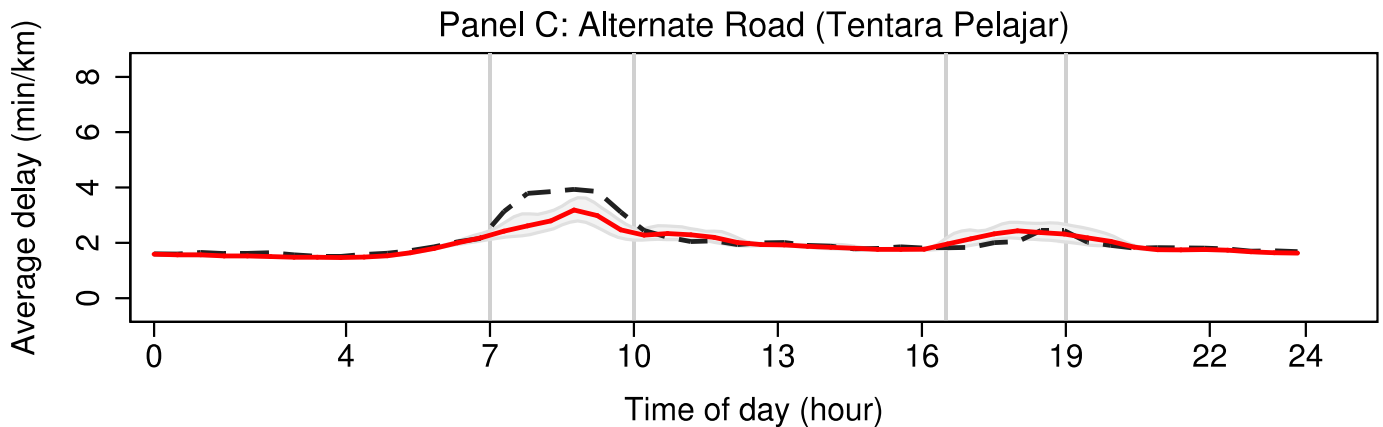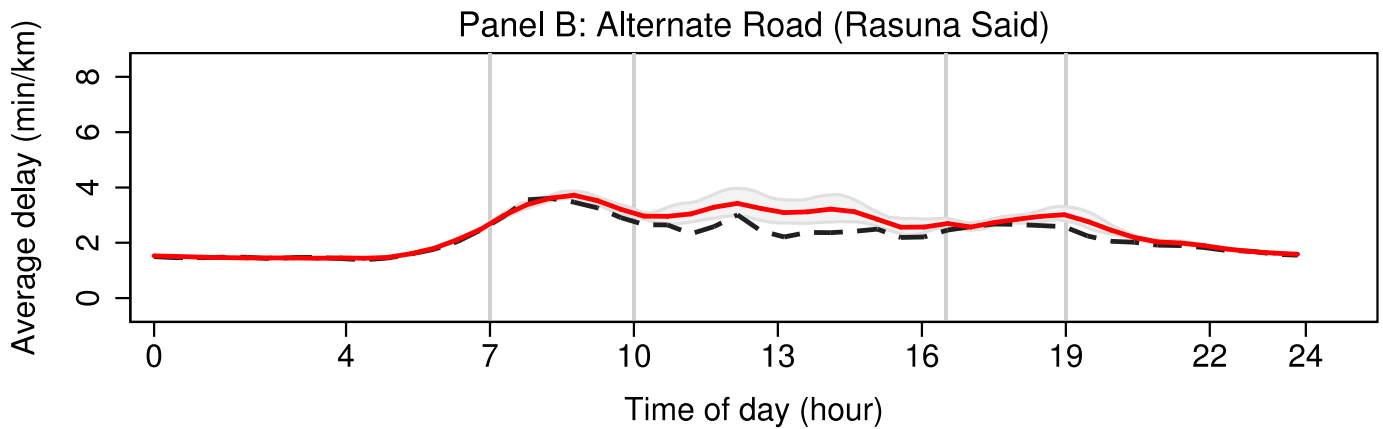# Appendix Figure 1A: Travel Delay Pre- vs. Post-Policy Lifting
on 3-in-1 and Alternate Roads
Northbound

Panel A: 3-in-1 Road (Sudirman)

Panel B: Alternate Road (Rasuna Said)

Panel C: Alternate Road (Tentara Pelajar)

Live before policy lifting — — — Live after policy lifting ———
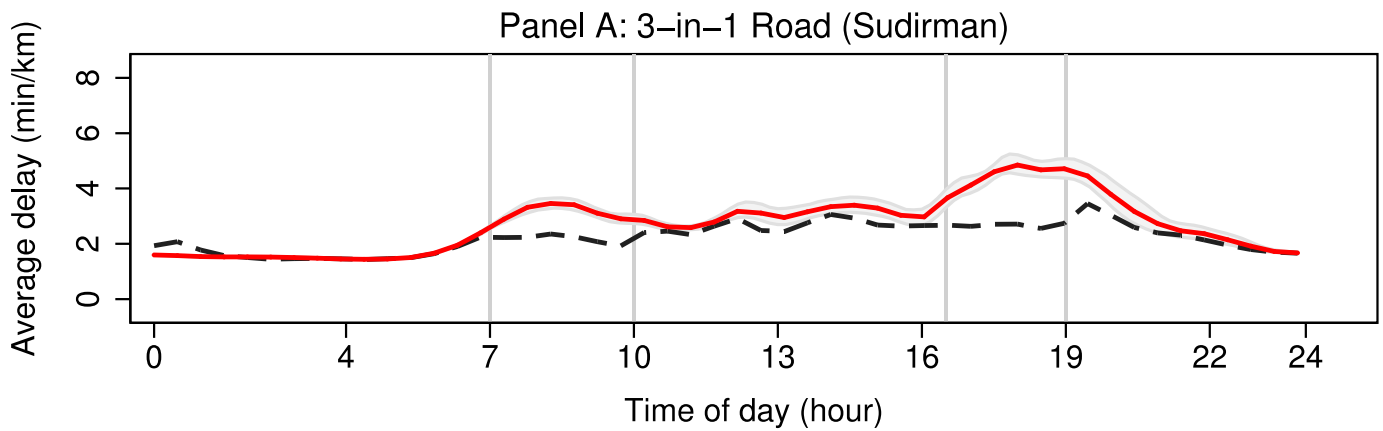
Notes: This figure replicates Figure 2 restricting to northbound road segments. Confidence intervals are calculated using a bootstrapping procedure that adjusts for clusters at the level of road direction. For departure times between 6:00 a.m. and 4:30 p.m., when only pre-data from April 1 and April 4 are available, there are 24 clusters. For departure times between 4:30 p.m. and 6:00 a.m., when March 31 pre-data are also included, there are 25 clusters.

