Chapter 4. Summary of Environmental Commitments

THIS chapter summarizes the environmental commitments that would be a part of each build alternative, unless otherwise discussed. These commitments would be incorporated during final design or project implementation.

4.1 Continued Agency and Public Involvement

In all build alternatives, coordination and field reviews would continue after the release of the Record of Decision and as the design progresses. To address public concerns about the proposed reconstruction in the alpine section east of the road closure gate, the FHWA would hold an open house for the interested public after the 30 percent design field review of the upper section. At the open house, information about techniques to avoid or minimize impacts would be discussed. The public would be provided the opportunity to sign-up to attend a field review the following day to review specific locations along the corridor where the minimization techniques are proposed. Then, after the 70 percent design field review of the upper section, the FHWA would conduct another public open house demonstrating how the public comments received at the 30 percent design level were evaluated for incorporation into the design.

Because of the sensitive environmental setting of the road and the anticipated complexity of the construction, the selection of a highway contractor and oversight of their operations would be a critical component of the success of any build alternative. The FHWA would use a contracting technique called "Best Value Procurement," which allows the FHWA to award the construction project to a contractor on the basis of selected rating criteria rather than simply low bid. Selection criteria, such as compliance with environmental commitments and performance on past projects of a similar nature, can be considered with Best Value Procurement. The FHWA has used this contracting technique successfully in Yellowstone National Park and Rocky Mountain National Park. The FHWA would involve partner agencies in

developing contractor selection criteria, reviewing contractor qualifications, and in making recommendations for contractor selection.

Working with the SEE Team, the FHWA would develop environmental training for the selected contractor. The training would cover topics such as minimizing grizzly bear and human conflicts, minimizing disturbance to roadside wetlands and fens, salvaging and replacing topsoil, and implementing the landscaping and revegetation techniques. The training would be required for all contractor and subcontractor personnel.

The FHWA would have an on-site construction Project Engineer, as the Contracting Officer's representative, responsible for overseeing the construction contract and ensuring the environmental commitments described in Chapter 4 are fulfilled. The FHWA also would fund a seasonal full-time environmental compliance position through the SNF to assist the FHWA Project Engineer in monitoring all contractors' operations. An FHWA representative with experience in landscape architecture and revegetation also would be available on-site to coordinate implementation of the landscaping and revegetation plan, and direct contractor operations through the FHWA Project Engineer, as required. A construction partnering agreement would be developed among the FHWA, SNF, NPS, and other interested agencies that would describe agency communication and coordination to be followed to progress construction work in a responsive and efficient manner and to resolve conflicts arising during construction.

During construction, the FHWA, in conjunction with the SEE Team, would conduct one or more project site visits to observe contractors' compliance with the environmental commitments made in this document. After Phase I of the project is completed in 2007, the FHWA would convene the SEE Team to review and discuss their observations of the Phase I construction project. The SEE Team would identify any social, economic, or environmental problems or issues associated with Phase I construction and recommend appropriate modifications to Phase II construction methods or procedures.

4.2 Wetland Resources

The FHWA would mitigate all temporary impacts to wetlands. Best management practices, such as silt fencing and temporary soil tackifiers, would be used to help prevent erosion and siltation from construction activities. The WDEQ's BMPs designed to reduce or eliminate water quality degradation due to physical modifications of surface water would be used (WDEQ 1999). Wetlands that are temporarily impacted during construction would be regraded and revegetated to allow the re-establishment of wetlands.

