

### 3.0 PROJECT SETTING

The Pennsylvania High-speed Maglev Project would extend from Pittsburgh International Airport (PIA) in Allegheny County to the Greensburg area, Westmoreland County, a distance of approximately 87 kilometers (54 miles). Along the way, the project would pass through Downtown Pittsburgh, the largest city in the region and second largest city in Pennsylvania, and Monroeville, a municipality approximately 16 kilometers (10 miles) east of Pittsburgh with a population of nearly 30,000 (U.S. Census 2000). The following section is intended to provide an overview of the features present within the study area. Detailed investigations of site specific resources and potential impacts are presented in Chapter 4.0, Environmental Consequences.

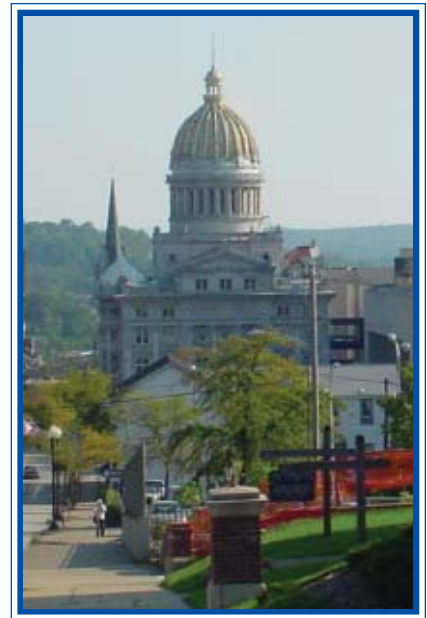
Definitions for all acronyms can be found in Chapter 10.0 of this DEIS

#### 3.1 Regional Setting

The study area for the proposed Pennsylvania High-speed Maglev Project is located in southwestern Pennsylvania in Allegheny and Westmoreland counties. Both counties are comprised of numerous municipalities and townships of varying sizes and populations with Pittsburgh and Greensburg, respectively, being each county’s seat of government. (See Photos 3.1-1 and 3.1-2.)

Located within an approximately 805-kilometer (500-mile) radius of Pittsburgh are some of the nation’s largest cities (Chicago, New York, Philadelphia, and Washington, D.C.). This radius also includes over half of the nation’s industrial and manufacturing capacity, as well as 51 percent of the United States population, 28 percent of the top U.S. metropolitan retail markets, 50 percent of Canada’s population, 63 percent of our national industrial output, and 53 percent of U.S. buying income.

The project area is characterized by plateaus, hillsides, narrow valleys, and rivers. Over 1,700 bridges span local rivers and valleys. (There are 720 bridges in the City of Pittsburgh alone.)



**Photo 3.1-1** View of the Westmoreland County Court House in the City of Greensburg.



**Photo 3.1-2** View of the Pittsburgh skyline from Mount Washington.

Land utilization of this hilly project area can be divided into three major land use categories: urban, suburban, and rural. These three categories generally describe different sections of the project – the western portion of the project area includes mainly suburban land uses, while the middle portion contains an urban setting, and the eastern area is primarily rural. The City of Pittsburgh recognizes 88 distinct neighborhoods that were established as immigrants arrived to work in the coal and steel factories or to open businesses. The area’s strong ethnic background is a product of this massive immigration that took place in the early 1900s during the growth of the steel industry.

## **3.2 Cultural Setting**

The terrain that makes up the study area has likely been inhabited since the decline of the Ice Age around 14,000 years ago, as evidenced by the appearance of some Paleoindian period remains throughout the region. As time passed, the abundant natural resources and ameliorating climate of the region brought in nomadic groups throughout the Archaic and Early Woodland periods, with increasing agricultural dependence and permanent settlement culminating locally in the Monongahela cultural tradition of the Late Woodland/Late Prehistoric period (approximately A.D. 1100 to 1550). The Monongahela culture has been characterized most dramatically by large villages with stockades, round houses, storage features, and burials.

The historic period in the region is generally considered to begin with initial European occupation ca A.D. 1750, when the French claimed the area and erected Fort Duquesne at the confluence of the Allegheny and Monongahela rivers. This confluence, where the waters of the two rivers form the Ohio, became a focal point during the French and Indian War, until the English gained control and constructed Fort Pitt there in 1758. Two reported Native American villages — Allequippa’s Town and Shannopin’s Town — date to approximately the same time. The excellent river access, the abundant natural resources, and the key geographic location quickly transformed the area into a major inland port and the center for commerce and manufacturing, particularly during the growth of the coal and steel industries in the late nineteenth century. The force of this industrial and commercial development shaped the culture of the region for almost two centuries, transforming the early rural economies into a major industrial force until the peak of the steel industry period from 1920 to 1945 in which Pittsburgh was labeled the “Steel Capital of the World.” The concentration of urban residential and commercial development followed the waterways and historic railroads serving the region, where the majority of historic sites and historic districts are found today. In the period after 1946, the region was marked by a shift from the industrial base to a service economy. Agriculture, the coal industry, manufacturing activities, and the steel industry declined, and service, retail, and finance/insurance/real estate businesses saw substantial growth.

### **3.2.1 Historical Structures and Properties**

Much of the study area for the Pennsylvania High-speed Maglev Project has been subject to previous historic resource studies, most notably Pittsburgh and its immediate vicinity. To supplement the existing information, windshield surveys were conducted of the proposed study area. The study area contains a wide range of historic resource types, including farms and farmsteads; industrial sites; residential, commercial, and industrial historic districts; religious, cultural, and public institutions; transportation-related resources; and individual buildings. The resources are of national, state, and local importance, and are significant under National Register of Historic Places (NRHP) Criterion A (association with an event), Criterion B (association with a person), and Criterion C (architecture and engineering). The study area

also includes four National Historic Landmarks in Allegheny County (The Forks of the Allegheny/Point State Park, the Allegheny County Courthouse, Kennywood Park, and the Smithfield Street Bridge) and one in Westmoreland County (Bushy Run Battlefield).