Appendix Figure 1B: Travel Delay Pre– vs. Post–Policy Lifting
on 3–in–1 and Alternate Roads
Southbound

Panel A: 3–in–1 Road (Sudirman)

Panel B: Alternate Road (Rasuna Said)

Panel C: Alternate Road (Tentara Pelajar)

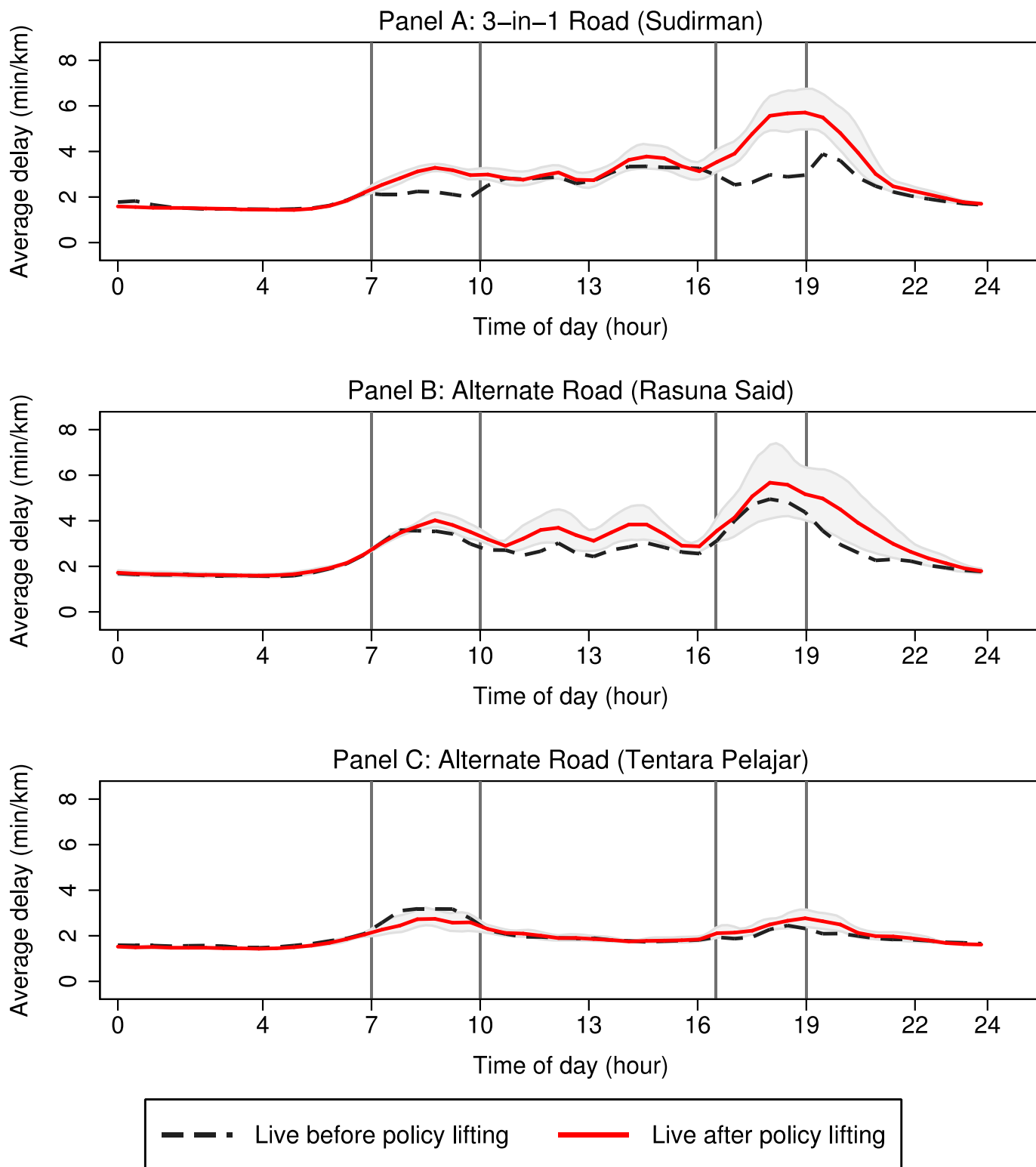- - - Live before policy lifting　　——— Live after policy lifting
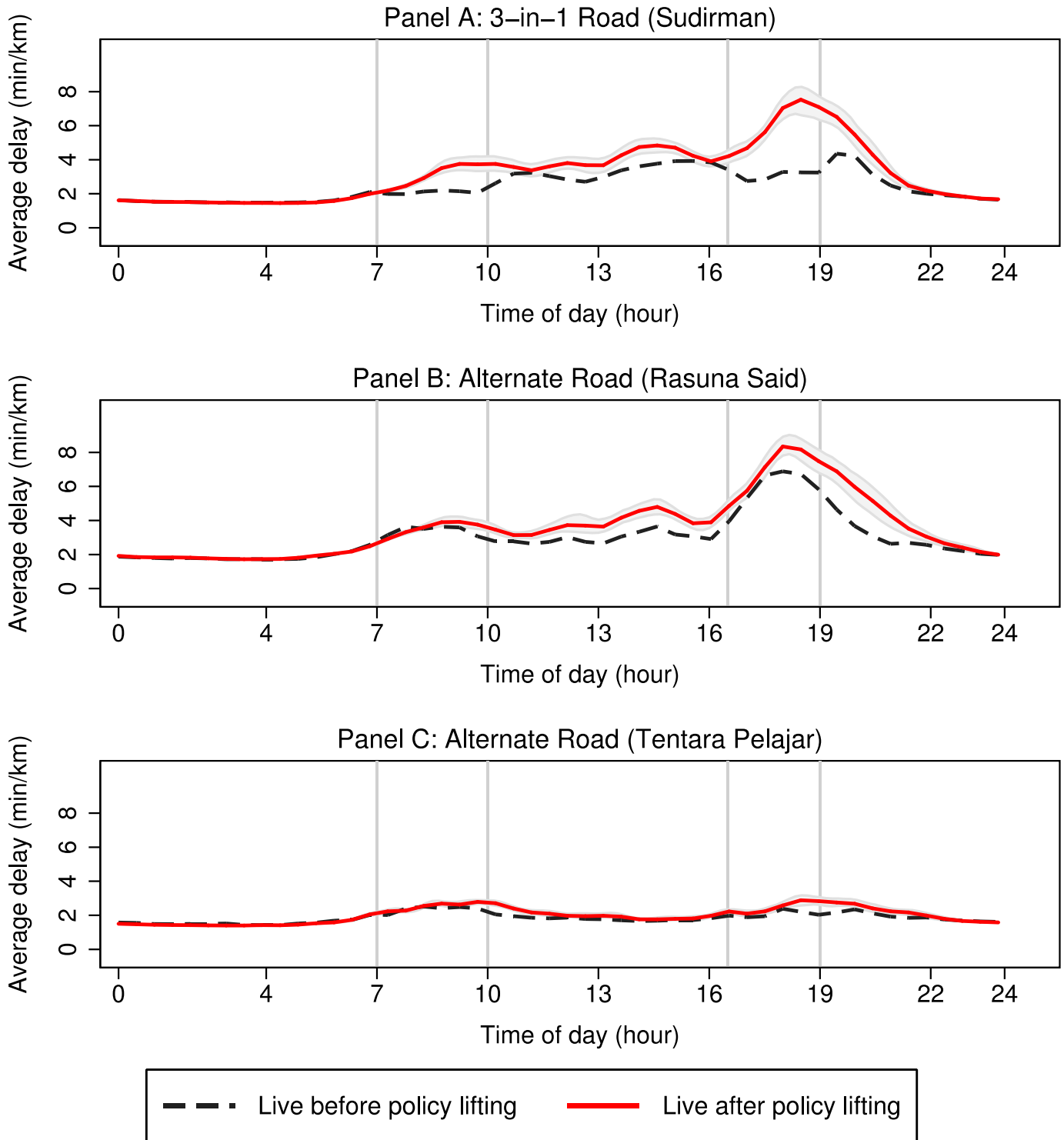
Notes: This figure replicates Figure 2 restricting to southbound road segments. Confidence intervals are calculated using a bootstrapping procedure that adjusts for clusters at the level of road direction. For departure times between 6:00 a.m. and 4:30 p.m., when only pre–data from April 1 and April 4 are available, there are 24 clusters. For departure times between 4:30 p.m. and 6:00 a.m., when March 31 pre–data are also included, there are 25 clusters.

