DISTRICT III
SNOW AND
ICE CONTROL PLAN

October 2014

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NEVADA DEPARTMENT OF TRANSPORTATION
DISTRICT III
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INTRODUCTION

Due to Nevada's geographic location, elevation, and topography, snow and ice occur in varying amounts over most of the state. Snow depths and storm frequencies vary from minimal and infrequent at the lower elevations in the south to extreme and frequent at the higher elevations in the north. Nevada's tourism-based economy places added emphasis on snow and ice control because the state's life-blood depends, to great extent, on attracting visitors to Nevada via passenger vehicles.

Being geographically located in the northeastern portion of the state with high mountain passes and desert valleys, District III experiences a variety of conditions. Elevations range from a high of 8,378 feet at the upper Angel Lake campground to a low at Imlay of 4,100 feet. Lower elevations experience less frequent storms. While snow and ice control is not required as frequently nor as intensely in these lower valleys as it is where more snow falls, it is still a very high priority.

In order to be responsive to the needs of the public, a number of factors should be considered besides snow depths. When scheduling snow and ice control, consideration should be given to routes with high traffic volumes and peak traffic periods on commuter routes. Areas that historically have been a problem for motorists to maintain traction or that have historically received extra attention in order for motorists to maintain control of their vehicle should receive a high priority. Bridge decks, tunnels, and historic drifting areas can be a problem and should be monitored. An effort should be made to accommodate school bus routes in the rural areas.

This plan addresses variations in conditions, such as storm intensity, duration, type of traffic, and traffic volumes. It is not intended to anticipate every condition. It is a guide that outlines methods and procedures that apply District-wide for most situations. Because every storm is different and every situation cannot be anticipated, experience of the crew should be used to modify the plan when necessary. However, any modifications of the plan should be consistent with the intent of the plan.

A list of terms used herein is presented for reference.

ORGANIZATION

The Nevada Department of Transportation (NDOT) is governed by its Transportation Board of Directors, which appoints a Director.

The Director establishes policy and directs the operation of NDOT within parameters established by the Transportation Board of Directors. Operational control and limited policy setting have been delegated to the District Engineers by the Director.

The District Engineer, in conjunction with Maintenance Managers, is responsible for reviewing and modifying the Snow and Ice Control Plan annually. This yearly update is to ensure that the plan provides guidance to District staff that results in a reasonably safe level of service.

All levels of supervisory personnel are responsible for being familiar with the plan, thoroughly preparing prior to storms, and practicing good tactical procedures during storms.

All maintenance employees are responsible for ensuring that they understand procedures, are authorized to operate a particular piece of equipment before proceeding, and conduct themselves in a manner that is a credit to them as individuals as well as to NDOT.

This plan is structured as if the chain of command can always be followed. In actual practice, this is not always possible without a delay in response or a reduction in the level of service provided to the public. With snow and ice control, responsiveness is very important and should not be sacrificed for the sake of following the chain of command. Usually the chain of command can and should be followed without sacrificing the service provided to the public.

TERMINOLOGY

The following terms are used through this document:

Abrasive mixture: A mixture of sand and a deicing chemical, generally salt. The abrasive mixture is prepared before anticipated storms.

Anti-icing: Anti-icing is the snow and ice control practice of preventing the formation or development of bonded snow and ice by timely applications of a chemical freezing-point depressant. Moderate and periodic reapplications of the chemical during the storm can continue this effect.

Bare pavement: The condition where the travel lanes are clear of loose snow but may have patches of ice or snow pack that, when treated with chemicals or abrasive mixtures or a combination thereof, may be negotiated safely by the average driver without the need of chains.

Chain or snow tire controls: A mandatory condition where either chains or snow tires are required due to snow or ice on the roadway. Chains or snow tire requirements are placed when, in the judgment of the maintenance supervisor on duty, snow and ice conditions make it difficult for average drivers to control their vehicle when driving in a prudent manner.

Cornice: Overhanging snow forming a partial arch created by the wind.

Crossovers: Turn-through area constructed to allow official vehicles to cross from one side of a divided highway to the opposite side.

Cutting pack: Peeling ice or snow buildup from the pavement. Usually done with motor graders.

De-icing: Removal of snow and ice through mechanical and/or chemical means.

End of storm: The condition when the snowstorm or blowing snow is subsiding and the weather is starting to clear.

Facility Pollution Prevention Plan (FPPP): Plan to prevent, or reduce to the maximum extent practicable (MEP), stormwater pollutant discharges into receiving waterways that are associated with activities conducted by Maintenance and District personnel at NDOT Maintenance facilities.

Heeling: Pushing snow as far left or right as possible.

Pack: A buildup of ice and snow on the road surface.

Pre-op: The pre-operational check is a list of items that must be checked on each vehicle before the vehicle is used.

District III Road Operations Center (ROC)): Located in Elko's District office, this is the District III dispatch center (operated 24/7 year-round) used by all NDOT employees for assistance. The on-duty Traffic Center Technicians are the maintenance workers' contacts to the NHP and other law enforcement agencies. Traffic Center Technicians also disseminate information on road conditions to the public and other agencies. Road Operations Centers are located in Elko, Reno, and Las Vegas and can also be referred to as Traffic Management Centers (TMC), Road Operations Center or Road Ops.

Run in tandem: The practice of multiple plow units plowing as a team. On non-divided highways, the lead plow starts at the centerline and plows to the right and the following plows also push snow to the right. On divided highways, the lead unit plows left from the centerline and all other trucks or graders plow from the centerline right. Divided highways with narrow median areas or barrier walls should be treated as a non-divided highway.

Sander conveyor: The chain at the bottom of the sander unit that moves the material in the sander to the spinner.

Sand spinner: The part of a sander unit that spreads the abrasive mixture. Spinner speed can be adjusted to regulate how wide material is spread.

Scheduled shift: A specific time period an employee is assigned to work, usually over a number of days. The shift may be any length of time from 8 to 12 hours but may be extended to 16 hours in emergency situations. A callout on overtime responding to a specific need is not a scheduled shift. An employee is normally assigned a shift prior to the end of the previous shift.

Slobbers: The snow left on the pavement, on either side of a rotary plow after a cut has been made.

Snow poles: An extension of pipe (plastic, metal, or wood) used to guide snow removal equipment and the public during and after storms. The pole can have one or more reflective stripes at the top to convey information to maintenance personnel.

Spreader calibration: The procedure of calculating the pounds of material discharged per mile at various truck speeds.

White out: A complete lack of visibility due to a snowstorm or blowing snow.

Widening: Pushing snow as far left or right as possible.

LIABILITIES AND PRECAUTIONS

Highway maintenance functions concern everyone. The State of Nevada, through the Department of Transportation, strives to maintain its highways in a reasonably safe condition for the traveling public. As it relates to winter maintenance, NDOT removes snow and ice and applies abrasive mixtures to the roadway to improve driving conditions for the motorist.

When NDOT receives actual notice of a hazardous condition on its highways, the Department will respond and check the alleged hazard. If a hazard exists, it should be corrected or adequate warning should be provided to the motorists.

PURPOSE AND POLICY

PURPOSE

The purpose of this plan is to define operational procedures for snow and ice control. It defines the levels of service that maintenance will strive to provide. The plan is to help the maintenance crews provide the safest roadway condition reasonably possible with the resources available. Because storms vary dramatically and occur over a variety of roadway and traffic conditions, this plan is intended to be flexible to accommodate the variety of conditions encountered. It is a guide structured to fit average conditions.

POLICY

It is the policy of District III that the orderly movement of traffic during storm conditions takes precedence over all other maintenance operations except the protection of life and property. The District's maintenance organization will strive to maintain the state's highways in such condition that traffic can proceed in a reasonably safe manner during winter storms.

OVERTIME

District III maintains a an Overtime Approval Process. Due to budgetary limitations, every effort shall be made to curtail the use of overtime. The policy is meant to make the District more flexible and responsive to customers' needs and allow us to more readily react to our core mission. Due diligence shall be use when determining the appropriateness of requests for overtime. When possible, innovative (flex) shifts shall be used. Proper preapprovals of overtime shall be obtained by crews.

SNOW PLAN DEVELOPMENT

The snow plan developed for each District will provide guidance to managers and crews in describing snow and ice control responsibilities. The following items in the snow plan will be reviewed and updated annually:

- Administrative data including names, addresses, and telephone numbers of regular and seasonal personnel
- Crew and shift assignments
- Equipment available for each section
- Map or listing of highway levels of service and priorities
- Emergency and road closures procedures
- Prearranged snow storage sites

FIELD OPERATIONS AND TRAINING

District Administration and Maintenance Managers shall make advance preparations so that the snow removal operations are ready prior to the first storm. District Administration should review snow removal plans with appropriate members of the NHP. Teamwork and cooperation are essential for successful snow removal operations.

The Maintenance Supervisor I should prepare shift schedules for regularly assigned crews, with any temporary or part-time employees included in the schedules. They should review their assigned personnel and make certain all maintenance workers have or will receive any necessary training before the first storm. All maintenance workers who operate snowplows must have a Class A or B commercial drivers license and be certified in accordance with NDOT TP 1-6-19.

Temporary employees should be hired with enough lead time to ensure they receive all necessary training. They must have a Class A or B commercial drivers license and be certified on snow removal equipment in accordance with NDOT TP 1-6-19. Training should include a review of this plan.

PREPARATION AND ADVANCE PLANNING

Early plans should be made for winter work so that the roadway, equipment operators, snow plowing equipment, sanding equipment, radio equipment, sanding materials and supplies, including signs, flags, barricades, and small tools will all be ready for the first frost or snow storm.

