

ROAD POLICIES, MANAGEMENT AND MAINTENANCE
THE DIVIDE
SNOWMASS VILLAGE, COLORADO

I. Principles of Road Maintenance

- A) Keep water out of subgrade
- B) Inspect regularly and frequently
- C) Repair all noted failures/blockages promptly
- D) Use proper techniques when repairs are required
 - materials
 - workmanship
- E) Do not permit road surface to be cut unless absolutely necessary
- F) Do not permit new driveways/improvements to block drainage or otherwise interfere with proper road functioning. Be sure driveway culverts are large enough.
- G) Do not permit new construction to divert drainage onto road surface or shoulder, even temporarily.
- H) Keep road surface clean of mud and debris to clearly define edge of asphalt.
- I) Do not allow parking on the roadway - this forces traffic onto the opposite shoulder causing road failures, and/or blockage of drainage.

II. Maintenance Program

A. General

The roads in the Divide are asphalt which is considered a flexible pavement. Generally, it is intended to flex with loads rather than resist movement. This characteristic generally makes asphalt a forgiving surfacing providing a smooth ride even when minor failures occur.

The nature of being flexible also places a responsibility on the maintenance group to follow certain practices to keep the surface in good repair. Following the recommended procedures will maximize the service life of the roadways.

B. Management

Generally, during its early life, a roadway needs little maintenance once initial construction defects are properly repaired.

Above all that is normally required is routine preventative maintenance and a regular inspection program. As the road ages, periodic repairs and more aggressive preventative maintenance procedures are required. To properly administer the road maintenance program, the following steps should be taken:

1. Establish one individual as the prime contact with the responsibility and authority to make judgements and direct work on the roadway.
2. Adopt a set of road policies and maintenance procedures.
3. Establish a homeowners awareness program.
4. Set up a convenient reporting mechanism for homeowners - similar to the concept to the "Pothole Hotline" in some cities.
5. Contract with a firm capable of at least routine maintenance and inspection, and preferably with the ability to make some of the more significant and urgent repairs.
6. Set up a record keeping system for routine maintenance, noted deficiencies and repairs.
7. Establish a regular inspection program, preferably performed by the same individual each time.

In addition to the regular interval, non-scheduled inspections should be made after rainstorms and other events which could result in road damage.

C. Recommended Policies

The following should be adopted and enforced to prevent damage from road use and construction.

1. Establish a permit system for anyone doing construction work within the road easement, and for all commercial vehicles larger than 1 ton. Include a refundable deposit or bond if enforcement difficulties are anticipated.
2. Require construction plans for all driveways, culverts, utility tie-ins, drainage, grading, the location of any and all proposed obstructions such as posts, walls, signs and entrance features. Generally, private improvements should not be permitted within the road rights of way unless circumstances dictate otherwise.

3. The following standards should be included:

a) Drainage

- Drainage patterns and capacities shall be maintained.
- Adequate culverts (minimum 18" diameter or equivalent arch size shall be placed under all driveways).
- Minimum culvert grade shall be 1%
- Regrading of borrow ditch to install culvert is permitted so long as a minimum of 2:1 slope is maintained in the earth grading and vegetation is reestablished. Slopes steeper than 2:1 require rocking up to prevent slumping and erosion
- All culverts shall be corrugated steel pipe, 16 gauge minimum, or concrete

b) Driveways

- Driveways shall not direct drainage from the lot onto the road surface.
- Driveways shall flatten to a maximum grade of 6% for one car length at the roadway.
- Sight distance shall be maintained at each driveway to allow drivers entering the roadway to see oncoming traffic from a stopped condition.
- Minimum driveway width should be 12' plus a minimum of a 5' paved radius or flare on each side at the intersection with the roadway.

c) Grading and Walls

- Grading and walls within the road easement shall be designed in general conformance with the grading plan prepared by Design Workshop.
- No slopes shall be steeper than 2:1 and revegetated to match the predominant vegetation along the roadway.
- Walls should be designed by a registered professional engineer and shall be capable of withstanding adjacent traffic loadings in conformance with the American Association of State Highway and Traffic Officials (AASHTO) recommendations for H-20 loading.
- Any rocked-up drops in the ditch (such as at driveway culverts) should be located a minimum of 5 feet from the roadway or be protected from traffic by a grating or other means approved by the Association.

