Transport Research Laboratory

Pedestrian Countdown at Traffic Signal Junctions (PCaTS) - Road Trial

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C.1 Introduction

This appendix presents additional graphs relating to the analysis of pedestrian behaviour.

C.2 Number of pedestrians per hour

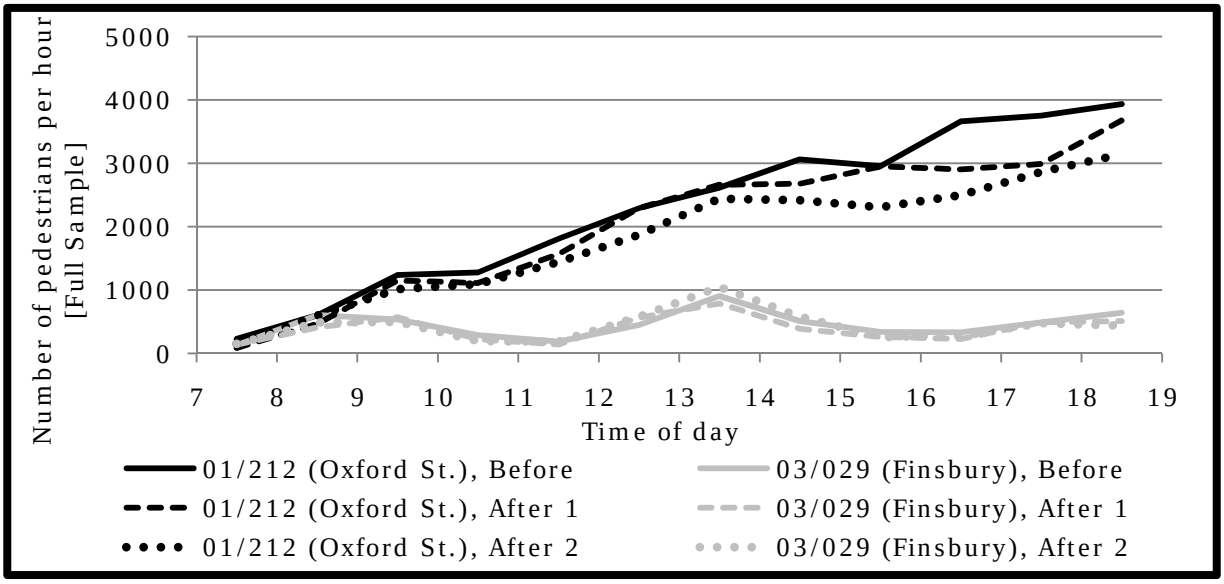

Figure C-1 Number of pedestrians per hour, (Oxford St. and Finsbury)

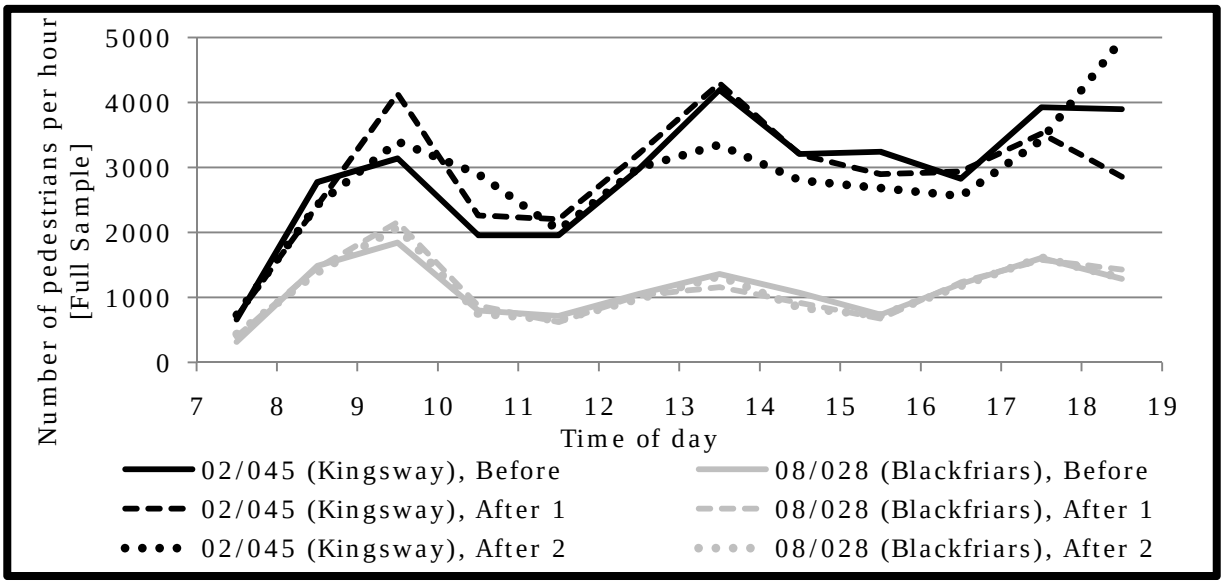

Figure C-2 Number of pedestrians per hour, (Kingsway and Blackfriars)

