



# IntelliDrive Benefit-Cost Analysis

July 22, 2010

# Previous BCA Work

- Two rounds of benefit-cost analysis for initial VII concept (2006-2008)
- Goals:
  - Understand magnitude of impacts (esp. safety) and length of phase-in period
  - Assess case for continued federal involvement
- Limitations:
  - Simplified deployment scenario & set of applications
  - Very preliminary data on equipment costs and potential impacts of applications

# BCA Framework

- Societal perspective: all benefits and costs, incl. non-monetary impacts
- Benefits = value of safety, mobility, and environmental impacts of VII applications, compared to non-VII baseline
- Costs = upfront installation costs of equipment plus ongoing operations & maintenance costs
- Used 40-year time period and 7% discount rate

# BCA Approach

- Identified key parameters, e.g. standard USDOT values for travel time savings
- Built model of US light-duty vehicle fleet (current stock, annual sales & scrappage) to estimate diffusion of onboard technology through fleet
- Researched proposed applications and their potential impacts – e.g. improved ramp metering
  - Collaborated with Volpe Center experts on vehicle safety systems and crash typologies

# BCA Approach

- Estimated upfront and ongoing system costs based on equipment and telecom needs
- Held a series of teleconferences with a “Benefit-Cost Task Force” to gain further info, e.g.:
  - Power and telecom equipment options and costs
  - Costs of application development and onboard equipment for vehicles
  - Impacts of safety and mobility applications

# Current Activities

1. Update fleet model to help guide development of deployment scenarios
  - Recent declines in vehicle sales and VMT
  - Reconcile with long-term VMT forecast
  - Account for possible retrofit / aftermarket scenarios
  
2. Go beyond conventional BCA to assess direct impacts on stakeholders
  - For example, state DOT cost savings from reduced use of loop detectors for traffic monitoring
  - Is there a “business case” for participation?

# Today's Discussion Topics

1. Baseline scenario: vehicle sales forecasts and long-term VMT growth
  
2. Impacts on stakeholders:
  - State/local DOTs
  - Tolling authorities
  - Private sector

# State/Local DOT Topics

- Traffic monitoring, reporting/ accountability
- Traveler info
- Winter maintenance
- Litigation
- Signal timing and ramp metering
- Travel demand data

# Contact Info

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