

August 7, 2017

CITY COUNCIL STUDY SESSION ITEM

SUBJECT

Intelligent Transportation Systems (ITS) Implementation Strategy Update

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POLICY ISSUES

Council approved the ITS Master Plan Update consultant contract and the addition of a new Transportation Technology Partnerships Manager in November 2016. These two developments are vital in helping the City develop an updated ITS implementation strategy that leverages technology to improve transportation mobility, safety, and sustainability.

The ITS Master Plan Update and Technology Partnership efforts are intended to build upon Bellevue's Smart Cities framework to provide a Smart Transportation System that "Moves people smarter, safer, faster, while providing more choices, better real-time information, lowering emissions and raising efficiencies".

DIRECTION NEEDED FROM COUNCIL

ACTION

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DIRECTION

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INFORMATION ONLY

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No formal action is required by Council at this time. Tonight's presentation is an opportunity to learn more about the City's ITS work and for Council to provide feedback or direction to staff.

BACKGROUND/ANALYSIS

Bellevue is in the process of coordinating and blending two important efforts – the ITS Master Plan Update and the new Transportation Technology Partnerships - forming an overall ITS Implementation Strategy.

With the successful implementation of the original 2004 ITS Master Plan technologies over the past 13 years, the need to update the plan to help meet our transportation challenges through the use of new and emerging technologies became apparent. The intended outcome of the ITS Master Plan Update is a comprehensive strategic deployment plan that will identify and address our future needs. The deployment plan will set priorities that align with the goals already established by the City's Smart Cities Strategic Plan.

In 2017, the City completed its first Smart Cities Strategic Plan – Bellevue Smart. This plan establishes smart city strategies and implementation actions to achieve improved livability, sustainability, and resiliency in our increasingly digital, mobile, and connected world. Transportation is one of six important elements achieving the desired smart city outcomes. Current ITS Implementation Strategy efforts are consistent with the Bellevue Smart principal and long term strategies including the update of the ITS Master Plan and the pursuit of public and private partnerships to support the development of new technologies. Emerging and disruptive technologies such as Automated, Connected, Electric and Shared (ACES) vehicles, which will transform transportation and reshape regional mobility, will benefit from new partnerships with the private sector to help accelerate and integrate deployment. The role of Bellevue's new Transportation Technology Partnerships Manager focusses on fostering these partnerships.

Vision

The following draft vision statement has been developed as a focal point for the ITS Implementation Strategy:

Use innovation and partnerships to deploy emerging technologies that enhance the safety, sustainability, efficiency, and accessibility of Bellevue's transportation system.

Goals

Blending the efforts of the ITS Master Plan Update and the City's Transportation Technology Partnerships, the following draft goals have been developed for the advancement of Bellevue's ITS Implementation Strategy:

1. Make Bellevue a nationally recognized leader in advanced transportation technologies.
2. Improve safety for all modes of travel in support of Bellevue's Vision Zero initiative.
3. Leverage Bellevue's ITS network and transportation technology partnerships to support the growth of the technology industry in Bellevue and overall economic opportunities.
4. Improve the efficiency of the roadway network to enhance mobility.
5. Expand and enhance the City's current ITS functions.
6. Create more mobility choices for commuters, residents and visitors.
7. Provide accurate and timely transportation information for more efficient travel choices.
8. Enhance sustainability by reducing vehicle emissions.
9. Pursue private and public sector funding partnerships in advancing Bellevue's ITS Implementation Strategy.

ITS Master Plan Update Status

Following the May 15 Council Study Session, the ITS team has accomplished several key milestones on the ITS Master Plan. The following summary provides a review of the status for each of the main project tasks:

1. Update the City's existing ITS inventory: *Complete*
2. Conduct a literature review to incorporate all other City planning efforts and news from latest industry developments: *Complete, but will be updated by staff prior to finalizing the plan*
3. Conduct a needs assessment looking at technology to support the future goals: *In Progress*
4. Utilize a public outreach process to identify future travel information needs: *In Progress*

5. Develop a communication infrastructure plan that supports the future build-out of ITS in Bellevue: *Near Completion*
6. Update the deployment plan for future ITS implementation needs: *In Progress*
7. Document all project findings and outcomes in a final report and presentation: *In Progress*

As part of the ITS Master Plan needs assessment, a two-month stakeholder engagement process was undertaken to meet with staff across multiple City departments as well as other partnering agencies such as King County Metro Transit. A significant amount of insight into the ways transportation technology has been supporting various City departments was gained, as well as future enhancements that would help to improve current transportation business processes. Over 70 separate needs were identified overall, and can be summarized in the following five major themes:

1. Communication network upgrades to provide additional system resiliency and redundancy.
2. Real-time data collection and transportation system monitoring capabilities to provide more relevant, accurate and timely information to City staff and the traveling public.
3. Mobile device technology and social media to provide timely transportation information.
4. Integration of transportation technologies for inter-compatibility.
5. Deployment of ITS technology that enhances safety and mobility for all modes of transportation.

