האוניברסיטה העברית בירושלים
The Hebrew University of Jerusalem

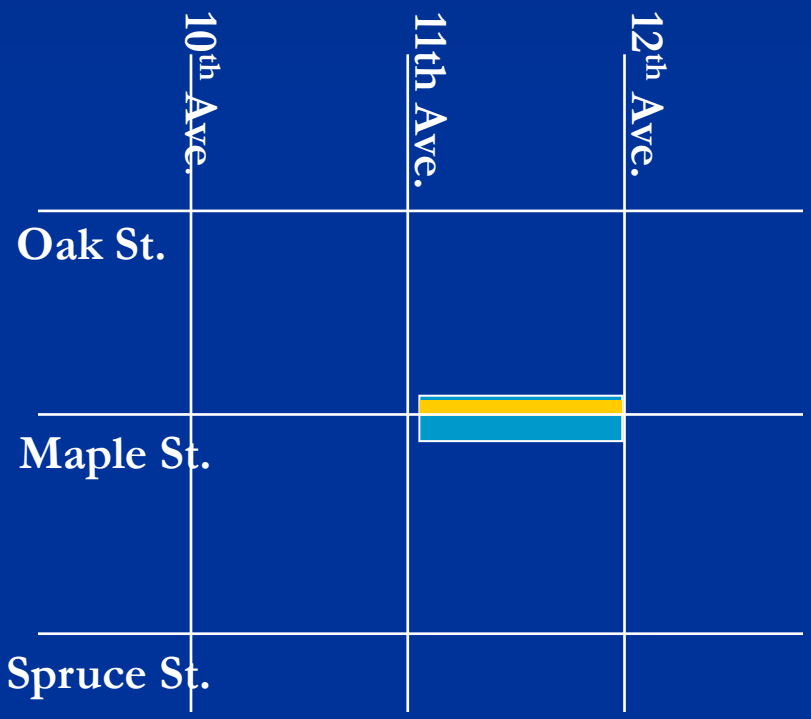
GEORGE MASON UNIVERSITY

The Importance of Micro Geographic Units in Understanding Crime Trends

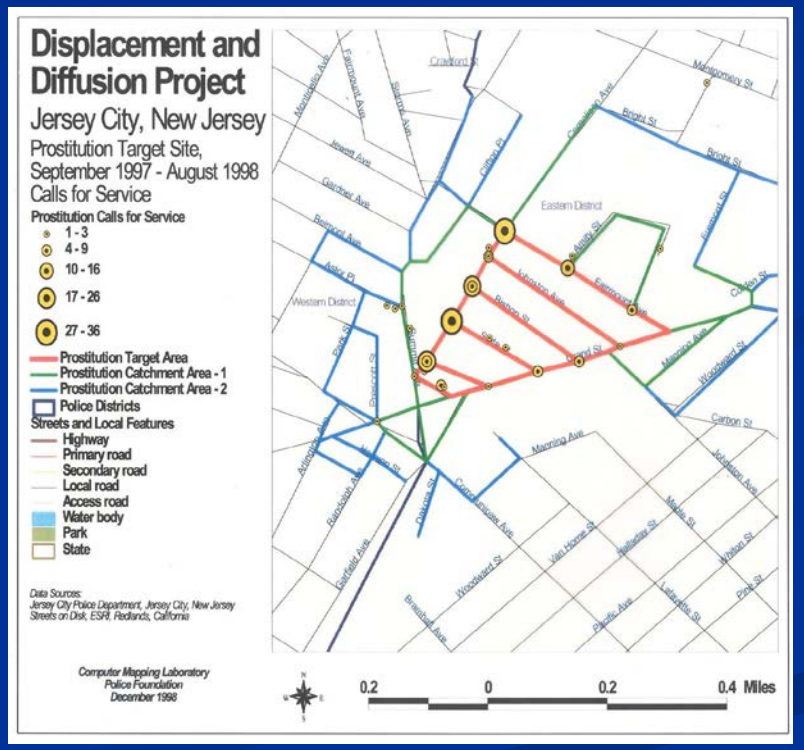
David Weisburd
George Mason University
Hebrew University

The Criminology of Place and Hot Spots of Crime: Micro Geographic Units of Analysis

The Street Segment



Cluster-- Street Segments (Weisburd et al., 2006)



What I am Going to Talk About Today

- The concentration of crime at place.
- The difference between trends of crime concentrations and trends of crime in a city.
- The variability of crime trends at a micro geographic level.
- The geographic heterogeneity of crime trends within communities.

CRIME CONCENTRATIONS

Crime Concentrations at Addresses

Sherman et al., 1989

No. of Calls	Observed No. of Places	Expected No. of Places	Cumulative % of Places	Cumulative % of Calls
0	45,561	6,854	100%	—
1	35,858	19,328	60.4	100.0
2	11,318	27,253	29.2	88.9
3	5,683	25,618	19.4	81.9
4	3,508	18,060	14.4	76.7
5	2,299	10,186	11.4	72.4
6	1,678	4,787	9.4	68.8
7	1,250	1,929	7.9	65.7
8	963	680	6.8	63.0
9	814	213	6.0	60.6
10	652	60	5.3	58.4
11	506	15	4.7	56.3
12	415	4	4.3	54.6
13	357	1	3.9	53.1
14	297	0	3.6	51.7
15≥	3,841	0	3.3	50.4

mean = 2.82 X^2 = 301,376 df = 14 $p < .0001$

Pierce et al., (1986)