Pre-season preparations for snow and ice control operations should normally be completed by November 1 of each winter season and should include but not be limited to the following:

- Snow plan review and modification
- Materials acquisition and stockpiling
- Equipment operator training
- Roadway preparation
- Equipment preparation and adjustment
- Request temporary help if necessary and schedule shifts

PUBLIC RELATIONS

To a large extent, success of the snow and ice control program is dependent on how well other agencies and the public understand the program. In order to ensure that a good understanding exists, District Administration should keep other agencies and the public well informed. Both formal and informal meetings with law enforcement agencies and other maintenance organizations are effective. Cooperation and informing the news media can take several forms. Press releases and being available for interviews are effective as is allowing the media to ride in plow trucks during severe storms. Arrangements for riding in plow trucks should be made through District Administration.

WORKING FOR OTHER GOVERNMENTAL AGENCIES

Snow plowing may be performed for cities, counties, and other governmental agencies if resources are available. Such work shall be done only by the authority of a written agreement executed by the Director. Under these agreements, detailed costs shall be recorded and billings prepared. Service as specified above will be performed at a lower priority than work on the State Highway system.

WORKING WITH LAW ENFORCEMENT AGENCIES

Law enforcement agencies have the duty to report items they feel are hazardous and may cause accidents. As a result, the maintenance crews must respond to many calls in order to provide a high level of service and minimize liability. Maintenance employees are subject to a certain number of callouts and callbacks to provide assistance such as:

- Additional maintenance on a section of highway
- Removal of obstacles from the roadway
- Traffic control assistance at accident sites

The Maintenance Supervisor I should stress cooperation with law enforcement agencies to his/her employees and establish good lines of communications with the agencies that work within the crew's jurisdictional area.

WEATHER FORECASTS

Because weather forecasts play such an important role in winter maintenance activities, the National Weather Service Web site can be reviewed to provide updated forecasts. Other contracted weather services can provide more tailored forecasts to directly fit our needs. Timely forecasts can provide reasonably accurate predictions on:

- Timing when a storm will hit a specific area
- Type of storm predicted (snow, rain, winds, etc.)
- Intensity and amount of snow or rain
- Temperature pattern of the storm
- General progress of the storm
- Elevations that will be affected

Timely forecasts can also be helpful in scheduling employees and equipment.

In addition to weather forecasts, supervisors should pay special attention to pavement temperatures, RWIS data, and the direction that the pavement temperatures are trending, whether they are rising or dropping.

This information should be used for scheduling crews prior to a storm's arrival. Proper use of this information results in less overtime and better utilization of resources. At the beginning of each season, arrangements should be made with the National Weather Service concerning timing of calls, special information, and individuals to contact.

ASSISTING MOTORISTS

Areas located outside the metropolitan areas can be potentially hazardous for stranded motorists, especially during times of inclement weather. An offer to radio for help or to call for a tow truck promotes a good relationship with the public. Call the District III Road Operations Center when motorists require assistance; the Traffic Center Technicians will notify the appropriate agency. Maintenance personnel should not call a tow company directly.

Maintenance employees should always try to assess the situation when approaching a stranded or disabled vehicle. If any indicators cause concern to the employee, he/she should notify District III Road Operations Center and arrange for law enforcement to investigate.

As a general practice, NDOT does not encourage maintenance vehicles to aid directly in towing or pushing stalled vehicles. There may be circumstances where a stranded vehicle is a hazard and may cause property damage or personal injury if not moved promptly. In these cases, maintenance personnel should exercise their best judgment and move the disabled vehicle with the driver's approval. In isolated instances, law enforcement officers may request assistance in moving stalled vehicles. Employees should inform all parties involved that they are not responsible for any damage that may occur to other vehicles.

LIMITS OF WORK

Snow and ice removal work by state forces should be confined to highway right-of-way.

PRIVATE APPROACH ROADS

Removal of normal snowfall on private approach roads, both on and off the right-of-way, is the responsibility of the property owner. NDOT maintenance forces should remove snow windrows blocking private approaches and mailbox turnouts as a part of after-storm cleanup operations.

Property owners have no authority to move snow onto the paved highway surface. If a property owner continues to move snow onto the highway after being asked not to by a supervisor, the District's Maintenance Manager should be notified. Form letters are available to issue to the offending party, asking them to stop depositing snow into the right-of-way. Law enforcement may be asked to assist in getting the practice stopped.

When possible, the illegal pushing of snow onto the right-of-way should be documented with photographs.

CONSTRUCTION PROJECTS

Snow and ice removal on construction projects should be performed only if the project is open to traffic.

ROADWAY PREPARATION

Roadway side ditches should be clean. Shoulders should be smooth and flush with the pavement. Tall weeds, grass, and brush next to the roadway that may cause drifting should be cut and removed. Slope flattening, ditch widening, and snow fence projects should be considered in high-drift areas during betterment reviews.

Maintenance Supervisors I should inspect signs pertaining to snow removal activities to ensure that the signs are in good condition. Any signs needing replacement should be replaced before the first major storms.

Snow poles are a necessary item in many snow removal operations. They provide delineation for snow removal crews and the traveling public during and after storms. The basic purpose of the snow pole is to:

- Provide roadway delineation
- Mark culverts and drains
- Mark beginning and ends of dikes and guardrail
- Delineate bridge rails
- Delineate ramp gores and median islands
- Mark miscellaneous items or obstructions that could cause damage to plows such as rock outcroppings
- Delineate objects that could be damaged by flying snow from the snow plowing activities when a rotary plow is being used such as signs, homes, trailers, power lines, other utility lines, etc.
- Mark the beginning and end of widen pavement and chain-up areas

Snow poles removed at the end of the previous season or damaged poles needing replacement should be in place prior to November 1. The minimum number of poles necessary shall be used. A 400-foot spacing, or more, between the poles is desirable. Areas of poor alignment, fog, and/or severe blowing or snowing conditions may require placement of poles at a spacing less than 400 feet. In areas that have low annual snowfall, snow poles will not be placed. Existing guideposts will be sufficient in most situations.

Snow poles are permitted on the following routes:

IR-80	Selected areas
US-93	Selected areas
US-93A	Selected areas
SR-225	Mountain City Hwy.
SR-226	Deep Creek Rd.
SR-227	Lamoille Rd.
SR-228	Jiggs Rd.
SR-229	Ruby Valley Rd.
SR-230	Starr Valley Rd.
SR-231	Angel Lake
SR-232	Clover Valley
SR-233	Montello Rd.
SR-278	Pine Valley Rd.
SR-766	Newmont/Barrick Mine Rd.
SR-767	So. Ruby Valley Rd.
SR-140	Denio Highway High Country
US-50	Austin and Bob Scott Summits
US-50	Pinto Summit
US-50	Pancake Summit
US-50	Little Antelope Summit

US-50	Robinson Pass
US-6	Currant Creek Summit
US-6	Murray Summit
US-6	Sacramento Pass
US-6	Connors Pass
US-95	Paradise Hill

Snow poles should be removed during the summer months unless there are extenuating circumstances.

CHAIN OR SNOW TIRE REQUIREMENTS

"Chains or Snow Tires Required" signs are posted when, in the judgment of the Maintenance Supervisor on duty, snow or ice conditions make it difficult for average drivers to control their vehicles when driving in a prudent manner. Chain or snow tire requirements should be removed when conditions improve enough to allow the average driver to control his or her vehicle.

The District III Road Operations Center shall be notified of any changes in these requirements.

EMERGENCIES

OPERATIONS

The Maintenance Supervisor I shall notify the Maintenance Supervisor II whenever it becomes apparent that he will be unable to keep his highways open without help. The Maintenance Supervisor II will arrange to send supplementary equipment and work force as available for temporary assistance. The Maintenance Manager should be contacted for possible assistance from other areas if the Maintenance Supervisor II does not have adequate resources in his area. If help is not available and it becomes necessary to close a road, the District III Road Operations Center shall be notified. The District III Road Operations Center will follow the protocol in place.

PROCEDURES

Emergencies are defined as unforeseen combinations of circumstances or the resulting state that calls for immediate action. Any situation posing an immediate hazard for personal injury or property damage should be treated as an emergency. During the winter, situations such as traffic accidents, hazardous material spills, and abandoned vehicles become more critical due to storms and adverse road conditions. In addition, accumulating snow or ice, as well as poor visibility, during storms presents increased potential for emergencies.

NDOT normally becomes aware of an emergency situation by one of the following methods:

- An NDOT employee observes an emergency and reports it to the District III Road Operations Center

- A law enforcement agency reports an emergency to the District III Road Operations Center
- A private citizen reports an emergency to an NDOT employee

Once notified of an emergency, the District Office or District III Road Operations Center is responsible for notifying appropriate District supervisory personnel to ensure that the emergency is properly handled. District administration or the Road Operations Center may be required to notify the following:

- Radio and televisions stations
- Chief Maintenance Engineer
- Director's office
- Federal Highway Administration

When NDOT employees arrive on the scene of an emergency, they should:

1. Assess the situation to determine potential hazards and any assistance required.
2. Provide emergency assistance to the injured based on first-aid training and knowledge.
3. Provide traffic control to protect the public.
4. Not participate in cleanup of any hazardous materials.
5. If the emergency involves damage to state property or personal injury to NDOT employees, notify the Road Operations Center immediately so appropriate notification of District administrative personnel and investigations can be conducted.

REQUESTING REMOVAL OF VEHICLE FROM RIGHT-OF-WAY

NDOT maintenance employees can request removal of private vehicles from the roadway. Nevada Revised Statutes (NRS) authorize the NHP to have vehicles towed from the highway right-of-way.

- NRS 487.281: States that a person shall not abandon a vehicle upon any public highway or road.
- NRS 484.397: Authorizes police officers to remove certain vehicles in certain circumstances. When a vehicle is unattended or disabled, an officer can immediately have it towed if it is an obstruction to traffic or it interferes with the normal flow of traffic. This law also provides for the towing of vehicles that have been abandoned for 24 hours on any freeway, US route, or primary arterial. On other routes, vehicles can be towed after 72 hours.

Any NDOT employee can call the District III Road Operations Center and request the tow of a vehicle based on one of the following criteria:

1. The abandoned or disabled vehicle is encroaching into the travel lane (includes a vehicle parked on the edge line).

2. A disabled or abandoned vehicle is parked on or under a bridge structure, in close proximity to the tunnels, or otherwise looks suspicious.
3. Employees are **actively** plowing snow and a vehicle is left where it could be damaged by snow removal operations or is hampering our ability to clear the roadway of snow and ice.

