

## Staff Report

September 8, 2016

**TO:** Bicycling, Transportation, and Street Safety Commission

**FROM:** Brian Mickelson, Assistant City Engineer  
Roxanne Namazi, Senior Civil Engineer

**SUBJECT: Fifth Street Corridor Reconfiguration - Update**

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### **Recommendation**

This is an Informational item.

### **Fiscal Impact**

None at this time.

### **Background and Analysis**

Fifth Street, between A and L streets, was reconfigured to provide for the following:

- Bike lanes A to B streets while maintaining 4 travel lanes.
- One travel lane in each direction B to L streets.
- Bike lanes B to L streets.
- Bike boxes at the intersections of A and B streets.
- Green conflict zone marking at all intersections.
- Turn pockets at every intersection to accommodate left turns.
- Upgraded ADA compliant ramps at every corner (as needed).
- Marked crosswalks at every intersection. The intersections of C and J streets were supplemented with pedestrian actuated flashing lights (Rectangular Rapid Flashing Beacons).
- 8-phase fully actuated traffic signals at the intersections of F and G streets.
- Audible pedestrian countdown signals at all signalized intersections.
- At least two street lights at every intersection.
- A traffic signal at the Fire Station. The signal flashes yellow and will turn red when activated by the Fire Department (during exit and entrance into the Station).
- Speed limit was changed from 30 mph to 25 mph between B and L streets.

The improvements were completed in August 2014. Staff collected data on Fifth Street and adjacent streets before and after the reconfiguration to assess the impacts of the roadway redesign. The collected data consisted of:

- 24-hour vehicle counts on Fifth Street and adjacent streets.
- Peak hour turning movement counts (am and pm) on Fifth Street at all intersections for all modes.
- Speed data on Fifth Street.
- Collision data on Fifth Street.

The collected data indicated the following:

- Following is a summary of the traffic volume changes:
  - Fifth Street decreased up to 19% west of the tracks, and increased up to 20% east of the tracks.
  - E. Eighth Street east of F Street increased 14 to 20%.
  - C, D, and E Streets south of Fifth Street increased by 14 to 87%, and decreased 35 to 45% north of Fifth.
  - Third and Fourth Streets west of the tracks increased 34 to 110%, and decreased by 24 to 38% east of the tracks.
  - I, J and L Streets increased 13 to 44%.
  - Sixth Street increased 37 to 55%.
  - Seventh Street decreased by 31%.
  - Miller Drive south of E. 8<sup>th</sup> increased by 36%, and decreased by 10% north of E. 8<sup>th</sup> Street.

Please see attached Exhibit A for the vehicle volume changes (daily traffic).

- Bicycle volumes in the corridor increased significantly. Please see attached Exhibit B for the bike volumes before and after the reconfiguration.
- Pedestrian volumes did not change significantly. Please see attached Exhibit C for the pedestrian volumes before and after the reconfiguration.
- Critical speed decreased from 33 mph to 30 mph after the roadway reconfiguration. Critical speed is the speed that 85% of the drivers drive at or below.
- The Collision Rate increased after the roadway reconfiguration:

	<b>Before</b>	<b>After</b>
Daily Traffic Volume	14,998	12,927
Distance (miles)	0.61	0.61
Number of Years	2	2
Collision Rate (collisions/million vehicle miles)	3.50	5.39

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<b>Collisions*</b>	<b>August 2012-July 2014 (before)</b>	<b>August 2014 – July 2016 (after)</b>
Vehicle/Vehicle	16	19
Vehicle/Bike	7	10
Vehicle/Pedestrian	1	2
Total	24	31

\*does not include collisions related to driving under the influence (7) or hitting a fixed object (3).

Period	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>I</b>	<b>J</b>	<b>K</b>	<b>L</b>
<b>8/12-7/14 (before)</b>	1	3	2	5	5	2	2	2	0	2
<b>8/14-7/16 (after)</b>	2	1	6	5	5	4	1	2	2	3

Please see Exhibit D for a summary of the collisions.

The majority of the vehicle/vehicle collisions at the non-signalized intersections were “broadside”, where the drivers from the side streets turned onto Fifth Street (mostly left turns). This may be due to the drivers’ impatience and accepting smaller gaps when vehicles are queued on Fifth Street.

