

## **Section 10. STORM WATER POLLUTION CONTROL**

### **A. General**

As an EPA requirement, structural, environmental controls must be included to minimize the discharge of storm water pollutants from areas of new development and significant redevelopment both during and after construction.

The following section was created in an effort to ensure that, to the maximum extent practicable, new development and projects that require drainage plans do not increase pollutant loads from the development project site. The measures outlined in this section are to be in accordance with approved Storm Water Management Plans.

### **B. Applicability**

While all development shall address water quality, some Priority Project categories have been developed to address the more serious development categories that historically have the potential to generate serious storm water pollution problems during and after construction. All new development and projects that require drainage plans and that fall into one of the following Priority Project categories are subject to Structural Treatment Control Best Management Practices (BMPs) requirements:

- Retail, Warehouse and Office Developments in excess of 0.5 acres site size
- Automotive Repair Shops
- Restaurants
- Gas Stations/Fueling Facilities
- Dumpster, Compactor and Waste Collection and Storage Pads on all commercial and industrial sites
- Residential developments with more than 10 residential units, excluding single family housing subdivisions

### **C. Structural Treatment Control Best Management Practices**

All Priority Projects shall consider, incorporate and implement storm water Structural Treatment Control BMPs into the project design to comply with the Minimum Storm Water Quality Control Measures shown in Table 16-1.

A Structural Treatment Control BMP is an engineered system designed, constructed and maintained to remove pollutants from urban runoff. Pollutant removal is achieved by simple

gravity settling of particulate pollutants, filtration, screening, biological uptake, media adsorption or other physical, biological or chemical process. Examples of typical drawings and details for Structural Treatment Control BMPs are shown in the respective agency's Storm Water Management Plans under separate cover.

## **D. Criteria for Designing Structural Treatment Control BMPs**

1. Treat the runoff from the "water quality storm event" (0.6 in. of precipitation within a six-hour period).
2. a. For sites 40 acres or smaller, the following approximate methods may be used:
  - i. The Storm Water Quality Treatment Rate (SWQR) is the peak rate of flow from the water quality storm event as a function of the percentage of impervious land use (Land Use Category D) shown on Table 10-2. Treatment of the initial storm runoff at rates equal to or greater than the SWQR provides treatment of the SWQV.
  - ii. The Storm Water Quality Treatment Volume (SWQV) is the treatment volume from the water quality storm event as a function of the percentage of impervious land use (Land Use Category D) shown on Table 10-2.
- b. For sites larger than 40 acres, site hydrology in accordance with the City of Rio Rancho/SSCAFCA Development Process Manual (DPM), using the water quality storm event, is used to determine the runoff rate and volume.
3. Provide bypass or overflow capacity to convey the flood control design discharge, even if the BMP structures and components are completely full or plugged.
4. Gross Pollutant Control (AMAFCA/Albuquerque)\*
  - a. Gross pollutant material consists of both surface floatables and submerged buoyant neutral items such as saturated paper, tumbleweeds, etc. Therefore, gross pollutant structural treatment control BMPs must address both surface and subsurface gross pollutants and floatable debris;
  - b. To the extent practical, prevent trapped and collected pollutant materials being re-introduced into the runoff during subsequent runoff events, including events larger than the water quality design storm;
  - c. To the extent practical, retain the trapped pollutants out of low flows and nuisance flows to prevent leaching of water quality constituents from the trapped debris;
  - d. Design the facilities for ease of maintenance; and

- e. Identify the maintenance plan and responsible party to maintain adequate gross pollutant capacity. It is recommended that the facility be cleaned following each storm event.
  - f. Commercial and industrial sites must provide and operate and maintain BMP facilities on-site.
  - g. Commercial and industrial site BMPs shall address failure of the system such that no pollution is discharged off-site.
5. Examples of standard details for BMPs and guidance documents for storm water pollution control can be found on the COA Website at [www.cabq.gov/storm-drainage-design](http://www.cabq.gov/storm-drainage-design).

\*Reference: AMAFCA/Albuquerque MS4 Gross Pollutant Study, Draft dated August, 2004, prepared by ASCG for AMAFCA and the City of Albuquerque.

<b>TABLE 10-1. MINIMUM STORM WATER QUALITY CONTROL MEASURES FOR PRIORITY PROJECTS</b>			
<i>Priority Projects</i>	<b>Control of Liquids from Dumpster Areas<sup>(1)</sup></b>	<b>Control of Gross Pollutants and Floatable Trash</b>	<b>Control of Oil from Vehicle Parking Areas</b>
Residential developments with more than 10 residential units		x	
Automotive repair facilities	x	x	x
Gas stations/fueling facilities	x	x	x
Restaurants	x	x	
Retail and office developments larger than 0.5 acres	x	x	
Dumpster and compactor pads <sup>(1)</sup>	x	x	

**NOTES:**

(1) Isolate and discharge to sanitary sewer. Design discharge for 100 year event.

<b>TABLE 10-2. WATER QUALITY STORM EVENT RUNOFF RATE AND VOLUME AS A PERCENT OF IMPERVIOUS AREA FOR 40-ACRE AND SMALLER SITES</b>			
Percent Impervious (%D)	Runoff Depth (inches)	Runoff Rate (cfs/ac)	Runoff Volume (cubic feet/ac)
0	0	0	0
20	0.09	0.5	327
40	0.18	0.8	653
60	0.27	1.2	980
80	0.36	1.35	1037
100	0.46	1.5	1670

**NOTES:**

- (1) Water Quality Storm Event – 0.6 inches precipitation, all zones. It is assumed that approximately 0.14” will infiltrate leaving 0.46” of actual run-off to be treated for Water Quality purposes.
- (2) Assumes pervious area evenly divided between Land Uses B and C.
- (3) Interpolate for site-specific impervious area.
- (4) Calculated from DPM Chapter 22, Section 2, Part A.