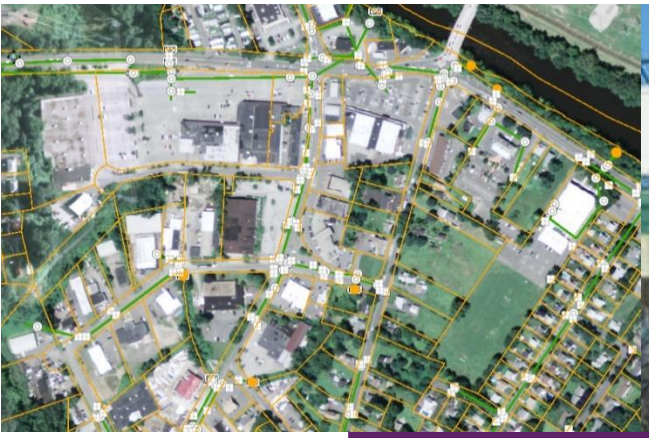
Town of Agawam
Stormwater System Assessment and Utility/Fee Planning Project

Stakeholder Informational Workshop



September 25, 2017

Project Overview
Rationale and Need

Why are we here?

- The Town has existing stormwater problems.
- Stormwater management needs are increasing.
- The Town has limited resources and funding.
- We have the ability to solve these problems and manage stormwater better, but it will cost more.
- What's the best approach to move forward?

Project Overview
Goals

MassDEP s319 Grant: Project 16-06/319

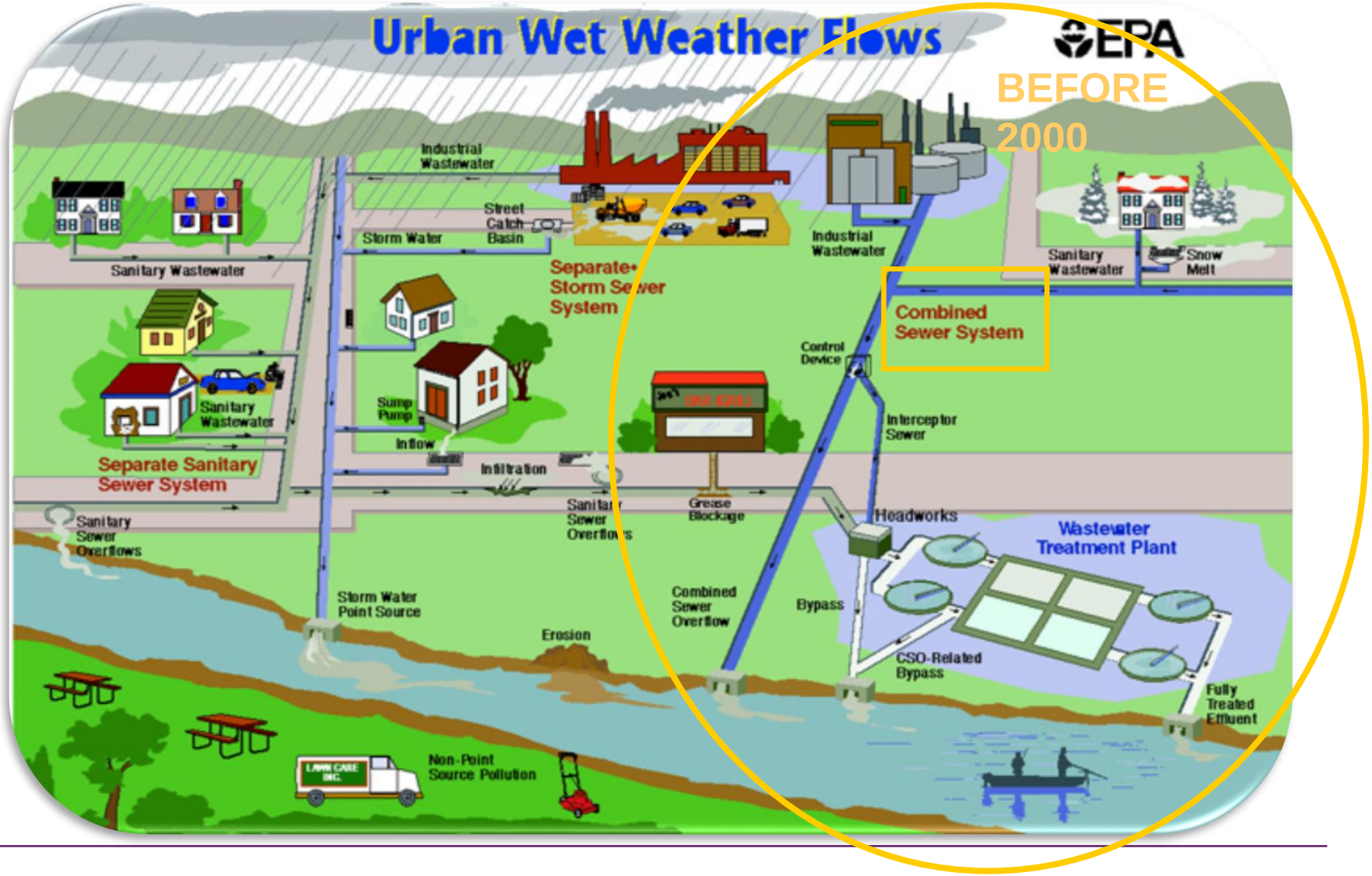
Goals:

1. Obtain a local consensus on Agawam's current and future stormwater management program needs, priorities and costs.
2. Execute a robust public engagement process to promote a deep understanding of stormwater issues and funding needs.
3. Study the possibility of establishing a stormwater utility in Agawam.
4. Develop recommendations and a consensus for next steps.

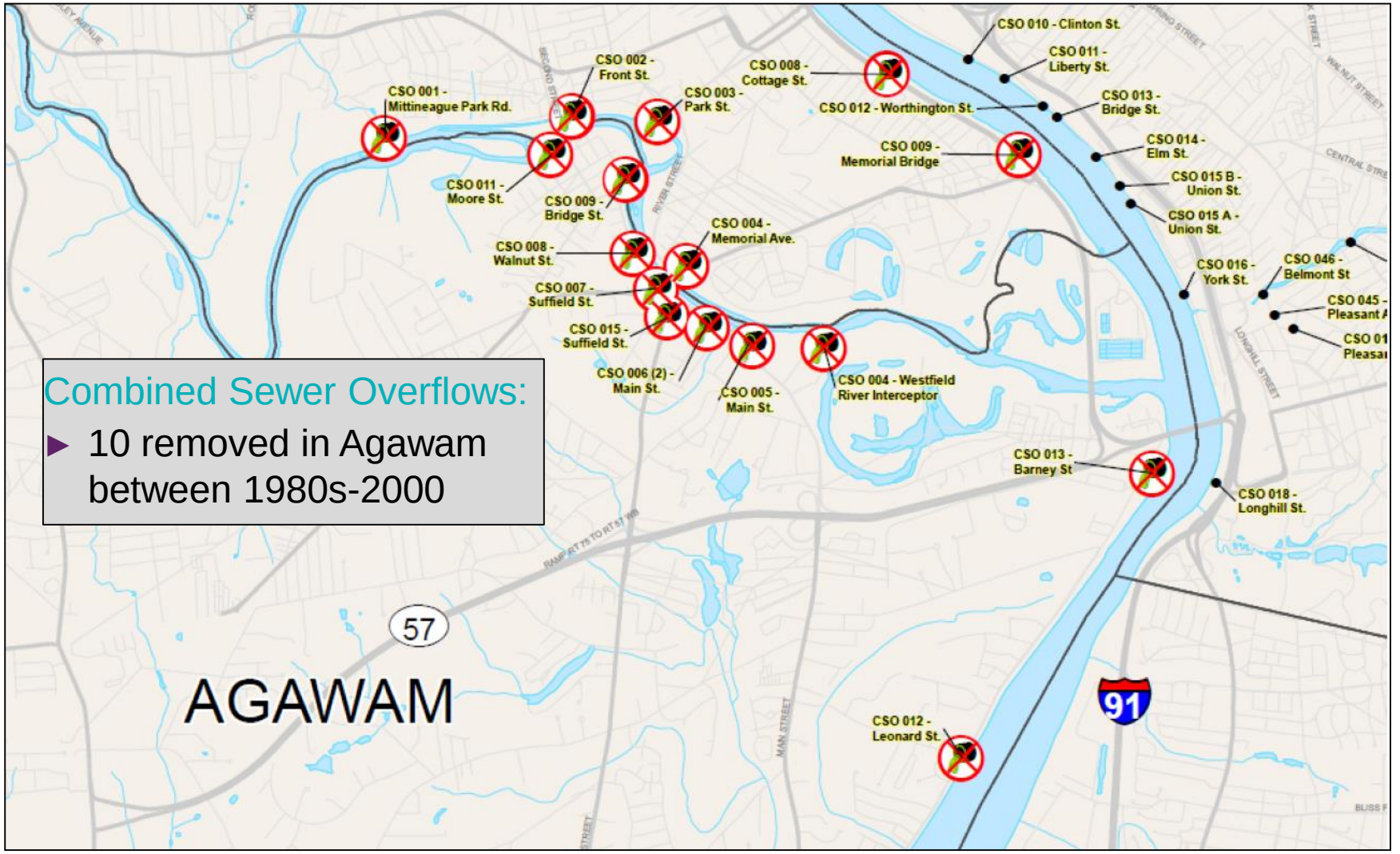
Project Overview
Roles and Responsibilities

- Project Team:
  - Town Staff – provide input on stormwater management program, costs, priorities, and policy recommendations
  - Pioneer Valley Planning Commission – manage grant, review project deliverables, conduct public education and outreach, support GIS updates
  - Amec Foster Wheeler – guide study, facilitate meetings, and provide technical analysis and report writing
  - Graphic Designer – develop public education and outreach materials
- Advisory Task Force:
  - Attend 6 meetings
  - Provide input throughout the project
  - Provide recommendations for consideration by the Town Council and the general public
- Town Council:
  - Participate in Task Force and Public Meetings

