

# National Bicycle and Pedestrian Documentation Project Conducting Counts



Alta Planning + Design  
National Bicycle and Pedestrian Documentation Project



# What is the NBPD?

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- Annual bicycle and pedestrian count and survey effort
- A cooperative effort between Alta Planning + Design and the ITE Pedestrian & Bicycle Council
- Initiated in 2002
- Not funded
- Applied v. academic research
- Free service available to all public agencies and organizations

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# Why do counts?

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- Non-motorized modes have no such consistent, uniform data collection and analysis system
- Each agency conducts counts, surveys, and analysis its own way
- No or little national sharing of data
- Result = harder to justify funding, document benefits, understand what influences walking and bicycling
- One solution to this problem: National Bicycle and Pedestrian Documentation Project

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# How will counts be used?

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- Establish a national database of bicycle and pedestrian count information generated by these consistent methods and practices
- Begin analysis on the correlations bicycle and pedestrian activity and local characteristics

# Estimating Daily/Annual Volumes

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Traffic engineers regularly extrapolate daily volumes from peak hour counts and the same can be done for bicycle and pedestrian volumes

- Peak-hour counts assumed to be 10% of daily volumes
- Estimated daily volumes can then be used to generate annual volumes

# Who should do counts?

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- Cities
- Counties
- Park districts

# Manual vs. Automatic Counters

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- Manual counts
  - Time consuming & expensive
  - Can collect other information - turning movements
  - Limited to peaks, 12-hr counts
- Automated counts (infrared)
  - Require calibration, data downloading, and periodic recalibration
  - Cheaper
  - Can only collect screenline counts
  - 24-hour counts, trends
- Automated counts (video)
  - Time consuming & expensive (video review)
  - Can collect other info
  - Can be reviewed, validated after the fact

# Calibrating Automatic Counters

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- Check with the manufacturer to determine the best way to calibrate. Typically, calibration involves counting manually for 1-2 hours, then comparing automatic counts to manual counts.
- All counters will have some degree of error. The manufacturer should provide guidelines that will reduce error.
- Factors such as width of travel way, volumes, and percentage of people in groups can affect accuracy of some types of counters.



# Time Estimates

| Task               | Time                 | Cost                   |
|--------------------|----------------------|------------------------|
| Select locations   | 2 hours              |                        |
| Recruit counters   | 2 hours              |                        |
| Train counters     | 1 hour per counter   |                        |
| Counts             | 2 hours per location |                        |
| Automatic counters |                      | \$1,500 - \$5,000 each |

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# Selecting Time of Year

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- Peak walking and bicycling periods
- School in session
- Conducive weather conditions
- Not a prime vacation time

# Selecting Days of the Week

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- Select one weekday and one weekend day to gather different levels
- Tuesdays, Wednesdays and Thursdays are not statistically significantly different

# Selecting Time of Day

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- Consistency is key
- Peak periods include:
  - Weekday, 10AM-Noon
  - Weekday, 5-7 PM
  - Saturday, Noon-2pm
- Actual local peak periods may vary considerably

# Selecting Locations

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- Historical count location
- Bicycle facility
- High collision area
- Smart growth
- Transit
- Planned project
- Mix of land uses
- Stakeholder recommendations

# Location Types

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## ■ Screenline



■ ■ ■ ■ ■ Screenline

## ■ Intersection



# Screenline vs Intersection Counts

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Choose depending on your needs:

## Screenline Counts

- Used to identify trends in volume
- Used to identify factors influencing walking and biking

## Intersection Counts

- Used to conduct exposure/safety analysis
- Should be done at high collision locations

# Document Locations

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- Document with aerial maps





# Hiring Counters

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- Bicycle/Pedestrian advisory committees
- Advocacy groups (walking/cycling)
- Local college students
- Interns

# Training Counters

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- Counters should be trained for
  - Interaction with public
  - Count process
  - Form use

# Items to Bring

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- Instructions
- Safety vest
- Location map
- Count forms
- Clipboard
- Pen or pencil and spare
- Optional: hat, sunscreen, jacket, folding chair, snacks

# Transportation, Safety, Comfort

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Things to consider:

- How counters can access locations?
- Will counters be safe at the locations?
- Will the counters be comfortable?
  - i.e., heat, sun, rain, cold

# Forms

National Bicycle and Pedestrian Documentation Project: Forms

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**STANDARDIZED SCREENLINE COUNT FORM**

Name: \_\_\_\_\_ Location: \_\_\_\_\_ # \_\_\_\_\_  
 Date: \_\_\_\_\_ Time Period: \_\_\_\_\_ Weather Conditions: \_\_\_\_\_

Please fill in your name, count location, date, time period, and weather conditions (fair, rainy, very cold).  
 Count all bicyclists and pedestrians crossing your screen line under the appropriate categories.

