

CDOT Office of Innovative Mobility's Transit First/Last Mile Planning Toolkit: Overview of Available Tools and Resources

Program Overview

Improving first and last mile (FLM) infrastructure in the walksheds around future bus rapid transit (BRT) stations is key to improving multimodal safety, enhancing community accessibility, and maximizing ridership. The CDOT Office of Innovative Mobility's (OIM) BRT First/Last Mile Toolkit aims to equip BRT project stakeholders with tools to evaluate FLM needs in the walksheds around planned BRT station areas.

Using the Federal Boulevard BRT project as a pilot, OIM developed and refined a Station Area Walkshed Index Tool and a Walkshed Site Visit Tool. **These tools, currently available for stakeholder use, are detailed below.**

Available Tools and Resources

Station Area Walkshed Index

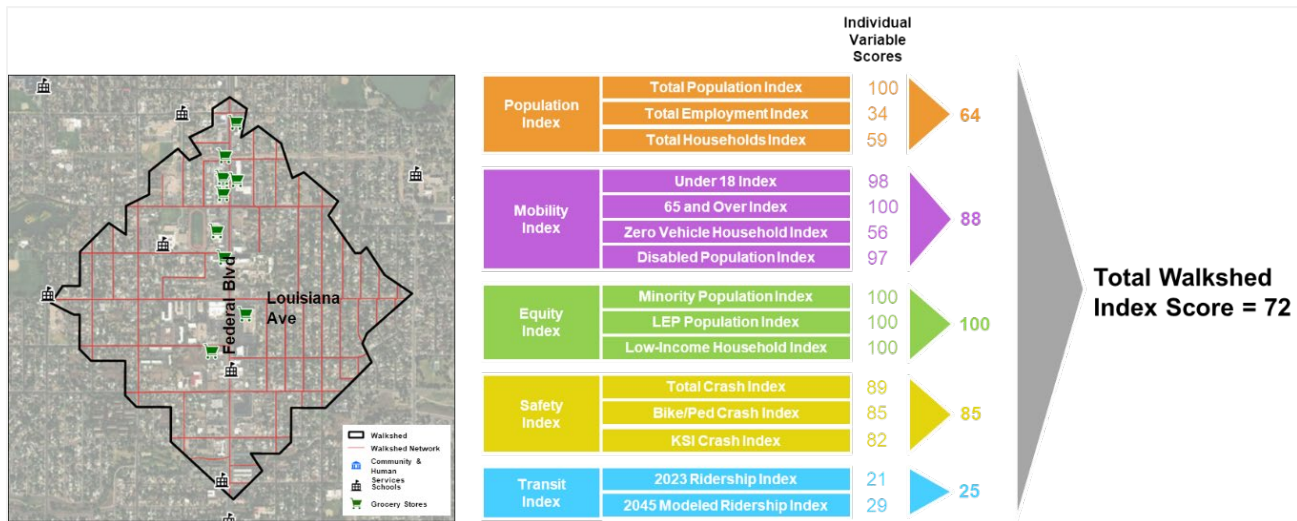
Key Benefits of the Walkshed Index

The Station Area Walkshed Index Tool quantitatively scores and prioritizes transit station area walksheds that have the most need for multimodal transportation and safety improvements. It also identifies sites to visit for additional analysis and informs potential multimodal investment priorities.

Walkshed Index Tool Overview

OIM's Station Area Walkshed Index Tool is based on the proven methodology of the Denver Regional Council of Governments Equity Index. Walkshed Index scores are calculated for each station area along a transit corridor, and walksheds are then ranked to identify those that could benefit most from multimodal infrastructure and safety improvements. Index scores are based on a range of datasets, including block group level 5-Year American Community Survey demographic data, crash data, current transit ridership data, and modeled future transit ridership data. Additional spatial datasets can also be incorporated into the Index. The half-mile walksheds and Index scores are developed through an automated ArcGIS model that is available for use by local municipalities. **Figure 1** shows an example of Index scoring for a station area's walkshed (in this case, the BRT station area walkshed on the Federal Boulevard corridor). The graphic shows the individual index scores averaged into a total Walkshed Index score of 72.