Municipal Stormwater System
How it Works



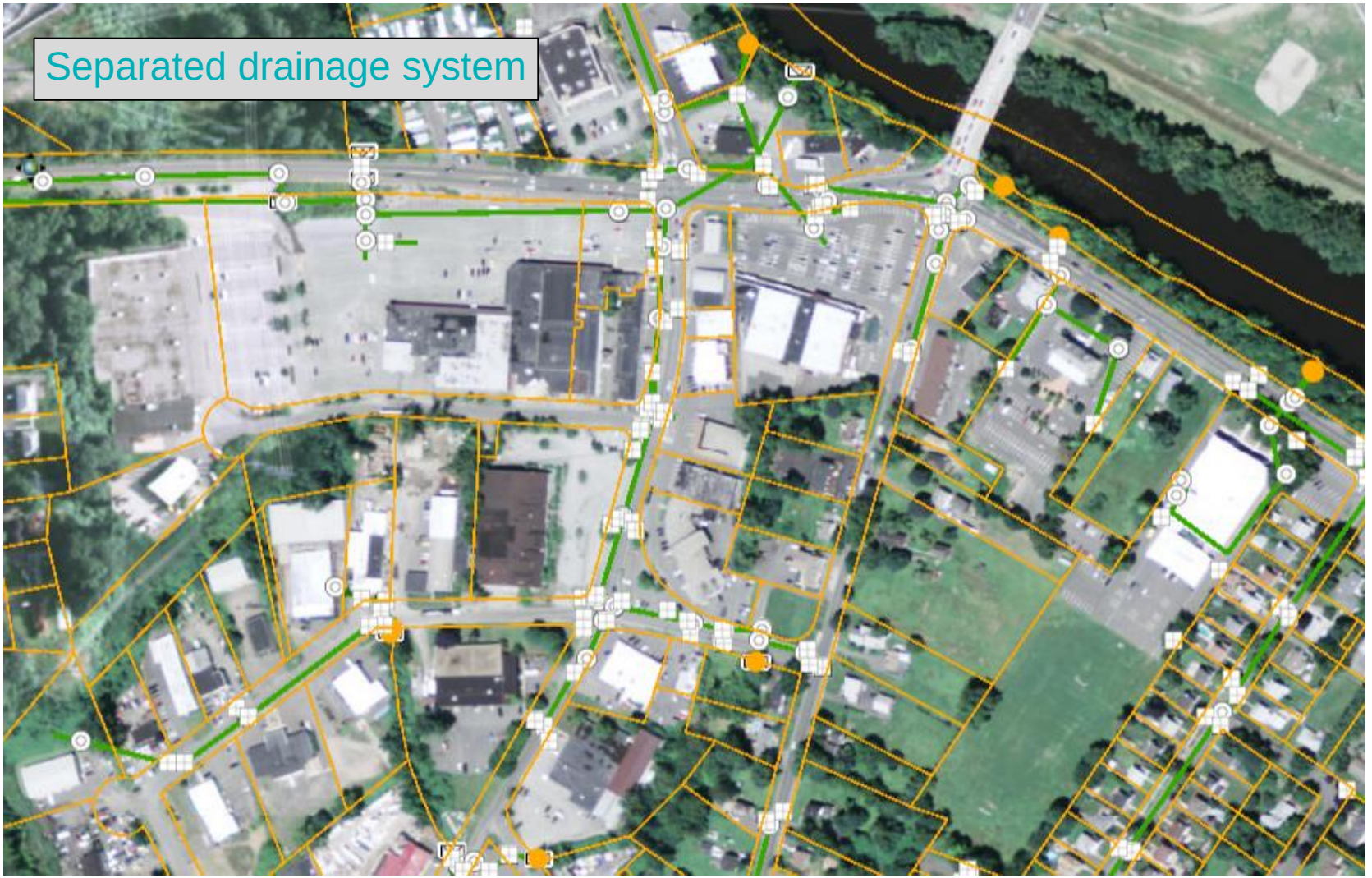
Municipal Stormwater System
How it Works



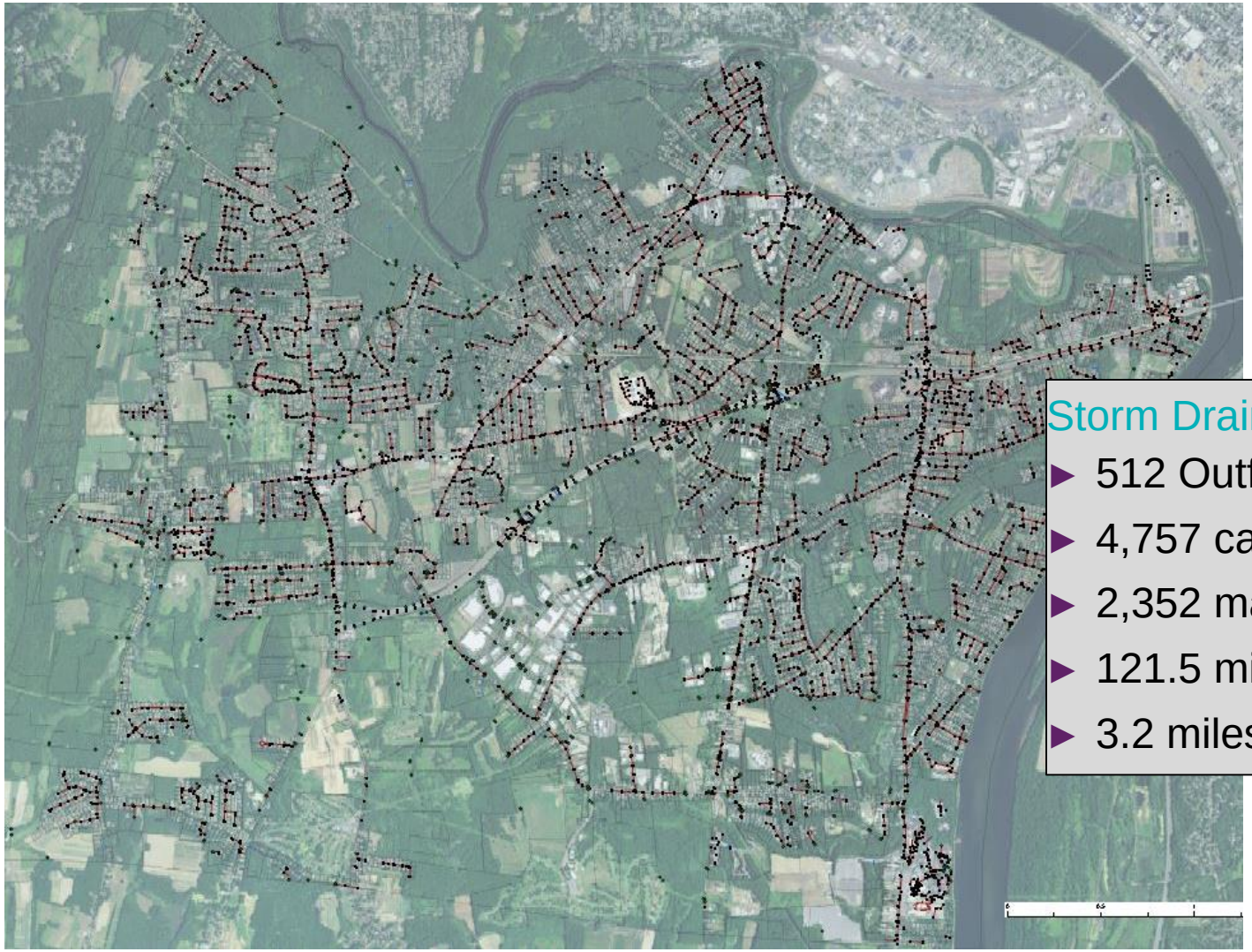
Combined Sewer Overflows:

- 10 removed in Agawam between 1980s-2000

Municipal Stormwater System
How it Works



Municipal Stormwater System
Extent



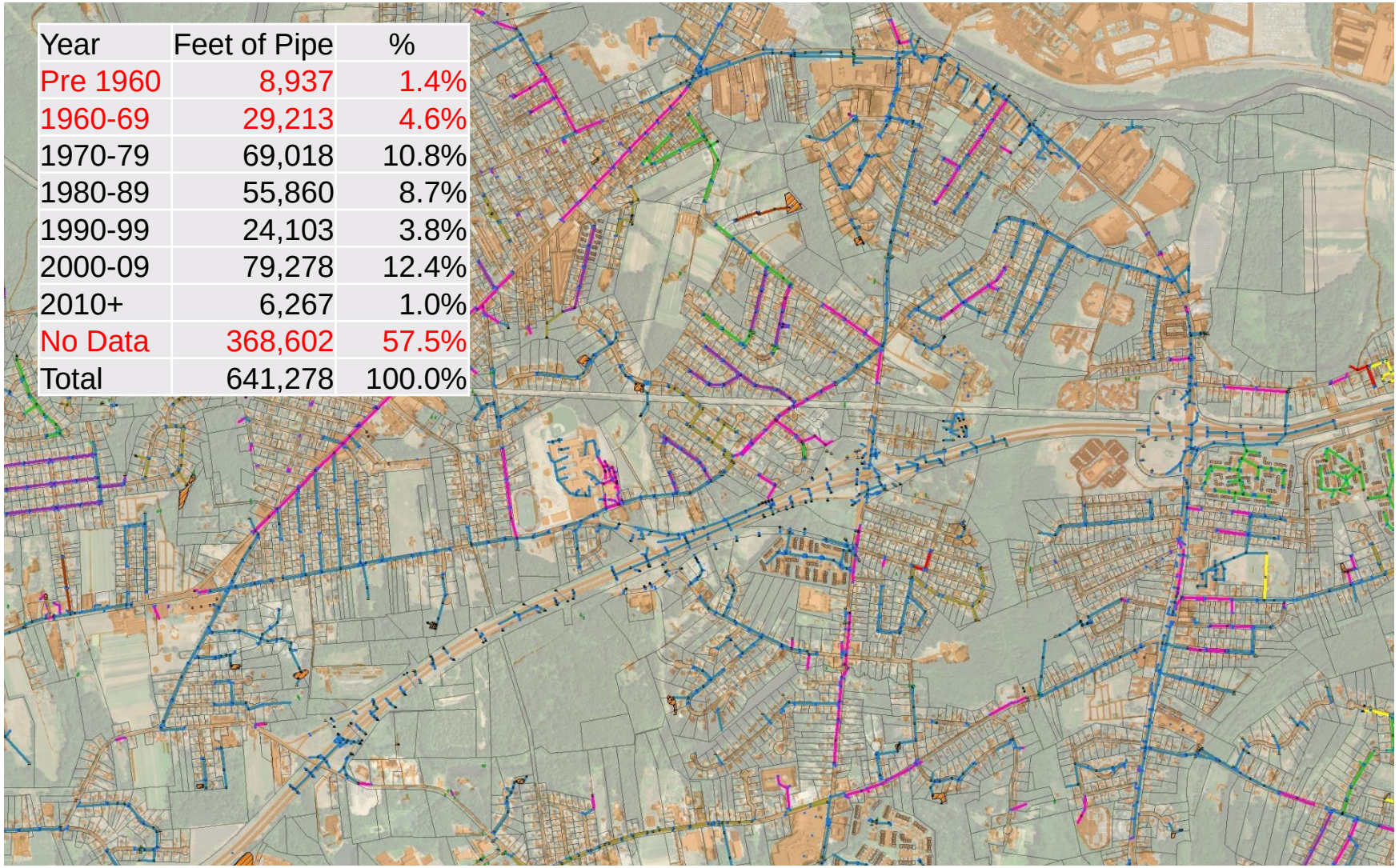
Storm Drain Infrastructure:

