

STRUCTURING A STORMWATER UTILITY

Town of Reading, MA
April 30, 2009



Discussion Topics

- ◆ Joe Delaney – Development of the Storm Water Utility
- ◆ Kim Honetschlager – GIS use in program development/implementation
- ◆ Ted McIntire – Program implementation and lessons learned

Establishing the Storm Water Utility

- ◆ What to Expect
- ◆ Planning for the Storm Water Program
- ◆ Developing Storm Water Utility Parameters
- ◆ Getting Program Approval
- ◆ What Can Go Wrong

What to Expect

- ◆ Plenty of time
- ◆ Local opposition
- ◆ Delays
- ◆ Money

Planning for the Storm Water Program

- ◆ Establish a Storm Water Committee
- ◆ Review universe of funding options
 - General fund
 - Existing enterprise fund
 - New enterprise fund
- ◆ Make recommendation
- ◆ Get early buy-in from decision makers

Developing Storm Water Utility Parameters

◆ Determine program costs

- Labor
- Expenses
- Equipment
- Capital
- Other

Developing Storm Water Utility Parameters

- ◆ Establish rate setting criteria
 - Simple to implement
 - Equitable to ratepayers
 - Defensible
- ◆ Determine fee structure
 - Exemptions
 - Flat fee vs. variable fee
 - Abatements
- ◆ Document and obtain buy-in

Getting Program Approval

- ◆ Public Education
- ◆ Town Meeting/City Council approval establishing an Enterprise Fund
- ◆ Major issues
 - Tax vs. fee
 - Tax deductibility
 - Applicability to non-profits/Town properties
 - Unfunded mandate
 - Legality

What Can Go Wrong

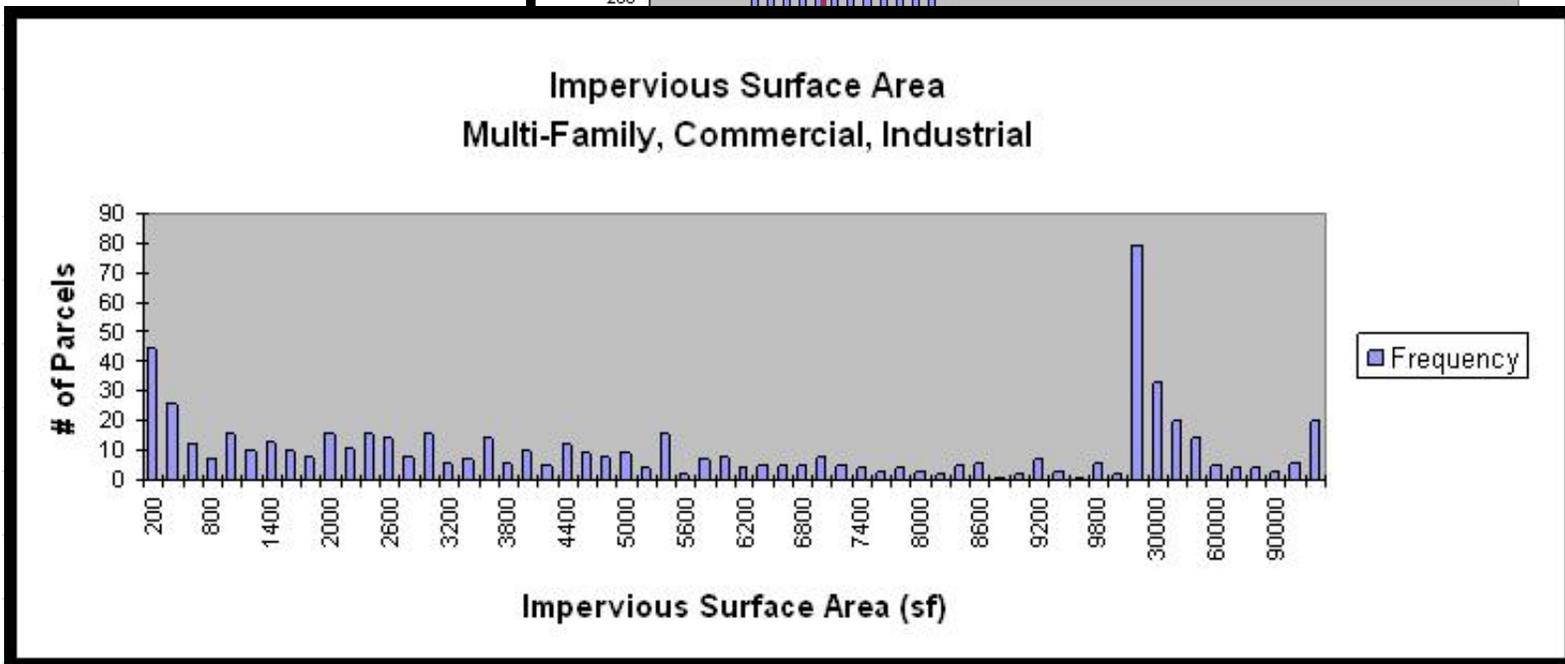
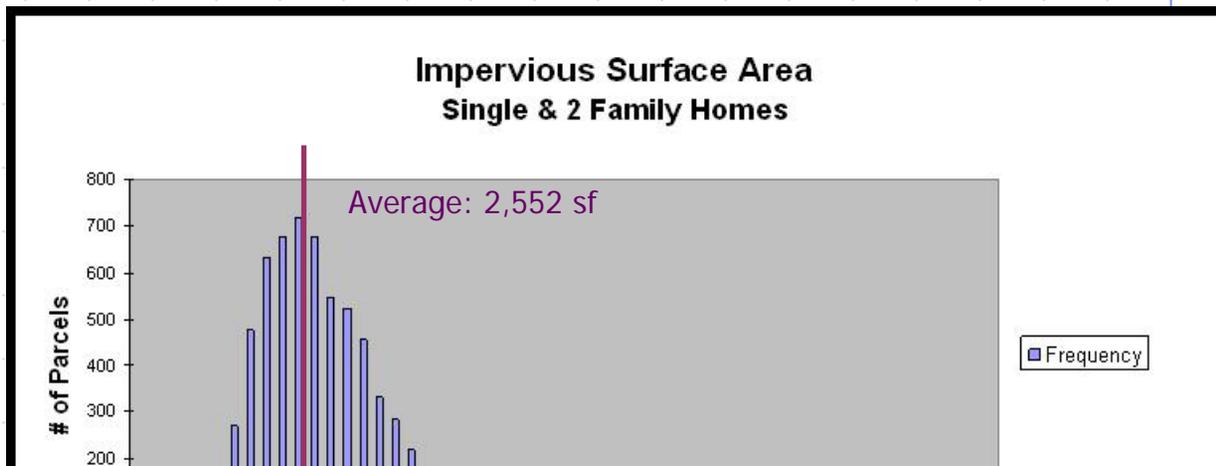
- ◆ Not doing your homework
- ◆ Non-defensible program costs and rate structure
- ◆ Program opposition
- ◆ Lawsuits

