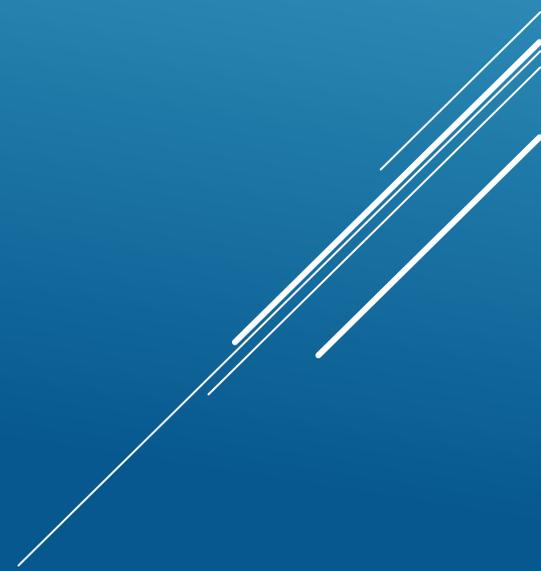


A graphic of a winding road with a dashed center line and solid edge lines, curving from the bottom left towards the top right against a blue background.

Crooked River Ranch Road Department

Road Primer

03.11.24

A decorative graphic consisting of several parallel white lines of varying lengths, slanted diagonally from the bottom right towards the top left.

SPECIAL ROADS DISTRICT

- ▶ In 1982 an election was held to create a “Special Road District” (SRD) empowered to assess, levy and collect taxes on all taxable real property within the district. In 2000, the SRD and Association entered into an agreement that designated the SRD as having primary authority and jurisdiction over the public roads within the boundaries of the SRD *with the exception of County roads.*
- ▶ **The Association is delegated with the authority to perform road maintenance on SRD managed roads.**

The SRD and Association have two agreements that manage the roles and responsibilities of both entities. They also note the criteria for road construction including minimum road design standards. They are the Road Management Plan and Settlement Agreement.

The Settlement Agreement states that “The parties agree that the District has primary authority and jurisdiction over the public roads within the boundaries of the District, including authority over improvements, construction, reconstruction and maintenance of all public roads except roads accepted by Deschutes or Jefferson County.”

It further states “The District delegates to the Association the authority to perform road maintenance on District roads. The District shall determine, and the Association shall comply with District road maintenance standards. Current levels of maintenance by the Association shall be maintained.”

For a more complete list of roles and responsibilities, see the Road Management Plan which is on our website. You can also request a hard copy at the Administration office.

SPECIAL ROAD DISTRICT AND YOUR TAXES...

While it varies each year, the SRD collects approximately \$220,000 from Jefferson County and \$20,000 from Deschutes County annually. Tax dollars received go back into road projects as determined by the SRD and Road Department, specifically for maintenance on paved roads.

While these dollars contribute to the maintenance and improvement of Ranch roads it is not nearly enough to fund the full need.

Your homeowner dues are integral in providing the additional monies necessary to fund road maintenance and improvement projects each year.

A decorative graphic consisting of several parallel white lines of varying lengths, slanted diagonally from the bottom right towards the top right, set against the blue background.

ROAD DEPARTMENT STAFF

The Crooked River Ranch Road Department consists of four employees.

Our Road Maintenance Supervisor, Jordan Jones, has been an employee in the Road Department since June of 2014.

During the winter, work schedules may be modified to provide for coverage seven days a week.



ROAD DEPARTMENT EQUIPMENT

Our crew maintains the roads on the Ranch with a variety of equipment including:

Graders, Back-hoes, Dump Trucks, Water Trucks, Pick up Trucks, a Roller and Broom are used to maintain Ranch roads. The department's inventory also includes ancillary equipment and attachments such as Sanders, Low Boy Trailer, Plows and Hammer. The department also has a Grizzly and a Dry Shed for Cinder Storage. Most of the equipment is older, from the 80's, 90's and early 2000's with the exception of a 2012 GMC Service Truck, 2017 Chevy Pick Up and a 2017 Roller.

WHAT CONSTITUTES OUR ROADS?

It is estimated that we have approximately 90 miles of road on the Ranch, approximately 12 miles are County roads, and 78 miles are Association roads.

The County Roads are all paved.

