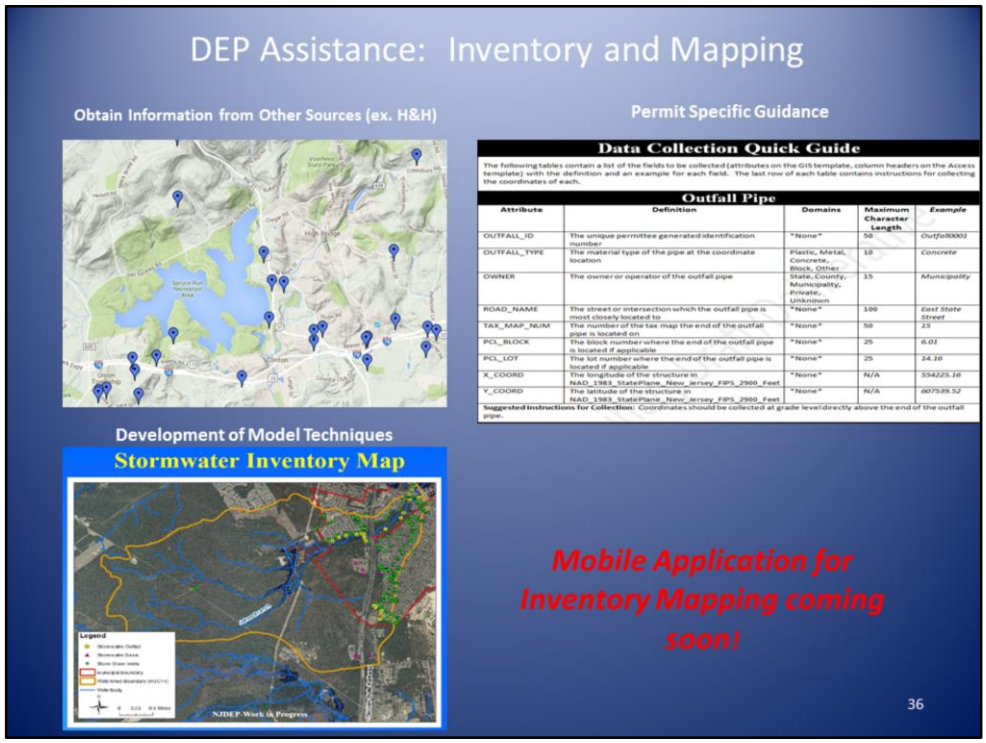
Many conditions of the permit remain unchanged or clarified from 2009; most new requirements are phased in over time

What the pre draft includes:

- Infrastructure Inventory and Mapping to support of operations and maintenance of stormwater facilities (including older facilities)
- Improved education and training opportunities at the local level (expanded

activities to earn points

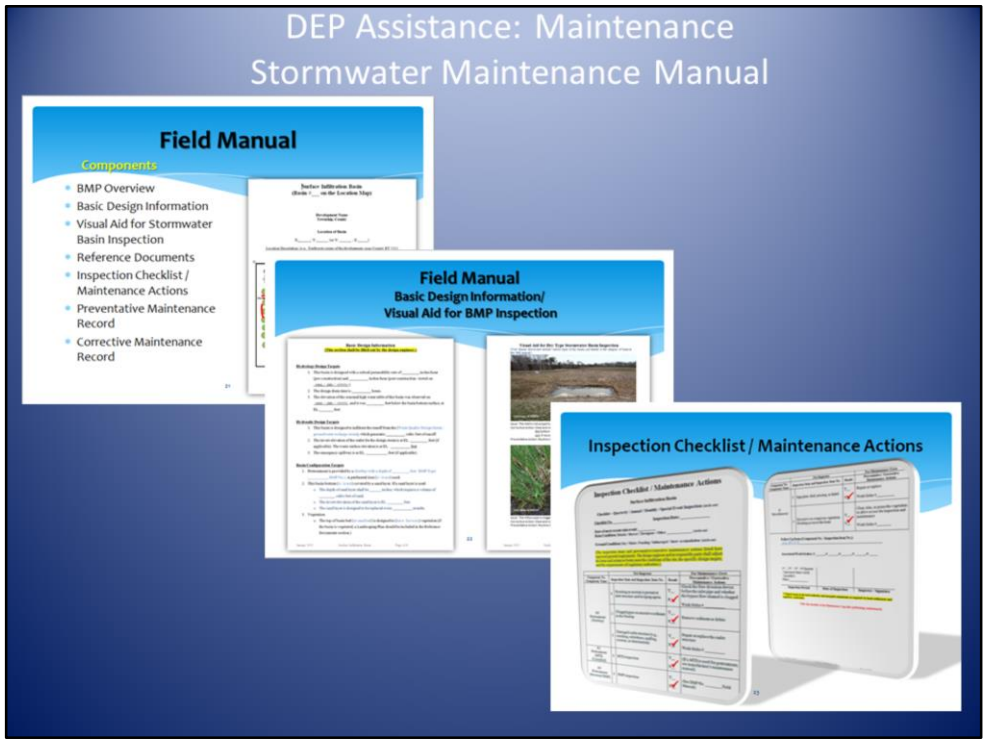
- Increased public outreach and transparency of stormwater provisions (i.e. web postings of SPPP and ordinances)
- Post Construction: summary checklist, prioritize O&M
- Elimination of additional permits needed for specific municipal operations