### **3.2.2 Archaeological Resources**

In order to evaluate the potential for archaeological resources within the project area, a methodology was developed that included background literature research, the development of prehistoric and historic archaeological contexts, and the creation of resource potential models or sensitivity maps within a Geographic Information System (GIS). The predictive models will be utilized to determine areas of potential historic and prehistoric archaeological resources after the selection of an environmentally preferred build alternative and before construction of the project. The Area of Potential Effect (APE) for the archaeological resources is considered to be the area of potential ground disturbance related to construction activities. See Chapter 4.0, Environmental Consequences, for more information on archaeological resources.

#### **3.2.2.1 Prehistoric Archaeological Resources**

Previously recorded information about prehistoric sites in the region was utilized for the development of site distribution patterning. The project region is characterized by broad hilltops or ridge tops, separated by deeply incised valleys cut by the tributaries of the Ohio, Monongahela, and Allegheny rivers. Much of the project area is disturbed by modern/historic development (i.e., strip mining and residential, commercial, and industrial growth), particularly within the limited alluvial landforms of the terrain. The types of sites expected in the region might include burial mounds; villages and hamlets containing burials, storage pits, ceramics, cultigens, milling stones, post molds and domestic tools; hunting, gathering, and fishing camps; lithic quarry sites; and isolated hunting strays. Of primary concern are the potential locations of Monongahela village sites, a significant resource type within the region. These sites are located on terraces above the rivers and on benches above the larger tributaries, as well as on broad ridges and saddles, often near drainage divides and Indian trails. Undisturbed locations situated within these topographic settings in the project area are considered high probability zones for prehistoric resources.

#### **3.2.2.2 Historic Archaeological Resources**

The development of a historic archaeological context drew upon previous survey reports and recorded site file information, and included the collection of documentary information concerning the general historical development of the region. Historical data were collected for historic archaeological resource types that had been identified as regionally important by previous surveys. The project area contains residential, commercial, industrial, and agricultural historic resources. Most of the historic industrial activity in the region was located along the Ohio, Monongahela, and Allegheny rivers and the larger tributaries, with some mines and mining communities existing in the uplands of the region. Historic commercial/residential development in the region was most often situated near transportation corridors (i.e., waterways, railroads, and roads) and their crossings. Historic agricultural sites in the area include a number of farmsteads and early settlements. Of particular importance are locations where historic maps indicate that buildings or features once occurred but are no longer extant.

In order to assess the potential for encountering historic archaeological resources within the proposed alternative alignments, a historic archaeological resource sensitivity map was produced using the GIS. The map incorporates the results of the background research, including available local histories, historic records and mapping, recorded historic sites (Pennsylvania Archaeological Site Survey files), and the results of various historic resource surveys (including the historic resource studies conducted for this project). Data layers gathered for inclusion and evaluation within the GIS historic sensitivity map include: documented historic Indian pathways; extant historic structures (greater than 50 years old) identified by historic resource surveys and verified by field reconnaissance; historically mapped communities, structures, properties, roadways, railroads, canals, and waterways; and the intersections, crossings, and/or confluences of these linear features.

### 3.3 Socioeconomic Setting

#### 3.3.1 Land Use

The project area offers a wide range of land uses on which to demonstrate the versatility of the maglev system. Generalized land use within the project area covers categories from open-space and parks, to residential and commercial, to heavy and light industrial. See Chapter 4.0, Environmental Consequences, for more information on land use.

#### 3.3.2 Population and Housing

Pennsylvania's population increased from 11,881,643 people in 1990 to 12,281,054 people in 2000. However, the populations of both Allegheny County, the second largest county in the state, and Westmoreland County, the 10th largest county in the state, decreased slightly from 1990 to 2000. Allegheny County's 2000 population was 1,281,666, down from 1,336,449 in 1990, a 4.1 percent decrease. Westmoreland County's population dropped minimally from 370,321 in 1990 to 369,993 in 2000, a decrease of only 0.1 percent. Pittsburgh lost 35,316 people or 9.5 percent of the city's population from 1990 to 2000 (U.S. Census 1990 and 2000).

The Pennsylvania High-speed Maglev Project traverses both rural and urban areas, from PIA in the west, through Downtown Pittsburgh and Monroeville, to the Greensburg area in the southeast. Approximately one-third of the project area surrounding Downtown Pittsburgh is urban (more than 20 people per hectare [8.1 people per acre]). The remaining portions of the project area (approximately one-third each) are suburban (4 to 20 people per hectare [1.6 to 8.1 people per acre]) and rural (less than 4 people per hectare [1.6 people per acre]).

