

Rail crossing traveler information system:

City of Vancouver case study



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Outline

I: Introduction

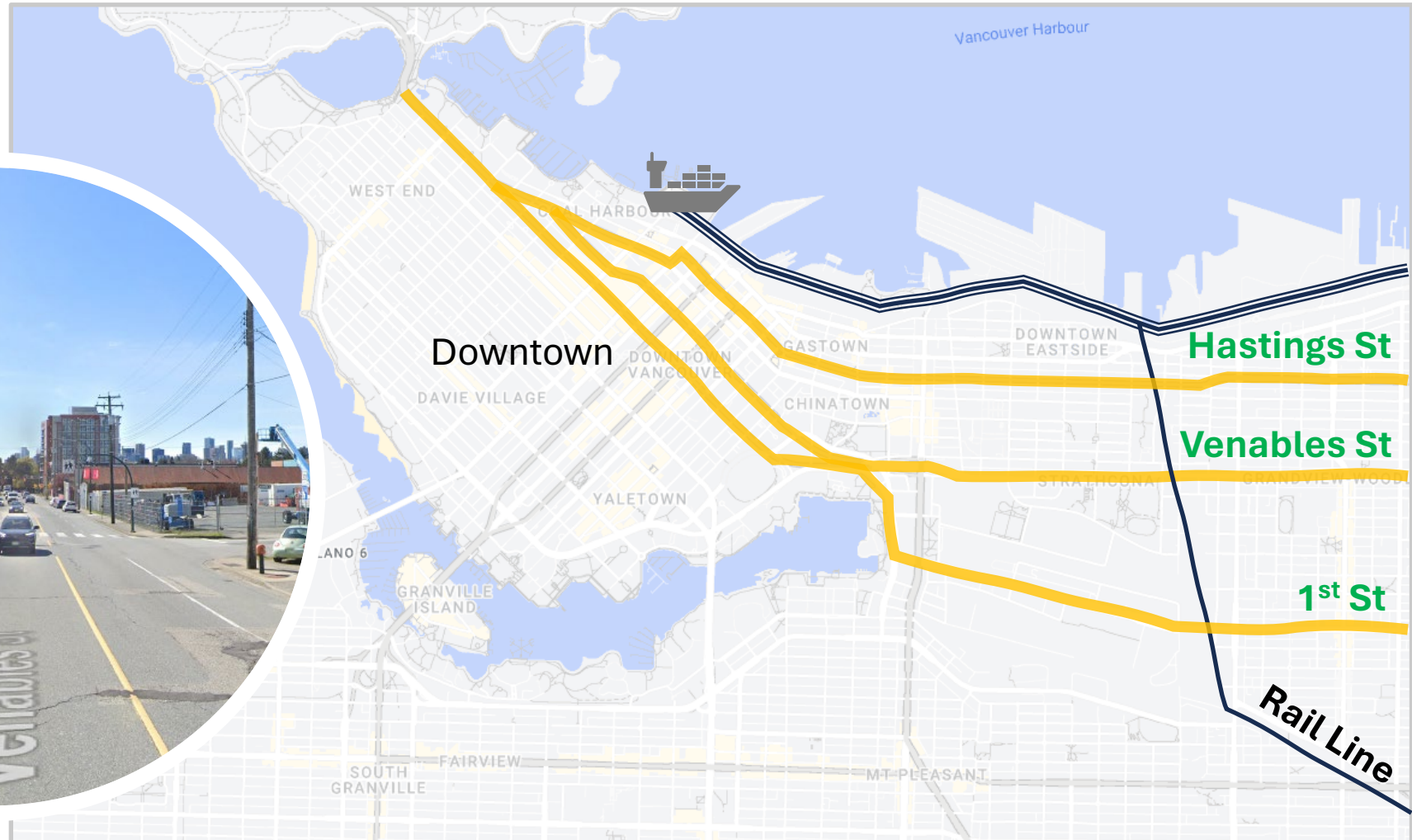
II: Traffic delays at Venables St rail crossing