Proposed mitigation for unavoidable permanent wetland impacts is described in a *Conceptual Wetland Mitigation Plan* (ERO Resources Corp. 2002a), and would involve both on- and off-site mitigation. In developing the plan, opportunities were considered in the following order:

- On-site wetland restoration
- On-site wetland creation
- Off-site wetland creation
- Off-site wetland preservation and restoration

On-site mitigation opportunities would consist of wetland restoration, with some wetland creation. The FHWA reviewed all of the project area to locate suitable on-site wetland mitigation opportunities in the same environments in which impacts would occur under the build alternatives. These opportunities were reviewed in the field with

representatives from the SNF and the Corps. Because most potential on-site wetland creation opportunities would involve impacts to existing, high quality meadows, large wetland creation sites were eliminated from further consideration (FHWA 2000). For example, in alpine sections of the project site, impacts to alpine vegetation that would result from construction of a mitigation wetland would outweigh the value of the constructed wetland. Consequently, no alpine wetland mitigation opportunities were identified and all on-site wetland restoration and creation would take place in subalpine areas. On-site wetland mitigation is possible at 10 sites located in the Top of the World Store area, at the Little Bear Lake fen, at Long Lake, and at an abandoned gravel pit in the Frozen Lake area (Figure 33). Monitoring of restored wetlands would be conducted after restoration is completed.

On-site wetland restoration would involve establishing wetlands in areas where the existing roadway would be removed from areas that were historically wetlands. Opportunities for on-site wetland restoration range from 1.0 to 1.2 ha (2.6 to 3.0 ac.) for Alternatives 2, 5, and 6 (Table 9). Most of the restoration would occur in the Top of the World Store area. Because Alternatives 3 and 4 would not realign the road in the Top of the World Store area, opportunities for restoration at the Top of the World Store area with these alternatives would be less than 0.1 ha (0.1 ac.).

In Alternatives 5 and 6, a bridge would be built on piers in an area where the existing road crosses a fen. Some of the existing road overlays fen soils, and the road would be removed after bridge construction. The bridge would shade some restored fen, but most (0.2 ha [0.4 ac.]) would not be in constant shade and could be revegetated. All of the remainder probably would not support vegetation, but would be saturated to shallowly inundated, underlain by fen soils.

High priority on-site wetland creation generally would involve excavating small subalpine upland areas to match the elevation of an adjacent existing wetland or stream. High priority wetland creation sites would be those areas that have been disturbed previously or those areas where impacts on existing plant communities would be minimal. Opportunities for high priority on-site wetland creation range from 0.3 to 0.4 ha (0.6 to 1.1 ac.) for all build alternatives (Table 9).

Several other areas were considered for on-site wetland mitigation to help meet the wetland mitigation requirements under the build alternatives. However, these sites would involve excavation and wetland creation in undisturbed high-quality subalpine or montane meadow communities. Creation of wetlands in these areas is considered a low priority because the gain in wetland resources would come at the loss of existing subalpine and montane communities. Opportunities for low priority on-site wetland mitigation for all build alternatives range from 1.0 to 1.1 ha (2.4 to 2.6 ac.).

The areas presented in Table 9 represent the total area identified at the 10 on-site mitigation sites. Not all of the 10 sites identified probably would develop into functioning wetlands. For planning purposes, the FHWA applied a “success factor” to the area shown in Table 9. For the high priority restoration and creation sites, a success factor of 90 percent was applied. The high priority restoration and creation sites have a high likelihood of success because of favorable topographic and hydrologic conditions. A success factor of 60 percent was applied to the low priority sites. The low priority mitigation sites would be less successful than the high priority sites because of less favorable

topographic and hydrologic conditions. Areas likely to develop into functioning wetlands range from about 0.9 ha (2.1 ac.) for Alternative 3 and 4 to 2.0 ha (5.2 ac.) for Alternative 2 (Table 10). Because on-site wetland mitigation would not mitigate all unavoidable wetland impacts, the FHWA investigated off-site mitigation opportunities.

Off-site wetland mitigation was considered only after all on-site mitigation opportunities had been examined. The FHWA investigated off-site wetland mitigation at the Pilot Creek gravel pit. This potential option for off-site wetland creation would be the same under all build alternatives. Off-site wetland creation at this location originally was considered a low priority because of the depth to ground water. However, during the spring of 2003, high flows from Pilot Creek flowed into the gravel pit. The FHWA is examining the possibility of creating wetlands using high flows from Pilot Creek. It is estimated that between 0.4 and 1.2 ha (1 and 3 ac.) could be created at the site. Wetland creation at the site would likely be surrounded by a large area (up to 4 ha (10 ac.)) of upland and riparian restoration, so diverse habitats would be incorporated into the mitigation site design. No other off-site wetland creation opportunities were found near the project area.