- Count bicyclists who ride on the sidewalk.
- Count the number of people on the bicycle, not the number of bicycles.
- Pedestrians include people in wheelchairs or others using assistive devices, children in strollers, etc.
- People using equipment such as skateboards or rollerblades should be included in the "Other" category.

|              | Bicycles |      | Pedestrians |      | Others |
|--------------|----------|------|-------------|------|--------|
|              | Female   | Male | Female      | Male |        |
| 00-:15       |          |      |             |      |        |
| 15-:30       |          |      |             |      |        |
| 30-:45       |          |      |             |      |        |
| 45-1:00      |          |      |             |      |        |
| 1:00-1:15    |          |      |             |      |        |
| 1:15-1:30    |          |      |             |      |        |
| 1:30-1:45    |          |      |             |      |        |
| 1:45-2:00    |          |      |             |      |        |
| <b>Total</b> |          |      |             |      |        |

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- Forms should be provided by the agency

# Data Input

## STANDARDIZED SCREENLINE COUNT FORM

Name: \_\_\_\_\_ Location: \_\_\_\_\_ # \_\_\_\_\_  
Date: \_\_\_\_\_ Time Period: \_\_\_\_\_ Weather Conditions: \_\_\_\_\_

Please fill in your name, count location, date, time period, and weather conditions (fair, rainy, very cold).  
Count all bicyclists and pedestrians crossing your screen line under the appropriate categories.

- Count bicyclists who ride on the sidewalk.
- Count the number of people on the bicycle, not the number of bicycles.
- Pedestrians include people in wheelchairs or others using assistive devices, children in strollers, etc.
- People using equipment such as skateboards or rollerblades should be included in the "Other" category.

|        | Bicycles |      | Pedestrians |      | Others |
|--------|----------|------|-------------|------|--------|
|        | Female   | Male | Female      | Male |        |
| 00-:15 |          |      |             |      |        |
| 15-:30 |          |      |             |      |        |
| 30-:45 |          |      |             |      |        |

- Name
- Location
- Date
- Time Period
- Weather

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# Data Input

## STANDARDIZED SCREENLINE COUNT FORM

Name: \_\_\_\_\_ Location: \_\_\_\_\_ # \_\_\_\_\_  
 Date: \_\_\_\_\_ Time Period: \_\_\_\_\_ Weather Conditions: \_\_\_\_\_

Please fill in your name, count location, date, time period, and weather conditions (fair, rainy, very cold).  
 Count all bicyclists and pedestrians crossing your screen line under the appropriate categories.

- Count bicyclists who ride on the sidewalk.
- Count the number of people on the bicycle, not the number of bicycles.
- Pedestrians include people in wheelchairs or others using assistive devices, children in strollers, etc.
- People using equipment such as skateboards or roller blades should be included in the "Other" category.

|        | Bicycles |      | Pedestrians |      | Others |
|--------|----------|------|-------------|------|--------|
|        | Female   | Male | Female      | Male |        |
| 00-:15 |          |      |             |      |        |
| 15-:30 |          |      |             |      |        |
| 30-:45 |          |      |             |      |        |

- 15 minute intervals
- Count from each direction
- Count by person
- Others include
  - Skateboarders
  - Rollerbladers

# Data Input: Intersection Crossing

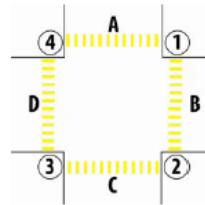
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## STANDARDIZED BICYCLE INTERSECTION COUNT FORM

Name: \_\_\_\_\_ Location: \_\_\_\_\_  
 Date: \_\_\_\_\_ Time Period: \_\_\_\_\_ Weather: \_\_\_\_\_

Please fill in your name, count location, date, time period, and weather conditions (fair, rainy, very cold).  
 Count all bicyclists crossing your through the intersection under the appropriate categories.

- Count bicyclists who ride on the sidewalk.
- Count the number of people on the bicycle, not the number of bicycles.



Collect turning movements

Treat as 2 locations for submittal to NBPD

| Time Period         | Bicycle Counts                           |        |        |               |        |        |               |        |        |               |        |        |
|---------------------|--|--------|--------|---------------|--------|--------|---------------|--------|--------|---------------|--------|--------|
|                     | Leaving Leg A                            |        |        | Leaving Leg B |        |        | Leaving Leg C |        |        | Leaving Leg D |        |        |
|                     | A to B                                   | A to C | A to C | B to C        | B to D | B to A | C to D        | C to A | C to B | D to A        | D to B | D to C |
| 00-:15              |  |        |        |               |        |        |               |        |        |               |        |        |
| 15-:30              |  |        |        |               |        |        |               |        |        |               |        |        |
| 30-:45              |  |        |        |               |        |        |               |        |        |               |        |        |
| 45-1:00             |  |        |        |               |        |        |               |        |        |               |        |        |
| 1:00-1:15           |  |        |        |               |        |        |               |        |        |               |        |        |
| 1:15-1:30           |  |        |        |               |        |        |               |        |        |               |        |        |
| 1:30-1:45           |  |        |        |               |        |        |               |        |        |               |        |        |
| 1:45-2:00           |  |        |        |               |        |        |               |        |        |               |        |        |
| Total               |  |        |        |               |        |        |               |        |        |               |        |        |
| Total Leg:          |  |        |        |               |        |        |               |        |        |               |        |        |
| Street Name A to C: | Location 1 (Total Leg A + Total Leg C) = |        |        |               |        |        |               |        |        |               |        |        |
| Street Name B to D: | Location 2 (Total Leg B + Total Leg D) = |        |        |               |        |        |               |        |        |               |        |        |



