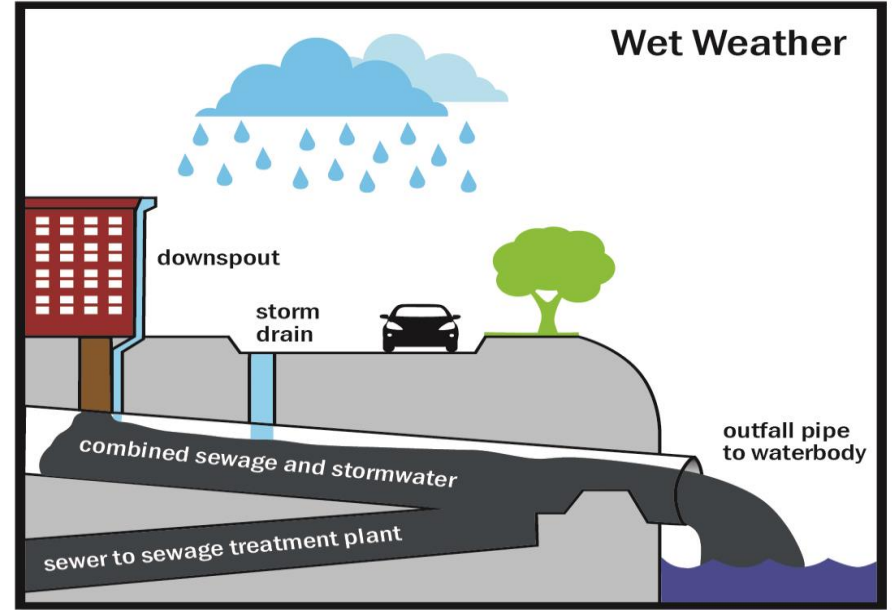
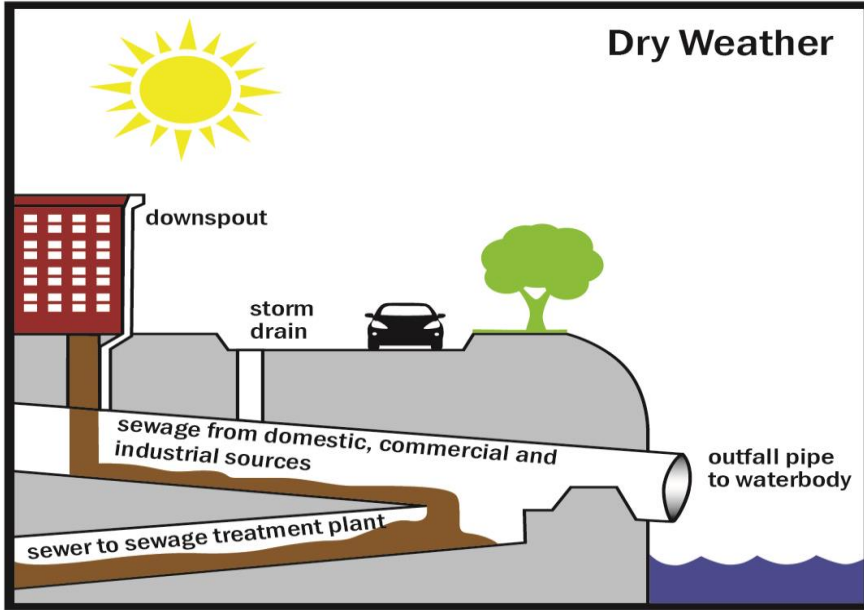


COMBINED SEWER OVERFLOW PERMITTING

IDENTIFYING SYNERGIES BETWEEN REDUCING CSOS
AND BDA REDEVELOPMENT

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CSO DIAGRAM



HOW MANY CSO DOES NJ HAVE?

Combined sewer systems serve roughly 1,100 communities nationwide. Most communities with combined sewer systems (and therefore with CSOs) are located in the Northeast, Great Lakes regions and the Pacific Northwest.