Why Base Fee on Impervious Surface?

- ◆ Difficult to “meter” stormwater
- ◆ More impervious surface = the more runoff = more pollutants going into water bodies
- ◆ Well established nationally. Over 400 stormwater utilities nationwide. Few in New England.

So Where does GIS Come In?

GIS used for preliminary calculations to develop methodology



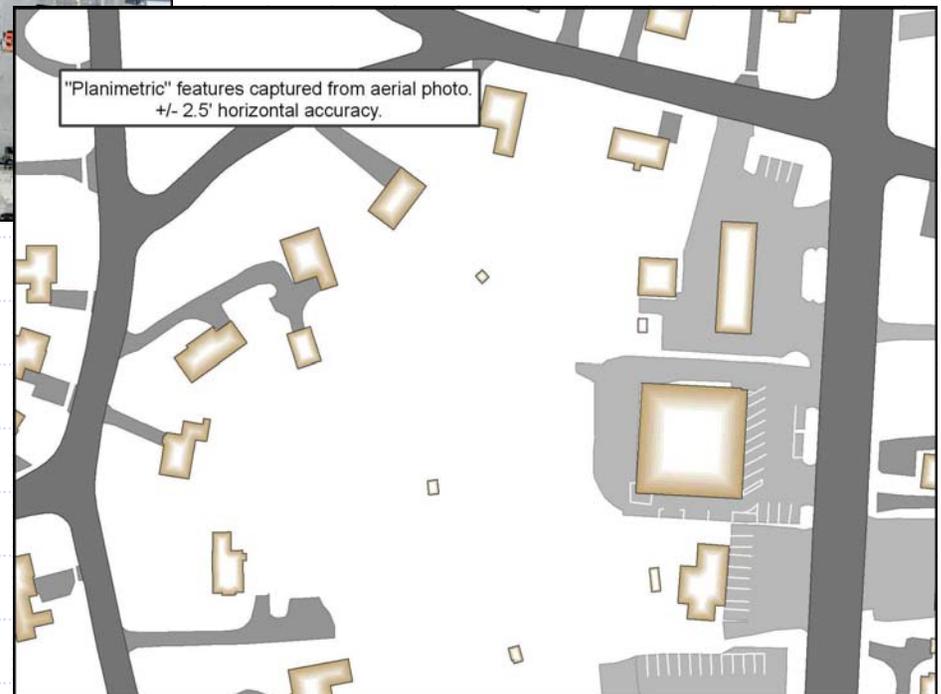
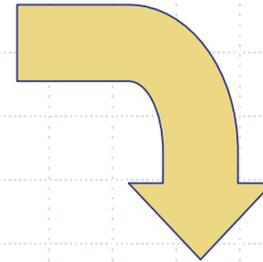
GIS used to calculate and apply fee

