



J. Ferrin Crosby, P.E.  
County Engineer

*Office of*  
**Apache County Engineer**  
P.O. Box 238, St. Johns, AZ 85936  
*fcrosby@co.apache.az.us*

Facsimile: 928-337-2062

Telephone: 928-337-7528

**APACHE COUNTY ENGINEERING AND ROADS DEPARTMENT  
ROADWAY SNOW REMOVAL AND CINDERING POLICY**

**PURPOSE:**

Apache County Engineering and Roads Department considers that the forecast of certain difficult driving conditions caused by snow and or ice warrant immediate response and work by its roadway maintenance forces to mitigate these driving conditions until weather allows driving conditions to return to normal.

The goal of this work will be to enable a reasonable and prudent driver operating a sufficiently equipped vehicle to safely travel public roadways. Work may be continuous or intermittent depending on the nature of the storm, and the availability and condition of equipment and personnel.

**Disclaimer**

- Residents of Apache County should be aware or make them aware that the region has a climate that has frequent winter storms of varying severity. Precautions should be made for any travel in the region to anticipate the occurrence of severe weather. The Arizona Department of Transportation offers the following tips for winter travel. Slow Down. Drive defensively. Be patient and allow additional time for your trip
- Carry snow chains/cables in case highways are snow-packed and icy. Also be sure to pack a car safety kit that includes a cell phone
- Leave sufficient space between your vehicle and others. Give yourself plenty of room and time to stop or avoid upcoming hazards
- If stopped on the roadway, leave room for emergency vehicles to get around you
- Make sure your vehicle has plenty of fuel and pack extra clothing for winter weather. If you slide off the roadway, stay with your vehicle. The Department of Public Safety or the Arizona Department of Transportation will respond
- Check weather and road conditions before you leave. Let someone know your route.
- To stay up-to-date with the latest highway conditions around the state, visit the ADOT Traveler Information Center at [www.az511.gov](http://www.az511.gov) or call 5-1-1

## **POLICY:**

1. Apache County Roads Department road maintenance crews will begin snow removal operations and/or cindering when four (4) inches or more has accumulated on the local roadways.
2. Priority for snow removal and/or cindering is:
  - a. Major County Maintained arterial roads and school bus routes.
  - b. Minor collector roads.
  - c. Residential Roads designated and maintained by the county.
  - d. Primitive Roads designated and maintained by the county.
3. Priorities a thru c will be completed so that all roadways will be cleared with an initial pass, and open prior to beginning on Priority d.
4. In emergency situations the Sheriffs Office may contact the Road Yard Supervisor so they can coordinate movement of emergency vehicles (ambulance, fire trucks, etc.)
5. It is the purpose of the initial pass to open roadways so as to permit responsible traffic flow. It is impossible to plow without leaving a windrow (which may affect) driveway entrances. The County does not have the equipment or manpower to address these windrows in the initial phases of snow removal. Hence the removal of the windrows will be addressed during the clean-up phase of the operation (generally within 24-48 hours after the storm has passed) on County Maintained roads only.
6. Driveway snow clearing is the responsibility of the resident. \*
7. Illegal head walls that have been constructed on pipe culverts without a county Right-of-Way use permit are the responsibility of the resident.
8. Exceptions to this policy may be made by the Board of Supervisors or the Public Works director in situations where Public Health Safety and Welfare will be more readily assured by such an exception.
9. Roads that are not on the Board of Supervisor approved list of Roads eligible for maintenance will not be plowed. In the event the winter storm is declared a county emergency off system roads will only be cleared in conjunction with requests by the Sheriff's Office.
10. In the event a road is closed to substantial snow accumulations the foreman will notify the County Engineer and other affected parties such as the Sheriffs Office, U. S. Forest Service, Fire Departments etc. Furthermore a log of the closure will be kept in the responsible Road Yard. The Log will contain all measures taken to ensure the road was cleared of any persons before the closure, and the means used to effect the closure.

