FINAL SEDIMENT and EROSION CONTROL PLAN

BLUE LAKE HYDROELECTRIC PROJECT (FERC No. 2230) EXPANSION

Prepared by:

City and Borough of Sitka Electric Department

March, 2011

1.0 INTRODUCTION

The City and Borough of Sitka Electric Department ("City") is in the process of applying for an amendment to the existing FERC license for the Blue Lake hydroelectric project ("Project", FERC No. 2230). The amendment will reflect two significant changes in Project design: 1) construction of a new powerhouse including 3 new turbine generators and decommissioning of the existing turbine generators; and 2) raising the Project dam as much as 83 feet from the existing spillway height of El (elevation in feet above mean sea level) 342 to El 425.

The City is seeking an amendment to the existing FERC license to address recent electric load forecasts in the face on increasing diesel fuel costs. Details of the proposed expansion are described in the Draft Amendment Application (City, 2009), available at the City's Project website (www.cityofsitka.com/departments/electric/bluelakeexpansion).

In addition to this plan, the City will prepare a separate Timber Clearing and Management Plan containing, among other elements, proposed erosion control and water quality protection relative to clearing, collecting and removing timber in the areas potentially-inundated by the dam raise.

2.0 CONSULTATION and COMMENT

A draft of this plan was distributed to Stakeholders on October 26, 2010. Comments on the draft, dated January 13, 2011, were received from US Forest Service, (USFS), Sitka Ranger District. Those comments, and numbers applied by the City, are in Attachment I. The City addressed all comments without dispute. Actions taken in response to the numbered comments are in Attachment II. All text additions related to comments or other City-related changes, are noted in italics in this final plan.

3.0 PROPOSED CONSTRUCTION ACTIVITIES and SCHEDULE

3.1 PROPOSED CONSTRUCTION ACTIVITIES

Construction activities and locations to be addressed in this plan will include:

- Raising the existing Blue Lake dam by approximately 83 feet;
- Construction of a 500 foot-long intake access road;

- Construction of a new intake portal and a 125 foot-deep gate shaft;
- Development of a 1.5 acre Damsite Construction Staging Area near the existing dam;
- Improvements along the existing 900 foot-long intake tunnel;
- Modifications at the Fish Valve Unit (FVU) small hydropower generation site;
- Construction of a new transmission line from the FVU to the dam/intake construction area;
- Construction of a new powerhouse to replace the existing Blue Lake powerhouse and generating units;
- Construction of a surge chamber near the proposed powerhouse; and
- Specific construction and land preparation actions in the area of the proposed new powerhouse.

3.2 PROPOSED CONSTRUCTION SCHEDULE

Construction is expected to begin in July, 2011, with preparatory work in the powerhouse area and along the proposed electrical distribution line to the dam area. Major work at the powerhouse site will begin in January, 2012 and will be complete by October 2013.

Work at the dam and intake sites, including development of the Dam Site Construction Staging Area, will begin in October, 2012. The new intake structure and gate system will be operation by July 2013. *Deicing chemicals will not be utilized in the Blue Lake drainage area*.

Dam raising will begin in October 2012 and reservoir filling will begin in October 2013, lasting until December of 2014. Timber clearing in the proposed inundation area will begin in December, 2012 and continue until February, 2013. The reservoir will be filled between October, 2013 and December, 2014. Timber will be removed from the reservoir beginning in November, 2014.

Snow removal will be performed with heavy construction equipment i.e. grader or frontend loader. Gravel or sand maybe used where ice is a problem.

4.0 SCOPE of SEDIMENT and EROSION CONTROL ACTIONS

As shown in more detail in City (2009), the construction activities which this plan addresses will occur at several different project locations. In addition, sediment and erosion control activities, including spoils disposal, will involve lands not currently within the FERC Project Boundary. The location of these activities is generally depicted in Figure 1. We have elected to describe spoils disposal relative to each construction action within this plan, instead of in a separate plan.

This plan does not present exact designs or dimensions for certain sediment and runoff control features. These values cannot be accurately calculated until more detailed design and construction information becomes available.. The City proposes to submit an Addendum to this ESCP, after approval of Project final design but prior to construction. This Plan addendum will document:

1) *Construction schedules and locations;*
2) *Spoils and runoff volumes; and*
3) *Dimensions and capacities of drainage channels and settling basins.*

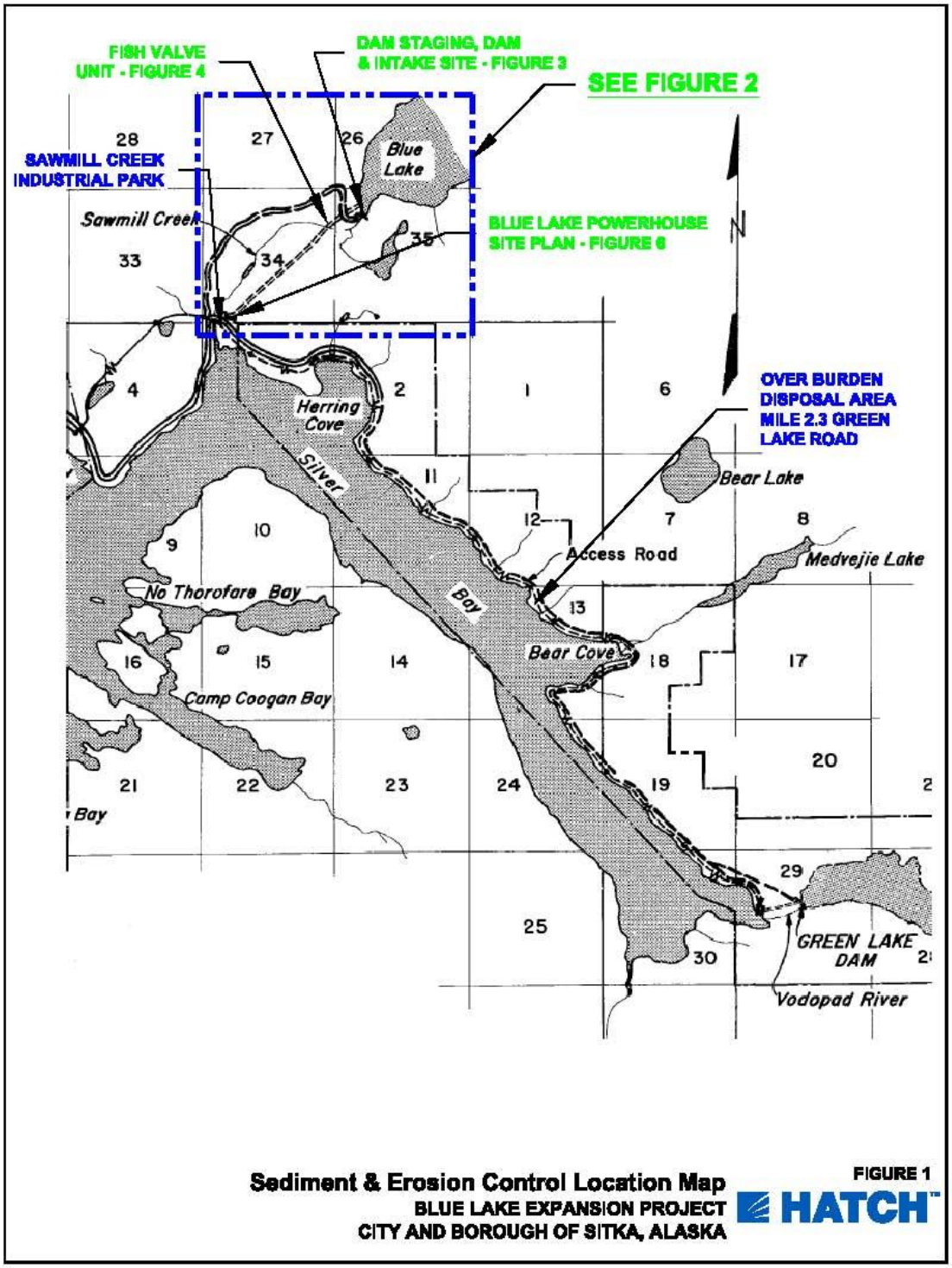
In the following sections, we describe spoils disposal and sediment and erosion control within five defined Project areas. These areas were defined based on expected construction or other disturbances.