III: Implementing a traveler information system

IV: Learnings

V: Conclusion

I: Introduction

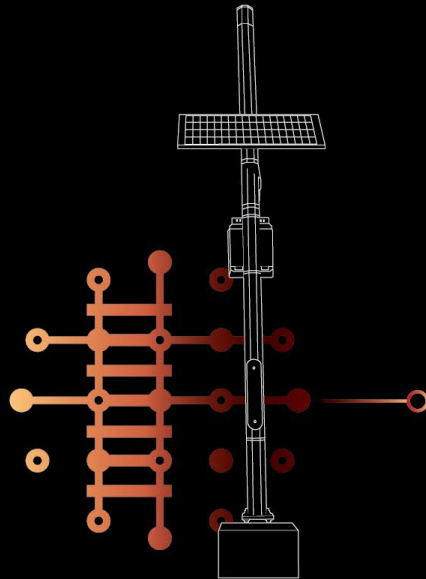




II: Traffic Delays at Venables Rail Crossing



III: Implementing a Traveler Information System



Train sensor in public ROW

Sensors installed within 100 ft of crossing & off rail ROW

Cloud-based data analysis

Predict blockages up to 10 minutes before train arrives

Integration into existing systems

Information delivered to traffic management centers, roadside signs, and emergency dispatchers