Inventory – outfalls (in current permit), Basins, MTDs, subsurface systems, Green Infrastructure

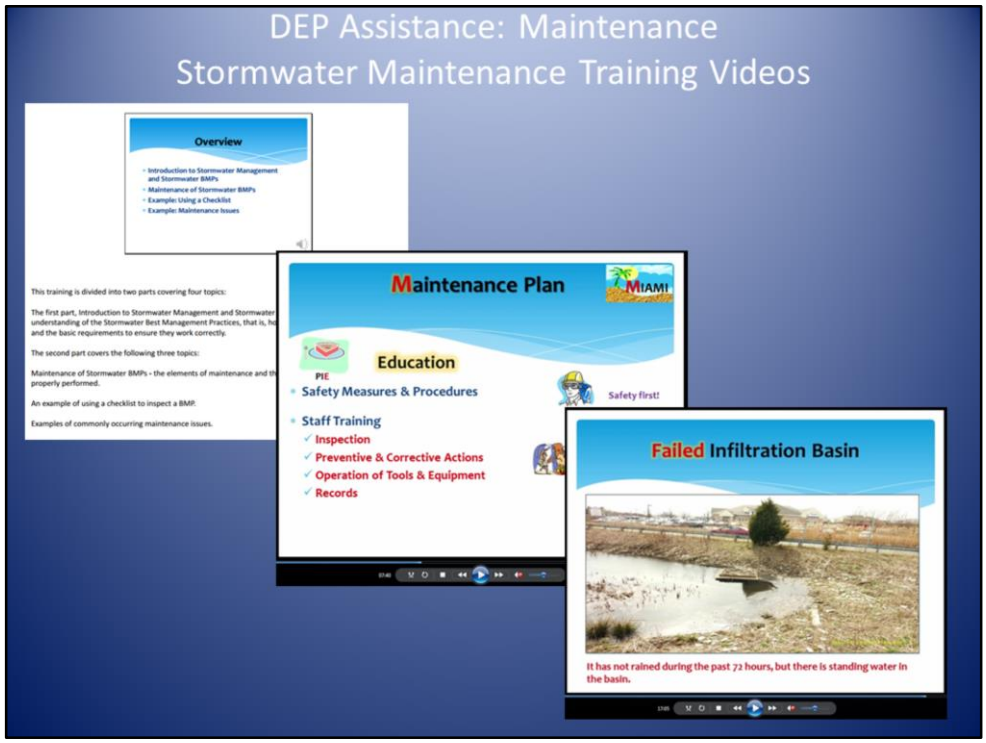
- Make existing GIS data available as a starting point
  - Existing data from NJDEP and SCD (H&H)
  - Coordinate with Mapping Sources (Counties, Highlands, ANJEC, etc.
  - H&H Database

- Coordinate data collection and data sharing
- Develop multiple collection methods to suit different levels of GIS experience
- Provide detailed guidance on meeting electronic inventory requirements
- In person training
- Provide time….3 years to gather inventory, 4 years to map



<u>Requirement:</u> Maintenance Manual (Maintenance Plans, Field Manuals, Logs, Inspection Records) all designed to ensure compliance with recordkeeping and maintenance provisions of permit and rule. Use is optional.

It is open source and can be revised by the user as needed.



