

Stormwater 101 & Statewide County Stormwater Authority for Urbanized Areas



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History of County-wide Stormwater Authority

- August 1987 Record Flooding – 9 inches of rain in northeastern Illinois, 3 deaths and over \$200 million in flood damages
- 1985/1986 State gives stormwater authority to counties served by the Northeastern Illinois Planning Commission (NIPC), DuPage, Kane, Lake, McHenry and Will counties.
- 1990 NIPC develops Model Stormwater Drainage and Detention Ordinance
- 1994 authority granted to Metropolitan Water Reclamation District for Cook County. Did not include floodplain management.
- 2005 authority granted to nine more counties, primarily located in southwestern (Metro East) and northern Illinois

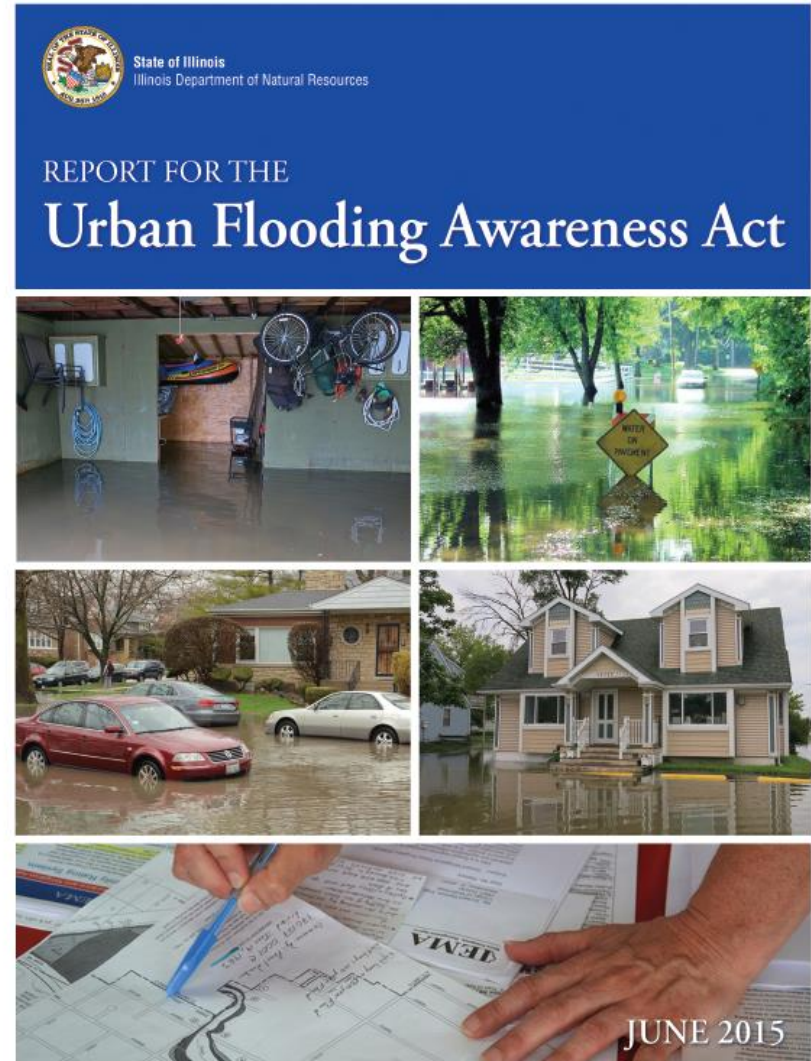
Urban Flooding -

Report for the Illinois Urban Flooding Awareness Act

33 Recommendations made for Illinois General Assembly, Illinois Congressional Delegation, Local Government and State Government

Illinois General Assembly included:

- 1. The authority to generate revenue from fees, to plan, implement and maintain stormwater management/drainage programs/facilities should be granted to all County Stormwater Planning and Management Agencies (55 ILCS 5/5-1062), counties (55 ILCS 5/Div. 5-15) and municipalities regardless of home rule status. (Chapters 4 and 9)
- 2. **Stormwater Planning and Management authority should be granted to all Illinois counties to adopt countywide stormwater ordinances, projects and programs.** (Chapters 4 and 9)



2019 Public Act 100 – 758

Highlights

- Authority expanded to **counties with all or part of a urbanized area**
- Emphasizes cost-effective solutions to flooding
- Added the **evaluation of urban flooding** to stormwater planning
- Allows all counties to form a **stormwater management planning council if approved via referendum**
- Committees to include one member each from drainage districts and soil and water conservation districts

Public Act 100 – 758 Amendments

New terms added

- "Urban flooding" means the flooding of public and private land in urban communities that results from stormwater or snowmelt runoff overwhelming the existing drainage infrastructure, unrelated to the overflow of any river or lake, whether or not that land is located in or near a floodplain.
- "Urbanized areas" means a statistical geographic entity consisting of a densely settled core created from census tracts or blocks and contiguous qualifying territory that together have a minimum population of at least 50,000 persons and has been delineated as an urbanized area by the United States Census Bureau after the most recent decennial census.

Public Act 100 – 758 Amendments

New requirements (except Cook County):

Sec. 5-1062

- (3) preparing a countywide plan for the management of stormwater runoff, including the management of natural and man-made drainageways. **The countywide plan** may incorporate watershed plans and **shall evaluate and address flooding problems that exist in urbanized areas that are a result of urban flooding.**

Sec. 5-1062.2

(a) The purpose of this Section is to allow management and mitigation of the effects of urbanization on stormwater drainage in the metropolitan counties of Madison, St. Clair, Monroe, Kankakee, Grundy, LaSalle, DeKalb, Kendall, and Boone **as well as all counties containing all or a part of an urbanized area**