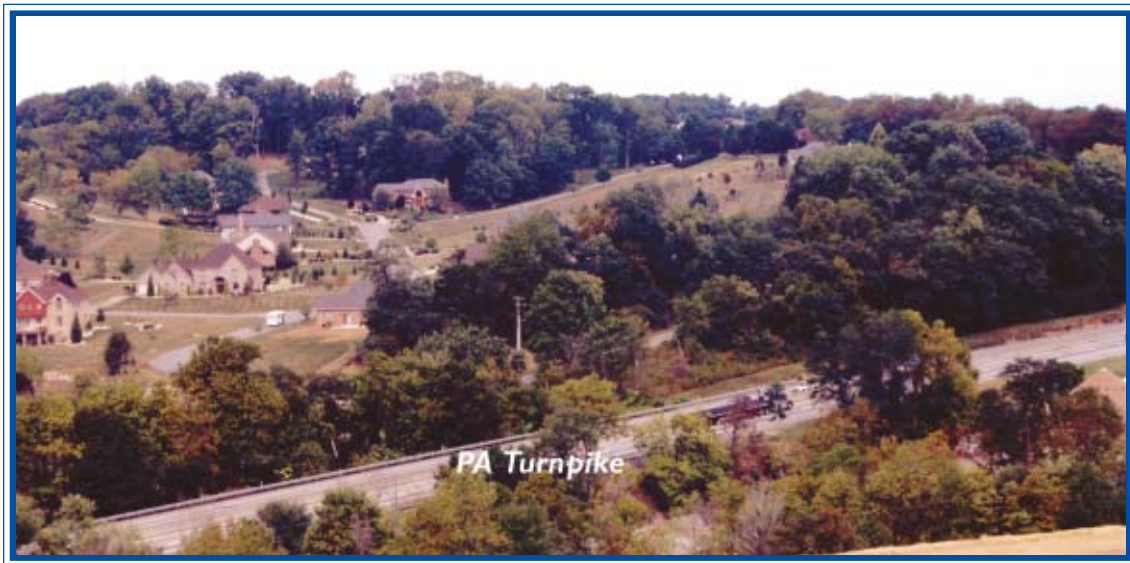
Table 3.3.2-1 compares housing characteristics for Allegheny and Westmoreland counties, the cities of Pittsburgh and Greensburg, the municipalities of Monroeville and Penn Hills, and Hempfield Township with data for the Commonwealth of Pennsylvania. (Photo 3.3.2-1 shows a new housing development within the project area.)

Title VI of the *Civil Rights Act of 1964* requires that no person in the United States shall on the ground of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance. In addition, Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority and Low Income Populations*, requires that "each Federal agency shall . . . identify and address, as appropriate, disproportionately high and adverse

**Table 3.3.2-1 Housing Characteristics (U.S. Census 2000)**

	Total Population	Total Households	Family Households (%)	Average Household Size (Persons)	Vacant Housing Units (%)	Seasonal/Recreational Housing Units (%)	Owner Occupied Housing Units (%)
Pennsylvania	12,281,054	4,777,033	67.2	2.48	9.0	2.8	71.3
Allegheny County	1,281,666	537,150	61.9	2.31	8.0	0.4	67.0
Westmoreland County	369,993	149,813	69.8	2.41	7.0	1.0	78.0
City of Pittsburgh	334,563	143,739	51.6	2.17	12.0	0.5	52.1
Municipality of Penn Hills	46,809	19,490	68.1	2.38	4.2	0.1	79.7
Municipality of Monroeville	29,349	12,376	65.0	2.30	6.0	0.5	69.7
Hempfield Township	40,721	15,997	72.5	2.43	4.8	0.3	84.4
City of Greensburg	15,889	7,144	54.9	2.11	7.6	0.3	52.2

human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations” (59 Fed. Reg. 7629, February 11, 1994). Based on the alignments of the maglev system traversing numerous municipalities and townships where impacts to residential land uses are anticipated, a detailed analysis of potential disproportionate effects to minority and/or low-income populations has been conducted and can be found in Chapter 4.0, Environmental Consequences.



**Photo 3.3.2-1** *New houses near Interstate 76 (Pennsylvania Turnpike).*

**3.3.3 Economy and Employment**

In the past, the project region was the home of large manufacturing facilities and the world’s largest steel mills. However, with the decline of heavy industry, many of these jobs have disappeared. In the late 1970s and early 1980s, over 100,000 steel workers lost their jobs as the economy of the region shifted to service and retail-oriented businesses. Unemployment data from the 2000 Census for both Allegheny and Westmoreland counties show that approximately 5.2 percent of the labor force is unemployed, with Allegheny County having approximately three times the employable work force (at nearly 991,000) than Westmoreland County.

One of the fastest growing areas of the region surrounds PIA. Employing over 18,000 people, the airport is the area's largest employer. New corporate parks have grown and the forecast is for much more of the same. Major corporations and business operations are relocating to this area, along with small manufacturing and light industrial operations. Multinational corporations, such as Bayer Corporation, FedEx Ground, and SmithKline Beecham, have their headquarters in this area.

In one 11-by-11-block area of Pittsburgh's Central Business District (CBD), the headquarters for seven Fortune 500 companies reside. The area also houses two of the nation's largest banks, three Downtown department stores, a state park with a towering fountain that marks the confluence of Pittsburgh's three rivers, a thriving cultural district, and shops of every kind. The city's rivers are part of the Inland Waterways System that supports 34,000 regional jobs.

The eastern suburbs of Allegheny County, particularly Monroeville, grew dramatically after the 1950s. In 1950, the population of Monroeville stood at 7,841. By 1970, it had more than quadrupled, to where it stands today at nearly 30,000 (U.S. Census 2000). Monroeville Mall, one of the largest malls in the region, is flanked by strip malls, office complexes, movie theater multiplexes, health clubs, service and repair operations, chain and local restaurants, small- and medium-size hotels, and major apartment and condominium complexes. It is also home to the Monroeville ExpoMart, a trade and exposition center for small- to medium-size trade shows and conventions.

