



# Radnor Township Stormwater Program and Fee

December, 2013



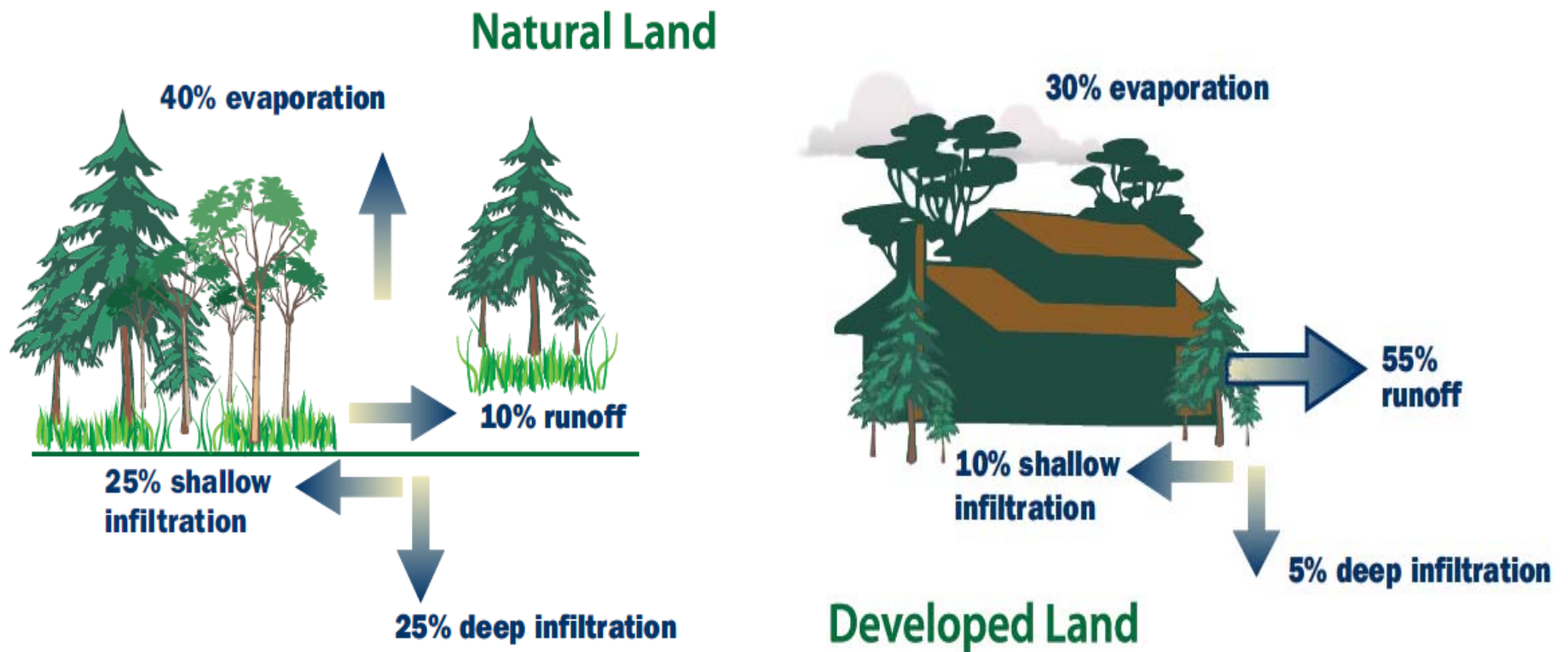


## Stormwater Program and Fee Background





# Impervious Area & Stormwater





## Stormwater Challenges

- Aging Infrastructure
- Maintenance Needs
- Flood Safety and Mitigation
- Regulatory Requirements
- Water Quality Protection



**Even without new challenges, the complexity and cost of stormwater management in Radnor will continue to increase.**



# Stormwater Challenges



## Flooding Related Challenges



# Stormwater Challenges



## Maintenance Related Challenges



# Stormwater Challenges



## Water Quality Related Challenges



## Stormwater in Radnor – Infrastructure Needs











- Water (Aqua PA) and wastewater (RHM) services are supported by dedicated fees – not stormwater
- The Township is responsible for operation and maintenance of:

