

# Western Minnesota Contactless Payment Project

## **Transit Lab**

Department of Civil, Environmental, and Geo- Engineering

University of Minnesota Twin Cities

Presentation at Implementation Workgroup Meeting, January 9, 2023



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# Western Minnesota Contactless Payment Project Research Team and Scope

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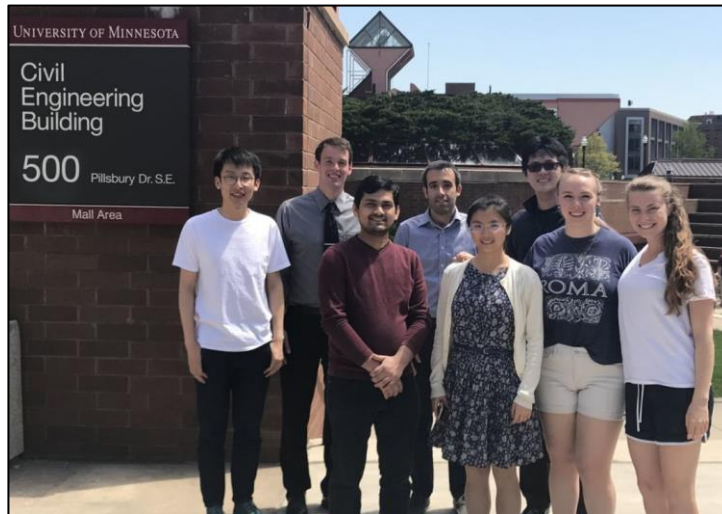
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## Transit Lab at the University of Minnesota

Research group since 2015, with focus on:

- Transit data and rider behavior
- Transportation technologies (MoD/MaaS, AV, EV)



## Research Team



Hannah DeBruin  
Graduate Researcher



Kwangho Baek  
Graduate Researcher



Alireza Khani  
Principal Investigator

## Research Objectives

1. Compare the benefits and drawbacks of contactless payment technologies
2. Understand the impact of contactless payment systems and trip planning platforms on the safety of passengers and riders
3. Identify the impact of contactless payment technologies on public confidence in rural public transit systems
4. Test two contactless payment technologies and a trip planning application
5. Gauge riders and public perception of the agencies and technologies

## Research Scope

1. Pre-implementation survey to establish a baseline of attitudes/behaviors
2. Post-deployment survey of **contactless payment** to examine current perceptions of the new technology
3. Post-deployment survey of **MaaS trip planner** to examine current perceptions of the new technology
4. Financial and ridership impact analysis using MNDOT/agencies' data
5. Transit operator interviews to understand the operational impact on their organization



## Tasks and Timelines

Year	2022		2023												2024	
Month	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
Task 1: Pre-Implementation Survey																
Task 2: Contactless payment impact survey																
Task 3: MaaS trip planner impact survey																
Task 4: Survey Analysis																
Task 5: Organizational impact analysis																
Task 6: Final Report																