III: Implementing a Traveler Information System

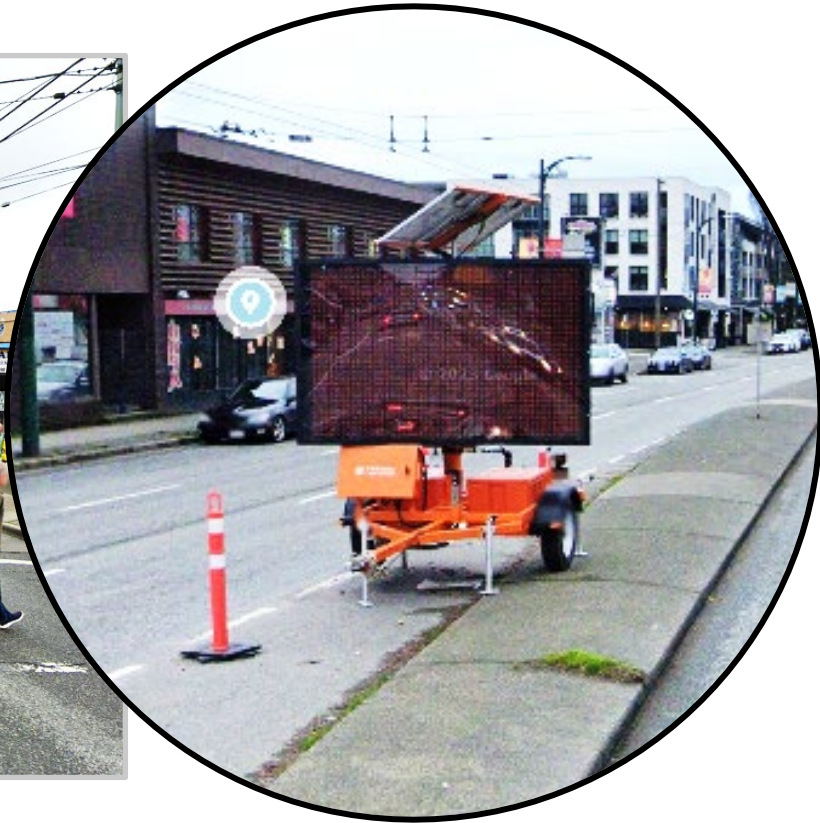


III: Implementing a Traveler Information System



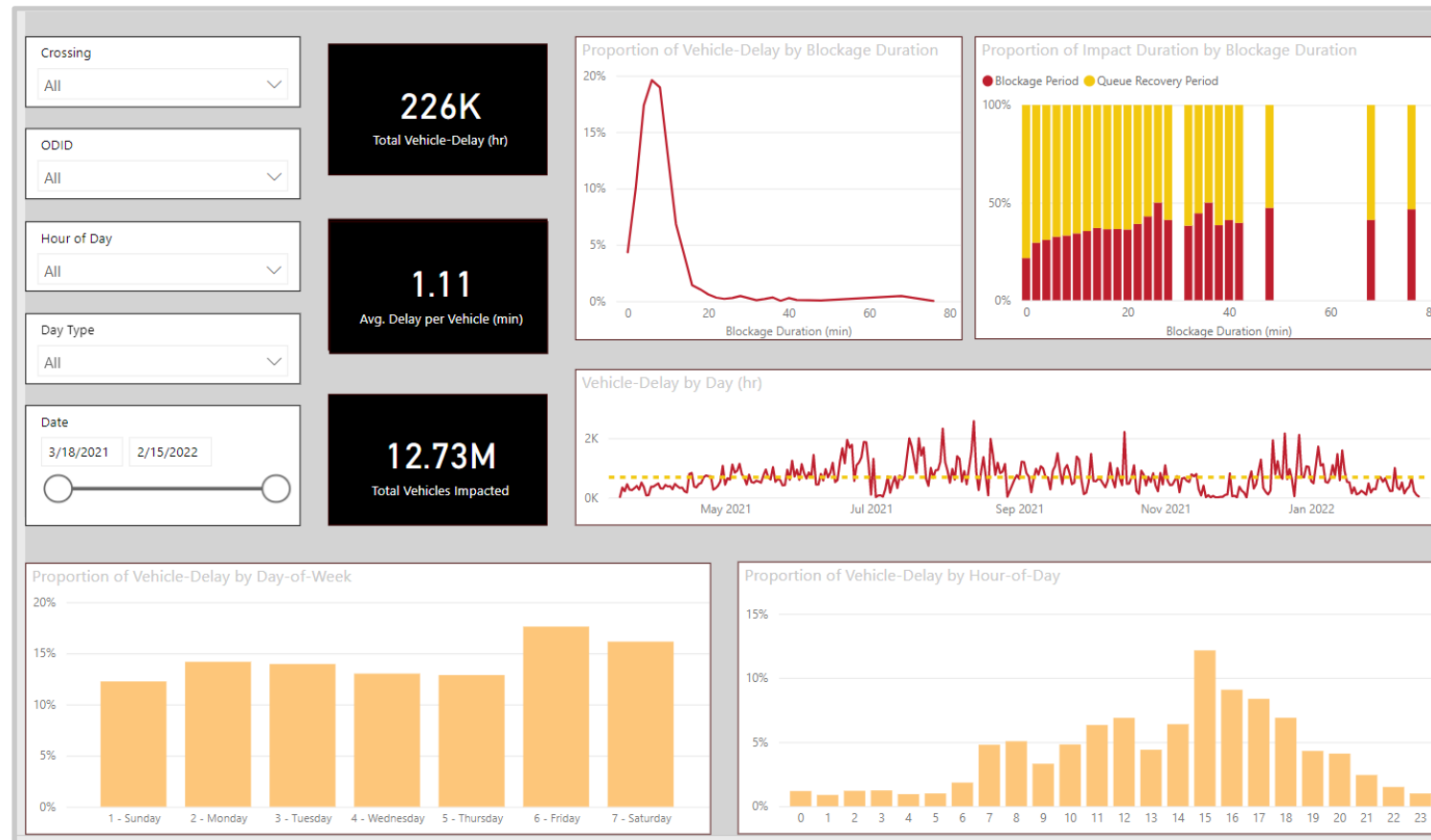
Train sensor at Venables St rail crossing

