

# City of Bellevue Pedestrian & Bicycle Count Report Fall 2009



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## Purpose and Overview

Policy PB-29 of Bellevue's Comprehensive Plan policy instructs Transportation Department staff to "develop procedures to collect data in order to measure pedestrian and bicycle usage on an ongoing basis." These data will help track Bellevue's progress toward its goals of improving bicycling and walking conditions in the city. The information has other potential uses as well: it can reveal usage and demand trends, enable detailed safety analyses, and help decision makers weigh competing transportation investments.

In response to this directive, City of Bellevue staff and citizen volunteers counted bicyclists and pedestrians at a total of 13 sites throughout the city on Tuesday September 29<sup>th</sup> 2009. This was the second annual count of its type, and the first to use video capture technology. Volunteers also conducted intercept interviews at one site downtown on October 1<sup>st</sup>, surveying a total of 62 pedestrians and bicyclists.

## Methodology

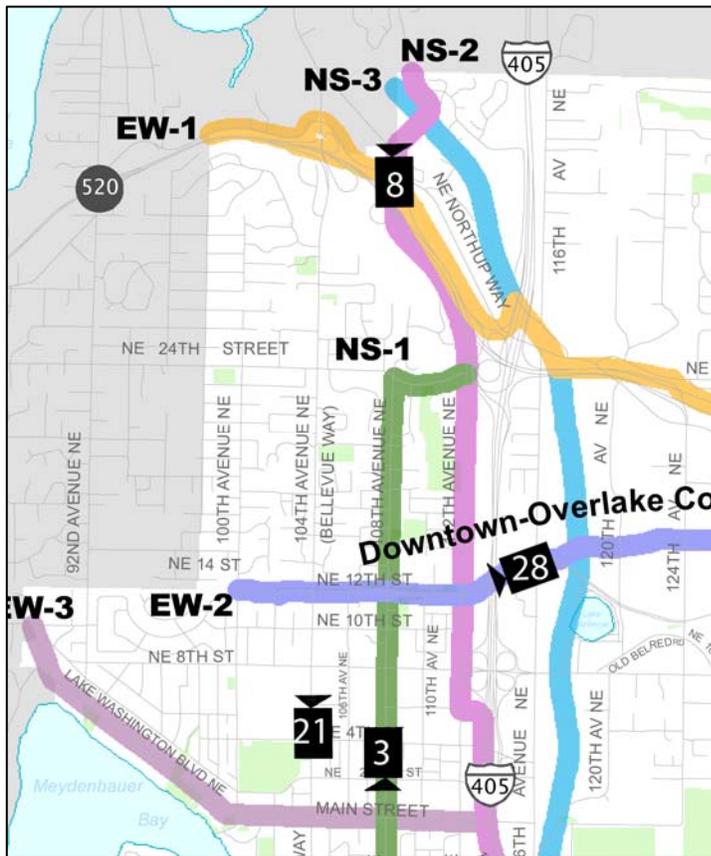


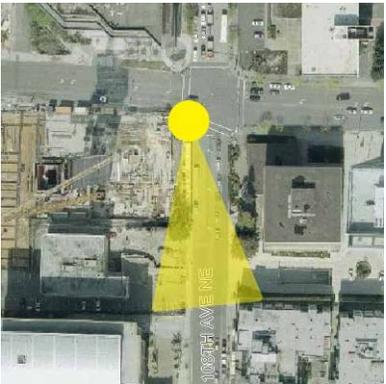
Figure 1. Camera locations and orientations

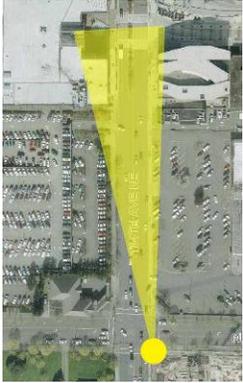
screenlines (imaginary lines used to decide when to count a bicycle or pedestrian). See Appendix A for a full map of all the count sites.