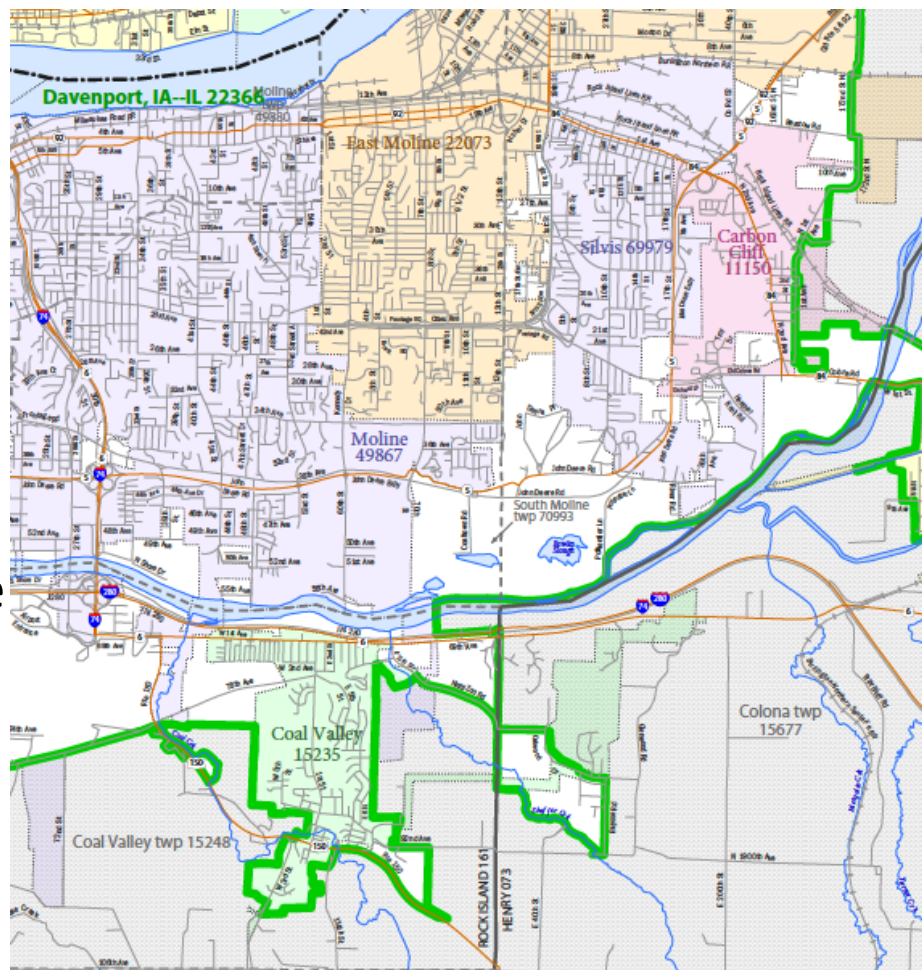
Urbanized Areas

The Census Bureau identifies two types of urban areas:

- Urbanized Areas (UAs) of 50,000 or more people;
- Urban Clusters (UCs) of at least 2,500 and less than 50,000 people.

The Census Bureau has maps of each Urbanized Area, showing which counties are all or partially part of the area.

Coordinates with EPAs use of urbanized areas for regulating small municipal separate storm sewer systems (MS4s).



Urbanized Areas – Population 50,000+

Urbanized Area	County	Population
Chicago, IL--IN	Cook, DuPage, Kane, Lake, McHenry, Will	8,018,716
St. Louis, MO--IL	Madison, Monroe, St. Clair	372,895
Rockford, IL	Winnebago	296,863
Peoria, IL	Peoria, Tazewell, Woodford	266,921
Round Lake Beach--McHenry--Grayslake, IL--WI	McHenry	259,811
Springfield, IL	Sangamon	161,316
Champaign, IL	Champaign	145,361
Davenport, IA--IL	Rock Island, Henry	137,150
Bloomington--Normal, IL	McLean	132,600
Decatur, IL	Macon	93,863
Alton, IL--MO	Madison, Jersey	83,811
Kankakee, IL	Kankakee	81,926
DeKalb, IL	DeKalb	68,545
Carbondale, IL	Jackson, Williamson	67,821
Danville, IL	Vermillion	50,996
Dubuque, IA--IL	Jo Daviess	64,767
Cape Girardeau, MO--IL	Alexander	52,591

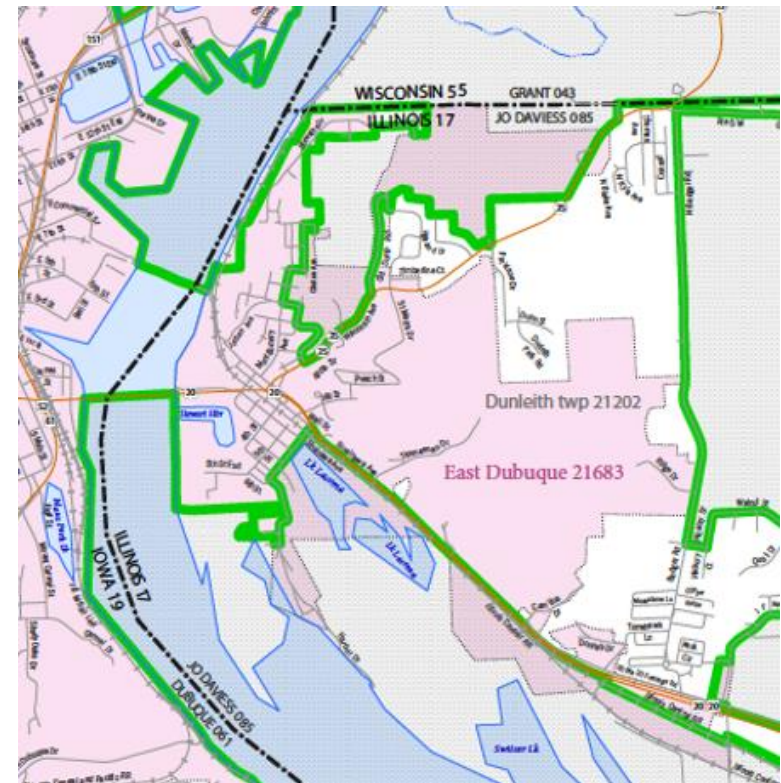
31 Illinois Counties with Explicit Stormwater Authority

- Alexander
- Boone
- Champaign
- Cook
- DeKalb
- DuPage
- Grundy
- Henry
- Jackson
- Jersey
- Jo Daviess
- Kane
- Kankakee
- Kendall
- LaSalle
- Lake
- Macon
- Madison
- McLean
- McHenry
- Monroe
- Peoria
- Rock Island
- Sangamon
- St. Clair
- Tazewell
- Vermilion
- Will
- Williamson
- Winnebago
- Woodford

Public Act 100 – 758 Amendments

Expanded authority w/out need of a referendum to:

- 5-1062.2(a) The purpose of this Section is to allow management and mitigation of the effects of urbanization on stormwater drainage in the metropolitan counties of Madison, St. Clair, Monroe, Kankakee, Grundy, LaSalle, DeKalb, Kendall, and Boone **as well as all counties containing all or a part of an urbanized area** and references to "county" in this Section apply only to those counties.



Public Act 100 – 758 Amendments

Expanded authority to all other counties is they get approval via a referendum to:

- 5-1062.2 (a-5) This Section also applies to all counties not otherwise covered in Section 5-1062, 5-1062.2, or 5-1062.3 if the question of **allowing the county board to establish a stormwater management planning council has been submitted to the electors of the county** and approved by a majority of those voting on the question.
- (i-5) **Before a county** that establishes a stormwater management planning council after submission of the question to the electors of the county pursuant to subsection (a-5) **may submit a referendum question to the electors of the county for an annual tax under** subsection (i), the county shall:
 - (1) **adopt and enforce a floodplain management ordinance or a stormwater management ordinance** under subsection (g) that has been approved by the Office of Water Resources of the Department of Natural Resources; and

Public Act 100 – 758 Stormwater Management Planning Committee

Sec. 5-1062.2

Membership

- membership equal numbers of county board and municipal representatives from each county board district (minimum 6 members to represent board districts)
- one member representing drainage districts
- one member representing soil and water conservation districts
- additional members as may be determined by the stormwater management planning committee members.