III: Implementing a Traveler Information System



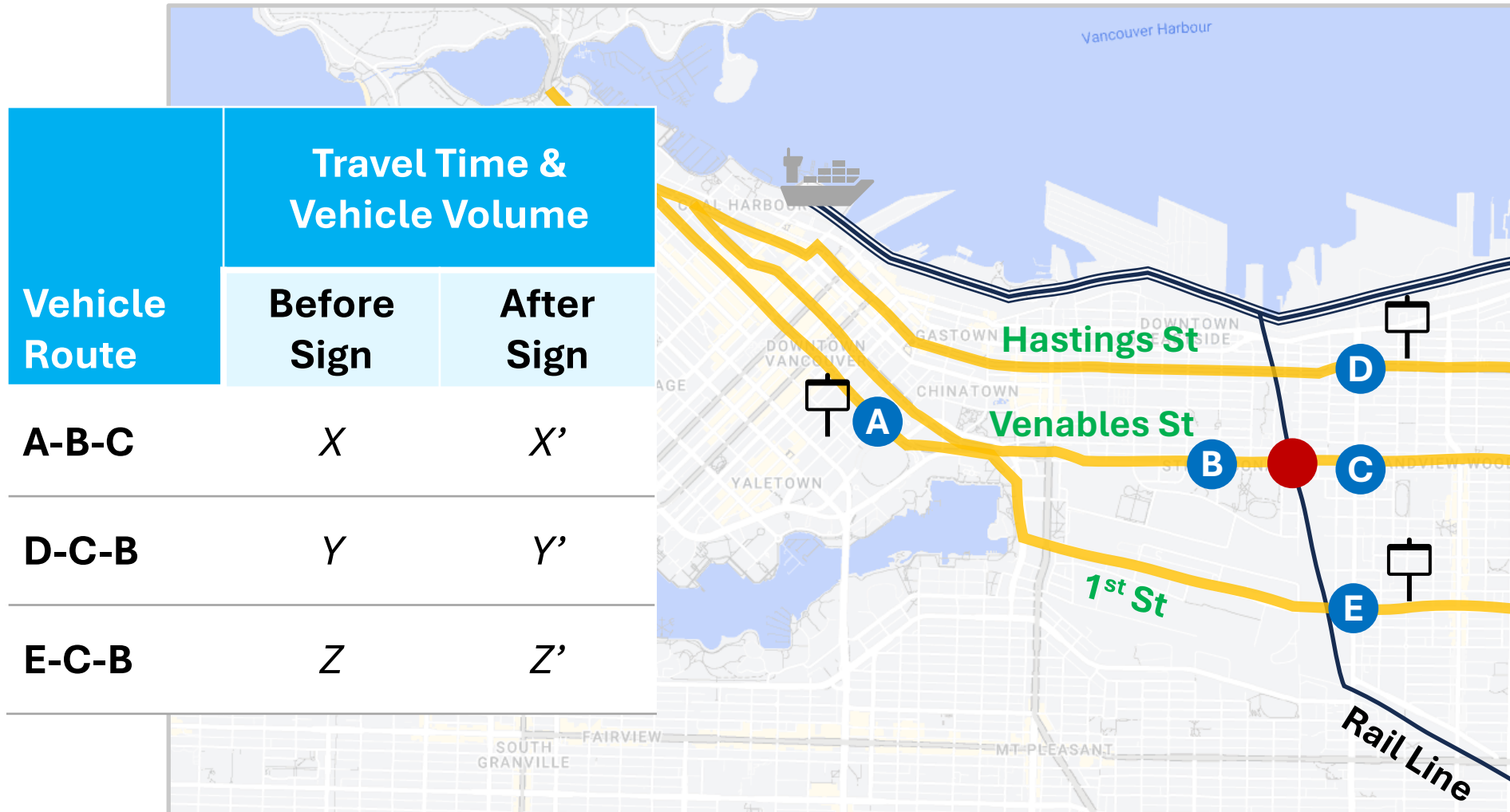
Dynamic message sign on Hastings St

III: Implementing a Traveler Information System



Rail crossing information dashboard & analytics

III: Implementing a Traveler Information System



III: Implementing a Traveler Information System

	Hours of Delay	Vehicles Delayed
Before	7,507	180,660
After		
Change		

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Change	-2,232	-40,141
	-30%	-22%

IV: Learnings

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Cost over 25 years	\$125,000,000	\$300,000

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IV: Learnings

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Delay reduction (%)	100%	30%
Delay reduction (hr over 25 yr)	1,141,689	342,507
Cost per 1 hr delay reduction	\$109.59	\$0.87

IV: Learnings



Poor quality sensors require frequent resetting in the field

Choose your Bluetooth sensor provider carefully to minimize O&M costs.



Choose your signs & driver messaging carefully

Match the sign type & size to the message type & length to minimize driver confusion.

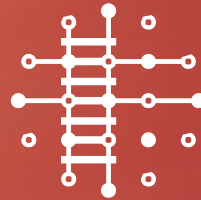


Signs support broader information approaches

This solution provides the foundation to support in-vehicle messaging & CV/AV operations.

V: Conclusion

- Increasing train & traffic volumes are decreasing mobility & safety at rail crossings
- Rail crossing traveler information systems improve mobility & safety
 - 30% reduction in traffic delays
 - 22% reduction in vehicle interactions with trains
 - 125x more cost-effective than grade separation
- TRAINFO expanding to other crossings in Vancouver & surrounding areas
- Contact us to learn how **FHWA Section 130** funding can cover **100%** of the cost of a rail crossing traveler information system



TRAINFO

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