

### **3.13 Public Services and Utilities**

#### **3.13.1 Existing Conditions**

For purposes of the analysis on Public Services and Utilities associated with construction and operation of the Cogeneration Project, the study area is defined as portions of Whatcom and Skagit Counties within a 50-mile radius of the project site. The majority of construction and operations workers for the project are expected to commute from within 50 miles of the site, as explained in the Technical Report on Population, Housing and Economics, Appendix L.

##### **3.13.1.1 Recreation**

The Cogeneration Project is to be built on BP property, adjacent to the Cherry Point Refinery, in an area of Whatcom County zoned for heavy industry and populated with a number of other heavy industry facilities. There are no recreational facilities within this Heavy Impact Industrial zone of Whatcom County.

Northwestern Washington, and particularly the City of Bellingham, is noted for its quality of life, due in part to the numerous and varied recreational opportunities for both residents and tourists. These opportunities range from the national parks and forests found in the eastern two-thirds of Whatcom County, to the opportunities offered by Puget Sound in the west, to the urban attractions of the historic village of Fairhaven, to the monthly festivals and events county-wide, to the wilderness opportunities around Mount Baker. Table 3.13-1 presents a listing of major parks in Whatcom County. With the exception of the smaller, specific-purpose areas such as the Hovender Homestead Park, most of the parks listed in Table 3.13-1 offer multiple-use opportunities for sport, education and accommodation.

Whatcom County provides numerous recreational opportunities, having the Straits of Georgia, freshwater lakes and the mountains all with easy access. The shoreline provides for boating, sailing, windsurfing, swimming, kayaking, scuba diving, whale watching, saltwater fishing, clam and oyster digging and beachcombing. Bellingham is a point of access to the San Juan Islands, with its multiple marine state parks. Birch Bay has long been a summer resort, and provides a whole range of man-made attractions to complement its natural advantages, including a golf course, arcades, bicycle rentals, horseback riding, waterslides and accommodation of all types.

**TABLE 3.13-1**

Major Recreational Areas

<b>Recreational Area</b>	<b>Location</b>	<b>Approximate distance from project site</b>	<b>Facilities</b>
<b>Federal</b>			
Mt. Baker-Snoqualmie National Forest	Whatcom and south, 1,709,700 acres	100 miles	Water sports, winter sports, Wild and Scenic River, Mt. Baker Wilderness Area, trails, 30 US Forest Service campgrounds
North Cascades National Park	Whatcom and south, 505,000 acres	100 miles	Water sports, winter sports, trails, rafting, camping, lodging
<b>State</b>			
Birch Bay State Park	Birch Bay, 194 acres	2 miles	Boat launch, picnic sites, fishing, swimming, water sports, Audubon Sanctuary, camping
Larrabee State Park	Bellingham, 2,683 acres	15 miles	Boat launch, picnic sites, fishing, swimming, water sports, camping
Peace Arch	Blaine, 20 acres	8 miles	Picnic sites
<b>County</b>			
Hovender Homestead Park	Ferndale	4 miles	Historic Place, picnics sites, trails, fishing
Lighthouse Marine Park	Point Roberts, 22 acres	15 miles	Boat launch, picnic sites, camping
Samish Park	Bellingham, 39 acres,	15 miles	Boat rentals, picnic sites, swimming
Semiahmoo Park	Blaine, 300 acres of tideland	8 miles	Paths
Silver Lake Park	Sumas, 411 acres	20 miles	Boat launch, picnic sites, trails, horseback riding, camping, cabins
<b>City of Bellingham</b>			
Lake Padden Park	Bellingham, 900 acres	15 miles	Boat launch, picnic sites, fishing swimming, trails, sports facilities
Whatcom Falls	Bellingham, 209 acres	15 miles	Picnic sites, fishing, trails, sports facilities
Sehome Arboretum	Bellingham, 175 acres	15 miles	Trails

Sources: National Forest Service [NFS], 2001; National Park Service [NPS], 2001; Whatcom County [WC], 2001b; City of Bellingham [CBe], 2000

In the western part of Whatcom County, the area devoted to national parks and forest provides opportunities for every type of outdoor activity, from downhill skiing and back country wilderness activity in the winter, to hiking, white water rafting, horseback riding, fishing, and wildlife viewing in the summer. As well, its extensive facilities for accommodation, educational programs and wildlife management ensure that the Mt.

Baker-Snoqualmie National Forest is one of the most visited in the United States (NFS, 2001).

In addition to the area's natural endowment, Bellingham is a vibrant cultural center for the county, with Western Washington University, a symphony orchestra, theatres, museums, art galleries, shopping facilities, restaurants, and the historic waterfront community of Fairhaven. As a family-oriented city, there are also the recreational facilities typically used by families, including bowling alleys, sport, community and interpretative centers, movie theatres, farmers' markets and playgrounds. In the communities surrounding Bellingham, each unique in some way, further opportunities are offered, from seasonal berry picking in Ferndale to a stroll down a "dutch" street in Lynden.

From the renowned events and festivals, such as the Bellingham Festival of Music and the Ski to Sea Festival, to the more local Birch Bay Polar Swim, Lake Whatcom Railway Valentine Train and the Holland Days event in Lynden, there is not a month of the year that does not include a major event in the country. The wealth of recreational opportunities is both a draw to travelers – from the large population centers in Washington State and British Columbia as well as from beyond – but also an important part of a lifestyle that has attracted and continues to attract migration to the area.

Accordingly, economic activity associated with recreation is an integral part of Whatcom County's economy. Available official statistics do not distinguish what percentage of Whatcom County's economic activity is related to tourism and/or local population recreational facility use. However, it is clearly an important source of local employment and income. This was perhaps most evident in the widely acknowledged impact that the decline in the Canadian exchange rate has had on Whatcom County's economy, reducing cross border shopping and recreational trips (WSESD, 2001c).

The importance of tourism to the local economy is also demonstrated by the Bellingham/Whatcom County Convention and Visitors Bureau (2001) initiative for attracting visitors to the area in response to a decline in cross-border travel. While this recent decrease in demand may not reflect a long-term trend, and therefore, will not necessarily apply during construction of the Cogeneration Project, which will not begin until 2004, there is no indication that recreational facilities are currently over-extended. On the contrary, the reduction in usage is thought to represent a significant threat to the local economy, warranting expenditures to reverse the trend on the part of local businesses.