## SNOW REMOVAL PROCEDURES

1. Road Yard Supervisors will be primarily responsible for determining when snow removal operations are to commence. They will monitor weather forecasts, weather conditions, and road conditions. They will notify the Highway Superintendent and crews when conditions are such that he/she believes the snow level is approaching 4" and snow removal and /or cindering operations are preparing to begin. It is intended that snow removal and/or road cindering operations will be actively underway at the 4" snow level.
2. The Road yard Supervisor will determine the crew size and assign personnel to specific areas. **Note: Under the Apache County Roads Department Policy "While preference may be given to those employees who wish to volunteer for the work, all employees are required to work overtime when requested to do so."**
3. The operators will move through their assigned area according to the priorities in the snow removal policy. Each operator's primary area of responsibility and route will be identified on the road district Snow Plowing Route Manual which is accessible to a dispatcher, if a dispatcher is deemed necessary. If operators are confronted with an emergency they are to contact the supervisor immediately, if the supervisor cannot be reached they may contact the Sheriff dispatch for direction.
4. Cars in the roadway:  
Operators will notify the Supervisor if a vehicle is obstructing the safe operation of the snow removal process. The Supervisor will notify the Sheriffs Office. with the License #, model, make, color, and location. It will be at the Sherriff's Department discretion as if and how the vehicle is to be removed.
5. If the operator is unable to safely conduct snow plowing and/or roadway cindering operations due to vehicles' in the roadway he/she will not do so and he will notify the supervisor of such stranded vehicles: unless the situation is obviously life threatening, the procedure will be the same as item 4.
6. Windrows: all windrows developed on road identified in the policy portion of this document (items 32 - a, b, c pg.1), will remain during the initial phases of snow removal and until roadways are cleared and the cleanup phase has begun.
7. Driveway clearing and cindering is the responsibility of the resident.

**APACHE COUNTY  
DISTRICT I - CHINLE AREA  
SNOW REMOVAL PLAN**

The District I Chinle area will be broken down into seven geographical areas:  
**Spider Rock, Del Muerto, Blue Gap/Tachee, Lukachukai, Rough Rock, Black Mesa, Round Rock, East Many Farms**

Storm events will be monitored by National Weather Service and actual road inspections.

While storm events may occur at anytime of the day or night. Snow removal operations will usually begin at 7:00am and end at a designated time (early evening).

Specific sections may be designated as closed for the winter season. These designated roads will not have snow removed during the snow storm.

**Snow Removal**

Snow Removal /Grading is to start when approximately 6 inches has accumulated on the roads, in any of our designated areas.

**Cindering/Deicing**

Deicing will be applied as needed to known areas where icing occurs such as hills, and school area roads.

**Road Priority**

- 1) Blade County Roads  
Other Entities such as BIA, NDOT, Navajo Nation, etc. will be responsible for blading their respective roads.
- 2) High Risk Medical Individuals  
Heart patients, elderly with medical needs, diabetic, oxygen dependent, extreme illness, medical follow-ups and ambulatory assistance. NOTE: Hospital referrals should be on file with the Apache County office.
- 3) Declared Emergencies  
District I will work with other entities, including local chapters. NOTE: When other entities declare emergency, it may not apply to Apache County because we are a different governmental agency

**Priority Roads by Area {roads listed in order of priority}**

Spider Rock - 555, 460, 461: 456, 458  
Del Muerto - 525, 464, 465, 522  
Blue Gap/Tachee - 515, 516, 517, 558, 102, 104  
Lukachukai-512, 599,598,101,601,600,514,108,509,133,593,511,595,126  
Rough Rock - 579, 573, 574, 571, 504, 581, 580, 577, 499, 500, 582, 572  
Black Mesa - 566  
Round Rock- 586, 587, 498, 588  
East Many Farms - 505, 550, 519, 575

## **Resources Available**

District I Chinle Area has 7 full time employees who will be available for snow removal operations.

4 Motor Graders

1 Front End Loaders

1 Backhoe

1 Snow Plow with Cinder

## **Road Closure Procedures**

Road closures will be with a "Road Closed" sign placed on a wind master sign stand & placed in the middle of the road. After the road is closed, the closed area will be checked to assure there is nobody on the road at that time.

