IMPROVED WATER QUALITY: HOW TO SHAPE DEVELOPMENT WITH INCENTIVES

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TRIPLE BOTTOM LINE

Create environmentally friendly, economically feasible, and socially acceptable developments

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
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**SOURCES OF POLLUTION**

**EPA CLEAN WATER ACT**

- 1972: Clean Water Act
- 1973: Exempted stormwater discharges unless significant contributor
- 1987: Water Quality Act
- 1997: Granted States the responsibility
- 1999: Phase 1 SW Program
- 1999: Phase 2 SW Program

**STATE REQUIREMENTS**

- Texas Commission on Environmental Quality (TCEQ)
- State agency that regulates Texas MS4s
- Texas Pollutant Discharge Elimination System (TPDES) Permit
- Industrial Multi-Sector General Permit
- Construction General Permit
- MS4 Permit
**TOTAL MAXIMUM DAILY LOADS**

- Total Maximum Daily Loads (TMDL)
  - State developed and EPA reviewed/approved
  - Created for 303d waterbodies
  - 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)**

- Public Education and Involvement
- Post-Construction Stormwater Water Quality Controls
- Municipal Operations/Good Housekeeping
- Construction Site Runoff Control
- Illicit Discharge Detection and Elimination
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
- Preserves natural areas
- Adaptive reuse
- Clustered development

GREEN SW INFRASTRUCTURE (GSI)

- GSI reduces stormwater and contaminant flow to surface waters
- Can be incorporated anywhere
- Vegetated swales
- Permeable pavement
- Rainwater harvesting
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ADDITIONAL BENEFITS

- Improved air quality
- Increased public health
- Community beautification
- Ecosystem protection
- Increased community engagement
- Potential savings

FNI – HELPING COMMUNITIES

- Helping clients that recognize the benefits implement them in their community
- Helping with Code updates and water quality criteria
- Working through issues and lessons learned

COMMON ISSUES AND RESOLUTIONS

- Stakeholders are not supportive
- Education
### Code and criteria conflict
- Conduct audit of local codes and ordinances
- Leave code open ended and refer to criteria
- Develop design criteria that can be kept more up-to-date with evolving field

### Strict street section and utility alignment requirements
- Allow for non-standard street sections without additional review

### 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.

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

- San Antonio River Authority (SARA)
- Norman, OK
- Port Aransas, TX
- Buda, TX
- Austin, TX
SAN ANTONIO RIVER AUTHORITY

- Brooks Development guidebook
- Toolkit
- Case studies
- Primer on ecosystem tools
- Native plantings
- Noise mitigation berms
- Green walls
- Watershed Wise Rebate
  - Funds for LID projects

NORMAN, OKLAHOMA

- Assessed existing code and technical manuals to catalog revisions needed to encourage GSI incorporation
- Updated engineering design criteria to add criteria for green stormwater infrastructure (GSI) and other LID principles
- Incentives, maintenance

PORT ARANSAS, TEXAS

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

- Innovative Residential Development
- 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
- LID elements
  - Low flow fixtures
  - 20% less impervious cover
  - Permanent erosion control
  - Permeable pavement
  - Natural infiltration methods

AUSTIN, TEXAS

- Stormwater Fee Discount
- Free tools
  - Water conservation
  - Irrigation system evaluation
  - Graywater
  - Showerhead and faucet aerators
- Rebates
  - Pool cover
  - Irrigation upgrade
  - Graywater
  - Rainwater harvesting
  - Turf to native conversion
  - Landscape - mulch service
  - Commercial/multifamily/school rebates

QUESTIONS?

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