



Nice Streets, Mean Streets: Mapping Transportation Accessibility in Southeast Michigan

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PROJECT DESCRIPTION & GOALS

This collaboration between U-M's Science, Technology, and Public Policy (STPP) Program and Programs to Educate all Cyclists (PEAC), a local non-profit organization advocating for transportation equity for individuals with cognitive disabilities, was one of 10 projects in the inaugural cohort of Strava Metro's Academic Researchers Program. Through the program, STPP and PEAC gained access to Strava Metro's dataset of bicycle trips in Washtenaw County, which includes crowd-sourced data (from Strava users) aggregated to show common routes, origins, and destinations; collected distances traveled and CO2 saved; along with available demographic information.

The project aimed to support PEAC's advocacy efforts in two main ways:

1. By demonstrating that PEAC students' experiential expertise is valid
2. By using PEAC students' experiences to identify safety concerns or other elements not necessarily reflected in the Strava Metro data

METHODOLOGY

We (the STPP and PEAC teams) first used the Strava Metro platform to identify high-use bike routes, mainly using the heatmaps function, along with our own knowledge of the area. PEAC instructors then led students on rides or walks of the routes, stopping to discuss their perceptions of each street and whether they would classify it as nice or mean, and why. *(Please see Appendix 1 for details.)*

As a part of PEAC's regular programming, PEAC students learn to identify bike routes as "nice" or "mean" based on their level of comfort and perceived safety. All students are over 18 years of age and are skilled riders. During and after a ride on an identified route, students completed a survey and engaged in discussion around the weather; posted speed limit; degree of protection for bicyclists (i.e., protected bike lane, painted bike lane, no bike lane); driving patterns; and road conditions. Based on these factors, the survey prompted students to indicate whether a road was mean, nice, or in between.

We then re-visited the Strava Metro platform with PEAC students' experiences in mind, paying attention to where students' experiences tracked with what the data indicate, versus where students' experiences offered additional nuances that may not be visible in the data. All of the data are from Summer/Fall 2025.



Photo credit: PEAC

PROJECT TAKEAWAYS & AREAS FOR FUTURE RESEARCH AND ADVOCACY

This project demonstrates the need for and value of incorporating individuals with cognitive disabilities into decision-making processes around transportation safety in order to ensure widespread accessibility. Students' reviews of the rides reflected the realities of the built environments shaping each route. They could distinguish between cars travelling at 25 versus 35 miles per hour—not because of the posted speed limit, but because of the road's design. For example, streets that expanded from two to three lanes suddenly felt “mean” as the additional lane increased tension between drivers and riders.

In some cases, students' feelings and opinions were more precise and nuanced than what the Strava Metroview data showed on their own. In addition to “validating” the data, students' experiences provided better insights for targeting advocacy. Students' experiences demonstrate that although a route is popular, it may not be accessible, bringing attention to areas where city planners or transportation staff may need to consider additional safety measures. Individuals with cognitive disabilities can help planners better identify where interventions like side paths, protected bike lanes, traffic calming, and road diets are necessary.

The Strava dataset demonstrates a selection bias in that it provides insights based only on active Strava users who opt in to sharing data. The user base of Strava differs considerably from PEAC students and from more casual or need-based riders generally—Strava users are often those riding not (or not only) out of necessity, but who are invested in bicycling as a form of urban transportation.

These skews, however, provide support for the findings in a way; we can presume that Strava users are comfortable riders and therefore less likely to be riding on sidewalks, for example. Thus when Strava users are opting for sidewalks, it suggests an exacerbated problem with the bike infrastructure. In other words, experienced riders' choices reflect that their safety concerns and experiences are aligned with PEAC students', supporting the notion that individuals with cognitive impairments have valid

expertise for identifying where interventions are necessary to improve safety for bikers and pedestrians.

Students' observations also included further nuance about factors that made a route feel mean or nice, including time of day, active construction, inclines and curves, and traffic light duration (including of bike-specific lights). These are details that are not necessarily reflected in the Strava data but should be included in determinations of safety interventions.

PEAC students' characterizations of streets as mean or nice were simple and accurate, in contrast to the complex standards and matrices most often used to rate streets for safety, comfort, and rideability. Ensuring cognitive accessibility improves road safety for everyone, not only for cognitively impaired users.

Special thanks to the following PEAC students and staff for their collaboration on this project and for sharing their expertise, wisdom, and experience with us.

Students

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APPENDIX 1: All rides

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**To watch the PEAC riders
discuss their perceptions of
cycling routes, please click on
the street names below:
[Washtenaw Avenue \(Mean\)](#)
[First Street \(Nice\)](#)**

General information

The “total activities” indicator in the edge data view describes the total number of recorded rides along the length of the combined edges. For the areas used in this study, there was little variation across months from Spring–Fall of 2025, so the data used in the screenshots are generally representative of regular use. PEAC students learn to identify bike routes as “nice” or “mean” based on their level of comfort and perceived safety.

