

Setting Up A Municipal Stormwater Utility Information Session

**Presented by: City of New London, Southeastern
Connecticut Council of Governments, and ARCADIS**

December 15, 2025



The background of the slide is a light gray gradient. It is decorated with numerous water droplets of various sizes, some of which are in sharp focus while others are blurred, creating a sense of depth. The droplets are scattered across the slide, with a higher concentration in the top-left and bottom-right corners.

CITY OF NEW LONDON STORMWATER MANAGEMENT

HISTORY AND SUCCESSFUL IMPLEMENTATION

TALKING POINTS

- BRIEF OVERVIEW OF NEW LONDON'S STORMWATER NEEDS AND MS4 REQUIREMENTS
- DISCUSS THE LOGIC OF FUNDING STORMWATER SERVICES THROUGH A USER BASED FEE
- ESTIMATE REVENUE REQUIRED TO MEET PRIORITY NEEDS
- PRESENT A TIMELINE FOR FULL IMPLEMENTATION
- IMPORTANT FACTORS THAT LEAD TO A SUCCESSFUL IMPLEMENTATION

REMEMBER SEPTEMBER 11, 2015



BANK STREET



BROAD STREET

REMEMBER SEPTEMBER 11, 2015



BROAD STREET



GARFIELD & JEFFERSON

THE MS4 PERMIT

MS4 DEFINED

- **M**_{MUNICIPAL}
- **S**_{EPARATE}
- **S**_{TORM}
- **S**_{EWER}
- **S**_{YSTEM}

- THIS GENERAL PERMIT REQUIRES EACH MUNICIPALITY TO TAKE STEPS TO KEEP THE STORMWATER ENTERING ITS STORM SEWER SYSTEMS CLEAN BEFORE THAT STORMWATER ENTERS WATER BODIES

SIX MINIMUM CONTROL MEASURES

- PUBLIC OUTREACH
- PUBLIC PARTICIPATION
- ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)
- CONSTRUCTION SITE STORMWATER RUNOFF CONTROL
- POST CONSTRUCTION STORMWATER MANAGEMENT
- POLLUTION PREVENTION AND GOOD HOUSEKEEPING

CITY-WIDE STORMWATER INFRASTRUCTURE

STORMWATER SYSTEM ASSETS

- ESTIMATED VALUE OF MORE THAN \$50 MILLION
- DRAINAGE OUTFALLS: 60
- DRAINAGE STRUCTURES: 1,100
- CATCH BASINS: 1,100
- ROADS: 63 MILES (MOST WITH DRAINAGE PIPES)
- STORMCEPTORS®: 4
- ADDITIONAL MAPPING AND INVESTIGATIONS ARE NEEDED TO FULLY UNDERSTAND ASSETS

CURRENT LACK OF FUNDING LEADS TO OPERATIONS AND MAINTENANCE CHALLENGES

- NO DEDICATED STORMWATER STAFF – REACTIVE MAINTENANCE BASED ON IMMEDIATE PROBLEMS
- DEFERRED MAINTENANCE OF STORM SEWERS AND CATCH BASINS
- NO LONG TERM PROGRAM PLAN - HISTORICALLY “TASK ORIENTED” FOR PUBLIC WORKS BUDGETING PURPOSES
- CITY HAS NOT KEPT UP WITH INDUSTRY BEST PRACTICES FOR INFRASTRUCTURE RE-INVESTMENT WHICH IS 2% OF ASSET VALUE OR \$1,000,000 ANNUALLY
- MS4 STORMWATER PERMIT CONTINUES TO EVOLVE REQUIRING ADDITIONAL O&M RESOURCES



STORMWATER REGULATORY MANDATES

- THE CITY HAS BEEN AN MS4 PERMIT HOLDER SINCE 2003.
- THE PERMIT IS REQUIRED UNDER THE FEDERAL CLEAN WATER ACT AND ADMINISTERED BY THE DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION (DEEP).
- THE MS4 PERMIT AUTHORIZES MUNICIPALITIES TO DISCHARGE STORMWATER FROM THE PUBLIC STORMWATER SYSTEM INTO LOCAL WATERS
- NEW MS4 PERMIT – **EFFECTIVE JULY 1, 2017**
- NEW REQUIREMENTS:
 - ENHANCED OPERATION, MAINTENANCE, AND MAPPING REQUIREMENTS
 - STORMWATER ACTIVITIES FOCUSING ON ILLICIT DISCHARGE AND DETECTION ELIMINATION (IDDE), POST CONSTRUCTION STORMWATER MANAGEMENT REGULATIONS AND STORMWATER RETROFITS
 - ADDITIONAL REQUIREMENTS REQUIRED TO ENHANCE BEST MANAGEMENT PRACTICES IN THE PUBLIC EDUCATION AND IDDE PROGRAMS TO ADDRESS WATER QUALITY IMPAIRMENTS - PHOSPHOROUS, NITROGEN, BACTERIA, AND MERCURY

STORMWATER MANAGEMENT FUNDING APPROACH

WHEN DO WE HAVE TO WORRY ABOUT THIS?

- WATER QUALITY ISSUES ARE A PROBLEM NOW AND STORMWATER MANAGEMENT IS PART OF THE SOLUTION
- STORMWATER PROGRAM IS NOT ADEQUATELY FUNDED ON AN ANNUAL BASIS TO MEET CURRENT NEEDS
- MS4 PHASE II PERMIT REQUIRES A SIGNIFICANT INCREASE TO EXISTING STORMWATER PROGRAMS

WHAT HAPPENS IF WE DO NOTHING?

- STILL HAVE TO MEET PERMIT CONDITIONS AND MANDATED PROGRAM INCREASES ARE EXPENSIVE
- DETERIORATION OF EXISTING ASSETS VALUED OVER \$50 MILLION
- MS4 NONCOMPLIANCE CAN RESULT IN FINES & POTENTIAL 3RD PARTY SUITS

WHY A STORMWATER UTILITY MODEL?

- FEE BASED SYSTEM PROVIDES AN EQUITABLE AND FLEXIBLE DISTRIBUTION OF COST
- NO IMPACT ON TAX BASE AND USERS PAY FOR THEIR IMPACT

STORMWATER PROGRAM FUNDING MECHANISMS

- **OPTION A: TAX INCREASE**
 - BASED ON PROPERTY VALUE
 - EXCLUDES CONTRIBUTION BY TAX EXEMPT PROPERTIES
 - FUNDING NOT GUARANTEED
- **OPTION B: STORMWATER UTILITY (USER FEE)**
 - BASED ON IMPERVIOUS COVER
 - ALL PROPERTY INCLUDED
 - DEDICATED FUNDING – STORMWATER ENTERPRISE FUND

BASIS FOR STORMWATER FUNDING

- ALL SYSTEM USERS PAY THEIR FAIR SHARE
- COMPLETELY BASED ON SQUARE FEET (SF) OF IMPERVIOUS COVER (IC) NOT PROPERTY VALUE
- RESIDENTIAL EQUIVALENT UNIT (REU) = 1000 SF OF IC
- CREDIT AND APPEALS SYSTEM
- QUARTERLY INTEGRATED BILLING SYSTEM WITH WATER AND SEWER BILLS
- ADEQUATE FUNDING FOR OPERATIONS AND MAINTENANCE AND CAPITAL IMPROVEMENTS

STORMWATER PROGRAM FEES

Property Type	Units	Total IC	% of IC	Average IC	REU	Quarterly Cost	Revenue
Residential							
0-1000	286	191,916	0.47%	671	1	\$ 7.50	\$ 8,580
1000-2000	1930	3,021,388	7.42%	1,565	2	\$ 15.00	\$ 115,800
2000-3000	1520	3,705,912	9.10%	2,438	3	\$ 22.50	\$ 136,800
3000 +	1218	5,504,091	13.52%	4,519	5	\$ 37.50	\$ 182,700
Commercial	828	16,880,522	41.46%	20,387	20.4	\$ 152.90	\$ 506,416
Tax Exempt	168	7,078,629	17.39%	42,135	42.1	\$ 316.01	\$ 212,359
Municipal	112	4,330,290	10.64%	38,663	38.7	\$ 289.97	\$ 129,909
Totals	6062	40,712,748	100.00%				\$ 1,292,563
Residential Equivalent Unit =		1000	Square Feet (SF) of Impervious Cover (IC) =			\$7.50	

RECOMMENDATIONS OF THE STORMWATER COMMITTEE

GENERAL RECOMMENDATIONS

- ESTABLISH A STORMWATER ORDINANCE
- CREATE A STORMWATER AUTHORITY
- ESTABLISH A USER BASED FEE FUNDING PLAN
- ESTABLISH A DEDICATED ENTERPRISE FUND FOR STORMWATER
- ADMINISTER THE PROGRAM THROUGH THE W&WPCA
- UTILIZE EXISTING CONTRACT OPERATIONS



IMPLEMENTATION TIMELINE

- MAR 2017 - WWPCA REQUEST TO COUNCIL FOR STORMWATER STUDY
 - JUN 2017 - FIRST STORMWATER TASK FORCE MEETING (TOTAL OF 6 MEETINGS)
 - MAY 2018 - PUBLIC HEARING TO CONSIDER SWU PROPOSAL
 - JUN 2018 - COUNCIL APPROVAL AND CREATION OF A STORMWATER UTILITY
 - OCT 2018 - FIRST STORMWATER CHARGES ON UTILITY BILLS
 - OCT 2018 - STORMWATER MAINTENANCE WORK BEGINS
- 



