3.3.2 Soils

The soils within the study area are predominantly lacustrine silt and sand deposits with interspersions of alluvial gravels and clays transported by the Colorado River. For the most part, the lacustrine deposits are poorly consolidated and are subject to both water and aeolian erosion. The process of gradual deflation of these deposits has resulted in the formation of desert pavement and protopavement over large areas. Those deposits associated with stable lake stands appear to be especially susceptible to this process. As a result of these factors, most of the surface formations within the project area consist of, or are overlain by, thin aeolian secondary deposits derived from these lacustrine sands and silts. Most of the softer underlying silt/clay formations are dissected by intricate drainage systems trending northward towards the Salton Sea. Ancient beach deposits can often be observed in the banks of these channels.

There are nine soil types present within the survey corridor: Rositas sand, Rositas fine sand, Carsitas gravelly sand, Glenbar complex, Indio-Vint complex, Meloland fine sand, Niland fine sand, pits, and Rositas-Superstition loamy fine sand (U.S. Department of Agriculture [USDA] 1978). The USDA soil survey did not include a portion of the survey corridor south of State Route 98 and west of the existing 230-kV power line. Soils information from this area is not currently available.

3.3.3 Seismicity

The Imperial Valley is one of the most seismically active regions in the nation. Five earthquakes of 5.8 magnitude or greater have occurred in the Imperial Valley in the last 100 years. Several times a year, the Imperial Valley will experience minor tremors, will suffer a moderate quake every five to ten years, and will be subjected to a major quake (magnitude 6 to 7) every 20 to 40 years. Major faults in the area trend generally northwest-southeast, roughly parallel to the proposed transmission line routes. The transmission line routes lie between the Laguna Salada Fault (about 9 miles west), the Superstition Hills Fault (about 9 miles northeast), and the Imperial Fault (about 14 miles east). There has been a major earthquake on each of these faults within the last century.

3.4 Water Resources/Floodplains

The Colorado Desert is subject to extremes of humidity and temperature. Very high summer temperatures, well over 100 degrees Fahrenheit, combine with low rainfall and high evaporation rates to produce an environment that is second only to Death Valley in total aridity. Normal annual precipitation in Calexico is 2.8 inches; in El Centro, it is 2.71 inches. Due to these conditions, there is no surface water in natural areas near the proposed transmission lines, although the Westside Main Canal and other irrigation canals serve the agricultural areas to the east.

In the project area, three defined drainages traverse the proposed routes from, generally, southwest to northeast. The northernmost and largest in area is Pinto Wash, draining toward the northeast about 3,000 feet south of the IV Substation, where it is more than 3,000 feet wide. Another drainage is just south of Highway 98. This area includes the confluence of two streambeds, where a culvert and dam have been placed. The area directly downstream of the culvert has been heavily disturbed due to off-road vehicle traffic. The southernmost area is an extension of an unnamed intermittent drainage that rises to the southwest in Mexico and drains northeasterly. These drainages are normally dry but are probably subject to flash-flooding in occasional torrential storms that can occur in the area. Pinto Wash is the site of the only 100-year floodplain mapped in the proposed transmission line routes by the Federal Emergency Management Agency (FEMA) on Flood Insurance Rate Maps.

Groundwater at the IV Substation site in 1980 was encountered in borings at 25 to 30 feet below the ground surface. On USGS topographic maps, the mean sea level contour intersects the substation site. Borings about 3,000 feet east of the IV Substation encountered groundwater about six to seven feet below the ground surface. Agricultural tile drains under fields just east of this area are at a depth of five to six feet. As in most locations in the Imperial Valley, groundwater in the area is brackish and is not used for any beneficial purpose.

3.5 Biological Resources

The discussion of biological resources in this EA is based on a report of biological surveys conducted in September and October of 2000 of a study area corridor 2,150 feet wide centered on the existing SDG&E transmission line and of the area north and east of the IV Substation. A wetland delineation was also performed. The survey report and wetland delineation report are attached to this EA (Appendix C).

3.5.1 Vegetation

Two vegetation communities were identified within the survey area: Sonoran creosote bush scrub and desert wash (Figure 3.5.1). Neither of these communities is considered a sensitive plant community. Of the approximately 1,464 acres in the survey corridor, about 1,218 are Sonoran creosote bush scrub and about 204 acres are desert wash. The remainder, about 42 acres, is developed. The two major areas of developed land are SR-98 (5.5 acres of the study area) and the IV Substation (36.9 acres). A network of dirt roads used by off-highway vehicles is present around the access roads for the SDG&E transmission line in the center of the study corridor.

Sonoran creosote bush scrub covers most of the study area. It is an open, relatively sparse community dominated by creosote bush (*Larrea tridentata*), with burro-weed (*Ambrosia dumosa*) and two species of saltbush (*Atriplex* spp.) common. Several trees,