4.1 SPOILS DISPOSAL GENERAL

Construction-related spoils will consist of 1) overburden (organic or soil-related inorganic material) from initial stripping; and 2) rock, from excavation, blasting and other activities. All construction spoils will be managed and/or disposed of in *one or more of* three ways or places:

4.1.1 On- or Near-Site Retention and Redistribution.

Limited amounts of overburden and rock may be retained at or near their origin and replaced soon after construction. Exact removal and storage sites to be addressed in this manner will be determined prior to construction.



Sediment & Erosion Control Location Map
BLUE LAKE EXPANSION PROJECT
CITY AND BOROUGH OF SITKA, ALASKA

FIGURE 1

HATCH

4.1.2 Green Lake Road (GLR) Spoils Disposal Area

Overburden from the various construction areas will be disposed of at a borrow area on the uphill side at mile 2.3 of the Green Lake Road (See Figure 1). This borrow area consists primarily of exposed rock and drains to the northwest where the water exits the area through a culvert under the Green Lake Road and into Silver Bay. Sedimentation and erosion of the area will be controlled by installing a settling basin and silt fence just upstream of the culvert inlet.

4.1.3 Sawmill Creek Industrial Park (SCIP) Spoils Disposal and Processing Area

The SCIP will be used as a construction office, material storage and material processing area (See Figure 1). It is planned that much of the rock generated by the project that requires processing will be hauled to this site for storage and processing. Processing may include rock crushing and/or screening and use in a concrete batch plant. The SCIP is a flat area containing an existing drainage system which includes a storm water discharge into Silver Bay. Timber will also be hauled and temporarily stored at SCIP.

Prior to any spoils being transported and deposited at the SCIP or Green Lake Road sites they will be inspected for invasive species according to methods approved in a Weed Risk Assessment developed jointly by the City and USFS.

4.2 BEST MANAGEMENT PRACTICES

The City will implement Best Management Practices (BMP's) during construction to prevent and contain any accidental spillage of any substances, such as fuels, oil, or construction materials and to prevent soil erosion and sedimentation in Blue Lake reservoir and Sawmill Creek. The US Forest Service Handbook FSH 2509.22, Soil and Water Conservation Handbook (Effective October 31, 1996) and the Alaska Highway Drainage Manual (2001) will provide guidelines for the BMP's to be implemented to prevent sediment and erosion occurrences. These BMP's are described in detail relative to the various Project construction areas and will include:

- Measures to reestablish vegetation on exposed soils by seeding with suitable vegetation species. Most areas will be allowed to re-establish through natural vegetative successional processes. Consultation with the Forest Service will determine where seeding will be done and whether changes to the seed mixture is needed.
- *The City will follow seed/fertilizer mix prescriptions from USFS manual: Facts about Seeding for Erosion Control, Tongass National Forest.*
- Measures to physically protect the soil surface from erosion or modify the topography to minimize erosion include the use of processed shot rock for the road surface and the use of mulches, riprap, erosion mats, and terracing on cuts, fills and ditches as appropriate.
- Measures to physically inhibit the transport of sediments to streams, including the use of baled straw in ditches or below fill slopes, rock check dams, sediment traps, diversion ditches, and silt fences. *Straw bales will be used only if certified weed free bales are available. Silt fences will be periodically inspected for accumulated silt, which may require hand removal and disposal at approved locations. When an area has stabilized,*

the silt fences will be removed, but care taken to either revegetate or remove accumulated silt.

- Measures to reduce the amount of soil disturbance in or near streams include the immediate placement of large culverts (greater than 24 inches in diameter) in live streams prior to crossing a stream with rock embankment during road construction.
- Monitoring of turbidity in Sawmill Creek to measure the effectiveness of erosion and sediment control measures in preventing unnecessary pollution. *Detailed monitoring methods will be described in a Water Quality Monitoring Plan to be developed in association with appropriate resource agencies.*
- *The City will give special consideration to erosion control and reseeding from September through winter to address immediate control measures until seed can be applied.*

Prior to commencement of construction the City or its Contractor will also prepare a Storm Water Pollution Prevention Plan (SWPPP) under the Alaska National Pollutant Discharge Elimination System (APDES) because more than 1 acres of land will be disturbed. The erosion and sediment control measures outlined in this ESCP will be applied in the SWPPP for the APDES construction permit. A Notice of Intent GCP NOI (January 2010) will be filed with the Alaska Department of Environmental Conservation (ADEC) by the City and the Contractor, prior to commencing construction. NOI modifications will be filed as required during construction, and a Notice of Termination (GCP NOT (March 2010) will be filed with the ADEC at the completion of the project.

5.0 PROPOSED MEASURES by PROJECT CONSTRUCTION AREA

For purposes of this Plan, we have defined four Project Construction Areas and associated Work Areas within which erosion and sediment control measures will be implemented (Figure 2). Within each area, we describe spoils management and disposal, and erosion and sediment control. These areas are:

- Dam and Intake Area;
- Fish Valve Unit (FVU) Area;
- Dam Site Power Distribution Line Area; and
- Powerhouse Area, which includes construction activities at or near the proposed new powerhouse, the surge chamber and the new powerhouse access road.

In the following plan descriptions, elevations are noted as above mean low sea level by the term "El" as in "El 420", or 420 feet above mean sea level.