FACTORS THAT LEAD TO A SUCCESSFUL SWU IMPLEMENTATION

- ENABLING LEGISLATION
 - PUBLIC OUTREACH AND TASK FORCE
 - ESTABLISHED WWPCA
 - UPDATED BILLING SOFTWARE
 - IN HOUSE GIS CAPABILITIES
 - IN HOUSE ENGINEERING
 - SUCCESSFUL CONTRACT OPERATIONS
 - HIGH PERCENTAGE OF TAX EXEMPT PROPERTIES
 - POLITICAL SUPPORT
- 

DETERMINING FEES BASED ON ZONING/ASSESSOR'S INFORMATION

	A	B	C	D	E	F	G	H	I	J
1	Street #	Street_Name	PID	Grantee	Mailing_Address	Use_Code	Use_Descript	Zone		
2		STUART AVE	1	NEW LONDON CITY OF_OCE	181 CAPTAINS WALK	903C	MUNICIPAL MDL_94	OS		
3		BRIDGE TO WATERFRD	2	NEW LONDON CITY OF_PEN	181 STATE ST	9030	MUNICIPAL MDL_00	OS		
4	76	NEPTUNE AVE	3	PICAZIO HARRY F III	28 GRASSY ILL RD	1010	Single Family	R_1A		
5	72	NEPTUNE AVE	4	PICAZIO HARRY F III	28 GRASSY HILL RD	1010	Single Family	R_1A		
6	68	NEPTUNE AVE	5	17 PARK STREET LLC	28 GRASSY HILL RD	1060	Land w_OBs	R_1A		
7	1153	OCEAN AVE	7	GUILLOCHEAU MARITZA MAIANO	1153 OCEAN AVE	1010	Single Family	R_1A		
8	1157	OCEAN AVE	8	HANRAHAN JAMES M And CHERYL L	305 GLENWOOD AVE	1010	Single Family	R_1A		
9	1165	OCEAN AVE	9	DUDDY JOHN S And JOANNE M	1165 OCEAN AVE	1010	Single Family	R_1A		
10	7	BENTLEY AVE	10	NEDZEL CORRINA L And CARL	7 BENTLEY AVE	1010	Single Family	R_1A		
11	11	BENTLEY AVE	11	CURCURO DONALD J	11 BENTLEY AVE	1051	Four Family	R_1A		
12	15	BENTLEY AVE	12	FAGIN SANDRA E	15 BENTLEY AVE	1010	Single Family	R_1A		
13	19	BENTLEY AVE	13	RETTURA VINCENZO	PO BOX 424	1010	Single Family	R_1A		
14	17	PARK ST	14	17 PARK STREET LLC	28 GRASSY HILL RD	1210	BOARDNG HS	R_1A		
15	94	NEPTUNE AVE	15	MARZANO CONCETTINA	639 RIDGE RD	1010	Single Family	R_1A		
16	90	NEPTUNE AVE	16	BARCELO DIANE M	90 NEPTUNE AVE	1010	Single Family	R_1A		
17	82	NEPTUNE AVE	17	GOUR LANA TRUSTEE	54 SOUTH MAPLE STREET	1010	Single Family	R_1A		
18	14	PARK ST	18	BLACKBURN JAMES D 85 And	PO BOX 1622	3020	INNS MDL_94	R_1A		
19	10	PARK ST	19	BLACKBURN VIVIAN	216 GLENWOOD AVE	1040	Two Family	R_1A		
20	41	STUART AVE	20	LAVOIE KENNETH J	501 DEEP WOOD DR	1050	Three Family	R_1A		
21	43	STUART AVE	21	NAPHEN MICHAEL And	43 STUART AVE	1010	Single Family	R_1A		
22	47	STUART AVE	22	SWAIN THOMAS W IV	47 STUART AVE	1050	Three Family	R_1A		
23	49	STUART AVE	23	LEADER SYLVIA TRUSTEE	15 CENTER CT	1010	Single Family	R_1A		
24	105	STUART AVE	24	STATTLER RANDALL C	105 STUART AVE	1010	Single Family	R_1A		
25	40	HIGHLAND AVE	25	KING WILLIAM F	40 HIGHLAND AVE	1010	Single Family	R_1A		