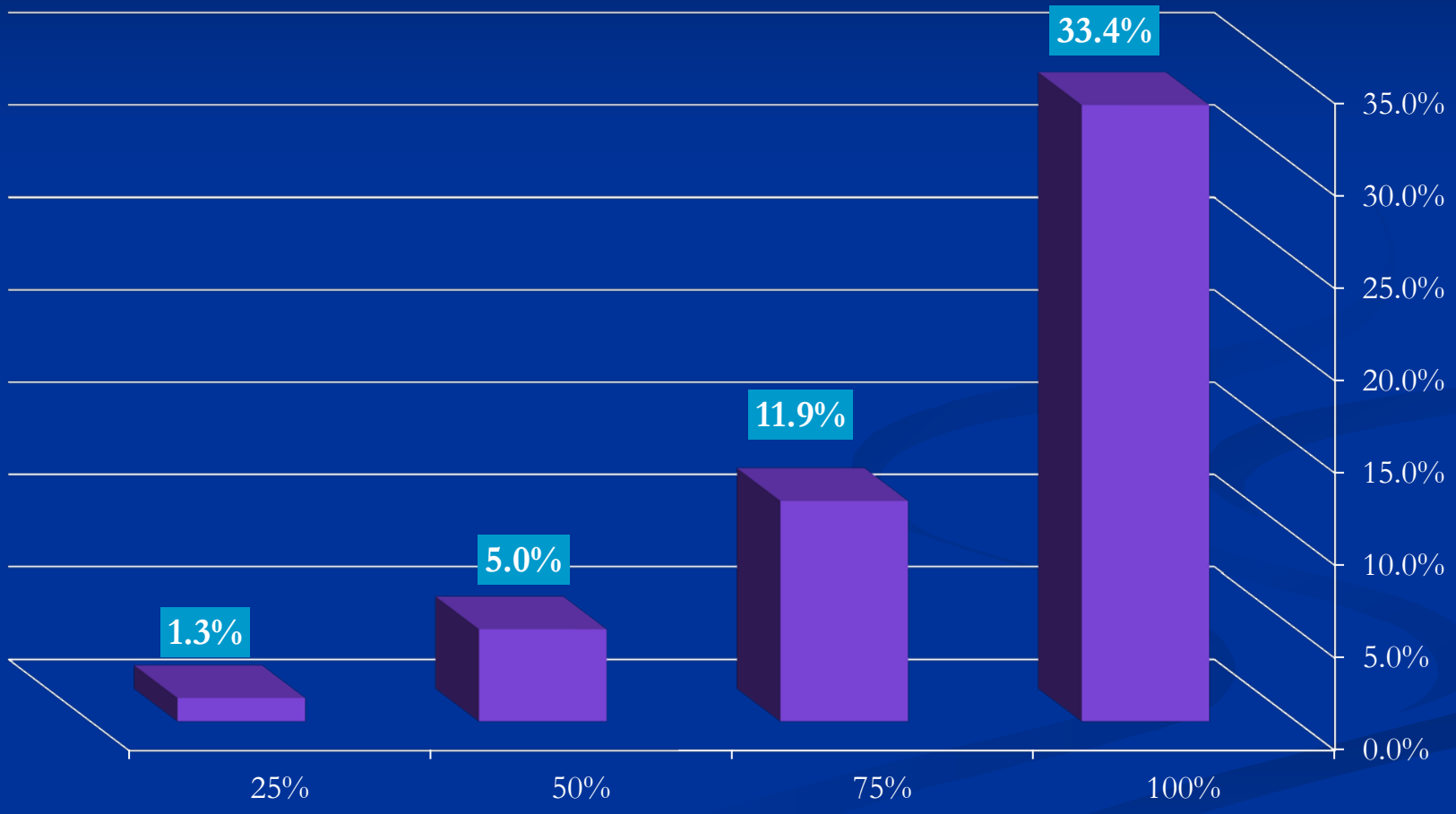
Annual Rate of Demand for Services per Street Address	Percent of All Street Addresses	Percent of Total Demand for Police Services
1 or more	80.79	100.00
2 or more	43.64	91.00
3 or more	30.10	84.44
4 or more	22.87	79.18
5 or more	18.32	74.78
10 or more	8.66	59.62
20 or more	3.64	50.13
30 or more	2.01	34.01
40 or more	1.27	27.86
50 or more	.86	23.56
75 or more	.40	16.79
100 or more	.22	13.13
150 or more	.09	9.36
Total Number of Cases	703,830[1]	2,905,440[2]

Crime Concentrations at Street Segments: New York

	2009		2010	
	n	%	*n*	%
Incidents in the Top 10% of the Street Segments	229,236	68.9	232,192	69.6
Incidents in the Top 5% of the Street Segments	173,591	52.2	175,571	52.6
Incidents in the Top 1% of the Street Segments	51,454	24.5	82,005	24.6

Crime Concentrations at Street Segments: Tel Aviv

(Crime Incidents=31,550; Street Segments=17,160)



