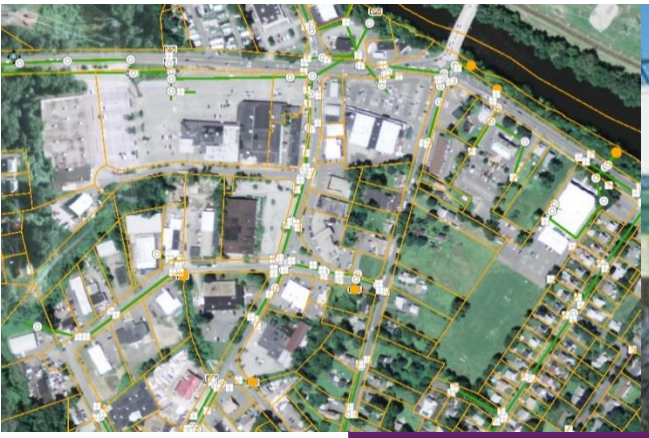
Town of Agawam
Stormwater System Assessment and Utility/Fee Planning Project

Town Council Workshop



April 30, 2018

Agenda

6:00 - 6:05p: **Welcome and Introductions**

6:05 - 6:10p: **Project Overview**

6:10 - 6:25p: **Stormwater Program**

- Municipal stormwater system
- Existing activities and costs
- Future needs, costs, and level of service

6:25 - 6:45p: **Funding Options**

- Existing funding options
- Stormwater utility overview
- Data analysis

6:45 - 7:25p: **Agawam Funding Analysis**

- Funding analysis
- Sample properties
- Task Force recommendations

7:25 - 7:30p: **Next Steps**

Project Overview
Rationale and Need

Why are we here?

- The Town has existing stormwater problems.
- Stormwater management needs are increasing
  - New MS4 Permit is driving many needs
- 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
Work Completed So Far

- Evaluation of Agawam's existing and future costs, funding options and funding analysis by the Project Team
- Final report in June 2018
- Advisory Task Force participation:
  - 6 meetings throughout the project (April 2017-February 2018
  - Attendance at other public meetings
- Public Meetings:
  - Public meetings on 9-25-17
  - Senior citizens workshop on 10-30-17
  - Clergy representatives workshop on 1-9-18
  - Business workshop on 1-16-18
- Additional Meetings with Project Team

Agawam Funding Analysis
Review of Task Force Feedback

Needs, Tax versus Fee, and Level of Service (LOS)

- There is agreement that there are stormwater needs that are not met and the current level of funding is not adequate.
- Members generally felt that a stormwater fee was a better way to distribute costs and the costs for sample residential properties seemed reasonable for both LOS and rate scenarios.
- The annual fees for a stormwater utility appear to be reasonable and the increase for a higher LOS would advance the program for little added cost.
- Members preferred the following for a stormwater utility:
  - A rate methodology based on impervious area
  - A flat rate structure based on 1,000 sf of impervious area and potential modifiers
  - Credits for water quantity and quality management, as well as small properties
  - Offer up to 50% in credits
  - Billing with existing utility bills (water and sewer)

