



**Got Snow?
Go Slow!**

The Perfect Snow Day



Grader's First Pass



Old Strawberry Road

Reality Sets In



Downtown Twain Harte-Daylight Hours

Summary of Service

- Priorities-How, What, Why
 - Deciding Factors
 - Determination of Needs
 - Safety & Maintenance

- Wants vs. Needs
 - Driveways, intersections, parking lots
 - Roads, crowding, clean up

- Challenges

- How Can You Help?

- Coverage and Costs
 - Area Maps
 - Costs

Priorities

- Determining Factors
 - Storm type and severity – heavy or light snow, winds, elevation and length of storm.
- Determination of Need
 - When and where begin plowing
 - What time to bring in and send home crews
 - Are night crews needed
 - When and where to sand roads
- Safety and Maintenance
 - Access for emergency services
 - Safety to travelling public
 - Maintenance of road surface

Wants vs. Needs

Public Wants

- No berms in driveways
- No ice/snow on roads
- Two clear travel lanes
- Ability to park in right-of-way
- Clear intersections
- Sand on roads by 6:00 a.m.
- 24 hour shifts
- No property damage
 - Mail Boxes
 - Dikes
 - Vehicles
 - Driveways

Public Basic Needs

- Open Roads for Basic Services
 - Emergency vehicles/fire house access
 - School buses
 - Business access
- Road Surface Protection
 - Clear road surface of snow by plowing and crowding
 - Keep ditches and cross-culverts open for drainage of water from the road surface

Challenges

- Response to Law Enforcement Requests and Emergencies
- Trees and Power Lines
- Obstructions in Right-of-Way
- Visitors and Locals Unaware of Road Laws
- Equipment Failure
- Citizens Unprepared for Weather Challenges
- Mileage vs. Staff
- Road Fund Shortages

Emergency Response

Twain Harte Drive at West entrance.



Emergency vehicles have chains on tires.
Grader arriving on scene.

Trees and Power Lines



- Tree down across Longeway Road. This must be removed prior to completing plowing on road.
- Low hanging power lines. This line is approx. 7' from snow surface.



A minimum of 10' is needed for safe passage of equipment. Road cannot be plowed until power line is cleared from roadway.

Obstructions in Right-of-Way

- The most common items obstructing rights of way are:
- Basketball hoops and toys
- Snow mobiles, RVs and boat trailers
- Wood splitters and stacks of wood
- People
 - children playing
 - adults attempting to flag down plow drivers
- Vehicles parked or abandoned

Obstacles in the Right-of-Way



This wood shed, toys and travel trailer are at the end of a cul-de-sac on Pipit Court where plows need to turn around. This road is not plowed on a regular basis due to the obstacles in the road.



Sierra Drive in Twain Harte

- Vehicles parked or abandoned in roadway or right-of-way, pose serious safety hazards for plow drivers and public.
- We do not plow roads where passage of equipment is not clear enough to be safe.

Buried Vehicles



Car with flag on it parked in the right of way. Crowding of snow was delayed due to vehicle and possible damage to it. Note the centerline at the edge of the snow bank on the right. Cleared road is barely one lane wide.

Abandoned Vehicles



- This picture is similar to what happens on Tuolumne Road at Buckhorn Grade. Drivers attempt to hurry home before they have to use chains on their vehicles. Vehicles become stranded and gridlock ensues.
- This same issue happens on Evergreen Road and Longeway Road.
- Crews must await the arrival of law enforcement to have vehicles removed before snow removal efforts can continue.
- In the meantime, if a plow was traveling this road, it too is stuck in gridlock until vehicles are cleared creating a delay.

Vehicle in Right-of-Way



This road was not able to be plowed properly due to a vehicle in right-of-way on the left side of road the previous day. Plow had to impact shoulder on the right side of road.

Private Driveway



This is a prime example of the correct way to clear a driveway creating proper ingress/egress to property. The owner has deposited snow to sides of driveway, not in roadway. The garbage cans can now be placed without being struck by plows.

