2.0 Environmental Description

This chapter presents descriptions of the existing environmental conditions at the STP 3 & 4 site, the site vicinity and the region. The environmental descriptions provided sufficient detail to identify those environmental resources that have the potential to be affected by the construction, operation, or decommissioning of the General Electric (GE) Advanced Boiling Water Reactors (ABWR). The chapter is divided into nine sections as follows:

- Site Location (Section 2.1)
- Land (Section 2.2)
- Water (Section 2.3)
- Ecology (Section 2.4)
- Socioeconomics (Section 2.5)
- Geology (Section 2.6)
- Meteorology, Air Quality and Noise (Section 2.7)
- Related Federal Project Activities (Section 2.8)
- Existing Plant Parameters and Site Characteristics (Section 2.9S)

2.1 Site Location

STPNOC proposes to construct and operate two GE ~~ABWR~~ Advanced Boiling Water Reactor (ABWR) units at the STP site in Matagorda County, Texas. The site is not located within a township. The two ABWR reactors would be referred to as STP 3 & 4. This section describes the general location of the STP site.

STP 3 & 4 and supporting infrastructure would be sited in the area delineated in Figure 2.1-1. The centerline of STP 3 & 4 would be approximately 1500 feet north and 2150 feet west of the center of the existing Units 1 & 2 containment buildings.

The STP 3 & 4 Reactor Buildings would be located at the following coordinates:

			Universal Transverse Mercator (UTM) Zone 14 (meters)	
	Latitude	**Longitude**	**Northing**	**Easting**
Unit 3	N28° 47' 59’	W96° 3' 16’	3,189,341	787,518
Unit 4	N28° 47' 59’	W96° 3' 26’	3,189,341	787,243

North American Datum 1983 (NAD 83)

The STP site is on the west side of the Colorado River. The STP 1 & 2 power block area (generating facilities and switchyard) is north of the ~~main cooling reservoir~~ Main Cooling Reservoir, as would be STP 3 & 4. The exclusion area boundary is oval-shaped having a minimum distance from the center of each existing containment building of 4692 feet. The STP property, shown in Figure 2.1-1, is approximately 12,220 acres (Reference 2.1-1). The exclusion area boundary is completely within the property boundary.

The STP site is located in a rural area of Matagorda County, approximately 10 miles north of Matagorda Bay and 70 miles south-southwest of Houston. The western bank of the Colorado River forms the eastern STP property boundary. A 13-acre park, developed by the Lower Colorado River Authority (LCRA) and operated by Matagorda County, is located on Farm-to-Market Road 521 (FM 521) on the west side of the Colorado River (Reference 2.1-2). The Port of Bay City terminal is located approximately five miles north-northeast of the STP site. Run by the Port of Bay City Authority, it accommodates barge traffic including off-loading and loading facilities for various products (Reference 2.1-3). Measured at approximately 12 miles north-northeast of the site, Bay City Census County Division (CCD) will be the closest population center (i.e., having more than 25,000 residents) to the new units when commercial operation begins (Figure 2.1-2). The Bay City CCD, containing Bay City and Van Vleck had a population of 24,238 in 2000 (Reference 2.1-4). Figure 2.1-3 provides a six mile vicinity map.

Access to the site is from FM 521, which runs through the STP property and intersects with FM 1095. FM 1468 intersects with FM 521 directly north of the STP site. A railroad spur that serves the plant parallels FM 1468 and intersects with a commercial line approximately nine miles north of the site. Only railroad cars consigned to STPNOC are brought into the plant site over this spur. Figure 2.1-4 is an oblique aerial photograph of the STP site.

2.1.0.1 References

2.1-1 "STPEGS Updated Final Safety Analysis Report, Units 1 and 2," Revision 13.

2.1-2 "LCRA (Lower Colorado River Authority) 2007, FM 521 River Park." Available at http://www.lcra.org/parks/river_access/fm521.html, accessed February 14, 2007.

2.1-3 "Port of Bay City Authority 2007." Available at http://www.portofbaycity.com, accessed March 12, 2007.

