Stormwater Program Permit History, User Fee Development, Credit Policy & Utility Ordinance

City of Murfreesboro
May 31, 2007

Items of Discussion - #1

1. **Stormwater Program Permit History**
2. Stormwater Mngmnt. Requirements & Goals
3. Recommending an Equitable, Reliable & Sustainable Funding Mechanism via a Stormwater Utility
4. Establishing Imperviousness as Basis of Measurement for Stormwater Utility
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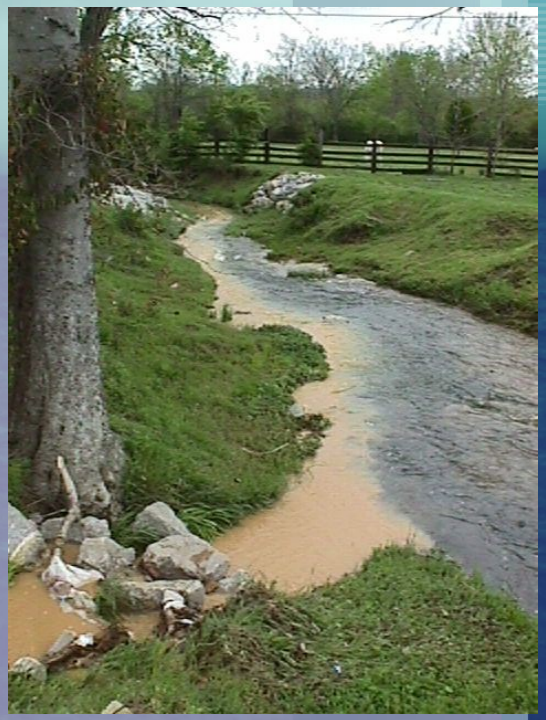
What is storm water?

Runoff from natural precipitation, such as rain events and snow melt and other surface runoff and drainage.

Why is Storm Water a Problem?

- Developed and disturbed land contributes to problems
  - Quality (e.g., pollutants such as sediment, nutrients)
  - Quantity (e.g., excess flows)
- Other pollutants enter storm sewer systems and pollute storm water
  - Illicit discharges
  - Illicit connections



The Clean Water Act

Rivers and Harbors Act (1899)
Water Pollution Control Act (1948)
Fed. Wtr.Poll. Control Act (1956)
Water Quality Act (1965)

Federal Water Pollution Control or "Clean Water" Act (1972)

CWA Amendments (1977)
Water Quality Act (1987)
Coastal Zone Amendments (1990)

Phase I Rule (1990)
Phase II Rule (1999)
M'boro Permit 2003
(5-yr term)

United States Code, Title 33

Sec. 1251. Congressional declaration of goals and policy

- (a) Restoration and maintenance of chemical, physical and biological integrity of Nation's waters; national goals for achievement of objective

The objective of this chapter is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. In order to achieve this objective it is hereby declared that, consistent with the provisions of this chapter -

- (1) it is the national goal that the discharge of pollutants into the navigable waters be eliminated by 1985;
- (2) it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983;
- (3) it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited;
- (4) it is the national policy that Federal financial assistance be provided to construct publicly owned waste treatment works;
- (5) it is the national policy that areawide waste treatment management planning processes be developed and implemented to assure adequate control of sources of pollutants in each State;
- (6) it is the national policy that a major research and demonstration effort be made to develop technology necessary to eliminate the discharge of pollutants into the navigable waters, waters of the contiguous zone, and the oceans; and
- (7) it is the national policy that programs for the control of nonpoint sources of pollution be developed and implemented in an expeditious manner so as to enable the goals of this chapter to be met through the control of both point and nonpoint sources of pollution.

PHASE 2 RULE – Regulated Small MS4

General Permit Requirements

- **Required to develop, implement and enforce a program to:**
  - Reduce the discharge of pollutants to the maximum extent practicable (MEP),
  - Protect water quality, and
  - Satisfy the appropriate water quality requirements of the Clean Water Act
- **Program must include:**
  - Six minimum control measures
  - Evaluation/assessment efforts & recordkeeping

Items of Discussion - #2

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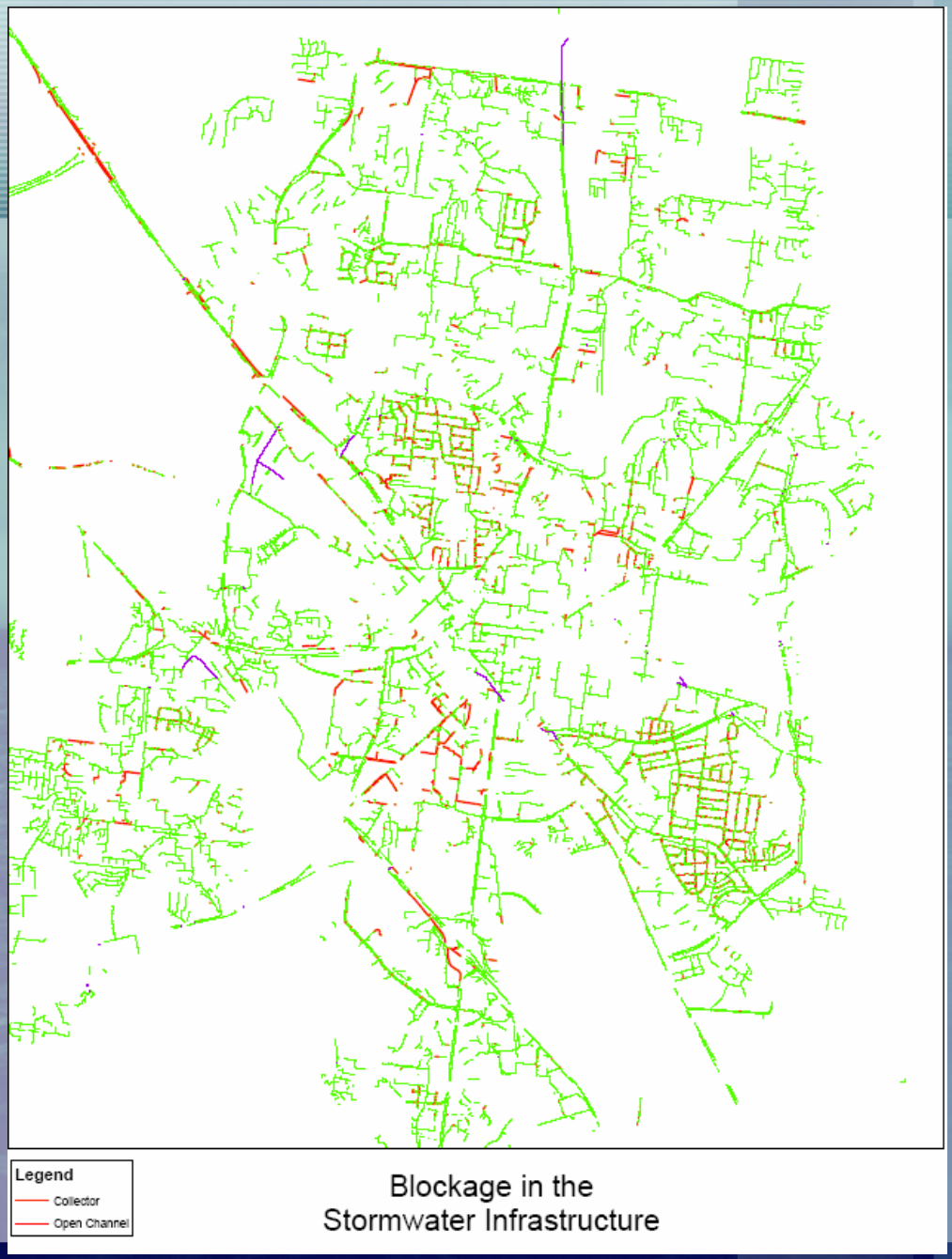
Six Minimum Control Measures