Appendix Figure 2: Travel Delay Pre– vs. Post–Policy Lifting
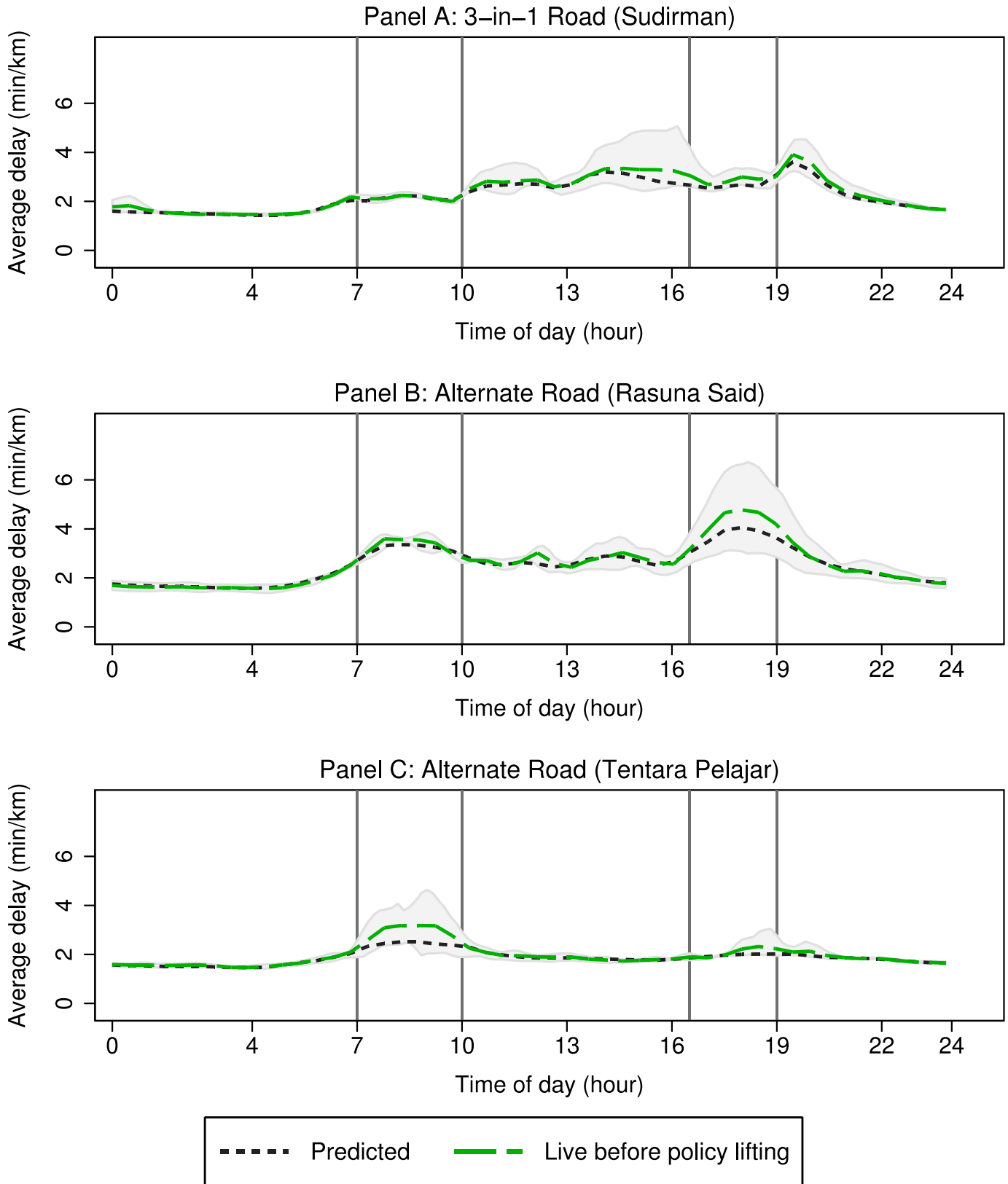## on 3–in–1 and Alternate Roads
Mondays & Fridays Only

Panel A: 3–in–1 Road (Sudirman)

Panel B: Alternate Road (Rasuna Said)

Panel C: Alternate Road (Tentara Pelajar)

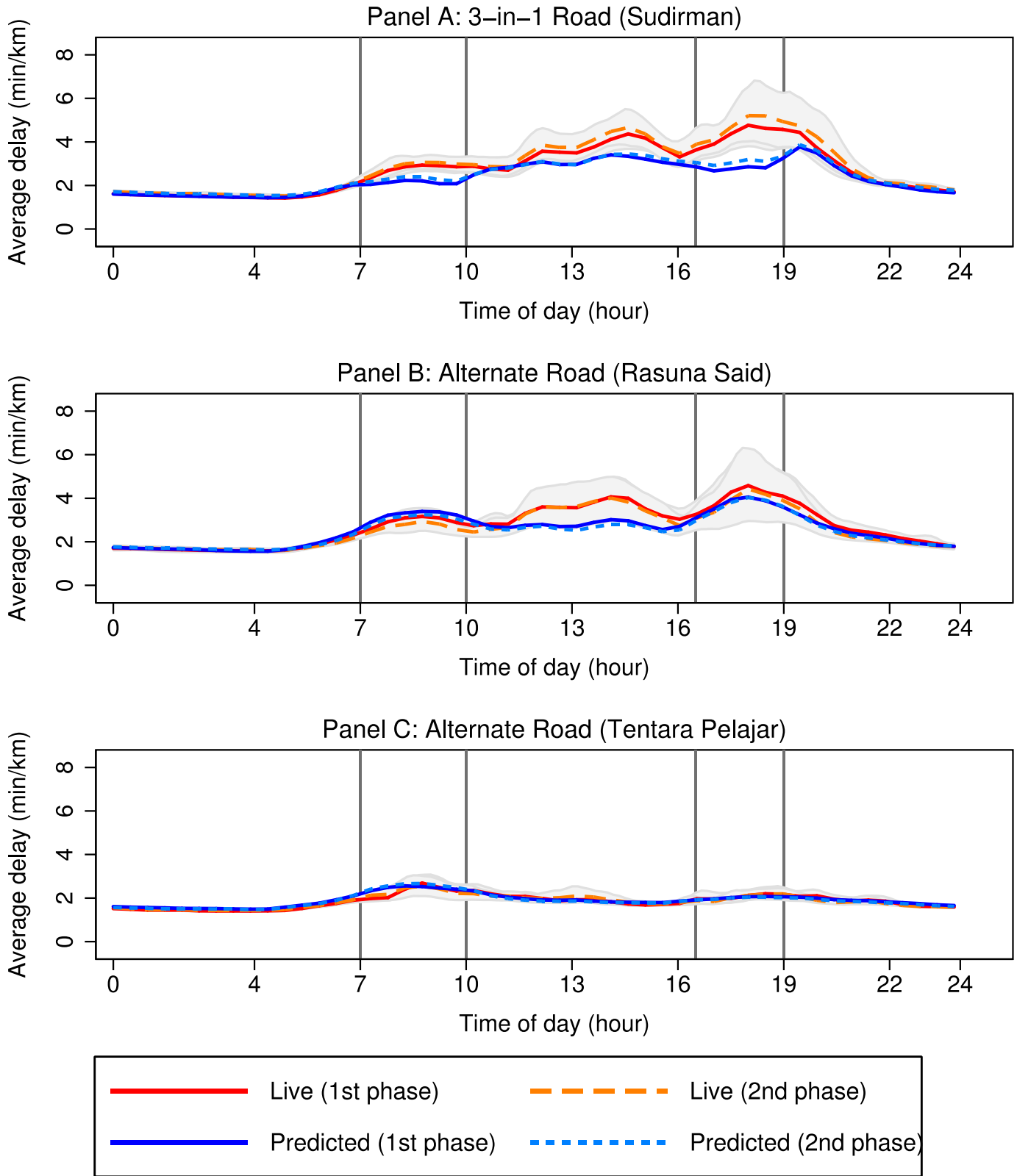- - - Live before policy lifting   —— Live after policy lifting