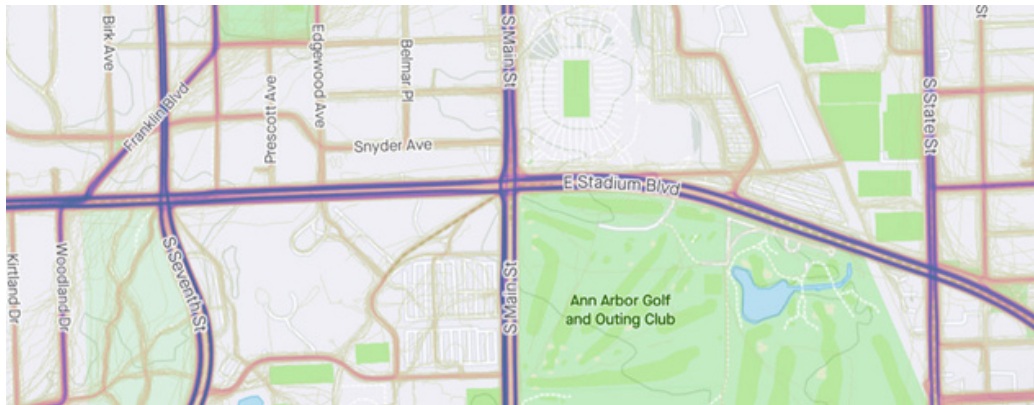
Street, City	Mean or nice?	Reasoning	Insights relative to Strava Metro data	Advocacy implications
Stadium Blvd., AA*	Mean	No bike lane; many cars driving fast	Data show higher bike use on sidewalk, validating students' perceptions of unsafe road conditions	Need for improved bike infrastructure
Washtenaw Ave., AA	Mean	No bike lane; many cars driving fast	Data show higher bike use on sidewalk and even higher in adjacent park, validating students' perceptions of unsafe road conditions	Need for improved bike infrastructure
Packard St., AA	Between	Unprotected bike lane; cars felt too fast and/or too close in some places	Some areas are more dangerous than others, which the data do not necessarily reflect	Bike lanes are well-located but insufficient to accommodate volume of use
Carpenter Rd., Ypsilanti	Mean	High traffic, busy and loud; no bike lane	Data validate students' perceptions and suggest inconsistencies along the route in terms of skill level required	Need for bike infrastructure and speed control
Michigan Ave., Ypsilanti	Mean	No bike lane; cars driving fast	Data show higher bike use on sidewalk, validating students' perceptions of unsafe road conditions	Need for improved bike infrastructure

Street, City	Mean or nice?	Reasoning	Insights relative to Strava Metro data	Advocacy implications
N. River St., Ypsilanti	Nice	Low traffic; cars driving slower	Street is nice/accessible, but not highly used by experienced bikers	Low-priority for targeted advocacy
Division St., AA	Nice	Protected bike lane	Data show effectiveness of protected bike lanes, in line with PEAC students' perceptions; PEAC students added some nuance around length of traffic lights	Good model for improving infrastructure in other areas; PEAC students' expertise aligns with other (including more experienced/comfortable) bikers and city planners who installed bikeways; potential need to assess traffic lights
William St., AA	Nice	Protected bike lane		
First St., AA	Nice	Protected bike lane		
Seventh St., AA	Between	Unprotected bike lane that narrowed at some parts	PEAC students were in-between about this high-use street; potential high-impact advocacy area	Need for improved bike infrastructure

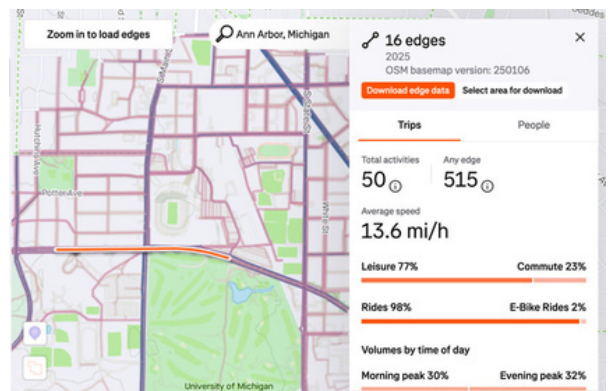
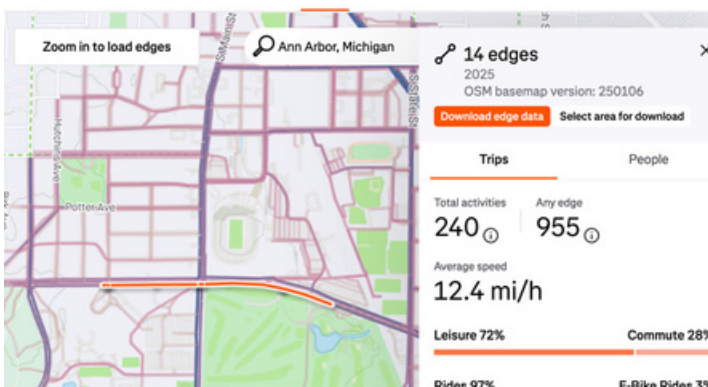
- AA= Ann Arbor

1. Stadium Blvd., Ann Arbor

Stadium Blvd. is a high-use corridor just south of downtown Ann Arbor. This section, near the intersection of East Stadium Blvd. and S. Main St., passes by U-M Stadium, golf courses, and Pioneer High School. The intersection has 4-way stoplights, multiple lanes including turning lanes in each direction, a posted speed limit of 35 miles per hour, and unprotected bike lanes.