5.1 DAM and INTAKE CONSTRUCTION AREA

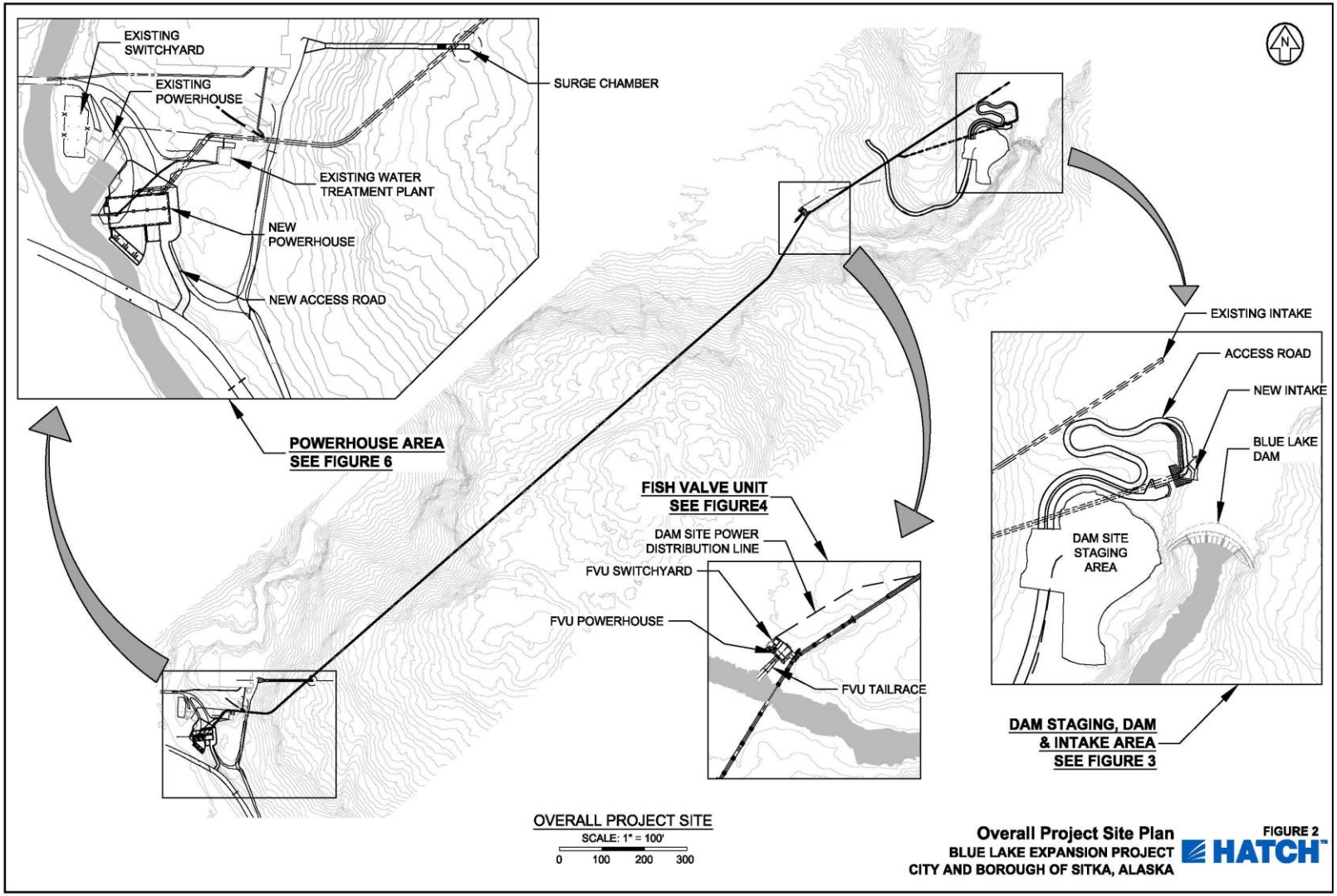
This area will include construction sites for the intake access road, intake portal, gate shaft and intake tunnel, and all work at the dam (Figure 3). Spoils disposal and sediment and erosion control in this area will be discussed relative to the following Work Areas:

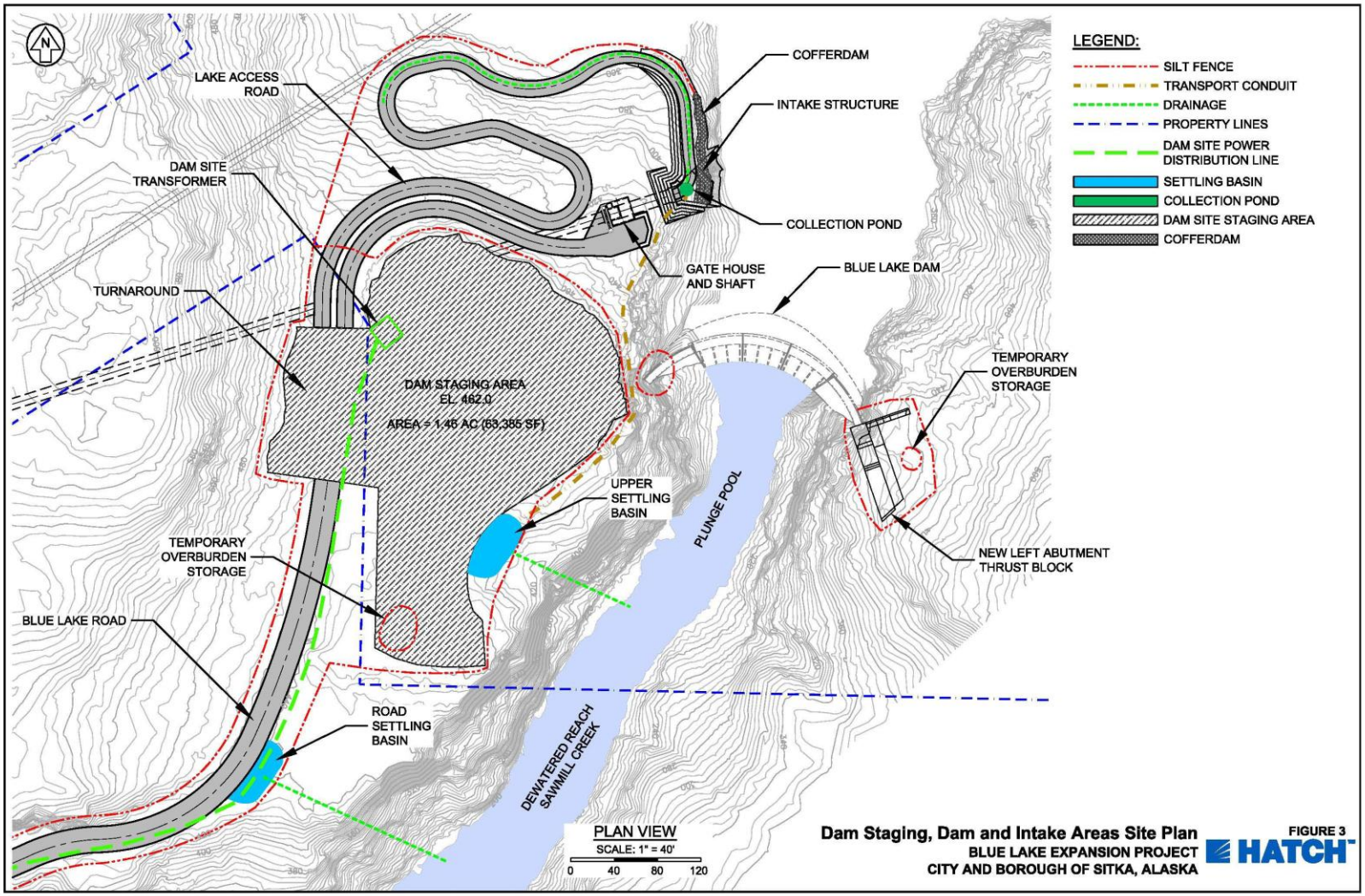
5.1.1 Intake Work Area

Sediment control within this area is important because of the area's proximity to the City's existing water intake structure which will remain in use through most of the construction period. Construction-related material in this area will require management to avoid water quality effects on drinking water.

