FHWA Office of Safety
Research and Development

Vehicle to Infrastructure Communications -
Transform Surface Transportation Safety,
Mobility and Environmental Performance

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Research Towards Implementation

- Connected vehicle research
  - Multi-modal, transformational applications
  - Requires a robust, underlying technological platform
    - well-defined technologies,
    - interfaces,
    - and processes
  - Goal to deploy stable, interoperable, reliable systems
Research Towards Implementation

Drivers/Operators

Vehicles and Fleets

Wireless Devices

Connectivity

Infrastructure

Image Source: Thinkstock/USDOT
Vehicle to Infrastructure Communications

**Vision**
Transform surface transportation safety, mobility, and environmental performance through a connected vehicle environment.

**Mission**
Develop and evaluate the systems requirements for transfer of information between vehicles and infrastructure that will enable applications to improve safety, mobility, and management of surface transportation, while reducing environmental impacts. Establish guidance to assist public agencies in making investment decisions for successful deployment, operations and maintenance of V2I infrastructure and applications.

**Goals**
The goals of the V2I Communications research program are to develop the infrastructure components of a connected vehicle environment and to document the benefits, installation specifications, and the processes and tools that will result in the deployment of an interoperable system.
V2I Communications

- Enabling Technologies
  - Integrated V2I Prototype
  - RSE
- Applications Selection, Development and Evaluation
  - Cooperative Agreement with CAMP
    - V2I Safety Applications
    - Mobility Applications
    - Applications for the Environment: Real-Time Information Synthesis (AERIS) Applications
    - Road weather
    - Smart Roadside Initiative
- Infrastructure Planning and Policy
  - National Connected Vehicle Field Infrastructure Footprint Analysis
  - Public Agency Guidelines
V2I Communications - Updates

- Technology

- Applications
  - Safety
  - Mobility
  - AERIS
  - Road Weather
  - Smart Roadside Initiative

- Break

- Connected Vehicle Infrastructure Deployment Analysis

- Implementation Guidance

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