N Wayne Field Basin	100 Miles of Streets
57+ Miles of Stormwater Pipe	1,500+ Inlets
Roadside swales	New Public SW Infrastructure

- Radnor must comply with Municipal Separate Storm Sewer System (MS4) Permit requirements
- Reduced staffing and limited funding has deferred maintenance
- Some infrastructure requires more frequent maintenance to maximize capacity
- Some infrastructure is rapidly deteriorating requiring emergency repair
- Majority of stormwater infrastructure is located underground in Radnor - Out of Sight/Out of Mind!

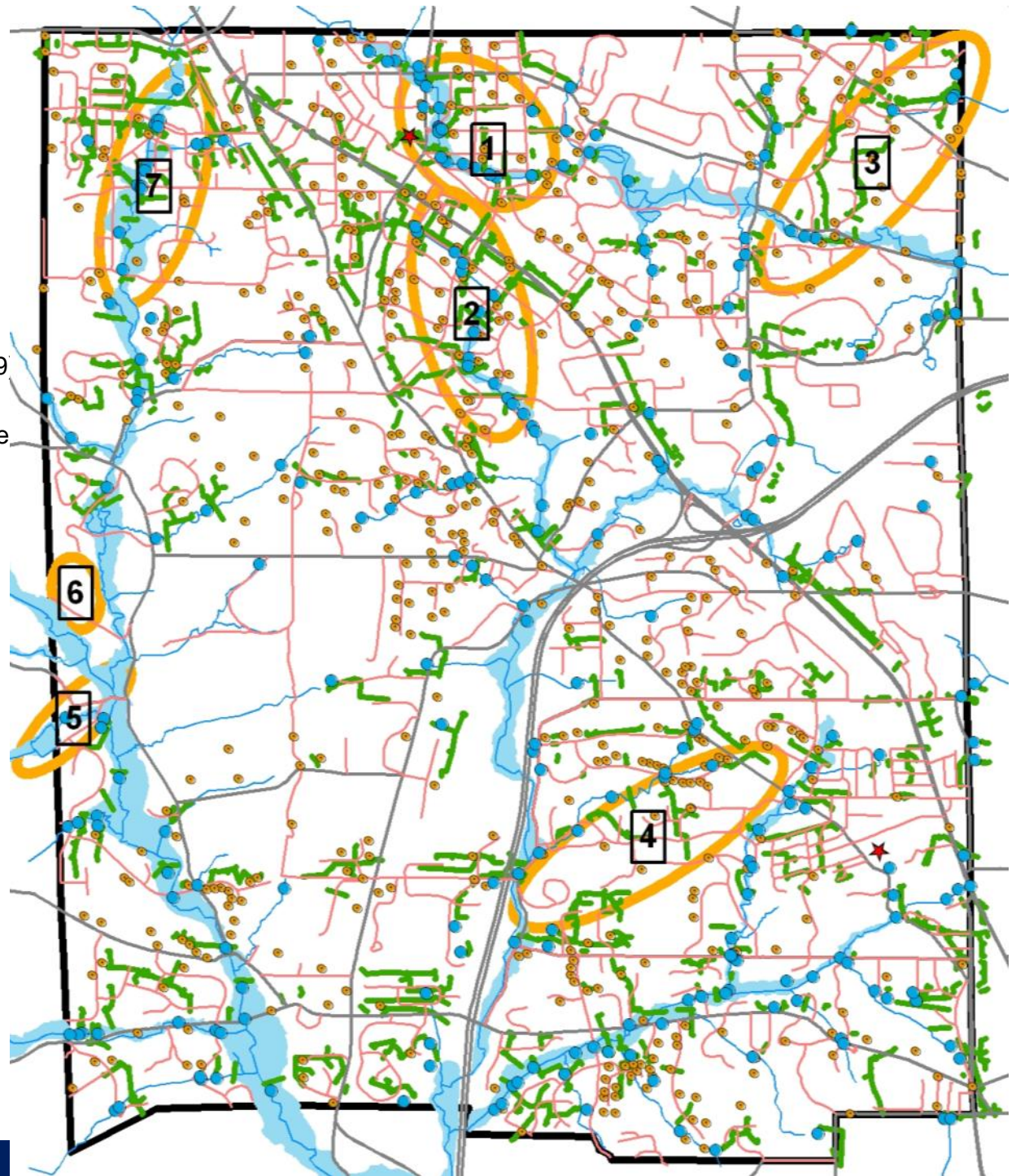


# TOWNSHIP WIDE STORMWATER NEEDS

-  Public Stormwater BMPs
-  Outfalls
-  Private Stormwater BMPs (1997 - 2009)
-  Public Storm Sewer
-  Street Sweeping / Leaf Collection Route
-  Focus Areas
-  Streams
-  Floodplain
-  State Roads
-  Township Boundary

## FOCUS AREAS

- 1 - Flood Mitigation
- 2 - Infrastructure Replacement & Flood Mitigation
- 3 - BMP Installation and Infrastructure Stabilization
- 4 - Culvert Replacement
- 5 - Dam Assessment and Infrastructure Replacement
- 6 - Skunk Hollow Facility
- 7 - BMP Installation and Infrastructure Replacement





## How was the Stormwater Program Developed?

Stakeholder Advisory Committee and Township staff developed a 20-year plan to start addressing the concerns and identified an alternative funding method.

### Goals:

- Reduce the threat to public safety and local property from stormwater runoff.
- Establish a dedicated and sustainable funding mechanism.
- Comply with regulatory requirements and protect local water resources.
- Provide public education and awareness.
- Offer an incentive program to property owners to encourage private activities.

**To achieve the stated goals, a new program fee was the preferred method of funding.**

**All developed parcels contribute to stormwater runoff – so all should share in paying for stormwater related costs.**



## Frequently Used Terms

**Impervious Surface:** a surface that prevents or impedes the infiltration of water into the ground. Impervious surfaces include, but are not limited to, streets, sidewalks, pavements, driveway areas and roofs. Any surface areas designed to be gravel or crushed stone shall be regarded as impervious surfaces.

### **Impervious Surface Examples:**

- Roofs / Buildings