Spoils Management and Disposal

Because most of the area has been previously-disturbed, little vegetation or soil overburden will be removed. Organic spoils removed during construction of the intake access road will be disposed of at a disposal site on the Green Lake road.


EXISTING SWITCHYARD
EXISTING POWERHOUSE
SURGE CHAMBER
EXISTING WATER TREATMENT PLANT
NEW POWERHOUSE
NEW ACCESS ROAD
POWERHOUSE AREA
SEE FIGURE 6
FISH VALVE UNIT
SEE FIGURE4
DAM SITE POWER DISTRIBUTION LINE
FVU SWITCHYARD
FVU POWERHOUSE
FVU TAILRACE
EXISTING INTAKE
ACCESS ROAD
NEW INTAKE
BLUE LAKE DAM
DAM SITE STAGING AREA
DAM STAGING, DAM & INTAKE AREA
SEE FIGURE 3
OVERALL PROJECT SITE
SCALE: 1" = 100'
0 100 200 300
Overall Project Site Plan
BLUE LAKE EXPANSION PROJECT
CITY AND BOROUGH OF SITKA, ALASKA
FIGURE 2
HATCH


LEGEND:
SILT FENCE
TRANSPORT CONDUIT
DRAINAGE
PROPERTY LINES
DAM SITE POWER DISTRIBUTION LINE
SETTLING BASIN
COLLECTION POND
DAM SITE STAGING AREA
COFFERDAM
COFFERDAM
INTAKE STRUCTURE
COLLECTION POND
GATE HOUSE AND SHAFT
BLUE LAKE DAM
LAKE ACCESS ROAD
DAM SITE TRANSFORMER
TURNAROUND
DAM STAGING AREA
EL. 462.0
AREA = 1.46 AC (63,385 SF)
TEMPORARY OVERBURDEN STORAGE
UPPER SETTLING BASIN
PLUNGE POOL
NEW LEFT ABUTMENT THRUST BLOCK
TEMPORARY OVERBURDEN STORAGE
BLUE LAKE ROAD
ROAD SETTLING BASIN
DEWATERED REACH SAWMILL CREEK
PLAN VIEW
SCALE: 1" = 40'
0 40 80 120
Dam Staging, Dam and Intake Areas Site Plan
BLUE LAKE EXPANSION PROJECT
CITY AND BOROUGH OF SITKA, ALASKA
FIGURE 3
HATCH

Rock spoils from construction of the intake access road, intake portal, gate shaft and tunnel will be hauled up the intake access road to the Dam Site Construction Staging Area where the material will be sorted and redistributed for future use at the campground or SCIP for future use.

Erosion and Sediment Control

After removal of organic material, exposed surfaces will be primarily bedrock or large diameter rock. After overburden removal, there will be little erosion control necessary in this area except to prevent blasted rock and blasting fines from reaching Blue Lake, either as dry material or when washed down during rain or snowfall.

The primary sediment control measure in the intake area will be a cofferdam constructed at the intake portal to enable work while the lake level is above the intake portal invert elevation (Figure 2). The cofferdam will have a crest at El 320 to prevent entry of lake water and construction-related sediment from running into the reservoir during construction

The access road and intake portal will be constructed such that the roadbed will slope toward a ditch along the road. Drainage water captured by this ditch will travel to a Collection Pond located at about El 310 at the portal entrance.

Water from the Collection Pond will be pumped to an Upper Settling Basin located south of the Dam Site Construction Staging Area (see below) at about El 460. The Settling Basin will be used to manage all surface water runoff from the intake and the Dam Site Construction Staging Area (See Below). The Primary Settling Basin will be sized to accommodate the predicted water volume from the Intake Area construction. Supernatant water from the Primary Settling Basin will be discharged into the Plunge Pool as described below.

5.1.2 Dam Site Construction Staging Area Work Area

The proposed Dam Site Construction Staging Area will be located above the right abutment of the dam. This area was used for staging during the original construction of the dam and has since revegetated with alder and some coniferous forest. The original staging area will be enlarged by excavation of a portion of the existing rock knob at the right abutment and using the material to fill the low area. This will create a 1.5 acre staging area to be used for dam construction. It will be necessary to raise the end of the Blue Lake road adjacent to the staging area to the level of the staging area in order to provide a turnaround area for trucks hauling equipment to and from the dam site. This arrangement is depicted in Figure 3

The City intends to revegetate approximately 0.5 acres in the southwest corner of the Damsite Construction Staging Area after construction is complete (See Figure 3). The remainder of the staging area will be graded to slope to the south to ensure drainage into the Sawmill Creek canyon and not toward Blue Lake or the dam face.

Spoils Management and Disposal

The area will first be stripped of vegetation and a calculated volume of the stripped organic material will be retained near the staging area for use in revegetating the 0.5 acre southwest section. Care will be taken to retain both the soil and vegetative components of this material to assure rapid revegetation in the restored area. The remainder of the organic material will be trucked to GLR disposal area.

Erosion and Sediment Control

It will be necessary to construct a silt fence around the perimeter of the Damsite Construction Staging Area to manage surface water runoff and contain any erosion taking place on the site. The silt fence will be installed prior to commencement of any construction at the site.

After the organic material is removed, the staging area will be leveled by cut and fill to develop a generally flat work area covered with crushed rock. This area will be graded from the edges of the area to route all runoff to the settling basin shown in Figure 3. Grading will be scheduled and conducted to direct runoff away from Blue Lake reservoir.

5.1.3 Dam Work Area

The Dam Area consists of the dam foundation and both the right and left abutments of the dam. The dam abutments are located on steep rock, and rock work will be required at these locations to prepare the abutments, construct thrust blocks, rock bolts, abutment drains and grout curtains.

Spoils Management and Disposal

The small amount of organic material located on the left abutment of the dam will be stripped and disposed of and revegetated on city property east of the left abutment. Rock removed in preparing the dam abutments will be used for construction or placed in the Dam Site Construction Staging Area to be sorted and utilized onsite or hauled to the SCIP disposal area.

Erosion and Sediment Control

Organic material stored near the left abutment will be contained by a silt fence preventing discharge downslope to Sawmill Creek. Fines from blasting and other excavation will be allowed to travel downslope to Sawmill Creek, where they will settle out in the Plunge Pool, as described in the next section.

Because all work on the dam will be done from the downstream side of the dam, construction material and runoff will travel naturally into the plunge pool instead of the lake. Any work on the upstream side of the dam will have to be performed to contain sediment or material before it enters the lake. The areas upstream of the dam are quite small and silt fences will be installed to retain or redirect runoff towards the downstream side of the dam.