- 512 Outfalls
- 4,757 catch basins
- 2,352 manholes
- 121.5 miles drain pipe
- 3.2 miles culverts

Municipal Stormwater System

Age

Year	Feet of Pipe	%
Pre 1960	8,937	1.4%
1960-69	29,213	4.6%
1970-79	69,018	10.8%
1980-89	55,860	8.7%
1990-99	24,103	3.8%
2000-09	79,278	12.4%
2010+	6,267	1.0%
No Data	368,602	57.5%
Total	641,278	100.0%



Municipal Stormwater System
Agawam DPW Activities

Existing Activities:

- Catch basin cleaning
- Street sweeping
- Drainage structure repair and replacement
- Culvert cleaning, repair and replacement
- Management of stormwater treatment facilities
- Road shoulder and ditch repair
- Flood response and related improvements
- Engineering and planning for upgrades
- Drainage mapping and assessments
- Stormwater permit compliance


Carr Ave – culvert replacement


Robinson Park School – infiltration system

Stormwater Needs
Infrastructure

Additional Needs:

- Ongoing operation and maintenance (repairs & reconstruction) challenges
- Maintenance backlog of deteriorated storm drain infrastructure
- Culvert failures: North Street culvert is severely deteriorated, resulting in bank erosion for White Brook
- Pipe failures: Westford Circle outfall pipe separation and erosion
- Detention pond maintenance: private maintenance is not performed, resulting in failure and burden upon the municipal system
- Undersized pipes to convey flow
- Sanitary sewer cross-connections

Stormwater Needs
Water Quality

Impaired Water Bodies:

- Connecticut River
  - E. coli, nutrients, total suspended solids (TSS), and PCBs in fish tissue
  - Long Island Sound TMDL (nitrogen) – applies to Agawam
  - Incorporated into EPA stormwater permit
- Potential Causes of Impairments:
  - Urban stormwater runoff
  - Illicit discharges
  - Sanitary sewer I/I and SSOs
  - Septic systems
  - Waterfowl
  - Pet waste

Return to all sites | Nearby Sites | Return to search

Connecticut River at Pynchon Point Park

River Road
Agawam, MA
Longitude/Latitude: -72.585449 / 42.083300

Pynchon Point Park is located at the mouth of the Westfield River where it joins the Connecticut River. Down a short path from the parking lot, is an unimproved ramp for car-top boats only.

Is It Clean?

Pynchon Point is sampled Thursdays from June to September by volunteers coordinated by the Pioneer Valley Planning Commission.

Sample Date	Status	CFU/100ml	Wet
2016-09-28	Clean for Boating and Swimming	190	Y
2016-09-21	Clean for Boating	270	Y
2016-09-14	Clean for Boating and Swimming	18	N
2016-09-07	Clean for Boating and Swimming	116	N
2016-08-31	Clean for Boating and Swimming	54	N

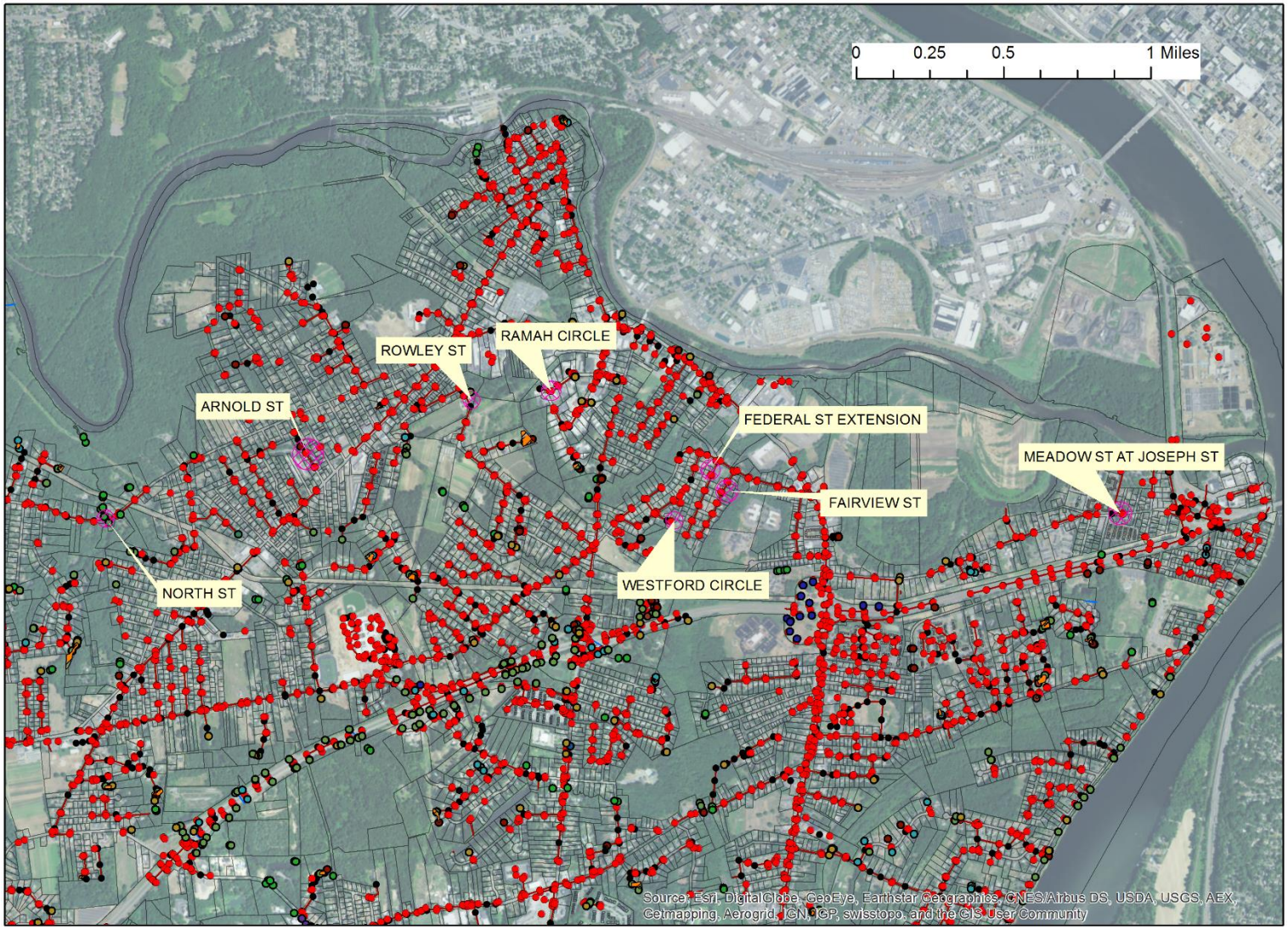
Get more data | What do these numbers mean?

Stormwater Needs
Flooding

Known Problem Areas:

- Arnold Street (north) – flooding during heavy storms, failed infiltration system
- Meadow Street near Joseph Street – heavy storms overwhelm undersized pipes
- Fairview Street and Federal St. Ext. – flooding due to tree roots in pipes
- Basement flooding during extreme storms
- Increased intensity of storms and resulting flooding and erosion

Stormwater Needs
Example Problem Areas



Stormwater Needs
Advisory Task Force feedback

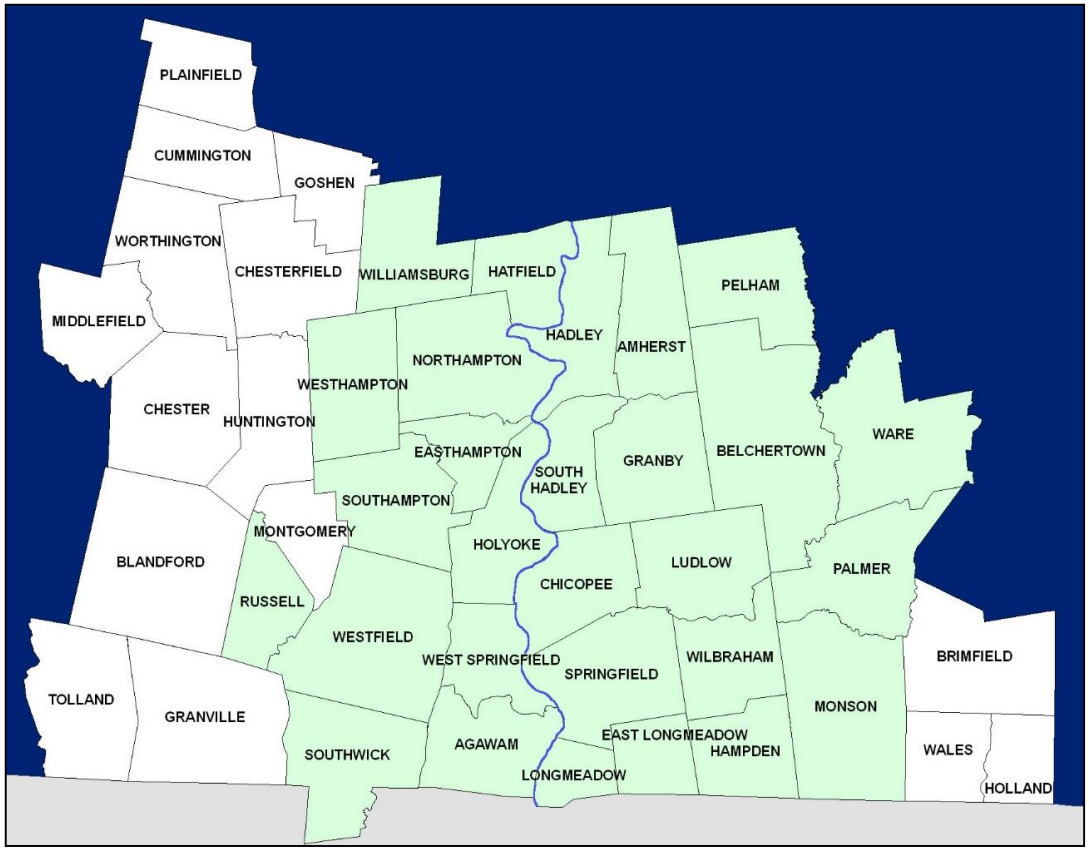
“We need a better stormwater management program because:”

