



CITY OF BELLEVUE PEDESTRIAN AND BICYCLE COUNT REPORT



Fall 2010

City of Bellevue
Transportation
Department

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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.” The data collected here will help track Bellevue’s progress toward its goals of improving bicycling and walking conditions in the city. The information also contributes to a larger effort in Washington State to improve decisions about where to put transportation funds and how to improve safety. Led by the Washington State Department of Transportation, Cascade Bicycle Club and Puget Sound Regional Council, a total of 32 cities conducted counts across the state in early October. Data from these counts will be used to inform investments in bike lanes, sidewalks and educational programs statewide.

City of Bellevue staff and citizen volunteers counted bicyclists and pedestrians at a total of 13 sites throughout the city on Tuesday, October 5th, 2010 from 7:00-9:00am and 4:00-6:00pm. This was the third annual count of its type, and the second to use video capture technology.

METHODOLOGY

MANUAL COUNTS

Following the National Bicycle and Pedestrian Documentation Project (NBPD) guidelines, the City of Bellevue selected five sites for manual screenline counts of bicycles and pedestrians. Bellevue traffic management cameras are installed at these sites, allowing staff to record video from them for later review. As the City’s recording system only supports four channels at a time, two volunteers conducted an in-person count at the fifth location. Video from the other locations was reviewed by an intern and volunteers recruited through a list of last year’s volunteers and the City’s volunteer listserv. Figure 1 shows the locations and orientations of the video count sites, and Table 1 includes on-site images of all the manual count locations and their screenlines (imaginary lines used to decide when to count a bicycle or pedestrian). See Appendix A for a full map of all count sites.

The sites used were the same as last year’s count locations. They were originally chosen because they roughly encircle downtown, a major trip destination, and because most of them correspond to Priority Bicycle Corridors designated in Bellevue’s Comprehensive Plan.



Figure 1. Manual count site camera orientations and locations.

Table 1. Manual count site screenshots and camera orientations.



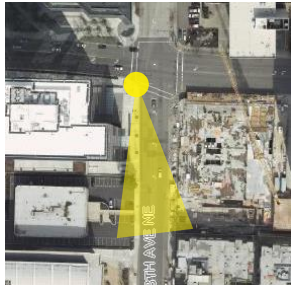

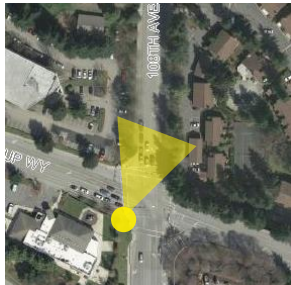

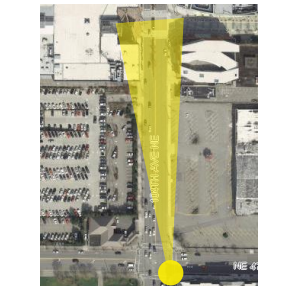

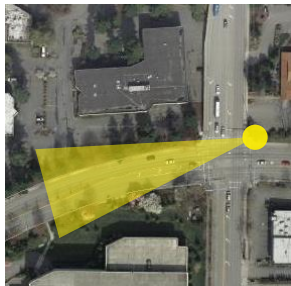
Location [Camera/Site #]	Screenline	Camera Orientation
114th Ave NE N/O SE 8th St <i>[N/A, field count site]</i>		N/A
108th Ave NE S/O NE 4th St [2]		
108th Ave NE N/O NE Northup Way [3]		
Bellevue Way N/O NE 4th St [4]		
NE 12th St W/O 116th Ave NE [5]		



Figure 2. Volunteer counting traffic at City Hall (2009).



Figure 3. Proposed change to screenline for Bellevue Way N/O NE 4th St (site 4).