1. Public Education and Outreach
2. Public Involvement/Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Runoff Control
5. Post-Construction Storm Water Management in New and Redevelopment
6. Pollution Prevention/Good Housekeeping for Municipal Operations

Goal: Cleaning 13 Miles of Clogged Storm Drainage System



By Routine Jet-Vac Truck Cleaning

Debris Catchments at Major Outfalls in Streams

Stream Restoration Projects

Requirements & Goals

Repair Components of Ex. Drainage System

Upcoming Monitoring Req'mnts

Figure 6: Monitoring Types and Pollutants or Conditions That They Measure

Biological

Assesses:
- Structure and function of aquatic communities
- Habitat, such as condition of riparian vegetation
- Health and abundance of aquatic species or fish populations

Physical

Measures:
- Temperature
- Conductivity
- Transparency
- Total suspended solids

Chemical

Tests for levels of:
- Pesticides
- Organics
- Metals (cadmium, arsenic, etc.)
- Nutrients (phosphorous, nitrogen)
- Toxic materials in fish tissue

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Stormwater Runoff Management as a *Service*

- Environmental Enhancement - Preventing Degradation and Pollution of Public Waters
- Flood damage Reduction / Drainage
- Protection of Transportation Systems
- Protecting Water Supply
- Providing Regulatory Compliance
- Providing Long-term System Maintenance

Establishing a Funding Mechanism

Creation of a ***Stormwater Utility***

- Determined as most equitable and dependable funding mechanism; a dedicated revenue stream.
- Opportunity to incorporate credit incentives.
- Allowable per TCA §68-221-1107.

User Fees vs. Taxes

- User Fees are paid for a **service** benefiting the paying party
- User Fees are **voluntary**. The paying party has the option of not utilizing the service but they must demonstrate that they are not contributing to degradation (quantity/quality) and/or pollution of public waters
- The amount of the User Fee is designed to **recover the actual cost** of the service.

Legal Considerations & Relevant Attorney General Opinions

- Vandergriff v. City of Chattanooga
- Clean Water Act § 313 (a)
- State of TN Attorney General Opinion 06-177
- State of TN Attorney General Opinion 93-057
- State of TN Attorney General Opinion 94-039

Consider assessing fee to…

- City property – City is billing entity
- Churches – AG's opinion
- Tax-exempt properties – AG's opinion
- State – MTSU and other
- Federal
- Local (County)
- ROW – part of storm drainage system

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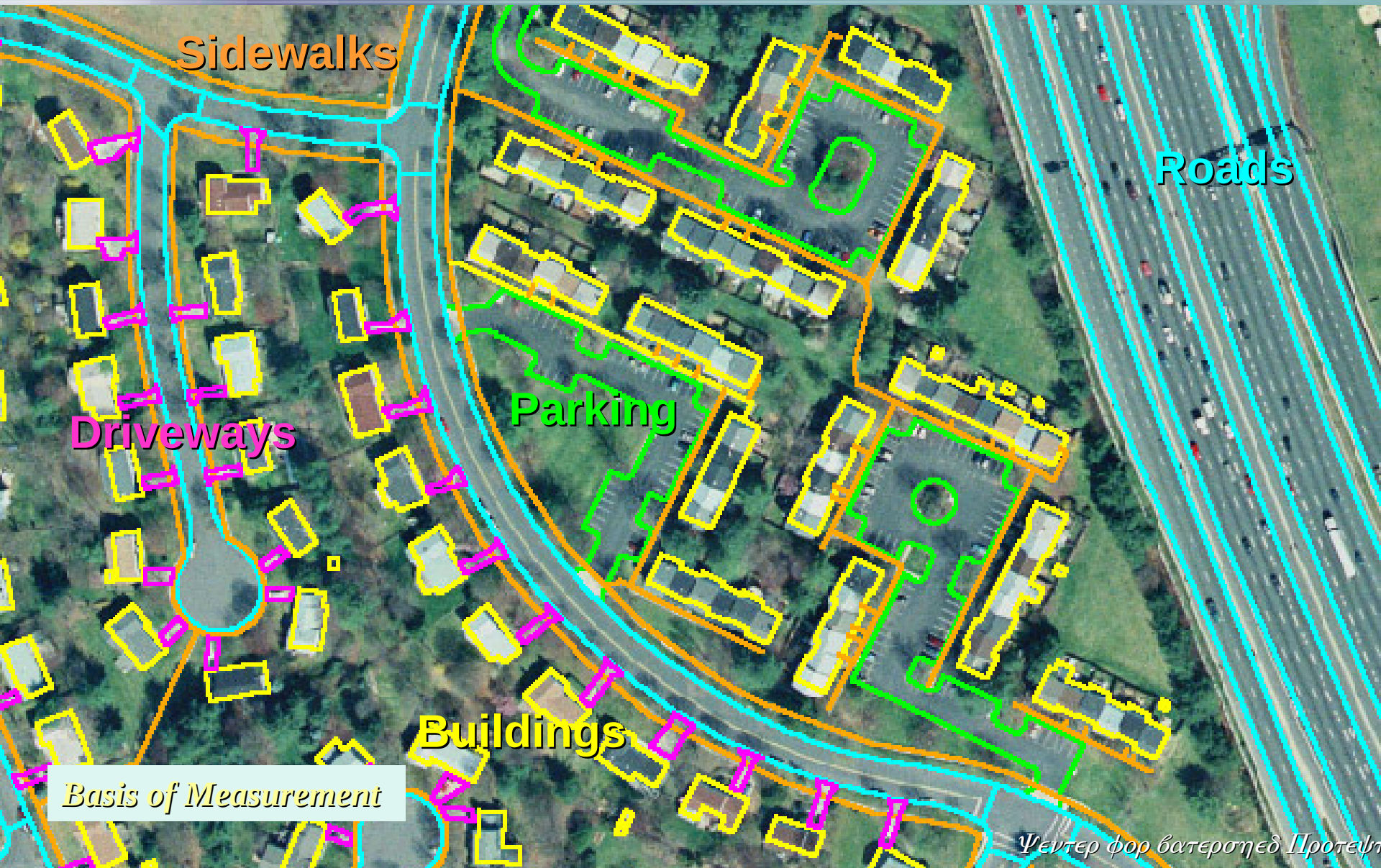
What is Impervious Surface?

