Accessible Wayfinding Pilot Project

Presented to Intercity Transit Authority

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Background

Situation: A visually impaired customer reported difficulty navigating inside our buildings.

- She suggested audio format signage.
- Marketing was asked to research accessible navigation options.

Challenges the visually impaired face

- Limited access to visual information.
- Complex layouts.
- Safety concerns.

Benefits of audio wayfinding tools

- Enhanced Accessibility.
- Improved Customer Experience.
- Equal Access.
- Increased Safety.

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Research

- Lots of Google searches
- Reviewed research studies conducted for the National Institute for Transportation and Communities (NITC)
- Reviewed GPS and Wayfinding Apps listed by the National Library of Service for the Blind and Print Disabled at the Library of Congress (27 Apps)
- Spoke with Sound Transit representative regarding their installation of GoodMaps at two of their stations.
- Spoke with NaviLens implementation team at Whatcom Transportation Authority (WTA).

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Application Name	Cost			Wayfinding Support			Operating System			Additional Hardware Needed?	
	High	Low	Free	Indoor	Outdoor	Both	iOS	Android	Both	Yes	No
Aira	X					X			X	X[s]	
Apple Maps			X		X		X				
Ariadne		X			X		X				X
Arianna			X	X					X	X[c]	
Autour			X		X		X			X[h]	
Aware			X	X					X	X[b]	
Be My Eyes			X			X			X		X
BeAware			X			X	X			X[b]	
Blind Explorer			X		X			X		X[h]	
BlindSquare	X					X	X				X
BlindWays			X		X		X				X
Click and Go Navigation			X			X	X				X
DotWalker			X*		X			X			X
Eye-d		X	X			X			X	X[k]	
FAR Vision			X**			X			X	X[b]	
GetThere			X		X				X		X
Google Maps			X		X				X		X
Indoo.rs			X	X			X			X[b]	
Lazarillo GPS			X		X				X		X
Nearby Explorer	X				X				X		X
NowNav		X			X			X			
Right-Hear			X	X					X	X[b]	
Seeing Eye GPS	X				X		X				X
Soundscape			X		X		X			X[h]	
Talking Goggles		X				X			X		X
Wayfindr	X			X					X	X[b]	

*pro version available for $6.99 **optional beacons at $49/piece [b]beacons [h]headphones [c]colored tape [s]smart glasses [k]keyboard

NITC Study, August 2019

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Comparison (very condensed version)

Vendor	Technology	Requirements	Indoor	Outdoor	Pros	Cons
GoodMaps	LiDAR	Mapping of venue	X		Can edit maps in real-time.	Not good in outdoor settings. Can be costly to implement, with a lengthy timeline.
RightHear	Bluetooth	Beacons	X	X	Beacons don’t require WiFi or electricity. Integrates with the Moovit app to provide transit information. Available in 26 languages.	Use of beacons limits scalablility. Have to adopt Moovit app.
NaviLens	Accessible QR code	Individual signs/stickers with QR code	X	X	Codes are read in the user's language (34 different languages). Once the code is created, the text and URL it leads to can be updated. Scalable. Can be used at transit centers, bus stops, on buses to provide real-time information. Integrates GTFS RT information. Widespread application (56 countries). MIT Technology Review.	Lots of different codes to generate, print and post.

Defining our criteria

- Resource should provide accessibility in indoor and outdoor settings.
- App must be free to users.
- App must be available for both iOS and Android devices.

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The winner: NaviLens

NaviLens allows blind and low vision individuals to independently navigate places by translating visual signage into audio messages. The technology consists of two mobile phone apps (NaviLens and NaviLens Go!) and a multi-colored QR-style code.

Benefits & features

- Provides real time bus information or any other information stored in code.
- Provides orientation (distance and direction) to the code.
- Provides audio in 34 different languages in the user's phone language.
- Code can be detected from up to 40 ft. away.
- Code is read and detected within a second.
- Can be read unfocused even when user is unaware a code is within range.
- Can be read from an angle of 160 degrees.
- Can be read in all light conditions.

