Attachment 1 - Recommended ITS Projects

ITEM	PROJECT NAME	PROJECT DESCRIPTION	PHASE	ORDER OF MAGNITUDE COST ESTIMATE
1	**INITIATIVE 1: Reinforce Foundation**			
1.1	Video Cameras and Monitor Wall	To repair existing video cameras and a monitor wall to restore the City's ITS infrastructure, enhancing real-time road network monitoring and management, and improving response to reported issues using existing resources.	Early Winner	$
1.2	Video System Expansion - Core Intersections	To expand the City's video system to enhance real-time road network monitoring and management at core intersections, improving the ability to respond to issues promptly using existing infrastructure.	Early Winner	$$$
1.3	Traffic Information Dissemination Improvement	To integrate existing cameras into a Video Management System to centralize video viewing and roadway condition assessment, significantly enhancing the City's real-time road network monitoring and issue response capabilities.	Early Winner	$$
1.4	Traffic Management System Optimization	To optimize the existing Traffic Management System to fully utilize its data and reporting features, enhancing the City's ability to track traffic signal metrics, improve maintenance response times, and optimize information dissemination to operators and transportation staff.	Early Winner	$
1.5	Telecommunications Plan Development	To develop a Telecommunications Plan to support the rapid deployment of ITS technologies, ensuring scalability and maintainability by collaborating with multiple stakeholders, and providing a roadmap for the near-term and long-term growth of the City's IT and ITS infrastructure.	Early Winner	$
2	**INITIATIVE 2: Make ITS Data a Strategic Asset**			
2.1	Traffic Flow Monitoring	To implement a permanent traffic flow monitoring system to collect key metrics like traffic volume, speed, and classification, supporting Vision Zero objectives, improving data gathering, and creating a scalable technology foundation for future sensor deployment.	Early Winner	$$$$
2.2	Vehicle, Cyclist and Pedestrian Detection	To pilot new detection technologies at intersections to enhance data gathering for vehicles, cyclists, and pedestrians, and improve safety and operational analyses through small, well-defined pilot projects.	Short Term	$$$
2.3	ITS Data Warehouse	To deploy an ITS Data Warehouse to securely store and manage all collected traffic and ITS data, enhancing stakeholder access, increasing database security and redundancy, supporting historical data analysis, informed decision-making, and identifying data gaps.	Short Term	$$$
2.4	Internal Dashboards and Reporting	To develop internal dashboards and reporting systems to centralize data collection and assessment, improve metrics gathering and reporting, enhance maintenance response times and efficiency, create a scalable ITS deployment foundation, and support operational analyses.	Medium Term	$$$
2.5	Regional Data Sharing	To enhance regional data sharing by leveraging existing data feeds and identifying cost-sharing opportunities with external agencies, improving data gathering and reporting, and reducing costs through shared infrastructure initiatives.	Medium Term	$$

