


## New Technologies for Accessible Transportation


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## How big is the problem?




- 54.4 million; 20% US population
- Unemployment 63%; Income: \$38,400 (\$61,000)
- Poverty: 24.7% (9.0%)
- Fed expenditures: \$226 B (2002); \$357 B (2008)



- Disability claims: 104, 819 (2006) vs. 634,743 (2012)
- 1.4 million deployed; one third report a disability
- Spending: \$0.93 billion (2006) vs. \$5.95 billion (2012)






- Disability rates rise as people get older
- 35 million age 65 + in 2004
- Expected to reach 72 million by 2025



\*2011 World Report on Disability\*, WHO; US Census Bureau report "Americans With Disabilities: 2005"; "2007 Disability Status Report, United States" Cornell University, Rehabilitation Research and Training Center on Disability Demographics and Statistics; AAA Foundation. Getting around: Alternatives for Seniors Who No Longer Drive., May 2007; Goodman, N. J., and D. C. Stapleton; Federal Program Expenditures for Working-age People with 15 Disabilities. *Journal of Disability Policy Studies*, Vol. 18, No. 2, 2007; AAA Foundation. Getting Around: Alternatives for Seniors Who No Longer Drive, May 2007; Linda Bilmes, "Soldiers returning from Iraq and Afghanistan: The Long-term Costs of Providing Veterans Medical Care and Disability Benefits", Kennedy School of Government, Harvard University, 2007

## Impact of Transportation on User Groups

	Types	Jobs	Education/ Training	Healthcare	Recreational	Housing Aging in Place
	People with Disabilities	●	●	◐	◑	●
	Veterans with Disabilities	●	●	◐	◑	●
	Aging Seniors	◑	◑	●	◐	●

Use of Transportation: Less ◑ More ●

- Is lack of adequate transportation a problem?
  - Twice as many people with disabilities say it is important to their Daily Living Needs
  - 76% say it is important to their job search
  - 29% consider it a significant problem in accessing jobs

U.S. Department of Transportation Federal Highway Administration  
 Andrea Lubin and Devajyoti Deka, "The Role of Public Transportation as a Job Access Mode: Lessons from a Survey of Persons with Disabilities in New Jersey", Rutgers The State University of New Jersey, 2011  
 Loprest, P., and E. Maag, Barriers to and Supports for Work Among Adults with Disabilities: Results 33 from the NHIS-D. The Urban Institute, Washington, D.C., 2001.

## Amazing Age...



- Smartphones
- Data
- Cloud Computing

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## New Paradigm

- **Intelligent Transportation Systems (ITS)**
  - Connected Vehicle Research
  - Automated Vehicle Research
- **Other Research/Applications**
  - FHWA Exploratory Advanced Research
  - FHWA Small Business Innovative Research
  - ITS JPO Dynamic Mobility Applications
- **Synergistic Approaches**
  - Wireless and Sensors
  - Robotics
  - Artificial Intelligence



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## Other Research/Applications

- **FHWA Exploratory Advanced Research**
  - Technological innovations in transportation for people with disabilities
  - 3 new projects; focus on situational awareness, event horizons
- **FHWA Small Business Innovative Research**
  - Smartphone Alert Status
  - Pedestrian Detection using stereo cameras
- **ITS JPO Dynamic Mobility Applications**
  - MMITSS bundle –mobile accessible pedestrian signal