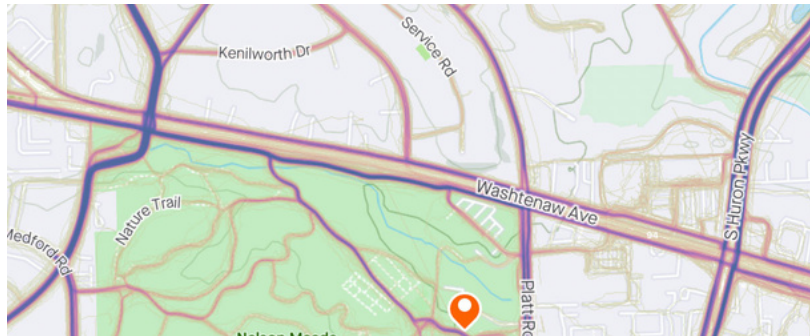
The heat map above, taken from the Strava Metroview platform, shows high bike activity recorded on this stretch of Stadium Blvd. High bike use on Stadium was surprising given our knowledge of the lack of bike infrastructure and heavy car traffic, but also expected, given the lack of alternative routes. PEAC students categorized the road as mean from looking at it; they were not comfortable riding on it.



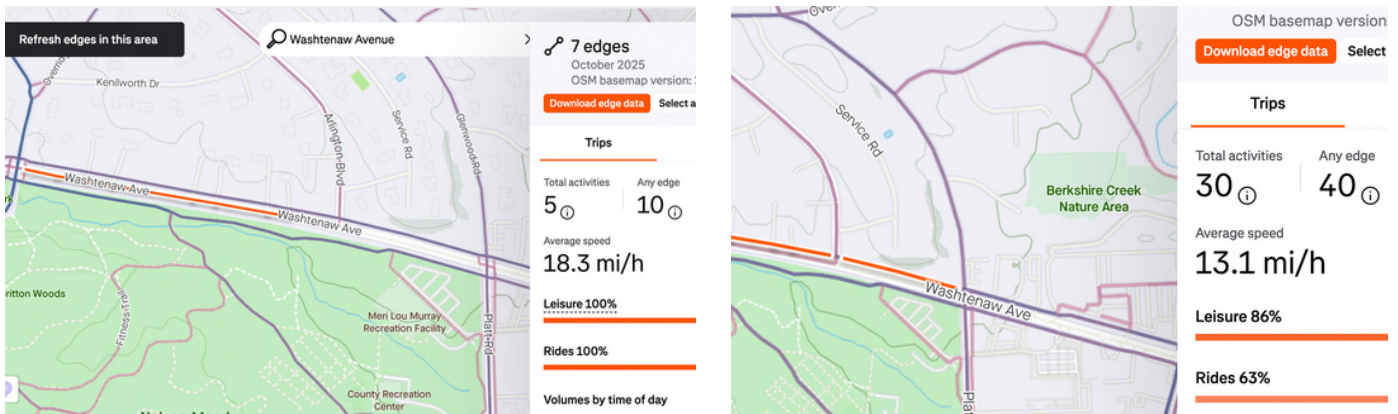
We then used the Strava Metroview platform to look at the edge data along this road which is high-use, but mean, according to PEAC students. The edge data demonstrate that more rides are happening on the sidewalk (left) than on the road (right). From this we can infer that the road is not safe for bicyclists, as PEAC students recognized. Students know that this is a mean street, and the data suggest so as well, as many cyclists opt to ride on the sidewalk instead. In this case, triangulating PEAC students' experiences with the Strava data accomplished both goals; it validated PEAC students' perceptions and exposed important nuances in the data.

2. Washtenaw Avenue, Ann Arbor

Washtenaw Ave. (I-94 business loop) is another high-traffic road that spans much of the city, with many shops and restaurants on or adjacent to it. The portion of Washtenaw Ave. depicted below, for example, goes past popular destinations including County Farm Park, Arbor Hills shopping center, Whole Foods, and others. This road has no separated spaces for bikes and a speed limit of 45 MPH, with many cars going faster.

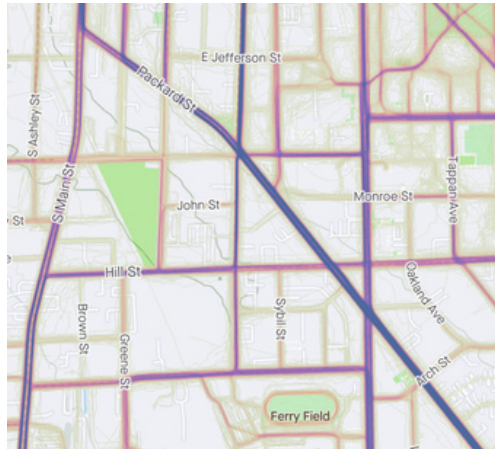


Like Stadium Ave., PEAC students were not comfortable riding on Washtenaw Ave., characterizing it as mean. Looking at the edge data corroborates PEAC students' labelling of the street as mean; very few rides occur on the street (left) compared to the sidewalk (right). The bottom image shows that even more rides are occurring within the park adjacent to the road. Almost as many occur on the sidewalk north of the road, however, suggesting that riding on the park side may be inconvenient due to implications for turning or crossing through traffic lights.