Fee Calculation Steps

1. Calculate average impervious surface area for residential parcels = "storm water unit" (2,552 sf in Reading)
2. Determine total # of storm water units on all parcels in town
3. Divide the total revenue to be generated by the total number of storm water units to determine the required fee per storm water unit
4. Increase the fee to cover abatements & non-payments & to build reserve fund



Step 1: Orthophoto features captured as GIS layers

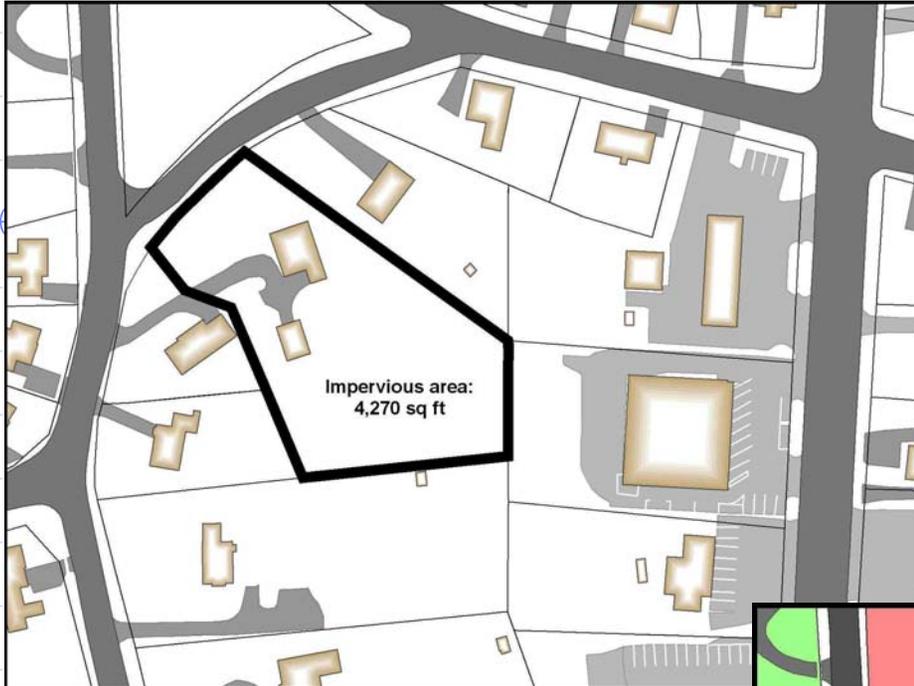


- ◆ GIS layers developed by tracing features visible in orthophoto.
- ◆ Impervious surfaces = building footprints, private roads, driveways, parking areas

* Analysis was done using 1998 orthophotos.

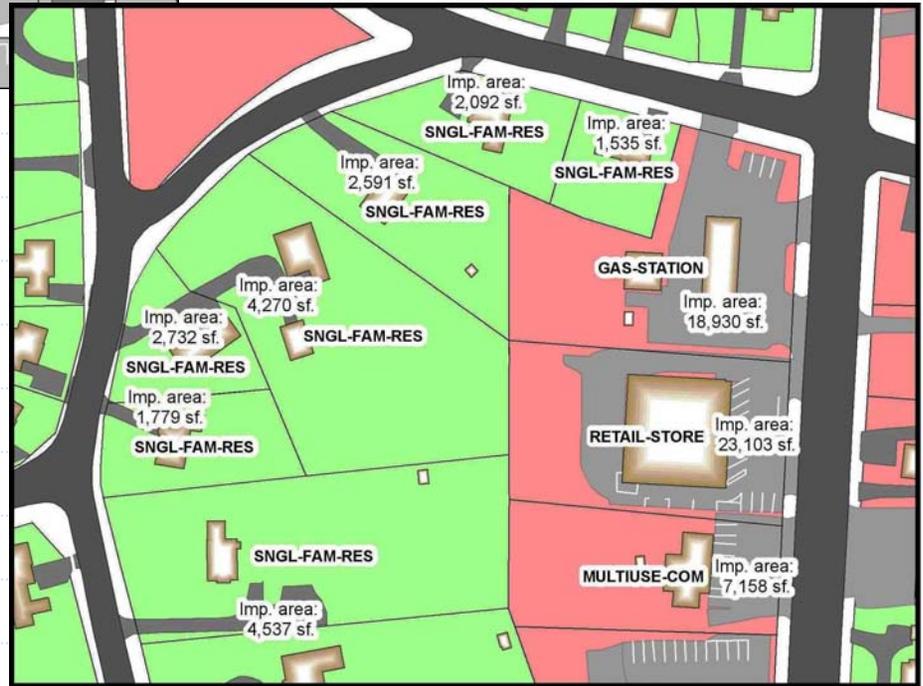
Step 2: Calculate Impervious Surface Area

- ◆ Use parcel layer as “cookie cutter” & sum impervious surface area for each parcel.