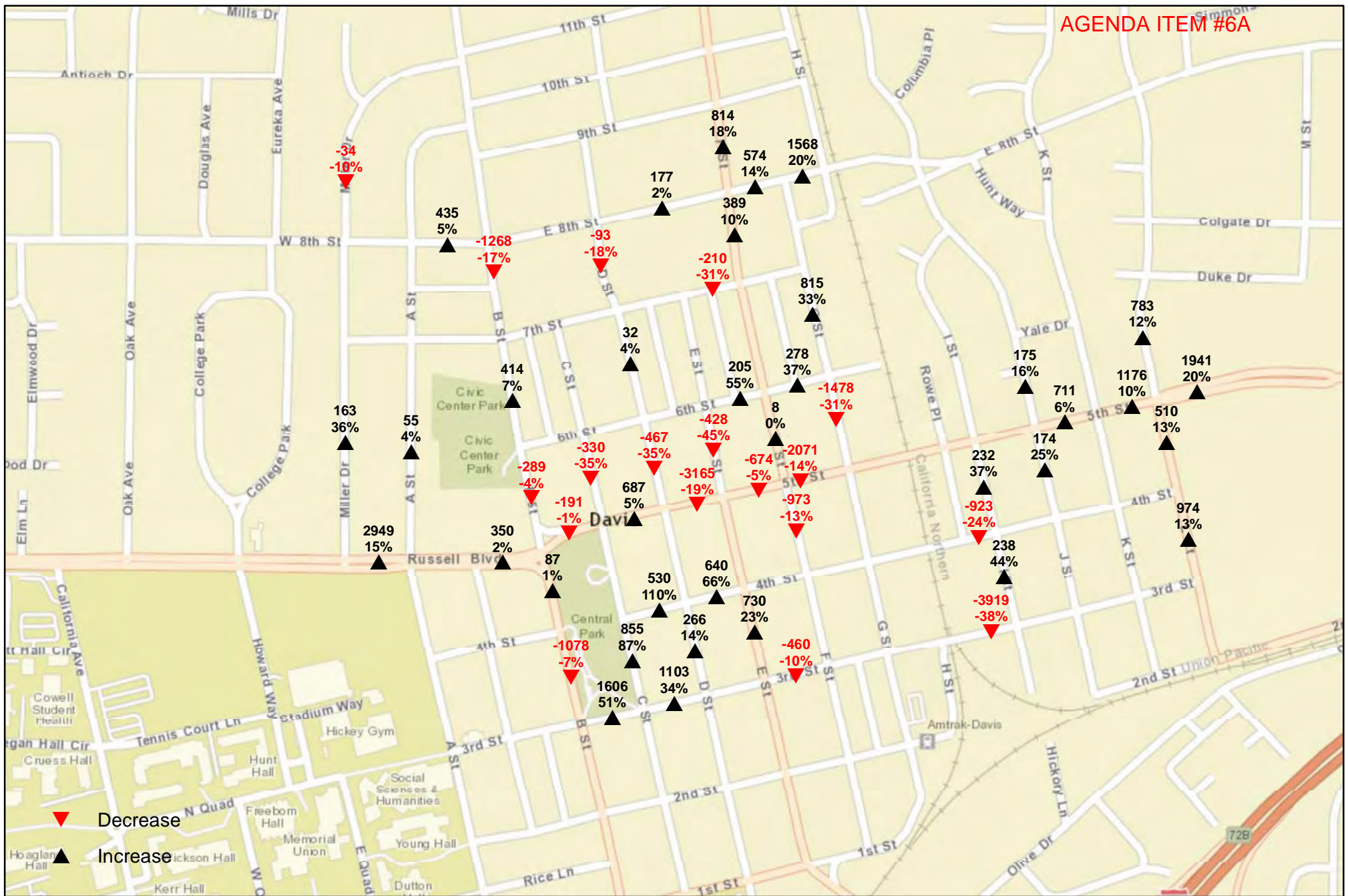
The number of the bicycle related collisions has increased throughout the corridor. However, the number of the cyclists in the corridor has greatly increased as well. The majority of the vehicle/bicycle collisions were “right hook”, where the drivers collided with the cyclists while turning right.

The two pedestrian involved collisions were at the intersections of Fifth/E (bike vs. Pedestrian) and Fifth/J (vehicle vs. pedestrian). In both cases the collision reports indicated that the pedestrians violated the right of way. Both collisions occurred at night.

We would like the number of collisions in the corridor reduced. We will continue to monitor traffic, and collect and analyze additional data.