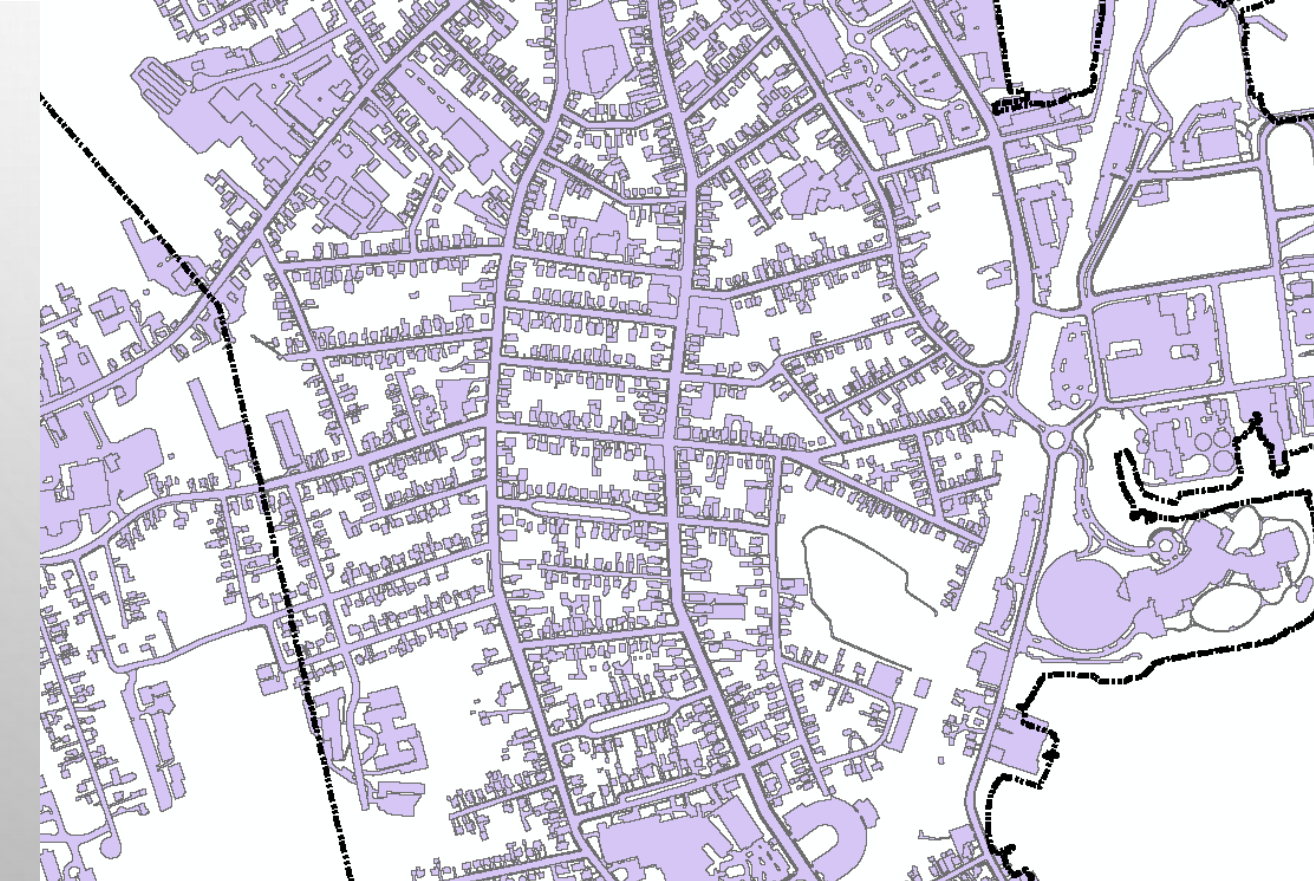
DETERMINING IMPERVIOUS COVERAGE WITH GIS



2012 Impervious Surface Download

 Layers

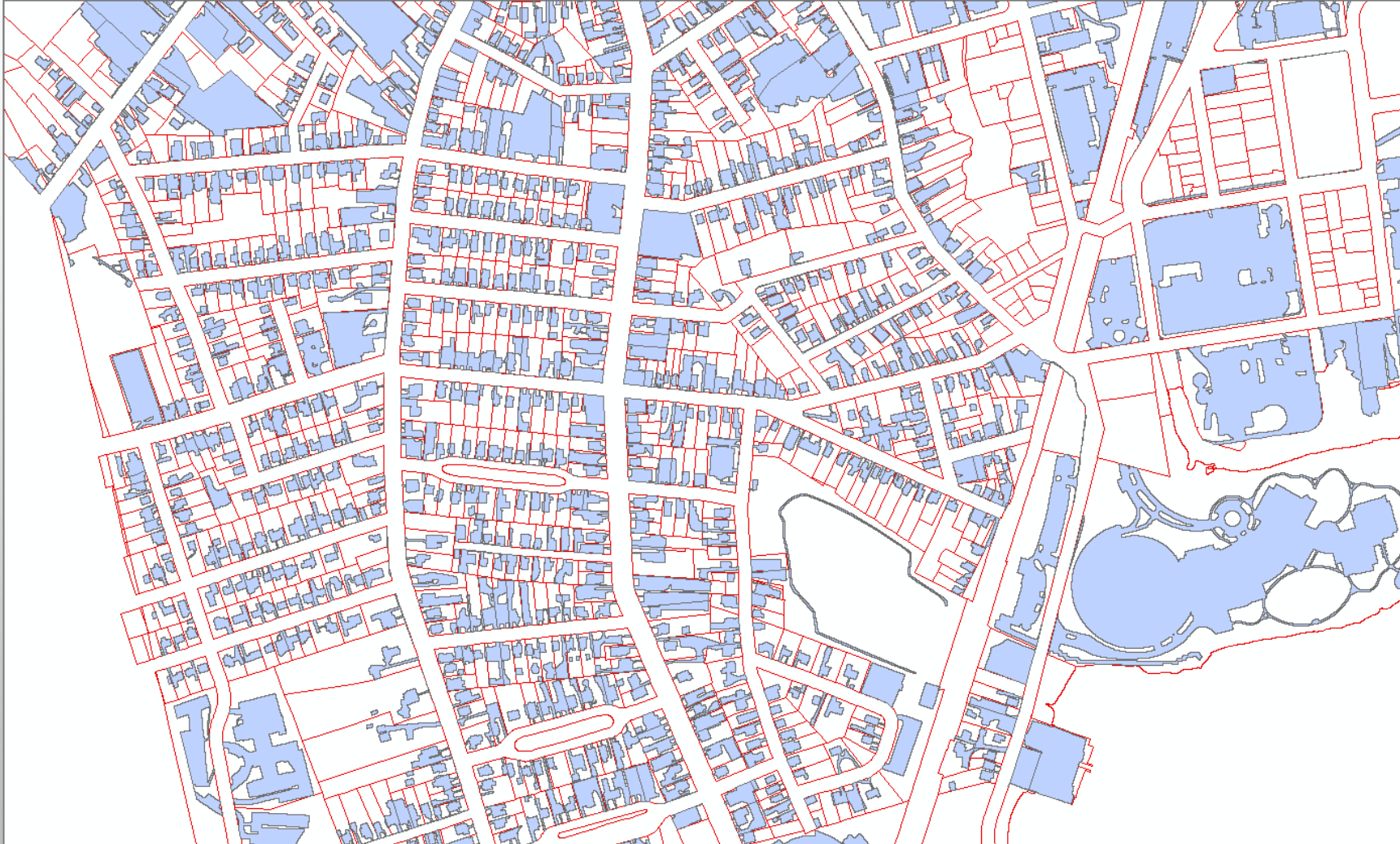
☒ CT_StatewideImpervious_SoutheasternCOG_NewLondon_Buffer



