



Facilities Management – Engineering Division Checklist for Stormwater Design Standards

DESIGN

- No new outfalls or discharges to Waters of the State.
- Existing outfall(s) and discharges maintained as necessary to operate at their existing capacities.
- New building project sites and building redevelopment sites are designed to capture the 25-year, 24-hour storm event or greater with the goal to eliminate all storm water volume discharges post-development. Design guidelines reviewed with the engineers on a per-project basis to ensure conformance with a goal of zero stormwater runoff from new or redeveloped sites.
- New and redeveloped sites are evaluated for the need for site-specific BMPs to mitigate impacts from “hot spots” or areas of potential pollutant loading.
- Project meets all channel protection criteria.
 - Maintain the post-development project site runoff volume and peak flow rate at or below pre-development levels for all storms up to 2-year, 24-hour event. Pre-development level means the runoff flow volume and rate for the last land use prior to the planned new development or redevelopment.
 - Compliance is determined by calculating the existing (“pre-development”) and post-development runoff volume and rate for the 2-year and smaller storm events.
 - Use acceptable sources of rainfall data for calculations such as:
 - Rainfall Frequency Atlas of the Midwest
- Effluent limits meet the State of Michigan “Water Quality Treatment Performance Standard” as listed below:
 - Treatment of the first one inch of runoff from the entire site
 - BMP’s designed on a site-specific basis to reduce post development total suspended solids loadings by 80 percent or achieve a discharge concentration of total suspended solids not to exceed 80 milligram per liter.
 - For more information, see WMU Design Guidelines Section 33 Appendices for two additional documents: *MDEQ Post-Construction Storm Runoff Controls Program* and *EPA Supplemental Guide Appendix F*.
- Designs utilize retainage and detainage systems to minimize the impact on existing storm water system. Designs include maintainable sediment control.
- All addition(s) and renovation(s) on campus assessed via 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 submitted to WMU Facilities Management – Engineering Division. These calculations include detention area sizing.



WMU Design Guidelines

- All additions and renovations project(s) on campus 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.
- Testing specified and performed on all new project storm/sanitary drain systems to insure no cross connects are installed in the systems.
- Streets and parking areas utilize runoff areas as much as can be accommodated to encourage infiltration.
- Written inspection and maintenance program for each BMP installed.
- Construction sites with 1-acre or more of soil disturbance inspected by a Construction Site Certified Operator.

CONTRACTOR REQUIREMENTS

- Contractors obtain all necessary erosion permits.
- A certified operator employed by or under subcontract of the contractor is required to perform soil erosion and sedimentation control inspections once per week and within 24 hours of a storm event for construction sites with 1 or more acre of disturbed soil with a point source discharge to waters of the state, in accordance with MDEQ's Permit by Rule
- Best practices employed by contractor for dust control, and runoff during construction.
- Coal tar emulsions to seal asphalt surfaces are not allowed.
- Wastewater generated from cutting, grinding, drilling, or hydro-demolition of concrete without authorization under an NPDES wastewater discharge permit is not permitted.

TESTING AND DOCUMENTATION

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

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

OPERATION AND MAINTENANCE

- Routine maintenance 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 APPENDIX