

3.11 TRANSPORTATION

Construction and operation of the proposed Plymouth Generating Facility (PGF) would affect transportation and traffic in the site area. Transportation issues would include construction traffic on roads (workers, equipment, and material deliveries by truck), delivery by rail of large power plant components, and plant operation traffic (employees, visitors, deliveries of materials, and supplies). Types of transportation addressed in this section will include road, rail, river, and air transport.

3.11.1 AFFECTED ENVIRONMENT

3.11.1.1 Regional and Site Area

The PGF would be located in an area north of Christy Road and the Burlington Northern Santa Fe Railway (BNSF) railroad tracks and south of State Route 14 (SR 14), approximately 2 miles west of the community of Plymouth and approximately 3.5 miles west of Interstate 82 (I-82). Roadway, air, rail, and river transportation are available in the regional and site area surrounding the PGF plant site.

3.11.1.1.1 Roadway Transportation

The existing roadway system in the site area is shown on Figure 3.11-1. The roadways potentially affected by the proposed project include:

- **Interstate 82** – I-82 is a northwest-southeast freeway that originates at I-90 in Ellensburg and extends southeast to I-84 near Hermiston, Oregon, a few miles south of Plymouth. The freeway has four travel lanes (two in each direction). The I-82 interchange closest to the proposed plant site is at SR 14. The posted speed on I-82 is 70 miles per hour (mph) for autos and 60 mph for trucks.
- **State Route 14** – SR 14 is an east-west, two-lane highway that originates at the McNary Dam, intersects with I-82, and runs west to I-5 in Vancouver, Washington. SR 14 parallels the Columbia River on the north side, and has a posted speed of 65 mph for autos and 60 mph for trucks.
- **Christy Road** – Christy Road is a two-lane county road that runs parallel to the north side of the Columbia River. Christy Road terminates just east of I-82 and extends west approximately 6.5 miles until it turns north to intersect with SR 14. Christy Road crosses the BNSF railroad tracks approximately 0.75 mile west of the existing access road to the plant site, and is routed underneath the railroad tracks north of the community of Plymouth. The posted speed limit is 35 mph.
- **Plymouth Road** – Plymouth Road is a two-lane county road that runs north from its intersection with Christy Road at the community of Plymouth, past SR 14.
- **Plymouth Industrial Road** – Plymouth Industrial Road is a minor access road off of SR 14 that leads to the AgriNorthwest grain facility near the PGF plant site.

The road terminates before reaching the plant site.

Existing Traffic Volumes

Average daily trips data (year 2000) for SR 14 and I-82 were obtained from the Washington State Department of Transportation (WSDOT) and are shown on Figure 3.11-1. Traffic data were not available for Christy, Plymouth, or Plymouth Industrial Roads (Childress 2002). Manual 12-hour traffic count data and manual truck count data for the SR 14/Plymouth Road intersection (conducted in 2000) were also obtained from WSDOT (2000), as this was the intersection of concern (Holmstrom 2002).¹

Table 3.11-1 shows existing peak hour traffic volumes along SR 14 and Plymouth Road for the a.m. and p.m. periods (7:00 to 8:00 a.m. and 4:00 to 5:00 p.m., respectively). For the a.m. peak travel period on SR 14, approximately 30 of the 62 eastbound vehicles (48 percent) and approximately 49 of the 161 westbound vehicles (30 percent) were trucks.

For the p.m. peak travel period on SR 14, approximately 30 of the 175 eastbound vehicles (17 percent) and approximately 37 of the 99 westbound vehicles (37 percent) were trucks.

**Table 3.11-1
 Existing Traffic Volumes, 2000**

Location	Traffic Volumes (all vehicles)	
	AM Peak (7:00 – 8:00 am)	PM Peak (4:00 – 5:00 pm)
SR 14 - eastbound	62	175
SR 14 - westbound	161	99
Plymouth Rd. - northbound	13	30
Plymouth Rd. - southbound	13	35

Source: WSDOT 2000.

Existing Level of Service

Level of Service (LOS) is an estimate of the performance efficiency and quality of a roadway as established by the Transportation Research Board’s (TRB) *Highway Capacity Manual* (2000) methodology. The TRB methodology measures the degree of delay at intersections using the letter rating “A” for the least amount of congestion and letter rating “F” for the most amount of congestion, as shown in Table 3.11-2.

¹ Intersection data were not available for the SR 14/Christy Road intersection.

