

Why Low Salt Design?

Low Salt Design strategies help infrastructure perform better in the winter. They increase safety and drive down the need for salt. The use of salt has economic, environmental, and societal costs:

- Degrades infrastructure including concrete, pavement, metal fixtures, and exterior and interior of buildings (Every 50 lb. bag of salt causes \$40-\$400 in infrastructure damage)
- Damages vegetation and soil
- Pollutes drinking water, lakes, rivers & wetlands
- Harms fish, fish eggs and other aquatic life



Low Salt Design Examples



Outsmart the Wind

Hopkins' prevailing winter wind is NNW. Anticipate blowing/drifted areas and design to shelter your critical traffic areas.



Use the Sun

Less salt is used where the sun shines. Evaluate where shadows will be on a project site to help place critical areas in the sun.



Snow Storage

Designs must include snow storage with meltwater control. About 18% of plowshed needed for snow storage in average snow winter. Snow hauling plan needed if storage is undersized.



Drainage

Route meltwater away from salted surfaces. Consider downspouts, snow storage areas, and snow melt from lawn/landscape areas. Reduce meltwater footprint onto salted surfaces.



Plow Access

Plan for width of snow removal equipment. Avoid acute angles and curved surfaces. Design for easy push to snow storage. Limit need for back up maneuvers.



Vegetation

Keep trees and shrubs out of snow storage. Use salt tolerant species in islands. Limit winter shadows in safety zones through species selection and placement

For more information, contact the City Engineer, Eric Klingbeil:
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More information on Low Salt Design including a Low Salt Design Best Practices checklist:
<https://www.hopkinsmn.com/1196/Hopkins-Sustainable-Building-Policy>



Low Salt Design Examples

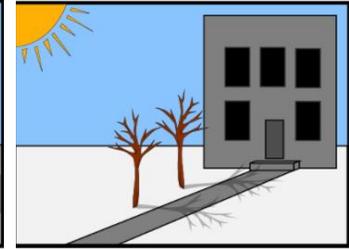
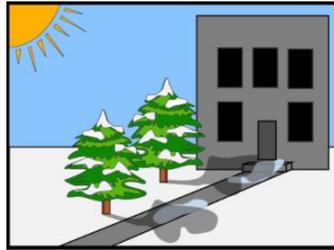
Poor Winter Performance

Proactive Winter Performance



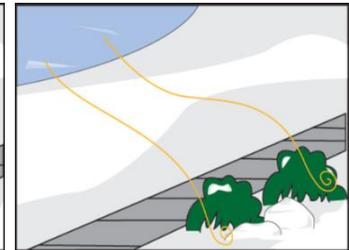
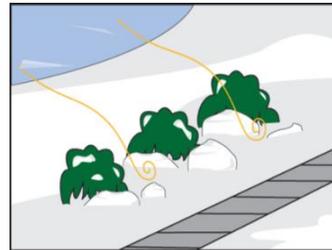
Direct sunlight to critical areas (front steps, braking zones):

- Select deciduous vegetation
- Control shadows of conifers
- Consider building orientation



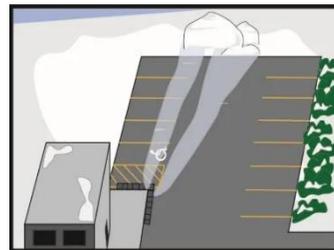
Manage the NNW winter Wind:

- Create snow drop zones before or after the saltable surface.
- Eliminate snow drop zones on saltable surfaces



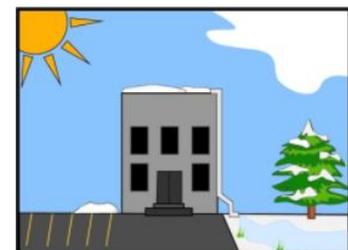
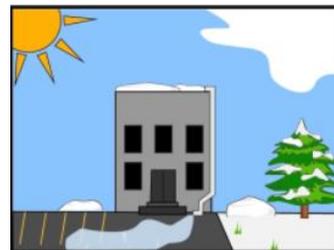
Design for snow storage:

- Size snow storage area at ~18% of plowed area
- Keep snow storage areas free of trees and other obstacles
- Control meltwater sprawl



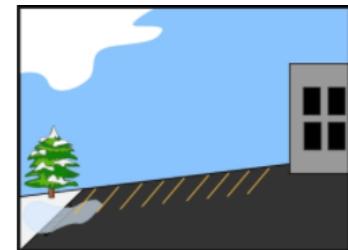
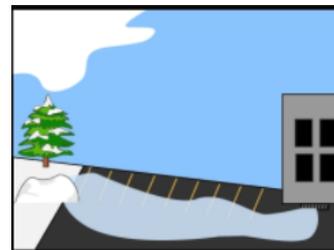
Control vertical drainage:

- Drain snowmelt from (roofs, decks, awnings) away from saltable surfaces
- Reduce meltwater sprawl



Manage horizontal drainage:

- Store snow on low side of pavement
- Direct perimeter meltwater away from saltable surfaces



Make it easy to plow:

- Reduce obstacles
- Create easy push to snow storage
- Limit plow back up maneuvers