Out of the 78 miles of Association roads, just over 26 miles are paved.

The remaining 52 miles of road are a combination of gravel and native roads.

A decorative graphic consisting of several parallel white lines of varying lengths and orientations, located in the bottom right corner of the slide.

Several years ago, the Board of Directors approved increasing the Road Department budget to allow for the improvement to “county standard” of 3.5 miles of road per year for 10 years. This would complete the graveling of all native roads. Over the years, the Road Department has not only succeeded at completing the 3.5 miles per year but in some years was able to exceed the 3.5-mile goal. Due to the fact that the remaining roads are short and require moving equipment and resources multiple times, the number of roads completed is now averaging 1.6+ miles per year.



WORST FIRST

Each year when choosing which roads will be brought to “standard” the Road Department takes the following into consideration:

- *Which roads are in the worst condition?
 - *Which are the most traveled?
 - *Which are the most populated?
- 

Once the Road Department has selected the roads they consider most in need of improvement, they present them to the Special Road District (SRD) for their approval.

The SRD may ask for reasons and justifications for the Road Department selections.

Both entities will come to an agreement as to which roads will be included in the next year's schedule.



What is “Standard”?

We have been discussing bringing our roads to “standard”... Just what is that? The following excerpt is from the Road Management Plan for CRR as amended 8.16.21.

The County Code requires that improvements on any roads within the county shall be completed in accordance with the minimum road design standards. However, neither the District nor the Association has the resources to initially improve roads to these standards. The minimum road design standard initially will be to provide an adequate base that can be further improved in the future. When funds become available, improvements will be made to the roads to bring them up to county standard.

INITIAL MINIMUM ROAD DESIGN STANDARDS

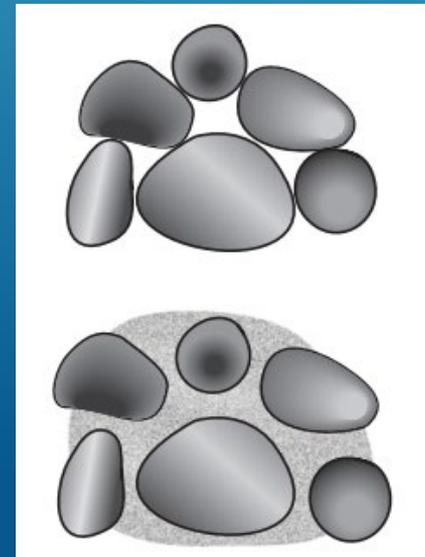
	Collector	Local Road	Commercial
Min RW width	60 ft	60 ft	60ft
Lane Width	11 ft	10 ft	11ft
Shoulder Width	2 ft	2 ft	2ft
Shoulder Surface	Gravel	Gravel	Gravel
Sub-base Depth		4 inch	
Base Depth	6 inch	2 inch	8 inch
Road Surface	AC or Oil Mat	Gravel	AC or Oil mat
Surface Depth	2 inch AC/3 shot	2 inch	2 ½ in AC

Per the Road Management Plan - Jefferson County Specifications, sub-base gravel shall be well graded “reject gravel” (commercial base) that can be easily graded and compacted.

NOW THAT THE ROADS HAVE BEEN SELECTED, WHAT HAPPENS NEXT?

- The roads that are going to be improved first need to be widened. We must remove trees and brush from the roadside and then haul them to the limb dump with the dump truck. We will use the grader to strip the brush, dirt and rocks from the side of the road to also be hauled away.
 - Once the road is wide enough, the water trucks will water the road so that it can then be compacted. We then dig ditches and put in culverts as needed. When this is done, we will order trucks to start hauling in gravel which will be delivered to the job site and/or hauled from the stockpile at the Road Department yard.
 - This gravel will then be spread out with the grader, watered and rolled multiple times throughout this process to get the width, crown and depth that is needed to meet standards. The process provides a crown in the road which is needed so that water will be dispersed off the road and into the ditches and culverts.
 - The combination of crown, ditches and culverts will maintain the integrity of the road over time.
- 

When bringing roads to standard, the materials selected are done so for a specific reason. For example, the gravel we purchase is 0-3/4 commercial base, which means it has “fines” or fine aggregates interspersed with the gravel. Fine aggregates generally consist of natural sand, stone fines or stone dust with most particles smaller than 5 mm. This type of material is preferred as it reduces voids and will hold the layer in place better. This provides for better stability, compaction and wear. State spec gravel is not a preferred choice due to the fact that it spreads and moves around. Gravel is made up of many small pieces of rock and when used as pavement, it tends to migrate and spread out when subjected to constant pressure and friction. The cost of state spec gravel is also higher than commercial base. By using 0-3/4 commercial base, the Road Department is creating the best road base possible for the traffic levels, weather conditions and cost.