- **Impervious Surface** is any surface that does not allow substantial infiltration of water into the soil.

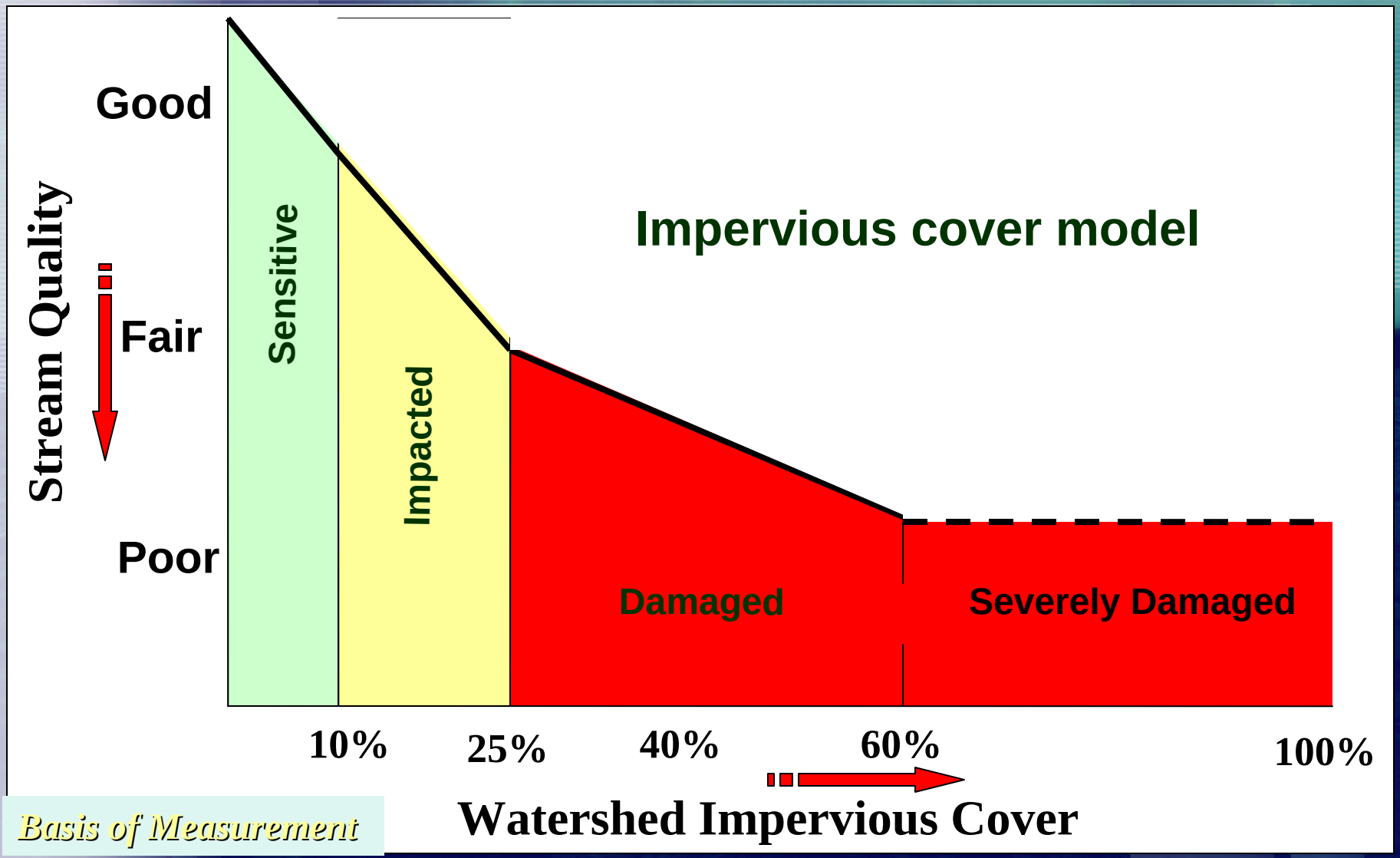
Forms of Impervious Surface



What's the Big Deal about Imperviousness?

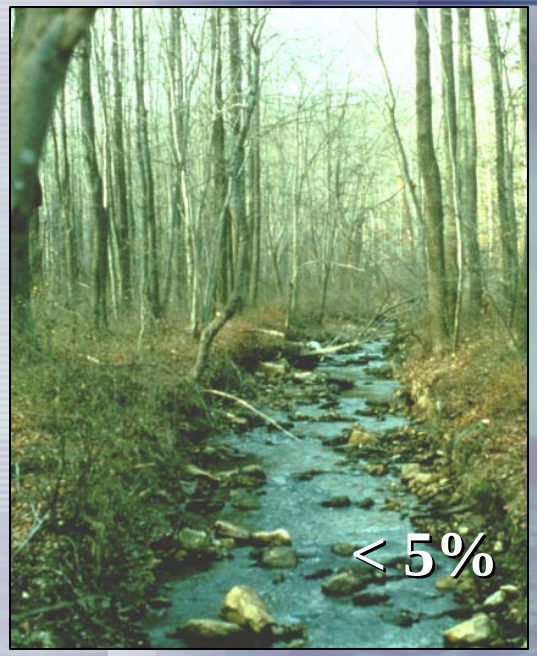
- The more impervious surface on a property, the less infiltration of stormwater on that property.
- The more impervious surface on a property, the greater the quantity of surface water runoff, and the quicker the surface water runs off of that property.
- The more impervious surface on a property, the more pollutant loading generated by that property.