Another option for off-site wetland mitigation would be the same in all build alternatives. The option would involve preservation of high quality wetlands, and possible restoration of filled and degraded wetlands. The Corps recognizes preservation of existing wetlands as an important type of compensatory mitigation as a means of obtaining the goal of no net loss of wetlands (U.S. Army Corps of Engineers et al. 2000; U.S. Army Corps of Engineers 2002).

The FHWA considered using off-site preservation for compensatory wetland mitigation because other wetland mitigation opportunities would be insufficient to mitigate all impacts. A large part of the proposed project is in undisturbed alpine and subalpine areas. Although restoration of wetlands would be possible in most of the build alternatives, the area available for restoration would not be large enough to fully compensate for the impacts of the build alternatives. Creation of new wetlands on-site sufficient to mitigate all impacts would disturb existing vegetation communities, increasing the total adverse impacts of the project. Off-site wetland creation at Pilot Creek gravel pit was considered a low priority. No other off-site wetland creation opportunities were found near the project area.

The FHWA identified some off-site mitigation opportunities between the proposed Segment 4 reconstruction area and YNP. These sites are being considered because they contain wetlands dominated by stands of willows, and are located in areas where the land has been or could be subdivided for development. The preferred site contains willow assemblages consisting of palustrine scrub/shrub and persistent emergent wetlands that are uncommon in the YNP area. These willow assemblages provide valuable habitat for species such as moose, which rely on willow assemblages for winter browsing. The scrub/shrub wetlands are dominated by numerous willow species, which are uncommon in YNP and surrounding areas. Wolf willow, a GNF Forest Service sensitive species, and Farr willow, a SNF sensitive species are found in at least one site, and may be found on more sites. Additional survey work may be necessary for the final mitigation plan.

Because of the extensive willow communities, the preferred site provides valuable wildlife habitat. The site is a high priority for preservation because the land has been subdivided for development, has

extensive willow communities present, provides valuable wildlife habitat, and is in close proximity to YNP. The site also provides an opportunity for wetland restoration. Roads constructed through the site have filled wetlands. The roads could be removed and restored as wetlands.

4.3 Cultural Resources

The FHWA, the SNF, the NPS, and the Wyoming SHPO, have developed a draft Memorandum of Agreement for mitigation of adverse effects to historic resources. The agencies are finalizing the Memorandum of Agreement, which will be included in the Record of Decision. Mitigation of effects on Segment 4 would include preparing a formal nomination package for the Beartooth Highway for listing to the National Register and documenting any section of the original alignment selected for realignment (see Table 12). This documentation would include photographs showing the original location, footprint, and setting of the sections. Mitigation also would include interpretation of the history and construction of the road, by installing interpretive kiosks at pullouts along the road, and providing other interpretive materials for visitors. Information about the bridges would be included in the interpretive materials.

Three sites are being considered for interpretation of the original road construction (Figure 34). One site at the top of the West Summit switchbacks would provide an overview of the switchbacks leading up to the west summit (see Appendix G). A second site at the Bar Drift would provide an overview of the switchbacks leading up to the east summit. The third site at Beartooth Lake would provide interpretation of the former historic bridge at the outlet of Beartooth Lake. Interpretive historical information may be combined with information on other aspects of the area, such as geology, wildlife, and natural history. The details of the interpretation and site-specific locations would be developed by the FHWA in consultation with the Wyoming SHPO, the SNF, the NPS, and interested tribes.

Mitigation of effects to the four historic bridges and culvert headwalls would include detailed photo-documentation and drawings of the existing bridge features before they are dismantled. Documentation would be to Historic American Building Survey/Historic American Engineering Record standards. If Alternative 2 is selected, documentation would still be completed on the Little Bear Creek bridge #2, even though the bridge would not be dismantled. The SNF would not assume responsibility for maintenance of the bridge; long-term maintenance would be uncertain.

