4.0 ENVIRONMENTAL CONSEQUENCES

The information in this chapter provides the analytical basis for a comparison of the alternatives carried into detailed study. Those alternatives are the No-Build Alternative, Alternative Alignments A5-North and A5-South, Alternative Alignments B4-East and B4-West, Alternative Alignment C2-Mod, Alternative Alignment C5, and Alternative Alignment C6. The proposed passenger stations at PIA and in Downtown Pittsburgh are included in Alternative Alignments A5-North and A5-South; a proposed maintenance facility near PIA is also included in these two alternative alignments. The proposed passenger facility at the landside terminal and the commuter facility function, in combination, as the PIA station. Both the Expressway East and Enlow Road sites were analyzed as the potential commuter facility for the PIA station. The proposed station at Thompson Run in the Monroeville/Penn Hills area is included in Alternative Alignments B4-East and B4-West. The proposed station near Greengate Mall in Westmoreland County is included in Alternative Alignments C2-Mod and C5. Alternative Alignment C6 includes a proposed station at Toll Route 66/PA Route 136 in Westmoreland County. Impacts resulting from associated roadway improvements are also included in each alternative.

The No-Build Alternative is carried into detailed study as a baseline for establishing the environmental consequences of the build alternatives. Each respective subsection of this chapter includes a description of the potential impacts to the project study area resources that could result from selection and implementation of the No-Build Alternative.

Each section within this chapter discusses the methodologies used to analyze alternatives; identifies the probable impacts on the predominant natural, social, and cultural resources of the area; and proposes mitigation efforts and strategies to address the potential impacts to the resources. The information in this chapter represents a summary of extensive descriptive and analytical data. Additional information, working papers, and other reports are found in the Project Technical Support Files (PTSF). All of the additional information found in the PTSF will be available for public review during the comment period.

The Environmentally Preferred Build Alternative consists of Alternative Alignments A5-South, B4-West, and C6. The basis for the recommendation of the Environmentally Preferred Build Alternative is addressed in Chapter 4.24. Detailed alignment plates, illustrating the alternatives studied in detail with the project's environmental features, are included in Chapter 11.0 (which is included as a separate CD).

Potential Impact Zone

Potential impacts to most of the project area resources were calculated based on an impact zone generally utilizing the following criteria:

- all of the area within proposed earthwork cuts, plus an additional 6.1 meters (20 feet) from outside of the top of cut limits;
- 30.5 meters (100 feet) on each side of the proposed maglev centerline in residential areas where development is equal to or greater than one house per acre, or where housing densities consist of clusters or concentrations of houses;
- 10.7 meters (35 feet) on each side of the proposed maglev centerline in rural areas where development densities are less than one house per acre;
- 7.6 meters (25 feet) on each side of the proposed maglev centerline in dense commercial and industrial areas;

- 5.3 meters (17.5 feet) on each side of the proposed maglev centerline in the vicinity of the Allegheny Valley Railroad, the existing right-of-way for the railroad itself, or defined transportation corridors;
- the design schematic of each station; and
- 6.1 meters (20 feet) from the limits of all proposed roadway improvements in the vicinity of each station.

Supplemental criteria were used as the limits of potential impact in a few cases and a separate set of criteria, specific to particular resources (such as visual and cultural resources), were applied when appropriate to provide a better measurement of potential effects. Descriptions of supplementary criteria are found within the individual methodologies discussed in this chapter.

It should be noted that for the purposes of impact analysis, this DEIS utilized the anticipated construction year of 2008 (the earliest year that construction could commence, although it is more likely construction would not start until closer to the end of the decade), and a design year of 2026 (20 years beyond the final design plan submissions anticipated for 2006).

Special Considerations

Navigable Waters

The region's three major rivers, the Monongahela, Allegheny, and Ohio, are all navigable waters serving both commerce and recreation. Millions of tons of barge cargo are shipped annually on each river while recreational use of the rivers and their shorelines continues to grow.