Notes: This replicates Figure 2 restricting to data from Mondays and Fridays between April 1 and May 2. Confidence intervals are calculated using a bootstrapping procedure that adjusts for 50 clusters at the level of date and road direction.

Appendix Figure 3: Predicted vs. Live
Travel Delay Pre–Policy Lifting on 3–in–1 and Alternate Roads

Panel A: 3–in–1 Road (Sudirman)

Panel B: Alternate Road (Rasuna Said)

Panel C: Alternate Road (Tentara Pelajar)

····· Predicted   − − − Live before policy lifting

Notes: Pre–policy change data are from the evening of Thursday, March 31, and all day Friday, April 1 and Monday, April 4. Predicted data were queried between April 3 and April 12.

Appendix Figure 4: Comparison of Overlapping Data
from First and Second Phase

Panel A: 3-in-1 Road (Sudirman)

Average delay (min/km) vs Time of day (hour)

Panel B: Alternate Road (Rasuna Said)

Average delay (min/km) vs Time of day (hour)

Panel C: Alternate Road (Tentara Pelajar)

Average delay (min/km) vs Time of day (hour)

Legend:
- Live (1st phase)
- Live (2nd phase)
- Predicted (1st phase)
- Predicted (2nd phase)

Notes: Live data are from weekdays April 28 through May 6, the overlap period for the first and second phases of data collection. Confidence intervals are calculated using a bootstrapping procedure that adjusts for 14 clusters at the level of date and road direction.

