The following is in response to application review comments received from David Rocque's memo to LURC dated March 10, 2006. For ease of reference, we have included Mr. Rocque's comments along with our responses below. MMP is still working on a response to Comment 1 as a result of a May 23, 2006 memo from David Rocque.

Comment 2:
The applicant includes details for ditches with vegetation or stone over 6" – 12" of soil which then rests on 1.5' – 3' of stone with an under drain pipe. Where are these to be used? Why not extend the stone layer to the surface? Are these curtain drains?

Response:
Ditches with underdrain are to be used in areas where soil nail walls or gabion walls are installed on the back slope and where recommended by the geotechnical engineer. The details have been edited on sheet C-22 to extend the crushed stone to the bottom of the riprap ditch section. These will act as curtain drains where installed.

Comment 3:
The application leaves it up to the applicant to choose, at some future date, whether to pave the roads or to re-grade them after every rainfall event. Water bars are not required or even suggested for unpaved roads. On such steep slopes and long lengths of road, water bars should be required. Otherwise, significant damage will likely occur to the roads. In addition, concentrated runoff can cause significant damage to fill extensions when it finally exits the road. Type and spacing of water bars should be included. I would prefer to see some form of pavement, at least on the steeper section of roads. In the long term, this should be the most cost effective and environmentally sensitive alternative.

Response:
The applicant proposes to treat the roadway surface where grades exceed 10% and at switchbacks with Lignin Sulfonate (tree sap) or other surface stabilizer. The applicant also proposes to use a special surfacing gravel/rock which is to be specified by S. W. Cole Engineering or another qualified engineer.

On steep road sections the use of reclaimed asphalt, processed shale, and the special surfacing gravel/rock is proposed to limit the potential for erosion. During the construction period of the project the use of these surfaces and stabilizing treatments will be employed to reduce the need for drainage dips and water bars. As needed, broad-based drainage dips will be installed at the spacing determined by final road design along proposed access roads. Along mountaintop roads, conveyor belt water bars will be employed as needed at the spacing determined by final road design to accommodate low clearance haul equipment using the mountaintop roads between turbine sites. Once construction is complete, any conveyor belt water bars will be removed and replaced with broad-based drainage dips for ease of maintenance. Construction details for these drainage dips and bars will be provided in the final LURC submission.

Comment 4:
Roads that intercept drainage swales, seeps or groundwater discharges are proposed to use cross-culverts, which is appropriate. No mention however, is made to re-connect the swale, seep or discharge, probably since it is assumed but I would like to see it as a requirement.

Response:
Reconnection of swales and other point discharges will be accomplished by use of flow dispersion berms or pipe culvert outlet aprons as shown on drawings C-22 and C-23. The flow dispersion berms will be used where the concentrated flow below the roadway section is not obvious. The culvert rip rap outlet aprons will be used where concentrated drainage flow regimes below the road section are obvious. These notes have been added to the respective drawings.

Comment 5:
Deep cuts into hardpan glacial till soils where there is a shallow seasonal water table will be difficult to stabilize because of the water flowing over the exposed cut soil surface. These cuts should have a stone sandwich (between layers of filter fabric) to transmit the intercepted water down to a roadbed stone sandwich. The sandwich can then be covered with erosion control mix if the slope is 2:1 or less or a structural measure if the slope is greater than 2:1. For slopes 2:1 or less, the stone sandwich can essentially serve as rip-rap, with a cover of erosion control mix to be more aesthetically pleasing and to allow for native plants to eventually take root.

Response:
Additional details have been added to the attached detail sheets for backslope treatment with a stone sandwich and either riprap or erosion control mix cover, depending upon slope as noted above.

Comment 6:
What criteria were used in the location of stump dumps? How will the stump dumps be constructed? Do they take into consideration the groundwater table?

Response:
Stump dumps were selected by a local forester (Peter Farnsworth). Both sites were previous lay-down yards, that are relatively flat, dry, no documented (or undocumented) PSL2 areas, and were suitable for the stump-dump purpose.

Comment 7:
The applicant proposes to use wood waste for soil stabilization in some locations but there are concerns with buoyancy so measures are needed to keep the wood waste in place. I do not believe that wood waste alone is generally a suitable erosion control material. Erosion control mix is a much better material since it contains some soil material to add weight and provides for some binding of the wood fragments. The applicant indicates that loam and seed is to be applied before the wood waste so that vegetation can become established as the wood waste is decomposing. From my experience, the erosion control mix is quite durable and is likely to last long enough for natural vegetative stabilization (shrubs, trees and herbaceous plants). If necessary, additional erosion control mix can be applied to areas where needed. Putting loam and seed under a layer of erosion control mix does not make sense since vegetation would have a very difficult time making it through.

Response:
Wood waste/bark filter material will be replaced with the erosion control mix material as specified by the MeDEP throughout the project documents. Sheets C-21 and C-24 have been edited to replace wood bark mulch with erosion control mix.

