Draft Feasibility Studies Scope of Work

1. FreedomWorks, LLC requests use of existing roads within the MNF to conduct project feasibility studies, and approval to construct a new $25,000 temporary road at Mill Run Road to facilitate core bore drilling for civil and structural studies. The new temporary road shall meet all the design requirements of the MNF. The temporary roadway area will be restored to its previous condition after studies have been completed

2. FreedomWorks, LLC understands that if a special use permit is issued by MNF for a feasibility study, and upon completion of all required studies, the project must meet initial and secondary screening criteria identified in 36 CFR 254.54 before USFS can accept an application for construction.

3. FreedomWorks, LLC understands the development of all designs, specifications, construction drawings, mobilization and operations plans associated with a special use permit shall be coordinated with the appropriate Federal, State and Local Authorities Having Jurisdiction to be compatible with existing fish and wildlife, recreation, and cultural resources.

4. After reviewing the extensive comments received by FERC, the current estimated cost for project feasibility studies is: $1,170,000, including:

    a. A budget of $300,000 for USFS to recover administration and coordination costs associated with a Special Use Permit application request for the project.

    b. A $100,000 field survey with core boring, lab studies and desktop evaluation of soil resources including:

        i. An assessment of the proposed project's proximity to abandoned mine lands as well as associated spoil piles and contaminated overburden to that would be disturbed during the creation of the upper reservoir. This study shall include an analysis of the "soil" material to be removed/disturbed and saturate including geochemistry analyses, soil chemistry analyses, and heavy metal characterization.
        ii. Studies to determine the existing condition, potential effects to the soil resource, and the required designs and mitigations (including an erosion and sediment control plan) soil plasticity, and bearing tests for construction planned at the proposed project area.

    c. A budget of $300,000 for field surveys, and desktop evaluation of aquatic and

terrestrial species (both plants and animals) that are identified as federally listed and RFSS, to support determinations of potential effects.

The MNF now contains most of the remaining acreage of central Appalachian spruce and spruce-hardwood forest, as well as most of the acreage upon which it formerly occurred. Project feasibility studies will explore measures and actions to mitigate potential permanent timber loss on both public and private lands. Options may include reforesting additional acreage of new spruce restoration funded by the project with USFS oversight

Potential rare habitats within the project area:

i. Woolgrass wet meadow (S3)
ii. Silvery sedge fen (S2)
iii. Blueberry-bracken fern shrub swamp (S3)
iv. Red spruce-hemlock/rhododendron swamp (S2)
v. Cottongrass fen (S1)
vi. Red spruce/heath peat woodland (S2),
vii. Rice cutgrass marsh (S3)
viii. Threeway sedge fen (S1)
ix. Chokeberry-wild raisin peatland (S3)
x. Cranberry-beakrush peatland (S1)
xi. Allegheny Mountains hemlock-hardwood forest (S3)

During surveys associated with the Corridor H highway project, running buffalo clover (*Trifolium stoloniferum*), a federally listed endangered species, and small whorled pogonia (*Isotria medeoloides*), a federally listed threatened species, were found in the vicinity of the proposed Project. Running buffalo clover is found in woodland habitats with partial to filtered sunlight where there is moderate periodic disturbance (e.g., trampling, grazing). Small whorled pogonia is found in deciduous woods. Surveys by approved surveyors will be needed within all proposed areas of disturbance associated with the Project. The Service and the West Virginia Division of Natural Resources have established acceptable survey periods and developed procedures to follow if either of these species is found during surveys

Other sensitive and endemic plant species of concern include:

I. Lance-leaf grape fern (Botrychium lanceolatum var. angustisegmentum - S1)
II. Pussy willow (Salix discolor - S2)
III. Kidneyleaf grass-of-parnassus (Pamassia asarifolia -S2)
IV. Roundleaf sundew (Drosera rotundifolia var. rotundifolia - S3)
V. Blackgirdle bulrush (Scirpus atrocinetus - S3)
VI. Small cranberry (Vaccinium oxycoccos - S3)
VII. Large cranberry (Vaccinium macrocarpon - S3)
VIII. Bristly black currant (Ribes lacustre - S2)

IX. Rose pogonia (Pogonia ophioglossoides - S2)
X. Large-leaf white violet (Viola blanda var. palustriformis - S1)
XI. Hoary sedge (Carex canescens - S3)
XII. Buckbean (Menyanthes trifoliata - S1)
XIII. Bog rosemary (Andromeda polifolia var. glaucophylla - S1)
XIV. Northern bog clubmoss (Lycopodiella inundata - S2)
XV. Foxtail clubmoss (Lycopodiella alopecuroides - S1)
XVI. Creeping snowberry (Gaultheria hispidula - S3)
XVII. Kidneyleaf twayblade (Listera smallii - S2).

