

PHASE 2 MITIGATION SUMMARY

MITIGATION SUMMARY
 PHASE TWO- THE MINT FARM INDUSTRIAL PARK
 CITY OF LONGVIEW, COWLITZ COUNTY, WASHINGTON

This Section contains a brief summary of the wetland mitigation permits. The permits should be reviewed for actual requirements.

Phase Two of the Mint Farm Industrial Park project site is approximately 300 acres in size and comprises the central and eastern portions of the approximately 445 acre site commonly referred to as the "Mint Farm". Phase One, the western approximately 125 acres of the "Mint Farm," is owned by the City of Longview and is currently being developed into the first part of this overall industrial park facility. The services, utilities, infrastructure, and associated roadways planned and developed as a part of Phase One have been sized to support and facilitate the Phase Two development. Phase One filling was authorized by Department of the Army Permit Number 1996-4-00177.

An assessment of the Phase Two project area was completed between 1996 and 1999. This assessment resulted in the identification of 35 wetland areas totaling 47.8 acres onsite. This assessment program included an evaluation of the functions and value ratings for each identified area.

The Preferred Action Alternative will unavoidably impact 25.35 acres of onsite wetland area. As compensation for this unavoidable impact a total of 22.5 acres of existing onsite wetland will be restored/enhanced and a total of 29.2 acres of new wetland area will be created onsite. This scenario will provide a wetland area replacement ratio of better than 1.5 to 1 (replacement to modified) and a wetland restoration ratio of 3.0 to 1.0 (restored to modified). In addition, this scenario will increase diversity of plant communities and wildlife habitats available within the project site while creating a single contiguous wetland and associated buffer area. To help determine if the wetland creation/restoration project successfully meets the established performance criteria a ten-year monitoring program will be undertaken. This monitoring program includes contingency provisions should any of the performance criteria not be met.

TOTAL AMOUNT OF ONSITE WETLAND	TOTAL AMOUNT OF WETLAND UNAVOIDABLY IMPACTED	TOTAL AMOUNT OF WETLAND BEING CREATED ONSITE	TOTAL AMOUNT OF WETLAND BEING RESTORED/ENHANCED ONSITE	TOTAL AMOUNT OF AREA ESTABLISHED ONSITE AS A PART OF THE MITIGATION PROGRAM (WETLAND AND BUFFER)
47.8 acres	25.4 acres	29.2 acres	22.5 acres	66-67 acres

MITIGATION SITE CHARACTERISTICS

Existing Conditions: The site selected for the compensatory mitigation area has managed for agricultural activities for several decades. These activities have not been abandoned and an actively managed and actively grazed pasture plant community presently dominates the project site.

Mitigation Site Hydrology: Onsite assessments have identified that the majority of the area does not exhibit ponded surface water into the growing season, though these areas do appear ponded for short periods during seasonal storm events. The onsite wetlands exhibit a seasonally flooded water regime. Such seasonal flooding appears to be prolonged by the invert elevations of culverts installed within the ditches and the level of surface water within the adjacent regional drainage ditch system. The onsite wetlands are generally dry, but often saturated to near the surface, from early to mid-summer through fall.

While the upland portions of the proposed mitigation site are somewhat drier than other areas within Phase Two, the difference is based on elevation differences of only a couple feet. These areas are intricately intermixed with associated wetlands that comprise one-third of the proposed mitigation site. Site grading and augmentation of flows from stormwater conveyance systems are proposed to provide the hydrology necessary to support the proposed wetlands mitigation habitats. We estimate drainage from approximately 150 acres can be directed to and through the mitigation site, after pre-treatment in treatment ponds at the site's periphery.

Mitigation Site Vegetation: Seeded and invasive grasses and herbs dominate the plant community identified within the selected mitigation area. Himalayan blackberry is also invading this area, primarily in the higher areas. The onsite plant community is actively managed for the production of pasture for domestic livestock. Such management actions include the mowing of invasive weeds and shrubs, and the maintenance of the field ditches.

The northern boundary of the project area, immediately north of the selected mitigation area, is dominated by a band of Douglas fir trees. These trees were densely planted to provide a screen between the project area and the single-family residential area north of the project site.

Mitigation Site Soils: Onsite assessment defined the soil characteristics within the proposed mitigation site as hydric in character. Soil texture was silty loam, silty clay loam, and peaty loam. Faint and very weak redoximorphic feature were present (i.e. mottles, concretions). Past onsite land uses have included clearing, plowing, seeding, and ditching and appeared to have acted to influence the hydric character of the soil within the selected mitigation wetland area.

The hydric character of the soils within the proposed mitigation areas will benefit the establishment of a viable wetland community once wetland hydrology is reestablished. Existing surface soils within the project area will be used to re-contour the final grading of the created mitigation areas.

DETAILED DESCRIPTION OF THE COMPENSATORY MITIGATION PLAN

1. As compensation for the unavoidable modification of onsite wetlands approximately 29.2 acres of compensatory mitigation wetland area is intended to be created and directly connected to the proposed stormwater management facilities (Sheet 11). In addition, 22.5 acres of existing wetlands will be preserved and enhanced.
2. The compensatory wetland is proposed to be created within an area presently dominated by active agricultural pasturage. The existing vegetation community within the area selected for wetland mitigation is dominated by seeded and invasive grasses and herds. Invasive shrubs (i.e. Himalayan blackberry) are also present within this existing community.