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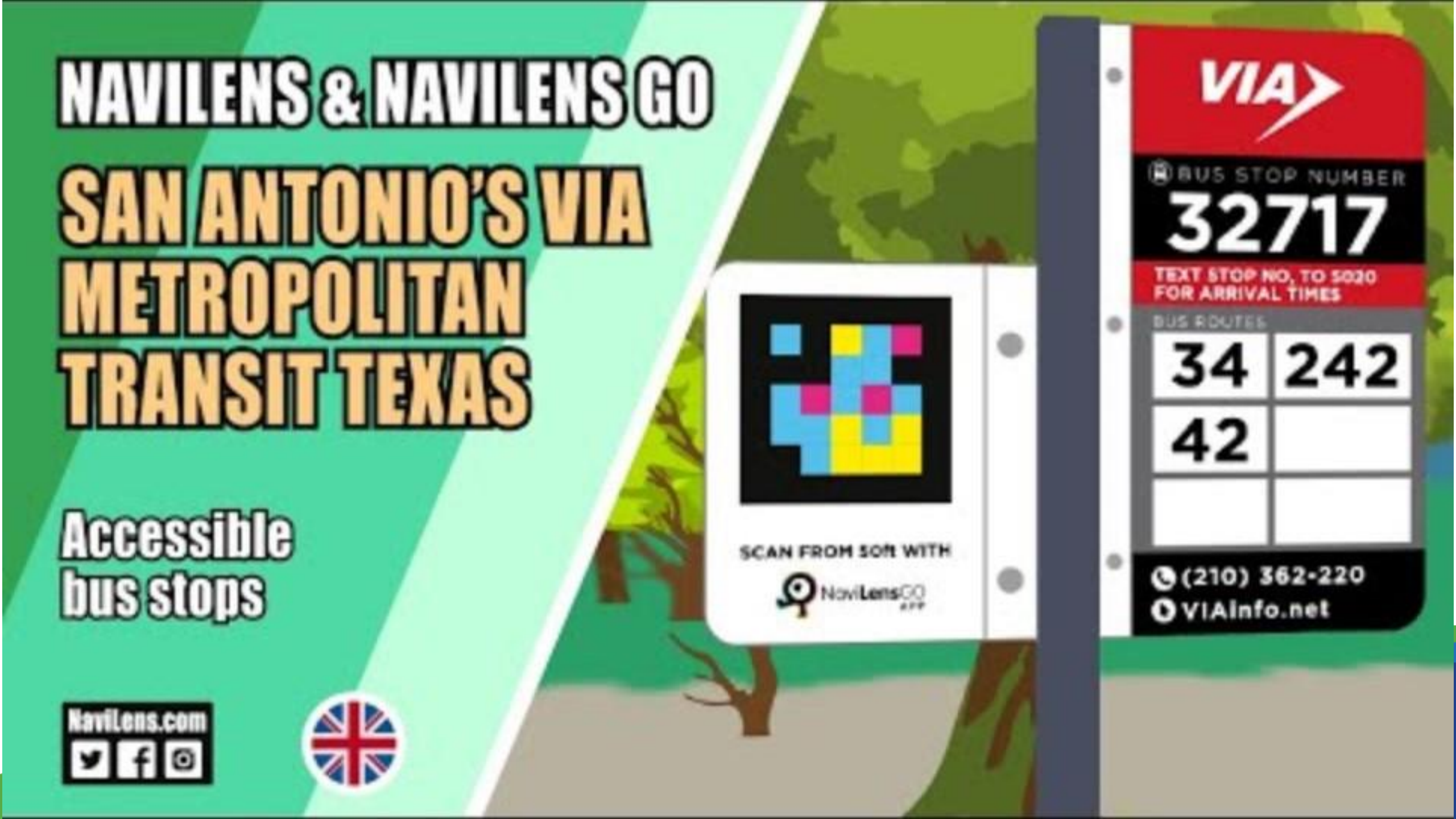
NAVILENS & NAVILENS GO

