

# Western Michigan University Facilities Management – Engineering Division

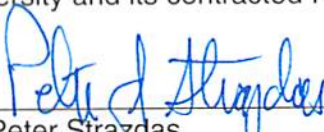
## Design Guidelines for Facilities Construction:

DESIGN GUIDELINE DG31-1 Storm Water Management

### Western Michigan University Storm Water Control Policy

Western Michigan University in its endeavor to meet our storm water discharge commitments has developed this Storm Water Management Policy for new and redevelopment projects on University property.

The Design Guideline will be utilized on all new projects from this date forward by the University and its contracted Professionals.

  
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Mr. Peter Strazdas  
Associate Vice President for Facilities Management  
Western Michigan University

12-19-13  
\_\_\_\_\_  
Effective Date

### PART 1 – GENERAL GUIDELINES

The following guidelines have been established by Western Michigan University with the intent to meet best management practices for storm water management.

These guidelines are applicable to all projects on University property, including new and existing buildings, roads, sidewalks, and landscaping, that disturb one acre or more, including projects less than one acre that are part of a larger common plan of development that encompasses one acre or more or where significant runoff is expected. Any changes to the existing storm water runoff or the storm sewer system must be accomplished within the following guidelines and approved by the Office of Facilities Management – Engineering Division.

Professional Service Contractors engaged in projects for the University shall follow, specify and include the requirements and practices identified in this Guideline in accordance with their Professional Services Agreement with the University.

### PART 2 – DESIGN

The University will enforce the following design guidelines. Professional Service Contractor's shall include in their designs and specifications the following:

1. No new outfalls or discharges to Arcadia Creek will be installed.
2. Existing outfall(s) and discharges will be maintained as necessary to operate at their existing capacities.
3. New project sites and redevelopment sites will be designed to attain a "0 percent" volume discharge increase or impact on the existing storm water drainage system to meet the State of Michigan "Channel Protection Criteria".
4. Effluent limits shall meet the State of Michigan "Water Quality Treatment Performance Standard" as listed below:

- a. Treatment of the first one inch of runoff from the entire site, and,
  - b. BMP's shall be designed on a site-specific basis to reduce post development total suspended solids loadings by 80 or achieve a discharge concentration of total suspended solids not to exceed 80 milligram per liter.
  - c. For more information see WMU Design Guidelines DG31-1B Post Construction Storm Water Controls, and DG31-1C Storm Sewer System Pollution Prevention.
5. Designs shall utilize retainage and detainage systems to minimize the impact on existing storm water system. Designs shall include maintainable sediment control.
  6. All addition(s) and renovation(s) on campus shall require the use of computer modeling to determine and evaluate the design flow conditions of storm water systems and track changes to existing storm water system(s) downstream. Copies of these files are to be submitted to WMU Facilities Management – Engineering Division. These calculations shall include detention area sizing.
  7. All additions and renovations project(s) on campus are required to provide electronic detailed site grading plans and specifications identifying: on-site drainage patterns, on site detention areas, storm drainage structure(s), pipe(s) with size and material selection, invert elevation(s), and geometric location(s) to WMU Facilities Management – Engineering Division.
  8. Testing shall be specified and performed on all new project storm/sanitary drain systems to insure no cross connects are installed in the systems.
  9. Streets and parking areas shall utilize runoff areas as much as can be accommodated to encourage infiltration.
  10. Provide a written inspection and maintenance program for each BMP installed.

### **PART 3 – CONTRACTOR REQUIREMENTS**

Construction documents shall include the following:

1. Contractors are responsible to obtain all necessary erosion permits.
2. Best practices shall be required of the contractor for dust control, and runoff during construction.
3. Coal tar emulsions to seal asphalt surfaces are not allowed.
4. Wastewater generated from cutting, grinding, drilling, or hydro-demolition of concrete without authorization under an NPDES wastewater discharge permit is not permitted.

### **PART 4 – TESTING AND DOCUMENTATION**

Specifications shall require the following at the completion of the construction of the plumbing, storm drains, storm and sanitary systems.

1. Ensure by testing, the separation of the storm and sanitary systems.
2. Test reports documenting what was done, how it was done, the date it was accomplished, and the results. These reports shall be submitted to the University's Facilities Management – Engineering Division office.

### **PART 5 – OPERATION AND MAINTENANCE**

Routine maintenance shall be provided, and maintenance schedules developed and implemented that are adequate to maintain pollution removal effectiveness at design performance and to ensure that the controls are maintained in a condition to reduce to the maximum extent practicable, the contribution of pollutants to the surface waters of the State.

**END OF GUIDELINE**