

## 2. GENERAL RESPONSES TO COMMENTS ON MAJOR ISSUES

### A. ALTERNATIVE ANALYSIS

#### Issue Summary:

Some commenters requested additional information regarding alternative locations for the project as well as different project sizes.

#### Response:

The 404(b) 1 Alternatives Analysis established that the basic purpose and need of the cogeneration project is to provide a reliable and cost-effective supply of both steam and electricity to the BP Cherry Point Refinery and to provide electricity to the regional power grid.

The cogeneration project is not a water-dependent project. Therefore, alternative actions, alternative sites, and alternative site configurations were considered to determine if they could satisfy the project purpose and need, would be practicable, and would result in less wetland, and overall environmental, impact.

The Applicant has designed the cogeneration facility to occupy the smallest footprint area feasible, limited to 33 acres, and to affect the least amount of wetlands. There is no alternative configuration that would further reduce the wetlands impact and no other action that would satisfy all of the elements of purpose and need. The Alternatives Analysis defined the criteria for evaluating practicable alternative locations, based on cost, technology, and logistical limitations. Those criteria are size, proximity to the refinery, security, and accessibility.

Six potentially practicable sites were evaluated, including the proposed site. The six sites are described in more detail in the Alternatives Analysis included in Appendix A of this Final EIS. The proposed site is shown to be the one with the least wetland and overall environmental impact. The sites are compared in Table 1 below.

The criteria used to evaluate the six sites are described in Section 2.4.1 of the Draft EIS. Site 1 is the proposed project site.

**Table 1: Comparison of Alternative Cogeneration Sites**

Site	Size	Proximity to Refinery	Security	Accessibility	Wetland Impacts
1	Meets criterion	Meets criterion	Meets criterion	Meets criterion	12 acres
2	Meets criterion	Meets criterion	Meets criterion	Meets criterion	31 acres
3	Meets criterion	Meets criterion	Meets criterion	Meets criterion	33 acres
4	Meets criterion	Meets criterion	Meets criterion	Meets criterion	About 20 acres
5	Fails criterion	Meets criterion	Meets criterion	Meets criterion	2.5 acres
6	Meets criterion	Fails criterion	Fails criterion	Meets criterion	unknown

Laydown areas (material staging areas) are required for construction of the cogeneration facility and for permanent use by the refinery for maintenance activities called turnarounds. Alternative laydown sites must meet three criteria to serve the purpose and need: size, accessibility, and security. Costs would be similar for all sites so this factor was not taken into account when comparing sites. Technology is also not relevant in comparison of sites because no alternate electrical generating technology is available that would be applicable or be different on one site versus another. The cogeneration project requires construction laydown and staging areas 33 acres in size with easy accessibility to the construction site. The permanent laydown area for refinery use must be 22 acres.

In general, the same sites considered practicable for the cogeneration facility would also meet the key criteria for practicability for the laydown/turnaround areas. However, one site would be occupied by the cogeneration facility itself. The potentially practicable sites are compared in Table 2 below. Alternative A, the proposed site, is the site that has the least wetland and overall environmental impact and meets the practicability criteria and the purpose and need.

**Table 2: Comparison of Alternative Laydown Area Sites**

Site	Size	Security	Accessibility	Wetland Impacts
A	Meets criterion	Meets criterion	Meets criterion	19 acres
B	Meets criterion	Meets criterion	Meets criterion for cogeneration, not for refinery use	12 acres
C	Meets criterion	Meets criterion	Meets criterion for cogeneration, not for refinery use	31 acres
D	Meets criterion	Meets criterion	Meets criterion for cogeneration, not for refinery use	33 acres
E	Meets criterion	Fails criterion	Fails criterion	unknown

For both the cogeneration facility and the laydown areas, no combination of sites would satisfy the purpose and need and meet the practicability criteria.

The Alternatives Analysis demonstrated that no other practicable action, site, combination of sites, or site configuration would have less wetland impact or overall environmental impact and at the same time meet the purpose and need. Therefore, the proposed sites for the cogeneration project and the laydown/turnaround area meet the required tests of Clean Water Act Section 404 (b) 1 and Section 230.10(a) Guidelines for Implementing the Clean Water Act.

Also, the project size was developed to meet the following critical criteria:

- Reliability - Steam and power reliability are critical to the operation of the BP Refinery. A plant with three gas turbines and one steam turbine (3x1) provides this reliability because if one turbine is shut down for planned maintenance, two turbines would remain running. If one of the two remaining turbines shuts down inadvertently, only one turbine would be running. One gas turbine is sufficient to supply steam and electricity to the refinery.

