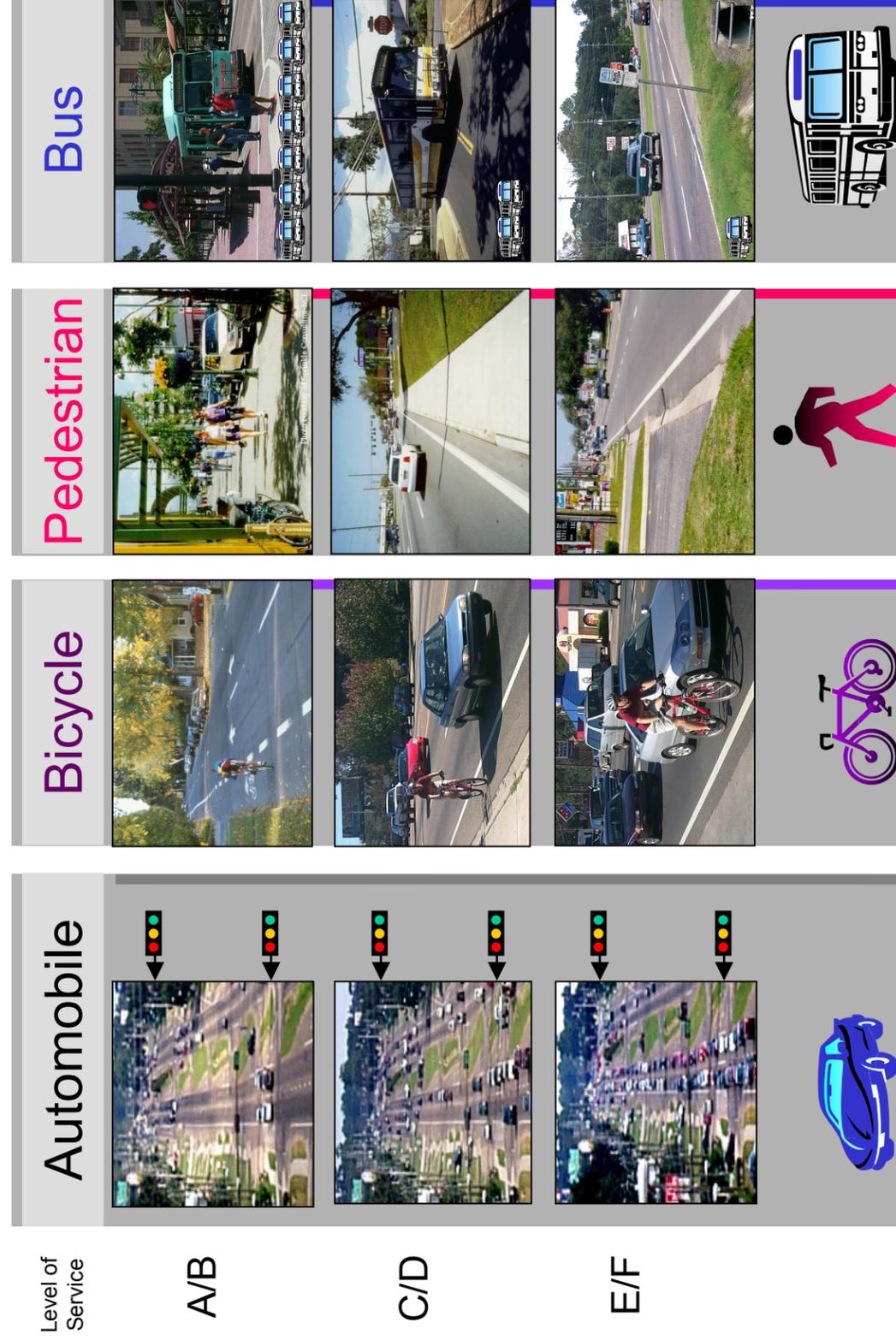


Figure 1 - 2

EXAMPLES OF LEVEL OF SERVICE BY MODE FOR URBAN ROADWAYS



FDOT Quality/Level of Service Handbook

2002

# Quality/Level of Service

## HANDBOOK



Florida Department of Transportation  
 Office of the State Transportation Planner  
 Systems Planning Office  
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<http://dot.state.fl.us/planning/systems/sm/los/default.htm>

