Use Cases Discovery - Summary

This document summarizes the toplines from our March 28, 2024 NC-BPAID meeting, where we brainstormed and discussed potential use cases for data on bike, pedestrian and accessibility infrastructure.

During the meeting, participants split into three groups to discuss their use cases for bicycle, pedestrian, and physical accessibility infrastructure data, and come up with a list. Broadly, these use cases include the following, many of which overlapped across the three groups:

- ADA and transition planning
    - PROWAG assessment
- Asset management
    - Asset inventory
    - Asset condition
    - Examining commercial use
- Community engagement
    - Comparing communities
    - Measuring funding needs
- Infrastructure delivery
    - Prioritization
    - Financing
- Localized wayfinding
    - Cartography
    - Routing
- Performance management
    - Basic descriptive statistics
    - Tracking infrastructure delivery
- Public health planning
- Safety analysis
    - Crash factor identification
    - Selecting and implementing countermeasures
    - Evaluating countermeasures
- Transportation modeling
    - Travel demand modeling
    - Accessibility to destinations
    - Level of traffic stress or level of service
    - Network gap analysis
    - Disaster/emergency response
- Trip planning and navigation
    - Connections between non-motorized network and other modes

Underlying these individual use cases are some core needs:

Geographic

- Where is the infrastructure located?

Physical

- What type of infrastructure (e.g., sidewalk, separated bike lane, multi-use path)?
- What are the general physical characteristics of the infrastructure (e.g., width, surface type, separation material, flush curb)?
- What are the detailed physical characteristics of infrastructure (e.g., geometric design details)?
- What is the condition of the infrastructure (i.e., is maintenance necessary)?

Contextual

- What is the relevant physical context of the infrastructure (e.g., number of lanes, speed limit of adjacent infrastructure)?
- What is the relevant temporal context of the infrastructure (e.g., crashes, vehicle volume of the adjacent infrastructure)?

Regulatory

- What are the policies for using the infrastructure (e.g., bicycle and e-bike access, streeteries, sidewalk robots)?
- Is the infrastructure in compliance (e.g., ADA/PROWAG)?

These basic needs cover many of the use cases listed above, and with them met we can also answer higher level questions central to the remaining use cases, like:

- How do I get from my location to a specific destination using this infrastructure?
- What destinations are reachable from a given location using this infrastructure?
- What is the experience of using the infrastructure (e.g., level of service, level of traffic stress)?
- Where might states, counties and cities want to build or upgrade infrastructure?