Comment 8:
A mulch, wood waste/bark filter berm is listed as one acceptable type of erosion control measure, which may be used on this project. The specification for the berm indicates that it may contain as little as 40 percent organic matter. The spec also requires all of the woody material to pass a 3-inch screen. I believe that allowing up to 60 percent soil material (particularly without a textural requirement so that the soil can be silt or clay) is too much for the berm to act as a filter (it won't be permeable enough). I also believe that the spec should allow for the woody material to be larger and require it to favor elongated fibers. The Department of Environmental Protection has an excellent erosion control mix specification that I recommend the applicant use.

Response:
The wood waste filter berm detail on sheet C-23 has been replaced with an erosion control mix filter berm detail, and the term wood waste has been replaced with erosion control mix throughout the project details to address this comment. The mix specifications have been revised to match the current erosion control mix specification.

Comment 9:
Loam is to be applied to the exposed mineral soil surface prior to seeding for vegetative stabilization. Erosion control mix is supposed to be applied in a similar manner as an alternative to vegetative stabilization. I suggest requiring the loam or erosion control mix to be incorporated into the exposed soil surface (key it in), particularly if there is a significant textural difference or if the exposed mineral soil surface is hardpan. This will allow for a greater rooting depth and minimize potential for the loam to slip or slid down the hardpan surface when wet. In general, I prefer erosion control mix to seeding, as it is less likely to fail in the mountains and will be less of an aesthetics issue (will not stand out visually as much as green grass).

Response:
Erosion control mix will be used wherever possible and loam and seed will only be used in lower areas of the project. Notes have been added to details on sheet C-21 to require a 6-inch deep, 6-inch wide linear key spaced every 4 linear feet down the face of the slopes referenced above.

Comment 10:
Borrow material (including gravel and shale) is to be used in areas where fills are required but no mention is made of where this material is to come from. I do not recommend that borrow pits be excavated on mountainsides or that over excavation of cuts be made to supply this borrow material. Any alteration of the mountains should be minimized to the maximum extent possible.

Response:

No new pit locations are proposed with this project. Excavated rock material will be processed and used as fill. Other required fill material will come from offsite pit locations within 10 miles of the site. The Roadway Design section provides provisions to make slight adjustments to the road profile and alignment to reduce the depth of cut for roadway backslopes into wet seeps and increase the cover thickness over weak subgrade areas. In rock areas, the Contractor may lower the profile to gain additional material and reduce the size of the fill slope. Further discussion of borrow material is provided in Comment 11 below.

Comment 11:
Temporary Construction Roads are proposed to require stumping, grubbing and some cutting and filling. If possible, I recommend leaving stumps in place and not disturbing the soil. Otherwise these temporary roads will create permanent alteration of the sites where they are located (including rutting where the ruts penetrate into the groundwater table and become streams). In order to minimize alteration (at least for soils with a high seasonal water table), I suggest looking into the use of equipment that can cut trees and chip them in place and/or bringing in grindings from the stump dump stockpiles. These chips can be used to provide some leveling and smoothing which should be sufficient for temporary roads without changing the hydrology of a site or exposing soils so that they are susceptible to erosion. This technique should also be used for the transmission line corroder as well.

Response:

Where possible stumps and grubbings will be left in place and in place chipping of trees will be performed as noted above.

In an effort to complete the Redington Wind Farm Project in a timely manner, while trying to keep the effects on the mountain and the costs to a minimum, the applicant is proposing a change to the previously submitted permit application. Below is the proposed sequence for completing the roads.

Once the permit is acquired from LURC, clearing and grubbing will commence up the staked road and a temporary road will be constructed. The road will be approximately 12 feet wide and will be constructed with the least amount of cut and fill work possible to achieve a traversable grade. This will allow dump trucks, drill rigs and pickups to travel the roadway to start with activities on top of the mountain. Without this temporary road, the work on top of the mountain would be delayed until later in the season and would hamper the foundation and erection process. The entire 2007 season needs to focus on foundations, electrical and erection in order to meet the year end schedule.

Erosion controls and cross-drainage consistent with those identified in the permit application will be engineered, implemented, and maintained for the installation of the temporary road. The erosion controls will be a combination of temporary and permanent treatment. The permanent erosion control measures will not be completed until the permanent road construction reaches a given point.

As best can be determined by the preliminary road design, there is surplus of material located in the areas of the turbine string roads on both mountains. This surplus material needs to be blasted and processed early on in the project in order to service the fill areas lower on the mountains to build up the road base. Utilizing this surplus material will limit clearing impacts, decrease costs, and manage schedule performance. It also solves some of the hauling issues such as heavy traffic, utilizing resources elsewhere, and productivity.

The key is to disturb as little land as possible while still moving ahead to meet budget and schedule constraints. We believe the temporary road is the only way we will be able to achieve this.

Comment 12:

The applicant states that winter rye can be seeded at elevations below 2700 feet up to October 1 but I feel that is too late a date for the area. I suggest September 15 should be the cut-off date.

Response:
The affected areas of the project narratives will be edited to state a September 15 cut-off date for seeding of winter rye at elevations below 2700 feet. This information will be provided in the final LURC submission.