

# Bristol Town Council

## April 14, 2016



### *“Municipal Stormwater Management Enterprise Fund Feasibility Study”*

Town of Bristol Planning Department  
R.I. Dept. of Environmental Management  
Horsley Witten Group  
AMEC Foster Wheeler  
Blue Sky Engineering



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# Content



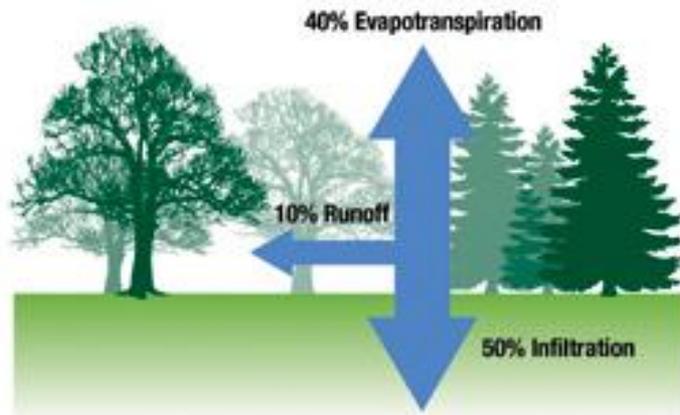
- Stormwater is not clean
- Flooding, sewage, and water quality problems
- Study background
- Stormwater Management Enterprise Fund (SMEF)
  - What is a SMEF
  - Steering Committee Work
  - What are the costs/benefits
  - SMEF implementation elements
- Questions/Discussion
- More information at

<https://amec.box.com/s/dbp9w4ptrvjst3fr5ji8e6fw7o7fa7iv>

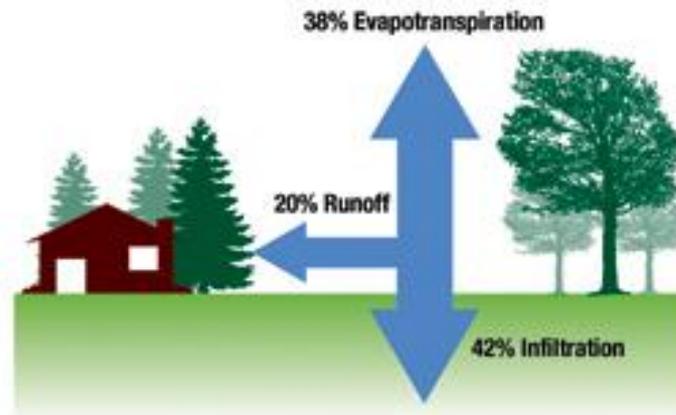


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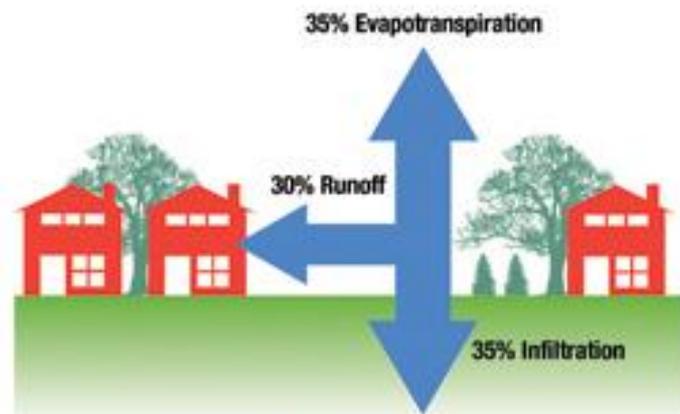
# EFFECTS OF IMPERVIOUSNESS ON RUNOFF AND INFILTRATION



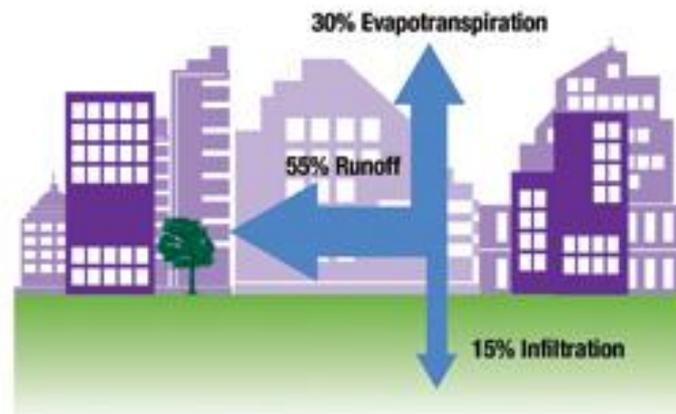
**NATURAL GROUND COVER**  
0% Impervious Surface



**LOW DENSITY RESIDENTIAL (e.g. rural)**  
10-20% Impervious Surface



**MEDIUM DENSITY RESIDENTIAL (e.g. subdivision)**  
30-50% Impervious Surface



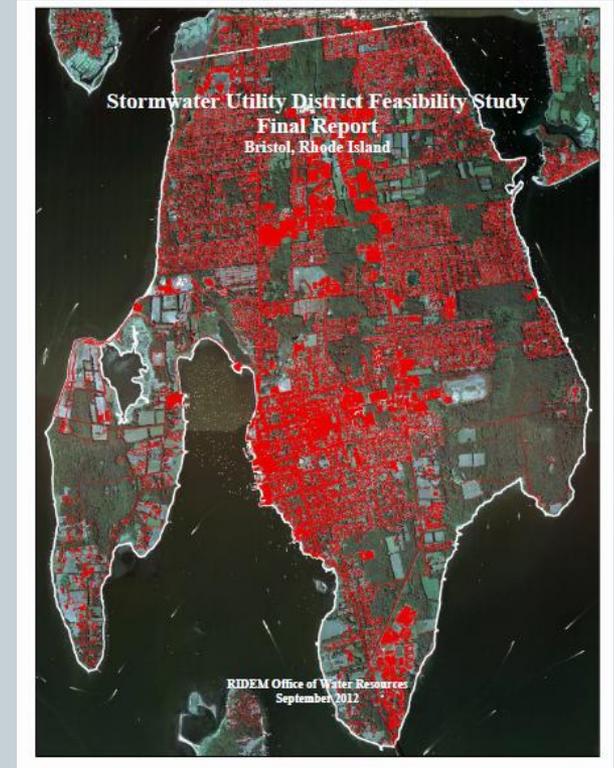
**HIGH DENSITY RESIDENTIAL/INDUSTRIAL/COMMERCIAL (e.g. town centre)**  
75-100% Impervious Surface

Source: Arnold and Gibbons (1996) Impervious Surface Coverage.

