



Paving the Way to Accessibility

Assessing Salt Lake City's Bicycle Network

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May 2024





Executive Summary

“It’s a super outdoorsy city but no one feels safe biking in their own community.”

Bicycling plays a critical role in connecting us to opportunities such as employment, healthcare, education, and more. However, bicyclists remain an afterthought in many places and the infrastructure that does exist is often uncomfortable, unsafe, and ineffective at connecting us with the places we want or need to go.

Salt Lake City has an extensive and rapidly growing bicycle network with strong crosstown corridors and a secondary network of neighborhood routes. However, bicyclists must often contend with heavy, fast-moving traffic on wide downtown streets or navigate the east-west divide created by the railroad tracks and Interstate 15. These conditions create barriers for bicycling, making it uncomfortable for all but the most fearless. Salt Lake City’s transportation plan, which was adopted in May 2024, calls for an expanded low-stress bicycling network, which would enable residents to move comfortably to reach the places that matter to them.

Paving the Way to Accessibility evaluates Salt Lake City’s bicycle network with a focus on comfort and access to opportunity. Its foundation is a routing analysis that assesses how comfortably residents can access different amenities by bicycle depending on where they live. This summary briefly describes the analysis before focusing on its key findings and recommendations.

This report was produced in collaboration with **Sweet Streets SLC**, who were instrumental in providing guidance on its direction and structure and recruiting local bicyclists for the community engagement phase.

Methodology

A routing analysis uses an algorithm to identify the best route between an origin and a destination using a network and a set of preferences and restrictions. The origins for this analysis were the center points of almost 2,500 census blocks in Salt Lake City, which represent where a typical resident may live. The destinations were the locations of amenities that

someone may want or need to go on a regular basis, such as workplaces, schools, grocery stores, parks, healthcare facilities, government buildings, or places of worship.

The network consisted of streets, trails, and paths that can be used by local bicyclists. Each segment was assigned comfort and preference values, which were critical for instructing the algorithm and determining the access to opportunity score.

The comfort values were automatically assigned based on the presence and type of bicycle facilities and the speed limit. The preference values were manually assigned the account for the difference in perceived comfort while bicycling on a particular road and its actual infrastructure. For example, 700 East has a conventional bike lane in Sugar House but few people would feel comfortable using it given the speed and volume of traffic. These values were primarily based on input from local bicyclists during the community engagement phase of the report’s creation, which included a workshop and interviews.

Next, the routing algorithm took these inputs and sought to find routes that maximized comfort and minimized distance traveled, essentially modeling the decisions that urban bicyclists make every time they decide to ride. It generated a route from every origin to every type of destination, resulting in almost 50,000 unique routes.

Finally, the routes were used to calculate access to opportunity (ATO) scores across Salt Lake City, which quantify how comfortable it is to bike to a range of destinations depending on where one lives. Each ATO score is a cumulative weighted measure of route comfort from one origin to 20 destinations based on their relative importance for daily life. A negative score means that most routes from a particular origin require bicyclists to use low-comfort streets, while a positive score means that most routes use high-comfort streets. Higher positive scores use more separated paths and protected bike lanes, while lower positive scores use more painted bike lanes and neighborhood streets.

“It feels like the safe routes are a secret that can only be shared by other people who take them.”