EXAMPLE OF DITCH AND CULVERT



ROAD TYPES



The types of roads on Crooked River Ranch are broken down as follows:

- ❖ County paved roads
- ❖ Ranch paved roads
- ❖ Ranch graveled roads
- ❖ Ranch native (not graveled) roads
- ❖ Easements (not our responsibility)

IMPROVED TO STANDARD ROAD



NATIVE ROAD



YEARLY MAINTENANCE

In addition to upgrading the quota of substandard native roads, the Road Department grades each native road once a year.... and where needed multiple times each year.

The purchase of the 2006 water truck has enabled the Road Department to begin this process earlier in the spring and continue later in the fall (weather permitting) as they don't have to remove the water module and replace it with the sanding module on the 2006 water truck.



ROAD LISTS

- County Paved Roads
 - Deschutes County -
 - Chinook Drive from 43rd to Antelope
 - Jefferson County –
 - Chinook Drive – from Antelope to Clubhouse Rd
 - North Hill
 - Mustang to Shad
 - Shad to Sundown Canyon
 - Cinder – Shad to Peninsula
 - Peninsula – Cinder to Meadow
- 

• Ranch Paved Roads

- Commercial Lp
- Canary Rd
- Shad Rd – Sundown Canyon to Peninsula
- Peninsula Dr. – Shad to Meadow
- Meadow Rd – Peninsula to end
- Quail Rd – Shad to end
- Dove Rd – Quail to the dirt
- Parkey Dr – Quail to Dove
- River Rd – Quail to the dirt
- Badger Rd – Chinook to Quail
- Sage Hen – Badger to Ermine
- Ermine Rd – Shad to Quail
- Mustang Rd – Shad to Quail
- Rim Rd – Chinook to Mustang
- Rainbow Rd – South Side of Badger to Quail
- Panorama Cir – Peninsula to Shad
- Basalt Dr – Cinder to Shad
- Ridge Place (Privately paved. Ranch does limited maintenance only)
- Clubhouse Rd – from Chinook to end
- Sand Ridge – from Canary to Shad
- Horny Hollow (Privately paved. Ranch does limited maintenance only)



- Graveled Roads

- Buffalo Pl
- Prairie Rd
- Onyx Rd
- Golden Mantel
- Corral Pl
- Geneva View Rd
- Peninsula Dr
- Scout Camp Trail
- Chickadee Rd
- Hummingbird Rd
- Sand Ridge - Canary to Chickadee
- Sheltered Pl
- Sundown Canyon
- Wheatgrass Rd
- High Cone Dr
- Crater Loop
- Upper Ridge Rd
- Dove Road – from pavement appx
¼ mile
- Sumpter Dr
- Cinder Cone Loop

- Thicket Ln
- Mesa Ln
- Blue Jay Rd
- Dingo Ln
- Cottontail Dr
- Deer Rd
- Trout Rd
- Minnow Ct
- Narcissa Ln
- Brokentop Dr – graveled by private
- Tadpole Ct
- Frog Ct
- Ferrett Rd
- Chipmonk Rd
- Waterhole Pl
- Big Sky Pl
- Round Up Pl
- Lords Pl
- Buckaroo Pl
- Chaparral Pl
- Sandy Pl
- Swallow Dr

- graveled Roads cont.