# Background



- Stormwater Phase II Permit 2004
- Preliminary Study – 2012
- Presentation to Town Council 2012
- 2015-2016 Feasibility Study



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# Steering Committee

- Community representatives
- Stakeholders help identify relevant issues
- Commercial uses
- Homeowners
- Neighborhoods
- Non-profits
- Schools
- Business
- Recreational interests



Mt. Hope High School Property  
Silver Creek Watershed



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# Voting from First Meeting



- Members were asked to vote on their top three stormwater issues of concerns. The results were as follows:
  - **Aging infrastructure (14 votes)**
  - **Chronic flooding (7 votes)**
  - **Infrastructure maintenance (7 votes)**
  - Wastewater issues (3 votes)
  - Ecological concerns (2 votes)
  - Development pressure (1 vote)
  - Preservation of property values (1 vote)

# Actual Current Stormwater Program Cost\*



• Public involvement & outreach	1,500
• Illicit discharge detection & elimination	11,000
• Pre- and Post Construction Site Stormwater Mgmt.	16,000
• Pollution Prevention – sweeping and catch basin cleaning	270,500
• GIS mapping of stormwater structures	15,000
• Administration	35,000
• MS4 annual report & TMDL program	6,500
• DPW stormwater operations and materials	73,500
• Contracted services (consulting, contractor, engineering)	160,000
• Major drainage projects – completed or ongoing	<u>\$ 290,000</u>
<b>Total</b>	<b>\$ 879,000</b>

\*Annual Cost



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# Additional Unfunded Stormwater Needs



- Backlog of drainage rehabilitation needs
- MS4 permit and TMDL requirements
  - Planning and engineering needs
  - Water quality improvement projects
  - Outfall inspection, maintenance & repair
- Enhanced routine maintenance activities (street sweeping, catch basin cleaning, etc.)



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# Future Stormwater Program Cost Projected Need\*



• Public involvement & outreach	6,000
• Illicit discharge detection & elimination	20,000
• Pre- and Post Construction Site Stormwater Mgmt.	35,000
• Pollution Prevention – sweeping and catch basin cleaning	350,000
• GIS mapping of stormwater structures	20,000
• Administration	35,000
• MS4 annual report & TMDL program	21,500
• DPW stormwater operations and materials	95,000
• Contracted services (consulting, contractor, engineering)	175,000
• Major drainage projects	<u>\$ 600,000</u>
<b>Total</b>	<b>\$ 1,357,000</b>

\* Annual costs and based on existing regulatory requirements and known needs.



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# Current Bristol Funding Sources



- General Revenue (Taxes)
- Drainage Fund (Bond)
- Sewer Enterprise Funds
- Grants
- Loans: nearly all sewer related capital projects utilize State Revolving Fund (SRF) loan monies

# What is a Stormwater Enterprise Fund?



- A stormwater enterprise fund, also known as a Stormwater Utility or Stormwater Management District (SMD) is a "stand-alone" funding mechanism that derives revenue through fees for stormwater services.
- Pays for the operation, construction and maintenance of catch basins, drainage pipes, street cleaning and treatment systems, and administration and management stormwater controls and discharges.
- The funds generated go into a separate account creating a consistent and reliable source of funding for stormwater services.