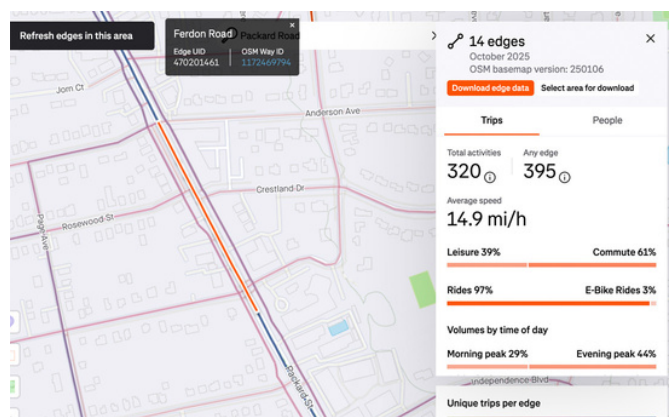
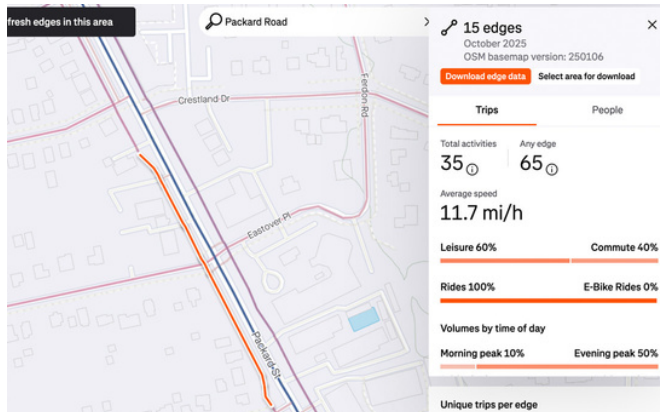
3. Packard Street, Ann Arbor

Packard St. is another high-traffic corridor that passes/connects many destinations including stores, restaurants, offices, and schools. It has unprotected bike lanes and a speed limit of 30 MPH, which increases to 35 MPH on the southern stretch.



PEAC students had mixed/in-between characterizations of Packard. Some felt that the cars were too close and/or too fast and noticed that this was true in some parts of the ride more than others. The route has portions that are more dangerous than others, though the Metroview data does not necessarily indicate that there may be any difference in safety along the road.

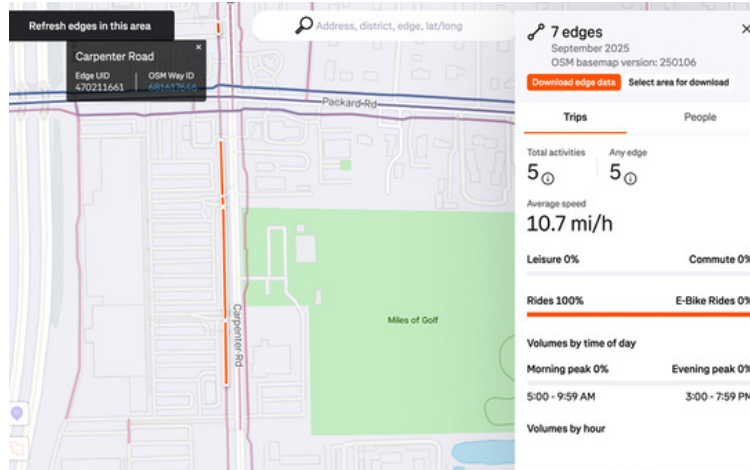
Along Packard, the edge data appears as three lines, indicating that some bikers are riding on the sidewalk and some on the street. Further north (e.g., between Dewey and Granger), the edge data indicate that cyclists use the unprotected bike lanes more so than the sidewalks, suggesting that these bike lanes are well-located. That said, the edge data for the sidewalks still indicate high use; although some riders use the bike lanes, they are insufficient to accommodate many riders along this route.



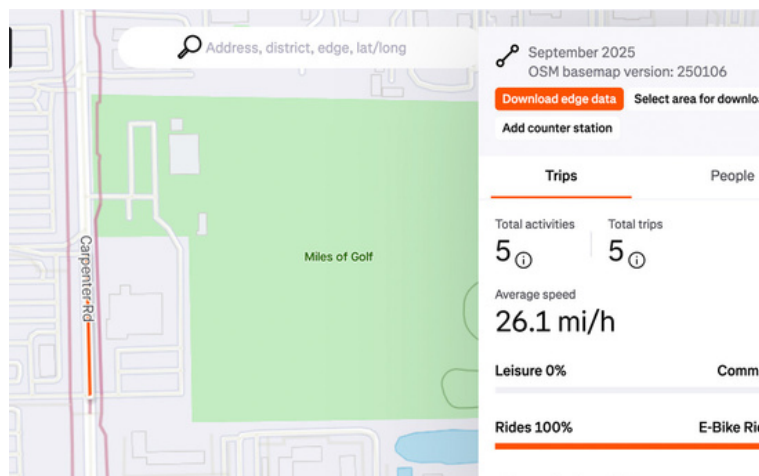
Further south on Packard, roughly the same number of riders use the bike lanes, but fewer riders use the sidewalk. This suggests lower use overall along this portion of Packard relative to further north, and specifically, lower use by riders who may be less confident in an unprotected bike lane versus on the sidewalk. This may indicate poorer sidewalks (e.g., uneven or broken areas), pointing to a potential need for repair; it also roughly coincides with the shift from 30 to 35 MPH.

4. Carpenter Rd., Ypsilanti

Students rode on Carpenter Rd. between Packard and E. Ellsworth—a high-traffic corridor without bike infrastructure. Students classified this road as mean and noted that they would be uncomfortable biking this route alone. Students cited cars’ high speeds and generally perceived the road as dangerous. The edge data show very low bike activity on Carpenter Rd., even though it connects to higher-use roads, aligning with students’ perceptions. This is the case on both the northbound and southbound sides of the street.

