

Project: Metro Transit Mobile Application for iOS and Android Operating Systems
Submitted by Metro Transit
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Introduction

The Metro Transit mobile app will include several features that improve customer access to information and introduce new tools designed to improve customer satisfaction with the Twin Cities transit system. This app not only will provide customers with a variety of tools to increase transit ridership, but will serve as an additional data collection tool for Metro Transit and the Metropolitan Council. This app will be free to the public and available for the 2 most common mobile operating systems, Android and iOS, which comprise over 90% of the smartphone market. Metro Transit Customer Relations has received over 100 requests for an app in the last 12 months. Metro Transit social media pages (Facebook and Twitter) receive 2-3 requests per month.

1.1: The main components of the app are as follows:

Navigation:

To allow for customers to more easily take trips using Metro Transit, the app will take advantage of elements of the mobile platform to enhance trip the planning experience. The app will use data from Metro Transit's Trip Planner and Interactive Map. It will utilize the GPS of the phone for a variety of functions including determining trip origin, Metro Transit services nearby (transit stops, park and rides, Go-To retailers, etc.), and real time information on bus and train arrivals (NexTrip). Additionally, other services that complement Metro Transit service (Nice Ride, HOUR Car, bicycle path connections) will be integrated through publically available APIs and other data, allowing for customers to make transit and non-drive alone trips part of their regular habits through one app. Utilizing GPS and route data, the app will also have a feature that allowed a rider to set alerts on their trip that warn them when the stop is coming up. This is good for new riders and out of town visitors who may be worried that they may miss their stops, and for regular customers who would like to relax and enjoy the ride.

The app will allow for local storage of trip information. Customers will be able to save frequent trips, favorite routes and stops, and even regional maps of the Twin Cities to allow for off-line trip planning, something not possible at this time with any currently available mobile sites or third party smartphone apps. Faster trip planning results on the mobile device can be achieved by eliminating the need to access the Metro Transit servers for all data, instead storing the data in the app and updating only when the routes change.

Push Notifications:

Push notifications are messages sent to an app user from the entity that publishes and controls the app. This type of information goes to the user automatically (from the user's perspective) as opposed to requiring the user to search for information relevant to their trips and routes.

The app will allow a user to set up custom alerts to aid in their travel by Metro Transit buses and METRO light rail and bus rapid transit lines. The customer will be able to select favorite routes, stops and stations and receive automatic alerts when there are issues (delays, reroutes, etc.). Often, a customer must search out this data on their own on the Metro Transit site to learn about delays. We know from customer feedback that riders typically learn about delays after experiencing one, resulting in a negative experience. By alerting customers in advance through the app, customers will experience greater reliability and be more likely to choose transit.

An additional feature of the push notification feature will enable Metro Transit to send information to the user for informational and promotional purposes, allowing quick communications of system-wide delays that affect all or nearly all routes and potentially affect legs of the trip not subscribed to as described in the above paragraph. Users who do not subscribe to custom alerts can still receive alerts about system-wide delays, which provides riders the opportunity to make alternate travel arrangements. Metro Transit also benefits from these messages as the Transit Information Center and website become overrun with calls and emails about the delays. Push notification functionality delivers this information before users have to resort to the stressed call center.

Promotional messages will be possible as well, though we expect to limit them to maintain an unobtrusive experience for customers.

Go-To Card Account:

Customers will be able to check their Go-To Card balance and add value through the app.

ADA/Accessibility:

The app will be equally useful for customers with vision or hearing disabilities. Custom destination alerts, haptic feedback, screen reading, and other features to be determined will be included. On occasion, Metro Transit customers who suffer from hearing loss have trouble hearing the driver call out the stops, according to feedback received by Metro Transit Customer Relations. An app-initiated reminder of an upcoming stop will help alleviate this problem. With the ability for text, audio and vibration alerts, visually and hearing impaired customers will all have options to aid in their travel. A letter of support from Wanda Kirkpatrick, Director of the Metropolitan Council Office of Equal Opportunity and Diversity, is attached.