Approval of a Maintenance Supervisor II or higher is required for requesting a tow for the following:

1. A winter storm is predicted and an abandoned vehicle is expected to pose a problem for snow removal operations.
2. A vehicle has been parked in the right-of-way for over 24 hours on a major route or over 72 hours on a secondary route.

FACILITY POLLUTION PREVENTION PLAN (FPPP)

FPPPs have been developed for the District's major facilities: Elko, Ely, Winnemucca and Wells maintenance facilities. Major facilities are those that accommodate multiple maintenance crews and serve as a location for equipment repairs beyond routine maintenance. More remote facilities are grouped together and covered under one umbrella FPPP with site specific considerations. The FPPP contains various aspects of pollution prevention methods, such as equipment and vehicle storage, stockpile storage and washing. Crews should take FPPPs into consideration for their specific site locations prior to performing tasks.

MATERIALS

ACQUISITION

Maintenance Supervisors I and II should review material needs to ensure that required materials for the snow removal operations are either delivered or will be delivered in sufficient quantities and at appropriate times to ensure that adequate material will be available for each storm.

Each year, a list of stockpile locations and quantities of abrasive mixtures and de-icing chemicals should be prepared by the Maintenance Manager from input received from the Maintenance Supervisor IIs. These requests are processed by the Headquarters Maintenance and Asset Management Division for forwarding to State Purchasing. State Purchasing proceeds with advertising and awarding contracts for the materials requested.

Upon receipt of the listing containing the successful material suppliers, orders are placed with the low bidders for the necessary materials.

STORAGE

Proper location of stockpiles is critical to an efficient snow removal operation. The location of stockpile sites should minimize nonproductive travel time and be situated to maximize use by

multiple crews. Stockpile sites should be located to minimize possible environmental damage and not create a nuisance to adjoining properties. Stockpiles must be located in areas where there is suitable access off and on the highway for NDOT vehicles. Salt or abrasive mixtures should be stored in storage buildings wherever possible. When buildings are not available, extra attention should be given to drainage and prohibiting salt from migrating into watercourses or impacting the environment. Review the appropriate Facility Pollution Prevention Plan for guidance.

SPECIFICATIONS

SAND

Sand for snow and ice control shall meet **Specification D** for de-icing sand. Specification B may be substituted for Specification D material.

Sieve Size	Specification D % by Weight Passing Sieve	Specification B % by Weight Passing Sieve
No. 4	93 - 100	90 - 100
No. 8	40 - 80	---
No. 16	15-60	35 - 75
No. 50	0 - 20	---
No. 100	0 - 4	---
No. 200	0 - 2.5	0 - 3

Hardness/durability index must be greater than 75.

As sand is delivered, it should be tested in conformance with the NDOT Standard Specifications for Road and Bridge Construction to ensure it meets specifications before accepting or using any of the material. Testing should be performed every 1,000 tons for quality assurance purposes.

SALT

De-icing salt shall meet the specifications as set forth in the annual open-term contract (OTC) or bid specifications.

LOW-MOISTURE MINERALIZED DE-ICERS

A mineralized de-icing product is now available to be purchased on OTC. This product is a chloride-based mineral material that works at lower temperatures than normal sodium chloride. Initial applications have shown the product to be very effective. It is applied to the roadway via the truck sander, just like salt-sand mixes.

Mineralized de-icers have been shown to be advantageous when temperatures fall below the working range of sodium chloride. With this product, acceptable de-icing has been achieved with pavement temperatures as low as 5°F. This de-icing product is also especially helpful in urban

areas where air quality and dust caused from sand application are issues of concern. However, due to the increased cost of this material, it should be used at the direction of a Maintenance Supervisor.

Specifications for application will be developed as we gain experience working with this material. Known trade names are "Interstate Melt 500" (Shelton's), "Ice Slicer RS" (Envirotech), and “Rapid Thaw” (McArthur Farm Supply).

De-icer materials shall meet the specifications as set forth in the annual OTC or bid specifications.

ANTI-ICING PRODUCTS

Anti-icing materials are available that may provide an improved level of service or result in less environmental damage. A few of the products that may be tested by NDOT are:

- Calcium magnesium acetate
- Magnesium chloride
- Calcium chloride
- Potassium acetate

Anti-icing materials shall meet the specifications as set forth in the annual OTC or bid specifications.

SNOW POLES

Snow poles shall be orange, polyolefin, 3 to 8 feet in length, and have reflective sheeting or reflector attached 3 inches below the top of pole for delineation. As existing nonconforming snow poles are damaged or need to be replaced, they should be replaced with snow poles that conform to the current specification.

ANTI-ICING AND DE-ICING

ANTI-ICING

Anti-icing is defined as the snow and ice control practice of preventing the formation or development of bonded snow and ice by timely applications of a chemical freezing-point depressant. District III typically uses a 30% solution of magnesium chloride in its anti-icing efforts. The product should be applied to the roadway in advance of a predicted winter storm at 20 to 40 gallons per lane mile. Considerations in determining application rates should include the following:

- Pavement surface texture
- Bridges, tunnels, and shaded areas
- Predicted temperature, humidity, and storm conditions

Observed residual chemical on the roadway from previous applications should also be a factor in the decision process.

Applicators should shut off spraying in advance of intersections and halfway down freeway off ramps in order to keep traffic from overtracking the material into the intersection and creating a possible slick condition.

Speeds when applying anti-icers should not exceed 55 MPH. Applicators should restrict spray to one lane at a time.

It is industry practice to apply anti-icing chemicals well into the storm, except when conditions of hard snow or ice pack exist. Supervisors should evaluate the effectiveness of this practice and use their best judgment when determining the usefulness of this course of action.

APPLICATION OF LIQUID ANTI-ICERS AND DE-ICERS

NDOT uses a self-contained tanker unit with a pump to apply anti-icing chemical to the roadway.

The purpose of spreading an anti-icing material for winter road maintenance is to maintain an orderly flow of traffic during adverse weather conditions and to ensure that the road is as safe as possible under the circumstances. The anti-icing mixture is a minimum 22% to 30% solution mixed with water. Application rates of anti-icing chemical should be between 20 and 40 gallons per lane mile, depending on surface conditions of pavement, anticipated winter storm conditions, and observed residual chemical left on the roadway from previous applications. Anti-icing chemicals are used to:

- Prevent the formation of a bond between the snow pack and the road surface
- Melt fresh snow as it falls
- Melt compacted snow that remains after plowing
- Retard the formation of ice

The anti-icing chemical magnesium chloride is very effective from 25°F to -28°F and not effective below -30°F.

Operators need to pay particular attention to the items noted below so that application of the anti-icing chemicals produces optimum results.

The initial application should be made prior to the predicted winter storm event. The mixture is brine that, under most conditions, will keep snow or ice from bonding to the pavement. Subsequent applications will usually keep the snow in a mealy condition and prevent a pack from forming.

When the slush begins to stiffen, it is time to plow and reapply additional de-icing material.

Anti-icing chemical application is generally necessary on bridges long before road surfaces. Because cold air reaches the top and bottom surfaces of a bridge, they cool off much faster than the remainder of the roadway surface. Because of low temperatures and high humidity, bridge decks may ice up when there is little or no precipitation.

Equipment used for hauling or handling these chemicals should be washed as soon as possible after each storm to prevent corrosion. Washing should not be done where runoff could affect watercourses or impact the environment. NDOT wash racks should be used where available. Review the appropriate Facility Pollution Prevention Plan for guidance.

When applying anti-/de-icing chemicals, operators must pay close attention to traffic and, if necessary, shut off the nozzles to keep from spraying motorists' vehicles.

Operators should maintain speeds that do not endanger life or property but provide a reasonably prompt service. An appropriate speed for rural low-volume road with 2 inches of loose snow is considerably different than an appropriate speed for a busy urban street with an ice pack. **OPERATORS SHOULD NEVER EXCEED A SPEED THAT IS SAFE FOR CONDITIONS.**

ABRASIVE MIXTURES

MIXING

When practical, abrasive mixtures should be mixed and placed in the stockpiles prior to November 1. Materials mixed after this date will potentially contain excessive moisture and present more handling problems than material that is mixed before winter storms. The salt to sand mix ratio can vary, depending on each sub district's needs.

If an alternative de-icer is used, the manufacturer should be consulted for the recommended mixture and application rate.

APPLICATION

Abrasive mixtures shall only be applied as necessary and when temperatures indicate satisfactory results will occur. Snow removal and abrasive mixture application shall be closely monitored to prevent loss of abrasive mixtures by plowing.

The purpose of spreading an abrasive mixture for winter road maintenance is to maintain an orderly flow of traffic during adverse weather conditions and ensure that the road is as safe as possible under the circumstances. The abrasive mixture is a mixture of salt and sand. The ratio of salt to sand can vary by location and is dependent on prevalent temperatures, traffic volumes, and management determinations. Salt is used in the mixture to:

- Prevent the formation of a bond between the snow pack and the road surface
- Melt fresh snow as it falls

- Melt compacted snow that remains after plowing
- Prevent the formation of ice

Salt (sodium chloride) is very effective above 25°F, fairly effective between 25° and 15°F, marginal between 10° and 15°F, and not effective below 10°F.

Operators need to pay particular attention to the items noted below so that application of the abrasive mixture produces optimum results.

Sand to Salt Ratio (volume)	Optimum Application Rate (pounds per lane mile)	Optimum Mileage Per Load	
		5 tons	8 tons
4 parts sand to 1 part salt	1,500	6.7 miles	10.7 miles
3 parts sand to 1 part salt	1,200	8.3 miles	13.3 miles
2 parts sand to 1 part salt	900	11.1 miles	17.8 miles
1 part sand to 1 part salt	600	16.7 miles	26.7 miles
Salt only	300	33.3 miles	53.3 miles

Timing is crucial in applying abrasive mixtures. Make the initial application just prior to when the snow begins to accumulate on the pavement. The mixture will quickly produce a brine that, under most conditions, will keep snow or ice from bonding to the pavement. Subsequent applications will usually keep the snow in a mealy condition and prevent a pack from forming.