- Chukkar Dr
- Folly Waters Dr
- Jack Pine Pl
- Box Canyon
- Rainbow Rd – North End from Quail to Badger
- Antelope Dr
- Puma Rd
- Lynx Ct
- Elkhorn Ln
- Fawn Dr
- Perch Rd
- Salmon Rd
- Steelhead Rd
- Groundhog Rd (portion of road is easement)
- Tarpon Rd
- Stallion Dr
- Pony Trail
- Mare Pl
- Buckskin Ln
- Nighthawk Ln
- Robin Dr
- Ermine Rd. – Sage Hen to Bullhead
- Cougar Rd
- Snug Pl
- Maverick
- Outlook
- Badger – from Chinook to Antelope
- Sparrow

- Scenic View Pl
- Canyon Dr
- Crescent Pl
- River Terrace Pl
- Chandler Ridge Pl
- Dane's Pl
- Jeanne's Pl
- Equestrian Pl
- Pasture Ct
- Deer Crossing
- Homestead Pl
- Corner Pl
- Pumice Pl
- Oasis Pl
- Terresan Pl
- Spur Pl
- Sisters View Pl
- Jefferson View
- Grasslands Pl
- Narcissa Ct
- Rainbow Ct
- Shelf Ct
- Buckhorn Pl
- Business Cir

- graveled Roads
cont.

