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# **Street-level Trends in Violent and Gun-Related Crime South Los Angeles, 2006 to 2015**

## **A Trajectory Analysis**

**By**

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## **Street-level Trends in Violent and Gun-Related Crime South Los Angeles, 2006 to 2015**

Trends in violent and gun-related crime are examined from 2006 to 2015 across four police divisions in Los Angeles: 77<sup>th</sup> Street, Southeast, Southwest, and Newton. The focus of the analysis is street segments, which is defined as a street from intersection to intersection. There are a total of 10,761 street segments located in these four police divisions.

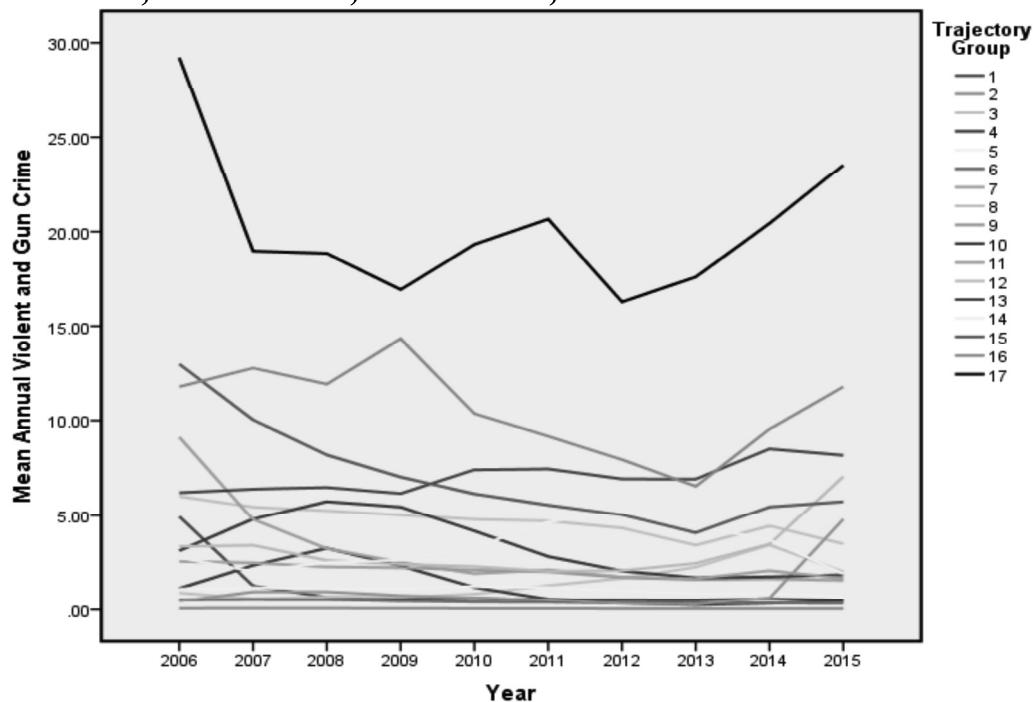
For the analysis, a count of the yearly number of violent and gun-related crime incidents is created for each street segment. Since crimes falling on the intersections cannot be associated with a sole street segment, they are evenly distributed to each street segment at a given intersection. For example, a typical intersection where two roads cross has four street segments. If a crime incident occurred on this intersection, each of four segments is given 0.25 of a crime incident.

A statistical technique known as "group-based trajectory modeling," is used to explore differences between streets in crime trends over time. The technique groups street segments based on the similarity in their crime trends over time. It is useful for identifying streets in Los Angeles that have chronically-high levels of violent and gun-related crime or streets that have had a steady increase in crime over time.

