

Transportation Data Equity Initiative



University of Washington



Team Members:



Other participants:



COMPLETE TRIP



U.S. Department of Transportation
ITS Joint Program Office

Transportation Data Equity Initiative

Project Team



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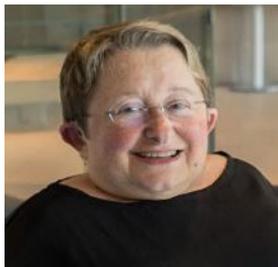
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Daniel Lai,
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Transportation Data Equity Initiative

- Many people are underserved by modern mobility applications because they lack key information about the physical environment, about access, and services.
- This project is designed to create, modify and improve data standards and data integration, validation and maintenance tools necessary for modern applications to provide mobility benefits more equitably. We focus on
 - Routable sidewalks,
 - Transit paths, and
 - On-demand transit service
- Efficacy and efficiency of our data and tooling will be demonstrated through three diverse consuming applications:
 - Multimodal AccessMap
 - Soundscape
 - 3D Digital Twin

King & Snohomish Counties, WA



Multnomah & Columbia Counties, OR



Harford & Baltimore Counties, MD



Team Organization & Partnerships

- **University of Washington**

- Anat Caspi, PhD – PI, CDL
- Mark Hallenbeck – PML
- Ryan Avery, PhD - SDL

- **Cambridge Systematics**

- Erin Flanigan – CS Project Manager
- Mark Jensen – Task Lead, ConOps+

- **Studio Pacifica**

- Karen Braitmeyer – Facility Accessibility Lead

- **Unity Technologies**

- Tim Wong – Industry Solution Lead
- Crystal Garcia – Bus. Development Lead
- David McKay – Project Manager, Digital Twin

- **City of Bellevue**

- Daniel Lai – Local Agency Practice/Implementation Lead

- **Data Industry Partners**

- Google
- Microsoft
- Facebook (Mapillary)

- **State Agency Partners**

- Washington DOT
- Oregon DOT
- Maryland DOT

Challenges & Underserved Populations

Target Population:

- Traditionally travel disadvantaged populations disproportionately include people with disabilities, older adults, and rural residents. Our efforts will address informational gaps experienced by populations underserved by modern mobility applications due to lack of data about physical environments or transit services.

Problems Being Solved- information equity in the New Mobility

- **All travelers need usable information they can trust. Detailed, accurate data about pedestrian spaces, travel environments, and travel services are crucial for modern technology applications to provide mobility benefits more equitably.**

Stakeholder Engagement

- The UW team already maintains multiple communities of practice. This project will have six specific stakeholder groups.
Participatory Design, Equity and Justice, Data Standards (GTFS-Flex & Sidewalks/Pathways), Ethical Data Science, Community Mapping

Proposed Solutions

- Three Extended Data Standards

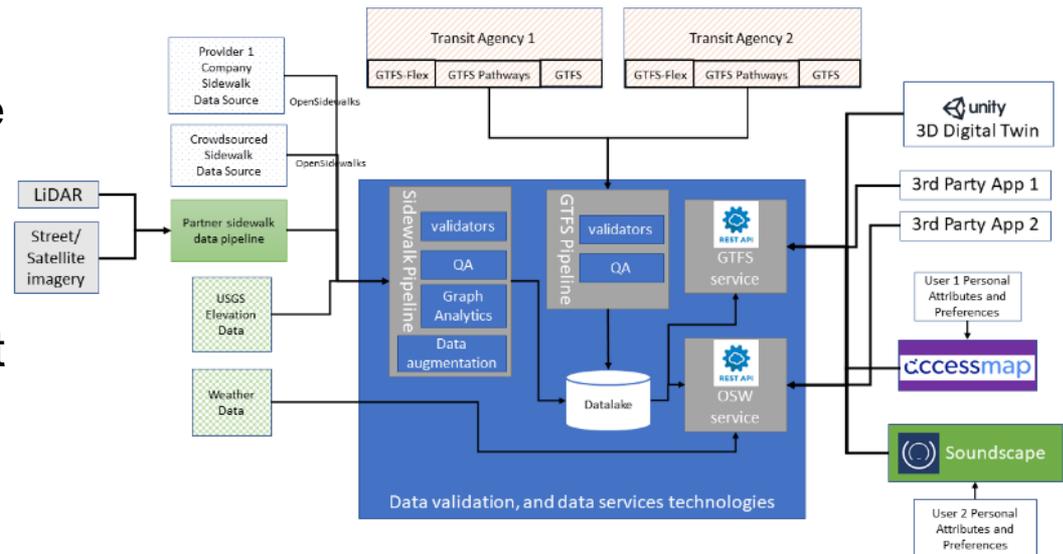
- OpenSidewalks
- GTFS-Pathways
- GTFS-Flex

- Data pipelines (APIs)

- Business plans for scalable collection, operation, and maintenance
- Tools to make it easier to generate, consume and vet the data needed in the standard formats

- Illustrative applications

- Multi-modal Access Map Trip Planning
- Soundscape
- 3D Digital Twin



Proposed Solutions (cont.)