Attachments: Exhibits A, B, C, D

C: Sgt. Rod Rifredi



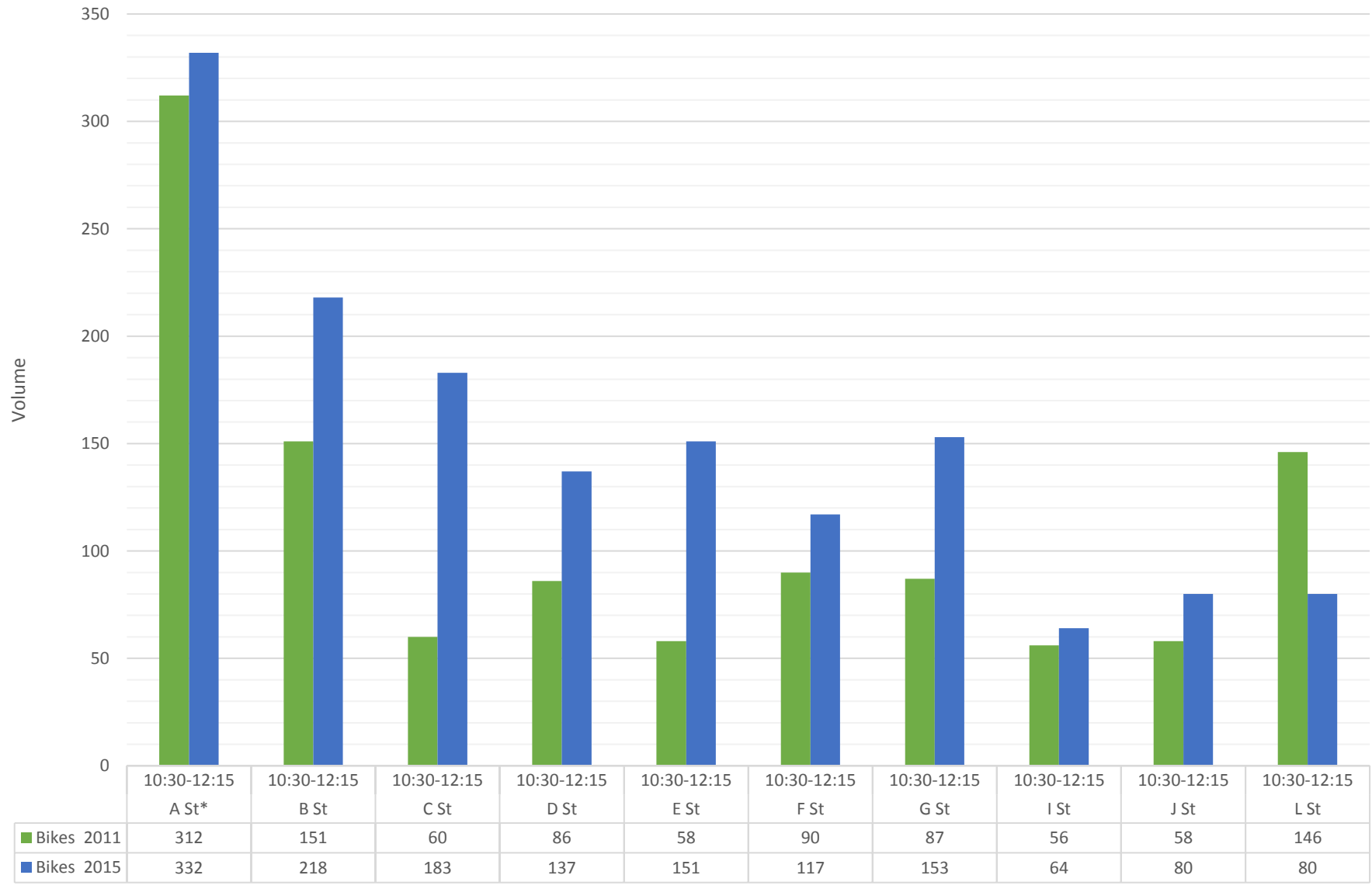
### Change in Average Daily Traffic Post Fifth Street "Road Diet"

ADT Summary	
Total Vehicles 2012	315,208
Total Vehicles 2016	319,801
Difference	+4,593
% Change	+1.5%

### Fifth Street Corridor Intersection Turning Movement Study

Total volume entering intersection from all approaches before and after "road diet":