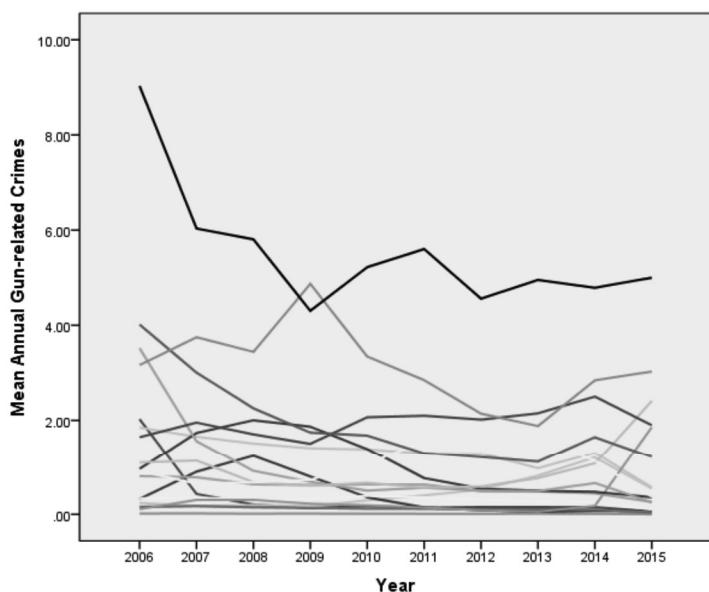
The trajectory analysis identified 17 unique crime trends from January 1, 2006 to December 31, 2015 in the street segments examined. Figure 1 presents the mean number of annual violent and gun-related incidents on a given street segment in each of the 17 groups. The majority of trajectory groups (and streets in these divisions overall) are either free of violent or gun-related incidents or have very few incidents each year. Crime on these streets appears to have steadily declined since 2006, but some groups of streets have experienced crime increases since 2013. Trajectory Group 17 has the highest number of incidents, with an average of nearly 30 incidents on each street segment within the group in 2006 and slightly less than 25 incidents in 2015.

Trajectory 17 had a notable decline in the number of incidents between 2006 and 2012, but incidents began to increase on these street segments in 2013. A few of the trajectory groups also experiences increases in violent and gun-related crime over the past few years. This increase is most evident with Trajectory Group 16, which experienced approximately a 50% increase in the number of incidents.

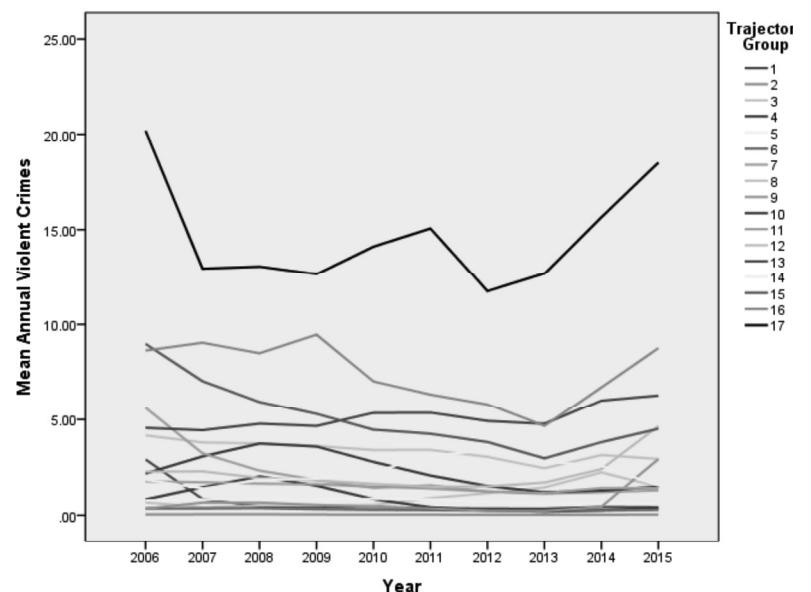
**Figure 1: Trends in Violent and Gun-Related Crime  
77<sup>th</sup>, Southwest, Southeast, and Newton Divisions**



**Figure 2: Trends in Gun-Related Crime**



**Figure 3: Trends in Violent Crime**



Street segments were grouped in the analysis based on the combined total of violent and gun-related crimes. Trends in violent and gun-related crime among these trajectory groups are explored separately in Figures 2 and 3. While crime incidents are increasing among Trajectory 17 street segments, this increase is due to a sharp spike in violent crime; gun-related crime has remained relatively stable on these streets over the past several years. In contrast, Trajectory 16 street segments have experienced increases in both violent and gun-related incidents.

Table 1 presents a description of the street segments by trajectory group. This information is from the 2010 U.S. Census. Group totals were obtained by associating each street segment in the four divisions with the census tract it falls within. Streets falling within or on the boundary of two census tracts were randomly assigned to one of the two census tracts. Then, census tract information associated with each street was aggregated by taking the mean for all street segments in each trajectory group. As such, descriptives on street segments by trajectory group presented below are not precise, but provide a general indication of the area and characteristics in which they are located.