### *Manual Counts*

Following the National Bicycle and Pedestrian Documentation Project (NBPD) guidelines, the City of Bellevue selected 5 sites for manual screenline counts of bicycles and pedestrians. Bellevue traffic management cameras are installed at these sites, allowing staff to record video from any of them for later review. Since the City's recording system only supports four channels at once, the Department sent a Transportation Department intern to the fifth location to conduct an in-person count. Video from the rest of the locations was reviewed later by an intern and volunteers referred by the Cascade Bicycle Club and recruited through the City of Bellevue's volunteer listserv. Figure 1 shows the locations and orientations of the video count sites, and Table 1 include on-site images of all the manual count locations and their

These sites were chosen because they roughly encircle downtown, a major trip destination, and because most of them correspond to Priority Bicycle Corridors as designated in Bellevue's Comprehensive Plan.

Camera #	Location	Screenline	Camera Orientation
NA (field count site)	118th Ave NE N/O SE 8th St		NA (field count site)
3	108th Ave NE S/O NE 4th St		
8	Bellevue Way N/O NE Northup Way		

21	Bellevue Way N/O NE 4 <sup>th</sup> St		
28	NE 12 <sup>th</sup> St W/O 116th Ave NE		

**Table 1. Manual count sites details**

The count times were:

- 9/29, 7-9 AM
- 9/29, 4-6 PM

Bellevue staff and volunteers counted bicycles and pedestrians at the four video count locations by watching digital video from desktop computers in a City Hall training room (see Figure 2). All manual counts used NBPD-standard count forms and procedures. For information about the NBPD guidelines, see their website at: <http://bikepeddocumentation.org/>.



**Figure 2. Volunteer counting traffic at City Hall.**

## ***Automated Counts***

In addition to the NBPD-based manual counts, Bellevue continued its annual automated tube counts, albeit rescheduled to coincide with the manual counts. Pneumatic tube counters were placed at eight locations across the city and data gather for one week, with the peak periods reported here (see Table 2).

<b>Site #</b>	<b>Location</b>
A	Bike lane on 115 <sup>th</sup> Pl NE, east of 116 <sup>th</sup> Ave NE
B	Bike lane on 118 <sup>th</sup> Ave SE, north of I-90
C	SR 520 Bike Trail at NE 24 <sup>th</sup> St
D	Bike Trail at Newcastle Beach Park
E	Bike Trail at Enatai
F	I-90 Bike Trail west of 128 <sup>th</sup> Ave SE (Factoria Boulevard)
G	Eastgate Bike Trail east of Eastgate Way
H	West Lake Sammamish Bike Lane, south of Northup Way

**Table 2. Automated count sites**



**Figure 3. Volunteer interviewing two pedestrians in Downtown Bellevue.**

## ***Intercept interviews***

The NBPD offers participating agencies the option to conduct surveys of passing bicyclists and pedestrians using a standard form and method. This allows jurisdictions to gather more information than they would from a simple count. Bellevue opted to conduct surveys at the intersection of 108<sup>th</sup> Ave NE and NE 4<sup>th</sup> St in Downtown on Thursday October 1<sup>st</sup> from 3:30 to 6:00 PM. Staffing was provided mainly by volunteers, who responded to postings on the Bellevue

volunteer listserv, Cascade Bicycle Club message boards, and in the Bellevue Reporter.

Each volunteer received:

- a. Safety vest
- b. 2 pens
- c. Clipboard with survey forms and plastic cover sheets
- d. Official City of Bellevue volunteer badges
- e. Volunteers interviewing cyclists received large “bike survey” signs (to help flag down passing cyclists)

Volunteers administered 2-3 minute surveys to each passing bicyclist and pedestrian who agreed to stop. Exact compliance numbers were not recorded, but the author estimates the rate to have been 60 - 80%. Surveys followed the standard form distributed by the NBPD

([http://bikepeddocumentation.org/index.php/download\\_file/-/view/18](http://bikepeddocumentation.org/index.php/download_file/-/view/18)). For a detailed survey methodology, see page 11 of [http://bikepeddocumentation.org/index.php/download\\_file/-/view/16](http://bikepeddocumentation.org/index.php/download_file/-/view/16).

