3.2.2. BMP 10: Fueling at Dedicated Stations

This BMP applies to businesses and public agencies that operate a facility used exclusively for the transfer of fuels from a stationary pumping station to vehicles or equipment. This type of fueling station includes aboveground or underground fuel storage facilities, which may be permanent or temporary. Fueling stations include facilities such as, but not limited to, commercial gasoline stations, 24-hour convenience stores, car washes, warehouses, manufacturing establishments, maintenance yards, port facilities, marinas and boatyards, construction sites, and private fleet fueling stations.

Description of Pollutants

Typically, stormwater contamination at fueling stations is caused by leaks or spills of fuels, lubrication oils, radiator coolants, fuel additives, and vehicle washwater. These materials contain organic compounds, oils and greases, and metals that can be harmful to humans and aquatic life. These pollutants must not be discharged to the drainage system or directly into receiving water.

A spill can be a one-time event, a continuous leak, or frequent small spills. All types must be addressed.

Required BMP Elements

All BMPs related to fueling at dedicated stations must be consistent with the requirements of the Seattle Fire Code (SMC, Chapter 22.600). The water quality requirements presented in this manual are separate from, and in addition to, the requirements of the Seattle Fire Code. These water quality requirements relate to fuel storage tanks, fuel dispensing equipment, area lighting, spill control and secondary containment, signage, maintenance, and operations. For current requirements, refer to the Seattle Fire Code.

New or substantially altered stations* require the following (refer to Figure 7):

*Substantial alteration of fueling stations includes replacing the canopy or relocating, replacing, or adding one or more fuel dispensers in such a way that the Portland cement concrete (or equivalent) paving in the fueling area is modified. Addition of fuel tanks to a site also triggers implementation of source control BMPs. For further guidance on determining the actions considered substantial remodeling, contact the Seattle Department of Construction and Inspection (SDCI).

- Construct fueling stations on an impervious concrete pad under a roof to keep out rainfall and to prevent stormwater run-on. Pave the fueling island and containment pad with Portland cement concrete or equivalent. Asphalt is not considered an equivalent material.
- Use an oil control treatment BMP for contaminated stormwater and wastewater in the fueling containment area with discharge to the sanitary sewer. Alternately, discharge to a dead end sump.