As shown in Table 1, the low-crime trajectory groups comprise the majority of street segments in these divisions. The two highest-crime groups, Trajectories 16 and 17, comprise a total of 36 and 11 street segments respectively. These represent 0.44% of the street segments in the four divisions (47 of 10,761).

Trajectory 17 street segments have nearly twice the average number of yearly gun-related and violent crime incidents. Streets in these two trajectory groups are slightly more likely to be located in areas where there is a higher percentage of African-American residents than Hispanic residents. Trajectory Group 17 street segments are notably more likely to be located in areas with lower owner-occupied housing and higher female-head of households.

A map of street segments in Trajectory Groups 16 and 17 are presented in Figure 4. These streets are dispersed throughout the four divisions. The street name and address ranges of these streets are presented in Table 2. (Note that there are more than 47 streets listed because the U.S. Census provides address information on parts of streets in geographic files. Accordingly, a street segment as defined in the analysis is oftentimes made up of multiple portions of streets in a U.S. Census geographic file.)

Table 3 presents the Top 30 most frequent street addresses of violent and gun-related crime incidents for years 2014 and 2015 that occur on street segments in Trajectory Groups 16 and 17. Addresses with the highest number of incidents for that time period are located at the top of the list.

**Table 1: Description of Street Segment Characteristics by Trajectory Group**

Traj Group	Number of Segments	Annual Violent Crime	Annual Gun Crime	Total Population	% African American	Hispanic, Any Race	% Owner Occupied Housing			% Female Headed Households	Median Age	Homeowner Vacancy Rate	Rental Vacancy Rate
							%	% Owner Occupied Housing	% Female Headed Households				
1	302	0.70	0.40	4315	35%	60%	35%	27%	30.75	3.65	5.84		
2	2954	0.04	0.04	3957	38%	50%	41%	24%	33.04	5.07	6.32		
3	170	0.99	0.48	4301	37%	60%	38%	29%	30.77	3.25	6.46		
4	273	0.82	0.44	4288	32%	63%	34%	27%	30.22	3.78	5.75		
5	1559	0.75	0.30	4334	33%	62%	36%	27%	30.17	4.08	6.10		
6	3176	0.30	0.14	4200	35%	57%	38%	26%	31.40	4.35	6.07		
7	1098	1.45	0.56	4391	30%	66%	34%	28%	29.13	3.62	5.97		
8	228	3.37	1.26	4452	36%	61%	33%	29%	29.77	4.22	6.56		
9	104	0.69	0.40	4324	35%	60%	40%	28%	30.52	4.74	6.39		
10	254	2.29	1.05	4317	30%	66%	33%	29%	28.79	4.34	5.78		
11	170	2.12	1.00	4333	31%	65%	33%	28%	29.20	4.17	6.15		
12	156	2.17	1.03	4392	32%	64%	35%	30%	29.12	3.93	5.86		
13	59	5.11	1.99	4677	37%	59%	30%	28%	30.44	4.32	6.75		
14	133	2.27	1.10	4482	31%	67%	34%	29%	28.67	3.94	6.02		
15	78	5.11	1.88	4473	33%	64%	30%	29%	29.14	3.81	6.23		
16	36	7.49	3.22	4530	41%	56%	27%	28%	31.69	3.53	6.62		
17	11	14.66	5.69	4218	42%	55%	22%	33%	29.22	4.04	5.69		

