

**26TH ANNUAL
INTERNATIONAL TECHNOLOGY &
PERSONS WITH DISABILITIES
CONFERENCE**



March 16, 2011 (Session #OTH-1012)

Bill Curtis-Davidson (IBM Human Ability & Accessibility Center)

Eric Lipp (Open Doors Organization)

Aaron Steinfeld (RERC on Accessible Public Transportation - Carnegie Mellon)

Jim Tobias (Inclusive Technologies)

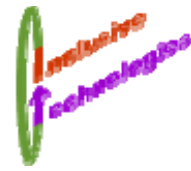
Tom Wlodkowski (AOL, Inc.)

**Accessible Travel: Evolving the Practice of Providing
Geo-Data Services to Improve Mobility**

Panelist Introductions



Bill Curtis-Davidson
Accessible Transportation
Solutions Leader
IBM Human Ability &
Accessibility Center



Jim Tobias
Principal
Inclusive Technologies



Eric Lipp
President & Founder
Open Doors Organization



Tom Wlodkowski
Director of Accessibility
AOL Inc.



Aaron Steinfeld
Co-Director
RERC on Accessible Public
Transportation
Carnegie Mellon University

Agenda

Time	Topic	Presenter
03:10 – 03:15	Panel Goals & User Needs	Tom Wlodkowski (AOL)
03:15 – 03:20	“Data-Enabled Travel” Report from Geo-Access Challenge Team	Bill Curtis-Davidson (IBM)
03:20 – 03:30	Accessible Cities	Eric Lipp (Open Doors Org)
03:30 – 03:40	Example Accessible Transportation Applications	Aaron Steinfeld (RERC-APT/Carnegie Mellon)
03:40 – 03:45	Policy Background & Recommendations	Jim Tobias (Inclusive Technologies)
03:45 – 04:05	Moderated Q&A Session	Tom Wlodkowski (AOL)
04:05 – 04:10	How You Can Get Involved	Tom Wlodkowski (AOL)

Panel Goals



Through this panel, we hope to help attendees:

- ❖ Understand the **market context for accessible travel**
- ❖ Understand how **open data is being leveraged in accessible travel**
- ❖ Understand some **types of transformative applications** being developed using open data for accessible travel
- ❖ Understand **industry activities that you can engage in** to support development of innovative technologies to support accessible travel

User Needs



❖ Studies have shown that adults with disabilities can encounter a variety of obstacles in the travel and restaurant industry

❖ These obstacles include:*

- ▶ Physical obstacles
- ▶ Service-related obstacles
- ▶ Communication-related obstacles

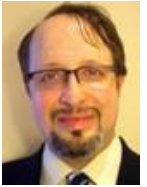
❖ Even when obstacles do not exist, it can be difficult to get information about options that do exist:

- ▶ Accessible public transit stations and stops
- ▶ Accessible public transit vehicles
- ▶ Real-time information relevant to successful use of transport system
- ▶ Accessible private transportation options

These obstacles often prevent persons with disabilities from utilizing all possible transportation options, thereby limiting their mobility in communities.

* 2005 Open Doors Org/Harris Interactive market study, [“Research Among Adults with Disabilities: Travel & Hospitality”](#)

The “Data-Enabled Travel” Report: Background & Key Outcomes



❖ Background

- ▶ Began July 2010 @ White House / FCC / Dept of Commerce brainstorm during 20th Anniversary of ADA Celebration
- ▶ Brainstorm included ~24 technologists and disability advocates
- ▶ Led to formation of Geo-Access Challenge Team involving more parties

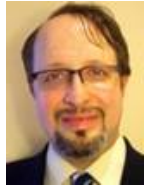
❖ Key Outcomes Thus Far

- ▶ “Data-Enabled Travel” Report:
 - <http://www.geoaccess.org/content/report-data-enabled-travel>
- ▶ Proof-of-Concept / ideation activities
- ▶ Establishment of [GeoAccess.org](http://www.geoaccess.org)
- ▶ Planning for upcoming government aligned activities

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The “Data-Enabled Travel” Report: Data Requirements (Appendix B)