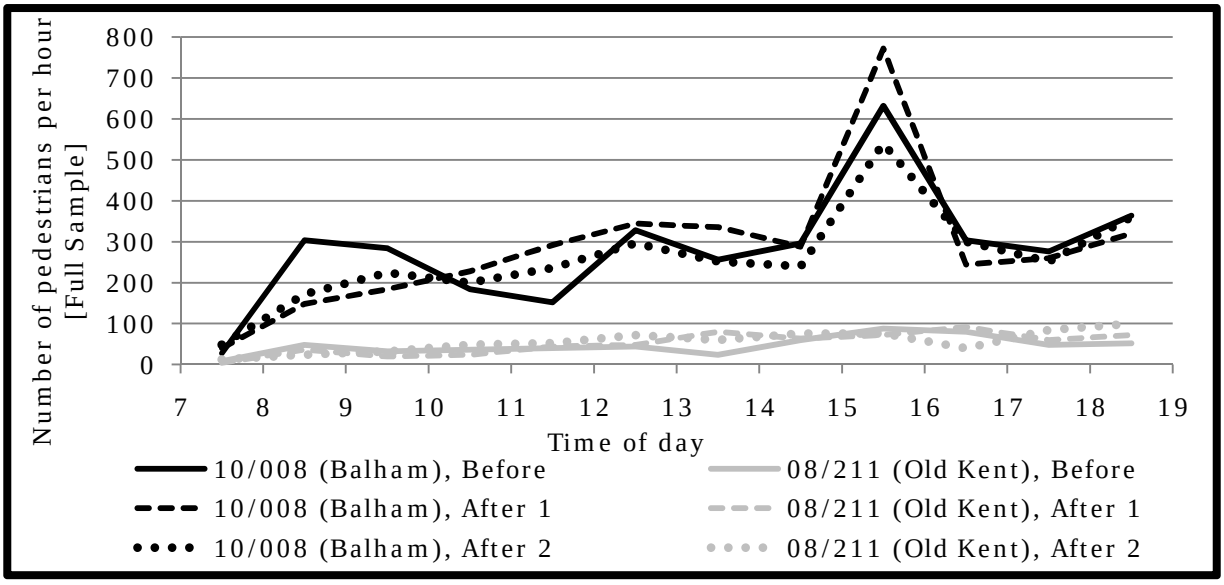

Figure C-3 Number of pedestrians per hour, (Balham and Old Kent)

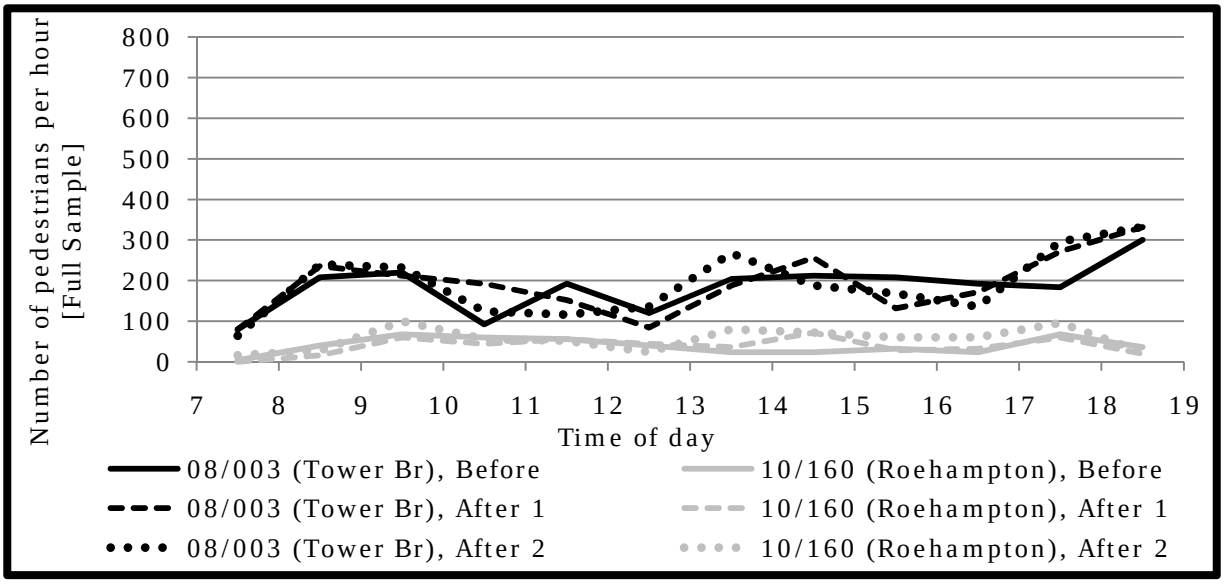

Figure C-4 Number of pedestrians per hour, (Tower Br. and Roehampton)

C.3 Pedestrian Signal Timings

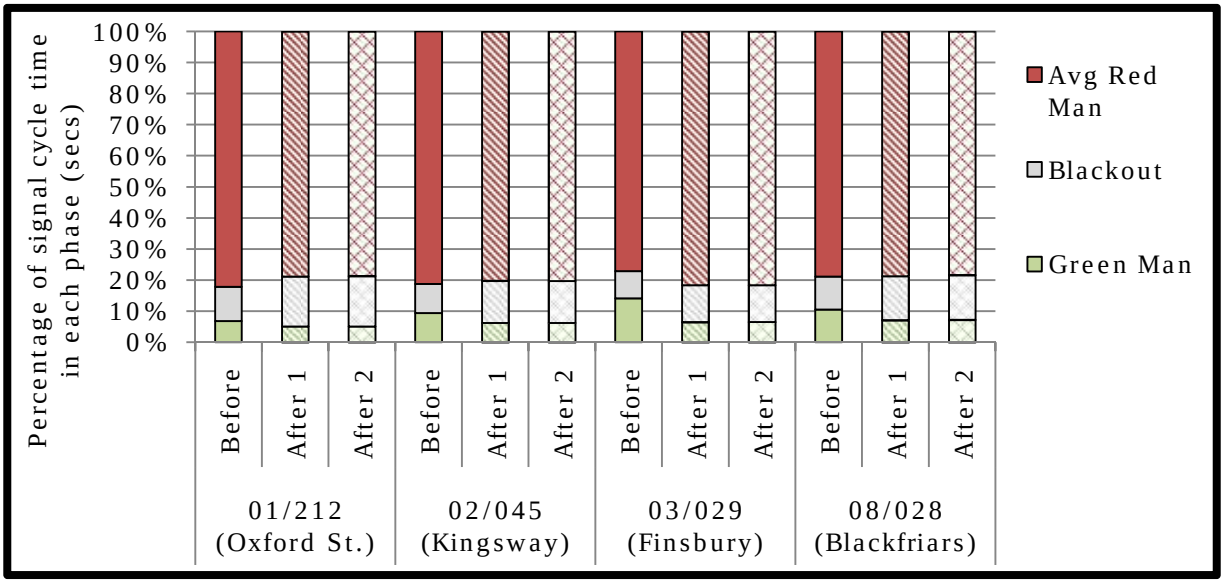

Figure C-5 Fixed timings for Green Man and Blackout phases and average timings for Red Man phases, percentage, Group 1