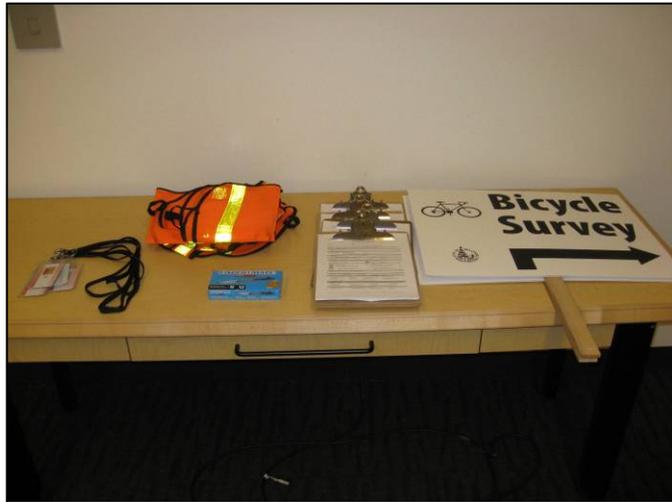


Figure 4. Survey equipment.

## Results

### *Counts*

Location	9/29/09, 7-9 AM (bikes/peds)	9/29/09, 4-6 PM (bikes/peds)
Bellevue Way N/O 4th	3 / 265	5 / 359
108th Ave NE S/O NE 4th St	11 / 295	15 / 361
NE 12th St W/O 116th Ave NE	24 / 32	20 / 27

<b>Location</b>	<b>9/29/09, 7-9 AM (bikes/peds)</b>	<b>9/29/09, 4-6 PM (bikes/peds)</b>
Bellevue Way NE N/O Northup Way	19 / 19	21 / 11
118th Ave NE N/O SE 8th St	14 / 4	17 / 6
115TH PI NE E/O 116th Ave	6 / NA	13 / NA
118th Ave SE N/O I-90	22 / NA	28 / NA
SR 520 Trail at NE 24TH St	24 / NA	22 / NA
Trail at Newcastle Beach Park	17 / NA	29 / NA
I-90 Trail at Enatai	61 / NA	98 / NA
I-90 Trail W/O 128th Ave SE	35 / NA	43 / NA
Eastgate Trail E/O Eastgate Way	8 / NA	13 / NA
West Lake Sammamish Parkway S/O Northup Way	3 / NA	3 / NA

## *Surveys*

### **Pedestrian (n=53)**

1. *What is your home zip code?*

Home zip code [**Varies**]

2. *What best describes the purpose of this trip?*

- a) Exercising [**5.7%**]
- b) Work commute [**66%**]
- c) School [**1.9%**]
- d) Recreation [**11.3%**]
- e) Shopping/doing errands [**7.5%**]
- f) Personal business (medical, visiting friends, etc.) [**7.5%**]

3. In the past month, about how often have you walked here?

- a) First time [5.7%]
- b) 0 – 5 times [11.3%]
- c) 6 – 10 times [3.8%]
- d) 11 – 20 times [60.4%]
- e) Daily [18.9%]

4. Please check the seasons in which you walk.

- a) All Year [94.3%]
- b) Summer [1.9%]
- c) Fall [3.8%]
- d) Winter [1.9%]
- e) Spring [1.9%]

5. What is the total length of this trip (start to finish)?

[DISTANCE: min .2 mi, max 30 mi, median 1 mi]  
[TIME: mean 22.4 min]

3. Origin (zip code) \_\_\_\_\_  
[Varies]

6. Will any part of this current trip be taken on public transit?

- a) Yes [54.7%]
- b) No [43.4%]