- Aging infrastructure – 5 votes
- Flooding problems – 5 votes
- Erosion of channels and streams – 4 votes
- Water quality problems – 3 votes
- Wastewater or septic pressures – 3 votes
- Drinking water protection – 3 votes
- Compliance requirements – 2 votes
- Preserve recreation or fisheries – 2 votes
- Ecological concerns – 2 votes
- Understanding of the stormwater system / data quality – 1 vote
- Beach closures or swimming restrictions – 0 votes
- Preservation of property value – 0 votes
- Development pressures – 0 votes
- Prevent lawsuits – 0 votes

Everyone got 5 votes

Stormwater Needs
Regulatory Requirements

- Small Municipal Separate Storm Sewer System (MS4) General Permit
  - Re-issued by EPA on April 4, 2016
  - Becomes effective July 1, 2018
  - Replaces prior MS4 permit issued in 2003
- Who is regulated?
  - 26 MS4s in Pioneer Valley
  - 260 MS4s across MA



Note: Pelham and Westhampton obtained waivers.

Stormwater Needs
Regulatory Requirements

MS4 Permit - 6 Minimum Control Measures (MCMs)

- MCM 1: Public Education and Outreach
- MCM 2: Public Involvement and Participation
- MCM 3: Illicit Discharge Detection and Elimination (IDDE) Program
- MCM 4: Construction Site Stormwater Runoff Control
- MCM 5: Stormwater Management in New Development and Redevelopment
- MCM 6: Pollution Prevention and Good Housekeeping

Represent the majority of operational and engineering costs . . . .

Stormwater Needs
Summary of Part 1 - Background

Stormwater Program Challenges:

- Aging infrastructure
- Flooding and drainage system capacity
- Water quality impacts
- Mapping and understanding of the storm drain system (age, condition, etc.)
- System maintenance
- Capital improvements
- Regulatory requirements
- Increasing costs
- Limited resources and funding

Existing Stormwater Program
Current MS4 Permit Budget Approach

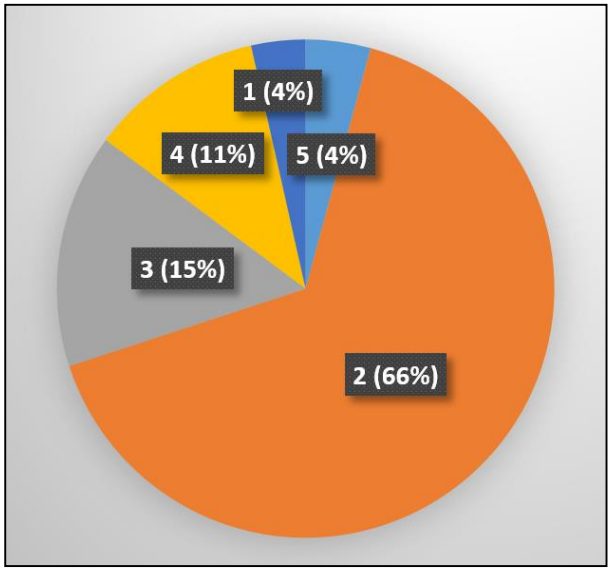
STORMWATER MANAGEMENT FY2017 = $173,000 line item

- Focused on MS4 Permit Compliance
- MS4 Permit - 6 Minimum Control Measures (MCMs)
  - MCM 1: Public Education and Outreach ($3,000)
  - MCM 2: Public Involvement and Participation ($1,500)
  - MCM 3: Illicit Discharge Detection and Elimination (IDDE) Program ($20,000)
  - MCM 4: Construction Site Stormwater Runoff Control ($5,000)
  - MCM 5: Stormwater Management in New Development and Redevelopment ($5,000)
  - MCM 6: Pollution Prevention and Good Housekeeping ($138,500)

- Does not include:
  - Labor associated with operations and management
  - Labor for administration, management, engineering, planning, inspection/enforcement
  - Capital projects and equipment costs
  - Additional contract services

Existing Stormwater Program
All Stormwater Related Expenditures

Functional Category	FY '17 Budget
1. Stormwater Program Administration	$37,676
2. Stormwater Operations and Maintenance	$586,799
3. Drainage Engineering and Stormwater Management Planning	$135,725
4. Regulatory Compliance/Enforcement	$100,917
5. Stormwater Capital Improvement Projects and Equipment	$31,456
Total	**$892,571**



- Preliminary costs are derived primarily from:
  - Existing and estimated budget items
  - Estimated personnel (labor) efforts – approx. 5 full time employees (FTEs)
  - Contractors and expenses

Existing Stormwater Program
Functional Approach for All Expenditures

- 1. Stormwater Program Administration
  - General administration (budgets, personnel, management, etc.)
  - Grant application/management
  - Internal/external project coordination
- 2. Stormwater Operations and Maintenance
  - Catch basin repairs
  - Storm drain and culvert repairs
  - Street sweeping
  - Catch basin cleaning
  - Storm cleanup/flood relief response
  - Ditch/channel maintenance
  - Equipment maintenance/repair
- 3. Drainage Engineering and Stormwater Management Planning
  - System conditions inspection/video
  - Asset management
  - Planning/design of collection system upgrades

Existing Stormwater Program
Functional Approach for All Expenditures

- 3. Drainage Engineering and Stormwater Management Planning *(continued)*
  - Planning/design of collection system upgrades
  - Planning/design of stormwater treatment (BMPs)
  - Drainage design standards and bylaws
  - System mapping and database management
  - Water quality monitoring
  - Public involvement/outreach
- 4. Regulatory Compliance/Enforcement
  - MS4 permit compliance
  - Review and approval of stormwater plans
  - Construction inspections and reporting
  - BMP inspection and enforcement
- 5. Stormwater Capital Improvement Projects and Equipment
  - Minor projects: drainage improvements (existing systems)
  - Major projects: new infrastructure/BMPs
  - Capital equipment

Future Stormwater Program
Stormwater Needs

Example Identified Needs:

- Maintenance backlog of deteriorated storm drain infrastructure with associated increased effort for labor and equipment
- Repair failing culverts: North Street culvert is severely deteriorated, resulting in bank erosion for White Brook
- Replace failed pipes: Westford Circle outfall pipe separation and erosion
- Educate and enforce detention pond maintenance: private systems
- Increase maintenance of publicly-owned detention basins
- Design/replace undersized pipes: Arnold Street
- Identify and eliminate sanitary sewer cross-connections and other illicit discharges
- Implement increasing MS4 permit requirements: inventories, inspections, outfall screening, good-housekeeping activities (street sweeping and catch basin cleaning)
- Additional administration, engineering, planning, asset management, etc.

Future Stormwater Program
Summary of Future Costs

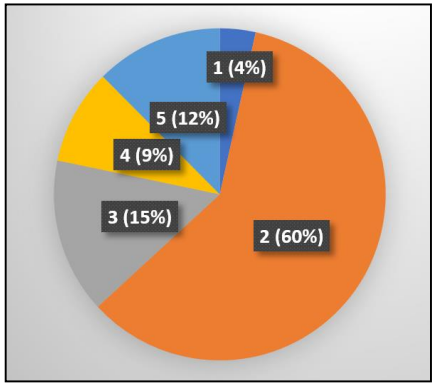
Preliminary Estimate:

Functional Category	FY '17	FY '18	FY '19	FY '20	FY '21	FY '22
1. Stormwater Program Administration	$37,676	$66,182	$67,236	$67,236	$67,236	$67,236
2. Stormwater Operations and Maintenance	$586,799	$1,027,446	$1,126,618	$1,179,723	$1,197,723	$1,215,723
3. Drainage Engineering and Stormwater Management Planning	$135,725	$321,284	$290,519	$257,449	$306,599	$280,389
4. Regulatory Compliance / Enforcement	$100,917	$175,950	$179,269	$179,269	$179,269	$179,269
5. Stormwater Capital Improvement Projects and Equipment	$31,456	$39,619	$289,951	$289,951	$289,951	$289,951
Total	**$892,571**	**$1,630,481**	**$1,953,593**	**$1,973,628**	**$2,040,778**	**$2,032,568**

Key Considerations:

- $854,810 – net increase
- Increase of ~2.5 FTEs
- Increased contractor costs
- Includes $250K for minor and major capital projects
  - Budget needs to be refined over time based on new data from future assessments.

