“I never realized sidewalks were a big deal”

A Case Study of a Community-Driven Sidewalk Audit Using Project Sidewalk

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Oradell

Borough in Bergen County, New Jersey
Population: 8,110; City Streets: 40 miles (64km)
Oradell Partners

girl scouts

Hackensack Meridian Health

National Multiple Sclerosis Society
Before we start,
Sidewalk accessibility lacking in many US cities despite regulations
Crowdsourcing for Urban Accessibility
Crowdsourcing for Urban Accessibility
Crowdsourcing for Urban Accessibility

Data collection + urban accessibility advocacy
Crowdsourcing for Urban Accessibility

Community Advocacy
Oct-Nov, 2021
Girl Scouts In-Person
Sidewalk Audits

Jun, 2021
Project Begins
Oct-Nov, 2021
Girl Scouts In-Person
Sidewalk Audits

Jun, 2021
Project Begins
Oct-Nov, 2021
Girl Scouts In-Person
Sidewalk Audits

Jun, 2021
Project Begins

Nov, 2021
Partnering with
Project Sidewalk
Project Sidewalk

5 Major Label Types

- Curb Ramps
- No Curb Ramps
- Obstacles
- Surface Problem
- Missing Sidewalk
Project Sidewalk

5 Severity Levels

😊 Severity 1  😞 Severity 2  😞 Severity 3  😞 Severity 4  😞 Severity 5
Project Sidewalk

5 Severity Levels

 Severity 1

 Severity 2

 Severity 3

 Severity 4

 Severity 5

impassable for wheelchair users
Oct-Nov, 2021
Girl Scouts In-Person
Sidewalk Audits

Jun, 2021
Project Begins

Nov, 2021
Partnering with
Project Sidewalk
**Timeline**

- **Jun, 2021**
  - Project Begins

- **Oct-Nov, 2021**
  - Girl Scouts In-Person Sidewalk Audits

- **Nov, 2021**
  - Partnering with Project Sidewalk

- **Mar, 2022**
  - Initial Presentation to City Council

- **Apr, 2022**
  - First Mapathon
Oct-Nov, 2021
Girl Scouts In-Person Sidewalk Audits

Mar, 2022
Initial Presentation to City Council

Aug, 2022
Second Mapathon

Jun, 2021
Project Begins

Nov, 2021
Partnering with Project Sidewalk

Apr, 2022
First Mapathon
Jun, 2021
Project Begins

Oct-Nov, 2021
Girl Scouts In-Person Sidewalk Audits

Nov, 2021
Partnering with Project Sidewalk

Mar, 2022
Initial Presentation to City Council

Apr, 2022
First Mapathon

Aug, 2022
Second Mapathon

Aug-Oct, 2022
Research Team Data Analysis
Sidewalk Analysis
Sidewalk Analysis

- curb ramps: 1,455 labels
- missing curb ramps: 545 labels
- obstacle: 215 labels
- surface problems: 3,654 labels
- missing sidewalks: 5,023 labels
Sidewalk Analysis

- **surface problems**
  - 3,654 labels

- **missing sidewalks**
  - 5,023 labels
Sidewalk Analysis

Many missing sidewalks
Quality is at concern for existing sidewalks

surface problems 3,654 labels

missing sidewalks 5,023 labels
# Surface Problem Analysis

<table>
<thead>
<tr>
<th>Rank</th>
<th>Surface Problem Tags</th>
<th>Count</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>height difference</td>
<td>1455</td>
<td>29%</td>
</tr>
<tr>
<td>2</td>
<td>cracks</td>
<td>1256</td>
<td>25%</td>
</tr>
<tr>
<td>3</td>
<td>uneven/slanted</td>
<td>1031</td>
<td>21%</td>
</tr>
<tr>
<td>4</td>
<td>grass</td>
<td>547</td>
<td>11%</td>
</tr>
<tr>
<td>5</td>
<td>very broken</td>
<td>235</td>
<td>5%</td>
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![Image showing height difference](image.png)
### Surface Problem Analysis

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**Height Difference**
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![Height Difference](image-url)
High Severity Surface Problems
Post-Deployment Interviews

Participants

- Disability Advocates
- Girl Scouts
- Girl Scouts’ Parents
- Medical Professionals

N = 19
Post-Deployment Interviews

Participants

- Disability Advocates
- Girl Scouts
- Girl Scouts’ Parents
- Medical Professionals