# How does a Stormwater Enterprise Fund Work?



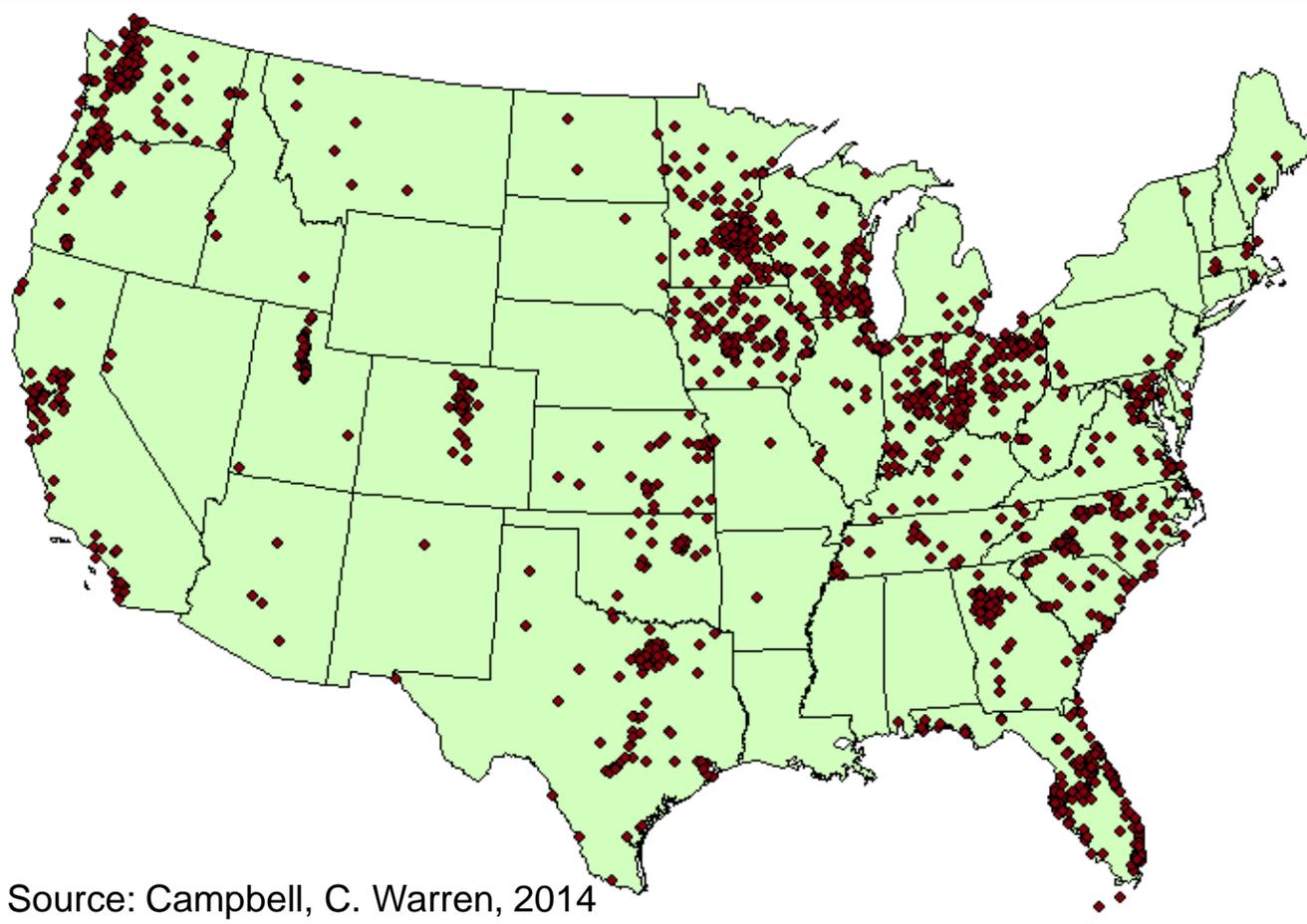
- Fees assigned to a parcel for services provided
- Fee is proportional to the stormwater burden on the stormwater system/program
- More impervious areas...  
...more stormwater runoff...  
...larger burden on the system...  
...larger user fee
- Therefore, even tax-exempt properties like schools contribute
- But, RI enabling statute exempts state properties
- Not a “Rain Tax” – Value of the Property is Not Considered

# Key Advantages of a Stormwater Enterprise Fund



- **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 Equitable** because the cost is borne by the user on the basis of demand placed on the drainage system.

# Existing Stormwater Utilities



- ~1,500 utilities
- 13 in New England
- Programs vary
- Funding varies

Source: Campbell, C. Warren, 2014

# Example Stormwater Utilities in NE

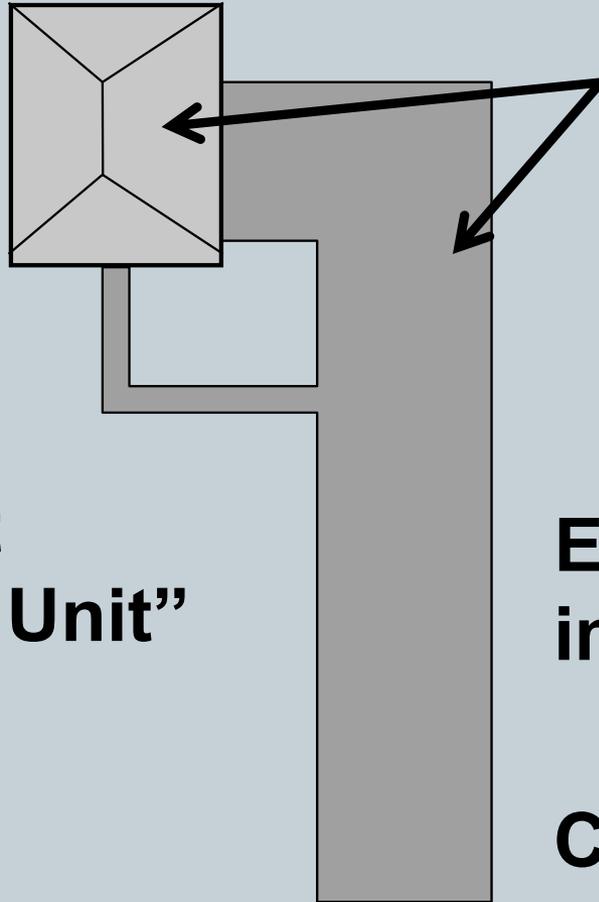


- **South Burlington, VT**
  - Population 18,612
  - Annual Stormwater Budget \$2,440,347
  - Funds all stormwater activities, plus flood control and green infrastructure projects
  - High level of service
- **Northampton, MA**
  - Population 28,592
  - Annual Stormwater Budget \$1,980,056
  - Funds nearly all stormwater activities, water quality projects, and maintenance of flood control systems (levees)
  - Relatively high level of service