Bellevue staff and volunteers counted bicycles and pedestrians at the four video count locations by watching digital video from computers in a City Hall training room (see Figure 2). All manual counts used NBPD-standard count forms and procedures. Pedestrians included those in wheelchairs or others using assistive devices and children in strollers. Cyclists riding on the sidewalk were considered a bicycle (or a pedestrian if walking their bike) and the number of people on the bicycle, not the number of bicycles, was counted. Bicycles and pedestrians were not distinguished by sex, although this procedure could be implemented in the future. For information about the NBPD guidelines, see their website at: <http://bikepeddocumentation.org/>. A sample of the count form used can be found in Appendix B. It is recommended that the screenline for site 4, Bellevue Way NE N/O NE 4th St, be shifted slightly north in future counts as driveways exist on either end of the current screenline (see Figure 3). This makes counting pedestrians from the recorded video footage notably difficult and imprecise.

AUTOMATED COUNTS

In addition to the 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 (see list in Table 2 and map in Appendix A) and data gathered for a little over one week from 8:00am Friday, October 1st to 11:00am Monday, October 11th, with the October 5th 7:00-9:00am and 4:00-6:00pm periods reported in this document (see Table 3).

Table 2. Automated Count Sites.

Site #	Location
A	Bike lane on 115th Ave NE E/O 116th Ave NE
B	Bike lane on 118th Ave SE N/O I-90
C	SR-520 Bike Trail at NE 24th St
D	Bike Trail at Newcastle Beach Park
E	I-90 Bike Trail at Enatai
F	I-90 Bike Trail W/O Factoria Blvd SE
G	I-90 Sunset Bike Trail E/O Eastgate Way
H	West Lake Sammamish west side shoulder S/O SE 26th St

INTERCEPT INTERVIEWS

The NBPD offers participating agencies the option to conduct surveys of bicyclists and pedestrians using a standard form and method. Although surveys were conducted during the 2009 count, Bellevue opted to not conduct surveys this year.

RESULTS

Table 3. 2009 and 2010 Count Results.

Location Description [Site #]	Count Date: Tuesday 9/29/2009						Count Date: Tuesday 10/5/2010					
	07:00 - 09:00			16:00-18:00			07:00 - 09:00			16:00-18:00		
	Weather	Bikes	Peds	Weather	Bikes	Peds	Weather	Bikes	Peds	Weather	Bikes	Peds
114th Ave NE N/O SE 8th St [1]	Fair	14	4	Rainy	17	6	Sunny, Clear, Cold	39	30	Sunny, Clear	42	16
108th Ave NE S/O NE 4th St [2]	Fair	11	295	Rainy	15	361	Sunny, Clear, Cold	16	294	Sunny, Clear	19	368
108th Ave NE N/O NE Northup Way [3]	Fair	19	19	Rainy	21	11	Sunny, Clear, Cold	6	34	Sunny, Clear	9	38
Bellevue Way NE N/O NE 4th St [4]	Fair	3	265	Rainy	5	359	Sunny, Clear, Cold	3	235	Sunny, Clear	12	443
NE 12th St W/O 116th Ave NE [5]	Fair	24	32	Rainy	20	27	Sunny, Clear, Cold	17	16	Sunny, Clear	25	16
Bike lane on 115th Ave NE E/O 116th Ave NE [A]	Fair	6	n/a	Rainy	13	n/a	Sunny, Clear, Cold	17	n/a	Sunny, Clear	22	n/a
Bike lane on 118th Ave SE N/O I-90 [B]	Fair	22	n/a	Rainy	28	n/a	Sunny, Clear, Cold	39	n/a	Sunny, Clear	67	n/a
SR-520 Bike Trail at NE 24th St [C]	Fair	24	n/a	Rainy	22	n/a	Sunny, Clear, Cold	24	n/a	Sunny, Clear	42	n/a
Bike Trail at Newcastle Beach Park [D]	Fair	17	n/a	Rainy	29	n/a	Sunny, Clear, Cold	20	n/a	Sunny, Clear	69	n/a
I-90 Bike Trail at Enatai [E]	Fair	61	n/a	Rainy	98	n/a	Sunny, Clear, Cold	119	n/a	Sunny, Clear	182	n/a
I-90 Bike Trail W/O Factoria Blvd [F]	Fair	35	n/a	Rainy	43	n/a	Sunny, Clear, Cold	62	n/a	Sunny, Clear	76	n/a
I-90 Sunset Bike Trail E/O Eastgate Way [G]	Fair	8	n/a	Rainy	13	n/a	Sunny, Clear, Cold	16	n/a	Sunny, Clear	20	n/a
West Lake Sammamish west side shoulder S/O SE 26th St [H]	Fair	3	n/a	Rainy	5	n/a	Sunny, Clear, Cold	4	n/a	Sunny, Clear	20	n/a

