INFORMATION TECHNOLOGY AND TRANSPORTATION

Jonathan L. Gifford

GEORGE MASON UNIVERSITY | School of Public Policy

TRANSPORTATION POLICY, OPERATIONS, AND LOGISTICS



DISNEY'S MAGIC HIGHWAY - 1958

OUTLINE

- Improving access to transportation-related information
- Improving transportation safety
- Improving transportation system monitoring & management
- Challenges

IMPROVING ACCESS TO TRANSPORTATION-RELATED INFORMATION

- Navigation
- Realtime info
- Collaboration/ sharing
- Location based services

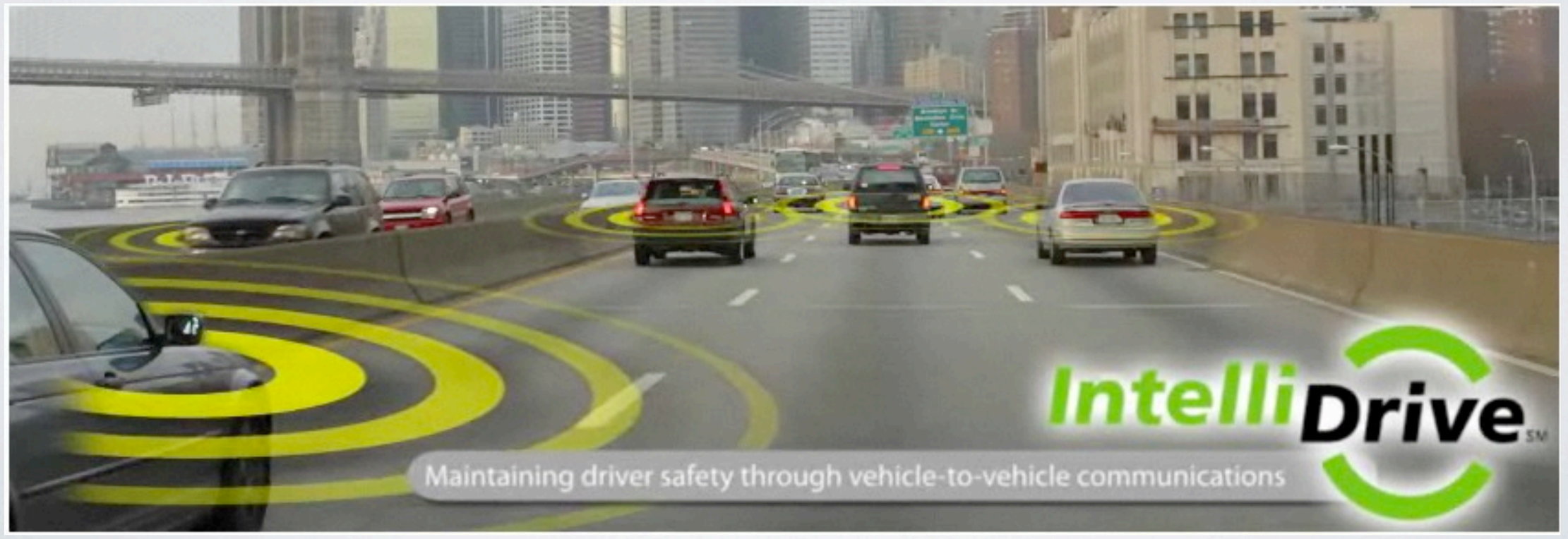
Système d'Information en Ligne (SIEL) - Paris



Photo: Greenski

IMPROVING TRANSPORTATION SAFETY - IntelliDrive℠

- **Benefits**
  - Situational awareness
  - Collision avoidance
  - Crash information announcement
  - Cost savings (single device)
- **Applications**
  - Vehicle-to-vehicle (V2V)
  - Vehicle-to-infastructure (V2I)
  - Vehicle-to-handheld device (V2D)
- **Technologies**
  - Advanced wireless communication
  - On-board computer processing
  - Advanced vehicle sensors
  - GPS navigation
  - Smart infrastructure



IMPROVING TRANSPORTATION SAFETY

- **Road Weather Information Systems (RWIS)**
  - Rain, flooding, snow, ice, visibility, hurricanes, high winds
  - "Anytime, anywhere" road weather information
  - Road users, operating agencies, value added companies











IMPROVING TRANSPORTATION SYSTEM MONITORING & MANAGEMENT

- Traffic signal timing
  - 272,000 signals in U.S.
  - Most use outdated data
  - Causes 5-10% congestion
- Benefit
  - Low cost traffic data
  - Update signals from office
- Electronic payment
  - Avoids congestion at toll booths
  - Enables expanded tolling, variable tolling (time of day, direction, vehicle type)

TECHNICAL CHALLENGES

- Standards - U.S. & International
- Procurement & joint procurement
- Obsolescence
- Legacy systems

INSTITUTIONAL CHALLENGES

- **Jurisdictional**
  - Mode: highway, transit, rail, airport
  - Function: planning, design, construction, maintenance, operations, police, fire, emergency
  - Level of government: Federal, state, county, city, public authority, interstate compact, ...
- **Organizational**
  - Sharing information
  - Establishing/maintaining common plans, funding priorities, schedules
  - Funding
  - Technical expertise
- **Behavioral**
  - Privacy
  - Adaptive behavior

Jonathan L. Gifford, Professor & Associate Dean for Research

Director, Master's in Transportation Policy, Operations & Logistics

George Mason University School of Public Policy

3401 Fairfax Drive, MS3B1, Arlington, VA 22201

jgifford@gmu.edu / 703-993-2275 tel.

http://policy.gmu.edu http://tpol.gmu.edu

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