For comparison purposes, the number of CSOs in NJ, NY and PA are listed below:

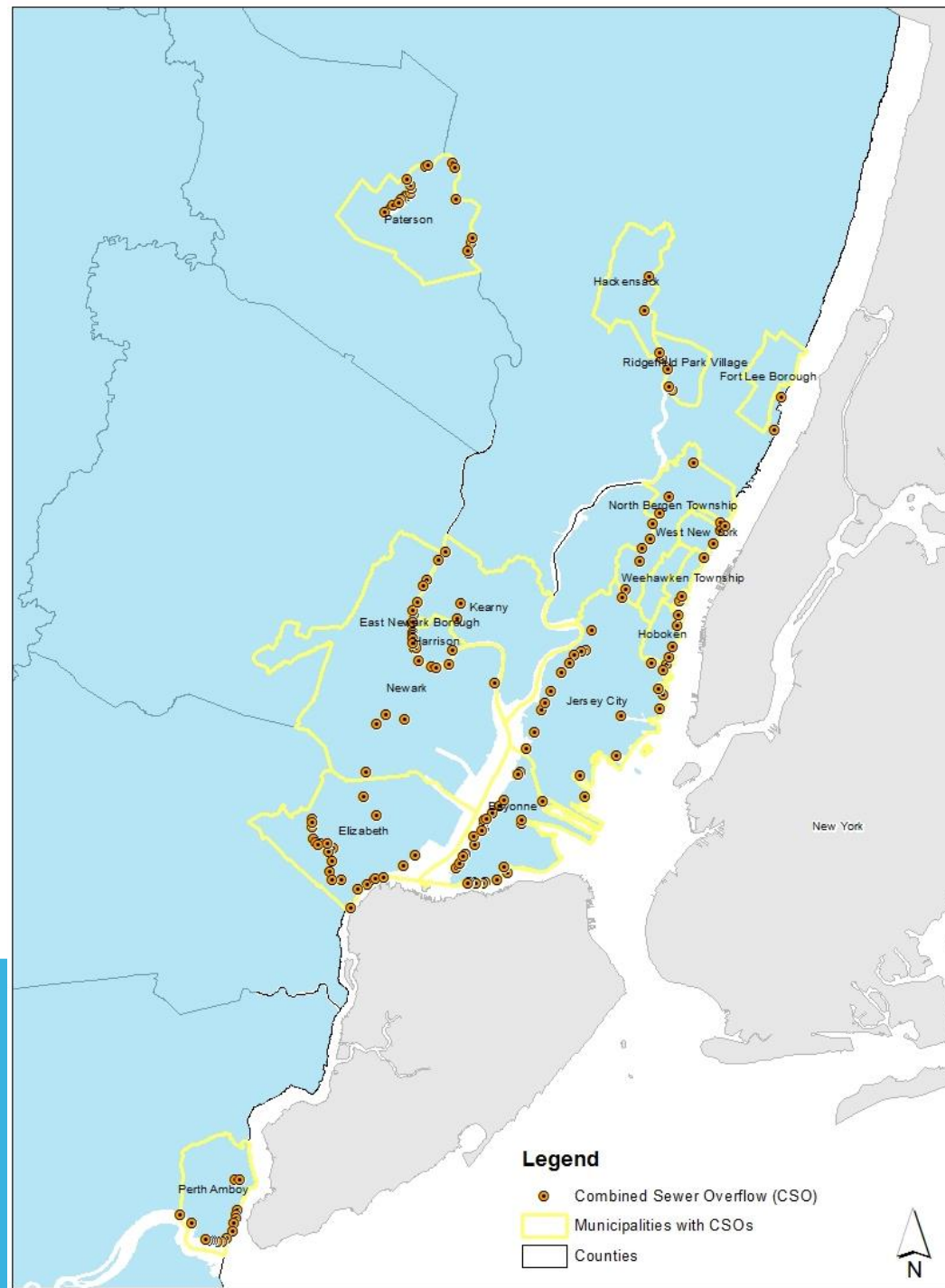
- ❑ NJ has **213** CSOs within 21 communities
- ❑ NYC has **937** CSOs
- ❑ PA has **1,569** CSOs within 152 communities

WHERE ARE COMBINED SEWER OVERFLOW OUTFALLS IN NJ?