- FY ’18-22 (5-yr avg.): **$1,926,209**



Future Stormwater Program
Summary of Future Costs

Example Major Capital Project:

- ~$324,900 (Fairview St. / Federal St. Ext.)
- Flooding during heavy rainstorms

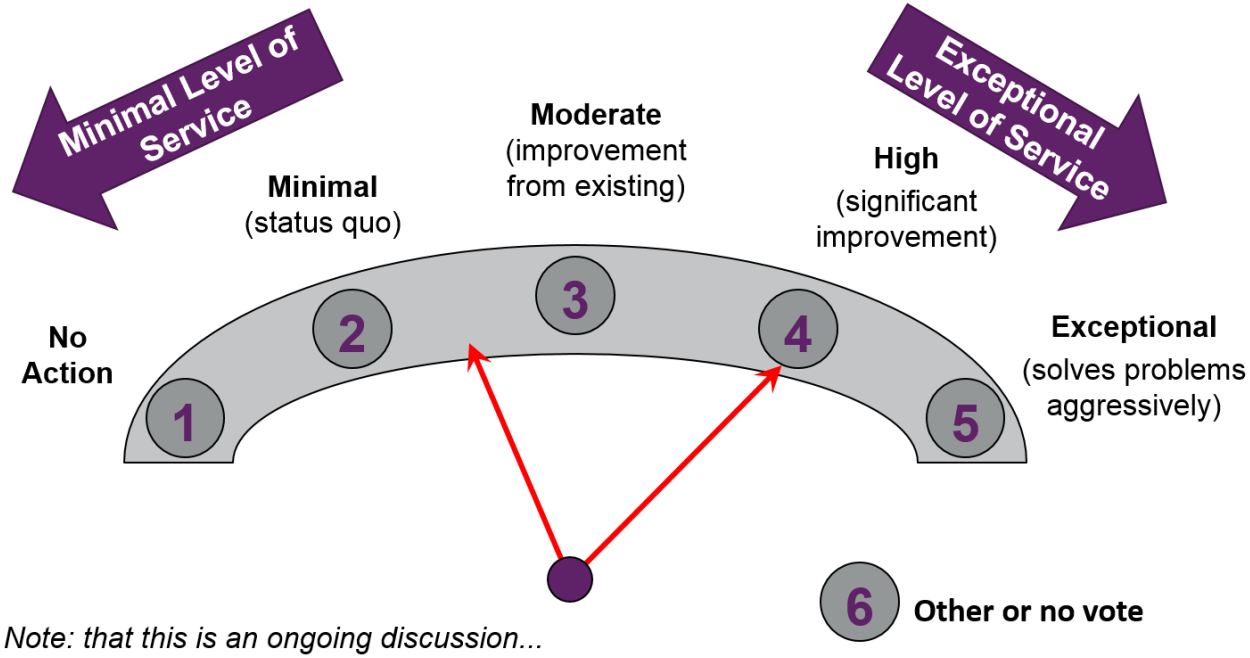
FAIRVIEW STREET								
ITEM #	ITEM	UNIT	QUANT.	UNIT PRICE	HDPE PIPE 24X24X8 CB Cover	RCP PIPE 24X24X8 CB Cover	HDPE PIPE CB Top- Type "C"	RCP PIPE CB Top-Type "C"
	DRAINAGE SYSTEM							
2	12" HDPE	LF	1590	$6.50	$10,335.00	-	$10,335.00	-
6	12" RCP	LF	1590	$8.07	-	$12,831.30	-	$12,831.30
9	25 LB BUCKET LUBE	EA	1	$45.95	-	$45.95	-	$45.95
	Structure: CB							
10	2' CB SUMP	EA	14	$267.00	$3,738.00	$3,738.00	$3,738.00	$3,738.00
11	2' CB RISER SOL	EA	14	$208.00	$2,912.00	$2,912.00	$2,912.00	$2,912.00
12	4' CB KO C-RISER (4' High wit	EA	14	$320.00	$4,480.00	$4,480.00	$4,480.00	$4,480.00
13	TYPE "C" BIT CURB CB TOP (	EA	14	$424.00	-	-	$5,936.00	$5,936.00
14	24" x 24" x 8" 3 Flange CB Frar	EA	14	$408.02	$5,712.28	$5,712.28	-	-
15	CB Hood, Cast Iron*	EA	14	$88.96	$1,245.44	$1,245.44	$1,245.44	$1,245.44
	Structure: MH							
16	48" x 4' BASE EXT WHOLE	EA	7	$374.00	$2,618.00	$2,618.00	$2,618.00	$2,618.00
17	3' X 48" CONE W/24" OPNG	EA	7	$192.00	$1,344.00	$1,344.00	$1,344.00	$1,344.00
18	48" X 1' RISER PER FT	PF	9	$64.00	$576.00	$576.00	$576.00	$576.00
19	48" CONSEAL JOINT	EA	12	$8.00	$96.00	$96.00	$96.00	$96.00
20	Massachusetts 26"x8" Frame &	EA	7	$395.44	$2,768.08	$2,768.08	$2,768.08	$2,768.08
				SUBTOTAL =	**$35,824.80**	**$38,367.05**	**$36,048.52**	**$38,590.77**
ITEM #	**ITEM**	**UNIT**	**QUANT.**	**UNIT PRICE**	**COST (INSTALL)**			
	INSTALLATION**							
21	PIPE, 8" - 15"	LF	1590	$55.00	$87,450			
23	DMH & CB	EA	21	$1,100.00	$23,100			
				SUBTOTAL =	**$110,550.00**			
				TOTAL=	**$146,374.80**	**$148,917.05**	**$146,598.52**	**$149,140.77**
	Cold patch for Trenches	TON	134	$114.00	$15,276			
				TOTAL=	**$161,650.80**	**$164,193.05**	**$161,874.52**	**$164,416.77**

Future Stormwater Program
Levels of Service

Future program considerations:

- Level of service options
- Setting expectations
- Solving problems
- Program growth over time

Source: https://www.portlandoregon.gov/bes/52501



Note: that this is an ongoing discussion...

Stormwater Asset Replacement Value

LOS and Best Practice Example Approach

Something to keep in mind as we discuss the appropriate Level of Service (LOS) and annual program costs.

The American Water Works Association is a trade group that prepares manuals and best practice guidance for public water utilities.

Based on life expectancy of pipes and related infrastructure, they recommend that utility operators invest 1-2% of the value of their assets in annual maintenance (older systems at the higher end) and 1-2% in capital replacement or capital reserves.

A rough estimate of the replacement value of Agawam's existing stormwater infrastructure is **$150M.**

- For O&M at 1% - $1.5M/yr.
- For Capital at 1% - $1.5M/yr.

$3M is a reasonable LOS and a goal for program growth

Agawam Storm Drain Infrastructure:

- 512 Outfalls
- 4,757 catch basins
- 2,352 manholes
- 121.5 miles drain pipe
- 3.2 miles culverts

Preliminary Funding Analysis

LOS Option A - Moderate

Funding needs depend on the LOS to be provided:

- Preliminary future cost estimates were based on a “moderate” LOS.
- Moderate represents a doubling over the current service level and would provide for more proactive maintenance, regular system inspections, meet regulatory mandates, and include a consistent set-aside of $250,000 a year to start to address the backlog of infrastructure repair and replacement needs.

Functional Category	FY '17	FY '18	FY '19	FY '20	FY '21	FY '22
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Preliminary Funding Analysis

LOS Option B - Higher

For comparison purposes, cost estimates for a higher level of service were prepared:

- The higher level of service represents an average increase of 2.5 times the current service level and would provide for proactive maintenance and regulatory compliance at a moderate level and adds an accelerated schedule for system inspections and capital improvement investment.
- Included in the Higher LOS is an additional $250,000 a year for Capital Improvements (over the Moderate LOS) starting in year 3 and a new position for an engineer starting in year 2 to support inspections and capital contracts.

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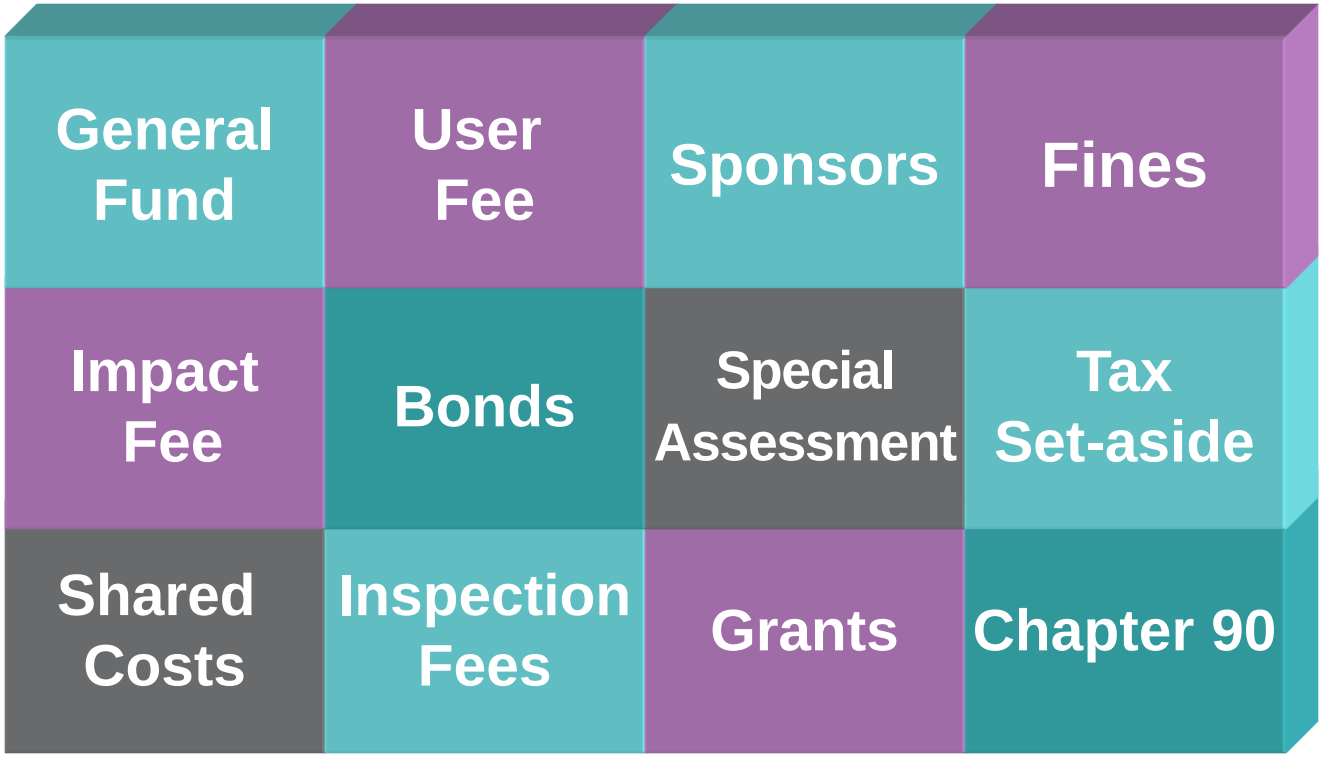
1. Stormwater Program Administration	**$37,676**	**$66,182**	**$67,236**	**$67,236**	**$67,236**	**$67,236**
2. Stormwater Operations and Maintenance	$586,799	$1,027,446	$1,126,618	$1,184,723	$1,207,723	$1,230,723
3. Drainage Engineering & Stormwater Management Planning	$135,725	$321,284	$372,519	$341,089	$391,911	$367,389
4. Regulatory Compliance/Enforcement	$100,917	$175,950	$179,269	$179,269	$179,269	$179,269
5. Stormwater Capital Improvement Projects and Equipment	$31,456	$39,619	$289,951	$539,951	$539,951	$539,951
Total	**$892,571**	**$1,630,481**	**$2,035,593**	**$2,312,268**	**$2,386,090**	**$2,384,568**