#### 3.13.1.2 Schools

Whatcom County has 34 elementary schools, 11 middle schools, 9 high schools, and 10 alternative education facilities. It has four colleges and universities, those being Bellingham Technical College, Whatcom Community College, Western Washington University and the Northwest Indian College. Total enrollment in Whatcom County's public education system from elementary to high school is over 23,000. The colleges have a total enrollment of over 14,000 and the university has over 12,000 students. In addition to schools in the public system, there are also 21 private schools, four in Lynden and the rest in Bellingham. Table 2 provides information on public school districts and enrollments, collected by telephone from school district offices.

TABLE 3.13-2

Public Schools

SCHOOL DISTRICT	LEVEL			CAPACITY	STUDENTS	% USE
	E	M	H			
Bellingham	13	4	3	12,550	9,986	79.6
Blaine	3	1	1	<2,043	2,043	100.0
Ferndale	7	2	1	5,860	4,941	84.3
Lynden	3	1	1	3,125	2,431	77.8
Nooksack Valley	2	1	1	n/a	n/a	n/a
Meridian	2	1	1	1,756	1,572	89.5
Mt. Baker	4	1	1	2,505	2,321	92.7
Total	34	11	9	27,839	23,294	83.7

Sources: Personal communications, individual school districts, 2001

Note: E=elementary, M=middle, H=high

Schools in Washington State are funded primarily from the state on the basis of a formula that is driven largely by enrollments. Individual school districts may supplement these funds, through special levies on property taxes or bond issues to supplement state funds for perceived needs. Additional state and federal funds are made available for specific (categorical) programs, for example, for compensatory instruction in English as a second language, or for student transportation. Therefore, although the relationship is not perfect, any new students from elsewhere in Washington State would ultimately result in an increase in state funding within Whatcom County.

3.13.1.3 Fire Response Services

The Refinery typically has 100 fire responders on call during the week, at least twelve of whom are specifically assigned to locations around the Refinery property. During the weekend, there are 20 fire responders on call, again at least twelve of whom are assigned to specific locations around the property. Given the specialized nature of the Refinery operations, BP uses employees specifically trained to respond to fires. Several of these are fire response instructors, who routinely provide training courses at other industrial installations around Washington State and nationally. In addition, all BP employees are required to attend annual safety courses and pass written exams to educate them on BP's required procedures, protocols, and emergency response expectations at the Cherry Point Refinery. These efforts are focused on preventing fires and in the event of a fire or other emergency, limiting the potential impact.

Equipment available for firefighting includes three pumper trucks (of 1,250, 1,500 and 2,000 gallons per minute capacity), an extensive system for the supply of water for firefighting based on pipelines, pumps and fire hydrants distributed around the site, a stock of 10,000 gallons of foam, a 6,000-gallon per minute trailer-mounted pump and one Hazardous Materials Management truck.

[Fire District #7 \(District #7\) supports six fire stations. Two of these stations are located near the Cogeneration Project at 4047 Brown Road \(1.5 miles\) and 5419 Grandview Road \(2.5 miles\). District #7 is a combination department consisting of 16 career and 70 volunteer fire fighters. District #7 maintains and staffs 7 engines, \(3-1750 gpm and 4-1500 gpm\) out of the six stations, along with 5-licensed Aid Units, \(3-Rescue and 2-](#)

[Transport Capable Ambulances](#)). [District #7 is currently purchasing a 100 ft aerial ladder truck designed for refinery and power plant needs](#)

There is typically only one fire incident per year [at the Refinery](#), and with one exception, these have been minor and immediately extinguished. The infrequency of events suggests that there is no discernible pattern in terms of seasonal or operational peaks. Only one fire has occurred during the life of the Cherry Point Refinery, in 1977, that required outside assistance to fight.

#### 3.13.1.4 Police and Security Services

BP maintains the services of a professional contract security force, Resource Security Service Inc., who patrols the property 24 hours a day, 365 days a year. During the week, 12 security staff is on site, while 8 security staff is present during the weekend. Volunteers are not used. Resource Security Service staff are provided with training both general to security work, and specific to the BP's refinery operations at Cherry Point. They are trained, for example, in bomb threats, safety, emergency medical care, oil spill response, terrorist awareness, radio, locks and keys, threatening call diffusion, pipeline inspection, as well as undergoing monthly refresher sessions and weekly exams. Three 4-wheel drive vehicles are stationed on site at all times, such that security personnel are able to quickly reach all areas of the BP's property at Cherry Point.

Incidents at the site have been limited to the occasional theft of small equipment, on average about once a year. Security personnel also respond to incidents around the site perimeter. There has never been a case of such incidents leading to personal injury or physical damage to BP facilities or equipment.

The Whatcom County Sheriff's Office would be required to respond to criminal incidents, and would normally only be called by BP's security personnel to the site. This has not occurred during the 30 years since the Refinery has been in operation, including those periods when maintenance turnaround and capital project construction workforces have exceeded 2,000 individuals.

Whatcom County statistics for the most recent year data are available, 2000, show a total of 256 incidents of violent crime, broken down as aggravated assaults (44), assaults (161), rapes (50) and homicides (1) (WC, 2001d). This represents a decrease in violent crimes of approximately 9.5% over 1999. As a ratio of incidents to population using the 2000 population figures, this represents 1 incident for every 650 people, and is well within the capacity of local staff and equipment to handle.

#### 3.13.1.5 Communication

Whatcom County is served by two daily newspapers, both published in Bellingham. These are the Bellingham Herald and the Northwest Citizen. Bellingham, Birch Bay, Blaine, Ferndale and Lynden each have one or more smaller community newspapers, usually published weekly. The Business Pulse is a Whatcom County magazine.

Cable and satellite service companies, including AT & T, DIRECTV and TCI Cablevision of Washington, provide the full range of television stations, as well as a local Community Access Television station. Bellingham, Blaine, Ferndale and Lynden all broadcast radio.

The telephone infrastructure is provided by Qwest, while AT & T and Sprint also offer the full range of long distance, Internet access and other telephone services.