	Mainstream Public Transit	Public Paratransit	Private Transportation	POIs / Environment Information
Static Data from Authorities	<ul style="list-style-type: none"> • GTFS Feed • Accessible Stations/ Stops • Accessible Vehicles • Contacts / help 	<ul style="list-style-type: none"> • Agency info • Service areas • Fixed routes/stops (if applicable) • Fares/reservations • Contacts / help 	<ul style="list-style-type: none"> • Community based transport • Rideshares / carpools • Accessible taxis • Private air, rail, bus or ferry accessible stops/vehicles • Wheelchair rentals 	<ul style="list-style-type: none"> • Accessibility info for businesses (e.g. attractions, hotels, restaurants, etc.) • Accessible municipal infrastructure (e.g. tactile paving, pedestrian street crossings, sloped curbs, accessible parking, etc.)
Real-Time Data from Authorities	<ul style="list-style-type: none"> • Automatic Vehicle Location (AVL) • Elevators/escalators • Wheelchair lift status • Vehicle fullness • Congestion/traffic • Predicted arrival 	<ul style="list-style-type: none"> • Automatic Vehicle Location (AVL) • Vehicle fullness • Congestion/traffic • Predicted arrival • Service alerts • Reservation 	<ul style="list-style-type: none"> • Automatic Vehicle Location (AVL) • Vehicle fullness • Congestion/traffic • Predicted arrival • Service alerts • Reservation 	<ul style="list-style-type: none"> • Real-time info for Accessible Municipal infrastructure (e.g. closings)
Crowd Sourced Data	<ul style="list-style-type: none"> • Vehicle fullness • Vehicle issues • Station/stop issues • Service issues • Ratings / reviews 	<ul style="list-style-type: none"> • Vehicle fullness • Vehicle issues • Station/stop issues • Service issues • Ratings / reviews 	<ul style="list-style-type: none"> • Vehicle fullness • Vehicle issues • Station/stop issues • Service issues • Ratings / reviews 	<ul style="list-style-type: none"> • New or edited POIs • POI ratings/reviews • User generated tags for municipal infrastructure

The “Data-Enabled Travel” Report: Geo-Access Challenge Team Contributors



❖ Challenge Leader

- ▶ **Thomas Wlodkowski**, AOL Inc.

❖ Challenge Report Authors

- ▶ **Bill Curtis-Davidson** (Editor), IBM
- ▶ **Jamal Mazrui**, FCC
- ▶ **Aaron Steinfeld**, RERC-Accessible Public Transportation
- ▶ **Jim Tobias**, Inclusive Technologies
- ▶ **Mohammed Yousuf**, FHWA, U.S. Dept of Transportation

❖ Proof-of-Concept Development

- ▶ **David M. Clark** (Independent)
- ▶ **Chris Blouch** (AOL) and **Ted Drake** (Yahoo!)
- ▶ **Eric Lipp & Laurel Van Horn** (Open Doors Organization)
- ▶ **Jamal Mazrui** (FCC) & **Mika Pyyhkala** (Neighborhood Health Plan)

