

4.2-c SNOW STORAGE

DESCRIPTION

Snow is removed from streets, roadways, and parking areas to ensure public safety and to accommodate transportation. Plowed snow can contain pollutants such as salt, sand, oil, grease, heavy metals, and trash, which can accumulate in the area where the snow is stored and can be released when the snow melts.

In the Lake Tahoe Region snow storage practices vary dependent upon land use conditions: 1) in residential areas snow is plowed from roads onto road shoulders, and from driveways to pervious areas adjacent to driveways; 2) in commercial areas snow is commonly plowed to the corners of a parking lot; and 3) in the most densely developed areas (e.g., Lake Tahoe Boulevard in the City of South Lake Tahoe), snow is removed and stored at an off-site location. The guidance provided for this BMP primarily targets appropriate snow storage practices for commercial areas and densely developed areas.



This snow storage area is ideal because it is on a paved surface, upslope of drainage BMPs and the sign clearly indicates the area is dedicated for snow storage.

APPLICABILITY

- Appropriate snow storage practices are necessary for all properties and facilities where snow is plowed and stored.
- Snow should not be stored within a Stream Environment Zone (SEZ) or an SEZ setback.
- Snow should not be stored in stormwater treatment BMPs. Exceptions may be temporarily granted by the permitting authority on a case-by-case basis for dry basins or infiltration basins installed as part of a BMP Retrofit with severe space constraints. Refer to Design and Installation Considerations below for more details.

BMP DESIGN APPROACH

- Pollutant Source Control
- Hydrologic Source Control
- Stormwater Treatment

SCALE OF APPLICATION

- All SFR and MFR < 1 acre
- MFR 1-5 Acre and CICU < 5 acres
- MFR and CICU > 5 acres and all WQIPs

BMP TYPE

- Temporary
- Permanent

- Snow should not be stored within BMPs defined in this Handbook as a Wet Basin or a Media Filter.
- Snow may be stored above a vegetated Filter Strip as defined in this Handbook.

Advantages

- If properly sited and designed, snow storage practices can prevent the surface discharge of poor quality melt water.
- Regional snow storage facilities, where applicable, provide locations where pollutants in plowed/hailed snow can be directed through large scale stormwater treatment BMPs.

Disadvantages

- Requires designated locations for snow storage that may take up parking or other useful space.
- Can damage landscaping and vegetation.

DESIGN AND INSTALLATION CONSIDERATIONS

- Snow storage areas should be sited and designed to minimize pollutant and runoff impacts.
- Size the area designated for snow storage to accommodate the expected volume of snow. As a rule of thumb, size snow storage areas to be roughly 20 percent of the plowed area.
- Do not locate snow storage areas on top of drain inlets.
- Snow storage within dry basins and infiltration basins may be acceptable if the following conditions are met:
 - Drainage design standards for the responsible jurisdiction allow the practice.
 - The limits of snow storage within the basin are clearly designated and do not encroach on the inlet and outlet structures of the basin.
 - Basin capacity has been increased to accommodate expected snow storage amounts in addition to the design storm (typically the 20-yr/1-hr storm). The basin must retain the capacity to hold the design storm at all times during snow storage operations.
 - Stabilized access for snowplowing equipment is provided.
 - Maintenance is conducted annually after spring snowmelt to remove material and debris from the basin, rehabilitate the infiltration capacity of the basin, and to confirm conveyance facilities are functional.
- Clearly identify the boundaries of the snow storage area to be visible under winter conditions.
- Site pervious snow storage areas so that plowing and snowmelt will cause the least disturbance to soils and vegetation. Avoid siting snow storage on compacted or poorly draining soils.
- When storing snow in close proximity to an SEZ setback or other sensitive areas, construct a berm around the perimeter of the snow storage area to contain the

snowmelt. Alternatively, construct a vegetated filter strip between the SEZ setback and the snow storage area.

- For snow that may contain elevated levels of pollutants (e.g., commercial parking lots or roads), site snow storage on an impervious surface that drains to a stormwater treatment BMP described in this Handbook.
- If an appropriate on-site snow storage area cannot be sited or designed, make arrangements for removal of snow and off-site storage.
- When storing snow in landscaped areas, plant with native and adapted species tolerant of snow storage (perennials that die back annually and shrubs/trees that can bend with weight, but not break).
- Employ concave landscaped areas rather than mounded landscapes for snow storage.
- Locate snow storage areas to maximize solar exposure and away from primary roadways to the greatest extent feasible.



Snow shall not be stored in the shoreline where polluted snowmelt can go directly into Lake Tahoe.

- For unpaved snow storage areas where snowplowing equipment will operate, the snow storage area should be covered with gravel or plowed to maintain 12 inches of packed snow to reduce soil disturbance and soil compaction.
- Site basins outside of the jurisdictional snow storage ROWs – usually 15-20 feet off of roadway.

INSPECTION AND MAINTENANCE

- Before and after winter, clean the designated snow storage area of accumulated sand, trash, and debris, and inspect any associated drainage outlets or conveyance facilities for damage or erosion.

- Before and after winter, repair any damage or erosion that may have occurred to the snow storage area from snow removal equipment or other snow storage activities.

EFFECTIVENESS CONSIDERATIONS

When properly sited, designed, and maintained, snow storage areas can significantly reduce the discharge of poor quality melt water to receiving waters and other sensitive areas.