On the dismantled bridges and culvert headwalls, the original stone masonry would be salvaged. The FHWA would use the salvaged stone masonry or similar stone masonry to provide an aesthetic facing for the three culvert headwalls and new bridge abutments, except for the Beartooth Ravine bridge (Figure 36). It may be necessary to split the existing stone masonry in half to provide sufficient masonry for the new abutments. In some locations, stone form liner may be used in lieu of stone masonry if the volume or quality of the existing masonry and nearby rocks are not adequate. Bridge design would replicate the original bridges as closely as possible, given safety and construction requirements. The abutments for the Beartooth Ravine bridge would be formed to look like stone or covered with cultured stone, and the bridge would have railings similar to the other bridges.

As additional mitigation of effects to the bridges, the FHWA and the SNF would develop an interpretive site at the Lake Creek bridge (Figure 35).

The site would provide information about the Lake Creek bridge as well as the other four bridges along the proposed project. The interpretation would be consistent with the Beartooth All-American Road Corridor Management Plan. The responsibility for maintenance of the Lake Creek site would be uncertain.

If previously unknown cultural resources are inadvertently discovered during construction, work would stop in the immediate vicinity until the resource can be evaluated in accordance with the National Historic Preservation Act by the FHWA. If it is determined that such resources are eligible for listing in the NRHP, the FHWA would conduct such mitigation measures that would be developed through consultation with the SHPO, the SNF, and interested Native American tribes.

4.4 Wildlife Resources

Mitigation and conservation measures would be incorporated into the selected alternative to minimize potential impacts on wildlife and threatened, endangered, and sensitive species. These measures would be developed and implemented in cooperation with the FHWA, USFS, Wyoming Game and Fish Department, and USFWS during final project design. Mitigation measures applicable to minimizing wildlife habitat impacts and wildlife/vehicle collisions for all species are described below. Proposed additional mitigation for threatened and endangered species also is described. Final project requirements for mitigation will be developed during formal Section 7 consultation with the USFWS. Consultation currently is ongoing due to potential adverse effects to the grizzly bear. In June 2003, the FHWA submitted a Biological Assessment to the USFWS and a Biological Evaluation in August 2003 to the SNF.

Wildlife Habitat

- Limits of construction would be minimized during final design and actual construction.
- All disturbed areas would be revegetated with native species.
- Limit the combined grubbing and grading operations area to 30,000 square meters (3 ha; 7 ac.) of exposed soil at any one time.
- Wildlife crossing areas would receive site-specific landscape revegetation plans, including tree and shrub plantings.
- An 8-hour construction-free gap would occur within each 24-hour period.
- Snags and cavity nest trees would be avoided to the extent possible.
- Abandoned road sections and material sources would be regraded and revegetated with native species to create habitat similar to adjacent undisturbed land.
- BMPs would be used to prevent the introduction of chemical and petroleum products into the environment and to reduce erosion and sedimentation.

Wildlife/Human Interactions

- Wildlife crossing signs and interpretive signs would be used to inform the public about the presence of wildlife.
- Interpretive exhibits would be provided at several major parking areas to inform the public of the presence of wildlife, effects of human activity on wildlife, and the potential for wildlife/vehicle collisions.
- Highly palatable non-native plant species would not be planted adjacent to the road to minimize attracting wildlife.

Grizzly Bear

- The Grizzly Bear Management and Protection Plan would address the facilities (workcamps, staging areas, gravel pit areas, and construction areas), actions, guidelines, and procedures associated with construction to assure compliance with regulations and best management practices in order to prevent human/bear conflicts.