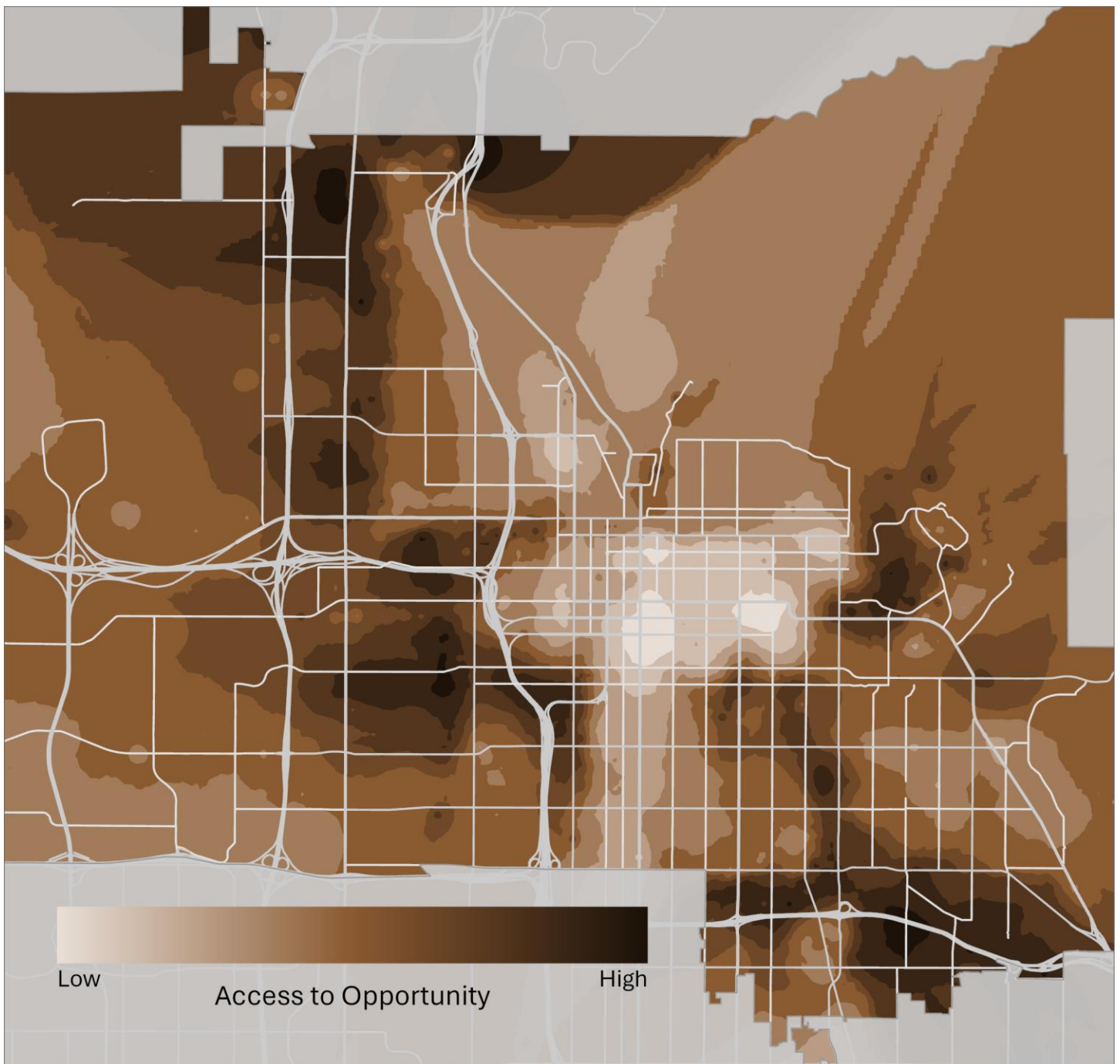


Findings

There are clear disparities in comfortable access to opportunities by bicycle depending on where one lives in Salt Lake City. In darker places, such as Sugar House and Poplar Grove, residents can combine high-quality facilities like the S-Line Trail, the 9-Line, and the Jordan River Trail with a dense network of residential streets. In lighter places, such as downtown, residents are often forced to use high-speed streets without bicycle infrastructure to reach their destination. The Granary District and Ballpark have the highest variation in score, which indicates that

comfort can vary substantially block-by-block.

The distribution of ATO scores may seem counter-intuitive given prevailing narratives about bicycling in different parts of Salt Lake City. However, the presence of bicycle infrastructure does not necessarily mean that riding somewhere is comfortable. While downtown is where most of the city's protected and buffered bike lanes are concentrated, most of its streets are high-speed and many lack any bicycle facilities at all. The Westside, on the other hand, offers direct access to multiple high-comfort trails via quiet neighborhood streets.