#### 3.13.1.6 Water Supply and Wastewater Discharge Infrastructure

Appendix F, Technical Report on Water characterizes the existing surface water and groundwater regimes within the general vicinity of the project area adjacent to the Cherry Point Refinery, and describes the stormwater management, water supply, and wastewater treatment processes to be implemented during construction and operation of the Cogeneration Project.

#### 3.13.1.7 Emergency Medical Services

As detailed in Appendix J (Emergency and Security Plans), BP's existing emergency medical services resources, including facilities, personnel, and training programs at the Cherry Point Refinery include (John Karabias, BP Certified Physician Assistant, pers. comm. 2001):

- A full time certified Physician Assistant during the week, with more than 20 years experience at BP's Cherry Point Refinery;
- A full time Nurse Practitioner who is also a Registered Nurse during the week, with more than 5 years experience at the refinery;
- Four Emergency Medical Technicians on call as the first to respond to medical emergencies after regular working hours and on weekends;
- Between 100 and 120 First Aid Providers available across the Refinery to respond to needs, with at least 25 present per shift; and
- A rotational pool of three doctors, one of which visits the Refinery for a day a week.

There is a staff clinic on site with two examining rooms, a major treatment room and a supply room. The clinic has one ambulance, and a helipad for air lifting patients to hospitals in either Bellingham or Seattle. The clinic has an emergency radio system directly connected to the Whatcom County Emergency Center as well as to St. Joseph Hospital in Bellingham, located approximately 20 minutes drive from the Cherry Point Refinery. The clinic is equipped with automated defibrillators (which can be operated by the emergency medical technicians) as well as a manual defibrillator (operated by medical professionals), and is fully supplied, including intravenous and airway supplies, cardiac medication and a multi-trauma kit. Medical emergencies do not occur frequently at the Cherry Point Refinery. In the past, they have typically occurred less than once per year and most have been within the capability of BP's onsite resources to manage.

The only hospital in Whatcom County, St. Joseph Hospital, is operated as a non-profit, voluntary private institution, unsupported by tax revenue. The hospital charges for its services, but provides services regardless of ability to pay. Revenue over and above expenses is spent on health care delivery improvements.

The hospital has 253 beds and 24 newborn bassinets. It has 300 doctors, employs a total of 1,700 full and part-time employees of whom 515 are nurses, and has an average of 250 volunteers. The hospital provides a full range of nursing services, as well as advanced

cardiovascular, cancer, mental health, radiological, respiratory, rehabilitation and surgery services.

The hospital is a Level II Certified Trauma Center – in Washington State only Seattle has a higher Certified Level 1 Center – open 24 hours a day, 365 days a year. It is an integral part of the Whatcom County Emergency Medical Services network, connected by radio to the paramedics and emergency medical technicians from fire departments (which provide local ambulance service), and other organizations such as BP. The hospital operates [with Airlift Northwest MedFlight](#), to bring assistance to scenes of emergencies throughout Whatcom County, Skagit County, Island County, and San Juan County.

The hospital presently has a \$70 million expansion program underway, which will add approximately 170,000 square feet of space for major services, inpatient beds and parking. The expansion is part of a 20-year Master Facility Plan, developed with the City of Bellingham and the hospital board of community leaders. The primary drivers for expanding the hospital facilities include anticipated strong growth in the population of the area, and an aging population. Funds have been raised from the hospital's cash reserves and from a private bond issue (PeaceHealth, 2001).

Local medical facilities must also respond to the requirements of the anticipated weekly commuting and relocating workers and their families, who are estimated to be no more than 414 people at a maximum during the peak of construction. This represents a relatively low number of people to the area as a result of the Cogeneration Project, relative to the local population of Whatcom County and of the Bellingham, Blaine, and Ferndale areas. There are also no reports of over-extended medical facilities locally.

### **3.13.2 Environmental Impacts of the Proposed Action**

#### **3.13.2.1 Construction Impacts on Recreational Facilities**

Potential impacts to recreational facilities as a result of construction activities for the Cogeneration Project are primarily related to traffic and use of available recreational facilities. None are expected to be significant.

Since the location of Birch Bay State Park is not along the main arterial road that would be used by construction workers for commuting to the Cogeneration Project, there are unlikely to be any adverse traffic-related impacts to users of the park.

Any increased usage of recreational facilities would likely come from non-local workforces. This would include both weekly commuters, who are less likely to access recreational facilities simply because they are not present in the area on weekends, and temporarily relocating workers and their families. Temporary relocations are estimated to not exceed 180<sup>1</sup> individuals at any one time, and even this number would only occur

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<sup>1</sup> For purposes of estimating impacts in this section, the highest estimates of potential relocations presented in Appendix L are used. These highest estimates only have the potential to occur over the five-month period when construction activity is at its peak. As explained in the appendix, actual relocations could be much lower in number, more so if averaged over the 23-month construction stage.

over the five-month peak construction period during the winter of 2004-2005 (see Appendix L).

Urban recreational opportunities, such as nearby parks, restaurants, and movie theatres, for example, occur primarily in Bellingham, whose population at over 67,000 suggests that the addition of up to a maximum of 180 construction workers, or 414 people including family members, to the area will not create a burden on existing recreational facilities.

Similarly, usage of more rural recreational facilities, such as parks and marinas, is unlikely to be adversely affected by increased demands during construction of the Cogeneration Project. The northwestern part of Whatcom County, including Birch Bay, Bellingham, Blaine, Ferndale, and Mount Vernon is renowned for the range and quality of outdoor and cultural recreational facilities. Restaurants, shops, parks and local businesses within this area regularly accommodate high demand by tourists and the local population, particularly during the summer months. Thus, temporary relocations of a relatively small number of construction workers and their families to the Whatcom and Skagit County areas during construction of the Cogeneration Project are not expected to impose unmanageable demands on existing infrastructure within Bellingham, or within other neighboring communities such as Blaine, Ferndale, and Birch Bay.

#### 3.13.2.2 Operation Impacts on Recreational Facilities

Potential impacts to recreational facilities during operation are primarily related to increased use of available recreational facilities, noise and air emissions. None are expected to be significant.

The operational workforce of the Cogeneration Project will not exceed 30 full time individuals, of which no more than half would represent additional population to the area as a result of relocation. The estimated total increase in population of less than 30 people associated with the operation of the Cogeneration Project will have an insignificant effect on recreational use within the Whatcom and Skagit County areas.