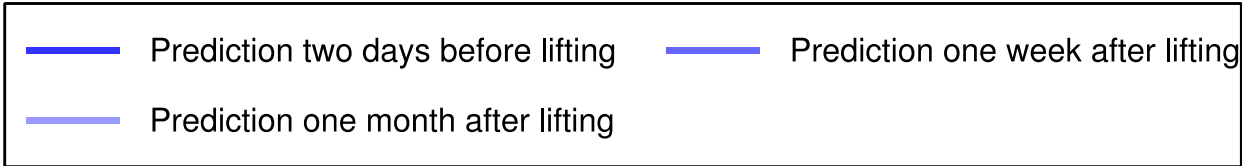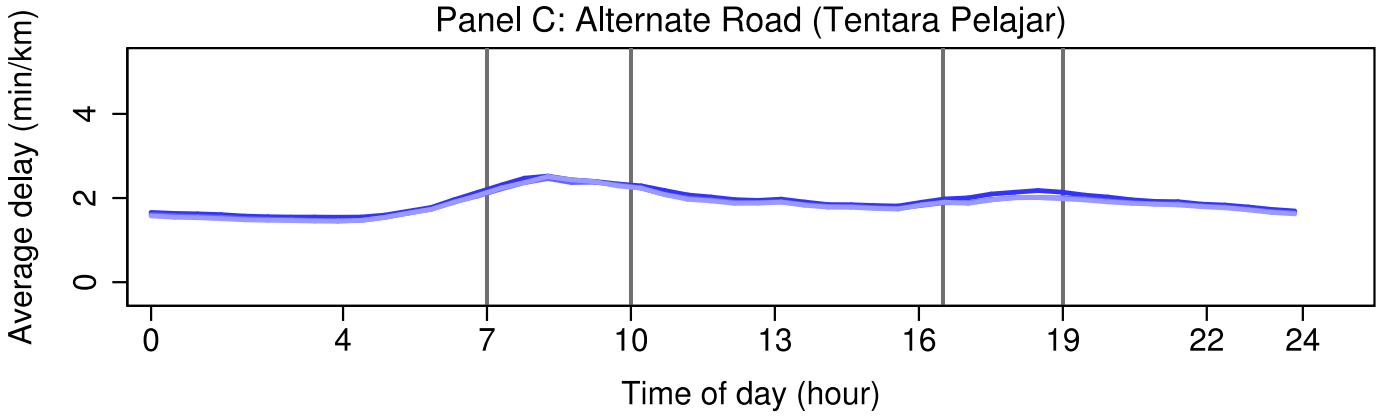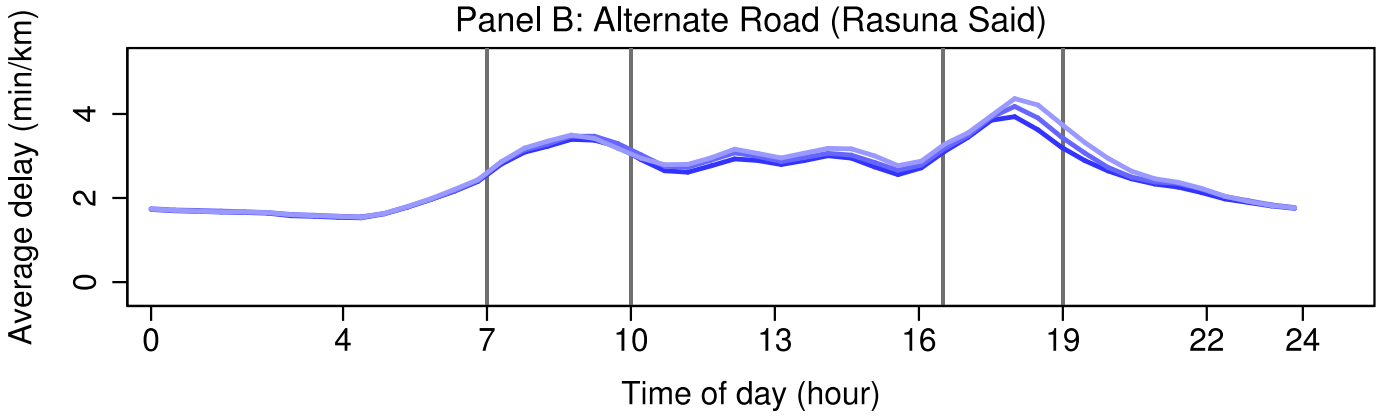Appendix Figure 5: Travel Delay Predicted vs. Post–Policy Lifting on 3–in–1 and Alternate Roads
By Road Direction
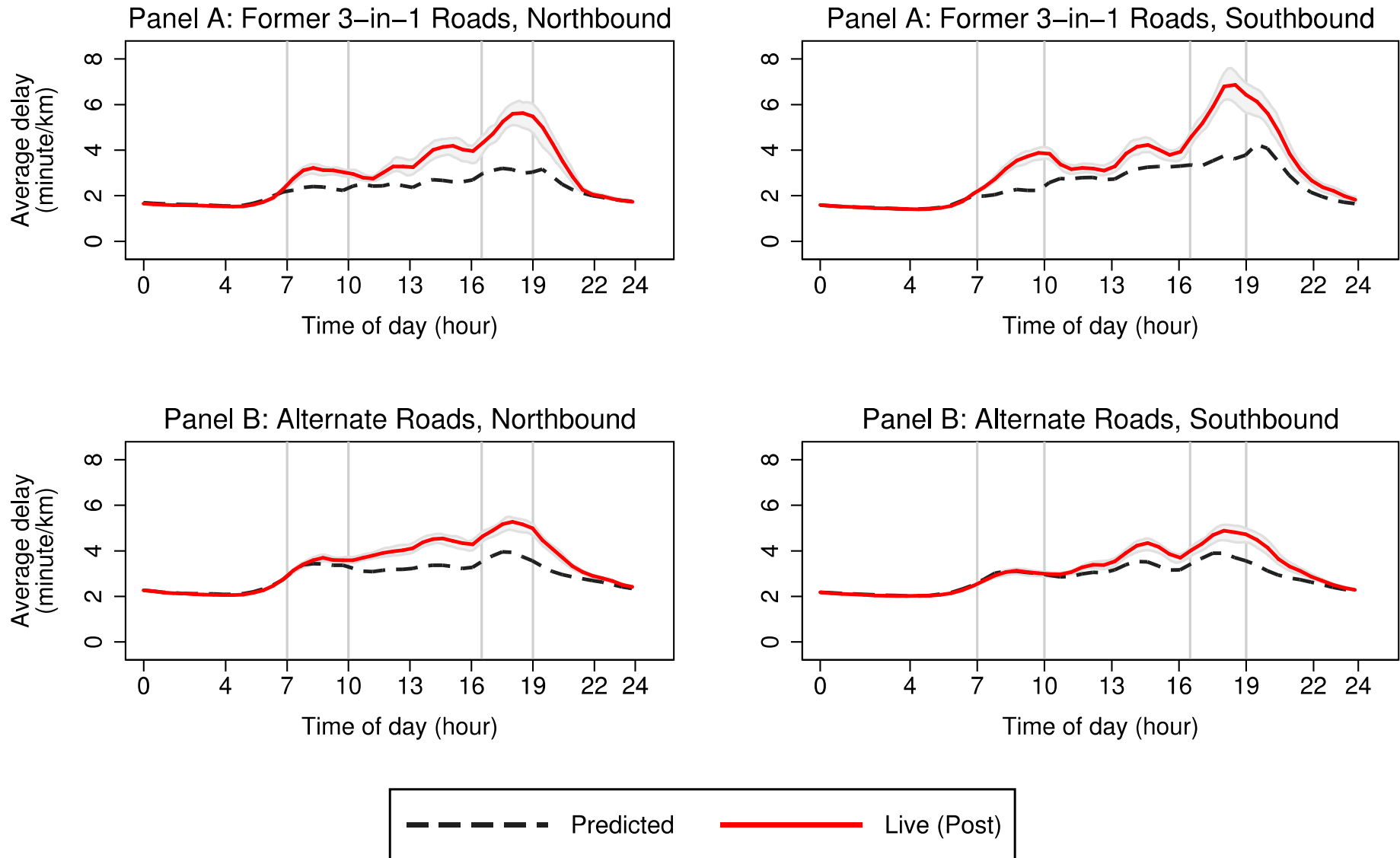
Notes: This figure replicates Figure 3 separating the analyses by road direction. Post–policy lifting data are from all weekdays, April 28 – June 3. Confidence intervals are calculated using a bootstrapping procedure that adjusts for 27 clusters at the level of date and road direction.

Appendix Figure 6: Predicted Travel Delay Pre– vs. Post–Policy Lifting on 3–in–1 and Alternate Roads

Wednesday Predicted Data Only

Panel A: 3–in–1 Road (Sudirman)

Panel B: Alternate Road (Rasuna Said)

Panel C: Alternate Road (Tentara Pelajar)

Prediction two days before lifting
Prediction one week after lifting
Prediction one month after lifting
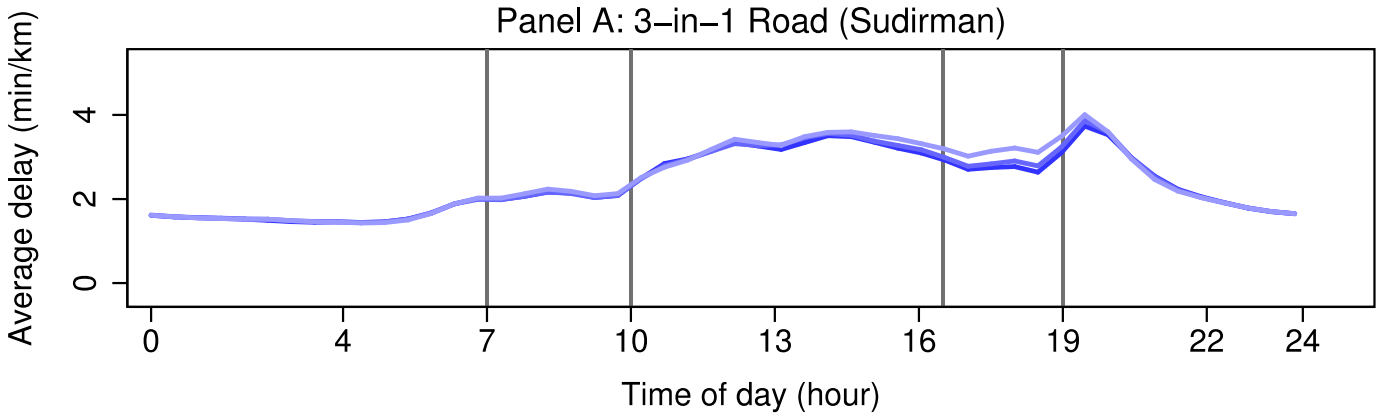
Notes: This figure shows the Google Maps 'predicted' delay queried at three points in time. The first query was made on April 3 and had a departure date of Wednesday, April 20. The second, made on April 11, also had a departure date of April 20. The third, made on May 2, had a departure date of Wednesday, May 18.