# How a Fee is Typically Calculated

**Average  
Residential  
Property**

**Equals 1.0  
“Equivalent  
Residential Unit”  
(ERU)**

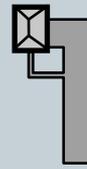


**Impervious areas**

**ERU = 3,250 sq.ft.  
impervious area**

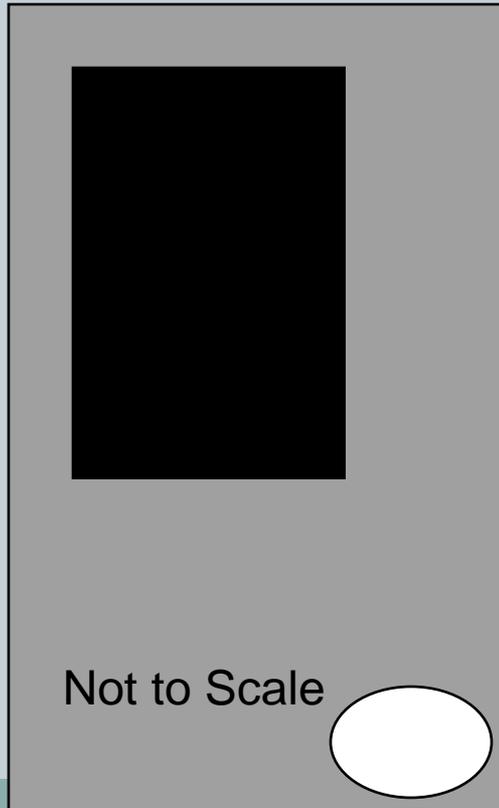
**Can also use a billing  
unit of 500, 1000 sf, etc.**

# How a Fee is Typically Calculated



= 1 ERU

**Small Lot**



= 40 ERUs

**Big Lot**

Rate structures can reflect a number of different things...not just impervious area

# Popular Rate Methodologies



- Impervious Area (IA) (55%)
- Impervious Area and Gross Area (29%)
- Gross Area/Intensity of Development (10%)
- Others (6%)
  - water meter size, flat rates, zoning class

*“The fee system shall be reasonable and equitable so that each contributor of runoff to the system shall pay to the extent to which runoff is contributed.”*



# New England Rate Examples

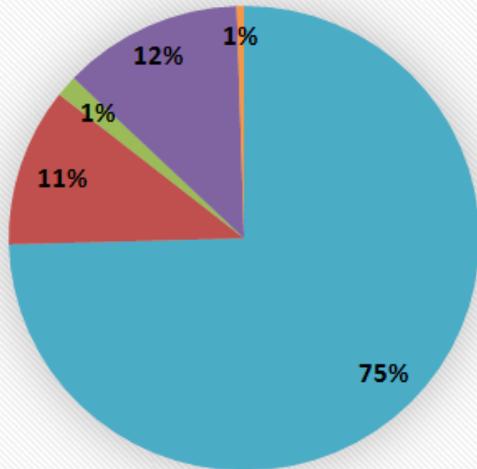


- **Portland, ME**
  - 1,200 sf Impervious Area (IA) billing unit for all properties
- **South Burlington, VT**
  - 2,700 sf IA billing unit for residential; actual IA for non-residential
- **Northampton, MA**
  - Tiers based on net hydraulic area: (impervious and pervious areas)X(weighted runoff coefficient)
- **Fall River, MA**
  - Surcharge on the sewer bill

# Analysis of Properties and Impervious Area

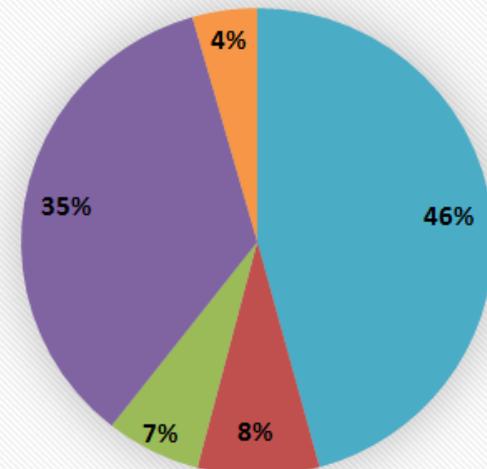


## Property Type Distribution



■ Single-Family Residential ■ Multi-Family Residential ■ Condo / Shared Area  
■ Non-Residential ■ SW Fee Exempt\*

## IA Distribution



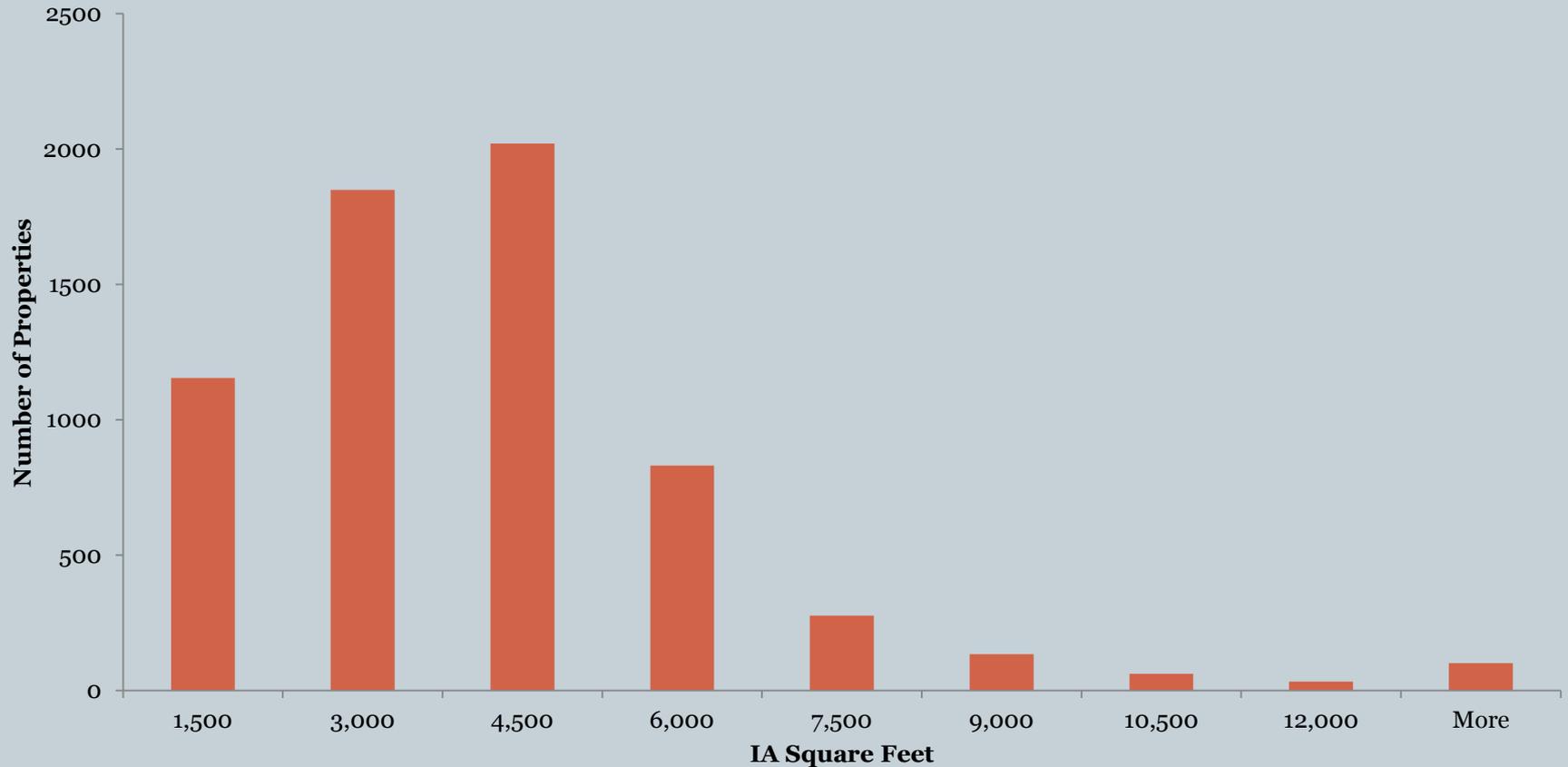
■ Single-Family Residential ■ Multi-Family Residential ■ Condo / Shared Area  
■ Non-Residential ■ SW Fee Exempt\*

