



Application

10357 - 2018 Travel Demand Management (TDM)

11031 - Bike Rack Sensors for Metro Transit buses

Regional Solicitation - Transit and TDM Projects

Status: Submitted
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Primary Contact

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What Grant Programs are you most interested in? Regional Solicitation - Transit and TDM Projects

Organization Information

Name: Metro Transit

Jurisdictional Agency (if different):

Organization Type: Metropolitan Council
Organization Website:
Address: 560 Sixth Avenue North

***** **City:** Minneapolis **State/Province:** Minnesota **Postal Code/Zip:** 55411
County: Hennepin
Phone:* 651-602-1000 **Ext.:**
Fax:
PeopleSoft Vendor Number: METROTRANSIT

Project Information

Project Name: Bike Rack Sensors for Metro Transit Buses
Primary County where the Project is Located: Multiple
Cities or Townships where the Project is Located: Across the entire Metro Transit service area
Jurisdictional Agency (If Different than the Applicant): Purchase, install, and configure sensors that record when and where a bicycle is loaded or unloaded from the bike racks on the front of Metro Transit buses
Brief Project Description (Include location, road name/functional class, type of improvement, etc.):
(Limit 2,800 characters; approximately 400 words)
TIP Description Guidance (will be used in TIP if the project is selected for funding): CMAQ
Project Length (Miles): 0
to the nearest one-tenth of a mile

Project Funding

Are you applying for competitive funds from another source(s) to implement this project? No
If yes, please identify the source(s)
Federal Amount: \$280,000.00
Match Amount: \$70,000.00
Minimum of 20% of project total

Project Total \$350,000.00

Match Percentage 20.0%

Minimum of 20%

Compute the match percentage by dividing the match amount by the project total

Source of Match Funds Metro Transit operating budget

A minimum of 20% of the total project cost must come from non-federal sources; additional match funds over the 20% minimum can come from other federal sources

Preferred Program Year

Select one: 2020

Select 2020 or 2021 for TDM projects only. For all other applications, select 2022 or 2023.

Additional Program Years:

Select all years that are feasible if funding in an earlier year becomes available.

Project Information-Transit and TDM

County, City, or Lead Agency Metro Transit

Zip Code where Majority of Work is Being Performed 55411

Total Transit Stops

TERMINI:(Termini listed must be within 0.3 miles of any work)

From: n/a
(Intersection or Address)

To: n/a
(Intersection or Address)

DO NOT INCLUDE LEGAL DESCRIPTION

Or At: n/a
(Intersection or Address)

Name of Park and Ride or Transit Station: n/a

e.g., MAPLE GROVE TRANSIT STATION

(Approximate) Begin Construction Date

(Approximate) End Construction Date

Primary Types of Work Installation of equipment on buses

Examples: GRADE, AGG BASE, BIT BASE, BIT SURF, SIDEWALK, CURB AND GUTTER, STORM SEWER, SIGNALS, LIGHTING, GUARDRAIL, BIKE PATH, PED RAMPS, PARK AND RIDE, ETC.

Requirements - All Projects

All Projects

1. The project must be consistent with the goals and policies in these adopted regional plans: Thrive MSP 2040 (2014), the 2040 Transportation Policy Plan (2015), the 2040 Regional Parks Policy Plan (2015), and the 2040 Water Resources Policy Plan (2015).

Check the box to indicate that the project meets this requirement. Yes

2. The project must be consistent with the 2040 Transportation Policy Plan. Reference the 2040 Transportation Plan goals, objectives, and strategies that relate to the project.

List the goals, objectives, strategies, and associated pages:

Transportation Policy Plan: Bicycle Connections to Transit (section 7.24), Thrive MSP 2040: Accountability ("Adopting a data-driven approach to measure progress") (page 75), "Applying policies to specific places" (page 80), Equity: Creating real choices in where we live, how we travel, and where we recreate for all residents, across race, ethnicity, economic means, and ability: "Prioritize transportation investments that connect lower-income areas to job opportunities."

3. The project or the transportation problem/need that the project addresses must be in a local planning or programming document. Reference the name of the appropriate comprehensive plan, regional/statewide plan, capital improvement program, corridor study document [studies on trunk highway must be approved by the Minnesota Department of Transportation and the Metropolitan Council], or other official plan or program of the applicant agency [includes Safe Routes to School Plans] that the project is included in and/or a transportation problem/need that the project addresses.