N = 19

Method

Group/individual semi-structured interviews with two researchers
Thematic analysis through deductive and inductive encoding
How can emerging tools like Project Sidewalk be used to support urban accessibility advocacy?
What did key stakeholders learn about *sidewalks & disability*, urban planning, and accessibility advocacy?
Findings
Findings

Shifted Perspectives

Perceptual & behavioral changes towards urban accessibility

Raised awareness of civic responsibility
Findings

**Shifted Perspectives**
- Perceptual & behavioral changes towards urban accessibility
- Raised awareness of civic responsibility

**Civic Engagement**
- Scientific inquiry & data analysis
- Storytelling & public speaking
- Understanding real-world constraints
- Collaborative interactions
Findings

**Shifted Perspectives**
Perceptual & behavioral changes towards urban accessibility
Raised awareness of civic responsibility

**Civic Engagement**
Scientific inquiry & data analysis
Storytelling & public speaking
Understanding real-world constraints
Collaborative interactions

**Implications For Digital Civics**
Benefits & limitations of Project Sidewalk
Sustaining engagement
Support in training, interpreting & visualization
Findings

Shifted Perspectives

- Perceptual & behavioral changes towards urban accessibility
- Raised awareness of civic responsibility

Civic Engagement

- Scientific inquiry & data analysis
- Storytelling & public speaking
- Understanding real-world constraints
- Collaborative interactions

Implications For Digital Civics

- Benefits & limitations of Project Sidewalk
- Sustaining engagement
- Support in training, interpreting & visualization
Before Project Sidewalk, I never realized how important curb ramps are for people with disabilities...
Now when they walk down the street and see something [inaccessible], they quickly notice and say “This is wrong!”
This experience gave me a new perspective that I can use to help change the world.
Findings

Shifted Perspectives
Perceptual & behavioral changes towards urban accessibility
Raised awareness of civic responsibility

Civic Engagement
Scientific inquiry & data analysis
Storytelling & public speaking
Understanding real-world constraints
Collaborative interactions

Implications For Digital Civics
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Scientific inquiry & data analysis
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Implications For Digital Civics
Benefits & limitations of Project Sidewalk
Sustaining engagement
Support in training, interpreting & visualization
This is just another way to look at it.
This is just another way to look at it.
Combining research findings with local knowledge

This is just another way to look at it.
Findings

Shifted Perspectives
Perceptual & behavioral changes towards urban accessibility
Raised awareness of civic responsibility

Civic Engagement
Scientific inquiry & data analysis
Storytelling & public speaking
Understanding real-world constraints
Collaborative interactions

Implications For Digital Civics
Benefits & limitations of Project Sidewalk
Sustaining engagement
Support in training, interpreting & visualization
Continued engagement and collaboration with local authorities
Findings

Shifted Perspectives
Perceptual & behavioral changes towards urban accessibility
Raised awareness of civic responsibility

Civic Engagement
Scientific inquiry & data analysis
Storytelling & public speaking
Understanding real-world constraints
Collaborative interactions

Implications For Digital Civics
Benefits & limitations of Project Sidewalk
Sustaining engagement
Support in training, interpreting & visualization
Implications for Future Tools
Implications for Future Tools

Much more than a well designed platform
Implications for Future Tools

Much more than a well designed platform

Comprehensive Tutorials
Implications for Future Tools

Much more than a well designed platform

Comprehensive Tutorials  Technical Support
Implications for Future Tools

Much more than a well designed platform

Comprehensive Tutorials

Technical Support

Data Interpretation
Governmental Policy

Ordinance

Mandatory sidewalk repairs for home sales
Governmental Policy

**Ordinance**
Mandatory sidewalk repairs for home sales

**Cost Offset**
Tax incentives and contractor arrangements
Expanding to Teaneck
Expanding to Teaneck

Launched in 2023 August
Expanding to Teaneck

Launched in 2023 August

46 volunteers
7,185 labels
62.5 miles
Key Contributions
Key Contributions

Digital tools enhance accessibility advocacy & education
Key Contributions

Digital tools enhance accessibility advocacy & education

Community science fosters attitudinal changes & enhance knowledge
Key Contributions

Digital tools enhance accessibility advocacy & education

Community science fosters attitudinal changes & enhance knowledge

Implications for future digital civic tools & community collaboration
“I never realized sidewalks were a big deal”
A Case Study of a Community-Driven Sidewalk Audit Using Project Sidewalk

- Digital tools enhance accessibility advocacy & education
- Community science fosters attitudinal changes & enhance knowledge
- Implications for future digital civic tools & collaboration with communities

Contact
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