State Bus Transit Safety Guide

Deborah Buchacz Sapper

March 2005

www.cutr.usf.edu/bussafety

BC 137-42
NCTR-527-02
1. Report No
   BC137-42
   NCTR-527-02

2. Government Accession No.

3. Recipient's Catalog No.

4. Title and Subtitle
   State Bus Transit Safety Guide

5. Report Date
   March 2005

6. Performing Organization Code

7. Author(s)
   Deborah Buchacz Sapper

8. Performing Organization Report

9. Performing Organization Name and Address
   National Center for Transit Research
   Center for Urban Transportation Research
   University of South Florida
   4202 E. Fowler Avenue, CUT 100
   Tampa, FL 33620-5375

10. Work Unit No.

11. Contract or Grant No.
   DTRS98-G-0032

12. Sponsoring Agency Name and Address
   Office of Research and Special Programs
   U.S. Department of Transportation, Washington, D.C. 20690

   Florida Department of Transportation
   605 Suwannee Street, MS 26, Tallahassee, FL 32399

13. Type of Report and Period Covered


15. Supplementary Notes
   Supported by a grant from the Florida Department of Transportation and the U.S. Department of Transportation

16. Abstract
   The purpose of this project was to gather industry “Best Practices” for developing model state safety programs, necessary state legislation, for the development of improved bus transit safety standards and practices. This guide, as well as associated information included on a website, will serve to aid states in the development of a state system safety program and related implementing procedures which will address the voluntary requirements by FTA.

17. Key Words
   Public Transportation, safety, safety oversight, bus transit

18. Distribution Statement
   Available to the public through the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22181 ph (703) 487-4650 http://www.ntis.gov, through the NCTR web site at http://www.nctr.usf.edu/ and the project website http://www.cutr.usf.edu/bussafety/

19. Security Classif. (of this report)
   Unclassified

20. Security Classif. (of this page)
   Unclassified

21. No. of pages
   16

22. Price

Form DOT F 1700.7 (8-69)
State of Florida Department of Transportation
Public Transit Office
605 Suwannee Street
Tallahassee, FL 32399-0450
(850) 414-4500

Project Manager:
Mike Johnson

National Center for Transit Research
Center for Urban Transportation Research
University of South Florida
4202 E. Fowler Avenue, CUT 100
Tampa, FL 33620-5375
(813) 974-3120

Project Staff: Deborah Buchacz Sapper, Senior Research Associate

The opinions, findings and conclusions expressed in this publication are those of the authors and not necessarily those of the U.S. Department of Transportation or the State of Florida Department of Transportation.
STATE BUS TRANSIT SAFETY GUIDE

This document (generally a summary of the website) serves as the Final Report for “State Bus Transit Safety Guide”. Through its National Center for Transit Research (NCTR), and under contract with the Florida Department of Transportation, the Center for Urban Transportation (CUTR) was tasked to gather industry “Best Practices” for developing model state safety programs, for the development of improved bus transit safety and security standards and practices. The Bus Transit System Safety Resource Guide web site can be found at http://www.cutr.usf.edu/bussafety/.

In July of 2001, FTA developed a draft “Model Transit Bus Safety Program.” This document defines a model transit bus safety program inclusive of safety oversight functions to complement the implementation of a transit safety program. The Program was initiated by the FTA in response to a 1998 National Transportation Safety Board (NTSB) special investigation report entitled “Transit Bus Safety Oversight” (PB98-917006, NTSB/SIR-98/03). The document was the result of findings from investigations and a subsequent public hearing in March 1998 concerning high-profile bus accidents in the United States. The NTSB report observed that there is a lack of consistency among the states regarding oversight of transit bus safety and there is currently no overall Federal regulatory structure guiding the oversight of transit bus safety. Consequently, NTSB recommended that the U.S. DOT, the American Public Transportation Association (APTA), the Community Transportation Association of America (CTAA) and the American Association of State Highway and Transportation Officials (AASHTO) “develop…a model comprehensive safety program(s) and provide it to all transit agencies.” The goal of the recommendations was to encourage the development of transit bus safety standards and practices that large bus agencies, as well as small transit bus operations, could practicably implement.