Weisburd and Amram, In Press

CRIME RATE TRENDS VS CRIME CONCENTRATION TRENDS

Seattle Crime Trends

Crime Concentrations and Crime Patterns at Places

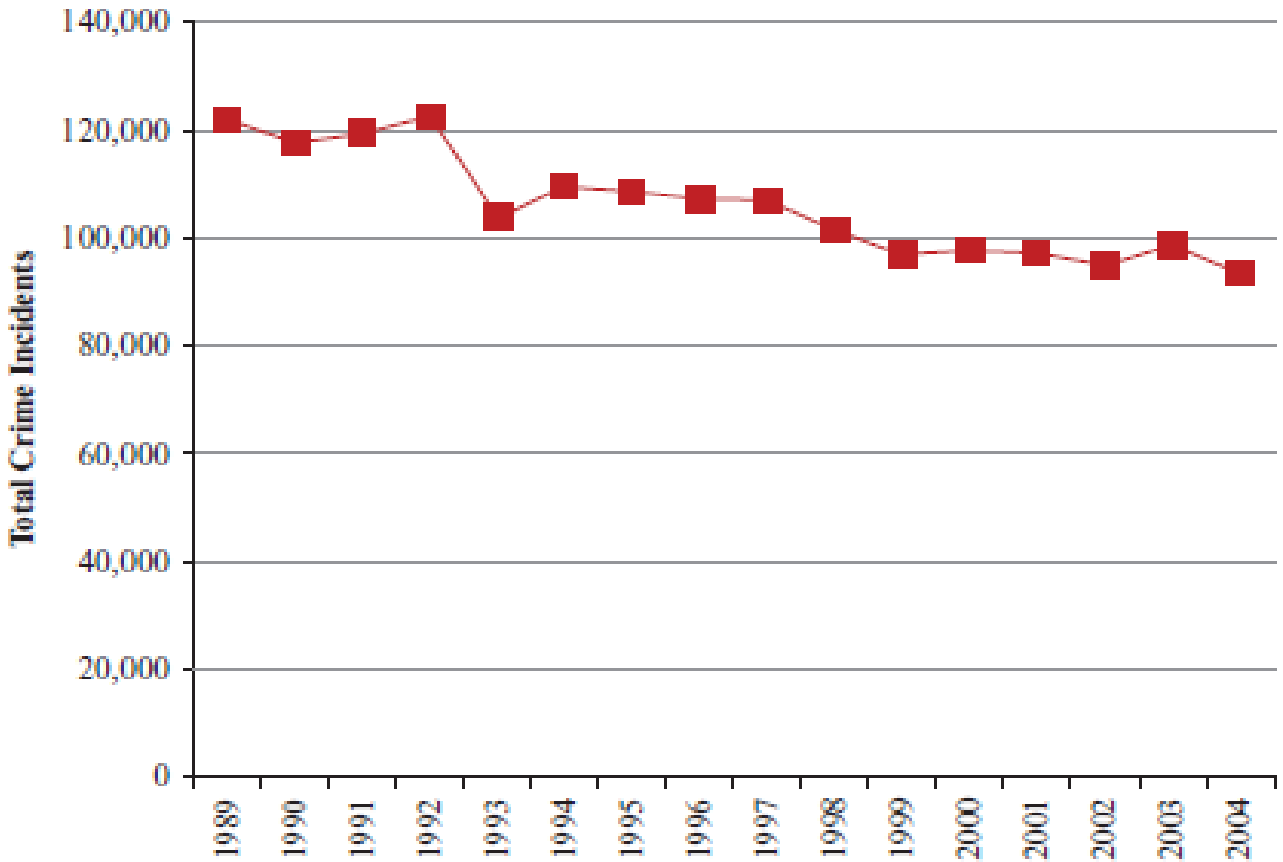
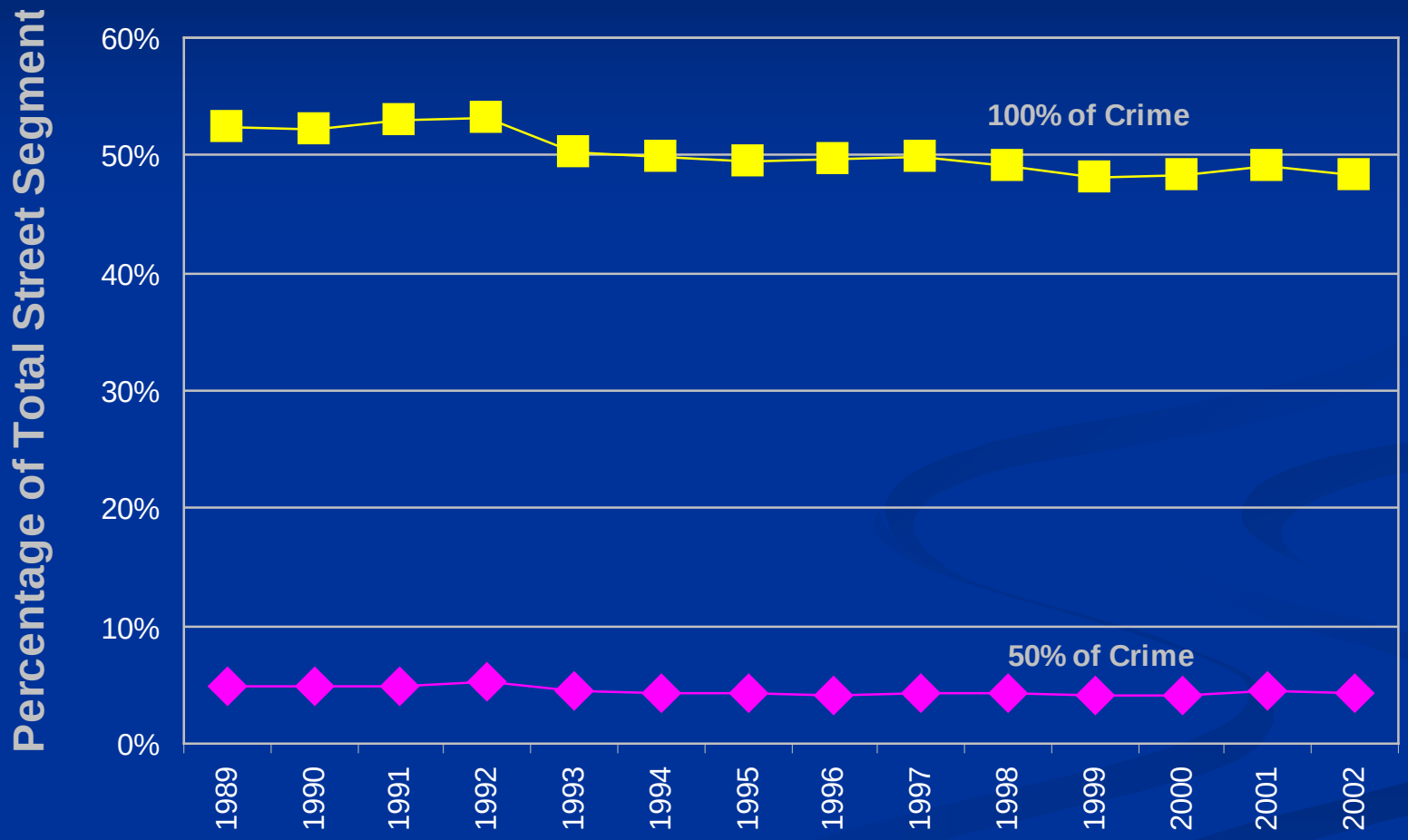