Westmoreland County has a population of 369,993 (U.S. Census 2000), making it the 10th highest populated county in Pennsylvania. In 2000, the county's labor force was approximately 291,000 workers with a 5.2 percent unemployment rate. Today, Downtown Greensburg is a center for service industries, professional offices, and banking. Small downtown shops and restaurants remain open while large-scale shopping centers (i.e., Westmoreland Mall and large "box-store" strip malls) are located around the periphery of the City of Greensburg and near the terminus of the project.

Additionally, five of the 10 largest business and industrial parks in southwestern Pennsylvania are located in the project area. Together, these parks have a combined developed acreage of 570 hectares (1,400 acres).

### **3.3.4 Community Facilities and Services, including Recreation**

Local police departments, fire departments, ambulance services, and other emergency service providers are found throughout the project area. Pittsburgh is one of the top medical centers in the nation. While numerous outpatient centers are located throughout the project area, the majority of severe accident cases and emergency specialty surgeries are taken to hospitals located in the Oakland neighborhood of Pittsburgh.

The western section of the project area offers convenient shopping facilities (Airport Airmall, Robinson Town Centre, the Pointe at Robinson, and the Mall at Robinson), hotels, and convention and exposition halls. Other attractions include: Robert Morris Colonial Theater, the Montour Trail, Settlers Cabin (an Allegheny County park), local township parks, public golf courses,

and private country clubs. The Meadows Racetrack, located in Washington County, attracts people to this area as the only harness horse racing track in the region.

Pittsburgh has 113 kilometers (70 miles) of riverfront on the Allegheny, Monongahela, and Ohio rivers, one of the highest totals in the country. The Strip District, Station Square, and Point State Park offer great places to relax and watch the pleasure boats on Pittsburgh's rivers. The Senator John Heinz Pittsburgh Regional History Center, housed in the 1898 Chautauqua Lake Ice Company building, is a seven-story structure that preserves and displays 300 years of the region's history.

The Carnegie Museums of Pittsburgh encompass a library, music hall, Museum of Art, Museum of Natural History, and the Carnegie Science Center, which contains an OMNIMAX theater, a miniature railroad display, and a World War II submarine. Pittsburgh also has the world's most complete single-artist museum, the Andy Warhol Museum. The National Aviary, the Pittsburgh Zoo and Aquarium, Schenley Park, the Rachel Carson Homestead, and neighboring Phipps Conservatory and Botanical Gardens all provide an association in localized, natural settings.

Downtown Pittsburgh also offers Heinz Hall, the Pittsburgh Symphony, Benedum Center for the Performing Arts, the Pittsburgh Ballet Theater, the Pittsburgh Opera, Civic Light Opera, the Pittsburgh Public Theater, and the Pittsburgh Dance Council. The Mellon Jazz Festival, the Pittsburgh Film Festival, the Three Rivers Arts Festival, the Pittsburgh Regatta, and the Vintage Grand Prix (an antique car race) are held annually. Sports and recreation in the city include Steelers football at the new Heinz Field, Pirates baseball at the new PNC Park, Penguins hockey at the Mellon Arena, Riverhounds soccer, college sports, boating, and the City of Pittsburgh Marathon. Kennywood Park, an amusement park built in 1899 and a National Historic Landmark, located southwest of the immediate project area, draws thousands of visitors a year from the surrounding Pittsburgh region and neighboring states.

Over 29 colleges and universities are scattered throughout southwestern Pennsylvania, many of them within the project area, including Robert Morris University (in the western suburbs of Pittsburgh), Duquesne University and Point Park University (in Downtown Pittsburgh), the University of Pittsburgh, Carnegie Mellon University, and Carlow College (in Oakland, three miles east of Pittsburgh's CBD), and Allegheny County Community College (with campuses on Pittsburgh's North Side and in Monroeville). Several other regional colleges and universities have established satellite centers in the Monroeville area for evening and other nontraditional students. Westmoreland County offers St. Vincent College, the Greensburg campus of the University of Pittsburgh, Westmoreland County Community College, Seton Hill University, and the New Kensington campus of the Pennsylvania State University.

The Municipality of Monroeville alone has 21 parks including Boyce Park (an Allegheny County park which offers skiing, horseback riding, a wave pool, and other recreational activities). There are also six public golf courses and four country clubs in the area. The only two Hindu Temples located in southwestern Pennsylvania are located in Monroeville. This municipality also houses two hospitals: Forbes Regional Hospital and Health South of Greater Pittsburgh, a rehabilitation hospital.

Westmoreland County offers various cultural events and museums including: St. Vincent College's Concert Series and Theater; the Abbey Singers; Westmoreland Children's Chorus;

Westmoreland Choral Society; Westmoreland Symphony; Westmoreland Arts and Heritage Festival; Apple Hill Playhouse Theater; and the Westmoreland County Museum of American Art located in Downtown Greensburg. Numerous parks are found in Westmoreland County, including Bushy Run Battlefield; Conemaugh and Loyalhanna reservoirs (both are USCOE facilities); Keystone, Lynn Run, and Laurel Mountain state parks; Cedar Creek, Twin Lakes, and Mt. Odin parks; and Braddock's Trail.

### 3.3.5 Visual Resources

The Pennsylvania High-speed Maglev Project would pass through prominent vistas and view sheds in the region. Among these views would be PIA, the Ohio, Monongahela, and Allegheny rivers, Pittsburgh's central business district, and Westmoreland County's suburban areas and rich agricultural landscapes. One of the most stunning urban vantage points in America is on Mount Washington (see photo 3.1-2). The historic Duquesne and Monongahela Inclines climb to the top of Mount Washington providing exceptional views of Downtown Pittsburgh. See Chapter 4.0, Environmental Consequences, for more information on the visual resources of the project area.

