Implementing Automated Internal and External Bus Announcements

Transportation Committee
August 11, 2014

Background Information

- ADA Requirements
  - Operators required to announce transfer points, major intersections, destination points and intervals
  - Agency is required to provide means by which an individual with a visual impairment or other disability can identify his/her proper bus
  - Project updates presented to Transportation Accessibility Advisory Committee (TAAC)
- Announcements are currently implemented on Routes 10, 17, 18, and Red Line BRT service
- 664 of the 960 buses (or 69%) of buses will be announcement ready at end of 2014; Entire fleet will be announcement ready by 2017 as new bus procurement occurs
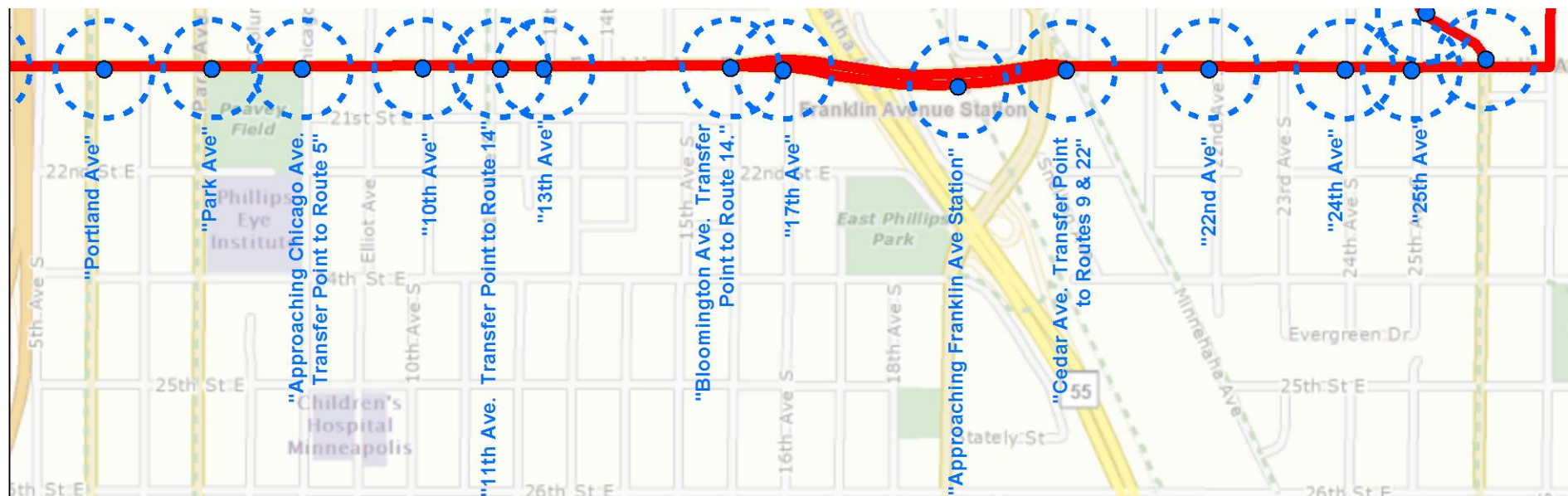
External Announcements

- **Made every time Operator opens the front door**
- **Content will include:**
  - **"Welcome Aboard"**
  - **[Route]**
  - **[Branch]**
  - **[Direction]**
  - **[Destination(s)]**
  - **"Please have your fare ready."**
- **1,200 external phrases maintained to support route system**
- **External volumes reduced 8:00 PM – 7:00 AM**

"Welcome Aboard Route 5 E. Southbound to Mall of America. Please have your fare ready."