Impervious Cover & Stream Quality



Basis of Measurement

Review – Impervious Cover & Stream Quality



Impervious Cover

Basis of Measurement

Center for Watershed Protection

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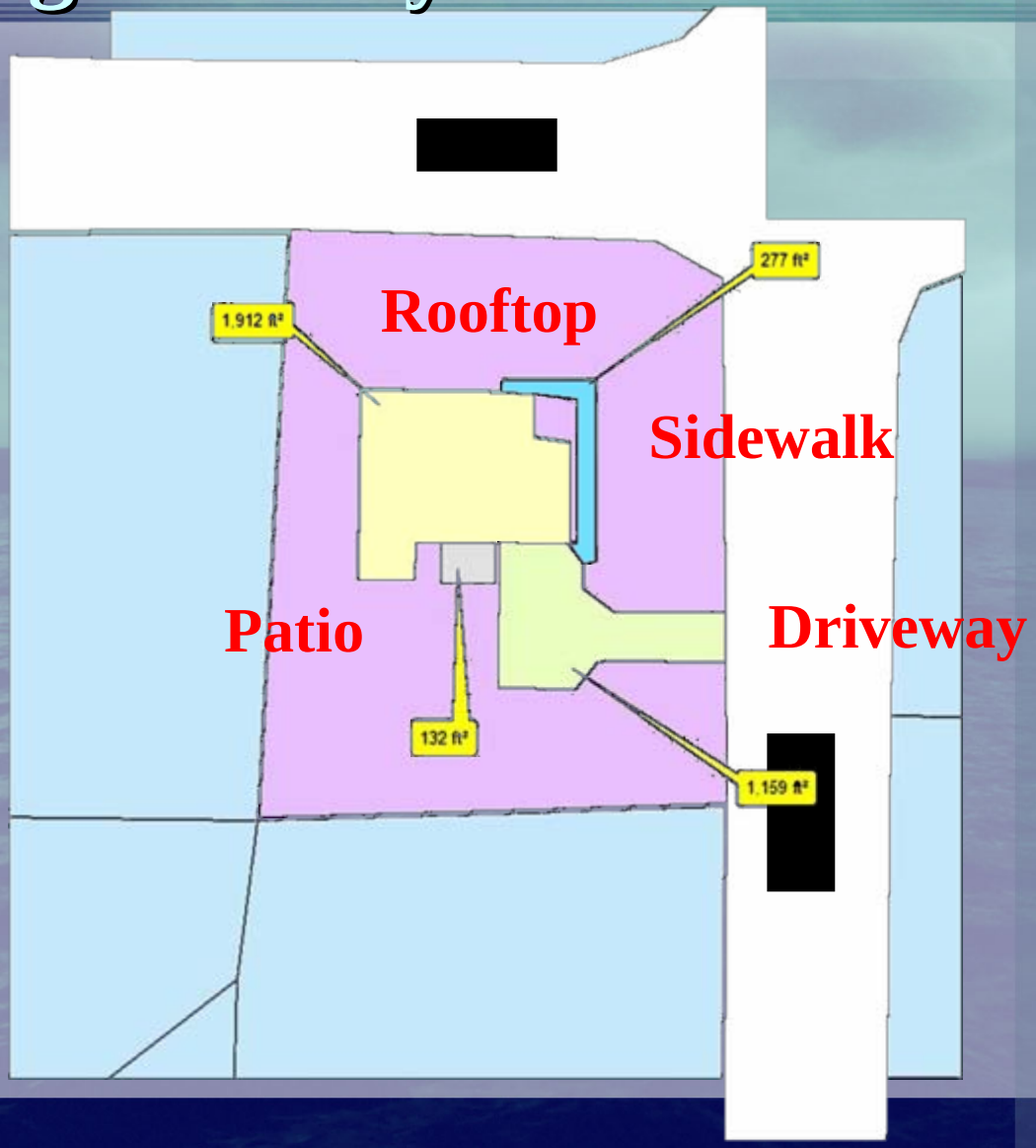
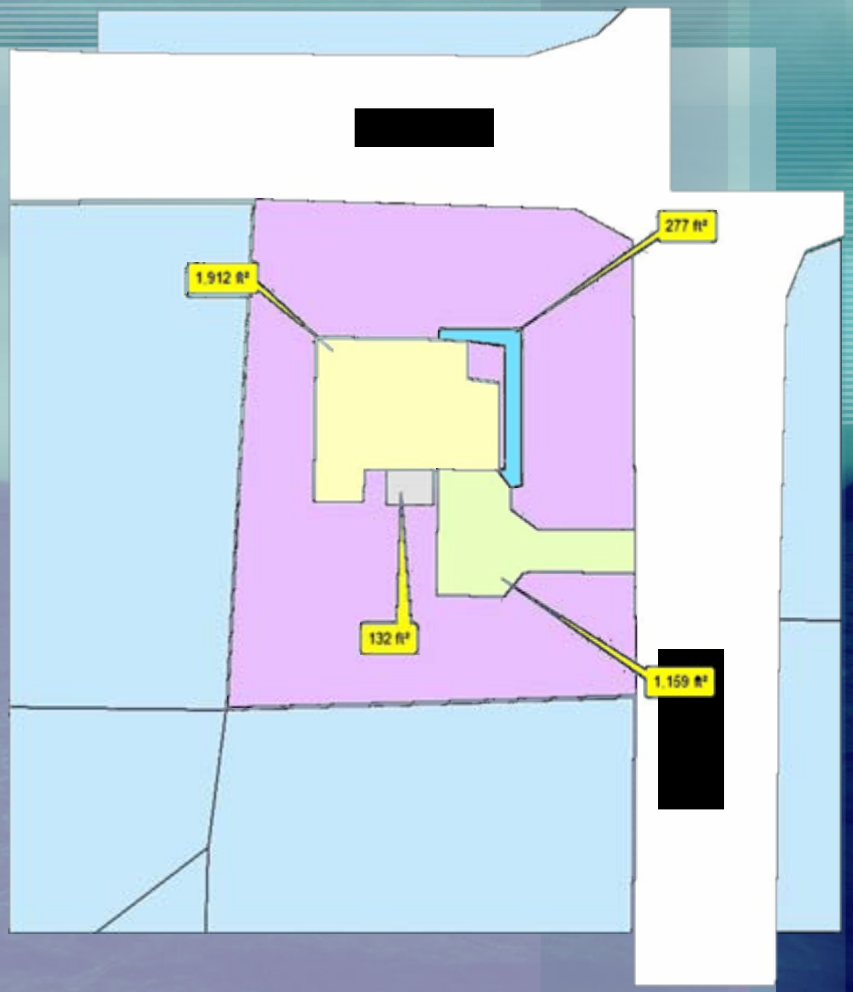
What Impervious Surfaces were Looked at on Single Family Residential Lots?