- Parking Lots
- Roads/Driveways
- Sidewalks/Paved Walking Paths
- Crushed Gravel
- Compacted Dirt
- Patios
- Roads/Driveways

### **Non-Impervious Surface Examples:**

- Lawn
- Grass
- Meadow
- Woods/Forest



## Frequently Used Terms

**Best Management Practice (BMP):** methods, procedures and analyses specified in the Pennsylvania Stormwater Best Management Practices Manual to reduce flooding potential and control the volume, flow rate and water quality of Stormwater.



**Stormwater Management Costs:** The associated public costs of equipment and facilities, energy, manpower, materials, property acquisition, transportation and services required to (i) avoid reduce, manage, treat, collect, convey, detain, infiltrate, pump and transport Stormwater; (ii) provide flood protection; (iii) keep equipment and facilities including best management practices functioning satisfactorily and economically; (iv) administer the Stormwater management program, including regulatory compliance, and (v) to improve Radnor's Stormwater Management System.



## Frequently Used Terms

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### **Single Family Residential (SFR) Property:**

Single family detached homes, attached homes, townhouses, duplexes and row homes.

### **Other Developed Property (ODP):**

All developed properties other than single family residential properties, including, but not limited to multi-family properties such as apartment or condominium complexes and common areas associated with such uses, and commercial, institutional, governmental and industrial parcels.



## Frequently Used Terms

**Billing Unit:** The unit of measure by which properties are assessed a stormwater fee.

- For **SFR properties**, the SAC determined a flat rate for SFR properties that did not reflect the diversity of Radnor. Instead, the number of Billing Units associated with a property is assigned into 1 of 4 tiers based on lot size.
- For **ODPs**, the number of billing units associated with a property is a function of the impervious surface that exists within the parcel boundary. The Billing Units for ODP properties was based upon the median amount of impervious surface (1 Billing unit/1,500 SF of impervious area) associated with the first SFR tier.