## 3.4 Natural Environment Setting and Potentially Contaminated Areas

### 3.4.1 Aquatic Resources

Aquifers within the project area include the Appalachian Basin and a narrow surface aquifer located along the valleys of the Ohio, Allegheny, and Monongahela rivers. Located in the Ohio River Basin, the project area's three major river basins and watersheds, the Ohio, Allegheny, and Monongahela rivers, are each classified as a Warm Water Fishery (WWF) by *Chapter 93 of Title 25 of the Pennsylvania Code*. WWFs are waterways designated for the maintenance and propagation of fish species and additional flora and fauna that are indigenous to a warm water habitat. In addition, *Chapter 93* lists several of the identified streams as trout-stocked waterways. See Chapter 4.0, Environmental Consequences, for further information on streams and waterways.

*Chapter 93* also requires special protection of the Ohio, Allegheny, and Monongahela rivers, as each river is a source of the area's potable water supply. Urbanization, industrialization, and drainage from abandoned coal mines have affected the water quality of study area streams and rivers. Even though water quality in rivers and streams has improved over the last few decades, many smaller streams still remain polluted.

Soils associated with wetlands generally consist of silty clays that reduce soil permeability and result in poor drainage, causing wetland areas to remain inundated or saturated for long periods after storm events. Flooding events or shallow water tables typically provide wetland hydrology. Herbaceous wetland vegetation typically found in southwestern Pennsylvania consists of a mixture of grasses, sedges, and rushes. Scrub-shrub wetlands occur along stream and river systems, often providing a transition zone between herbaceous and forested wetlands. Forested wetlands are located mainly in the floodplains of the larger stream and river valleys. The majority of forested wetlands has been logged and now primarily consists of second- or third-growth trees.

A variety of plant and animal species use wetlands, which are essential for feeding, breeding, nesting, and refuge. Waterfowl and wading birds are the most recognized group of animals that occupy wetlands. Reptiles and amphibians that require wetland habitat for survival include toads and frogs, salamanders, water snakes, and turtles.

All wetland types (open-water through emergent and forested), sizes, and conditions were encountered throughout the project area. (See Photo 3.4.1-1.)



**Photo 3.4.1-1** View of a wetland (in the immediate foreground) within the project study area.

### 3.4.2 Floodplains and Flood Hazard Areas

One-hundred year and 500-year floodplains and flood hazard areas, identified by the Federal Emergency Management Agency (FEMA), surround the Ohio, Monongahela, and Allegheny and their tributaries throughout the study area. Floodplain and floodway protection is required by Executive Order 11988, *Floodplain Management of 1977* (44 CFR 9), as amended; *National Flood Insurance Act of 1968* (42 USC 4124), as amended; and U.S. Department of Transportation Order 5650.2, *Floodplain Management and Protection*. See Chapter 4.0, Environmental Consequences, for more information on floodplains and flood hazard areas.

### 3.4.3 Vegetation, Wildlife, and Threatened and Endangered Species

Originally, dense tree cover dominated the project area; however, urban development, agriculture, mining activities, and timbering eliminated most of the forestland. Existing woodland cover is a mosaic of second- and third-growth forests, primarily consisting of sycamores, maples, and oaks. The dominant land cover identified within the project area includes urban areas, rangeland, cropland and pasture, forestland, streams and rivers, wetlands, and barren land. Rangeland includes open land (herbaceous), shrub and brush, and mixed rangeland. Forestlands include deciduous and evergreen forests. (See Photo 3.4.3-1.) Barren land includes abandoned strip-mine areas and other cleared, non-vegetated lands.



**Photo 3.4.3-1** View of forested terrain within the project study area.

Rangelands provide habitat for wildlife species adapted to open space and early succession vegetation. Edge environments can form where one or more habitat types, such as forests or wetlands, abut. Edge environments often provide greater habitat diversity and attract more species than individual communities.

Varieties of bird species forage in open fields, using the shrubby edge habitat for nesting and cover. Poor species diversity and low populations for most reptile and amphibian species generally result from the openness and lack of adequate ground cover within these habitats.

Wildlife use of cropland is largely dependent on the crop, season, and agricultural practices. Crops such as ear corn and soybeans provide cover and food for a number of birds and small mammals. After harvest, waste materials attract many migrating and wintering waterfowl species.

The oak/hickory forest is the most common and mature forest type within the project area. The next-most-dominant forest-type is the northern hardwoods. Eastern hemlock is found in the cooler, wetter areas characteristic of higher elevations in the region's eastern section.

Wildlife communities are important ecologically, economically, and recreationally. A diverse array of wildlife is found in the area, including big and small game (e.g., deer, ground-hogs, and squirrels) fur-bearing species, other small and large mammals, songbirds and raptors, and amphibians and reptiles. Forest-floor litter, such as decayed logs, flat rocks, fallen limbs, and leaf material, is an important habitat component, providing foraging cover and day-time refuge for many species.

Coordination has occurred with the PADCNr - Pennsylvania Natural Diversity Inventory (PNDI), the PFBC, the PGC, the USCG, the USCOE, the USFWS, and the USEPA to determine the presence of threatened or endangered species within the project study area. Numerous plant species (*Scutellaria saxatilis*/Rock skullcap, *Trillium nivale*/Snow trillium, *Eupatorium coelestinum*/Mistflower, *Acalypha deamii*/Three-seeded mercury, *Passiflora lutea*/Passion-flower, *Crataegus pennsylvanica*/Red-fruited hawthorn, and *Ptelea trifoliata*/Common hop-tree), two butterfly species (*Speyeria idalia*/Regal Fritillary and *Lycaena hyllus*/Bronze Copper), one bird species (*Asio flammeus*/short-eared owl), and one mammal species (*Myotis sodalis*/Indiana bat) were identified through this coordination as potential species of special concern in the project area. See Chapter 4.0, Environmental Consequences, for further information on threatened and endangered species.