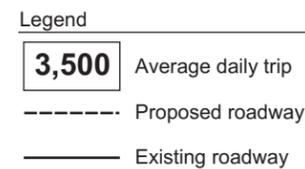
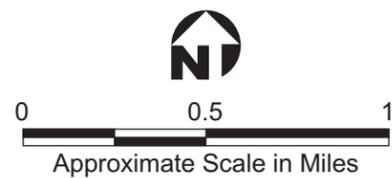
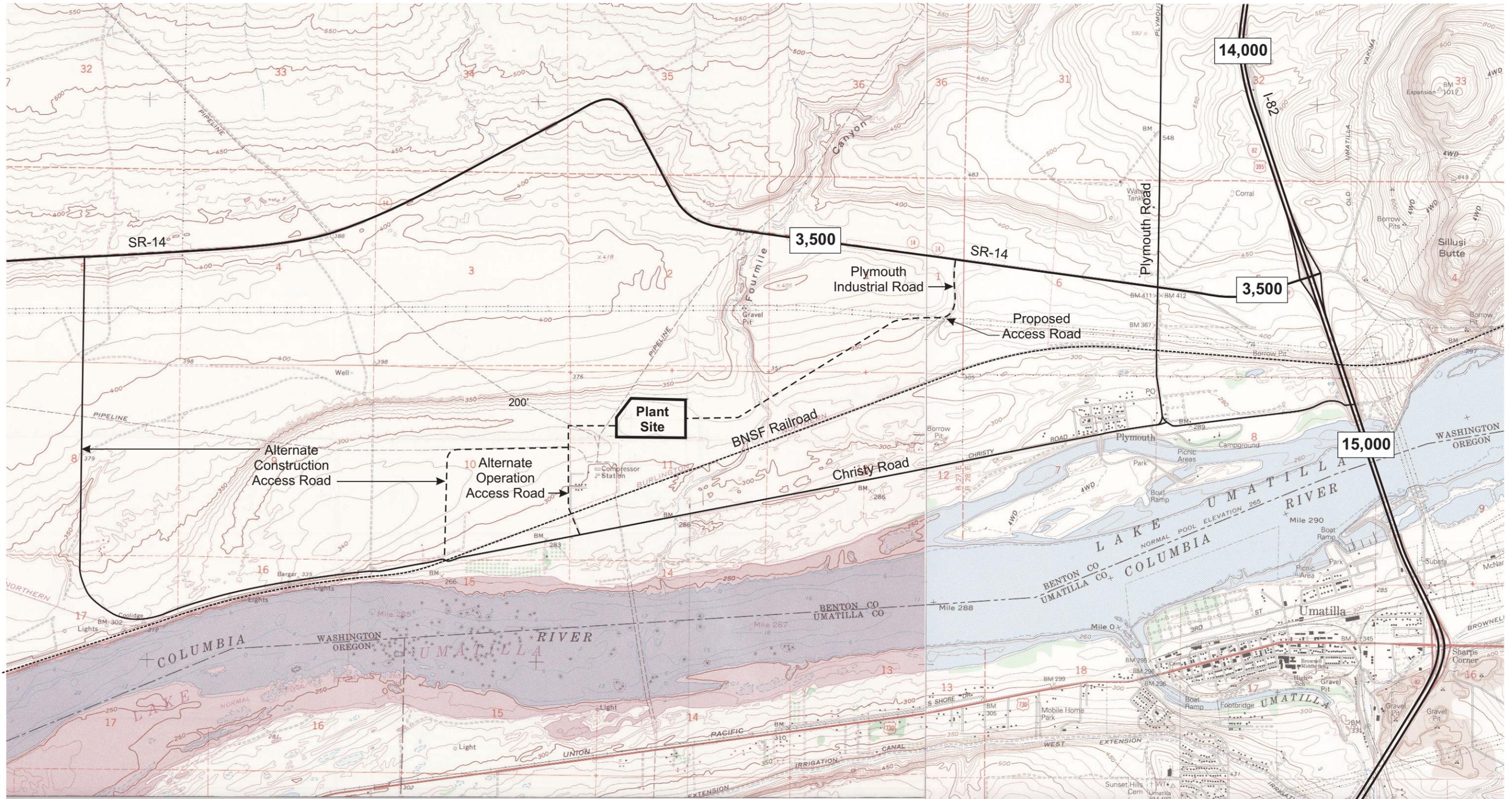


Figure 3.11-1
**Existing Roadways and
 Average Daily Trips**

Figure 3-11-1 (Continued)

Table 3.11-2
TRB Rating System: Level of Service and
Delay for Unsignalized Intersections

Level of Service	Expected Traffic Delay
A	≤ 10 seconds
B	> 10 – 15 seconds
C	> 15 – 25 seconds
D	> 25 – 35 seconds
E	> 35 – 50 seconds
F	> 50 seconds

Source: TRB, 2000.

Input for the LOS analysis of the unsignalized intersection of SR 14 and Plymouth Road included the peak hour traffic counts (listed in Table 3.11-1), the intersection data from WSDOT, truck percentages data from WSDOT, and geometric road information (e.g., number of lanes, width, configuration, and grade) (Eldrid 2002). The Highway Capacity Software (HCS) 2000 Release 4.1a, that is used in conjunction with the TRB *Highway Capacity Manual*, was used to calculate LOS.

The results of the LOS analysis show LOS A under existing conditions at the intersection of SR 14 and Plymouth Road, representing little or no delay in all travel directions. Analysis of critical turning movements (left turns) for stopped vehicles from Plymouth Road show only short delays of 10 to 11 seconds, resulting in LOS B. An LOS of C or better is typically considered to be acceptable for a rural setting and is the LOS standard for Benton County.