Spinner speed settings are critical. A spinner that revolves too fast will throw material over an excessively wide area, which has two detrimental effects: it wastes material, and material that is cast too wide may damage vehicles behind the sand truck or in the adjacent lane. Two methods are available for reducing the distance that the spinner casts material: reducing the speed of the spinner and adjusting the deflectors on the spinner. Truck speed should not exceed 35 MPH when applying abrasive mixtures to the roadway.

Spinner speeds along with truck speeds will be monitored to ensure abrasive mixtures are not thrown over an excessively wide area. Material cast too wide has several detrimental effects: it wastes material, has the potential to damage vehicles behind the truck and in the adjacent lane, and can be deposited in area that may be harmful to the environment and adjacent property.

A strong wind blowing across a street or highway can cause the abrasive mixture to drift as it comes out of the spreader unit, pushing it onto a shoulder or into a gutter. Operators need to be aware of these situations and “play the wind” to place the abrasive mixture where it will do the most good.

Salt in the abrasive mixture needs time to work. Plowing and sanding operations should be timed to allow the abrasive mixture to be effective. Plowing the abrasive mixture off the pavement before it is effective wastes material and increases the cost of snow removal. Knowing when to plow and reapply the abrasive mixture is an important factor that the operators should be aware

of. Watching the snow that is being kicked out behind the vehicle tires will give the operator a good idea when to plow and reapply the abrasive mixture.

When the slush begins to stiffen, it is time to plow and reapply additional abrasive mixture.

Abrasive mixture application is generally necessary on bridges long before road surfaces. Because cold air reaches the top and bottom surfaces of a bridge, they cool off much faster than the remainder of the roadway surface. Because of low temperatures and high humidity, bridge decks may ice up when there is little or no precipitation.

Brine created from combining an abrasive mixture with moisture will flow to the low side of the roadway especially on super-elevated curves. Place the abrasive mixture on the high side of curves and let gravity spread the brine across the roadway.

Sometimes operators must go beyond their normally assigned areas when plowing and applying abrasive mixtures. Due to the location of jurisdictional breaks, there may be short gaps that do not receive adequate attention unless plow operators make an effort to cover them. A short stretch that is left for another crew to plow or sand can be hazardous to unsuspecting motorists.

Equipment used for hauling or handling salt, such as sanders, should be washed as soon as possible after each storm to prevent corrosion. Washing should not be done where runoff could affect watercourses or impact the environment. Review the appropriate Facility Pollution Prevention Plan.

When applying abrasive mixtures in tandem, adequate distance should be maintained between trucks to allow traffic to pass the abrasive mixture application operation. Operators will pay close attention to oncoming traffic and shut off or reduce spinner speed so as not to cast the abrasive mixtures toward the motorists' vehicles, thereby damaging them from the abrasive mixtures being distributed.

EQUIPMENT

GENERAL

In addition to the routine equipment operation training, employees will be trained on the use of ground speed-oriented sander controls. Operational use of the controls will be stressed so the rate of application of material will be consistent even when the speed of the sander truck varies.

PREPARATION AND ADJUSTMENT

Maintenance Supervisors I and II should review the list of available equipment to determine what plows or sanders are available and what condition they are in. Ground-speed–controlled sanders and anti-icing units should be calibrated. Equipment needing repairs should be referred to the repair shop in priority order. Communication equipment should be reviewed to ensure it is in good condition.

CARE AND OPERATION

Maintenance personnel shall check their assigned equipment at the beginning of each shift. Equipment shall be inspected, lubricated, and serviced at the end of each storm. The items listed below should be checked at the beginning or end of the shift.

Plow Truck and Sander

1. Perform complete pre-trip inspection of the truck.
2. Check plow, blade, and frame for obvious damage. If any damage is detected, report it to the supervisor.
3. Check hydraulic oil levels for the sander unit.
4. Grease fittings on the sander unit and check sander controls for proper operation.
5. Check all lights on the truck and the sander.
6. Check to see that accident report forms are in the unit.
7. Check to make sure tire chains are with the vehicle along with tighteners, tools, and wire for repairs.
8. Check to see that safety equipment such as flares or red warning triangles are in the vehicle.
9. Check sander gate openings and deflector settings at the spinner.
10. After each storm, or as required, wash the truck and sander units.
11. At the end of the shift, fuel vehicle and clean cab.
12. Drain air tank daily.

Tow Plow

1. Perform complete pre-trip inspection of the tow plow, and trailer.
2. Check hydraulic oil levels.
3. Check wheel chocks.
4. Check safety pins for plow.
5. Check all lights on unit.
6. Empty sander daily.
7. Keep glad hands and electric lines protected.

Motor Grader

1. Perform a complete pre-op inspection.
2. Check to make sure tire chains are in a toolbox in the unit along with tighteners, tools, and wire for repairs.
3. Check engine-warning equipment before using equipment.
4. Make sure all lights work and are on when leaving the yard to begin work.
5. Make sure accident report forms are in the unit along with safety items such as flares or red warning triangles.
6. Check to ensure that the slow moving vehicle emblem is on the motor grader and visible to anyone coming up behind the unit.

7. Check plow blades for any obvious damage and report any damage to your supervisor.
8. Drain water from the fuel tanks weekly.
9. When working in a chain or snow tire control area, all drive wheels must be chained.
10. At the end of the shift, fuel vehicle and clean cab.
11. After each storm wash down the unit.

Rotary Plow

1. Perform a complete pre-trip inspection of the truck.
2. Check shoes, wear plates, and fan blades.
3. Check engine-warning equipment before operating unit.
4. Check to make sure that the tire chains along with tighteners, tools, and wire for repairs are on the unit.
5. Check to make sure accident report forms are in the unit.
6. Check all lights.
7. Do not leave the cutter head in gear when leaving the cab or when people are around the unit.
8. At the end of the shift, fuel up the unit, clean cab, and visually inspect the unit for any damage.
9. Drain water from the air tanks.
10. If the snow chains have been damaged, repair them or tell the supervisor before the start of the next shift.
11. Let the rotary box down on center shoes. Never work with box completely on hydraulic system.
12. Clean off all snow buildup from the head, cab, and doghouse after each shift.

Personal Equipment

Because of varied and unpredictable circumstances that occur during the winter season, each employee should have the following personal equipment with them when they begin their shift:

- Gloves
- High-visibility clothing that meets the requirements of TP 1-7-4
- Flashlight
- Hearing protection
- Winter coat or parka
- Rain gear
- Appropriate footwear

SNOW PLOWING

GENERAL

Snowplows should not leave the paved portion of the roadway and plow unpaved shoulders in order to widen out plowed areas. If drifts need to be pushed back, it should be done only with loaders, motor graders, or a wing plow.

Plow operators also will be cautioned about plowing snow at bridges and overpasses. They should reduce plowing speed so snow will not be thrown over the sides of the structures.

PLOWING WITH PUSH PLOWS

Because plows are throwing snow with roadway debris mixed in with the snow, truck-operating speed is very important. Operators should maintain a speed that does not endanger life or property but provides a reasonably prompt service. An appropriate speed for a low-volume rural road with 2 inches of loose snow is considerably different than an appropriate speed for a busy urban street covered with 4 inches of chunky slush.

The maximum speed for plowing on a low-volume rural road is 35 MPH. The plowing speed on urban streets should never exceed the posted speed limit and generally should not exceed 25 MPH. Speeds should be further reduced to eliminate the possibility of causing damage to signs, vehicles, or other facilities along the highway. When plowing on bridges, speed should be decreased so that snow or ice is not pushed over the side of the structure onto traffic or pedestrians below. **OPERATIONS SHOULD NEVER EXCEED A SPEED THAT IS SAFE FOR CONDITIONS.**

When traveling with the plow in the up position, it is District policy that speeds shall not exceed 55 MPH. Speeds may need to be further reduced when a truck is equipped with a wing plow or when traveling over very rough surfaces.

Under normal circumstances, snow removal equipment should not be operated against opposing traffic unless traffic is restricted from the area under a traffic control plan.

When plowing on a **two-lane highway,** always plow starting at the center of the roadway and plow to the right.

When plowing on a **four-lane highway,** if possible, plow in tandem.

On **non-divided highways or divided highways with narrow medians or barrier rails,** the lead plow starts at centerline and plows to the right. The following plow also plows right.

On **divided highways with medians wide enough to accommodate snow storage,** the lead plow starts on the left and plows left. The following plow overlaps the first plow's cut and plows right. Any additional plows also plow right.

When plowing in the city **where there is a curb, gutter, and sidewalk,** plowing to the right should be done very carefully so that additional snow is not stacked on the sidewalk. In some cases, depending on anticipated accumulation, it may be necessary to plow all snow to the center of the roadway and come back later to remove it. Before plowing to the center of the street, it is necessary that the operator check with his/her supervisor.

Normally when plowing in tandem, adequate distance should be maintained between trucks to allow traffic to pass the plowing operation.

PLOWING WITH WING PLOWS

District III has been increasing its use of wing plows for the past several years. Wing plows offer dramatically increased productivity from a single truck and operator. However, special considerations and training need to be exercised when plowing with a wing plow.

Wing plows should never be used to plow up against guardrail sections. No one should operate a wing plow without being fully trained in the proper uses and precautions necessary to use them safely and effectively.

Rules for wing plow operation are as follows:

- The maximum speed of a snowplow equipped with a wing plow is 35 MPH while plowing and 55 MPH or lower when raised.
- Inspection of the plow blades and plow pins must be made periodically throughout the shift.
- Safety warning lights will be operational whenever the snowplows are attached to the truck.
- Under no circumstances will the main snowplow be used to plow snow to the left and the wing plow to the right.
- When the snowplow is parked, both plows will be lowered to the ground. Even at the gas pumps, Make sure there is enough clearance to lower the wing plow.
- If the visibility is poor or the situation seems unsafe, do not use the wing plow.
- Be sure of your clearance.
- Use extra care with wing plows on narrow summits or sections of road where guardrail has been installed.
- Train operator to have toe up slightly and lift toe in areas of known bridge problems.