## Radnor's Existing Service, Expanded Services

### Existing Services to Remain in General Fund

- Minor system clearing
- Street sweeping
- Leaf collection and composting
- Vehicle maintenance
- Pre-storm activities

Existing 2013  
Program Budget:  
\$1.1M



## Radnor's Expanded Stormwater Program

- Dedicated funding source.
  
- Public stormwater services to be funded:
  - Stormwater Capital Projects
  - Proactive infrastructure maintenance
  - Watershed studies to identify the most impactful projects
  - Asset management & mapping
  - Aerial imagery
  - Fee support & billing
  - Increased inspections of structural BMPs
  - Public education

Enhanced  
Program Budget:  
\$1M

Total  
Program Budget:  
\$2.1M





## Radnor's Expanded Stormwater Program

- 84% of ENHANCED revenue dedicated to Capital Improvements and Operations & Maintenance
- Emergency Preparedness and Response not budgeted – handled via operating reserve

COST CENTER	CURRENT	ENHANCED	TOTAL PROGRAM
	2013 SNAPSHOT	AVERAGE YEAR	AVERAGE ANNUAL
CAPITAL IMPROVEMENTS	\$0	<b>\$526,000</b>	\$526,000
OPERATIONS & MAINTENANCE	\$930,711	<b>\$254,000</b>	\$1,184,711
ENGINEERING, ENFORCEMENT & REGULATORY COMPLIANCE	\$134,807	<b>\$33,600</b>	\$168,407
EMERGENCY PREPAREDNESS AND RESPONSE	\$0	<b>\$0</b>	\$0
PROGRAM MANAGEMENT	\$45,519	<b>\$117,200</b>	\$162,719
<b>TOTAL ANNUAL COST</b>	<b>\$1,111,037</b>	<b>\$930,800</b>	<b>\$2,041,837</b>



## Benefits of a Stormwater Fee

- More equitable than increase to property taxes
- Distributes costs evenly
- Allows for long-range planning (20-year horizon) to bring down \$10M backlog
- Enables proactive strategies
- Provides incentive to minimize stormwater runoff
- Supports property owners that want to invest in Green Infrastructure



## Basis for Rate Determination

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- The \$29 rate was based on cost estimates for Township's expanded stormwater program:
  - Capital improvements,
  - Expanded operations and maintenance activities, and
  - Upgrades to the storm sewer system.



# How are Bills Calculated?

## Overview of a 3-Step Process

### 1. Classify Property.

SFR (6,000 properties)

ODP (1,000 properties)

### 2. Assign Billing Units.

SFR – Tiering structure based on lot size

ODP – Measured impervious surface

### 3. Calculate Annual Fee.

Multiply Billing Units by the rate of \$29





## Step 1 Classify Properties

Classified each of Radnor's 7,000+ parcels into 1 of 2 categories, using:

- County tax data,
- Aerial imagery, and
- Visual classification.

**Single Family Residential (SFR) Property:**



**Other Developed Property (ODP):**



## Step 2 Assign Billing Units

- All developed SFR parcels assigned to one of the following Tiers based upon lot size:

Tier (Lot Square Footage)	Billing Units
0 to 7,000	1
7,000 to 20,000	2
20,000 to 43,560	3
>43,560	4

- All ODPs be billed for stormwater at a rate of one billing unit per 1,500 SF of impervious area.



## Step 2 Assign Billing Units (SFR Property)

- Delaware County Board of Assessments and Appeals maintains record of lot sizes
- Each Tier was designated a defined number of Billing Units based upon an analysis of impervious surfaces for lots of that size.