Public Notification

Tuolumne County Ordinance Code Section 10.28 “Snow Removal” prohibits parking on the pavement or road shoulder during snow removal operations. Signs like this are posted on the roadways near subdivision entrances/exits major collectors, minor collectors and local roads noting snow removal policies.

Currently, there are 36 signs from Tuolumne Rd North to Leland Meadows.



Visitors and Locals Unaware of Road Laws



Bottini Apple Ranch Road



- Families BBQ, picnics, toys, cross traffic at places like Little Sweden and Bottini Apple Ranch Road, as seen here, create huge safety concerns. Currently, there is not enough law enforcement staff to control this issue.
- Plows must use Hwy 108 to reach areas like Cold Springs, Pinecrest and Strawberry. Getting stuck in traffic because of these types of obstructions delays our response time exponentially.

Citizens Ignore Road Laws



A constant challenge for law enforcement is the fact that citizens choose to ignore the very laws that are created to protect them and their loved ones. This sign is posted in several areas at Little Sweden on Highway 108.

Citizens Ignore Road Laws



Little Sweden at Highway 108. Note people gathering in right-of-way, parking at the “No Parking Anytime” signs and no chains on any vehicle. These pictures were taken at approximately 3:30 pm. At 4:00 p.m., Dodge Ridge closes and westbound traffic clogs this entire corridor.

Sugar Pine Area



In an effort to avoid a berm in the driveway, this Pine Cone Dr. resident parked his vehicle almost half way into the roadway. As you can see, crews were unable to clear the remaining snow from the road.

Equipment Failure



- Equipment failure is a reality. This is a grader that lost traction and wound up off the side of the road in Cold Springs. It will take at least one grader to pull it up to the roadway.



- Here you see a mechanic working on a piece of equipment in the field under adverse weather conditions.

How Can You Help?

- Make sure you do not place or store anything in the right-of-way that could be an obstacle to a plow driver.
- Clear your driveway each time a plow comes by. If you do, you will have little to no berm once plowing is completed.
- **Help educate others**-remind neighbors and visitors to park as far off the road as is possible so plows can get through. Local Homeowner's Associations have been especially helpful sending our Snow Removal Policy flyer with seasonal letters to homeowners.
- Be courteous and patient with each other as well as snow plow operators.
- **USE YOUR TIRE CHAINS**. They still offer the best traction for tires.

Be Prepared on the Road



Be prepared for adverse weather conditions. If you choose to go out in the weather:

- Don't travel unless necessary.
- **Carry/use** chains in vehicle. They are your best traction device on snow or ice.
- Keep a basic survival kit and bottled water in your car.
- Keep a blanket/sleeping bag in your car should you become stranded.



Be Prepared at Home



Always be prepared at home. Conditions can prevent crews from clearing a safe passage on a county road for up to three or more days.

- ✓ Keep prescriptions filled and on hand.
- ✓ Have enough food and bottled water in the house for a few days.
- ✓ Be prepared for power outages.
- ✓ Stay with a friend/relative out of the snow line if necessary.