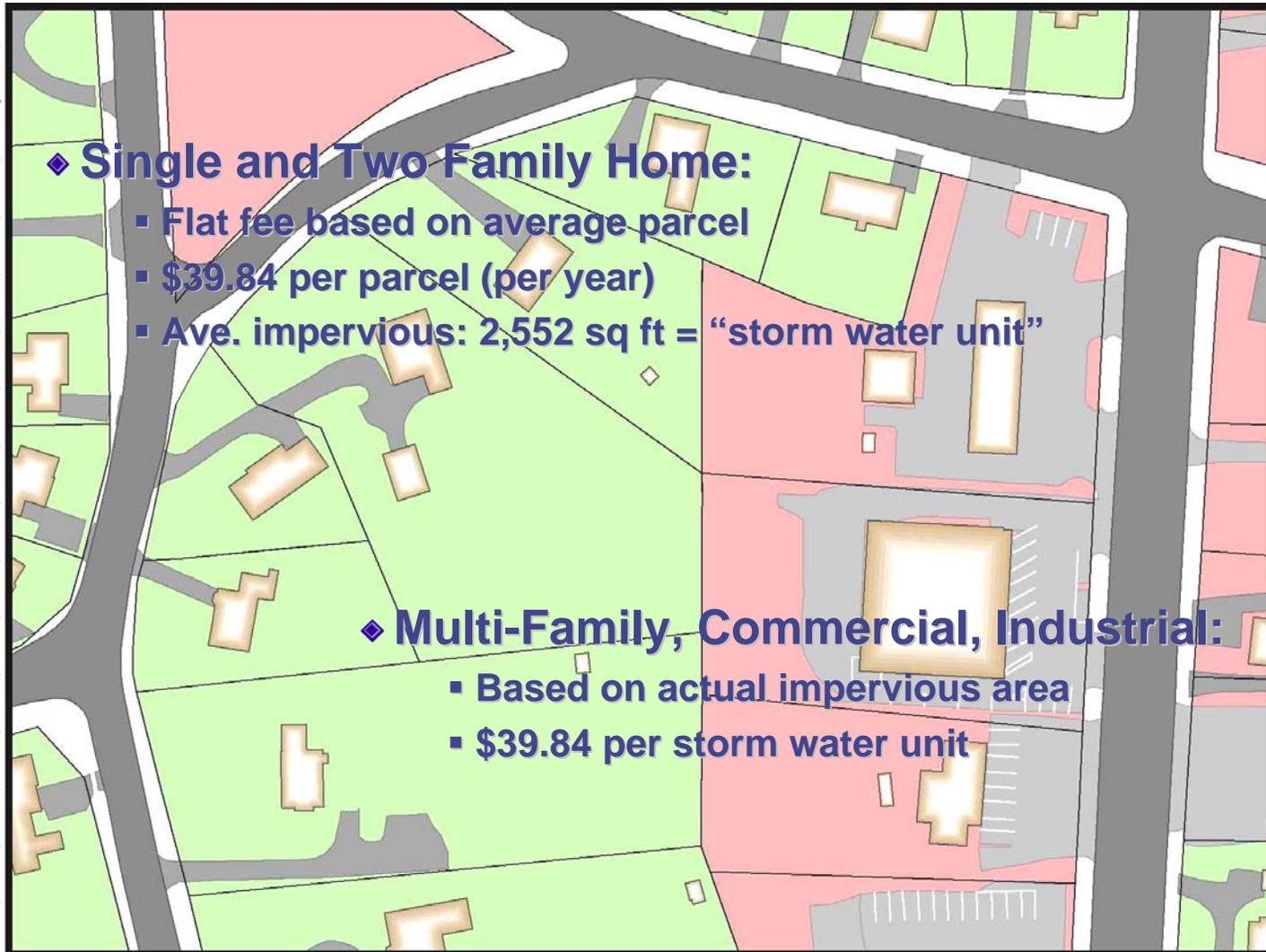


Step 3: Join Assessing Data

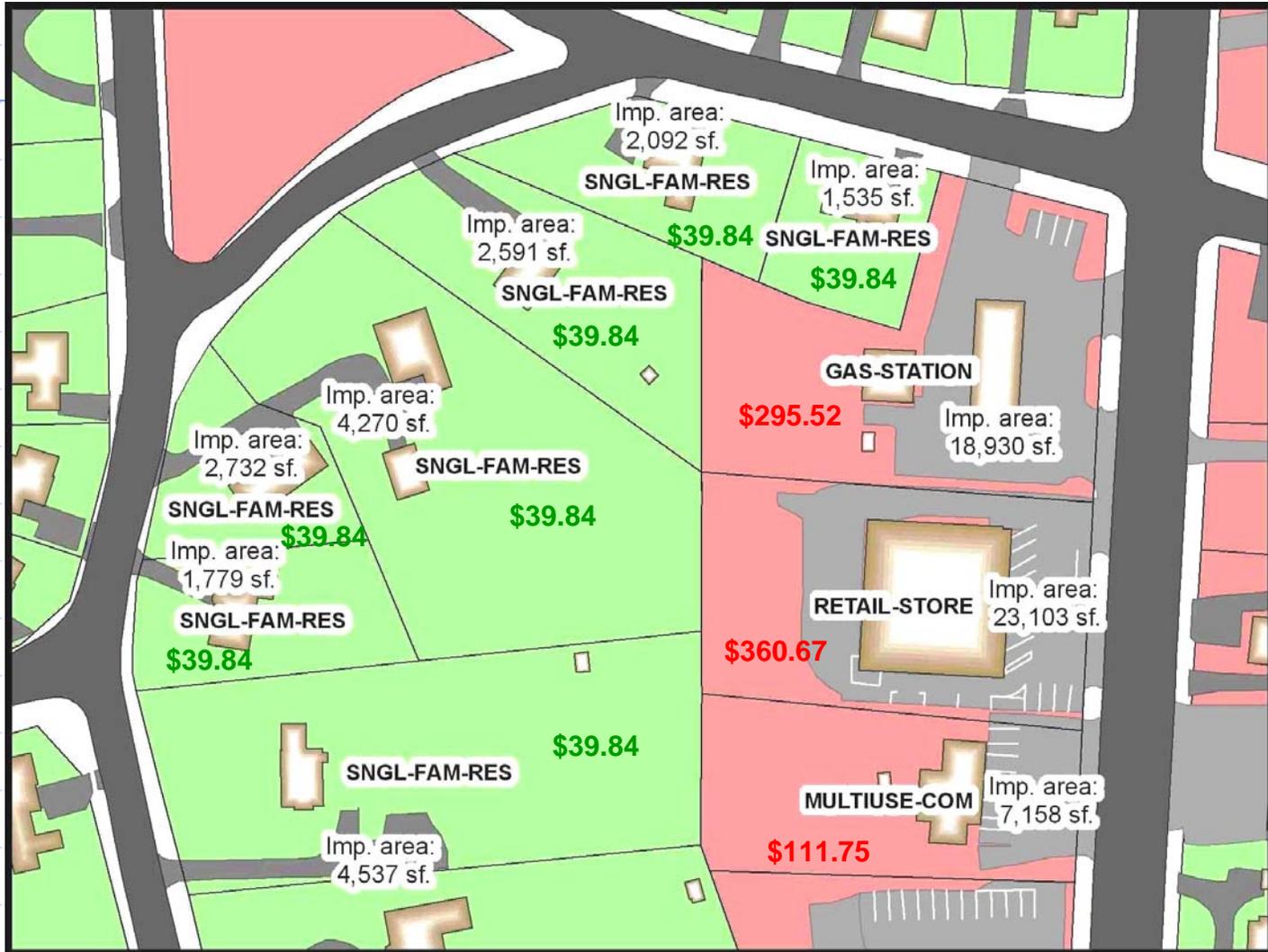
- ◆ Join assessing database to GIS parcel layer by parcel ID.
 - Land use code
 - Owner name & address



Step 4: Calculate Fee Based on Land Use



Step 4: Calculate Fee Based on Land Use



Will this approach work in your community?