Northern:

- **Paterson**
- Hackensack
- Ridgefield Park Village
- Fort Lee Borough
- North Bergen Twp
- West New York
- Weehawken Twp
- Hoboken
- **Jersey City**
- **Bayonne**
- **Kearny**
- East Newark Borough
- **Harrison**
- **Newark**
- **Elizabeth**
- **Perth Amboy**

<http://www.nj.gov/dep/dwq/cso-maps.htm>

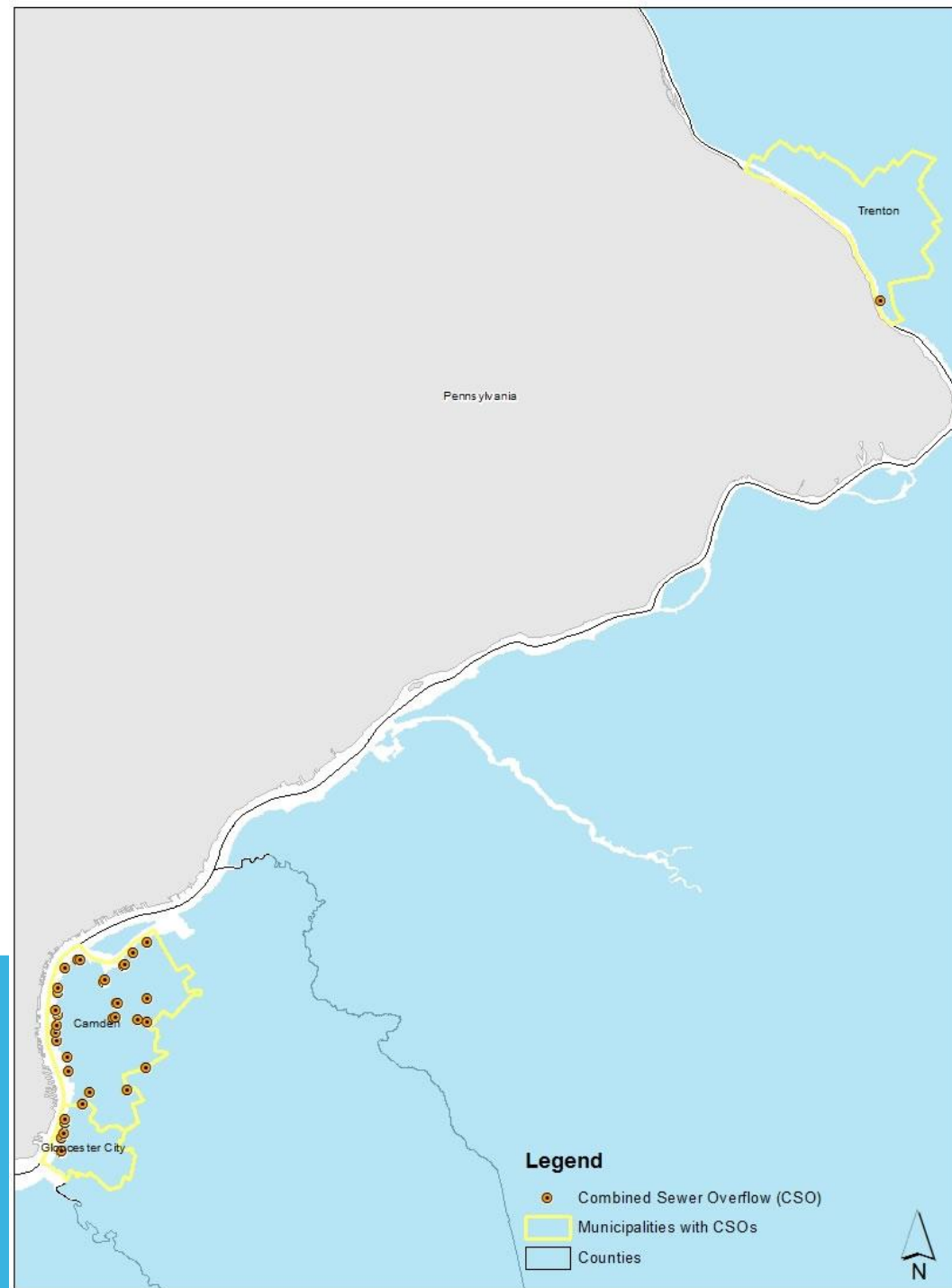


WHERE ARE COMBINED SEWER OVERFLOW OUTFALLS IN NJ?