5.1.4 Plunge Pool Work Area

The Plunge Pool will be used as a settling pond for water collected during construction at the Dam, Intake and Dam Site Construction Staging Areas. During the rainy season in Sept. 2009 the average volume of runoff entering the Plunge Pool was 30,000 gal/day. This run off rate is expected to be repeated during construction, comprised of natural runoff from outside the work areas and water from the Primary and Secondary Settling Basins. The volume of solids that will accumulate within the Plunge Pool due to construction activities will be less than a few cubic yards. This material will be eroded from the Plunge Pool during a major spill event along with the natural erosion within the Plunge Pool and transported downstream. .

In past licensing documents, the Sawmill Creek reach from the downstream face of the Blue Lake dam and the Fish Valve Unit has been described as the "dewatered reach" because no water is released from Blue Lake below the dam (the reach does carry water during spill periods when water is overtopping the dam).

5.2 FISH VALVE UNIT CONSTRUCTION AREA

The Fish Valve Unit Area is located at the North River Portal and Fish Valve Unit (Figure 4). This area will be used to access both river penstock portals during the generation outage and the replacement of the Fish Valve Unit turbine generator after the generation outage. There will be no clearing or excavation associated with construction in this area. However, equipment access and staging may result in some surface disturbance.

As a condition of the existing Blue Lake Project license, the City has committed to providing improved drainage at the Sawmill Creek campground. The City may transport some of the spoils from construction at the dam/intake and Blue Lake access road areas to the FVU area for use in these improvements. More detailed calculations of these spoils volumes and descriptions of their eventual use in the FVU area will be included in the final ESCP.

5.2.1 Spoils Management and Disposal

Because no clearing or excavation is expected at the FVU, there will be no need to stockpile or dispose of soils or other organic material.

5.2.2 Erosion and Sediment Control

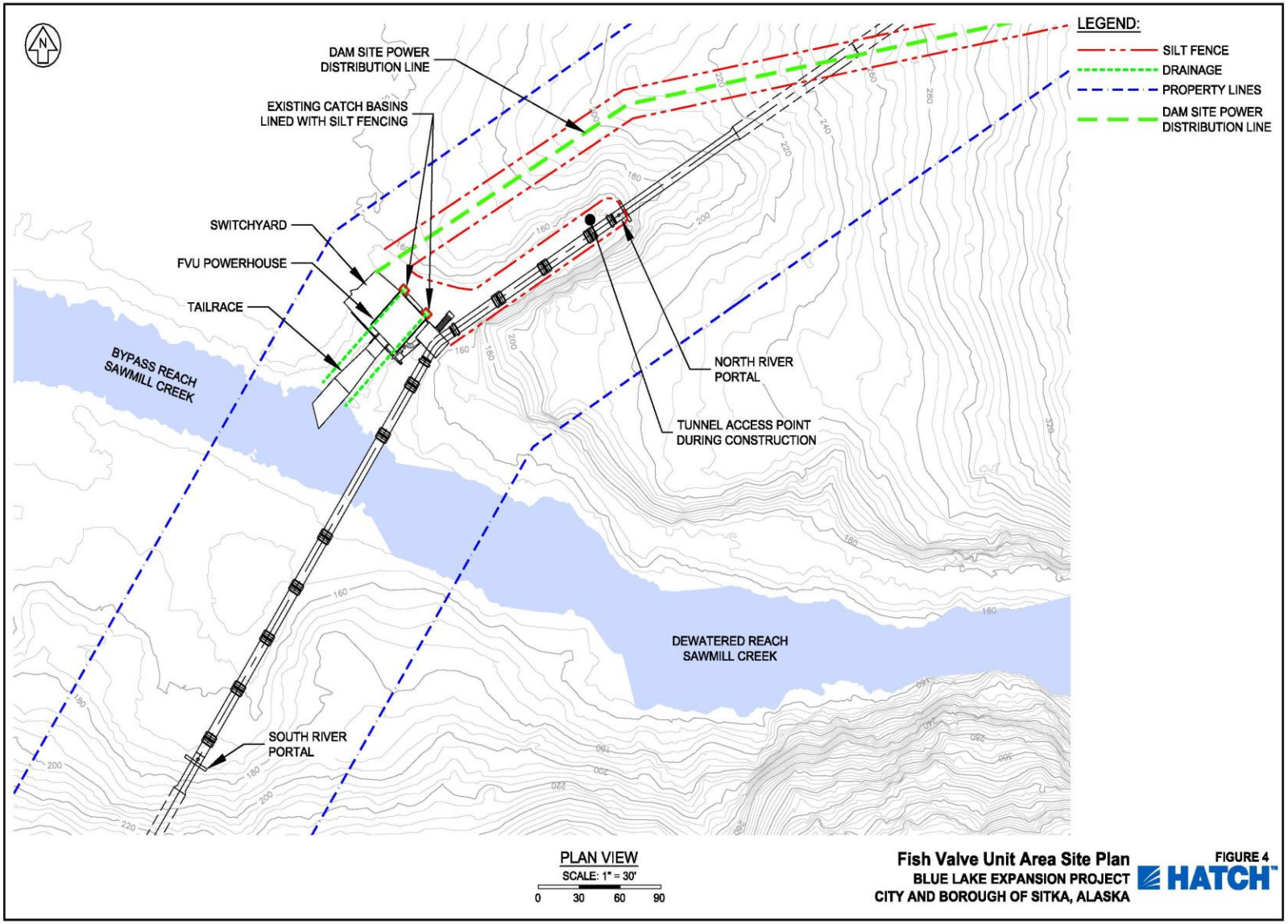
No structural erosion control measures will be necessary since there will be no excavation or other surface disturbance at the FVU. The City will observe BMP's relative to equipment usage and materials storage.