List the applicable documents and pages:

Twin Cities Shared Mobility Action Plan (2017): Goal: 8: Concentrate Efforts around Integrated Mobility Hubs (page 30), 9: Realign CMAQ Funding and Improve TDM Outcomes (page 32). Metropolitan Transit Bicycle and Pedestrian Connections to Transit Infrastructure Study (2009): project would inform decisionmaking for goals stated in section 2.1 (page 2). Metropolitan Council TDM Evaluation and Implementation Study (2010): Strategy 3.2: "Local and regional TDM efforts should be focused in corridors where the region has made significant investments in multimodal options, including bicycling/walking facilities." (page 71). Minneapolis Comprehensive Plan: Transportation Policy 2.5.3: "Continue to integrate bicycling and transit facilities where needed, including racks on transit vehicles and bicycle parking near transit stops." (page 43)

4. The project must exclude costs for studies, preliminary engineering, design, or construction engineering. Right-of-way costs are only eligible as part of transit stations/stops, transit terminals, park-and-ride facilities, or pool-and-ride lots. Noise barriers, drainage projects, fences, landscaping, etc., are not eligible for funding as a standalone project, but can be included as part of the larger submitted project, which is otherwise eligible.

Check the box to indicate that the project meets this requirement. Yes

5. Applicants that are not cities or counties in the seven-county metro area with populations over 5,000 must contact the MnDOT Metro State Aid Office prior to submitting their application to determine if a public agency sponsor is required.

Check the box to indicate that the project meets this requirement. Yes

6. Applicants must not submit an application for the same project elements in more than one funding application category.

Check the box to indicate that the project meets this requirement. Yes

7. The requested funding amount must be more than or equal to the minimum award and less than or equal to the maximum award. The cost of preparing a project for funding authorization can be substantial. For that reason, minimum federal amounts apply. Other federal funds may be combined with the requested funds for projects exceeding the maximum award, but the source(s) must be identified in the application. Funding amounts by application category are listed below.

Transit Expansion: \$500,000 to \$7,000,000

Transit Modernization: \$100,000 to \$7,000,000

Travel Demand Management (TDM): \$75,000 to \$500,000

Check the box to indicate that the project meets this requirement. Yes

8. The project must comply with the Americans with Disabilities Act (ADA).

Check the box to indicate that the project meets this requirement. Yes

9. In order for a selected project to be included in the Transportation Improvement Program (TIP) and approved by USDOT, the public agency sponsor must either have, or be substantially working towards, completing a current Americans with Disabilities Act (ADA) self-evaluation or transition plan that covers the public right of way/transportation, as required under Title II of the ADA.

The applicant is a public agency that employs 50 or more people and has an adopted ADA transition plan that covers the public right of way/transportation.

Date plan adopted by governing body

The applicant is a public agency that employs 50 or more people and is currently working towards completing an ADA transition plan that covers the public rights of way/transportation.

Date process started

Date of anticipated plan completion/adoption

The applicant is a public agency that employs fewer than 50 people and has a completed ADA self-evaluation that covers the public rights of way/transportation.

Date self-evaluation completed

The applicant is a public agency that employs fewer than 50 people and is working towards completing an ADA self-evaluation that covers the public rights of way/transportation.

Date process started

Date of anticipated plan completion/adoption

(TDM Applicants Only) The applicant is not a public agency subject to the self-evaluation requirements in Title II of the ADA.

10. The project must be accessible and open to the general public.

Check the box to indicate that the project meets this requirement. Yes

11. The owner/operator of the facility must operate and maintain the project year-round for the useful life of the improvement, per FHWA direction established 8/27/2008 and updated 6/27/2017.

Check the box to indicate that the project meets this requirement. Yes

12. The project must represent a permanent improvement with independent utility. The term independent utility means the project provides benefits described in the application by itself and does not depend on any construction elements of the project being funded from other sources outside the regional solicitation, excluding the required non-federal match.

Projects that include traffic management or transit operating funds as part of a construction project are exempt from this policy.

Check the box to indicate that the project meets this requirement. Yes

13. The project must not be a temporary construction project. A temporary construction project is defined as work that must be replaced within five years and is ineligible for funding. The project must also not be staged construction where the project will be replaced as part of future stages. Staged construction is eligible for funding as long as future stages build on, rather than replace, previous work.