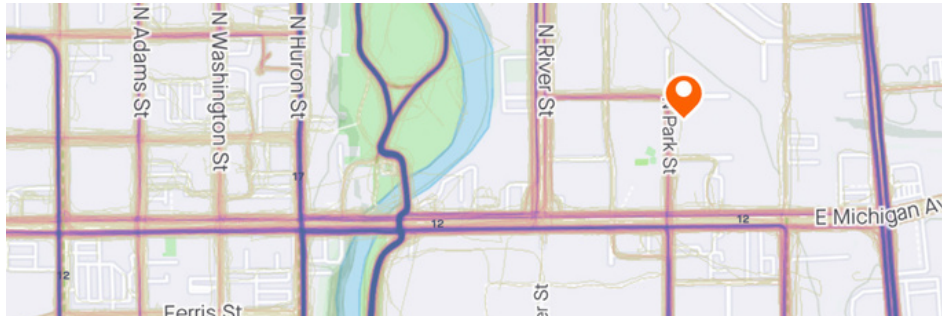


The edge data also show that most recorded rides are not on the street itself but on the sidewalk/shoulder, except for one small section (below). Along this section, the average bike speed increases significantly, suggesting that when bikers on this road must enter the street (for any reason, e.g., broken sidewalks), they must increase their speed in order to ride safely, indicating even lower accessibility.

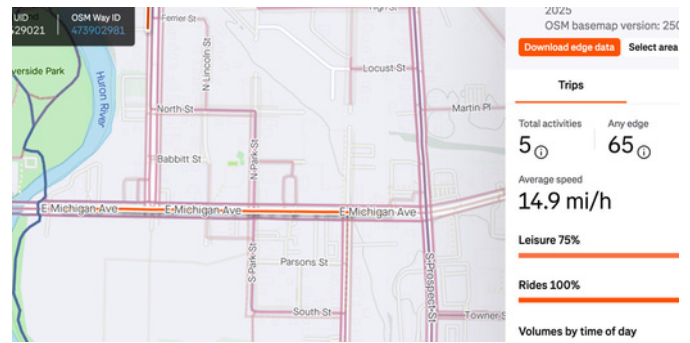
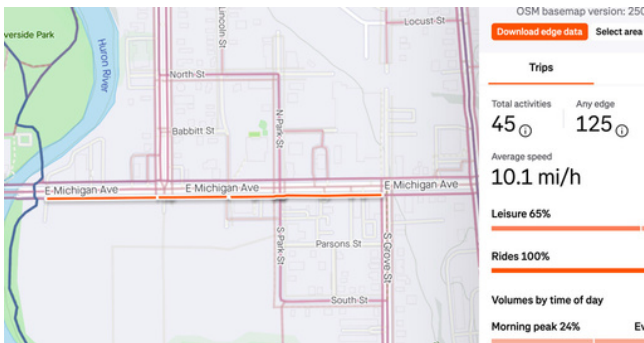


5. Michigan Ave., Ypsilanti

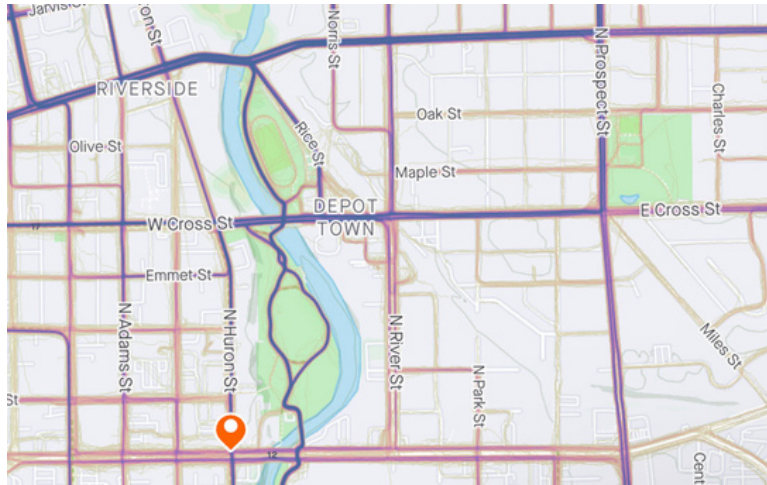
Students rode one block of Michigan Ave. and immediately agreed that it was mean. Michigan Ave. has no separated space for bikes and a speed limit of 30 MPH, with many cars going faster.



Looking at the edge data reveals that more bikers are opting to ride on the sidewalk (above) than in the street (below) by a wide margin, suggesting that riders do not feel safe on the street. In this case, PEAC students' perceptions align with Strava users' choices to ride on the sidewalk.