Potential increases in noise levels during routine operation of the Cogeneration Project are unlikely to be detected at the nearest recreational facility, namely Birch Bay State Park. The analysis found in Appendix K demonstrates that sound from the proposed Cogeneration Project is expected to increase noise levels at the park entrance by only 0.6 dBA, during the daytime, and by 3.1 dBA at nighttime. Because a 3.0 dBA increase is barely perceptible by most people in a laboratory setting, people at the park entrance are not expected to perceive any difference in noise levels. Park users are expected to be even less likely to perceive any difference in sound levels because they will be inside the park, further away from the Cogeneration Project.

Air emissions from the Cogeneration Project are not expected to impact recreational opportunities. Section 3.2 and Appendix E provide detailed information regarding air emissions from the Cogeneration Project and their expected impacts. Emissions are not expected to result in any significant impacts to air quality or to visibility in the area. Moreover, by providing steam to the Refinery, the Cogeneration Project will enable BP to significantly reduce emissions that would otherwise be produced by the Refinery.

### 3.13.2.3 Schools

The Cogeneration Project site lies within the Blaine School District. With the exception of the City of Blaine, which only accepts students from within its own district, other schools in the Bellingham, Ferndale, and Birch Bay areas are not filled to capacity, and would have room for an incremental increase in the number of students from families who could potentially move to the area during construction of the Cogeneration Project.

As described in Appendix L, very few of the estimated 180 relocating construction workers are expected to bring their families given that only 27 jobs will last over the 10-month period from September to June. During operation of the Cogeneration Project, even if a maximum of 15 families relocated, the addition of their children to the local school population within Whatcom County is insignificant.

### 3.13.2.4 Fire Response Services

BP will retain an EPC Contractor that is experienced in the construction of gas-fired electrical generation plants, gas pipelines, pollution control equipment and power transmission lines. The EPC Contractor will be required, by the terms of its contract with BP, to prepare and implement safety programs, including emergency plans. BP will put procedures into place to ensure that contractors meet these obligations. Appendix J describes the mechanisms to deal with accidents. ~~The Whatcom County Fire Department would only be contacted in the event that the fire cannot be easily extinguished with onsite equipment and personnel.~~

BP is proposing that existing fire-fighting services and infrastructure currently in place to support the operations of the Cherry Point refinery would ~~manage support~~ fire preparedness and response needs for the Cogeneration plant as well. Appendix J, Emergency and Security Plans includes proposed changes to existing plans to accommodate both the construction and operations phases of the Cogeneration Project.

~~Both the Cogeneration Project Fire Emergency Response Operations (FERO) Plan and the Emergency Preparedness Plan (EPP) are relevant to fire response. These are consistent with and incorporate all applicable regulatory requirements at the local, state and federal agency level. The operations of the Refinery strictly adhere to these the Refinery FERO plans, EPP and regulatory requirements. They are equally applicable to the operation of the Cogeneration Project, which does not present hazards additional to those already addressed in existing manual and plan. In addition to the highly effective emergency response capability of the Refinery, the JHA fire department will be available to augment Refinery efforts and operations any time the FERO system is activated.~~

During operation and maintenance of the Cogeneration Project, mechanical failure, malfunctions in the electrical system and human error are potential risks that could result in fire. In such an event, ~~BP's the Cogeneration Project~~ FERO Plan would be activated. The plan provides detailed guidelines to assist responders and includes a command structure, duties and responsibilities, checklist for responders, equipment lists, instruction guides and strategic actions for potential or critical incident scenarios, which may occur in or around the ~~Cherry Point Refinery Project~~. The Plan is consistent with BP's EPP, which provides preparedness and planning information for emergency conditions. Again, should this ever become necessary, BP would coordinate efforts with local emergency agencies. All plant employees will receive regular training to ensure that

effective and safe actions limit the potential occurrence of fire, and the ability to respond effectively in the event of a fire.

During operation of the Cogeneration Project, existing staff and equipment at BP's Cherry Point Refinery are considered sufficient to meet all but the most severe of potential fires. The fire protection system would consist of a site perimeter firewater loop with post indicating valves and hydrants, an automatic deluge system for transformers, a sprinkler system for steam turbine lube oil equipment and bearings, and detection and alarm equipment. A carbon dioxide system, provided by the CGT supplier, would protect this equipment. Buildings would have fire protection including a pre-action system for Administration Building and Auxiliary Substation Building and dry stand pipe and Class III hose stations for all other buildings. Portable fire extinguishers of appropriate sizes and types would be located throughout the power plant site. The design of the Cogeneration Project will include an extension of existing fire water supply pipelines and hydrants from the refinery's existing system.

One trained employee will be assigned specifically to coordinate fire response actions at the Cogeneration Project. Only in the event of an extraordinary incident, would assistance need to come from outside of BP's onsite fire response resources and infrastructure. BP maintains regular communication with the local sheriff, fire fighting and emergency response services in Whatcom County, Whatcom County's Emergency Planning Commission, and with the Washington State Department of Ecology. By maintaining full disclosure on capabilities and resources to respond to fires with these other agencies, and by remaining current on legislated and regulatory requirements, BP successfully ensures at state of readiness and preparedness to respond to potential fires.

There are no specific requirements for routine intervention by local firefighting or other services. Firefighting resources in Whatcom County are provided through 17 fire protection districts and 2 municipal city fire departments, and a total of 17554 paid fire fightersmen and 645 volunteers fire fighters. The Cogeneration Project site is within Fire District #13, which covers a 46 square mile area from Blaine southwards. There are five fire stations within the district, each staffed by volunteers and equipped with a 1,500-gallon per minute (gpm) pumper truck and an aid unit. In addition, the Bellingham municipal fire department, staffed with paid firefighters, is located approximately only 20 minutes away. Fire districts in Whatcom County work with each other to ensure full support in the event of large fires. Except in the event of a large scale emergency, these resources are unlikely to be called upon, since BP's onsite resources, personnel, equipment, training and accessibility, are superior to local firefighting capability, and are specialized in fire preparedness and response procedures at a major industrial refinery complex. The Cogeneration Project site is within Whatcom County Fire District # 7, which has jurisdictional responsibility for coverage of a 73 square mile area of the county, from the Bay Road southerly to the Slater Road and from the Straits of Georgia easterly to Aldrich/Guide Meridian Road including the City of Ferndale, all the major industrial complexes and a population of approximately 17,500. The district supports six fire stations within the district. Two stations are located near the Cogeneration Project at 4047 Brown Road (1.5 miles) and 5419 Grandview Rd (2.5 miles). The District is a combination department consisting of 16 career and 70 volunteer fire fighters. The District maintains and staffs 7 engines (3-1750 gpm and 4-1500 gpm) out of the six stations, along with 5-licensed Aid Units (3-Recues and 2-Transport Capable Ambulances). The District is currently purchasing a 100' aerial platform ladder truck designed for refinery and power plant needs. Fire District 7 has Mutual Aid Agreements