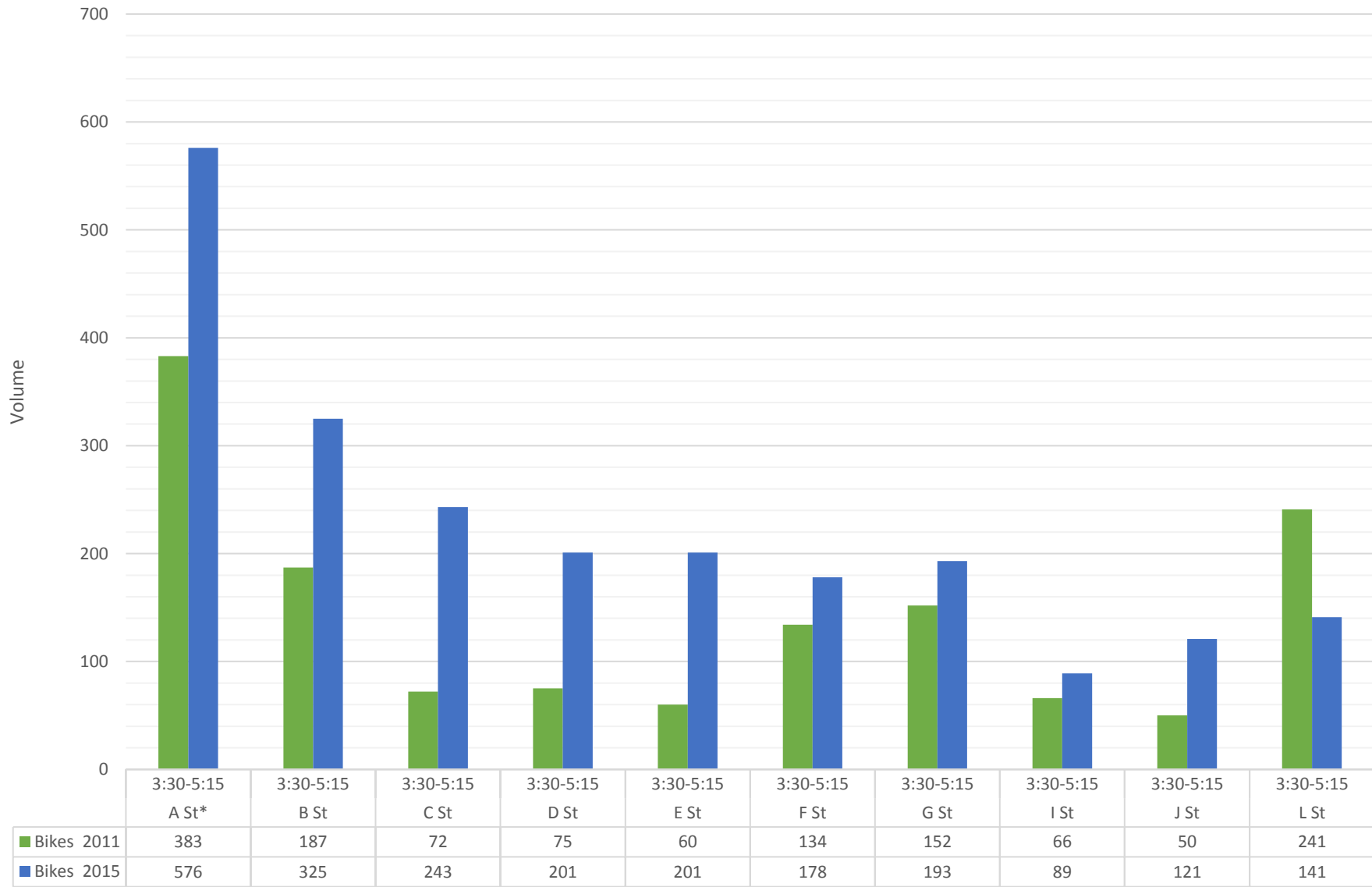
Bicycles: 10:30 am - 12:15 pm



### Fifth Street Corridor Intersection Turning Movement Study

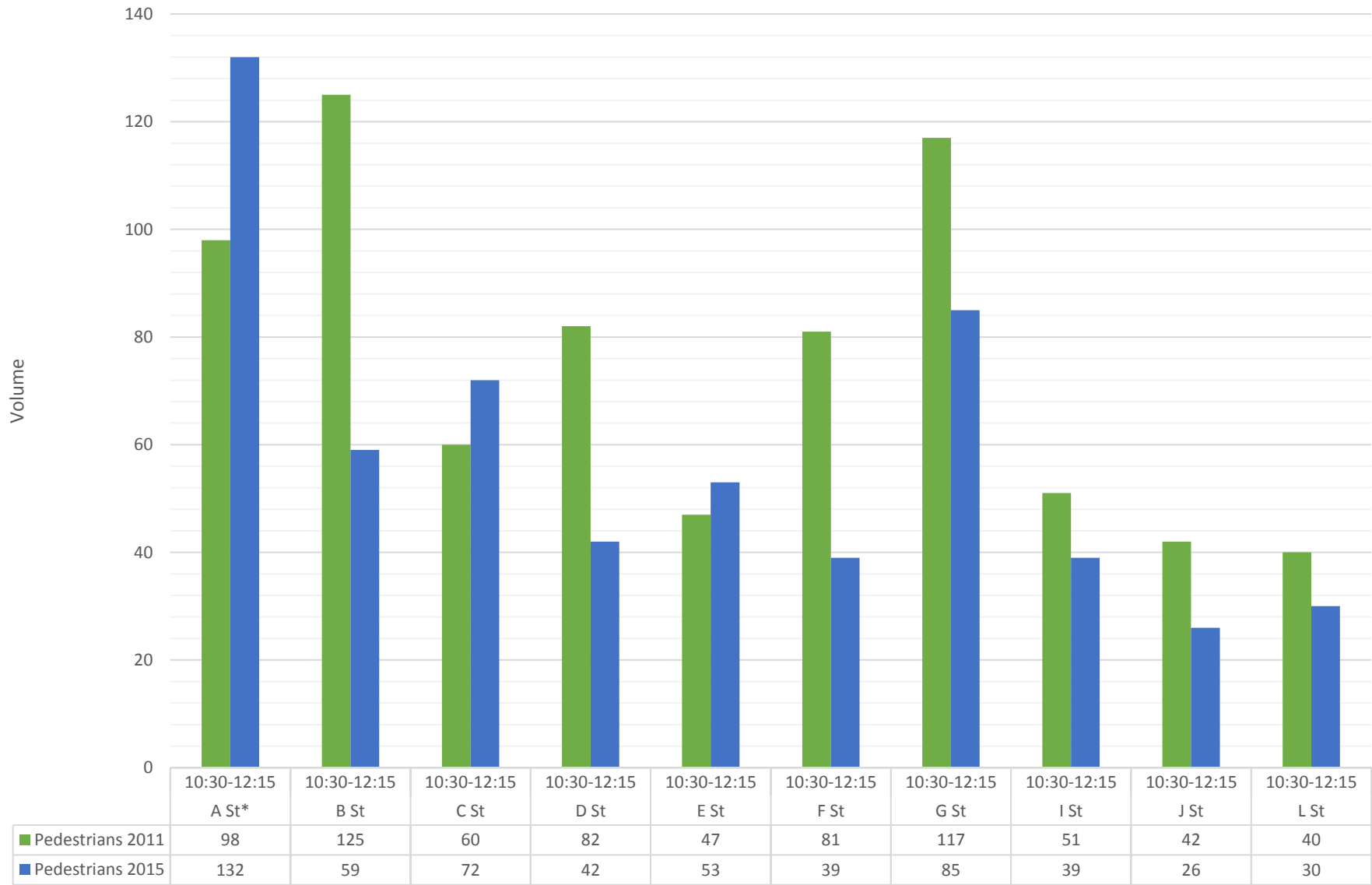