Estimated Future Traffic Volumes

The PGF is expected to begin operation by late 2005. Traffic volumes in 2005 without the PGF were estimated for the site area, based on the assumption that background traffic volumes would increase two percent annually between 2000 and 2005. The growth factor of two percent per year was based on projected average annual population and labor force growth in the Benton County area and is considered to be conservatively high. As stated in Section 3.13, Socioeconomics, population in Benton County is expected to grow 1.3 percent per year between 2000 and 2010, while employment in Benton and Franklin counties combined is expected to grow 1.2 percent per year between 2000 and 2008. The average growth rate of 2 percent in the Benton County area was also based on historical traffic data obtained from WSDOT. The Goldendale Energy Project in Goldendale, Washington; the Coyote Springs PGE plant in Morrow County, Oregon; the Hermiston Power Project in Umatilla County, Oregon; and various transmission line projects that have been approved by local agencies and are currently under construction or anticipated to be under construction within the next 4 years, were considered. The resulting estimated a.m. and p.m. peak hour volumes along SR 14 and Plymouth Road are shown in Table 3.11-3.

**Table 3.11-3
Estimated Future Traffic Volumes Without PGF, 2005**

Location	Traffic Volumes	
	AM Peak (7:00 – 9:00 am)	PM Peak (4:00 – 6:00 pm)
SR 14 - eastbound	69	194
SR 14 - westbound	178	109
Plymouth Rd. - northbound	14	33
Plymouth Rd. - southbound	14	39

Estimated Future Level of Service

The LOS analysis for future conditions was conducted using the same methodology that was used for existing LOS conditions. Results of the LOS analysis for 2005 conditions without the PGF show that turning movements at the SR 14/Plymouth Road intersection would continue to experience little delay, even with the assumed growth in background auto and truck traffic associated with other projects in the area. In addition, all SR 14 movements and left turns from northbound Plymouth Road to westbound SR 14 would continue to operate at LOS A, and left turns from southbound Plymouth Road to eastbound SR 14 are expected to remain at LOS B. No other intersections in the area are anticipated to be affected.

3.11.1.1.2 Rail Transportation

The BNSF Railway operates railroad tracks that extend through the southern portion of the site area. This major railway connects the west and east coasts of the United States and points in between.

3.11.1.1.3 River Transportation

River transportation in the site area includes barge and boat/shipping transport on the Columbia River. The plant site is located less than 1 mile north of the Columbia River, which runs from east to west (and towards the Pacific Ocean) in this part of the state. Ports in Washington and Oregon on the Columbia River within 50 miles up or down the river from the site area include the Ports of Benton, Kennewick, Pasco, Walla Walla, Umatilla, Morrow, and Arlington. Approximately 17 additional ports are located on the river further west of Arlington, from The Dalles, Oregon, to Ilwaco, Washington.

3.11.1.1.4 Air Transportation

Air transportation in the regional area includes the Tri-Cities Airport located in Pasco, which is approximately 30 miles north/northeast of the general site area. Other more distant airports or airfields exist in Walla Walla and Yakima, Washington, and Pendleton, Oregon.

3.11.1.2 Proposed Action

3.11.1.2.1 Plant Site

Plymouth Industrial Road is a paved, minor roadway that extends south from SR 14 and provides access to the AgriNorthwest grain facility east of the plant site. Peak traffic associated with the grain facility is seasonal.

A minor access road originates northbound from Christy Road, crosses the BNSF railroad tracks, and terminates at the Williams Co. compressor station just southwest of the plant site. Other dirt roads or paths run adjacent to or in between agricultural fields in the site area.

The area where an off-load platform would be constructed is south of AgriNorthwest's planned rail loop and is currently undeveloped.

3.11.1.2.2 Transmission Interconnection

The transmission interconnection is located in an area with no paved roadways, rail, air, or river transportation facilities.

3.11.1.2.3 Access Road

The proposed access road alignment is located in an area that includes a portion of Plymouth Industrial Road (discussed above under Section 3.11.1.1.1). The area also includes vacant land with no paved or dirt roadways. The area does not include rail, air, or river transportation facilities, with the exception that the off-load platform would be constructed in an area adjacent to the existing BNSF rail siding.

3.11.1.3 Alternate 230-kV Transmission Interconnection

The existing conditions for the alternate 230-kV transmission interconnection would be the same as the existing conditions for the proposed transmission interconnection because the 230-kV line is in the same physical location as the proposed 500-kV line.

3.11.1.4 Alternate Benton PUD/BPA Transmission Interconnection

No road, rail, air, or river transportation facilities are located in the area where the alternate Benton Public Utility District (PUD)/BPA transmission interconnection would be constructed. Although the existing transmission lines and towers run parallel to Christy Road, there are no access roads to these facilities in the area.

3.11.1.5 Access Alternative

The alternate construction and operation access roads would include roadways that already exist, including Christy Road and unpaved farm roads. These roads cross the BNSF railroad tracks in two places.