Challenge Team Contributors

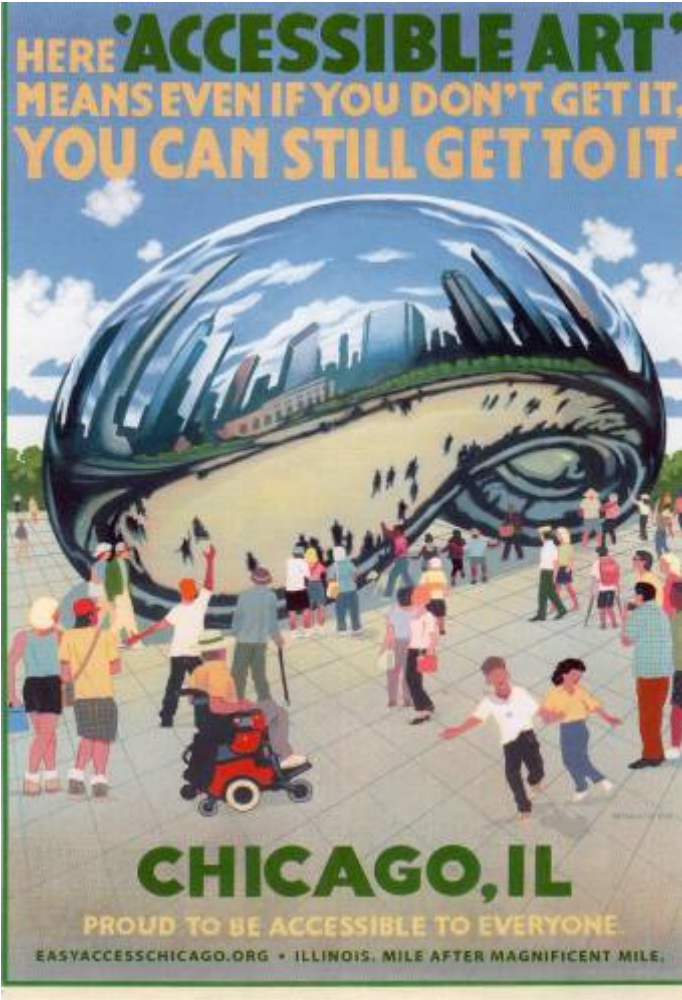


Accessible Transportation & Accessible Cities



- ❖ **Many regional efforts worldwide are expanding the awareness and dialogue about inclusive travel and tourism:**
 - ▶ **North America:** Canada, US Cities such as Chicago, New York, Northern California, San Diego, Washington D.C., etc.
 - ▶ **Europe:** European Network for Accessible Tourism (ENAT)
 - ▶ **Africa:** Kenya, South Africa, Tanzania
 - ▶ **Asia/Pacific:** Australia & New Zealand, India
 - ▶ **South America:** Brazil
- ❖ **Will be positively influenced over time by increasing government regulations / policies (e.g. UN Convention)**
- ❖ **“Inclusion” vs. “Accessibility” – inclusion in society and livable communities and business/tourism connections**

Accessible Cities Example: Easy Access Chicago Guides



Accessible Cities Example: Easy Access Chicago Website



The screenshot shows the Easy Access Chicago website. At the top left is the logo with the text 'EASY ACCESS Chicago' and icons for a wheelchair, a person with a cane, and a person with a hearing aid. Below the logo is a navigation bar with links for HOME, ACCESS INFORMATION, TRANSPORTATION, and USEFUL INFORMATION. The main heading reads 'Welcome to Easy Access Chicago' and 'Your Guide to A Great, Accessible Destination'. A section titled 'What You'll Find On This Site' contains a list of resources. On the right side, there is a vertical menu with links like 'EASY ACCESS CHICAGO', 'Home', 'Welcome to Chicago', 'About Open Doors Organization', 'Contact Us', and 'How to Use This Site'. A callout box titled 'WEBSITE HOME PAGE' points to a photo of a public art installation. Another callout box titled 'CITY & STATE TIE-INS' contains text about using the site with other Chicago guides and visiting the Illinois Bureau of Tourism. A third callout box titled 'DOWNLOAD PRINT GUIDE' points to a section about downloading a print guide, which includes a small image of the print guide and contact information for ordering a physical copy.

WEBSITE HOME PAGE

CITY & STATE TIE-INS

DOWNLOAD PRINT GUIDE

EASY ACCESS CHICAGO

HOME | ACCESS INFORMATION | TRANSPORTATION | USEFUL INFORMATION

Welcome to Easy Access Chicago

Your Guide to A Great, Accessible Destination

What You'll Find On This Site

- Information for Visitors and Residents with A Wide Range of Disabilities, as well as for Older Travelers
- Detailed Access Reports for Over [100 Attractions](#)
- Access Information on [Midway](#) and [O'Hare](#) Airports
- Listings of [Accessible Tours](#) of All Types
- A Guide to [Local Accessible Transportation](#), Public and Private
- [Chicago Insider Tips](#) to Help You Make the Most of Your Stay
- A Guide to [Sports](#) and [Adapted Recreation](#)
- [Tips and Resources for Families](#)
- A Database of Accessible [Hotels](#) and [Restaurants](#) Searchable by Specific Access Features, Location and Price
- Listings of Key [Disability-Related Services](#) and [Resources](#)
- General [Tips for Hassle-Free Travel](#)

EASY ACCESS CHICAGO

Home

Welcome to Chicago

About Open Doors Organization

Contact Us

How to Use This Site

EASY ACCESS CHICAGO

Easy Access Chicago is best used in conjunction with the Chicago Official Visitors Guide and the Chicago Convention and Visitors Bureau website, www.choosechicago.com.