# Counting Different Users



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# How do you count this?

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# How do you count this?

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# How do you count this?



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# How do you count this?



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# How do you count this?

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# How do you count this?

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Other!

# Quality Control

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It is important to include quality control measures

Quality control may consist of:

- Spot field checks to verify that counters are at the correct location and collecting the correct information,
- Review and verification of data within a day or two of collection to identify discrepancies
- Use of counters who care a lot about bicycle and pedestrian issues has been shown to improve the accuracy of counts.



# Returning Count Forms

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- Count forms collected by the sponsoring agency
- Data should then be entered in the data spreadsheet available at:  
[www.bikepeddocumentation.org](http://www.bikepeddocumentation.org)

# Data Input

Enter data into provided spreadsheet

| <b>Count Location Description:</b>                  |  |  | <u>Loc. #1</u> | <u>Loc. #2</u> | <u>Loc. #3</u> | <u>Loc. #4</u> | <u>Loc. #5</u> |
|---|--|--|----------------|----------------|----------------|----------------|----------------|
| Type of facility:                                   |  |  | Enter here     | Enter here     | Enter here     | Enter here     | Enter here     |
| Type of setting:                                    |  |  | Enter here     | Enter here     | Enter here     | Enter here     | Enter here     |
| Scenic Quality:                                     |  |  | Enter here     | Enter here     | Enter here     | Enter here     | Enter here     |
| Surrounding land uses:                              |  |  | Enter here     | Enter here     | Enter here     | Enter here     | Enter here     |
| Schools, parks, visitor destinations within 1 mile: |  |  | Enter here     | Enter here     | Enter here     | Enter here     | Enter here     |
| Quality of connecting facilities:                   |  |  | Enter here     | Enter here     | Enter here     | Enter here     | Enter here     |
| Length of facility:                                 |  |  | Enter here     | Enter here     | Enter here     | Enter here     | Enter here     |
| Access:   |  |  | Enter here     | Enter here     | Enter here     | Enter here     | Enter here     |
| Quality of overall network:                         |  |  | Enter here     | Enter here     | Enter here     | Enter here     | Enter here     |
| Traffic volumes (ADT):                              |  |  | Enter here     | Enter here     | Enter here     | Enter here     | Enter here     |
| Traffic speeds (posted):                            |  |  | Enter here     | Enter here     | Enter here     | Enter here     | Enter here     |
| Crossings and intersections:                        |  |  | Enter here     | Enter here     | Enter here     | Enter here     | Enter here     |
| Crossings and intersection traffic:                 |  |  | Enter here     | Enter here     | Enter here     | Enter here     | Enter here     |
| Crossings and intersection protection:              |  |  | Enter here     | Enter here     | Enter here     | Enter here     | Enter here     |
| Topography:   |  |  | Enter here     | Enter here     | Enter here     | Enter here     | Enter here     |
|   |  |  |                |                |                |                |                |
|   |  |  |                |                |                |                |                |
| <b>Count #1 Data:</b>                               |  |  |                |                |                |                |                |
| Date Collected:                                     |  |  | Enter here     | Enter here     | Enter here     | Enter here     | Enter here     |
| Time Period:  |  |  | Enter here     | Enter here     | Enter here     | Enter here     | Enter here     |
| Weather:  |  |  | Enter here     | Enter here     | Enter here     | Enter here     | Enter here     |
| Bicycles:   |  |  | Enter here     | Enter here     | Enter here     | Enter here     | Enter here     |
| Pedestrians:  |  |  | Enter here     | Enter here     | Enter here     | Enter here     | Enter here     |
| Other:  |  |  | Enter here     | Enter here     | Enter here     | Enter here     | Enter here     |
|   |  |  |                |                |                |                |                |

Send Data to NBPD!

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[data@bikepeddocumentation.org](mailto:data@bikepeddocumentation.org)

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# Participate!

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For more information or to participate:

National Bicycle and Pedestrian Documentation Project

[www.bikepeddocumentation.org](http://www.bikepeddocumentation.org)

[info@bikepeddocumentation.org](mailto:info@bikepeddocumentation.org)

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