CITY OF ST. ALBERT

ADMINISTRATIVE BACKGROUNDER

NATIONAL SMART CITIES CHALLENGE – INTELLIGENT TRANSPORTATION SYSTEMS (ITS)

Administration is providing background information on Intelligent Transportation Systems (ITS), to provide additional context related to its recommended focus for national Smart City Challenge funding.

BACKGROUND:

1) What is Intelligent Transportation Systems (ITS)?

The heart of Intelligent Transportation Systems (or ITS) is the application of technology and innovation to improve upon road network safety, mobility and efficiency.

ITS involves the use of innovative equipment and practices that support a seamless and multi-modal network (vehicles, transit, cyclists, pedestrians) and enable enhanced data collection, analysis. and sharing. ITS then influences:

- Road user choices - such as the way we travel (by car, by bus, cycle or walk) or the route we take;
- Traffic management operations – such as signal timings, parking controls, variable speed limits; and
- Vehicle operations, such as connected or autonomous vehicles.

2) What Applications are Associated With ITS?

ITS is typically structured into 9 key service areas:

- Traffic Management Services
- Traveller Information Services
- Emergency Management
- Maintenance and Construction Management
- Public Transportation Management
- Information Management
- Advanced Vehicle Safety Systems
- Commercial Vehicle Operations
- Electronic Payment

Within these service areas, are multiple sub-sections that are relevant to the key service delivery. For example, Traffic Management is inclusive of strategies that surround signal timings, parking controls, variable speed limits, vehicle operations (connected / autonomous).

There are approximately 35 sub-sections within the ITS bundles.

3) What Are the Benefits of ITS?

- Real-time information sharing
- Data based decision making
- Optimized traffic flow (real time – real conditions)
- Safety and security
- Improved mobility for all modes – vehicular, active (walking / cycling), public transportation
- Transit management
- Defer construction
- Economic catalyst
- Environmental gains

4) How Does ITS Align to City Priorities / Plans?

St. Albert updated its Transportation Master Plan (TMP) in 2015. This landmark plan provided four guiding principles that focused on livable communities that feature accessible and affordable transit, active and sustainable transportation, environmental health and economic prosperity. A section of the TMP was dedicated to ITS to maximize utilization and capacity of the existing transportation network.

In addition, St. Albert prepared the Smart City Master Plan in October 2016, which provided more detail on innovation, technology, and systems. The Smart City plan includes many ITS-related initiatives, including signal coordination, real time traveler and parking information, transit technologies (such as transit signal priority (TSP)) at key intersections, emergency vehicle pre-emption, data management, autonomous and connected vehicles, and a combined control centre. The Smart City Master Plan envisions an evolution to “an optimized/intelligent transportation system, improving the efficiency, safety, and ease of travel in and through St. Albert”.

ITS will support this vision and provide operational benefits to the City and residents.

5) What Does ITS Look Like in St Albert Today?

St Albert has created a solid foundation for future ITS implementation through:

- Improvements to field level systems and upgrades of signal hardware and infrastructure that will support new technologies;
- Expansion of the City's fibre-optic communications network that supports data capture, data movement, information sharing, and improved network monitoring;
- Installation of sensors for improved traffic management, data collection, and accommodation of active modes; and
- Integration of pre-emption systems for Emergency Medical Services and Fire Services

The City is also completing an ITS Strategic Plan that will describe a roadmap to further integrate ITS further and provide a prioritized listing of specific strategies that may be implemented. The ITS Strategic Plan is expected to be completed in Q1/Q2 of 2018.

ITS is an excellent choice for the Smart City Challenge for many reasons described in the report to Council, including that it will lead to improved data collection and information sharing, enhance City project deliverables and services, and empower the community (and region) to make informed decisions on the use of a full, multi-modal transportation network.

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