

**GRAND COUNTY FOREST MANAGEMENT PLAN
FOR COUNTY ROAD RIGHTS OF WAY**

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Prepared For:

**GRAND COUNTY BOARD OF COUNTY
COMMISSIONERS**

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Grand County Forest Management Plan County Road ROWs

Since the mid 1990's, Grand County has been undergoing a Mountain Pine Beetle (MPB) infestation that has since moved from a normal, natural occurrence to epidemic levels. During the past decade the MPB have increased exponentially, killing up to 90% plus of lodgepole pine, the dominant tree species in Grand County. The MPB have become so aggressive as to infest trees down to a four (4) inch diameter at breast height (dbh). This extensive tree mortality has led to a pending safety issue along forested county roads. Some areas of the county have had standing dead lodgepole pine for nearly a decade. As the standing dead trees age, their root systems decay, weaken and eventually give way causing the trees to fall. The dead trees located along county roads are becoming a major hazard concern as they begin to fall in greater numbers each year, especially during wind and storm events.

Removal of the hazard trees with-in the county ROW will not only lessen the danger of falling trees but will also aid in mitigation of other potential roadway hazards by improving line of sight to decrease collisions with wildlife and alternative motorized and non-motorized roadway users. ROW tree removal will clear zones along roadways to facilitate snow removal in the winter season, noxious weed control in the summer season and general maintenance issues year round. It will also create a wider clearing in sometimes dense forest, improving potential fire breaks and provide safer evacuation routes in the event of a wildland fire.

Objective

Grand County has a responsibility to keep county maintained roads open to the public. As the lodgepole pine forest around the roads die and begin to fall over, the trees will impede traffic, block access to homes and subdivisions and become a safety hazard to roadway users. Grand County will remove all hazard trees with-in the county road rights of way (ROW) and any trees that in the discretion of the County threaten safe passage within such ROWs. A hazard tree for purposes of this project will be defined as the following:

- Any tree of any species that is standing dead at the time of the tree removal project;
- Any lodgepole pine tree that is likely to be infested and killed by MPB. This includes any lodgepole pine in excess of 4 inches in diameter within the ROW; and
- Any tree that is leaning towards the roadway.

Grand County generally maintains a sixty (60) foot ROW in which roads have been constructed. Due to topography and road engineering requirements, not all county road driving surfaces have been constructed and aligned along the precise centerline of the specific ROW. However, since any dead standing tree within twenty (20) feet of the road shoulder (defined as that area extending twenty feet, 20', from either side of the driving

surface) represents a safety concern for county residents and visitors, to achieve effective and meaningful results from this project, any hazard tree within twenty feet of the road shoulder must be removed. For the purpose of this project, the ROW will be defined as twenty (20) feet from the edge of the road shoulder, which will likely extend beyond the sixty foot ROW in several instances.

Grand County Division of Natural Resources (DNR) determination of the highest priority roads will be based on the following criteria:

- extent of susceptible/impacted forested miles;
- extent of feeder roads/usage and location; and
- likely direction of wildland fire spread based on topography and prevailing winds.

Due to budget and personnel constraints, Grand County will focus initial removal efforts on roads meeting the above criteria. Primary access roads will take precedence over secondary roads until all primary roads are sufficiently mitigated. Grand County has a total of 175.99 miles of these primary arterial roads. Based on this criteria; priority will be placed on the Three Lakes district and the Fraser Valley. Once the primary routes are addressed, Grand County will address secondary roadways on the same premise as above. Grand County has a total of 638.62 miles of secondary local roads. Grand County is also actively encouraging property owners that are mitigating their property to include the county road ROW in their mitigation projects. This project will focus on county maintained roads only, responsibility for removing standing hazard trees along non county maintained roads will be on the entities that manage those roads. Due to the costs associated with logging operations, this project will be staged over many years.

Location

Grand County is located approximately 65 miles North/Northwest of Denver, Colorado in a high mountain park area known as Middle Park. Grand County was established in 1874 and was named after Grand Lake and the Grand River, now known as the Colorado River. Grand County is surrounded by the Continental Divide on the east and north, by Routt and Eagle Counties to the west and Summit and Clear Creek Counties to the south.

Grand County is the headwaters of the 1400 mile long Colorado River and has a land area of approximately 1869 square miles (1.2 million acres). The county consists of steep, mountainous uplands and areas of glacial drift with annual precipitation averaging 12 to 20 inches, with 55-60% falling in the summer months; and elevation change from 6850 feet in the southwest to over 13,500 feet on the east side near the Continental Divide; the average elevation being 7360 feet above sea level.

Towns and unincorporated communities within the county include Winter Park, Fraser, Tabernash, Granby, Grand Lake, Hot Sulphur Springs, Parshall and Kremmling. Land ownership within the county is made up of a mixture of Federal, state, county, municipal and private; 62% being federal; 4% state; remaining 34% being local government or privately owned.

Resource Assessment

The lodgepole pine (*Pinus contorta*) forests, the dominant species in the montane and subalpine forests of Grand and its neighboring counties, are being killed by an extensive epidemic of the Mountain Pine Beetle (*Dendroctonus ponderosa*). The MPB epidemic, which has been building for more than a decade, is causing widespread and extensive tree mortality across the entire forested landscape of Grand County, approximately 800,000 forested acres.

MPB infestations are cyclical, with occurrences every 10 to 30 years. However, because of extended drought conditions, warmer than average winter temperatures, and the even aged, over mature forests, this MPB infestation we are currently experiencing is at a magnitude never before seen or recorded. To date, approximately 90% of the lodgepole pine exceeding six inches in diameter are infested or dead within the county.