Mileage vs. Staff

SNOW REMOVAL MILEAGE BY ELEVATION

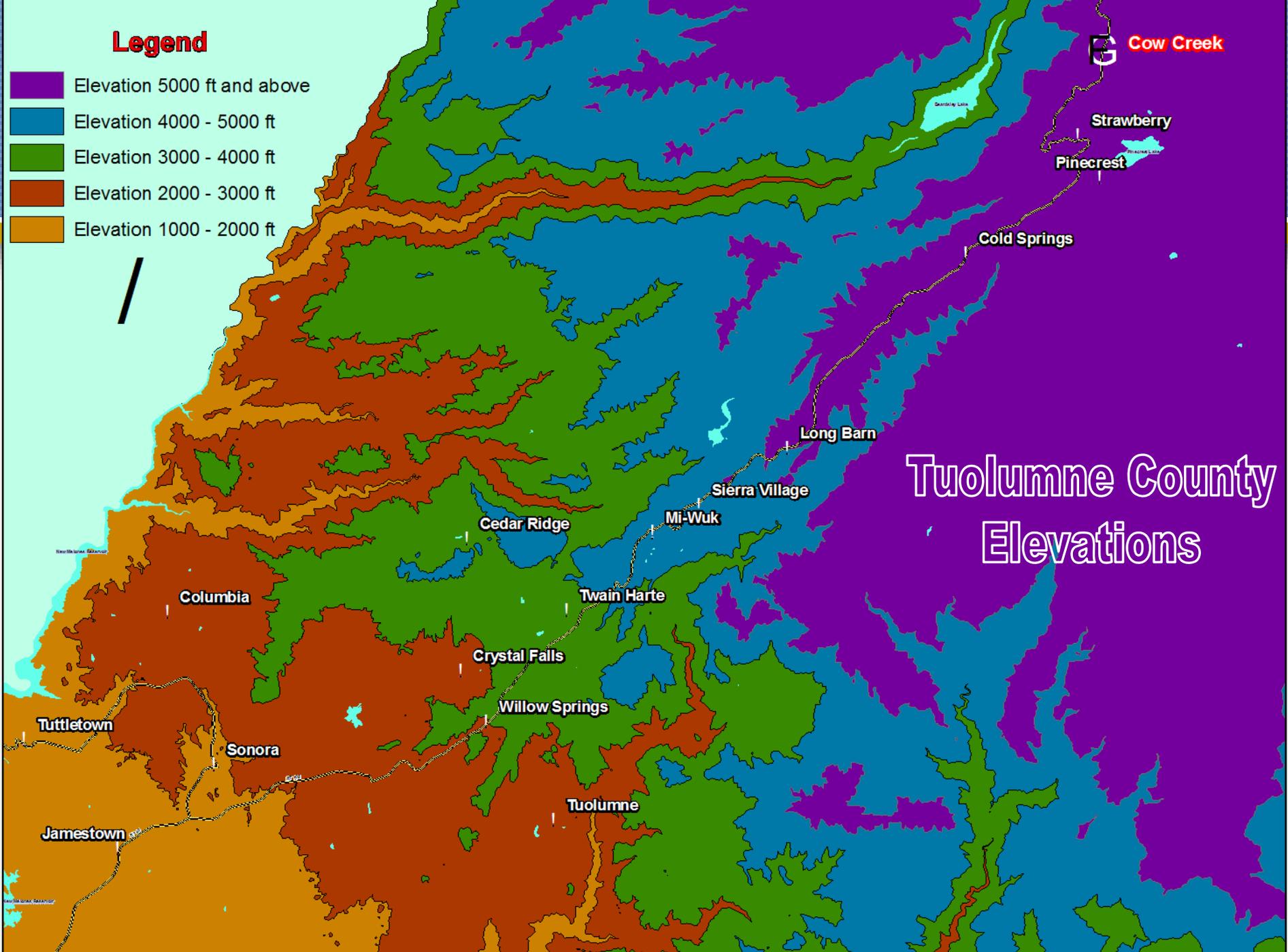
Elevation	Lane Miles of Roads plowed
• 5,000+	56
• 4,000-5,000	212
• 3,000-4,000	356
• 2,000-3,000	756

Note: Snowfall to the 1,400 foot elevation (**Jamestown**) can result in the need for snow removal on over 900 lane miles.

- **Lane mile** = one lane, one mile in length and includes turning lanes, passing lanes and similar appurtenances.
- Each lane mile usually requires two to three passes if the plow is to “crowd” the snow off the traveled-way.
- During an active storm, additional passes over each road are usually needed.
- The average speed for a snow plow is about 12 mph.
- When snow is traffic compacted, numerous passes must be made by large plows or motor graders to remove the ice.
- For Fiscal Year 2008-2009, there are 21 staff members that can perform some kind of snow removal for this area excluding the south portion of the county.