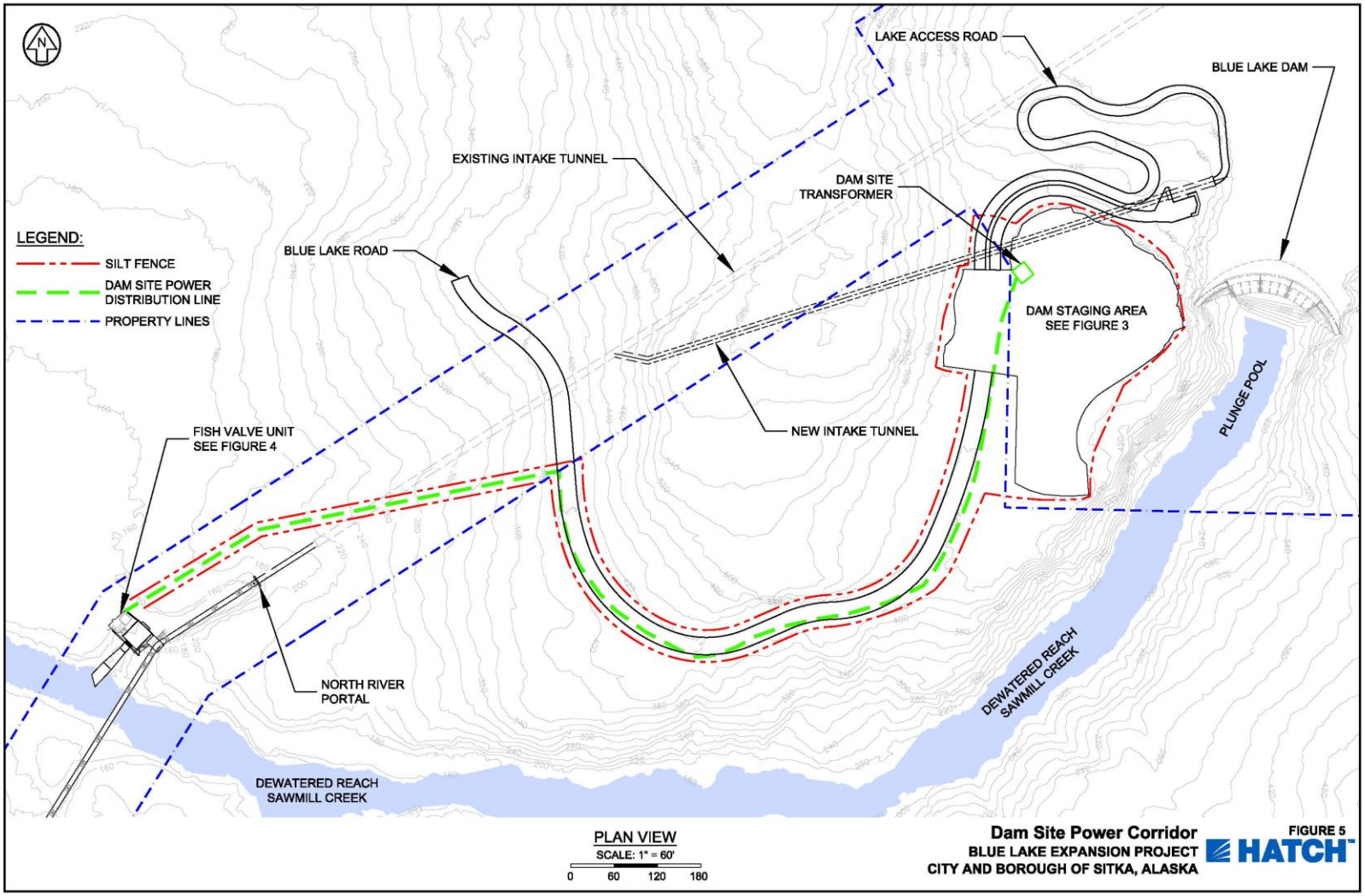
Minimal surface *run-off* water flowing through the area will require minimal silt fencing at the north wall of the powerhouse. The water will be discharged into the bypassed reach of Sawmill Creek. It is expected that some water will leak around the existing intake gate and enter the tunnel. Prior to daylighting at the north river portal of the tunnel, during construction, water

emanating from the north river portal will be routed through existing drainage control features of the FVU. Water emanating from the FVU site will be routed through silt fence material prior to entry into Sawmill Creek.

5.3 DAM SITE POWER DISTRIBUTION LINE CONSTRUCTION AREA

This new 12.5 kilovolt (kV) distribution line runs from the FVU to the Blue Lake road along the upper tunnel alignment (Figure 5). This distribution line will be buried along its entire route.


LEGEND:
SILT FENCE
DRAINAGE
PROPERTY LINES
DAM SITE POWER DISTRIBUTION LINE
DAM SITE POWER DISTRIBUTION LINE
EXISTING CATCH BASINS LINED WITH SILT FENCING
SWITCHYARD
FVU POWERHOUSE
TAILRACE
BYPASS REACH SAWMILL CREEK
NORTH RIVER PORTAL
TUNNEL ACCESS POINT DURING CONSTRUCTION
DEWATERED REACH SAWMILL CREEK
SOUTH RIVER PORTAL
PLAN VIEW
SCALE: 1" = 30'
0 30 60 90
Fish Valve Unit Area Site Plan
BLUE LAKE EXPANSION PROJECT
CITY AND BOROUGH OF SITKA, ALASKA
FIGURE 4
HATCH


LAKE ACCESS ROAD
BLUE LAKE DAM
EXISTING INTAKE TUNNEL
DAM SITE TRANSFORMER
LEGEND:
SILT FENCE
DAM SITE POWER DISTRIBUTION LINE
PROPERTY LINES
BLUE LAKE ROAD
DAM STAGING AREA SEE FIGURE 3
PLUNGE POOL
NEW INTAKE TUNNEL
FISH VALVE UNIT SEE FIGURE 4
NORTH RIVER PORTAL
DEWATERED REACH SAWMILL CREEK
DEWATERED REACH SAWMILL CREEK
PLAN VIEW
SCALE: 1" = 60'
0 60 120 180
Dam Site Power Corridor
BLUE LAKE EXPANSION PROJECT
CITY AND BOROUGH OF SITKA, ALASKA
FIGURE 5
HATCH

5.3.1 Spoils Management and Disposal

Only minimal soil disturbance is expected, with all overburden being replaced immediately after burial of the cable. There will be no need for offsite storage or disposal of overburden or other excavation products.

5.3.2 Erosion and Sediment Control

Erosion will be controlled by replacing overburden as quickly as possible without the need for stockpiling. *If deemed necessary, spot seed/fertilizer will be applied to minimize surface erosion immediately after construction.* It is expected that natural revegetation will occur over the narrow corridor, beginning in the first year after burial.

Surface water runoff during power cable installation will run down the cable corridor into the Sawmill Creek Campground. A silt fence will be installed along the sides of the cable corridor to contain runoff and associated sediment before it enters the campground. At the campground, runoff water will be captured in the FVU sediment basin located at the base of the slope near the FVU and eventually drain in to the bypassed reach of Sawmill Creek.

5.4 POWERHOUSE/SURGE CHAMBER CONSTRUCTION AREA

This area includes all construction work to be done relative to the powerhouse, surge chamber, and downstream tunnel portal (Figure 6).