Figure 1. Example Walkshed Index Analysis Results



Use Case: Rural Transit Walkshed Analysis

The project team tailored a version of the Station Area Walkshed Index for FLM and travelshed analysis in rural areas. Specifically, this Index, modified to include analysis of both walkshed areas and broader travelsheds, will help understand how broader travel patterns may impact transit ridership and access to transit services. It will also enable CDOT and local municipalities to identify and prioritize intercity bus and rail station areas that most need improvements to multimodal infrastructure and complementary services like microtransit.

Walkshed Index Resources Available Upon Request

The Station Area Walkshed Index Tool is ready for use by BRT project stakeholders and other transit planning projects. CDOT OIM can provide:

- An automated ArcGIS tool that develops a Walkshed Index for all transit station areas along a corridor (available late Q3 2025)
 - A semiautomated version of the tool is currently available for use
- Walkshed Index Tool User Guide
- Technical support for all Index Tool users

Walkshed Site Visit Tool to Identify First/Last Mile Needs

Key Benefits of the Walkshed Site Visit Tool

OIM developed a smart phone-based survey tool that allows users to conduct walkshed site visits where they can easily identify, document, and map potential FLM improvements. The mobile tool, based on pre-populated survey fields, helps users identify FLM issues and potential recommendations simply and efficiently. Because the Site Visit Tool requires no previous familiarity with the tool, various project stakeholders and/or community members can easily use it. The Site Visit Tool can be used as the next step after using the Walkshed Index or independently.

Walkshed Site Visit Tool Overview

The Walkshed Site Visit Tool provides a qualitative, hands-on approach to identifying necessary multimodal improvements in a walkshed. It enables project stakeholders to visit station area walksheds and catalog current multimodal infrastructure needs or challenges, along with potential recommendations to improve these issues. The tool can be easily used on a mobile phone during a site visit to identify the location of an issue and to add details about the issue, including written information and pictures. **Figure 2** presents an example of the survey interface prompting the user to identify safety deficiencies at intersections that could be mitigated to improve FLM accessibility.

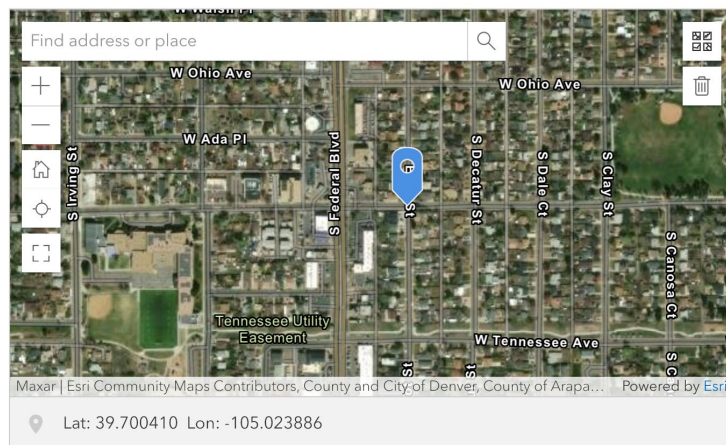
Figure 2. Example Survey Interface Prompt for Intersection Safety Deficiencies

Intersection Design/Safety Issue

Identify safety deficiencies at intersections that could be mitigated to improve first/last mile accessibility.