Internal Announcements

- **Made on bus when bus enters designated bus stop zones – GPS Activated**

- **Route 2 Eastbound Example**

Internal Announcements

- **Made at all bus stop locations**
- **Will not be made when bus is in "off-route" condition (caused by inaccurate geocode settings and route detours)**
- **Approximately 200 landmarks will be announced (selected by the Transit Information Center (TIC) department)**
- **Approximately 8,700 individual transfers will be announced**
  - **Transfer information maintained by the TIC**
  - **Transfers will not be announced in the Downtown Fare Zone (accounts for 80,000 transfers)**

Internal Announcements

- **Have the ability to adjust radius zone distance for each stop**
- **Default setting 600 feet (long city block 660' feet, short city block 330' feet)**
- **Revisions will be ongoing**
  - **Identify bus stops with high speed approaches**
  - **Leverage field tests**
- **Zones will overlap; depart zones used to mitigate premature announcements**
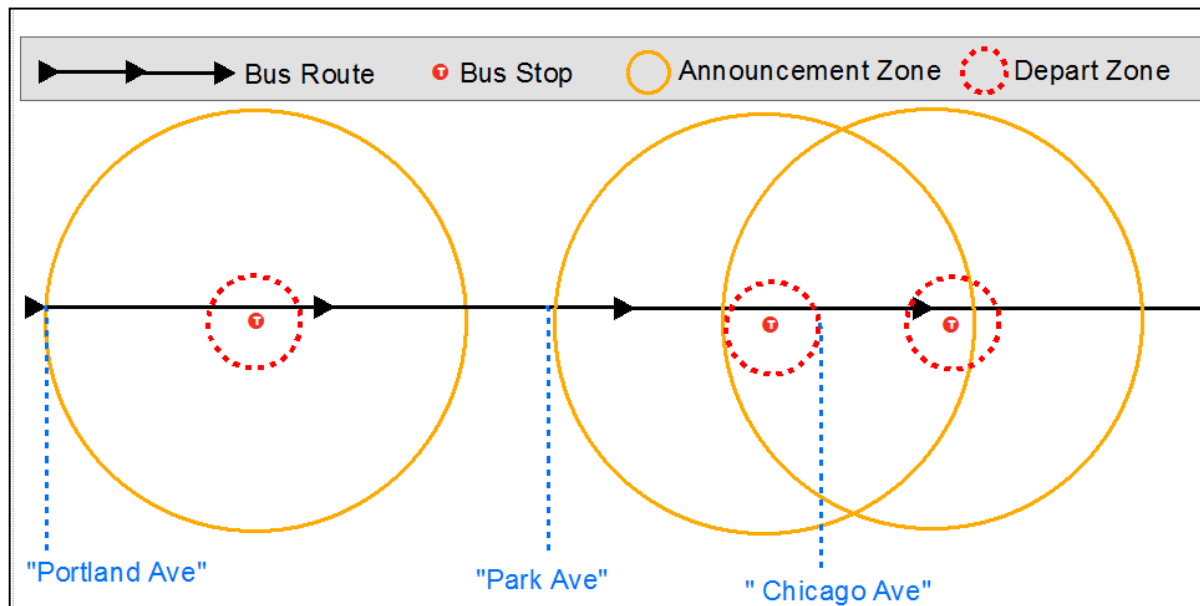
Internal Announcements

- **Internal announcement content will scroll on "Stop Request" LED sign and match announcement**

Audio Solution

- **Text to speech software is planned to be used**
  - **Female voice talent (male talent used for safety related messages)**
  - **Ensures stable voice**
    - **Talent could become ill**
    - **Talent could leave audio role**
    - **Same voice is consistently used**
  - **Efficient maintenance**
  - **Original cost estimations lower**
  - **Bids currently being reviewed for software; paid for by federal grant**
- **Sample Announcements below match current talent used on Routes 10, 17, 18 and Red Line**

  🔊 **"Approaching 38th Street. Transfer point to Route 23."**

  🔊 **"Approaching Chicago Avenue. This stop for HCMC."**

How do buses get their announcements?

1. **Bus schedules and stops changed on weekly and quarterly basis**

2. **About every 3 weeks, in light of service changes, announcement and schedule data updates are sent to MDT as part of schedule merge process**

3. **When starting a bus after a merge, MDT's will download schedule and announcement updates**

4. **Once logged in, the bus "knows" the schedule and announcement itinerary of the logged Duty/Run number**