ANALYSIS AND DISCUSSION

The tally data in this report do not say much on their own and it will be necessary to repeat these counts for a number of years before trend lines become apparent. However, because the 2010 count sites were not changed from 2009, we can make comparisons between the two years.

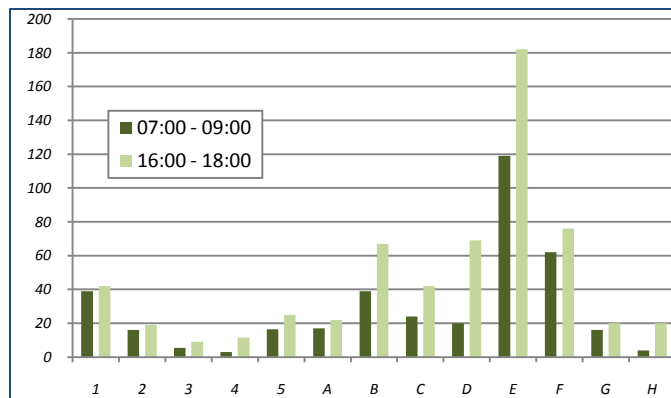


Figure 4. Bicycle activity on October 5th, 2010.

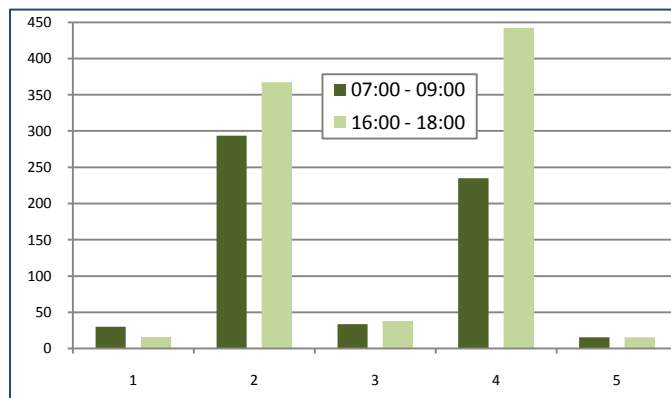


Figure 5. Pedestrian activity on October 5th, 2010.

At all but two locations, there was an increase in bicycle and pedestrian activity from the morning to afternoon period (pedestrians at site 1 decreased by 14 and stayed the same at site 5; see Figure 4 and Figure 5). This is similar to the observable trend in 2009 (see Figure 6 and Figure 7 on following page).

In addition, the relative amount of bicycle and pedestrian activity at each site appears to be consistent with 2009 data (see Figure 6 and Figure 7). There is a clear increase in the absolute number of bicycles and pedestrians at most locations though from 2009 to 2010. This is shown in the percent increases and decreases reported in Table 4. Notice that combining the morning and evening count periods yields an increase in bicycle activity at all locations except site 3 (64% decrease, from a low base value) and site 5 (6% decrease).

Site 5 is the only site where pedestrian activity decreased from 2009 to 2010 (by 47%) when the count periods are combined. In the 2010 count period, site 5 was impacted by construction activity on the relevant roadway link (reconstruction of the NE 12th Street overcrossing of I-405). During this construction activity, pedestrian passage was permitted on only one side of the street (the north side). In addition, pedestrians wishing to cross I-405 had the new option of the NE 10th Street link (opened since the 2009 count). Also at site 5, glare reduced the ability to accurately review video footage between 5:30 and 6:00pm.