The Cheat Mountain salamander (*Plethodon netting*), a federally listed threatened species, occurs in cool, moist red spruce or northern hardwood forests with an abundance of cover such as rocks, downed wood, or leaf litter. While the northern limit of its known range is to the south of the proposed Project, the US FWS online Information for Planning and Consultation (IPaC) tool indicates potential for this species to occur within portions of the Project area, and the nearest documented occurrence is less than 1 mile from the proposed upper reservoir footprint, in Blackwater Canyon.

Other avian, mammalian, herpetological, and invertebrate species of concern include:

i. Black arches moth (Melanchra assimilis - S1)
ii. Morrison's sooty dart moth (Pseudoherrnonassa tenuicula - SH)
iii. Two-spotted skipper (Euphyes bimacula - S1)
iv. Atlantis fritillary (Speyeria atlantis - S3)
v. Green comma (Pologonia faunus - S1)
vi. Baltimore checkerspot (Euphydryas phaeton - S2)
vii. Silver- bordered fritillary (Boloria selene - S3)
viii. Early hairstreak (Erora laeta - S2)
ix. Appalachian azure (Celastrina neglectamajor - S3)
x. Harris' checkerspot (Chlosyne harrisii - 82)
xi. Crimson-ringed whiteface (Leucorrhinia glacialis - S1)
xii. Sedge sprite (Nehalennia irene - S3)
xiii. Northern bluet (Enallagma annexum - S3)
xiv. Southern rock vole (Microtus chrotorrhinus carolinensis - S2)
xv. American bittern (Botaurus lentiginosus - S1)
xvi. American black duck (Anas rubripes - S2)
xvii. Black-billed cuckoo (Coccyzus erythropthalmus - S2)
xviii. Blackburnian warbler (Setophaga fusca - S3)
xix. Black-throated blue warbler (Setophaga caerulescens - S3)
xx. Broad-winged hawk (Buteo platypterus - S3)
xxi. Brown creeper (Certhia americana - S3)

xxii. Canada warbler (Cardellina canadensis - S3)
xxiii. Cerulean warbler (Setophaga cerulea - S2)
xxiv. Long-eared owl (Asio otus - S1)
xxv. Louisiana waterthrush (Parkesia motacilla - S3)
xxvi. Northern goshawk (Accipiter gentilis - S1)
xxvii. Northern saw-whet owl (Aegolius acadicus - S2)
xxviii. Northern waterthrush (Parkesia noveboracensis - S2)
xxix. Olive-sided flycatcher (Contopus cooperi - S1)
xxx. Wood thrush (Hylocichla mustelina - S3)
xxxi. Worm-eating warbler (Helmitheros verrnivorum - S3)
xxxii. Eastern box turtle (Terrapene carolina carolina – S5 but declining considerably across its range)

d. A separate $25,000 field survey and desktop evaluation for bats will be conducted at Mill Run, Big Run and Tub Run watersheds to determine if any appropriate mitigation actions are required. The proposed project is located within the ranges of the federally listed threatened northern long- eared bat (*Myotis septentrionalis*), and the federally listed endangered Virginia big-eared bat (*Corynorhinus townsendii virginianus*) and Indiana bat (*Myotis sodalis*). The entire project footprint falls within the conservation buffer of a Virginia big-eared bat hibernaculum, and there is a known hibernaculum used by this species and the northern long-eared bat within 6 miles of the upper reservoir.

e. A $57,500 field survey and desktop hydrologic assessment of streams that would be affected by the project. A field survey, physical habitat monitoring and desktop evaluation of fisheries to properly identify and evaluate potential project impact to the existing fisheries resources, including any proposed mitigation actions. The catch and release trout fishery in the Blackwater River may be impacted. Mill Run, a Tier 3 designated Brook Trout (*Salvelinus fontinalis)* stream, will be an area of particular concern, and extensive studies will be conducted. There is precedent to suggest that impacting a trout stream requires a robust mitigation and compensation plan. A two-year in stream flow study shall be performed to model the Cheat River, Mill Run, Big Run and Tub Run with conversion of Mill Run and Tub Run streams into reservoirs to determine minimum flow requirements to not stress existing fisheries, or whether a mitigation action plan can address the impact.

Hydro field survey and desktop evaluations include water quality analysis: water quality characteristics related to pH, acid neutralizing capacity, conductivity, base cations/anions, dissolved oxygen, total dissolved solids, total suspended solids, dissolved organic carbon, and water temperature.

f. A $25,000 field survey and desktop evaluation of impacts to area recreation and forest recreationalists including visual impact studies from Olson Fire Tower, from Lindy Point, and Centennial Park on Backbone Mountain

g. A $5,000 field survey and desktop evaluation of merchantable timber impacted for removal or damage by the project, in accordance with Forest Service standards, and compensation plan for the MNF cost-recover the timber value through Forest Service appraisal and contracting procedures.

h. A $7,500 field survey, desktop evaluation of cultural resources and potential archaeological study in consultation with the Forest Archeologist at the MNF.

i. Initial $350,000 preliminary project designs, specifications and drawings to enable PJM electrical systems and facilities impact studies to determine project feasibility.