Southern:

- **Trenton**
- **Camden**
- **Gloucester City**

<http://www.nj.gov/dep/dwq/cso-maps.htm>



WHAT'S BEEN ACCOMPLISHED

- ❑ First permits issued 20 years ago
- ❑ Solids/floatables controls at most all outfalls – removal of 600 tons of material a year
- ❑ \$1.5 Billion in funding
- ❑ Elimination of 68 outfalls

Despite the above.....

We still have an average of 23 billion gallons per year of raw sewage being discharged.

SYNERGY BETWEEN BDAS AND CSOS

When thinking about brownfield redevelopment in towns with CSOs , consider water infrastructure improvements that will reduce Combined Sewer Overflows, manage stormwater and improve aesthetics (more green).


For brownfield redevelopment in non-CSO towns, consider techniques to improve water infrastructure.

Both can be accomplished in a way that does not detract from your redevelopment plans & we have financing to support for these water infrastructure investments!


Multiple objectives met with creative thinking! (redevelopment, needed upgrades of infrastructure, greening a community, supporting community vision, and permit obligation).




A NEW AND DIFFERENT APPROACH TO PERMITS

- ❑ Promote regional coordination and community collaboration on CSO solutions
 - ❑ Emphasize the importance of Operation and Maintenance, Asset Management and Emergency Planning and advance Green Infrastructure
 - ❑ Issued to hydraulically connected systems – requires permittees to work together; ensures a better baseline understanding of the system as a whole.
 - ❑ Achieves continuous, incremental improvement in water quality.
- 


FINAL PERMITS INCLUDE

- ❑ Update CSO GPS coordinates and map
 - ❑ Install appropriate signage on the outfall visible from the water and shore – signs have standard format.
 - ❑ Enhance Operation & Maintenance procedures including asset management
 - ❑ Continued compliance with Nine Minimum Controls with enhanced oversight – permittees are **individually responsible** for NMCs
 - ❑ Development and implementation of Long Term Control Plans – permittees **must cooperate** on LTCPs
- 


NINE MINIMUM CONTROL MEASURES

- Proper operation and maintenance
 - Maximum use of collection system for storage
 - Review of pretreatment requirements
 - Maximization of flow to POTW for treatment
 - Prohibition of CSOs during dry weather
 - Control of solids and floatables
 - Pollution prevention
 - Public notification (e.g. outfall signs)
 - Monitoring of CSO impacts and efficacy of controls
- 

LONG TERM CONTROL PLAN

- ❑ In the next 3-5 years permittees must develop a plan for how CSOs will be reduced or eliminated.
 - ❑ Characterization, monitoring and modeling (System Characterization)
 - ❑ Public participation
 - ❑ Consideration of sensitive areas
 - ❑ Evaluation of CSO control approach and alternatives
 - Presumptive or Demonstrative Approach
 - ❑ Cost/performance considerations
 - ❑ Operational Plan
 - ❑ Maximization of treatment at the POTW
 - ❑ Implementation schedule
 - ❑ Monitoring to demonstrate compliance with Water Quality Standards
- 

CSO CONTROL ALTERNATIVES

- Green infrastructure
 - Increased storage in the collection system
 - STP expansion/storage
 - I/I reduction
 - Sewer Separation
 - Discharge treatment
 - Bypass of secondary treatment at the STP
- 

IMPLEMENTATION OF TEAMS

- ❑ In order to be effective, programs cannot operate independently
- ❑ Team concept will focus on ongoing and active multidisciplinary support to our permittees. While permittees are responsible, we will assist them where needed.

NJEIFP AND CSOS

Planning and Design

- ❑ 100% interest-free financing for LTCPs with the expectation that such plans will result in a capital improvement project. Loan terms up to 10 years.
- ❑ The Department is proposing to reserve \$10 million in SRF loan repayments for this purpose.
- ❑ Project information can be submitted at any time beginning **October 1, 2015.**

Construction

- ❑ 100% interest-free financing with loan terms up to **30 years** to communities in a CSO sewershed that reduce or eliminate excessive infiltration/inflow or extraneous flow.
- ❑ Offering up to \$3M in **principal forgiveness loans** for CSO abatement projects **utilizing green infrastructure** (Limited to \$1M per sponsor).