Appendix Figure 7A: Travel Delay on 3-in-1 Road (Sudirman)
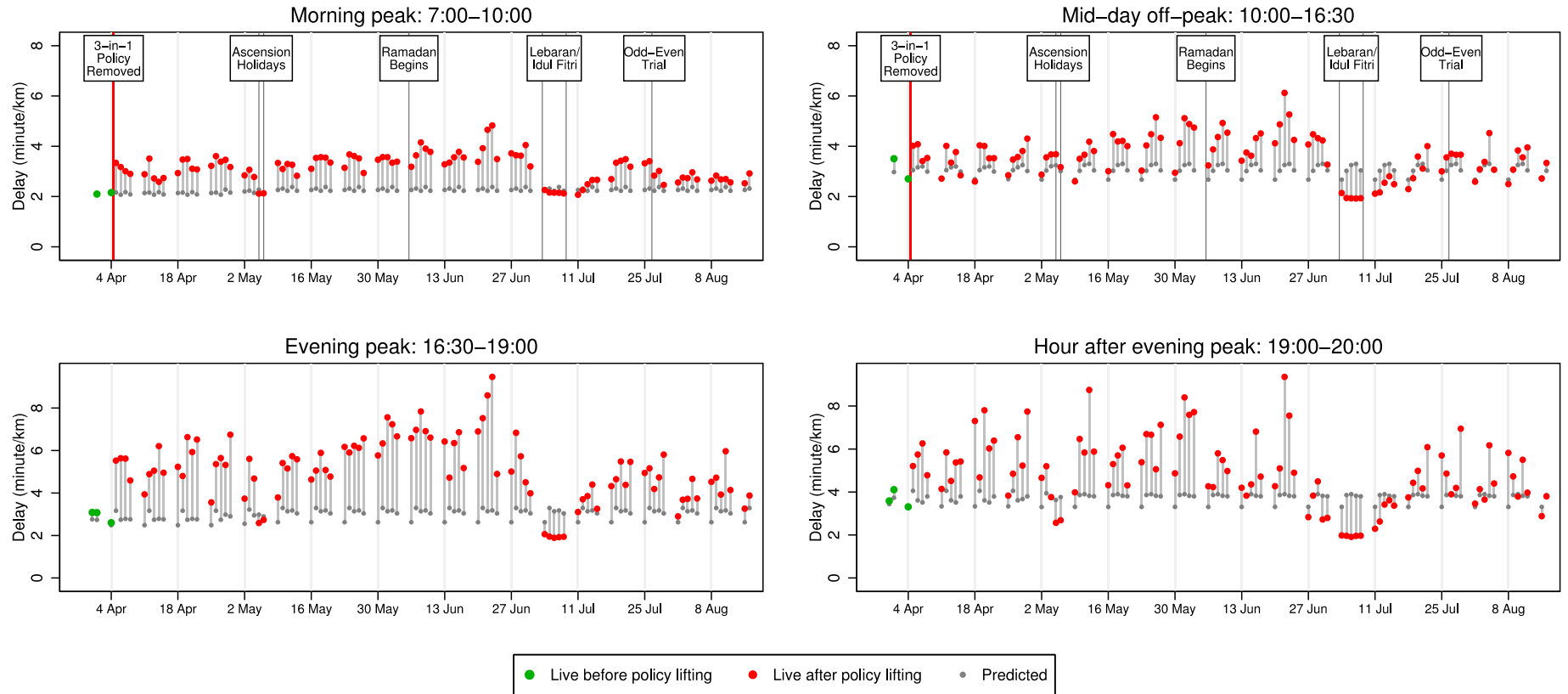
Notes: This figure replicates Figure 4A for Jalan Sudirman from March 31 to August 16.

Appendix Figure 7B: Travel Delay on Alternate Road (Rasuna Said)
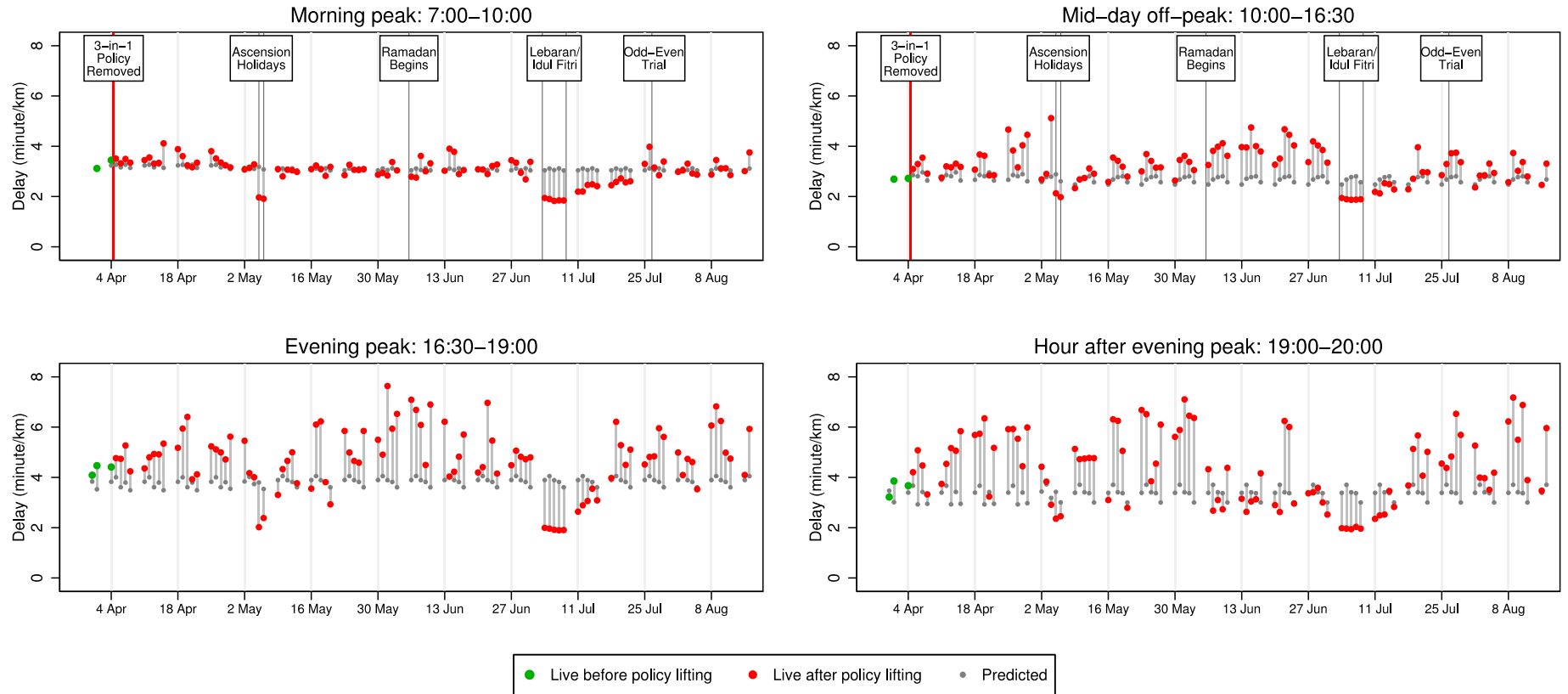
Notes: This figure replicates Figure 4B for Jalan Rasuna Said from March 31 to August 16.

