The Clean Water Project
What Is The Stormwater Impact?

Presentation To:
Seminar On Water Issues

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The Metropolitan District
Sewage Overflows Have Become More Than A Nuisance
Why Do The Clean Water Project?

- **CTDEP Order** To Control 1 Billion+ Gallons Annual Combined Sewage Overflows
- **Federal Consent Decree** To Eliminate Sanitary Sewer Overflows In District Towns
- **CTDEP Permit** To Reduce Nitrogen In Wastewater
- **Satisfy Public Concerns**
  - Eliminate Basement Backups
  - Street Flooding of Sewage
  - To protect Water Body Uses, Including Wethersfield Cove
What Are CSO’s?

“Single Pipe” Sewers Deliver All Dry Weather Flows to WWTP...

...But These Sewers also handle stormwater which causes overflows during rain events.
Overflows Are Combined Sewage and Stormwater...
Flooded Basements Are A Common Problem
Sewer Overflows Occur Throughout Existing System
Hartford’s Combined Sewer System alleviates backups with 50+ local regulators throughout neighborhoods and 38 CSO outfalls to waterbodies.
The District’s Separated Sewer Systems Relieve At Eight Untreated Overflows Directly To Local Streams When It Rains
Critical Sewer Overflows Occur Into South Branch Park River and Wethersfield Cove

Overflows From West Hartford and Newington Flow To South Branch Park River

Overflows From Wethersfield’s Folly Brook Area & Hartford’s Franklin Ave Area Flow To Wethersfield Cove
# Wethersfield Cove Watershed
## Estimated Peak Storm Flows

<table>
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<tr>
<th>Sewer Area</th>
<th>Average Sewage Flow (MGD)</th>
<th>Peak Flow (MGD)</th>
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<tbody>
<tr>
<td>Franklin Ave Hartford</td>
<td>10.0 - 12.0</td>
<td>234-254</td>
</tr>
<tr>
<td>Folly Brook Wethersfield</td>
<td>2.5 - 3.0</td>
<td>30-??+</td>
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<tr>
<td>Total Peak Flows</td>
<td>12.5 - 15.0</td>
<td>284+</td>
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<tr>
<td>Total Hartford WPCF Capacity</td>
<td>80.0</td>
<td>140.0*</td>
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*The Existing Hartford WPCF Needs Another 144 MGD Capacity To Handle South Hartford!"
1840-1961 Household Sewer Design Directs Stormwater To Existing Sewers

Household Plumbing Results In All Water Directed To Sewer

Sanitary Wastes

From Roof Gutters

From Sump Pump

From Underdrain

Basement Floor

To Sewer

Basement Sump
How Does Too Much Clean Water Get In?

Footing Drains

Sump Pumps

Yard Drains

Clean Water Project
the choice is clear
Preferred Solution: Modern Separation Of Sewage and Stormwater

To Gardens, Lawns, Drains

From Roof Gutters

To Sewer

Sanitary Wastes

To Drains

From Sump Pump

From Underdrain

Basement Sump

Clean Water Project
the choice is clear
The Long-Term Control Plan Evaluation Considered Combination of Many Options
Clean Water Project System Improvements

- System-wide Sewer Cleaning Assessment, Capacity Improvements And Repairs

- 80 Miles Sewer Separation, New Drains and Large Sewers

- 2 Mile Storage Tunnel

- 2.5 Mile Microtunnel

- Reline And Build New Pipes To Eliminate Local Overflows

- Treatment Plant Improvements To Increase Capacity And Remove Nitrogen
EXISTING COMBINED SEWER SYSTEM IS COMPLICATED BY THE FLOOD CONTROL SYSTEM
Primary Receptors Of Separated Stormwater

- South Branch Park River
- North Branch Park River
- Gully Brook
- Park River Conduit
- South Meadow Flood System
- North Meadow Flood System
- More Stormwater Will Require Flood Control Assessment
- Existing Levees Along CT River
After Sewage, What Issues Need To Be Addressed?

- Environmental Goals—Residual Storm Water Quality Impacts
- Localized Drainage Flooding?
- Flood Protection In Hartford?
- Quality of Life?
- Future Regional Watershed Goals
Alternative Stormwater Management Strategies Can Reduce SSO/CSO Costs...

• Eliminate Existing Sources of Stormwater from Sewers
• Build Runoff Capture/Use Systems
• Increase Pervious Surfaces To Reduce Runoff Rates and Volumes
• Reduce Impervious Services (Lower Density?)

...But May Not Address All Future Stormwater Management Needs!
There Are Many Approaches To Stormwater Management...

Where Possible, Vegetated Swales Can Handle Roof And Site Runoff.
How Will The Clean Water Project Address The Stormwater Issue?

• Coordinate with Local DPW Stormwater Programs
• New General Design Guidelines For Public Uses, Including Educational Programs
• Stormwater Study for Hartford in 2007
• Use Previously Closed Combined Sewer Outfalls
• Consider Alternative Stormwater Management Approaches On A Case By Case (Neighborhood) Basis
The MDC Is Funding A City of Hartford Storm Water Study.

1. Extent and Condition of Existing Drainage System
2. Estimate Flow Increase From Sewer Separation
3. Impact of Additional Flows On Existing Streams
4. Evaluate Sewer Separation Impact On Flood Control
5. Methods Of Storm Water Peak Flow Reduction
6. Options For Storm Water Control and Treatment
7. Modifications To District Sewage Overflow Reduction Plan
8. Develop Long Term Drainage System Investment Plan
How Can District Homeowners Help The Clean Water Project?

1. Encourage Legislators Sponsor and/or Support Clean Water FundingSeek To Extend and Authorize Long Term Infrastructure Funding Legislation
2. Demand Federal Participation For Rate Relief
3. Support District Efforts To Allow New Strategic Funding Sources
4. Participate In Local Project Reviews
5. Be Patient with Construction Impacts!
The Clean Water Project

Program Management Unit
September, 2006