Quality Assurance

- **Evaluate customer comments**

- **Buses equipped with annunciator hardware will have sticker on dashboard**

- **Working to incorporate hardware testing into bus maintenance**

- **May have procedure for Operators to test hardware**

- **Operator Bulletins will be issued upon implementation**

- **Operators can report announcement issues on MDT Defect Card**

Includes section for reporting announcement concerns
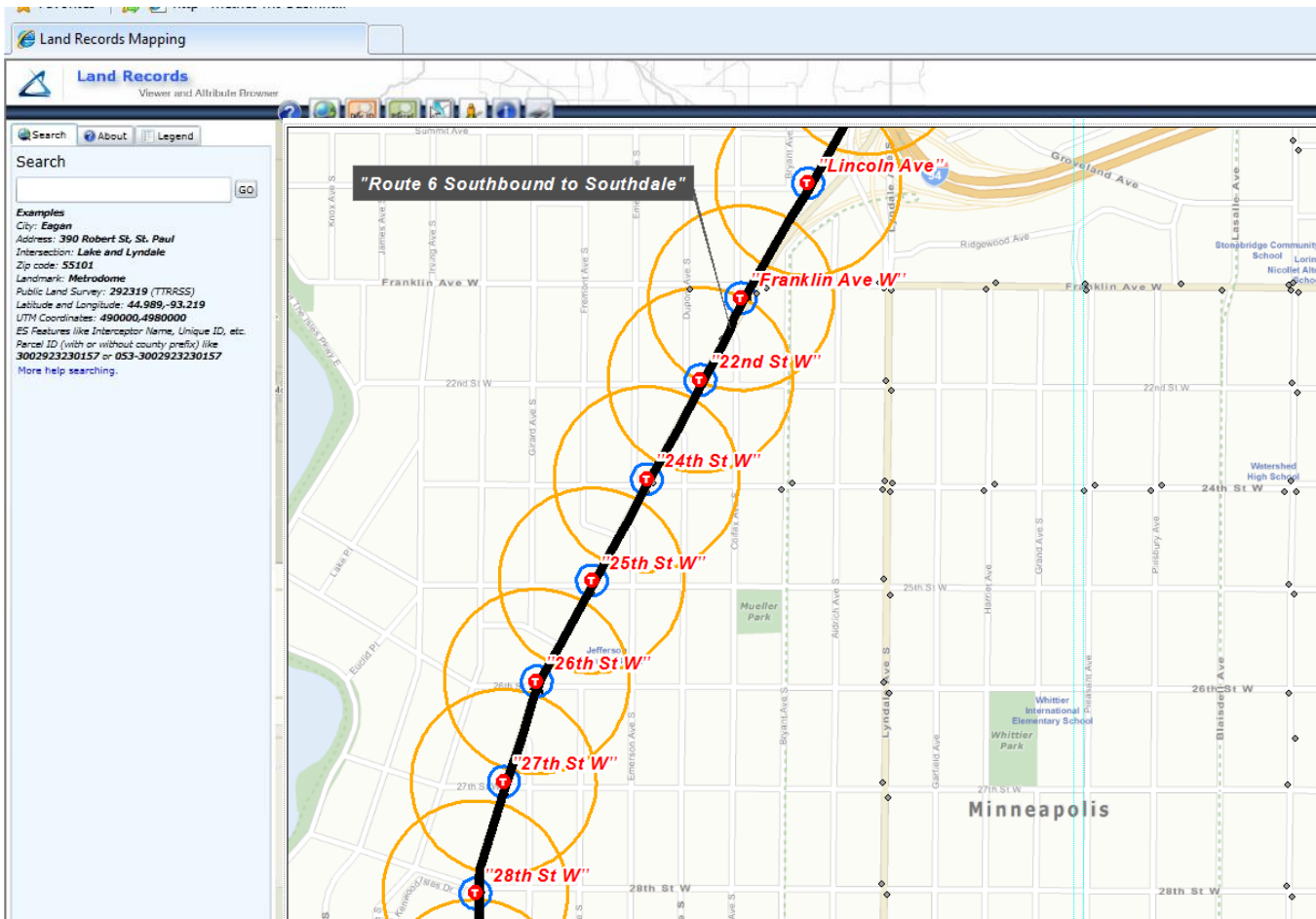
Quality Assurance