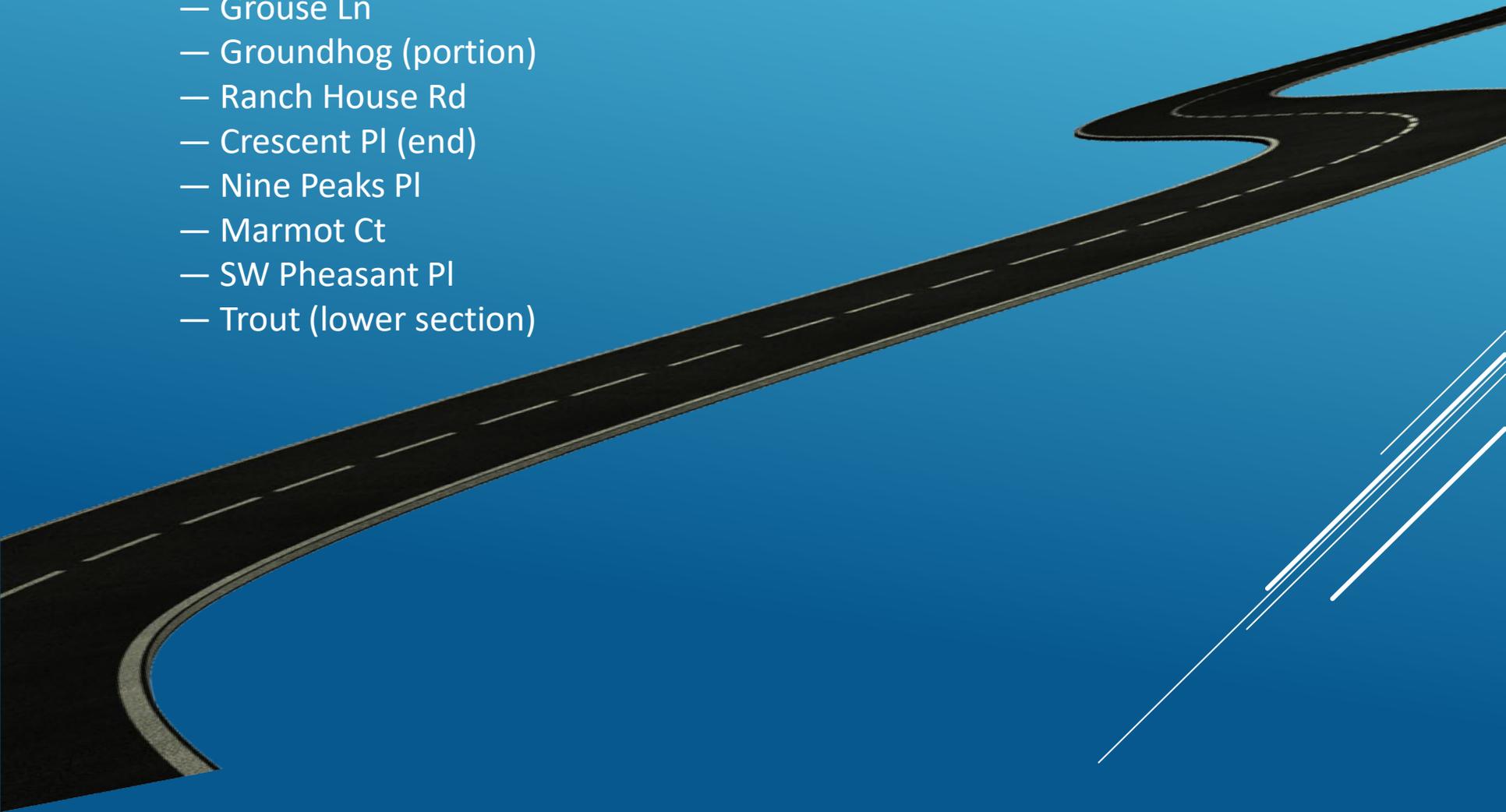
- Native Roads

- Ice Avenue
- Steelhead Falls
- Crooked Lane
- Riffle Ln
- Uplift Ln
- Placer Ln
- Canyon View Pl
- Cascade View Pl
- Bobcat Ct
- Fox Ct
- Gono Pl
- Bills Pl (Only to cul-de-sac
– rest is easement)
- Noah Butte Dr
- Swannie's Pl

These lists may contain errors and/or omissions. Not for use as reference.

Easements Not Maintained by HOA

- Tower Rd
- Summit View Place
- Bills Pl – Past cul-de-sac
- Grouse Ln
- Groundhog (portion)
- Ranch House Rd
- Crescent Pl (end)
- Nine Peaks Pl
- Marmot Ct
- SW Pheasant Pl
- Trout (lower section)



INCLEMENT WEATHER



During the winter, the Road Department is also charged with snow removal, sanding and the removal of downed trees and debris on Association roadways during storms. There is an agreement between the Association and the School District to provide access to bus routes and stops.

Moreover, our Road Department took on the responsibility of taking care of the County roads on the Ranch in addition to the Association roads in order to provide a more timely response and for enhanced road safety. This commitment to keep County roads clear and safe is part of a cooperative understanding with the County in which they reciprocate by providing assistance to us on numerous projects. It is truly a win-win for both.

Winter Plowing on Paved Roads

During winter months, the Road Department begins their day at 5:00am, ending at 1:30pm. They currently have 3 CDL drivers and one non-CDL driver.

The early start time is due to the agreement to have school bus routes plowed and sanded, with school busses starting to arrive at 6:20am. The Ranch is divided into three sections. Each plow and sanding truck (CDL required) has a designated route consisting of approximately 26.5 lane miles of paved roads. Each route takes between 1 ½ - 2 hours+ depending on severity of the storm. The main goal is to have all school bus routes freshly plowed and sanded before they begin arriving.

The non-CDL driver uses the snow-plow on the Road Department pick up truck to take care of areas the plow trucks cannot access.

The Road Crew is also on call for weekends when necessary. They currently rotate weekends to provide for coverage. This is in addition to their full 40+ hour week.

Several options have been explored to increase the sanding and plowing efforts.

Split shifts have been considered but that would impact the ability to have school bus routes plowed within the allotted timeframe.

With only four employees and limited equipment, there are no solutions without adding an additional crew that could work an alternate shift. This would double the personnel costs for the department as well potentially needing to purchase additional equipment.

As part of the equation is keeping HOA dues at a reasonable level, this has not been considered a viable option.

Plowing Gravel/Dirt Roads

There are many things to consider when doing winter snow removal on gravel/dirt roads. Making sure the road base integrity is maintained is a high priority. The condition of the road, the changes in conditions of the storms, and the rises and drops in the roadway will all affect the amount of material that is displaced with a plow. Whether or not the road base is frozen to a depth of 4-6" is a factor for when and what roads can be plowed. Without a freeze, (temperatures below 25* for a full week) there is no way the gravel will not be displaced, even if the blade never touches the road. Over the course of a winter, this could amount to as much as 15% of the road base. This displacement not only damages the roads but the cost to replace the displaced gravel is consequential.

This is also the reason we request that community members DO NOT plow the roads when plowing driveways.

Also, please make sure you give our plows plenty of room. The plow can throw snow, dirt and rocks up to 30 feet so please move as far as possible away from a moving plow. Additionally, the plow drivers may not see you and/or be able to move or lift the plow in time.

REMEMBER:

ROAD EQUIPMENT HAS THE RIGHT OF WAY

If you need help plowing your driveway, the CRR website has a list of snow plowing servicers. Please do not allow anyone to block the roads by leaving trailers, etc. in the roadway when plowing your driveway.