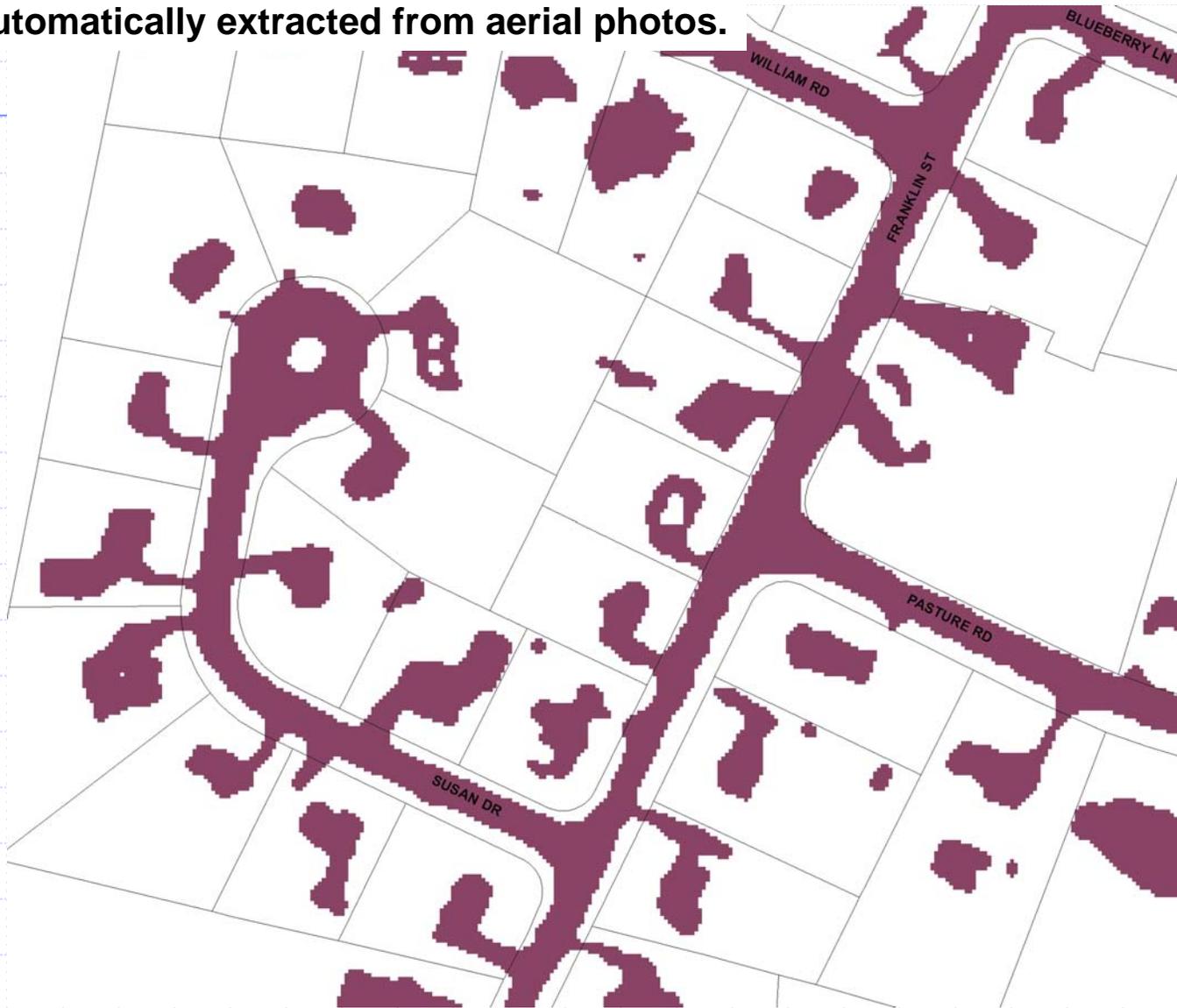
- ◆ If you have good GIS data, yes
- ◆ If not – look for other sources
 - Sample data, i.e. a subset of parcels in town
 - Assessing data only, e.g. lot size, zoning, and land use
 - Other impervious surface data sources, e.g. MassGIS

