Who are we designing for?
Biking is ...?
Who are we forgetting?

Interested but Concerned 51–60%

Not able or interested (31–37%)

Strong (1%)

Enthused (6%)
Safe Bikeways attract more riders

Aggregate data from Portland, New York City, Chicago, San Francisco, and Philadelphia
Since the *Urban Bikeway Design Guide*

UBDG, 1st Ed.

UBDG, 2nd Ed.

Total PBL Mileage, NACTO Cities
NACTO’s Designing for All Ages & Abilities
Who are our design users?

Photo: People for Bikes
All Ages & Abilities means ...

Safe

Attractive

Equitable

Photo: City of Austin

Photo: City of Vancouver

Photo: People for Bikes
Speed Increases Stress

Passing Events per 10min Trip

- 20 mph
- 25 mph
- 30 mph

1,000 ADT
Volume Increases Stress

- 1,000 ADT
- 2,000 ADT
- 3,000 ADT

20mph: 10 passing events per 10min trip
25mph: 20 passing events per 10min trip
30mph: 30 passing events per 10min trip

1,000 ADT
2,000 ADT
3,000 ADT

Passing Events per 10min Trip
Speed & Volume Amplify Stress

Passing Events per 10min Trip

- 20mph
  - 1,000 ADT: 10
  - 2,000 ADT: 20
  - 3,000 ADT: 30

- 25mph
  - 1,000 ADT: 10
  - 2,000 ADT: 20
  - 3,000 ADT: 30

- 30mph
  - 1,000 ADT: 10
  - 2,000 ADT: 20
  - 3,000 ADT: 30
### Contextual Guidance for Selecting All Ages & Abilities Bikeways

<table>
<thead>
<tr>
<th>Roadway Context</th>
<th>Key Operational Considerations</th>
<th>All Ages &amp; Abilities Bicycle Facility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any</td>
<td>Any of the following: high curbside activity, frequent buses, motor vehicle congestion, or turning conflicts¹</td>
<td>Protected Bicycle Lane</td>
</tr>
<tr>
<td>&lt; 10 mph</td>
<td>Less relevant</td>
<td>Pedestrians share the roadway</td>
</tr>
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<td>≤ 20 mph</td>
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<td>&lt; 50 motor vehicles per hour in the peak direction at peak hour</td>
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<td>≤ 500 – 1,500</td>
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</tr>
<tr>
<td></td>
<td>≤ 6,000</td>
<td>Low curbside activity, or low congestion pressure</td>
</tr>
<tr>
<td>Greater than 26 mph¹</td>
<td>≤ 6,000</td>
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<tr>
<td></td>
<td>Multiple lanes per direction</td>
<td></td>
</tr>
<tr>
<td>High-speed limited access roadways, natural corridors, or geographic edge conditions with limited conflicts</td>
<td>Any</td>
<td>High pedestrian volume</td>
</tr>
<tr>
<td></td>
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# Contextual Guidance

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Low-Speed, Low-Volume Roadways Can Be Shared

- Use both Peak Volume & Off-Peak Speed
- 20-25mph max Target Speed
- Manage high-end Speeds
- Reduce / Filter Volume
- Use Time of Day analyses for deliveries & stressors

*Photo: NACTO*
## Contextual Guidance

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Conventional & Buffered Lanes Organize

- Set 95th Percentile below 25mph
- Reduce Motor Vehicle Volume
- Reduce Curbside Conflicts
- Address Intersection Conflicts
- Adjacent Traffic Decreases Comfort
## Contextual Guidance

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Separated Bikeways are Transformative

- Protect where 95th Percentile exceeds 25mph
- Carry protection through Intersections
- Reduce Curbside Conflicts
- Upgrade Separation as Stress Increases
- Minimize the number of travel lanes

Photo: Adam Coppola for People for Bikes
Three Levers to Change the Street

Design

Operation

Network
Design

- Flip the Bike Lane & Parking Lane
- 4-to-3 Road Diet / Repurpose Motor Vehicle Lane
Make incremental improvements
Make incremental improvements
Operation

- Low-Speed Signal Progression
- Turn Prohibition
- Phase Separation
Operate for Comfort

Photo: Seattle DOT
Network

• Forced turns / Diversion
• Time-of-Day Regulations
• Large Vehicle Prohibitions
Change Network Role
Reduce Stress, Improve Comfort
Address Common Sources of Stress
Multiple Motor Vehicle Lanes: 4-to-3 road diet
Address Common Sources of Stress
Motor Vehicle Congestion
For more see: www.nacto.org

Linda Bailey
lbailey@nacto.org