Total volume entering intersection from all approaches before and after "road diet":

Bicycles: 3:30 pm - 5:15 pm



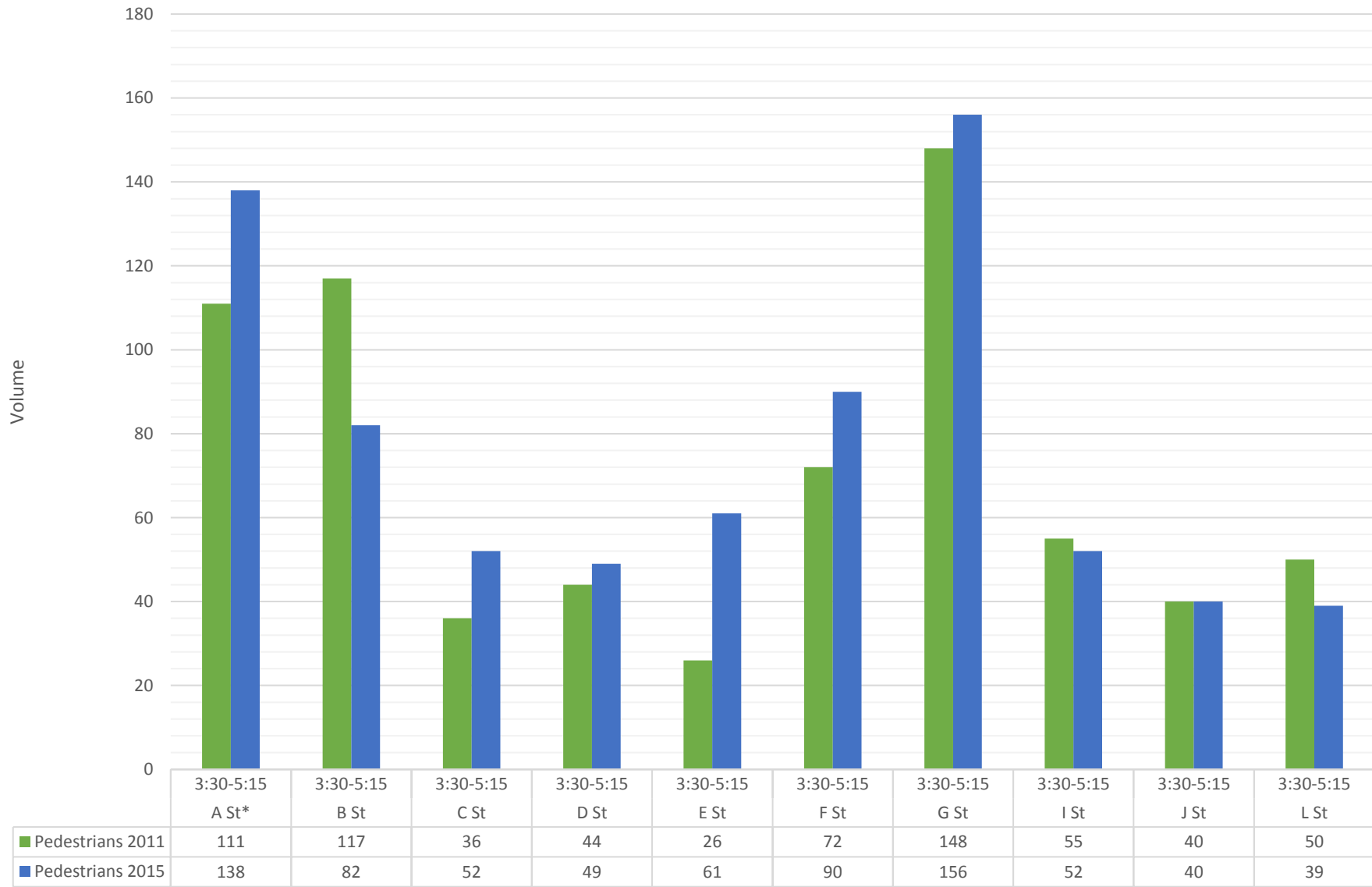
### Fifth Street Corridor Intersection Turning Movement Study