PLOWING WITH TOW PLOWS

District III has begun the use of a tow plow. Tow plows offer increased productivity from a single truck and operator and wing plows. However, special considerations and training need to be exercised when plowing with a tow plow.

Tow plows should never be used to plow against guard rail or concrete barrier rail sections, and the operator must always be aware of trailing area of the unit when it is deployed. No one should

operate a tow plow without being fully trained in the proper uses and precautions necessary to use them safely and effectively.

Rules for tow plow operation are as follows:

- The maximum speed of a tow plow is 45 MPH. (Special for the tow plow only)
- Inspection of the plow blades and keeper pins must be made periodically throughout the shift and replaced if needed.
- Safety warning lights will be operational whenever the tow plow is attached to the main unit and deployed.
- Operator must make sure all safety hazards and travelling public is in a clear zone when plow is being deployed as there are many blind spots.
- If visibility is poor or situation seems unsafe, do not deploy and use the tow plow.
- Be sure of your clearance and swing of tow plow, identifying hazards and unsafe areas.
- Avoid contacting the tow plow against guardrail or concrete Barrier Rail or similar items like curb and gutter.
- Inspection of pintle hitch, safety chains, and glad hands must be checked periodically throughout the shift for stress cracks and wear.
- During hydraulic failure for steering use wheel locks and immediately go to shop.
- Follow weight recommendations for trailer load. (Trailer is designed to carry straight salt. Salt / Sand mixtures commonly used at most stockpiles are heavier, therefore less can be carried).
- Do not operate unit in the opposing traffic lanes. It may be utilized in both right / left turn lanes and paved center median areas.
- When tow plow is parked and disconnected make sure trailer is chocked and all safety pins are in place with proper keepers for the storage of the plow. If plow is still connected to tow unit and parked, all safety precautions must still be followed as per operators manual and recommendations.
- Make sure all trailer connections are properly inserted, kept cleaned, and properly stored when unhooked.

PLOWING WITH ROTARY PLOWS

When operating rotary plows, consideration should be given to the following items:

- Do not blow snow across travel lanes unless no other acceptable alternative exists. When blowing snow across travel lanes, be alert for traffic and shut down the mill for traffic.
- Do not blow snow into avalanche or high-wind-drift areas.
- Be aware of roadside objects (signs, houses, parked cars, power lines, and other utilities) and take appropriate steps to prevent damage from blowing snow.
- If possible, rotary plowing should be performed when traffic is light.

SPECIAL PLOWING AND SPREADING CONSIDERATIONS

Bridges and Overpasses

As the cold air reaches both the top and bottom surfaces of bridges and overpasses, they will tend to freeze up long before the road surfaces. Because of this occurrence, they should receive early and continued attention throughout the storm. Bridge decks may ice up or frost over even when there is no precipitation and will need to be treated with abrasive mixtures. Operators may need to increase application rates if conditions are found to require more abrasive mixtures or chemicals.

Plow operators should reduce their speed when plowing snow on a bridge so that snow and chunks of ice will not be thrown over the sides of the bridge, which could cause considerable damage to anything below the bridge. Areas such as bridges and overpasses require special consideration. Bridge joints can cause damage to plows if they are struck; extra caution should be used when crossing them.

Tunnels and Shaded Areas

Tunnels and shaded areas provide another type of problem for the motorist. These areas need special attention because of the difference in temperature between the sunny area and the shady section. Operators may need to increase application rates if conditions are found to require more abrasive mixtures or chemicals.

Railroad Crossings

Before crossing the tracks, snowplows shall come to a stop and adjust the plow to clear any obstructions and then carefully cross the tracks before resuming regular plowing. No windrow of snow should be left on railroad grade crossings. When removing snow from railroad grade crossings, care should be taken to ensure that ice, snow, abrasive mixtures, or other material is not deposited and left on the railroad tracks. This procedure will help prevent serious damage to the tracks and plowing equipment.

Cattle Guards

When plowing across cattle guards, precautions should be taken to ensure that ice or snow is not allowed to build up on the approach to the cattle guard, the cattle guard, or the exit from the cattle guard. Before crossing a cattle guard, snowplows should stop 5 to 10 feet prior to the cattle guard, raise plow 2 to 3 inches, and then carefully plow across the cattle guard.

WIDENING AND CLEANUP

As soon as possible after a storm, the crew will concentrate on widening shoulders and other areas where snow may be stored during subsequent storms. Driveways and mailbox turnouts that might have been plugged by earlier snow removal activities will also be cleared.

WHITE OUT CONDITIONS

During white out conditions, the employee must make a sound judgmental decision whether the cause of the white out is due to a heavy winter storm or surface conditions (e.g. – ground blizzard). If it is determined that a ground blizzard is the cause and is in an area known to produce this type of condition for a short distance up to ½ mile, the employee should make an attempt to continue through the known area in a safe manner. Should the known area be of a distance greater than ½ mile, the employee should proceed as if in a heavy winter storm event. If a heavy winter storm has caused the condition of visibility to be minimized to a distance of 100 ft or less, the employee may find a safe area to pull off of the roadway (e.g. – Interstate on / off ramp) and using good judgment, allow minimal time for the conditions to improve. If it is not possible to find a safe place to get off of the roadway, the operator should apply an adequate amount of sand before coming to a stop. This should aid traffic in slowing and being able to stop. Should either of the two events occur, the employee must notify the District III Road Operations Center and their immediate supervisor.

It is suggested that plowing in tandem in these conditions may aide in the ability to overcome the situation and continue on, as in most cases the rear plow driver usually has better visibility and may assist the lead plow driver.

CLEANING DRAINAGE STRUCTURES

Drainage structures should be pre-marked before the winter season so they can be located during and after storms. It is important that roadway drains and drop inlets be kept open to allow melting ice and snow to run off the roadway. Accumulations of water with falling temperatures may cause inlets to freeze, thus causing an additional hazard to the traffic.

Maintenance employees should be aware of drainage facilities and should make sure they are open to eliminate areas of water accumulating or water running across the roadway. Water from melted snow can create a greater hazard than the original storm, especially if it freezes.

SNOW STORAGE AND DISPOSAL

The usual method of snow storage is to push the snow off the roadway or onto a median area. Snow storage, especially in the metropolitan areas, is a serious problem during periods of heavy

snow accumulation. Consideration should be given to reviewing areas for snow storage at the beginning of each winter season.

District management and field personnel should agree upon sites where snow can be disposed of if it has to be hauled from the roadway. In establishing stockpile areas, right-of-way personnel may need to be contacted to determine limits and any special conditions that may exist. Before stockpiling snow on private property, an agreement delineating all conditions and responsibilities must be executed. Because of the chemicals used in snow and ice removal activities, locations of snow storage areas should be evaluated for possible environmental conflicts.

In areas where the snow cannot be blown or plowed off the roadway and there is sufficient roadway width, snow may be plowed to the center of the roadway for later removal. When plowing snow to the center of the roadway, consideration must be given to providing openings for left-turn and cross-traffic.

Whenever snow is stored in the roadway so that it reduces the standard lane widths, parking, or turn movements, the proper highway restriction report shall be filed with the District Office, The District III Road Operations Center, and the Permitting Office in Carson City. The restriction can then be properly posted for the public and oversize loads restricted as necessary.

Two methods of clearing snow windrows from the center of the roadway will be permitted:

1. Material may be hauled from the center of the roadway to pre-designated storage or disposal areas. When practical, hauling should be done at night due to reduced traffic volumes.

2. If temperatures warm sufficiently to promote melting after a storm subsides, the windrows may be re-spread as a thin layer on the traveled way and allowed to melt and dissipate during the daytime. Pavement temperatures should be watched closely during these operations.

Private property owners may clear the snow from driveways within the right-of-way and deposit the snow on the right-of-way not being used by vehicles or pedestrians. No snow from other portions of private property shall be deposited on the right-of-way.

TRAFFIC CONTROL

Traffic control during the winter season has to be emphasized and given a high priority to protect the maintenance workers as well as provide safe passage for the traveling public on the facility. Because of a variety of climatic conditions (i.e., snow, rain, blowing snow, blowing dust, icy and snow packed roadways, etc.), it is more difficult for the maintenance employees to immediately have all the required signs that would normally be used for road closures, lane closures, etc.

Maintenance personnel must always be alert to the conditions and use other items that are immediately available to warn the traveling public of any incident that would cause them to deviate from their normal course of travel. Most incidents during the winter are temporary in nature, and maintenance workers can use the following devices to warn the public:

- Flares or red warning triangles
- Advance warning vehicle (a truck with warning lights in advance of the incident)
- A barrier vehicle (an unoccupied truck parked in advance of the incident, with warning lights)

If the incident, in the opinion of the supervisor, is going to necessitate stationary operation, then appropriate signs should be placed in accordance with NDOT's "Handbook on Work Zone Traffic Control."

At night, special attention must be given to the problem of reduced visibility due to darkness and the varied climatic conditions. During winter, night work is a necessity that requires certain items be given increased emphasis to ensure a safe operation. Some items that should be considered and discussed with maintenance employees include the following:

- Mandatory use of TP-compliant reflective apparel for night work
- Each maintenance worker should have a flashlight
- Sufficient lighting should be provided, when possible, to allow the traveling public to identify the location of the workers

The Maintenance Supervisor I should give each employee as much advance notice as possible of shift changes to avoid unnecessarily fatigued employees.