Table 4. Percent Increase or Decrease from 2009 to 2010.

Site #	1	2	3	4	5	A	B	C	D	E	F	G	H
Bicycles													
07:00 - 09:00	179%	45%	-71%	0%	-31%	183%	77%	0%	18%	95%	77%	100%	33%
16:00 - 18:00	147%	27%	-57%	130%	25%	69%	139%	91%	138%	86%	77%	54%	300%
Combined	161%	35%	-64%	81%	-6%	105%	112%	43%	93%	89%	77%	71%	200%
Pedestrians													
07:00 - 09:00	650%	-1%	76%	-11%	-52%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
16:00 - 18:00	167%	2%	245%	23%	-43%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Combined	360%	1%	138%	9%	-47%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

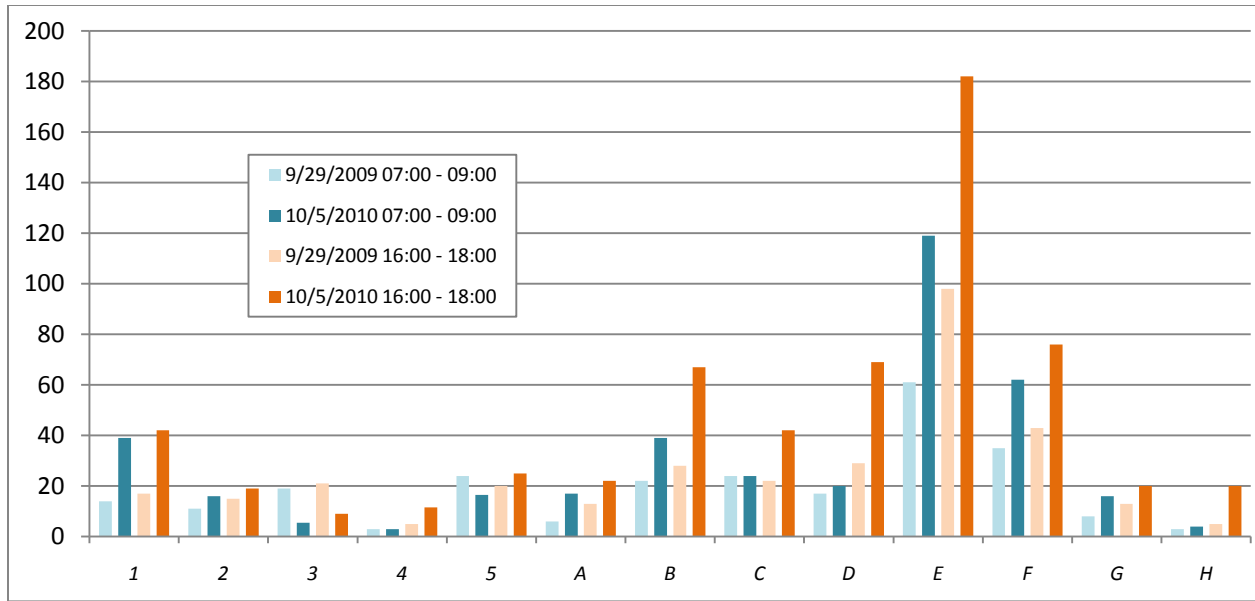


Figure 6. Bicycle activity on September 29th, 2009 and October 5th, 2010.