Appendix Figure 7C: Travel Delay on Alternate Road (Tentara Pelajar)

Morning peak: 7:00–10:00

Mid-day off-peak: 10:00–16:30

Evening peak: 16:30–19:00

Hour after evening peak: 19:00–20:00

Legend: ● Live before policy lifting ● Live after policy lifting · Predicted
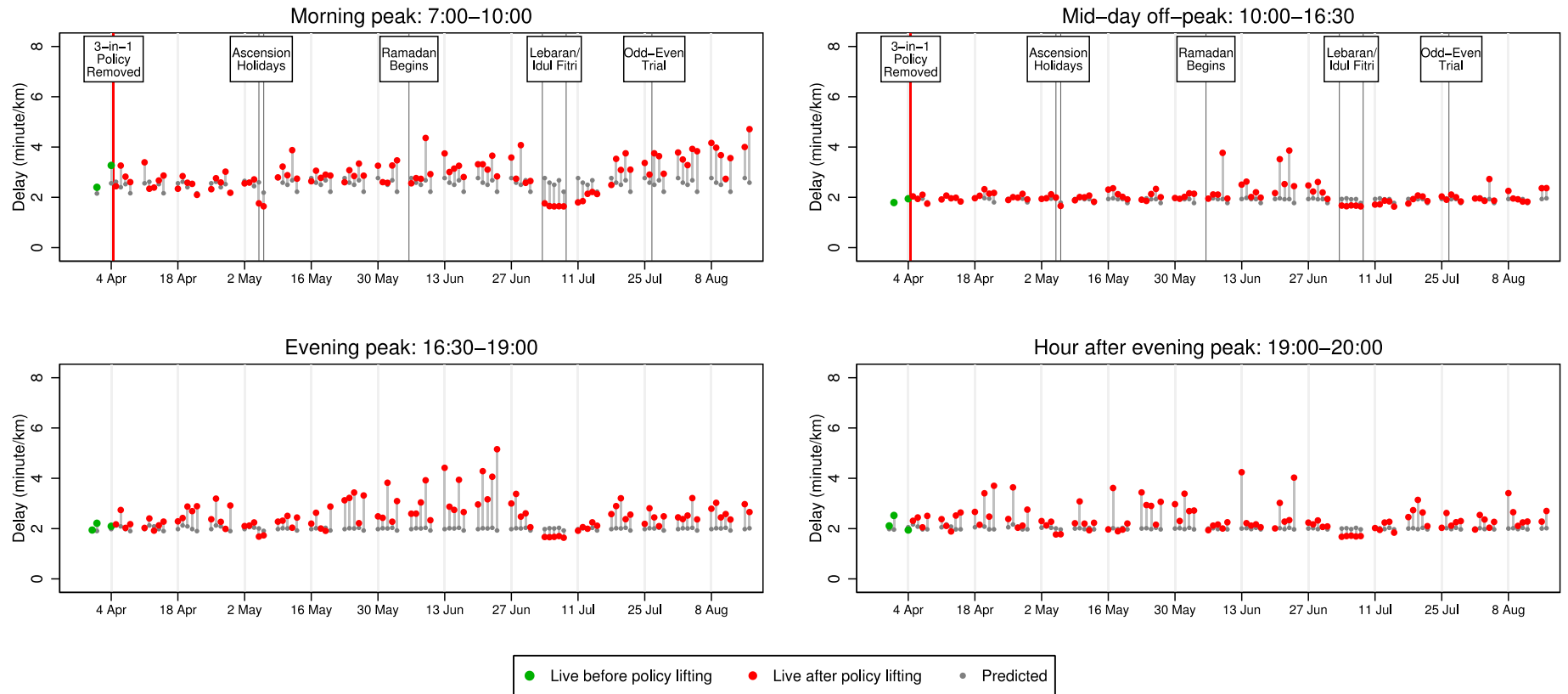
Notes: This figure replicates Figure 4B for Jalan Tentara Pelajar from March 31 to August 16.

Appendix Table 1: Summary Statistics, Before Policy Lifting (Friday April 1 and Monday April 4)

Time Interval	Average Delay (min/km)						Total Distance (km)
	6 - 7 a.m.	7 - 10 a.m.	10 a.m. - 4:30 p.m.	4:30 - 7 p.m.	7 - 8 p.m.	8 p.m. - 6 a.m.	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Road Jl. Sudirman	1.92	2.14	2.98	2.76	3.59	1.81	9.65
Road Jl. Rasuna Said	2.19	3.34	2.71	4.44	3.74	1.86	5.72
Road Jl. Tentara Pelajar	1.92	2.98	1.89	2.13	2.14	1.67	4.95

Notes: Columns 1-6 provide average traffic delay before the lifting of the 3-in-1 policy. Column 7 provides the sum of the distance of both northbound and southbound segments.

Appendix Table 2. Travel Delay Pre- vs. Post-Policy Lifting on 3-in-1 and Alternate Roads, Averaged over Northbound and Southbound

	Panel A: Delay on 3-in-1 Road (Sudirman)					
Time Interval	6 - 7 a.m.	7 - 10 a.m.	10 a.m. - 4:30 p.m.	4:30 - 7 p.m.	7 - 8 p.m.	8 p.m. - 6 a.m.
	(1)	(2)	(3)	(4)	(5)	(6)
Policy Lifting	-0.01	0.96***	0.54*	2.42***	1.91***	0.04
	(0.03)	(0.07)	(0.28)	(0.24)	(0.31)	(0.11)
Observations	141	423	917	359	144	1,418
Control mean	1.92	2.14	2.98	2.84	3.59	1.87
	Panel B: Delay on Alternate Road (Rasuna Said)					
Policy Lifting	0.03	0.11	0.72***	0.57***	1.25***	0.15**
	(0.03)	(0.12)	(0.13)	(0.15)	(0.24)	(0.06)
Observations	141	423	917	359	144	1,418
Control mean	2.19	3.34	2.72	4.36	3.61	1.89
	Panel C: Delay on Alternate Road (Tentara Pelajar)					
Policy Lifting	-0.01	-0.36	0.12**	0.28***	0.36*	-0.04
	(0.03)	(0.29)	(0.06)	(0.09)	(0.17)	(0.02)
Observations	141	423	917	359	144	1,418
Control mean	1.93	2.98	1.89	2.09	2.13	1.68

Notes: This table replicates Table 1 but averages delay over both road directions (northbound and southbound). In Columns 1-4, where only pre-data from April 1 and April 4 are used, standard errors reported in paratheses are adjusted for 24 clusters at the level of date. In Columns 5 and 6, where March 31 pre-data are also included, standard errors are adjusted for 25 clusters at the level of date. See Table 1 notes.