In December 2003, a Memorandum of Understanding was signed by FTA, AASHTO, APTA, and CTAA to promote voluntary development and implementation of bus safety and security plans at the state and transit system levels. The Model Transit Bus Safety and Security Program generated from this MOU contains contain two general categories: Core Safety Program Elements and Enhanced Safety Program Elements.

Core Safety Elements are the safety program elements that all transit providers should implement. Core Elements apply to all Section 5307 and 5311 transit providers. In cases where service is contracted with 5307 and 5311 funds, the grantee shall ensure the contractor would implement the core and enhanced safety program elements as applicable. Section 5310 provider participation in a safety program is subject to state discretion, however participation is encouraged.

The Core Safety Program Elements include:
- Driver /Employee Selection
- Driver/Employee Training
- Vehicle Maintenance
- Drug and Alcohol Abuse Programs
• Safety Data Acquisition and Analysis
• Security

The Bus Transit Safety Resource Guide web site serves to aid states and transit agencies in the development of a system safety and security programs and related implementing procedures which address the voluntary requirements established by the FTA and its partners.

The materials provided on the web site are scalable for systems of any size, but particularly suitable for small urban and rural systems and are intended to be used as outline models and templates for state and transit agencies in developing their safety and security programs. The site contains best practices related to Core Safety Elements defined in the FTA Model Transit Bus Safety and Security Program, state and transit agency safety plans, bus operator applications and selection forms, pre-trip procedures, transit safety review forms, procurement procedures, drug & alcohol requirements and policies, training program, transit insurance pools, state legislation on public transit safety and security.

The Bus Transit Safety Resource Guide will help promote voluntary development and implementation of bus safety and security programs at the state and transit system level. The Bus Transit Safety Resource Guide Website is currently being used as a tool for AASHTO, SCOPT Safety and Security Task Force, State Departments of Transportation and Transit Agencies developing bus safety and security plans and by the Transportation Safety Institute (TSI) as a resource in their Bus System Safety Course.

For more information, contact Mike Johnson, Project Manager, at (850) 414-4500, jamesmike.johnson@dot.state.fl.us

Below are images from the website that give an overview of the information provided on the main pages of the web site. Each page contains documents located on Transit Bus Safety Resource Guide website or links to other web sites.
Welcome

The Florida Department of Transportation (FDOT), in collaboration with members from the American Association of State Highway and Transportation Officials' (AASHTO) Multi-State Technical Assistance Program (MTAP), is working with the Center for Urban Transportation Research (CUTR) to promote a bus transit safety management practices guide and model program to assist state and transit systems in the development of a system safety program and related implementing procedures.

The purpose of this project is to gather industry "best practices" for developing model state safety programs and state legislation necessary for the development of improved transit bus safety standards and practices.

The guide will serve as a useful resource for state departments of transportation and transit systems of any size in developing bus safety plans. The sample plans, contacts, reference links, and checklists available at this site are adaptable for systems of any size but are particularly suitable for small urban and rural (section 5311) recipients.

Safety Program Elements

The Transit Bus Safety Resource Guide has been developed in response to the Model Transit Bus Safety and Security Program under development by the Federal Transit Administration (FTA). In cooperation with the American Public Transportation Association (APTA), the Community Transportation Association of America (CTAA), the American Association of State Highway and Transportation Officials (AASHTO), and other representatives from the transit bus industry, this website will attempt to assist in the promotion of a Transit Bus Safety and Security Program.

The Transit Bus Safety and Security Program contains two general categories of program elements:

March 23, 2006

FTA Safety and Security Questions for Triennial Reviews

FTA 2005 Triennial Review Workbook
Core Program Elements

Core Safety Program Elements are those elements that all transit providers should implement. Core elements apply to all Section 5307 and 5311 transit providers. Section 5310 providers participation in a safety and security program is subject to state discretion. In cases where service is contracted with 5307 or 5311 funds, the grantee shall ensure that the contractor would implement the core elements as applicable.