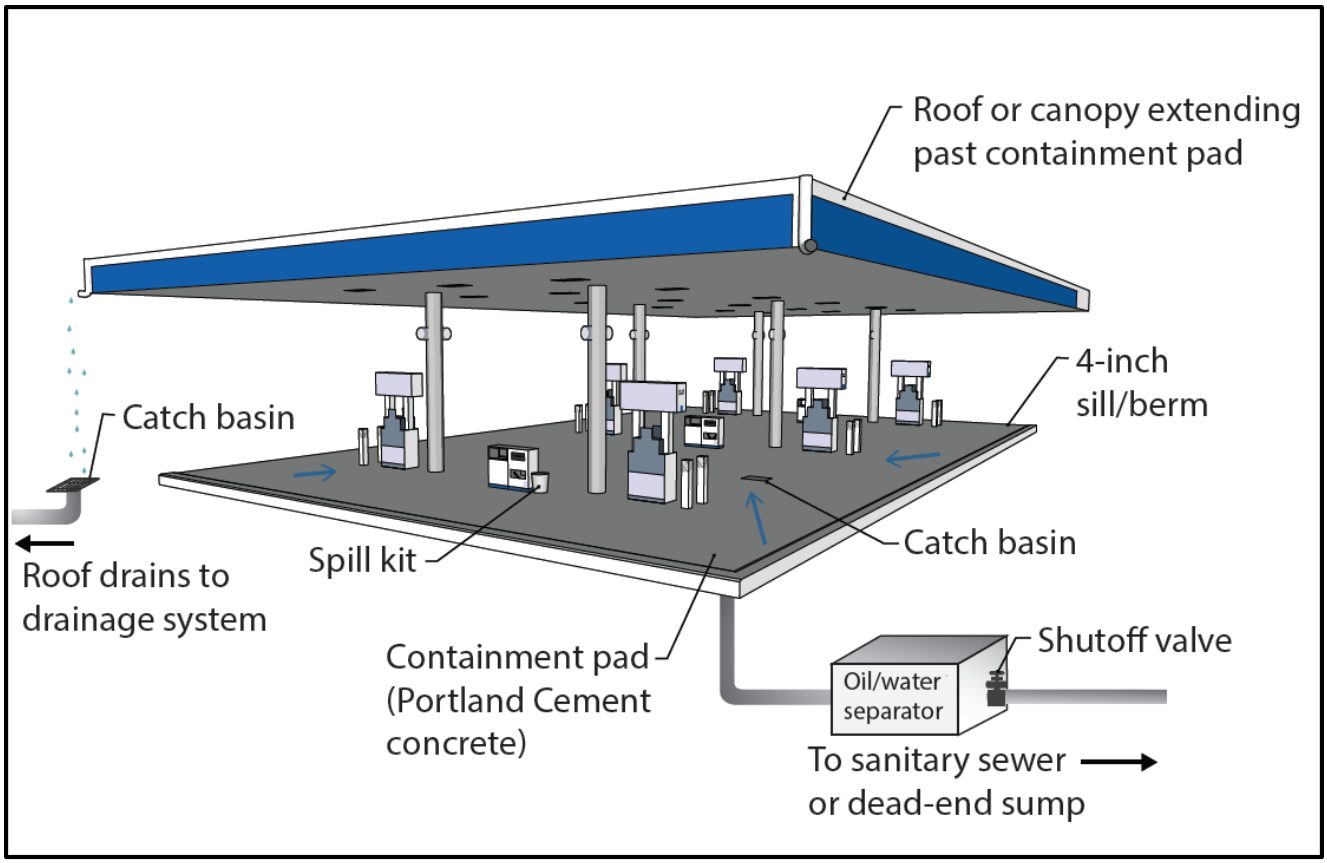

Figure 7. Fueling Island Schematic.

- Design the fueling island (Figure 8) to minimize stormwater contamination, to control spills, and to collect and direct contaminated stormwater and/or wastewater to a pretreatment facility that will achieve the performance goal per 3.5.2.1. Oil Control Treatment Volume 3 – Project Stormwater Control ((~~required level of treatment~~)). The fueling island must be designed in compliance with all applicable codes.
- Drains from the fueling island must discharge to the sanitary sewer or to a dead-end sump.
- The fueling island spill containment pad must be designed with the following:
  - A sill/berm (or equivalent control) raised to a minimum of 4 inches to contain spilled liquids and to prevent the run-on of stormwater from the surrounding area. Raised sills are not required at open-grate trenches that connect to an approved drainage-control system.
  - A concrete containment pad sloped around the fueling island toward the fuel pad drains. The slope of the drains must not be less than 1 percent.
  - ((~~The fuel pad drain system must include trench drains, catch basins and an oil water separator, a spill control separator, and/or a dead end sump~~.))
- Collect ((~~stormwater on~~)) runoff from the fuel island containment pad and convey it to either (1) the sanitary sewer—if approved by SPU and ((~~/or~~)) King County—using an approved ((~~pre-treatment system such as an~~)) oil/water separator ((~~and a basic treatment BMP. Alternatively, collect stormwater on the fuel island containment pad and~~)) or (2) hold for proper offsite disposal.

- For discharges to the sanitary sewer, a catch basin shall be installed upstream of the oil/water separator.
- The dead-end sump must be easily inspected.
- Collected runoff from the fuel island containment pad discharged to the sanitary sewer must comply with Seattle Municipal Code SMC 21.16.300 - Prohibited discharge of certain substances. Comply with pretreatment regulations prohibiting discharges that could cause a fire or explosion (WAC, Section 173-216-060).
- The minimum spill retention volume of the oil/water separator or dead-end sump shall be (1) 15 minutes for the flow rate of the dispensing mechanism with the highest through-put rate, or (2) if the area is uncovered, the 15-minute peak flow rate of the 6-month, 24-hour storm event over the surface of the containment pad - whichever is greater. The volume of the spill containment sump should be a minimum of 50 gallons with an adequate grit sedimentation volume.
- For further requirements and guidance related to the storage of fuel-contaminated stormwater, refer to BMP 26 in *Section 3.4.5*.

