Saint Paul Minnesota
The most livable city in America

Pedestrian & Bicycle Counting

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Why Count?

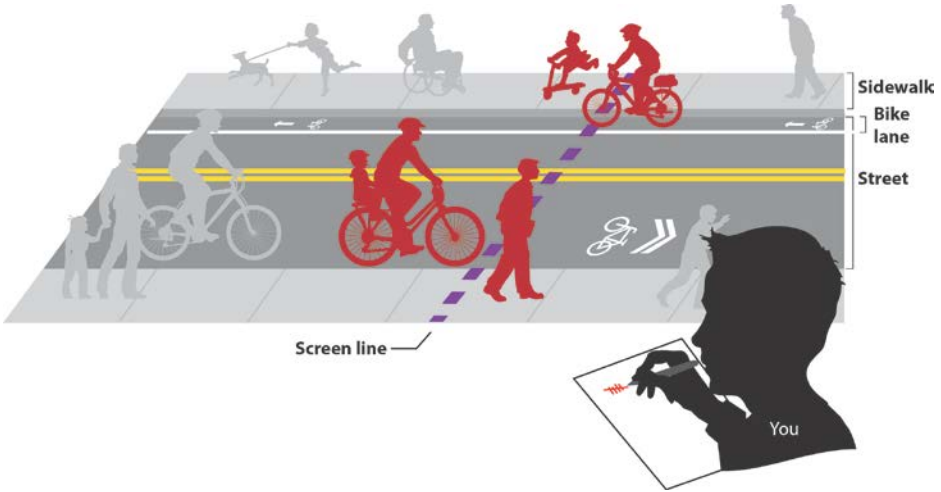
- To better understand where and how people are traveling throughout the city
- To inform future investments in safety and infrastructure
- To measure the impacts of new walking and biking investments

How do we measure walking?

- Manual counts
- Video (Manual)
- Automated Counters

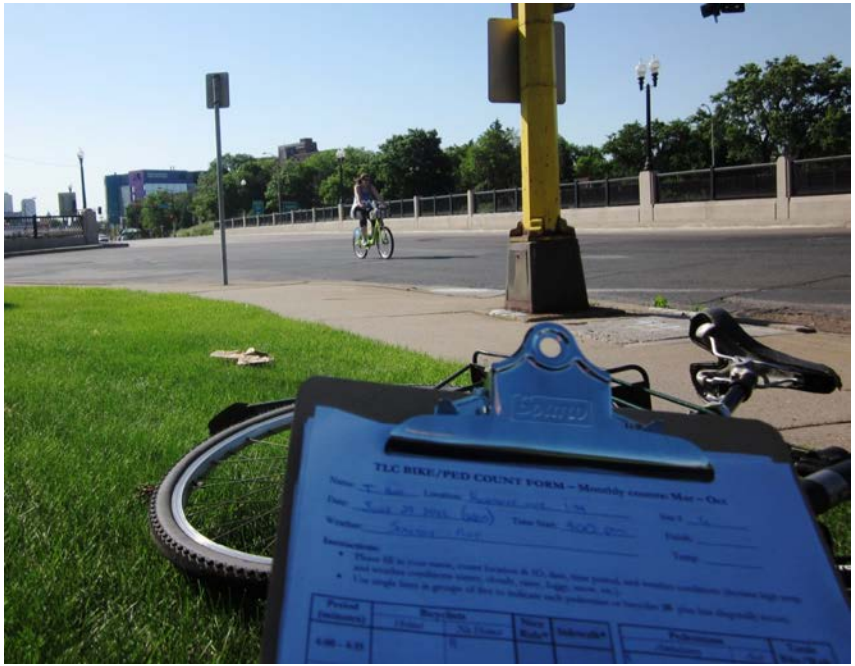
Manual Counts

- Conducted by volunteers in field
- Capture “Peak Hour” (4 – 6PM) traffic
- Measure traffic across a “screenline”
- Counted 130 unique locations in Saint Paul
- 25 “Benchmark” sites for walking are measured annually
- Other sites are rotated on a 3-5-year cycle, or specific to projects