**Table 2: List of Street Names and Address Ranges  
in Moderate-High (16) and High (17) Crime Trajectories**

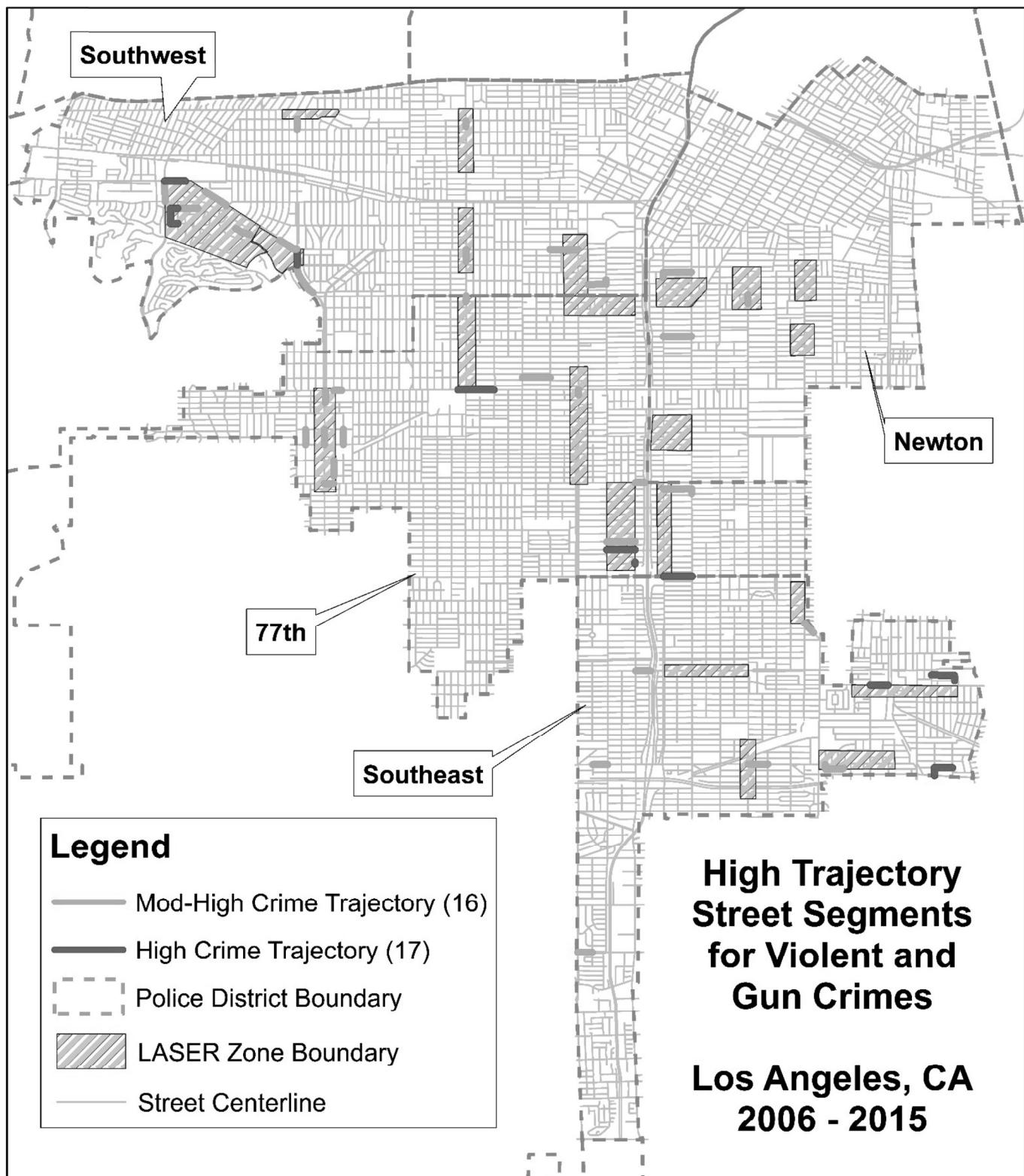
Street Name	Left from Address	Left to Address	Right from Address	Right to Address
10th Ave	6300	6498	6301	6499
11th Ave	6700	7098	6725-1	6725-99
Alvaro St	11400	11498	11401	11499
August St	4700	4998	4701	4999
August St	5000	5098	5001	5099
Avalon Blvd	4400	4498	4515-0	4515-98
Brynhurst Ave	6300	6498	6301	6499
Crenshaw Blvd	2800	2900	2801	2899
Crenshaw Blvd	4050	4198	4079	4199
Crenshaw Blvd	4200	4248	4201	4261
Crenshaw Blvd	4250	4298	4263	4299
Crenshaw Blvd	4300	4344	4301	4333
Crenshaw Blvd	5800	5898	5801	5899
Crenshaw Blvd	6300	6402	6301	6499
E 101st St	2001	2299	2000	2298
E 103rd St	1601	1679	1600	1682
E 115th St	1201	1399	1200	1414
E 115th St	2001	2199	2000	2198
Gibraltar Ave	3800	3998	3841	3999
Grape St	11500	11598	11501	11599
Imperial Hwy	601	699	600	698
Juniper St	10100	10198	10101	10199
Palmwood Dr	4000	4198	4001	4199
Pinafore St	4900	4998	4901	4999
Rodeo Rd	5002	5098	5001	5099
S Broadway	4200	4248	4201	4281
S Central Ave	9210	9298	9201	9299
S Central Ave	9300	9314	9301	9399
S Figueroa St	8916	8926	8319	8399
S Hoover St	4250	4298	4267	4299
S la Brea Ave	3600	3798	3601	3799
S Main St	7300	7398	7301	7325
S Vermont Ave	5820	5844	5817	5851
S Western Ave	2700	2802	2701	2799
S Western Ave	4000	4098	4001	4099
S Western Ave	4100	4128	4101	4129
S Western Ave	4400	4498	4401	4499
W 42nd St	100	298	101	299
W 43rd St	800	898	801	899
W 50th St	100	298	101	299
W 57th St	1200	1398	1201	1399
W 73rd St	100	298	101	299
W 81st St	300	798	501	799
W 82nd St	500	798	501	799
W Century Blvd	378	498	403	499
W Florence Ave	3332	3398	3301	3399
W Florence Ave	418	498	419	499
W Imperial Hwy	644	798	659	765
W Manchester Ave	100	298	101	299
W Martin Luther King Jr Blvd			4501	4809
W Martin Luther King Jr Blvd	1000	1050	1001	1011
W Martin Luther King Jr Blvd	1114	1198	1013	1199
W Martin Luther King Jr Blvd	3600	3698		
W Rosecrans Ave	800	898	801	899
W Slauson Ave	1600	1698	1601	1699
W Slauson Ave	1722	1754	1701	1799
W Slauson Ave	1756	1834	1801	1849
W Slauson Ave	3200	3292	3201	3299