The Core Safety Program Elements include:

- Driver/Employee Selection
- Driver/Employee Training
- Vehicle Maintenance
- Drug and Alcohol Abuse Programs
- Safety Data Acquisition and Analysis
- Security
# Driver/Employee Selection

Driver selection is critical to safe transit operations. The driver of a transit vehicle is directly responsible for the safety of their passengers and other motorists that share the road with transit buses. The transit provider should have a clear definition of driver qualifications and background. This applies to all safety-critical employees, both paid and volunteer.

<table>
<thead>
<tr>
<th>Document/Resource</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus Driver Application - Laguna Beach, CA</td>
<td></td>
</tr>
<tr>
<td>Bus Operator Application for Safety-Sensitive Positions - King County (Seattle)</td>
<td></td>
</tr>
<tr>
<td>Bus Operator Application - TriMet (Portland) pdf</td>
<td></td>
</tr>
<tr>
<td>Bus Operator Application - Utah Transit Authority pdf</td>
<td></td>
</tr>
<tr>
<td>Bus Operator Selection - Edmonton Transit System</td>
<td></td>
</tr>
<tr>
<td>Bus Operator Selection - PSTA</td>
<td></td>
</tr>
<tr>
<td>Bus Operator Selection System - Winnipeg pdf</td>
<td></td>
</tr>
<tr>
<td>Bus Operator Survey &amp; Selection Program (DOSS) - AFTTA</td>
<td></td>
</tr>
<tr>
<td>Canadian Urban Transport Association (CUTA) Employee Selection Training pdf</td>
<td></td>
</tr>
<tr>
<td>North Carolina Selection Procedures 1 2 3 4</td>
<td></td>
</tr>
<tr>
<td>Ohio Statewide Transportation Coordination Task Force</td>
<td></td>
</tr>
<tr>
<td>Santa Cruz MTD Operator Application &amp; Materials - 1 2 3 4</td>
<td></td>
</tr>
<tr>
<td>Selection Criteria and Job Requirements - Sydney, Australia pdf</td>
<td></td>
</tr>
<tr>
<td>START - Transit Personnel Testing &amp; Training Program</td>
<td></td>
</tr>
<tr>
<td>TCRP Synthesis 40 - Hiring and Training Public Transit Operators pdf</td>
<td></td>
</tr>
</tbody>
</table>

**Source:** [Transit Bus Safety Resource Guide](#)
**Driver/Employee Training**

Once qualified candidates are identified and hired, initial and on-going training is critical to ensure proper operations and adherence to the transit providers’ rules and regulations. Proper qualification of operating and maintenance personnel is a vital part of a safe transit environment. Driver training should address specific safety-related issues appropriate to the type of vehicle and driving assignment.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Resource</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driver Training for Small Urban and Rural Transit Systems (NYSDOT)</td>
<td><strong>NTI CD-ROM Training</strong></td>
</tr>
<tr>
<td>Florida Transit Operator Training Program</td>
<td><strong>Pennsylvania Training Resource &amp; Information Network (PennTrain)</strong></td>
</tr>
<tr>
<td>Kansas RTAP Ten Tips for Safety-Sensitive Staff Who Must Take Medications</td>
<td><strong>PennSCORE - Operator Training Manual</strong></td>
</tr>
<tr>
<td>National Safety Council Online Training</td>
<td><strong>Project Action</strong></td>
</tr>
<tr>
<td>NCDOT Public Transit Training Resource Database</td>
<td><strong>RTAP Training &amp; Technical Assistance - Handbook Chapter 13 pdf</strong></td>
</tr>
<tr>
<td></td>
<td><strong>TCRP Report 81 - Toolbox for Transit Operator Fatigue pdf</strong></td>
</tr>
<tr>
<td></td>
<td><strong>TCRP Synthesis 40 - Hiring and Training Public Transit Operators.pdf</strong></td>
</tr>
<tr>
<td></td>
<td>** Toolbox for Operator Fatigue Training**</td>
</tr>
<tr>
<td></td>
<td><strong>Transit Safety Review Forms (Florida)</strong></td>
</tr>
<tr>
<td></td>
<td><strong>TSI Transit Safety &amp; Security Program.pdf</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Washington State Transportation Training Coalition</strong></td>
</tr>
</tbody>
</table>
**Vehicle Maintenance**