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STORMWATER MANAGEMENT THROUGH GREEN INFRASTRUCTURE

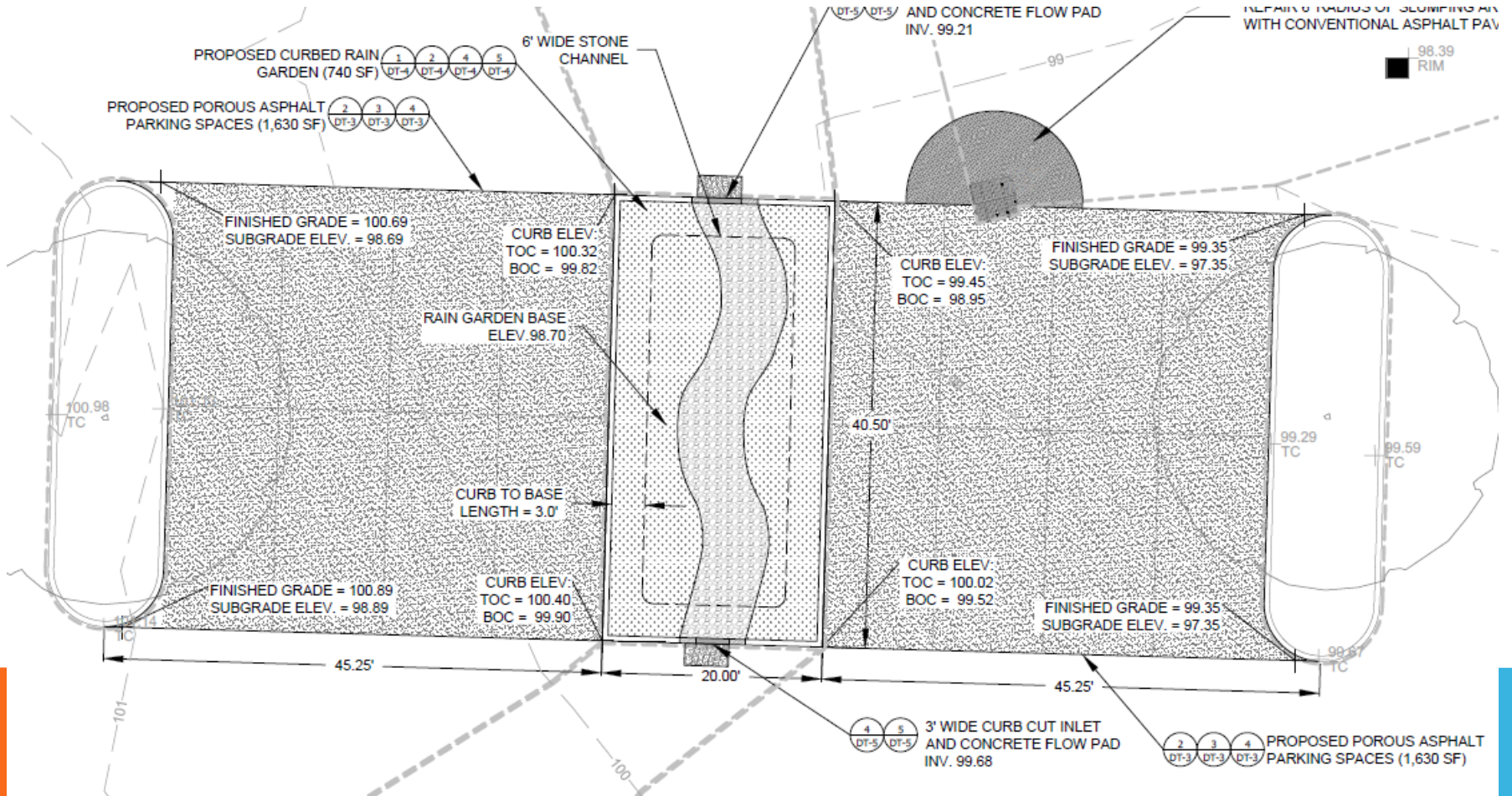


Stormwater management strategies that treat runoff close to the source through:

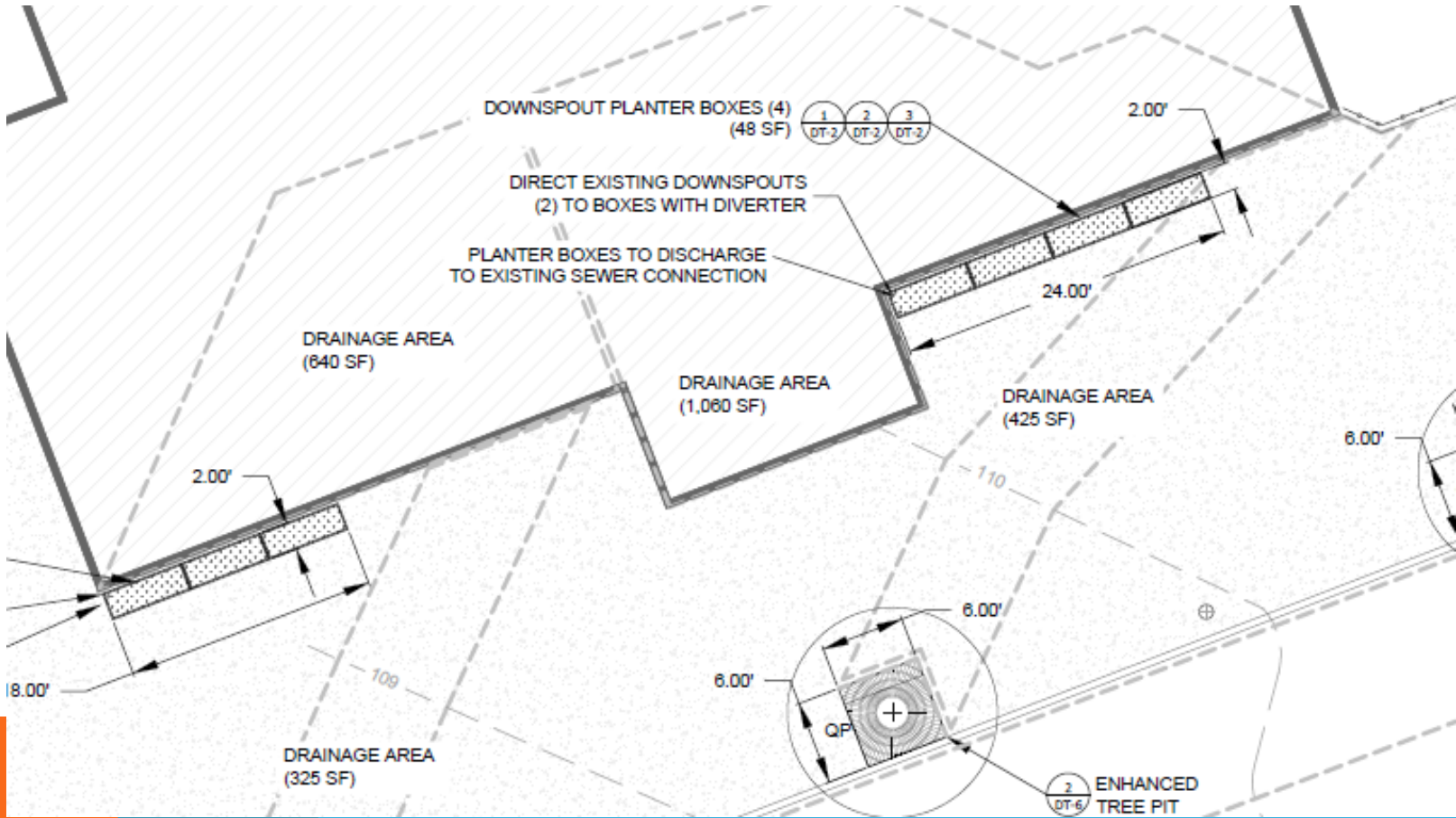
- infiltration
- treatment by soils or vegetation (under-drained systems)
- storage for reuse

Photo courtesy of Camden SMART

RAIN GARDEN AND PERVIOUS ASPHALT




DOWNSPOUT PLANTERS




STORMWATER CONTACTS

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INFORMATION AVAILABLE ON THE WEB

External CSO site - <http://www.nj.gov/dep/dwq/cso.htm>

- ❑ Individual permits and associated response to comments doc, listserv, submittal schedule, FAQs, guidance & resources for permittees