Issue Location Map*

Please create a point at the location of the issue or recommended improvement

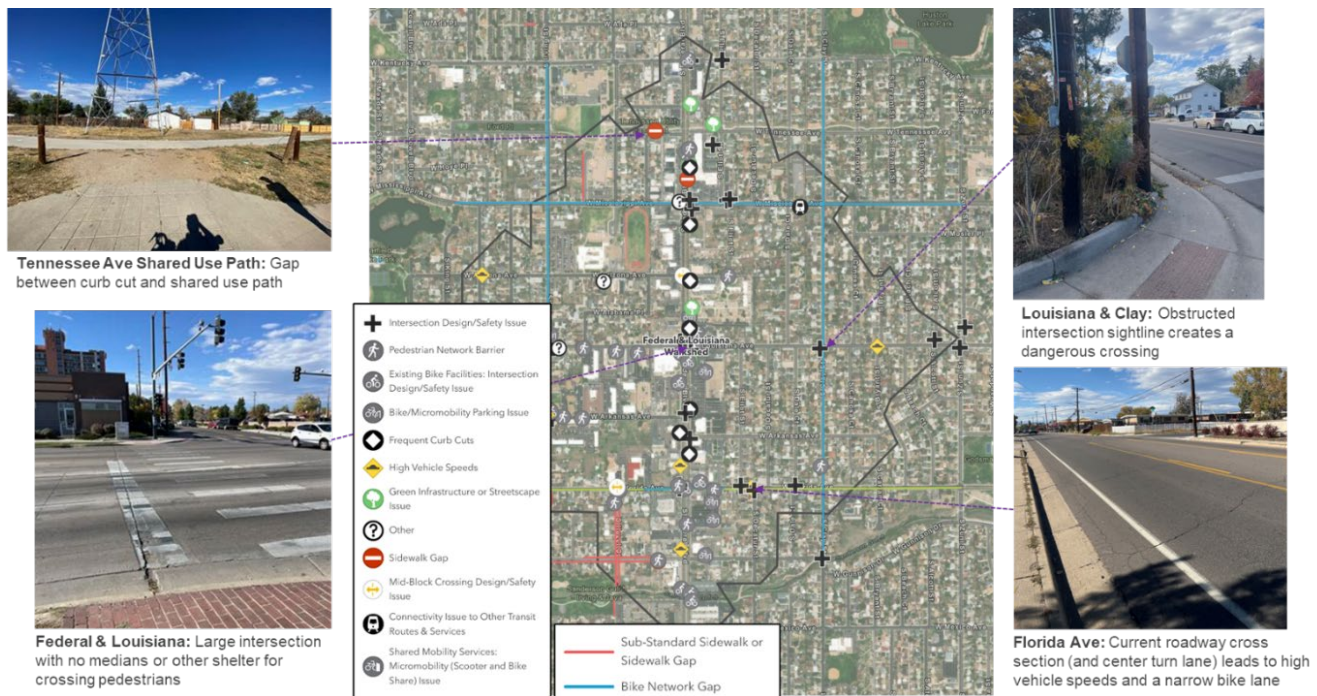


Issue Description*

Please briefly describe the observed issue. Additional details about the issue location can also be added here if necessary.

Site visit results are available in an ArcGIS Online map (**Figure 3**) and can also be exported as an Excel spreadsheet. A mix of CDOT staff, CU-Denver students (not previously familiar with the Tool), and project team consultants completed the walkshed analysis presented on **Figure 3**. More than 100 data points were gathered within 2 hours for a half-mile walkshed along Federal Boulevard.

Figure 3. Site Visit Tool Results at the Federal Boulevard BRT Station Area Walkshed



Use Case Example: Identifying Safety Issues Near a Mobility Hub

A Front Range municipality is currently planning a regional mobility hub to improve access to local and regional transit service and to fill gaps within the existing transit network. The city's goal is to receive an implementation grant to construct the mobility hub. As part of the grant application, the city identified key origins and destinations within the mobility hub walkshed, but they lacked a systematic method for identifying multimodal safety issues in this area. The city used the Walkshed Site Visit Tool to catalog multimodal safety issues and produce ArcGIS shapefiles and spreadsheets that organized the identified safety concerns. City staff, despite having no previous experience with the Tool, efficiently completed the data collection process. Demonstrating a systematic walkshed analysis approach and providing results will ultimately strengthen the city's grant application.

Site Visit Tool Resources Available Upon Request

The Site Visit Tool is ready for use by BRT project stakeholders. CDOT OIM can provide:

- Site Visit Tool with customizable fields that can be tailored to specific projects and local FLM needs
- Webmap and spreadsheet outputs developed after using the Site Visit Tool
- Site Visit Tool User Guide
- Technical support for all Site Visit Tool users