A customer does not need to have disabilities to benefit from this feature, as many people fall asleep en route to their destination. Everyone can benefit from this feature, which we cannot offer through a mobile website.

Transit User Mobile Data Collection:

When a customer uses a third party transit app, Metro Transit is unable to collect any data on that trip plan and related searches. While all third party apps use the Metro Transit data API, they keep all the data associated with its use. With a Metro Transit-owned app, the agency gains the ability to track trip data and even the ability to track user data via the phone's GPS, should the customer elect to allow their

data to be collected. This would aid in transit planning and service changes and well as augment rider data we already collect to give a more accurate picture of customer travel habits. Metro Transit can also compare travel behavior of mobile users separately from desktop users, which may yield valuable insights.

Travel Demand Management Features:

Aside from running the regional transit network, Metro Transit promotes carpooling, vanpooling, bicycling, walking, and telecommuting as part a suite of transportation options that reduce traffic congestion and improve air quality. Metro Transit offers several programs through its website, including a trip tracker, the Guaranteed Ride Home program, online ridematching for carpoolers and vanpoolers, and carpool parking permits at select locations throughout the region, along with resources for telecommuting and employer-specific assistance.

Many elements of these programs can be incorporated into a smartphone app. Should this project receive funding, it would be the first known instance of a transit or planning agency's mobile app including other sustainable transportation strategies and programs. Adding these features to the app will make it useful for residents and employees in the region for whom transit is not a viable option. These users will be able to find a sustainable transportation option and may come to know Metro Transit as a resource for more forms of transportation, which may lead to increased transit ridership in the future. Conversely, transit riders who find themselves unable to continue to take transit will have access to resources that can save them from driving alone. These options in the app will mirror changes currently planned for on metrotransit.org as the site becomes more inclusive of other sustainable modes.

1.2: The objectives of the project are to:

- Improve access to transportation information through the mobile platform
 - Providing an intuitive and easily accessible format for viewing transit schedules and trip plans
 - Providing personalized information that can be saved and accessed any time
- Providing an integrated view of transportation options from bus and rail to carpooling, vanpooling, biking, walking, and telecommuting through a convenient mobile experience.
- Increase the number of residents and visitors who choose sustainable transportation modes.
- Collect data on travel patterns and TDM information

1.3: This project fits within the agency's goals of delivering sustainable transportation choices to residents, employees, and visitors in our region. This app enables users to use new technology to move around the region in a responsible and sustainable way and collect data on how they do it.

2.1: This project will use many existing Metropolitan Council resources. Employees from IS, Marketing, Transit Information, Commuter Programs, and MTS will work together to plan and implement this new

resource for existing and potential customers. Aside from the actual app development work, the resources listed above will be responsible for all aspects of managing this project.

2.2: The app encompasses everything Metro Transit promotes to customers. It will work alongside the website, Transit Information Center, printed material, mobile site, and outreach efforts to increase ridership, and increase sustainable transportation usage in general. Currently, an app is one of the most frequent customer requests according to Metro Transit Customer Relations. By meeting this need, Metro Transit positions itself as innovative and responsive to customers, which will help attract new riders.

2.3: This project will take advantage of the investments the region has made in transportation, including bus and rail infrastructure, ridematching services, the Metro Vanpool program, bike infrastructure, and telework resources. The app will offer a new way to receive information about all aspects of Metro Transit's transportation programs and services and provide new forms of data to Metro Transit.

2.4: This app will support the 2013 Transportation Policy Plan by modernizing Metro Transit's communications technology, providing a product expected by smartphone users. In order to reach the goal of 147 million rides by 2030, Metro Transit must prepare for a time when the vast majority of people own smartphones and expect high quality apps that meet their everyday needs. As of May 2013, 56% of American adults owned a smartphone, a percentage that grows every year and spans all income levels. Providing information on non-transit options also aids in the goals of reducing congestion and collect more data for transportation planning purposes.