MassGIS Data

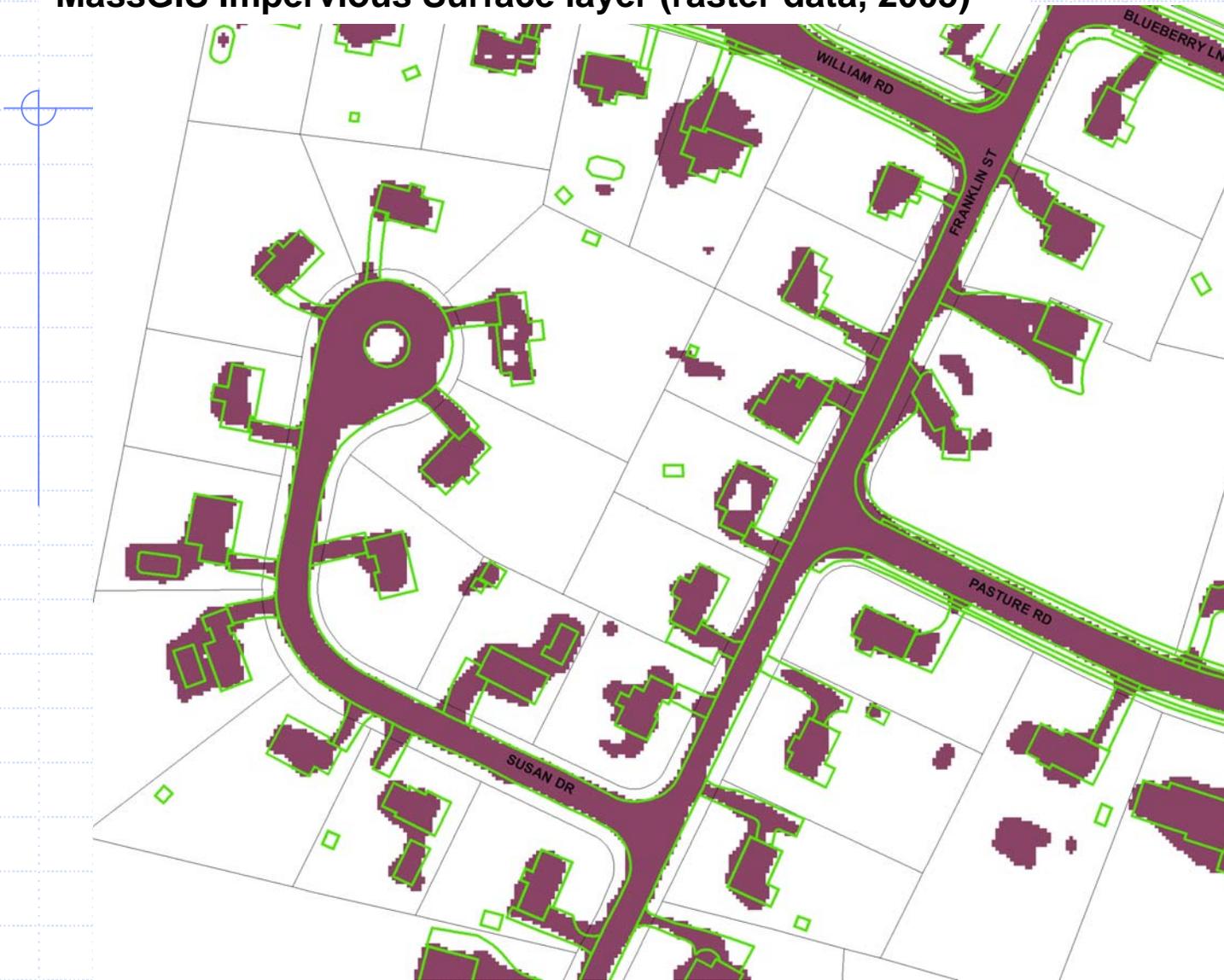


MassGIS Orthophoto 2005

**MassGIS Impervious Surface layer -
automatically extracted from aerial photos.**



**Reading planimetrics (vector data, 1998) over
MassGIS Impervious Surface layer (raster data, 2005)**



Program Implementation and Lessons Learned

- ◆ Choose billing method carefully
- ◆ Determine which department(s) pay for town-owned land
- ◆ Decide how to handle non-profit properties
- ◆ Educate property owners prior to billing
- ◆ Prepare staff to answer property owner questions
- ◆ Have procedure in place for abatements
- ◆ Adjust fees annually

Storm Water Enterprise Fund Frequently Asked Questions

1. What is storm water?

Storm water is rain water that runs off impervious surfaces such as streets, driveways, parking lots, rooftops, or other tightly packed surfaces. Impervious surfaces reduce the ability of storm water to be absorbed or infiltrate into the ground.

2. Why did Town Meeting and the Board of Selectmen vote to establish a storm water enterprise fund (SWEF)?

The Town of Reading is required by the United States Environmental Protection Agency (EPA) to develop a storm water management plan that reduces the discharge of pollutants to our storm drain system and water ways. The Town is required to be in full compliance with the terms of the National Pollutant Discharge Elimination System (NPDES) Phase II permit by 2008 to meet federal and state mandates. The Town established a SWEF to provide a dedicated and adequate source of funding for our storm water management program.

3. Why is storm water management necessary?

Storm water often contains surface pollutants including petroleum products, soaps, detergent, lawn fertilizer which eventually empty into the Aberjona, Ipswich, and Saugus rivers. Effective storm water management also helps reduce flooding and the erosion of river banks.

4. How is the SWEF fee calculated?

Single and Two-Family properties will be billed at a flat rate. All other properties will be assessed an annual storm water fee based on the total amount of impervious surface area on the lot, which is billed quarterly. Condominium properties will be billed based on the total amount of impervious surface, at a maximum of the single and two-family rate, for each condominium unit. The fee will appear as a separate charge on your quarterly water and sewer bill. The fee will be calculated as follows for the following different types of property:

<u>Property Type</u>	<u>Storm Water Fee</u>
Undeveloped	No fee
Single & Two-Family Residences	Flat fee of \$9.96/ quarter or (\$39.84 annually)
Multi-Family, Commercial/ Industrial	Fee is based on Total Impervious Surface Area.