ROAD CLOSURES

Road closures due to floods, blowing snow, and dust usually occur at predictable locations. New maintenance employees should be made aware of these areas so they will be informed and be in a better position to handle an emergency should one arise. In locations where storms or other conditions may be expected to disrupt traffic, emergency signs and barricades should be on hand and possible detour routes should be investigated at the beginning of each winter season. When it is necessary to close a road for an emergency, the following procedures should be used:

1. The District III Road Operations Center shall be notified immediately with all pertinent information.
2. Adequate warning signs should be placed giving warning of the closure in accordance with MUTCD.
3. All closures shall have both ends of the closure physically blocked and manned, unless otherwise authorized by a supervisor II or higher.
4. The closed area should be driven to ensure no one is stranded.
5. The vehicles used to block the road at each end of the closure shall be equipped with radios and strobe lights.
6. The person working the closure should not leave the area until the road is reopened or another NDOT employee relieves the individual.

7. Do not argue with the traveling public. Be firm but polite when informing them of the closure. If the road closure is violated, advise the section supervisor and request assistance from the NHP.
8. Do not give information to the public on the length of the closure or when the road will be reopened unless you are certain of the information.

NDOT is responsible for determining when road closures should be established due to snow or other weather conditions. The decision to close the road should be made at the highest level practical within the District. Due to emergency situations, the highest level practical may dictate that the least experienced member of the crew make the initial determination to close a road. Immediate supervisors should be notified, and a review should be made to determine if steps can be taken to safely reopen the roadway.

Occasionally, an NHP trooper or a Deputy Sheriff will request that a roadway be closed. If circumstances allow, a supervisor from the law enforcement agency should meet with a supervisor from NDOT and review the section in question prior to closing a road. The roadway should only be closed if a reasonably prudent driver cannot negotiate it in a manner that would allow safe passage. If a law enforcement agency closes a roadway and the closure does not appear to be warranted, the Assistant District Engineer or the District Engineer should be contacted as soon as possible with the details of the closure. The District III Road Operations Center shall be notified immediately of any changes to road closures.

RADIO PROCEDURES

During the winter months, maintenance personnel rely on the two-way radio communications system extensively. With the many calls for abrasive mixtures and assistance to specific areas, disabled vehicles, etc., the two-way radio is the most efficient way to communicate with other workers and the District III Road Operations Center. Some items the workers should be aware of that relate to radio usage are:

- The preferred method of communication is standard terminology and / or text such as “In Service” and “Out of Service”.
- Do not use CB lingo on NDOT radios except for the following:
  - 10-4 (message received or copy)
- Be brief and to the point with your communication. Remember that others need to use the radio. Be courteous and do not interrupt other messages.
- Use the Elko Road Operations group for communication with the District III Road Operations Center. Switch back to your crew talk group when finished.
  - Exception to this is when there are only single rovers on, they should remain on the Road Operation talk group until full operations are commenced.

All maintenance personal should report to the District III Road Operations Center when they come in service and go out of service.

When reporting accidents or other activities that require a request to the NHP or other law enforcement agency, provide the following information:

- Location (route, milepost. and direction)
- Injuries if any
- Number of vehicles involved and type of vehicles
- Description of vehicles (make, model, color, license plate number)
- Is the person calling in the information standing by or providing assistance?
- Are any state vehicles or employees involved?

When reporting non-accident calls (i.e., disabled vehicle, etc.), provide the following information:

- Location (route, milepost, and direction)
- Type of incident
- If vehicle is involved, type of vehicle (make, model, color, license plate number)
- Travel card number and expiration date
- Any other pertinent information that you think would aid the Traffic Center Technician in passing your message to the proper authorities

Profane, foul, or abusive language on the radio will not be tolerated.
All calls to the District III Road Operations Center are recorded.

ROAD CONDITION REPORT

The District III Road Operations Center is staffed 24 hours a day year-round. Reports regarding highway conditions, road closures, and approximate time of opening, detours, etc., are compiled as messages from field personnel reach the District III Road Operations Center located in the District Office. Information is disseminated to the public in the following ways:

- Through the telephone system by calling 511 (1-877-687-6237)
- Through the local media
- Via the Internet (www.nevadadot.com)
- Via the HARS (Highway Advisory Radio System)

Maintenance personnel should be aware that even during severe storms, the District III Road Operations Center is staffed by a maximum of two employees (normally only one). When radioing in to report an incident and an immediate response is not received, wait a minute or so and try again to complete the message. During a severe storm, there may be as many as 100 maintenance employees working and if many of them are trying to contact The District III Road Operations Center it may take some time and patience to get through. Traffic Center Technicians also receive many calls from the NHP and other law enforcement agencies and are required to update road conditions as they change.

All District III maintenance employees shall report conditions and controls to the District III Road Operations Center. During shift changes maintenance personnel should relay to the oncoming shift, their sections current conditions and current active controls.

It is absolutely mandatory that road condition changes are relayed to the District III Road Operations Center as they change so current and reliable road information is always available to the public.

LEVELS OF SERVICE

Budgetary and physical resources available for winter maintenance operations often limit District snow and ice control operations. Due to these limited resources, five levels of service (A through E) have been established. Factors that should be considered when establishing the level of service for a specific route include the following:

- Safety
- Average daily traffic (ADT)
- Commuter routes
- Availability of alternative routes
- Public interest and concern
- Potential economic impact
- Consequence of not providing a higher level of service
- Available resource

LEVEL OF SERVICE A

Snow will be removed continuously, and anti-icing and de-icing techniques and abrasive mixtures will be used as needed during the storm event to keep the roads open for traffic and provide a good surface on which to operate. After the storm has subsided, snow will be removed and abrasive mixtures will be used on a continuing basis until bare pavement exists. Patrols will be established for those areas where conditions require surveillance of the roadway for ice, rocks, avalanche, or snow. An abrasive mixture should be applied to enhance traffic safety when conditions warrant. Overtime needs to be preapproved, but must be held to a minimum.

District III Level of Service A Routes

Route	Description
IR-80	PE, HU, LA, EU, EL (all section in District III) MP to MP
US-6	From the junction of SR-318 to Ely (MP WP 13.92 to MP WP 37.95)
US-50	LA, EU, (MP WP 0.00 to MP WP 28.00)
US-50	MP WP 61.00 to MP WP 67.67

US-93	From Junction at US-50/US-93 in Ely to Idaho state line (MP WP 53.45 to MP EL 141.88)
US-95	HU Winnemucca to Oregon State Line
SR-225	From junction of SR-535 in Elko to Chain-up area (MP EL 27.23 to MP EL 29.00)
SR-227	From junction of SR-535 in Elko to Palace Parkway Intersection (MP EL 0.00 to MP EL 13.58)
SR-318	From District line in Lincoln County to junction with US-6
SR-535	From junction of SR 225 in Elko to junction of SR 227 in Elko
SR-787	HU

LEVEL OF SERVICE B

This level is the same as Level A except when personnel and equipment are not sufficient to maintain Level A service for both Level A and B routes, then Level A routes will take precedence. This may require shifting of personnel from Level B routes in one section to Level A routes in another section. Level B routes may experience longer periods of snow pack and chain or snow tire requirements while Level A routes are being maintained. Overtime needs to be preapproved, but must be held to a minimum.

District III Level of Service B Routes

Route	Description
US-6	From District boundary to US-6 at SR-318 (MP NY 111.99 to MP WP 13.92)
US-50	MP WP 28.00 to MP WP 61.00
US-6 & US-50	From junction of US-6/50/93 in Ely to Nevada-Utah state line at US-6 (MP WP 65.00 to MP WP 101.88)
US-93	From LN/WP County line at Geyser Ranch to Majors Junction (MP WP 0.00 to MP WP 26.71)
US-93A	From junction of US-93 at Lages to end in West Wendover (MP WP 0.00 to MP WP 53.20)
SR-223	From Angel Lake Road (SR-231) to 0.3 miles past US-93 (MP EL 73.99 to MP EL 75.98)

SR-225	From chain-up area north of Elko to Nevada-Idaho state line (MP EL 29.00 to MP EL 127.54)
SR-227	From Palace Parkway Intersection to end of pavement at Lamoille (MP EL 13.58 to MP EL 20.10)
SR-278	From junction of US-50 (MP EU 0.00 to MP EU 11.00)
SR-278	From Midway to West Carlin Interchange I-80 Exit 279 (MP EU 61.18 to MP EL 5.02)
SR-289	US-95 (Melarkey) to SR-795 (Reinhart)
SR-294	Grass Valley Road from PE/HU County line to SR 787 Hanson Street.
SR-304	Front Street in Battle Mountain from W. Battle Mountain Interchange to E. Battle Mountain Interchange
SR-305	From Battle Mountain City limits to SR-304
SR-306	From end of state maintenance near Gold Acres to Beowawe Interchange I-80 (MP LA 2.32 to MP EU 20.43)
SR-490	From US-93 northwest 8.93 miles to Ely State Prison
SR-766	Newmont/Barrick mine road, from junction of SR-221 in Carlin to end of pavement (MP EL 0.00 to MP EU 6.31)
SR-794	HU
SR-795	HU

LEVEL OF SERVICE C

Snow should be removed only during scheduled or innovative shifts except that some routes may be plowed on overtime when the Supervisor II determines there is sufficient reason for plowing. Snow pack left by truck plows will be removed as soon as conditions (e.g., weather and workload) permit. Use of abrasive mixtures may be limited to intersections, curves and grades depending on budgetary limitations. Patrols may be used for applying abrasive mixtures to selected areas and where conditions require surveillance for ice, rocks, avalanche, or snow.

