Date: September 11, 2015

Folsom Street Living Lab

Weeks 1-6 – Primary Evaluation Criteria

As part of the Living Laboratory Phase II Folsom Street project, data on vehicle and bicycle volumes, vehicle speed, vehicle travel time, collisions, and bicyclist demographics was collected before the installation of protected bicycle lanes, during weeks 1-6 after the installation, and will continue to be collected as part of the ongoing evaluation process. While the after data from these early weeks is important, it is important to note that it is still considered preliminary and ongoing data collection and analysis in the coming weeks will continue to inform the evaluation of the project.

Secondary evaluation data is also being collected as part of the evaluation process. This summary includes preliminary bicycle demographic data. Additional details about the secondary evaluation criteria and the collection time periods for each can be found at www.BoulderLivingLab.net.

Before data collection time periods vary by criteria and are noted in the individual tables below. After data collection time frames are:

- **Weeks 1-2:** July 27th to August 9, 2015
- **Week 3:** August 10th to August 16th, 2015
- **Week 4:** August 17th to August 23rd, 2015
- **Week 5:** August 24th to August 30th, 2015
- **Week 6:** August 31st to September 6, 2015

Vehicle Volume and Speed

The City has been collecting average weekday traffic volume and speed at two locations along Folsom Street, north of Bluff and north of Canyon. The data is collected using Miovision technology and is recorded for a 3-day period, and reported as the average of the three days, or average daily traffic (ADT). Note that Boulder Valley School District (BVSD) and Colorado University (CU) schools have been in session during some but not all of the before and after data collection periods (noted in the tables below.

Folsom Street north of Bluff Street – Posted Speed Limit = 30 mph

Evaluation Period	Date Collected	ADT-Weekday (vpd)	Average Speed (mph)	85th Percentile Speed (mph)	CU & BVSD In Session
Before	4/27-5/1/15	15,780	35	39	Yes
After-Week 2	8/5-8/7/15	13,790	33	37	No
After-Week 3	8/12-8/14/15	13,930	33	37	No
After-Week 5	8/26-8/28/15	14,310	32	36	Yes
After-Week 6	9/2/15-9/4/15	14,100	32	36	Yes

Folsom Street north of Canyon Blvd. – Posted Speed Limit = 30 mph

Evaluation Period	Date Collected	ADT-Weekday (vpd)	Average Speed (mph)	85th Percentile Speed (mph)	CU & BVSD In Session
Before	6/30-7/2/15	18,970	29	34	No
After-Week 2	8/3-8/5/15	15,790	25	30	No
After-Week 3	8/10-8/12/15	16,480	24	29	No
After-Week 5	8/25-8/26/15	16,500	24	29	Yes
After-Week 6	9/2/15-9/4/15	15,960	24	29	Yes

- **ADT =** Average Daily Traffic
- **VPD =** Vehicles per Day
- **MPH =** Miles per Hour

Corridor Travel Time

The travel time it takes to drive the Folsom corridor end-to-end from Valmont to Arapahoe in the northbound and southbound directions was measured by driving the corridor before and after the installation of the protected bike lanes. The project team used the before travel time measurements to help calibrate the VISSIM modeling software, and then to forecast the expected travel time after the installation.

Average PM Peak Hour Travel Times (in minutes:seconds)

Evaluation Period	PM Northbound	PM Southbound
Before (Nov. 2014)	3:32	3:20
Modeled	4:47[1]	4:30
Week 1-2	4:15	5:36
Week 3	4:02	4:41
Week 5	4:37	4:52
Week 6	4:13	5:19

Northbound PM Peak Hour Travel Time Variability (in minutes:seconds)

Evaluation Period	Average	High	Low	Variability
Before	3:32	4:52	2:46	2:06
Week 1-2	4:15	6:48	2:40	4:08
Week 3	4:02	5:15	2:49	2:26
Week 5	4:37	6:33	2:57	3:36
Week 6	4:13	6:47	2:38	4:07

Southbound PM Peak Hour Travel Time Variability (in minutes:seconds)

Evaluation Period	Average	High	Low	Variability
Before	3:20	3:44	2:13	1:31
Week 1-2	5:36	8:14	3:53	4:21
Week 3	4:41	5:58	3:35	2:23
Week 5	4:52	6:15	3:53	2:22
Week 6	5:19	7:50	3:52	3:58

Collisions

Collision data for the Folsom corridor from Valmont to Colorado is being compiled from police reports. The totals include all crashes at the intersections and in segments along the corridor. The following summarizes the average collision frequency (1.6 per week) from 2012 to 2014 for vehicle-vehicle, vehicle-bicycle, and vehicle-pedestrian collisions. The collisions reported for Weeks 1-6 are also summarized below by mode.