→ Likely to be combined

# Western Minnesota Contactless Payment Project Analysis Overview and Action Items

**Hannah DeBruin** and **Kwangho Baek**

Graduate Students

Department of Civil, Environmental, and Geo- Engineering

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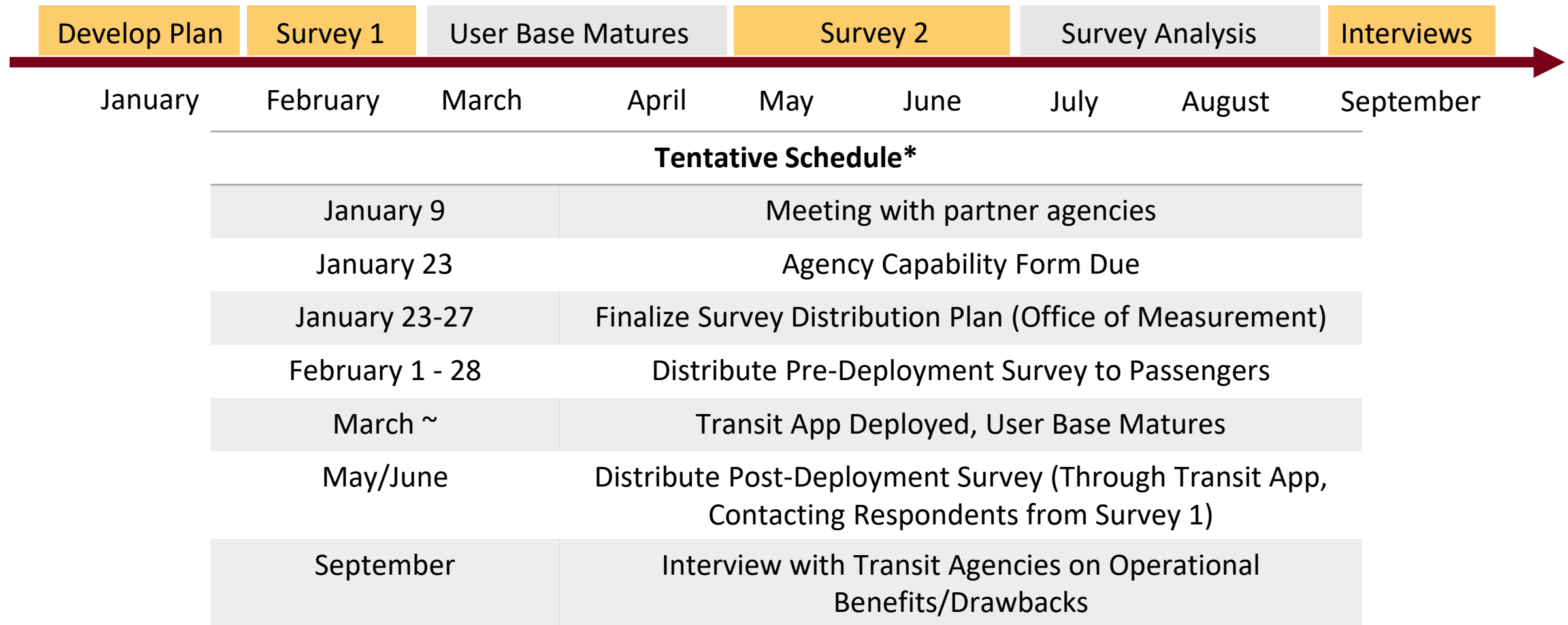
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## Approach to Analysis

- **Observed travel behavior (ridership) before and after implementation**
  - NTD ridership numbers reported monthly
  - Surveyed frequency of transit use
- **Attitudes about transit, COVID safety, fare payment, trip planning**
  - Pre-implementation survey about current attitudes and fare payment capabilities
    - Questions focused on bankedness, smartphone access, and fare payment preferences
    - Questions focused on COVID-related safety concerns
    - Questions focused on transit quality of service, including ease of planning a trip
  - Post-implementation survey about change in attitudes/satisfaction with contactless fare payment and trip planning app
- **Operational benefits and drawbacks of the fare payment & trip planning application**
  - Revenue and operating costs reported monthly
  - Transit operator interviews for qualitative feedback
    - Boarding efficiency, safe customer/driver interactions