[in place with all Whatcom County Fire Agencies to ensure full support in the event onsite refinery and District fire fighting resources are not sufficient to mitigate an emergency. BP's onsite resources, personnel and equipment, with available support from Fire District 7 \(JHA\), should be sufficient to respond to most emergencies. Additional resources or agencies are unlikely to be required except in the event of a large scale or long term emergency.](#)

In the unlikely event of an emergency, beyond the capability of BP's own resources, the Whatcom County emergency services would be called upon. Whatcom County's Division of Emergency Management is responsible for developing and maintaining community infrastructure for emergency/disaster mitigation, planning, response, and recovery. It is mandated to maintain a constant state of readiness to respond to events that might exceed the capability of any single jurisdiction or entity, and works closely with local industry (including BP) to exercise that mandate. The division has an Emergency Operations Center that can be activated to gather and disseminate information, take strategic decisions, allocate resources and coordinate responses to emergencies. This structure is in place, and is funded and staffed to the level required. The construction and operation of the Cogeneration Project does not introduce new hazards that would require initiative on the part of the division to incorporate into its work.

#### 3.13.2.5 Police and Security Services

The Cogeneration Project would be constructed within the existing 8-foot high, barbed wire topped perimeter fence around BP's property, and therefore, will be served by existing security arrangements in place for the Cherry Point Refinery. Access to the Cogeneration Project will be controlled through gates from Grandview Road. During the construction phase of the Cogeneration Project, additional security measures would be provided by installing and maintaining fencing around the perimeter of the Cogeneration Project construction site, and around the perimeter of the laydown areas, which are currently within existing fenced areas. Site access will be controlled for personnel and vehicles using contracted security service.

There is no foreseen requirement for BP to rely on Whatcom County police resources during construction and operation of the Cogeneration Project since the project site will be patrolled regularly by BP's contracted security staff. As noted in the above section on fire, the existing BP Cherry Point Refinery Emergency Response Plan is described in Appendix J, Emergency and Security Plans. No changes are necessary to accommodate either the construction and operations phases of the Cogeneration Project.

It is unlikely that the addition of approximately 180 construction workers into the Whatcom County area during construction of the Cogeneration Project will lead to a significant increase in the incidence of violent crimes. Consequently, it is not anticipated that community police forces will need to increase their staff or resources as a result of the construction of the Cogeneration Project.

There is the remote possibility of an extreme security or emergency incident that would involve local police; Appendix J describes the response to such an incident. Should such an event occur, local police would be notified, and would likely draw upon other state and federal security agencies, such as the Division of Emergency Management resources, as described above for a fire emergency.

### 3.13.2.6 Maintenance Requirements

Construction and operation of the Cogeneration Project is not anticipated to result in increased demands for maintenance requirements of public services, goods, and utilities. Specifically, the Cogeneration Project will not impose any demands on public funds administered by either Washington state, Whatcom County, or local governments to maintain the integrity and quality of such things as public roads, water supply systems, sanitary sewer collection and treatment systems, natural gas supply systems, parks, schools, and hospitals.

### 3.13.2.7 Communications

Construction and operation of the Cogeneration Project will not impose any increased demand, or result in any adverse effects, to local communication services, including community newspapers, cable, and satellite television services.

### 3.13.2.8 Water Supply and Wastewater Discharge Infrastructure

The following subsections provide an overview of the water supply and wastewater treatment infrastructure that will be implemented during construction and operation of the Cogeneration Project. Refer to Appendix F and Section 3.3 of this Application for Site Certification for further details on this infrastructure.

### 3.13.2.9 Public Water Supplies

#### Construction Impacts

During construction of the Cogeneration Project, water would be supplied ~~by truck from the Refinery or the EPC contractor~~ to provide dust control ~~and to provide drinking water to construction workers~~. The water service will be contracted out to a local company or supplied by the EPC contractor.

Hydrostatic test water would be required for the testing of the power plant facilities, natural gas connections, and water supply/discharge connections. The source of the hydrostatic test water is the fresh industrial water supplied from the Whatcom County Public Utility District (PUD). As described in Section 3.3 and in Appendix F, the volume of water needed for hydrostatic testing during construction will be about ~~2 to 34.8~~ million gallons.

#### Operation and Maintenance Impacts

No new water rights ~~or changes to existing water rights~~ would be required for operation of the Cogeneration Project. Water would be supplied through ~~an existing water reuse agreement with the Whatcom County PUD and Alcoa for reuse of the industrial water from the once through cooling system at the nearby Alcoa aluminum smelter. purchase between Whatcom County PUD and Bp.~~ The reuse of the industrial water from Alcoa will also result in a reduction of fresh water requirements by the BP Refinery. The additional water required by the BP Refinery and the Cogeneration Project will not require an amendment to the currently existing agreement between BP and Whatcom County PUD nor will it require a new construction or system infrastructure.

Birch Bay Water and Sewer District (District) currently purchases water from the City of Blaine. During operation, the Cogeneration Project would be expected to require only one to two gallons per minute on the average of potable water. This nominal amount will not impact available supplies or resources of potable water under current certified rights.

As described in further detail in Section 3.3 (Water) and Section 3.8 (Energy and Natural Resources), implementation of the Whatcom PUD water recycle project and the Cogeneration Project will together result in an overall net increase-decrease in fresh water consumption from the Whatcom County PUD of only 40 gpm approximately 484 to 556 gpm. beyond that currently utilized by the Cherry Point Refinery. This increase, relative to the overall water authorized supply from the Whatcom County PUD #1 of 11 mgd (Tom Anderson, General Manager Public Utility District, Whatcom County PUD #1, pers. comm., January 2002), together with the current water demand by the Refinery, are not considered significant.