These videos go hand in hand with Maintenance Manual (prior slide)

Conditions Related to Local Review of Stormwater Design in Development & Redevelopment

- Require DEP training for Stormwater Management Design Reviewers (e.g. Municipal Engineers)
- Require Online Training for Planning and Zoning Board Members
- Major Development Stormwater Summary Form

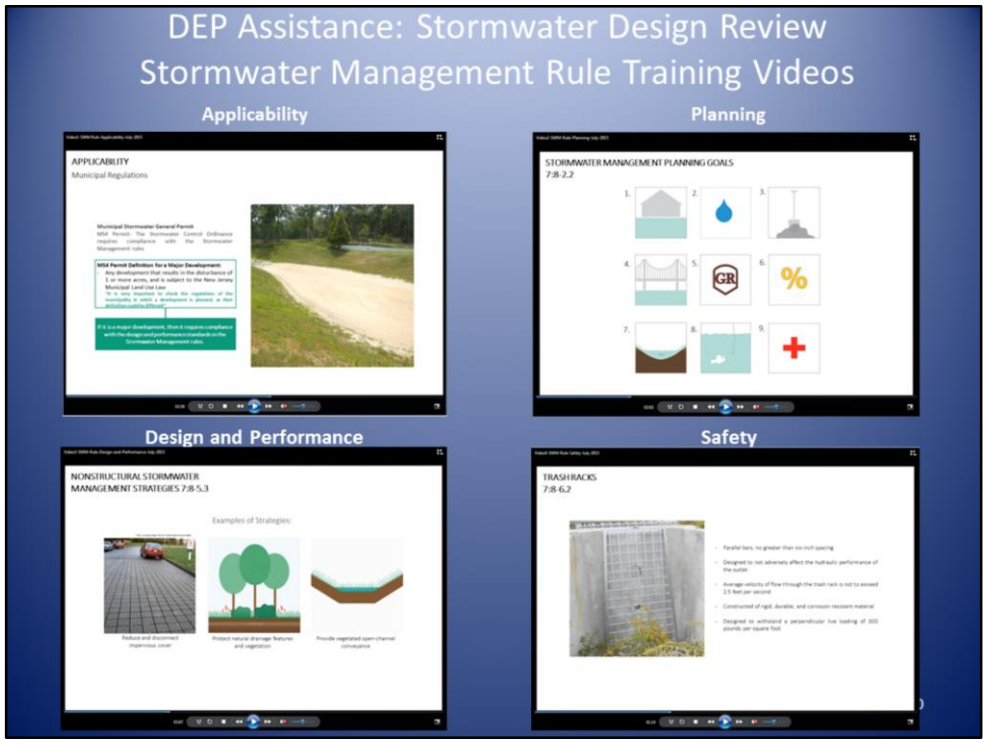
Rationale:

- Reinforce Proper Application of Standards
- Improve water quality

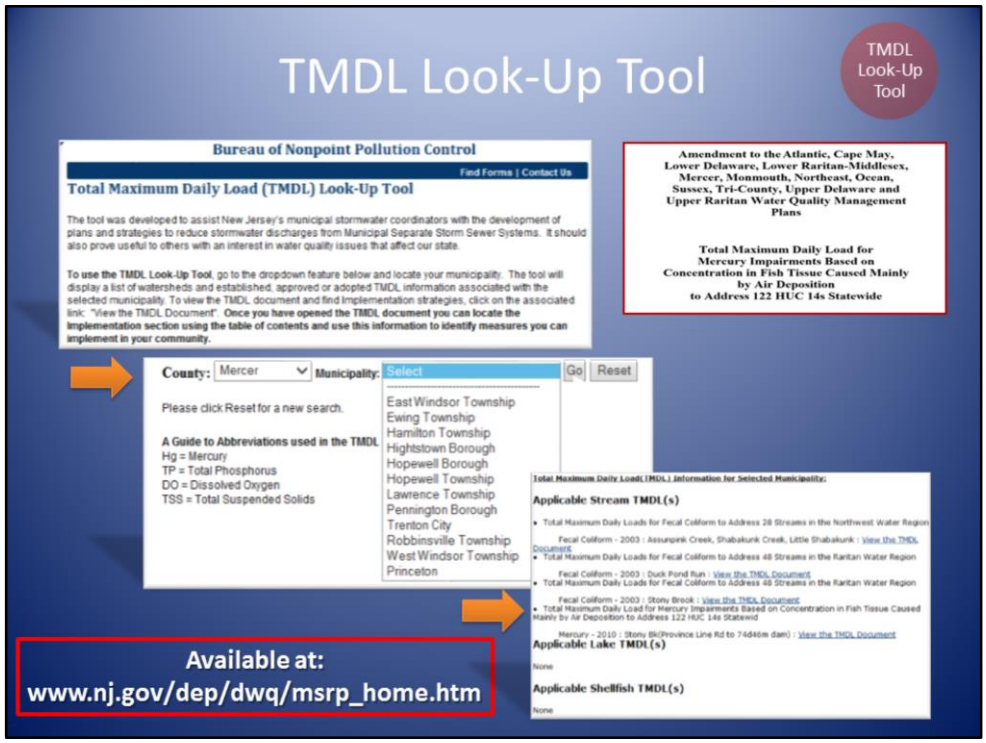
- Addresses water quantity and flooding

Assistance:

- Summary Form – one page
- Schedule to Implement
- Potential Collaboration with ANJEC (NJPO, Sustainable NJ and NLOM?)
- Annual DEP training course for Stormwater Design Review for Engineers/Reviewers (similar content posted on-line – not yet replacing live training)
- Onsite Audits



Compliments BMP manuals



Requirement:

Incorporation of TMDL information into Stormwater Pollution Protection Plan (SPPP

- Identify Impaired Waterways in Municipality
- Identify and Develop Strategies to Address Sources of Pollutants
- Update SPPP Annually
- Prioritize Stormwater Facility Maintenance & Repairs

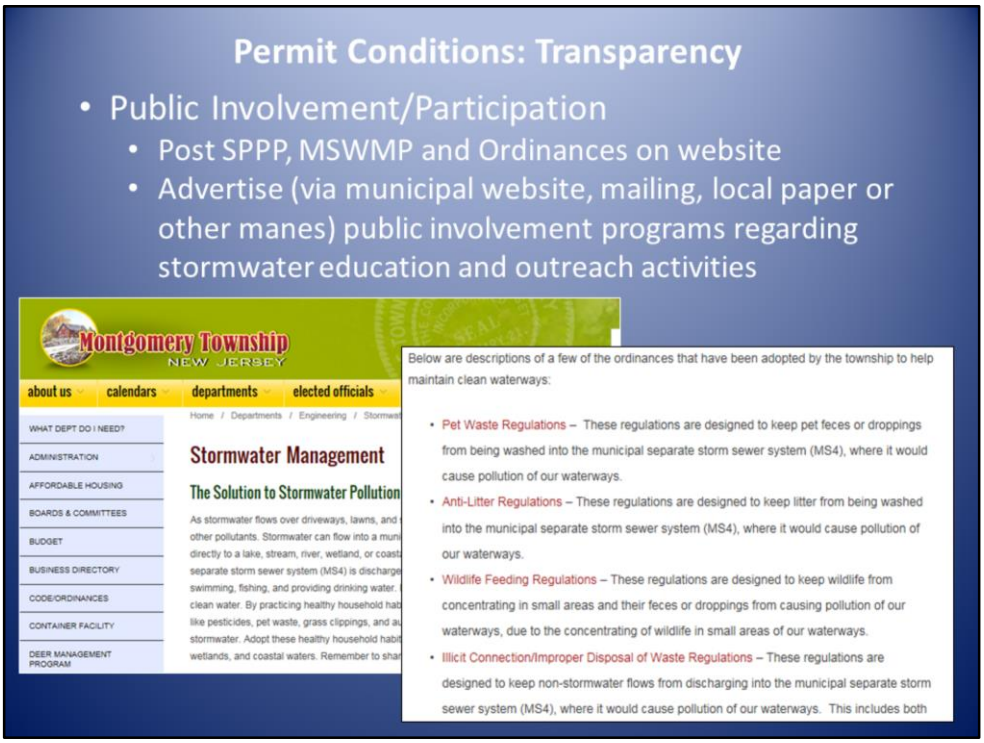
Rationale:

- Recognizes Limited Municipal Resources

- Supports local efforts to improve water quality

<u>Assistance:</u>

- Schedule to Implement (EDPA + 1 year)



This slide highlights <u>new</u> conditions in the PreDraft which require posting of information, public education required by the Municipalities

1) post on their website the municipality's SPPP, MSWMP and Stormwater Ordinances; and

2) Advertise public involvement programs pertaining to education and outreach activities. Item 1) is intended to satisfy requests that a town's stormwater "plans" be readily accessible to the general public.

This is an imagine of one municipality's stormwater website. Many municipalities already have a stormwater website b/c it helps to met compliance with the existing permit.