2.1-4 "USCB (U.S. Census Bureau) 2000. Matagorda County, Texas - County Subdivision and Place." GCT-PH1. Population, Housing Units, Area, and Density: 2000. Available at http://www.factfinder.census.gov, accessed February 23, 2007.

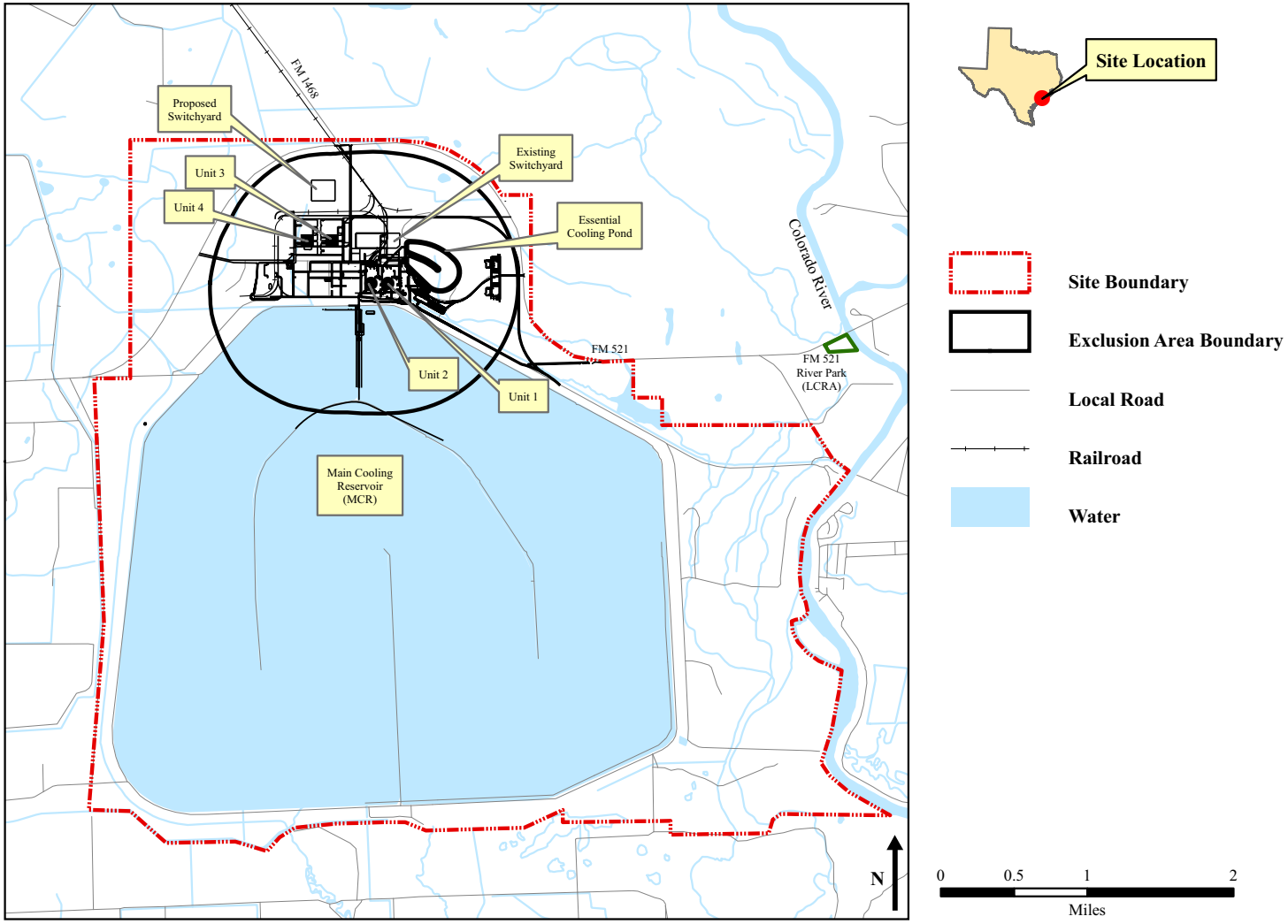

Figure 2.1-1 STP Site and Proposed Plant Footprint