## **Road Closure Areas**

**BIA Route**

**10 miles of N-13 from base of the mountain of the Lukachukai side, over the mountain to the base of the mountain on the Red Valley side. Annual Winter Closure**

**APACHE COUNTY  
DISTRICT I - TEEC NOS POS / ROCK POINT AREA  
SNOW REMOVAL PLAN**

The District I Chinle area will be broken down into seven geographical areas:  
**Red Valley/Oak springs, Cove, Sweetwater/Red Mesa, Teec Nos Pos, Dennehotso, Rock Point, Mexican Water**

Storm events will be monitored by National Weather Service and actual road inspections.

While storm events may occur at anytime of the day or night. Snow removal operations will usually begin at 7:00am and end at a designated time (early evening). Specific sections may be designated as closed for the winter season. Theses designated roads will not have snow removed during the snow storm.

**Snow Removal**

Snow Removal /Grading is to start when approximately 6 inches has accumulated on the roads, in any of our designated areas.

**Cindering/Deicing**

Deicing will be applied as needed to known areas where icing occurs such as hills, and school area roads.

**Road Priority**

- 4) Blade County Roads  
Other Entities such as BIA, NDOT, Navajo Nation, etc. will be responsible for blading their respective roads.
- 5) High Risk Medical Individuals  
Heart patients, elderly with medical needs, diabetic, oxygen dependent, extreme illness, medical follow-ups and ambulatory assistance. NOTE: Hospital referrals should be on file with the Apache County office.
- 6) Declared Emergencies  
District I will work with other entities, including local chapters. NOTE: When other entities declare emergency, it may not apply to Apache County because we are a different governmental agency

**Priority Roads by Area (roads listed in order of priority)**

Red Valley/Oak springs - 541, 467, 468, 540, 542, 545, 543, 544, 571

Cove - 538, 547, 466, 544

Sweet Water/Red Mesa - 535, 476, 477, 534, 480, 566, 534, 535, 536, 537, 471, 478

Teec Nos Pas -479, 475, 469, 470, 472, 473, 474, 475, 479

Dennehotso -482, 481, 483

Rock Point - 484, 485, 479, 490, 491, 559, 560, 567

Mexican Water - 548

### **Resources Available**

District I Teec Nos Pos Area has 7 full time employees who will be available for snow removal operations.

4 Motor Graders

2 Front End Loaders

1 Backhoe

### **Road Closure Procedures**

Road closures will be with a "Road Closed" sign placed on a wind master sign stand & placed in the middle of the road. After the road is closed, the closed area will be checked to assure there is nobody on the road at that time.

### **Road Closure Areas**

**BIA Route**

**10 miles of N-13 from base of the mountain of the Red Valley side, over the mountain to the base of the mountain on the Lukachukai side. Annual Winter Closure**

# APACHE COUNTY DISTRICT II SNOW REMOVAL PLAN

The District II areas will be broken down into two geographical areas:

+ **Ganado**

Cottonwood/Tselani, Blue Gap, Steamboat/Jeddito, Klagetoh, Wide Ruins, Ganado, Kinlichee, Nazlini, Cornfields

+ **Fort Defiance**

Houck, Fort Defiance, Sawmill, and Tsaile/Wheatfields

Storm events will be monitored by National Weather Service and actual road inspections.

While storm events may occur at anytime of the day or night. Snow removal operations will usually begin at 7:00am and end at a designated time (early evening).

Specific sections may be designated as closed for the winter season. Theses designated roads will not have snow removed during the snow storm.

## **Snow Removal**

Snow Removal /Grading is to start when approximately 6 inches has accumulated on the roads, in any of our designated areas.

## **Deicing**

Deicing will be applied as needed to known areas where icing occurs such as hills, and school area roads.

## **Road Priority**

7) Blade County Roads

Other Entities such as BIA, NDOT, Navajo Nation, etc. will be responsible for blading their respective roads.