Common Examples of Funded Stormwater Projects

- Green Infrastructure projects (i.e. rain gardens, pervious paving, subsurface gravel wetlands, etc.)
- Purchase of stormwater maintenance equipment, such as street sweepers and vacuum trucks
- Replacing existing storm inlets and stormwater systems
- Rehabilitation of existing stormwater sewer systems which have water quality benefits
- Retrofit of existing basins to increase water quality benefits;
- Installation of Manufactured Treatment Devices
- Construction of regional stormwater basins and extending stormwater outfalls

Shared Services:

The Municipality may rely on another governmental, private, or nonprofit entity to satisfy one or more of the Tier A Municipality's MS4 NJPDES permit provided:

•The other entity implements the control measure

•The control measure is at least as stringent or as frequent as the corresponding permit requirement

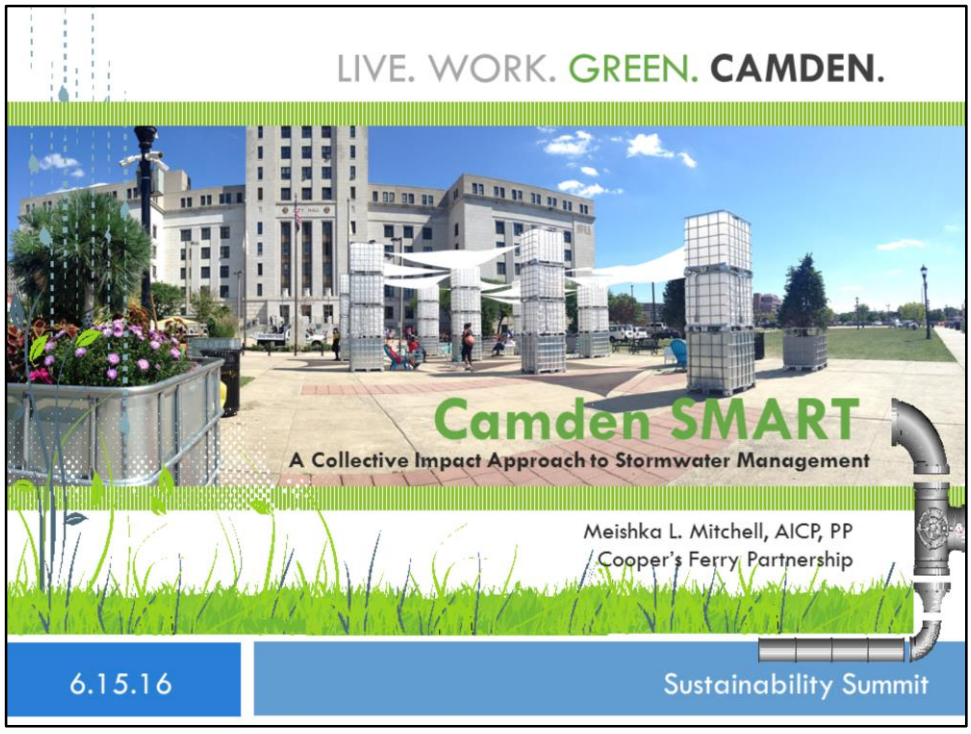
•The other entity agrees in writing or is required by law to implement the measure in manner compliant with the permit on the Municipality's behalf

Schedule for
Preliminary draft of the MS4 Tier A permit released 2/8/16
Preliminary draft of the MS4 Tier B permit released 3/11/16
Clean Water Council Public Hearing Held April 12, 2016
DEP will conduct outreach to municipalities through June 2016
Formal Draft Release August 2016, with Public Comment Period
Final Permit Issued December 2016, with Effective Date February 1, 2017