Legend

- Elevation 5000 ft and above
- Elevation 4000 - 5000 ft
- Elevation 3000 - 4000 ft
- Elevation 2000 - 3000 ft
- Elevation 1000 - 2000 ft



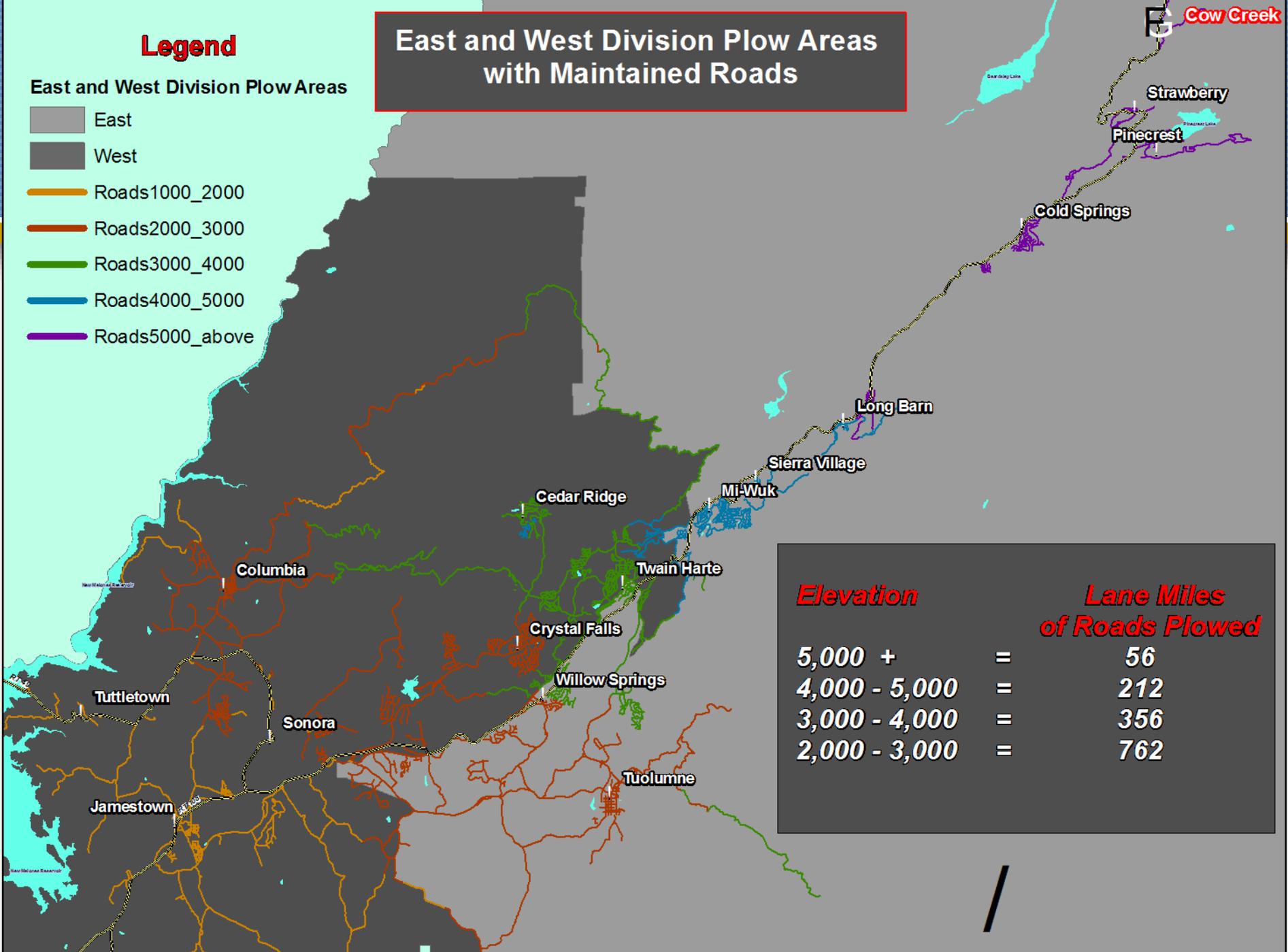
Tuolumne County Elevations

Legend

East and West Division Plow Areas

- East
- West
- Roads1000_2000
- Roads2000_3000
- Roads3000_4000
- Roads4000_5000
- Roads5000_above