8) High Risk Medical Individuals

Heart patients, elderly with medical needs, diabetic, oxygen dependent, extreme illness, medical follow-ups and ambulatory assistance. NOTE: Hospital referrals should be on file with the Apache County office.

9) Declared Emergencies

District II will work with other entities, including local chapters. NOTE: When other entities declare emergency, it may not apply to Apache County because we are a different governmental agency

## **Priority Roads by Area (roads listed in order of priority)**

Ganado: Group Home, 292, 420, 413, 426, 426, 427, 432, 451, 456, 458

Kinlichee: 304, 305, 306, 307, 308, 324, 423, 428, 450, 457

Nazlini: 284,309,310,318,452

Cornfields: 414,415,416

Steamboat:285,286, 287,288,289,316,317,429,430,434

Jeddito: 290, 291, 447

Greasewood: 459

Klaketoh: 421, 422, 424, 425, 460

Wide Ruins: 272, 281, 322, 323

Houck: 294, 295, 301, 302, 449

Cottonwood: 277, 278, 279, 417, 418, 419, 435, 438, 440

Tselani: 275, 276, 436, 437, 439, 453, 454

Blue Gap: 410, 411, 412

Sawmill: 297, 311, 312, 313, 314, 315, 446

Red Lake: 445

Fort Defiance: 293, 296, 325, 455

Tsaile/Wheatfields: 270, 271, 319, 320, 321, 441, 442, 443, 444

### **Resources Available**

District II has 12 full time employees who will be available for snow removal operations.

7 Motor Graders

3 Front End Loaders

3 Backhoes

1 Loader with plow

### **Road Closure Procedures**

Road closures will be with a "Road Closed" sign placed on a wind master sign stand & placed in the middle of the road. After the road is closed, the closed area will be checked to assure there is nobody on the road at that time.

### **Road Closure Areas**

## **Apache County St. Johns Road yard Snow Removal Plan**

The St. Johns area will be broken down into four general geographical areas. **Show Low Pines, Concho Area, St. Johns and Concho Valley.**

Storm events will be monitored by information from the National Weather Service, Sheriff's office and actual road inspections.

While snowstorm events may occur at any time of the day or night, plowing operations will usually begin at 4:30am and end by early evening.

Some specific sections of roads may be designated closed for the winter season or not plowed at night or during the snowstorm.

### **Plowing Snow**

Plowing of snow is to start when approximately 4 inches has accumulated on the roads, in any of our four general areas.

### **Cindering / Deicing**

Cinders will be applied as needed to known trouble areas such as hills and curves. Mag Chloride will be applied as needed to help break the bond of snow pack and melt icy spots. We mix Cinders with Mag Chloride at a ratio of 2:1

### **Road Priority's**

Main connector roads & Bus Routes will be plowed first under most circumstances. Subdivision and Secondary roads will be plowed as soon as equipment resources become available.

### **Priority Roads by Area (roads listed in order of priority)**

Show Low Pines; 8235, 8206, 8032 & 8050

Concho Area; 5020

St. Johns; 6040

Concho Valley; All roads

## Resources Available

St. Johns has 9 full time employees who will be available for snow removal operations.

3 Motor graders.

1 Front-end loaders

1 Truck with plow & cinders

1 Backhoe

## Road Closure Procedures

Road closures will be with a **"Road Closed"** sign placed on a wind master sign stand & placed in the middle of the road. After the road is closed, the closed area will be checked to assure there is nobody on the road at that time.

## Road Closure Areas

# **Apache County Round Valley Road yard Snow Removal Plan**

The Round Valley area will be broken down into five general geographical areas. Alpine, Greer, Nutrioso, Vernon and Round Valley

Storm events will be monitored by information from the National Weather Service, Sheriff's office and actual road inspections.

Some specific sections of roads may be designated closed for the winter season or not plowed at night or during the snowstorm.

## **Plowing Snow**

Plowing of snow is to start when approximately 4 inches has accumulated on the roads, in any of our five general areas.