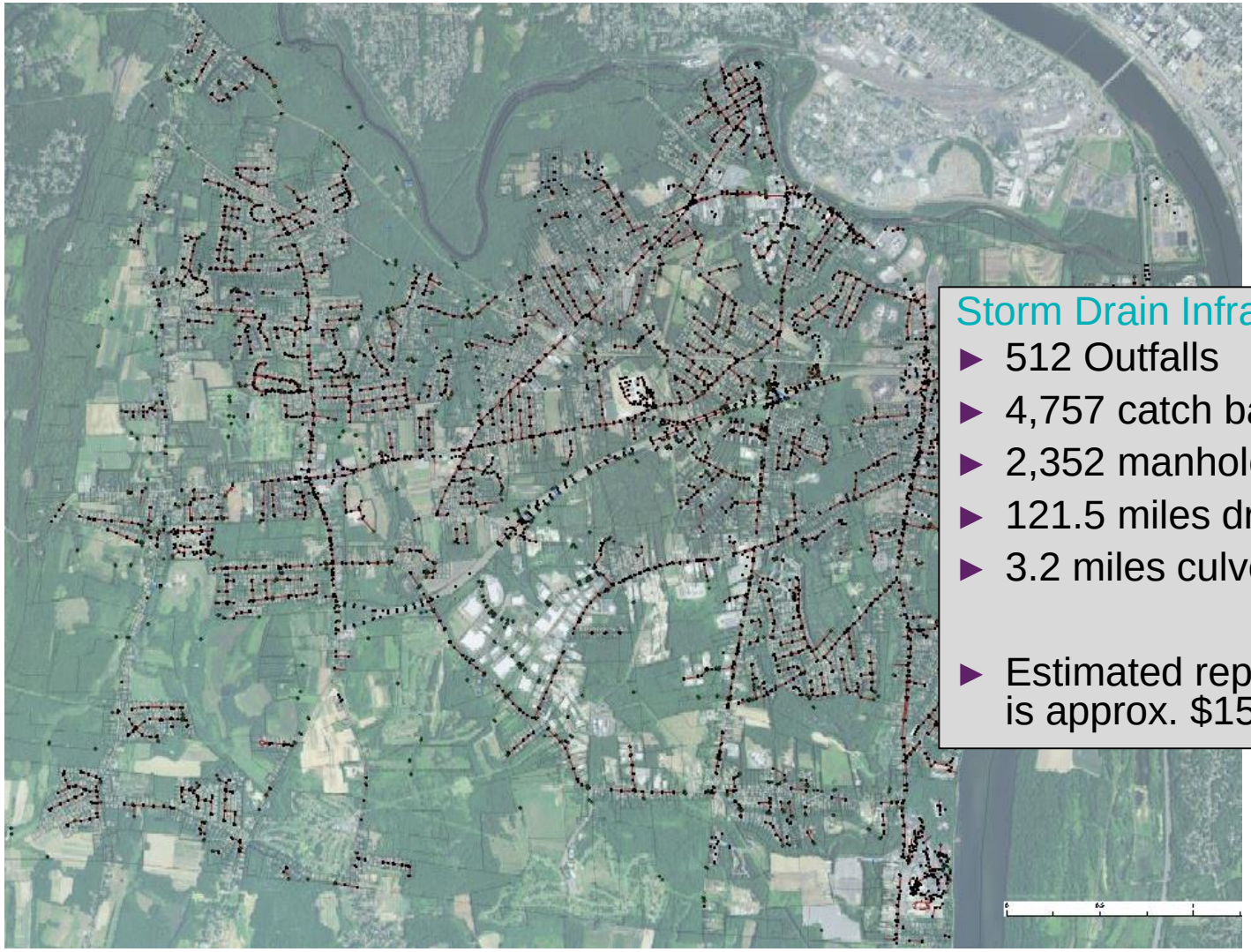
Agawam Funding Analysis

Review of Task Force Feedback

Key Comments and Concerns

- The future costs are a significant increase overall (up to 1.8% tax increase), especially when considering tax increases do not exceed 2.5% annually.
- Additional fees may be a significant burden to some properties.
- People are looking for solutions to these problems and seem receptive to idea of a fee if it will help address flooding and drainage problems.
- Need transparency to ensure that funding will go to stormwater.
- Need to effectively engage the public and inform them of the needs and costs related to stormwater management.

Stormwater Program
Municipal Stormwater System



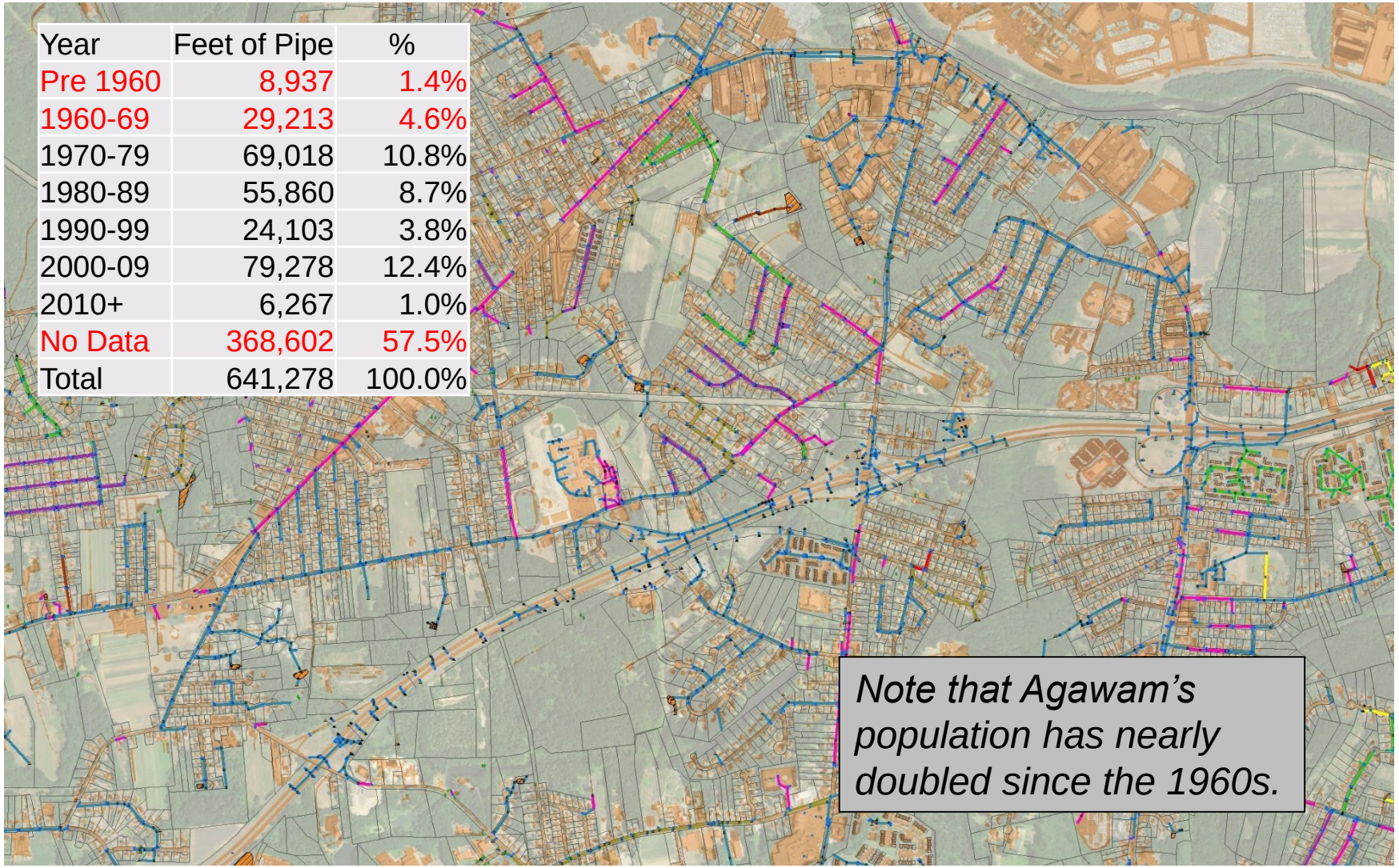
Storm Drain Infrastructure:

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

- Estimated replacement value is approx. $150 million

Stormwater Program
Municipal Stormwater System

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%



Note that Agawam's population has nearly doubled since the 1960s.