Future Stormwater Program
Future Funding Options

Common Methods for Funding Stormwater Programs

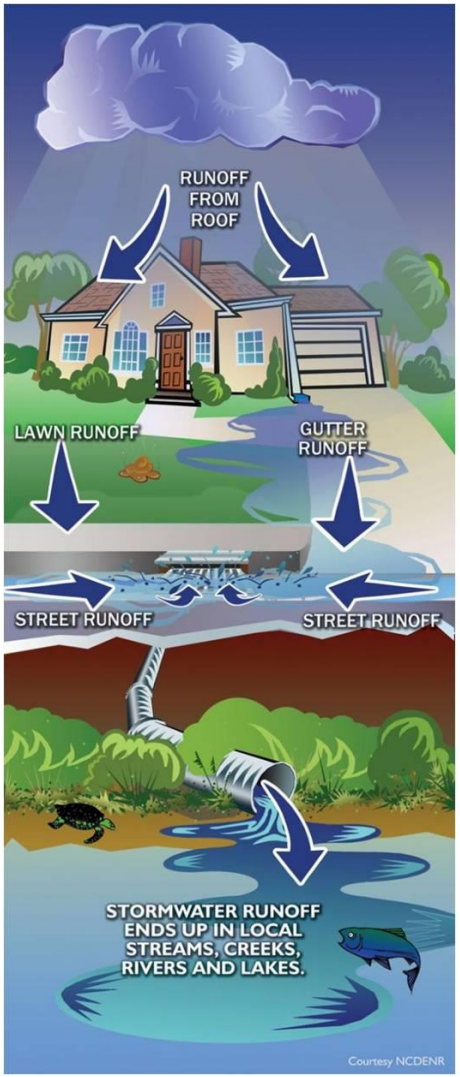


Future Stormwater Program
Primary Funding Options

Tax Revenue vs. User-Fee

- **Option A: Tax Override**
  - Based on property value
  - Funds allocated to DPW or other account
  - Town Meeting vote annually
- **Option B: Municipal Water Infrastructure Investment Fund**
  (MGL Chapter 259 (Section 39M): An Act Improving Drinking Water and Wastewater Infrastructure)
  - Based on property value (surcharge up to 3%)
  - Use of funds is not limited solely to stormwater
  - Town Meeting vote to establish
- **Option C: Stormwater Utility (user-fee)**
  - Based on impervious cover, not property value
  - Dedicated funding, stormwater only
  - Town Meeting vote to establish
  - Opportunities for credits

Stormwater Utilities
Rational Nexus



How Does it Work?

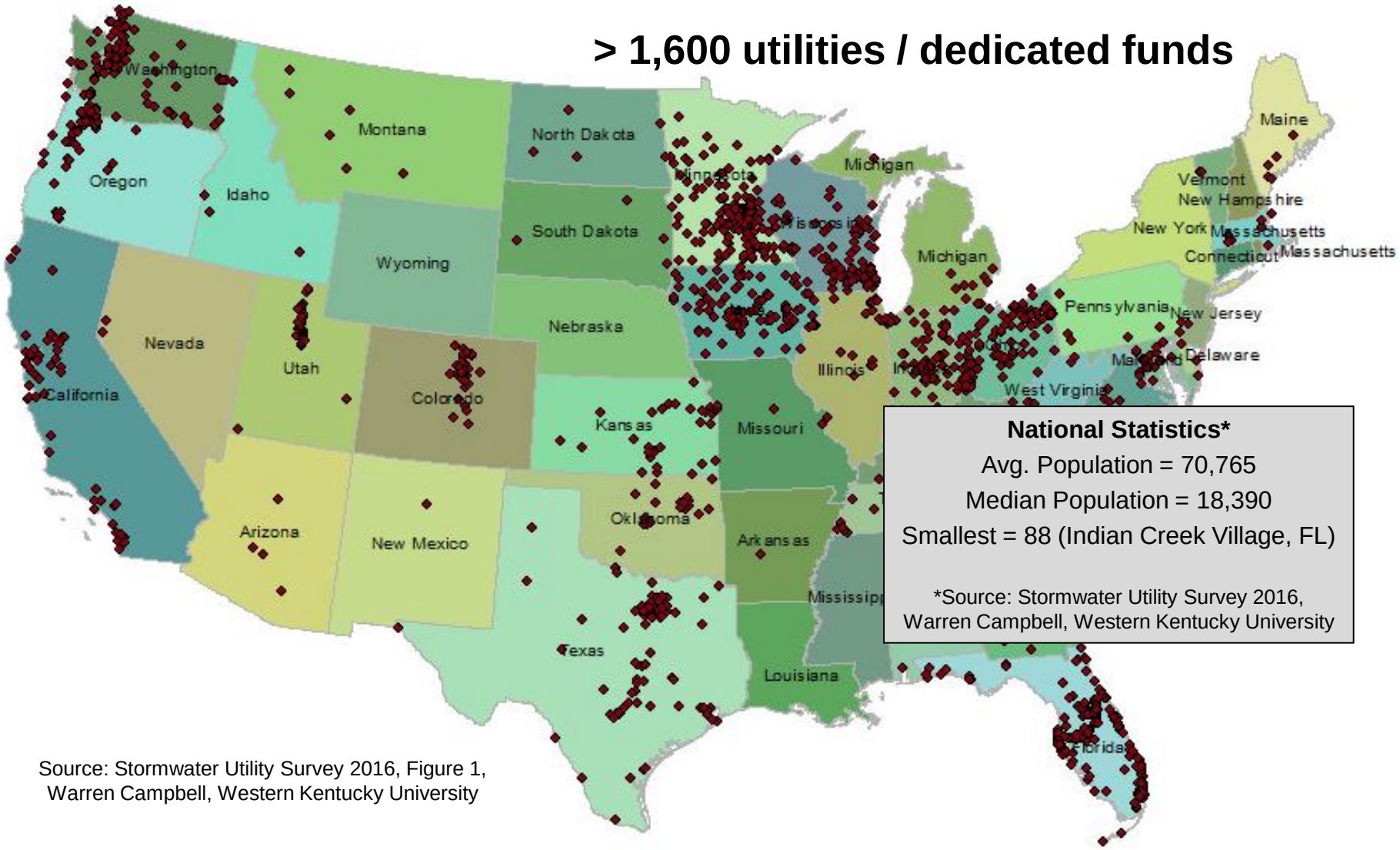
- Fees assigned to a parcel for <u>services</u> provided
- Fee is proportional to the stormwater burden on the stormwater system/program
- More impervious areas…
  - …more stormwater runoff…
  - …larger burden on the system…
  - …larger user fee
- Therefore, even tax-exempt properties contribute (universities, hospitals, and religious institutions, etc.)
- Not a “Rain Tax” – Value of the Property is <u>Not</u> Considered

Stormwater Utilities
Key Benefits

Key Advantages

- **It is Stable** because it is not as dependent on the vagaries of the annual budgetary process as taxes are.
- **It is Adequate** because a typical stormwater fee is based on a well thought out stormwater program to meet the needs and demands of the community, as well as other program drivers (e.g., water quality, regulations).
- **It is Flexible** because fees can be structured in multiple ways, and the program can be managed to fund activities based on changing priorities and needs.
- **It is more Equitable** than most other funding sources because the cost is borne by the user on the basis of demand placed on the drainage system.

National Trends for Stormwater Utilities



Source: Stormwater Utility Survey 2016, Figure 1, Warren Campbell, Western Kentucky University

Massachusetts

Sample Stormwater Utility Rates

Average Residential Stormwater Fees

- **Reading** (pop. 24,747)
  - $3.33/Month
  - $400,000 annual revenue
- **Newton** (pop. 85,146)
  - $6.25/Month
  - $1,750,000 annual revenue
- **Northampton** (pop. 28,540)
  - $7.50/Month
  - $1,940,000 annual revenue
- **Chicopee** (pop. 55,298)
  - $8.33/Month
  - $1M annual revenue

Notes:

- Programs, fees and revenue can vary widely.
- Revenue potential also varies based on rate structure and rate payers (e.g., residential versus non-residential make-up).
- Fees are for average residential properties – some rate structures include increasing fees for larger residential properties, such as Northampton.

