Inaugural Summit
Session 4
Public Private Partnerships
Private Sector Panel

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Motivation [Panel guidelines]

Limited public sector budgets $\rightarrow$ innovative financing strategies
Involving the private sector.

This session seeks innovative strategies to foster PPP
Summary

- Clarification
- Some future challenges
- Research areas
- List of research needs and opportunities
A clarification of terms

PPP (Public-Private Partnership): the private sector finances, builds, maintains, and operates an asset, recovering the investment with revenues = “Concession”

NEXTRANS vision ppp: any mechanism for integration between public and private sector (government-industry-academia) interests
Some future challenges in this field

Transportation Assets/Services. **How to:**

- **Fund / finance (two aspects: sources & best use of funds):**
  - New Construction / Expansion
  - Maintenance
  - Infrastructure Renewal

- **Operate – Best use of existing infrastructure:**
  - Congestion relief / Capacity improvements
  - Safety
Needs / opportunities in research

I will present research needs classified into:

NEXTRANS Pillars [Focus Areas]:

1. Vehicle-Information/Control Interaction (VICI)
2. Vehicle-Infrastructure Interaction (VII)
3. Vehicle-Driver Interaction (VDI)

Other Areas:

4. Policy/Behavioral/Social/Economic Issues
5. Traffic Modeling
6. Innovation in Infrastructure Design/Construction/Renewal
Needs / opportunities in research

1-2-3 VDI VICI

Automatic collection of private vehicle data [GPS, transponder, other on-board sensors]:

- Travel data (e.g. Origin-Destination)
- Real time traffic information
- IRI (International Roughness Index) data collection

Capacity improvement through use of new technologies:

- IT: Ramp-metering, flow breakdown detections & speed control, etc.
- Intelligent driving. Platooning.

Automatic detection of High Occupancy Vehicles (HOVs)

Dynamic Tolling:

- Driver’s behavior
- Maximize joint (Managed/Free) capacity
4-5 Policy/Behavioral/Social/Economic & Traffic Modeling

Discrete route choice models. Variables influencing route choice besides “value of time”:

- Safety, travel time reliability, roadside assistance, etc.
- Congestion delays
- Other (direct vs. indirect payment, etc.)

Value to society (cost-benefit) of different levels of requirements/risk sharing in Concession Agreements:

- Financial issues. Limiting Developer’s “up-side” in issues like re-financing gain share, revenue share, etc.
- Buy-back provisions which may establish excessive rights for the Owner

Financial mechanisms to improve marginal concession projects
5. Traffic Modeling

Web-based integration of traffic data from different agencies / nationwide

6. Innovation in Infrastructure Design/Construction/Renewal

Reversible median lanes. Design and operational challenges

Dedicated Freight lanes for oversize trucks between inter-modal stations

International comparison of infrastructure design paradigms and costs. [Comparable highway capital costs are lower in the UK, Canada and other European countries compared to the US]