Duties

- Develop a stormwater management plan, approved by IDNR/OWR, for county board approval
- Direct the plan's implementation and revision

Implementation

- May hire staff; engineering, legal, inspection, and financial
- Meet at least quarterly

County-wide Ordinances

Comprehensive regulations combined floodplain, soil erosion and sediment control, stormwater management, subsurface drainage and wetland regulations into one ordinance.

- DuPage County (1991)
- Lake County (1992)
- Kane County (1997)
- McHenry County (2004)
- Will County (2004)
- DeKalb County (2006)
- Grundy County (2010)
- Kendall County (2011)

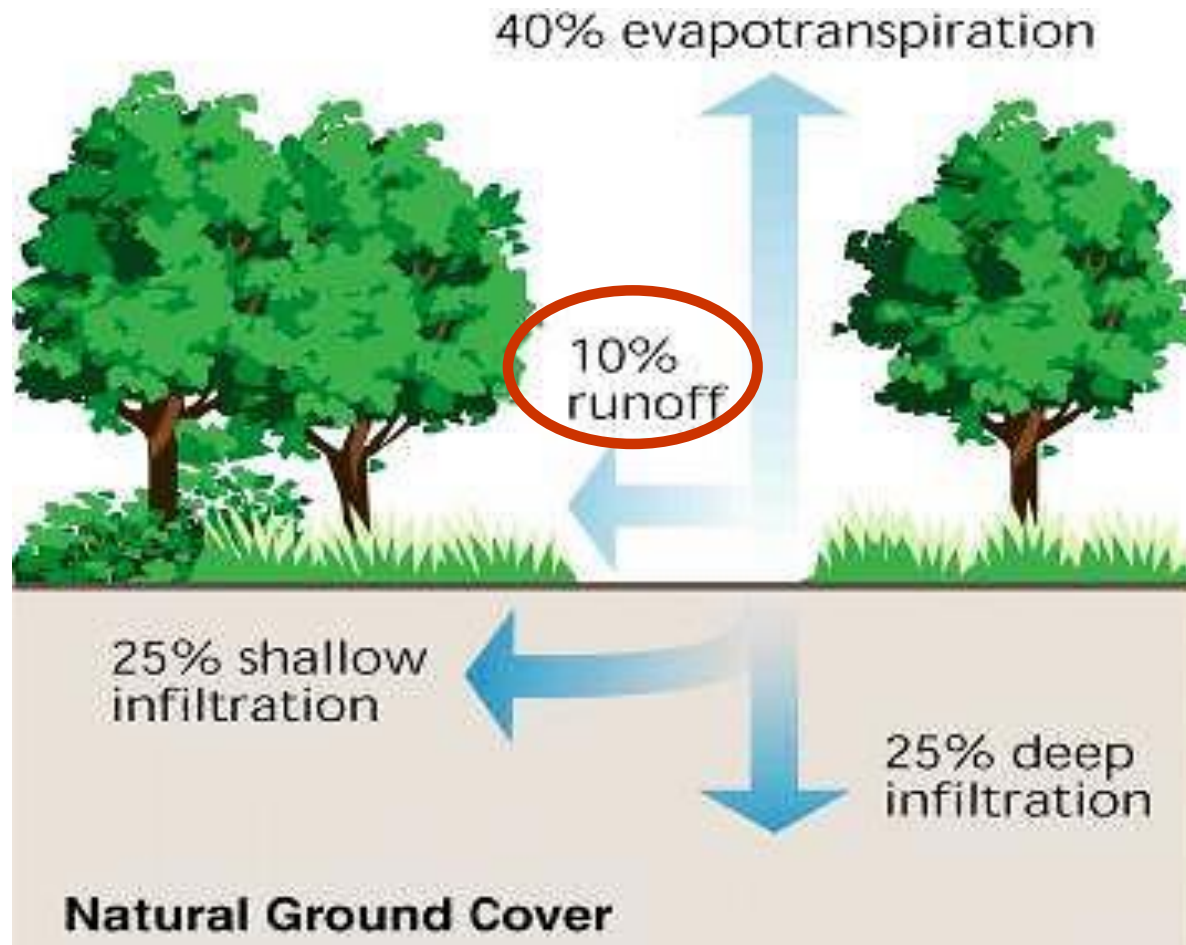


County-wide Programs

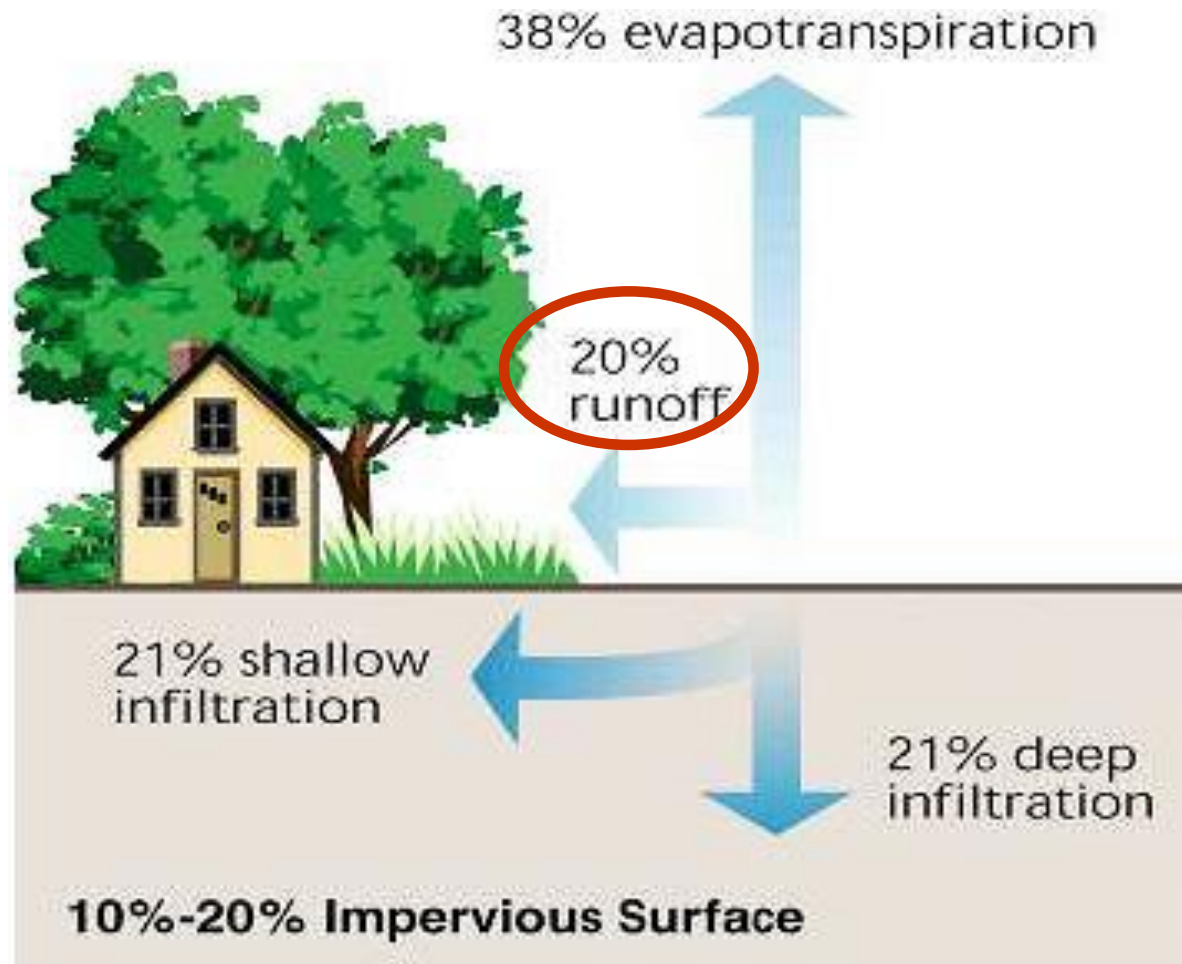
- DuPage County - 12 County Board/municipal member, meet monthly, 15+ staff members, 40 voting member Municipal Engineers Group composed on representative per community, audits of waiver communities conducted
- Lake County - 12 County Board/municipal member, meet monthly, 19 staff members, 12 member Technical Advisory Committee meet as needed, Municipal Advisory Committee meets twice a year, municipal certification every three years
- Kane County - 12 County Board/municipal member, 4 times a year (proposed by-law change), 4 in-house staff, 12 voting member Technical Advisory Committee, currently updating their ordinance, periodic review of certified communities allowed per ordinance
- McHenry County – 12 County Board/ municipal members, meet every other month, 5 in-house staff, 17 member Technical Advisory Committee, municipal certification process every three years
- Will County – 36 County Board/ municipal members, meet every month