Summary of Before Collisions Along Folsom Street from Valmont to Colorado from 2012-2014

Before Time Period	Vehicle-Vehicle	Vehicle-Bike	Vehicle - Pedestrian	Total
2012-2014	212	34	7	253
Average per Year	70.7	11.3	2.3	84.3

After Collisions Along Folsom Street from Valmont to Colorado

After Evaluation Period	Vehicle-Vehicle	Vehicle-Bike	Vehicle-Pedestrian	Total
Week 1-2	1	1	0	2
Week 3	1	0	0	1
Week 4	1	1	0	2
Week 5	0	0	0	0
Week 6	0	0	0	0
Total	**3**	**2**	**0**	**5**

Bicycle Volume

Daily bicycle volumes are being collected at three locations along Folsom using permanent 24-hour counters: Boulder Creek, South Street, and Pine Street. BVSD and CU were not in session during the before data collection period. Before and after volumes at Boulder Creek were collected by a permanent 24-hour counter. The before volumes at South and Pine Street were collected from 6am to 9pm on June 30th, 2015 and after volumes are being collected by permanent 24-hour counters installed in late July, 2015. The after data includes bicycle volumes while BVSD and CU were both in and out of session. Note

that the validation of the counters is currently in progress and volumes may later be adjusted to account for potential variances.

Bicycle volumes at all three locations increased during Weeks 4 and 5 from before conditions and Week 3 volumes. As noted previously, BVSD classes started during Week 4 and CU classes started during Week 5, likely influencing the bicycle volumes.

Daily Weekday Average Bicycle Volumes Along Folsom Street at Pine Street

Evaluation Period	Northbound	Southbound	Total
Before	437	440	877
Week 1	620	655	1,275
Week 2	551	625	1,176
Week 3	554	616	1,170
Week 4	603	651	1,254
Week 5	705	766	1,471
Week 6	684	748	1,432

Daily Weekday Average Bicycle Volumes Along Folsom Street at South Street

Evaluation Period	Northbound	Southbound	Total
Before	388	389	777
Week 1	497	578	1,075
Week 2	512	556	1,068
Week 3	406	500	906
Week 4	570	600	1,169
Week 5	706	791	1,497
Week 6	725	799	1,524

Daily Weekday Average Bicycle Volumes Along Folsom Street at Boulder Creek

Evaluation Period	Northbound - Adjusted	Southbound – Adjusted	Total - Adjusted
Before	592	483	1,076
Week 1	683	521	1,204
Week 2	607	497	1,104
Week 3	603	478	1,081
Week 4	782	602	1,384
Week 5	1,060	880	1,940
Week 6	1,226	855	2081

Notes:

- "Before" volumes at Pine and South were collected from 6am – 9pm on June 30th, 2015 and converted to daily volumes using the average hourly distribution from the permanent counter data.
- "Before" volumes at Boulder Creek are an average of weekday volumes from the last week of July and first two weeks of August from 2012-14.
- "After" volumes are an average of daily volumes on Tuesday, Wednesday, and Thursday during the corresponding week.
- Volumes from Folsom at Boulder Creek have been adjusted using previously determined adjustment factors. Volumes from Pine and South have not yet been adjusted.

Bicycle Demographics

Bicycle demographic data has been observed and recorded along the Folsom corridor before and after the installation of protected bike lanes. The before data was collected on April 28, 2015 for 2 hours. After data was collected on July 29, August 3, August 12-13, August 25-27, and September 1-3 for a total of 15 hours. Observations have been taken during weekday AM, noon, and PM hours. Observers record the total number of male and female bicycle riders on the roadways. In addition, the number of children and adults riding with children is recorded and comprises the "family" category (see table below).

Bicycle Weekday Demographic Along Folsom Street

Evaluation Period	Male	Female	Family
Before	72%	28%	4%
Week 1-2	78%	22%	6%
Week 3	67%	33%	5%
Week 5	66%	34%	4%
Week 6	66%	34%	4%