Proper maintenance of vehicles and equipment is critical to the continued safe operation of the transit system. Unsafe vehicles present unnecessary hazards to the driver, passengers, and other vehicles on the road. Basic vehicle maintenance practices must regularly address safety-related vehicle equipment to ensure that no unsafe vehicles are dispatched for service.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>APTA's Standard Bus Procurement Guidelines</td>
<td>Transit Safety Review Forms (Florida)</td>
<td>Vehicle PreTrip Inspection (Utah) pdf</td>
</tr>
<tr>
<td>Florida's Vehicle Maintenance Training</td>
<td>Vehicle Inspection Form (Iowa) pdf</td>
<td></td>
</tr>
</tbody>
</table>
Understanding safety data is an important step toward allocating important (and often scarce) resources to implement safety program elements. Safety data relative to transit provider operations can be used to determine safety trends in system operation. These data include information gathered from within the system on safety-related events such as passenger injuries or claims, employee injuries, accidents, and incidents. Driver reports (sometimes called logs) can be an important source of safety problems, such as dangerous stop locations, problems with bus equipment, safety problems with the route, and other issues. The data are useful in a formal hazard identification and resolution process to help identify hazards before they cause accidents. The data may also help improve system performance, not only in respect to safety, but also in overall delivery of service to the riding public. In addition, trend analyses of safety data can help determine the effectiveness of safety initiatives that have been implemented.
The security of passengers and employees is paramount to promoting the objectives of the FTA and its partner organizations in developing a Model Program. Transit providers must take all reasonable and prudent actions to minimize the risk associated with intentional acts against passengers, employees and equipment/facilities. To further this objective, transit providers will need to develop security plans and procedures and emergency response plans and procedures. The plans must include coordination with local law enforcement and with other regional transit providers, the conduct of exercises for their emergency plans, and assessment of critical assets and measures to protect these assets.
Training & Assistance

There are several resources for technical assistance and outreach for bus system safety.

Federaely supported training programs like those offered through the Transportation Safety Institute (TSI) provide opportunities for training and information.

Please visit the following sites to see what types of bus system safety training could benefit your organization:

- Transportation Safety Institute (TSI)
- Transportation and Security Certificate Program
- National Transit Institute (NTI)
- CTAA's Safety Review Program
- Kansas RTAP Program

State Legislation

Florida
- FDOT Legislation and Policy
- Public Bus Safety Standards

New York
- NYSS Public Transportation Safety Board
- NYSS Public Operator Information

Safety Policies & Plans

Colorado
- Colorado Safety Plan

Florida
- Bus Transit System Safety Review Form
- Pasco County SSPP

Indiana
- Indiana Safety Plan

Ohio
- Model Safety Plan

North Carolina
- Safety Resource CD
- Safety Policy Samples:
  - Sample Policy 1
  - Sample Policy 2
  - Sample Policy 3
- Training Material for Resource Guide:
  - System Safety Program Plan Elements
  - Final Safety Workshop
  - Final Safety Element Worksheet
- System Safety Program Plan Elements Rural County
  - 1-2

Transit Insurance Pools

California Transit Insurance Pool
Washington State Transit Insurance Pool
Wisconsin Transit Insurance
BEST PRACTICES

AASHTO States

Florida
Design Handbook for Florida Bus Passenger Facilities
Florida Transit Maintenance Consortium
Florida RTAP Program

Iowa
Iowa Office of Public Transit Manager's Handbook
Iowa Office of Public Transit Resources

Minnesota
Guidebook for Minnesota Transit Providers
Transit Safety and Security Workbook

North Carolina
NCDOT Public Transit Training Resource Database

Texas
Texas Transit Safety Guidebook

Utah
Utah Transit Program Compliance Forms

Washington
Washington State Transit Insurance Pool Standards for Operations
Volunteer Drivers - A Guide to Best Practices

APTA
APTA's Manual for System Safety Program Plans
APTA's Safety Management Audit Program

FTA
FTA Drug & Alcohol Information
FTA Drug & Alcohol Testing Program

TCRP