- The contractor, his/her agents, employees, and subcontractors would comply with the requirements of the Grizzly Bear Management and Protection Plan in the conduct of any and all activities authorized. The authorized Forest Officer in Charge may review, revise, and monitor the plan as needed in coordination with the FHWA Contracting Officer.
- The contractor's full cooperation in meeting grizzly bear management goals and objectives would be a condition to receiving authorization to operate.
- All construction employees working on-site would be given safety awareness training that includes the following subjects: protected status of the grizzly bear, grizzly bear behavior, proper (human) behavior in bear country, proper attractant storage, conflict avoidance/prevention, assessment of risks/probabilities, encounter procedures, and use of bear repellant spray.
- Bear-proof food storage boxes and sheds would be built to accommodate storage of foods, coolers, barbeques, and any other potential bear attractants. Bear-proof garbage cans and dumpsters would be provided to ensure that no attractants be available to bears and other wildlife. Trash containers would be monitored on a daily basis and emptied as needed to avoid overflowing, not to exceed once per day.
- No long-term food storage or storage in open containers would be allowed.
- No tent camping would be allowed in the workcamp during construction.
- An on-site manager would be responsible for the workcamp, including compliance with the Grizzly Bear Management and Protection Plan.
- Project employees would be prevented from carrying firearms or bringing pets to the workcamp or construction area.
- Grizzly bear sightings would be reported to the Forest Officer in Charge and the Wyoming Game and Fish Department.
- In the event of a human/bear conflict, or in order to avoid an imminent potential conflict, the Forest Officer in Charge may order an immediate temporary cessation of all project activity in the immediate area of the conflict or potential conflict if such is needed. The contractor would immediately comply with such action. Such cessation would be in effect until such time as the appropriate authorities have been contacted and any risks to humans and bears have been successfully resolved in accord with the Interagency Grizzly Bear Guidelines. Work cessation due to bear/human conflict would be reported to the USFWS.

4.5 Vegetation, Timber and Old Growth Forest

During construction, impacts to vegetation would be minimized using the techniques described in the *Techniques to Avoid and Minimize Impacts* section on page 64. New impacts would be avoided to the extent possible. The FHWA would implement a landscaping and revegetation plan to mitigate unavoidable effects on vegetation. Mitigation to reduce impacts on vegetation resources and ensure revegetation of disturbed areas would include the following measures:

- Collecting native seed before construction for use in revegetation
- Using native species common on the Beartooth Plateau when collected seed is not sufficient
- Establishing well defined construction limits to minimize vegetation disturbance
- Using BMPs to prevent wind and water erosion
- Using salvaged topsoil and its associated seed and plant parts

- Using native seed and planting shrubs and trees according to site-specific conditions and vegetation communities
- Applying soil amendments, mulches, organic matter, and other measures to facilitate revegetation
- Monitoring vegetation cover and implementing contingency and maintenance plans until vegetation cover is 70 percent of the original background vegetation cover in accordance with the Wyoming NPDES permit requirements. Monitoring would include inspection of the revegetated areas at least once every year whenever the road is open until the NPDES permit requirements are met.

Specific additional measures to prevent the introduction and spread of noxious weeds during construction would include:

- Implementing a weed management plan in accordance with the Wyoming Weed and Pest Control Act and other directives to prevent weed infestation and spread. A weed management plan would be incorporated into the landscaping and revegetation plan.
- Minimizing the area of disturbance and the length of time that disturbed soils are exposed
- Minimizing weed seed in imported soil materials
- Limiting the use of fertilizers that may favor weeds over native species
- Using periodic inspections and spot controls to prevent weed establishment. If weeds invade an area, an integrated weed management process to selectively combine management techniques (biological, chemical, mechanical, and cultural) to control the particular weed species following USFS guidelines would be used.
- Requiring that earth moving equipment be washed prior to entering the project area and inspecting them to prevent importing weeds on vehicle tires and mud

In 2002, the FHWA completed a survey of historic disturbances along the highway that have not revegetated naturally (ERO Resources Corp. 2002c). The evaluation considered each site's existing conditions and the potential to revegetate. The FHWA would evaluate these areas during final design to see which would be feasible to revegetate. For example, an abandoned borrow area is east of Long Lake and north of the road. Wetlands have formed in part of the area. The FHWA is investigating this area as a possible wetland mitigation site. If the area is not suitable as a wetland mitigation site, the FHWA may fill some or all of the area if excess waste rock and fill materials are available. If filled, the area would be revegetated.

