

U.S. Department of Transportation



Overview of Advanced Technology Programs

PRESENTED TO:
MOBILE SOURCES TECHNICAL REVIEW SUBCOMMITTEE
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DOT Commitment to Advanced Technology

- ◆ ***National Transportation Technology Plan (OSTP/NSTC, May 2000)***
 - ***Key Technology Partnerships:***
 - *Next Generation Global Air Transportation*
 - *Next Generation Transportation Vehicles*
 - *National Intelligent Transportation Infrastructure*
 - *Intelligent Vehicle Initiative*
 - *Transportation and Sustainable Communities*
 - *Monitoring, Maintaining and Rapid Renewal of the Physical Infrastructure*
 - ***All intermodal/multi-modal, with environmental emphases***



DOT Strategic Research Planning

- ◆ ***U.S. Department of Transportation Strategic Plan, 2000 – 2005 (May 2000)***
 - ***Human and Natural Environment Strategic Goal***
 - *“Protect and enhance communities and the natural environment affected by transportation.”*
 - ***Research and Development Strategies***
 - *Research environmental impacts of all modes of transportation, including renewable fuel sources, zero-emission systems and advanced pollution monitoring*
 - *Deployment of technologies for energy-efficient and environmentally-compatible transportation and propulsion systems*
 - *Research on technologies to reduce the waste, pollution and emissions in producing infrastructure materials*



DOT Research Planning on Emissions

- ◆ ***U.S. Department of Transportation Research and Development Plan, FY2001 (May 2000)***
 - ***Human and Natural Environment Emphasis Areas***
 - *Advanced Vehicle Technology Program*
 - *Center for Climate Change and Environmental Forecasting*
 - *FTA Equipment and Infrastructure Program*
 - *USCG Marine Environmental Protection Program*
 - ***Enabling Research Areas***
 - *Advanced Energy Storage and Conversion*
 - *Advanced Locomotive Propulsion System*
 - *Alternative Transportation Fuels*



Center for Climate Change and Environmental Forecasting

- ◆ ***DOT Virtual Center, sponsored by all DOT Administrations (formed May 1999)***
 - ***Mission: Focal point of DOT technical expertise on transportation and climate change***
 - *Comprehensive, multi-modal approaches to reduce transportation-related greenhouse gases*
 - *Strategic research, policy analysis, partnerships*
 - ***Current Research Areas***
 - *Credit for Voluntary Early Action*
 - *Emissions Trading*
 - *Alternative/Advanced Fuels*



Environmental Provisions in TEA-21

- ◆ ***Transportation Equity Act for the 21st Century***
 - ***Environmental Impacts of Surface Transportation***
 - *Congestion Mitigation and Air Quality Program (CMAQ)*
 - *Transportation Enhancements*
 - *Use of High Occupancy Vehicle Lanes*
 - *Alternative Fuels/Clean Fuels Formula Grant Program*
 - *Surface Transportation-Environmental Cooperative Research Program*
 - *Advanced Vehicle Technologies Program*
 - ***Funded through Federal Highway Trust Fund***
 - ***Managed by Federal Highway Administration (FHWA) and Federal Transit Administration (FTA)***



Research and Special Programs Administration (RSPA)

- ◆ ***Advanced Vehicle Technologies Program***
 - ***Medium- and Heavy-Duty Vehicle Technologies***
 - *Complements Partnership for a New Generation of Vehicles (PNGV)*
 - *Based on DARPA/Electric and Hybrid Vehicle Program*
 - *Partnerships: FTA, DARPA, DOE, private industry, nonfederal governments (50 percent cost share)*
 - ***Projects through competitively-selected consortia***
 - ***Technologies successfully demonstrated and integrated into vehicle platforms (buses, trucks, ships, ferries, locomotives)***



Research and Special Programs Administration (RSPA)

- ◆ **Commercial Remote Sensing Program**
 - *Regional Traffic Management*
 - *Environmental Impact Assessment*
- ◆ **Fuel Cell Partnership/Marine Fuel Cell Initiative**
- ◆ **DOT Technology Transfer/Technology Sharing**
- ◆ **University Transportation Centers**
 - *Transportation and Environmental Education for the Twenty-First Century (Assumption College, MA)*
 - *Advanced Transportation Technology (University of Idaho)*
 - *Transportation and the Environment (North Carolina State University)*



Federal Transit Administration (FTA)

- ◆ *Advanced Vehicle Technologies Program*
- ◆ *Advanced Bus Technologies Research*
 - *FTA Fuel Cell Transit Bus Program*
 - *Advanced Technology Transit Bus (ATTB)*
- ◆ *FTA Low Speed Maglev Program*
- ◆ *Transit Intelligent Transportation Systems (ITS)*
- ◆ *Transit Cooperative Research Program (TCRP)*
- ◆ *TCRP – IDEA Program*



Federal Railroad Administration (FRA)

- ◆ ***MagLev Deployment Program***
 - *Magnetic Levitation Transportation Technology Deployment Program*
- ◆ ***High Speed Rail (HSR) Program***
 - *High-Speed Train Control Systems*
 - *High-Speed Non-Electric Locomotives*
- ◆ ***Rail Intelligent Transportation Systems (ITS)***
- ◆ ***High Speed Rail IDEA Program***



Intelligent Transportation Systems (ITS/FHWA)

- ◆ *Joint Program Office, based in Federal Highway Administration (FHWA)*
- ◆ *Intelligent Vehicle Initiative*
- ◆ *Commercial Vehicle Operations*
- ◆ *Traffic Management and Control*
- ◆ *ITS Infrastructure, Architecture and Standards*
 - *Metropolitan ITS*
 - *Rural and Statewide ITS*
 - *Commercial Vehicle ITS*
- ◆ *ITS – IDEA Program*



Federal Highway Administration (FHWA)

- ◆ ***Surface Transportation Environment Cooperative Research Program (STECRP)***
- ◆ ***Crosscutting research in:***
 - *Air quality/climate*
 - *Water quality/ecosystems*
 - *Sustainability/livability*
- ◆ ***National Cooperative Highway Research Program (NCRHP)***
- ◆ ***NCRHP-IDEA Project***



Federal Aviation Administration (FAA)

- ◆ ***Inherently Low Emission Airport Vehicle Pilot Program (ILEAV)***
 - *Mandated by AIR-21*
 - *10 public-use airports, competitively selected*
- ◆ ***Emissions and Dispersion Modeling System***
 - *Dispersion Algorithms*
 - *Air Quality Screening Tool*
 - *Aircraft Particulate Matter Emissions Study*



Federal Motor Carrier Safety Administration (FMCSA)

- ◆ ***Safety Studies in support of FHWA/FRA Advanced Technology Demonstrations and Research***
- ◆ ***SAFETY IDEA Program***

National Highway Traffic Safety Administration (NHTSA)

- ◆ ***Safety Studies in support of FHWA and ITS Advanced Technology Demonstrations and Research***
- ◆ ***Safety Studies in support of PNGV***



United States Coast Guard (USCG)

- ◆ *Marine Environmental Protection Program*
- ◆ *Marine Fuel Cell for USCG Vessels*

Maritime Administration (MARAD)

- ◆ *Marine Air Emissions*
 - *Clean engine/clean fuel technologies*
 - *Fuel Cell Partnership*



Bureau of Transportation Statistics (BTS)

- ◆ *Information Infrastructure*
- ◆ *Data Gathering, Analysis and Modeling*