Mitigation Action Plan for Phase II Build Out, North Federal Campus, PNNL Site, Richland Washington

May 2013

1.0 Introduction

In January 2007, the Final Environmental Assessment of Construction and Operation of a Physical Sciences Facility at the Pacific Northwest National Laboratory (PNNL), Richland, Washington (DOE/EA-1562), the U.S. Department of Energy (DOE) determined that the construction and operation of the Physical Sciences Facility (PSF), within the PNNL North Federal Campus in Benton County, would not result in significant impacts to the environment and recorded a Finding of No Significant Impact (FONSI) for these actions. Since that time, DOE has completed Phase I construction of facilities and now plans to initiate Phase II of the planned 20-year build-out of the area assessed in DOE/EA-1562 (referred to here as the EA) to accommodate existing and anticipated capabilities needed to support the DOE Office of Science mission.

Consistent with the phased build-out approach assessed in the EA, for Phase II, DOE is planning construction and operation of facilities, infrastructure, and associated parking lots for expanded chemical, physical, biological, process science, and computational capabilities to support PNNL's core capabilities within the North Federal Campus. Construction could include expansion of existing facilities as well as construction of new facilities. In addition, Phase II includes infrastructure upgrades needed for the operations of the planned facilities, including installation of new roads and utilities (e.g., water, natural gas, electric, sewer, and communications). Construction of infrastructure is planned to begin in calendar year 2013.

The proposed construction footprint for Phase II facilities and associated infrastructure comprises an area of approximately 68 acres (Figure 1). Currently 36 acres of the action area is covered by PSF facilities/maintained grounds. The other 32 acres of land to the west and north is a mix of native and non-native habitats described below. Construction of the new facilities and associated infrastructure will involve clearing and grading the footprint of the buildings and infrastructure, as well as clearing and grading land areas needed to support construction activities and material laydown during construction.

1.1 Environmental Effects

As determined in the EA (DOE/EA-1562), the Phase I and Phase II construction and operation of facilities on the PNNL North Federal Campus in Benton County, would not result in significant impacts to the environment and mitigation for habitat loss was not required. However, since the EA and FONSI, DOE developed resource management policies for the PNNL Site that include mitigation for loss of priority habitats (DOE/PNSO 2008). Mature shrub-steppe is one of the habitat types classified as a priority habitat within Washington State (WDFW 2008). The proposed project includes plans to clear approximately 16.3 acres of mature shrub-steppe for Phase II construction activities. DOE prepared this mitigation action plan (MAP) to address the loss of priority habitat due to the proposed Phase II construction, and minimize or avoid potential impacts to biological resources.

Under the specified guidelines for mitigation of impacts to biological resources (DOE 2003), the threshold of areal impacts to mature shrub-steppe that requires mitigation action is 1.24 acre, and the extent of the proposed project and resulting loss of mature shrub habitat will require compensatory mitigation according to current DOE guidelines (DOE/PNSO 2008).

Construction activities may occur in the PNNL North Federal Campus area at various times over the next 5-10 years. The migratory bird nesting season begins around March 1 and extends through the end of July, but the locations and types of areas (e.g., shrub habitat or light poles) used by migratory birds for nesting may change from year to year based on species-specific factors and changing site conditions. Construction activities conducted during this period could potentially impact nesting birds. Ground-disturbing activities, such as those associated with the proposed work also present the potential for transporting, spreading, and increasing noxious weed species. Class B noxious weeds were located in previously disturbed portions of the proposed project area.

1.2 Function of the Mitigation Action Plan

This mitigation plan describes the compensatory mitigation and monitoring commitments under DOE resource management guidelines for the clearing and grading, and subsequent loss of mature shrub-steppe habitat associated with Phase II build out activities on the PNNL Site, within the North Federal Campus. The purpose of this MAP is to specify the mitigation requirements, outline the methods that DOE will implement to accomplish the mitigation actions, and define the metrics by which the success or failure of the mitigation measures will be monitored. The commitments made in this MAP are designed to mitigate for loss of the areal extent of the priority habitat by replacement of the lost habitat value, reduce or eliminate the potential spread of noxious weeds, and avoid potential impacts to nesting migratory birds.

1.3 Mitigation Action Plan Annual Reporting

The mitigation measures outlined as commitments in this MAP include implementation and monitoring. Beginning in the year following the initiation of site clearing and grading for Phase II construction activities and infrastructure development, the status, endpoints, and effectiveness metrics for implementation of mitigation and/or monitoring activities undertaken for this project will be included in the Annual Environmental Report for the PNNL Site.

