1. Introduction

Many agencies at the state, county, and municipal level are required to plan, design, and/or modify highways and streets to accommodate public transportation vehicles or facilities. Currently, there is no single publication to which an agency can refer for guidance on the design of highways and streets to accommodate transit services and facilities. In the absence of a reference guide, agencies must develop their own guidelines for design. In addition, the lack of a single guide makes it difficult for agencies to communicate basic design standards to consultants when contracting out work. Practitioners need a comprehensive resource that documents past and present experience and assimilates information from a variety of available guidelines.

A number of design guidelines and standards of practice have emerged for facilities that accommodate bus transit services. Few document the current state-of-the-art, and many are focused on specific design applications.

1.1. Purpose and Scope

This interim document is intended to function as a comprehensive reference of current practice in geometric design applications for transit facilities on urban highways and streets. Transit facilities in this guide are defined as any lane or guideway treatment or transfer of mode facility that addresses rubber tired bus transit. This document does not address facilities related to light rail transit (LRT) or rail rapid transit.

This Interim Guide has been prepared under a phase 1 project of the National Cooperative Highway Research Program (NCHRP). The primary resources from which this interim document is based include prior written references published by AASHTO, by NCHRP (including the HOV Systems Guide, NCHRP #414), and other professional organizations and public agencies. This document differs from the HOV Systems Guide because it includes only the information most pertinent to bus transit, and combines materials about HOV facilities, transit facilities on streets and off-line transit facilities into a single document.

Information has also been obtained from documented case study experiences. No new research has been conducted, nor has the transit profession been solicited to generate new guidance for subjects and issues not found in available references. A subsequent edition will include additional information based on research to be completed.

1.1.1. AUDIENCE

This Interim Guide is written for the use of local agencies and practitioners--planners and designers who need to know basic information about locating, sizing, designing and implementing transit facilities. As a compilation from other resources including other AASHTO resources, this document is intended as a “one stop” resource for practitioners to reach for in addressing typical transit facility applications.
1.1.2. ORGANIZATION OF THE INTERIM GUIDE

Following this chapter, Chapter 2 presents general guidelines common to all types of transit facilities. It covers functional planning, basic capacity calculations and design controls. The following chapters are organized according to the type of roadway environment they typically fit into. Chapter 3 addresses transit facilities on highways, typically in controlled access settings. Chapter 4 addresses transit facilities and operational treatments found on arterial streets.

Chapter 5 summarizes guidance for “off-line” transit collection and distribution facilities that are often located away from the highway and arterial setting on adjacent property or right-of-way. These typically include transit transfer stations and park-and-ride facilities. Community integration of these facilities is also addressed.

Information about each type of facility is presented in one place to make its application as “user friendly” as possible. Each facility presentation provides general design guidance, issues related to its implementation and in many instances case studies and examples of where this facility has been implemented.

References applied are provided at the end of each chapter. A complete listing of references can be found in the Appendix B, along with a transit facility glossary (Appendix A) and information about current and planned North American HOV facilities (Appendix C).

1.2. AASHTO Green Book and Related AASHTO References


Much of the pertinent content from this reference are incorporated into the various subjects presented herein. Primary references include AASHTO, TRB, ITE and public agency references. In particular, the "HOV Systems Manual," National Cooperative Highway Research Program #414,' Transportation Research Board, Washington, D.C., February 1998, has been one of the most heavily referenced recent guidance treatises with relevance to this topic.

1.2.1. RELATIONSHIP TO OTHER AASHTO REFERENCES

In contrast to other AASHTO documents that provide more depth for developing specific types of transit-related facilities, this Interim Guide focuses primarily on geometric design guidance for the full range of transit-related facilities on streets and highways.

AASHTO has previously published several guides addressing public transportation. The first such guide was published in 1983, appropriately called the “Guide for the Design of High Occupancy Vehicle and Public Transfer Facilities.” This reference was replaced in 1992 with two AASHTO guides:

- “Guide for the Design of High Occupancy Vehicle (HOV) Facilities,” and
The AASHTO HOV Guide provides detailed discussions of bus/HOV treatments on highway and arterial settings. The Park-and-Ride Guide addresses the role and design features required to develop suburban transit treatments that aggregate transit demand for express or limited bus operations. Both guides are currently in the process of being updated and will be released in 2003. Each of these guides in their current and updated versions provides significantly more information on the identified subjects than is contained within this resource.