**Table 3: List of Problem Addresses for Violent and Gun-Related Crime (2014-2015)**

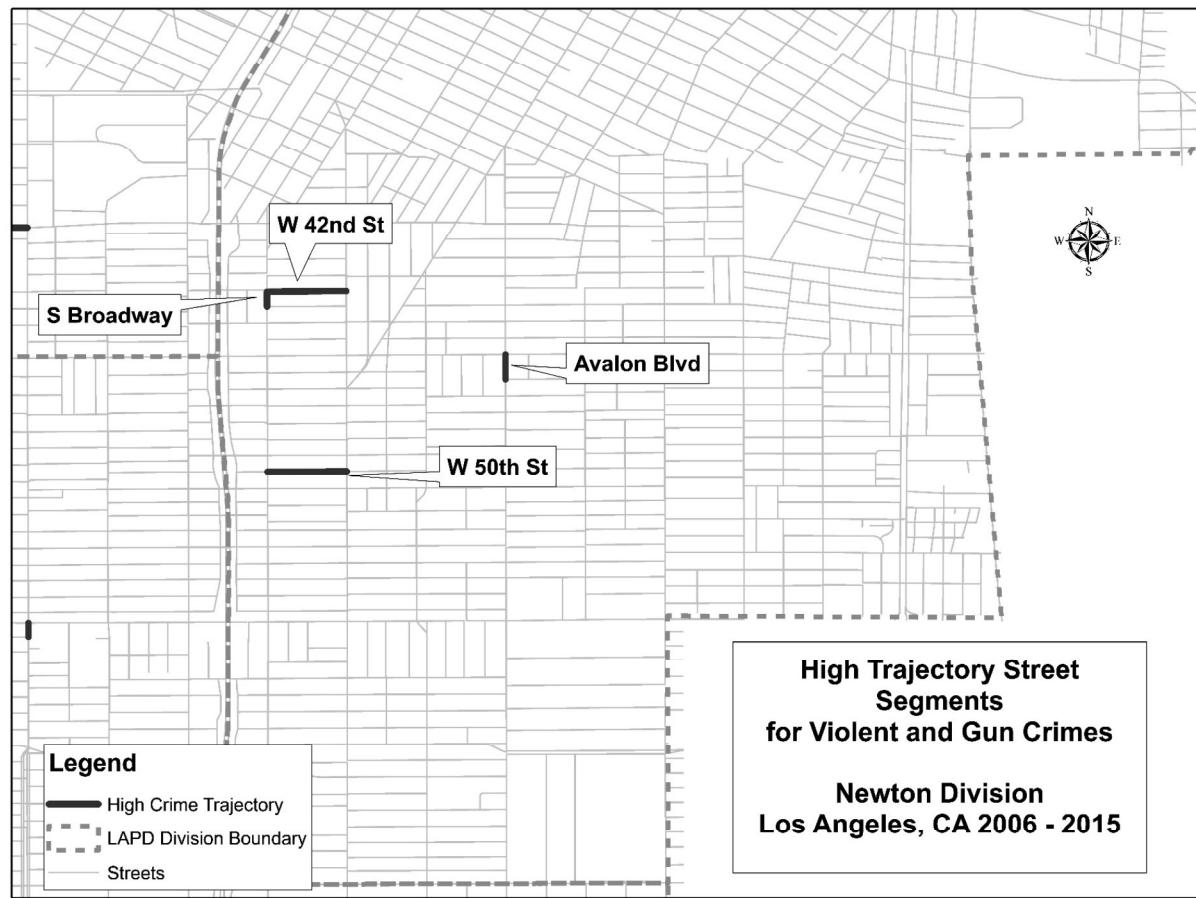
<b>Violent Crime</b>		<b>Gun-Related Crime</b>	
Address	Freq.	Address	Freq.
1 8916 S Figueroa St, 90044	49	8916 S Figueroa St, 90044	13
2 8926 S Figueroa St, 90044	42	8926 S Figueroa St, 90044	13
3 5001 Rodeo Rd, 90016	39	W Slauson Ave & S Western Ave,, 90047	11
4 W Slauson Ave & S Vermont Ave,, 90044	27	5001 Rodeo Rd, 90016	9
5 Crenshaw Blvd & W Martin Luther King Jr Blvd, 90008	26	Crenshaw Blvd & W Martin Luther King Jr Blvd, 90008	9
6 S Western Ave & W Vernon Ave,, 90062	20	1600 W Slauson Ave, 90047	8
7 W Slauson Ave & S Western Ave,, 90047	20	S la Brea Ave & Coliseum St., 90016	8
8 W Martin Luther King Jr Blvd & Crenshaw Blvd, 90008	19	W Martin Luther King Jr Blvd & Crenshaw Blvd, 90008	8
9 3650 W Martin Luther King Jr Blvd, 90008	18	W Slauson Ave & S Vermont Ave,, 90044	8
10 Avalon Blvd & Imperial Hwy,, 90061	18	700 W Imperial Hwy, 90044	7
11 W Florence Ave & Crenshaw Blvd,, 90043	18	861 W Rosecrans Ave, 90247	6
12 E Vernon Ave & Avalon Blvd,, 90011	16	Avalon Blvd & Imperial Hwy,, 90061	6
13 S la Brea Ave & Coliseum St., 90016	16	E 103rd St & Compton Ave,, 90002	6
14 1830 W Slauson Ave, 90047	15	S Vermont Ave & W Slauson Ave,, 90044	6
