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16. ABSTRACT

This report documents the research efforts related to the four tasks of Phase II+ of the Integrated Dynamic Transit Operation System project.

The first part, entitled "D-RIDE: Linking Mass Transit to Demand Responsive Transit," summarizes a study on a last-mile transit solution that integrates mass transit rides and on-demand shuttle bookings for a seamless multi-segment trip. The second part, entitled "R-TCP: Transit Connection Protection in the San Francisco East Bay Area," focuses on the development and evaluation of the R-TCP strategy for the east bay service area served by AC Transit, which enables district-wide optimization for dynamic bus dispatch and passenger service. The third part, entitled "Transit Research Roadmap," provides an overview of transit technologies currently in focus from industry experts, investors, researchers, and government. The fourth part, entitled "Bus Operations of Three San Francisco Bay Area Transit Agencies during the First Year of the COVID-19 Pandemic," describes the results of monitoring three transit providers and how these agencies' operations were affected, as well as their efforts to safely maintain some level of service during the COVID-19 pandemic.

The outcome of the four tasks has resulted in advanced transit research towards a dynamic-operated, traveler-centric, and robust transit system.

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PART I D-RIDE: Linking Mass Transit and On-Demand Transit Trips

Document: "*IDTO II+_Task 2_DRIDE for TDT.pdf*"

PART II R-TCP: Transit Connection Protection in the San Francisco East Bay Area

Document: "*IDTO II+_Task 3_R-TCP for ACT.pdf*"

PART III Transit Research Roadmap

Document: "*IDTO II+_Task 4_Transit Research Roadmap.pdf*"

PART IV Bus Operations of Three San Francisco Bay Area Transit Agencies during the First Year of the COVID-19 Pandemic

Document: "*IDTO II+_Task 5_Bus Operation During Pandemic.pdf*"