Total volume entering intersection from all approaches before and after "road diet":  
Pedestrians: 10:15 am - 12:15 pm



### Fifth Street Corridor Intersection Turning Movement Study

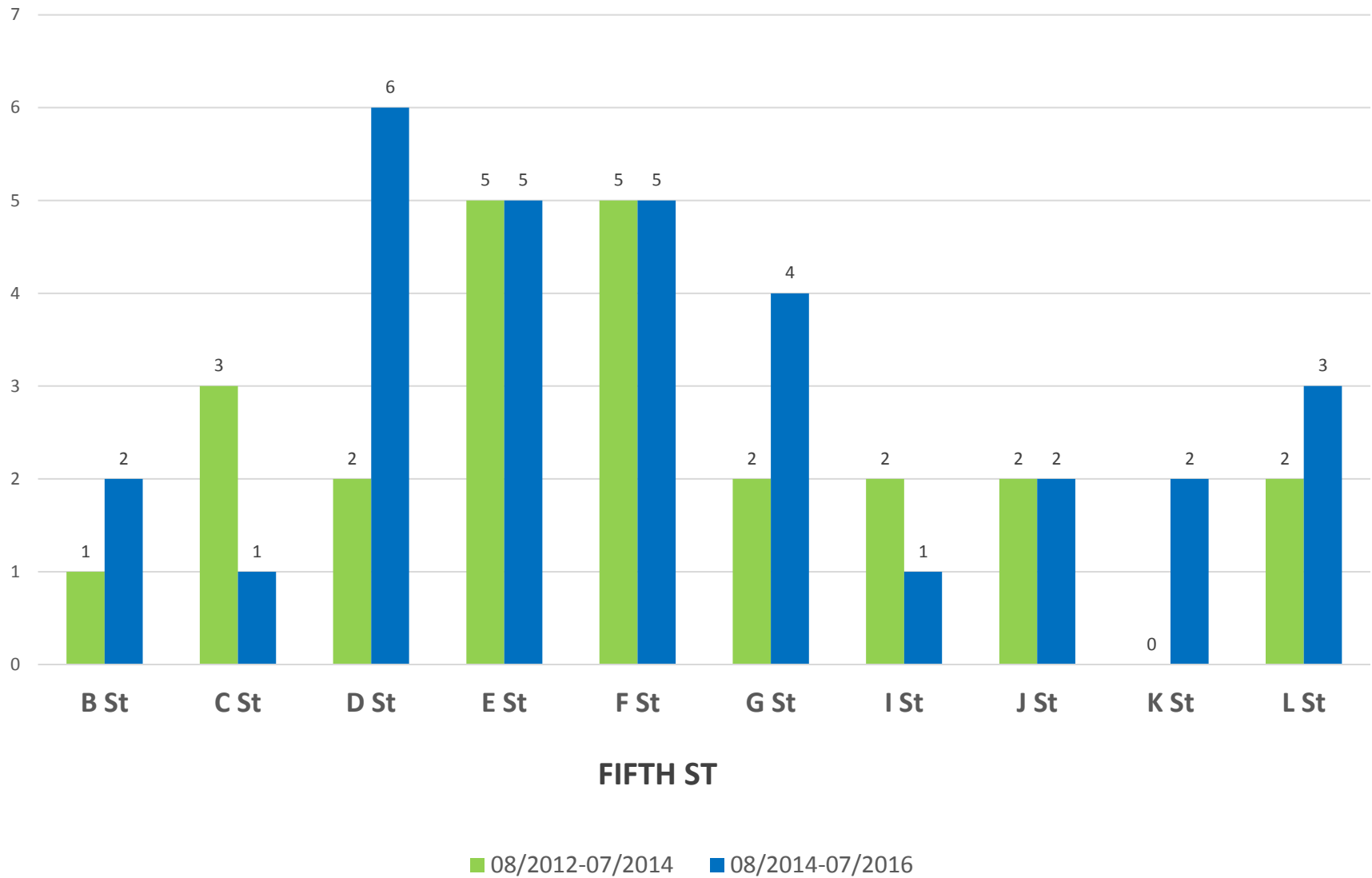
Total volume entering intersection from all approaches before and after "road diet":  
Pedestrians: 3:30 pm - 5:15 pm