Manual Counts

- Strengths:
  - Manual counts maximize spatial coverage
  - Can capture direction, demographics
  - Low cost
- Weaknesses:
  - Limited duration makes extrapolation challenging
  - Particularly sensitive to weather
  - Reliant on volunteers

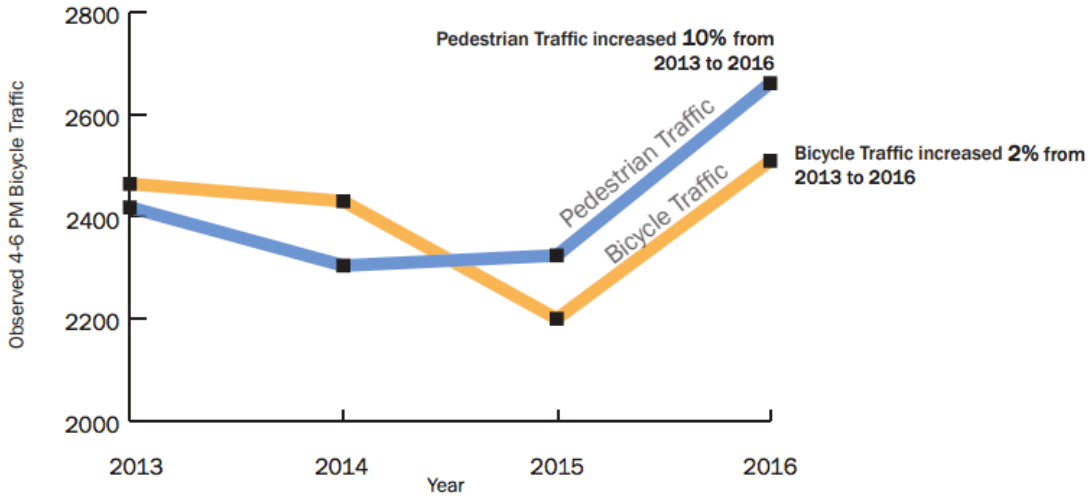


Manual Counts: Results

- Longitudinal Analysis of Benchmark Sites

Figure 1 - Observed Bicycle and Pedestrian Traffic at Benchmark Locations, 2013 - 2016

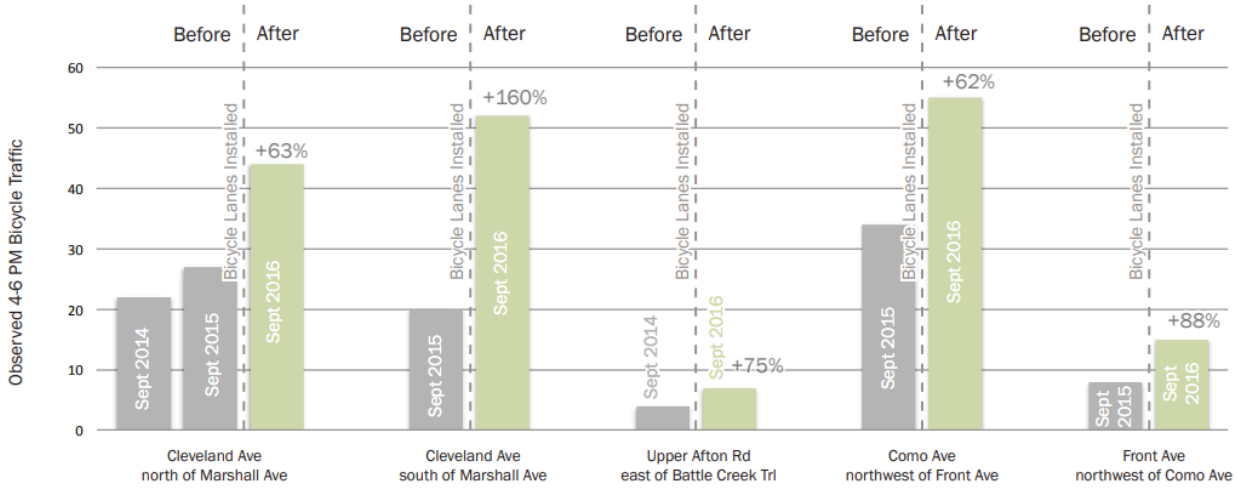
(Location totals reflect tabulated 2-hour peak counts)



