DALHOUSIE UNIVERSITY
FACULTY OF ENGINEERING

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HALIFAX
Halifax Regional Municipality

Department of Civil and Resource Engineering

Lacewood Drive Active Transportation Corridor

Study Objectives

- Design a bicycle system as part of Halifax Regional Municipality's Integrated Mobility Plan, to make it convenient for residents to choose cycling. This design aims to connect the Active Transportation network from Dunbrack Street to the Chain of Lakes Trail.

Project Location

- The project begins at the intersection of Lacewood Drive and Dunbrack Street, along 1.8 km of Lacewood Drive to the intersection of Titus Street and Main Avenue.

Design Process

- Analyze the project area and research various bike lane systems.
- Choose 3 suitable options to conduct a traffic analysis and Class D Cost Estimate.
- Select a final design based on the traffic analysis and cost differences.
- Develop a Final Design and Construction Management Plan.

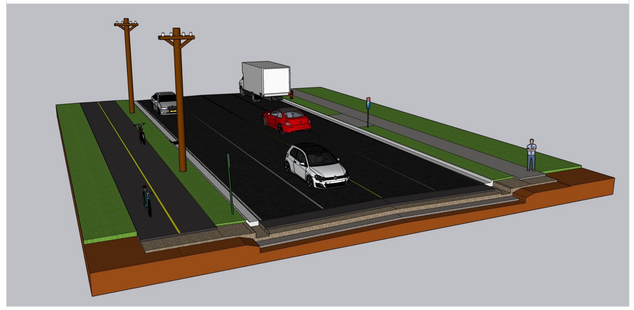
Design Options & Evaluation

- Three design options were analyzed (with Class D Cost Estimates): Conventional Bike Lanes ($1.9M), a Multi-Use Pathway ($2.5M), and Raised Cycle Tracks ($5.4M).The conventional bike lane caused Lacewood Drive to change from a 4-lane to 3-lane roadway, while the other two options had no impact to existing vehicular movement.
- A traffic analysis was conducted using Vistro Modeling Software, to determine the Level of Service (LOS) and delay for each situation.

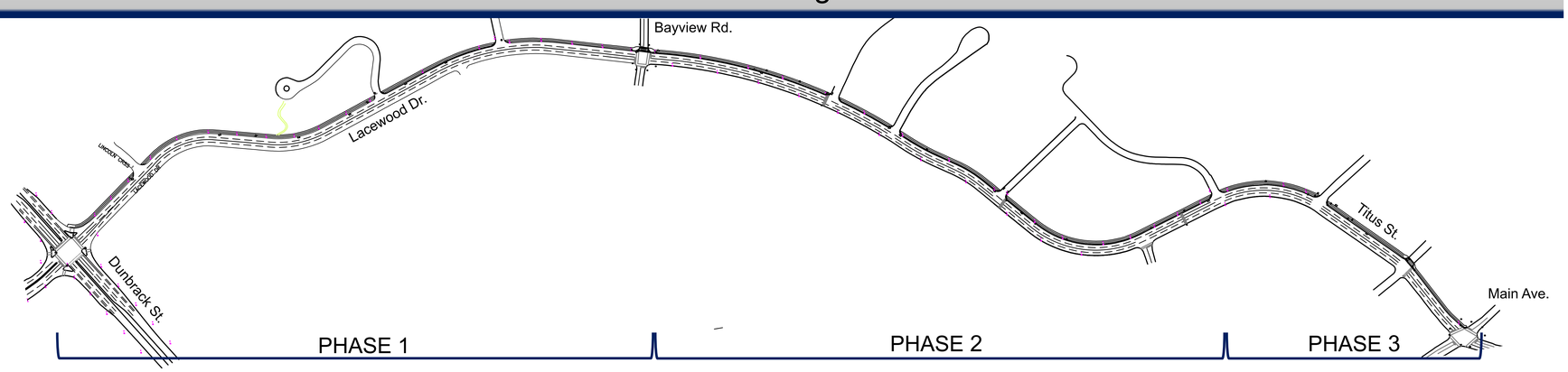
		Lacewood/Dunbrack	Lacewood/Bayview	Ttius/Main
		Multi-Use Pathway & Raised Cycle Track		
	AM	LOS C	LOS C	LOS D
	PM	LOS D	LOS B	LOS D
		Conventional Bike Lane		
1 lane Inbound	AM	LOS D	LOS F	LOS E
	PM	LOS D	LOS D	LOS D
1 lane Outbound	AM	LOS D	LOS C	LOS F
	PM	LOS F	LOS C	LOS F

Final Design

- Succeeding the design analysis, a Multi-Use Pathway was chosen for this project. Below is a typical cross section of the final product when constructed.

