Soup to Nuts:
Integrating GIS into Seattle’s Bicycle Master Plan Update Process

UC 2015
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Our mission, vision, and core values

**Mission**: deliver a high-quality transportation system for Seattle

**Vision**: connected people, places, and products

Committed to **5 core values** to create a city that is:

- Safe
- Interconnected
- Affordable
- Vibrant
- Innovative
Public Engagement – Phase 1
Best & Worst Streets for Riding
State of the Bicycling Environment

- Where are the gaps in the planned system?
- Where are there opportunities to expand the planned system?
Equity Analysis

- Identify areas of the city where underserved populations live
- Identify areas that have the lowest level of bicycle investment
Public Engagement – Phase 2
# Bicycle network development

## Facility Designation Guidelines

<table>
<thead>
<tr>
<th>Generalized Bicycle Facility Designation</th>
<th>Bicycle Facility Types</th>
<th>Posted Speed Limit (mph)</th>
<th>Average Daily Traffic (ADT) per day</th>
<th>Street Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neighborhood Greenway</td>
<td>Neighborhood Greenway</td>
<td>20</td>
<td>1,500 or less</td>
<td>Non-arterial</td>
</tr>
<tr>
<td>Shared Street</td>
<td>Shared lane pavement marking (sharrow)</td>
<td>25 - 30</td>
<td>To be used due to ROW constraints or topography</td>
<td>Non-arterial and Collector/Minor arterials</td>
</tr>
<tr>
<td>In street, minor separation</td>
<td>Bicycle lane; Climbing Lane</td>
<td>30</td>
<td>8,000 or less</td>
<td>Collector arterial</td>
</tr>
<tr>
<td></td>
<td>Buffered bicycle lane</td>
<td>30</td>
<td>15,000 or less</td>
<td>Collector/Minor arterials</td>
</tr>
<tr>
<td>Cycle Tracks (protected bicycle lanes)</td>
<td>Physically separated (raised or with barrier on-street facility)</td>
<td>30 and greater</td>
<td>15,000 and above</td>
<td>Minor/Principal arterials</td>
</tr>
<tr>
<td>Off-street*</td>
<td>Multi-use trail</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Citywide Network:
“All ages and abilities” facilities connect to key destinations

- Multi-use trails
- Cycle tracks (protected bike lanes)
- Neighborhood greenways

Local Connectors:
Facilities that connect to citywide network and serve local destinations

- Neighborhood greenways
- Bike lanes
- Buffered bike lanes
- Shared lanes
## Bicycle network facilities

### Bicycle Facilities in the Recommended Bicycle Network (lengths in miles)

<table>
<thead>
<tr>
<th></th>
<th>Existing Network*</th>
<th>Proposed Network Improvements</th>
<th>Total Network</th>
<th>Percent of Total Network</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Upgraded to Existing Bicycle Facilities</td>
<td>New Facilities</td>
<td>Total New or Upgraded Facilities to Build</td>
</tr>
<tr>
<td>Off Street</td>
<td>46.9</td>
<td>0</td>
<td>32.0</td>
<td>32.0</td>
</tr>
<tr>
<td>Cycle Track (protected bicycle lane)</td>
<td>3.2</td>
<td>52.1</td>
<td>49.5</td>
<td>101.6</td>
</tr>
<tr>
<td>Neighborhood Greenway</td>
<td>10.3</td>
<td>0</td>
<td>238.6</td>
<td>238.6</td>
</tr>
<tr>
<td>In Street, Minor Separation</td>
<td>44.4</td>
<td>17.9</td>
<td>75.6</td>
<td>93.5</td>
</tr>
<tr>
<td>Shared Street</td>
<td>30.0</td>
<td>0</td>
<td>7.8</td>
<td>7.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>134.8</strong></td>
<td><strong>70.0</strong></td>
<td><strong>403.5</strong></td>
<td><strong>473.5</strong></td>
</tr>
</tbody>
</table>

*Existing network totals include only existing facilities that meet the bicycle network facility designation guidelines or, in some cases, where right-of-way is limited and a higher-quality facility could not be implemented.

Over half (54%) of proposed network is on non-arterial streets
Prioritization

- Safety
- Equity
- Ridership
- Livability
- Connectivity

Bicycle Crash History
- Arterial Crossings
- Traffic Volume
- Posted Speed Limit

Health Indicators
- Minority Population Below 200% of Poverty
- No Cars Available Under 18 & 65 and Older

Proximity to Targeted Land Use
- Proximity to Population Density

All Ages and Abilities Facility Geographic Equity
- Is Part of the Citywide Network
- "Heroic" Project Connects to One or More Existing Facility

Prep Data

Join Existing Network to Census Tracts

Calculate Metric (BMP Miles per Person)

Clean-up Data so next steps don't fail

Select Each Quartile, Select Proposed Network in that Quartile and Calc Score

Requires the user to define quartile boundaries
Implementation Plan
Questions?

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http://www.seattle.gov/transportation/bike.htm

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