The first project scheduled for deployment is an upgrade to the communication network. Improved resiliency and a larger bandwidth will be important for any future initiatives proposed out of the ITS Master Plan Update. \$600,000 has been allocated from the Neighborhood Safety, Connectivity, and Congestion Levy for communication network improvements.

In addition to documenting current operational needs, the process identified needs for emerging transportation technologies. Working closely with the Transportation Technology Partnerships Manager, a key priority in the past three-months has been to identify opportunities with industry partners to enhance transportation services in the City.

Transportation Technology Partnerships Status Report

The following outlines outreach and research efforts of the Transportation Technology Partnerships (TTP) Manager over his first 90 days. The information provided is organized by the components of “ACES” transportation technology.

Autonomous Vehicle Technology:

- Autonomous/Electric Shuttles: Conversations are underway with autonomous/electric vehicle shuttle companies regarding piloting technology for a future downtown circulator. This effort is being done in conjunction with the Bellevue Grand Connection project.
- Governor’s Executive Order 17-02 on Autonomous Vehicle Testing & Technology: On June 7th, Governor Inslee signed an Executive Order in Bellevue on autonomous vehicles which also created an Autonomous Vehicle (AV) Work Group. The Governor singled out Bellevue and the Eastside as a center for companies in AV and signed the order at Echodyne’s offices in Bellevue. Bellevue will continue to work with the Governor’s Transportation Policy Advisor and has been asked to be an advisor to the work group set up in the Executive Order.

Connected Vehicle Technology:

- **Signal System Data Sharing:** The ITS group is currently working with two companies who are testing the use of our live traffic signal system data to support in-vehicle and mobile app technology that promote lower vehicle emissions and travel efficiency through vehicle-to-infrastructure (V2I) technology.
- **Signal System Performance Monitoring:** The ITS group is in conversations with multiple vendors who can potentially use our live traffic signal system data to provide real-time performance monitoring of the transportation system.
- **5G Cellular Communication:** Researching opportunities to pilot future 5G cellular communication networks for use in V2I communications.
- **Parking Monitoring:** Researching possibility of monitoring park and ride facilities in Bellevue to better inform motorists of available parking near their commute route.

Electric Vehicle Technology:

- **Electric Vehicle Infrastructure Opportunities:** Bellevue's TTP Manager is working with PSE to determine how to partner to accelerate the upgrade and expansion of electric vehicle infrastructure in Bellevue and to discuss utility regulatory reform.
- **Bellevue Municipal Fleet Electrification:** There is an opportunity to lead by example with a faster electrification of Bellevue's own vehicle fleet, which is required by state law to be 100 percent electric or biofuel by June 2018 "to the extent practicable". Possibilities include federal funding, the Volkswagen emissions settlement funding, and other private philanthropic companies.

Shared Vehicle Services:

- **Flexible Electric Vehicle Van Pools and the Commute Trip Reduction Act (CTR):** The state of Washington and King County Metro Transit have the largest van pool program in the United States and the only CTR Act in the United States. We have initiated discussions with the CTR board at Washington State Department of Transportation and the Bellevue Downtown Association (BDA) regarding the opportunity to demonstrate the advantages of a flexible (as opposed to a fixed) vanpool option that would also be electric and eventually autonomous. This could work well with Metro's first mile/last mile pilot projects and could be a combination of public as well as private sector vans and carpool services.

Outreach and Communications:

- Staff have been working diligently to communicate that Bellevue is open to partnerships with local and national companies looking to pilot new and innovative transportation technologies. The intent of this outreach is to build excitement around how Bellevue intends to address transportation needs through technology and to find companies willing to partner with us in this endeavor. Staff have provided recent presentations for the Bellevue Rotary Club, the BDA, the Bellevue Chamber of Commerce, the National League of Cities, the National Institute of Standards and Technology (NIST) Global City Team Challenge transportation working group, Pacific Northwest Economic Region (PNWER), and various events with the University of Washington.

Next Steps – ITS Implementation Strategy

Staff will continue engaging the public and technology industry to better define ITS projects for deployment. The project team is in the process of convening a series of focus group meetings to solicit feedback on how the public obtains traffic condition information. Outcomes of this meeting will help shape the data tools and performance monitoring system ultimately deployed by Bellevue. We also anticipate ongoing discussions with industry partners will help shape concepts to define projects the City would document and advance as part of the ITS Implementation Strategy. With further input collected from both City staff and external stakeholders, we plan to identify a prioritized list of projects that will include project timelines and the resources necessary to accomplish each.

Much has been accomplished in the Transportation Technology Partnership effort in terms of contacts, learning, and potential projects/partnerships. Initiatives identified in our inventory of options will be further vetted through additional outreach and networking with the intent of narrowing our focus on specific projects that will be defined as part of the ITS Implementation Strategy. These projects will then be shopped for funding as grant opportunities become available or through partnerships with public and private partners.

OPTIONS

N/A

RECOMMENDATION

N/A

ATTACHMENTS

N/A

AVAILABLE IN COUNCIL DOCUMENT LIBRARY

N/A