FIGURE 3.1 *Seattle Street Segment Crime Incidents*

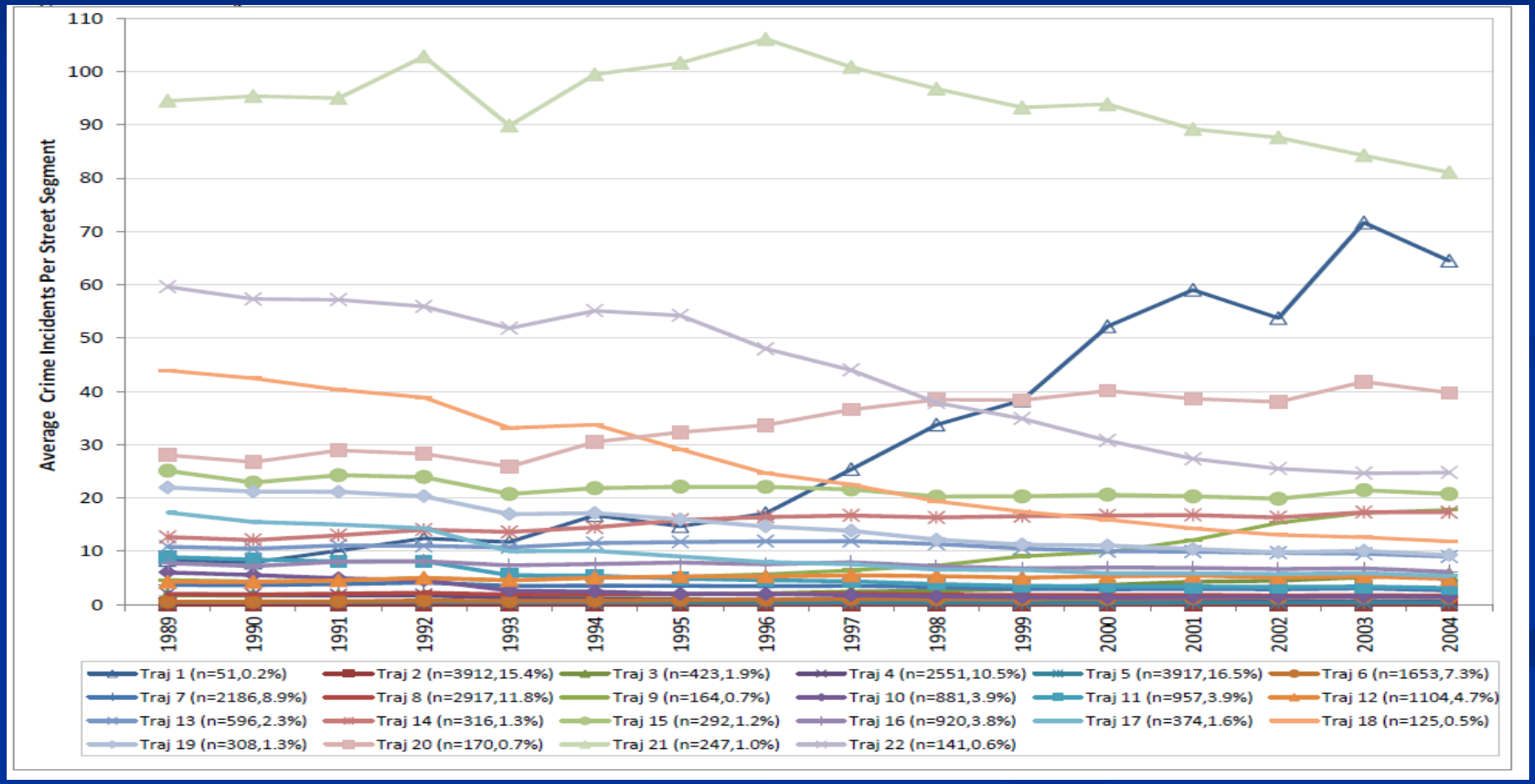
Trend of Crime Concentrations



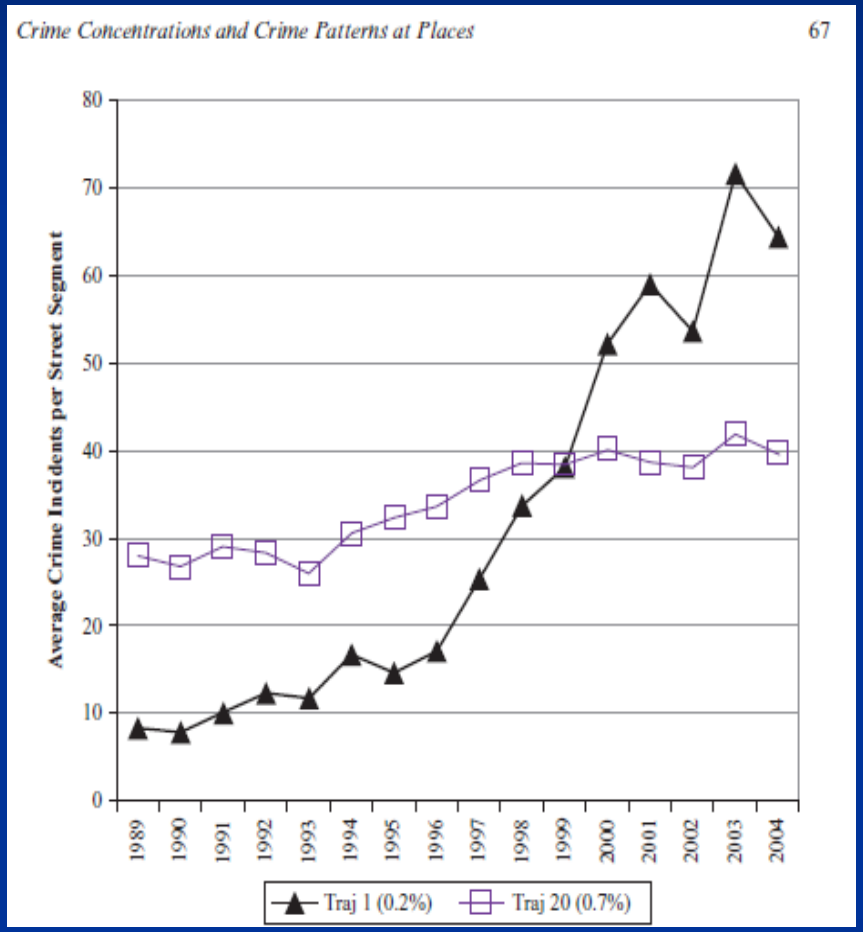
Weisburd, David, Shawn Bushway, Cynthia Lum, and Sue-Ming Yang. (2004). Trajectories of Crime at Places: A Longitudinal Study of Street Segments in the City of Seattle. *Criminology, 42*(2), 283-322.