Stormwater Program
Agawam DPW Activities

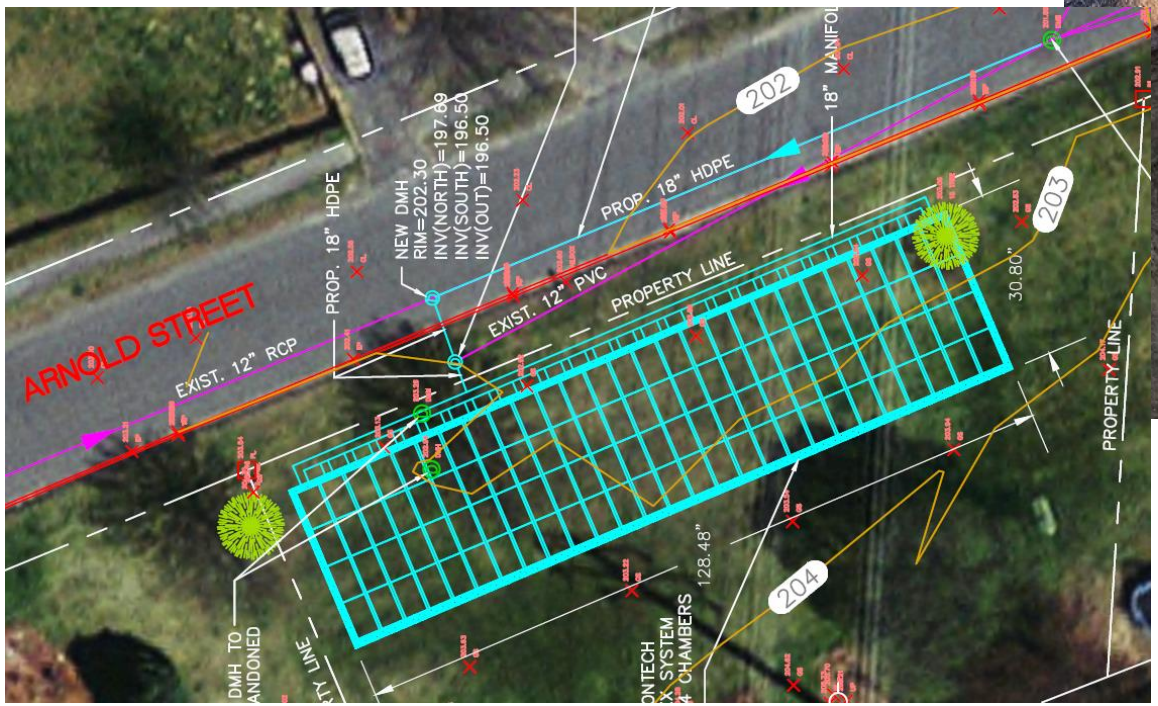
Existing Activities:

- 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

Stormwater Program
Agawam DPW Activities

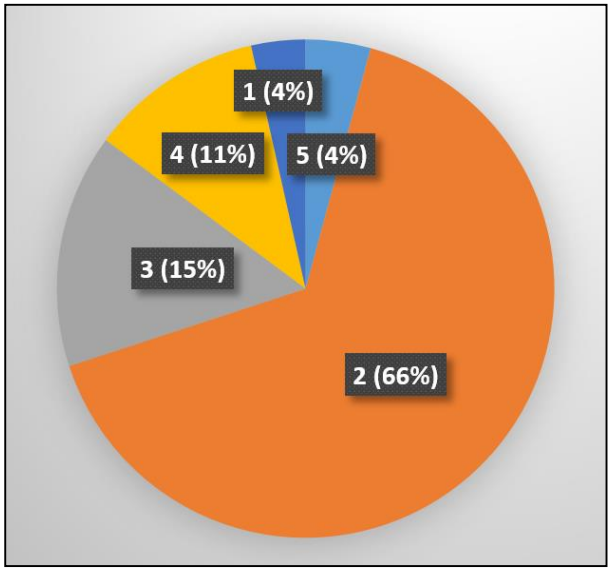
Arnold Street Improvements - $153,478

- Severe street flooding
- Failed underground infiltration system
- New infiltration system sized to handle all development



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

Stormwater Program
Future Needs: Infrastructure

Additional Needs:

- Ongoing operation and maintenance (repairs & reconstruction) challenges
- Maintenance backlog of deteriorated storm drain infrastructure
- 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 Program
Future Needs: Infrastructure

Examples of Aging and Failing 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
- Outfall failures: Reed Street at Main Street is severely eroded and collapsing

