7. Conclusions

As both Malvern Borough and East Whiteland Township seek to improve access to the industrial areas along Warren Avenue and to SEPTA's Malvern Train Station from Lancaster Avenue (U.S. Route 30) and points to the north in East Whiteland Township with a new roadway connection, this feasibility study evaluated the extension of Malin Road to Pennsylvania Avenue, as well as the extension of Three Tun Road to Malin Road to provide a new and improved access route to this area. Today, there is not an appropriate route to accommodate trucks travelling between this industrial area and major routes to the north such as U.S. Route 30, U.S. Route 222, and PA Route 29. As a result of the poor access to this area, truck traffic, as well as commuter traffic destined to/from the Malvern Train Station, must travel through neighborhoods and along narrow, residential roads that are not designed or intended to accommodate heavy vehicles or the level of traffic these streets carry today.

Based on the foregoing evaluation of the roadway extensions, this study concludes that while costly, the extension of Malin Road to both Pennsylvania Avenue and Three Tun Road is feasible. Further, the study findings include:

- The potential roadway alignment alternatives are in a transitional area between the several land use context categories, and thus, the recommended classification for the roadway alignment alternatives is a Community Collector in a transitional Suburban Center context or hybrid Suburban Corridor/Center, in accordance with PennDOT's *Smart Transportation Guidebook*.
- This study evaluated two alignment alternatives for the Malin Road extension. The preferred alignment was selected since it has no right-of-way and physical (grading) impacts to the Amtrak right-of-way (SEPTA tracks) while the horizontal and vertical layout of this alignment was also designed to minimize impact to the existing General Warren Village residential properties to the north.
- The study evaluated one alignment alternative for the proposed extension of Three Tun Road. The preferred alignment alternative has no right-of-way and physical (grading) impacts to the Buckeye oil tank farm and facility and the Amtrak right-of-way (SEPTA tracks).
- No environmental issues have been preliminarily identified at this time that would preclude the roadway and the identified roadway alignments, although further study and research is required during future stages of the project.
- Traffic volumes along roadways within the study area will generally decrease with the roadway extensions. However, potential traffic increases to Malin Road, between PA Route 401 and Lancaster Avenue, should be addressed due to the residential properties fronting portions of this roadway segment.
- The roadway extensions will better accommodate truck and bus traffic destined to/from the industrial areas near Warren Avenue and the Malvern Train Station, as well as divert this

type of traffic from residential and village streets not designed to accommodate these larger vehicle types, by providing a more convenient route.

- Intersection improvements at those intersections that provide access to the roadway extensions (i.e., Lancaster Avenue/Malin Road, Pennsylvania Avenue/Warren Avenue, and PA Route 352/Three Tun Road) will be necessary but these improvements are relatively minor intersection improvements. However, it is noted that spacing along Malin Road between Lancaster Avenue and the Norfolk Southern rail line is limited for vehicular queuing and should be carefully considered when approving future land use plans or developments, as well as during the design of the Malin Road extension project.
- Traffic operations within the study will benefit from the potential new road linkages by removing traffic from already congested roadways. Significant reductions in overall intersection delay may be experienced throughout the study area. Some additional improvements such as turning lanes at intersections may be needed to better accommodate turning movements associated with diverted traffic patterns resulting from the new roadways.
- The roadway extensions will accommodate forecasted traffic growth, and in particular, the transit-oriented development near the Malvern train station that the Borough envisions. Without the road extensions, significant improvements to the surrounding area roadways and intersections will be needed in order to achieve the traffic benefits (i.e., reductions in intersection delay) associated with the roadway extensions. If these improvements are not provided, then additional development traffic (and forecasted traffic growth) will further burden the already congested area roadway network.
- At this time, there are significant uncertainties regarding future funding for transportation infrastructure at all levels of government. As a result of these funding limitations, several major projects in the DVRPC region have been deferred, few new projects are being initiated, and there is considerable competition for any available resources. Accordingly, securing adequate funding for this project will be a challenge. For this project, it is important that the two municipalities as well as other stakeholders, property owners, and others work in a concerted effort to implement this project. A mutual "partnership" among the municipalities and stakeholders will be needed with the understanding that these improvements may need to occur gradually over time and potentially in stages.
- Due to the scope and costs of improvements associated with this project, it is anticipated that the overall project would occur in stages or phases. It may be most practical if the improvements along Pennsylvania Avenue and at the Pennsylvania Avenue/Warren Avenue were implemented first to support local development and the future roadway extension of Malin Road. This project would then be followed by the extension of Malin Road from its current southern terminus to Pennsylvania Avenue. The extension of Three Tun Road could likely be implemented at any time, independent of the Malin Road extension, although some modification to Malin Road and its intersection with Lancaster Avenue will be required if this extension were to occur first.