Accessibility Review of Transit-Related Applications

The Carl and Ruth Shapiro Family National Center for Accessible Media at WGBH

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Summary

[The Carl & Ruth Shapiro Family National Center for Accessible Media at WGBH](#) (NCAM) and the [National Center for Accessible Transportation at Oregon State University](#) are researching accessibility gaps within communication technologies used in transportation hubs and are identifying opportunities for universal and accessible design considerations to enhance the usability of travel-related information for all travelers.

Since late 2010, NCAM has followed the development of transit-related applications ("apps") that provide travelers with information to aid their trips. This report shares our reviews of a broad sampling of apps to determine their accessibility capabilities for people with sensory disabilities, including travelers with visual impairments who rely on the use of screen readers.

Of note:
- There are noticeably more apps available now compared to our initial review.
- The apps we retested did not show major changes in accessibility capabilities.
- Of the following apps that have maps, approximately half included information (routes, bus stops, etc.) as text, which means access to the maps isn't a necessity for screen reader users. Still, there are some apps that are of little use unless traveler can see the maps.
- While this report is a recent sampling, new apps and updates to existing apps are frequently introduced.

All mobile tests were performed using an iPhone 4 with the Voiceover application. Web applications were tested on a PC using JAWS with Firefox and Internet Explorer browsers, and on a Mac using VoiceOver with Safari. Our reviews of current accessibility capabilities and opportunities for improvements follow.

Transit Applications and Accessibility Notes

Free Transit Applications

1. **allSchedules (Free)**
   http://www.allschedulesapp.com/
   • Tested iPhone version
   • Search field is accessible to VoiceOver.
   • On the map, VoiceOver will identify the icons (e.g., bus stops) by name and street/intersection.

2. **MBTA bus tracker dashboard widget/OS X (Free)**
   http://www.wirelust.com/2009/11/24/mbta-bus-tracker-widget-for-osx/
   • Desktop/Mac OS X only
   • Screen reader reads the widget but getting the widget into focus can be difficult.
   • All information is read aloud but not in linear order.
   • Dark color scheme may be a problem for some users with low-vision.
   • Note: This is retest from our initial review in late 2010.

3. myTrimet.com **(Free)**
   http://mytrimet.com/about.php
   • Tested desktop version
   • Forms-driven system
   • Some form elements are properly labeled; others are not. Screen readers are able to navigate the forms with reasonable accuracy despite lack of labels.
   • Results are displayed in a data table that includes header-cell markup; can be navigated by a screen reader.

4. **Track the T (Free)**
   http://www.clickteam.info/davidn/bus/
   - Available for desktop only
   - Screen reader can read the first pages, when choosing a subway line or bus route to follow. Auto-refreshing drop-down menus will cause problems for some users and also cause screen readers to refocus to the top of the screen.
   - Screen readers can't read the graphs showing arrival information.
   - The dynamically changing information (timings) cause screen readers to re-focus elsewhere on the screen.
   - Is keyboard accessible.
   - Note: This is retest from our initial review in late 2010.

5. **MBTA bus on APPSPOT (Free)**
   http://mbta-bus.appspot.com/
   - Available for desktop only
   - Screen reader can select bus route from menu but cannot read information on the map or choose specific bus stops from the map, rendering this app inaccessible to screen-reader users.
   - Note: This is retest from our initial review in late 2010.

6. **HopStop (Free)**
   http://itunes.apple.com/us/app/hopstop/id303217144?mt=8
   - Screen reader cannot read the maps, but directions are available as text
   - Screen reader can read text, lists, pickers, etc.
   - Is very detailed so might be slow to use with a screen reader
   - Note: This is retest from our initial review in late 2010.

7. **C/BOS Subway Locator (Free)**
   http://www.flatironfactory.com/
   - Dark interface; might be hard for some users with vision loss
   - Screen reader can read some buttons but not all of them
   - Screen reader will read station list but only text; will not identify subway line
   - Screen reader can't read selector list
   - Screen reader will read alert list but only the text; can't identify subway lines

8. **Embark BOS/NYC (winner of NYC transit apps competition) (Free)**
   http://letsembark.com/
   • Dark interface; might be hard for some users with vision loss
   • Screen reader can't read initial message that explains how to use, but can read the buttons that lead user into the app
   • Screen reader cannot read the maps but most information is available as text
   • Screen reader can't identify the symbols representing subway lines (app uses color only to identify lines in BOS; color + number/letter in NYC version)
   • Users can locate stops using the start/end option
   • Users can enter station names in a text field or choose from a list of stations or stops that appears in a predictive list
   • Results are difficult to read and navigate: screen doesn't read each result in a logical fashion, so information doesn't necessarily get conveyed in a sensible manner
   • Because the subway lines cannot be identified, the user has no idea what subway to take
   • Will read list of advisories but because subway lines are identified w/colors (or colors w/letters or numbers), screen reader can't identify the subway line. Will read the text of the advisory but won't tell user what line is affected.