15 S Vermont Ave & W Slauson Ave,, 90044	15	W Martin Luther King Jr Blvd & S Western Ave,, 90062	6
16 W Slauson Ave & Crenshaw Blvd, 90043	15	3313 W Florence Ave, 90043	5
17 1600 W Slauson Ave, 90047	14	3650 W Martin Luther King Jr Blvd, 90008	5
18 4030 S Western Ave, 90062	14	W 63rd St & Crenshaw Blvd,, 90043	5
19 E 103rd St & Compton Ave,, 90002	14	4501 W Martin Luther King Jr Blvd, 90016	4
20 W Martin Luther King Jr Blvd & S Western Ave,, 90062	14	6309 Brynurst Ave, 90043	4
21 861 W Rosecrans Ave, 90247	13	6419 Brynurst Ave, 90043	4
22 S Vermont Ave & W Martin Luther King Jr Blvd,, 90037	13	867 W 43rd St, 90037	4
23 W Vernon Ave & S Western Ave,, 90062	13	9312 S Central Ave, 90002	4
24 Crenshaw Blvd & W Slauson Ave,, 90043	12	Crenshaw Blvd & Stocker St., 90008	4
25 E 103rd St & Grandee Ave,, 90002	12	Hyde Park Blvd & 10th Ave,, 90043	4
26 1651 E 103rd St, 90002	11	W 42nd St & S Broadway,, 90037	4
27 1815 W Slauson Ave, 90047	11	W 82nd St & S Figueroa St., 90044	4
28 W Martin Luther King Jr Blvd & S Vermont Ave,, 90037	11	W 84th St & S Figueroa St., 90044	4
29 3313 W Florence Ave, 90043	10	W Manchester Ave & S Broadway,, 90003	4
30 Avalon Blvd & E Vernon Ave,, 90011	10	1001 W Martin Luther King Jr Blvd, 90037	3