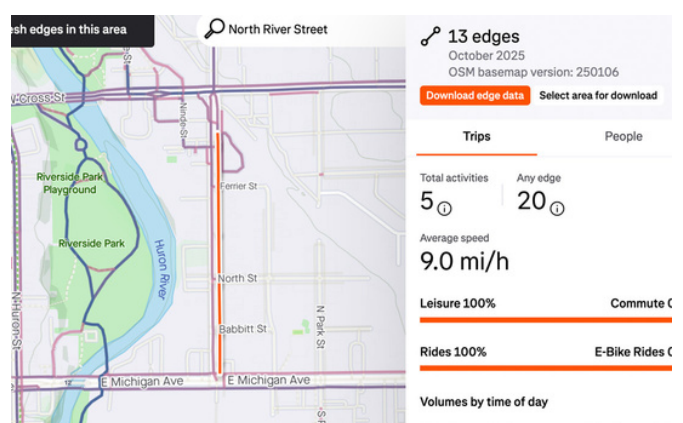
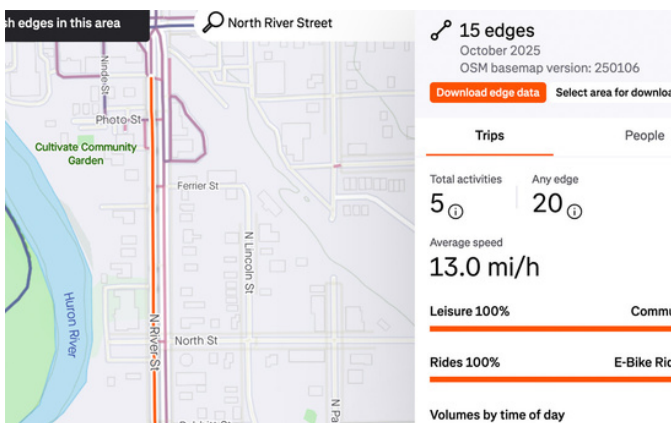


6. N. River St., Ypsilanti



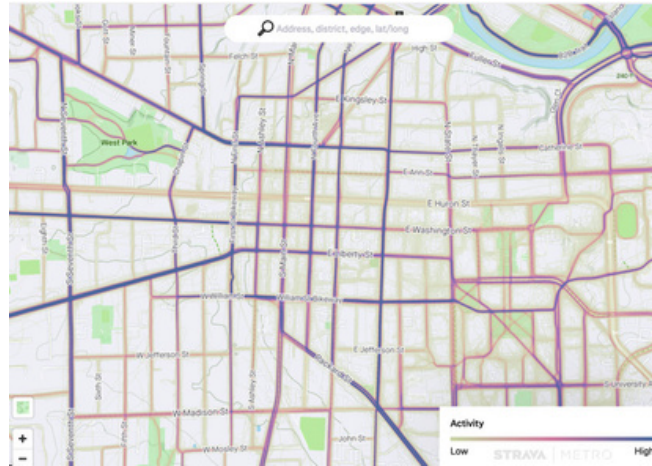
N. River St. has lower bike traffic relative to previous ride locations, as the heat map shows. PEAC students characterized it as nice, with lower and slower car traffic, even in the absence of dedicated bike infrastructure.

The edge data also show low recorded use. Relatively low use may indicate that it is not an important route; however, it runs across Ypsilanti connecting to higher traffic roads. Low use, then, may reflect lack of infrastructure and unsafe conditions; in this case, however, PEAC students deemed the street nice. This may indicate that the street is not popular with Strava users, or more experienced bikers generally, but is more accessible for a broader range of bikers.



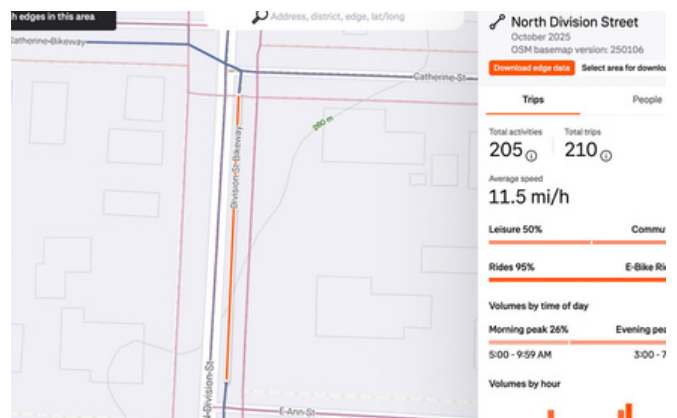
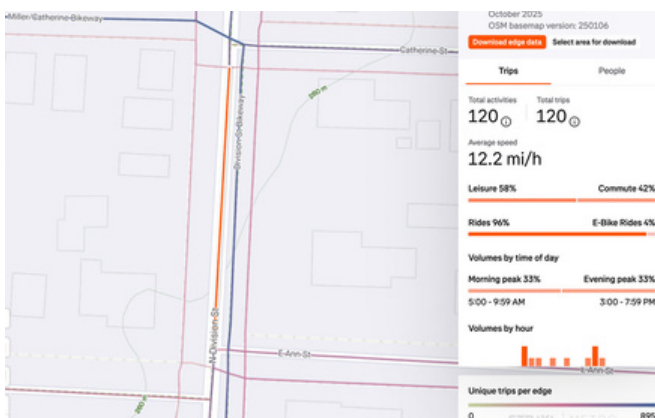
7. Division Ave., Ann Arbor

Division Ave. runs north to south through downtown Ann Arbor, connecting U-M’s campus to the northern area of the city. The heat map of the greater downtown area shows generally high bike use, as expected.