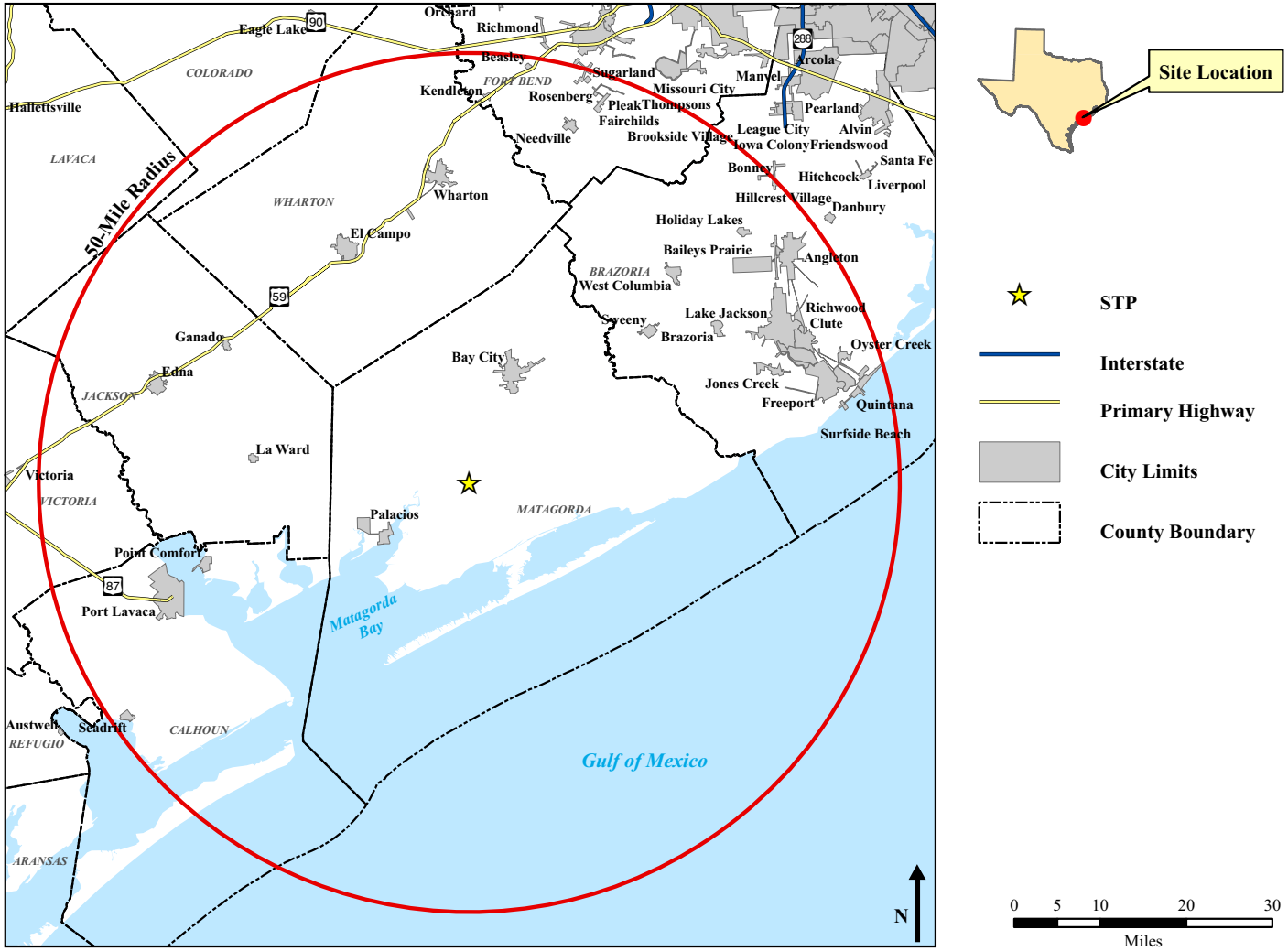

Figure 2.1-2 50-Mile Region

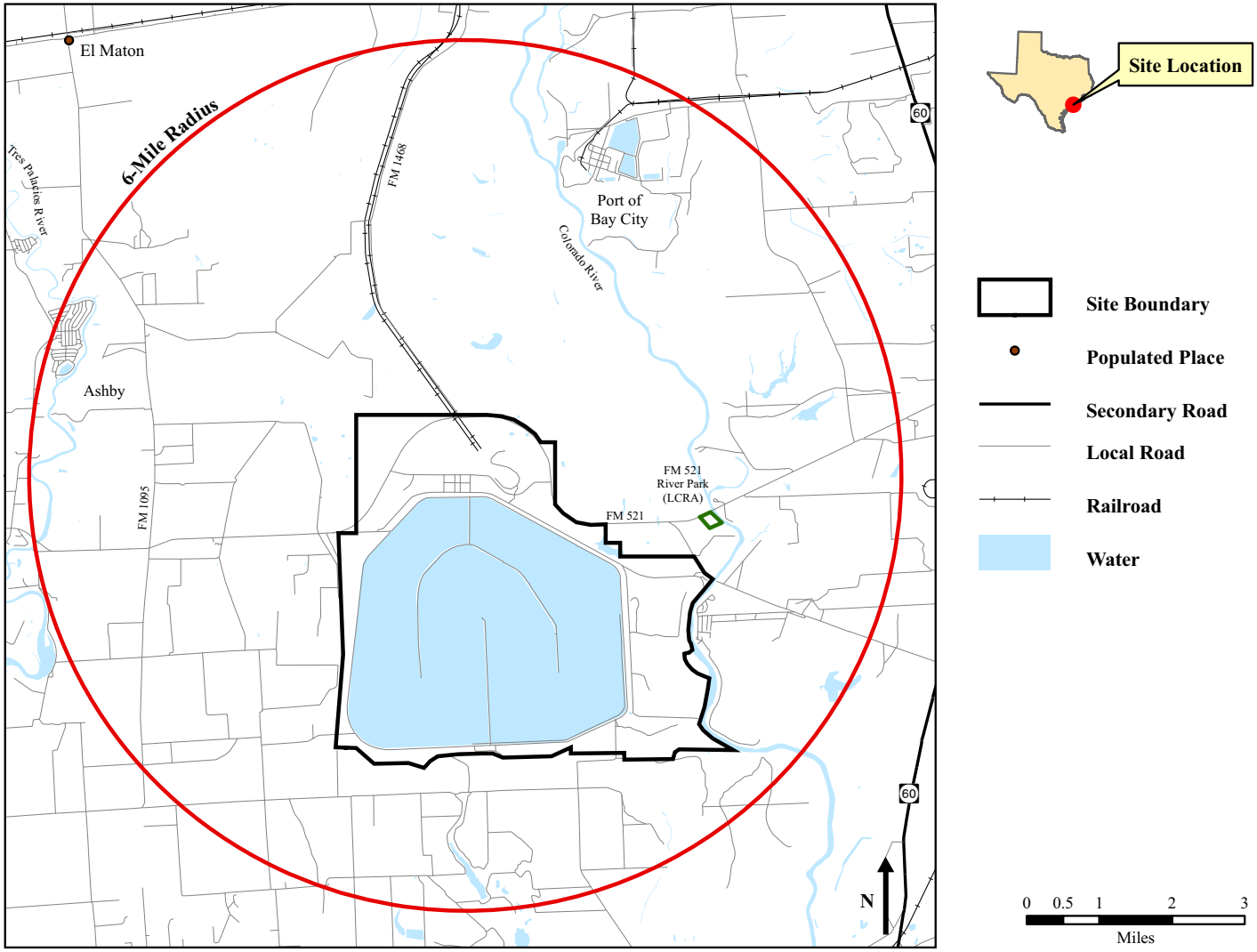

Figure 2.1-3 6-Mile Vicinity

Figure 2.1-4 Oblique Aerial Photograph of STP Site