2.0 Mitigation Actions

Proposed construction of new facilities and infrastructure on the PNNL Site is anticipated to result in removal of approximately 16.3 acres (about 6.6 hectares) of mature sagebrush steppe habitat on the North Federal Campus of the PNNL Site occupying the area between George Washington Way and Stevens Drive that is bounded on the southern edge by Horn Rapids Road on the PNNL Site. The shrub-steppe stand is classed as a high priority habitat by the Washington Department of Fish and Wildlife (WDFW 2008) and is identified as a valued biological resource. Under current guidelines for the management of cultural and biological resources on the PNNL Site (DOE/PNSO 2008), impacts to biological resources are to be avoided or mitigated (DOE 2003). Potential environmental effects of the proposed Phase II build out activities and the mitigation actions planned to avoid and minimize impacts to biological resources are summarized in Table 1.

2.1 Compensatory Mitigation Actions

As noted above, the construction of Phase II facilities and infrastructure is expected to result in the loss of approximately 16.3 acres of mature shrub steppe habitat. The nature of the Phase II build out activities (clearing, grading, construction of new facilities and infrastructure) is such that loss of shrub-steppe habitat within the project area cannot be avoided or rectified and, thus, will require compensatory mitigation which is briefly described here.

DOE/PNSO will implement compensatory mitigation for the loss of mature shrub-steppe classified as a priority habitat such that shrub steppe habitat is replaced or recreated at a ratio of 3 to 1; that is, for each unit of shrub-steppe lost, 3 units of shrub steppe will be replaced through one of several methods to develop habitat that meets the criteria for mature shrub steppe stands (required shrub densities and condition of the herbaceous understory). A replacement unit for late-successional sagebrush steppe can be developed using the following approaches:

- Transplanting 20 large shrubs/ha (8/acre) in areas with native herbaceous understory
- Planting 1000 shrub seedlings/ha (400/acre)
- Seeding native herbaceous plants if needed to develop a native herbaceous understory

Based on the current survey extent for Phase II construction activities, the loss of 6.6 hectares of mature shrub steppe habitat requires compensatory mitigation to replace 19.8 hectares (48.9 acres) of shrub steppe habitat.

Compensatory mitigation actions will be located and implemented such that the mitigation actions occur on sites that achieve in-kind habitat replacement and that are not expected to be disturbed or destroyed by any future anthropomorphic activities. Siting criteria for mitigation actions (DOE 2003) are as follows.

1. The mitigation area should be contained either wholly within DOE-administered or managed lands or on the Hanford Reach National Monument.

2. The mitigation area should be located near, within, and/or surrounding lands that possess significant habitat value

3. The mitigation area should include lands that will allow for in-kind replacement of habitat value lost.

4. The mitigation area should be placed in regions designated as conservation or preservation lands.

The criteria set by DOE (2003) were designed to achieve no net loss of in-kind habitat value and produce a net increase in the acreage of in-kind habitat protected from future development. Sufficient land area for in-kind mitigation is not available on the PNNL Site—approximately 7 acres to the east of the proposed Phase II build out were identified where shrub transplants, native plant seeding and installation could be implemented to develop a net increase in habitat value. Other potential areas where mitigation actions could result in net increases in habitat value include lands on the Hanford Reach National Monument or on nearby federal or state-owned lands that are managed for natural resource values. Conduct of compensatory mitigation on lands other than the Hanford Reach National Monument or outside of lands owned and managed by DOE would require that protection provisions, such as deed restrictions or conservation easements, be included as part of the land use agreements.

DOE will identify the most suitable nearby locations for compensatory mitigation actions within Benton or Franklin County.

Table 1 Summary of Mitigation and Avoidance Measures

Environmental Resource	Mitigation Measure	Responsible Organization
Priority Habitat	Conduct compensatory mitigation to replace and restore shrub-steppe habitat at a ratio of 3 replacement acres for every 1acre of habitat destroyed. Develop an implementation plan and schedule as part of project planning and identify location(s) of compensatory mitigation.	DOE and PNNL
Wildlife	Conduct biological surveys as needed before and during the project to identify potential impacts to wildlife, and specifically to migratory birds. Schedule ground disturbing activities to occur outside the nesting season to the extent feasible. Project staff will work with PNNL biologists to avoid any impacts to migratory nesting birds.	DOE and PNNL
Noxious Weeds	Avoid and minimize the spread of noxious weeds and non-native invasive species by minimizing off-road travel to avoid the spread of seeds. Construction equipment used to clear areas where noxious weeds are known to exist will be inspected and cleaned as necessary to prevent transport of seeds. Revegetation seeding will be reviewed by biologists to assure that seed mixes do not contain noxious weeds or other non-native invasive species that could potentially escape into native habitats.	PNNL Subcontractor