

1.0 INTRODUCTION

The findings of the Study team's Engineering Analysis of the alternatives described in the *Alternatives Development Report* performed as part of the Richmond to Hampton Roads Passenger Rail Study have been summarized in this report. The report describes a set of potential long-term improvements to implement the alternative routes that could be utilized to implement the designated Richmond to Hampton Roads high-speed railroad passenger corridor. The report outlines an initial broad range of corridor wide and site-specific improvements that would allow the Richmond to Hampton Roads Corridor to provide enhanced intercity passenger and freight train services. The conceptual improvements presented are considered necessary to support the introduction of high-speed rail service, while providing the same level of service and operational capacity for freight operations that presently exists in the corridors analyzed.

The analytical approach utilized in the development of the *Engineering Feasibility Analysis Technical Memorandum* includes:

- Assessment of current facilities, services, and operating conditions;
- Analysis of critical locations;
- Projection of future traffic and capacity requirements for the planning year 2025; and
- Preliminary identification of infrastructure improvements that would allow the corridor train operators to operate the projected train service levels satisfactorily and reliably.

The proposed improvements are described in detail and recommended track configurations are presented in schematic form. Capital Cost Estimates for the improvements are also presented.

1.1 The Engineering Analysis

The purpose of this task was to perform an analysis of the rail infrastructure of the study area and determine the improvements that would be necessary to accommodate frequent passenger trains operating at speeds of up to 110 mph.

The study scope was confined to fixed facility improvements that would safely support projected train schedules, frequencies, and service reliability through the year 2025.

1.2 Proposed Richmond - Hampton Roads High-Speed Rail Service

The Virginia Department of Rail and Public Transportation (DRPT) contracted the Study Team to evaluate the Richmond-Petersburg-South Hampton Roads and the Richmond to Newport News, North Hampton Roads corridor. The study developed overall long-range track configurations, alignment plans, and operating plans that would support the proposed

expanded requirements of all users of the rail lines. The corridors may be considered a natural extension of the Washington-Charlotte Southeast High-Speed Rail (SEHSR) Corridor,¹ extending from Petersburg, to the South Hampton Roads area or from Richmond to the North Hampton Roads area. The routes studied would extend between Richmond's Main Street Station and a terminal station in the Hampton Roads area. The route would require either a combination of CSX Transportation (CSXT) and Norfolk Southern (NS) rail lines² or just the CSXT line. CSXT operates the rail lines between Richmond and Petersburg, a segment of rail line in the Hampton Roads area, and the rail line between Richmond and Newport News. NS operates a rail line between Petersburg and Norfolk.

The proposed Richmond - Hampton Roads high-speed rail service could provide stations located to serve Norfolk, Virginia Beach, Newport News, other Hampton Roads communities, and Williamsburg. The current bridge-tunnel link between the Newport News Amtrak station and south side of Hampton Roads, utilizing a connecting bus, provides a circuitous and often congested route to Norfolk and Virginia Beach. New stations on the south side would offer much shorter and more reliable access times and make service convenient to more communities. A relocated station in Newport News would improve access to both Interstate 64 (I-64) and I-664, thereby potentially reducing access times for South Hampton Roads passengers.

A variety of alternative Southside and Northside station locations have been evaluated. Key Hampton Roads markets include:

- Downtown Norfolk
- Downtown Portsmouth
- Virginia Beach
- Norfolk Naval Base
- Other Norfolk destinations
- Other Portsmouth destinations
- Chesapeake, and
- Suffolk

Downtown Norfolk and Portsmouth are relatively compact markets that could be served by a station located in one of these areas. The remaining markets are spread over a much larger geographic area and would be best served by a "suburban" station with good access to the highway system. The Newport News and Hampton markets are not as geographically spread, but the potential of a second station near the Newport News/Williamsburg International Airport was evaluated.

¹ Parsons has recently completed two related studies of the Washington-Richmond corridor and the Richmond-Petersburg-Raleigh-Charlotte corridor for the FRA. The studies were performed in coordination with DRPT, NCDOT, Amtrak, CSXT, and NS.

² The potential for utilizing trackage owned by Short Line railroads in the South Hampton Roads area also has been evaluated as part of the study.