Effects of Increased Impervious Surfaces

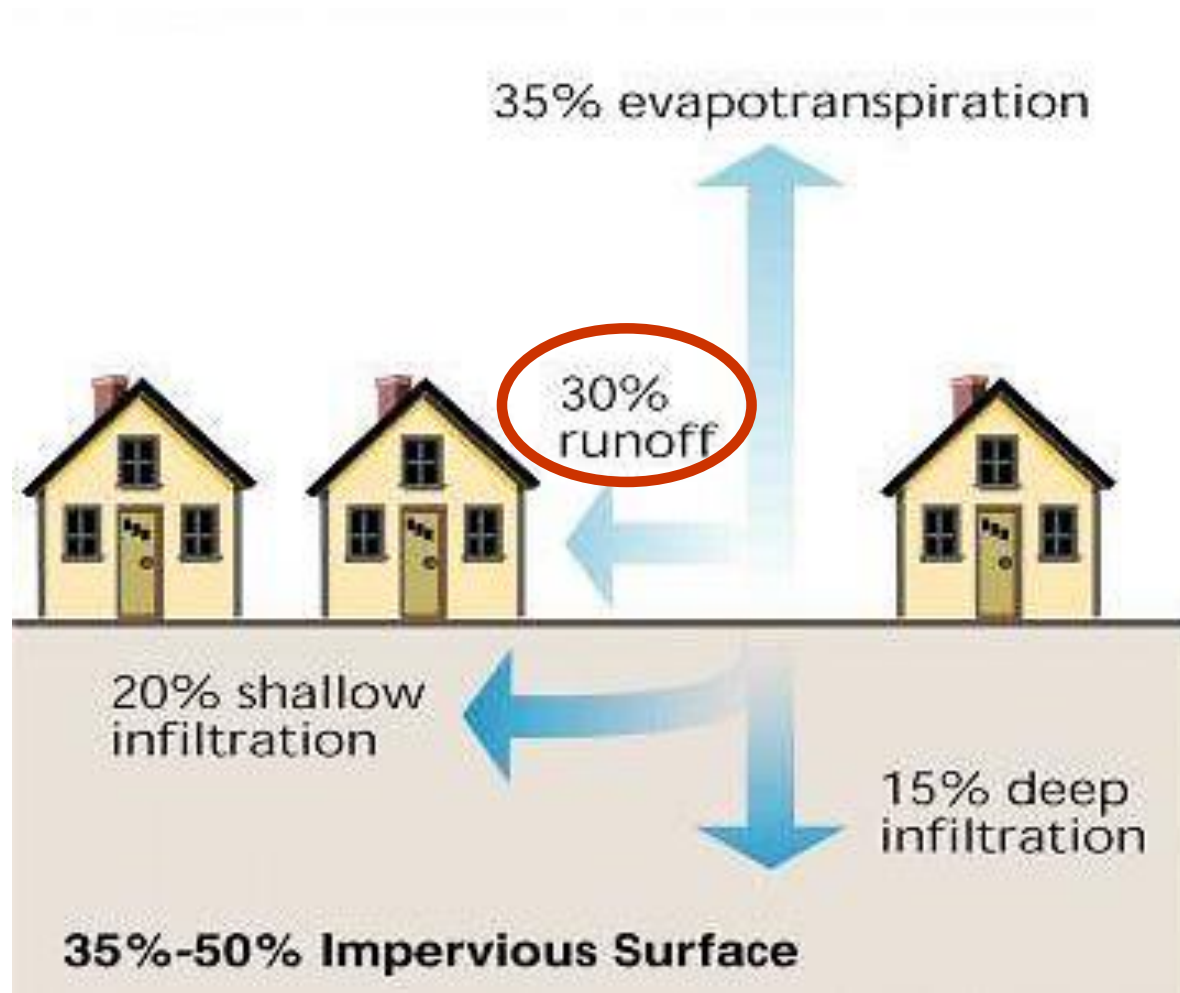
Natural Conditions



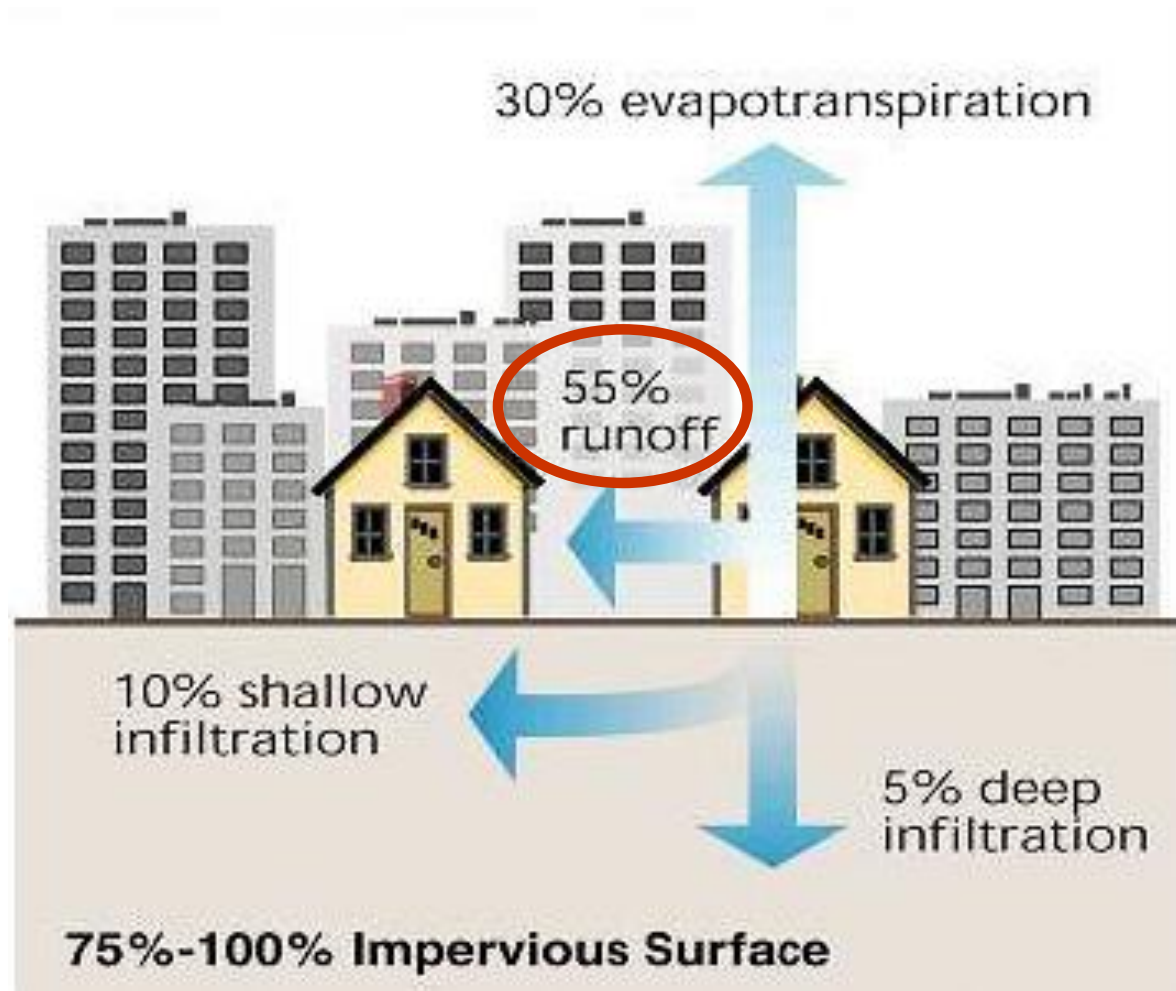
10% - 20% Impervious Surface



35% - 50% Impervious Surface



75% - 100% Impervious Surface



Model Stormwater Ordinance

PURPOSE AND SCOPE – Main Objectives

1. Reduce/Prevent Flooding

Flooding results from:

- Decreased infiltration
- Increased volume of surface runoff
- Increased velocity



Note:

A more detailed and comprehensive list of objectives can be found in the model ordinance.

PURPOSE AND SCOPE – Main Objectives

- 1. Reduce/Prevent Flooding**
- 2. Reduce/Prevent Erosion**

Erosion results from:

- Decreased infiltration
- Increased volume of surface runoff
- Increased velocity



Note:

A more detailed and comprehensive list of objectives can be found in the model ordinance.

PURPOSE AND SCOPE – Main Objectives

- 1. Reduce/Prevent Flooding**
- 2. Reduce/Prevent Erosion**