District III Level of Service C Routes

Route	Description
SR-140	From junction of US-95 to (MP HU 65.58) at Denio

SR-221	From SR-278 thru Carlin to FR-EL02
SR-226	Deep Creek Road, from junction SR-225 39.02 miles northwest (MP EL 0.00 to MP EL 39.02)
SR-228	Jiggs Road, from junction of SR-227 near Spring Creek to Jiggs
SR-229	Ruby Valley Road, from I-80 Halleck Interchange to junction of US-93 (MP EL 0.00 to MP EL 50.00)
SR-230	Starr Valley Road, from I-80 at Deeth to I-80 at Welcome
SR-232	Clover Valley Road (MP EL 2.61) to US-93 junction
SR-233	Montello Road, from I-80 to Nevada-Utah state line (MP EL 0.00 to MP EL 34.17)
SR-278	MP EU 11.00 north to Midway MP EU 61.18
SR-290	From junction of US-95 north to end of pavement
SR-292	From junction of SR-140 north to Nevada-Oregon state line in Denio (MP HU 65.58 to MP HU 68.52)
SR-293	Kings River Road from junction of US-95, west to Kings River Valley County Rd. (MP HU 23.99)
SR-305	From junction of SR-305 and US-50 at Austin to Battle Mountain City limits
SR-379	From junction at US-6 to end of pavement near Duckwater (MP WP 0.00 to MP WP 19.53)
SR-400	From I-80 Mill City Interchange, south to Unionville Road at end of pavement (MP PE 16.61 to MP PE 0.00)
SR-487	From Nevada-Utah state line to junction of US-6/50
SR-488	From junction of SR-487 in Baker to Great Basin National Park boundary
SR-535	From north side of exit 298 to end of state maintenance near Gateway RV (MP EL 21.68 to MP EL 24.13)
SR-789	From I-80 at Golconda Interchange, east to Midas County Road, at end of pavement (MP HU 16.25)
SR-796	HU

SR-892	From junction of US-50 north up Newark Valley to end of asphalt paving (MP WP 35.92)
SR 893	From junction of US-6/50 to end of pavement (MP WP 0.00 to MP WP 39.75) LEVEL is **C-**
SR-895	From the junction of SR-318 to (MP WP 1.48) at Preston
FR	See crew plans for frontage roads

LEVEL OF SERVICE D

Snow should be removed only during scheduled shifts except some routes may be plowed on overtime when the District Engineer determines there is sufficient reason for plowing. These routes may be allowed to close during moderate to heavy snowstorms. Roads allowed to close temporarily will be reopened after the end of the snowstorm during scheduled shifts as personnel and equipment become available. Once open, the road should be treated with an abrasive mixture to provide traffic safety as deemed necessary by the supervisor.

District III Level of Service D Routes

Route	Description
SR-140	From MP HU 65.58 at Denio Nevada-Oregon state line
SR-231	From Angel Creek Campground to Wells MP EL 11.00
SR-722	From Dist Boundary to US-50 (MP LA 12.00 to MP LA 41.52)
SR-767	So. Ruby Valley Road, from end of pavement to junction of SR-229 (MP EL 37.18 to MP EL 39.10)
SR-806	North Battle Mountain Road from junction of SR-304, north to Lander County Road (MP LA 5.81)
SR-894	From end of pavement to junction of US-93 (MP WP 0.00 to MP WP 16.62)
SR-895	From junction of SR-318 to Preston (MP WP 0.00 to MP WP 1.48)
RP-802	Beowawe Rest Area on I-80 (MP EU 6.56)
RP-804	Cosgrave Rest Area on I-80 at (MP PE 69.66)
RP-807	Schellbourne Rest Area on US 93 (MP WP 92.55)

RP-808	Button Point Rest Area on I-80 at (MP HU 23.65)
RP-809	Valmy Rest Area on I-80 at (MP HU 53.07)
RP-810	Sunnyside Rest Area on SR 318 at (MP NY 22.90)
RP-812	Salmon Falls Creek Rest Area, south of Jackpot on US-93 at (MP EL 138.00)
SP-01	Main park road to Cave Lake State Park from west park boundary to junction of SP-01B, 2.47 miles
SP-01B	Cave Lake State Park campground road from junction of SP-01 to .67 mile to south end of Cave Lake where pavement ends
FR	See crew plans for frontage roads.

LEVEL OF SERVICE E

These routes are allowed to close during the winter and are reopened in the spring when it is reasonable to expect that the possibility of a major storm is over.

District III Level of Service E Routes

Route	Description
SR-231	Angel Lake Road, from Angel Lake to Angel Creek Campground (MP EL 0.00 to MP EL 4.00)
SR-781	Palisade Bridge over Humboldt River 800 feet south to 400 feet north

MAINTENANCE CREW PLANS

CREW 322 - CONTACT

Route	Description	Service Level
US-93	From Salt Sand Pad (MP EL 96.4) north to Nevada-Idaho state line (MP EL 96.4 to MP EL 141.88)	A

CREW 324 - EMIGRANT

Route	Description	Service Level
IR-80	From LA-EU County line to Central Carlin Interchange (MP EL 2.85)	A

SR-306	From end of pavement near Gold Acres to Beowawe Interchange (MP LA 2.32 to MP EU 20.69)	B
RP-802	Beowawe Rest Area on IR-80 IR-80 (MP EU 6.56)	D

Major frontage roads within the jurisdiction of this crew will be assigned a Level of Service C. Minor paved frontage roads will be assigned a Level of Service D. Minor gravel frontage roads will be assigned a Level of Service E.

CREW 327 - INDEPENDENCE/NORTH FORK

Route	Description	Service Level
SR-225	From SR-226 to Idaho-Nevada state line (MP EL 54.37 to MP EL 127.54)	B
SR-226	Deep Creek Road, from junction of SR-225 to end of pavement (MP EL 39.02)	C

CREW 331 - RUBY VALLEY/CURRIE

Route	Description	Service Level
US-93	From junction of US-93A at Lages to Warm Springs Salt Sand Pile (WP MP 112.76 to MP EL 49.40)	A
SR-229	From junction of county road to Lamoille to junction of US-93 south of Wells (MP EL 11.05 to MP EL 50.36)	C
SR-767	From end of pavement to junction of SR-229 (MP EL 37.18 to MP EL 39.10)	D

CREW 332 - WELLS CREW #1

Route	Description	Service Level
IR-80	From East Wells Interchange to Oasis Interchange (MP EL 74.03 to MP EL 100.92)	A

US-93	From Warm Springs Salt Sand Pile to East Wells Interchange (MP EL 49.40 to MP EL 74.35)	A
SR-223	From Angel Lake Road to 0.3 mile past US-93 (MP EL 73.99 to MP EL 75.98)	B
SR-232	Clover Valley Road (MP EL 2.61 to US-93 junction)	C

Major frontage roads within the jurisdiction of this crew will be assigned a Level of Service C.
Minor paved frontage roads will be assigned a Level of Service D.
Minor gravel frontage roads will be assigned a Level of Service E.

CREW 335 - WELLS CREW #2

Route	Description	Service Level
IR-80	From Halleck - Ruby Valley Interchange to East Wells Interchange (MP EL 43.70 to MP EL 74.03)	A
US-93	From 4 Way Intersection in Wells to Salt Sand Pile (MP EL 75.35to MP EL 96.4)	A
SR-230	Starr Valley Rd., from IR-80 at Deeth to IR-80 at Welcome (MP EL 65.89)	C
SR-231	Angel Creek Campground to Wells (MP EL 11.00)	D
SR-231	Angel Lake Road, from Angel Lake to Angel Creek Campground (MP EL 0.00 to MP EL 4.00)	E

Major frontage roads within the jurisdiction of this crew will be assigned a Level of Service C.
Minor paved frontage roads will be assigned a Level of Service D.
Minor gravel frontage roads will be assigned a Level of Service E.

CREW 336 - WENDOVER

Route	Description	Service Level
IR-80	From Oasis Interchange to	A

	Nevada-Utah state line (MP EL 100.92 to MP EL 132.72)	
US-93A	From junction of US-93 at Lages to junction of SR-224 in Wendover (MP WP 0.00 to MP EL 53.20)	B
SR-233	Montello Rd., from IR-80 at Oasis to Nevada/Utah state line (MP EL 34.17)	C

Major frontage roads within the jurisdiction of this crew will be assigned a Level of Service C.
Minor paved frontage roads will be assigned a Level of Service D.
Minor gravel frontage roads will be assigned a Level of Service E.

CREW 340 - ELKO – SPECIALTY CREW

Route	Description	Service Level
SR-225	1 mile north of IR 80 to junction of SR-226 (from MP EL 29.00 to MP EL 54.37)	B

CREW 350 – ELKO CREW #1

Route	Description	Service Level
IR-80	From Central Carlin Interchange to Mountain City Hwy Interchange SR-225 (MP EL 2.85 to MP EL 23.27)	A
SR-278	From Midway to West Carlin Interchange I-80 Exit 279 (MP EU 61.18 to MP EL 5.02)	B
SR-766	Newmont/Barrick Mine Road from junction of SR-221 in Carlin to end of pavement (MP EL 0.00 to MP EU 6.31)	B
SR-221	From end of IR-80 through Carlin to FR-EL02	C
SR-278	From Alpha to Midway (MP EU 35.33 to MP EU 61.18)	C

SR-781	From south end B-1489 (Humboldt River) to north end	E

Major frontage roads within the jurisdiction of this crew will be assigned a Level of Service C.
Minor paved frontage roads will be assigned a Level of Service D.
Minor gravel frontage roads will be assigned a Level of Service E.

CREW 351 – ELKO CREW #2

Route	Description	Service Level
IR-80	From Mountain City Interchange to Halleck/Ruby Valley Interchange (MP EL 23.27 to MP EL 43.70)	A
SR-227	Lamoille Hwy, from junction of 12th Street in Elko to Palace Parkway intersection (MP EL 1.45 to MP EL 13.58)	A
SR-227	Lamoille Hwy, from Palace Parkway intersection to end of pavement at Lamoille (MP EL 13.58 to MP EL 20.10)	B
SR-228	Jiggs Road, from junction of SR-227 near Spring Creek	C
SR-229	Ruby Valley Road, from I-80 Halleck Interchange to junction of county road to Lamoille (MP EL 0.00 to MP EL 11.05)	C

South Fork State Park routes

Elko County and NDOT have an agreement for Elko County to service snow removal on the main State Park routes.

Major frontage roads within the jurisdiction of this crew will be assigned a Level of Service C.
Minor paved frontage roads will be assigned a Level of Service D.
Minor gravel frontage roads will be assigned a Level of Service E.