REMOVING THE ROADS FROM THE LAYER

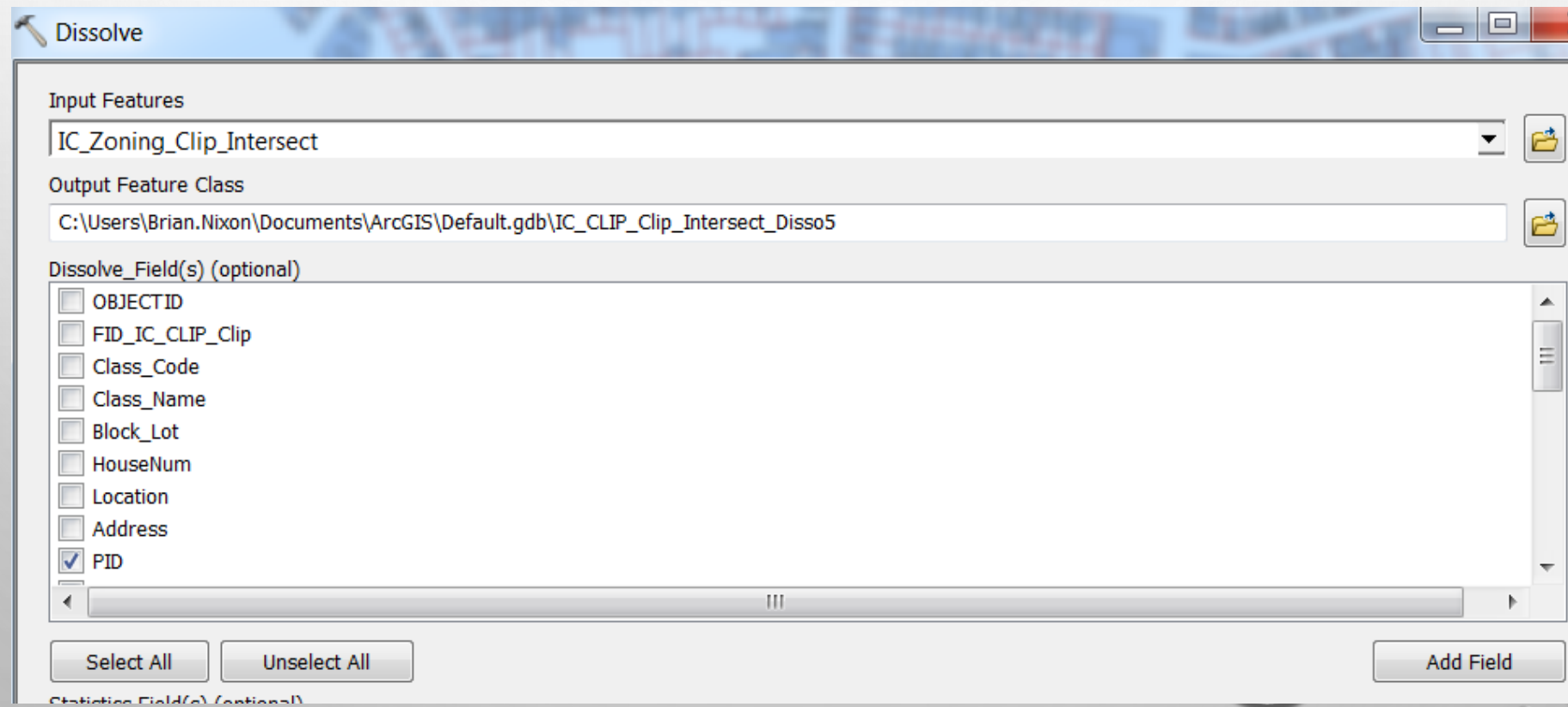


REMOVING THE SIDEWALKS FROM THE LAYER



COMBING IC LAYER TO ZONING PARCEL LAYER

- INTERSECT
- DISSOLVE BY PID



DETERMINING IMPERVIOUS COVERAGE BY PARCEL

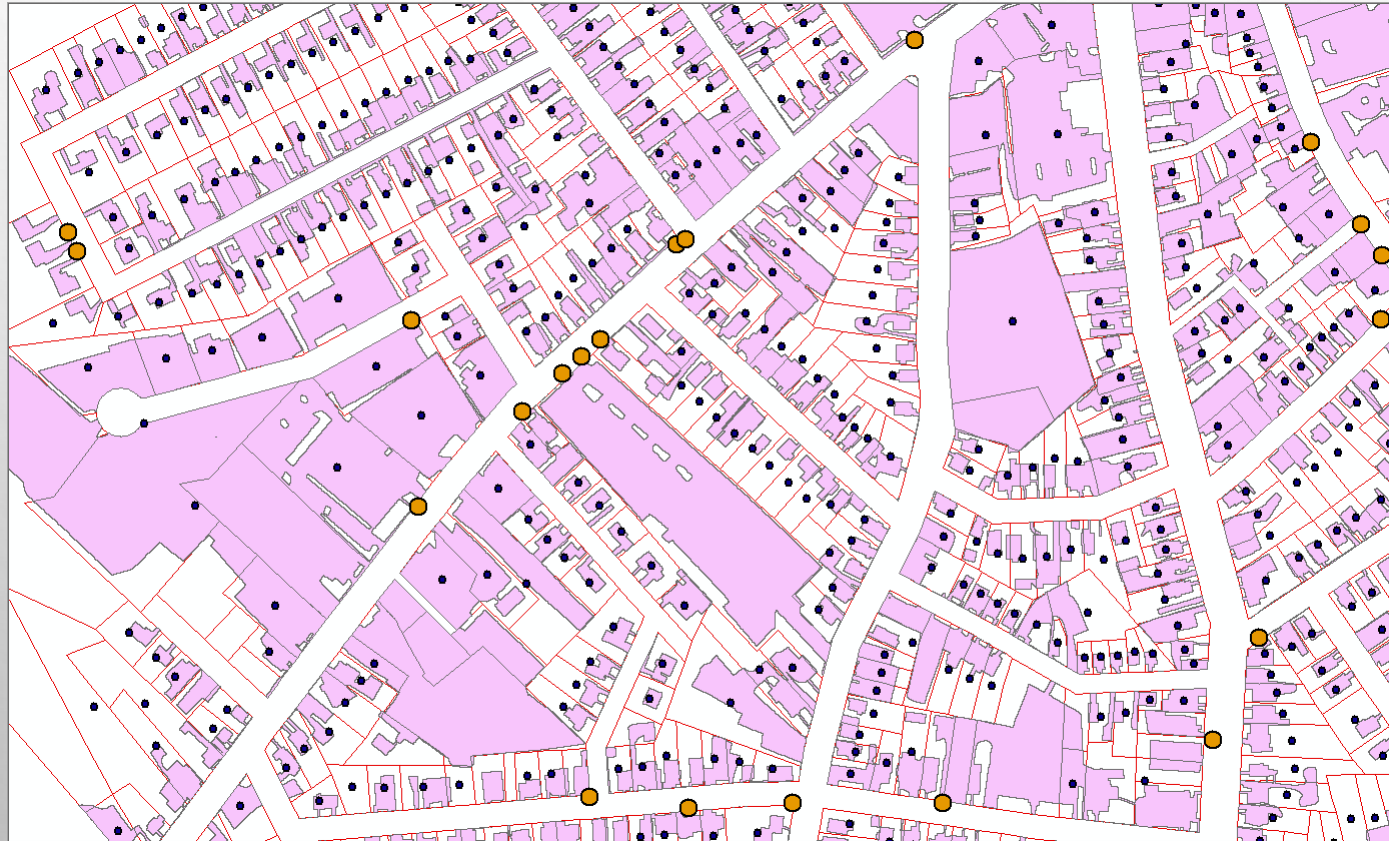
Table					
IC_Zoning_Clip_Intersect_Dissolve					
FID *	Shape *	PID	Shape_Length	Shape_Area	IC
1	Polygon	0	35288.299285	315122.8033	315122.8033
2	Polygon	1	19137.199167	626850.759249	626850.759249
3	Polygon	3	158.923397	834.006962	834.006962
4	Polygon	4	124.165563	721.508798	721.508798
5	Polygon	5	346.621154	5461.459007	5461.459007
6	Polygon	7	462.627548	4569.271925	4569.271925
7	Polygon	8	282.726194	2341.487681	2341.487681
8	Polygon	9	276.995044	1120.80293	1120.80293
9	Polygon	10	307.733086	1818.232271	1818.232271
10	Polygon	11	403.314159	2616.609321	2616.609321
11	Polygon	12	439.95998	2639.539046	2639.539046
12	Polygon	13	377.261704	1988.666948	1988.666948
13	Polygon	14	911.009091	12591.982927	12591.982927
14	Polygon	15	158.141416	1174.283463	1174.283463
15	Polygon	16	162.69127	1312.692584	1312.692584
16	Polygon	17	395.896717	1609.922022	1609.922022
17	Polygon	18	286.568245	2465.986025	2465.986025
18	Polygon	19	338.155029	2665.472822	2665.472822
19	Polygon	20	298.213276	3596.329406	3596.329406
20	Polygon	21	414.093069	2150.284218	2150.284218
21	Polygon	22	146.8452	1030.491053	1030.491053
22	Polygon	23	161.377287	928.764989	928.764989
23	Polygon	24	196.148896	1921.07579	1921.07579
24	Polygon	25	275.147157	1596.901676	1596.901676
25	Polygon	26	399.089678	2108.357234	2108.357234
26	Polygon	27	298.453702	2535.418177	2535.418177
27	Polygon	28	298.61085	2602.083727	2602.083727
28	Polygon	29	310.545517	2593.141174	2593.141174
29	Polygon	30	314.328075	2558.344799	2558.344799
30	Polygon	31	274.279136	2369.793897	2369.793897
31	Polygon	32	283.574119	2919.261031	2919.261031
32	Polygon	33	189.11072	1589.016531	1589.016531
33	Polygon	34	305.276556	2710.762481	2710.762481
34	Polygon	35	468.08074	1799.036565	1799.036565
35	Polygon	36	371.470415	2481.871166	2481.871166
36	Polygon	37	424.961485	2676.549393	2676.549393
37	Polygon	38	302.807452	2314.51791	2314.51791
38	Polygon	39	216.205963	1417.342757	1417.342757
39	Polygon	40	494.540542	1417.693100	1417.693100

LINKING BILLING SOFTWARE WITH IC LAYER

- ISSUES
 - NO MATCHING FIELD
 - MULTIPLE METERS PER ACCOUNT
 - DIFFERENT ADDRESSES THAN THE ASSESSOR'S INFORMATION
 - NEW ACCOUNTS NEEDED FOR PROPERTIES WITHOUT SEWER/WATER

LINKING BILLING SOFTWARE WITH IC LAYER (CONTINUED)

- EXPORTED BILLING SOFTWARE REPORT OF ALL ACTIVE CUSTOMERS IN NEW LONDON
- GEOCODED ADDRESSES



LINKING BILLING SOFTWARE WITH IC LAYER (CONTINUED)

Spatial Join

Target Features
CIS_Customers

Join Features
Zoning_wo_sidewalks

Output Feature Class
C:\Users\Brian.Nixon\Documents\ArcGIS\Default.gdb\CIS_Customers_SpatialJoin2

Join Operation (optional)
JOIN_ONE_TO_ONE

☒ Keep All Target Features (optional)

Field Map of Join Features (optional)

- ☒ Loc_name (Text)
- ☒ Status (Text)
- ☒ Score (Double)
- ☒ Match_type (Text)
- ☒ Match_addr (Text)
- ☒ Descr (Text)
- ☒ PlaceName (Text)
- ☒ StAddr (Text)
- ☒ Place_addr (Text)
- ☒ Nbrhd (Text)
- ☒ City (Text)
- ☒ County (Text)
- ☒ State (Text)
- ☒ StateAbbr (Text)
- ☒ Country (Text)
- ☒ LangCode (Text)

Match Option (optional)
COMPLETELY_WITHIN

Search Radius (optional)
Feet

Distance Field Name (optional)

OK Cancel Environments... Show Help >>

Join Data

Join lets you append additional data to this layer's attribute table so you can, for example, symbolize the layer's features using this data.

What do you want to join to this layer?
Join attributes from a table

1. Choose the field in this layer that the join will be based on:
PID

2. Choose the table to join to this layer, or load the table from disk:
CIS_Customers_SpatialJoin
☒ Show the attribute tables of layers in this list

3. Choose the field in the table to base the join on:
PID

Join Options

☒ Keep all records
All records in the target table are shown in the resulting table. Unmatched records will contain null values for all fields being appended into the target table from the join table.

☐ Keep only matching records
If a record in the target table doesn't have a match in the join table, that record is removed from the resulting target table.

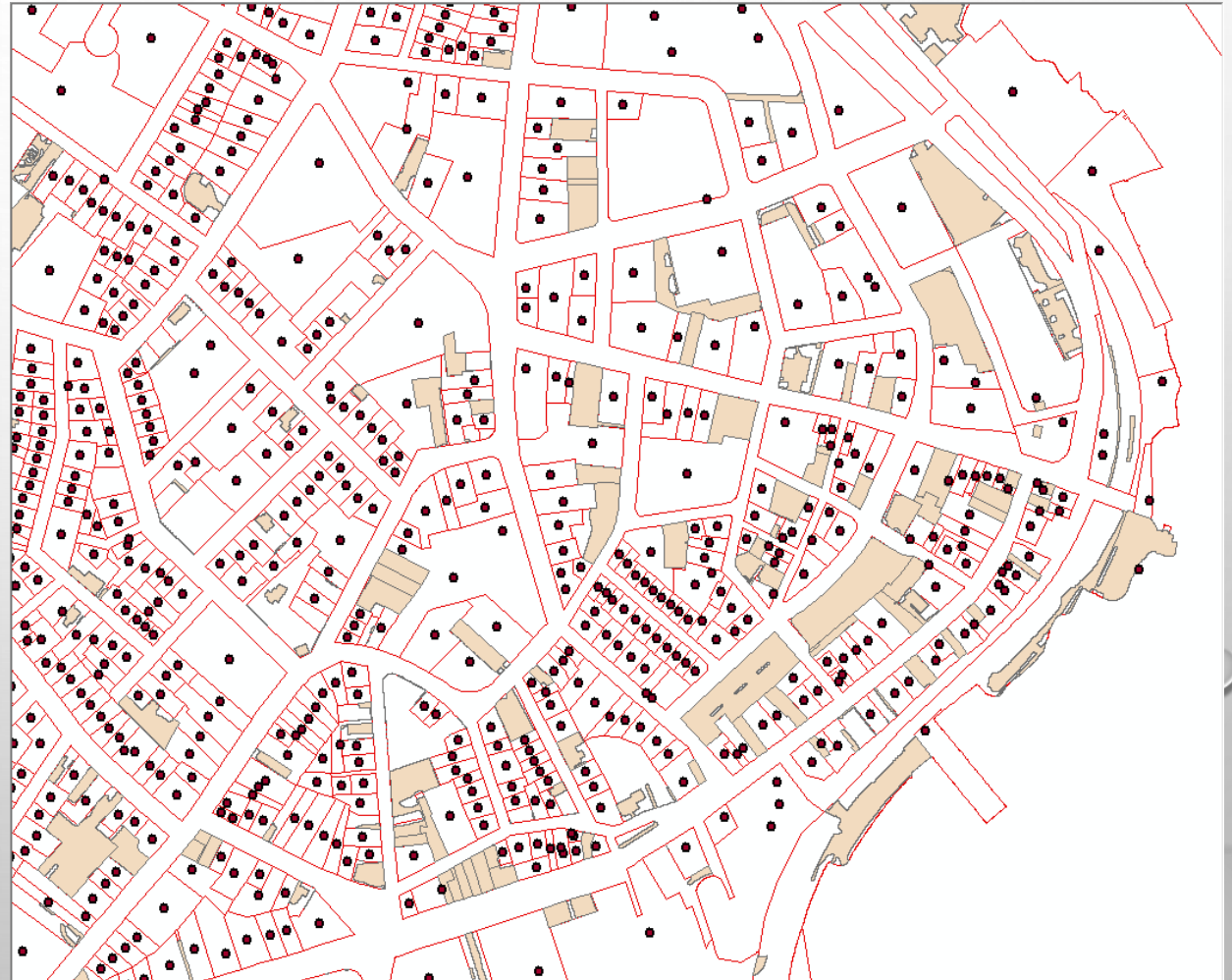
Validate Join

[About joining data](#)