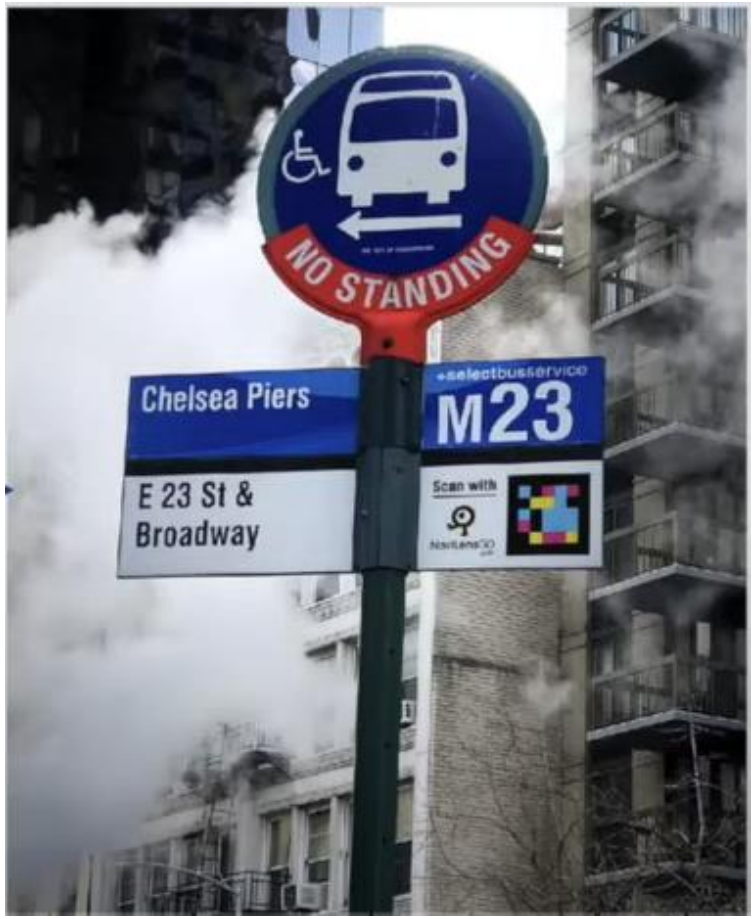
SAN ANTONIO'S VIA METROPOLITAN TRANSIT TEXAS

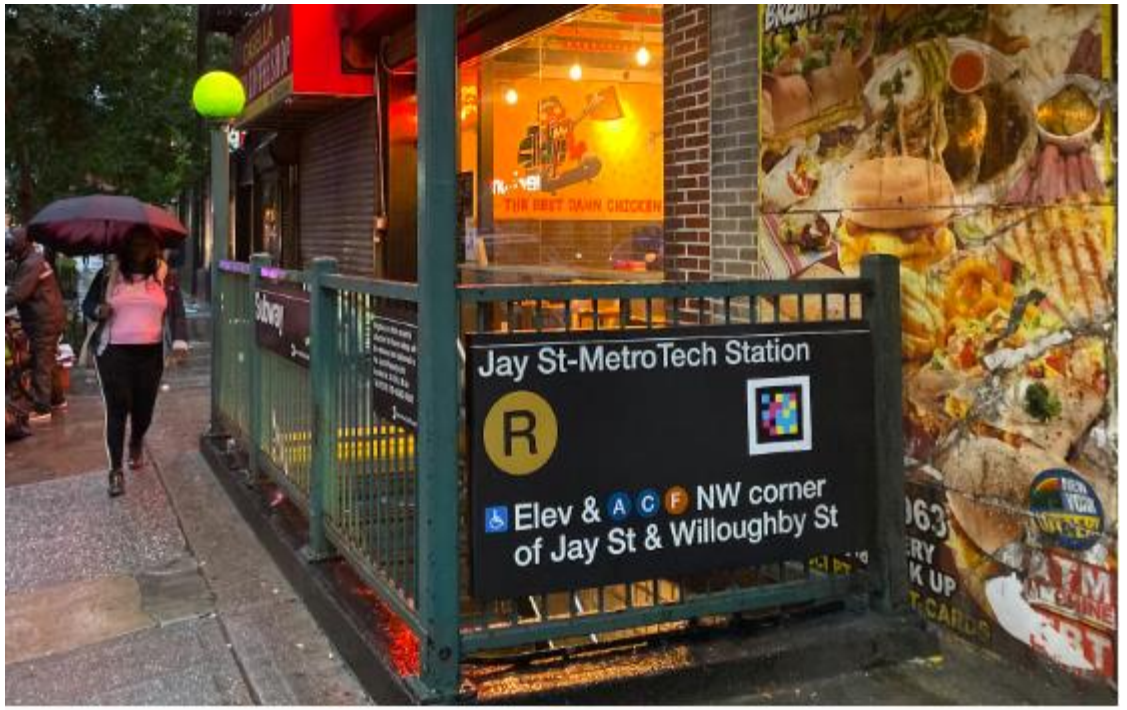
Accessible bus stops

NaviLens.com



Real world implementation





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Next steps

- Form a cross-functional team to work on NaviLens implementation.
- Develop, print codes and associated content.
- Recruit volunteers to test product prior to launch.
- Install at OTC and LTC.
- Pilot 6 months.
- Evaluate project.
  - Could be expanded to include bus stops.

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Questions?