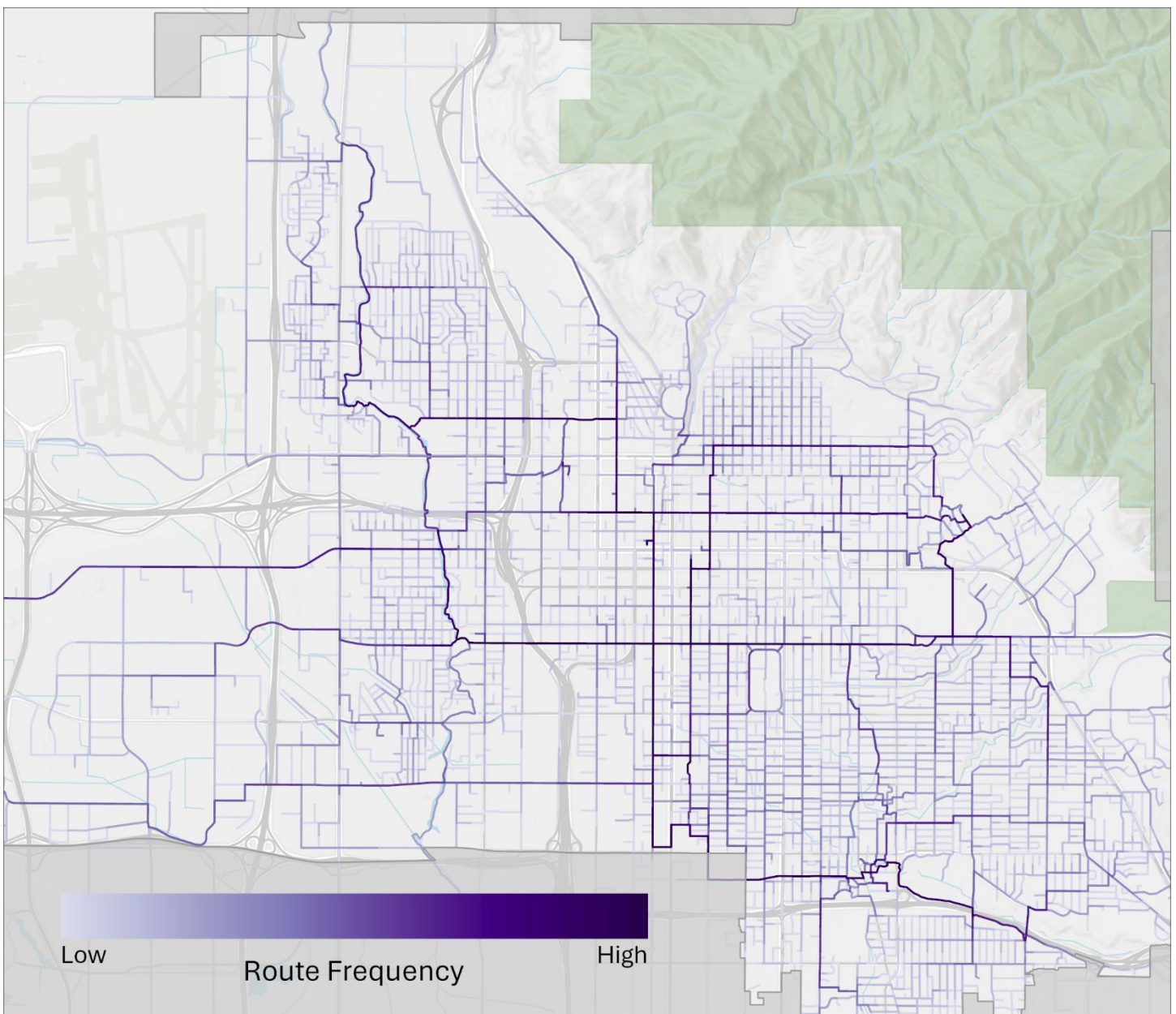


A trip's comfort depends not only on the quality of the bicycle infrastructure, but on its length. When normalizing by distance, more central parts of Salt Lake City like downtown and Ballpark have higher ATO scores than they previously did. In other words, the closeness of destinations balances out the lower comfort routes used to reach them. However, even places with a high concentration of destinations can still have low ATO scores if the local bicycle network is lacking. Trolley Square and the Rio Grande District are prime examples, as 400 South, 700 East, and other arterials effectively cut them off from the surrounding neighborhoods.