7. If you were not walking for this trip, how would you be traveling?

- a) Car [47.2%]
- b) Carpool [7.5%]
- c) Transit [22.6%]
- d) Bicycle [11.3%]
- e) I would not make this trip [13.2%]

8. Why are you using this route as opposed to walking somewhere else? (please check all that apply)

- a) Accessible/close [32.1%]
- b) Direct [81.1%]
- c) Lower traffic volumes [3.8%]
- d) Heard about it through friends, media, etc. [0%]
- e) Scenic qualities [0%]
- f) Level [1.9%]
- g) Personal safety [5.7%]
- h) Connection to transit [3.8%]

9. What would you like to see improved along this route (mark with an 'X') and community in general (mark with an 'O')? (please check all that apply)

- a) Wider sidewalks [1.9%]
- b) Better surface [0%]
- c) Better street crossings [9.4%]
- d) More shade trees [0%]
- e) Benches [3.8%]
- f) Access to shops, etc. [0%]
- g) More sidewalks [0%]

## **Bicycle (n=9)**

1. What is your home zip code?

**[Varies]**

2. What best describes the purpose of this trip?

- a) Exercising [0%]
- b) Work commute [77.8%]
- c) School [0%]
- d) Recreation [11.1%]
- e) Shopping/doing errands [11.1%]
- f) Personal business (medical, visiting friends, etc.) [0%]

3. In the past month, about how often have you ridden a bicycle here?

- a) First time [11.1%]
- b) 0 – 5 times [0%]
- c) 6 – 10 times [22.2%]
- d) 11 – 20 times [44.4%]
- e) Daily [22.2%]

4. Please check the seasons in which you bicycle.

- a) All Year [66.7%]
- b) Summer [33.3%]
- c) Fall [33.3%]
- d) Winter [11.1%]
- e) Spring [33.3%]

5. What is the total length of this trip (start to finish)? (complete one or more of the following)

**[DISTANCE: min .25 mi, max 18 mi, median 9 mi, mean 9.6 mi]**

6. Will any part of this current trip be taken on public transit?

- a) Yes [44.4%]
- b) No [55.6%]

7. If you were not biking for this trip, how would you be traveling?

- a) Car [44.4%]
- b) Carpool [11.1%]
- c) Transit [33.3%]
- d) Walking [22.2%]
- e) I would not make this trip [11.1%]

8. Why are you using this route as opposed to riding somewhere else? (please check all that apply)

- a) Accessible/close [0%]
- b) Direct [66.7%]
- c) Lower traffic volumes [11.1%]
- d) Scenic qualities [0%]
- e) Level [0%]
- f) Bike lanes [11.1%]
- g) Wider lanes [0%]
- h) Separation from traffic [0%]
- i) Connection to transit [0%]
- j) Heard about it through friends, media, etc. [0%]

9. What would you like to see improved along this route (mark with an 'X') and community in general (mark with an 'O')? (please check all that apply)

- a) Bike lanes [55.6%]
- b) Better surface [0%]
- c) Shoulders [0%]
- d) Less traffic [0%]
- e) Signs/stencils [0%]
- f) Better maintenance [0%]
- g) Signal detection [0%]
- h) Better crossings [0%]



Figure 5. Survey volunteers at the end of their shift.

## Comments from Survey-Takers

The following are comments and observations offered by survey participants during the process of answering the questions noted below. Responses are not verbatim – they are paraphrases as recorded by the volunteers who administered the surveys.