- 3. Preserve Habitat & Improve Water Quality**



Note:

A more detailed and comprehensive list of objectives can be found in the model ordinance.

GENERAL PROVISIONS AND JURISDICTION



**Within SFHA or
Flood-prone Area**



**Disturbed Area
>5,000 sf.**



**Within 25 feet
of a lake, pond,
stream, or wetland**

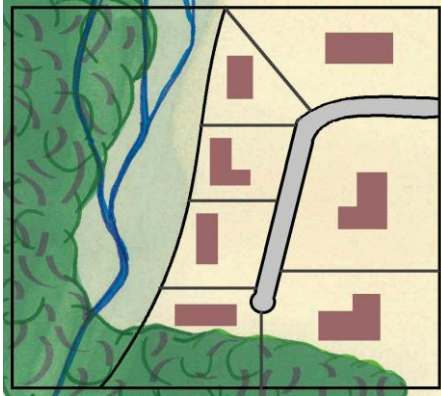
Note:

A more detailed and comprehensive list of regulated and exempted development can be found in the model ordinance.

STORMWATER MANAGEMENT STANDARDS

- 502. Water Quality And Volume Controls
- 503. Site Runoff Controls
- 504. Detention Facilities
- 505. Non-Structural BMPs
- 506. Stormwater Conveyance Systems
- 507. Buffer Areas
- 508. Soil Erosion And Sedimentation Control
- 509. Floodplain Management

Water Quality And Volume Controls



Volume

Reduction

(e.g. clustered development)

+



Volume Control

from BMPs

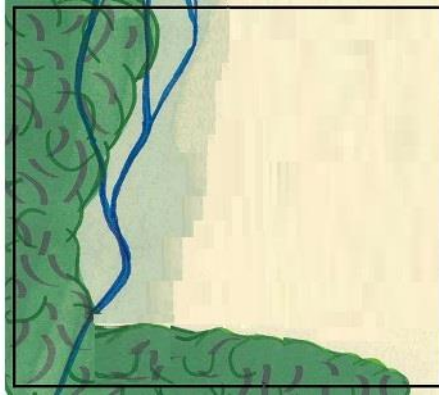
(e.g. bio-retention)