Please visit the Illinois Bureau of Tourism at www.enjoyillinois.com for information on other state destinations.

Easy Access Chicago... the Print Guide


This abridged print version is convenient to carry and has hotel and restaurant listings in easy-to-read tables.

Download the .pdf: [easy_access_chicago.pdf](#)

Order a print copy from the Illinois Bureau of Tourism by visiting www.enjoyillinois.com/brochures or by calling 800-2CONNECT (800-226-6632) or 800-406-6418 TTY.

Accessible Cities Example: Easy Access Chicago Website (continued)





ADVANCED LODGING SEARCH

HOME
ACCESS INFORMATION
TRANSPORTATION
USEFUL INFORMATION

Advanced Lodging Search

All lodgings listed have the following features/policies (except where noted):

- Wheelchair accessible entrance, hallways, restrooms and public areas
- Wheelchair accessible rooms with roll-in showers
- Wheelchair accessible rooms that are non-smoking
- Lowered controls in elevators
- Garage/lot nearby with designated accessible spaces (if not onsite)
- Policy to block a specific adapted room for guests with disabilities
- Policy to reserve adaptive equipment in advance
- Written evacuation procedure for guests with disabilities
- Staff training on evacuating guests with disabilities

Locations:

- Downtown
- Loop
- West Loop
- South Loop
- River North
- North Michigan Ave.
- Near North
- Lincoln Park/Lakeview
- Chicago West
- Midway Airport
- O'Hare Area
- North
- West/Northwest

Prices:

- Budget
- Mid-range
- Expensive

Parking:

- Valet
- Onsite lot/garage with designated spaces

Room Type:

- Suite
- Smoking
- 1 bed (queen or king)
- 2 beds
- Sofa bed

Room Amenities:

- Bed height 17"-23"
- Open frame bed
- Lowered closet rod
- Roll under sink
- Lowered mirror at sink
- Lateral transfer space at toilet
- Grab bars at toilet
- Grab bars in tub/shower
- Adjustable hand-held shower
- Shower bench-fixed
- Shower bench-portable

Manual Dexterity Features:

- Lever handles for doors
- Push button/non-twist lamps
- Easy use/lever controls in bathroom-sink, tub, shower

Features for People of Short Stature:

- Step stool only
- Kit with step stool, reacher, pull-down closet rod

Features for People with Hearing Loss:

- Strobe fire alarms-public areas
- Strobe fire alarms-guest room (hardwired)
- Strobe smoke detector

All lodgings listed have the following features/policies (except where noted):

- ❖ Wheelchair accessible entrance, hallways, restrooms and public areas
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- ❖ Lowered controls in elevators
- ❖ Garage/lot nearby with designated accessible spaces (if not onsite)
- ❖ Policy to block a specific adapted room for guests with disabilities
- ❖ Policy to reserve adaptive equipment in advance
- ❖ Written evacuation procedure for guests with disabilities
- ❖ Staff training on evacuating guests with disabilities
- ❖ Procedure to flag guests with disabilities in computer and generate printouts
- ❖ Orientation for guests who are blind/have low vision
- ❖ Policy to accept service animals with no fees/deposit

Example Applications: Tiramisu (RERC-APT)



- ❖ **Application Type:** Universal design transit app
- ❖ **Description:** Rider contributed transit information, screen reader friendly
- ❖ **Data Types:** GTFS, crowdsource real-time, citizen science