Single-family residential properties account for the majority of properties, but not the majority of impervious area.

# Analysis of Billing Units (ERUs)



## Impervious Histogram - SFR Properties



# What does a SMEF for Bristol Look Like?



## **Feasibility Study Steps and Initial Results:**

- Evaluation of properties and impervious area.
- Analysis of billing units.
- Future program cost and revenue need.
- Revenue distribution by property type.
- Comparison of fees versus tax impact on property types.

*This is a preliminary analysis for illustration purposes with lots of assumptions that need to be vetted if a SMEF is developed.*

# Analysis of Alternative Billing Units (results)

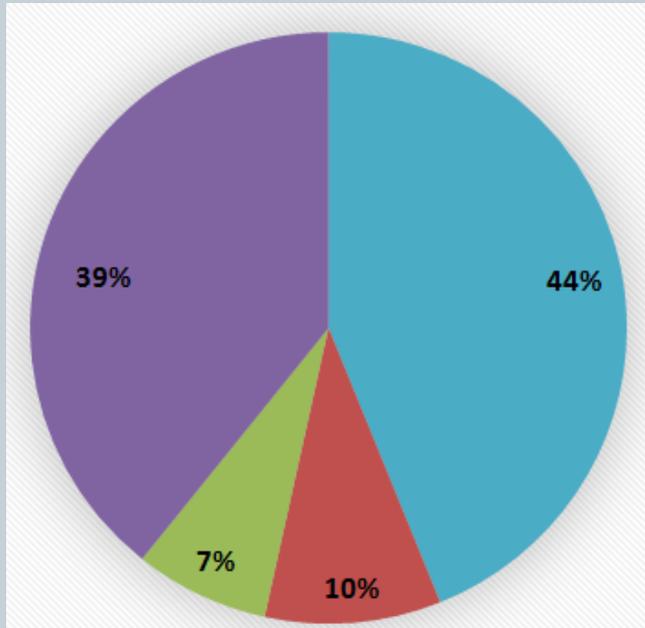


## Billing Units

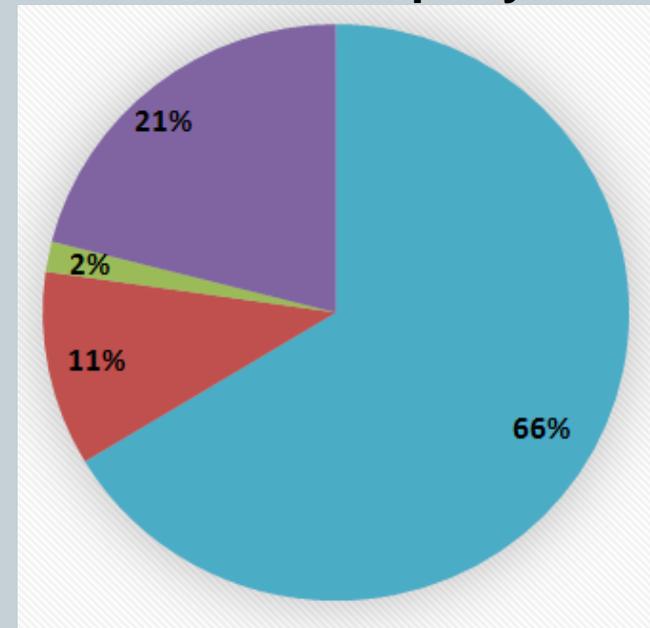
Property Type	Count	IA SqFt	ERU 3,250 SqFt	500 SqFt	1,000 SqFt
Single-Family Residential	6,462	22,651,333	5,943	45,300	22,644
Multi-Family Residential	957	4,124,721	1,293	8,252	4,147
Condo / Shared Area	129	3,212,317	988	6,421	3,216
Non-Residential	1,073	17,320,861	5,315	34,635	17,314
SW Fee Exempt	44	2,194,499	(675)	(4,389)	(2,197)
<b>Total</b>	<b>8,665</b>	<b>49,503,731</b>	<b>12,864</b>	<b>90,219</b>	<b>45,124</b>

# Revenue Distribution

## ERU Basis



## SW Based on Property Value



■ Single-Family Residential 
 ■ Multi-Family Residential 
 ■ Condo / Shared Area 
 ■ Non-Residential

<b>Single-Family Residential Property</b>	<b>Avg. Annual Cost</b>
ERU 3,250	\$ 117.09
SW Based on Property Value	\$ 157.42
<b>Non Single-Family Residential Property</b>	<b>Avg. Annual Cost</b>
Multiples of ERUs	\$ 1,065.66
SW Based on Property Value	\$ 331.60

Note that NSFR properties vary too widely for averages to be representative; see example property analysis.