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2.6	Cyclist and Pedestrian Counter Displays	To implement cyclist and pedestrian counter displays to inform the public about bike lane and multi-use pathway utilization, supporting public interest in multi-modal transportation initiatives.	Short Term	$$$
3	**INITIATIVE 3: Enhance Management and Response Capabilities**			
3.1	Video System Expansion - Major Corridors	To expand the City's video system to enhance real-time road network monitoring and management at major corridors, significantly improving the ability to respond to issues promptly using existing infrastructure.	Short Term	$$$$
3.2	Traffic Management Centre	To implement a Traffic Management Centre (TMC) to centralize traffic operations, including network and asset monitoring, issue and emergency response, improving efficiency and effectiveness by consolidating monitoring, reporting, and maintenance duties.	Short Term	$$$$
3.3	Advanced Traffic Management System	To deploy an Advanced Traffic Management System (ATMS) to provide a platform for real-time and historical monitoring, configuration, and data collection of ITS assets, improving maintenance and incident response times.	Short Term	$$$
3.4	Adaptive Signal Control	To deploy Adaptive Signal Control within the ATMS to optimize traffic signal operation, increasing corridor throughput, reducing congestion, and lowering emissions.	Medium Term	$$$
3.5	Advanced Traveler Information System	To deploy Advanced Traveler Information System (ATIS) to collect real-time traffic data across the city's roadway network to enhance live traffic monitoring, supports informed decision-making for infrastructure improvements, and optimizes traffic flow, leading to safer and more efficient transportation.	Medium Term	$$$$$
3.6	Pilot Road Weather Information System	To pilot Road Weather Information Systems (RWIS) to automate real-time and historical data collection on road-weather conditions, supporting efficient maintenance activities and informing drivers of potential weather impacts, enhancing overall road safety.	Medium Term	$$
4	**INITIATIVE 4: Improve Transportation Safety**			
4.1	Pedestrian Crossing Time Extension	To investigate the deployment of additional pedestrian crossing time at signalized intersections for vulnerable user groups, improving pedestrian safety, reducing fatal and serious incidents, and providing more appropriate and comfortable travel choices.	Short Term	$
4.2	Driver Feedback Signs	To expand the use of Driver Feedback Signs to enhance public safety on appropriate roadways in key areas such as school zones, reducing vehicle speeds and the severity of collisions.	Short Term	$$$
4.3	Smart Work Zone	To evaluate smart work zone technologies to improve work zone safety, reducing incidents through the deployment of ITS for dynamic traffic management.	Medium Term	$
4.4	Work Zone Reporting	To evaluate work zone reporting mechanisms to establish a system for conveying the location and duration of work zones, ultimately reducing work zone incidents through improved communication and data sharing.	Medium Term	$

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5	**INITIATIVE 5: Make Burnaby a Smart City**			
5.1	Innovation Sandbox Environment	To implement an Innovation Sandbox Environment to provide a cost-effective infrastructure foundation for quick deployment, testing, and assessment of new technologies in real-world conditions before larger-scale implementation.	Early Winner	$$
5.2	Smart Street Lighting	To implement smart street lighting technologies to introduce management, metrics, and control capabilities, reducing energy consumption, minimizing light pollution, and lowering maintenance costs through enhanced infrastructure management.	Early Winner	$$$
5.3	Smart Paid Parking System	To deploy smart paid parking system to upgrade from older technologies, improving user experience, enhancing data gathering and metrics reporting, reducing operating and maintenance costs, and charging parking fees based on supply and demand.	Early Winner	$$
5.4	Dynamic Curbside Management System	To deploy dynamic curbside management system to balance curbside access for all user groups, significantly improving asset use efficiency, data gathering, and metrics reporting.	Early Winner	$$
5.5	Pilot Connected Vehicle Technologies	To pilot connected vehicle technologies to establish a foundation for Cellular Vehicle-to-Everything (C-V2X) functionality and data collection, supporting the adoption of connected vehicle features as more vehicles become equipped with these technologies.	Medium Term	$
5.6	Transportation Website and Mobile App	To develop a transportation website and mobile app to inform road users about current conditions, including congestion, incidents, construction, and weather, enabling informed route and mobility choices and integrating with other applications for data sharing.	Medium Term	$$$$
5.7	Travel Time Information Displays	To implement travel time information displays to notify the public of estimated travel times and delays on major routes, assisting drivers in making informed route choices and improving overall traffic flow.	Medium Term	$$$$$
6	**INITIATIVE 6: Enhance System Reliability**			
6.1	Transit Signal Priority	To expand the use of Transit Signal Priority (TSP) to improve person throughput by prioritizing high-capacity transit vehicles, reducing delays caused by heavy congestion, and enhancing the overall efficiency of public transit.	Medium Term	$$$$
6.2	Emergency Vehicle Signal Preemption	To reduce emergency response times and intersection collisions by expanding the use of signal preemption, thereby improving emergency services' efficiency and safety.	Medium Term	$$$