



Mass Transit Vehicles *Cleaner and Safer*

Project Summary

Increased use of mass transit is critical to energy independence

- **As of 2002**

- Buses: 76,190
- Trolley bus: 600
- Light rail: 1,445
- Heavy rail: 10,718
- Commuter Railcars and locomotives: 5,300

2003: 9.4 billion trips

- **Annual growth**

- 6,000-8,000 buses ... *13% now use alternative fuels*
- 500-1,000 railcars ... *Most are electric now*

1972: 6.5 billion trips

Bus, railcar and subway passengers are surrounded by flammable materials

- Dashboards
- Seatbacks and cushions
- Storage compartments
- Ceiling and side wall panels
- Tray tables
- Carpeting
- Partitions
- HVAC ducts
- Other polymeric materials

FTA: 172 bus fires reported to FTA in 2005.

NFPA: From 1999 to 2003, U.S. fire departments responded to an estimated average of 2,210 bus or school bus fires per year.

NTSB: Estimates more than 2,500 fires occur each year on buses, but there is no exact count because records are not collected and stored in a central database.

Federal Transit Administration

- Concerned about poor data, severity of mass transit fires, impact on rider confidence
- Funded research at NIST into interiors flammability in anticipation of issuing revised 'best practices' for federal mass transit infrastructure grants.
- Committed to simultaneous fire safety and environmental progress.
- Turned to HELP and NASFM to finish the job.

Project Goals

- Review the current US requirements for fire performance for railcars and buses
- Develop integrated fire performance metrics including ignitability, combustibility, and toxicity of combustion effluents in railcars
- Validate fire performance metrics with experimental data
- Recommend best practices to be used in the choice of materials and products used in railcars

Organization

- **Research component:** Pravin Gandhi, PhD, Manager, Fire Research and Technology, Underwriters Laboratories
- **Technical advisors**
 - Mass transit safety expert
 - Emergency responder
 - NHTSA
 - NTSB
 - Industry

And because time is of the essence for the transition

- **Contractual:** Just completed
- **Technical advisory group organized:**
By end of June
- **Research Phase:** Complete by October
- **Technical advisory group review and
consensus:** By end of 2007
- **To FTA for best practices:** Early 2008