4.6 Visual Resources

For all build alternatives, views from some locations during the construction period would be altered by the presence of construction vehicles, equipment, personnel, and emerging new road facilities. This impact would be considered adverse by some viewers and would be an unavoidable consequence of project construction. The following mitigation measures would reduce impacts on visual resources during construction:

- Institute dust control procedures throughout the construction process.
- Locate staging areas and equipment and material storage facilities at sites with minimum visibility from the road, where possible.

An FHWA representative with experience in landscape architecture and revegetation would be

on-site to coordinate implementation of the landscaping and revegetation plan.

For all build alternatives, the road would alter views of some locations in the project area. The following mitigation measures would minimize the contrasts between the road and its surroundings.

Apply to Soil Cuts:

- Smoothly transition the top of cut faces into undisturbed ground by rounding, to diminish visible edges. Vary the size and shape of the rounding to match the adjacent landform and preserve selected trees and/or rocks.
- Preserve existing rock outcrops outside of clear zone and within construction limits to vary cut face slope, composition, color and texture. Undulate or roughen cut face to match adjacent rock outcrops and landforms.
- Preserve selected existing individual trees, shrubs and/or rocks outside clear zone and within construction limits for the same reasons as stated above.
- For placement of surface stones, use only stones salvaged from the ground surface prior to construction.
- Revegetate by seeding and/or planting with native plants.
- Place dry-stacked rock against cutslopes in select locations to avoid laying back slopes and to minimize erosion.
- Selectively place natural appearing, uncut felled trees, tree stumps and rocks onto cut face surfaces. Place these materials in patterns and at densities similar to the undisturbed adjacent forest. Felled trees with rock supports and staking may be located to enhance erosion control (not applicable in all areas).

Apply to Rock Cuts:

- Manipulate blasting patterns to create rock surfaces, terraces, and ridges similar to undisturbed rock faces and outcrops.
- Shape cut faces to blend with adjacent undisturbed rock faces.
- Create soil pockets within the terraces and ridges of cut faces to accommodate and promote revegetation. Locate, size, and shape soil pockets to replicate the planting areas of undisturbed rock faces.

Apply to Fills:

- Construct new fill slopes using terraces, native stones and native plants. The size, shape, and location of terraces should be similar to the adjacent undisturbed landforms. The density and placement of stones and plants also should be similar to the density and placement of adjacent undisturbed stones and plants.
- Connect new fills to adjacent undisturbed slopes by developing similar landforms and drainage patterns.
- Revegetate by seeding and/or planting with native species.
- Compose terracing, surface stone placement, and revegetation similar to adjacent undisturbed ground surfaces and land forms.

Apply to Retaining Walls:

- Treat exposed and visible concrete retaining wall faces and tops with form liners or stone facing to be similar to the historical bridge abutments, historical roadway retaining walls, and/or the undisturbed boulder field surfaces. This treatment may not be applicable in all talus locations.

- Treat mechanically stabilized earth wall face and tops with pre-cast concrete panels or dry-laid stone. Pre-cast panels should replicate the historical bridge abutments, historical roadway retaining walls, and/or the undisturbed boulder field surfaces.

Apply to Roadway Facilities:

- Use rock excavated within the project construction limits for aggregate base.
- Use asphalt-coated, stained, or painted culvert pipe end sections to diminish their visibility in the most visible locations.
- Use alternative materials for guardrails to minimize reflectivity and eliminate the silver color of galvanized steel guardrails.
- Use wood or alternative materials for guardrail posts to minimize reflectivity and provide a color that blends with the surrounding plant colors.
- Select guardrail designs that minimize the width of the metal exposed to view and allow snow to be ejected from the road through the rail.