# Fee versus Tax Example Properties



## Commercial Property Example

*Note: for illustration purposes only to show the difference in a fee versus tax approach. Actual values will vary based on final policy decisions, budget and financial evaluation.*

MSPARCELID	IA_SqFt	Fee_ERU	SW_Tax
94-25	17,609	\$585.45	\$196.66
94-26	30,606	\$1,053.81	\$276.80
94-27	21,135	\$819.63	\$243.60
94-29	33,724	\$1,170.90	\$72.78
94-49	0	\$0.00	\$58.89

# Fee versus Tax Example Properties



## Commercial Property Example

*Note: for illustration purposes only to show the difference in a fee versus tax approach. Actual values will vary based on final policy decisions, budget and financial evaluation.*

MSPARCELID	IA_SqFt	Fee_ERU	SW_Tax
9-50	74,080	\$2,693.07	\$5,897.01

# Fee versus Tax Example Properties

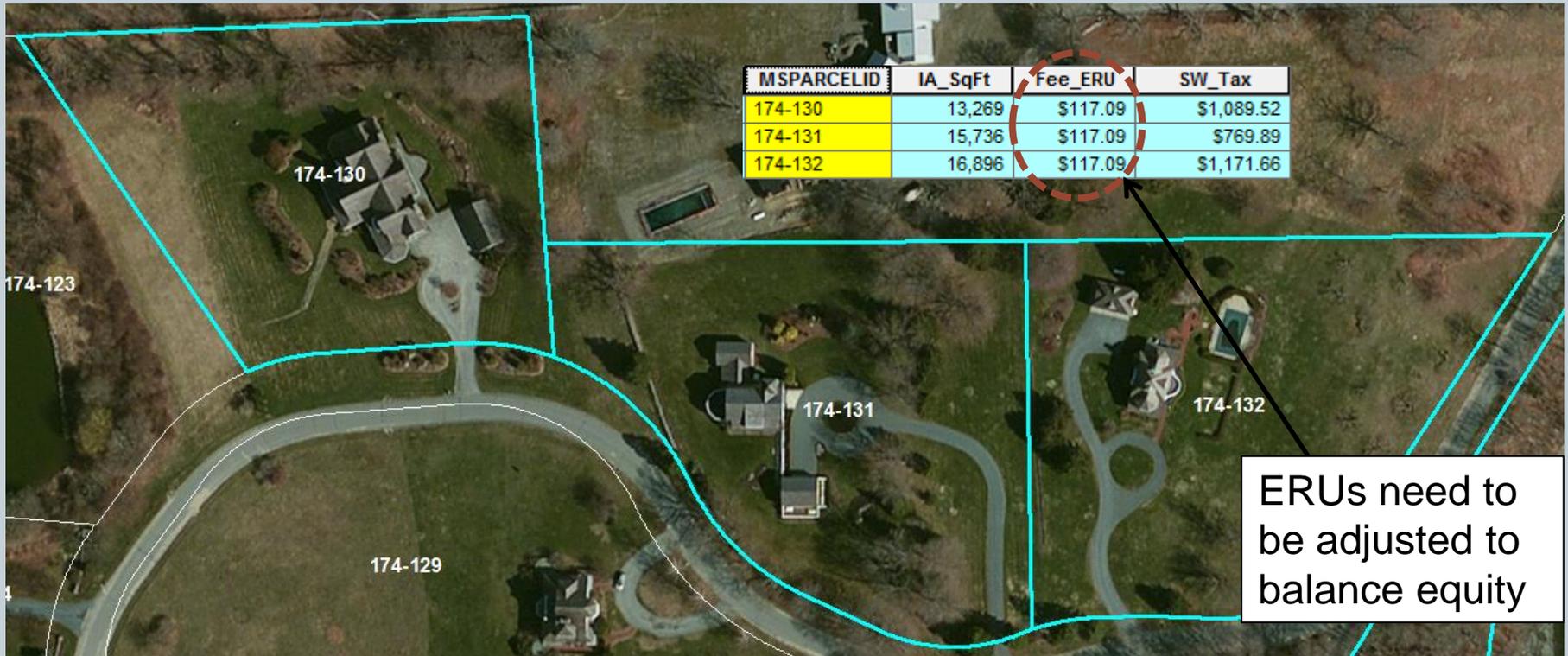


## Single-Family Residential Property Example

*Note: for illustration purposes only to show the difference in a fee versus tax approach. Actual values will vary based on final policy decisions, budget and financial evaluation.*

MSPARCELID	IA_SqFt	Fee_ERU	SW_Tax
80-66	2,262	\$117.09	\$140.32
80-68	2,582	\$117.09	\$142.32
80-70	2,973	\$117.09	\$144.65
80-71	2,616	\$117.09	\$142.59
80-72	2,477	\$117.09	\$135.07

# Fee versus Tax Example Properties



## Single-Family Residential Property Example

*Note: for illustration purposes only to show the difference in a fee versus tax approach. Actual values will vary based on final policy decisions, budget and financial evaluation.*

# But some owners have stormwater controls in place? What's fair and equitable?



1. Properties that don't generate or release pollutants or flood flows should have no fee or only partial fees
2. Stormwater credits should apply
3. Usually the Town sets-up an application process by which fee credits can be reviewed and awarded either on an annual or one-time permanent basis
4. Incentives can be made part of the program to encourage property owners to reduce their stormwater impacts
5. See Stormwater Credit Backgrounder for details

## Stormwater Credit Backgrounder



### Introduction

Properties can create stormwater impacts on receiving waters and community infrastructure at different levels. These impacts are directly related to the amount of impervious surface (e.g. roofs and parking areas) on the property and the effectiveness of any stormwater best management practices (BMPs) installed on the property. Where a community may choose to use a stormwater management enterprise fund, the fee structure must take into account these variations and the cost of service for stormwater management. Crediting of fees is a common mechanism to ensure fees are equitable based on the stormwater management controls for individual properties.

