

## 4. 付録 (APPENDEX)

- 4.3 トピック (Recent Topic)  
: U.S.A.

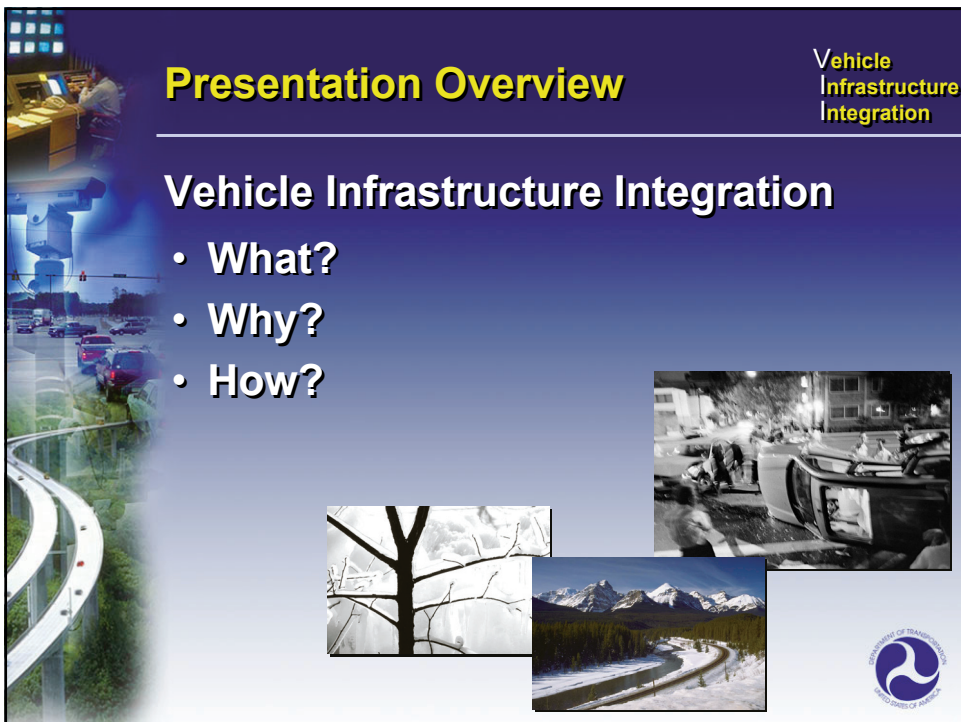





# Vehicle Infrastructure Integration

*an opportunity*

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## Presentation Overview

Vehicle Infrastructure Integration

### Vehicle Infrastructure Integration

- What?
- Why?
- How?



# Vehicle Infrastructure Integration

Vehicle Infrastructure Integration

## Connecting Vehicles and Infrastructure

Creating an "enabling communication infrastructure"