- Supplies the missing information needed to allow all individuals to discover, plan and navigate trips that include sidewalks, transit paths, and on-demand transit services
- Our project will;
 - identify the specific data elements required
 - Define how to code those data to allow for customized navigation needs and preferences.
 - Provide tools for collecting / developing/vetting and maintaining the data at scale
 - Demonstrate 3 unique applications that illustrate how these data change mobility



Target Performance Measures

Data Standards

- Percentage of adopted navigation Use Cases that can be met by
 - GTFS-Pathways standard
 - Opensidewalks standard
 - GTFS-Flex standard

Data and Tools for Developing Data

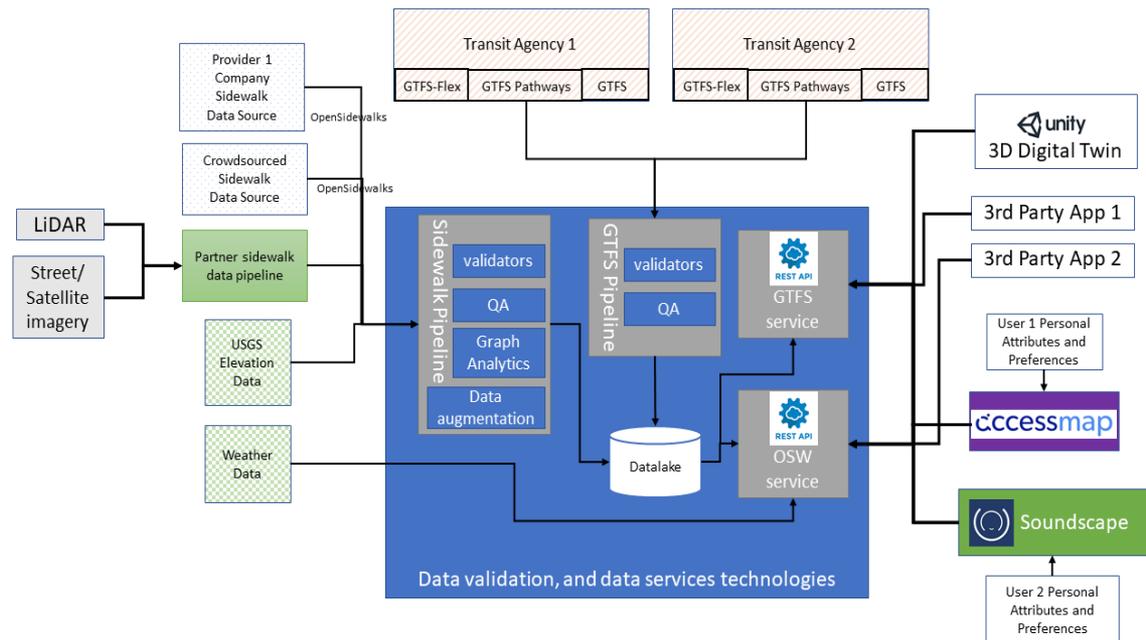
- Percentage of sidewalks tagged with attribute data
- Percentage of data items in adopted standards for which supporting tools have been accepted to develop required data

Applications Using Data Standards

- User satisfaction rating with application
- Outcome of heuristic usability evaluation field tests

Integrated Deployment

- Our data standards and data tools work directly generates the data our user facing applications require to meet user needs
- Our partnerships with industry are designed to scale that data nationally, with supporting data licensing agreements
- Our applications demonstrate the use of the APIs – and are designed to lead to large numbers of additional, nationally available applications



Challenges & Risks

- Reaching agreement on extension of existing standards
- Reaching agreement on priority of use cases to be addressed
- Technical difficulty of tool development for generating desired derivative data from base data
- Access to base data required for standards data development
 - Imagery
 - Software used by providers of on-demand service provision
- A functional business plan that pays for scaling of data provision
- USDOT assistance – funding support to transit agencies who will be key sources of GTFS data

Wrap-Up

3:50PM - 4:00PM ET