Check the box to indicate that the project meets this requirement. Yes

14. The project applicant must send written notification regarding the proposed project to all affected state and local units of government prior to submitting the application.

Check the box to indicate that the project meets this requirement. Yes

Requirements - Transit and TDM Projects

For Transit Expansion Projects Only

1. The project must provide a new or expanded transit facility or service (includes peak, off-peak, express, limited stop service on an existing route, or dial-a-ride).

Check the box to indicate that the project meets this requirement.

2. The applicant must have the capital and operating funds necessary to implement the entire project and commit to continuing the service or facility project beyond the initial three-year funding period for transit operating funds.

Check the box to indicate that the project meets this requirement.

Transit Expansion and Transit Modernization projects only:

3. The project is not eligible for either capital or operating funds if the corresponding capital or operating costs have been funded in a previous solicitation. However, Transit Modernization projects are eligible to apply in multiple solicitations if new project elements are being added with each application. Each transit application must show independent utility and the points awarded in the application should only account for the improvements listed in the application.

Check the box to indicate that the project meets this requirement.

4. The applicant must affirm that they are able to implement a Federal Transit Administration (FTA) funded project in accordance with the grant application, Master Agreement, and all applicable laws and regulations, using sound management practices. Furthermore, the applicant must certify that they have the technical capacity to carry out the proposed project and manage FTA grants in accordance with the grant agreement, sub recipient grant agreement (if applicable), and with all applicable laws. The applicant must certify that they have adequate staffing levels, staff training and experience, documented procedures, ability to submit required reports correctly and on time, ability to maintain project equipment, and ability to comply with FTA and grantee requirements.

Check the box to indicate that the project meets this requirement.

Travel Demand Management projects only:

The applicant must be properly categorized as a subrecipient in accordance with 2CFR200.330.

Check the box to indicate that the project meets this requirement. Yes

The applicant must adhere to Subpart E Cost Principles of 2CFR200 under the proposed subaward.

Check the box to indicate that the project meets this requirement. Yes

Specific Roadway Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES

	Cost
Mobilization (approx. 5% of total cost)	\$0.00
Removals (approx. 5% of total cost)	\$0.00
Roadway (grading, borrow, etc.)	\$0.00
Roadway (aggregates and paving)	\$0.00
Subgrade Correction (muck)	\$0.00

Storm Sewer	\$0.00
Ponds	\$0.00
Concrete Items (curb & gutter, sidewalks, median barriers)	\$0.00
Traffic Control	\$0.00
Striping	\$0.00
Signing	\$0.00
Lighting	\$0.00
Turf - Erosion & Landscaping	\$0.00
Bridge	\$0.00
Retaining Walls	\$0.00
Noise Wall (not calculated in cost effectiveness measure)	\$0.00
Traffic Signals	\$0.00
Wetland Mitigation	\$0.00
Other Natural and Cultural Resource Protection	\$0.00
RR Crossing	\$0.00
Roadway Contingencies	\$0.00
Other Roadway Elements	\$0.00
Totals	\$0.00

Specific Bicycle and Pedestrian Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Path/Trail Construction	\$0.00
Sidewalk Construction	\$0.00
On-Street Bicycle Facility Construction	\$0.00
Right-of-Way	\$0.00
Pedestrian Curb Ramps (ADA)	\$0.00
Crossing Aids (e.g., Audible Pedestrian Signals, HAWK)	\$0.00
Pedestrian-scale Lighting	\$0.00
Streetscaping	\$0.00
Wayfinding	\$0.00
Bicycle and Pedestrian Contingencies	\$0.00
Other Bicycle and Pedestrian Elements	\$0.00
Totals	\$0.00

Specific Transit and TDM Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Fixed Guideway Elements	\$0.00
Stations, Stops, and Terminals	\$0.00
Support Facilities	\$0.00
Transit Systems (e.g. communications, signals, controls, fare collection, etc.)	\$350,000.00
Vehicles	\$0.00
Contingencies	\$0.00
Right-of-Way	\$0.00
Other Transit and TDM Elements	\$0.00
Totals	\$350,000.00

Transit Operating Costs

Number of Platform hours	0
Cost Per Platform hour (full loaded Cost)	\$0.00
Subtotal	\$0.00
Other Costs - Administration, Overhead, etc.	\$0.00