Agawam Data Analysis

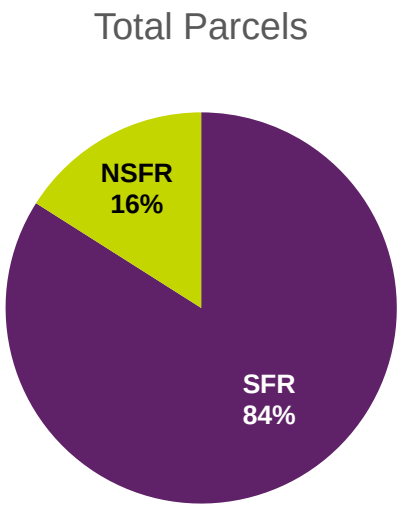
Impervious Cover and Parcel Analysis

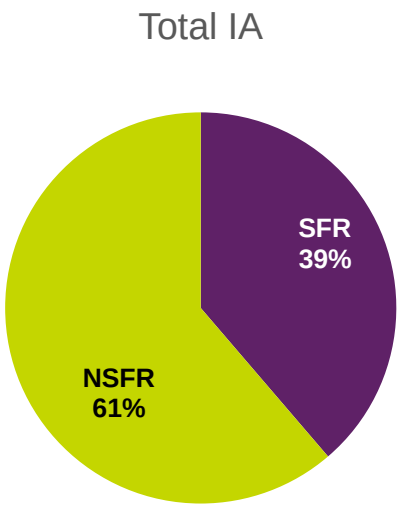
- GIS data was updated and analyzed to determine parcel boundaries and impervious area (IA).
- Aerial photography and GIS tools were used to perform an initial identification of impervious area per parcel in Agawam.
  - The analysis identified 9,179 developed parcels (having at least 200 SF of IA) with a total of 78,678,230 SF of IA

Agawam Data Analysis

Impervious Cover and Parcel Analysis

- GIS data was updated and analyzed to determine parcel boundaries and impervious area (IA).
- The GIS data was then linked to the Town Assessor's files by parcel ID. Using the Assessor's land use codes, properties where designated Single-Family Residential (SFR) or Non-Single-Family Residential (NSFR).
  - Of the 9,179 developed parcels: 84% or 7,710 are SFR and 16% or 1,469 are NSFR.
  - The SFR properties contained 30,464,260 SF of IA
  - The NSFR properties contained 48,213,970 SF of IA





Agawam Data Analysis

Preliminary Stormwater Rate Structure Options

The data analysis confirms that there is sufficient, quality data to support an impervious area rate methodology. To select the most appropriate rate method for Agawam, two impervious-based rate structure options were considered:

Option 1: Billing unit is based on an “equivalent residential unit” (ERU)

- Assumes residential parcels are generally similar in their impact on the public stormwater system and non-residential parcels are dissimilar - parcels are categorized into 2 categories: SFR and NSFR for billing purposes

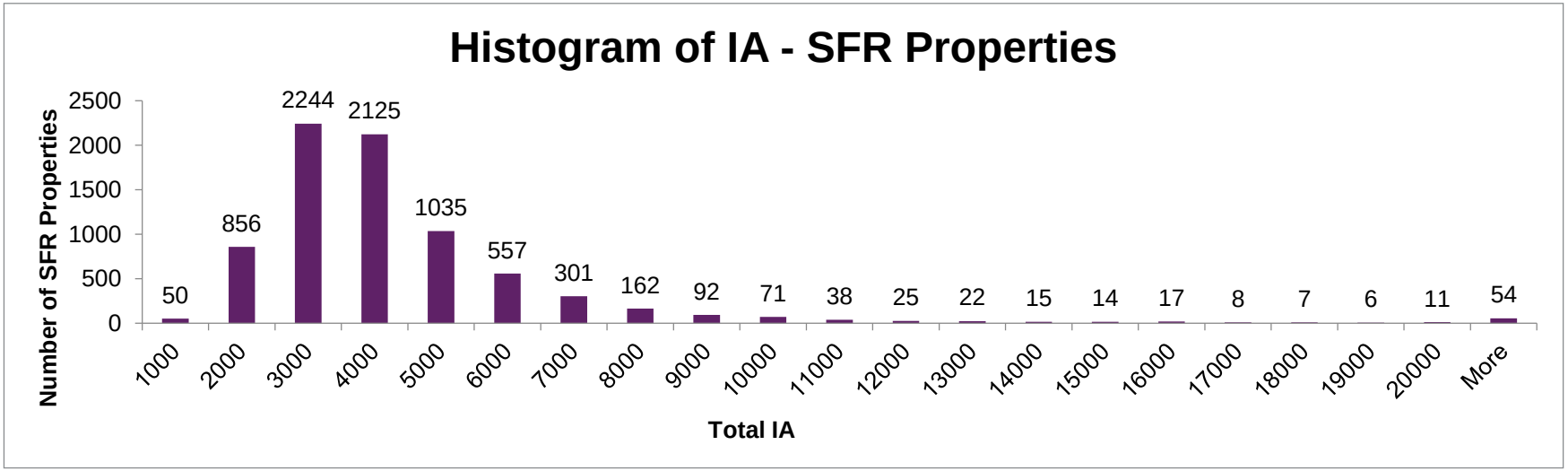
Similar IA for most single-family residential properties

Agawam Data Analysis

Preliminary Stormwater Rate Structure Options

Option 1: Billing unit is based on an ERU *(Continued)*

- The IA on all SFR properties was estimated and the median value (or ERU) for Agawam is 3,250 SF of IA.
  - For billing purposes, all SFR properties would be billed one (1) ERU. NSFR IA would be calculated by parcel and the total divided by the ERU to determine total billing units.
  - Note that SFR properties could be placed in “Tiers” based on the number of ERUs, among other basic rate structure options



Agawam Data Analysis

Preliminary Stormwater Rate Structure Options

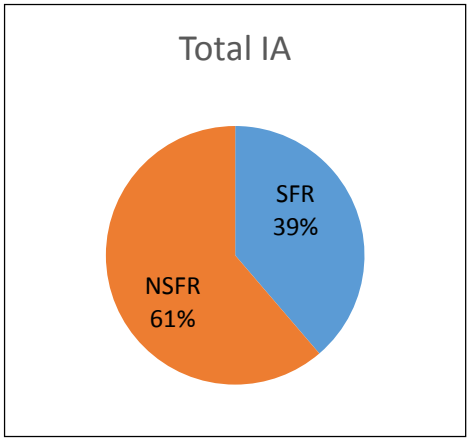
Option 2: Billing unit is based on a set Flat Billing Rate

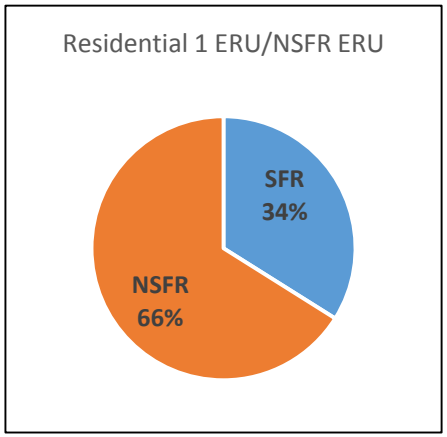
- ***For Agawam, we selected a 1,000 SF billing unit.*** This is large enough to minimize minor issues in using aerial photography to determine IA but small enough to recognize differences in property runoff impacts.
- Eliminates the need to assign land use codes to property, as all properties are billed on the same basis.
- Requires more accurate IA calculation on all SFR properties, but billing will align more closely with actual IA on properties across Town

Agawam Data Analysis

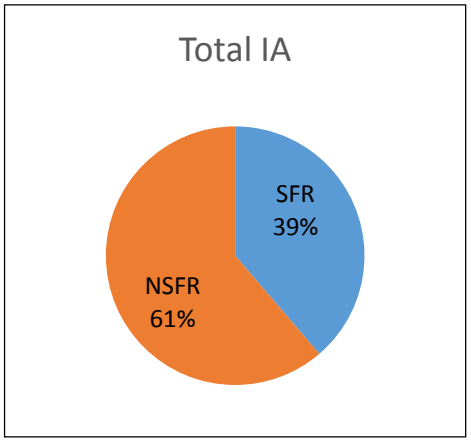
Preliminary Distribution of Costs

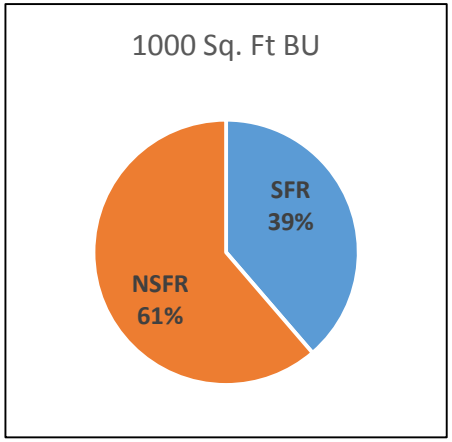
Option 1: Billing unit is based on an “equivalent residential unit” (ERU)





Option 2: Billing unit is based on a set Flat Billing Rate





Agawam Data Analysis

Preliminary Stormwater Rate Structure Options

There are multiple iterations and approaches to the basic rate structure that will be reviewed during Task Force Meeting #4.

Popular Rate Methodologies*:

- Impervious Area (IA) (77%)
- Gross Area with Intensity of Development Factor (14%)
- Gross Area Only (8%)
- Others: water meter size, flat rates, zoning class

**Source: 2016 Stormwater Utility Survey, Black & Veatch (74 participants from 24 states)*

Preliminary Funding Analysis:

Approach to Determining Stormwater Utility Revenue Needs

To estimate the rate that the utility would need to charge customers to support the Town's stormwater program, we must complete the following steps:

1. Determine the Level of Service (LOS) & annual costs of the program
2. In addition to direct program costs, the additional costs of operating the utility need to be determined (billing, credits, delinquencies, operating reserves)
3. Once the total annual revenue needs are determined, compare options and select a preferred rate structure and rate per billing unit.
4. The preferred approach will continue to be refined as policy and technical issues are finalized on such issues as credits, billing process and timing of implementation.

Preliminary Revenue Analysis and Rate

Using the two rate structure billing options discussed above, the revenue potential of each approach was calculated:

- Option 1: 3,250 SF ERU. At $1.00 per month per billing unit, the fee would generate $22,725 a month or $272,700 a year.
- Option 2: flat, town-wide billing unit of 1,000 SF would result in 78,702 smaller billing units. For each $1.00 per month per billing unit, the fee would generate $78,702 a month or $944,424 a year.

Applied to the Moderate and Higher level of service options, the following rates per billing unit per month would be required:

Program	ERU (3,250 SF IA)		Flat rate (1,000 SF IA)	
Moderate LOS ($2,052,519)	$7.53/month	$90.36/year	$2.17/month	$26.04/year
Higher LOS ($2,297,790)	$8.42/month	$101.04/year	$2.43/month	$29.16/year

Preliminary Funding Analysis

Tax Versus Fee

Estimated Revenue from Real Property Tax (2017): $57,860,000

Tax rates: Residential $16.31/1000 and Commercial $31.12/1000

Tax increase to fund increased program entirely from property tax

(note: tax exempt properties would not pay under this scenario)

- Moderate LOS ($1,926,209 - $892,571) = $1,033,638 +1.8%
- Higher LOS ($2,159,800 - $892,571) = $1,267,329 +2.2%

Potential tax decrease if current program costs ($892,571) is funded by fee: -1.5%

This is a preliminary estimate and will change based on final funding policies (decisions) by the Town and fees assessed for public properties.

