Perspectives on the Report and Joint Opportunities for Collaboration

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Perspectives on the report

• Disruptive transportation technologies will bring lots of opportunities, challenges and uncertainties

• Opportunities to shape how these technologies can be:
  • integrated with existing urban forms in the City
  • Incorporated as part of future transport/transit planning, policies and infrastructure decisions
Opportunities highlighted in the report

- **Need to be proactive** in responding to/shaping these technologies to harness their potentials:
  - Reclaimed Inner City space and urban densification
  - **seamless integration between LRT/transit** and shared mobility and autonomous vehicles (last mile problem)
  - Wealth of new **Data** that can be used for transit/traffic operation and Planning
  - Calgary future **economy** and job creation
Results of a Recent survey

A recent survey conducted by the University of Calgary:

- 25% of the respondents will **definitely** and 50% will **probably** sell one of their cars when shared autonomous vehicles become available.

- Huge impact on **residential and downtown parking** demand.

**Willingness to Pay** for Different Levels of Automation per Year:

<table>
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<tr>
<th>Level</th>
<th>Level 2</th>
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<td>$3529</td>
<td>$2691</td>
<td>$4349</td>
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Results of a Recent survey (contd.)

Respondents’ Willingness to cede the Control to the Vehicle in Different Tasks

Need to train a new group of **highly qualified professionals** capable of responding to this **paradigm shift**
Report Aligned with the new Smart City Challenge

$300 million over 11 years

• **Mobility is #1 priority in Smart Cities!**

• **Collaboration:** Municipalities, Universities and Industries

• The City of Calgary is well positioned as a potential candidate for Smart City Challenge.

• **Synergies** between the City of Calgary and the University of Calgary to undertake this Challenge
Urban Alliance

• Vision
  • The Urban Alliance is a world leader in **collaborative research partnerships** between municipal governments and their local educational/research institutions

• Mission
  • The Urban Alliance is a model for urban sustainability, achieved through innovative research collaborations, education and applicable outcomes that enhance our quality of life.
Long standing history of Collaboration

Urban Alliance was **instrumental** in establishing:

- Urban Alliance Professorship in **Transportation System Optimization** (> 9 years)
- PUTRUM (**Public Transit for Urban Mobility**) research program supported by Calgary Transit
- **ACWA** research facility with a $38 million capital expenditure
- Calgary **Biocell** project
- CRC Chair in **Sustainable Water**
VPR Human Dynamics - Smart Cities

Integrated Infrastructure for Sustainable Cities in partnership with the City of Calgary through Urban Alliance

• A focus on how disruptive transportation technologies:
  • can be integrated in our transit/transportation framework, policies, infrastructure planning, etc.
  • Seamlessly integrated with transit (Last mile problem)
  • Impacts on transport infrastructure, urban form, supporting infrastructure, Ecological footprint, Climate Change, etc.
  • Internet of Things (IoT), Big Data, Cloud Computing as applied to Transportation/Transit applications
Cross Disciplinary Expertise – Integrated Infrastructure for Smart Cities

- Economics
- Public Transit Planning and Operation
- Computer Science and Computer Engineering
- Transportation Planning
- Sustainable Urban Infrastructure
- Road Safety and Security
- Intelligent Transportation Systems
- Freight and Logistics
- Travel Behavioural Modelling
- Policy Analysis
- Active Modes Cycling and Walking
- Freight and Logistics
- Haskane Business School
- Economics
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University of Calgary lab Facilities

Research infrastructure that **exceeds** $40 million:

- Advancing Canadian Wastewater Assets (configurable wastewater treatment plant with 9 post treatment test streams),
- Active Traffic and Demand Management Lab (simulation of real traffic and effects of different variables/traffic controls),
- Sustainable Landfill Technology,
- Laboratory for Integrative Design,
- New Driving simulator,
- High Performance computing through West Grid
Training Future Professionals

- Research Thesis and project based thesis
- Research collaborations
- Technical & Professional development Courses
- Industrial Placement and Internships
- Alignment Workshops with academics, governmental / municipal agencies & industries
Thank you!