5. How is total impervious surface area determined?

Impervious surface areas were measured using the Town's mapping system (GIS). Building footprints, driveways, and parking areas, were delineated from aerial photos. The surface area of these features was calculated and will be assessed at a rate of \$39.84/ 2,552 sq. ft. (annually) for multi-family, commercial, and industrial properties.

6. For what purposes will SWEF fee revenue be used?

Storm water fee revenue will be used to hire two laborers that will perform stream and detention basin maintenance activities. The SWEF will allow the Department of Public Works to address a variety of stream and drainage maintenance issues that have not been completed due to staffing and budget limitations. Storm water fees will also fund capital expenditures for drainage system mapping, illicit discharge detection, and general drainage system infrastructure improvements.

FAQs

5. Will residents be assessed a SWEF fee if their property is located on a private way or on a town accepted street that does not have catch basins or storm drains?

Yes, although a property may be located on a private way or on a town accepted street that does not have catch basins or storm drains, the owner will be assessed a storm water fee since the property still produces runoff into the Town's storm water system.

6. Are there certain types of properties that are exempt from the storm water fee?

The Board of Selectmen approved a rate structure as recommended by the Water, Sewer, and Storm Water Management Advisory Committee that does not provide any exemptions for municipal properties, schools, or properties owned by religious or registered non-profit organizations. Undeveloped property (without impervious surfaces) is the only category of property that will not be assessed a storm water fee.

7. Has the Town made any provisions for storm water abatements?

Yes, to encourage property owners to minimize the amount of runoff from properties and to reduce the amount of pollutants entering Town waterways, the Town has instituted the following storm water abatement program:

Single & Two-Family Residences

Single and two-family residential properties that install and maintain infiltration systems or other means to reduce runoff will be eligible for an abatement of up to 50% of their total assessment.

Commercial/ Industrial/ Multi-Family

Commercial/ Industrial/ Multi-Family properties that install and maintain state-of-the-art storm water treatment and infiltration systems will be eligible for an abatement up to 50% of their total assessment.

8. What are some typical storm water devices that qualify for abatements?

- Drywells
- Infiltration Chambers
- Detention Ponds

9. What are some typical devices that do NOT qualify for abatements?

- Drinking water filtration systems
- Rain Barrels
- Sump Pumps

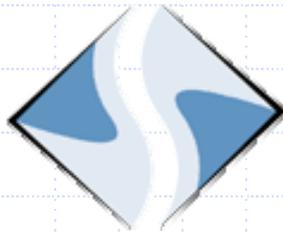
10. Where can I obtain more information or file for an abatement?

Property owners or condominium associations (on behalf of condominium owners) seeking additional information or would like to file for an abatement should contact the Department of Public Works, Engineering Division at (781) 942-9082. The Abatement Application Form may be obtained through the Town of Reading website at www.ci.reading.ma.us, or may be picked up at the Engineering Office at Reading Town Hall, 16 Lowell St.

11. Is the storm water abatement permanent?

The storm water abatement percentage will only change if the impervious surface area changes.

Other New England Municipalities



South Burlington
Stormwater Utility

<http://www.sburl.com/stormwater/>

- Used QuickBird Satellite data. Pilot study resulted in flat fee for residential, tiered fee for non-residential.

City of Newton, MA

<http://www.ci.newton.ma.us/dpw/engin/stormwater.htm/>

- Actual measurements of sample parcels. Two flat fees: one for residential parcels, one for non-residential parcels.

Charles River Watershed Association

<http://www.crwa.org/projects/stormwater/swutility.html>

- Case study of South Burlington, Newton, & Reading stormwater utilities

Resources

- ◆ Reading Storm Water Division

http://www.readingma.gov/Pages/ReadingMA_Water/storm/index

- ◆ Charles River Watershed Association

<http://www.crwa.org/projects/stormwater/utilities.html>

- ◆ New England Water Works Association

<http://www.newwa.org/>

Contact info

Joe Delaney, P.E.
Deputy Director
Division of Municipal Services
Commonwealth of MA
617-292-5808
Joseph.Delaney@state.ma.us

Kim Honetschlager, GISP
GIS Coordinator
Town of Reading, MA
781-942-6631
khonetschlager@ci.reading.ma.us

Ted McIntire
DPW Director
Town of Reading, MA
781-942-9077
tmcintire@ci.reading.ma.us

<http://www.readingma.gov>



Ipswich River, Reading, MA
<http://ma.water.usgs.gov/ipswich/IF2.htm>