Totals

Total Cost	\$350,000.00
Construction Cost Total	\$350,000.00
Transit Operating Cost Total	\$0.00

Measure A: Project's Use of Existing Infrastructure

Response:

The project will capitalize on the investments made in transit vehicle communications technology (the ability to use sensors to record and transmit information in real-time), real-time station signage (at BRT stations and high-volume bus stops), and on customer-facing web-based products, including the Metro Transit smartphone app, mobile website, desktop website, and NexTrip Partner Displays

(Limit 2,800 characters; approximately 400 words)

Measure A: Average Weekday Users

Average Weekday Users

2000

Response:

It is currently impossible to provide an accurate user count across 900+ buses every day. Collecting this information is the goal of this project, which will allow us to use the data to increase bicycle parking at congested areas and increase bus bike rack capacity where possible. A successfully funded project will allow users to know if approaching bus(es) have space for their bike, and if not, it gives them the chance to make alternate plans before it is too late. It makes for a more reliable and less stressful multimodal travel experience, which will lead to increased transit usage over time.

(Limit 2,800 characters; approximately 400 words)

Measure A: Project Location and Impact to Disadvantaged Populations

Response (Limit 2,800 characters; approximately 400 words)

We know that people with lower income are less likely to own cars and rely more heavily on transit, and bicycles serve as a low-cost option to get to transit that is too far away to walk to. Funding this project will allow us to determine if bicycle parking near transit and bus bike rack availability is equitably distributed. If it is not, we can quickly identify areas that need improvement and create a plan to address bicycle access issues in those locations.

Measure B: Affordable Housing

City/Township	Population in each city/township	Score	City Population/Total Population	Housing Score Multiplied by Population percent
Fridley	18180.0	84.0	0.08	6.951
Minneapolis	182658.0	100.0	0.83	83.138

Affordable Housing Scoring

Total Population	219704.0
Total Housing Score	96.62
Upload "Regional Economy" map	1531425120640_RegnlEconomyMap.pdf

Click on 'Edit' button on top right of page

Measure A: Areas of Traffic Congestion and Reduction in SOV Trips

Response:

This project will affect all Metro Transit buses, which operate on every congested roadway in the region. By improving the bike-transit multimodal experience, more people will choose this biking and transit over SOV trips.

(Limit 2,800 characters; approximately 400 words)

Measure B: Emissions Reduction

Number of Daily One-Way Commute Trips Reduced:	1728
Average Commute Trip Length (Default 12.1):	12.1
VMT Reduction	20908.8
CO Reduced	49972.032
NOx Reduced	3345.408
CO2e Reduced	7665166.08
PM2.5 Reduced	104.544
VOCs Reduced	627.264

Response:

If each bus with sensors added gains two bikes per day as a result of this project, that will reduce approximately 1728 one-way SOV trips (432 buses x 2 bike rack spaces per bus x 2 additional users per day).

(Limit 2,800 characters; approximately 400 words)

Measure A: Project Innovation

Response:

This project, which would expand a pilot currently running on 23 buses, would be the first of its kind for a transit agency. Right now, when a customer is waiting for a bus with a bike, they don't know if the rack is full. When the rack is full, the driver may deny the customer access at their discretion. This causes frustration and hassle for customers and discourages them from trying again in the future. This project would allow users to check their bus via their phone (using the Metro Transit app or mobile website), or a real-time sign at certain locations, to see if space is available. Meanwhile, we can analyze the data collected across the system to determine usage patterns, and use that information to expand bicycle parking option in busy corridors and explore three-place racks on buses serving routes known to fill the bike racks. Currently, we only know when a customer is denied access from complaints made to Customer Relations, which is not helpful in understanding system-wide patterns.

(Limit 2,800 characters; approximately 400 words)

Measure A: Organization's Experience and Resources

Response:

Metro Transit's Technology Systems team worked with a vendor to create the system currently serving 23 buses on a pilot basis, and are able to scale that system up to support more buses. Metro Transit's Strategic Initiatives group can analyze and visualize the data, and the Commuter Programs (TDM) group can work with internal and external partners to implement solutions based on what the data shows.