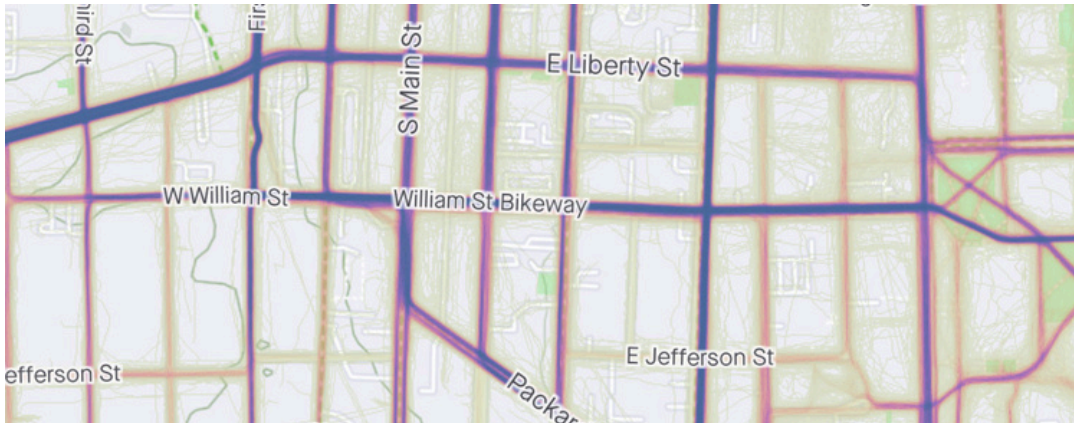
Students rode on Division Ave., one of Ann Arbor’s designated bikeways. It has a protected bike lane and a 25 MPH speed limit. Students characterized this road as nice. Looking at the edge data for Division shows not just that it has relatively high bike traffic; it also shows the effectiveness of the protected bike lane, which has around 70% more use (comparing the photos below: left shows sidewalk traffic, while right shows bike lane traffic).

In this case, PEAC students’ characterization of the road as nice is reflected in the Strava data; bikes more often use the bike lane because it is convenient and safe. With less bike traffic on the sidewalk, too, this road is safer for both bikers and pedestrians.

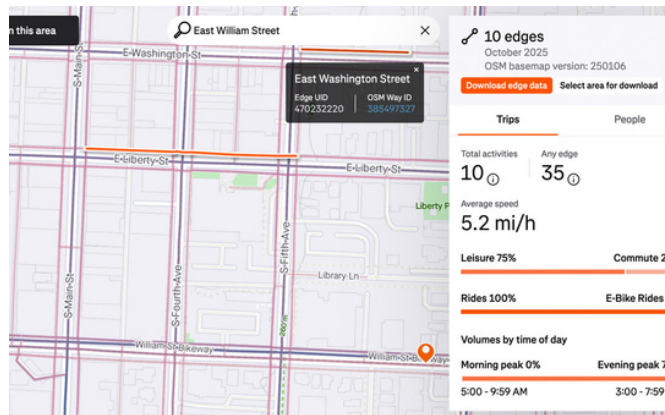
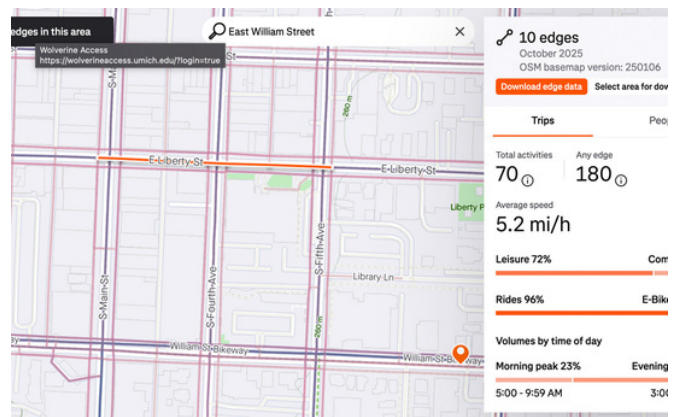
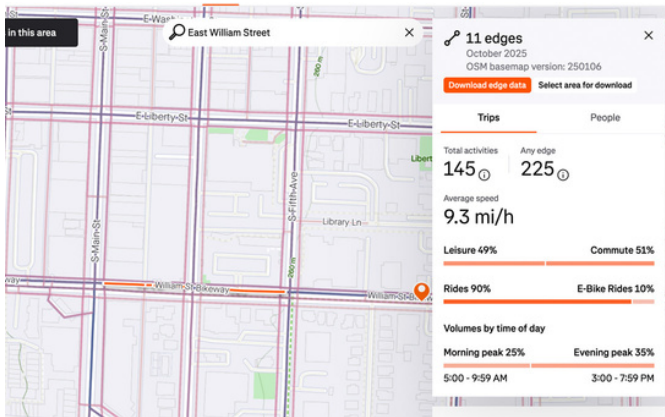


8. William St., Ann Arbor

Like Division, students recognized William St., which has protected bike lanes, as nice. The heat map shows that the street, like its surrounding streets, gets high bike traffic.