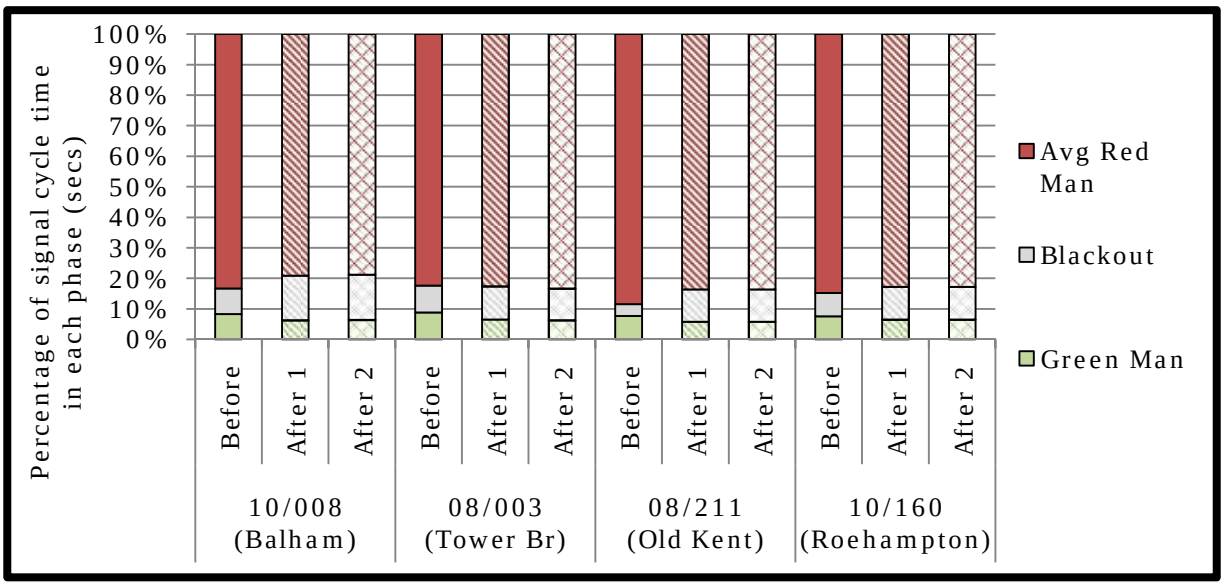

Figure C-6 Fixed timings for Green Man and Blackout phases and average timings for Red Man phases, percentage, Group 2

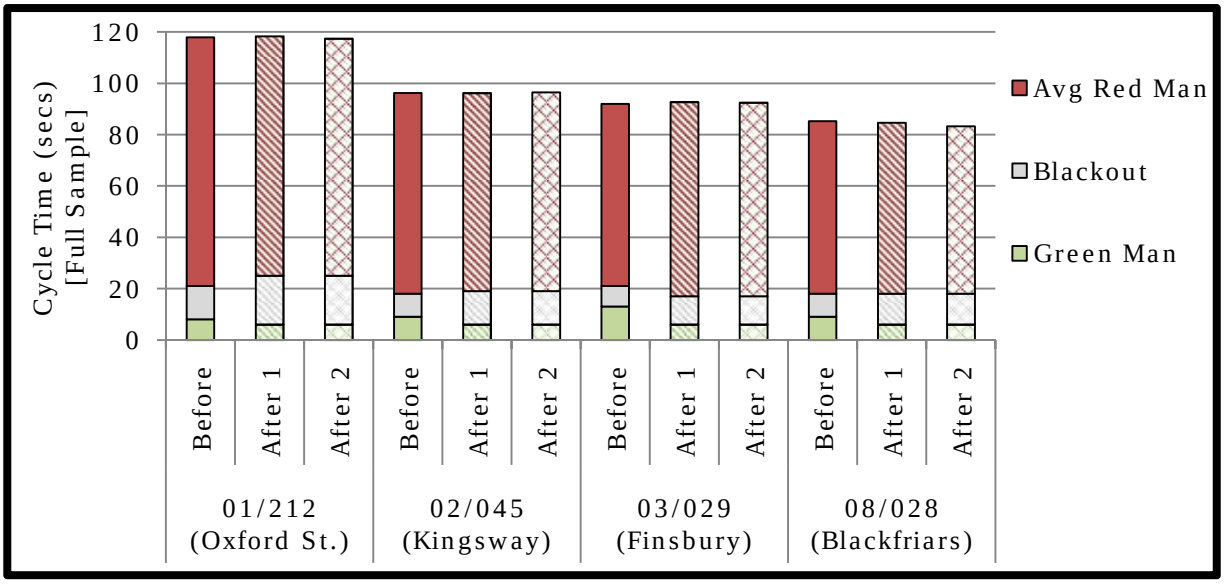

Figure C-7 Fixed timings for Green Man and Blackout phases and average timings for Red Man phases, Total = Cycle Time (seconds), Group 1