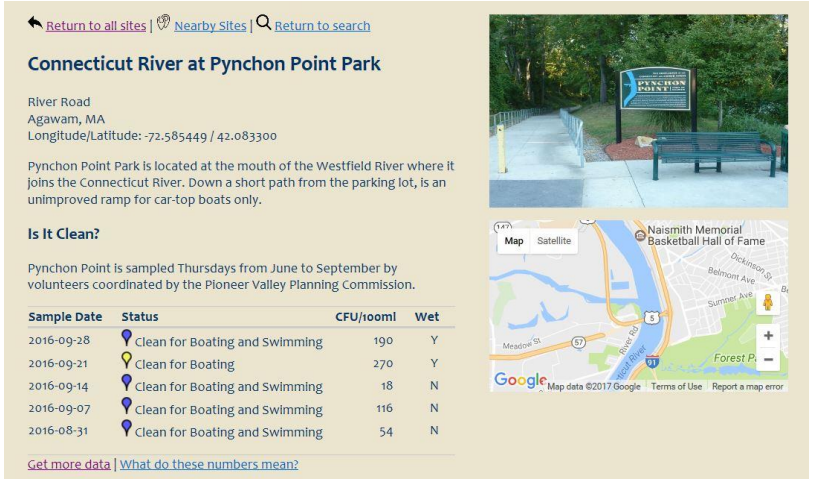
Reed Street Outfall Failure

North Street Culvert Failure

Stormwater Program
Future 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



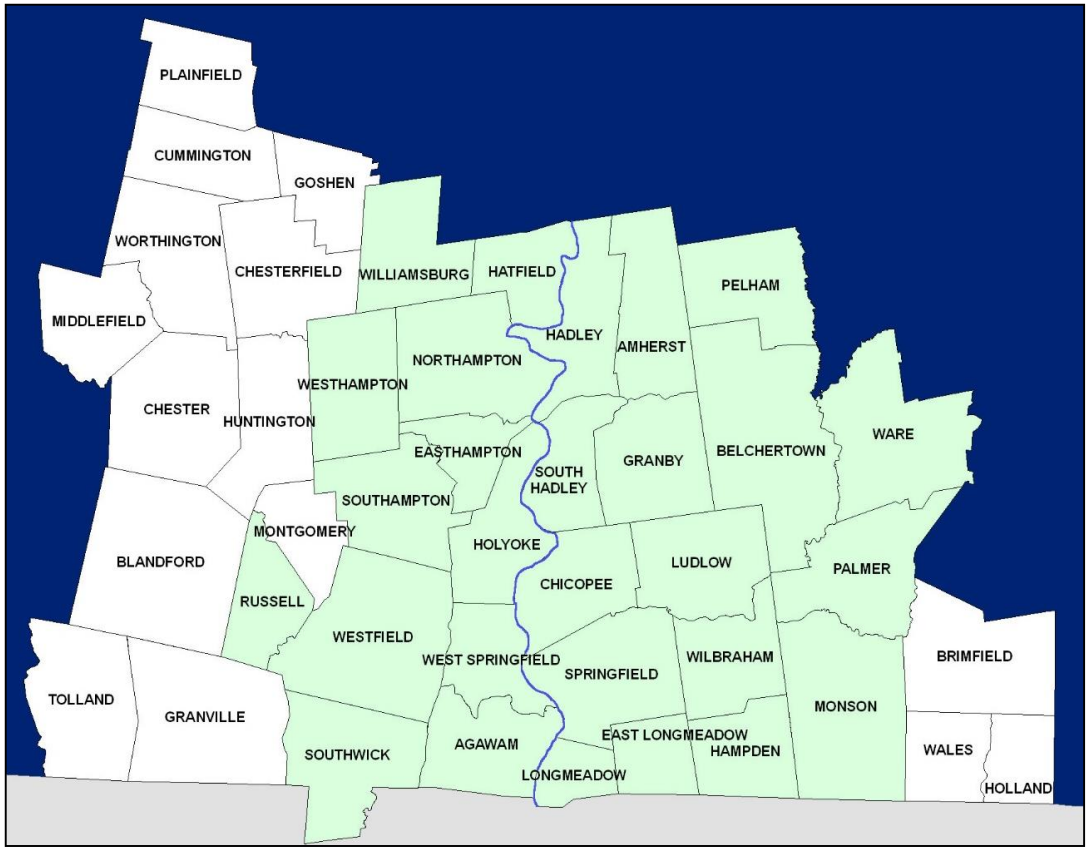
Stormwater Program
Future Needs: Flooding

Known Problem Areas:

- Ramah Circle – flooding during heavy storms, undersized 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 Program
Future 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?
  - 24 MS4s in Pioneer Valley
  - 260 MS4s across MA



Note: Pelham, Russell, Ware, and Westhampton obtained waivers.

Stormwater Program
Summary of Current and Future Costs

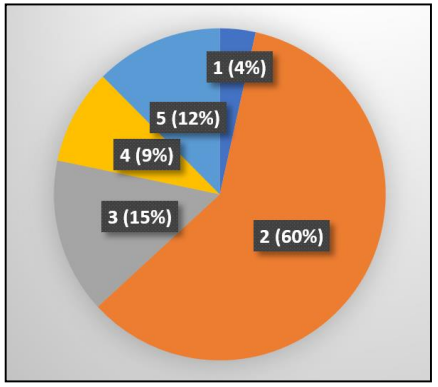
Preliminary Estimate (moderate level of service):

Functional Category	FY '18	FY '19	FY '20	FY '21	FY '22	FY '23
1. Stormwater Program Administration	$42,176	$66,182	$67,236	$67,236	$67,236	$67,236
2. Stormwater Operations and Maintenance	$735,799	$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	**$1,046,071**	**$1,630,481**	**$1,953,593**	**$1,973,628**	**$2,040,778**	**$2,032,568**

Key Considerations:

- $880,138 – net average 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 ’19-23 (5-yr avg.): **$1,926,209**

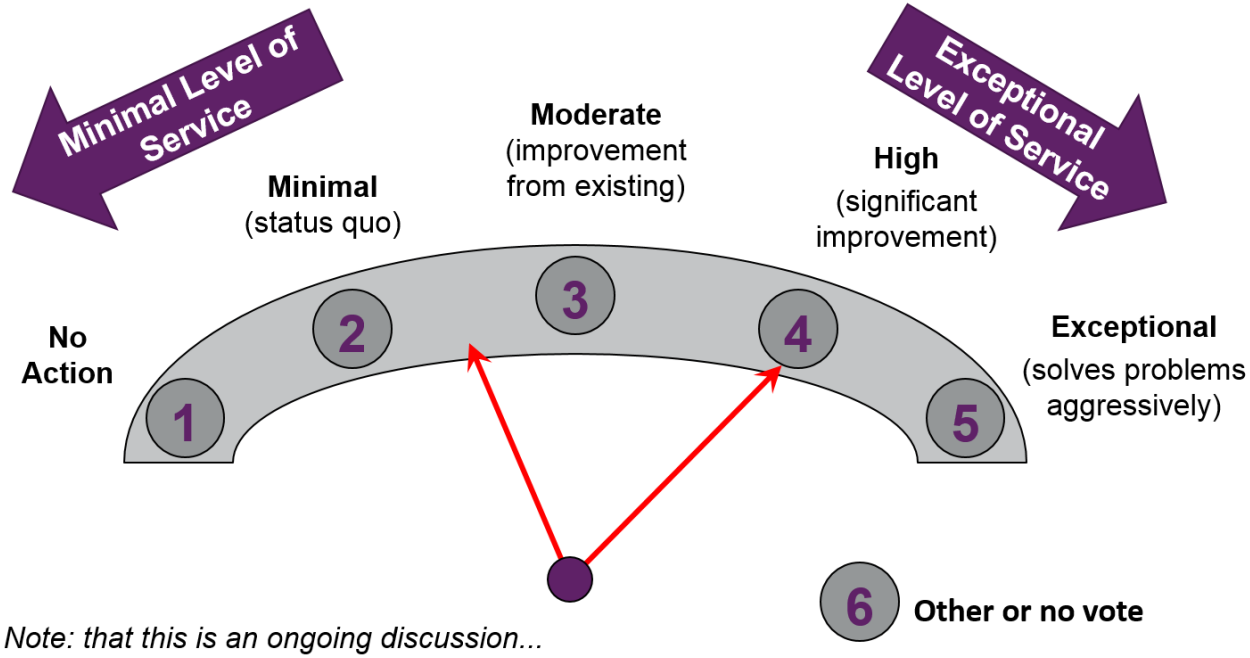


Stormwater Program
Level of Service

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 Program

Stormwater Asset Replacement Value

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

Stormwater Program

Moderate and Higher Level of Service

- $1,926,209 – moderate level of service
  - $880,138 – net increase
  - $250K for capital projects
- $2,149,800 – higher level of service
  - $1,103,729 – net increase
  - Additional $250K for capital projects starting in FY ‘21

