

Seattle Street Quality Analysis

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DATA 512 A Au 18: Human-Centered Data Science

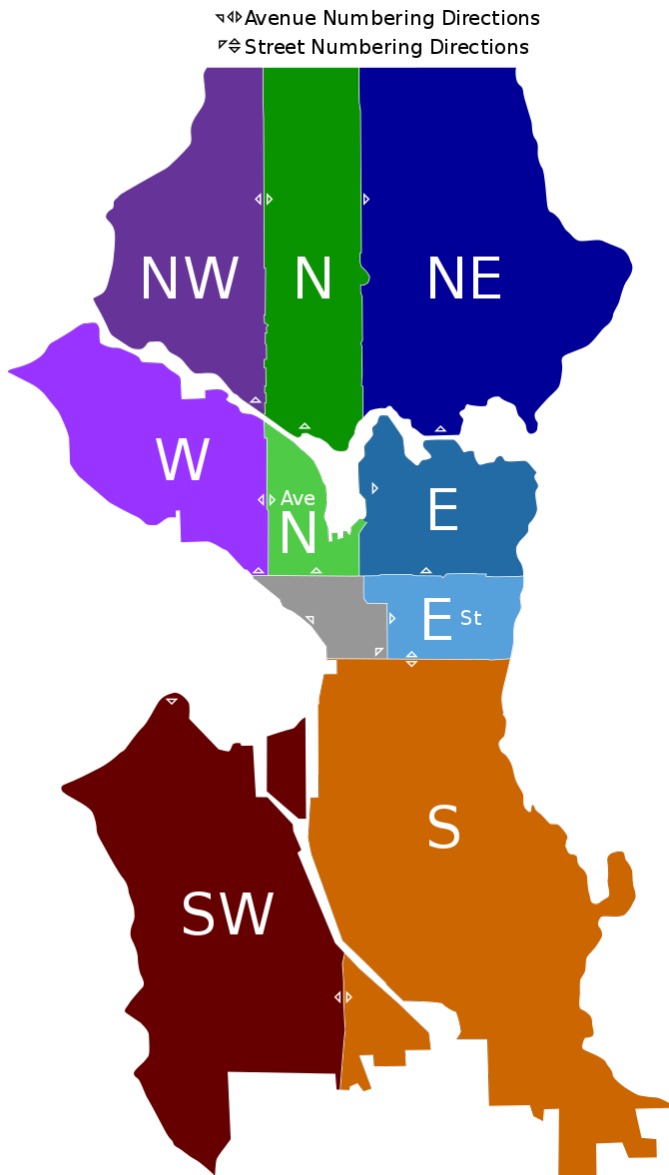
Motivation

- Using Seattle road quality data, analyze how road quality varies across the different sections of Seattle to evaluate whether road maintenance varies across different areas of the city.
- Visibility into infrastructure spend and infrastructure quality is important for holding our government accountable and for understanding if there are any inequalities between neighborhoods or regions of the city.

How

- Leveraging data from [Seattle GIS Open Data](#), we obtain street information like the following.

	STNAME_ORD	XSTRLO	XSTRHI	PVMTCONDINDX1
15	1ST AVE S	1ST AV S VI	S HUDSON ST	88
16	1ST AVE S	1ST AVS OFF S RP	1ST AVS ON S RP	45
17	1ST AVE W	W HARRISON ST	W REPUBLICAN ST	62
18	1ST AVE W	W COMSTOCK ST	W LEE ST	81
20	1ST AVE NW	NW 46TH ST	NW 47TH ST	34



Using the cardinality on the street name, we split streets into region

	STNAME_ORD	XSTRLO	XSTRHI	PVMTCONDINDX1	region
15	1ST AVE S	1ST AV S VI	S HUDSON ST	88	S
16	1ST AVE S	1ST AVS OFF S RP	1ST AVS ON S RP	45	S
17	1ST AVE W	W HARRISON ST	W REPUBLICAN ST	62	W
18	1ST AVE W	W COMSTOCK ST	W LEE ST	81	W
20	1ST AVE NW	NW 46TH ST	NW 47TH ST	34	NW

Results

- Aggregating the pavement conditions into -1 (does not exist), 0, and 5 other quintiles, we see the following counts.

condition	-1	0	20	40	60	80	100	Total
region								
E	0	345	431	311	364	281	116	1848
N	3	322	90	337	647	912	562	2873
NE	0	427	164	297	647	1269	1344	4148
NW	0	135	91	269	399	943	589	2426
S	3	1089	284	533	841	1398	1207	5355
SW	3	662	114	229	499	864	839	3210
W	0	455	77	143	223	494	313	1705
central district	1	304	236	148	159	104	72	1024
downtown	1	88	22	61	116	196	76	560
Total	11	3827	1509	2328	3895	6461	5118	23149

Results

- Looking at the roads with quality = 0, we see a higher percent for central district and W compared to the others.

Percent of Roads with Quality = 0	
region	
central district	30.0
W	27.0
SW	21.0
S	20.0
E	19.0
Overall Average	17.0
downtown	16.0
N	11.0
NE	10.0
NW	6.0

Results

- Central district and E do the worst, as shown in the gray and blue lines of the cumulative road count