* p <.10, ** p<.05, *** p<.01

Appendix Table 3. Travel Delay Pre- vs. Post-Policy Lifting on 3-in-1 and Alternate Roads, Mon., Thurs. evenings, and Fri. Only

	Panel A: Delay on 3-in-1 Road (Sudirman)					
Time Interval	6 - 7 a.m.	7 - 10 a.m.	10 a.m. - 4:30 p.m.	4:30 - 7 p.m.	7 - 8 p.m.	8 p.m. - 6 a.m.
	(1)	(2)	(3)	(4)	(5)	(6)
Policy Lifting	-0.02	0.82***	0.04	2.06***	1.83***	0.10
	(0.04)	(0.07)	(0.09)	(0.36)	(0.36)	(0.06)
Northbound	0.22***	0.22**	-0.65***	-1.36***	-1.80***	-0.09
	(0.02)	(0.10)	(0.16)	(0.30)	(0.43)	(0.08)
Observations	114	342	742	418	168	1,354
Control mean	1.92	2.14	2.98	2.84	3.59	1.87

	Panel B: Delay on Alternate Road (Rasuna Said)					
Policy Lifting	0.03	0.24**	0.62***	0.55***	1.20***	0.26**
	(0.03)	(0.11)	(0.21)	(0.19)	(0.37)	(0.13)
Northbound	-0.11***	-0.12	-0.54	-4.07***	-3.77***	-0.90***
	(0.03)	(0.17)	(0.33)	(0.24)	(0.42)	(0.11)
Observations	114	342	742	418	168	1,354
Control mean	2.19	3.34	2.71	4.35	3.61	1.89

	Panel C: Delay on Alternate Road (Tentara Pelajar)					
Policy Lifting	-0.04	-0.39	0.03	0.20*	0.38**	-0.02
	(0.03)	(0.35)	(0.07)	(0.11)	(0.18)	(0.03)
Northbound	0.21***	0.49	-0.04	-0.03	-0.62***	-0.07**
	(0.04)	(0.30)	(0.08)	(0.13)	(0.17)	(0.03)
Observations	114	342	742	418	168	1,354
Control mean	1.92	2.98	1.89	2.09	2.13	1.68

Notes: This table replicates Table 1 for a sample of only Mondays, Thursday evenings, and Fridays to match pre-period days of week. Each regression includes day-of-week fixed effects. See Table 1 notes.

* p <.10, ** p<.05, *** p<.01

Appendix Table 4. Regression Discontinuity for Travel Delay Pre- vs. Post-Policy Lifting on 3-in-1 and Alternate Roads (First week after lifting)

Panel A: Delay on 3-in-1 Road (Sudirman)

Time Interval	6 - 7 a.m.	7 - 10 a.m.	10 a.m. - 4:30 p.m.	4:30 - 7 p.m.	7 - 8 p.m.	8 p.m. - 6 a.m.
	(1)	(2)	(3)	(4)	(5)	(6)
Policy Lifting	0.01	1.28***	1.64***	3.38***	2.40***	0.14
	(0.08)	(0.39)	(0.46)	(0.60)	(0.44)	(0.12)
Northbound	0.20***	-0.20	-1.08***	-1.68***	-1.87***	-0.09
	(0.03)	(0.18)	(0.24)	(0.31)	(0.35)	(0.06)
Days since lifting	-0.00	-0.09	-0.24**	-0.20	-0.11	-0.03
	(0.01)	(0.08)	(0.09)	(0.12)	(0.11)	(0.03)
Observations	66	198	430	178	72	682
Control mean	1.92	2.14	2.98	2.84	3.59	1.87
Wild Bootstrap p-value on Policy Lifting	0.91	0.01	0.04	0.01	0.01	0.44

Panel B: Delay on Alternate Road (Rasuna Said)

Policy Lifting	-0.01	0.00	0.55***	0.49**	1.13*	0.16
	(0.05)	(0.14)	(0.17)	(0.18)	(0.56)	(0.14)
Northbound	-0.13***	-0.04	-0.66***	-3.76***	-3.13***	-0.60***
	(0.03)	(0.08)	(0.14)	(0.21)	(0.42)	(0.07)
Days since lifting	0.01	0.02	-0.01	-0.02	-0.11	-0.02
	(0.01)	(0.03)	(0.05)	(0.07)	(0.13)	(0.02)
Observations	66	198	430	178	72	682
Control mean	2.19	3.34	2.71	4.35	3.61	1.89
Wild Bootstrap p-value on Policy Lifting	0.94	0.95	0.07	0.02	0.02	0.40

Panel C: Delay on Alternate Road (Tentara Pelajar)

Policy Lifting	0.39	-0.59	0.15	0.29	0.37	0.05**
	(0.24)	(0.54)	(0.12)	(0.26)	(0.25)	(0.02)
Northbound	0.39***	0.81**	0.13	-0.06	-0.39**	0.03**
	(0.11)	(0.27)	(0.09)	(0.17)	(0.17)	(0.01)
Days since lifting	-0.08	0.11	-0.02	-0.02	-0.04	-0.02***
	(0.05)	(0.10)	(0.03)	(0.04)	(0.06)	(0.01)
Observations	66	198	430	178	72	682
Control mean	1.92	2.98	1.89	2.09	2.13	1.68
Wild Bootstrap p-value on Policy Lifting	0.203	0.46	0.302	0.324	0.31	0.126

Notes: This table replicates Table 1 restricting to just the first week after the policy was lifted and includes a linear term for days since the policy was lifted. Since we have fewer than 30 clusters, we also report p-values for the coefficient on policy lifting calculated using the wild bootstrap cluster procedure. See Table 1 notes.

* p <.10, ** p<.05, *** p<.01

Appendix Table 5. Travel Delay Predicted vs. Post-Policy Lifting on 3-in-1 and Alternate Roads

Time Interval	6 - 7 a.m.	7 - 10 a.m.	10 a.m. - 4:30 p.m.	4:30 - 7 p.m.	7 - 8 p.m.	8 p.m. - 6 a.m.
	(1)	(2)	(3)	(4)	(5)	(6)

Panel A: Delay on 3-in-1 Road (Sudirman)

	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	0.00	0.97***	0.50***	2.47***	1.83***	0.12***
	(0.01)	(0.06)	(0.09)	(0.22)	(0.26)	(0.04)
Northbound	0.24***	0.12	-0.96***	-1.37***	-1.96***	-0.09*
	(0.01)	(0.10)	(0.15)	(0.23)	(0.30)	(0.05)
Observations	324	972	2,106	810	324	3,232
Control mean	1.92	2.13	3.02	2.79	3.66	1.78

Panel B: Delay on Alternate Road (Rasuna Said)

	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	-0.01	0.24***	0.65***	1.18***	1.59***	0.17**
	(0.01)	(0.05)	(0.11)	(0.29)	(0.39)	(0.07)
Northbound	-0.07***	-0.17**	-0.77***	-3.92***	-3.68***	-0.72***
	(0.02)	(0.07)	(0.17)	(0.21)	(0.31)	(0.05)
Observations	324	972	2,106	810	324	3,232
Control mean	2.23	3.21	2.78	3.74	3.27	1.87

Panel C: Delay on Alternate Road (Tentara Pelajar)

	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	-0.04	0.17*	0.07	0.35***	0.44***	-0.02
	(0.03)	(0.09)	(0.04)	(0.07)	(0.11)	(0.02)
Northbound	0.23***	0.19	-0.04	-0.18	-0.52***	-0.02
	(0.04)	(0.13)	(0.04)	(0.11)	(0.15)	(0.02)
Observations	324	972	2,106	810	324	3,232
Control mean	1.95	2.45	1.94	2.02	2.05	1.67

Notes: This table replicates Table 1 using predicted data as control. See Table 1 Notes.

* p <.10, ** p<.05, *** p<.01