(Limit 1,400 characters; approximately 200 words)

Measure B: Project Financial Plan

Project funding sources are identified and secured to continue the project past the initial funding period, and/or carry on the project to a future phase:

Yes

25 Points

Applicant has identified potential funding sources that could support the project beyond the initial funding period:

15 Points

Applicant has not identified funding sources to carry the project beyond the initial funding period:

0 Points

Response:

The cost of installing sensors on new buses will be built into the cost associated with all after-market modifications to buses entering the fleet. The software used to manage the system and analyze the data is maintained for a variety of uses in the agency and will be supported on an ongoing basis.

(Limit 2,800 characters; approximately 400 words)

Measure A: Cost Effectiveness

Total Project Cost (entered in Project Cost Form):	\$350,000.00
Enter Amount of the Noise Walls:	\$0.00
Total Project Cost subtract the amount of the noise walls:	\$350,000.00
Points Awarded in Previous Criteria	
Cost Effectiveness	\$0.00

Other Attachments

Bike Boards

A line bike boardings

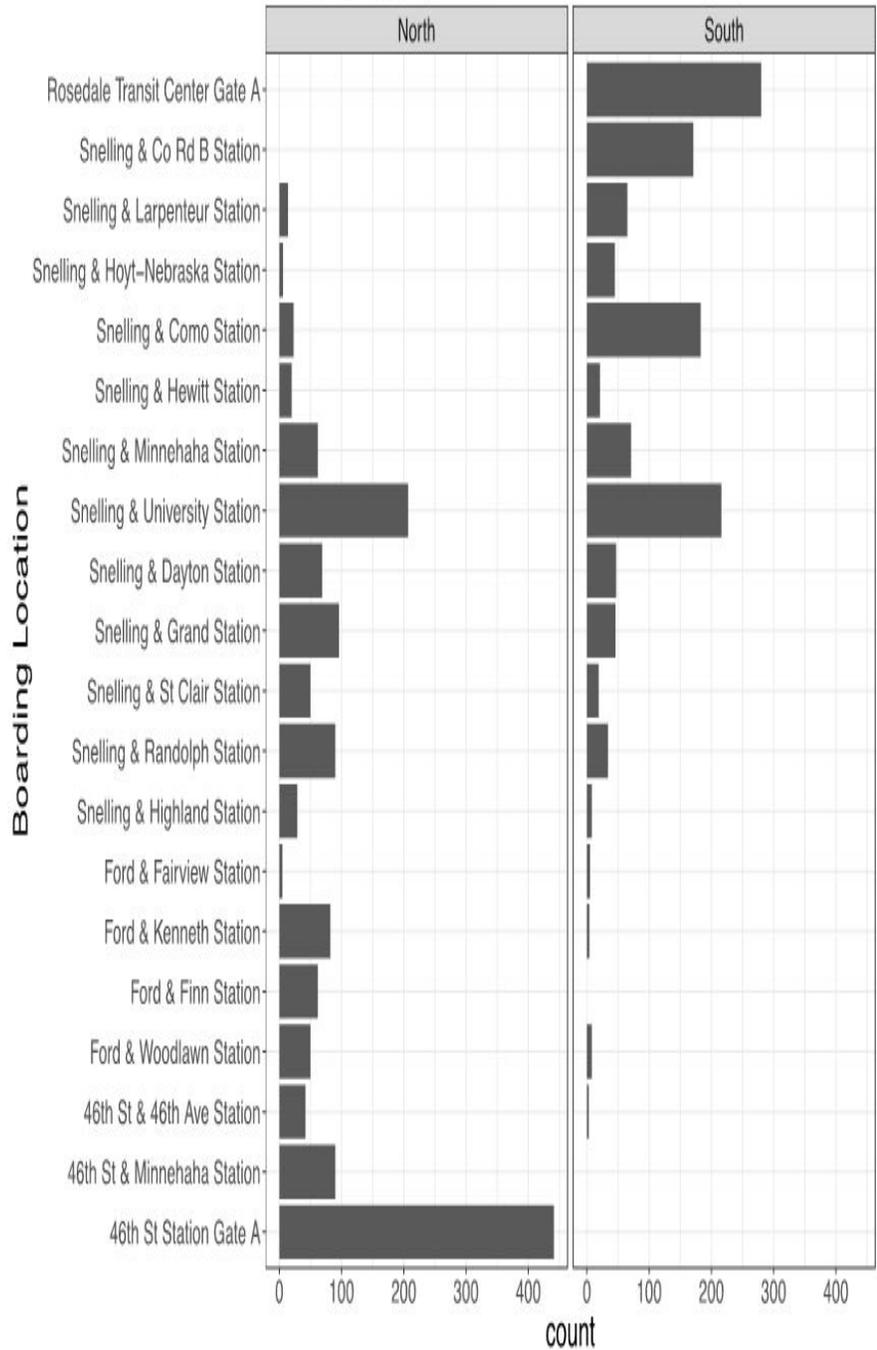