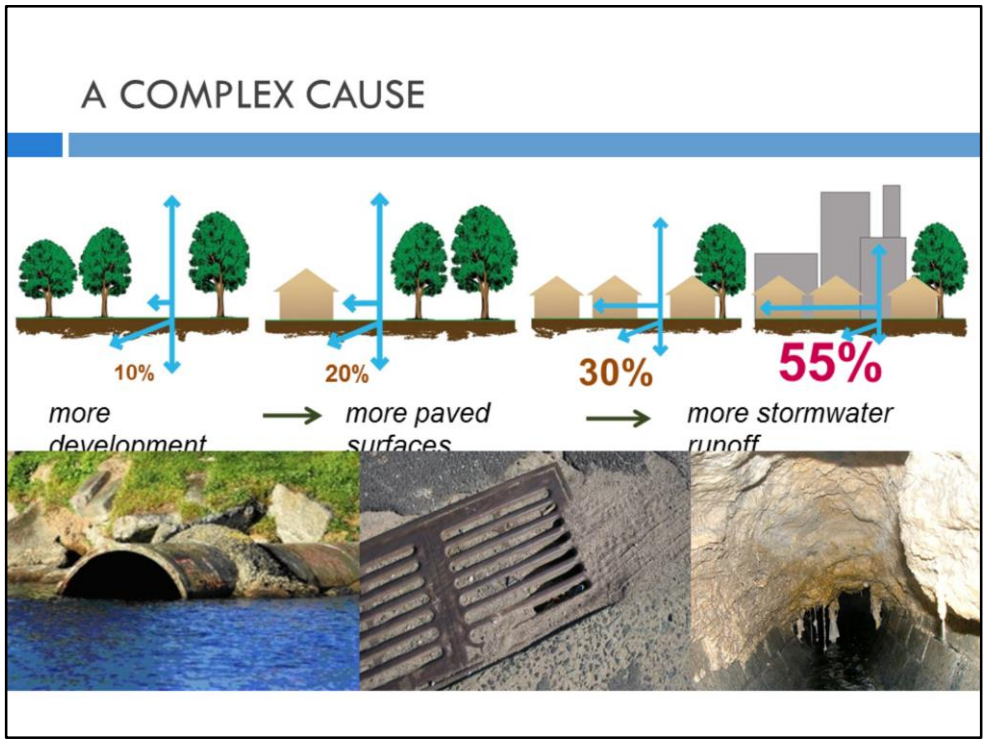
Common Concerns from Municipalities:

- Cost of compliance; grants needed; unfunded mandates
- Concerns about private basins: ensuring maintenance (especially older basins), access to property
- Mapping and Inventory: staff needs; technology; DEP guidance needed; comments of support
- Basin maintenance cost concerns and permits (Land Use) needed

Cost and location of required review engineer training/burden of required Board/Council member on-line training

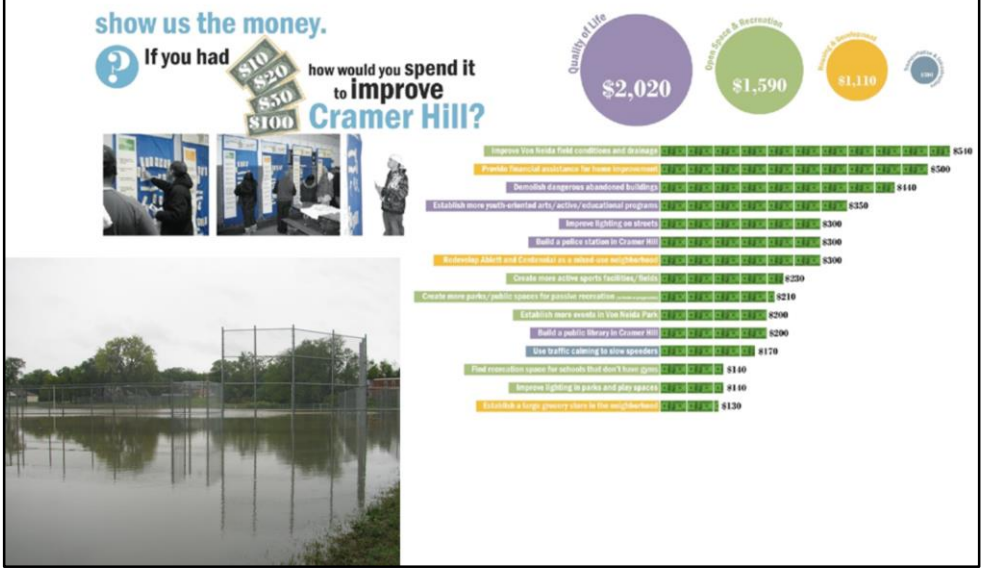

LIVE. WORK. GREEN. CAMDEN.
Camden SMART
A Collective Impact Approach to Stormwater Management
Meishka L. Mitchell, AICP, PP
Cooper's Ferry Partnership
6.15.16
Sustainability Summit