#### **3.4.4 Farmlands**

The southeastern portion of the project area in Westmoreland County contains the only productive farmlands, land classified as agricultural land, and Agricultural Security Areas (ASAs) in the project area. Land with soils meeting the *Farmland Protection Policy Act of 1981* (FPPA), as amended, classification (farmland soil types Prime Farmland and Farmland of Statewide Importance) are located in the project area. The purpose of the *FPPA* is to minimize the extent to which federal funds convert farmland to nonagricultural uses (7 USC 4201). Under Pennsylvania state law, *Act 43* gives local governments the authority to preserve particular farmlands by declaring them ASAs. An ASA consists of agricultural land of at least 101.7 hectares (250 acres) under the ownership of one or more persons. ASAs exist within the immediate vicinity of the project area, along the proposed alternative alignments in Section C. See Chapter 4.0, Environmental Consequences, for further information on agricultural land uses. (See Photo 3.4.4-1.)

#### **3.4.5 Waste Management Activities**

Numerous potential hazardous/residual waste sites dot the landscape, including operating and abandoned gas stations, industrial sites, utilities, landfills, and other waste areas. PADEP and the USEPA regulate these types of properties. Coordination has been conducted

with the USEPA, PADEP, and municipal officials. It will continue throughout the project to identify properties of concern and associated environmental liability. Additional information is included in Chapter 4.0, Environmental Consequences.

### 3.4.6 Air Quality

Allegheny County and Westmoreland County are in attainment for carbon monoxide (CO) except for a small portion of Allegheny County coinciding with Downtown Pittsburgh that has been designated as a maintenance area. While both Allegheny and Westmoreland counties had acquired maintenance status for ozone (O<sub>3</sub>), they will revert to nonattainment in June 2005. Additionally, both counties are in nonattainment for fine particulates (PM 2.5).



**Photo 3.4.4-I** A typical western Pennsylvania farmstead within the study area in Westmoreland County.

### 3.4.7 Noise/Vibration

The project's noise analysis included the development of a GIS-based noise prediction model in accordance with the FRA "General Noise Assessment" prediction algorithms. The project area encompasses several different types of land uses. Single family residences, multi-family residences, recreational areas, and institutional buildings were evaluated within the noise prediction model.

The General Noise Assessment analysis has been performed in accordance with FRA's *High-Speed Ground Transportation Noise and Vibration Impact Assessment*, December 1998. Guidance provided by *FRA Procedures for Considering Environmental Impacts* and *FTA Transit Noise and Vibration Impact Assessment* (April 1995) have also been considered throughout the assessment.

All noise sensitive land uses within 107 meters (350 feet) of the proposed alignments (utilizing the alignment centerline as the middle of the analysis area) were categorized. The number and type of noise sensitive structures were based on three categories: Land Use Category 1 are areas where quiet is essential (outdoor concert pavilions/national landmarks); Land Use Category 2 includes residences and places where people sleep (hospitals, hotels); Land Use Category 3 are areas of daytime and evening use only (schools/churches/libraries).

The following screening distances, derived from the above-referenced FRA and FTA guidelines, were used to determine likely impacts:

1. Shared with existing rail line
  - a. Urban/noisy suburban - 61 meters (200 feet)
  - b. Quiet suburban/rural - 91 meters (300 feet)
2. Shared with existing highway
  - a. Urban/noisy suburban - 38 meters (125 feet)
  - b. Quiet suburban/rural - 38 meters (125 feet)

3. New corridor (previously undeveloped land)
  - a. Urban/noisy suburban - 61 meters (200 feet)
  - b. Quiet suburban/rural - 107meters (350 feet)

Noise and vibration screenings are used to compare build alternatives during the environmental studies of the DEIS. Site specific detailed noise analysis will be utilized to determine potential noise impacts and define site selection of noise mitigation features (e.g., acquisition buffers, noise barriers/earthen berms, building insulation, etc.).

Vibration sensitive receptors in the project area could include historic buildings, recording studios, laboratories with sensitive equipment, or hospitals. No sensitive vibration receptors are anticipated within the impact zone of the project.

#### **3.4.8 Soils and Erosion**

The study area is located within the Pittsburgh Low Plateau Section of the Appalachian Plateau physiographic province. Soils in this Appalachian Plateau sub-region developed mainly from glacial deposits and contain hard-packed layers that slow percolation of water and restrict root development. The drainage pattern in the region is dendritic or treelike, which develops when streams flow over rocks that are fairly uniform in their resistance to erosion.

Southwestern Pennsylvania has, by far, the highest concentration of landslides of anywhere else in the Commonwealth. Landslides typically take place along areas where the Pittsburgh Red Beds, a layer of soft red clay-shale, occur near the ground surface.

#### **3.4.9 Climate and Geology**

The project region is defined by four distinct seasons, each of which has both mild and extreme tendencies. Because of these distinct seasons and their defining characteristics, the region experiences high, moderate, and low temperatures throughout the course of a year. The region also experiences considerable rainfall as well as drought conditions. Snow and ice are common to the region during the winter months. The project area is located in a stable seismic region, generally with no earthquakes occurring within an 80-kilometer (50-mile) radius of Pittsburgh.