- Efficiency - The newest turbines, which also happen to be the largest, are the most efficient available. Efficiency lowers the cost to produce electricity, reduces air emissions, reduces greenhouse gas emissions, and reduces fuel consumption per kilowatt hour of electricity produced.
- Economy of Scale - Within certain constraints, such as infrastructure, the incremental increase in size generally lowers the cost of construction and operation of the plant. For instance, smaller plants may cost less to construct, but their cost is not necessarily proportional to the output produced. A facility half the size does not cost half as much. To recover the cost of capital invested in the project, the plant must be of a sufficient size to lower the cost per kilowatt produced into a competitive range. Because private money is being used to finance the proposed project, investors must weigh risk versus return like any other investment.

## **B. WETLAND IMPACTS AND MITIGATION**

### **Issue Summary:**

Several commenters stated that the Draft EIS did not adequately describe the impacts on wetlands or the proposed mitigation plan.

### **Response:**

The Wetland Mitigation Plan was prepared to provide mitigation for the wetland impacts associated with the proposed construction of the BP Cherry Point Cogeneration Project. Although the placement and design of the cogeneration project has avoided and minimized wetland impacts to the extent feasible, 4.86 acres of wetland will be temporarily disturbed and 30.51 acres of wetland will be permanently filled. The affected wetlands have been degraded over many decades of farming, road building, and industrial activity. In addition to the resulting changes in the vegetation and habitat, ditches and roads have redirected water flow from historical paths.

The mitigation plan proposes to restore in place the temporarily disturbed wetlands upon completion of construction activities that will occur in those areas. For the permanent wetland fill, compensatory mitigation is proposed.

Areas surrounding the impact site in the Terrell Creek drainage were screened for mitigation potential. The chosen sites were shown to be among the best sites available in the watershed for mitigation potential. They are on BP-owned land just north of Grandview Road across the road from the impact sites and total 110 acres in two land parcels. Those two parcels are located on each side of Blaine Road between Grandview Road and Terrell Creek. The eastern parcel is labeled Compensatory Mitigation Area (CMA) 1, and the western parcel is labeled CMA 2.

The mitigation areas are similar in overall character to the impact areas. They are mostly fallow fields dominated by non-native pasture grasses. More than 72% of the mitigation areas qualify as jurisdictional wetlands and are either seasonally inundated or seasonally saturated, drying out by late summer.

Functional assessments were conducted on the wetlands in the impact areas and the mitigation areas, and historical information was reviewed. The mitigation plan was designed to compensate for wetland functions that have been lost by restoring conditions prevalent before settlement and farming of the area took place. The most difficult functions to demonstrate compensation are the hydrological functions, and those became the central theme of the mitigation. The ditches that have been dug to drain farmland in the mitigation areas will be plugged and the water spread back into areas it historically occupied before farming activities changed it. In addition, to compensate for water that does not reach CMA 2 as it did before Grandview Road and Blaine Road and their roadside ditches were built, treated runoff water will be piped across them from the impact area so that it can flow in approximately historical pathways.

The other major focus of the mitigation is to restore native vegetation in patterns similar to what existed before the advent of farming in the area. This will be done by eradicating invasive species, primarily reed canarygrass and blackberries, and by planting native species. Historical maps indicate some areas in the project vicinity were freshwater marshes, probably associated with shrub-dominated habitat, but the majority of the area was probably forested. Remnants of unfarmed forest suggest that the dominant forests were probably mixed deciduous/coniferous tree species on hummocky terrain. In the mitigation planting plan, about 78% of the mitigation areas will be occupied by forest and shrub habitat, and grasses and sedges will dominate the remainder in herbaceous wetland and upland. The open areas in particular will have habitat structure, such as logs, included to provide habitat for small mammals and other wildlife species. Small seasonal ponds will be distributed throughout the sites to provide breeding areas for native amphibians. These ponds, however, are designed to dry up in late summer to prevent bullfrog reproduction. The mitigation area has been designed to maintain and improve equivalent habitat available for the great blue herons that nest in a nearby colony to the west.

Performance standards, monitoring, and contingency measures have been designed and approved by the regulatory agencies to ensure that the mitigation plan will succeed and will compensate for all the wetland impacts. Monitoring, which will occur for 10 years, will include hydrology, vegetation, and invasive species.