Preliminary Estimate (higher level of service):

Functional Category	FY '18	FY '19	FY ‘20	FY '21	FY '22	FY '23
1. Stormwater Program Administration	$42,176	$66,182	$67,236	$67,236	$67,236	$67,236
2. Stormwater Operations and Maintenance	$735,799	$1,027,446	$1,126,618	$1,184,723	$1,207,723	$1,230,723
3. Drainage Engineering and 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	**$1,046,071**	**$1,630,481**	**$2,035,593**	**$2,312,268**	**$2,386,090**	**$2,384,568**

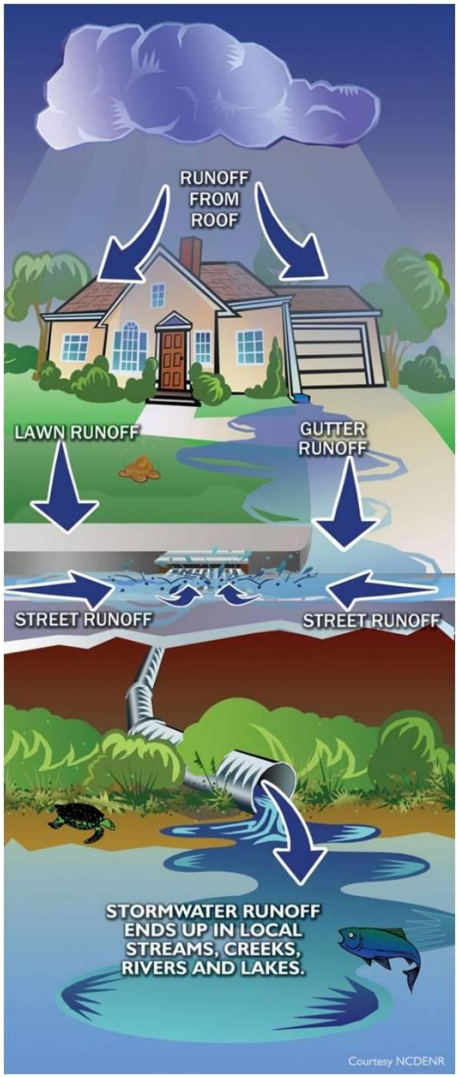
Funding Options
Primary Options

User-Fee vs. Tax Revenue

- **Stormwater Utility (user fee): Task Force Recommendation**
  - Based on impervious cover, not property value
  - Dedicated funding, stormwater only
  - Opportunities for credit
  - City Council vote to establish
- **Other Options**
  - **Tax Increase – based on property value**
  - **Municipal Water Infrastructure Investment Fund** *(MGL Chapter 259, Section 39M)*
    - Based on property value (surcharge up to 3%)
    - Use of funds is not limited solely to stormwater

Stormwater Utility Overview

Rational Nexus



How Does it Work?

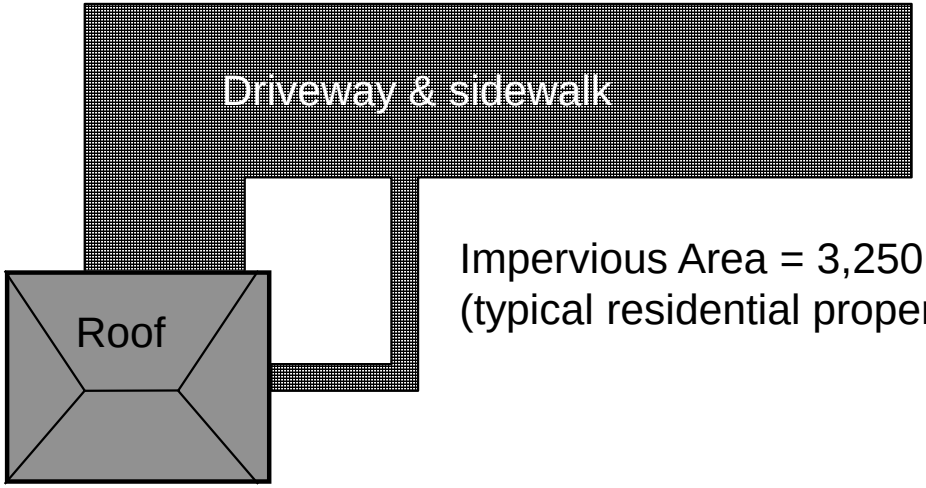
- Fees assigned to a parcel for <u>services</u> provided
- Fee is proportional to the stormwater burden on the stormwater system/program
- More impervious areas…
  - …more stormwater runoff…
  - …larger burden on the system…
  - …larger user fee
- Therefore, even tax-exempt properties contribute (universities,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

Stormwater Utility Overview

Funding Approach

- Key Components:
  - Rate Methodology – the metric used to assess the impacts of stormwater runoff to the system (e.g., impervious area (IA)).
  - Rate Structure – the metric used to distribute costs among users (e.g., flat rate, tiers, etc.).
  - Billing Units – the size of the IA to which a fee is assigned based on the rate structure.