=

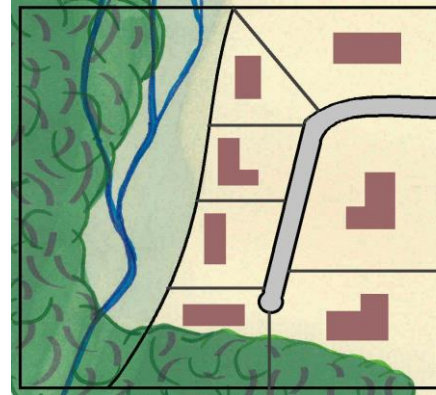
**Required
Control
Volume**

Volume = 1" x new
impervious area

Site Runoff Controls



IV

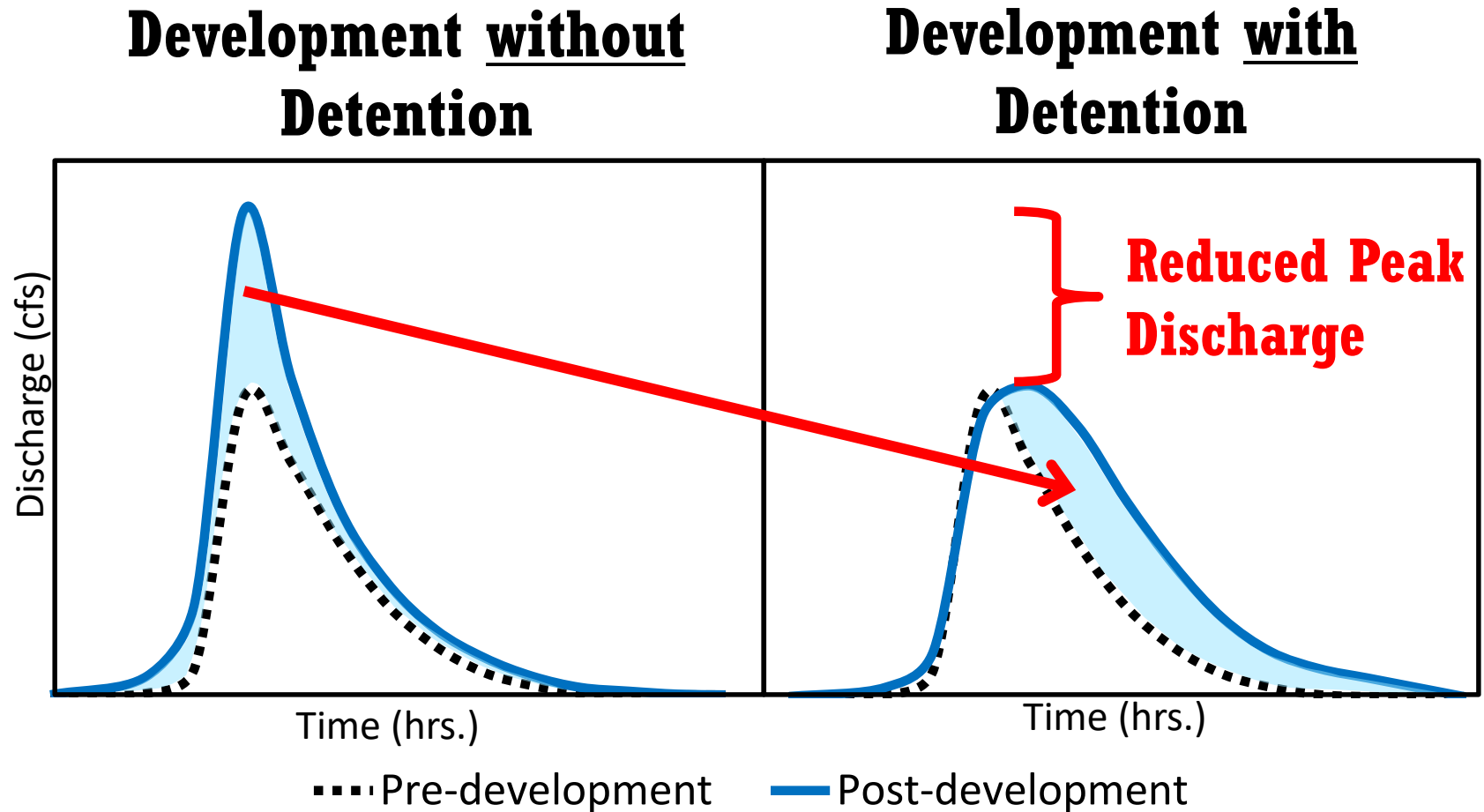


**Pre-Development
Release Rate**

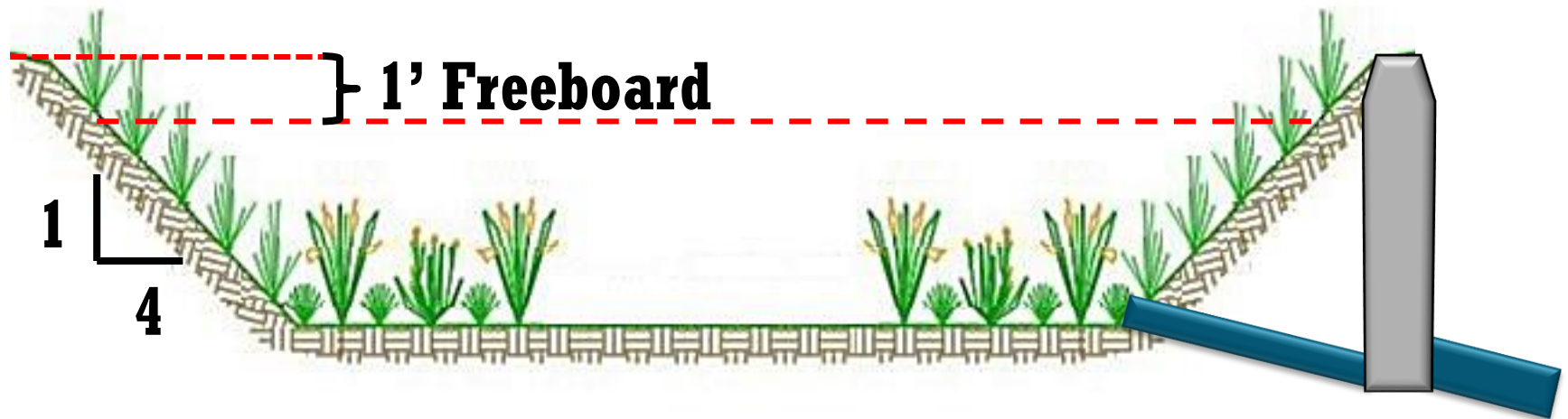
**Post-Development
Release Rate**

Post-development discharge shall not exceed the existing discharge for the 2-, 10-, 25-, 50-, 100-year critical duration storms.

Detention Facilities - Purpose



Detention Facilities



Outfall & Restrictor Requirements

Outfall Pipe: 12" Minimum

Restrictor Dia.: 4" Minimum

2-year Release Rate: 0.04 cfs per acre (Max)

100-year Release Rate: 0.15 cfs per acre (Max)

Non-Structural BMPs

Definition:

Non-Structural BMPs encourages the treatment, infiltration, evaporation, and transpiration of precipitation close to where it falls, while helping to maintain a more natural and functional landscape.

