DATA & ANALYTICS FOR ASSESSING THE NEEDS OF VULNERABLE ROAD USERS

Fred Young | Managing Director | SE Asia
“Vietnamese people don’t walk.”
Vietnam
A lack of comprehensive data about biking and walking makes it difficult to advocate for, plan for, and implement facilities where they help our communities most.
USA in 2002:
• No consistent, uniform data collection and analysis for active mobility
• Multiple, inconsistent methodologies across agencies and country
• No sharing of data at a national level
• Result = difficult to justify funding, document benefits, understand what influences walking and bicycling
Goals of the **National Bicycle and Pedestrian Documentation Project (2002)**:

- Develop a **consistent national methodology** for conducting counts and surveys
- Establish a **national database** of count information
- Use database to **begin analysis** on the correlations bicycle and pedestrian activity and local characteristics
Pedestrians & Bicyclists
Male / Female
Helmet / No Helmet
Also: Strollers / Wheelchairs / Scooters / Skateboards / Roller-skates / Unicycles / if it moves and doesn’t have a motor, we count it
Weather / Date / Time / Location

What to Count?
### Daily and weekly count from across North America: Consistently Inconsistent

#### When to Count?
Monthly use in North America follows regional seasonal patterns.

Use v. Temperature

Official Annual National Count (USA): Mid-September
Optional Dates:
- Mid-January
- Mid-May
- Mid-July

When to Count?
• Official National Count Dates (USA): Second week of September (one weekday, one weekend day)

• Locations: previous count location, bicycle facility, mixed land uses, high crash corridor

• Select & train surveyors

• Conduct survey

• Analyze results

Annual Count Methodology
Count at same location every year to see trends over time.
More than just count data: surveys and interviews add dimension and insights to the data

"I bike because it saves time — I get where I need to go while getting exercise."
- ARTHUR, MIDTOWN

"I like to run. I enjoy being free, outside."
- MICHELLE, LITHONIA

"I love being able to bike my five- and eight-year old to school every morning."
- KATIE, CANDLER PARK

"I enjoy the health benefits of walking — not just the physical health benefits also the mental health benefits. Like taking in the sights and sounds around me. It's nice to walk in Midtown but in South Fulton we need wider sidewalks that don't stop all the sudden."
- KAYLA, SOUTH FULTON COUNTY NEAR THE AIRPORT

"Riding to work wakes me up and when I get there, my head is clear and ready for the day."
- JERRY, MIDTOWN RESIDENT

"Even though I drive to work, I like to walk to get lunch because there are a lot of places to go near the office. I could imagine biking to work if the roads were friendlier."
- JASON, WEST SIDE.

Surveys & Interviews
National Bicycle and Pedestrian Documentation Project

About
One of the greatest challenges facing the bicycle and pedestrian field is the lack of documentation on usage and demand. Without accurate and consistent demand and usage figures, it is difficult to measure the positive benefits of investments in these modes, especially when compared to the other transportation modes such as the private automobile. An answer to this need for data is the National Bicycle & Pedestrian Documentation Project, co-sponsored by and Alta Planning and Design and the Institute of Transportation Engineers (ITE) Pedestrian and Bicycle Council. This nationwide effort provides a consistent model of data collection and ongoing data for use by planners, governments, and bicycle and pedestrian professionals.

Methodology
The basic assumptions of the methodology are that, in order to estimate existing and future bicycle and pedestrian demand and activity, agencies nationwide need to start conducting counts and surveys in a consistent manner similar to those being used by ITE and other groups for motor vehicle models.

NBPD to Provide Free Summary Reports!
The National Bicycle and Pedestrian Documentation Project has developed a summary report that highlights the valuable information that can be gained from year-long automatic bicycle and pedestrian counts. If your community uses Eco-Counter automatic count technology, the National Bicycle and Pedestrian Documentation Project will provide a free summary report of the data in exchange for submission of the annual automatic count data to the project. This report puts valuable information regarding usage and trends at your fingertips which can be used in grant applications, press releases, annual count reports, etc. Sample reports are available here and here. Email your Eco-Counter data in excel format to data@bikepeddocumentation.org. Please indicate the exact location of the automatic counter and let us a bit about the bicycle/pedestrian facility.