- ((~~Install an automatic shut-off valve and spill control sump at the discharge point where drains convey contaminated stormwater to a treatment system~~.)) For discharges to the sanitary sewer, an automatic shutoff valve is required at the discharge point of the oil water separator. The ((~~discharge point~~)) valve must be closed in the event of a spill. The spill control sump must be sized in compliance with the Seattle Fire Code and the International Fire Code. For more information, contact the Seattle Fire Department (206) 386-1400.
- Construct a roof or canopy over the fueling island to prevent precipitation from falling directly onto the spill containment pad (Figure 8). The roof or canopy must:
  - At a minimum, cover the spill containment pad (within the grade break or fuel dispensing area) and preferably extend several additional feet to reduce the introduction of windblown rain.
  - Roofs and canopies 10 feet or less in height must have a minimum overhang of 3 feet on each side. The overhang must be measured relative to the berm or other hydraulic grade break.
  - Roofs or canopies greater than 10 feet in height must have a minimum overhang of 5 feet on either side.

Figure 8. Roof at Fueling Island to Prevent Stormwater Run-on.

- Convey runoff collected in roof or canopy drains to a drainage system or receiving water outside the fueling containment area. This will prevent the mixing of uncontaminated runoff from the roof with contaminated runoff from the fueling island.
- A roof or canopy may not be practical at fueling stations that regularly fuel vehicles 10 feet in height or more, particularly at industrial or transportation sites. Additional BMPs or equivalent measures are required. At these types of fueling facilities, the following BMPs apply, as well as all of the other required BMPs and fire prevention requirements (Seattle Fire Code and Uniform Fire Code):
    - The concrete fueling pad must be equipped with an emergency spill control device that includes a shutoff valve for drainage from the fueling area.
    - The shutoff valve must be closed in the event of a spill. An automatic shutoff valve is preferred to minimize the time lapse between spill and containment.

Obtain all necessary permits for installing, altering, or repairing side sewers. Restrictions on certain types of discharges may require pretreatment before they enter the sanitary sewer.

The following BMPs or equivalent measures are required for all fueling stations:

- Implement all citywide BMPs (refer to Chapter 2).
- Train employees on the proper use of fuel dispensers.
- Do not use dispersants to clean up spills or sheens.
- Post signs related to the operation of fuel dispensers in accordance with the Seattle Fire Code. For example, post "No Topping Off" signs near fuel dispensers (topping off gasoline tanks results in spillage and vents gasoline fumes to the air).
- Ensure that the person conducting the fuel transfer is present at the fueling dispenser/fueling pump during fuel transfer, particularly at unattended or self-service stations. Post "Stay with Vehicle during Fueling" signage near fuel dispensers.
- Ensure that the automatic shutoff on the fuel nozzle is functioning properly.
- Ensure that at least one designated trained person is available either on site or on call at all times to promptly and properly implement spill prevention and cleanup. If the fueling station is unattended, the spill plan must be visible to all customers using the station, and the spill kit must also be accessible and fully stocked at all times.
- Keep suitable cleanup materials, such as dry adsorbent materials, on site to enable employees to promptly clean up spills.
- Transfer the fuel from the delivery tank trucks to the fuel storage tank in impervious contained areas and ensure that appropriate overflow protection is used. Alternatively, cover nearby inlets/catch basins during the filling process and use drip pans under all hose connections.

The following additional BMPs or equivalent measures are required for fueling over open water, such as at marinas or boatyards:

- Have an employee supervise the fuel dock.
- Use automatic shut-off nozzles and promote the use of "whistles" and fuel/air separators on air vents or tank stems of inboard fuel tanks to reduce the amount of fuel spilled into receiving waters during fueling of boats.
- During fueling operations, visually monitor the liquid level indicator to prevent the tank from being overfilled.
- The maximum amount of product received must not exceed 95 percent capacity of the receiving tank.
- Collect stormwater on the fuel island containment pad and convey it to either; the sanitary sewer—if approved by SPU and/or King County—using an approved pre-treatment system such as an oil/water separator or collect stormwater on the fuel island containment pad and hold for proper offsite disposal.

Facilities and procedures for the loading or unloading of petroleum products must comply with U.S. Coast Guard requirements. Refer to specifications in the Stormwater Management Manual for Western Washington (SWMMWW), Volume IV, Appendix IV-D (Ecology 2014).

Recommended BMPs

- Provide information to all appropriate parties on collection and recycling programs for oil, oil absorbing pads, and oil filters.
- Direct all appropriate parties to the proper disposal of all used hydrocarbon products through the use of signs, mailings, and other means.