

Supplementary Note 2. Description of data used in the study

The detailed information on the freeway crash data used in the study is summarized in Table 2 and Table 3.

Table 2 Crash data in 2017.

Freeway	Number of mainline loop detectors	Begin mile	End mile	Total mileage	Number of selected crashes
I5-N	444	1.14	539.05	537.91	6,353
I5-S	453	0.22	539.05	538.83	6,288
I10-E	269	0.18	239.90	239.72	3,781
I10-W	281	0.18	239.90	239.72	3,830
I405-N	156	0.37	72.07	71.70	2,971
I405-S	166	0.37	72.07	71.70	3,002
I80-E	270	2.79	200.07	197.28	3,136
I80-W	263	3.30	200.32	197.02	3,138
I15-N	251	0.73	290.73	290.00	2,558
I15-S	243	0.72	290.73	290.01	2,511
I880-N	99	0.31	45.13	44.82	1,738
I880-S	106	0.11	45.13	45.02	1,577
I210-E	143	0.32	85.04	84.72	1,468
I210-W	149	0.32	85.53	85.21	1,601

Table 3 Crash data in 2022.

Freeway	Number of mainline loop detectors	Begin mile	End mile	Total mileage	Number of selected crashes
I5-N	448	0.22	621.4	621.18	5,048
I5-S	448	0.22	621.4	621.18	5,207
I10-E	250	0.18	239.9	239.72	3,454
I10-W	254	0.18	239.9	239.72	3,265
I405-N	164	0.37	72.07	71.70	2,268
I405-S	171	0.37	72.07	71.70	2,241
I80-E	266	2.79	200.07	197.28	2,230
I80-W	257	3.30	200.33	197.03	2,336
I15-N	230	0.73	288.13	287.40	2,199
I15-S	217	0.72	288.55	287.83	1,997
I880-N	103	0.31	45.17	44.86	1,297
I880-S	107	0.11	45.17	45.06	1,337
I210-E	140	0.32	85.04	84.72	1,211
I210-W	150	0.32	85.53	85.21	1,150