The use of water by the Cogeneration Project, with air-cooling industrial cooling water from Alcoa reused for evaporative water cooling, represents a significant reduction in fresh water demand as compared to a gas-fired combined cycle project using conventional water-cooling technology public water. Specifically, the plant would utilize an air-cooled condenser cooling tower with 45-12 cells to dissipate heat in the operation of the facility and reduce water demand. Water would be required for makeup requirements of the steam cycle and for general purposes, including potable water for employee consumption. HRSG blowdown water would be routed to the Refinery for reuse. The Cogeneration Project will have an average water consumption requirement of approximately 604 approximately 2,244 to 2,316 gallons per minute (gpm.) on a continuous basis.

However, theThe Cogeneration Project would enable a significant 20 gpm reduction in the Refinery's water consumption because the Cogeneration Project will produce steam instead of water being heated in the Refinery's boilers. By comparison, a comparable water-cooled cogeneration plant would require approximately 3,000 gpm, or 4.5 million gallons per day of water. This reflects a project average since on hot dry days the use would go up, and down on cool days.

#### 3.13.2.10 Wastewater

##### Construction Impacts

During the construction phase of the Cogeneration Project, the EPC contractor will be responsible for the removal and disposal of sanitary wastes associated with the construction workforce. As for other services, sanitary waste removal will be provided by a local business, which will accordingly benefit from the increased demand for services.

##### Operation and Maintenance Impacts

The Cogeneration Project will generate wastewater from the cooling tower, water treatment facility production of high quality boiler feedwater, blowdown from the heat recovery steam generators, collection of drainage from equipment and other sources, occasional turbine blade washing, and sanitary waste. Appendix F, Technical Report on Water, provides detail on the expected flows and quality of various wastewaters.

During the operation of the Cogeneration Project, spent boiler feedwater, blowdown water and drainage water from various sources will enter BP's existing refinery wastewater treatment system, which presently discharges treated wastewater, under the terms and conditions of an NPDES Permit, to the Strait of Georgia through Outfall 1 at a depth of approximately 60 feet beneath BP's dock. The estimated flow and chemical composition of wastewaters from the Cogeneration Project are provided in Table 3.3-4 of Section 3.3, except for the sanitary wastewater stream.

Sanitary wastes will be discharged to the Birch Bay Water and Sewer District's (District) treatment system in accordance with the terms and conditions of an Agreement between the Refinery and the District. The District has confirmed that it has the capacity to accommodate the incremental combined sewage loading from the Refinery and the proposed Cogeneration Project. These estimated volumes of sanitary waste discharge from the Cogeneration Project, which when operational will employ up to 30 people, will be ~~approximately between~~ 1 to ~~2-5~~ gallons per minute.

There will be no incremental cost to the District for connection or provision of sanitary waste services for the Cogeneration Project. Under the terms of the negotiated agreement between BP and the District, BP will pay for all costs associated with the connection to the system, will hand over ownership of equipment outside the BP fence line to the District, and will pay connection and monthly service fees for the service. Potential impacts on public wastewater treatment infrastructure associated with the operation of the Cogeneration Project are considered negligible. Process wastewater discharges will be managed through the refinery's existing wastewater treatment system, and subsequently discharged to a deep-sea outfall into the Strait of Georgia. Sanitary waste discharges during operation of the Cogeneration Project will account for a very small volume of discharge to the District's sanitary treatment system. Further, the capital costs associated with the connection to the District's sanitary sewer treatment system will be funded by BP, and thus, will not impose financial constraints or demands on public utilities. Rather, a positive impact will be realized from increased revenue to the District as a result of higher monthly service payments by BP to cover the treatment and discharge of the incremental sanitary waste.

#### 3.13.2.11 Stormwater

##### Construction Impacts

As detailed in the Appendix F, Technical Report on Water and in Section 3.3, during construction of the Cogeneration Project, best management practices (BMPs) for sediment and erosion control will be implemented and maintained. These will include the construction of diversion ditches to prevent runoff from entering the site, ~~the use of tarps to cover exposed services to reduce erosion,~~ and temporary swales to filter and divert stormwater to the treatment and retention-detention system. After the settling of eroded materials in the retention-detention basins, the water will be discharged to the wetlands north of Grandview Road.

The proposed stormwater collection and treatment system will allow infiltration to occur and proper detention of stormwater to minimize peak discharge flows. The final discharge will be to wetlands for enhancement where the water will be able to infiltrate and recharge the shallow groundwater-bearing zone. The stormwater collection, treatment, and discharge will be within the same hydrologic basin where the stormwater

originates, namely within the Terrell Creek watershed. Hence, no significant changes to the quantity of water will result to the Terrell Creek drainage basin during construction of the Cogeneration Project.

#### Operation and Maintenance Impacts

During operation of the Cogeneration Project, stormwater from site runoff will be managed through an oil/water separation system and/or a wetpond for additional treatment and detention. Stormwater that could have come into contact with oils, greases, or other contaminants will be routed through the Refinery's wastewater treatment system.

BP is committed to implement and maintain BMPs to minimize potential impacts of the Cogeneration Project on both the volume and quality of stormwater. Since potentially contaminated stormwater associated with construction and operation of the Cogeneration Project will be processed through BP's existing wastewater treatment system at the Refinery, the project will not impose demands on the public wastewater treatment system. Therefore, potential impacts to community stormwater infrastructure systems associated with the project will be avoided.

#### 3.13.2.12 Solid Waste

Tables 3.13-3 and 3.13-4 summarize anticipated categories and volumes of wastes to be generated during construction and operation of the Cogeneration Project.

#### Construction Impacts

During construction phase of the project, the EPC contractor will be required to segregate and dispose of wastes in accordance with applicable federal and state laws, and with local county regulations. This is normally undertaken through contracted local solid waste disposal haulers who are licensed to transport and dispose of construction waste materials in accordance with the Whatcom County comprehensive plan for solid waste. Non-hazardous wastes would be transported to state-permitted solid waste transfer stations, and/or to permitted landfills within Washington and/or Oregon. Hazardous waste disposal facilities are available locally at the Bellingham Disposal of Toxics Facility, although it reportedly has limited capacity. Depending upon the actual types and quantities of hazardous wastes to be generated during construction of the Cogeneration Project, the EPC contractor will be responsible for identifying alternative licensed hazard waste disposal facilities.