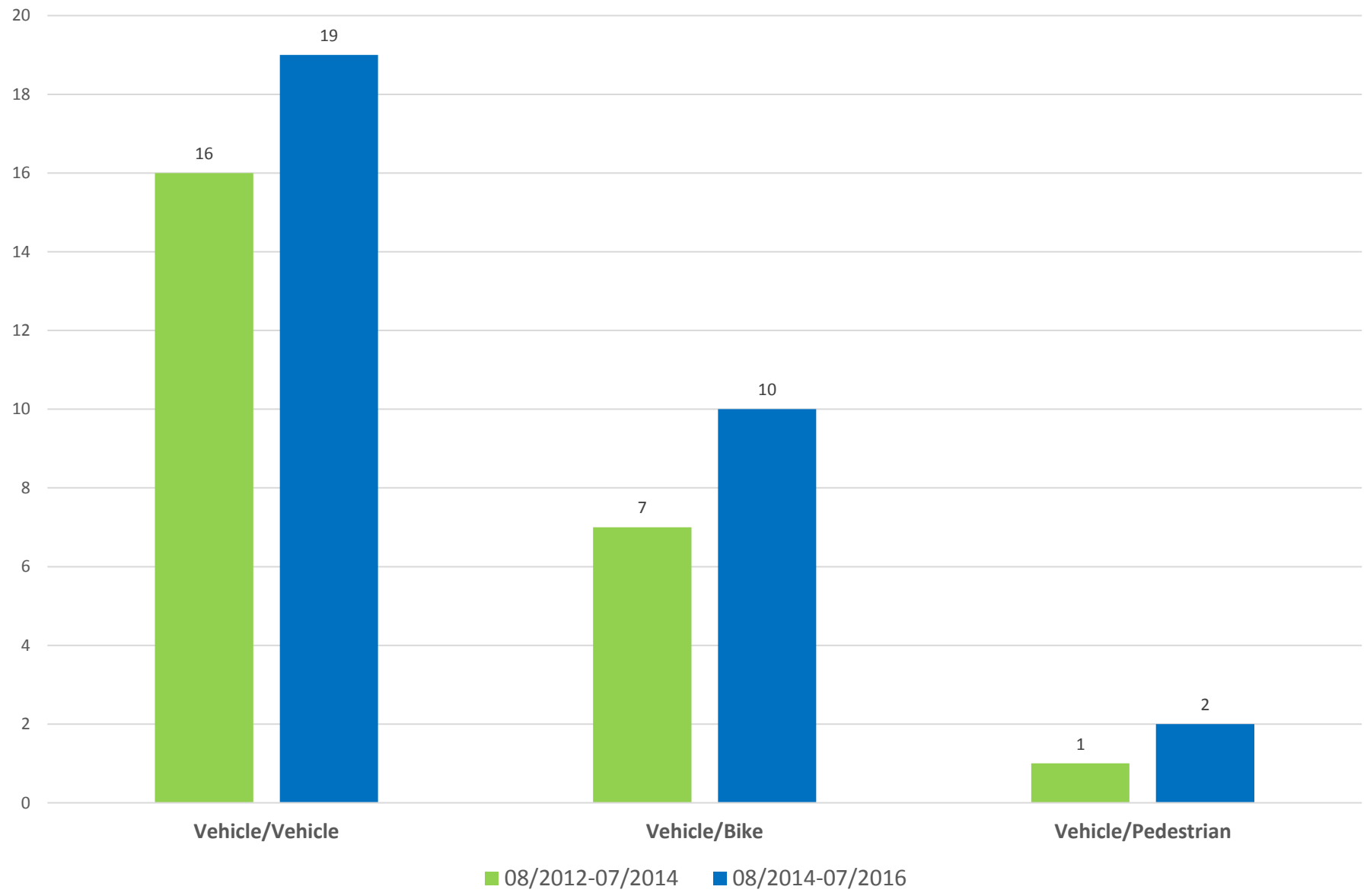
### Total Number of Collisions Before and After Road Diet