Chart showing bike boardings on A Line buses during summer of 2017. Expanding the pilot will allow us to understand bike boarding/alighting patterns across more of our service area.

Minneapolis - TransitMaster Play Back

Query View Playback Tools Help

Speed: [Slider]

Zoom: [Slider]

Message Records

Source: V.0.2640
 Destination: H.0.0
 Time Logged: 05:20:56:517
 Date Logged: 7/10/2018
 Type: Bike Rack Usage

Sensor 1: Load
 Sensor 2: No Activity
 Block: 2327
 Service: WK
 Stop Offset: 33
 Odometer: 23.30 miles
 Delta Latitude: -1684
 Delta Longitude: 1182
 Reference Point used: 0
 Latitude: 44.926172
 Longitude: -93.167183

In...	Time/Date	Vehicle	Message	Source	Destination	Communication Subsystem
			Bike Rack Usage			
551	05:20:56 ...	8001	Bike Rack Usage	V.0.26...	H.0.0	TMCDMA(8)
580	05:23:57 ...	8001	Bike Rack Usage	V.0.26...	H.0.0	TMCDMA(8)
778	05:50:24 ...	8001	Bike Rack Usage	V.0.26...	H.0.0	TMCDMA(8)
885	06:05:10 ...	8001	Bike Rack Usage	V.0.26...	H.0.0	TMCDMA(8)
1035	06:25:19 ...	8001	Bike Rack Usage	V.0.26...	H.0.0	TMCDMA(8)
2215	08:48:51 ...	8001	Bike Rack Usage	V.0.26...	H.0.0	TMCDMA(8)
2353	09:05:17 ...	8001	Bike Rack Usage	V.0.26...	H.0.0	TMCDMA(8)
3526	11:36:46 ...	8001	Bike Rack Usage	V.0.26...	H.0.0	TMCDMA(8)
3727	12:00:45 ...	8001	Bike Rack Usage	V.0.26...	H.0.0	TMCDMA(8)
3974	12:35:06 ...	8001	Bike Rack Usage	V.0.26...	H.0.0	TMCDMA(8)