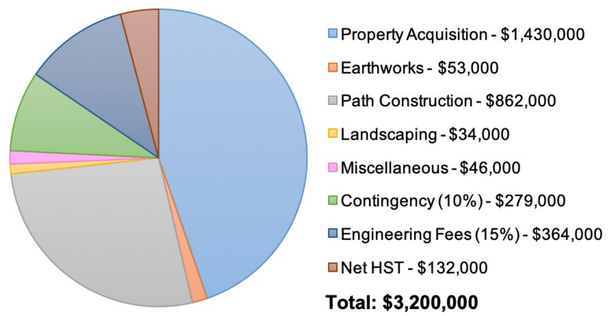


Final Design

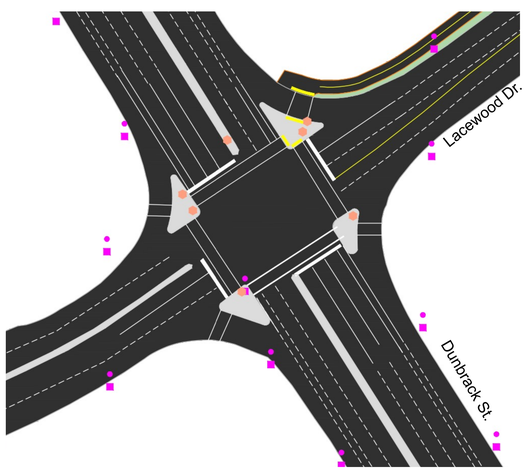


Cost Estimate

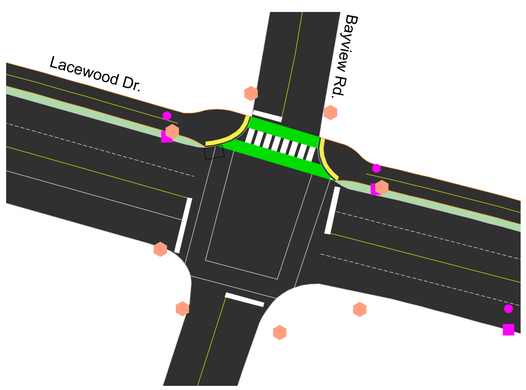
- Class A Cost Estimate:



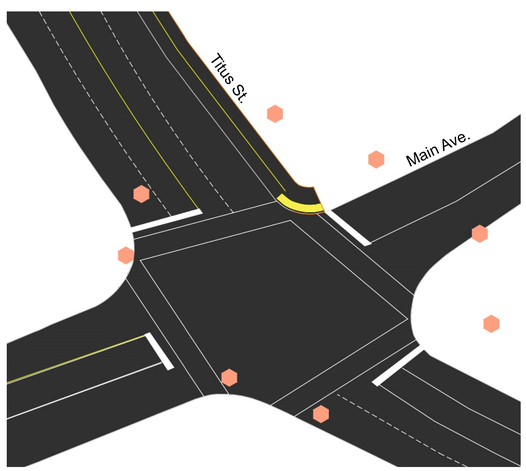
Lacewood Dr. at Dunbrack St.



Lacewood Dr. at Bayview Rd.



Titus St. at Main Ave.



Conclusion and Recommendations

- Following an analysis of three bike systems, a multi-use pathway is recommended for this section of Lacewood Drive.
- This design will not increase delays for vehicular traffic.
- The project should be constructed in three phases, identified on the Final Design layout.

Acknowledgements

- Advisors: Paul Burgess and Dr. Nouman Ali
- Course Instructors: Dr. Yi Liu and Dr. Craig Lake
- Industry Contact: David MacIsaac
- References: Halifax Regional Municipality Integrated Mobility Plan
  Ontario Traffic Manual