Source: Statewide Integrated Traffic Records System (SWITRS) and Davis PD



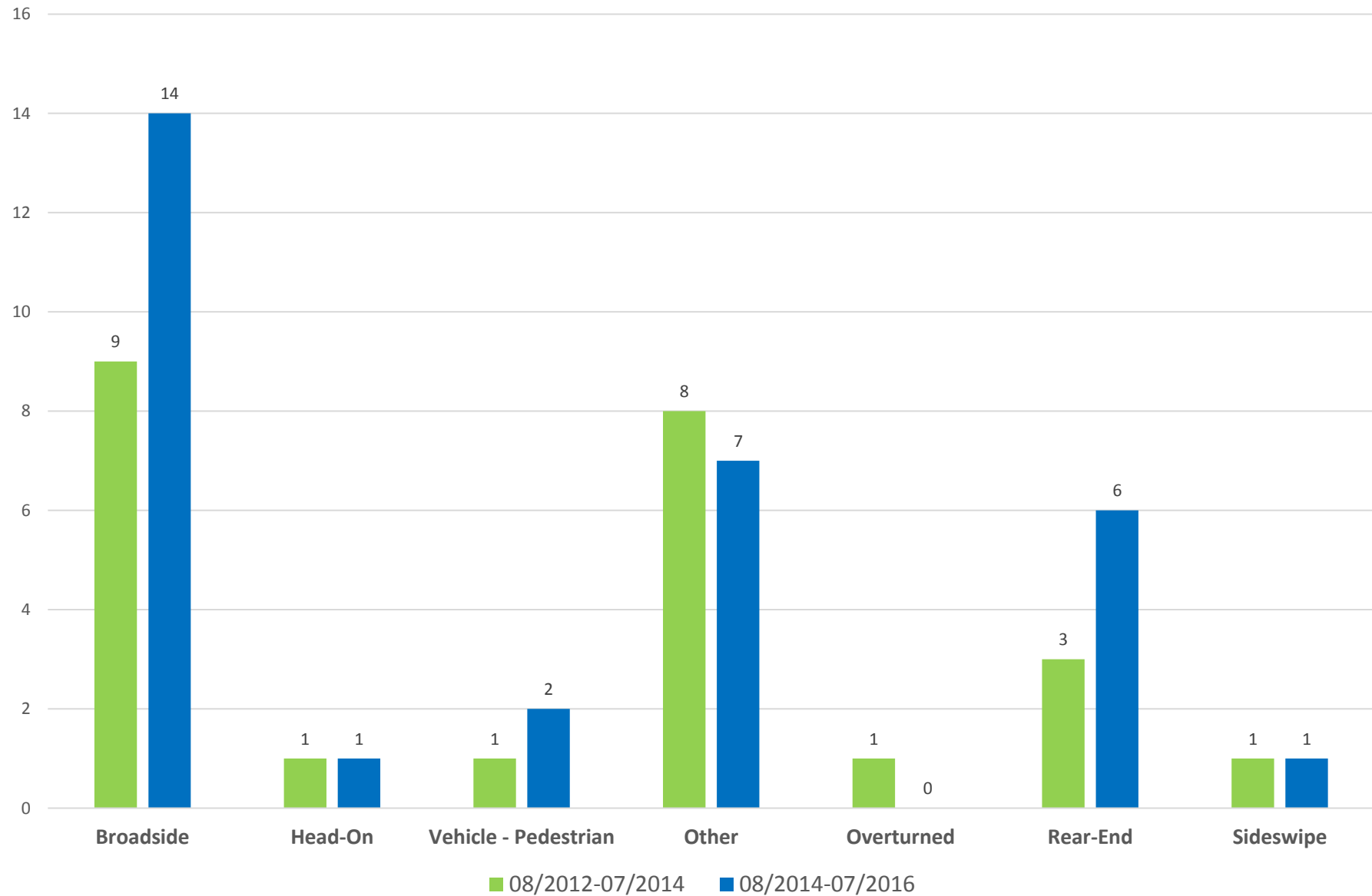
### Collisions by "Involved with" Before and After Road Diet

Source: Statewide Integrated Traffic Records System (SWITRS) and Davis PD



### Collisions by Type: Before and After Road Diet

Source: Statewide Integrated Traffic Records System (SWITRS) and Davis PD



### Collisions by Primary Collision Factor (PCF): Before and After Road Diet

Source: Statewide Integrated Traffic Records System (SWITRS) and Davis PD