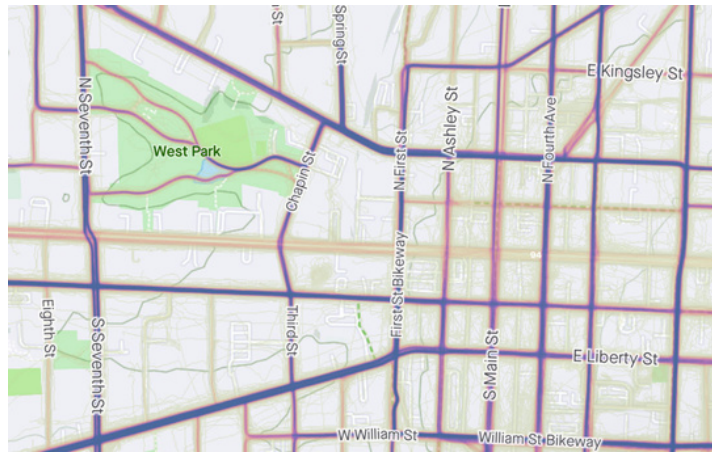


The edge data indicate that the protected bike lane (left) gets significantly more use than either the street (right) or the sidewalk (below) on Liberty St., which runs parallel to William. The data suggests that in line with PEAC students' perceptions, William is a nice street. PEAC students' expertise is consistent with other bikers/Strava users and city planners who conceptualized William St. as a bikeway.



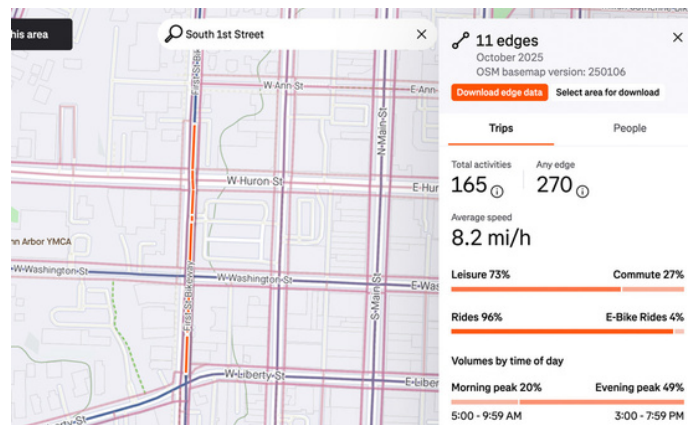
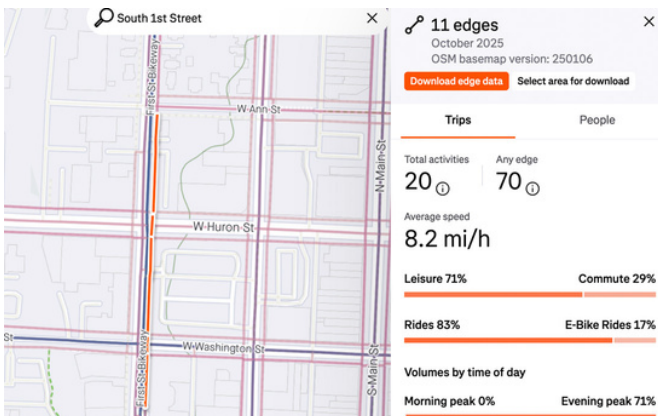
9. First St., Ann Arbor, Ann Arbor

First St. has another protected bike lane near downtown Ann Arbor, which connects to bikeways on William and Division. It also crosses major roads including Liberty, Huron, and Miller. The heat map shows that it has high use, particularly compared to parallel streets (Ashley and Main). PEAC students characterized First St. as nice, as it has protected bike lanes and a specific traffic light for bicycles.



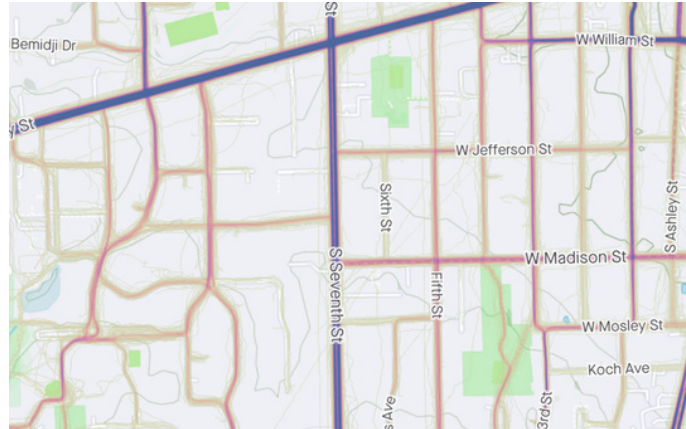
The edge data confirms the much higher use of the protected bike lane relative to the sidewalk. Like on Division and William, PEAC students’ characterization of the road as nice is reflected in the Strava data; riders more often use the bike lane because it is convenient and safe.

The students’ observations included one nuance—the dedicated traffic light for bicycles felt too short. Students did not feel they had enough time to get through the green light. This is an important detail for city planners that the Strava data alone do not reflect.



10. Seventh St., Ann Arbor, Ann Arbor

Seventh St. has an unprotected bike lane and a speed limit of 30 MPH, along with several hilly stretches. It has high activity as it is a major road connecting to other major roads; many bikers use Seventh St. to travel between residential areas and downtown.



Students characterized Seventh as in-between, unlike other high-use roads near downtown which students deemed nice. This perception of Seventh as somewhere in between nice and mean aligned with what the Strava Metroview data suggest. The edge data show that more riders are using the street (presumably, the protected bike lane) than the sidewalk. We know from PEAC students' experiences, though, that the street is not as nice as others, suggesting that it could benefit from the installation of a protected bike lane. Students also noted that the bike lane narrowed at some points, making the street feel meaner.

