SESWA 2021

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Social

TRIPLE BOTTOM LINE





SUSTAINABILITY IS TO...

"...meet the needs of the present without compromising the ability of future generations to meet their own needs." -World Commission on Environment and Development, 1987



SOURCES OF POLLUTION



EPA CLEAN WATER ACT



STATE REQUIREMENTS

NPDES-delegated State programs in EPA Region IV:

- ADEM
- FDEP
- Georgia EPD
- Kentucky EEC
- MDEQ
- NCDEQ
- SCDHEC
- TDEC

Typical NPDES Permits:

- Permits for construction stormwater
- Permits for industrial stormwater
- Permit for MS4s

TOTAL MAXIMUM DAILY LOADS

• Total Maximum Daily Loads (TMDL)

- State developed and EPA reviewed/approved
- Maximum amount of pollutant to enter a waterbody
- Point and non-point source allocations
 - Point NPDES permit
 - Non-point Variety of programs



MS4 MINIMUM CONTROL MEASURES (MCM)



Bioretention

Sedimentation/Filtration

TRADITIONAL WATER QUALITY CONTROLS



Standard regional/centralized control



Requires a larger drainage area and footprint

LOW IMPACT DEVELOPMENT (LID)





SYSTEMS & PRACTICES THAT REDUCE RUNOFF & POLLUTANT CONCENTRATIONS CONTAINS RUNOFF NEAR THE SOURCE

Examples include:









GREEN SW INFRASTRUCTURE (GSI)



GSI reduces stormwater and contaminant flow to surface waters



Rain garden/bioretention cell



Green Roofs



Can be incorporated anywhere

Residential Areas Commercial Areas Public Areas



Swales

Permeseble

Permeable Pavement



ADDITIONAL BENEFITS

Improved air quality

Increased public health

Community beautification

Ecosystem protection

Increased community engagement

Potential savings







COMMON ISSUES AND RESOLUTIONS



Stakeholders are not supportive



Education

COMMON ISSUES AND RESOLUTIONS



Code and criteria conflict



Leave code open ended and refer to criteria Develop design criteria that can be kept more up-to-date with evolving field

Conduct audit of local codes and ordinances

COMMON ISSUES AND RESOLUTIONS



Strict street section and utility alignment requirements



Allow for non-standard street sections without additional review

COMMON ISSUES AND RESOLUTIONS

Environmentally sensitive zones such as hillsides and riparian corridors are not protected



Develop hillside standards Define floodplain buffers and no mow zones

COMMON ISSUES AND RESOLUTIONS



City wants to promote LID but has no funding mechanism and/or state requirements



Incentivize LID

EPA RECOMMENDED INCENTIVES

- Rebates and Installation Financing
 - Funding, tax credits, or reimbursements
- Awards and Recognition Programs
 - Marketing and public outreach
- Development Incentives
 - Offered during process of applying for development permits

- Stormwater Fee Discount or Credit
 - Require stormwater fee based on size of impervious area
 - Reduce fee by reducing volume of runoff with onsite capture systems
- Grants
 - Direct funding to property owners/communities for implementing GI practices

CASE STUDIES FROM ACROSS THE SOUTH

IMPROVED WATER QUALITY: HOW TO SHAPE DEVELOPMENT WITH INCENTIVES

San Antonio River Authority (SARA)

Raleigh, NC

Charlotte, NC

Port Aransas, TX

Austin, TX

Buda, TX

SAN ANTONIO RIVER AUTHORITY

Primer on ecosystem tools

- Native plantings
- Noise mitigation berms
- Green walls
- Toolkit
 - Outline how LID tools work, community benefits, design criteria, and typical construction costs
- Case studies
 - Demonstrate how to implement features at various locations
- Watershed Wise Rebate
 - Funds for LID projects

• Reimbursements

- For Stormwater improvements "over and above" minimum requirements:
- GSI practices
- Treating stormwater conveyed within street ROW

• "Rainwater Rewards"

- Voluntary program to add GSI elements to your property
- Covers up to 90% of costs
- Disconnecting downspouts
- Green roofs
- Cistern
- Raingarden/bioretention area
- Pavement removal
- May lower utility fee based on impervious removal

Utility Fee Credits

- For detaining more stormwater on-site than needed
- Primarily for commercial properties

RALEIGH, NORTH CAROLINA

CHARLOTTE, NORTH CAROLINA

• Utility Fee Credit

For having stormwater pond on property
For having existing SCM on property

- Crediting based on:
 - Peak runoff control
 - Volume control

PORT ARANSAS, TEXAS

- Developed stormwater management plan
 - Amend landscaping ordinance to offer incentives for adding GSI and preserving sensitive areas
 - Mark drainage structures to educate the public
 - Discourage dumping through recurring hazardous waste and bulk collection events

IMPROVED WATER QUALITY: HOW TO SHAPE DEVELOPMENT WITH INCENTIVES

Stormwater Fee Discount

• Free tools

- Water conservation
- Irrigation system evaluation
- Gray water
- Showerhead and faucet aerators

Rebates

AUSTIN, TEXAS

- Pool cover
- Irrigation upgrade
- Graywater
- Rainwater harvesting
- Turf to native conversion
- Landscape mulch service
- Commercial/multifamily/school rebates

BUDA, TEXAS

- 4 LID elements required in aquifer recharge zone
- 4 LID elements can be included to allow for the following modifications:
 - Reduce front yard setback
 - Reduce lot area
 - Reduce park land dedication
 - Fee waivers, technical assistance, and fast track reviews
- LID elements
 - Low flow fixtures
 - Native landscaping
 - Cool roof
 - 20% less impervious cover
 - Permanent erosion control
 - Permeable pavement
 - Natural infiltration methods

IMPROVED WATER QUALITY: HOW TO SHAPE DEVELOPMENT WITH INCENTIVES

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