OK Cancel

LINKING BILLING SOFTWARE WITH IC LAYER (CONTINUED)

- 561 PARCELS WITHOUT ACCOUNTS



STORMWATER BILLING IMPLEMENTATION

AccountView

Previous Active Next History 1 4 Add Copy Mass Add Refresh Search Contact Letter Note S/O Action Arrangement Task Open Previous Next Close

Customer Account New Services Records Create Filter

Customer: 000173
Account: 008684
CITY OF NEW LONDON
0 OCEAN BEACH Park
NEW LONDON, CT 06320
() -

Balance: \$0.00
Last Bill: \$48.09 Due 9/28/2018
Deposit: \$0.00
Plan: None
Next:

Active
Municipal
Moved in 10/9/1991
Owner

Cycle 02B / Book 06
Dial #: 60408103
Remote #: 1440239528
Current Read:

Collections Okay

Customer Service Address Customer/Account Services X Addresses Transaction History Reading History Bills Comments Move In/Out ACH Meter Re

Water Sewer Stormwater

Service Information

Installed/Previous Reading Date 09/28/2018
Date Service Installed 09/27/2018
Date Service Removed
Reference Number
Effective Date
Activation Date
Deactivation Date
Credit Code
Usage Discount Code
Interval Metering Type Unknown
Meter Room
Key Reference Number
Master Meter ☐
Service Multiplier Code 1
Service Multiplier Code 2

Service Bill Codes

Billing Code ST3 - Storm Water - Municipal - New London

Basic Multipliers

Record 1 of 1

Multiplier Description	Multiplier	Start Date	End Date	Notes	Info Only
> Square Ft.	621385.622646	9/27/2018		0	

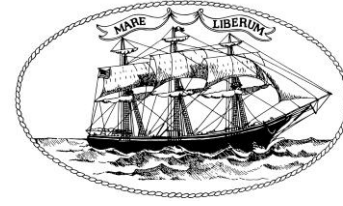
Meters

Record 0 of 0

Meter #	Service	Read Type	Meter Bill Code	Dials	Remote Type	Le
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**SOUTHEASTERN
CONNECTICUT
COUNCIL OF
GOVERNMENTS**



 **ARCADIS**

Stormwater Program Finance

Southeastern Connecticut Council of Governments

December 15, 2025

Presenters



Jennifer Kelly Lachmayr, PE, BCEE
Senior Vice President / Area Leader



Kathryn Edwards, PE
Principal Engineer

Discussion Topics

- 1 **Stormwater Utilities
Overview**
- 2 **Stormwater Program Cost
Considerations**
- 3 **Building Public
Consensus for the
Program**
- 4 **Innovation and
Implementation Case
Studies**

Stormwater Utility Overview

Current Stormwater Utilities

Stormwater Utilities, 2025



Source: Western Kentucky University Stormwater Utility Survey, 2025

Nationwide
since the mid-
1970s



2,000+ Utilities
in the United
States

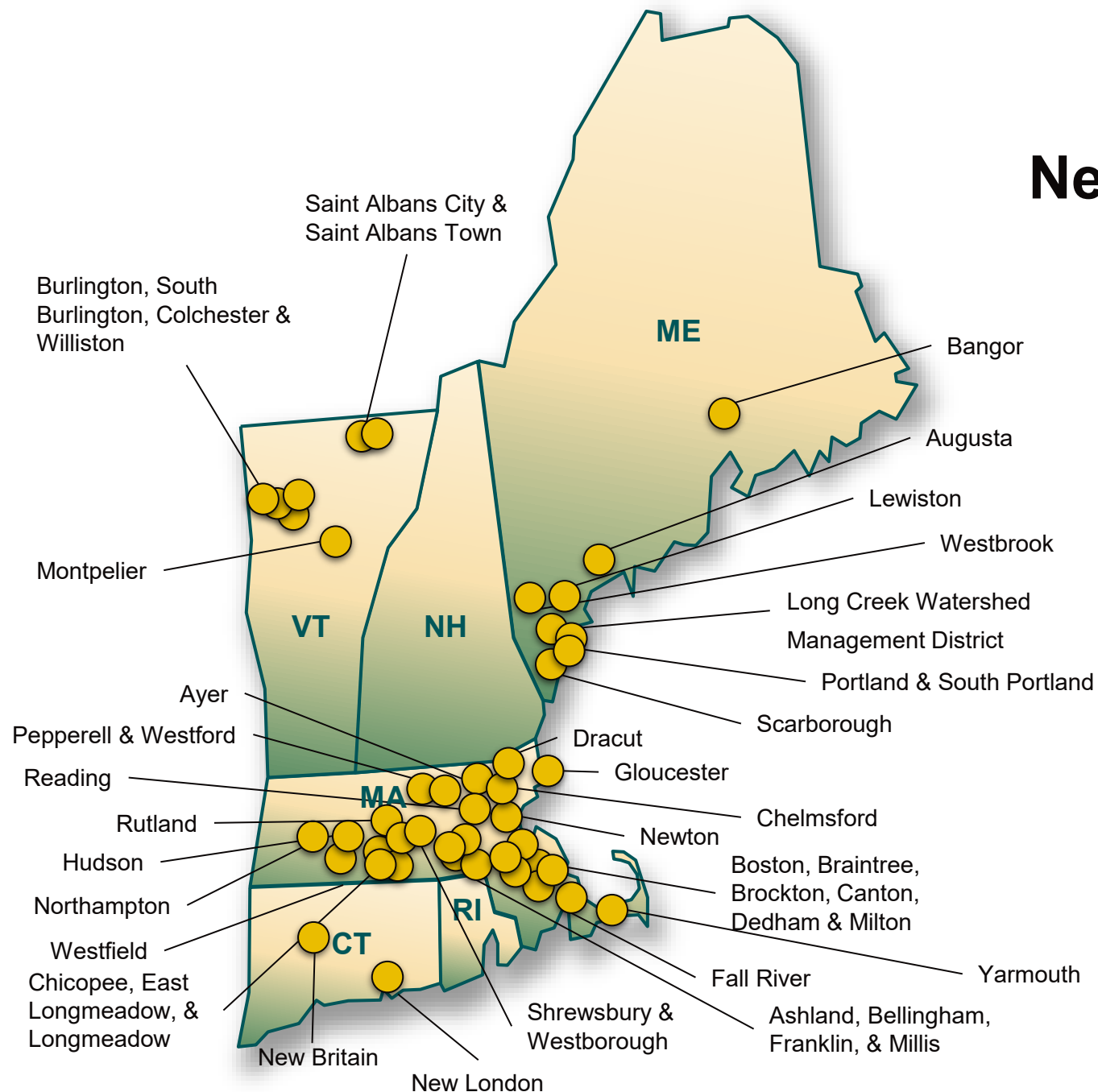


46 Utilities in
New England



43 States plus
DC have at
least one utility

New England Stormwater Utilities



Program Cost Components

Costs include general administrative/staff, capital projects, and operation and maintenance activities, in addition to activities necessary to comply with the MS4 General Permit

Administrative

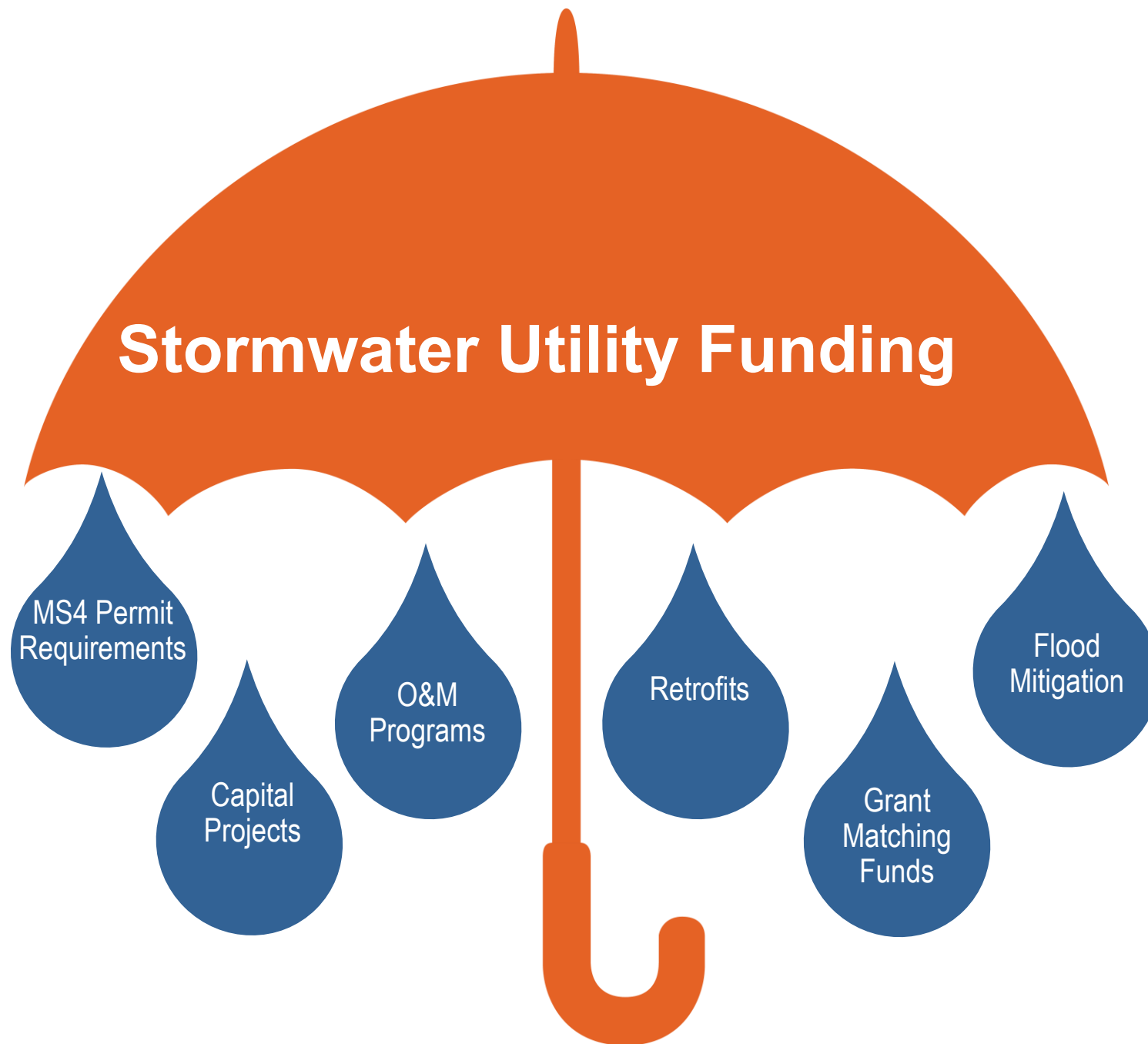
- Reporting & Permit Compliance
- Billing
- Management
- Mapping
- Lab Costs
- Written Procedures/Programs
- Recordkeeping
- Establishing Requirements
- Public Meetings
- Public Education and Outreach Materials