In general, it is best to create a credit mechanism that is simple to understand and practical to implement. Stormwater credits are granted both to increase the fairness with which rates are applied and to provide incentives to implement an overall stormwater management plan. Often, stormwater credits are rewards offered to advance other social or environmental objectives. Credits typically do not have significant total revenue reduction potential. For example, a typical revenue reduction amount is around five percent. However, credits can make a financial difference to users with large impervious areas who will pay larger fees, and it provides an opportunity for property owners to mitigate a portion of the fee.



Treatment swale handling parking lot runoff

The types of credits most often given by utilities can be grouped into the following categories, which have varying levels of complexity:

- **Retention or detention:**
  - Reduce peak flow and control the rate at which the runoff volume enters the drainage system.
  - Structures must meet a town's design and performance criteria.
  - Graduated credits can be offered for those structures meeting standards.
- **Water Quality BMPs or "Green Infrastructure":**
  - Reduce polluted runoff; supports a town's stormwater permit (aka Rhode Island Pollutant Discharge Elimination System or RIPDES permit) requirements, and provides an incentive for being "good" or "green".
  - Structures must meet a town's design and performance criteria.
  - Graduated credits can be offered for different levels of treatment.
- **Privately maintaining on-site infrastructure and controls:**
  - Reduces the stormwater program costs by relieving the department of maintenance costs and responsibility.
  - Intended for large areas, such as campuses, therefore an area/size requirement or amount of infrastructure requirement must be specified by the town.
- **Non-structural BMPs (e.g., stormwater education):**
  - Services or activities that help reduce the quantity and improve the quality of stormwater runoff in lieu of constructing stormwater management infrastructure; examples include stormwater education, training, maintaining a RIPDES permit for stormwater, pollution prevention, and good housekeeping programs.

# Summary of the Two Main Options



	<b>General Funds</b>	<b>User-Fee</b>
Who Pays?	Taxed Properties	Everyone Pays
Basis of Contribution (\$)	Property Value	Contribution to Runoff
Credits for On-site Management	None	Consideration of Treatment

- Everyone pays something in the end
- Fees often provide a more equitable or flexible distribution of cost than tax revenue
- Individual homeowners pay less with fees vs. taxes

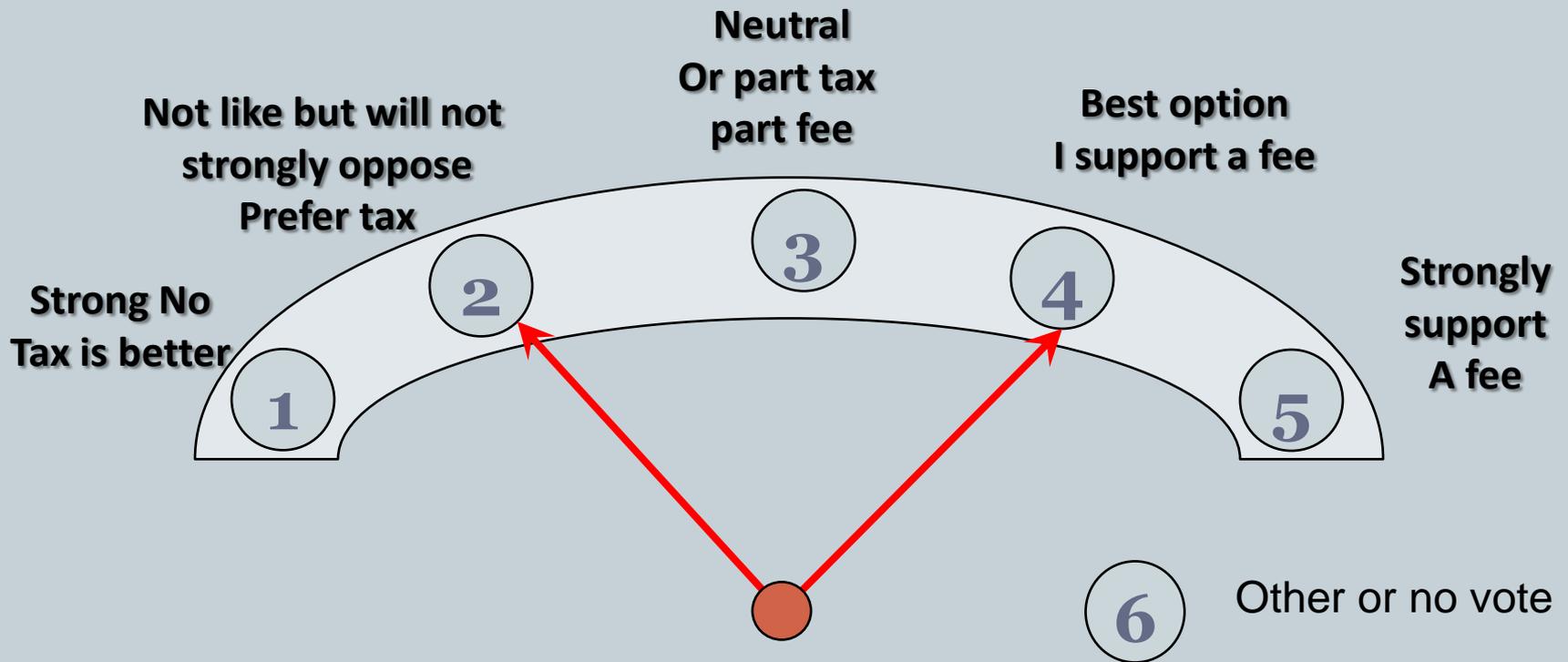
# Is there a Compelling Case for a SMEF?