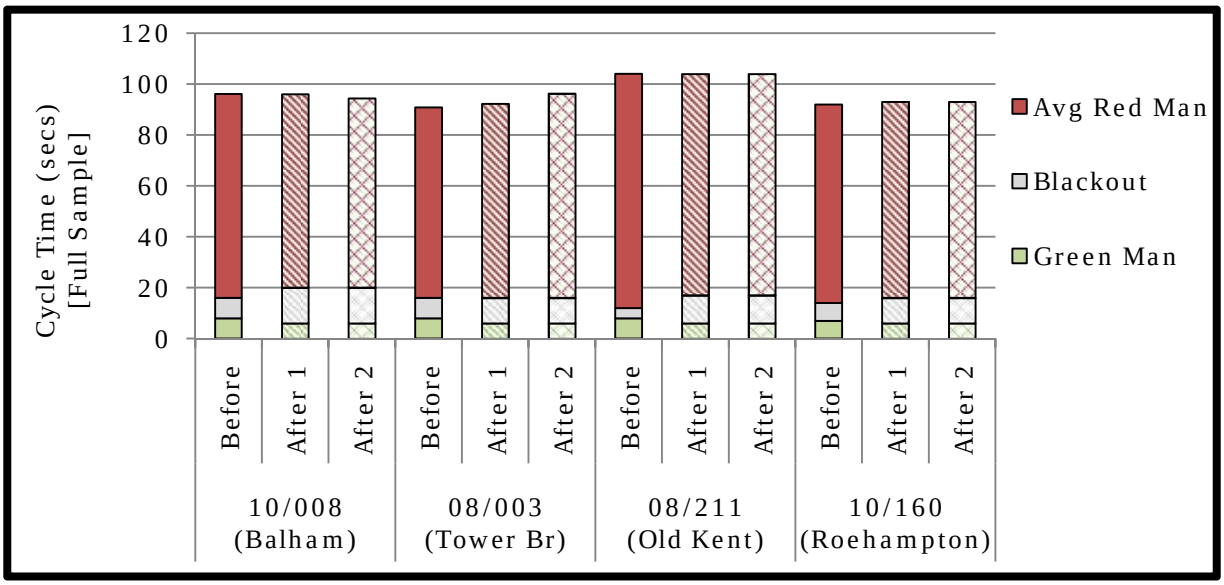

Figure C-8 Fixed timings for Green Man and Blackout phases and average timings for Red Man phases, Total = Cycle Time (seconds), Group 2

Table C-1 Average Cycle Time (seconds)

Site	Before	After 1	After 2
01/212 (Oxford St.)	117.9	118.3	117.3
02/045 (Kingsway)	96.2	96.2	96.5
03/029 (Finsbury)	91.9	92.6	92.4
08/028 (Blackfriars)	85.3	84.6	83.3
10/008 (Balham)	96.1	96.0	94.4
08/003 (Tower Br.)	90.8	92.3	96.2
08/211 (Old Kent)	104.0	104.0	104.0
10/160 (Roehampton)	92.0	93.0	93.0

Table C-2 Fixed signal timings in the Before and After surveys

	Before			After 1			
	Green Man	Blackout	Green + Blackout	Green Man	Count-down	Green + Count-down	Increase in total crossing time
01/212 (Oxford St.)	8	13	21	6	19	25	19%
02/045 (Kingsway)	9	9	18	6	13	19	6%
03/029 (Finsbury)	13	8	21	6	11	17	-19%
08/028 (Blackfriars)	9	9	18	6	12	18	0%
10/008 (Balham)	8	8	16	6	14	20	25%
08/003 (Tower Br.)	8	8	16	6	10	16	0%
08/211 (Old Kent)	8	4	12	6	11	17	42%
10/160 (Roehampton)	7	7	14	6	9	15	7%

Table C-3 Details of Changes to Red Man time

Change in Red Man time	Site	Change
Increase	03/029 (Finsbury)	4-second increase: - 'Before', 75 seconds in AM and PM Peak and 67 seconds in Inter-Peak; - 'After 1' and 'After 2', 79 seconds in AM and PM Peak and 71 seconds in Inter-Peak
Decrease	01/212 (Oxford St.)	3-second decrease: - 'Before', 90 seconds in AM Peak and 99 seconds rest of day; - 'After 1', 87 seconds in AM Peak and 96 seconds rest of day; - 'After 2', the same as 'After 1', except for 58 seconds near 13:00.
Decrease	10/008 (Balham)	4-second decrease: - 'Before', 80 seconds fixed all day, except for 83 seconds near 07:00; - 'After 1', 76 seconds fixed all day; - 'After 2', the same as 'After 1', except for 76 seconds near 07:00.
Decrease	08/211 (Old Kent)	5-second decrease: - 'Before', 92 seconds in AM and PM Peak; - 'After 1', 87 seconds in AM and PM Peak[1]; - 'After 2', no discernible pattern.
Negligible change	02/045 (Kingsway)	1-second decrease: - 'Before', 78 seconds fixed all day; - 'After 1' and 'After 2', 77 seconds fixed all day
Negligible change	10/160 (Roehampton)	1-second decrease: - 'Before', modal average was 78 seconds; - 'After 1' and 'After 2', modal average was 77 seconds
Negligible change	08/028 (Blackfriars)	No change: - 'After 1', 70 seconds in AM and PM Peak and 62 seconds in Inter-Peak; - 'Before', the same as 'After 1', except for 92 seconds near 12:00; - 'After 2', same as 'After 1', but then no discernible pattern for 11:00-17:00.

[1] For Old Kent and Roehampton, it was not possible to calculate the Red Man time profile for the whole day from the video data. This was because the low pedestrian flows resulted in not enough consecutive cycles with Green Man phases.

Change in Red Man time	Site	Change
Negligible change	08/003 (Tower Br.)	No change: - 'After 1', 80 seconds in AM and PM Peak and 72 seconds in Inter-Peak; - 'Before', the same as 'After 1', except for 67 seconds near 18:00; - 'After 2', 80 seconds fixed all day