Non-Structural BMPs - Examples

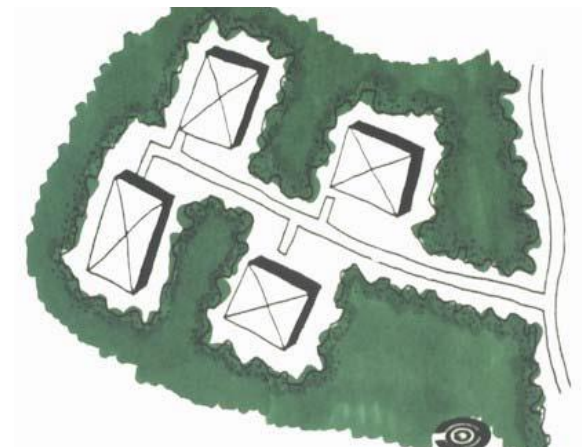


Disconnect Impervious Areas

Non-Structural BMPs - Examples



**Protect Sensitive
Areas**



**Minimize
Disturbed Areas**

Other Examples:

- Cluster Development
- Reduce Impervious Cover

Non-Structural BMPs - Purpose

- ✓ **Volume Reduction (Infiltration)**
- ✓ **Water Quality/
Filtration**

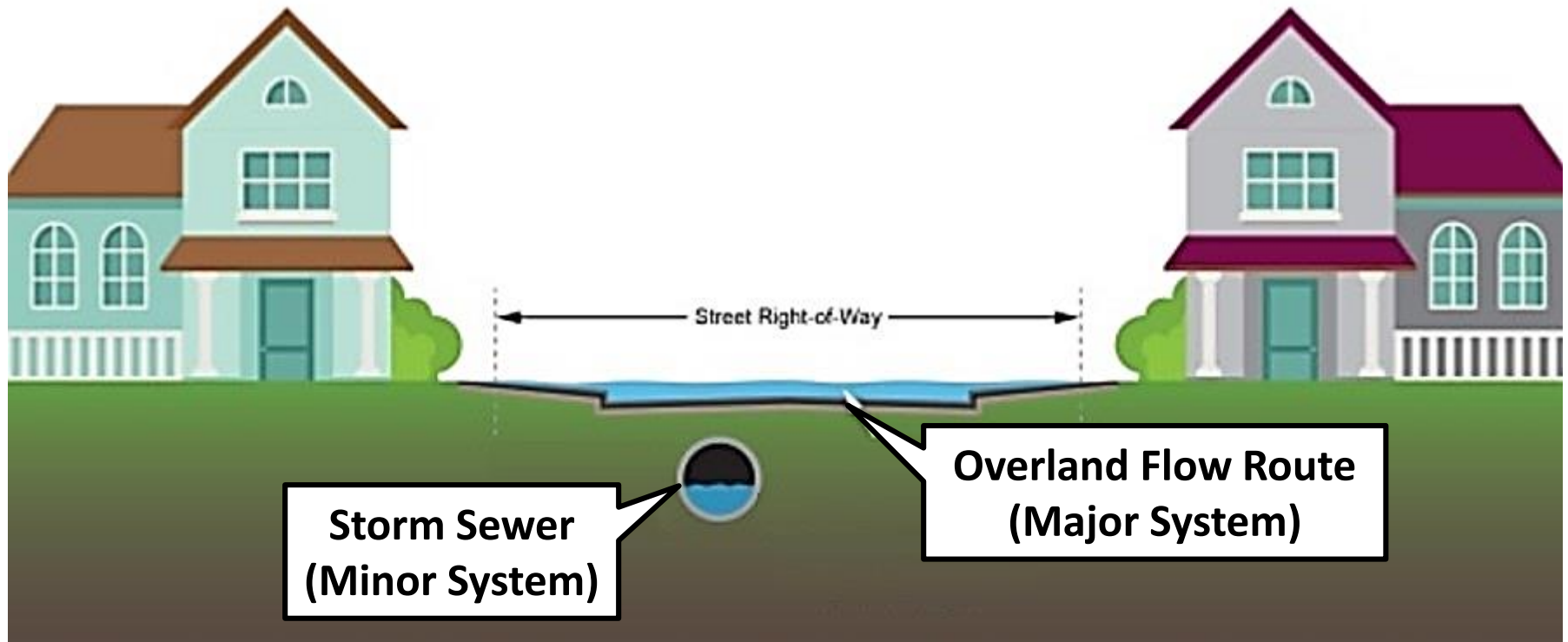


Non-Structural BMPs - Requirements

- ✓ **Near Developed (Paved) Area**
- ✓ **Protected During Construction**
- ✓ **Placed in Most Permeable Soils**