- Walls located on the downhill side of the roadway shall be protected by a guardrail located adjacent to the roadway in accordance with the Colorado Department of Highways Standards. Guardrail materials shall be approved by the Association.
- Walls located on the uphill side of the roadway shall be located a minimum of 5 feet from the edge of road or be protected by a guardrail.
- In all cases, walls shall be designed to accommodate drainage quantities and patterns and not be located so as to deflect water onto the roadway.

d) Posts, Obstructions and Other Private or Homeowner Improvements

- All posts, signs and other obstructions, whether temporary or permanent, located within the road easement shall be designed to break-away when struck by a vehicle. Concrete foundations for such posts shall be poured flush with the ground within 5 feet of the roadway, and may protrude 6" above grade elsewhere unless otherwise protected from traffic by a barrier such as a guardrail or ditch.
- No other structures shall be permitted within the right of way unless special approval is obtained from the Homeowners Association and traffic safety provisions are made.
- All private pillars, walls, and other such features shall not be permitted within the right of way unless necessary for grading retention or drainage facilities.
- No post or other obstruction, permanent or temporary, shall be located so as to obstruct sight lines for vehicles on the roadway or driveway.
- Any such private improvements located on the roadway are for the convenience of the homeowner and no liability for damage is expressed or implied by the Association.
- Any damaged private improvements shall be repaired by the homeowner within 7 days or the Association will remove the damaged improvements at the expense of the homeowner.

4. Policies and Procedures

- a) All utilities under the road have been stubbed out for the lots. No roadway cuts for convenience to take service at a different location shall be permitted.
- b) Emergency and unavoidable roadcuts: asphalt cuts will be unavoidable from time to time, for example due to a utility problem under the roadway.

Any person or agency cutting the asphalt shall be required to obtain a permit from the Association.

- The permit should stipulate the location and purpose for the cut.
- The permittee should be required to barricade all cuts and promptly repair the surface when work is done
- Storm water or other incidental drainage should not be allowed to enter the cut.
- No cut shall be allowed to close the road. A minimum 10' clear path must be maintained.
- If this path is off the road or on to the shoulder, the permittee is responsible for repairing and restoring the path as well as the asphalt cut.
- If two way traffic cannot be maintained, there must be a flag person on site.
- No excavation may be left open overnight.
- Drainage must be maintained at all times.
- Excess excavation or other building materials or supplies such as road base, sand, etc. shall not be stockpiled on the roadway or in drainage ditches or swales.
- Minimum patch shall be 8" of hot mix asphalt. Subgrade shall be adjusted to optimum moisture ($\pm 2\%$) and compacted in 8" lifts to 95% of standard proctor, or the excavation backfilled with roadbase and compacted to 95% of modified proctor.
- All cutting and patching shall be done neatly and all adjacent roadway damaged shall likewise be repaired.

c) New Utility Crossings

All new utility or pipe crossings shall be bored or jacked. Open cuts shall not be permitted.

d) Building Permits

No building permit sign off shall be made by the Association until all of these policies relating to new construction have been satisfied and permits issued.

e) Load Limits

There shall be weight limitation of 40,000 pounds GVW on all roads in The Divide between 12:00 o'clock a.m. on March 15 and 12:00 o'clock p.m. on July 1 every year. The load limitation may be waived or modified at the discretion of the Homeowners Association or its designated representatives based on the structural integrity of the road system in any particular year, due to climatic conditions. A special permit may be granted to vehicles used for the mobilization of equipment only; maximum GVW allowed for 5-axle vehicles (two tandem axle groups) shall be 60,000 pounds GVW; maximum GVW for 7-axle vehicles (two tri-axle groups) shall be 80,000 GVW. This permit will be issued by the caretaker upon 24 hours advance notice to move in.

f) Parking

- Parking should not be permitted on the road shoulders.

- Construction parking should be limited. Contractors's employees should park in one of the lots at the bottom and shuttle up. For those who find it necessary to drive to the job site, instruction will be given to park on the paved surface and not on the shoulder. If damage results from the Association allowing parking to occur on roadways either to the portion of the road sections where parking is allowed on, or adjacent road sections due to the fact that vehicles will be forced to the other side of the road, The Divide Homeowners Association will take responsibility for damage done as a result of parking on the roadway.

g) Contractors shall keep the roadway open and free of mud and construction debris.

h) Cumulative Truck Traffic Loading

The roadway section was designed to accommodate an equivalent construction traffic loading of 20-25 loaded dump trucks per day. The loads have been assumed to be restricted as specified in Section C3(e) above. Including mobilization vehicles as described in Section C3(e) above, the total number of

vehicles hauling gravel, dirt, concrete and other such materials resulting in heavy loads shall be restricted to a total of 25 trips per day.

In order to accomplish the construction traffic limitation hauling heavy loads, a construction schedule shall be required as a part of the building permit application. This schedule shall include the hauling schedule by dates, and this schedule shall become a part of the commercial vehicle permit issued to the contractor. Variances from this schedule for any cause, including weather delays, must be approved individually. Commercial vehicle permits or requested variances shall not be issued for more than the above limitation of traffic per day.