Capital

- Stormwater System Infrastructure Rehabilitation, Replacement, and Improvements
- Eliminate Causes of Sanitary Sewer Overflows
- Removal of Illicit Connections and Discharges
- Debt Service

O & M

- Maintenance of Stormwater System
 - Stormwater system inventory
 - Mapping assessment
 - General maintenance
 - Cleaning and Inspection
- IDDE Program
 - Catchment area mapping
 - Outfall and intermunicipal connection inspection and mapping
 - BMP identification
- Other O & M Items
 - Street & Parking Lot Sweeping
 - Pollution Prevention at Municipal Operations (Good Housekeeping)
 - Landscaping management at BMPs



Stormwater Communities & Revenue



Community	Pipe (LF)	Manholes	Catch Basins	Outfalls	Annual Rev. \$
- Chicopee, MA - Newton, MA - Fall River, MA - Reading, MA - Westfield, MA - New London, CT - Chelmsford, MA - Milton, MA - Westford, MA - Pepperell, MA - Fitchburg, MA	528,567 1,690,000 1,320,000 528,000 621,000 ~750,000 502,000 ~274,600 - TBD 421,500	1,984 5,700 6,000 2,700 1,000 1,100 800 185 1,590	8,804 13,257 6,000 3,200 5,400 1,100 4,500 3,482 5,160 1,101 7,020	~200 155+ - In Prog. 425 300+ 60 650 230 616 169 450	1.5 M 2.2 M 4.4 M 0.5 M 0.5 M 1.8 M 2.0 M 0.7 M 1.5 M 0.2 M - TBD

Stormwater Program Cost Considerations

Why Dedicated Stormwater Funding?



Aging infrastructure



Increasing regulatory/MS4 permit requirements



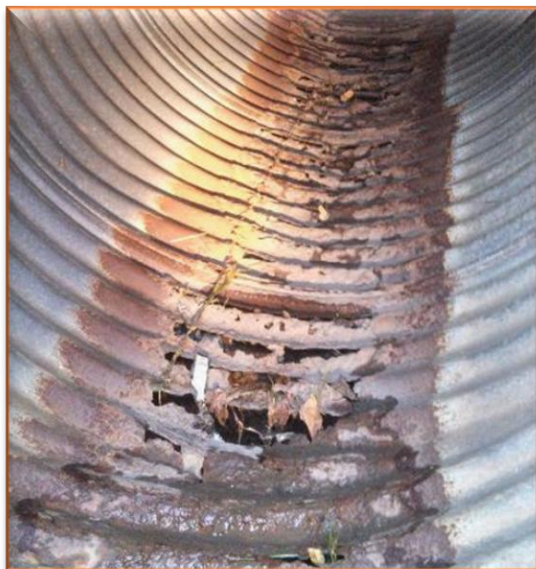
Increased drainage issues



Recognition of stormwater as a true utility like water, power, etc.

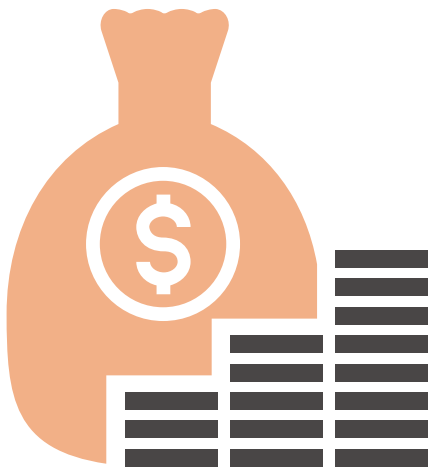


Result in consistent, ongoing annual costs to provide effective Stormwater Service & remain Compliant

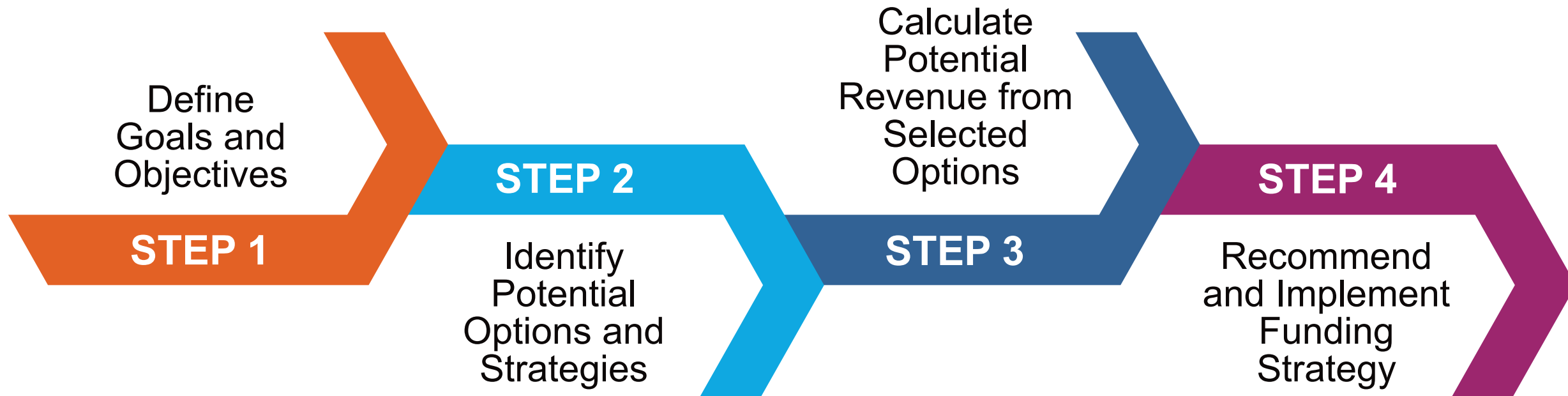


Numerous Funding Options Available

Traditional	Innovative
General Tax Fund	Capital markets (EIB, incentives)
Benefit Area/Special Assessment Districts	Cost sharing
Grants and Loans	Private and non-profit sources
Municipal bonds	Public-private partnerships
Inspection, Permit, Development Fees	Mitigation banking and credit trading
Fines	Miscellaneous sources
Impact Fees	
Fee in-lieu of programs	
Water/Wastewater Revenue	
Stormwater Utility	



4 Steps to Identifying and Evaluating Stormwater Funding Options



Systematic process to develop a funding strategy leads to successful implementation