Example Applications: Wheelmap.Org



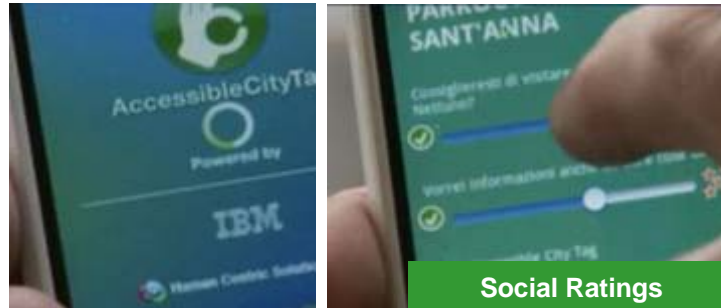
The image shows the Wheelmap.Org website and its mobile app interface. The website header includes the logo, 'BETA' status, and navigation links like 'Login', 'Register', 'What is wheelmap?', 'Blog', 'Imprint', and 'E'. A search bar contains the text 'i.e. Sunset Boulevard San Francisco or Brandenburg Gate Berlin' with 'find' and 'Add another place' buttons. The mobile app interface shows a 'Nearby Places' list with the following items:

Place Name	Category	Distance
sanimedius Pharmacy	Pharmacy	51 m
Mr. Hoang Snack Restaurant	Restaurant	51 m
Lidl Supermarket	Supermarket	108 m
Morning Glory Café	Café	119 m
Hot Dog & Burger Fast Food	Fast Food	133 m
Pappa e Ciccia Café	Café	136 m
Lichtblick Cinema	Cinema	141 m
Papa e Ciccia		

The app interface also shows a 'Wheelchair accessibility?' filter with options: wheelchair accessible, partly wheelchair accessible, not wheelchair accessible, and unknown status. A 'Category' filter includes Accommodation, Food, Leisure, Bank & Post, Shopping, Tourism, Education, Government, Misc, and Public transfer. Statistics show 74936 wheelchair accessible places, 11067 not wheelchair accessible places, and 7033 partly wheelchair accessible places. A 'PayPal Donate' button is visible on the website.

- ❖ **Application Type:** Regional POI Info Foraging App
- ❖ **Description:** Website and mobile app helps people find wheelchair accessible POIs
- ❖ **Data Types:** POI accessibility info from authorities and users, citizen science

Example Applications: IBM Accessible City Tag



❖ **Application Type:** Regional POI Info Foraging App

❖ **Description:** Pilot Android app deployed in Nettuno, Italy – helps people find accessibility info about city POIs, filtered by disability type



❖ **Data Types:** POI accessibility info from authorities, user ratings and reviews



Policy Background



❖ **Accessible transportation is essential to inclusion**

❖ **ADA Regulations on Public Transit**

- ▶ Vehicle-based information display & announcement (including external)
- ▶ Accessible stop requests

❖ **Section 508**

❖ **Upcoming changes to ADA on ICT**

- ▶ Web
- ▶ Equipment & furniture



Policy Recommendations



❖ For all federally funded transportation R&D and implementation projects:

- ▶ Open, inclusive data in standard formats
- ▶ Accessible points-of-interest (POIs)
- ▶ Real-time status (e.g., elevator outages)
- ▶ 508-compliant technologies & user interfaces, including crowdsourcing interfaces



❖ Research to improve understanding of user needs and preferences

Moderated Q&A Session



- ❖ **Regulatory & User Needs**
- ❖ **Market Environment & Accessible Cities**
- ❖ **Data Sharing Infrastructure**
- ❖ **The Need for Applied Research**
- ❖ **Role of Transportation & City Authorities**



How You Can Get Involved



- ❖ **Policymakers:** Address this issue in policy / key is ensuring open data, funding of projects, etc.
- ❖ **R&D:** Pursue projects in this area
- ❖ **Transportation Authorities & Other Data Owners:** Provide open data and encourage app development
- ❖ **Citizens:** Assist and support accessible cities efforts / data gathering and serve as citizen scientists, co-designers
- ❖ **ICT Developers:** Include accessibility information and accessible user interfaces in your products and services
- ❖ **We encourage all parties to:**
 - ▶ Review Data-Enabled Travel Report (<http://www.geoaccess.org/content/report-data-enabled-travel>)
 - ▶ Attend Kareem Dale's address tomorrow for a special note about government activities in this area!

