

## Transportation Committee

Meeting date: January 13, 2020

For the Metropolitan Council meeting of January 22, 2020

**Subject:** Real-Time Prediction Engine, Contract 18P322

**District(s), Member(s):** All

**Policy/Legal Reference:** 3-3 Expenditure Policy, Procurement of Goods and Services Greater than \$500,000

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**Division/Department:** Metro Transit / Transit Information

### Proposed Action

That the Metropolitan Council authorizes the Regional Administrator to negotiate Contract 18P322 with Cambridge Systematics, Inc. to provide real-time departure prediction software implementation, support, hosting and maintenance services in an amount not to exceed \$972,000.

### Background

In 2008, Metro Transit began providing customers real-time departure predictions through the NexTrip system. In 2018, there were 80 million unique NexTrip requests via metrotransit.org, the Metro Transit app, the automated phone system, and SMS/text message. Additionally, NexTrip times are provided at over 200 real-time signs and push-button annunciators at stations and high-profile bus stops.

These customer information tools all use the same NexTrip prediction data. The current NexTrip prediction system is basic; it does not account for many factors that affect actual departure times and fails to provide predictions under various circumstances. Furthermore, current NexTrip predictions tend to perform worse when buses are delayed, which is when customers depend on this information the most.

High quality real-time information is a critical customer information need and expectation. Prediction accuracy and availability have been a persistent and significant source of customer complaints. In response to customer feedback, Metro Transit has pursued many strategies to improve prediction accuracy. A prediction engine software system that will use more inputs and deliver smarter predictions was identified as an essential strategy for improving prediction accuracy.

### Rationale

The procurement process for this project was completed in two phases. The first, a formally advertised Request for Proposals issued January 7, 2019 with a Pre-Proposal meeting held on January 16, 2019, and proposals received on February 22, 2019. The Notice of Award for Phase 1 was issued to two vendors on April 18, 2019.

Phase 1 ran from July 1 to October 31, 2019. During this time, the two selected vendors set up and configured software to: (1) generate real-time departure predictions for all bus routes, trips, and stops; and (2) report on prediction accuracy and system performance. Additionally, the selected vendors advised Metro Transit staff on additional opportunities to improve prediction accuracy and data quality. During the fourth and final month of

Phase 1, Metro Transit evaluated the two vendors' predictions alongside the current system used to generate NexTrip real-time information and assessed accuracy performance. Results showed both vendors performed significantly higher in prediction accuracy than the current NexTrip system. After the completion of Phase 1, the two vendors submitted proposals for Phase 2, the long-term implementation, support and maintenance of the software and final accuracy reports.

The evaluation panel considered: the accuracy performance during Phase 1; the roadmap for ongoing improvements to prediction accuracy; system performance and availability during Phase 1; the ability to meet the technical requirements; and the Phase 2 proposals including cost, references, and ongoing support. The evaluation panel determined that Cambridge Systematics was the most advantageous solution for the Council.

Cambridge Systematics, Inc. will configure, implement, support, and maintain a prediction engine that will improve the accuracy, reliability, and availability of departure predictions for all bus service and Northstar.

### **Thrive Lens Analysis**

The action advances the Thrive outcomes of Stewardship, Prosperity, Equity, Livability, and Sustainability. Improving the accuracy, accessibility, and availability of real-time information for transit riders addresses a key customer pain point and improves the reliability and attractiveness of transit.

### **Funding**

Funding for this contract is included in the Transit Information operating budget.

### **Known Support / Opposition**

Improving prediction accuracy is a High Priority Initiative for Metro Transit and has widespread support. There is no known opposition.