4.7 Recreation and Socioeconomics

The FHWA would consider limiting nighttime construction adjacent to the campgrounds and Top of the World Store, when they are open. The decision would be made in cooperation with the SNF based on the type of construction required by the selected alternative. Access to the Top of the World Store would be maintained at all times.

To assist local business owners and the traveling public with the delays and closures, the FHWA would develop a traffic control plan in coordination with those communities that may be most affected by the reconstruction work, such as Red Lodge. The FHWA also would develop a public information program as part of traffic management during construction. The FHWA would use various forms of communication, such as ads, signs, newsletters, and brochures via radio, TV, and the Internet, to inform road users and local business owners about the construction schedule and progress. Specific partial day or nighttime road closure times would be announced well in advance to assist motorists with trip planning.

4.8 Water and Aquatic Resources

The FHWA would use BMPs to minimize soil erosion and adverse effects on surface water quality. Construction requirements described in FHWA's Standard Specifications for Road and Bridge Construction would be used to minimize erosion and sedimentation during and after construction (FHWA 1996). The WDEQ's BMPs designed to reduce or eliminate water quality degradation due to physical modifications of surface water would be used for this project (WDEQ 1999).

The FHWA would apply for a Section 404 permit to place fill material into surface waters. Impacts at Long Lake would be mitigated as required by the 404 permit. The USFWS, SNF, Wyoming Game and Fish Department, and the public would be provided an opportunity to review and comment on the 404 permit application. The 404 permit would require a Water Quality (401) Certification from the WDEQ before a 404 permit can be issued. To obtain a 401 certification, all discharges into surface water must not result in an expected violation of any applicable water quality standard.

The FHWA would seek authorization from the WDEQ to discharge storm water associated with construction activities under the National Pollutant Discharge Elimination System (NPDES). The NPDES permit requires a Stormwater Pollution

Prevention Plan for the construction activities to minimize impacts on surface waters. The plan would be monitored during and after construction until all disturbed areas are stabilized. FHWA would be responsible for compliance with the NPDES permit, and may turn over monitoring duties to the SNF or the NPS.

The contractor would obtain all permits and approvals for use of water for construction purposes.

4.9 Air Quality

All construction activities would be conducted in compliance with WDEQ requirements for construction-related fugitive dust. Dust abatement measures, such as watering unpaved disturbed areas, would be implemented. Disturbed areas would be revegetated as soon as possible after construction of a given road section is completed.

4.10 Soils, Geology, and Paleontology

Mitigation measures to protect and preserve soil resources in the project area would be incorporated in the landscaping and revegetation plan and are incorporated into FHWA's and WDEQ's BMPs. Components of these plans include the implementation of measures to minimize the loss of soil material before, during, and after construction. General erosion control measures would include minimizing the area of disturbance to defined construction limits and limiting the time bare soil is exposed. Suitable temporary sediment control measures such as silt fences, sediment logs, trenches, and sediment traps would be used to contain soils within the project area.

No earthwork operations would be allowed until after the removal of topsoil. Woody vegetation would be removed prior to topsoil salvage. Topsoil within tree stump roots would be salvaged to the extent possible. Topsoil salvage methods include windrowing topsoil at the limits of construction and pulling the soil back on slopes during reclamation. Selective topsoil redistribution to soil deficient areas would be used as needed. Soil amendments, mulches, and seeding would be selectively applied to match site conditions and revegetation goals. Long-term soil protection would come from prompt revegetation of disturbed areas following construction.

4.11 Noise

The FHWA would consider limiting nighttime construction adjacent to the campgrounds and Top of the World Store, when they are open. The decision would be made in cooperation with the SNF, based on the type of construction required under the selected alternative. The FHWA would describe expected construction noise in the public information program.

4.12 Hazardous Materials

Any petroleum-contaminated soils encountered during construction would be removed and transported off-site to a solid waste landfill in accordance with the WDEQ's solid waste guideline on the management of petroleum-contaminated soils. Guardrails that contain creosote also were identified. Creosote-containing guardrails would be disposed of at an appropriate facility or reused for an intended purpose.