Public Consensus Considerations

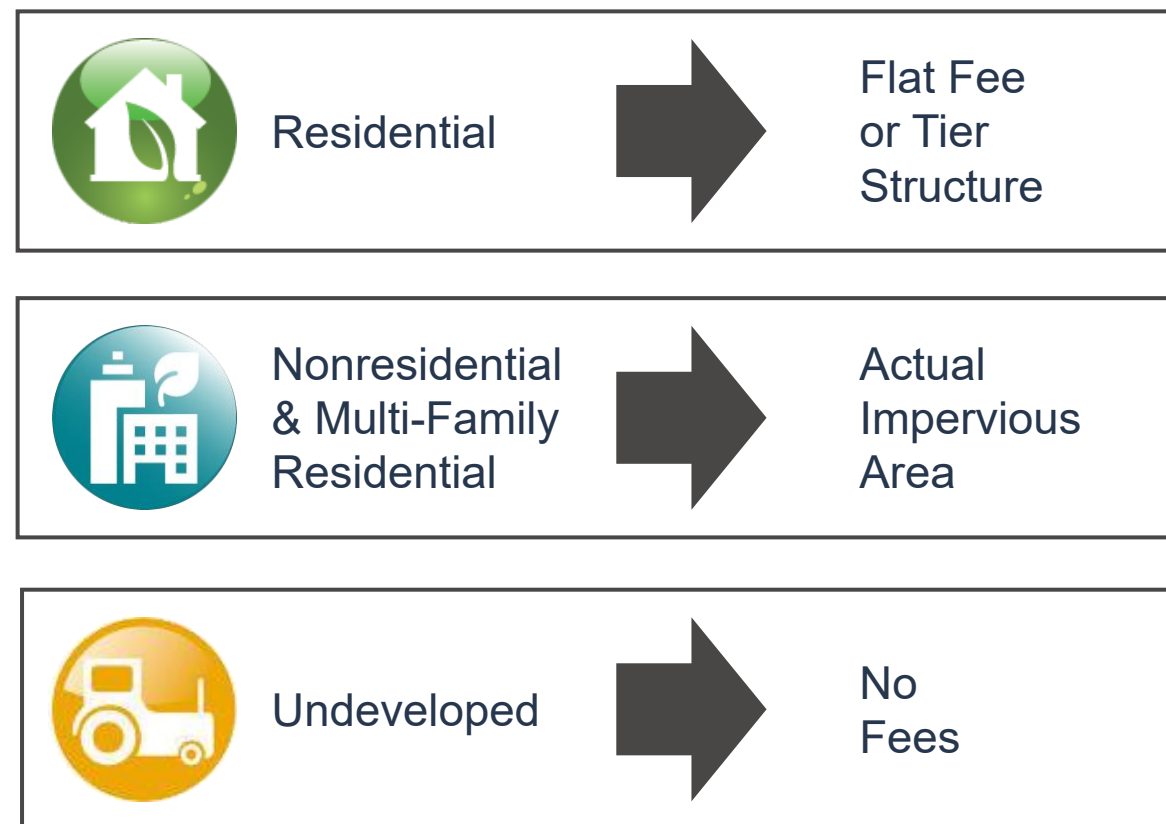
Rate Structure Alternatives

Keep it simple

- Accurate, fair, and defensible
- Representative of local conditions

Link to benefits

- Service area
- Program
- Projects



Common Residential Rate Structures

Flat (all SFRs pay same fee)

- Simplest to explain
- Easy to administer
- Consistency with trash/sewer billing
- Few appeals anticipated
- Small properties pay same as large properties



Tiered on Parcel Size

- Correlation between parcel size and impervious area
- More equitable
- More complicated to explain
- Potential for appeals (lot size discrepancies)
- Can impact # ERUs (+/-)



Additional Stormwater User Fee Considerations



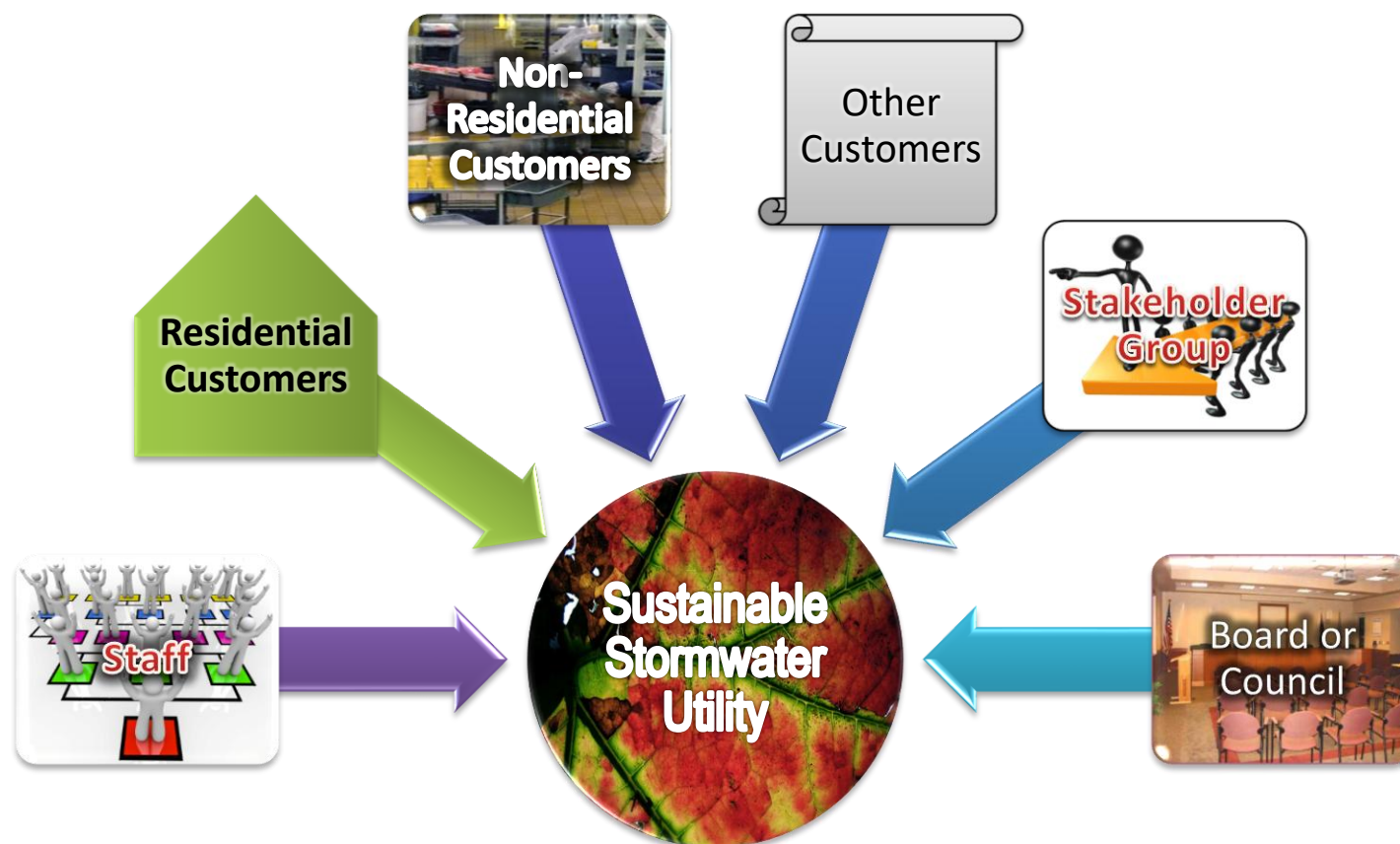
Often Perceived
as a “Rain Tax”

Requires
Assessment of
Parcels for
Impervious Area

Establishment
or Adjustments
to Billing
Systems

Development of
Credit Programs

Consensus Building – Engagement at All Levels



Innovative Funding

Innovative Funding Sources for Stormwater & Green Infrastructure

Cost Sharing, Private and Non-Profit Sources, Public Private Partnerships:

- GI offers versatility in framing ideas
- Leverage other infrastructure costs
- Green jobs!
- Accelerate implementation
- Lower construction and maintenance costs
- Access to new sources of capital
- Shift risk





Resilient NYC Partners

NYC provides the funding and the expertise, you provide the property.

Resilient NYC Partners is a program that **funds green infrastructure** for qualifying properties. The program helps you improve your property and helps NYC meet its resiliency goals. Property owners can use these funds for projects like:

- Installing green infrastructure practices such as subsurface stormwater storage, porous pavement, and rain gardens
- Fixing drainage issues and reducing ponding

Who should apply?

Private and non-City owned properties with:

- **50,000 square feet or more of site-level impervious surfaces**, such as large parking lots or courtyards
- a connection to either the combined or separate sewer system
- ability to sign and commit to a five-year maintenance agreement

Partnering with us is easy!

We know construction can be a big undertaking. Our expert team has worked with property owners on similar projects. We know how to streamline the process and make it work for you.

- Assessment**
 We will first conduct a desktop analysis. If your property meets the eligibility criteria, we will then schedule a site visit with you to better understand your property.
- Planning & Review**
 We will develop detailed plans tailored to your property for your review. Together, we will refine and finalize your project.
- Scheduling & Approvals**
 Once a project is agreed upon, we will work with you to make a construction plan and obtain permits.
- Construction**
 Build it! Construction typically lasts 4-6 weeks. We will work with you to make sure everyone is safe and minimally disrupted.

Case Study – Resilient NYC Partners

- Pay-for-Performance Contract to deliver green infrastructure for CSO mitigation
- Arcadis is exclusive delivery partner
- Green infrastructure installation on Non-City Owned Properties

Eligibility criteria – >40,000 sf, Drains to DEP sewer, combined sewer and MS4

- Property owner provides 5 years of maintenance
- Typical technologies – Rain gardens, Porous Pavement, Subsurface Infiltration
- Fixed Reimbursement following Certification

Stormwater Utility Funded Projects: New London Watershed Management Plan



Enhanced Bacteria & Nitrogen Sampling Supports MS4 Program Goals

- Illicit Discharges identified through sampling
- Water Quality focus areas were identified based on sampling and nitrogen load modeling results.
- Top retrofit opportunity areas were identified for when funding is available.
- An approved Watershed Based Plan unlocks potential funding sources.