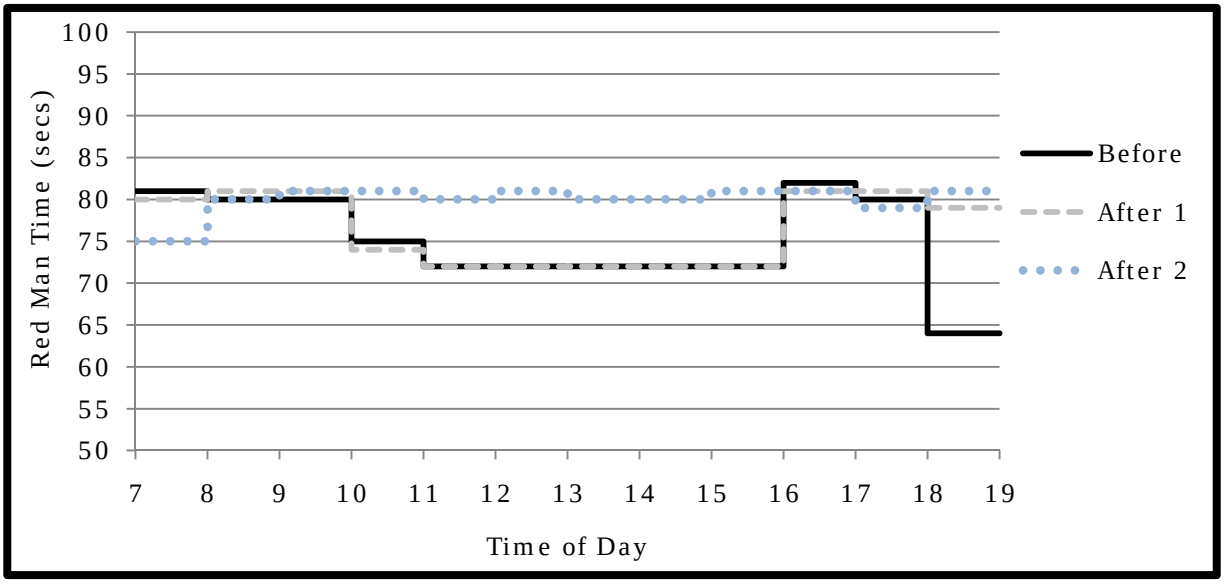

Figure C-9 Red Man times by Time of Day (Tower Br.)

Table C-4 Duration (secs) of the "All Red" phase from Start of Pedestrian-Red to End of Vehicle-Red (i.e. Just After End of Blackout) (not necessarily the same arm)

Site	Before	After 1 and After 2	Change (secs)	Change (%)
01/212 (Oxford St.)	9	3	-6	-67%
02/045 (Kingsway)	7	3	-4	-57%
03/029 (Finsbury)	6	3	-3	-50%
08/028 (Blackfriars)	6	3	-3	-50%
10/008 (Balham)	9	3	-6	-67%
08/003 (Tower Br.)	5	3	-2	-40%
08/211 (Old Kent)	6	3	-3	-50%
10/160 (Roehampton)	5	3	-2	-40%

Table C-5 Average Time (secs) from Start of Pedestrian-Red to End of Vehicle-Red on the arm surveyed (i.e. Just After End of Blackout)

Site	Before	After 1	After 2
01/212 (Oxford St.)	45.1	39.2	39.2
02/045 (Kingsway)	38.3	34.7	38.9
03/029 (Finsbury)	6.4	3.3	2.8
08/028 (Blackfriars)	29.3	28.2	28.9
10/008 (Balham)	30.2	23.3	25.7
08/003 (Tower Br.)	5.0	3.2	3.4
08/211 (Old Kent)	20.3	14.3	11.9
10/160 (Roehampton)	16.7	15.5	15.6

Table C-6 Average Time (secs) from Start of Vehicle-Red to End of Pedestrian-Red on the arm surveyed (i.e. Just Before Start of Green Man)

Site	Before	After 1	After 2
01/212 (Oxford St.)	5.2	4.4	5.0
02/045 (Kingsway)	6.6	6.3	5.9
03/029 (Finsbury)	30.4	30.9	31.2
08/028 (Blackfriars)	9.2	8.9	8.9
10/008 (Balham)	7.8	8.1	7.7
08/003 (Tower Br.)	23.3	23.2	23.2
08/211 (Old Kent)	6.1	6.0	5.9
10/160 (Roehampton)	6.1	5.7	6.0

