Latest MWELO Updates + Storm Water Requirements “Kliffs Notes”

New Storm Water Permit and BMP Design Manual: Impacts on Future Development

Presented by: Kenneth Kozlik, Fuscoe Engineering
NEW STORM WATER PERMIT AND BMP DESIGN MANUAL

- Impacts on Future Development
- Presented by: Kenneth Kozlik, Fuscoe Engineering
TOPICS:

- What are the MS4 Permit and BMP Design Manual?
- Major Changes:
  - Water Quality Treatment
  - Hydromodification
- How these Changes Effect Upcoming Projects?
- Solutions and Planning Tips
NEW REGION 9  
MS4 PERMIT

- Adopted in June 2013
- Includes southern Orange County and southern Riverside County.
- BMP Design Manual implemented February 2016
- Requirements Apply to Priority Development Projects.
To qualify for “Prior Lawful Approval”, the following conditions must be met prior to the effective date of the BMP Design Manual:

- Have approved design of storm drain system including BMPs.
- Been issued a permit authorizing construction activities.
- Begin construction within 180 days after effective date.
- Pull all subsequent permits within 5 years of effective date.
PRIORITY DEVELOPMENT PROJECTS

- New Development which creates 10,000 sf of impervious area
- Redevelopment which creates and/or replaces 5,000 sf of impervious area
- Projects which create/replace 5,000 sf of impervious area and include:
  - Restaurants
  - Hillside Development
  - Parking Lots
  - Streets, Roads, Driveways
  - Auto Repair Shops
  - Gas Stations
- Projects which create/replace 2,500 sf of impervious area and drain directly to an Environmentally Sensitive Area
MAJOR CHANGES TO THE MS4 PERMIT: POLLUTANT CONTROL

DESIGN CAPTURE VOLUME:

- BMP Sizing is based on the Design Capture Volume (DCV)
- 24-hour 85th percentile storm event
  - 0.55 inches of rain for downtown San Diego
  - 0.80 inches of rain for San Marcos
- Reductions in DCV available for:
  - Impervious area dispersion
  - Green roofs
  - Permeable pavement
  - Tree wells
MAJOR CHANGES TO THE MS4 PERMIT:
POLLUTANT CONTROL

TIERS OF BMP REQUIREMENTS:

RETENTION
- Implement LID BMP’s to retain 100% of the Design Capture Volume.
- “Retain” means it cannot leave the site. Must utilize infiltration or reuse.
- Reuse options – landscape irrigation or toilet flushing.

BIOFILTRATION
- If retention is not feasible, implement biofiltration BMPs.
- New sizing requirements for biofiltration.

ALTERNATIVE COMPLIANCE
- Implement flow-through treatment control BMPs onsite AND perform Alternative Compliance mitigation.
ALTERNATIVE COMPLIANCE

- Offsite water quality and/or hydromodification management projects.
- Must provide a greater overall water quality benefit than implementing the permit requirements onsite.
- Water Quality Equivalency criteria has been developed.
- Considers factors such as land use, BMP effectiveness.
- Applicant may be able to construct the Alternative Compliance project or contribute funding.
- Applicant-initiated Alternative Compliance projects can be proposed now.
- Credit or fee based systems are another 1.5-2 years out.
WHAT IS HYDROMODIFICATION?

- Increased erosion in soft-bottomed streams/channels due to development.
- Impacts have been attributed to increased flow magnitudes and durations for small to medium sized rainfall events.
- Rainfall events of concern are from a percentage of the 2-year storm up to the 10-year storm.
- Some exemptions available
  - Direct discharge to ocean, bays, major rivers
MAJOR CHANGES TO THE MS4 PERMIT: HYDROMODIFICATION

- Post-project flows must not exceed “Pre-Development” flows rather than “Pre-Project” flows.
- No credit for existing impervious areas.
- Redevelopment projects must implement flow controls to match the conditions of an undeveloped site.
MAJOR CHANGES TO THE MS4 PERMIT: HYDROMODIFICATION

Protection of Critical Coarse Sediment Yield Areas

- Naturally occurring sediment is beneficial to receiving streams and beaches.
- If Critical Coarse Sediment Yield Areas are present on your site, they must be avoided or mitigated.
  - Mitigation focuses on showing “no net impact” to receiving waters.
SOLUTIONS

RETENTION:

- Capture and Reuse:
  - Irrigation
  - Indoor
- Infiltration BMPs:
  - Bioretention (No Subdrain)
  - Infiltration Basins/Trenches
  - Underground vaults
  - Dry wells

BIOFILTRATION:

- Biofiltration Basins
- Planter Boxes
- Potentially Proprietary “High Rate” Biofiltration Units

FLOW-THROUGH (PLUS ALTERNATIVE COMPLIANCE):

- Downspout Filters
- Hydrodynamic Separators
- Media Filters
SOLUTIONS: BIOFILTRATION

- Shallow depressions in landscape designed to capture runoff & encourage ponding.
- Effective for a wide range of pollutants.
- Easily incorporated into:
  - Parking lot islands and edges.
  - Street rights-of-way and medians.
  - Landscape areas around buildings.
- Rule of Thumb Sizing:
  - Treatment + Hydromod = 6-16% of imperious area.
  - Treatment Only = 3% of impervious area.
SOLUTIONS: DETENTION VAULTS

- Can be configured with retention (infiltration or reuse) or biofiltration
- Allow for high volume storage of runoff in a small footprint area.
- Detention vaults alone do not provide treatment to improve water quality.
- Typically installed under parking lots, streets or parks to maximize property usage.
- Rule of Thumb Sizing:
  - $\text{Hydromod} = 2\text{–}10\% \text{ of imperious area.}$
Important considerations when planning a new project:

- Timeline — will project be subject to new BMP design requirements?
- Check for hydromodification exemptions.
- Infiltration testing — coordinate with Geotech.
- Opportunities for reuse (LEED Credit, landscape area).
- Is alternative compliance worth exploring?
- Identify storm water and integrate into site planning.
- Account for BMP costs in site development budgets.
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