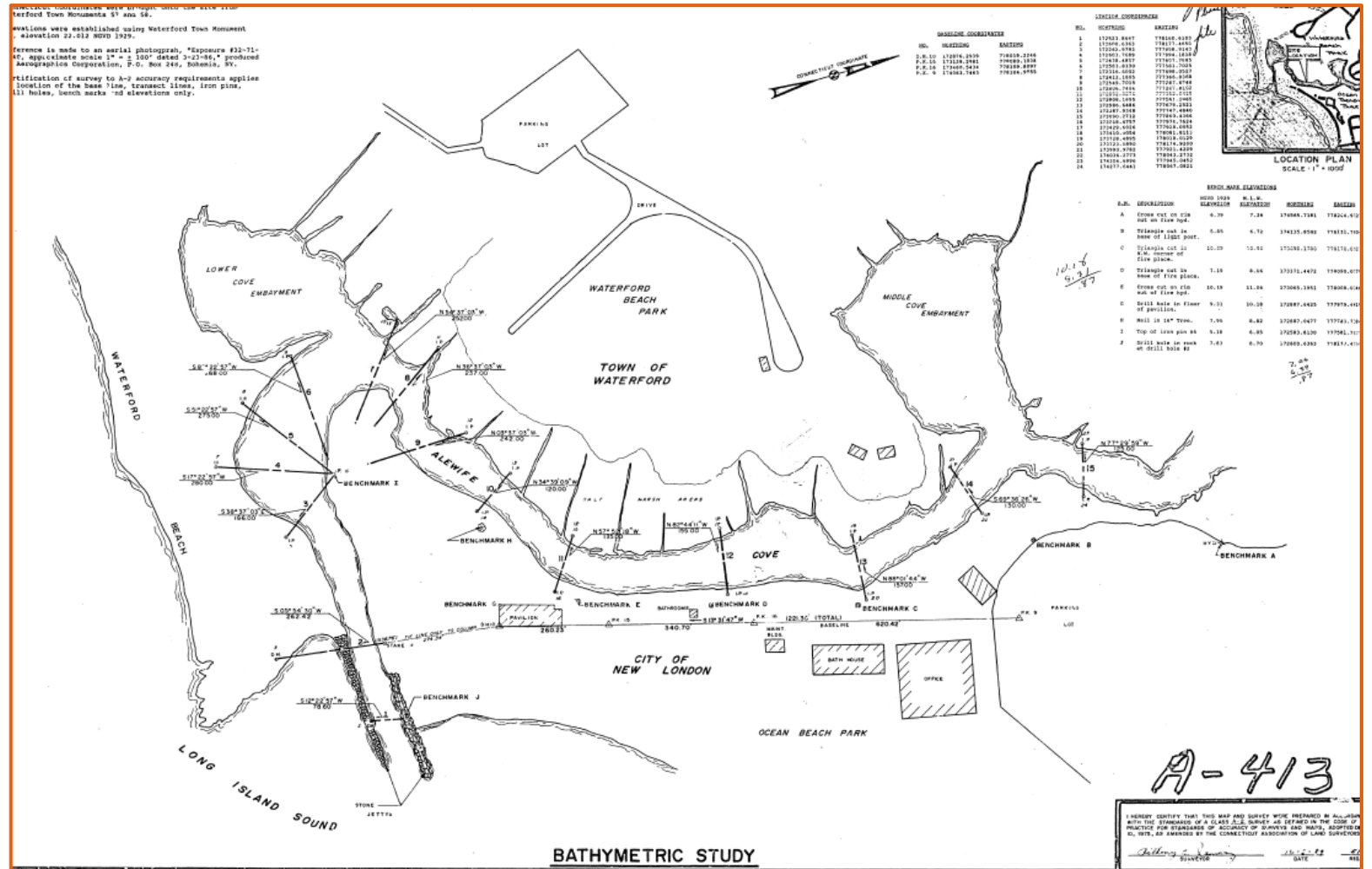




Alewife Cove - Problem

- Deposition of sand/sediment into the lower Cove
- Shoaling
- Alteration of channel depth and flow
- Continued erosion of the Ocean Beach jetty
- Negative impacts on spawning of fish species and ecosystem of local birds

Due to sediment transport, wave and wind patterns and significant storms like Irene (2011) and Sandy (2012)





Alewife Cove - Solution

- Alternatives Feasibility Analysis for Stabilization of Alewife Cove: Lower Channel and Cove Outlet
- LIS FF Grant – Collaboration with Waterford and Alewife Cove Conservancy
 - Grant \$400,000
 - Match \$125,000
 - Total \$525,000
- Shovel Ready nature-based community resilience project.
- Community Resilience, Conservation Efforts, Water Quality improvements
- Stabilize outlet, develop sustainable long-term solution to restore and promote resilience.



Photo: Alewife Conservancy

Hempstead Street Flooding

- Localized ponding of surface runoff
- 43 Hempstead Street (a Brownfield Site)

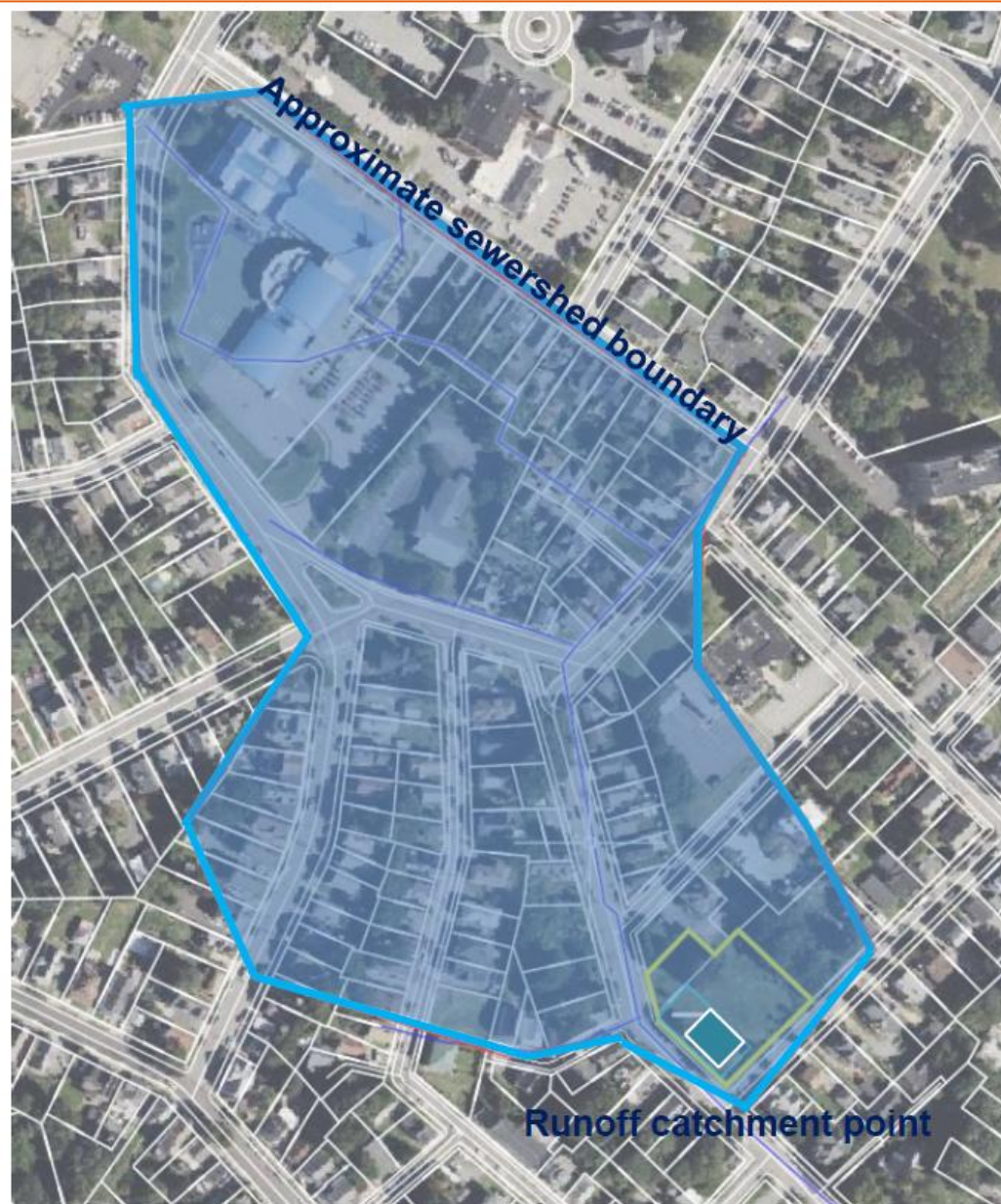
Opportunity to align a planned project with a beneficial watershed improvement.





Hempstead Street Park Project

- City purchased the vacant parcel to create a public park.
- Brownfield Cleanup and Assessment Grant program funding to cleanup the site.
- Planned improvements align with Watershed Management Plan concept



- 20-acre sewershed for storm sewer system
- Catchment point at Hempstead and Home
- 35-40% impervious – streets, parking lots, rooftops
- Approx. gallons of runoff from a one-inch storm = 29000





Water, Sewer, and Stormwater Ordinance Updates



Bylaw/Ordinance

Legal Authority



Rules & Regulations

Technical Requirements
Procedures



Guidance Materials

Examples & Details
BMPs

Benefits of Sustainable Stormwater Funding

Permit Compliance

Appropriately funded stormwater program

Increased life of City's infrastructure

Improved water quality

Potential for improved resiliency

City Remains in Control of the Program

Prevent fines

Equitable distribution of costs



Thank You



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