Garbage cans need to be back from the road at least 2 feet behind the fog line to avoid being hit.

Potholes also become a problem during the winter but really need to wait to be fixed until winter is over as temporary fixes won't last.

Our Road Department is also responsible for sanding slick roads during inclement weather. Once the primary roads, bus stops and intersections are plowed, they follow up by sanding. Please remember that as traffic flows over sanded roads, the cinder is pushed down into snow, ice and mud.

Remember, there are times when the snow fall is so heavy that the plowed or sanded roads are compromised as soon as they have maintained them. Extreme low temperatures can also impact the equipment and materials. Please be patient, drive slowly and with caution.

The following pages explain the plowing sequence for Crooked River Ranch.

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ROAD PLOWING SEQUENCE

➤ Light Snowstorm

When there is more than one inch of snow on the ground, all three snowplows will be activated with bus routes and primary paved roads being plowed first, after which secondary roads will be plowed. After those roads are finished, we will then go back and sand the roads, intersections and bus stops for safe travel. Gravel roads do not get plowed unless there is between 4 and 6 inches of snow and the ground is frozen significantly so that when we plow, we aren't plowing the gravel off the roads or causing damage to our equipment.



➤ Major Snow Storm

In the event of a snowstorm in which we get over 8 inches (dropping snow roughly 1 inch per hour), as with the Light Snowstorm, all three snowplows will be activated with bus routes and primary paved roads being plowed first. Next, secondary collector roads (many graveled) will be plowed. The one pick up with attached plow will take care of cul-de-sacs. Keep in mind dirt roads will not be plowed until paved roads are completed and the Road Department is able to keep them clear. This usually happens after the storm breaks. Graders will be used only as a back up or to remove ice build up when needed. Sand will not be dispersed until the snow has slowed down or stopped so as not to waste sand with the exception of the big hills such as Badger, South and North Hills. Dirt roads do not need to be sanded as rock from the road would be uncovered once plowed. While this is the preferred plan, it can be modified based on situation.

COMMUNICATION AND TRACKING

- As part of the Inclement Weather Response Plan, processes have been put into place to better inform the community about road status during severe storms or for road closures.
- Each vehicle is supplied with a check list of all roads broken down by route. As the plowing is completed, the roads are marked off throughout the plowing process. This procedure helps to prevent any inefficiencies or omissions.
- Communication between Administration and the Road Department has been enhanced with periodic updates. These updates keep Administration informed of progress so that they are then able to pass this information to the residents via Phase Rep notices, the CRR website or social media when needed.
- Additionally, the Board of Directors approved the purchase of radios that will enable all drivers and the Administration office to be in contact.

WHAT CAN YOU DO TO HELP MAINTAIN CROOKED RIVER RANCH ROADS?

- **SLOW DOWN!** Speed increases wash-boarding and unnatural erosion of our roads.
- Limit jack-rabbit starts and hard braking.
- Do not abandon vehicles for extended lengths of time during inclement weather.
- Our equipment cannot effectively work around abandoned vehicles.



- Remember that your Road Department is doing the best they can to keep your roads safe and drivable.
 - With the vast number of road miles, your help is much appreciated. Be a good neighbor.
 - Help where you can.
 - Those who help by plowing cluster box areas and cul-de-sacs free our Road Department up to focus on the primary and secondary roads. (Remember please DO NOT plow gravel/dirt roads)
 - Thank you to those who lend a hand.
- 

If you feel you need more than the Road Department is required to provide, there are options.

One, you can apply for an LID (Local Improvement District) with Jefferson or Deschutes County which could finance upgrades including paving.

A Local Improvement District (LID) is created when property owners within a defined benefited area petition the County to make street, drainage, water, utility and/or sanitary sewer improvements.

However, if you choose to personally improve your road and/or place dust abatement on your road, the CRR Road Department will not be responsible for continued maintenance.



If you have concerns about your road, the Road Department appreciates being made aware of the situation. You can complete a Road Maintenance Request Form which can be found on our website, www.crookedriverranch.com, or pick one up at the Administration Office.

Also, please bear in mind that there are limitations as to the type, timing and amount of road repairs that the Road Department can do. The limitations are based on weather, where the Road Department is currently working and scope of work being requested.

Thank you for taking the time to learn more about the CRR Road Department and the improvement/maintenance of our roads.