Manual Counts: Results

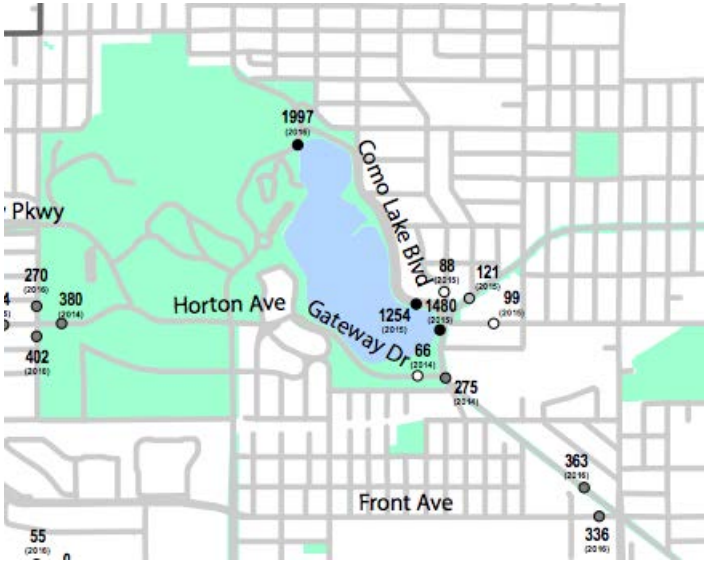
- Changes following infrastructure investments

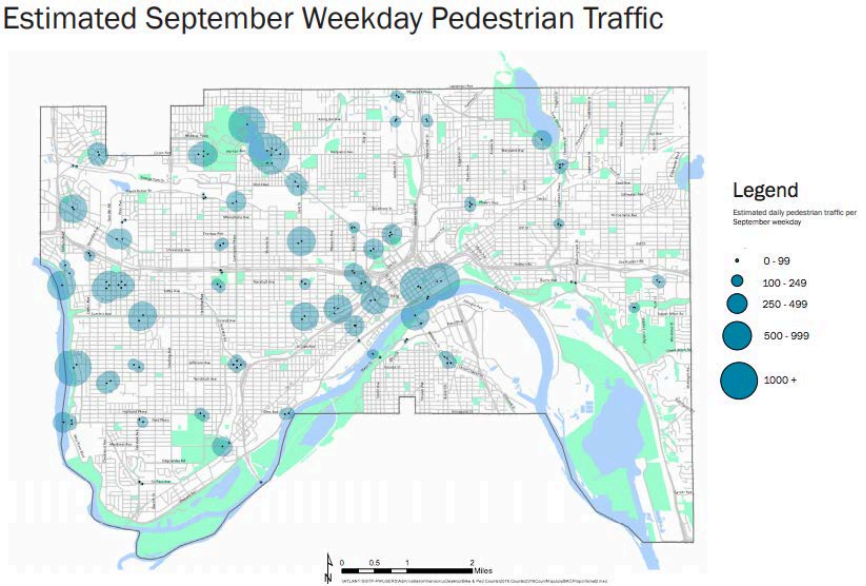
Figure 3 - Bicycle Traffic at 5 Locations Before and After Bike Lane Projects
(Location totals reflect tabulated 2-hour peak counts)



Manual Counts: Results

- Changes following infrastructure investments





Manual Video Counts

- Mobile camera
- Installed for 12 – 48 hours
- Data manually reviewed/tabulated
- Can capture intersection crossings
- By request only