## **Cindering / Deicing**

Cinders will be applied as needed to known trouble areas such as hills and curves. Mag Chloride will be applied as needed to help break the bond of snow pack and melt icy spots. We mix Cinders with Mag Chloride at a ratio of 2:1

## **Road Priority's**

Main connector roads & School Roads will be plowed first under most circumstances. Subdivision and Secondary roads will be plowed as soon as equipment resources become available.

## **Priority Roads by Area (roads listed in order of priority)**

Greer;            1120, 1121, 1122, 1126

Alpine;           2311,2107,2220,2104

Nutrioso;        2180,2108, 2109, 2269, 2116

Vernon;          3140, 3144, 3145, 3148, 3139

Round Valley 4162

## Resources Available

Round Valley has 10 full time employees who will be available for snow removal operations.

- 4 Motor graders, one with all wheel drive and wing / v-plow attachment.
- 2 Front-end loaders, one with snowplow attachment.
- 2 1 ton 4x4 trucks with plow and sander attachments.
- 1 6 wheel dump truck with plow and sander attachments
- 1 ¾ ton Pickup with plow
- 1 All wheel drive backhoe.

## Road Closure Procedures

Road closures will be with a "**Road Closed**" sign placed on a wind master sign stand & placed in the middle of the road. After the road is closed, the closed area will be checked to assure there is nobody on the road at that time.

## Road Closure Areas

1325 - 7.7 miles north of Hwy 260, Just north of Hidden Meadow Lodge.

3123 - 4.7 miles south of Hwy 60

3140 - North of McNary at the Reservation/ USFS Boundary. And 4.2 miles South of Hwy60

# **Apache County Chambers Road Yard Snow Removal Plan**

The Chambers Road Yard area will be broken down into six (6) general geographical areas:

**Sanders**

**Lupton**

**Oak Springs**

**St. Michaels/Window Rock**

**Navajo**

**Witch Wells**

**Adamana**

Storm events will be monitored by information from the National Weather Service, the Apache County Sheriff's office and actual road inspections.

While snowstorm events may occur at any time of the day or night, plowing operations will usually begin at 6:00am and end by early evening.

Some specific sections of roads may be designated closed for the winter season or not plowed at night or during the snowstorm.

## **Snow Plowing**

Plowing of snow is to start when approximately 4 inches has accumulated on the roads in any of our seven general areas.

## **Cindering/ Deicing**

Cinders will be applied as needed to known trouble areas such as hills and curves. If available, Magnesium Chloride will be applied as needed to help break the bond of snow pack and melt to icy spots. Cinders will be mixed with Magnesium Chloride at a ratio of 2:1

## **Road Priorities**

Main connector roads & school bus Routes will be plowed first under most circumstances. Subdivision and Secondary roads will be plowed as soon as equipment resources become available.

## **Priority Roads by Area (roads listed in order of priority)**

**Sanders;** 7160, 7080, C-409, C-410, C-411, Park Estates (S101) 7250E, 7250W, 7395

**Lupton;** C-298, C-299, C-403, C-405

**Oak Springs;** C-400, C-402, C-404

**St. Michael's/ Window Rock;** C-407, C-408, C-603, C-604, SMSD, C-614

**Navajo;** 7000, 7002, 7003, 7005, 7006

**Witch Wells;** 7230,7231,7232,7233

**Adamana;** 7156, 7380

## **AVAILABLE RESOURCES**

### **PERSONNEL**

The Chambers Road Yard has 8 full time employees who will be available for snow removal operations.

### **EQUIPMENT**

- (3) Cat 140H Motor Graders
- (1) Cat Front End Loader
- (1) Truck w/ plow attachment
- (1) Cat Backhoe

### **Road Closure Procedures**

Road closures will be identified with a "**ROAD CLOSED**" sign placed on a wind master sign stand & placed in the middle of the road. After the road is closed, the area of closure will be checked periodically to ensure that the road is not being traveled.

### **Road Closure Areas**

There are currently no known roads in the Chambers Road Yard area that require closure from abundant snowfall at this time.