



Overview of Digital Wayfinding Technologies

Presentation to the BART Accessibility Task Force – March 2026



Presentation Overview

- Key station wayfinding/navigation challenges
- Review of 5 digital wayfinding tools
- Next steps

BART Station Navigation - Top Challenges

Blind and Low Vision Riders

- Finding key station amenities –ticket vendors, faregates, correct platforms

Riders with Mobility Challenges

- Re-routing when escalators/elevators are out of service
- Finding shortest path to destination

All Riders

- Navigating large/complex stations
- Adjusting to changes in station layouts

NaviLens

HOW IT WORKS

NaviLens provides navigation and realtime transit information using QR-style codes

REQUIRED FOR STARTUP

Printing & installation of NaviLens codes

EXAMPLE DEPLOYMENTS

NY MTA, TransLink, MBTA

PROS & CONS

Pros

- Long detection range (50–80 ft), no precise aiming needed
- Codes can provide “digital signage”
- Magnet codes can guide users to specific locations
- No beacons, WiFi, or Bluetooth required

Cons

- Codes need to be maintained
- No continuous navigation between code locations
- Requires downloading a specific app
- Requires phone-raising

GoodMaps

HOW IT WORKS

GoodMaps provides navigation using LiDAR scanning to create detailed 3D maps of station interiors

REQUIRED FOR STARTUP

LiDAR scanning of stations

EXAMPLE DEPLOYMENTS

BART (Macarthur Station); Via Rail (Canada)

PROS & CONS

Pros

- Fine-grained 2-inch indoor accuracy
- No infrastructure
- Turn-by-turn directions
- Works offline after map download
- Benefits all riders especially in complex stations

Cons

- LiDAR scanning required
- Maps need updates when station layouts change
- Requires downloading a specific app
- Works only in pre-mapped venues
- Requires phone-raising
- Lacks elevator status

Waymap

HOW IT WORKS

Waymap uses a smartphone's built-in sensors to provide turn by-turn audio navigation guidance in pre-mapped locations

REQUIRED FOR STARTUP

LiDAR scanning & videos of stations

EXAMPLE DEPLOYMENTS

WMATA

PROS & CONS

Pros

- No physical infrastructure
- Works without GPS, WiFi, or Bluetooth (underground)
- 3-foot turn-by-turn audio navigation
- Doesn't require phone-raising

Cons

- LiDAR/video mapping required for setup
- Sensor quality varies across smartphone models
- Requires downloading a specific app
- Periodic map updates needed as layouts change
- Lacks elevator status

GTFS Pathways

HOW IT WORKS

Uses trip planning applications and standardized data feeds to provide navigation instructions

REQUIRED FOR STARTUP

Station surveys to create node-and-link models

EXAMPLE DEPLOYMENTS

BART (updates to Trip Planner in development)

PROS & CONS

Pros

- Open standard/no vendor lock-in or ongoing fees
- Works with multiple apps
- Benefits all riders
- Enables wheelchair-accessible route planning
- Can integrate real-time elevator/escalator outage data

Cons

- Complex data modeling
- May not provide sufficient audio detail for blind users' orientation needs
- Not a navigation app itself
- Maintenance required as station layouts evolve
- Requires Wifi/GPS

AIRA

HOW IT WORKS

AIRA live agents view the user's live camera stream and location through the AIRA app and provide navigation instructions

REQUIRED FOR STARTUP

Configure geofence boundary around stations

EXAMPLE DEPLOYMENTS

Pittsburgh Transit; Jacksonville Transit

PROS & CONS

Pros

- Minimal setup required
- No maintenance needed
- Agents can help with a range of accessibility issues

Cons

- Requires cell signal or WiFi
- Requires downloading a specific app
- Requires phone raising

Key Considerations

Factors to weigh when evaluating digital wayfinding solutions



Cost



Utility / Co-Benefits



Ease of Implementation



Maintenance & Updatability



Vendor Lock-In



Connectivity Requirements

Summary and Next Steps

Top Findings

- Combination of tools may be best
- Wifi/connectivity is a key constraint
- Long term funding required
- Low-maintenance solutions are particularly attractive

Next Steps

- Continue GTFS pathways project development
- Pursue funding for additional pilots and long-term solutions

Questions for BATF

- Have you tried any of these technologies?
- Any concerns about them?
- Any features you find particularly attractive?
- Additional factors BART should consider when prioritizing technologies to pilot?