**Handbook used for roadway planning and preliminary engineering analyses**

*This Handbook provides the first successful multimodal approach unifying the nation's leading automobile, bicycle, pedestrian, and bus Q/LOS evaluation techniques into a common analysis.*



**EXECUTIVE SUMMARY**

This Quality/Level of Service Handbook and its accompanying software are to be used by engineers, planners, and decision-makers in the development and review of roadway users' quality/level of service (Q/LOS) at planning and preliminary engineering levels. This Handbook primarily provides tools to address multimodal transportation service inside the roadway environment (essentially inside the right-of-way).

This updated Handbook and accompanying software provide the first successful multimodal approach unifying the nation's leading automobile, bicycle, pedestrian and bus Q/LOS evaluation techniques into a common transportation analysis at facility and segment levels. With the techniques provided in this Handbook and accompanying software analysts can now easily analyze roadways from a multimodal perspective using professionally accepted techniques. These analyses can lead to better multimodal project decisions up to the design phase.

Two levels of analysis are included in this Handbook: (1) "generalized" planning and (2) "conceptual" planning. Generalized planning makes extensive use of statewide default values and is applicable for broad applications such as statewide analyses, initial problem identification, and future year analyses. Generalized planning is applicable when the desire is for a quick, "in the ball park" determination of LOS. Florida's Generalized Tables found in this Handbook are the major analysis tool to conduct this type of planning analysis. The default values used for the Generalized Tables have been extensively researched and represent the most applicable statewide values.

Conceptual planning is applicable when there is a desire for a solid determination of the LOS of a facility without doing a detailed, comprehensive operational analysis. Examples of conceptual planning are preliminary engineering applications such as trying to reach a decision on design concept and scope for a facility (e.g., 4 through lanes with a raised median and bicycle lane), conducting alternatives analyses (e.g., 4 through lanes undivided versus 2 through lanes with a two-way left turn lane), and determining needs when a generalized planning analysis is simply not accurate enough. Florida's LOS software (LOSPLAN), which includes ARTPLAN, FREEPLAN, and HIGHPLAN, is the major analysis tool to conduct these types of analyses.

**Implementation schedule**

This Handbook and accompanying software may be implemented immediately. FDOT will not accept analyses employing superseded methods, techniques, volumes, or generalized tables from previous versions of this publication after July 1, 2002.

**Handbook changes**

*Multimodal perspective includes bicycles, pedestrians, and buses as well as automobiles.*

New freeway facility planning technique provided

*Handbook represents planning and preliminary engineering applications of the leading analytical methodologies for automobiles, bicycles, pedestrians, and buses.*

The most significant difference in this Handbook and previous editions is its multimodal perspective. In addition to traditional "highway" (automobile and truck) LOS analysis, state-of-the-art techniques are now provided to simultaneously evaluate the LOS for bicyclists, pedestrians, and buses on roadways in urban areas. LOS techniques are provided for each roadway mode; however, FDOT recommends against combining the LOS for each mode into one overall roadway LOS. Other significant changes include a new freeway facility planning technique and completely updated software.

The techniques in this Handbook represent planning and preliminary engineering applications of the following primary resource documents and analytical methodologies using actual Florida roadway, traffic and signalization data:

- 2000 Highway Capacity Manual (HCM2000) methodologies for automobiles and trucks;
- 1999 Transit Capacity and Quality of Service Manual (TCQSM) for buses;
- Bicycle LOS Model, the most used technique in the U.S. to evaluate LOS for bicyclists; and
- Pedestrian LOS Model, the most advanced technique in the U.S. to evaluate LOS for pedestrians.

**Florida's LOS standards**

This Handbook also contains Florida's Statewide Minimum LOS Standards for the State Highway System. These standards are required for use on Florida Intrastate Highway System (FIHS) routes.

**User feedback**

*Review comments are welcome.*

In order to make future editions of this Handbook and accompanying software even better, FDOT welcomes your review comments and suggestions. Chapter 8 contains a user survey and a software "bug" report form.