Sidewalk Accessibility Disparities
A Case Study of Urban and Rural King County, Washington

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Introduction

- 10-17% chance of a magnitude 8+ earthquake along the Cascadia subduction zone in the next 50 years
- Transportation and roadways will suffer large-scale damage
- Sidewalks assist those with TBIs and orthopedic injuries.
- Sidewalks aid in navigation and safety in disaster settings

Reasearch Question

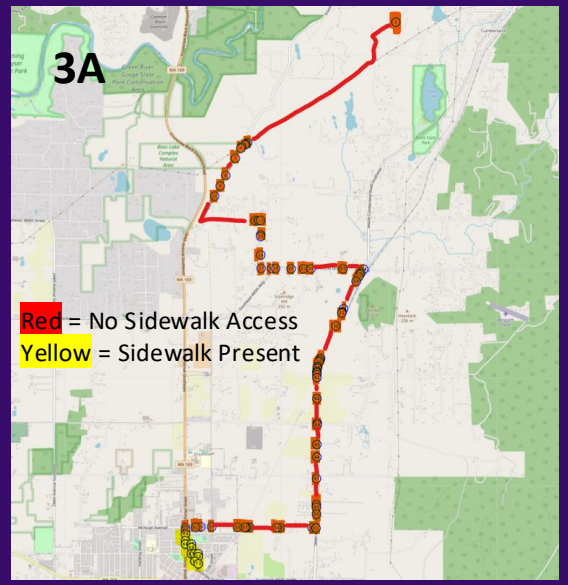
When navigating to a trauma center in the event of an earthquake, how does sidewalk accessibility vary between rural and urban areas in King County, WA?

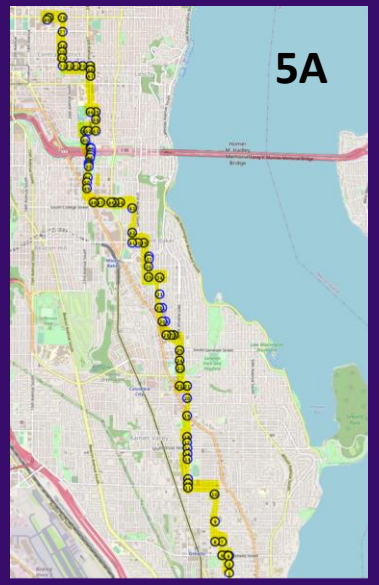
Methods

- CANVAS Streetview (Google Streetview)
- Surveyed/Audited 74 locations
- Excel Data Analysis and Comparison
    - Sidewalk frequency

Data

	Total Coordinates	Coordinates w/ Sidewalks
Route 3A (R)	74	13 (17.6%)
Route 5A (U)	80	80 (100%)
Route 5B (U)	80	78 (97.5%)





Discussion & Data Analysis

- In ≈ 18% of surveyed sites, sidewalks were present.
- Extremely high Kappa Scores (>-0.9) in our team and other teams' data
- Presence of sidewalks was significantly higher in urban routes (Over 5 times higher)

Limitations

- Sidewalks were only recorded if raised and separated
- Obstructed CANVAS Streetview
- Smaller pathways and trails were not considered as sidewalks

Call to Action

- Construction of more sidewalks to facilitate navigation and safe transportation, especially in rural areas
- Sidewalk cleaning and maintenance
- Funding to eliminate the disparity between rural and urban access to care

Works Cited

1. FHWA. safety.fhwa.dot.gov/saferjourney1/library/countermeasures/01.htm.
2. FHWA. safety.fhwa.dot.gov/ped_bike/tools_solve/walkways_trifold/walkways_trifold.pdf.
3. Bader MD, Mooney SJ, Lee YJ, Sheehan D, Neckerman KM, Rundle AG, Teitler JO. Development and deployment of the Computer Assisted Neighborhood Visual Assessment System (CANVAS) to measure health-related neighborhood conditions. Health and place. 2015 Jan 1;31:163-72. doi: 10.1016/j.healthplace.2014.10.012