

UDOT MAINTENANCE FACTS

UDOT consists of four administrative regions headquartered in Ogden, Salt Lake City, Orem, and Richfield. The Regions are responsible for all UDOT programs in these areas.

UDOT maintained roads lead into every National Park, National Monument, and National Recreation Area in Utah. State highways serve every ski area in the state.

SYSTEM FACTS

Miles of highways maintained by UDOT:	5,872 miles
Miles of Interstate Highways	971 miles
Amount of lane-miles of state highways maintained by UDOT	16,270 lane-miles
1 lane-mile = 1 mile of road 12 feet wide	

Amount of pavement maintained by UDOT	24,087 surface areas
1 surface area = 1 mile of road 12 feet wide	
(all pavements must be cared for – traffic lanes get first priority)	

UDOT maintains

- 95,000 signs
 - 2,700 large overhead signs
- 375,000 delineators
 - 60,000 culverts
 - 1,670 bridges
 - 2,500 miles of fence
 - 39 rest areas
- 100,000 acres of roadside vegetation
 - 600 miles of guardrail
 - 2,000 miles of ditches and
 - 1 ferry boat

LONG TERM PAVEMENT MAINTENANCE

Our maintenance program is based on the idea “*Good Roads Cost Less*” – Keeping a road in good shape is less costly in the long term than letting it deteriorate and then try to fix everything at once.

On average, we spent \$3,600 per year per lane-mile of road for fixing roads
We spend another \$7,000 per year for every lane-mile on the system for rehabilitation or preservation of road pavements so they won’t deteriorate faster.

Much of the “construction” we see around the state is actually maintenance work . . .
Fixing potholes, sealing cracks, renewing pavement surface so cars and trucks have better “Skid Resistance”, preserving pavements by adding protective layers, and adding new pavement layers for added strength are all part of the routine pavement maintenance cycle.

Why do roads deteriorate?

- Traffic – heavy truck and automobile traffic causes wear
- Water – water seeps under the pavement and makes the earth underneath soft
- Erosion – water erodes slopes and pipes

Crash damage

Freezing and thawing during the winter – this can break concrete and asphalt.

EQUIPMENT FACTS

We have 493 trucks equipped with snow plows

We use 1500 snow plow blade edges annually

Trucks are scheduled for replacement every fifteen years

About 1100 other specialized pieces of equipment such as message boards, paint trucks, giant snow blowers, front-end loaders, road graders, oil spreaders, and boom trucks. We lease most of our tractors used for mowing. The equipment Division is constantly looking for ways to stretch equipment purchase money. All new front-end loaders are purchased on a guaranteed dealer buy-back program that reduces ownership costs. UDOT uses about 1,100,000 gallons of gasoline and diesel annually.

PERSONNEL FACTS

We employ about 560 permanent full-time employees and about 30 winter seasonal employees who work at 78 maintenance stations and in 29 special maintenance crews who take care of bridges, highway painting, signs, weed control, guardrail and also plow snow in the winter

The most remote maintenance station is located at Garrison, Utah, located near the Nevada border west of Delta. It's a two hour drive to the nearest doctor or supermarket and 3 hours to the nearest pizza parlor.

The farthest from UDOT Headquarters is Bluff Maintenance Station 329 miles southeast of Salt Lake City

WINTER MAINTENANCE and SNOW REMOVAL

UDOT moves about 65,000,000 tons of snow off the road in a typical winter

A typical snow season costs \$18,000,000 for snow removal on state highways.

Salt is NOT used to melt snow, rather it is used to keep snow and ice from bonding to the pavement

UDOT uses plowing, anti-icing, prewetting, and deicing to manage winter road conditions

Interstate routes and urban arterial streets receive highest priority for snow removal while five routes with low summer traffic volumes are closed for the entire winter.

UDOT uses primarily common salt to de-ice and anti-ice roads. We also use magnesium chloride and potassium acetate in smaller quantities.

Application

Typical application rates for dry salt are 250 pounds per lane-mile.

A lane mile is a section of road 12 feet wide by 5,280 feet or 66,360 square feet.

This rate is 0.0039 pounds of salt per square foot or 0.06 ounces or 1/8 teaspoon per square foot.

Applying liquid salt (salt brine) in carefully controlled amounts and under controlled conditions reduces the amount of salt needed to keep ice from forming to about 50 pounds per lane-mile. Brine is applied directly to the surface and is not allowed to run off. Salt is placed where it is needed.

Sodium Chloride salt loses its ability to melt ice at low temperatures. At 20° F it takes three times as much salt to melt a pound of ice than it took at 31° F. At -5° F sodium chloride will not melt ice.

Experience has shown that sodium chloride salt that is normally solid is easy to store, low cost, and effective when used in the correct quantities and at the correct temperature.

Salt Sources

UDOT salt comes from

- solar evaporation ponds located north of Grantsville (Morton Salt Company),
- solar evaporation ponds at MAGCORP, north of I-80 near Grantsville (Broken Arrow),
- solar evaporation ponds west of Ogden at Little Mountain (North American Salt).

Rock salt from underground mines at Redmond, Utah (Redmond Minerals) makes up about 30% of our usage statewide.

As with any bulk commodity, haul costs determine which products are used in what area. In northern Utah the majority of the salt used is from the Great Salt Lake. In southern and eastern Utah most salt used comes from Redmond, Utah.

Magnesium Chloride from evaporation ponds operated by North American Salt west of Ogden is used in small amounts.

We use a very small quantity of potassium acetate from a manufacturer in Iowa for anti-icing on the bridges at I-215 and State Route 210 (Knudsen's Corner) as part of a test of advanced anti-icing techniques.

Preparing for winter

We purchase only enough salt for anticipated needs. We try to limit salt sitting in storage areas. Salt is ordered throughout the winter on an as-needed basis.

75,000 cubic yards of deslicking grit have been stockpiled

Magnesium Chloride is purchased one truck load at a time since we have limited storage facilities. Potassium acetate is only used at two locations. We have 2,500 gallons in storage.

"Snow Schools" are held in each region to refresh plow drivers skills and plan for the season. A particular concern of Snow School is insuring consistency between roads maintained by adjoining maintenance stations