East and West Division Plow Areas with Maintained Roads



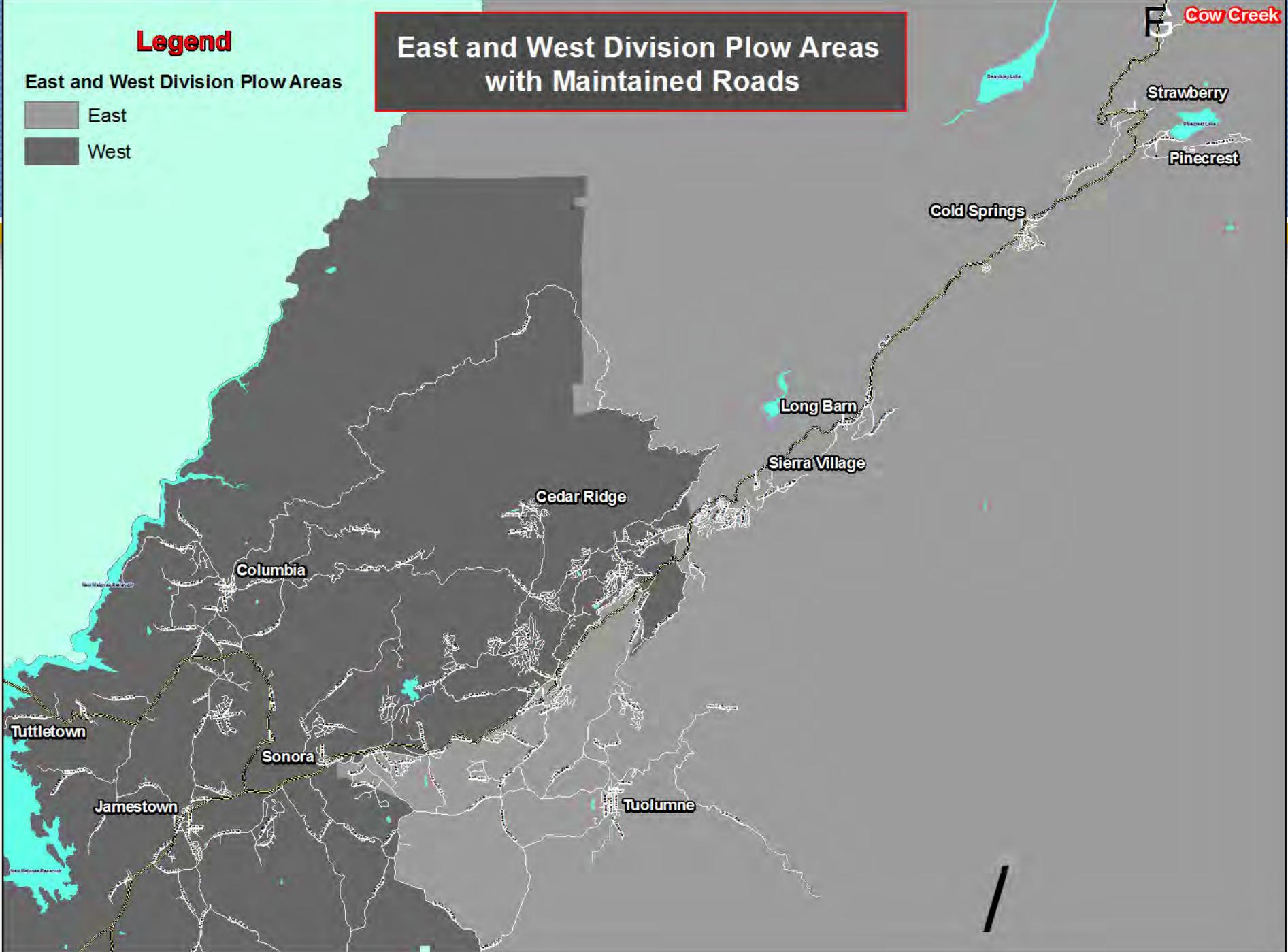
<i>Elevation</i>		<i>Lane Miles of Roads Plowed</i>
5,000 +	=	56
4,000 - 5,000	=	212
3,000 - 4,000	=	356
2,000 - 3,000	=	762