- Analogy for water utility:
  - Water consumption
  - Cubic feet of water; increasing rates for water use over 4,000 cubic feet
  - $1.90 per hundred cubic feet of water



Impervious Area = 3,250 square feet
(typical residential property in Agawam)

Stormwater Utility Overview
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.
  - ***Credits*** *are available to reduce the fee for properties that meet stormwater management requirements – this is not available if funded through taxes.*

Stormwater Utility Overview

Sample Stormwater Utility Rates in Massachusetts

Average Residential Stormwater Fees

- **Chicopee** (pop. 55,298)
  - $8.33/Month
  - $1M annual revenue
- **Longmeadow** (pop. 15,784)
  - $2.25/Month
  - $215,000 annual revenue (FY2019)
- **Northampton** (pop. 28,540)
  - $7.50/Month
  - $1,940,000 annual revenue
- **Westfield** (pop. 41,094)
  - $1.67/Month
  - $560,000 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

Preliminary Stormwater Rate Structure

Billing unit is based on a set Flat Billing Rate

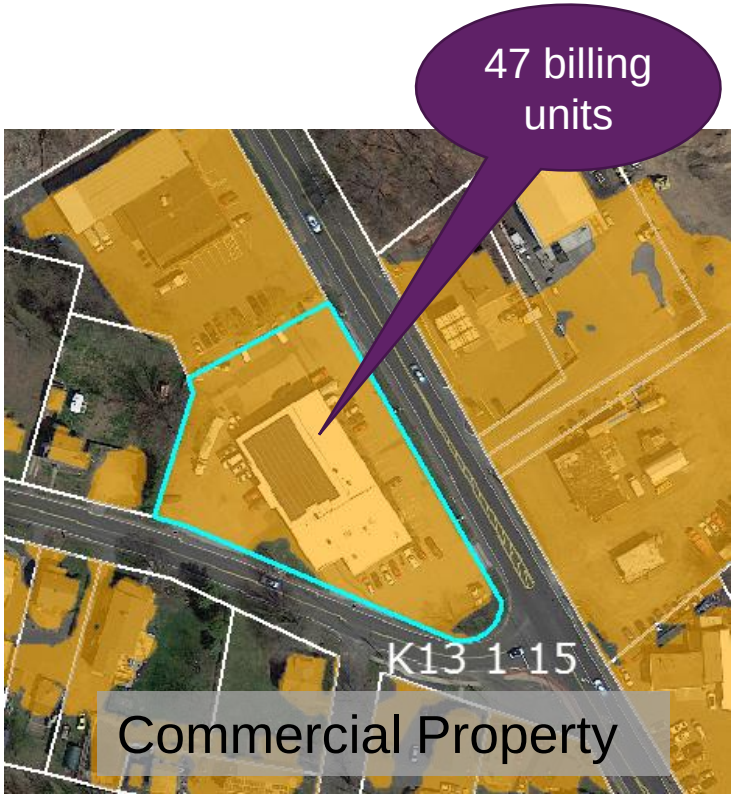
- ***For Agawam, a 1,000 SF billing unit was selected.*** This is large enough to minimize minor issues in using aerial photography to determine IA but small enough to recognize differences in property runoff impacts.
- Eliminates the need to assign land use codes to property, as all properties are billed 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

	Single Family Residential	Non-Single Family Residential	Total
Parcels	7,710	1,469	9,179
Total IA (SF)	30,464,260	48,213,970	78,678,230
Billing Units	30,499	48,253	**78,702**

Agawam Funding Analysis

Basic Approach for Calculating Fees

- Measured impervious surface for each parcel using aerial photos and GIS.
- Billing units are calculated based on 1,000 square foot increments
- Total program costs ÷ billing units = $/billing unit



Agawam Funding Analysis

Calculation of Rate per Billing Unit

Divide the total annual revenue needed by the amount of available billing units (1,000 sf IA billing unit):

Calculation for moderate level of service:

$2,052,519 ÷ 78,702 billing units = $26.08

or $26.08 per 1,000 sf of IA per year.

Note: this is a preliminary analysis and the rate is dependent on final policies, data, and revenue needs.

Assumptions: the above calculation assumes annual revenue needs for a moderate level of service including 3% revenue for the credit program, 2% revenue for bad debt, and $30,000 in costs for fee management activities (e.g., billing, collection, database management) = $126,310.

Agawam Funding Analysis
Tax Versus Fee

Revenue from Real Property Tax (2018): $60,032,566

Tax rates: Residential $16.61/$1,000 and Commercial $31.47/$1,000

Estimated 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 - $1,046,071) = $880,138 +1.5%
- Higher LOS ($2,149,800 - $1,046,071) = $1,103,729 +1.8%

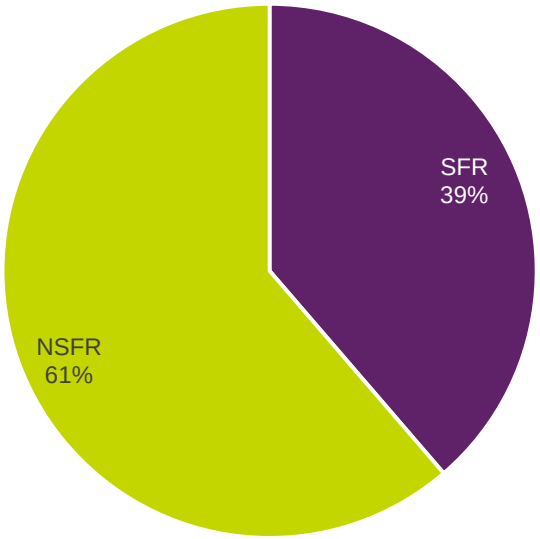
Potential tax decrease if current program costs ($1,046,071) is funded by fee: -1.7%

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

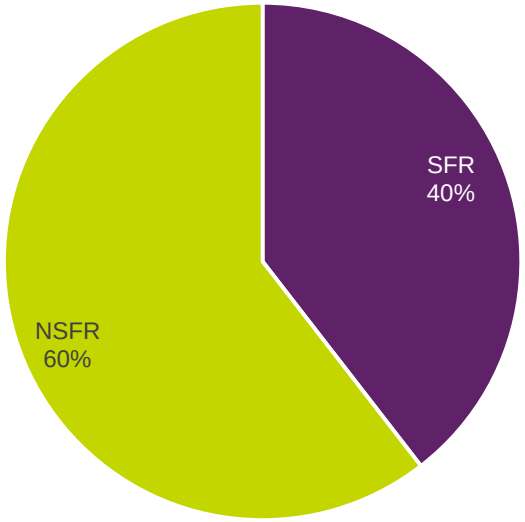
Agawam Funding Analysis
Tax Versus Fee

Revenue Distribution

1,000 sf IA Basis



SW Based on Property Value



Revenue is the same from both property classes under each funding approach, but the 1,000 sf basis (stormwater utility) does not consider property value and recognizes differences in properties and their runoff. Also, every property pays under a stormwater utility.