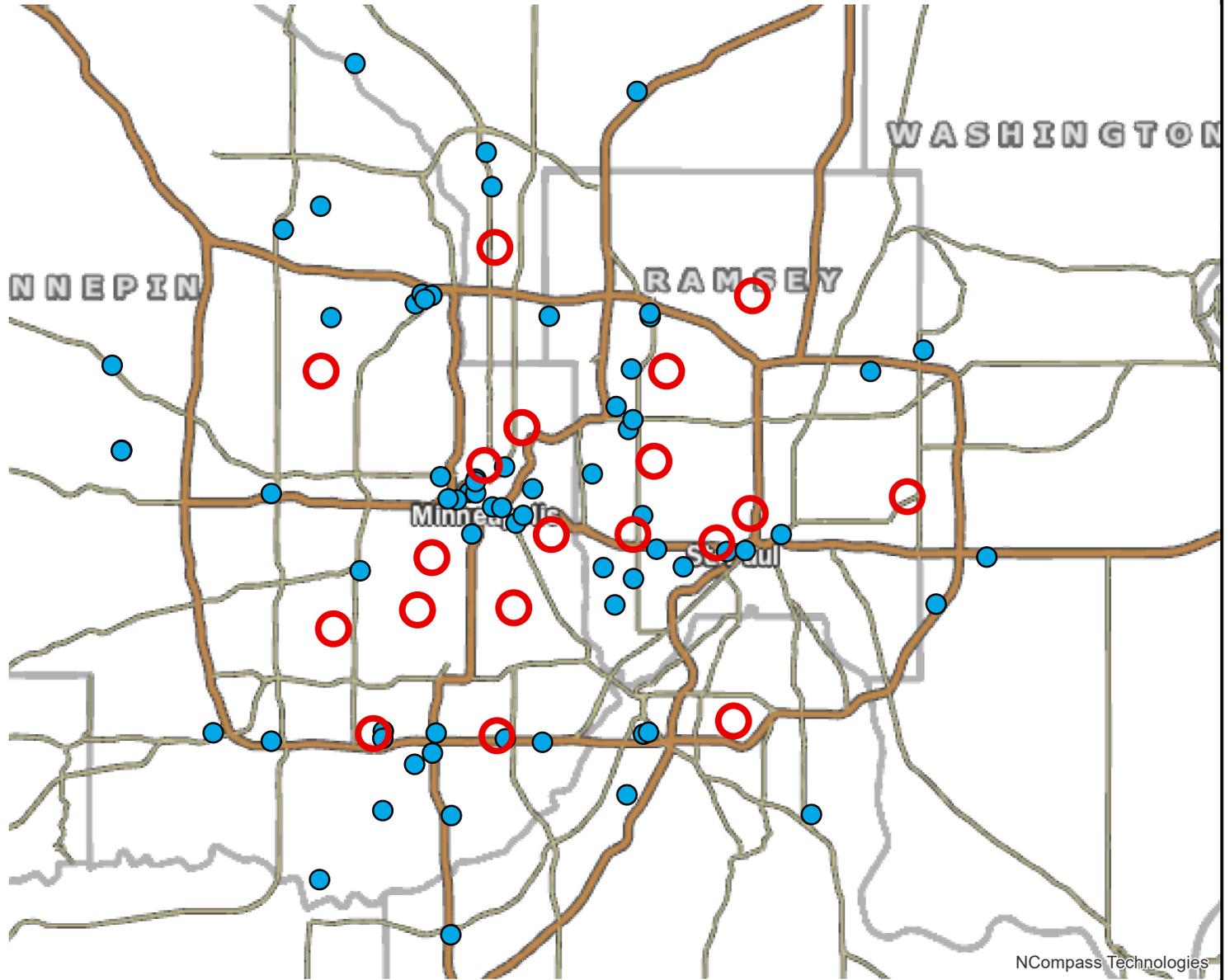
Row Count: 10 LAT: LON: Date: 07/10/18 Time: 05:20:56

Screenshot of the TransitMaster Play Back application showing bike rack usage on a Metro Transit bus. The software is ready for an expansion of the rack sensors.

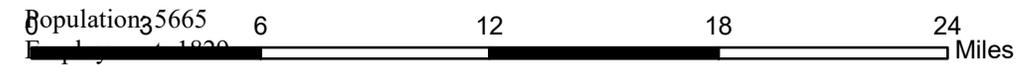
175 KB

Regional Economy

- Population:** 0
- Employment:** 747
- Fridley**
- Population: 18180
- Employment: 17119
- Mfg and Dist Employment: 8448
- Hopkins**
- Population: 1069
- Employment: 877
- Mfg and Dist Employment: 702
- Inver Grove Heights**
- Population: 132
- Employment: 7
- Mfg and Dist Employment: 0
- Maplewood**
- Population: 6631
- Employment: 1146
- Mfg and Dist Employment: 39
- Mendota Heights**
- Population: 3394
- Employment: 1203
- Mfg and Dist Employment: 24
- Minneapolis**
- Population: 182658
- Employment: 221379
- Mfg and Dist Employment: 16465
- New Hope**
- Population: 8970
- Employment: 2292
- Mfg and Dist Employment: 743
- North Oaks**
- Population: 650
- Employment: 1193
- Mfg and Dist Employment: 1110
- Oakdale**
- Population: 6346
- Employment: 1556
- Mfg and Dist Employment: 184
- Richfield**
- Population: 18866
- Employment: 2804
- Mfg and Dist Employment: 389
- Roseville**
- Population: 17433
- Employment: 11981
- Mfg and Dist Employment: 993
- Shoreview**
- Population: 35665
- Employment: 1929
- Mfg and Dist Employment: 353
- St. Anthony**
- Population: 1212



● Project Points
● Postsecondary Education Centers



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For complete disclaimer of accuracy, please visit <http://giswebsite.metc.state.mn.us/gisitenew/notice.aspx>