## Project Timeline



\*subject to change



## Rider Survey Goals

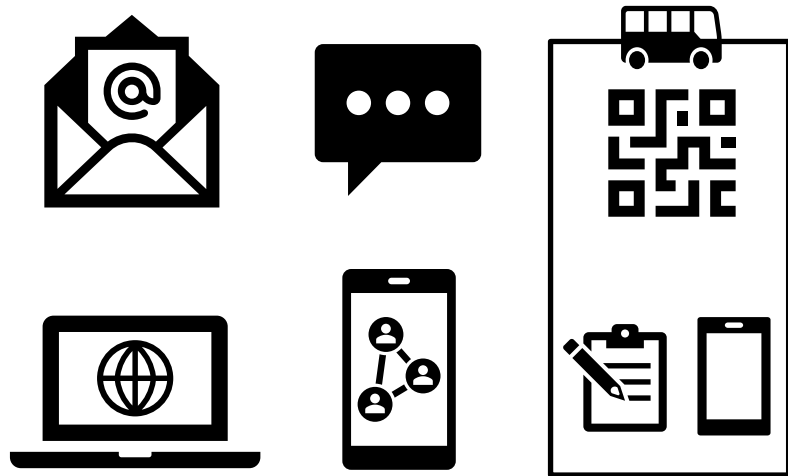
- Targeting existing riders of 6 partner transit agencies
- 2-5 minutes long, completed online, on paper aboard transit vehicles, or over the phone when booking
  - Post-implementation survey distributed through text/email to pre-implementation survey participants and more can be recruited (i.e., Transit app users)
- Around 800 respondents, representative of the project:
  - Geographic distribution of riders by agency (using 2022 NTD ridership)
  - Sample allocation by the payment type (mobile/card)
  - Minimum number of samples for each agency

Agency (Mobile/Card)	Sample Size Target
Transit Alternatives (M)	135 Riders
Tri-Cap Transit Connection (M)	190 Riders
Morris Transit (M)	75 Riders
Prairie Five Rides (F)	100 Riders
Central Community Transit (F)	270 Riders
United Community Transit (F)	30 Riders

## Survey Distribution Methods

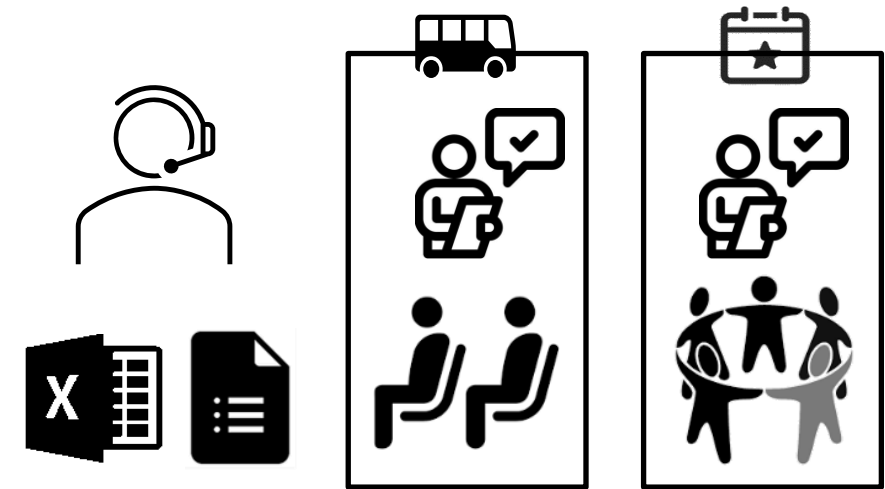
### Passive

- Emailing a link to existing riders with emails on file
- Texting existing riders with phone numbers on file
- Posting a link/QR code on agency websites/social media
- Posting a QR code inside vehicles
- Supplying paper/tablet surveys inside vehicles for riders to complete during their trip



### Active

- Asking each rider a short (2-3 minutes) set of survey questions when they call to book a ride
- Equipping agency staff with a clipboard/tablet and sending them on vehicles to interview passengers during their trip
- Partnering with community organizations/attending community events



## Rider Survey Participation Incentive

- **One free ride from the agency (reimbursed by the project)**
  - Voucher sent to passenger for next trip (mailed, emailed, texted, etc)
  - Our team would develop a tool for verifying each passenger only fills out the survey/receives the incentive once
- **Otherwise, will likely enter participants for a drawing of a gift card**
  - Participants would have to provide email address/phone number for entry



## Action Items

- Any immediate feedback about survey distribution methods?
- Complete Google form before January 23

Section 2 of 5

Information about Your Agency

This section asks about the level of service your agency provides and what incentives you might be able to offer for survey completion.

How many demand-responsive vehicles does your agency operate on a day-to-day basis? \*

Short answer text

What is your agency's estimate for the number of unique riders (clients) you serve in a month? \*

This is different from the total number of rides – repeat/regular riders should only be counted once

Short answer text