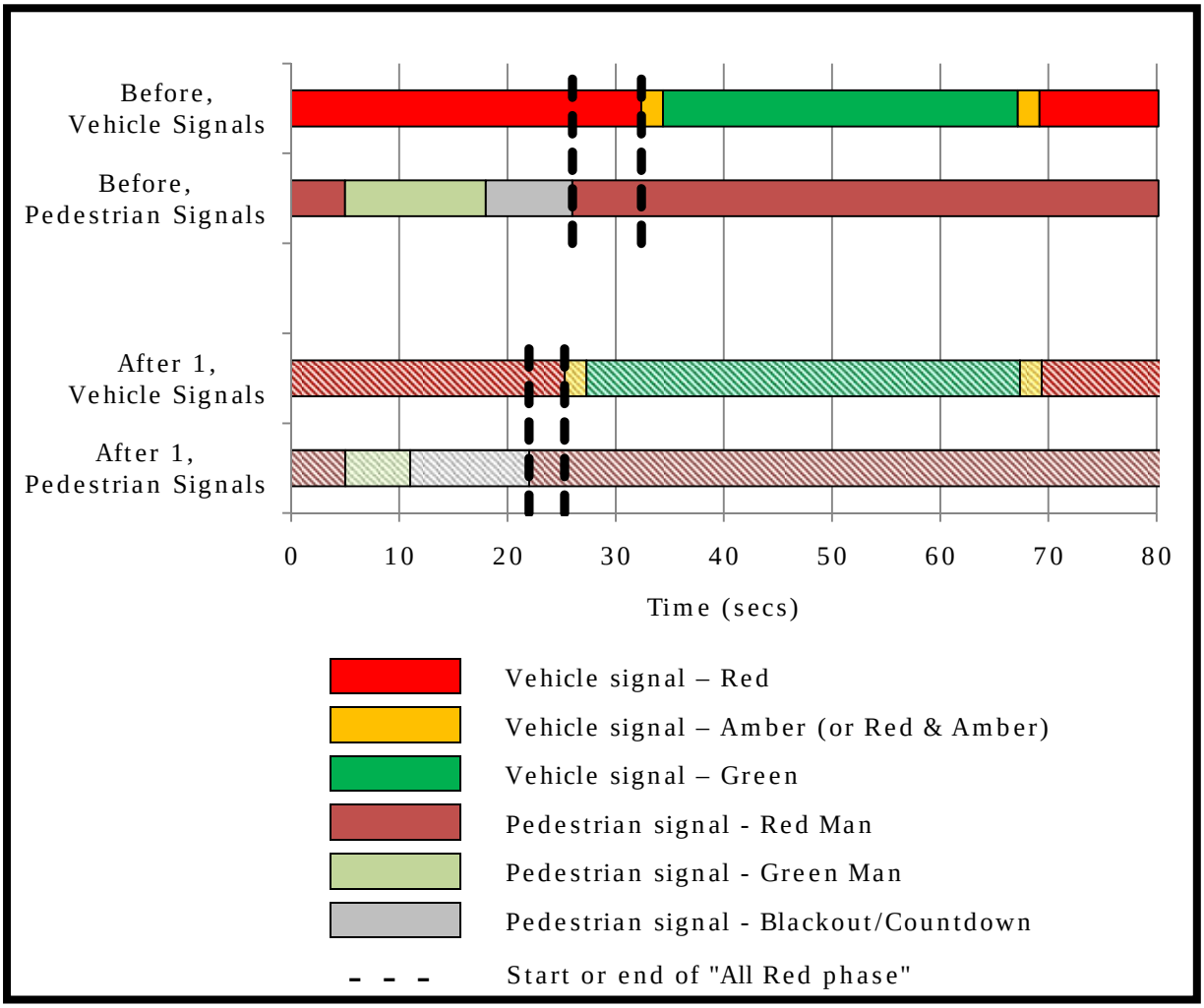

Figure C-10 Modification to the “All Red phase” after the End of the Blackout, Finsbury

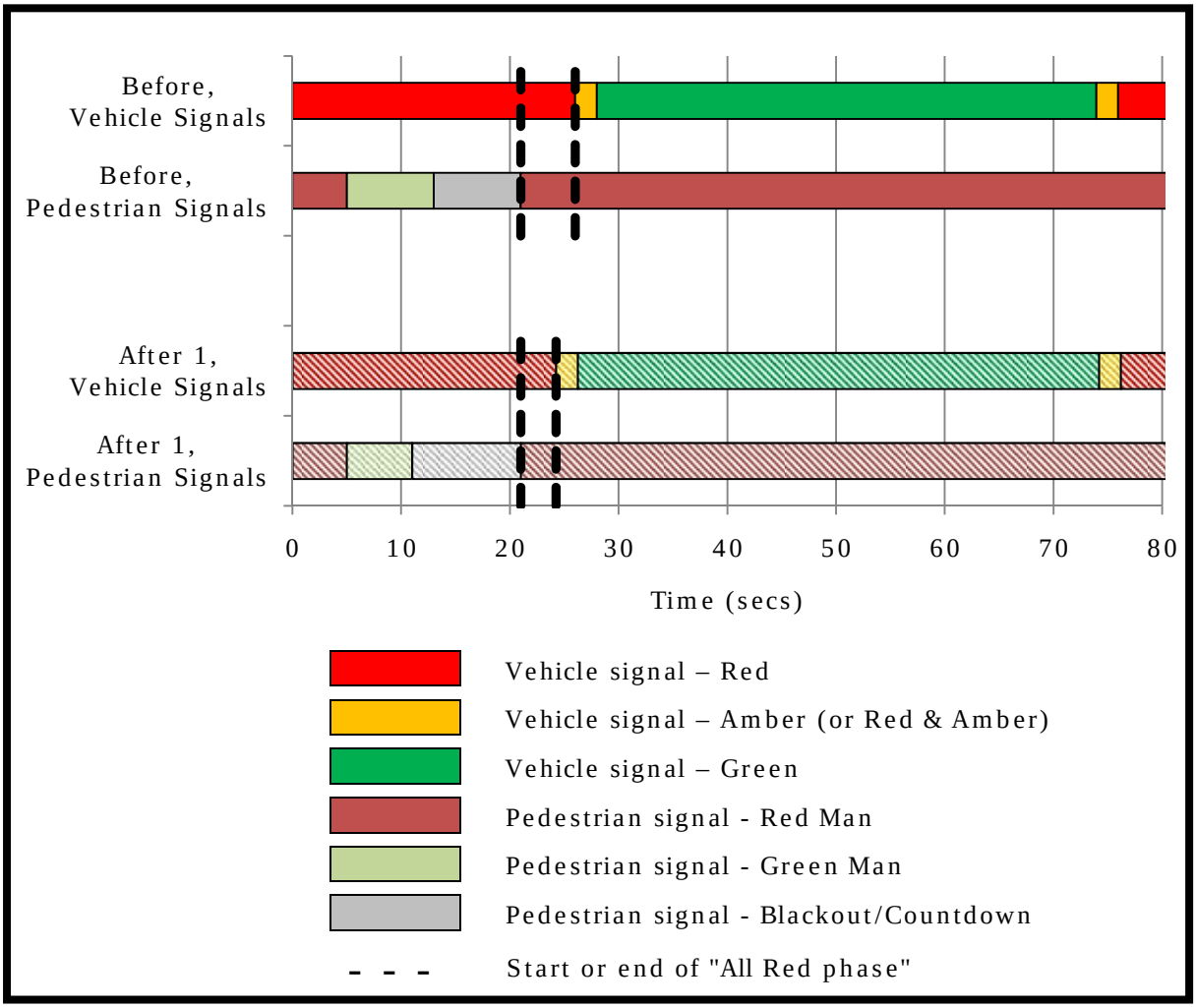

Figure C-11 Modification to the “All Red phase” after the End of the Blackout, Tower Br.