Preliminary Funding Analysis

Financial Impacts on Sample Properties

Upcoming examples do not include:

- Potential credits that properties may obtain
- Tax obligation for existing program (already paying for existing through taxes) – preliminary fees represent existing and future costs
- Fee versus tax comparisons are provided at the end

Preliminary Funding Analysis

Financial Impacts on Sample Properties

Single Family Home -

Morningside Circle

Estimated Impervious Area

- 2,889 SF

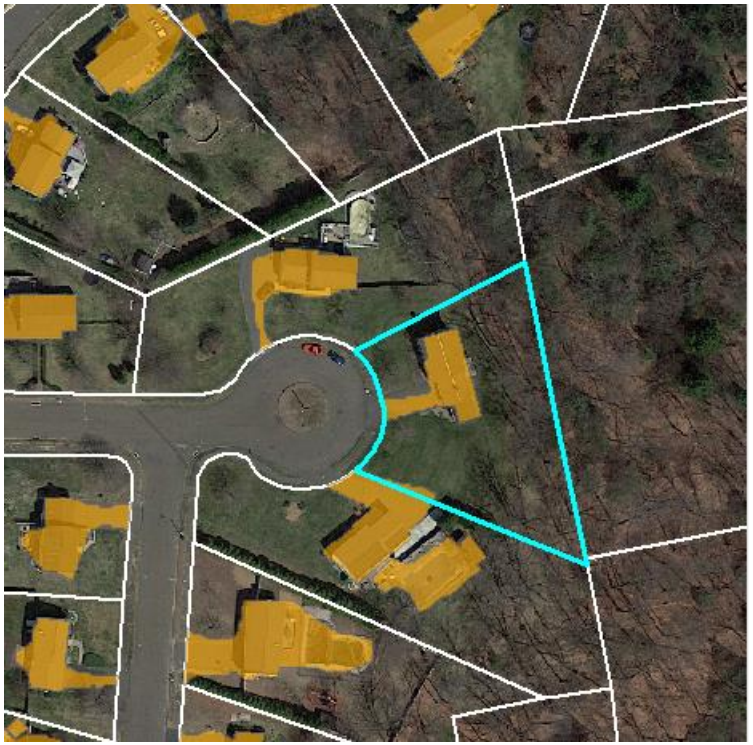
Preliminary Annual Range of Rates:

Option 1 (ERU – 3,250 SF)

- Moderate LOS - $90.36
- Higher LOS - $101.04

Option 2 (1,000 SF BU)

- Moderate LOS - $26.04 x 3 = $78.12
- Higher LOS – $29.16 x 3 = $87.48



Preliminary Funding Analysis

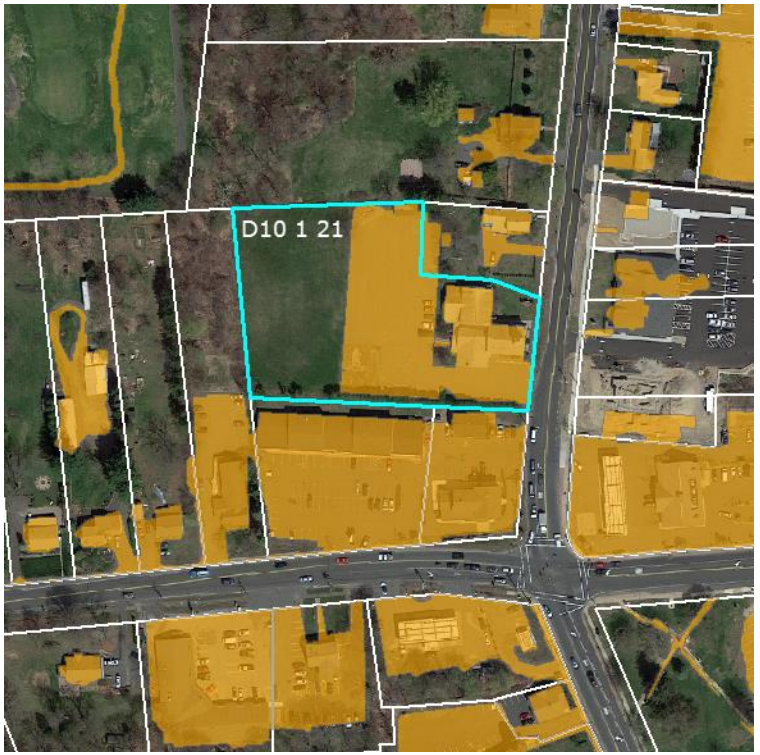
Financial Impacts on Sample Properties

Tax-Exempt Property-

Feeding Hills Church

Estimated Impervious Area

- 40,899 SF



Preliminary Annual Range of Rates:

Option 1 (ERU – 3,250 SF)

- Moderate LOS - $90.36 x 13 = $1,174.68
- Higher LOS - $101.04 x 13 = $1,313.52

Option 2 (1,000 SF BU)

- Moderate LOS - $26.04 x 41 = $1,067.64
- Higher LOS - $29.16 x 41 = $1,195.56

Preliminary Funding Analysis

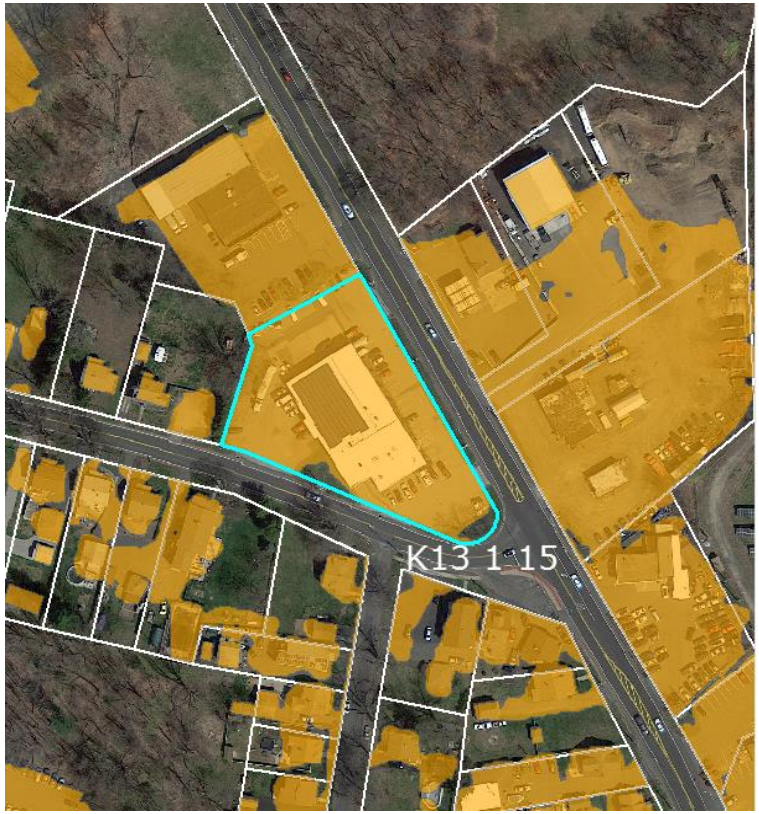
Financial Impacts on Sample Properties

Commercial Property -

Allied Floor

Estimated Impervious Area

- 47,402 SF



Preliminary Annual Range of Rates:

Option 1 (ERU – 3,250 SF)

- Moderate LOS - $90.36 x 15 = $1,355.40
- Higher LOS - $101.04 x 15 = $1,515.60

Option 2 (1,000 SF BU)

- Moderate LOS - $26.04 x 47 = $1,223.88
- Higher LOS - $29.16 x 47 = $1,370.52

Preliminary Funding Analysis

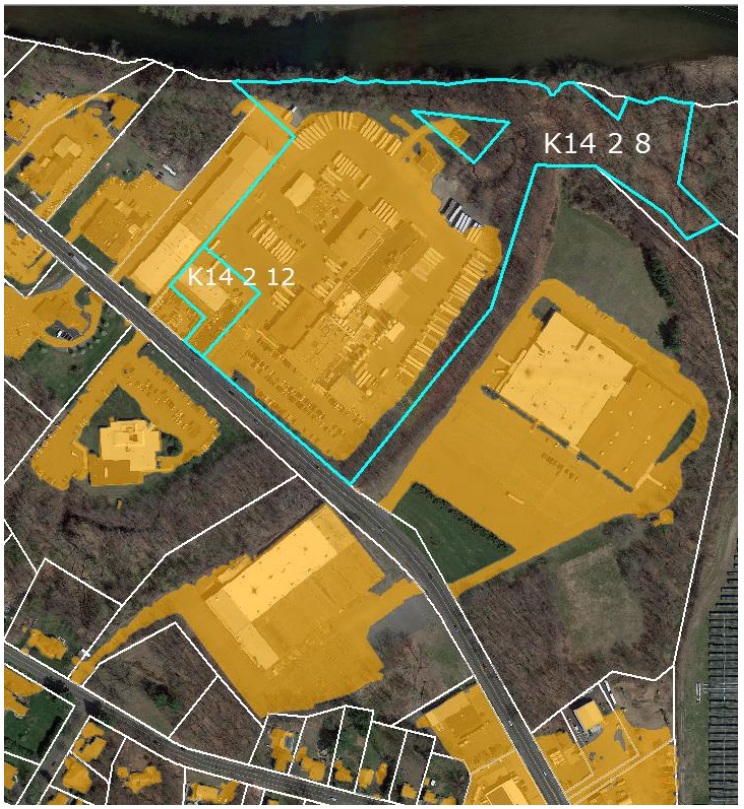
Financial Impacts on Sample Properties

Commercial Property -

KP Hood (2 parcels)

Estimated Impervious Area

- 509,385 SF



Preliminary Annual Range of Rates:

Option 1 (ERU – 3,250 SF)

- Moderate LOS - $90.36 x 157 = $14,186.52
- Higher LOS - $101.04 x 157 = $15,863.28

Option 2 (1,000 SF BU)

- Moderate LOS - $26.04 x 509 = $13,254.36
- Higher LOS - $29.16 x 509 = $14,842.44

Next Steps

- Refine Future Program, Costs, and Rate Structure
  - Consider rate options and modifiers, including credits
- Data and Revenue Analysis
  - Refine analysis
  - Evaluate billing system options
- Public Engagement
  - Start meeting with key stakeholder groups: non-profits, businesses, seniors
- Task Force Meeting #4 – early October 2017
- For additional materials and information: http://agawam.ma.us/sw-taskforce