Establishing SFU

>20,000 Residential Lots Sampled

- Median SFU in M'boro = **3,470 SF** of Imperviousness



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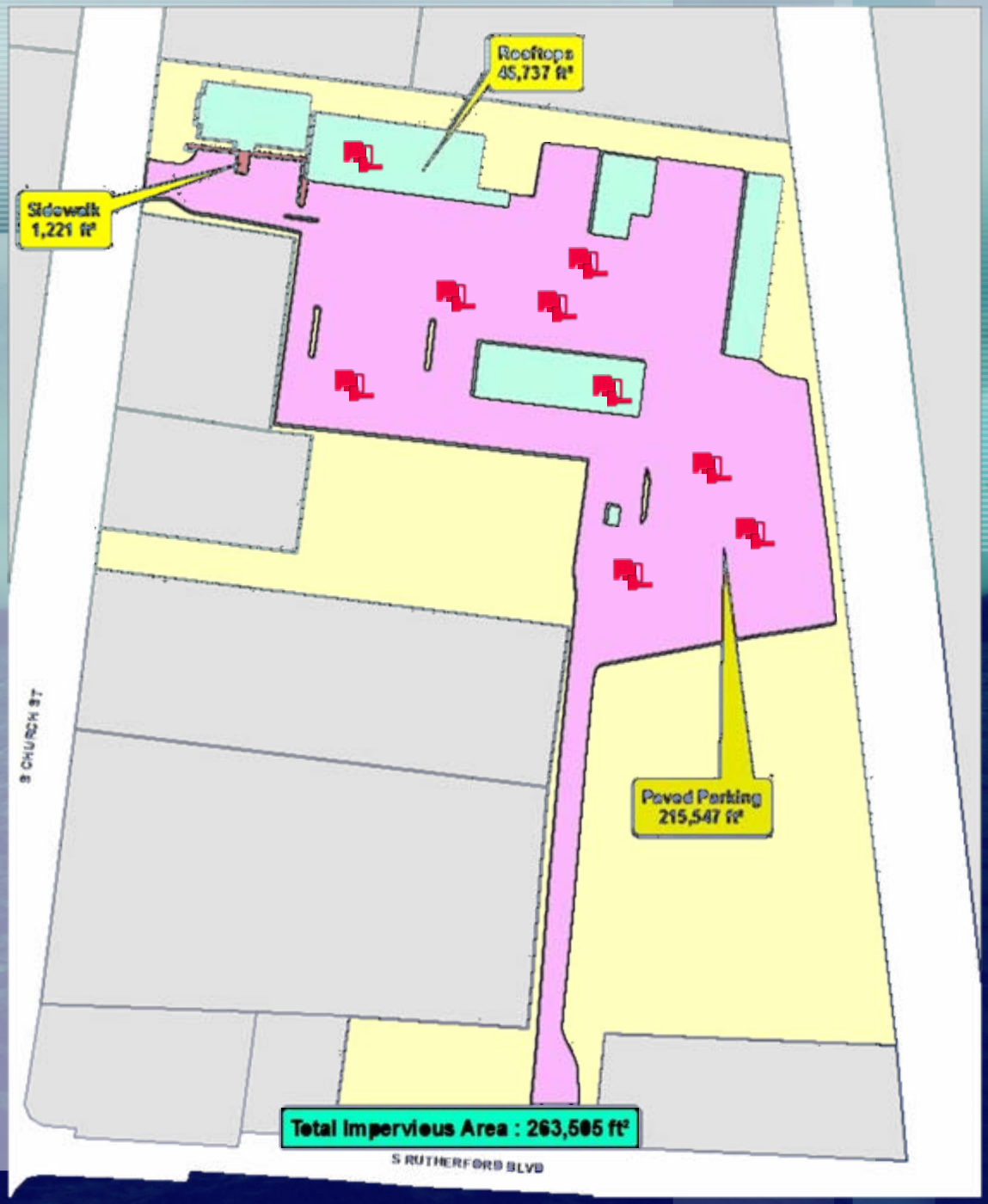
Non-Single Family Tracts

263,505 sf Imperviousness

263,505 s.f. /
3,470 s.f. per SFU
= **76 SFU's**



Calculating M'boro Customer Base

S/W Customer Base

		Single Family Units (SFU's) Equivalents		Parcels
SINGLE FAMILY RESIDENTIAL				
Single Family Units (SFU's)		**23,174**	**on**	**23,174**

		Single Family Units (SFU's) Equivalents		Parcels
NON-SINGLE FAMILY RESIDENTIAL & NON-RESIDENTIAL				
Single Family Unit Equivalents (SFU Eq.'s)		**38,938**	**on**	**5,764**
MTSU SFU's on # Parcels	1,989 on 12			
City of Murfreesboro SFU's on # Parcels	2,736 on 140			
Rutherford County SFU's on # Parcels	1,799 on 51			
Property Tax-Exempt SFU's on # Parcels	4,719 on 147			
TOTAL SFU's (Residential & Non-Residential)		**62,112**	**on**	**28,938**

Calculating M'boro Customer Base

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Proposed Stormwater Program *Annual Budget*

- **$269,769** for personnel and benefits
- **$1,539,303** for capital imp. & debt service
- **$262,850** for new equipment
- **$229,300** for outside services & BMP training
- **$121,118** for contingency & credits
- ***$2,422,368 TOTAL***

Municipality	City of LaVergne, TN	City of Franklin, TN	City of Maryville, TN	City of Murfreesboro, TN
Residential Single Family Units (SFU)	8,716	14,736	8,986	23,174
Non-residential SFU Equivalents	14,058	24,826	16,546	38,938
Total SFU's	22,774	39,562	25,532	62,112
SFU Imperviousness	3,181	3,350	2,400	*3,470*
Fee ($ per mo. / SFU)	$3.50	$3.65	$3.97	**$3.25**
Residential Tier Structure	None	0.75 for < 3,350 s.f. 1.20 for > 3,350 s.f.	None	**NONE**
Exemptions	Ag. & R.O.W.	Ag. & R.O.W.	Ag. & R.O.W.	**Ag. & R.O.W.**
Credit Opportunities - Residential	☒	☒	0.60 <1800 s.f.	☒
Credit Opportunities - Non-residential	☑	☑	☑	☑

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Credits Policy = Control the Rainfall Volumes