One new crossing of the Monongahela River is proposed for the project in the vicinity of River Mile #1. Any crossing would be required to meet minimum USCG standards and provide sufficient horizontal and vertical clearance to allow river traffic to continue unhindered. In accordance with Section 9 of the *Rivers and Harbor Act of 1899*, as amended, the *General Bridge Act of 1946*, and the *U.S. Department of Transportation Act of 1966*, a bridge permit application would be submitted to the USCG during the final design stage of the project. The USCG is participating as a cooperating agency. Coordination with the USCG will continue to occur to ensure that the clearance and proposed pier placement would not permanently disrupt river traffic and would also minimize any temporary restrictions on river traffic that could occur during construction.

Resources Not Present

Environmental resources not present in the study area include: Coastal Zones, National Natural Landmarks, and Wild and Scenic Rivers.

Permitting

Each of the alternative alignments considered would require stream or river crossings and wetland encroachments. Temporary stream crossings and cofferdams may also be required for construction. Permits granted from various state and federal agencies would be obtained for these activities. Permits that are anticipated to be required for this project are described below, based on regulatory requirements as of December 2004.

A Section 401 Water Quality Certification will need to be obtained for the project. Permits granted under Section 404 of the *Clean Water Act* require certification that the activity does not violate the Commonwealth's water quality standards. This certification is normally obtained during the Chapter 105 permitting process in Pennsylvania. For this project, it may be warranted to request this certification prior to the issuance of the Chapter 105 permit from PADEP. Obtaining this certification will allow the Section 404 permit to be issued for the entire project prior to the issuance of the Chapter 105 permit.

An Individual USCOE Permit under Section 404 of the *Clean Water Act* must be obtained for the proposed activity. Information to complete the required permit application will predominantly be contained within the approved NEPA document and support documents prepared for the project.

A PADEP Chapter 105 Water Obstruction and Encroachment Permit will need to be acquired for construction in both Westmoreland and Allegheny counties. There are two approaches to accomplish this. The first approach is to obtain a permit for each construction section of the project independently. The second approach is to coordinate with PADEP central office and southwest regional office to apply for a Programmatic Chapter 105 Water Obstruction and Encroachment Permit. The programmatic process would entail acquiring a permit for the first construction section within each county and then submitting major amendments to the primary permits for each subsequent construction section. This option can only be pursued if all the environmental clearances are approved at the beginning of the process. These clearances include, but are not limited to, threatened and endangered species, cultural resources, and land use planning.