### Pedestrian

#### Question 8 (“Why are you using this route as opposed to walking somewhere else?”)

- free parking
- parking available
- parking garage close by

#### Question 9 (“What would you like to see improved along this route and community in general”)

- Covered sidewalks
- Open sidewalk across street [where there is construction]
- Fix sidewalk on Main
- Good crosswalk. Good signals! Signals lets you know it activated
- Want ped only areas
- More bike lanes, ped only walkways to transit center
- Signal timing at NE 8th too long, timing good elsewhere
- Finish sidewalks
- Want quicker lights
- construction blocks sidewalks

- Timing too short
- More direct bus connections
- People don't look when they pull out of driveways
- Things are OK
- Things are OK
- Things are OK
- Finish construction on other side of the street
- Fine as is
- Lights take too long
- Fine as is
- need more training for cyclist -- do not give up any more road!
- fine as is!
- Fine as is
- Fine as is
- More lighting near Main Street
- Drivers need to be more tolerant of pedestrians
- Fine as is
- Fine as is
- Crosswalk should not have to push button - should light when traffic light is green automatically
- Too much construction - better sidewalk close-off
- crosswalk timing too long - long wait
- NE 4th - Light takes too long - Then it's not long enough
- More green space - more stores at street level
- Gotten a lot better in Bellevue - clear sidewalk construction
- light sequence
- OK
- Pretty good
- Open up closed sidewalks
- pretty good
- more parking
- signal change / People looking at car - have "walk" only signal / No turning
- fine as is
- fine as is

### **Bicycle**

#### **Question 8 (“Why are you using this route as opposed to riding somewhere else?”)**

- safest route
- bike friendly
- less construction

#### **Question 9 (“What would you like to see improved along this route (mark with an ‘X’) and community in general”)**

- traffic laws re: bikes

- everything is good
- lights not synched
- homeless in bike lanes

## Discussion

While the counts were successful, the tally data in this report do not say much on its own; we will have to repeat these counts for a number of years before trend lines become apparent. Due to spotty volunteer coverage last year (a factor in the decision to switch to video in 2009) and the revision of count sites there is only one site with data that can be compared between 2008 and 2009: the I-90 trail at Enatai. Combining the morning and evening count periods, this year saw a 46% drop in bike traffic from the same time last year. This is probably due to rainy weather on the day of the count [note: weather can be controlled for as a variable in future statistical analyses].

The Department's experiment with intercept interview was a success, with a full complement of volunteers and a high response rate from pedestrians and bicyclists despite the wind and rain. Lessons learned include:

- Stock the clipboards with plenty of ped forms – some may need to be redistributed among volunteers
- The “bike survey” signs were very helpful in getting cyclists to stop. They should be large enough and seen by the cyclist far enough in advance so that the cyclist can make a decision about where to pull over.
- The best sites for bike surveyors have good sight lines down the street and a curb cut for cyclists to exit the roadway. Always ask cyclists to step out of the road while taking the survey.
- The volunteers liked the custom City of Bellevue badges but survey recipients did not seem to notice them.
- Many of the pedestrians who declined to participate said that they were on their way to catch a bus. Transit-using pedestrians may be underrepresented in this data set.
- The count coordinator next year should consult WSDOT/CBC/NBPD about conducting the surveys earlier in the year than the counts. This would make for a more comfortable work environment for the volunteers and increase the number of potential survey recipients.

Pedestrian trips were mostly utilitarian in nature, and satisfaction with the walking environment was high. The most common complaints from walkers were about time spent waiting for a signal, and issues related to construction. Work and shopping trips dominated the cycling category, with more bike lanes as their top recommendation for the city.

# Appendix A: Count Locations



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 = 3,400 feet  
 City of Bellevue  
 IT Department  
 GIS Services  
 Plot Date: 2/11/2009

## Bicycle and Pedestrian Count Sites

This information is the property of the City of Bellevue. It is provided as a public information system. The City of Bellevue does not warrant the accuracy of the information and the user assumes all liability for any use of the information. The user agrees to hold the City of Bellevue harmless from any and all claims, damages, or expenses, including reasonable attorneys' fees, that may be incurred by the user as a result of the use of the information. The user agrees to hold the City of Bellevue harmless from any and all claims, damages, or expenses, including reasonable attorneys' fees, that may be incurred by the user as a result of the use of the information. The user agrees to hold the City of Bellevue harmless from any and all claims, damages, or expenses, including reasonable attorneys' fees, that may be incurred by the user as a result of the use of the information.