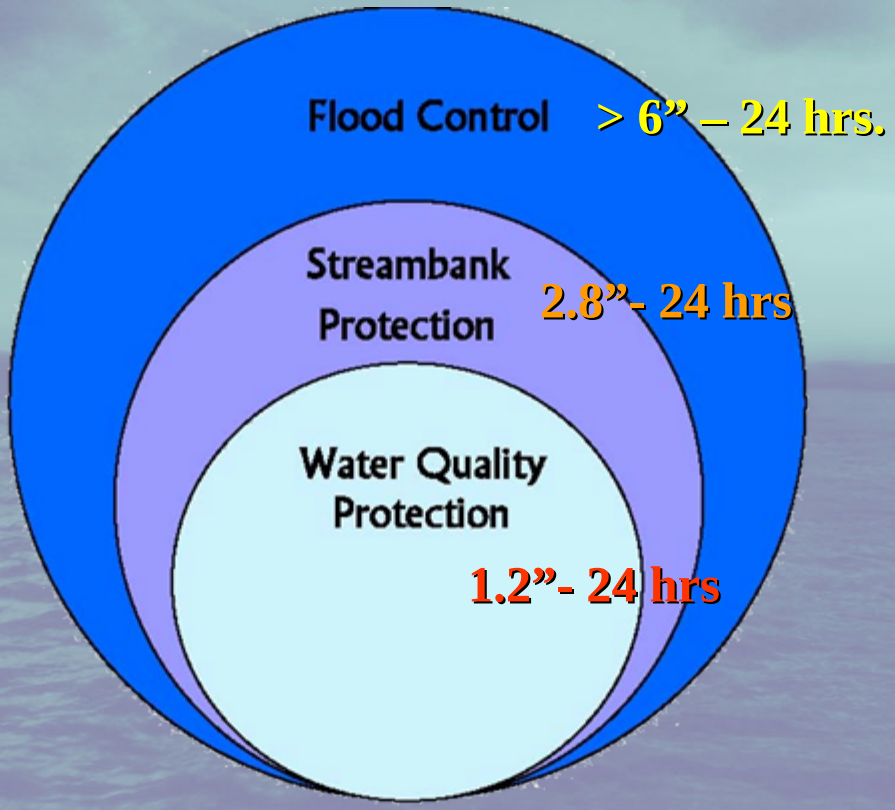


Figure 1.2-1 Representation of the *integrated* Design Approach

Water Quality Volume (WQv)

1.2” of rainfall in 24 hour period (constitutes 85% of events)

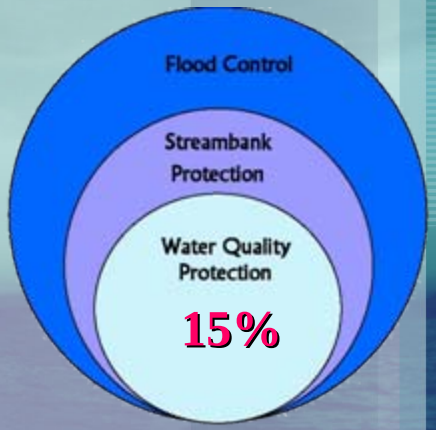


Figure 1.2-1 Representation of the *integrated* Design Approach

Must remove 80% TSS within the entire WQv to receive credit

Credits Policy

Streambank Protection Volume (SPv) or "Overbank" Volume

1-yr rainfall event
over a 24 hour period or
2.8 inches in 24 hours

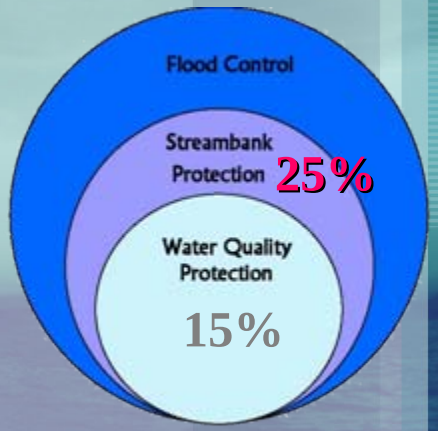


Figure 1.2-1 Representation of the *integrated* Design Approach

Must have **Extended Detention** and Release the SPv over 24 hours to receive credit

Credits Policy

Flood Control Volume ($V_{25,50,100}$)

The 25-yr, 50-yr, or 100-yr storm event

A comprehensive plan that involves extensive downstream assessment and on-site controls

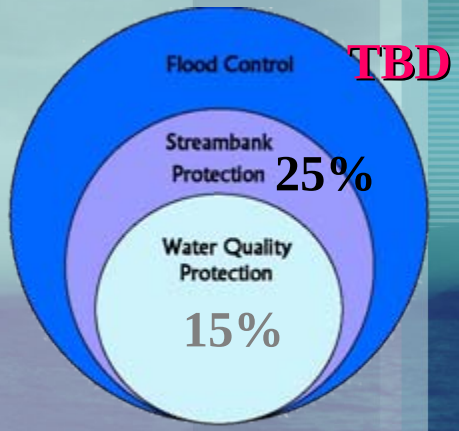


Figure 1.2-1 Representation of the *integrated* Design Approach

Credits Policy

Stormwater Education Credits – 15% Credit

Accredited schools teaching an approved stormwater curriculum.

Annual certification to the extent and proportion of students presented the curriculum.

Existing NPDES Stormwater Permitted Facilities – 10% Credit

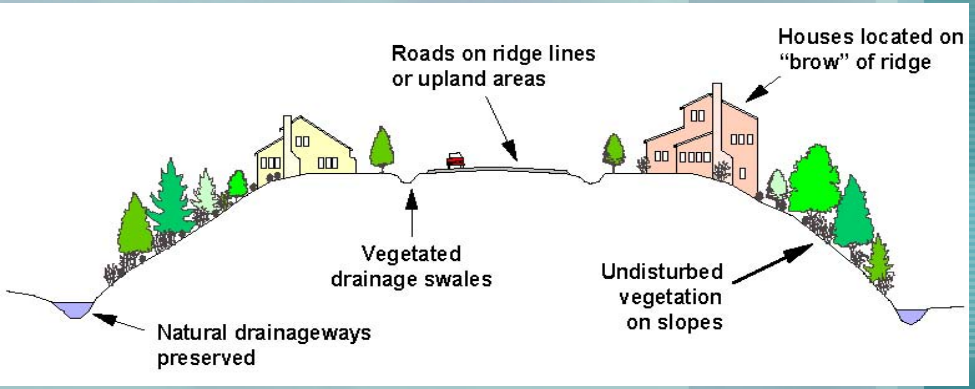
Applied to TDEC permitted sites having stormwater discharges associated with and industrial activity.

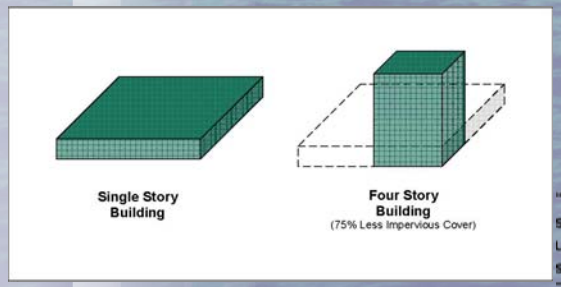
How can Development Achieve Credits?