The project area is characterized by narrow, steep-sided valleys dissecting the plateau. Numerous streams and rivers bisect the region. Elevations range from 213 meters (700 feet) to over 460 meters (1,500 feet). Smooth, undulating upland surfaces, cut by numerous, narrow, relatively shallow valleys, typify the geology of the area. Uplands developed on rocks that contain the bulk of the bituminous coal in Pennsylvania. The landscape reflects the presence of coal through operating, abandoned, and reclaimed surface mines. Local relief on the uplands is generally less than 65.6 meters (200 feet). Local relief between valley bottoms and upland surfaces may be as much as 196.8 meters (645 feet). Valley sides are usually moderately steep except in the upper reaches of streams where the side slopes are fairly gentle. There are no known sinkholes in the region; however, the prevalence of deep mines and limestone formations in the area make it susceptible to sinkhole formation.

### 3.4.10 Energy

Along its route, the Pennsylvania High-speed Maglev Project crosses the service territory of two electric utilities, which would provide electric power for the project. Duquesne Light Company serves the western portion of the project area and Allegheny Energy serves the eastern portion. The transmission systems of Duquesne Light and Allegheny Energy consist of 500 kilovolts (kV), 345 kV, and 138 kV transmission systems. There is approximately 10,000 megawatts (Mw) of installed generating capacity within the two service territories.

The SPC coordinates federal and state funded transportation planning activities in the region. SPC's regional transportation model was used to project vehicle travel in the area for the year 2026 and to estimate fuel saved by diverting motor vehicle travel to maglev. Projections of motor vehicle travel for 2026 yield approximately 107,049,217 kilometers (66,517,300 miles) per day. Assuming fuel energy content of 33,022 BTUs per liter (125,000 BTUs per gallon), motor vehicle travel will account for energy consumption of approximately 462 billion BTUs per day in 2026. This result assumed a fuel efficiency factor of 7.65 kilometers per liter (18.0 miles per gallon).

## 3.5 Traffic and Transportation

Pittsburgh, a city with considerable traffic congestion, is located in the main travel corridor between the Midwest and the eastern seaboard. Because of the Pittsburgh region's terrain, transportation is constrained by mountains, valleys, and rivers. Tunnels restrict traffic flow into the City of Pittsburgh by three of four major access highways into the Downtown area. Pittsburgh also has more bridges than any other city in the United States.

Based upon the results presented in *The 2003 Annual Urban Mobility Report* (Schrank and Lomax, September 2003), the traffic congestion effects on the average person in 2001 incurred within 75 major metropolitan areas of the U.S. (including Pittsburgh) resulted in a total average cost of \$69.5 billion, 3.5 billion hours, and 5.6 billion gallons of fuel.

Implementation of the Pennsylvania High-speed Maglev Project would provide a multi-modal transportation improvement serving various travel demands in some of the largest and most critical activity centers (Pittsburgh International Airport, Downtown Pittsburgh, Monroeville, and Greensburg) in southwestern Pennsylvania. As shown from preliminary ridership estimates, mobility options provided by the maglev project would draw current automobile users from their cars and, consequently, contribute to the reduction of congestion by providing an attractive new mode of transportation for the Pittsburgh metropolitan area. It would also provide a basis for future decisions by USDOT on deploying future national projects. The Pennsylvania High-speed Maglev Project has the potential to provide the Pittsburgh region with a modern transportation system that would enhance communities, create jobs, and afford this region international recognition as a world leader in transportation planning and development.

### 3.5.1 Roadways

Three interstate highways (I-70, I-76, and I-79) pass through the region and three multi-lane highways (I-279, I-376, and I-579) also serve the region and function as the major commuter routes between Downtown Pittsburgh and the northern, eastern, and western suburbs. Interstate 70 traverses the area in an east-west direction, passing south of Pittsburgh and

Allegheny County through Westmoreland and Washington counties to Wheeling, West Virginia. Interstate 76 (the Pennsylvania Turnpike), is another east-west interstate that traverses through Pennsylvania from New Jersey to Ohio. Interstate 76 splits from I-70 in New Stanton, Westmoreland County, continues east and north of Pittsburgh, and then passes through Butler, Beaver, and Lawrence counties into Ohio south of Youngstown. Interstate 79 is the major north-south Interstate in the region. From Morgantown, West Virginia, I-79 crosses into Greene County, passes through Washington County, continues west of Pittsburgh, and then turns north through Butler County to its terminus in Erie.

Interstate 279 (the Parkway West) provides access between Downtown Pittsburgh and the western and northern suburbs. Interstate 376 (the Parkway East) provides access between Downtown and the eastern suburbs of Forest Hills, Monroeville, and Penn Hills. Interstate 579 consists of the multi-lane Veterans Bridge over the Allegheny River and a short section of expressway. Large portions of the residents in the eastern region work in the City of Pittsburgh. The main link connecting the eastern suburbs with Downtown Pittsburgh or the airport is the Parkway East. The Parkway East is a limited-access highway requiring passage through the Squirrel Hill Tunnel, which restricts traffic flow. Interstate 376 is considered a saturated highway for most of the business day as well as when sports or cultural events take place in Pittsburgh. Both the Parkway East and Parkway West were ranked as the region's most congested corridors during both AM and PM peak hours (Schrank and Lomax, 2001).

### **3.5.2 Public Transportation**

The project area has a history of strong mass transportation services. Currently, transit service is provided within the project area by the Port Authority of Allegheny County (PAAC), the Westmoreland County Transit Authority (WCTA), the Beaver County Transit Authority (BCTA), the Mid-Mon Valley Transit Authority (MMVTA), the City of Washington, Greyhound Bus Lines, and Amtrak.