C.4 Impact of PCaTS on decision to cross

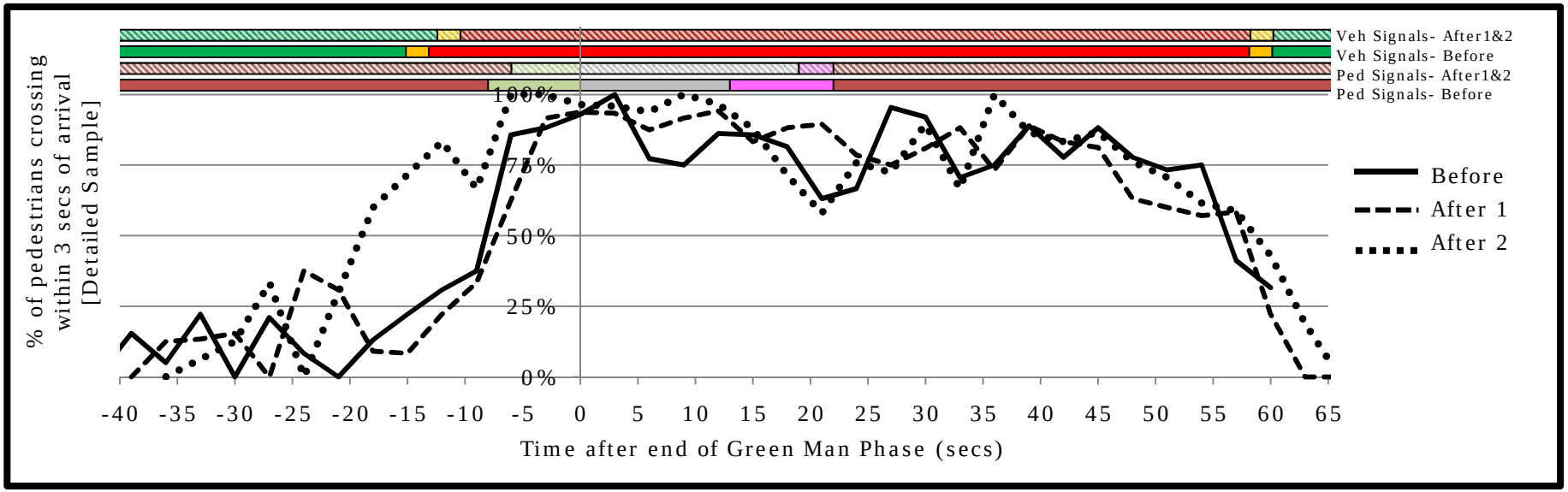

Figure C-12 Impact of PCaTS on decision to cross, relative to the end of the Green Man, (Oxford St.)

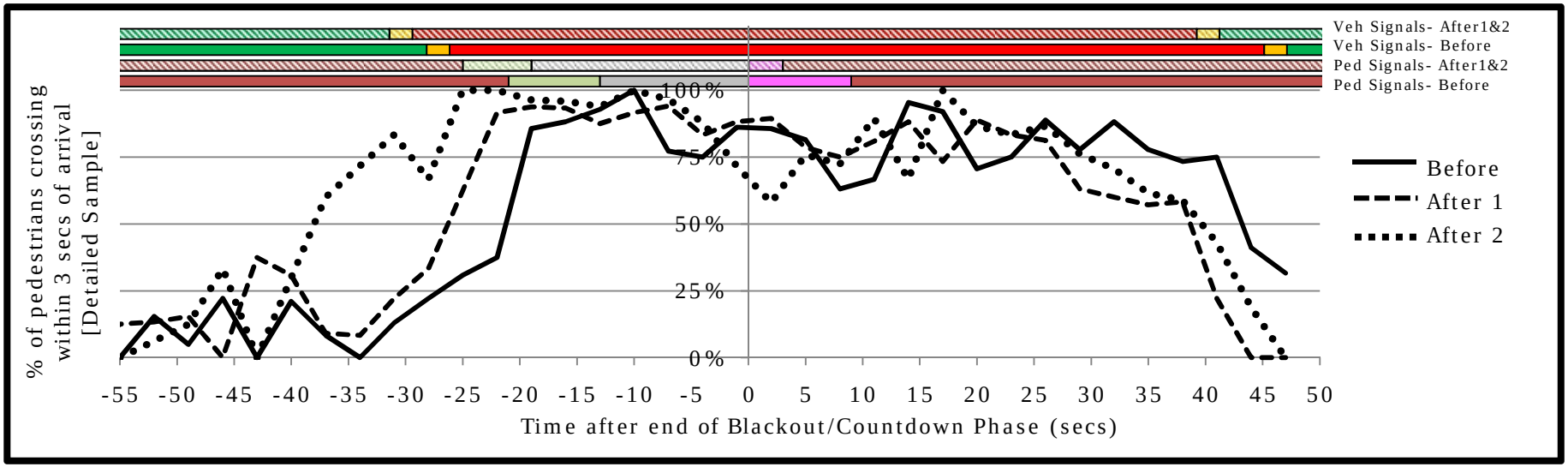

Figure C-13 Impact of PCaTS on decision to cross, relative to the end of the Blackout, (Oxford St.)

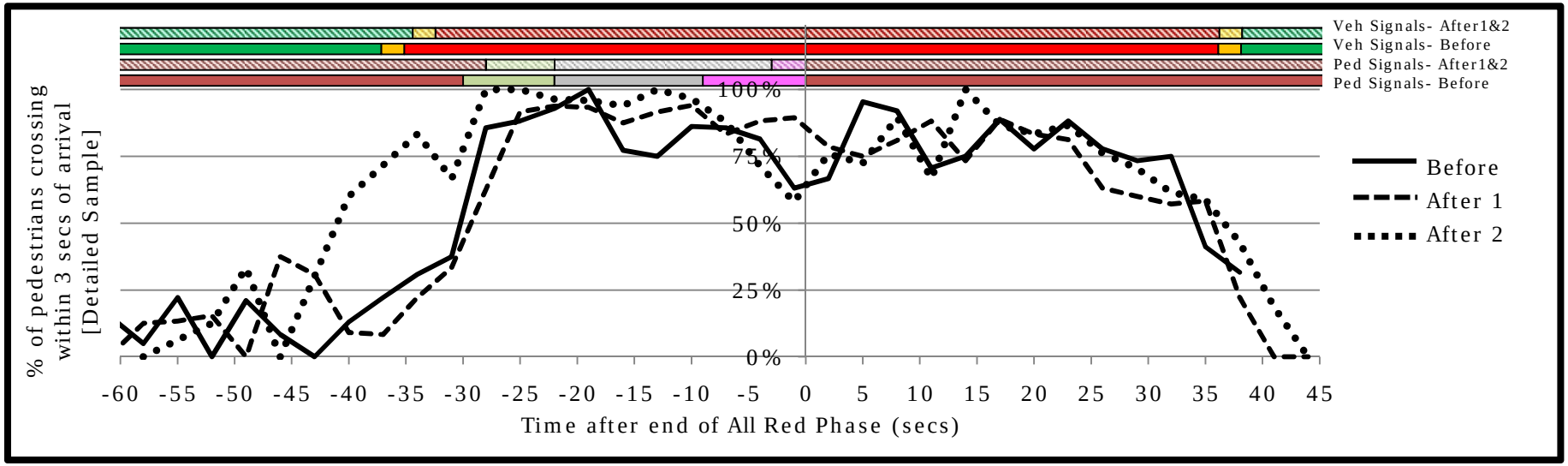

Figure C-14 Impact of PCaTS on decision to cross, relative to the end of the All Red, (Oxford St.)