Maps of the street segments in Trajectories 16 and 17, which are presented across the four divisions in Figure 4, are presented separately for each division in Figures 5 through 8.

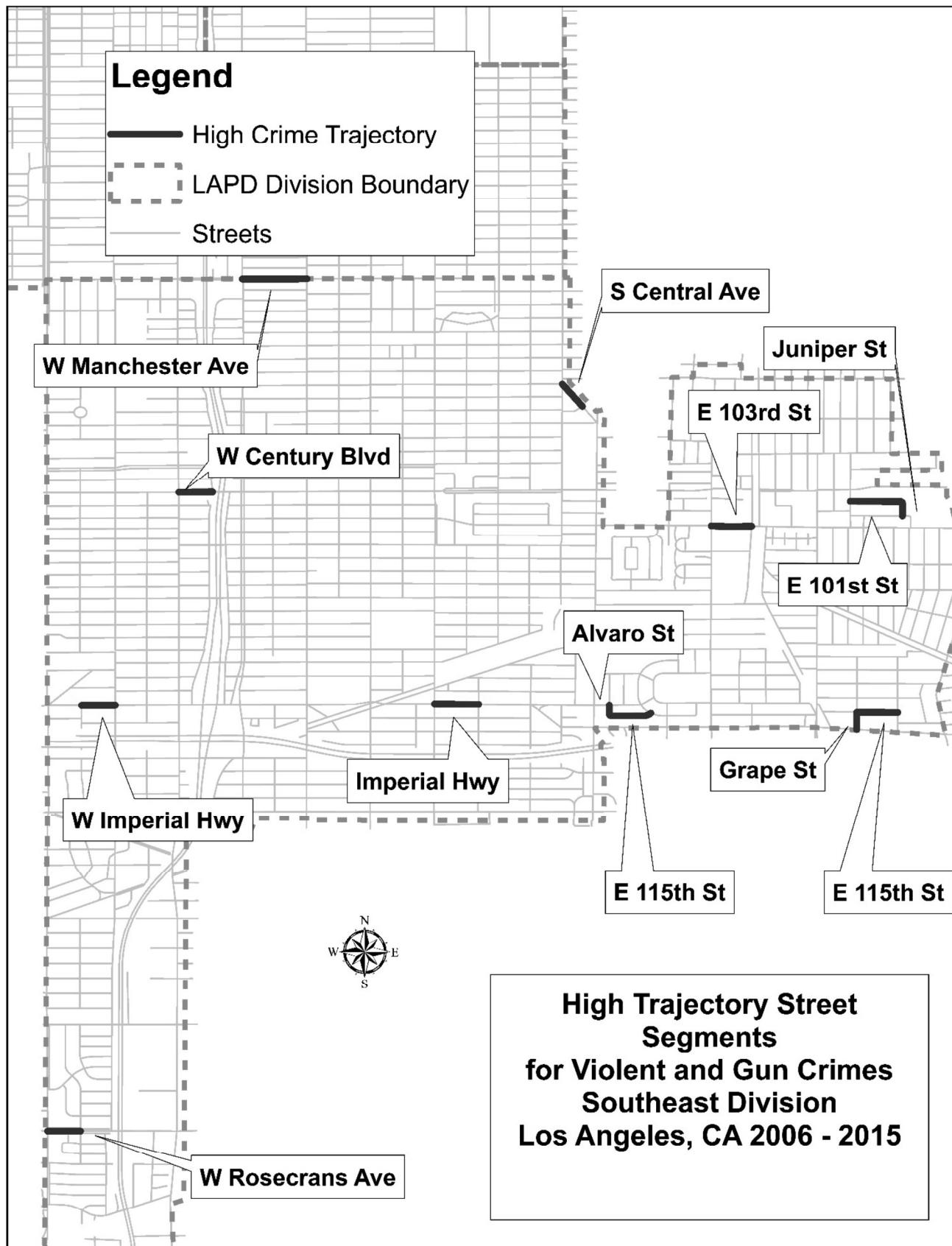
**Figure 4: Distribution of High Crime Trajectories in  
77<sup>th</sup>, Southwest, Southeast, and Newton Divisions**