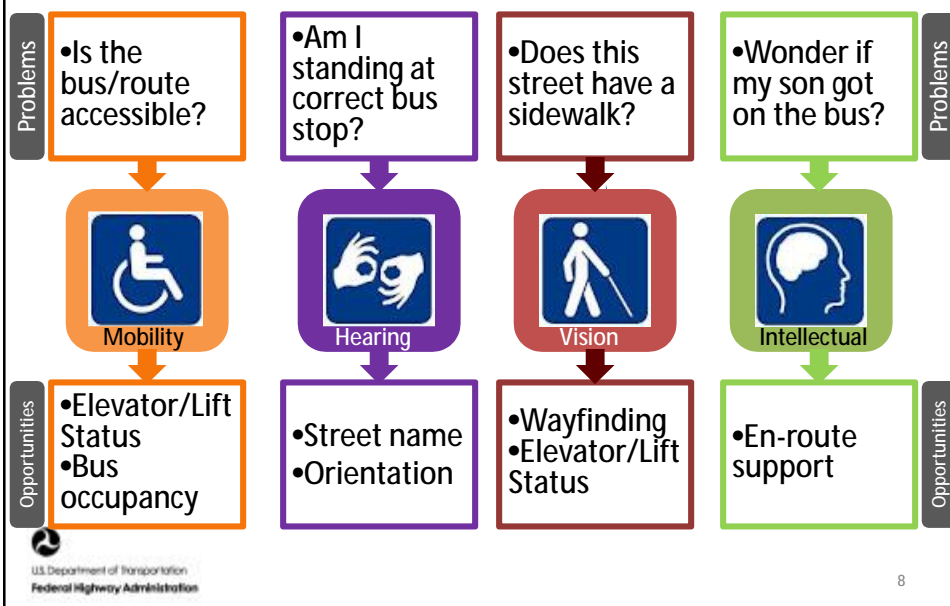
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## Cost Benefit



- New technology solutions could result in big savings to the nation
  - Applications
  - Systems
- Example
  - Convert some Para-Transit to Fixed-Route trips
  - Para Transit Trips: 190 Million
  - Operating cost: \$5.73 Billion
  - 25% transition =>\$1.5 Billion savings per year

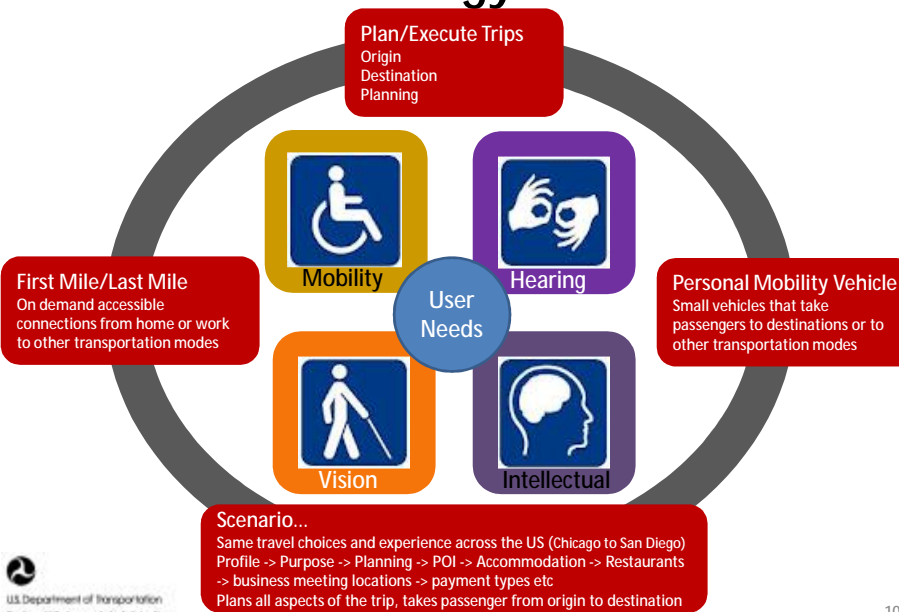
## Understanding User Needs - Examples



## Way forward...

- **User Needs**
  - Disabilities: Mobility, Vision, Intellectual...
  - Modalities: Sidewalk, Vehicle, Bus, Rail, Airport...
  - Commutes: Work, School, Travel, Leisure...
  - Connected: Inclusive, universal, Interfaces...
- **Accessibility Data Standards**
  - Data Definitions
  - Data Capture and Management; Reporting
  - Harmonization
- **Systems and Applications**
  - Integration of user needs
  - Origin
  - Destination
  - Planning

## Where Technology can take us...



# My Vision