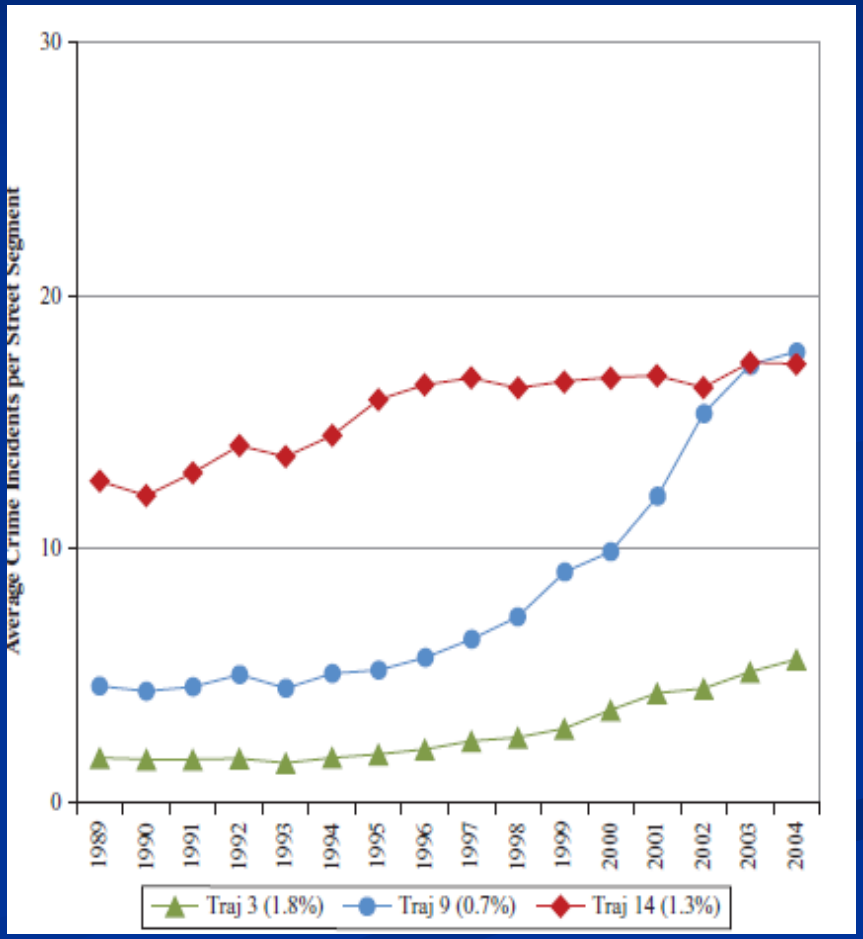
CRIME TRENDS AT MICRO UNITS OF GEOGRAPHY

Trajectory Analysis of Street Segments Across 16 Years

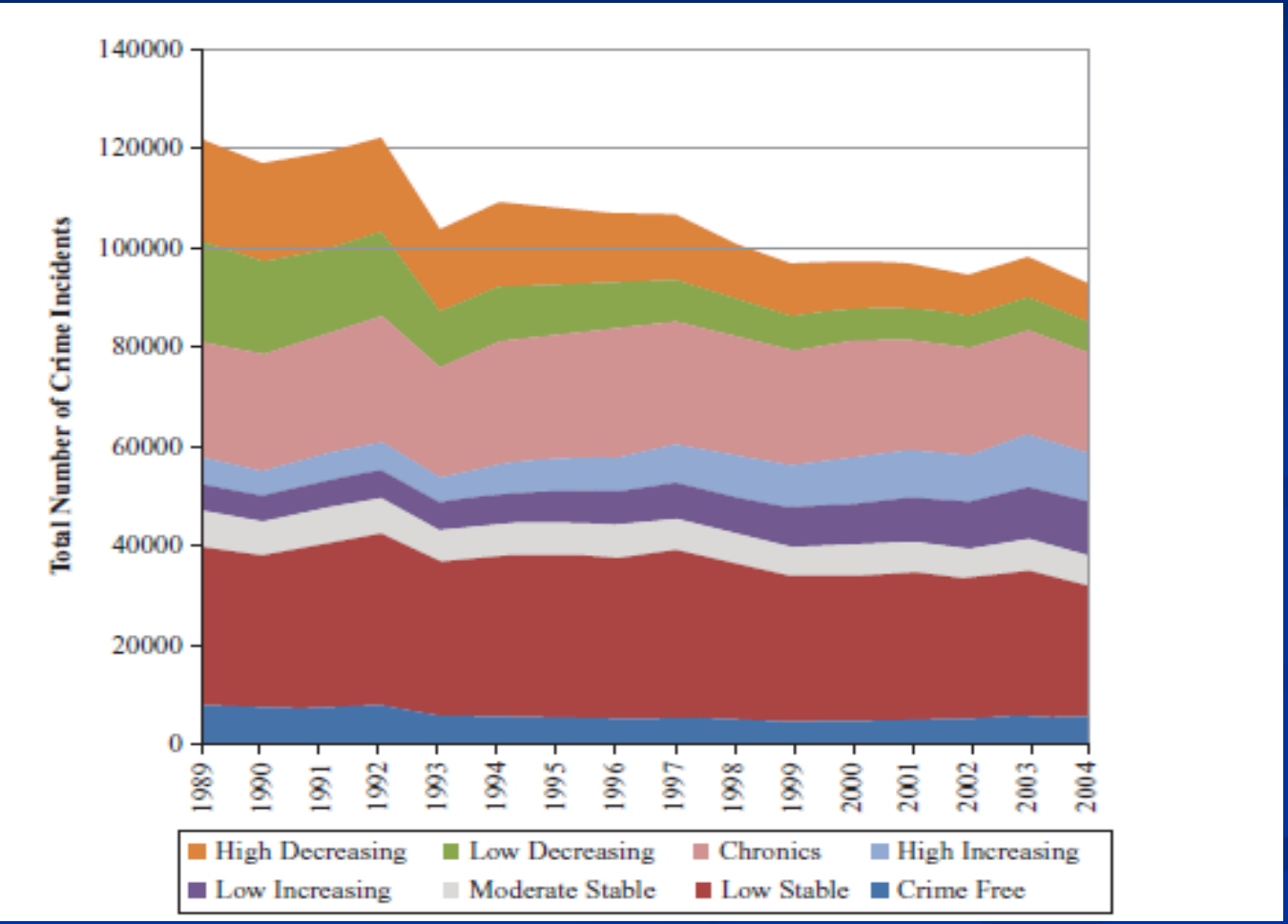


Increasing Crime Patterns (4.7%)