- **Approximately 15,000 announcement phrases will be managed with automated phrase development environment**
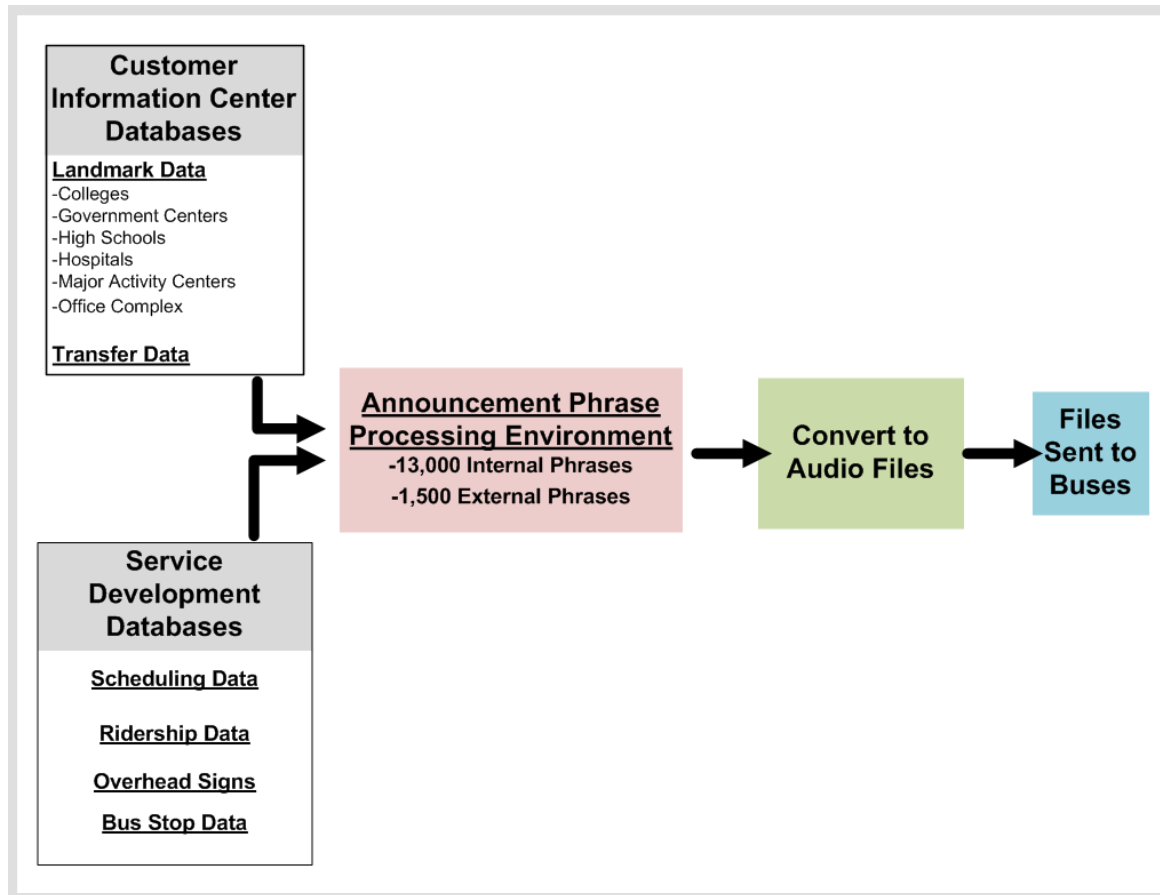
Quality Assurance

- **Internal interactive map getting developed for troubleshooting (similar feel to Google Maps)**
  - **Includes mapping of phrases, buffers, landmarks, route alignments**

Estimated Implementation Timeline

- October 2014 - 11 HI-Frequency Routes
- November 2014 - 53 Urban Local Routes
- November 2014 - 5 Suburban Local Routes
- December 2014 – 72 Express Routes
- Early 2015 – MTS Contracted Routes, 6 Express, 21 Suburban Local, 2 Urban Local

Future Considerations

- **Potential for service change and marketing announcements**
- **Announce controlled intersections without bus stops per ADA requirements**
- **Improved "interval" announcements per ADA requirements i.e. "Approaching I-694, approaching Hwy. 36, etc."**
- **Add downtown route transfer information**
- **Announcements in languages other than English**

Questions?

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