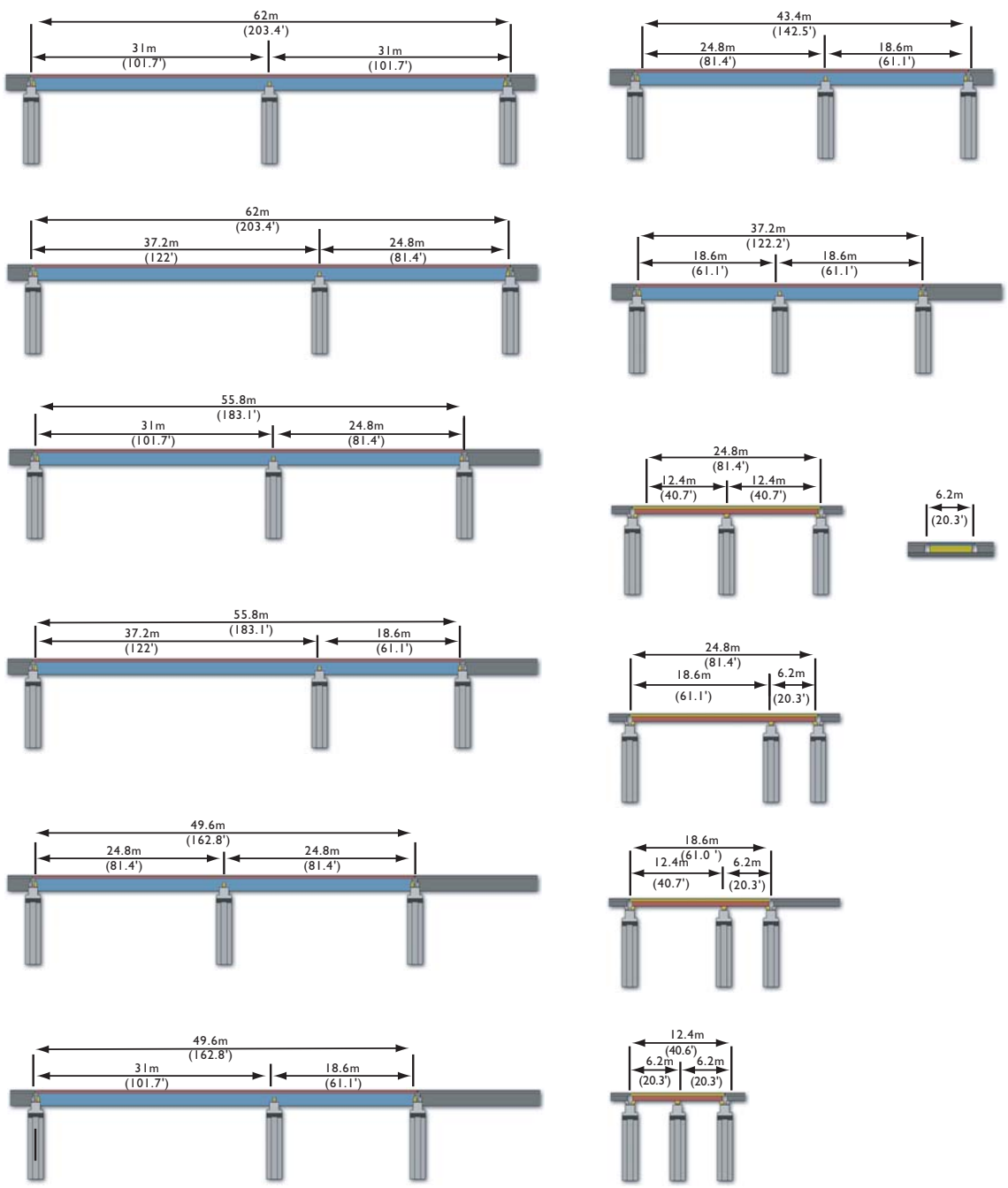
In conjunction with the Chapter 105 Water Obstruction and Encroachment Permit Application, PADEP will also assess the applicability of the following permits and issue them as part of the Chapter 105 process if necessary: a Chapter 106 Floodplain Encroachment Permit, a Submerged Lands License Agreement, and a Section 10 of the *River and Harbor Act* Permit.

Chapter 102 Erosion and Sedimentation Control Plan (E&S Plan) approval and a Section 402 National Pollutant Discharge Elimination System (NPDES) Permit will also need to be acquired for the project. The E&S Plan will require approval from the PADEP or designated county conservation district prior to the initiation of any earth disturbance activities greater than five acres. Since the earth disturbance will be a result of construction activities, a Section 402 NPDES permit must also be obtained from PADEP.

As discussed earlier, in accordance with Section 9 of the *Rivers and Harbor Act of 1899*, as amended, the *General Bridge Act of 1946*, and the *U.S. Department of Transportation Act of 1966*, a bridge permit application will be submitted to the USCG during the final design stage of the project.

Pier Placement

The proposed maglev system will be designed in such a manner as to avoid or minimize the extent of potential impact. As shown on Figure 4.0-1, the placement of support piers and guideway beams can generally be adjusted to avoid sensitive social, cultural, or natural features. Various pier and beam configurations would also be possible as a means of avoidance or minimization. Although the environmental consequences described within this chapter have been based on the potential impact zones, the project would leave much of the physical area that it traverses undisturbed.



LEGEND

- Type I Steel Guideway
- Type II Steel Guideway
- Type III Steel Guideway

The Pennsylvania High-speed Maglev Project

Various Pier & Beam Configurations

Not to Scale

Figure 4.0-1