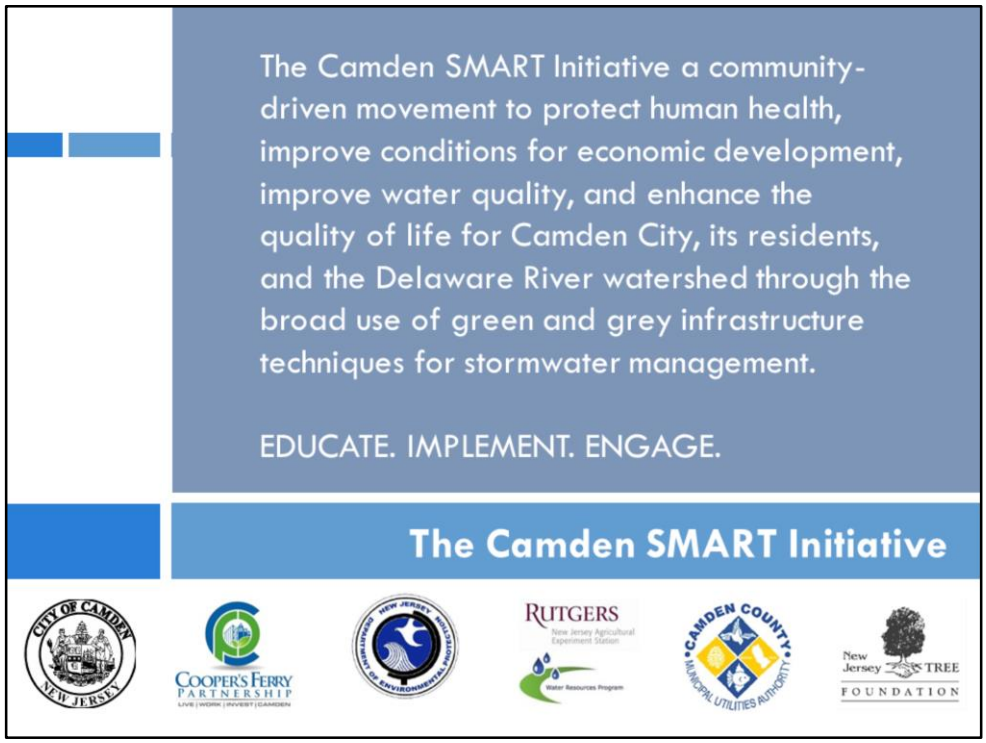
From neighborhoods to the downtown waterfront, flooding has major impact on existing residents, as well as the future development potential of the City.



The City of Camden has a degraded century-old combined sewer system with 180 miles of pipe, much of it still brick, traveling throughout the city. During rain events, sewage is discharged out of 23 outfalls into the Delaware River, the Delaware River Backchannel, the Cooper River, and Netwon Creek. Infrastructure investment critical for current resident and new development.

Stormwater Management
A NEIGHBORHOOD DEVELOPMENT PRIORITY





…take a different approach to this presentation by first telling you about our program, and then explain how our program came to be. The work that we do each day is quite sensible, actually…who doesn't want to to protect human health, water quality, and the quality of life for people?? But the story of how it began and why it works is a bit more interesting.

