

Green City, Clean Waters

Using Green Infrastructure to
Realize the Greatest Benefit



PHILADELPHIA WATER DEPARTMENT



- ▶ An integrated utility:
 - Drinking Water
 - Wastewater
 - Stormwater

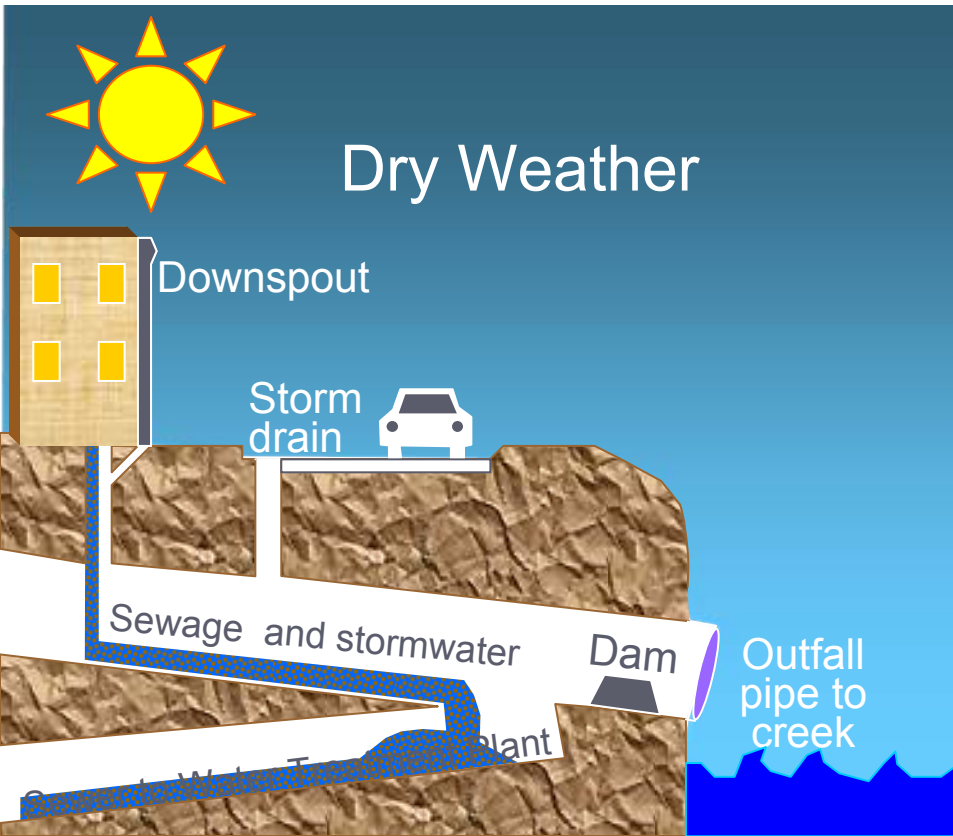
- ▶ A new integrated approach:
 - Land
 - Waterways
 - Infrastructure
 - Community

Green City, Clean Waters

- ▶ CSO Long Term Control Plan to DEP/EPA on 9/1
- ▶ Advances Citywide Sustainability Program
- ▶ Improves water quality
- ▶ Maintains and upgrades one of the nation's oldest infrastructure systems
- ▶ Transforms river and stream corridors into recreation destinations and green open space for citizens
- ▶ Preserves and restores habitat for aquatic species
- ▶ Improves public health and neighborhood quality of life
- ▶ Maximizes environmental return on every dollar spent