- **Storm Water Planning, General Design and Credit Guide (under development)**

Low Impact Design Site Practices

Figure 1.3.2-3 Riparian Stream Buffer





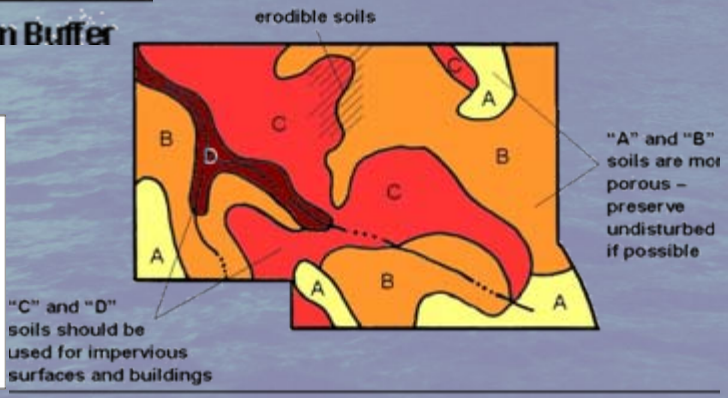


Figure 1.3.2-7 Soil Mapping Information
Can Be Used to Guide Development

Credits Policy

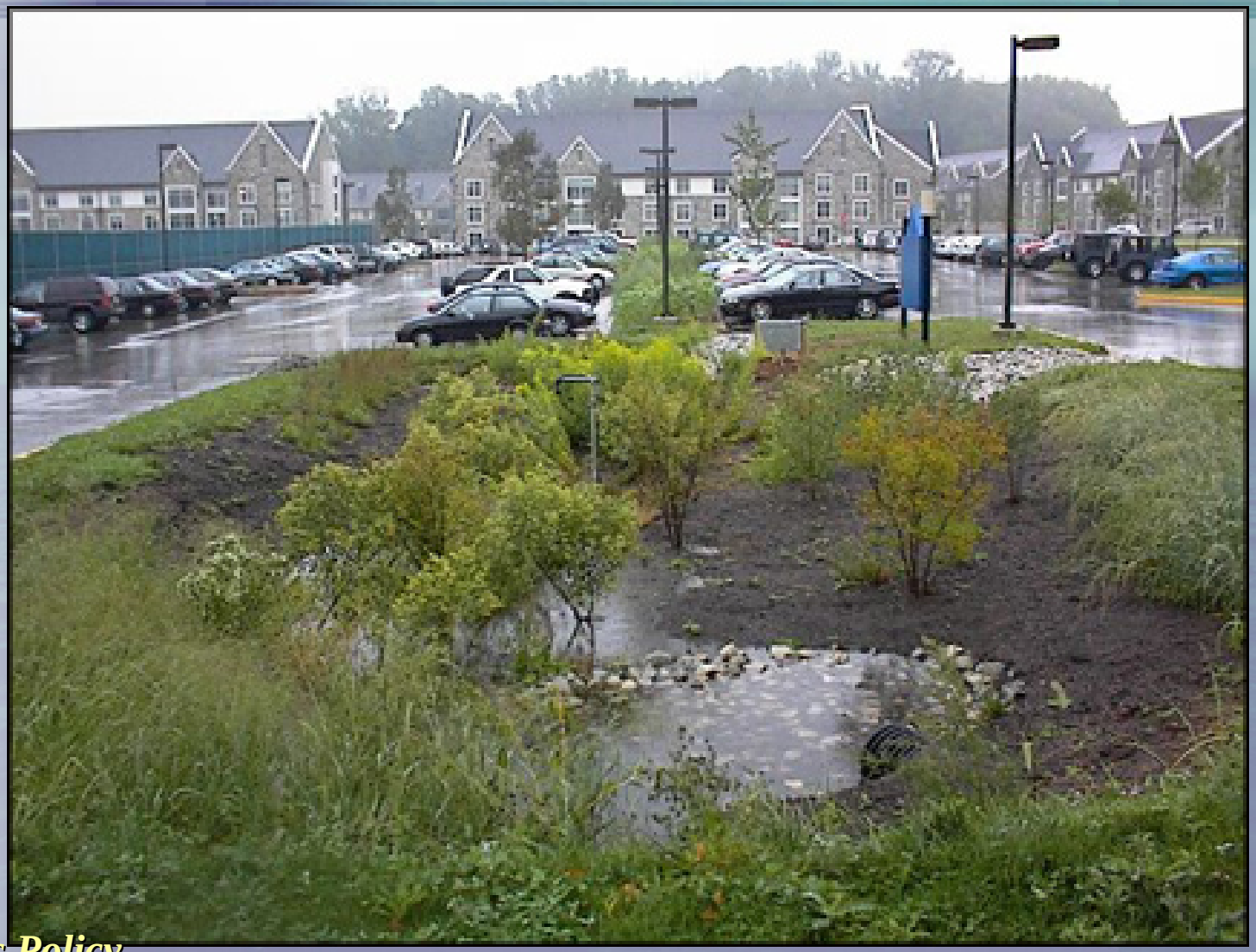
How can Development Achieve Credits?

- Storm Water Planning, General Design and Credit Guide (under development)
- **Storm Water Controls Manual (under development)**

