Making It Count: Collecting and Using Bicycle Data
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Overview
- Bike count technology and usage examples
- Data collection case study
- Conclusion

Why do we need better data?
- Helps to determine where investments are most needed
- Allows us to assess change, including number and rate of crashes
- Helps us quantify benefits of walking & biking
- Ultimately, makes active transportation projects more competitive for funding

National Bike and Ped Documentation Project

Issues with Pen & Paper Counts
- Weather & Seasonal Variations make estimating annual bicycle traffic difficult
- Bikes and peds have different travel patterns
- The “herding the cats” problem
- Pen and paper is time consuming to digitize

Existing Count Technology
New Solutions

Mobile Tech

<table>
<thead>
<tr>
<th>Category</th>
<th>Cost</th>
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<tbody>
<tr>
<td>APP-BASED COUNTING SOFTWARE</td>
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<td>GPS ENABLED ROUTE TRACKERS</td>
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<td>STRAVA METRO</td>
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<td>RIDE REPORT</td>
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<td>ANONYMUS DATA COLLECTION</td>
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<td>AIR SAGE</td>
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Imagery

<table>
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<td>VIDEO DETECTION SYSTEMS</td>
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Data Collection Case Study

Low Cost Hardware

Low-Cost Hardware

Crash Report

Age and gender do not match the overall population.
Concern about potentially higher frequency of crashes along streets in lower income, non-white neighborhoods.

At-risk bicycle population groups
- Youth (10-19)
- Crashes peak for school-aged children (0-17) from 3-7pm
- Young adults (20-24)
- Males (80% of crashes)
- Going straight or through an intersection

Segments of motorists most involved with crashes
- Driver ages are representative of the general population
- Passenger cars/station wagons, pickups, vans/motorhomes
- Right-turning vehicles (40% of crashes)

The bike failed to yield in 20% of reported crashes and disregarded the traffic control in 6.5% of crashes. Approximately 60% of crashes have a recorded hazardous bicycle action of ‘none’ or ‘slower’.

The data is important to the project’s trajectory, yet tells an incomplete story.

Gaps in Crash Report
- Residents’ points of view (and perceived safety/comfort)
- Exposure data
- "Dooring" type crashes
- Unreported crashes
- Distracted driving

Use other resources to augment knowledge:

Campaign Scan
100 campaigns included in the project database
Gaps in Crash Report

Community feedback and outreach to Spanish-speakers:

- Demographics
- Bicycling/driving frequency
- Reactions to existing media campaigns

Community Survey & Focus Groups Research

- Online survey fielded for 2 weeks
- Divided respondents into bicyclists and motorists based on response to following question:
  - How often do you typically ride a bicycle in the spring, summer or fall?
  - Cyclists – anyone who indicated they typically ride a bicycle on a daily, weekly or monthly basis.
  - Motorists – anyone who indicated they typically ride a bicycle quarterly, annually or never.
- Recruited focus groups participants with incentive prize drawings

Community Survey

- 2,208 responses (English), 39 responses (Spanish)
- 78% of respondents had a college/graduate degree, compared to 32% of the county’s population
- Skewed toward higher income brackets
- Spanish-speaking respondents more likely to have children at home, less likely to have completed college, lower income
- Spanish-speaking respondents showed a marked preference for messaging encouraging respect/sharing otherwise differ significantly from English-speaking respondents.

Survey & Focus Group Findings

- Suburbanites ride farther than city dwellers.
- Riders aged 21–29 travel short distances, riders 30+ years old more diverse in their riding distances.
- Women also ride shorter distances than men.
- Men more likely than women to ride on city streets and rural roads.
- Riders in their 20s were most likely to say they typically ride on sidewalks.

Key Findings

- Responses by both men and women age 18–29 show significant differences in cycling behavior compared to older riders.
  - Daily male riders ride on all roadways in all seasons and are significantly less likely to obey traffic signals and signs.
  - Young men are significantly less likely to obey traffic signals and stops than are older or female riders.

Key Findings

- Weekly riders are men & women riding mostly on neighborhood streets/trails for fitness/health, frequently wear a helmet, obey traffic signals and signs, signal turns, and ride with traffic.
- Monthly riders are women with children still at home, riding short distances on neighborhood streets or on sidewalks, least likely to wear a helmet, signal turns, or ride with traffic.
Key Findings

- Men are much more likely to ride more often and to ride greater distances than women.
- Women are more likely than men to report always wear a helmet and to obey traffic signals and signs.

Key Findings

- Data would indicate that motorists treat men and women cyclists differently on the road; for example, choosing to follow female cyclists rather than passing too closely to them, which is a motorist behavior reported much more frequently by male riders.
- There is no significant difference in the feeling of safety indicated by different ages, genders, residence location or cycling frequency.

Law Enforcement Survey

What have we learned?

- Men and women behave very differently
- Men and women may be treated differently by motorists
- We do not have good data on ethnic/racial group cycling behavior
- Need more research and outreach to minority groups

Law Enforcement Survey

Sharp increase in cycling safety in Portland as cycling levels rose:
- 6-fold increase in bike trips
- 70% fall in crash rate
For more information...

Check out our free white paper:
Altaplanning.com/resources
"Innovation in Bicycle and Pedestrian Counts" (March 2016)

Ask us about our email newsletter and follow our latest research project!

Thank you!
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