Legend

East and West Division Plow Areas

- East
- West

East and West Division Plow Areas with Maintained Roads



Cow Creek

Strawberry

Pinecrest

Cold Springs

Long Barn

Sierra Village

Cedar Ridge

Columbia

Tuttle town

Sonora

Jamestown

Tuolumne

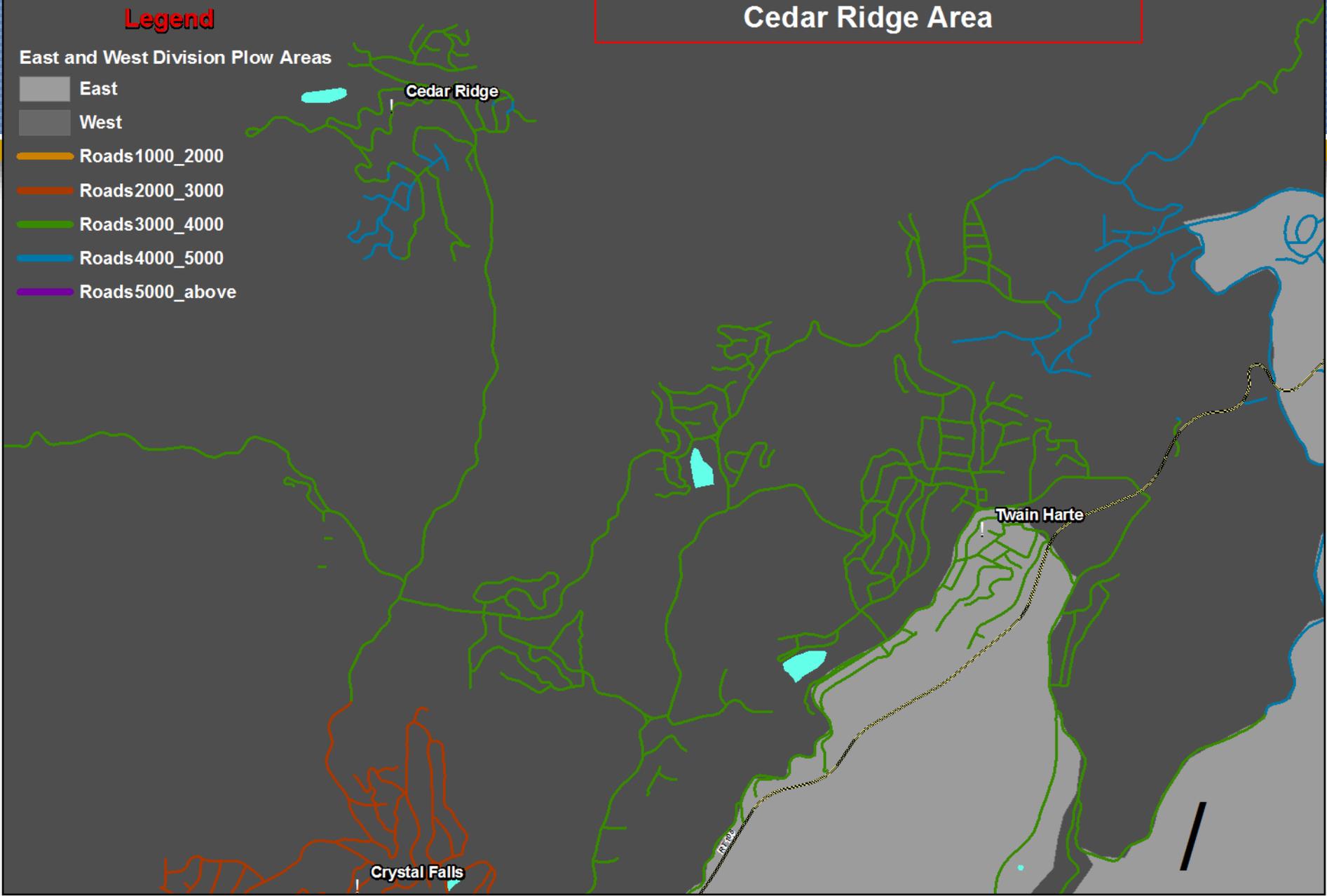


East and West Division Plow Areas with Maintained Roads Cedar Ridge Area

Legend

East and West Division Plow Areas

- East
- West
- Roads1000_2000
- Roads2000_3000
- Roads3000_4000
- Roads4000_5000
- Roads5000_above