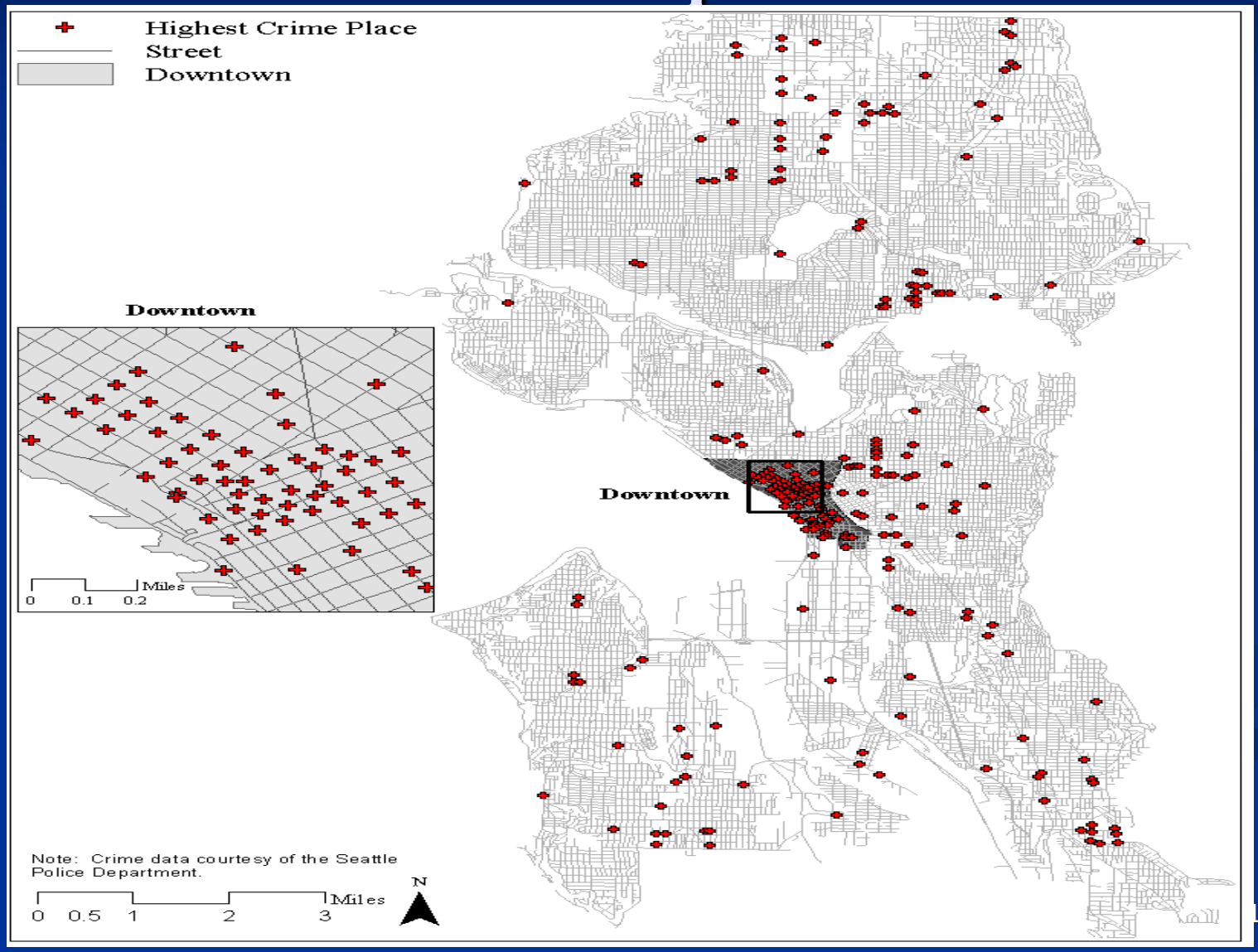


Crime Drop: 12% of City Streets

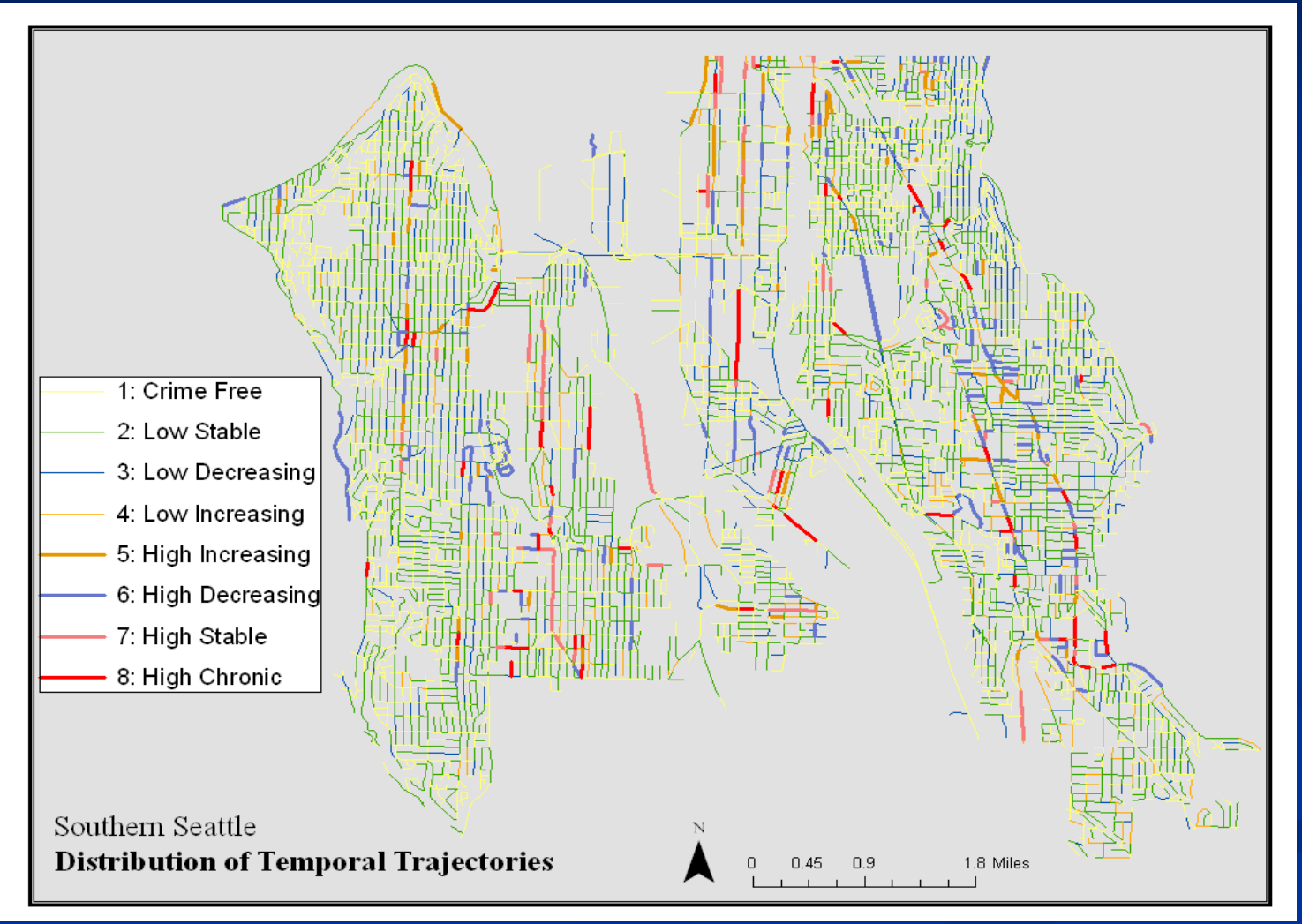


VARIABILITY OF TRENDS WITHIN COMMUNITIES

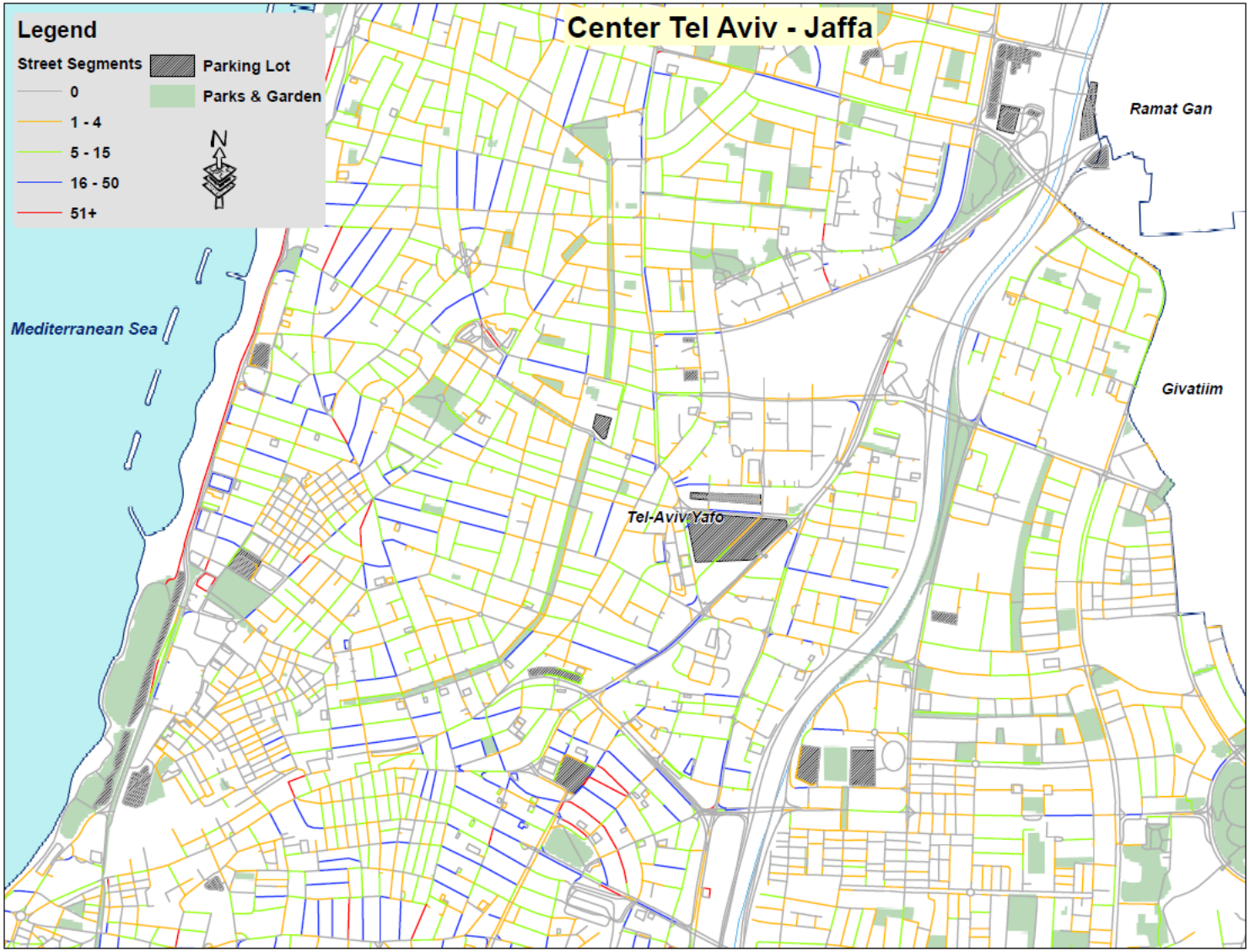
Hot spots across the city landscape



Street by Street Variability



Weisburd, Groff and Yang (In Press, Oxford University Press). *The Criminology of Place: Street Segments and Our Understanding of the Crime Problem*


Legend
Street Segments
0
1 - 4
5 - 15
16 - 50
51+
Parking Lot
Parks & Garden
N
Center Tel Aviv - Jaffa
Ramat Gan
Givatiim
Mediterranean Sea
Tel-Aviv Yafo