

WATER QUALITY PROTECTION MEASURES

NON-STRUCTURAL BEST MANAGEMENT PRACTICES (BMP's)

Non-structural BMPs include institutional and pollution-prevention type practices designed to prevent pollutants from entering storm water runoff or reduce the volume of storm water requiring management. Non-structural BMPs can be very effective in controlling pollution generation at the source, which in turn can reduce or eliminate the need for costly end-of-pipe treatment by structural BMPs. ["Preliminary Data Summary of Urban Storm Water Best Management Practices", United States Environmental Protection Agency, Washington, DC, August 1999, EPA Publication No. 821-R-99-012]

This definition of non-structural BMP is intended as a reference only and is not intended to be inclusive or exclusive. Some of the items listed in this section, are not included in the referenced EPA publication, while other items which do appear in the referenced EPA document do not appear in this listing. This listing is intended to be a starting point for discussions of specific items to include in the regional water quality protection plan.

- (1) Land Use
 - Zoning
 - Impervious cover limits
 - Conservation easements (set asides, offsets, mitigation)
 - Conservation tax relief
 - Encourage cluster development?
 - Buffer zones
 - Incentives to encourage sensitive area preservation (imp.cov. breaks, etc...)
 - Encourage retention of undeveloped land/open space

- (2) Location Standards
 - Stream setbacks
 - Critical feature setbacks

- (3) Land/Resource Management & Improvement
 - Improve/encourage proper agricultural practices (ranch/range management)
 - Urban forestry
 - Integrated Pest Management Plans (IPM)
 - Ranch/farm management education
 - Irrigation management
 - Stream restoration
 - Water conservation

- (4) Public Education & Outreach
 - Brochures to general public
 - Public service ads
 - Educate car wash owners
 - Bumper stickers, refrigerator magnets
 - Cleanup days
 - Complaint hotline
 - Volunteer monitoring
 - Adopt-a-stream program
 - Xeriscaping
 - Illegal dumping
 - Rainwater collection
 - Web site
 - Stencil/stamp/paint storm drain inlets
 - Educational programs for school age children
 - Signage
 - Small business education

WATER QUALITY PROTECTION MEASURES

- (5) Good Housekeeping
 - Street Sweeping
 - Vehicle washing
 - Auto care/maintenance
 - Hazardous chemical storage
 - Spill cleanup

- (6) Illicit Discharge Program
 - Local ordinances
 - Hotline for general public (to report illegal dumping/discharge)
 - Inspections
 - Cleanup
 - Enforcement (by whom?)
 - Evaluation/assessment (by whom?)
 - Map of known stormwater discharge locations

- (7) Local Regulations/Ordinances
 - Illicit non-stormwater discharges
 - Construction activities (duplication of TCEQ effort?)
 - Runoff rate/volume control (existing=future)
 - Water quality controls
 - On-site sewage systems (OSSF)
 - Fiscal surety

- (8) Local/Regional Review/Monitoring/Enforcement
 - Require geologic/environmental assessment
 - Review
 - Inspect/Monitor
 - Enforce
 - Evaluate
 - Adjust

- (9) Operation & Maintenance of Structural BMP's
 - require funding by developer?
 - Establish regional authority w/ taxing capabilities?

- (10) Other
 - Require retrofit/upgrade of existing developments (subdivision, small businesses, schools, local governments, etc...)

WATER QUALITY PROTECTION MEASURES

STRUCTURAL BMP's

Structural BMPs include engineered and constructed systems that are designed to provide for water quantity and/or water quality control of storm water runoff. Structural BMPs can be grouped into several general categories. ["Preliminary Data Summary of Urban Storm Water Best Management Practices", United States Environmental Protection Agency, Washington, DC, August 1999, EPA Publication No. 821-R-99-012]

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- (1) Vegetative Controls
 - Filter Strips/Swales
 - Bioretention
- (2) Infiltration
 - Ponds
 - Trenches
 - Drainfields
- (3) Detention
 - Wet
 - Dry
- (4) Filtration
 - Sedimentation/Sand Filtration Ponds
 - Horizontal Sand Filter
 - Organic
 - Wetlands
- (5) Retention
 - Retention/Irrigation
 - Retention/Infiltration
- (6) Landscaping
 - Commercial/public
 - Homeowners/individuals
- (6) Miscellaneous
 - Storm inlet filter traps
 - Porous pavement
- (7) Proprietary
 - Oil/sediment chambers

WATER QUALITY PROTECTION MEASURES

IMPLEMENTATION

RECOMMENDED (item numbers correspond to those listed under non-structural controls)

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 - Encourage retention of undeveloped land/open space

- (2) Location Standards
 - Stream setbacks
 - Critical feature setbacks

- (6) Illicit Discharge Program
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 - Hotline for general public (to report illegal dumping/discharge)
 - Inspections
 - Cleanup
 - Enforcement (by whom?)
 - Evaluation/assessment (by whom?)
 - Map of known stormwater discharge locations

- (7) Local Regulations/Ordinances
 - Illicit non-stormwater discharges
 - Construction activities (duplication of TCEQ effort?)
 - Runoff rate/volume control (existing=future)
 - Water quality controls
 - On-site sewage systems (OSSF)
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- (8) Local/Regional Review/Monitoring/Enforcement
 - Require geologic/environmental assessment
 - Review
 - Inspect/Monitor
 - Enforce
 - Evaluate
 - Adjust

- (9) Operation & Maintenance of Structural BMP's
 - require funding by developer?
 - Establish regional authority w/ taxing capabilities?

WATER QUALITY PROTECTION MEASURES

VOLUNTARY (item numbers correspond to those listed under non-structural controls)

- (3) Land/Resource Management & Improvement
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 - Urban forestry
 - Integrated Pest Management Plans (IPM)
 - Ranch/farm management education
 - Irrigation management
 - Stream restoration

- (4) Public Education & Outreach
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- (10) Other
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