9. **My Stop Boston (Free)**
   http://itunes.apple.com/us/app/my-stop-boston/id435308399?mt=8
   • Screen reader can read all controls
   • Screen reader can't read maps but audio cues can be set to notify users that they are close to destination or have arrived
   • Clear contrast; probably no problems for people with vision loss

10. **T on Time (Free)**
   http://www.t-on-time.com/tontime.html
   • Desktop only
   • Screen reader can read everything except maps; information is available as text, however
   • Good contrast but gray background w/T logo may cause problems for some users with vision loss; white timer over gray background may also be problematic

11. Nextbus (Free)
   http://www.nextbus.com/
   • Desktop or mobile (browser only)
   • Screen reader can access everything on the regular site except for information in the dynamic region, which makes the site unusable for blind users
   • Nextbus has option to display "simple site" and "ADA site;" both are screen-reader friendly. Both also have simple layouts and good contrast, too.
   • All of mobile version (Web only) can be used with screen reader, except for maps. Arrival information is available as text.
   • Also has phone option (call and key in number for route)

Transit Apps for Purchase

12. Arrival TriMet ($1.99)
   http://anythinghonest.com/arrival/index.html
   • Tested iPhone version
   • All functions except the arrivals display (see below) are accessible to VoiceOver except the maps that illustrate where each stop is. Each map has text stating where the stop is, however, so the inaccessibility of the map may not have much effect on the accessibility of the results.
   • In the arrivals display, VoiceOver does not read text, times, etc. The Information button, which is used to exit the arrivals display, is labeled only as "button." Since it is not identified, users may not know that they need to press this button in order to return to the app.

13. Catch the Bus ($0.99)
   http://catchthebusapp.com/
   • Screen reader reads all lists and functions.
   • Timing information updates on-screen every 60 seconds. Screen reader will read the update if user leaves the focus on the update region.
   • Note: This is retest from our initial review in late 2010.

14. **TransitGuru TriMet ($2.99)**
    http://toccata-technologies.com/transitguru
    - Tested iPhone version
    - All buttons are accessible to VoiceOver
    - Map is not screen-reader accessible
    - Search function is accessible, but it delivers search results as a map, which is inaccessible.
    - Route function is accessible. The results are accessible except for the color indicators (indicating which train lines to take), rendering the results not very useful.
    - Line function is accessible to VoiceOver.

15. **myTransit ($0.99)**
    http://itunes.apple.com/us/app/t-tracker/id349445961?mt=8
    - Screen reader can read all controls and lists but can't read maps. Street/route information is available as text.
    - Mostly sufficient contrast; some pages have dark text on a gray background which might be a problem for some users with vision loss.
    - Note: This is retest from our initial review in late 2010.

16. **KickMap ($2.99)**
    http://itunes.apple.com/us/app/nyc-subway-24-hour-kickmap/id285668269?mt=8
    - Highly graphic; screen reader can't read any maps; routes aren't offered as text so this app isn't fully accessible to screen-reader users.
    - Screen reader can identify only four out of the six menu buttons
    - Note: This is retest from our initial review in late 2010

17. **Annadale Staten Island Ferry and Train Schedule ($0.99)**
    http://www.annadaleapps.com/
    - Customized schedules are available as a series of pickers. Users can scroll through the entries on these pickers in order to choose departure and arrival stations and times. All station names and departure/arrival times are accessible to VoiceOver.
    - The headings (e.g., Depart, Arrive), which appear above each picker, are accessible to VoiceOver but are not explicitly associated with their respective pickers.
    - Note: This is retest from our initial review in late 2010.

18. MBTA Subway Real-Time Arrival Tool ($0.99)
   http://www.axelradsoftware.com/MBTA/help.html
   - Screen reader can't read anything
   - Fonts are small and thin; might be problematic for some users with vision loss
   - App itself is dark but mostly black background and white text

19. Pocket MBTA ($0.99)
   http://www.pocketbus.com/
   - Screen reader can read items in bus-route list and select routes to add to favorites list
   - Screen reader can't read maps but can read markers *in* the maps that show where bus stops are; can also identify the where's-the-bus icons.
   - Screen reader will identify the icon on the map that displays arrival times
   - Good contrast overall

20. Transit Spy ($1.99)
   http://www.transitspy.com/mobile
   - Screen reader can't read anything
   - Contrast is good but some lists are presented as gray text on black background
   - Uses color alone to indicate choices in a list

21. iTrans NYC Subway ($3.99)
   http://itunes.apple.com/us/app/itrans-nyc-subway/id283492923?mt=8
   - Screen reader cannot read the maps; routes and station information aren't available as text.
   - Text fields are unlabeled; screen reader can't tell what field is for what text
   - Note: This is retest from our initial review in late 2010.

22. Next Train NYC ($1.99)
   http://itunes.apple.com/us/app/next-train-nyc/id379293891?mt=8
   - Screen reader can read schedules and arrival times
   - User can choose from subway stations on home screen
   - Screen reader cannot read the maps but most information is available as text
   - One of the more accessible apps of the field we tested
   - Note: This is retest from our initial review in late 2010.

Acknowledgments