5.4.1 Surge Chamber Work Area

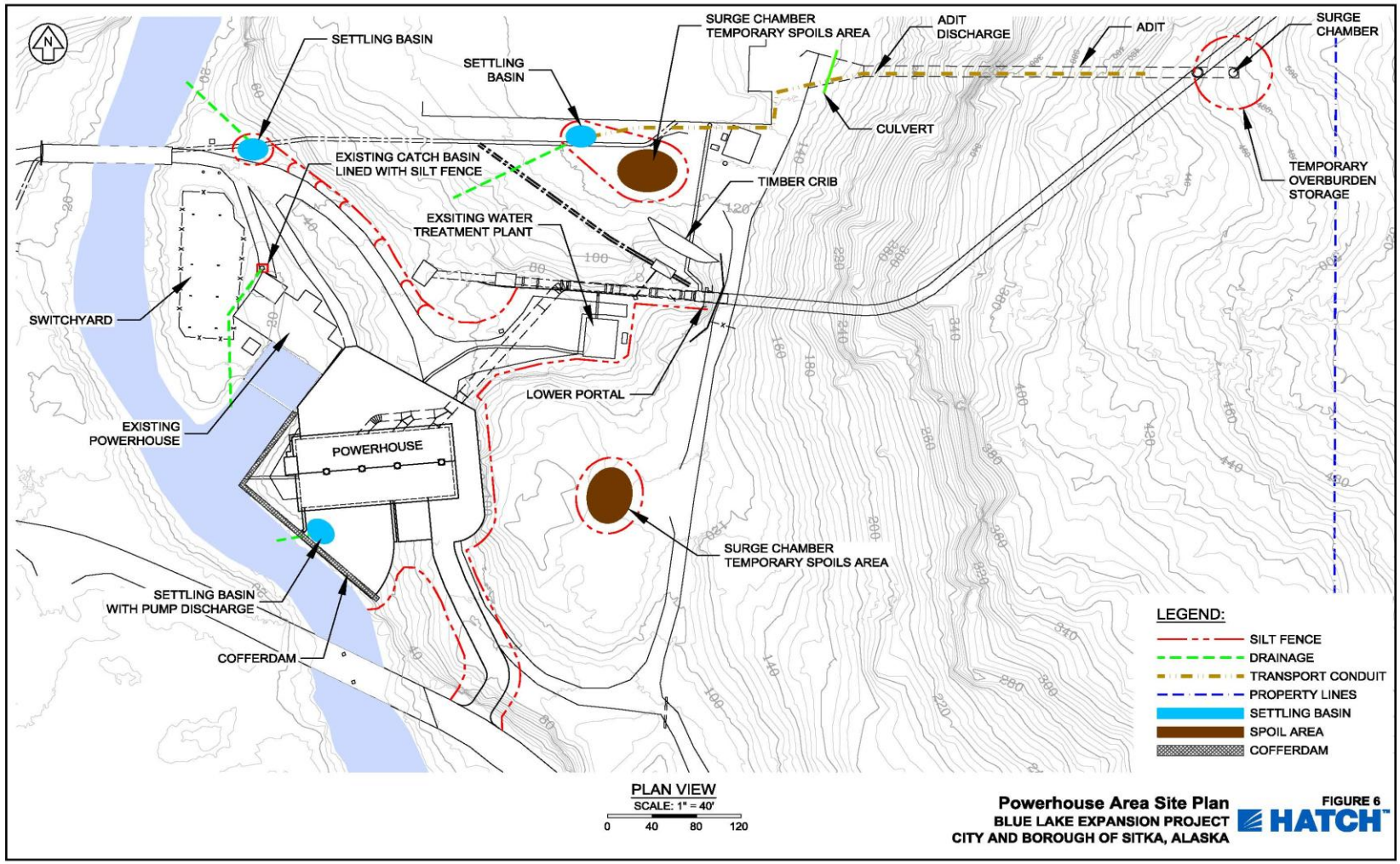
The Surge Chamber on the lower tunnel will be constructed from an admit tunnel located near the lower portal. All access to the Surge Chamber excavation and construction will be via this adit which will require clearing approximately 400 square feet of surface vegetation to gain access to the rock face to be excavated for the adit and Surge Chamber. 800 square feet of vegetation will be removed at the Surge Chamber vent location at El 500.

The organic material will be used to revegetate the Surge Chamber vent area following construction. *If deemed necessary, spot seed/fertilizer will be applied to immunize surface erosion immediately after construction.*

Spoils Management and Disposal

A small volume of overburden will need to be removed near the Surge Chamber vent. These spoils will be stockpiled at or near the vent site and used to revegetate the Surge Chamber vent area.

All of the blasting spoils removed from adit and Surge Chamber excavation will be deposited in the storage area outside the adit for sorting and hauling. The sorted rock will be used for reconstruction of the timber crib area at the lower portal and hauled to SCIP.


SETTLING BASIN
SETTLING BASIN
SURGE CHAMBER TEMPORARY SPOILS AREA
ADIT DISCHARGE
ADIT
SURGE CHAMBER
CULVERT
EXISTING CATCH BASIN LINED WITH SILT FENCE
TIMBER CRIB
TEMPORARY OVERBURDEN STORAGE
EXSITING WATER TREATMENT PLANT
SWITCHYARD
LOWER PORTAL
EXISTING POWERHOUSE
POWERHOUSE
SURGE CHAMBER TEMPORARY SPOILS AREA
SETTLING BASIN WITH PUMP DISCHARGE
COFFERDAM
LEGEND:
SILT FENCE
DRAINAGE
TRANSPORT CONDUIT
PROPERTY LINES
SETTLING BASIN
SPOIL AREA
COFFERDAM
PLAN VIEW
SCALE: 1" = 40'
0 40 80 120
Powerhouse Area Site Plan
BLUE LAKE EXPANSION PROJECT
CITY AND BOROUGH OF SITKA, ALASKA
FIGURE 6
HATCH

Erosion and Sediment Control

This spoils area will be surrounded by a silt fence and will include a small settling basin to treat any runoff water from the spoils pile near the adit access area. Any surface water entering the adit tunnel itself will be pumped out to the settling basin. Natural drainage will run across the entrance to the adit. A culvert will be installed across the entrance to prevent contamination of the natural drainage water by vehicle traffic into and out of the area. Water from the Surge Chamber area will drain through the Lower Portal Site sedimentation measures and eventually drains into the bypass reach of Sawmill Creek, after it leaves the settling basin.

5.4.2 Lower Portal Work Area

The lower portal area extends from the lower portal to the new powerhouse. Construction activities conducted at the lower portal area include: 1) removal of the timber crib and reestablishing the hillside slope adjacent to the lower tunnel portal; and 2) replacement of the lower penstock. Both of these activities will involve excavation of both organic material and rock, and then backfilling with clean, graded material.

Spoils Management and Disposal

Excavated materials will be transported off site to the appropriate disposal or storage area. The lower portal site drains downhill along the existing road and discharges into the bypass reach of Sawmill Creek.

Erosion and Sediment Control

Silt fencing will be installed downstream of each excavation site and a settling basin installed adjacent to Sawmill Creek to treat the runoff water.

5.4.3 Power House Work Area

The power house area is located adjacent to the existing Blue Lake powerhouse and Sawmill Creek. Substantial excavation will take place at this location which will include removal of minimal overburden and rock to construct a new driveway to the power house site at the east end of the Sawmill Creek highway bridge.

Spoils Management and Disposal

The small amount of overburden will be disposed of at the site on the Green Lake road. Excavated rock will be stored at the SCIP Construction Staging Area.

Erosion and Sediment Control

The new powerhouse would be located adjacent to the existing Blue Lake powerhouse and Sawmill Creek. Substantial excavation will take place at this location which will include 1) removal of rock and overburden to construct a new driveway to the powerhouse site at the east end of the Sawmill Creek highway bridge. The excavation of this new access road will require standard silt fences and runoff water treatment; and 2) removal of rock and overburden to construct the new powerhouse weir pool. The construction of the powerhouse and weir pool will require excavation as deep as 4.74 feet below sea level, and will require a cofferdam to isolate the area from Sawmill Creek. Run off and foundation seepage water entering this construction area will be routed to a settling basin within the weir pool. Water from this pool will be pumped back to Sawmill Creek after sediments have settled.

Minimal work will be done in the switchyard to replace existing transformers. No sediment or erosion control will be necessary in this area. BMP's for equipment usage and materials storage will be implemented.