Looking at a heatmap of the routes generated by the analysis can help to illustrate the connectivity – or lack thereof – in Salt Lake City's bicycle network.

Several corridors immediately stand out, including the Jordan River Trail, the 9-Line, Parleys Trail, and 200 South. Each of these corridors serves residents in multiple neighborhoods, allowing them to travel between different parts of the city comfortably and efficiently.

However, there are two main disparities. First, the east-west divide is clearly visible. Those who live on the Westside have few options to cross I-15 and the railroad tracks, and many of these are relatively low comfort. Residents often must go unnecessarily out of their way in order to safely make a trip by bicycle. Second, some neighborhoods are well-served by the street network while others are lacking. Sugar House has an extensive network of low-speed neighborhood streets, allowing residents to take a wide variety of





routes to reach different parts of the neighborhood and the rest of the city. Downtown, on the other hand, is dominated by high-speed arterials and lacks a finer-grained network, forcing bicyclists to decide between efficiency and comfort.

These findings illustrate two key takeaways. First, corridors with high-comfort facilities that directly connect neighborhoods act as the backbones of the city's bicycle network. Second, a strong network of secondary facilities helps bicyclists comfortably and efficiently reach the primary corridors nearest to them. Both types of infrastructure are important and necessary for a comfortable and effective bicycle network.

Sugar House is an excellent example of this relationship. Bicyclists who live in more residential areas can use low-speed, low-traffic neighborhood streets to reach the McClelland Trail or the S-Line, which offer easy connections to the 9-Line and the Jordan River Trail, opening up access to much of Salt Lake City. Major bicycling-priority corridors like these help bicyclists travel across the city comfortably and efficiently, while denser bicycle-friendly streets offer comfortable first- and last-mile connections to one's origin or destination. In neighborhoods like Sugar House, many trips remain entirely within the neighborhood as well, allowing residents to fully utilize quiet, pleasant residential streets.

It is important to remember that bicycling comfort is multi-faceted, and this analysis does not fully capture the multitude of factors that influence comfort. Further analyses could incorporate variables such as land use, slope, and tree canopy, as well as the impact of stopped freight trains. Additionally, publicly available activity data could be used to validate both the comfort of individual segments and the behavior of the routing algorithm itself.



Recommendations

Salt Lake City has the potential to become one of the best cities in the West for bicyclists, but significant work must still be done to reach this vision. First, the city has made good progress in creating bicycle-priority corridors in recent years, but connectivity in the broader network needs to be improved. This is particularly true along the I-15 corridor, which lacks comfortable, convenient crossings for bicyclists. Salt Lake Central Station and Central Pointe Station similarly lack comfortable access to nearby high-quality bicycle facilities. Creating better connections within the network would enable residents to more comfortably bike around the city.

Second, physical features are crucial for comfort, whether they are used to protect bike lanes or calm traffic on neighborhood streets. The improvements made through the city's **Neighborhood Byways** program are excellent examples of how simple infrastructure can create bicycling-friendly corridors. Features such as comfort-specific signage, greenery and art, and secure bicycle parking can improve the overall experience of bicycling as well.

Third, comfort depends not only on the built environment, but on addressing traffic violence and poor behavior by drivers. Almost every resident that I spoke with has felt unsafe while biking because of a driver's actions. Enforcing driving laws that affect bicyclists and educating drivers about their responsibility to be aware of bicyclists would help to improve safety and comfort for everyone.

Fourth, mixed-use development within residential neighborhoods should be encouraged. A short trip is often going to be more comfortable than a long trip, especially if that trip can utilize low-stress residential streets by remaining within the neighborhood. Developing bicycle-oriented, mixed-use corridors improves accessibility while generating economic benefits.

There is no one-size-fits-all solution to improve bicycling comfort and access to opportunity by bicycle. It is critical that Salt Lake City's bicycle infrastructure exists to serve everyone, not just the most fearless.

"You need to actually get on a bike in order to notice the issues."