(i) Trash hauling and other resident services and deliveries - Nothing in this policy shall be construed to limit normal resident services.

(j) Maintenance Practices - Utilities

Routine maintenance of utility systems shall not be done in such a manner as to damage the road facility. Hydrant flushing shall be done in a manner so as not to place concentrated, high velocity flows onto the roadway or into the roadside ditch or slopes. Any erosion or damage caused by or resulting from poor flushing techniques shall be the responsibility of the District.

Other routine maintenance procedures shall be performed in a manner and at times that do not cause traffic impedance or cause traffic to drive on the shoulder or in the ditch.

(k) Emergency Repairs

From time to time, emergency utility repairs may be required. If at all possible, one lane of traffic shall be maintained on the asphalt surface using traffic cones or barricades. If this is not possible, a temporary lane of traffic shall be established around the emergency repair areas. After repairs are complete, the roadway shall be restored including any damage caused by redirected traffic. No road closing shall be permitted that would isolate a residence.

(l) Emergency Procedures

A policy on the handling of emergency procedures shall be developed and adopted.

Such emergencies include:

- flooding
- utility breaks
- fire
- slides/slumps
- ice & snow
- accident
- medical/law enforcement

Such emergency repairs shall be developed in concert with emergency service providers, the Snowmass Water and Sanitation District, the Town of Snowmass, and the contract maintenance firm.

All procedures shall be developed with the guiding principle that the roadway must be kept open and free drainage maintained.

(m) Inspection

A policy for the routine inspection of the roadway should be developed and modified from time to time as experience dictates.

Initially, inspections should be made on a monthly basis and additionally after and incidents that can cause damage. Such additional inspections should be conducted after:

- rainstorms
- snowstorms
- spring thaw
- accidents
- fires
- utility breaks/maintenance

Additionally, inspections should occur following construction activity for which a permit was issued and after construction on individual lots.

D. Routine Maintenance

The drainage system must be kept open and free draining at all times.

- Culverts - keep clean of trash, debris, gravel and siltation. Erosion protection shall be kept intact.
- Ditches - road side ditches to be kept clean and free draining.
- Inlets - Keep grates clean and open, remove siltation and debris, replace all missing grates.
- Subdrain Outlets - Check for presence of flow. Clear growth and debris from the outlet.
- Swales - Periodically check the entire surface (Off-Road) drainage system for proper operation. Clear all trash, debris, vegetation, downed timber and other obstructions.
- Erosion - Inspect all culvert inlets and outlets, ditches and slopes for erosion from run off and repair noted problem spots. Washouts of the road should shall be repaired immediately.

Shoulders

Road shoulders shall be periodically graded to maintain positive drainage away from the asphalt. All loose material shall be recompacted and missing material shall be replaced and compacted to protect the asphalt edge. Grass and vegetative growth shall not be allowed to intrude into the asphalt.

Asphalt

All noted cracks, depressions, vegetative intrusions and other noted blemishes and degradations shall be repaired immediately upon discovery. Any cracks or fissures should be sealed with a liquid asphalt to prevent moisture seepage into the subgrade.

Signing/Striping

All signs and pavement striping should be maintained in good order.

Wintertime Maintenance

Guidelines for wintertime maintenance center around public safety and convenience. The methods used however can make a significant difference in road life. All asphalt and shoulder areas will be plowed on a regular basis. Snow shall be plowed/graded from asphalt and shoulder areas with the snow being stored beyond the borrow ditch.

Snow storage should be in areas below the road whenever reasonable possible in a free draining locations. Borrow ditches shall be opened when the spring thaw period is beginning and thereafter as needed. Hauling of snow may be required as the spring thaw period is beginning to open borrow ditches. Sanding, except during storms, should be reserved for shaded areas and cloudy periods when icing becomes a problem.

E. Periodic Maintenance

From time to time as the roadway ages, periodic heavier duty maintenance operations will become necessary. A qualified road contractor should be engaged to make an inspection and subsequent repairs on a semi-annual basis.

In addition to the contractor's inspection, any noted damage should be repaired immediately.

An outline checklist follows:

- Crack Sealing Asphalt and Gutter (conc.)
- Flushing culverts
- Freshen up shoulder gravel
- Seal coating
- Chip sealing
- Patching
- Grade borrow ditches
- Replace damaged guardrail/retaining timbers
- Replace erosion protection as required
- Clean silt from pockets upstream from culverts
- Clear drainageways of timber and debris
- Check with Aspen Ski Corp. on drainage maintenance offsite
- Replace lost grass cover on side slopes
- Clean drainage grates at Caretaker's unit (front of garage)
- Lower turf when swales become obliterated by growth (mostly irrigated swales)