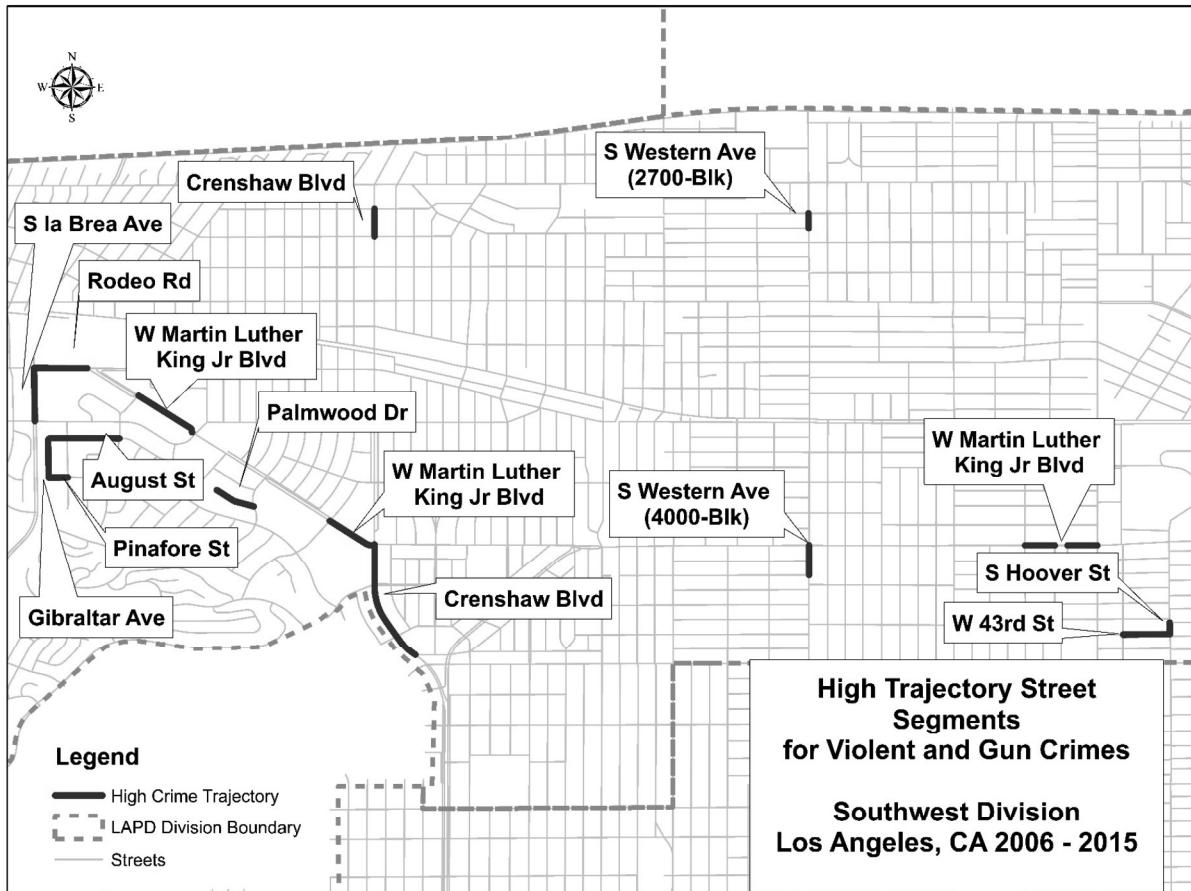
**Figure 5: High-Crime Streets in Newton Division (2006-2015)**



**Figure 6: High-Crime Streets in Southeast Division (2006 – 2015)**



**Figure 7: High-Crime Streets in Southwest Division (2006 – 2015)**



**Figure 8: High-Crime Streets in 77th Division (2006 – 2015)**

