BPAC Pedestrian and Bicycle Data Collection and Consistency

April 9, 2018
Obtain regionally consistent bike and pedestrian asset data that supports:

• potential model improvements for pedestrian and bicycle travel
• plan monitoring
• consistent and standardized evaluation of bike and pedestrian connectivity needs region-wide
• the preservation and maintenance work program
• local needs
The Challenge

• Inconsistent data formats between jurisdictions – data sets are difficult to integrate
• Inconsistent information – different data points are collected and not consistent regionally
• Lack of data in some areas
• Longevity of data collection activities and updates
• Challenge of accessing all the data in one place
The Challenge

Sidewalk Data Set Example: Inconsistent data formats

- Polygons
- Lines on both sides
- Center line with L/R attributes
Getting there...

- Regional and national conversations about standardization
- Recommendations from the BPAC
- PSRC data collection efforts based on these conversations
- Interagency coordination
Pedestrian Data
Sidewalk Data Collection into Open Street Maps

• Existing transit networks and tools already use the Open Street Maps (OSM) networks

• Open source – opportunity for PSRC and partners to **collectively contribute** to one data set

• Data in OSM would benefit from analysis tools developed or being developed (AccessMap)

• Provides interoperability and maintainability
Step 1: Drawing in the sidewalk network

- Criteria for where PSRC will focus on (such as access to transit)
- Prioritize where to begin based on:
  - what other agencies are doing
  - places we want to look at walkability (such as new BRT routes coming to several counties, ferry terminals, etc.)
- Identify process (bulk import or manual coding)
- Sidewalks as metadata to roads vs. sidewalks mapped as ways
- Define essential tags that are needed for step 1
- Get started...
Step 1: Drawing in the sidewalk network

Normal OpenStreetMap

Municipal Data + New Tools

New Specification (example)

Sidewalk:
- location
- condition
- elevation

Curb ramps

Street crossings

And beyond!
<table>
<thead>
<tr>
<th>sidewalk=* , highway=crossing</th>
<th>footway=sidewalk, footway=crossing</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><img src="image1.png" alt="Left Image" /></th>
<th><img src="image2.png" alt="Right Image" /></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self navigation with sidewalks as attributes of streets in OSM</strong></td>
<td><strong>Self navigation with sidewalks as ways in OSM</strong></td>
</tr>
</tbody>
</table>

- **sidewalk=*, highway=crossing**: Shows sidewalks marked as attributes of streets in OSM.
- **footway=sidewalk, footway=crossing**: Demonstrates sidewalks marked as ways in OSM, indicating they can be navigated by wheelchair users with lowered curbs.
Step 1: Drawing in the sidewalk network

<table>
<thead>
<tr>
<th>Ground Conditions</th>
<th>Using sidewalk=both/right/left</th>
<th>Using highway=footway + footway=sidewalk</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Sidewalk ground conditions at E Harrison and 12th Ave, Seattle WA" /></td>
<td>Sidewalks are described as street metadata (not displayed by default)</td>
<td>Sidewalks are described with footpath lines</td>
</tr>
</tbody>
</table>
Step 2: Consistency for other attributes

- Identify what other attributes are important to collect
  - Condition, accessibility, width, slope, etc.
  - For what purpose – access routing, maintenance costs, other local needs

- Work with BPAC and OSM Community on consistency of attributes
  - OSM is a global community where some consistency (standards) have been set, some can be proposed

- Communicating the proposed framework

https://wiki.openstreetmap.org/wiki/Proposed_features/sidewalk_schema#The_underlying_pedestrian_network
A potential ‘menu’ approach

‘Menu’ approach as guidance for local jurisdictions (example):

• recommend data points x, y and z are collected
• provide some networking approaches that can be integrated into regional data sets or OSM (example: ArcGIS for local governments)
• contribution of data collection into Open Street Maps
  • Suggested process (sidewalks as metadata or ways)
  • Suggested tagging of attributes
<table>
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<tr>
<th>Regional Bicycle Facility Typology</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shared Use Path</td>
<td>Shared Use Paths are for the exclusive use of pedestrians, bicyclists and other active transportation users. They are separated from motorized vehicular traffic by an open space, barrier, curb, or exist in an independent corridor.</td>
</tr>
<tr>
<td>Cycle Track (Protected Bicycle Lane)</td>
<td>Cycle Tracks are an exclusive bicycle facility within or adjacent to the roadway but separated from motor vehicle traffic by a physical barrier or change in elevation. Cycle Tracks are also known as “protected bicycle lanes.”</td>
</tr>
<tr>
<td>Bike Lane</td>
<td>Bike Lanes are a portion of the roadway designated for preferential use by bicyclists. Bike lanes include pavement markings indicating one-way bike use. This category includes a variety of implementation strategies such as buffered bike lanes, contra-flow bike lanes, colored bike lanes and bike passing lanes</td>
</tr>
<tr>
<td>Paved and Striped Shoulder</td>
<td>Paved and Striped Shoulders are paved shoulders defined by a fog line but without bike pavement markings indicating preferential bicycle use.</td>
</tr>
<tr>
<td>Shared Lane Markings (Sharrow)</td>
<td>Shared Lane Markings are pavement markings, or “sharrows,” which are used to indicate roadways that have a shared lane environment for bicycles and automobiles. SLMs reinforce the legitimacy of bicycle traffic on the street and recommend proper bicyclist positioning.</td>
</tr>
<tr>
<td>Neighborhood Greenway</td>
<td>Neighborhood Greenways are low speed, low volume local streets that prioritize pedestrian and bicycle travel with traffic calming treatments and improving arterial crossings. These often parallel nearby arterials and typically include a combination of treatments and aesthetics. Neighborhood Greenways have been referred to as Bike Boulevards.</td>
</tr>
</tbody>
</table>
Completed data set

- 2011 – BPAC adopted a bicycle facility typology
- 2014 – Typology was updated and PSRC released the first completed set of bike facilities
- 2017 – Bike Facility data set was updated for the 2018 plan update
Next Steps

1. Get the word out and communicate the benefits

   **Shapefile Download**
   https://www.psrc.org/regional-bicycle-facilities

   **View the Webmap**
   https://www.psrc.org/bicycle-and-pedestrian-planning

2. Create a game plan for updates

3. Perhaps eventual integration into OSM
Counts for pedestrians and bicyclists because people walking and bicycling COUNT!

- Calibrate bike model
- Better evaluate health and safety impacts
- Demonstrate use when projects are built
Actions

- Peer review – other regional count programs
- Collect existing count data – annual counts, before/after project counts, permanent counters
- Assess gaps and preferred method for additional counts