With the safety of county residents and visitors in mind, Grand County government is embarking on an aggressive, proactive approach to mitigate some of the issues occurring from the extensive forest mortality. Grand County is working cooperatively with the state and federal land managers to determine large-scale areas of greatest importance for wildland fire mitigation projects as well as to educate and encourage private property owners to mitigate their own properties against the inevitable wildland fire. In this respect, a Community Wildfire Protection Plan (CWPP) has been developed for the county. Several of the local Fire Protection Districts, which typically follow watershed boundaries, are also developing their own, more detailed CWPP.

All facets of Grand County from our citizens and economy to our native ecosystems are at increased risk due to a higher probability of catastrophic wildland fire as a result of the increasing dead, dry fuel loads. Grand County is also a critical watershed to a large portion of Colorado's population which would be negatively impacted by a catastrophic stand replacing wildland fire. A critical link in resident/visitor safety is the removal of the dead/infested hazard trees along critical roadways to limit potential traffic blockages from falling trees during both normal times and in the event of an emergency situation such as a wildfire or other natural disaster.

Project Management Recommendations

Grand County hoped to complete this project in-house as time and funds allowed using Road and Bridge as well as Natural Resources' personnel. Grand County provided classes for involved personnel to certify them as Class A Fallers, a requirement to perform work on any ROW that traverses federally managed lands (National Park Service, USFS, and BLM). After a one month trial run of the tree removal project using Road & Bridge and DNR personnel, Grand County realized how time and labor intensive this project would be and as a result was forced to consider other alternatives.

Grand County DNR completed its initial ROW project on CR 491 in the early spring of 2007 applying the management techniques listed above and achieved a very desirable effect. Use of a forestry head cutter/rotary mulcher attachment (FHC) on a skid steer loader was very efficient in returning the cut area to a natural minimally impacted environment.

The Grand County Division of Natural Resources is recommending that in order to mitigate the greatest number of hazard trees along the greatest number of miles in the most cost effective manner possible, that the county contract with a professional logging business that has appropriate logging equipment and experience to cut trees, remove logs and process the slash on site. Grand County DNR recommends the use of a FHC for the clean up of residual forest product due to its lack of labor intensive handling of product; logs and stumps up to eight to ten inches which can be ground and mulched. This method of forest management is preferred as it requires fewer stages of work, less disturbed ground, resulting in best management practices to protect soils and provides immediate start of re-vegetation of the ROW and forest interface. A contract between the logging business and the county would be signed detailing all specific requirements of the project.

The county could still choose to address the secondary roads using in-house personnel as time and funding allow. If hazard tree removal continues in-house it will necessitate a larger dedicated work force to manage the project and the vast amounts of hazard trees within the ROW. Additional cutter/fellers and/or a more mechanized approach for tree removal will need to be considered.

Grand County Division of Natural Resources determination of the highest priority roads will be based on the following criteria:

- extent of susceptible/impacted forested miles;
- extent of feeder roads/usage and location; and
- likely direction of wildland fire spread based on topography and prevailing winds.

Due to budget and personnel constraints, Grand County will focus initial removal efforts on these roads. Primary access roads will take precedence over secondary roads until all primary roads are sufficiently mitigated.

To ease coordination, Grand County will define any lodgepole pine greater than four (4) inches in diameter at breast height (dbh) and within twenty (20) feet of the road shoulder a hazard tree that must be removed. The mitigated area will likely extend beyond the sixty-foot county road ROW in several instances, as many mature lodgepole are much taller than twenty feet and may threaten safe passage even though outside the specific ROW. Ideally, any hazard tree-within sixty-six (66) feet of the road shoulder should be removed; however this would be well outside of the Grand County ROW and should be the responsibility of property owners. Once the ROW is cleared of hazard trees, monitoring of the sites must be conducted after wind events because of windthrow (wind-felled timber) resulting from the shallow-rooted system of the lodgepole pine.

Activity Schedule

Spring and summer seasons will be spent marking trees for removal, preparing appropriate contracts with logging contractors, determining highest priority road locations, developing property owner contact information, notification and liaison. With all appropriate documentation addressed, logging work may begin in the fall to minimize the impact from logging operations along the ground adjacent to the driving surface. Once the project areas are identified and prior to staging at the work site, a traffic control plan must be approved by the Grand County R&B Safety Supervisor to ensure safe coordinated traffic flow on the roadway where the project is taking place. Logging operations including but not limited to felling, limbing, topping, skidding logs to deck for removal; coordination with logging trucks for removal from job site; cleanup and/or disposal of the residual logging debris is inherently dangerous and proper precautions must be taken to ensure traffic safety.

Notification Procedures

In accordance with Colorado State Statute 42-4-114 Grand County DNR personnel will notify all affected property owners by certified mail. Grand County DNR personnel will only notify those property owners which will be affected within each phase of work, as defined by the scope of work. Property owners will then have the opportunity to “opt out” of the project by submitting written request and signing a waiver stating they will assume responsibility to remove any tree that was deemed a hazard under this plan, at their own expense within 10 days of written notification from Grand County. Property owners will be directed to mark any trees slated for removal with a special, agreed upon marking tape that any logging contractor performing the work will recognize and know to avoid. If a property owner does not remove the hazard tree(s) as requested by Grand County within the allotted time, Grand County will remove the tree(s) and require reimbursement from the property owner.

Natural Resources personnel will coordinate with the local newspapers to post upcoming activities and inform local residents of any potential road closures. Information about logging operations will also be posted and maintained on the Grand County web site.

Conclusion

As Grand County enters this large and vast project, it must always be remembered that this management plan will be dynamic, flowing and open to adaptive management principles due to the high degree of uncertainty associated with this project, specifically budget and personnel. Unforeseen actions in the future may make it necessary for Grand County to readdress the scope of the ROW management plan.