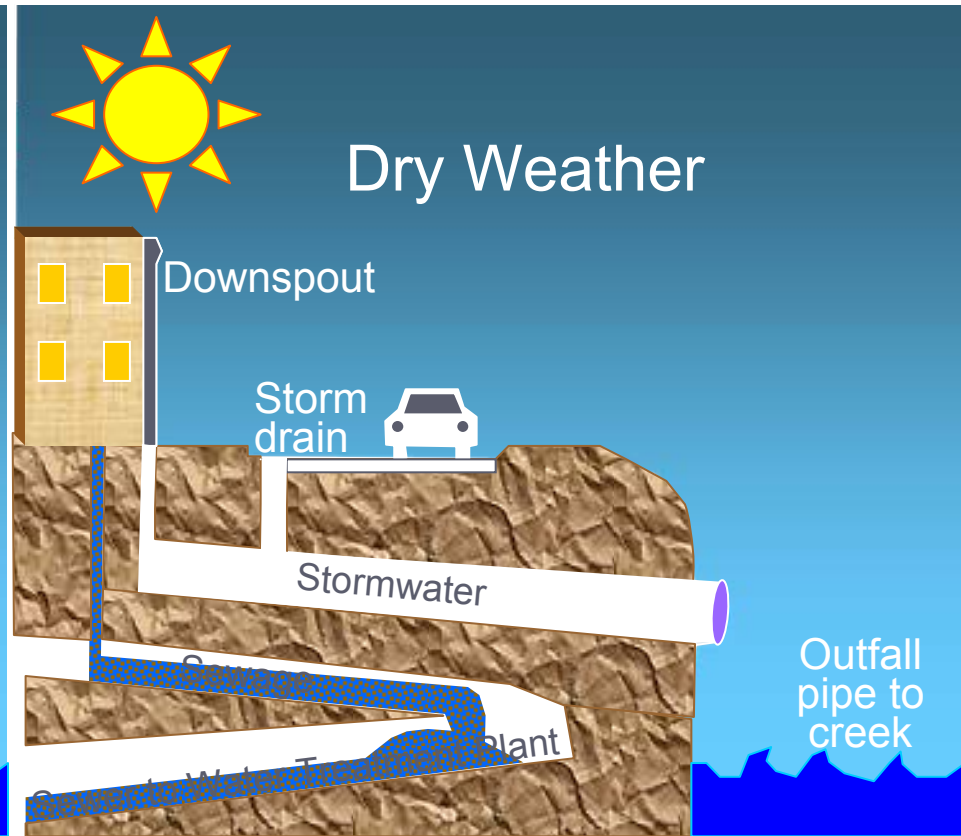
Types of Sewers in Philadelphia

Combined Sewer



60% of Philadelphia

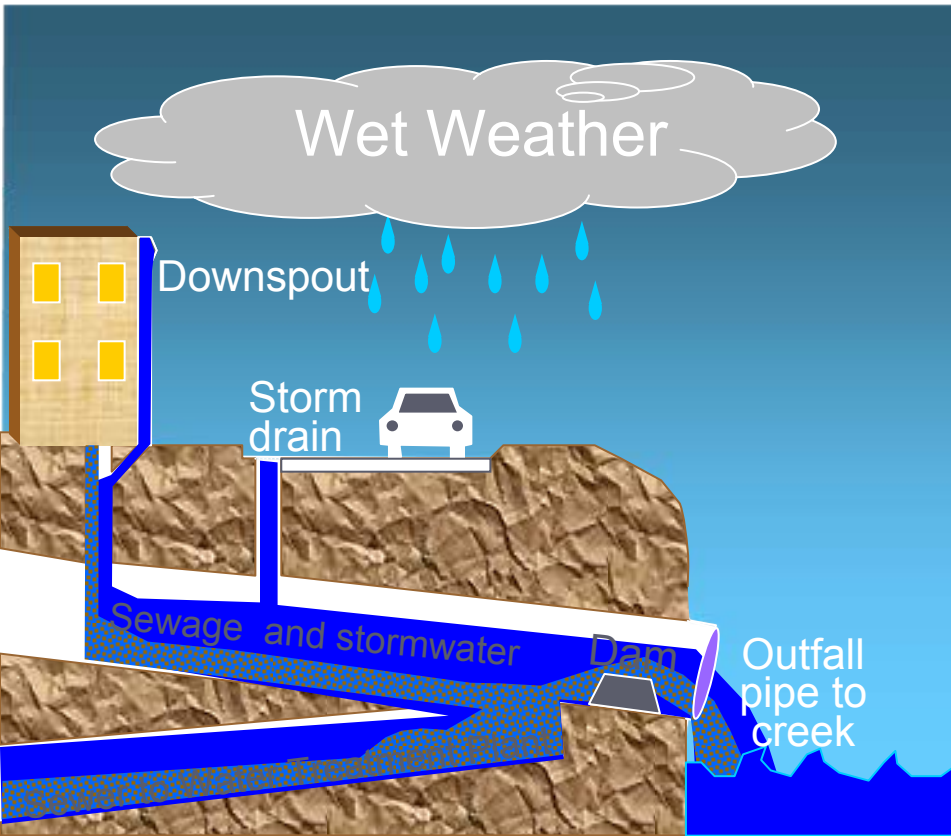
Separate Sewer



40% of Philadelphia

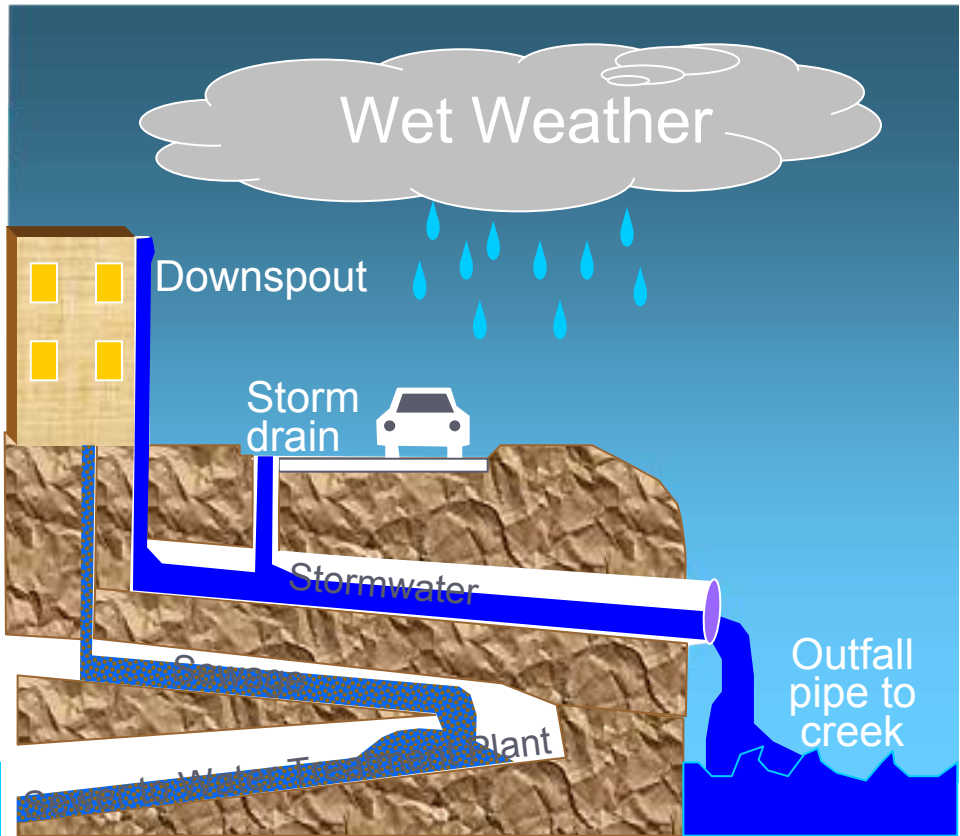
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Watershed-Wide Issues

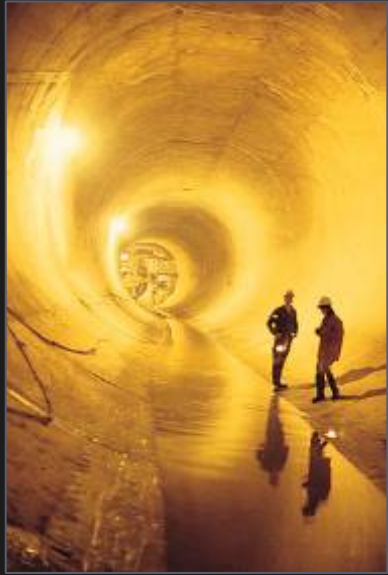
- ▶ Water Quality issues
- ▶ Odors
- ▶ Low Dissolved Oxygen
- ▶ Bank Erosion
- ▶ Lack of Channel Habitat and Biological Diversity
- ▶ Wetland Degradation
- ▶ Poor Public Access to Streams
- ▶ Dumping and Trash
- ▶ Vandalism