<b>Tier (Lot Square Footage)</b>	<b>Billing Units</b>	<b>Acreage</b>	<b>Annual Fee</b>
0 to 7,000	1	0 to 0.16	\$29
7,000 to 20,000	2	0.16 to 0.46	\$58
20,000 to 43,560	3	0.46 to 1 acre	\$87
>43,560	4	> 1 acre	\$116



# SFR Example



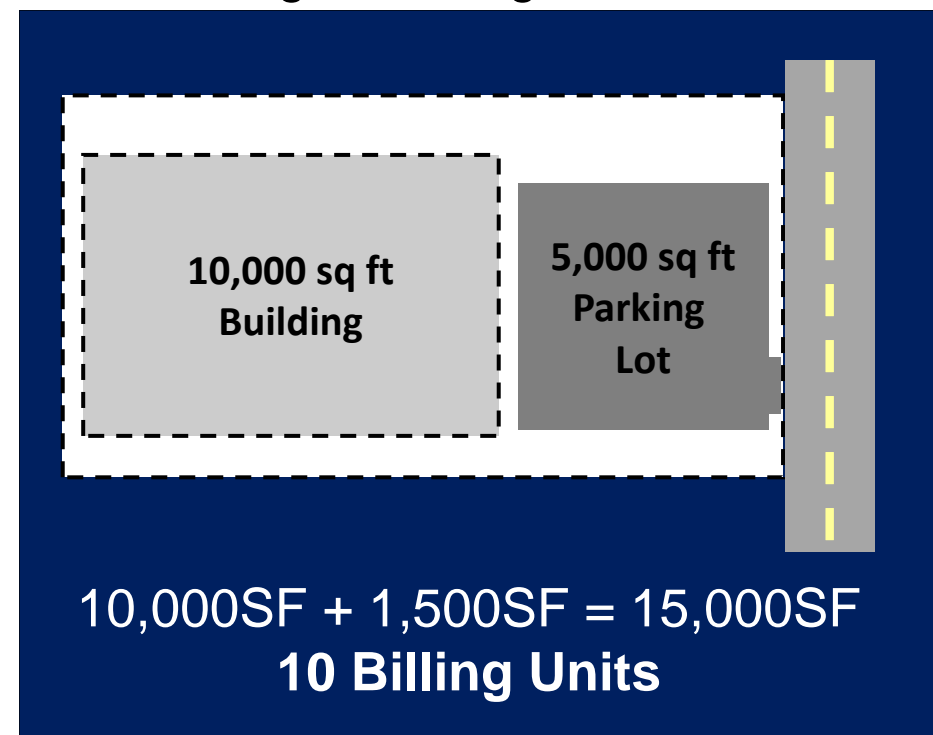
Lot Area:	28,125 SF
SFR Tier:	3
Billing Units:	3





## Step 2 Assign Billing Units (ODP)

- ODPs were assigned Billing Units based on measured impervious surface.
- One billing = 1,500 SF of impervious surface.
- Billing Units were rounded up to the next highest integer.
- Impervious surface on every ODP has been measured.
- All ODPs are billed a minimum of one Billing Unit.





# ODP Example



Impervious Surface: 65,088 SF  
Billing Units: 44



## Step 3 Calculate Annual Fee

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Billing Units x \$29 = Annual Fee

$$\boxed{\$29} \times \boxed{\text{Total Billing Units}} = \boxed{\text{Adequate funding for defined program expansion for defined program expansion}}$$



## Outreach

### **Parcel owners in Radnor have been and will continue to be notified about the new Stormwater Program and Fee:**

- Stakeholder Advisory Committee Meetings – November 2012 through April 2013
- Public Presentations at BOC Meetings in December 2012 and June, July, August, September, and October 2013
- League of Women Voters Public Outreach Forums in August and September 2013
- Township Newsletter Articles in Fall 2012, Winter 2012, Fall 2013
- Township-wide Information Mailers in August and November 2013
- Delco Times coverage in August 2013
- Main Line Times article in September 2013
- Initial Stormwater Bill Insert
- Stormwater Management web-page: [www.radnor.org](http://www.radnor.org)
- Township's YouTube Channel

20 ways to find out  
about Stormwater  
Program expansion  
since Fall 2012