Manual Video Counts

- Strengths:
  - Mobile
  - Can capture intersection crossings
  - Accuracy high (usually)
- Weaknesses:
  - Counting is time-intensive
  - Installation costs

Automated Counts

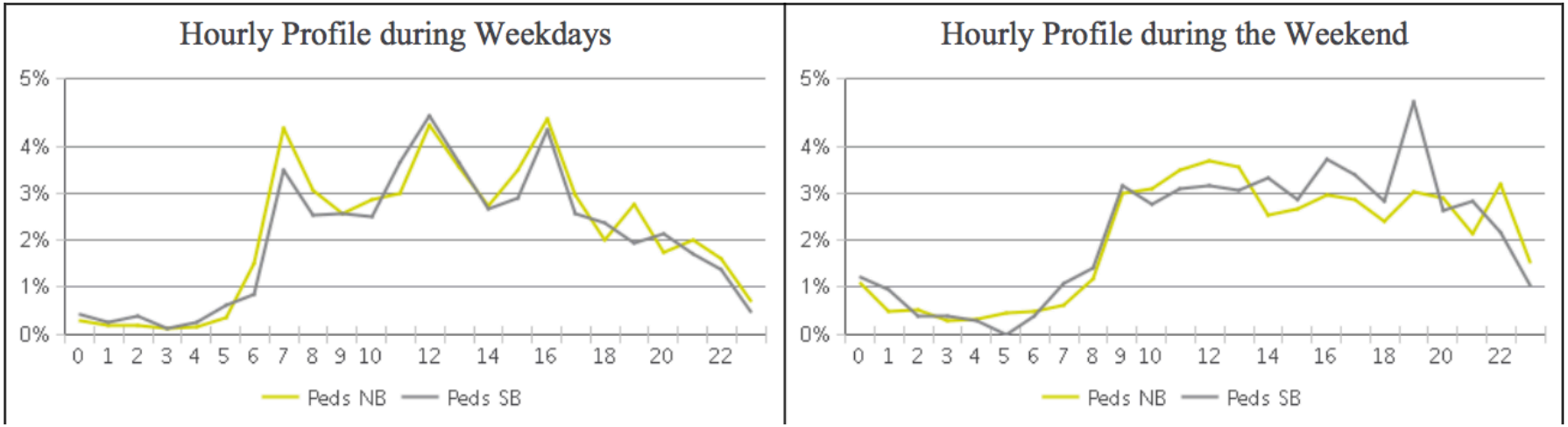
- Count with IR beams
- Collects continuous data
- Augments manual count data
- Informs extrapolation

Automated Counts

- Strengths:
  - Good accuracy
  - Collects data continuously
  - Organizes data automatically
- Weaknesses:
  - High cost
  - Misses intersections
  - Immobile

Automated Counts: Results

- Jackson Street: Hourly pedestrian profiles



Automated Counts: Results

- Determine AADT & Annual Variation

Table 2 - 2016 Bicycle Traffic Summary, Summit Ave east of Fairview Ave

Time Period	January - December (2016)
2016 Bicycle AADT	536
2016 Total Bicycle Traffic	195,268
Busiest Day of Year	6/5/16 (1,994)

Table 3 - 2016 Monthly Bicycle Traffic, Summit Ave east of Fairview Ave

Month	Monthly Bicycle ADT	Monthly Bicycle Traffic	Busiest Day of Month
January	69	2,160	1/31 (142)
February	119	3,434	2/27 (814)
March	341	10,589	3/12 (1,223)
April	537	16,087	4/17 (1,315)
May	814	25,224	5/30 (1,479)
June	996	29,901	6/5 (1,994)
July	942	29,189	7/9 (1,439)
August	857	26,565	8/21 (1,265)
September	730	21,151	9/18 (1,129)
October	548	17,003	10/2 (1,007)
November	384	11,536	11/5 (974)
December	79	2,430	12/1 (228)

Future Opportunities

- Centralized, accessible data
- More automated/longer duration counts
- Video detection at intersections
- Systematize data collection

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Questions?

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