The mitigation wetland will be created through the excavation of specific onsite areas and surface water input controls as a part of the onsite stormwater management plan. By suggestion of both COE and DOE staff, permanent open water features will not be created. This mitigation area is intended to be hydrologically connected to the adjacent regional drainage system via a direct surface water connection. In addition, the selected location for the mitigation wetland will allow movement of wildlife into adjacent habitats without the need to cross a substantial development (i.e. paved roadway). Site-specific excavation will focus on the creation of a mixed and structurally complex plant community. Following excavation of the mitigation area, hydric soils taken from onsite will be relocated into the excavated area and contoured to form desired wetland elevations. The relocation of existing hydric soils will help wetland creation success through the use of appropriate soils. These soils will likely contain the wetland plants, roots, and seeds to help establish a wetland plant community.

3. The selected plant communities proposed to be planted within the compensatory wetland area are proposed to contain a mixture of native emergent, shrub, and trees species common to the local area. Characteristics of several wetland and upland habitats will be targeted by the re-grading and planting activities (see Sheets 14 and 15). The selected species are planned to increase species diversity and wildlife habitats (i.e. feeding, nesting, cover), while also enhancing the local and downstream water quality through increased biofiltration.
4. Currently, the City of Longview proposes a construction schedule that provides most of the mitigation ahead of the associated wetland filling. The City has stated they're committed to constructing all of the necessary mitigation in three successive construction seasons. The first phase is proposed to include sufficient mitigation to offset fills required to construct initial project infrastructure occurring during the same construction season. The size of the initial mitigation as well as the subsequent phases are planned to be sufficient to pre-mitigate for impacts of subsequent filling on individual development pads. The intent is to delay filling of those pads to the extent possible consistent with limitations to the length of permit issued by the Corps.

Onsite planting is planned to be undertaken in two parts. This phased approach is intended to allow for the better establishment of selected communities and place particular attention on the ability of a particular species to survive once planted. Those species more tolerant of direct sunlight at initial planting (i.e. Oregon ash, rose, snowberry) is proposed to be planted during the first planting phase. Those species less tolerant of direct sunlight at initial planting (i.e. Western red cedar, Pacific ninebark) is proposed to be planted during the second planting phase. As presently proposed, the second planting phase will be undertaken at the end of the second year following mitigation site development. The actual timing for the second planting will be dependent upon the results noted during the first and second year monitoring and the overall success of the first planting.

5. A protective buffer along the restored and enhanced wetland and along the retained existing onsite wetlands is intended to be established as a part of this plan. The buffer area is intended to average in excess of 75 feet. These buffer areas are proposed to be planted with a mixture of native shrubs and trees and are planned to serve to protect the created wetland areas while providing additional wildlife habitat and plant species diversity. The establishment of native trees and shrubs will likely assist in the control of reed canarygrass through shading.

6. Water quality facilities are proposed to be located adjacent to, and outside of, the new wetland complex. These facilities will provide a source of hydrology with surface waters entering the created wetland at established surface elevations following biofiltration. Several two-celled wet ponds are proposed to treat and attenuate stormwater prior to release into the wetland complex. Final site grading is planned to allow the passage of surface water without becoming concentrated. Wetland hydrology is intended to be provided by the movement of groundwater on-site and from the direct connection to the adjacent regional drainage system.
7. The created wetland and buffer, once established, should not be mowed or regularly maintained.
8. Temporary and long-term erosion control measures along the proposed buffer edge should be implemented. This includes but is not limited to seeding with appropriate grasses and the use of silt fencing during the period prior to the establishment of adequate buffer vegetation.
9. Invasive weed species are proposed to be removed from within the created/restored wetland and buffer areas. This should include the removal of Himalayan blackberry during initial wetland and buffer creation, as well as continued removal during the established monitoring period. Special emphasis should be placed on the potential growth of reed canarygrass within the restored wetland and enhanced buffer areas. Removal methods for reed canarygrass are proposed to be implemented should on-site monitoring determine that reed canarygrass has become greater than 10% of the aerial coverage over the site. The grass species selected for initial site seeding have been noted to exhibit success on similar wetland creation/restoration projects to deter the establishment of reed canarygrass.
10. The diversity of wildlife habitats provided by the wetland and buffers are proposed to be enhanced by additional means. Such enhancement is proposed to include the placement of logs, stumps, and upright snags. These large woody debris habitat features are proposed to be placed at a density no less than 5 per acre.
11. Monitoring of the created wetland and buffer areas for a ten year period is planned to assist in determining if the restoration of the wetland and buffers successfully meets the GOAL of the mitigation plan. On-site monitoring should include the formulation of reports which will be provided to the involved agencies. These reports should identify such project elements as the monitoring methods and observations, use of the areas by wildlife, notations about invasive plant species, the need for potential remedial actions, plant community establishment, plant growth and general health, site hydrology characteristics, and photo documentation of the site at consistent locations. This monitoring is proposed to include a contingency plan to remedy created features that do not meet the project's GOAL.
12. The wetland and buffer restoration and enhancement plan allows for the implementation of educational opportunities that can potentially be integrated into the Mint Farm Industrial Park and the City of Longview School District. In addition, short term and long term monitoring allows scientific evaluation of wetland mitigation procedures and plant/wildlife responses to habitat manipulations.