STORMWATER BMPS: NEW CONSTRUCTION AND RENOVATON OF MUNICIPAL BUILDINGS AND FACILITIES

AFFECTED FACILITIES

These BMPS apply to any newly designed, constructed or renovated municipal building or facility.

BACKGROUND

Many practices in municipal and business operations may contribute to stormwater pollution. These include storing chemicals outside, allowing dumpsters to become full of water and leak out, allowing leaves and landscaping wastes to pile up and blow or be washed into the storm sewer, and discharging secondary containment or other polluted water to the street where it can be washed into the storm sewer. Improperly designed buildings can negatively impact stormwater. Designing a building properly in the first place will ensure that runoff from pressure washing, cooling tower wastewater, fueling spills, or vehicle washing do not pollute our waterways. Implementing these BMPs will ensure that buildings are designed with stormwater protection in mind.

BEST MANAGEMENT PRACTICES (BMPS)

Buildings and Structures

- If it is expected that a building or structures on the roof will be cleaned regularly, design the landscaping to allow wastewater to be directed to landscaped areas or retention areas.

Container Storage Areas

- Bulk storage structures must be installed around petroleum product tanks and any other liquid chemical (i.e. liquid deicer products) tanks located at municipal facilities. Control Measures must be implemented that provide secondary containment or equivalent protection so as to contain all spills and prevent any spilled material from entering State waters. For the scenario of a single containment system serving multiple tanks, the containment system must have sufficient capacity to contain 10% of the volume of containers, or the volume of the largest container plus 10%, whichever is greater.
- Design and build impervious secondary containment structures for any petroleum or other liquid chemical tanks. Secondary containment should be of sufficient capacity to hold the contents of the largest single container plus 4” of rainfall.
- Design the containment area so that it contains a blind sump (no outlet) to facilitate pumping out or draining.

Erosion Control during Construction

- Block storm drain inlets (within 25 feet and down gradient) during construction work. Place covers, straw bales, rock waddles, sand bags, filter fabric or plastic around or over inlets to protect them from entry of wastes, dusts, overspray or slurry.
- Store maintenance supplies including cement bags, sand, sealants, and tar under cover (such as a tarp) and away from drainage areas.
- Ensure that temporary storage of soil, sand and other materials is conducted to minimize stormwater pollution. (Do not store piles of materials in street, near

storm drains or gutters unless BMPs are used to protect storm drains from sediment run off.)

- During construction projects, control erosion to the maximum extent possible. Provide permanent erosion control that will remain effective for the life of the street.
- Inspect and maintain all erosion or sediment control devices or equipment installed in erosion-prone areas in road construction projects.
- Ensure that projects over 1 acre have the proper Stormwater Discharge Permits and Stormwater Management Plans.(Click on: https://www.colorado.gov/pacific/cdphe/news/water-quality-permits)
- Utilize BMPs to reduce erosion from the site. (See UDFCD Volume 3 and KICP's Erosion Control Field Guide).

Food Waste Handling Areas

- If food and grease waste containers must be stored outdoors, design a bermed or dyked area where food and grease wastes can be stored and storm water run-on will be diverted.

Landscaped & Vegetated Areas

- Design new or re-landscaped facilities with xeriscapes rather than conventional landscaping. Native species are usually preferable to non-natives.
- Incorporate Low Impact Development (LID) into new and retrofitted projects.

Materials Handling, Loading & Unloading Areas

- Do not install storm drains near (or at a lower elevation than) material loading or unloading areas unless they are equipped with shut-off valves.
- Grade and slope material loading and unloading areas to avoid run-on to the area.
- All loading and unloading areas should be paved.
- Loading and unloading areas should be under a roof, canopy or overhang to avoid exposure.
- Design new or remodeled facilities so that all work involving industrial materials or wastes is conducted indoors or under a roof or inside of containment.
- If work with materials must be conducted outdoors, construct impervious berms or secondary containment around areas where materials are stored, handled, or transferred routinely. Make sure these berms or dykes are adequate to contain the maximum quantity of the single largest probable spill or leak plus a simultaneous heavy rain fall.

Salt/Sand Storage Areas

- Salt/sand or *Ice Slicer* storage facilities should be totally enclosed such as under salt domes or inside of fabricated buildings.
- Liquid deicer storage tanks must have secondary containment berms installed as to contain the volume of the largest tank plus 10%.

Storm Drainage Systems

- Any new construction, remodel, addition or renovation will not be permitted to include any illicit connection.
- Any illicit connection discovered during a remodel, renovation, remodel or addition should be immediately disconnected.

Swimming Pools

- New or renovated pools should be connected to the sanitary sewer for pool water discharges if allowed by the sanitation district.

Vehicle & Equipment Fueling Stations

- All petroleum product tanks must have secondary containment berms installed or have double-walled tanks.
- Construct impervious berms around vehicle fueling stations to contain leaks or drips and to prevent run-on and run-off.
- Grade, contour and install impervious pavement around fueling stations to divert run-on storm water away from fueling stations.
- Install oil/water separators in any storm drain inlet that might receive run-off from a fueling area.
- Install covers or canopies over fueling stations to avoid exposure to storm water.
- If storm drains are located near fueling areas, install shut-off valves in storm drain inlets that can be turned off while fueling.

Vehicle & Equipment Maintenance & Repair Areas

- Design vehicle or equipment repair facilities such that all work involving hazardous liquids (oil, fuel, grease, hydraulic fluid, paint, solvents, anti-freeze, batteries, ATF, cleaners, etc.) is conducted indoors only.

Vehicle & Equipment Washing Facilities

- Design all vehicle and equipment washing facilities indoors. Plumb wastewater to a sanitary sewer, if allowed by the local sanitary district.

Waste Management Areas

- Design new or renovated facilities with waste, scrap or recycling accumulation areas indoors or under a roof. If outdoors, keep waste accumulation area inside of a containment structure and under cover.

REFERENCES

1. *Colorado's Phase II Municipal Guidance,* October 2001

2. *California Stormwater BMP Handbook*, January 2003

3. *Knoxville (TN) BMP Manual, Activities & Methods*, January 2001

4. *City of Tacoma: Surface Water Management Manual (Vol. IV Source Control BMPs)*,
    a. January 2003

5. *Municipal Facility Runoff Control Plan* (City of Lakewood, CO)

6. *Best Management Practices for Industrial Storm Water Pollution Control* (Santa Clara, CA)