- I think it might be a good idea because...
- I think it is not a good idea because...



If we agree we need to improve the stormwater program  
What is your comfort level with a fee?



# Voting from Second Meeting



- The average rank on a scale of 1 to 5 was 4, which was: “Best Option – I support a fee”.
- Recurring comments noted the need for a simple fee system, equitable fees, and an awareness of costs to businesses.

# Remaining Tasks



1

- Draft Report
- Final Steering Committee Meeting

2

- Draft Implementation Plan
- Draft Model Ordinance
- Meet with Project Management Team

3

- Second Workshop with Town Council
- Revise Model Ordinance
- Final Report Issuance
- Stormwater Management Webpage



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# Questions/Discussion



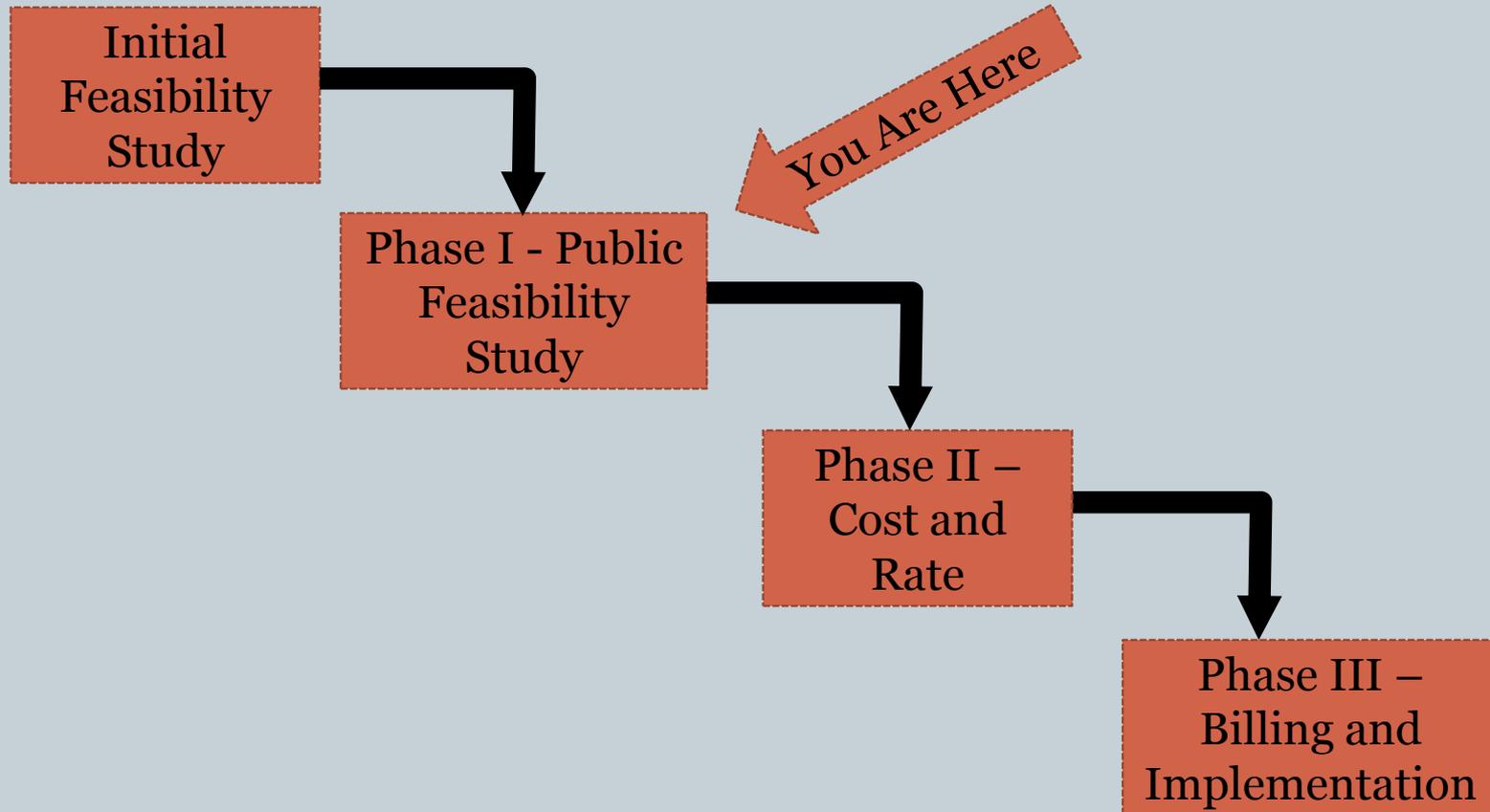
# Preliminary Action Plan for a SMEF



It is best to use a phased process for implementation



# Overall Path Forward



# Phase II – Costs and Rates



- **Cost/Program**
  - Update costs & level of service
  - Program 5-year plan
- **Funding Approach & Data**
  - Funding policies
  - Initial rate structure & credits
  - Billing policies
  - Public Involvement Plan
- **Final Cost and Rate Structure**
  - Functional organization
  - Administration & staffing
  - Credit manual
  - Final rates

# Phase III – Billing and Implementation



- **Fee Implementation**
  - Ordinance adoption
  - Implementation campaign
  - Billing trial run
  - Customer service
  - Internal management policy development
  - 1-on-1 staff training/on-call support