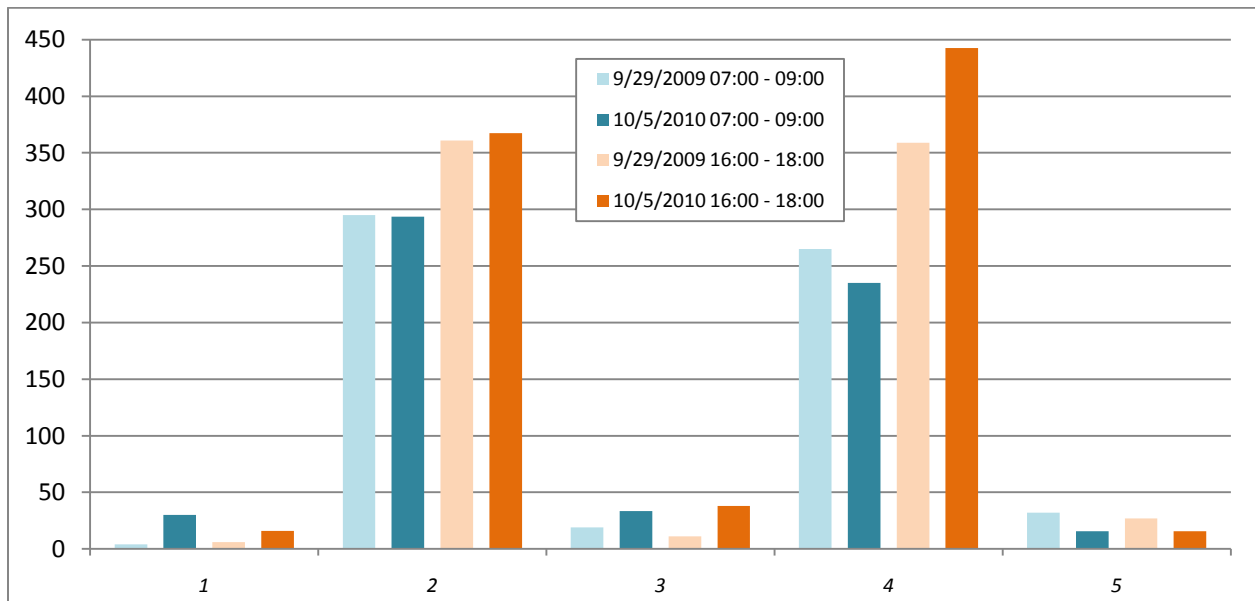


Figure 7. Pedestrian activity on September 29th, 2009 and October 5th, 2010.

APPENDIX A: COUNT LOCATIONS



V:\trarcgis\planning\Ped_Bike2007\BikeCorridors_11x17.mxd

City of Bellevue
IT Department
GIS Services

Plot Date: 2/11/2009

Bicycle and Pedestrian Count Sites

The information on this map is a geographic representation derived from the City of Bellevue Geographic Information System. The City of Bellevue does not guarantee that the information on this map is accurate or complete. This map is provided on an "as is" basis and disclaims all warranties, express or implied, including but not limited to warranties of merchantability, fitness for a particular purpose and non-infringement. Any commercial use or sale of this map or portions thereof, is prohibited without express written authorization by the City of Bellevue. The City of Bellevue is not responsible for any damages arising from the use of information on this map. Use of this map is at user's risk. Users should verify the information before making project commitments.

APPENDIX B: SAMPLE MANUAL COUNT FORM

BICYCLE AND PEDESTRIAN FIELD COUNT FORM

Name: _____ Location: 118th Ave NE and SE 8th St
 Date: October 5th, 2010
 Start Time: 7:00 am
 Weather: _____ End Time: 9:00 am

Please fill in your name and weather conditions (fair, rainy, very cold, etc.). Count all bicyclists and pedestrians under the appropriate categories with a hash mark.

- * Count for two hours in 15 minute increments.
- * 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.

Time	Bicycles		Pedestrians		Others
	Female	Male	Female	Male	
7:00 - 7:15 am					
7:15 - 7:30 am					
7:30 - 7:45 am					
7:45 - 8:00 am					
8:00 - 8:15 am					
8:15 - 8:30 am					
8:30 - 8:45 am					
8:45 - 9:00 am					
Total					