3.1: High-quality mobile apps developed by transit agencies are relatively rare. Many agencies, Metro Transit included, provide public data and allow for 3rd party developers. While this allows for many apps to be created, they are limited in features, often contain obtrusive advertising, and lack maintenance when the developer moves on to another project. Some regional transit agencies, in places like Los Angeles and Boston, have recently developed and released apps that offer trip planning, saved account information, and other information similar to what Metro Transit plans for.

3.2: Not applicable

3.3: This project in this form is new to the Twin Cities metropolitan area.

3.4: This will be the first fully supported, agency-backed mobile app in the region. Other apps are independently managed and are limited in scope. Currently, apps can only use the data Metro Transit provides. The data we provide do not and cannot constitute the full suite of information and services under the Metro Transit umbrella and the trip planning data from other apps is not available to Metro Transit. Metro Transit offers a mobile enhanced site, but cannot provide the types of services envisioned for a proper app.

4.1: Metro Transit’s transit service covers the seven county metro area, plus the part of Sherburne County served by Northstar commuter rail, but not the communities that have opted out of the regional transit system. Metro Transit’s TDM programs cover the entire region (in conjunction with the regional TMOs), and the Metro Transit trip planner and NexTrip services feeds the opt-out providers’ transit data along with its own. It is safe to say that the services offered in the proposed app will cover all the congested areas in the metro area. The app will help alleviate traffic congestion by presenting a new and convenient way to receive transit and other sustainable transportation information and assistance, resulting in reduced VMT throughout the region.

4.2: This project covers all areas.

4.3: This project will result in lower peak period VMT by making transit more convenient and by reducing barriers to understanding the transit network. Potential riders who are apprehensive about waiting at a bus stop, or confused about how to get to unfamiliar destinations, will have a fast and convenient solution to these problems at their fingertips at all times. Route and time information will be constantly updated, so riders don’t have to worry that their paper map is out of date.

We also know that not everyone can or will ride transit. For those whose destinations are not well served by transit, or for those who simply will not take a bus or train, the app will provide resources on other modes that will help travelers avoid driving alone. This multimodal approach ensures anyone who currently drives alone will have better options presented to them in a convenient, modern format.

4.4: We estimate VMT reduction based on the following factors:

According to the 2012 American Community Survey, 78% of commuters age 16 and up drive alone to work in the Minneapolis-St. Paul-Bloomington MSA. Our own State of the Commute Survey, conducted in 2012, estimates that 76% of commuters in the region drive alone. We will use the average of the two, 77%, to estimate that 1,344,098 people drive alone in the region, based on the ACS estimate of total drive alone commuters (1,745,582).

We believe that developing and promoting a fully-featured app will convince commuters to switch to other modes according to the estimates in the table below.

# of Current Drive Alone Commuters	Mode Switched To Because of Project	% of Commuters Who Switch Mode	% VMT Reduced	Number of trips per year reduced (10 per week)	Average One Way Trip Distance (miles)	VMT Reduced per Year*
1,344,098	Transit	1%	100%	520	12.1	84,570,646
1,344,098	Bicycling	0.20%	100%	520	12.1	16,914,129
1,344,098	Carpooling	1%	50%	520	12.1	42,285,323
1,344,098	Vanpooling	0.10%	80%	520	12.1	

						6,765,652
1,344,098	Telecommuting	0.10%	100%	520	12.1	8,457,065
Total						158,992,815

*Calculation: # of current drive alone commuters * % of commuters who switched modes * % of VMT reduced * trips per year * one way trip distance.

This table does not cover VMT reduced by people who own cars but don't commute, as well as non-commute trips made by people who commute. Non-commute trips make up over 80% of all trips according to the latest Travel Behavior Inventory. Since the ACS and TBI do not break down trips made by the non-commuting population, we cannot estimate VMT for these travelers, nor do we include VMT reduction calculations for non-commute trips, so these estimates should be considered very conservative.

5.1:

CO reduced: 136,281,804 pounds per year

PM2.5 reduced: 30,526 ounces per year

NOx reduced: 8973236 ounces per year

5.2: This project affects the entire region. It will be especially effective in congested corridors where the most emissions are generated.