Bioretention in parking median

Credits Policy

Rain gardens



Credits Policy

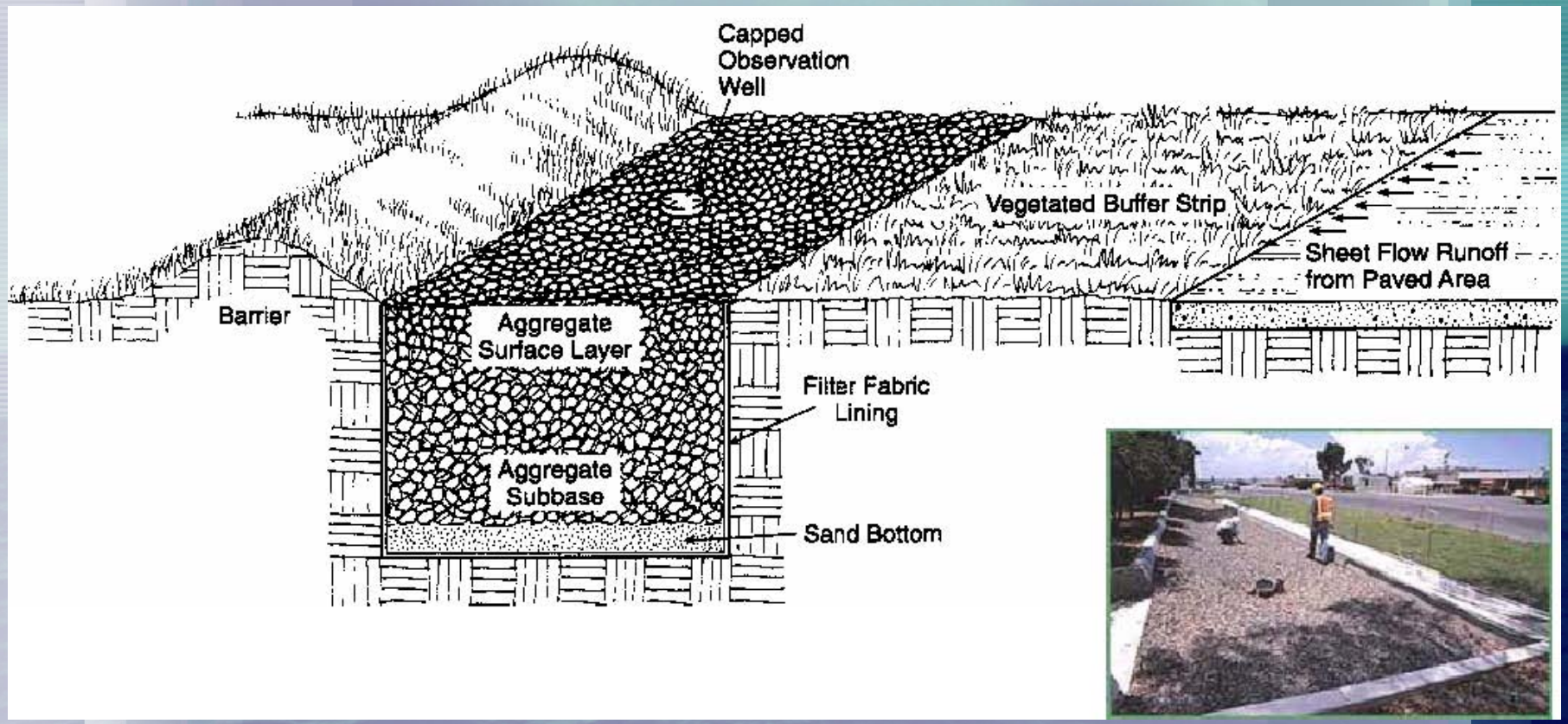
Pervious Parking Surface

Credits Policy

Porous Concrete

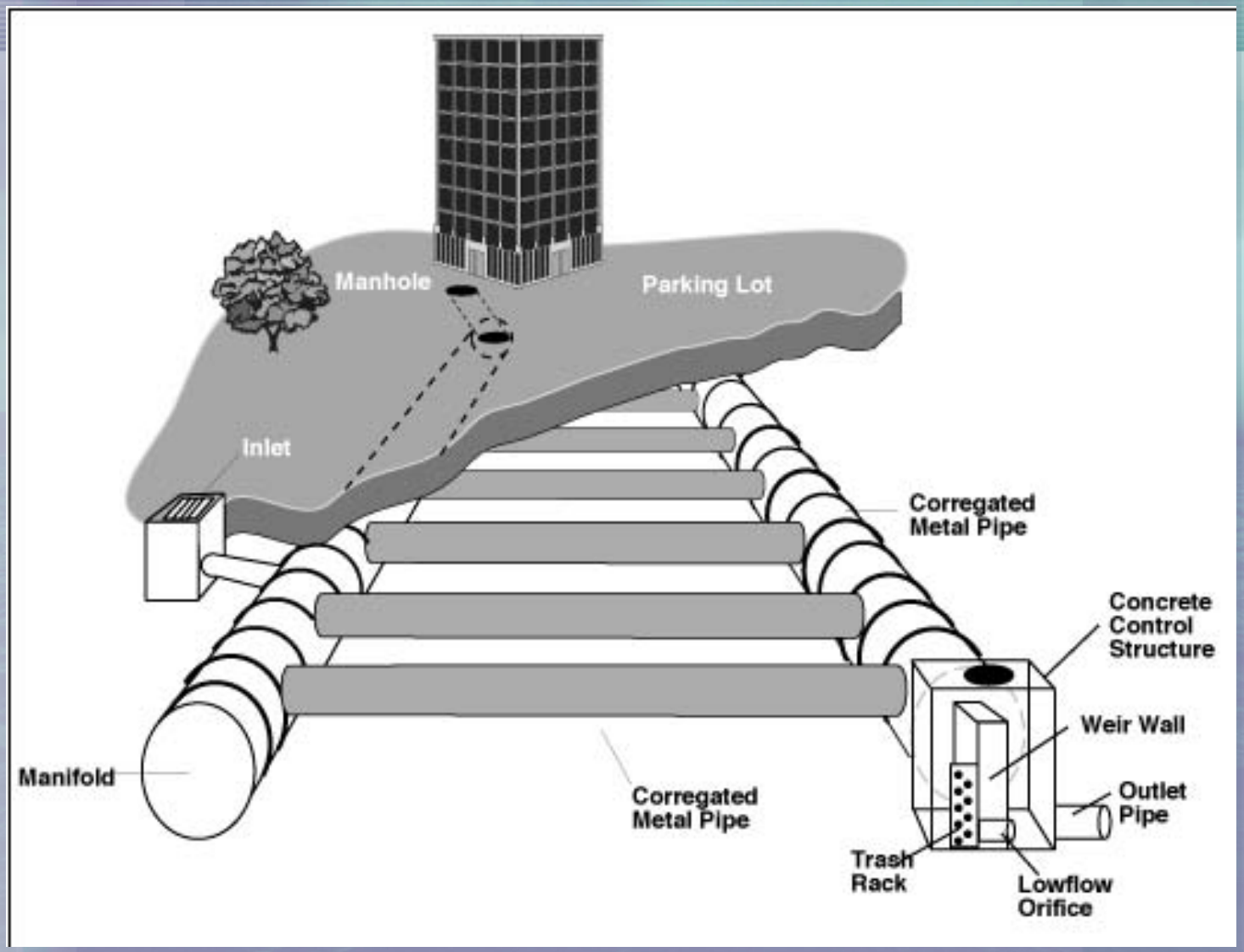
Credits Policy

Infiltration Trench



Credits Policy

Underground Detention



Credits Policy

Extended Detention Ponds

Wet ED Pond

Wet ED Pond

Credits Policy

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SWAC & MWSD Board Recommendations

- ✓ Motion and vote to fund stormwater management via a ***utility fee***
- ✓ Motion and vote to ***adopt 3470 square feet*** as the standard single-family lot imperviousness
- ✓ Motion and vote to adopt ***2007 budget*** of ***$2.42 million dollars***
- ✓ Motion and vote to adopt a stormwater ***user fee of $3.25 / month / single family unit (sfu)*** or equivalent.
- Investigate further the question of ***exemptions*** to a utility fee and ***credits to other MS4 permit holders***

Protecting The Environment For Our Future

Questions?