#### Operation and Maintenance Impacts

During operation of the Cogeneration Project, BP will implement similar protocols and procedures for the handling, segregation, and disposal of waste streams and recyclables as currently managed at the Cherry Point Refinery. Typically BP retains the services of licensed waste haulers to collect and dispose of recyclable and non-recyclable wastes to approved disposal facilities.

TABLE 3.13-3

Summary of Anticipated Construction Waste Streams

Waste Stream	Waste Stream Classification	Estimated Amount	Estimated Frequency of Generation	No. Trucks & Frequency	Quantity Shipped
Scrap wood, steel, glass, plastic, paper calcium silicate insulation, mineral wool insulation	Non-hazardous solids	50 cubic yards	Weekly	1 per week	50 cubic yards
Empty hazardous material containers	Hazardous solids	1.5 cubic yard	Weekly	1 per week	1.5 cubic yard
Used and waste lube oil during CT and ST lube oil flushes	Hazardous or non-hazardous liquids	55 gallon drums	200 drums over life of construction	1 per 60 days	22-55 gallon drums
Oil rags, oil absorbent generated during normal construction activities excluding lube oil flushes	Hazardous liquids	55 gallons	Monthly	1 per month	55 gallons
Solvents, used construction equipment lube oils, paint, adhesives	Hazardous liquids	200 gallons	Monthly	1 per month	200 gallons
Spent lead acid batteries	Hazardous solids	3 batteries	Yearly	1 per year	3 batteries
Spent alkaline batteries	Hazardous solids	80 batteries	Monthly	1 per month	80 batteries
ST and pre-boiler piping cleaning water, chelant	Hazardous or non-hazardous liquids	400,000 gallons	Once before initial startup	34	400,000 gallons
Waste oil from oily waste holding tank	Hazardous or non-hazardous liquids	25 gallons	Monthly	1 per month	25 gallons
Sanitary waste from potable chemical toilets and construction office holding tanks	Non-hazardous liquids	1500 gallons	Daily	+3 per week	1500 gallons
Storm water from construction area	Non-hazardous liquids	950,000 gallons	For a once in 2 year, 24 hour storm event	NA	NA
Fluorescent, mercury vapor lamps	Hazardous solids	40	Yearly	1 per year	40
Hydrotest water	Non-hazardous liquids	<del>Two to three</del> 4.8 million gallons	Once before initial startup	Discharged to Refinery water treatment system	<del>Two to three</del> 4.8 million gallons

Source: Duke/Fluor Daniel, 2001.

TABLE 3.13-4

(REVISED) ESTIMATED WASTE STREAMS DURING OPERATIONS

<b>CHERRY POINT COGENERATION PLANT ESTIMATED WASTE STREAMS DURING OPERATIONS</b>			
Waste Stream	Classification	Amount	Disposition
Boiler feed water demin regeneration waste, boiler B/D, treated wash down, misc. oily drains, Cooling Tower Blowdown	Non-hazardous liquids	190 gpm	Discharged to Refinery for treatment per NPDES
Spent SCR catalyst (heavy metals)	Hazardous Solids	Approx 4800 cubic feet (once every 3 - 5 years)	Recycle
Spent oxidation catalyst (noble metals, heavy metals)	Hazardous /nonhazardous Solids	Approx 990 cubic feet (once every 3 - 5 years)	Recycle/reclaim
CGT used air filters	Non-hazardous	Approx 1500 filters (once every 3 years)	Landfill disposal
CGT off-line wash water	Non-hazardous or hazardous liquid	< 4000 gallons/month	Trucked to disposal facility
Scrap wood, steel, glass, plastic, paper	Non-hazardous Solids	3 cubic yards/week	Landfill disposal
Used oil filters, grease, oil rags, oil absorbent	Hazardous Solids	1/2 cubic yard/month	Hazardous waste disposal facility
Spent batteries	Hazardous Solids	100 batteries/year	Recycle
Solvents, paint, adhesives	Hazardous Solids	<55 gallons/month	Hazardous waste disposal facility
Used lube oils and hydraulic fluids	Hazardous Liquid	25,000 gallons (once every 10 years)	Recycle at Refinery
Oily water separator oil	Hazardous Liquid	20 gallons/month	Recycle at Refinery
Spent Pre-Coat Filter Material (powdered cellulose and activated caron)	Hazardous/Non-Hazardous solid	1200 lbs/day(400 lbs cellulose, 400 lbs adsorbed oil, and 400 lbs water)	Hazardous waste disposal facility, refinery landfarm, or other refinery disposal

### 3.13.2.13 Emergency Medical Services

#### Construction Impacts

During construction of the Cogeneration Project, there will be a large number of workers onsite relative to the permanent operational workforce for the project. BP has established a proven track record during the past 30 years of managing its own emergency medical services in support of the Cherry Point Refinery operations, as well as accommodating emergency medical needs of up to 2,400 additional personnel during scheduled maintenance turnarounds and capital projects at the refinery. BP has demonstrated that its onsite medical services are able to effectively plan and manage for additional personnel, such that there will be little or no demand for support from community emergency medical services during construction of the Cogeneration Project.

During construction of the Cogeneration Project, the ultimate goal of the safety program will be consistent with that currently in place for the Cherry Point Refinery, namely zero accidents. An aggressive safety plan will include mandatory health and safety orientation for all personnel on site, periodic additional safety training for the duration of construction, safety audits, and monitoring of work processes by a safety engineer. The use of safety equipment will be strictly enforced. Stringent application of health and safety procedures will result in a low incidence of medical emergencies.

#### Operation and Maintenance Impacts

The operational workforce for the Cogeneration Project is also well within the capacity of BP's on-site facilities to handle. In addition, all employees of the Cogeneration Project will receive training in first aid and cardiopulmonary resuscitation (CPR). Onsite treatment will be provided where the medical requirement is either first aid treatment only and/or patient stabilization until professional medical attention is obtained.

Given the extent and sophistication of BP's onsite medical resources, routine support from offsite community medical facilities during construction and operation of the Cogeneration Project will not be required. Medical emergencies, which historically have occurred infrequently at the Refinery, could however, require medical assistance from the nearby St. Joseph Hospital in Bellingham, Washington.

