A-49: Nurseries and Greenhouses

Stormwater runoff (rainwater and snow melt) is the largest source of pollution to our lakes, streams and Puget Sound. King County requires businesses to implement measures to protect our shared waters. If the requirements below do not prevent pollution, additional measures are necessary.

The following best management practices (BMPs) apply to commercial container plant, greenhouse grown, cut foliage, and cannabis production operations.

Required Operational BMPs

- Establish nursery composting areas, soil storage, and mixing areas as far away as possible from surface waters and stormwater drainage systems.
- Do not blow, sweep, or otherwise allow vegetation or other debris into stormwater drainage systems or surface waters.
- Regularly clean up spilled potting soil, especially if fertilizers and pesticides are incorporated.
- Cover soil storage and compost storage piles. Refer to activity sheet A-4: Outdoor Storage of Soil, Sand and Other Erodible Materials.
- Dispose of pathogen-laced potting substrate and diseased plants appropriately.
- Place plants on gravel, geotextile, or weed cloth to allow infiltration and minimize erosion, including inside greenhouse structures.
- Properly store, reuse, recycle, and dispose of used polyfilm, containers, and other plastic-based products so that they do not collect stormwater.
- Evaluate and manage irrigation to reduce runoff, sediment transport, and erosion. Refer to activity sheet A-26: Landscaping Activities, Vegetation Management, and Irrigation

Required Structural BMPs

- Control stormwater and irrigation runoff. Either:
    - Collect runoff in a small basin and reuse the runoff,
    - Route runoff through an onsite vegetative treatment area, or
    - Use a graveled area and allow runoff to infiltrate.
- Surround soil storage and compost storage areas with a berm or wattles.
- Use groundcover, such as geotextile fabric or mulch, to stabilize disturbed areas and prevent erosion in areas where vegetative cover is not an option.
- In areas with heavy traffic (foot or machine), use appropriate aggregate such as rock and gravel for stabilization.
- Store potting substrate that contains fertilizer in a dedicated area with an impermeable base. If the storage area is not under a roof to protect it from rainfall,

then manage runoff so that no substrate enters the storm drain system or surface waters.

Supplemental BMPs – Operational

- Use soil mixing and layering techniques with composted organic material to reduce herbicide use and watering.
- Utilize soil incorporated with fertilizers and/or pesticides immediately; do not store for extended periods.
- Irrigation:
    - Place irrigation emitters primarily in the plant's root zone. This will significantly reduce nutrient related impacts from fertilizers.
    - Avoid over-irrigating. This may exceed the soil's water-holding capacity and lead to run-off or leaching
    - Consider, and adjust as needed, the uniformity of application, the amount of water retained within the potting substrate, and the amount of water that enters containers compared to that which exits the containers and/or falls between containers.
    - Consolidate containers and turn off irrigation in areas not in production. This may require individual on/off valves at each sprinkler head.
    - Based on the stage of plant growth, space containers and flats as close as possible to minimize the amount of irrigation water that falls between containers.
    - Group plants of similar irrigation needs together.
    - Consider minimizing water losses by using cyclic irrigation (multiple applications of small amounts). Consider using sub-irrigation systems (e.g. capillary mat, ebb-and-flow benches, and trays or benches with liners); these systems can conserve water and reduce nutrient loss, particularly when nutrients are supplied in irrigation water that is reused.

Supplemental BMPs – Structural

- Use windbreaks or other means (e.g. pot in pot) to minimize plant blow over.
- Cover potting areas with a permanent structure to minimize the loss of soil. Use a temporary structure if a permanent structure is not feasible.

Additional Information

- Potential pollutants can include: fecal coliform bacteria, metals, nutrients, oil and grease, oxygen demanding substances, PCBs, and sediment.
- *Stormwater Pollution Prevention Manual*, Chapter 3: Commercial and Multifamily BMPs
    - A-3: Storage of Liquid Materials in Portable Containers
    - A-4: Outdoor Storage of Soil, Sand and Other Erodible Materials
    - A-5: Storage and Use of Pesticides and Fertilizers

  - A-11: Cleaning or Washing of Tools and Equipment
  - A-24: Commercial Composting
  - A-26: Landscaping Activities, Vegetation Management, and Irrigation
- Washington State Department of Ecology's *Regulatory Guidance For Cannabis Operations* https://appswr.ecology.wa.gov/docs/WaterRights/wrwebpdf/Guidance4CannabisOperations.pdf

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For more information or assistance contact the King County Stormwater Services at 206–477–4811 and visit kingcounty.gov/stormwater.