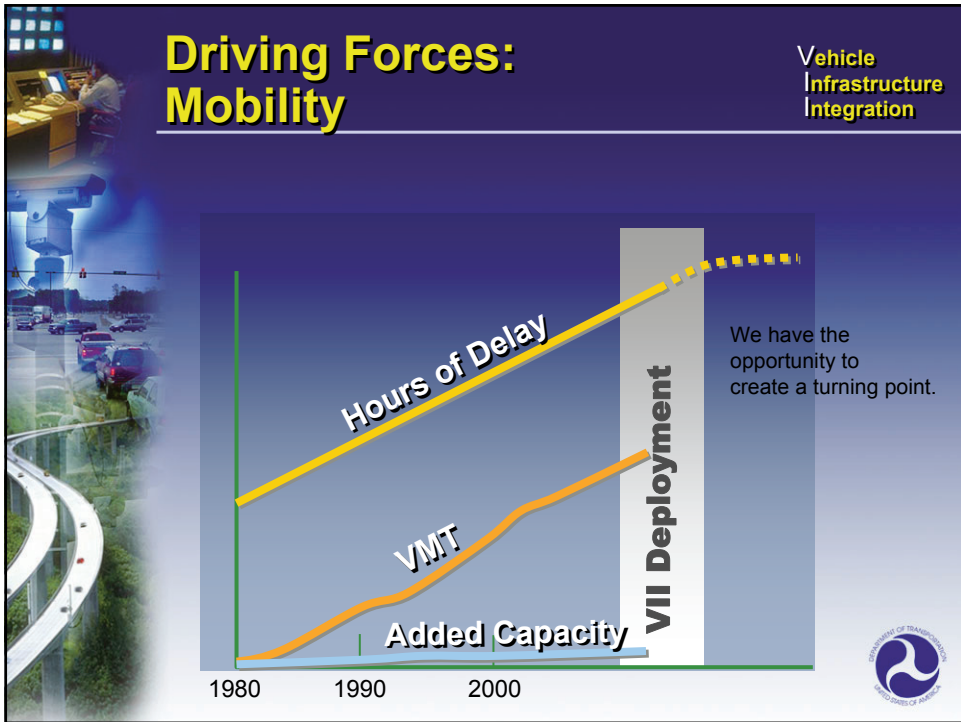
# Driving Forces: Safety

Vehicle Infrastructure Integration

Year	Fatalities	Fatality Rate
2000	42,815	1.51

VII Deployment

We have the opportunity to change the trend.



## VII Can Enable a Wide Range of Applications


Vehicle Infrastructure Integration

This slide highlights four key applications enabled by Vehicle Infrastructure Integration (VII):

- Work Zone Management:** An image showing a construction site on a highway with a crane and workers.
- Traveler Information:** An image showing a person using a handheld device to receive information.
- Weather Sensing:** An image showing a snowy road with a car, indicating real-time weather monitoring.
- Intersection Collision Avoidance:** An image showing a car at an intersection with a large 'STOP NOW' sign overlaid, representing a safety application.

*...for example*




  
 DEPARTMENT OF TRANSPORTATION  
 UNITED STATES OF AMERICA



## Intersection Collision Avoidance

Vehicle  
Infrastructure  
Integration

- Intersection crashes account for more than 17 % of all highway fatalities
- IVI Program concluded that cooperative systems were necessary to completely address intersection collisions
- First Intelligent Intersection demonstrated
- DSRC at 5.9Ghz provides necessary capability and security

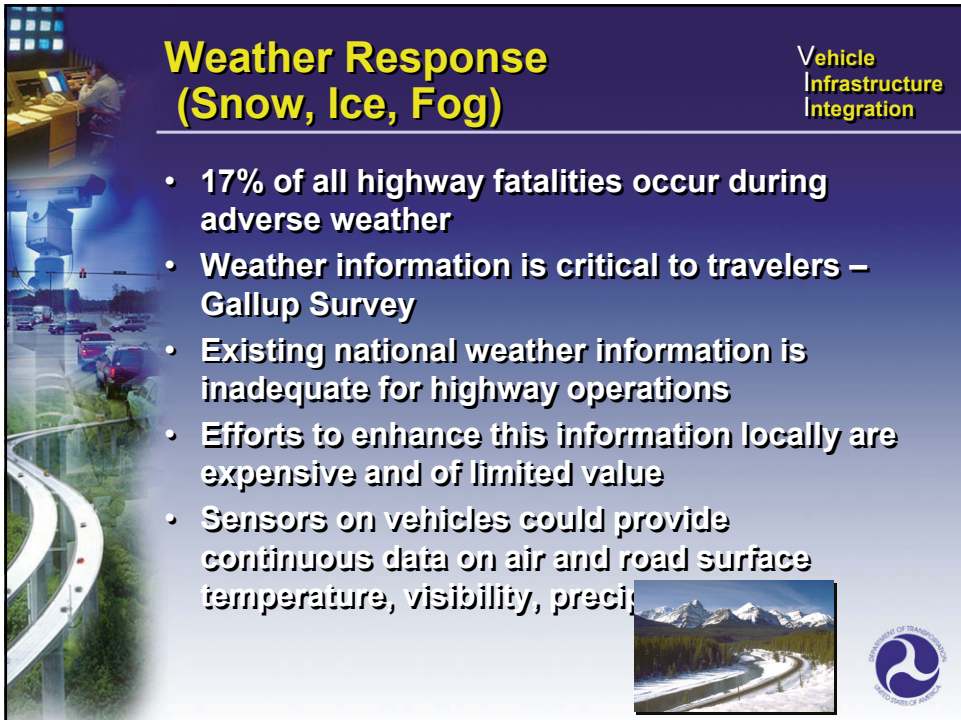

## Traveler Information/ Travel Management

Vehicle  
Infrastructure  
Integration

- Current traveler information systems are dependent on limited data
- Probe vehicles could provide complete network information:
  - *average speeds*
  - *delay*
  - *weather events*
  - *incidents*
- Data collected for roadway use remains anonymous (without unique vehicle identifiers)
- Tailored information could be provided directly to motorists:



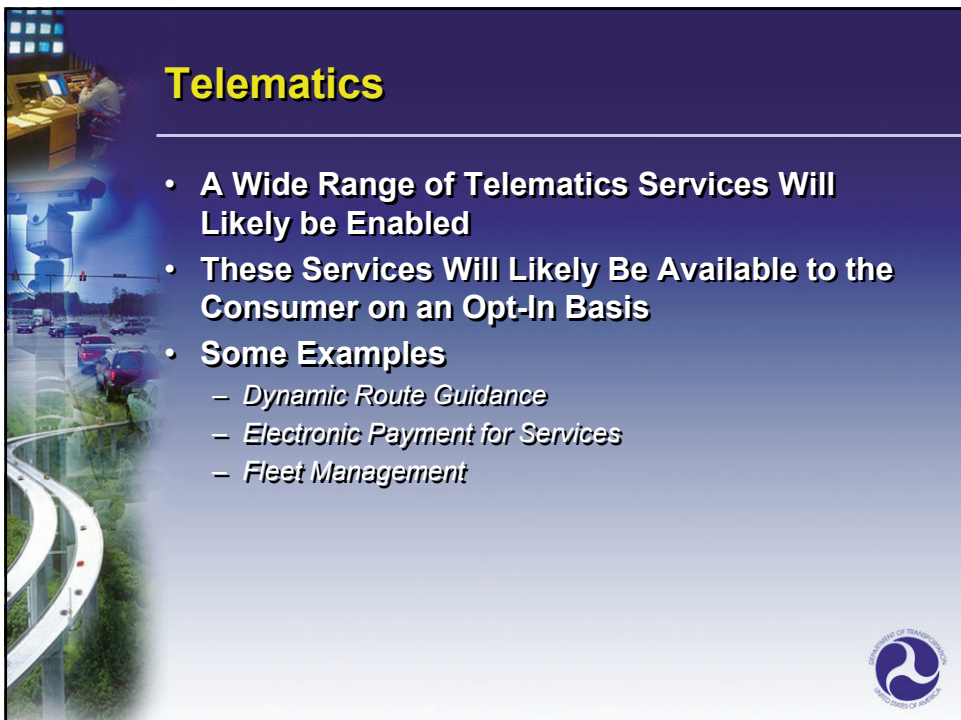






## Weather Response (Snow, Ice, Fog)


Vehicle  
Infrastructure  
Integration

- 17% of all highway fatalities occur during adverse weather
- Weather information is critical to travelers – Gallup Survey
- Existing national weather information is inadequate for highway operations
- Efforts to enhance this information locally are expensive and of limited value
- Sensors on vehicles could provide continuous data on air and road surface temperature, visibility, precipitation



## Telematics

- A Wide Range of Telematics Services Will Likely be Enabled
- These Services Will Likely Be Available to the Consumer on an Opt-In Basis
- Some Examples
  - *Dynamic Route Guidance*
  - *Electronic Payment for Services*
  - *Fleet Management*






## Working Together!

Vehicle  
Infrastructure  
Integration

- Working group in place
  - USDOT, AASHTO, auto companies
- 110 Public & Private Use Cases Developed
- Preliminary Architecture Defined
- Standards Nearing Completion
- DSRC Prototype Development Under Way



*We have concluded that VII is technically feasible*

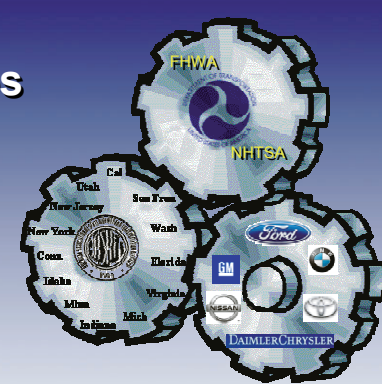




## Issues Remain

Vehicle  
Infrastructure  
Integration

Several key issues will have to be resolved:

- Institutional Issues
- Business models
- Engaging Other Stakeholders





## Addressing the Issues

- **Institutional Issues**
  - *Privacy -- Public & Private*
  - *Data Ownership*
  - *Access*
- **Business Approach – Many Options**
  - *Full Public Funding – Public Utility*
  - *Public –Private Partnership*
    - Maximizing Private Involvement
- **First VII Workshop in February ‘05**



## US DOT Program

### Motivation

- **Potential of VII is Clear**
- **No Single Use May Justify Deployment**
- **No Single Entity May Cause Deployment**
- **Some Sort of Cooperative Venture Is Needed**

### Milestone

- **A Decision to Proceed With Deployment Accompanied by a Plan for Deployment**