Stormwater Conveyance Systems



Stormwater Conveyance Systems



**Storm Sewers,
Inlets, & Swales**
10-year capacity (min.)

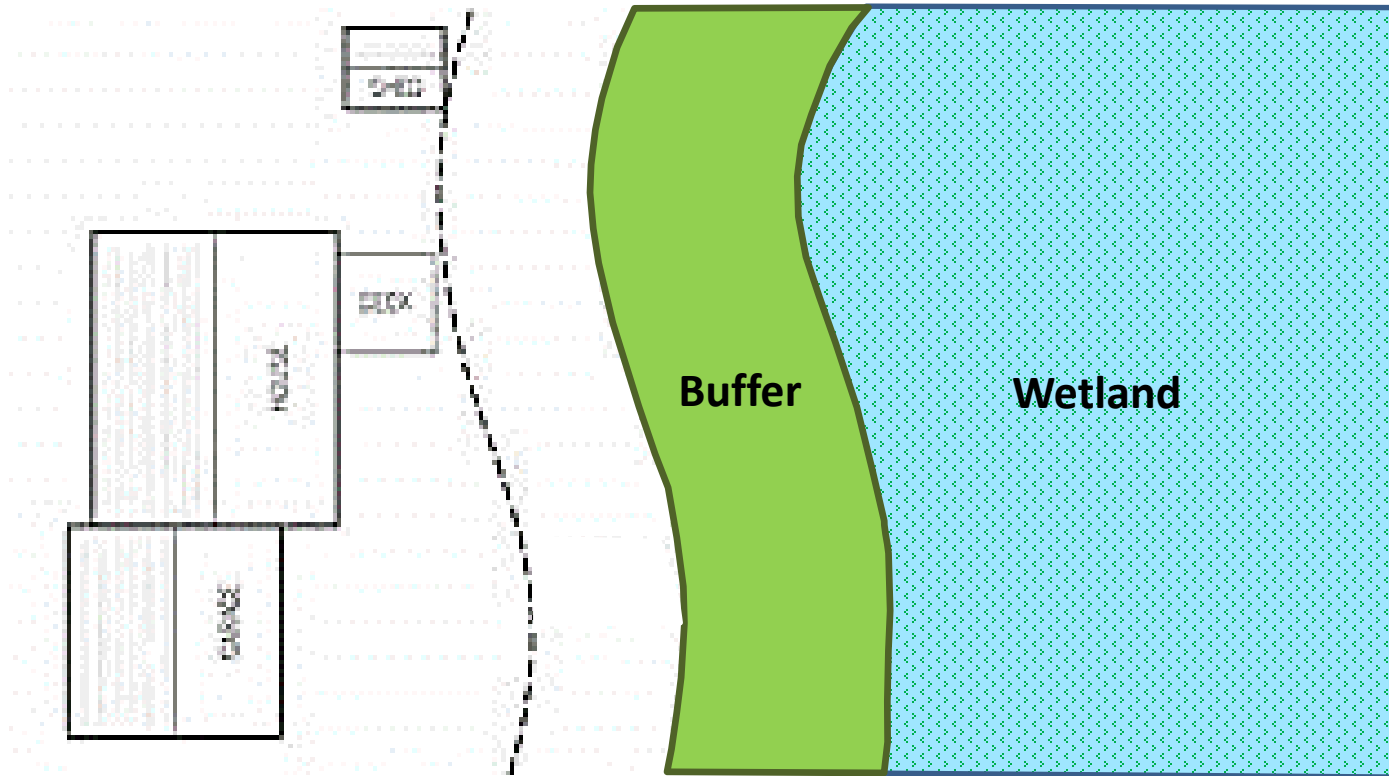


**Min. Storm Sewer
Size & Velocity**
12-inch diameter & 2.5 fps



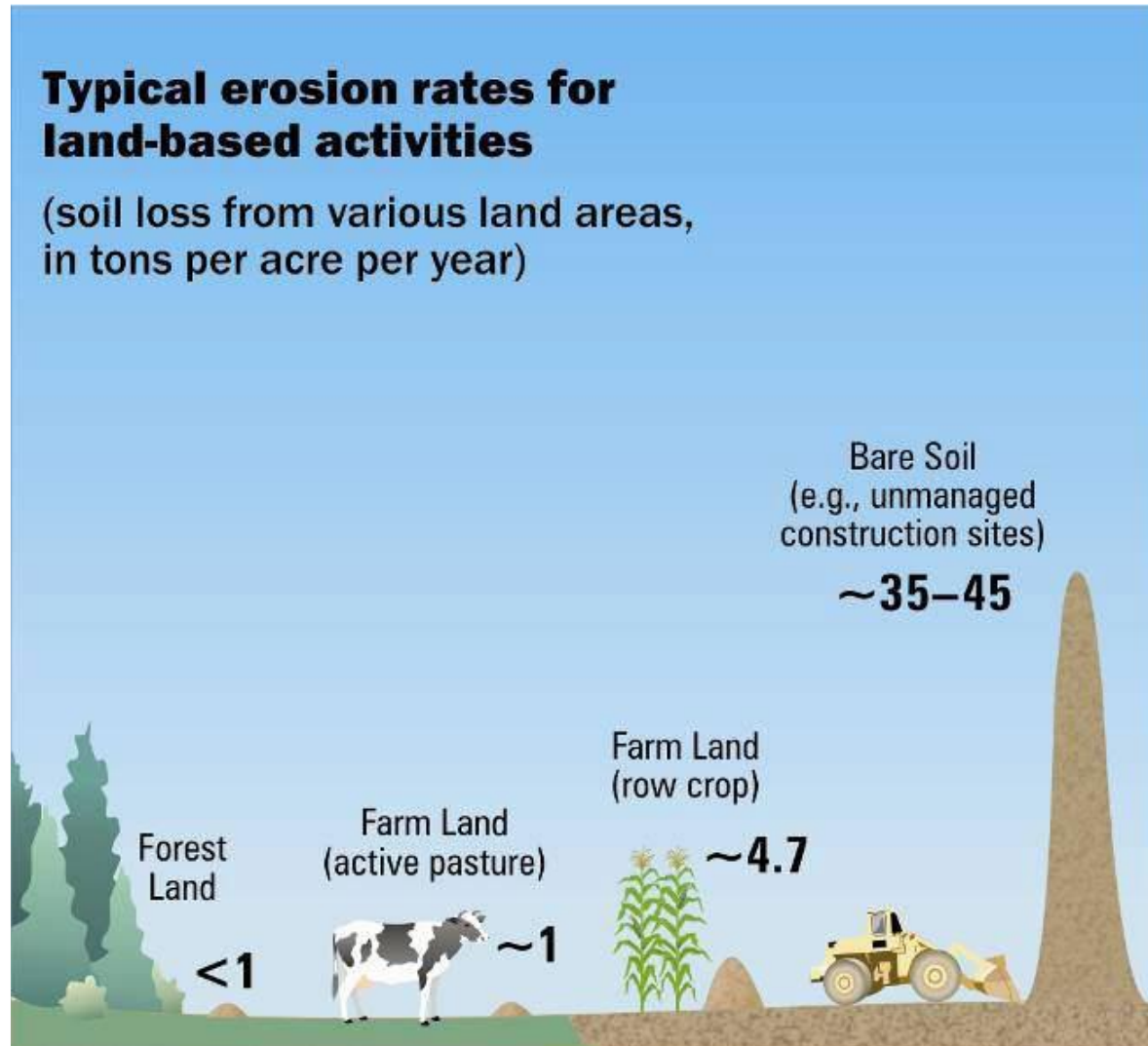
**Overland Flow
Paths**
100-year capacity

Buffer Areas



Buffer size and the allowable uses of a wetland buffer are described in the ordinance.

Soil Erosion And Sedimentation Control



Soil Erosion And Sedimentation Control



Technical Requirements



Maintenance Requirements



Required Notifications

If you already have an erosion and sedimentation control ordinance, you may want to review it and refer to that ordinance

Floodplain Management

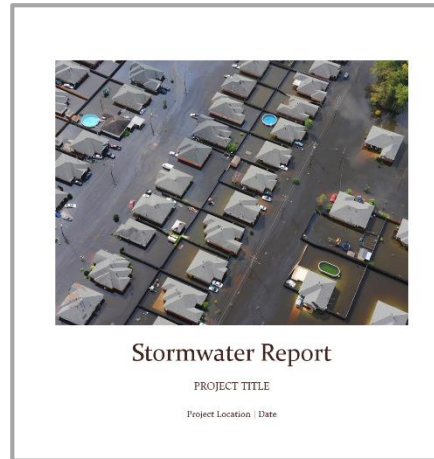


Please refer to IDNR's model Floodplain Ordinance. This section covers wetland mitigation requirements.

STORMWATER MANAGEMENT PLANS



**Review
Process**



**Stormwater Report
Requirements**



**Engineering Plan
Requirements**

OPERATIONS AND MAINTENANCE (O&M)



Responsibility



**O&M
Agreements**



**Plan
Requirements**

SUMMARY

If you have regulatory authority and need an ordinance:

1. Review your current ordinances
2. Compare your current ordinances to the IDNR Model Ordinance
3. Assemble a committee
4. Draft the new ordinance
5. Submit the ordinance for IDNR & FEMA Review
6. Formally adopt the ordinance

Questions?



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