CREW 355 - DISTRICT III BRIDGE CREW

Route	Description	Service Level
SR-227	Lamoille Hwy, (5th Street in Elko) from junction of SR-535 to	A

	junction of 12th Street in Elko (MP EL 0.00 to MP EL 1.45)	
SR-225	From junction of SR-535 to Chain-up area (MP EL 27.23 to MP EL 29.00)	A
SR-535	Idaho Street, from junction of SR-225 to 5th Street, SR 227 (MP EL 24.65 to MP EL 25.49)	A
FR-EL 17	East Jennings Way south side IR-80 Exit 303 from Idaho Street to 0.056 of Idaho Street 0.256 miles north Ramps 3 & 4	B
SR-535	From north side of exit 298 to end of state maintenance near Gateway RV (MP EL 21.68 to MP EL 24.13)	C
FR-EL 54	East Idaho Street from NYTC to end of state maintenance at Osino Interchange (6.938 miles east of NYTC)	C

Major frontage roads within the jurisdiction of this crew will be assigned a Level of Service C.
Minor paved frontage roads will be assigned a Level of Service D.
Minor gravel frontage roads will be assigned a Level of Service E.

CREW 341 – WINNEMUCCA - SPECIALTY CREW

In the event that snowfall accumulates in excess of 6 inches on the routes listed below, the snow will be plowed to the center of the highway and dispersed of immediately following the storm when manpower and equipment are available.

1. US 95 and SR-289, Winnemucca Blvd. from Winnemucca Blvd. West Interchange to Winnemucca Blvd. East Interchange

2. SR-794, Old US-40 from junction of SR-289 east to end of three lane section

3. SR-787, Hanson Street

If the snow is plowed to the center of the highway, the cross street intersections will be plowed open before the end of the work shift.

Route	Description	Service Level
US-95	From junction of I-80 at Exit 176 to Reinhart Lane	A
SR-787	Hanson Street from SR-289 Winnemucca Blvd. to junction of SR-294 - Grass Valley Road	A
SR-289	US-95 (Melarkey) to SR-795 (Reinhart)	B
SR-294	Grass Valley Road from PE/HU County line to SR-787 Hanson Street	B
SR-794	Old US-40 from junction of SR-289 east to north side of IR-80 at East Winnemucca Interchange (MP HU 17.05)	B
SR-795	Reinhart Lane from SR-289 to US-95 junction	B
SR-796	Airport Road from cattle guard at airport 1.33 miles north to FR-HU 15	C
FR-HU 15	3.06 miles east of PE County line to FR-HU 20	C
FR-HU 17	FR-HU 15 to cattle guard North of I-80	C
FR-HU 20	Pilot truck stop to US 95 at I-80	C

Frontage roads and rest areas will be assigned a Level of Service D.

CREW 370 - WINNEMUCCA CREW #1

Route	Description	Service Level
IR-80	Western district boundary 1.08 miles west of Imlay Interchange east to Winnemucca Blvd. East Interchange	A
SR-400	Unionville Road from junction of Unionville Canyon Road to Mill City Interchange on IR-80	C

FR-PE 15	Imlay to 151 Interchange (Dun Glen)	C
RP-804	Cosgrave Rest Area on south side of IR-80 at (MP PE 69.66)	D

Other frontage roads and rest areas will be assigned a Level of Service D.

CREW 371 - BATTLE MOUNTAIN

In the event that snowfall accumulates in excess of 6 inches on the routes listed below, the snow will be plowed to the center of the highway and dispersed of immediately following the storm when manpower and equipment are available.

Route	Description
SR-304	Front Street from Forest Street west to Tule Street
SR-305	Austin Highway from junction of SR-304 south to Carson Street
SR-806	North Battle Mountain Road from junction of SR-304 north to North 3rd Street

If the snow is plowed to the center of the highway, the cross street intersections will be plowed open before the end of the work shift.

Route	Description	Service Level
IR-80	From 0.87 mile west of Valmy Interchange east to LA/EU County line (MP EU 26.97)	A
SR-304	Front Street in Battle Mountain from West Battle Mountain Interchange to East Battle Mountain Interchange	B
SR-305	From junction of SR-304 To the Battle Mountain City limits	B
SR-305	From the Battle Mountain City limits to MP LA 72.70	C
FR-LA 01	From SR-304 to Skyline Blvd.	C
FR-LA 02	From SR 304 to Muleshoe Road	C

SR-806	North Battle Mountain Hwy from junction of SR-304 north to Lander County Road at railroad tracks	D

Other frontage roads and rest areas will be assigned a Level of Service D.

CREW 372 - OROVADA

In the event that snowfall accumulates in excess of 6 inches on the following routes, the snow will be plowed to the center of the highway and dispersed of immediately following the storm when manpower and equipment are available.

1. US-95, from south city limits of McDermitt, north to the Oregon-Nevada state line (MP 73.76)

If the snow is plowed to the center of the highway, the cross street intersections will be plowed open before the end of the work shift.

Route	Description	Service Level
US-95	From junction of SR-290 at bottom of Paradise Hill north to Nevada-Oregon state line at McDermitt (MP HU 73.76)	A
SR-290	Paradise Road from junction of US-95 north to Cotton Wood Creek structure (MP HU 18.00)	C
SR-293	Kings River Valley Hwy from junction of US-95 at Orovada west to Kings River Valley (MP HU 23.99)	C

The rest area is assigned a level of service D.

CREW 373 - QUINN RIVER

Route	Description	Service Level
SR-140	From junction of US-95 to MP 65.58 at Denio to Oregon State Line (MP HU 110.11)	C
SR-292	Denio Road from junction of SR-140 at MP 65.58 north to Nevada-Oregon state line in Denio (MP HU 68.52)	C

SR-140	From MP HU 65.58 at Denio to Oregon State Line	D

Rest areas are assigned a level of service D.

CREW 374 - WINNEMUCCA CREW #2

Route	Description	Service Level
IR-80	From Winnemucca Blvd. East Interchange to 0.67 mile east of Pumpernickel Interchange (MP HU 14.96 to MP HU 42.20)	A
US-95	From junction of Reinhart Lane north to junction of SR-290 (Paradise Road) (MP HU 22.09)	A
SR-789	Getchell Road from Golconda Interchange on IR-80 east to Midas County Road (MP HU 16.25)	C

Frontage roads and rest areas will be assigned a Level of Service D.

CREW 342 - ELY - SPECIALTY CREW

Route	Description	Service Level
US-93	From Ely to the North End of McGill (MP WP 53.45 to MP WP 66.00) This section is assigned to Crew 342 during winter months (Nov. - April)	A
US-50	(MP WP 61.00 to MP WP 67.67) This section is assigned to Crew 342 during the winter months (Nov. – April)	A
SR-490	Ely State Prison Road (MP WP 0.0 to MP WP 8.93) This section is assigned to Crew 342 during winter months (Nov. - April)	B

380 - ELY CREW #1

Route	Description	Service Level
US-6	MP WP 28.00 to MP WP 37.95	A
US-50 & 93	From junction of US-50 and US-93 in Ely to junction with US-6 at US-50 (MP WP 67.67 MP WP 68.43)	A
US-93	From the North end of McGill to Lages Junction (MP WP 66.00 to MP WP 112.76)	A
US-50	MP WP 28 to MP WP 61.00	B
RP-807	Schellbourne Rest Area on US-93 (MP WP 92.55)	D

CREW 381 – ELY CREW #2

Route	Description	Service Level
US-6, 50 & 93	From junction of US-6/50/93 in Ely to Nevada-Utah state line (MP WP 39.20 to MP WP 101.88)	B
US-93	From LN/WP County line at Geyser Ranch to intersection of US-93 at Majors Junction (MP WP 0.00 to MP WP 26.71)	B
SR-487	From Nevada-Utah state line to junction of US-6/50 (MP WP 0.00 to MP WP 11.00)	C
SR-488	From junction of SR-487 Baker to Great Basin National boundary in Baker (MP WP 0.00 MP WP 5.49)	C
SR-893	From junction of US-6/50 to end of pavement (MP WP 0.00 MP WP 39.75)	C-
SR-894	From end of pavement junction of US-93 (MP WP 0.00 to MP WP 16.62)	D

SP-01	Main road to Cave Lake State Park from west Cave Lake State Park boundary to junction of SP-01 and 01B, a distance of 2.47 miles	D
SP-01B	Cave Lake State Park campground road from junction of SP-01B and 01 to south end of Cave Lake where pavement ends, a distance of 0.67 mile	D

CREW 382 - LUND

Route	Description	Service Level
SR-318	From District boundary to junction of US- 6 (MP LN 43.67 to MP WP 22.56)	A
US-6	MP WP 13.92 to MP WP 28.00	A
US-6	From the District boundary to intersection with SR-318 (MP WP 13.92 at Blackjack)	B
SR-379	From junction of US-6 at Currant Creek to end of pavement near Duckwater (MP WP 0.00 to MP WP 19.53)	C
SR-895	From junction of SR-318 to Preston (MP WP 0.00 to MP WP 1.48)	D
RP-810	Sunnyside Rest Area on SR-318 (MP NY 20.90)	D

CREW 384 - EUREKA

Route	Description	Service Level
US-50	From LA/EU County line at US-50 near Illipah Junction (MP EU 0.00 to MP WP 28.00)	A
SR-278	From junction of US-50 (MP EU 0.00 to EU MP 11.00)	B
SR-278	MP EU 11.00 to Ely/ Elko Sub district Boundary (MP EU 35.33)	C

SR-892	From junction of US-50 to End of pavement (MP WP 0.00 WP MP 35.92)	C

CREW 385 - AUSTIN

Route	Description	Service Level
US-50	From CH/LA County line to LA/EU County line (MP LA 0.00 MP LA 56.53)	A
SR-305	From junction of US-50 to Ely/Winnemucca Sub district boundary (MP LA 30.80 to MP LA 72.80)	B
SR-722	From District II/III boundary (MP LA 12.00 to MP LA 41.52)	D