THE SMART TEAM

City of Camden

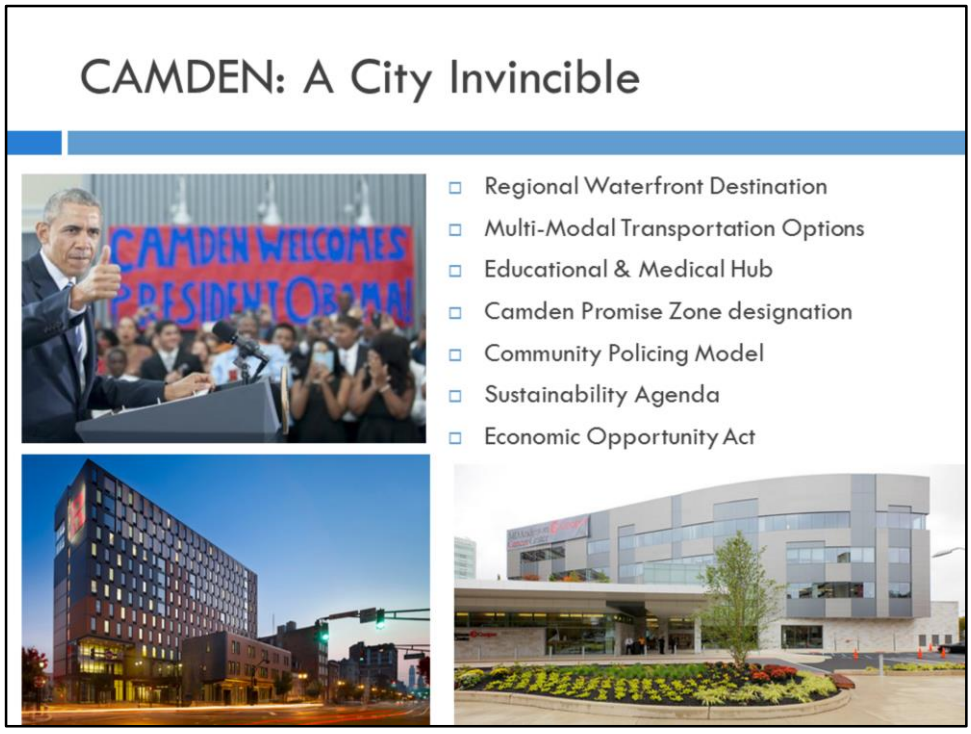
Cooper's Ferry Partnership

NJ Department of Environmental Protection

Rutgers Cooperative Extension Water Resources Program

Camden County Municipal Utilities Authority

NJ Tree Foundation



2014 was a transformative year for Camden. The Economic Opportunity Act has spurred announcements of new development from the Philadelphia 76ers Subaru, and Holtec International…with more announcements on the way. And this week's newspapers reported on the positive improvements in public safety in Camden. Since Camden has started using a county police force in May, 2013, there has been a 51 percent reduction in homicides, 22 percent drop in violent crime and 44 percent reduction in shootings. Camden's revitalized downtown waterfront continues to attract close to 3 million visitors a year. And collectively, Camden's educational and health care anchor institutions are investing in Camden's downtown.

And all this means that, once again, the City of Camden, with its institutions, nonprofit partners, and committed citizens, has an opportunity to transform and re-emerge as an economic center

once again.

With economic development as a primary objective for my administration, I acknowledged early on (starting with my transition reports in 2010) that Infrastructure and Sustainability would be center stage of that discussion.

- In 2013, the State of New Jersey passed the New Jersey Economic Opportunity Act
- Merged existing state economic development incentive programs into two programs
- Goal to enhance business attraction, retention, and job creation efforts and strengthen NJ's competitive edge in global economy
- Establishes Camden as Garden State Growth Zone (only in SJ)
- In Camden, targeted industries like logistics, manufacturing, energy, defense, maritime, and technology receive increased benefits

"Gamechanger" for South Jersey and

Camden Consolidates existing incentive programs into two

- NJ GROW & EERG

Camden is a Garden State Growth Zone 20 Year Tax Abatement Much ‘sweeter’ incentives to

level playing field
Lowers barrier to entry for South Jersey & Camden projects

LIBERTY
PROPERTY
TRUST

SMART IN NUMBERS

49 GREEN INFRASTRUCTURE PROJECTS COMPLETED

1,458 TREES PLANTED

223 RAIN BARRELS DISTRIBUTED

4,000 RESIDENTS ENGAGED

40+ PARTNERSHIPS CREATED

$25 MILLION INVESTED CAMDEN FROM 2011-2015

And together these projects infiltrate and capture over 4 million gallons of stormwater that would otherwise go into the overburdened combined sewer system.

Camden Earth Week 2014 engaged hundreds of residents, stakeholders, and volunteers, who planted 21 trees, constructed and distributed 28 rain barrels to Camden residents, collected thousands of pounds of garbage, planted a community garden, cleaned streets and alleys, toured the Camden County Wastewater Treatment Plant, hiked Petty's Island, and shared green drinks.


Stream
Daylighting


Pervious Pavement
BEFORE
AFTER

On January 24, 2013, the city of Camden, with the support of Cooper's Ferry Partnership, Camden County Municipal Utilities Authority, NJDEP, and USEPA, launched the CCI. The Collaborative is building upon the success of environmental initiatives underway, made possible by the efforts and resources of multiple partners that have come together to address the complex environmental issues present in the City. The CCI was formed to realize the many opportunities to maintain, restore, and enhance the environmental resources in the city. The CCI will facilitate and leverage partnerships for proactive, holistic, and innovative solutions to help Camden become a vibrant sustainable city.


COOPER'S FERRY PARTNERSHIP
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JERSEY WATER WORKS
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