Runoff from construction at the existing powerhouse access road will drain down to the existing catch basin at the powerhouse where it will encounter a silt fence.

The existing construction access road will be resurfaced and used for equipment delivery to the powerhouse site. Silt fences will be installed along the new road to prevent water and sediment from entering Sawmill Creek.

ATTACHMENT I

Comments from USFS on Draft ESCP

(Numbering Applied by the City)

File Code: 2770
Date: January 13, 2011

Christopher Brewton
Utility Director
City and Borough of Sitka--Electric Department
105 Jarvis Street
Sitka, AK 99835

RE: Blue Lake Hydroelectric Project (FERC No. 2230) Expansion, USDA Forest Service, Tongass National Forest, Sitka Ranger District, Comments on October 2010 Draft Sediment and Erosion Control Plan

Dear Mr. Brewton:

We reviewed the Draft Sediment and Erosion Control Plan and offer the following comments.

General Comments

USFS 1 We suggest adding a table of comments to make this document easier to read.

USFS 2 Although beyond the scope of this Plan, the City should consider a detailed plan regarding spill prevention and countermeasures for hazardous materials (petroleum products, chemicals, etc.) in the vicinity of the reservoir, equipment refueling and maintenance locations, etc.

USFS 3 Silt fences require periodic inspection for accumulated silt, which may require hand removal and disposal at approved locations. When an area has stabilized, the silt fences should be removed, but care taken to either revegetate or remove accumulated silt.

USFS 4 Prior to any spoils being transported and deposited at the campground or Green Lake Road site they should be inspected for invasive species. Enclosed are two documents that describe Forest Service guidelines for preventing the spread of invasive species and seeding. A Weed Risk Assessment is needed for this project to help the City and the Forest Service ensure that best management practices are employed.

The subsequent comments are numbered following the Plan section numbers.

2.2 PROPOSED CONSTRUCTION SCHEDULE

USFS 5 Page 2 - Based on the construction dates we recommend a discussion on what measures will be used for snow removal and storage. De-icing chemicals should not be used in vicinity of Blue Lake.

USFS 6 Work outside the growing season of September through the winter may require special consideration of immediate erosion control measures until seed can be applied.

3.1.3 Sawmill Creek Industrial Park (SCIP) Spoils Disposal and Processing Area

USFS 7 Is this site covered by a *National Pollutant Discharge Elimination System* (*NPDES*) permit and does the NPDES include rock and concrete processing and spoils disposal activities?

3.2 BEST MANAGEMENT PRACTICES

USFS 8 Page 4 – We will email you the current version of the Soil and Water Conservation Handbook, FSH 2509.22, effective July 14, 2006. The Timber Sale Contract will incorporate several of the Timber Management BMPs, beginning on page 58 of 117.

USFS 9 First bullet – The Forest Service has a standard seed/fertilizer mix that should be applied to exposed mineral soils (especially near surface waters). See attached Facts about Seeding for Erosion Control, Tongass National Forest.

USFS 10 Third bullet – The use of straw bales is discouraged due to their potential as sources of invasive weed seed. We recommend other options unless certified weed free straw is available.

USFS 11 Fifth bullet – A simple monitoring plan is needed to identify how and where data will be collected and how results will be reported and used.

USFS 12 Sixth bullet – This is not an accurate statement, suggest removal.

4.0 PROPOSED MEASURES by PROJECT CONSTRUCTION AREA

USFS 13 Page 5 - Advocate the activities at the head of the lake be identified in the bulleted list as the Timber Removal Area where erosion and sediment control measures will be implemented.

USFS 14 Outline the sediment control measures in its own section, separate from site disturbing activities such as felling, bucking, skidding, yarding, loading and hauling.

4.1.2 Dam Site Construction Staging Area Work Area

USFS 15 Page 8, second paragraph – Identify on Figure 3 the approximately 0.5 acre to be revegetated.

4.2.2 Erosion and Sediment Control

USFS 16 Page 11 - The last sentence in this section is a little confusing. Silt fences are not intended to be used and will not be effective in flowing water.

4.3.2 Erosion and Sediment Control

USFS 17 Page 14, first paragraph, second sentence – You will probably still need to apply spot seed/fertilizer to minimize surface erosion immediately after disturbance.

USFS 18 Page 14, second paragraph, second sentence - Reads in part "… and to filter the water before it enters the campground." This again is confusing, is the plan to place the silt fencing in flowing water or is this just describing storm or snowmelt related dispersed runoff?

4.4.1 Surge Chamber Work Area

USFS 19 Page 14, last sentence - Without knowing what the organic material is it is difficult to determine if this is a reasonable idea or not. You should consider seed/fertilizer application for immediate revegetation of disturbed areas.

Thank you for allowing us additional time to submit our comments. Please contact me at 747-4218 or cgoularte@fs.fed.us , or Melissa Dinsmore, Lands Specialist, at mdinsmore@fs.fed.us or 747-4201, if you have questions concerning this submittal.

Sincerely,

/s/ Carol A. Goularte
CAROL A. GOULARTE
District Ranger

cc: Dean Orbison
City Electrical Engineer

ATTACHMENT II

Table Showing How Numbered Comments Were Addressed.

Comment Number	Comment Summary	Action/Location
USFS 1	Suggest adding a comment table	Added as Attachment 2.
USFS 2	Requests plan for spill prevention	To be developed separate of this plan
USFS 3	Suggestions for silt fence maintenance	Language added, page 5, under 4.2, now fourth bullet
USFS 4	Addresses procedures to eliminate weed risk	Page 5, under 4.1.3, language added
USFS 5	Methods for snow removal and de-icing chemicals	Page 2, under 3.2, language added
USFS 6	Address control measures after September, before seed may be applied	Language added as last bullet, under 4.2, page 6
USFS 7	Question on SCIP NPDES Permit	The City will review any existing NPDES and/or other permit conditions addressing rock and concrete processing and spoils disposal.
USFS 8	Will provide FSH 2509-22	City will acknowledge receipt of manual
USFS 9	Notes that USFS has standard see mix	Language added as second bullet, under 4.2, page 5.
USFS 10	Use of straw bales discouraged	Language added, page 5, now 4th bullet.
USFS 11	Requests simple monitoring plan	Page 6, now 6th bullet, under 4.2,describing development of Water Quality Monitoring Plan
USFS 12	Not an accurate statement	Bulleted item removed from text
USFS 13	Suggests distinguishing timber removal from other activities at the head of the lake	Timber Removal and Management Plan is being prepared separately to address all related actions.
USFS 14	Outline timber removal control measures in separate section	See response to USFS 13
USFS 15	Identify the .5 acres to be revegetated on Figure 3	Figure 3 modified to show area.
USFS 16	Silt fences not effective in running water	Wording is clarified on page 12, section 5.22.
USFS 17	Probable need for spot seed/fertilizer after disturbance	Sentence added in first paragraph, Section 5.3.2.

USFS 18	Questions silt fence in running water	Wording is clarified on pg. 16, section 5.3.2
USFS 19	Consider seed/fertilizer for immediate revegetation	Sentence added to section 5.4.1.