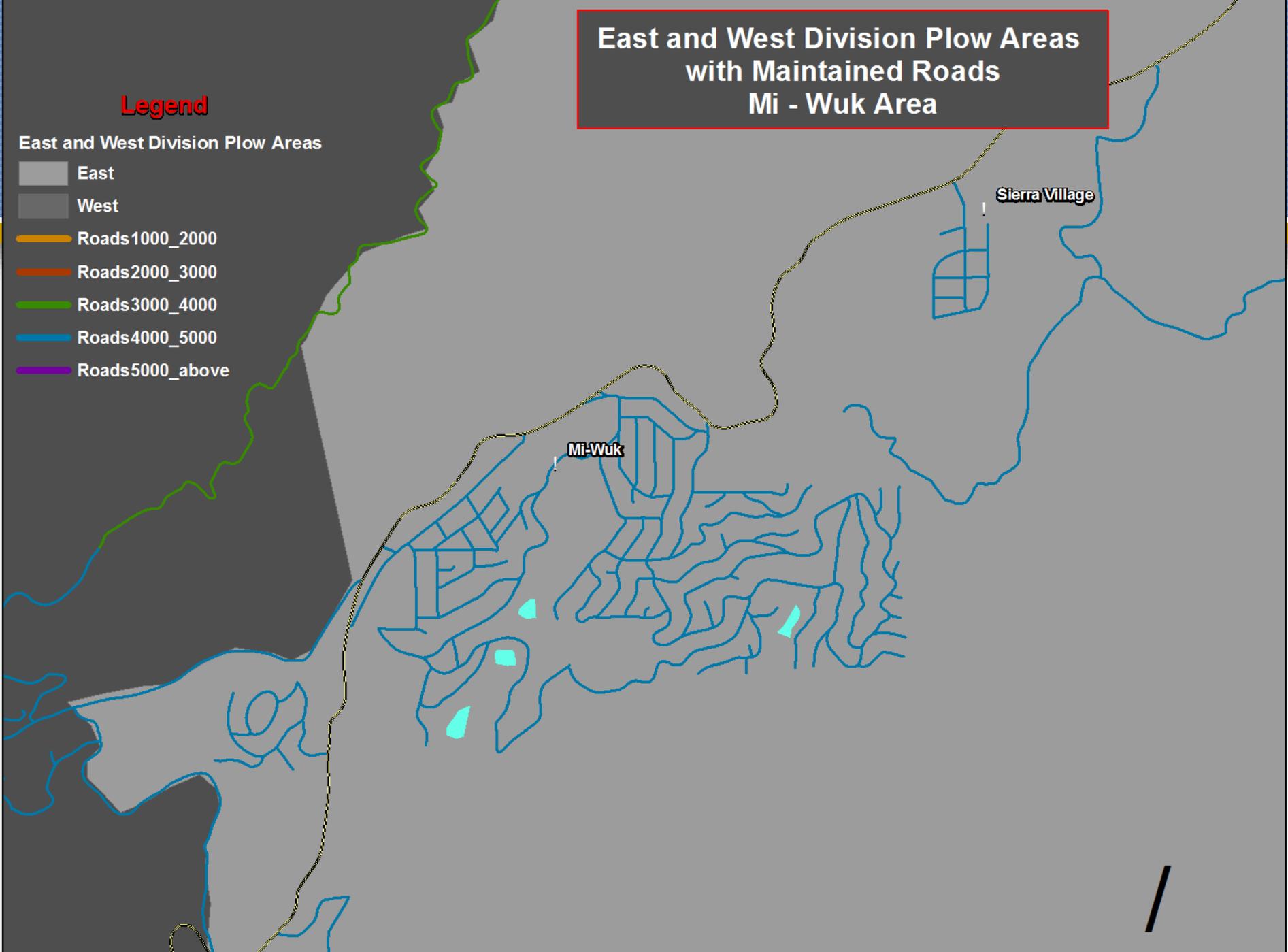


East and West Division Plow Areas with Maintained Roads Mi - Wuk Area

Legend

East and West Division Plow Areas

- East
- West
- Roads1000_2000
- Roads2000_3000
- Roads3000_4000
- Roads4000_5000
- Roads5000_above



Beardsley Lake

Strawberry

Pinecrest Lake

Legend

East and West Division Plow Areas

East

West

Roads1000_2000

Roads2000_3000

Roads3000_4000

Roads4000_5000

Roads5000_above

Pinecrest

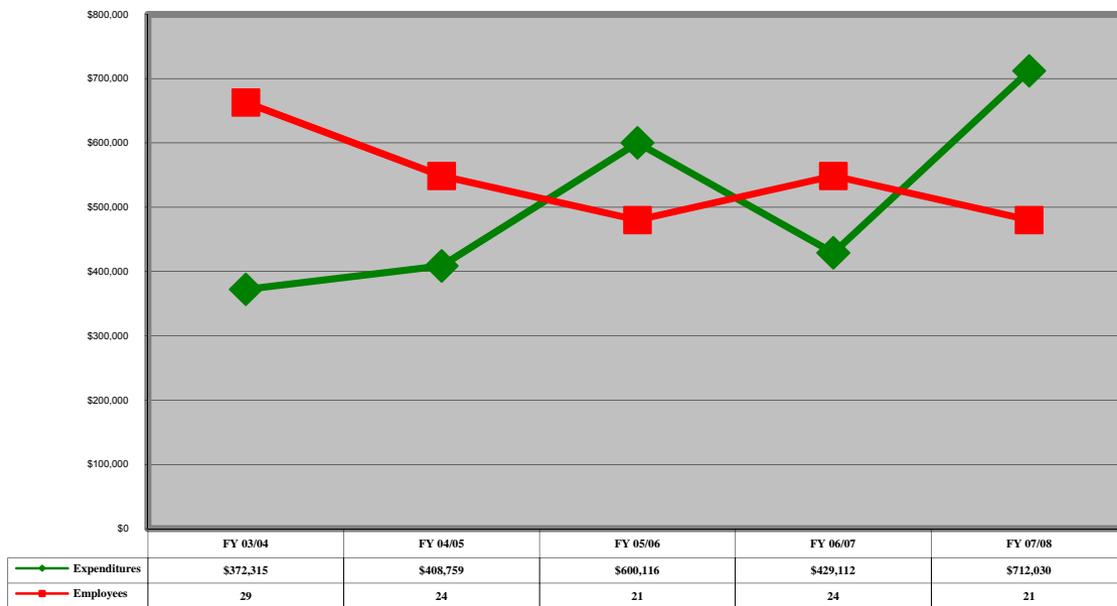
Cold Springs

R1408

**East and West Division Plow Areas
with Maintained Roads
Cold Springs Area**



Snow Removal Employees & Expenditures



- Funds expended for snow removal continue to rise annually.

Staff continues to drop as budgets become constrained by funding sources that are cut or deleted by State/Federal agencies.

By means of this presentation, we hope we have provided the Board of Supervisors and the public an in-depth look at the challenges, resources and expectations of residents concerning snow removal services provided in Tuolumne County.

Thank you for your patience during our presentation.

-Please drive safely for you and your family-

Remember,
Got snow? Go slow!