PAAC carries 76 million riders annually and operates public transit in Allegheny County throughout the 1,891 square-kilometer (730 square-mile) service area with over 900 buses, two funicular inclines, and a light-rail line connecting the southern suburbs with Downtown Pittsburgh. In addition to the buses using the local roadway network, PAAC uses three dedicated busways, the West Busway, the South Busway, and the Martin Luther King, Jr. East Busway. (See Photo 3.5.2-1.) PAAC also operates ACCESS, the nation's largest transportation program for senior citizens and persons with disabilities.

WCTA currently operates 27 buses on 21 weekday routes and six weekend routes. Established in 1978, WCTA provides service through contracts with private companies in and around Westmoreland County, to Downtown Pittsburgh, eastern Allegheny County, and Cambria County. WCTA carries about 200,000 passengers annually.

BCTA provides direct service to Pittsburgh from several Beaver County communities, including Aliquippa, Beaver, Beaver Falls, New Brighton, and Rochester. Several other communities also receive local bus service and paratransit service. BCTA carries about 500,000 passengers annually.

MMVTA provides direct service to Pittsburgh and over 20 Mon Valley communities

(Allenport, Belle Vernon, California, Carroll Township, Charleroi, Coal Center, Donora, Dunlevy, Elco, Fallowfield Township, Fayette City, Monessen, Monongahela, Naomi, New Eagle, North Belle Vernon, North Charleroi, Roscoe, Rostraver Township, Speers, Stockdale, and Washington Township). MMVTA carries about 422,000 passengers annually.



**Photo 3.5.2-1** View of the Martin Luther King, Jr. East Busway

The City of Washington bus service provides commuter routes to Pittsburgh and a local circulation system. Both regularly scheduled bus service and paratransit are provided. The City of Washington bus service carries about 52,000 passengers annually.

Intercity service is provided by Amtrak and Greyhound. Amtrak offers passenger service to New York City with stops in Greensburg, Latrobe, Altoona, Harrisburg, and Philadelphia along with daily service to Chicago and points west, and destinations east to Washington, D.C., and Baltimore. Greyhound provides intercity bus service to many areas of the Commonwealth and country from Downtown Pittsburgh, the Monroeville area, and the City of Greensburg.

### 3.5.3 Aviation

Two airports offer scheduled passenger air service within the project area. The PIA is a “focus city” airport. (See Photo 3.5.3-1.) Located approximately 29 kilometers (18 miles) west of Downtown Pittsburgh, the airport accommodates over 14 million travelers per year (Allegheny County Airport Authority, October 2001). In Westmoreland County, Arnold Palmer Regional Airport, located along U.S. Route 30 in Latrobe, approximately 18 kilometers (11 miles) from the project terminus, provides daily scheduled commuter flights as part of the Northwest Airlines system. The Arnold Palmer Regional Airport receives 46,000 aircraft operations per year. Other airports surrounding the project area include Allegheny County, Beaver County, Butler County, Rostraver, and Monroeville-Pittsburgh airports.



**Photo 3.5.3-1** Air Traffic Control Tower and Midfield Terminal at the Pittsburgh International Airport.

### 3.5.4 Railroads

Thirteen active railroads exist within the Pittsburgh metropolitan area including two Class I railroads, five Class II railroads and six switching lanes. The majority of service provided by these railroads is the movement of freight, with Norfolk Southern and CSX Transportation being the predominant haulers. Freight rail lines owned and operated by a number of railroad companies are located throughout the region, especially along the shores of major streams and rivers. Included in these railroads are the Allegheny Valley Railroad, Bessemer and Lake Erie (acquired by Canadian National in May

2004), and Union Railroad. In addition, numerous railroad properties have been abandoned. Many have been converted or are in the process of being converted to recreational trails.

### **3.5.5 Pedestrian and Trail Facilities**

Pedestrian access is a vital component to the business districts of Downtown Pittsburgh and Greensburg. Additionally, a regional bikeway and pedestrian network is being developed throughout the project area. This network consists of numerous interconnecting hiking/biking trails (Montour Trail and the Eliza Furnace Trail) that are planned to connect western Allegheny County to Pittsburgh and eventually to Cumberland, Maryland, and Washington, D.C., via the Great Allegheny Passage. Approximately 400,000 people per year use the existing trail system, with the numbers expected to increase as additional portions of the interconnected hiking/biking trail systems are completed. There are also several other proposed trails throughout the project area, including the Allegheny Valley Trail.

### **3.5.6 Navigable Waterways**

Southwestern Pennsylvania has three navigable water routes that sustain the largest capacity of inland river commerce in the nation. The Pittsburgh Port District encompasses 322 kilometers (200 miles) of commercially navigable waterways along the Monongahela, Allegheny, and Ohio rivers, in the nine counties in southwestern Pennsylvania. The Pittsburgh Port District includes over 200 river terminals and barge industry service suppliers, both publicly and privately owned. The Port of Pittsburgh is administered by a commission that provides shipping links between water and land transportation companies and is part of the Inland Waterways System that consists of over 16,090 kilometers (10,000 miles) of navigable waterways

The Port of Pittsburgh is the largest and busiest inland port in the United States and the twelfth busiest port in the United States. Over 46.9 tonnes (51.7 million tons) of cargo, valued at over \$380 million, is shipped and received through the port each year; these goods are shipped throughout the United States, Canada, and overseas. Close to \$8 billion worth of goods are moved along the port's waterways each year. Approximately 34,000 regional jobs are dependent on the Port of Pittsburgh.