News
- More walking and bicycling increased in the US! A 15-year longitudinal analysis of traffic counts from 13 metropolitan areas. Recent scholarship from Virginia Tech that used NBPD data to create a national demand model. Huyen Le, Ralph Buettner, and Steve Hanks are the lead authors of the study.

www.bikepeddocumentation.org
- Info about count and survey methodology
- Original site

www.trec.pdx.edu
- Info about count methodology
- Current host for national database
Annual Bicycle Counts

Total Number of Users by Mode

altaGO™
Sharp increase in cycling safety in Portland as cycling levels rose

6-fold increase in bike trips

70% fall in crash rate

Source: City of Portland (2013)
Gender Breakdown of Bicyclists + Pedestrians/Joggers
Over the 5-year count period, the ratio of male to female cyclists remained 2:1. The ratio of male to female pedestrians/joggers remained 1:1.

Basin Wide Growth by Mode
Over the 5 years, each mode of travel increased, as shown by the percentages on the right. Joggers increased by the largest percentage.

Count Data
The average number of bicyclists during the 2-hour evening peak period increased 58% between 2005 and 2015 (1,453 to 2,291 bicyclists).

Figure 4-2: Bicycle counts at selected intersections. Bikes per 2-hour peak period (2015).
Infrastructure Planning

- Land Use
- Crashes
- Traffic Stress
- Destinations
- Transit
Calgary, Canada
Downtown cycle track

Infrastructure Implementation
Data from the first 6 months

50% increase in the number of people arriving by bicycle

Infrastructure Implementation
Calgary Downtown Cycle Track

Infrastructure Implementation
Calgary Downtown Cycle Track

Infrastructure Implementation
**Active Mobility Benefits**

**Health Benefits of Walking & Biking**

**Current U.S. Health Statistics**

- **80%** of Americans do not achieve the recommended 150 minutes per week of moderate exercise.
- **2/3** of Americans are overweight or obese.
- **Cancer** is the **#1** cause of death in the United States.
- **1,630** Americans die every day from cancer, mainly of the lung and colon.
- **61%** of American adults are sedentary.
- **86%** of workers in the United States drive or bike in an automobile, sitting on average for 540 minutes per hour.

**Health Benefits**

- Residents of walkable communities are 2x more likely to meet physical activity guidelines compared to those who do not live in walkable neighborhoods.
- For every 0.5 mile walked, there is a reduction in the likelihood of obesity.
- 20 minutes walking or biking each day is associated with a 21% lower risk of heart failure for men and a 29% lower risk for women.

**Physical Health**

**What would be the annual benefits from doubling biking in Minneapolis by 2020?**

- **108,225,000** Miles Biked Per Year
- That’s the equivalent of 4,100 Trips Around the Earth
- 21% of Minneapolis residents meeting the CDC recommended number of physical activity just from bicycling 10-30 minutes per day
- **46,602,000** fewer miles traveled by automobiles every year

**MINNEAPOLIS 2020**

- **$1,560,000** savings from reduced vehicle emissions per year
- **$26,563,000** in reduced household operation costs per year
- **$6,990,000** in reduced road maintenance costs

- **$3,262,000** in cost savings from reduced traffic congestion
- **$23,301,000** in cost savings from reduced motor vehicle collision-related costs
- **$1,813,000** in annual healthcare savings

**Total Annual Health and Economic Benefits**

**$63,489,000**
Automated Counters
Motorized Two- and Three- Wheelers are disproportionately impacted by crashes

Who are the vulnerable road users? What are the goals for the data?

- Motorcycles
- Motorized Two- and Three- Wheelers
- Pedestrians / Bicyclists

What to count in Asia?
How do people access transit?

What mode: walk / bicycle / other?
Why: commuting to work or school / visiting friends / shopping / leisure
Where: what routes? Different routes for different modes?
When: is there a peak time? Does it change during the week or year?
Other considerations: does weather change behavior?
Goals: increase number of people accessing transit by walking or bicycling?
What about climate?

Monsoon Season v. Dry Season
Kuala Lumpur Car Free Day during Ramadan

- Holidays
- Diversity of calendars
- School schedules

Cultural considerations?
Vietnamese people do walk if they are provided a safe and convenient place.