Whatcom County recently reported a population to physician ratio of approximately 555/1 (WC, 2001), which will not be significantly affected by the addition of potentially 180 individuals at any one time, or an outside maximum of 414 including family members, to the local population during construction of the Cogeneration Project.

As for fire and police services, there is always the remote possibility of an extreme emergency incident that might necessitate involving local medical services. Were this to occur, these services would be involved as part of a call on the Division of Emergency Management resources, as described above.

### 3.13.2.14 Public Utilities

The Cogeneration Project will generate electricity over and above the immediate requirements of the Cherry Point Refinery. A double circuit, 0.8 mile long transmission line from the 230 kV switchyard leading to the interconnection point at Kickerville Road

east of the Cogeneration Project with the BPA transmission corridor would be included for export of power from the Cogeneration Project. The power will be transmitted through Bonneville Power Authority's (BPAs) transmission line to the east of the Cogeneration Project, connecting with the existing Custer substation. Upgrades of this substation ~~would~~ may be recommended as a result of the System Interconnection Facilities Study. [A single contingency analysis study performed by Bonneville Power Administration shows that upon the loss of one of the 230 kV transmission lines from the Custer substation, assuming certain combinations of loads and generation and assuming the ambient temperature exceeds 68° F, the existing 230 kV transmission lines would exceed BPA's operating limit of 100° C by up to 8%. One option if these events occurred is to implement a remedial action scheme to shed load or generation. BP prefers this course, as no new high voltage transmission lines are required across public or other private lands to provide for this contingency situation.](#) There would likely not be a requirement to significantly change BPA's operations or staffing to meet the needs of this Project.

#### 3.12.2.15 Fiscal Impacts

BP's existing security, emergency medical, and fire response infrastructure currently supporting the Cherry Point Refinery will be capable of supporting the needs of these services during construction and operation of the Cogeneration Project. It is anticipated that only in an extreme emergency, would local community fire, police, medical services, and other government resources be called upon to help respond to an event at the Cogeneration Project. Therefore, during routine construction and operation phases of the Cogeneration Project, there will be no financial demand on external or community resources for fire prevention and response, security and policing, and medical services.

In terms of additional requirements for emergency services during construction of the Cogeneration Project reflective of a relatively large workforce, the increased number of trained fire, security, and medical emergency personnel is relatively small given that BP currently has in place a sophisticated infrastructure at the Cherry Point Refinery. BP's experience with large temporary workforces during maintenance turnarounds and construction of other capital projects has demonstrated that emergency incidences are infrequent and are well within the capacity of BP resources, whether for fire, policing or medical service provision, to manage.

During operation of the Cogeneration Project, the number of individuals with their families that will move permanently into the area represents an insignificant percentage of both the existing local population, and the forecast population growth.

Whatcom County operates on a revenue base that has seen its revenue grow from about \$92 million in 1997 to forecasted revenue of \$111 million in 2001. Expenditures have grown more quickly, from \$84 million in 1997 to forecast expenditures of \$117 million in 2001 (WC 2001a). Whatcom County's 2001 budget forecasts a deficit in excess of \$5 million. The largest portion of revenue comes from property, sales, excise and timber harvest taxes, which based on 2001 projections, are expected to generate 41% of total revenue, equal to \$47 million. The other major revenue categories are intergovernmental transfers at 21%, and charges for goods and services at 14%.

The Cogeneration Project will generate additional revenue to Whatcom County through sales taxes on project-related local expenditures, property taxes, and sales taxes attributable to indirect economic impact. These are estimated at \$10 million over the 2-

year construction period, and another \$4.6 million annually during the operations phase of the Cogeneration Project (Appendix L). These estimates are conservative, as they do not include account for fiscal benefits resulting from indirect or induced employment, or the redistribution of increased tax revenue within Whatcom County that will accrue to Washington State as a result of the Cogeneration Project.

Relative to the present revenue of Whatcom County, the additional contribution of revenue resulting from expenditure, taxes, and income resulting from the construction and operation of the Cogeneration Project are significant. The benefits accruing from the increased revenue stream within Whatcom County and the state of Washington as a result of the construction and operation of the Cogeneration Project, will manifest itself through other ways, such as increased delivery of social and physical infrastructure services, and possibly, decreases in local tax rates to county residents.

Furthermore, insofar as the project contributes to the longer-term competitiveness of the Cherry Point Refinery, it contributes to the sustainability of that operation and the revenue it contributes through direct taxes, property taxes, employment income, and expenditures. Therefore, the net fiscal impact associated with the construction and operation of the Cogeneration Project will be highly positive.

### **3.13.3 Environmental Impacts of the No Action Alternative**

Under the no action alternative the proposed site would remain in its current state. The most significant impact associated with the no action alternative would be the lost opportunities for economic development and increased tax revenue that are possible with the construction and operation of the Cogeneration Project.

### **3.13.4 Mitigation Measures**

No mitigation is necessary because there will be no adverse impacts on public services and utilities associated with the construction and operation of the Cogeneration Project. BP, as is the case for the Cherry Point Refinery, will provide its own fire, security and emergency medical staff sufficient to cover all but the most extreme, and improbable, emergencies. Therefore, there will be no requirement for routine service delivery on the part of local service providers.

Construction and operation of the Cogeneration Project will bring a large net fiscal benefit to Whatcom County. There will be tax payments over the life cycle of the project as well as from other government revenue deriving from local employment and contracting of local services, while the plant will not place incremental demands on local government spending. The plant location, adjacent to the Cherry Point Refinery in a Heavy Industrial zoned area, will not affect enjoyment of recreational facilities.

### **3.13.5 Cumulative Impacts**

As explained above, the Cogeneration Project will not contribute to any cumulative impacts to public services. On the contrary, construction and operation of the Cogeneration Project will bring a large net fiscal benefit to Whatcom County and to the state of Washington. There will be tax payments over the life cycle of the project as well as from other government revenue deriving from local employment and contracting of

local services. At the same time, the project will not impose incremental demands on local government spending, public services and utilities, or other community resources.

### **3.13.6 Significant Unavoidable Impacts**

There are no unavoidable significant adverse impacts associated with the construction or operation and maintenance of the Cogeneration Project.