Agawam Funding Analysis

Tax Versus Fee – Residential Example

Typical single-family home in Agawam valued at approximately $250,000 and has 3,250 SF of IA

Stormwater Fee

Preliminary Estimate of fees

- Moderate LOS program - $78 per year
- Higher LOS program - $88 per year
- Plus potential tax savings of 1.7% or $72.36

Property Tax

Current property tax on $250,000 = $4,153 per year

1.5% increase = +$60.88 (moderate LOS)

1.8% increase = +$76.35 (higher LOS)

Agawam Funding Analysis

Tax Versus Fee - Commercial

Varies Widely - Depends on footprint, number of stories, and value

Allied Floor

Tax value = $552,500

IA = 47,402 SF

Stormwater Fee

Preliminary estimate of fees

- Moderate LOS program = $1,225/yr
- Higher LOS program = $1,370/yr
- Plus potential tax savings of 1.7% or $303

Property Tax

Current property tax on $552,500 = $17,387 per year

1.5% increase = +$255

1.8% increase = +$320

Country Manor Apts.

Tax value = $3,347,700

IA = 51,612 SF

Stormwater Fee

Preliminary estimate of fees

- Moderate LOS program = $1,356/yr
- Higher LOS program = $1,516/yr
- Plus potential tax savings of 1.7% or $1,836

Property Tax

Current property tax on $3,347,700 = $105,352 per year

1.5% increase = +$1,545

1.8% increase = +$1,937

Agawam 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

Note that this is a preliminary funding analysis and estimates of financial impacts will change based on final funding policies (decisions) by the Town.

Agawam Funding Analysis
Sample Properties

Single Family Home -

Morningside Circle

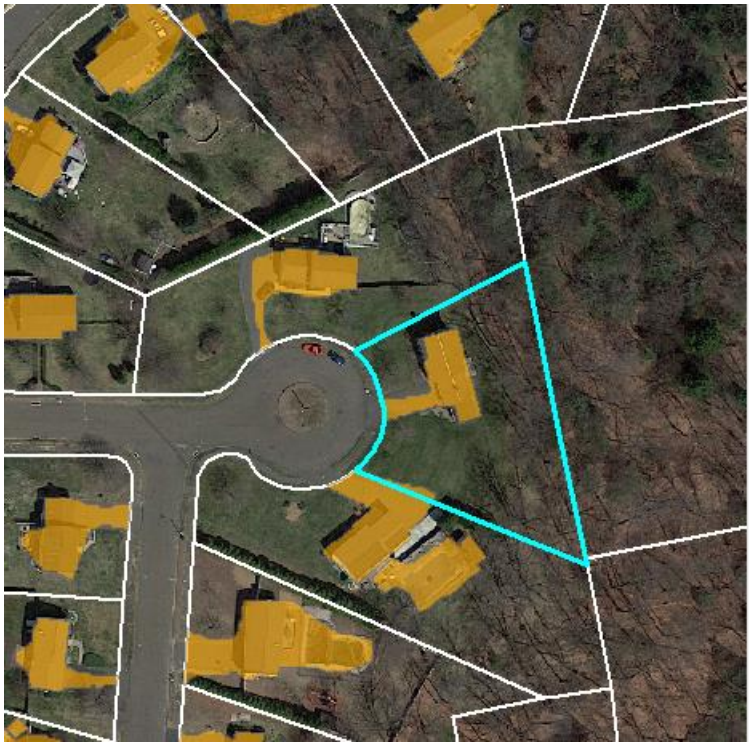
Estimated Impervious Area

- 2,889 SF

Preliminary Annual Range of Rates:

1,000 SF Billing Unit

- Moderate LOS - $26.08 x 3 = $78.24
- Higher LOS – $29.16 x 3 = $87.48



Agawam Funding Analysis
Sample Properties

Single Family Home -

Colemore St

Estimated Impervious Area

- 4,797 SF

Preliminary Annual Range of Rates:

1,000 SF Billing Unit

- Moderate LOS - $26.08 x 5 = $130.40
- Higher LOS - $29.16 x 5 = $145.80

Agawam Funding Analysis
Sample Properties

Tax-Exempt Property-

Feeding Hills Church

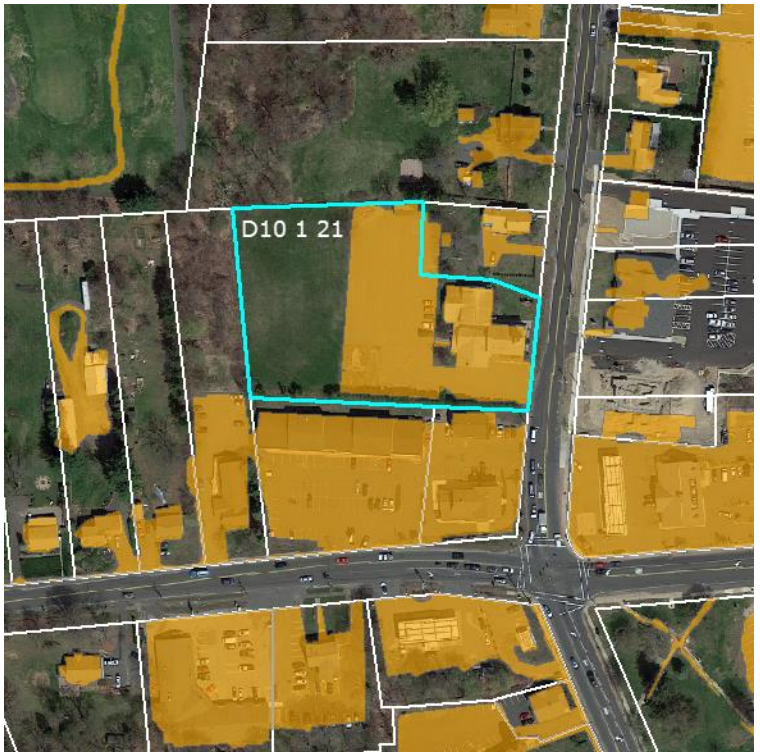
Estimated Impervious Area

- 40,899 SF

Preliminary Annual Range of Rates:

1,000 SF Billing Unit

- Moderate LOS - $26.08 x 41 = $1,069.28
- Higher LOS - $29.16 x 41 = $1,195.56



Agawam Funding Analysis

Sample Properties

Commercial Property -

Allied Floor

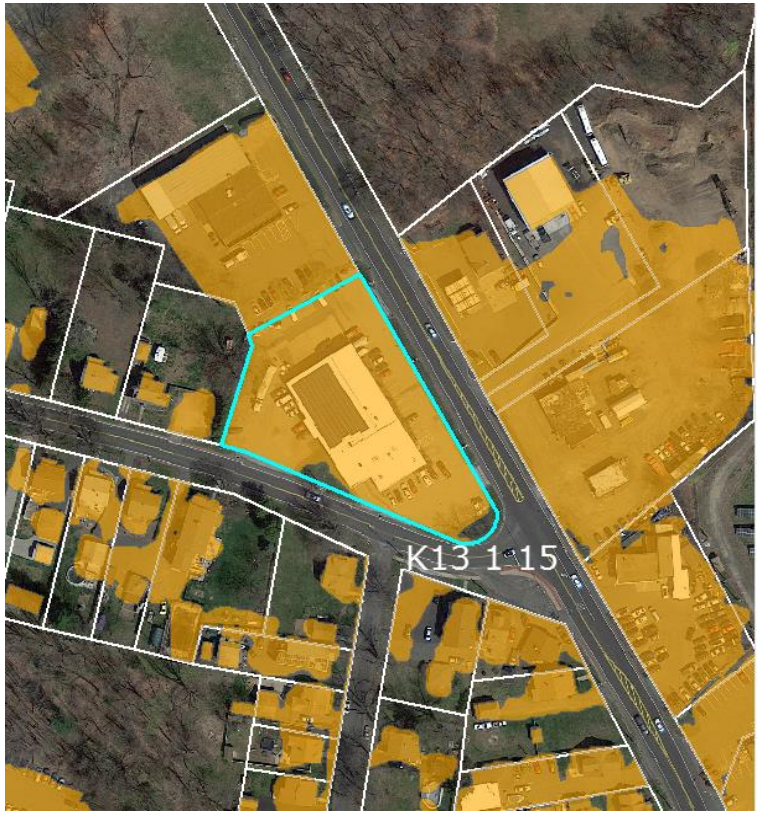
Estimated Impervious Area

- 47,402 SF

Preliminary Annual Range of Rates:

1,000 SF Billing Unit

- Moderate LOS - $26.08 x 47 = $1,225.76
- Higher LOS - $29.16 x 47 = $1,370.52



Agawam Funding Analysis

Sample Properties

Commercial Property -

Sarat Ford

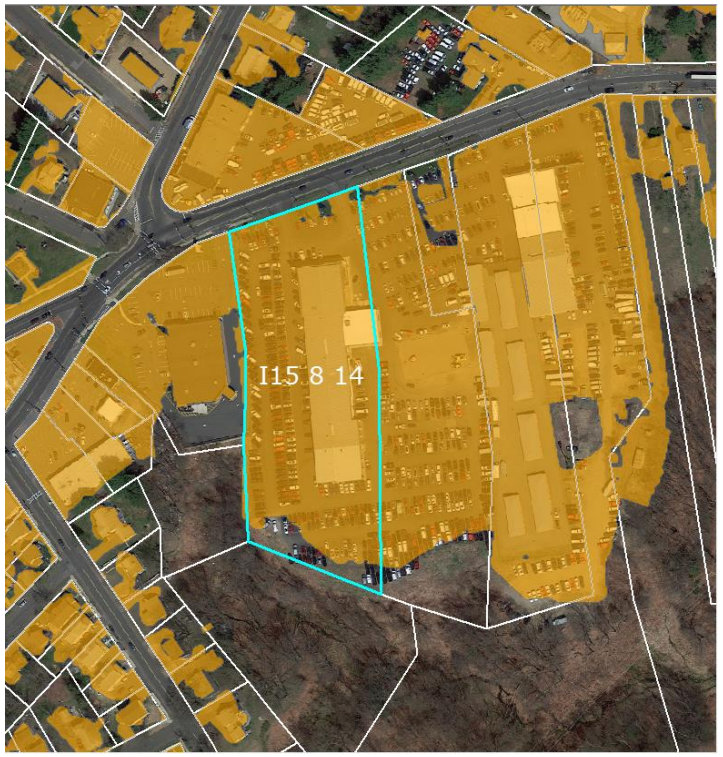
Estimated Impervious Area

- 142,996 SF

Preliminary Annual Range of Rates:

1,000 SF Billing Unit

- Moderate LOS - $26.08 x 143 = $3,729.44
- Higher LOS - $29.16 x 143 = $4,169.88



Agawam Funding Analysis
Sample Properties

Commercial Property -

HP Hood (2 parcels)

Estimated Impervious Area

- 509,385 SF

Preliminary Annual Range of Rates:

1,000 SF Billing Unit

- Moderate LOS - $26.08 x 509 = $13,274.72
- Higher LOS - $29.16 x 509 = $14,842.44

Agawam Funding Analysis
Sample Properties

Commercial Property -

Six Flags

Estimated Impervious Area

- 2,414,275 SF

Preliminary Annual Range of Rates:

1,000 SF Billing Unit

- Moderate LOS - $26.08 x 2,414 = $62,957
- Higher LOS - $29.16 x 2,414 = $70,392

Next Steps

1. **Finalize recommendations and report**
2. **Present at Council meeting to review and approve next steps**

Assuming the Town proceeds towards a stormwater utility:

1. *Continue public engagement process*
2. *Potential ordinance review and implementation*
3. *Continue with steps to build program and funding mechanism*
4. *Develop credit program*
5. *Potential schedule for full implementation - sometime in 2019*