CASE STUDY

REDEFINING ACCESSIBILITY IN ST. LOUIS

EAST-WEST GATEWAY
Council of Governments
Creating Solutions Across Jurisdictional Boundaries

Enhancing Accessibility Analysis Beyond the Closest Destination

The East-West Gateway Council of Governments (EWG) serves as the Metropolitan Planning Organization (MPO) for the St. Louis region, representing nearly 3 million residents. Like many MPOs, EWG has long used accessibility mapping to understand how people reach key destinations. Traditionally, these maps measure travel time to the nearest single destination—for example, the closest hospital, school, or grocery store.

EWG wanted to go further. They set out to answer a more comprehensive question:

How many key destinations can residents reach within a given travel time by public transit or walking—and how does that vary across the region?

To achieve this, EWG turned to TRACC software from Basemap Ltd. TRACC was the only platform able to handle the scale of analysis required, load diverse datasets, and generate trusted travel-time calculations. The software allowed EWG to:

- Include multiple destinations at once, categorized into eight types of points of interest (POIs).
- Apply weightings and saturation values so that accessibility scores reflect not just proximity to the closest POI, but also the relative importance and availability of multiple destinations.
- Model different modes (public transit, walking, cycling) and set realistic travel-time thresholds (e.g., 40 minutes walking, 60 minutes by transit).
- Run future scenarios by modifying the transit network to see how planned changes would impact accessibility scores.

"We needed a fresh new approach to the way we looked at accessibility and TRACC provided the exact inputs needed for our analysis"

How the Accessibility Score Works

- Origins: Census block centroids were used, allowing for fine-grained geographic analysis.
- Destinations: Split into eight POI categories, each with its own weighting and, in the case of walking, a saturation value.
- Travel Modes: Transit and walking were the focus, though TRACC can also model cycling and driving.
- Accessibility Function: Each origin–destination pair is assigned a travel time. An exponential decay function reduces accessibility as travel time increases, producing a score between 0 and 1.

Unlike traditional accessibility maps that highlight only the nearest destination, TRACC accounts for multiple destinations within reach, creating a more realistic and equitable picture of access.

Table 1. Saturation and weights for different point of interest categories and modes of travel

POI Categories	Walk		PT	
	Saturation (# POI's)	Weight	Saturation	Weight
Education	5	2.4	-	0.1
Entertainment and Recreation	10	1	-	0.05
Food and Drink	20	0.5	-	0.02
Grocery Stores	3	10	-	0.1
Hospitals	1	6	-	1
Pharmacies	3	2	-	0.1
Public Services and Banks	20	0.8	-	0.05
Shopping	20	0.5	-	0.02

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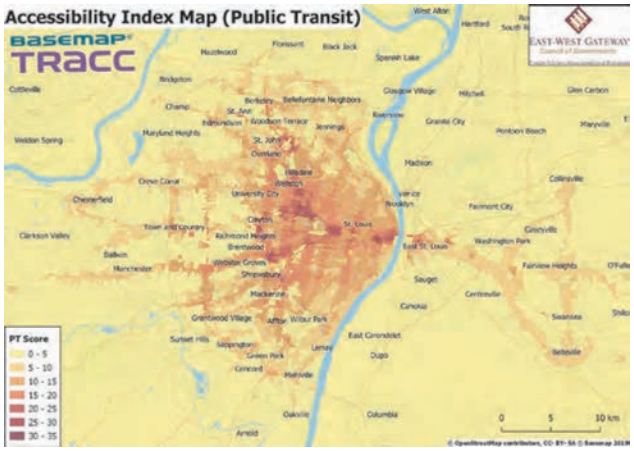
TRACC
ACCURATE, MULTI-MODAL TRAVEL TIME ANALYSIS

"Analyzing accessibility in small geographies such as census blocks reveals hotspots with very poor accessibility that will not show up when bigger geographies are used. TRACC helped us estimate travel times and accessibility between tens of thousands of census blocks within a reasonable timeframe—a task other available software could not handle."

Amir Poorfakhraei, Transport Analyst, East-West Gateway

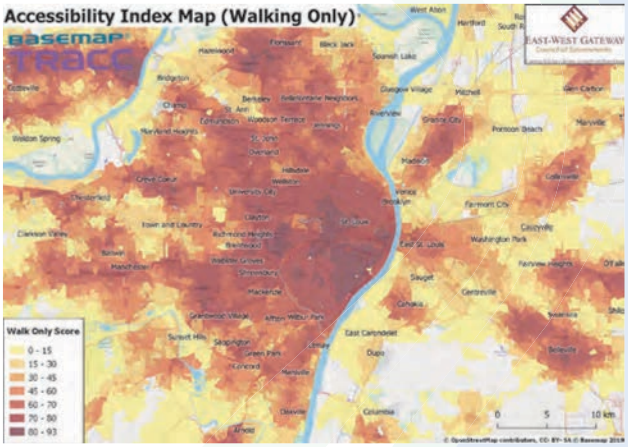


Results & Equity Insights

The results uncovered serious equity gaps. EWG found that East St. Louis and North St. Louis—areas home to many environmental justice communities, including low-income households, racial minorities, and zero-car households—suffer from very poor transit accessibility and only poor-to-moderate walk accessibility.

By revealing these disparities, TRACC gives MPOs like EWG a tool to:

- Identify underserved communities with greater precision.
- Support Title VI and equity analyses.
- Evaluate the impacts of future transit investments.



Why This Matters for MPOs

For MPOs nationwide, this approach moves accessibility analysis beyond static "nearest-destination" maps into a performance-based toolkit for equity, funding, and scenario planning. TRACC enables MPOs to:

- Scale & speed: Compute region-wide, block-level OD matrices (hundreds of millions of journeys) across transit, walk, and (optionally) bike within practical run times.
- Replicable methods: Lock parameters, version inputs, and rerun scenarios for PBPP, Title VI/EJ/Justice40 analyses, and consistent year-over-year reporting.
- Funding evidence: Produce clear before/after metrics to support grants and programs (e.g., RAISE, SS4A, CMAQ, SMART, FTA TOD), tying investments to measurable access gains.
- Scenario testing: Adjust headways, spans, routes, stops, and transfer rules to see accessibility shifts instantly—prioritize corridors and service packages with the biggest lift.
- Equity KPIs: Track % of priority populations within X minutes of jobs, healthcare, groceries, schools, parks; quantify "access per $" to compare alternatives.
- Data interoperability: Ingest GTFS and local POI datasets; join to demographics; export OD/score layers to GIS/BI tools and publish public-facing maps.
- Monitoring & accountability: Recompute on schedule to detect change, demonstrate progress, and communicate outcomes to boards and the public.

As Amir noted, the results were "eye-opening." EWG can now monitor accessibility over time and use TRACC to support decision-making across the St. Louis region.
This methodology is fully transferable to MPOs across the U.S.

If you are an MPO, transit agency, or government department seeking advanced, equity-centered, scenario-based accessibility analysis, TRACC can help you take the next step.

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