Gray

CSO Infrastructure Solutions

Green

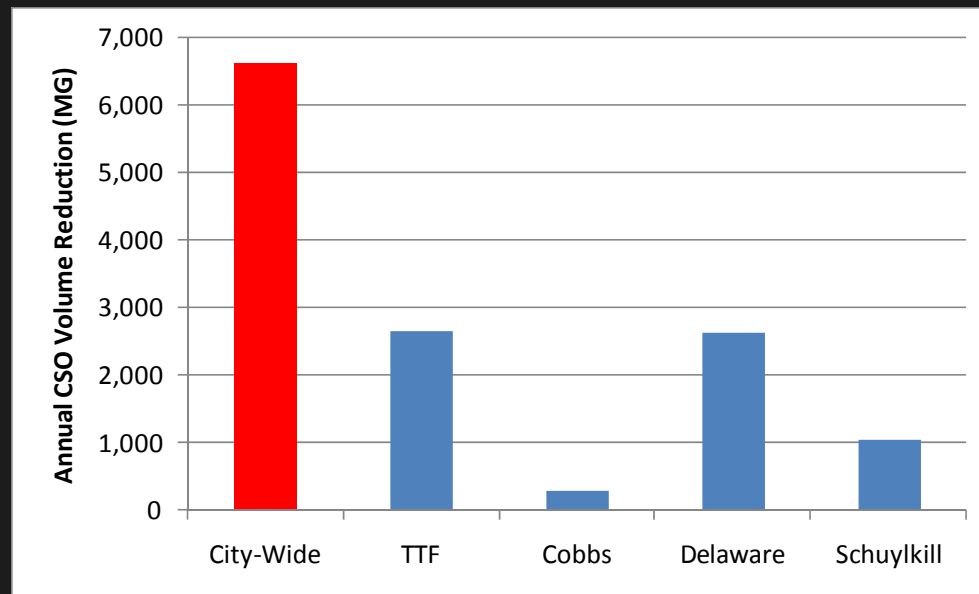


Green City, Clean Waters

- ▶ **Sustainable**
- ▶ **Support numerous EPA initiatives**
 - ▶ Green Policy
 - ▶ Protecting America's Waters
 - ▶ Reducing Green House Gas Emissions
 - ▶ Improving Air Quality
- ▶ **Adaptable (Climate Change)**
 - Adaptive Management
- ▶ **Immediate Benefits**
- ▶ **Return on Investment**
 - Triple Bottom Line Analysis

\$1 Billion Plan (\$1.6B after 20 yrs)

- ▶ \$200M to **Restore and Preserve Stream Corridors**
- ▶ \$200M to **Upgrade Water Pollution Control Plants**
- ▶ \$600M to **'Green' 34% of the combined sewer area by managing stormwater at the source**



8 Green Programs

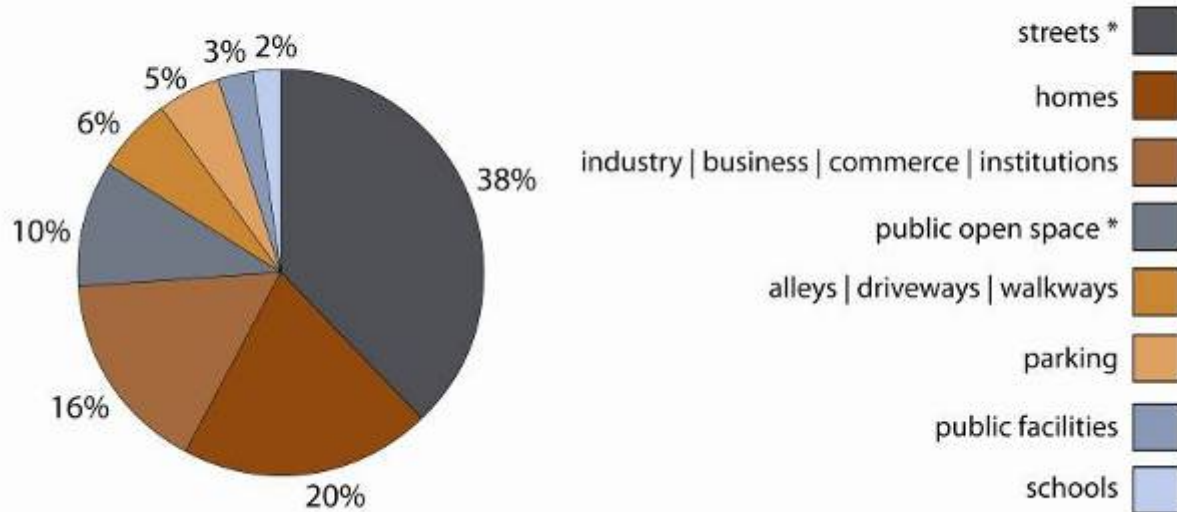
Public Lands

- Streets
- Schools
- Public Facilities
- Open Spaces

Private Lands

- Industrial/Commercial/Institutional
- Homes
- Parking
- Alleys, Driveways and Walkways

Percentage of Impervious Surface by Proposed Green Program



Green Infrastructure



Triple Bottom Line

Economic/Environmental/Social Benefits

- ▶ Costs
- ▶ Ecological Benefits
- ▶ Recreation
- ▶ Heat Stress Mortality
- ▶ Energy Savings
- ▶ Air Quality
- ▶ Carbon Footprint
- ▶ Aesthetics
- ▶ Jobs
- ▶ Property Value



Triple Bottom Line Benefits

- ▶ Jobs - 250 people employed annually
- ▶ Recreation - 10% more recreation and stream related visits
- ▶ Property Values - \$390M increase to homes near parks and green areas
- ▶ Heat Related Fatalities - 140 fewer
- ▶ Premature Deaths - 1-2 avoided / yr
- ▶ Asthma Attacks - 20 avoided / yr
- ▶ Missed Days of School / Work - 250 fewer / yr
- ▶ Carbon Dioxide Emissions - 1.5 Billion lbs avoided/absorbed
- ▶ Water Quality and Habitat Improvements - \$8.5M
 - 45 acres of restored wetlands
 - 148 acres of wetlands created
 - 11.1 miles of streams restored

*Imagine if we invested
in Philadelphia's
green infrastructure ...*





















THANK YOU

The City of Philadelphia's CSO Long Term Control Plan Update

<http://www.phillywatersheds.org/ltcp/>

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