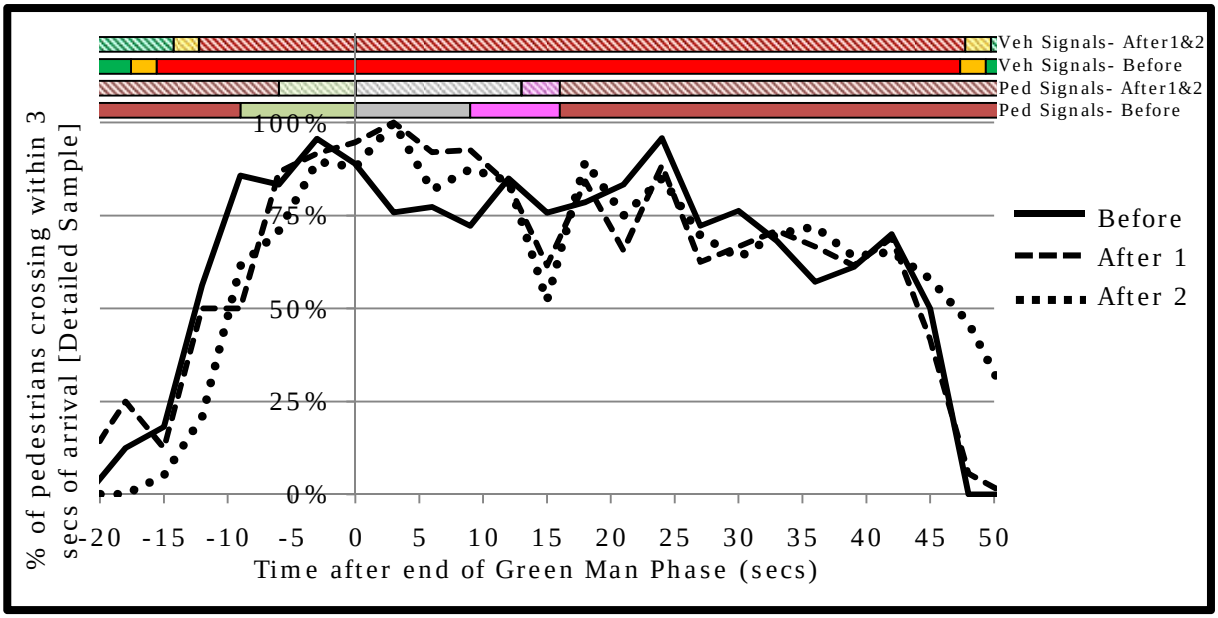

Figure C-15 Impact of PCaTS on decision to cross, relative to the end of the Green Man, (Kingsway)

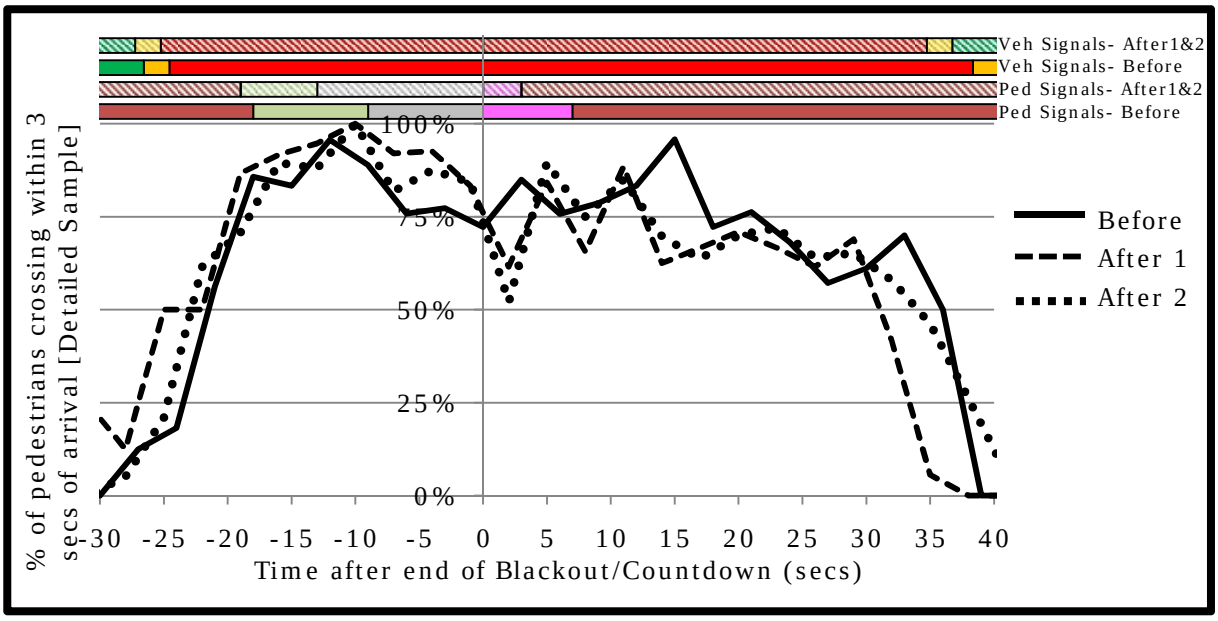

Figure C-16 Impact of PCaTS on decision to cross, relative to the end of the Blackout, (Kingsway)

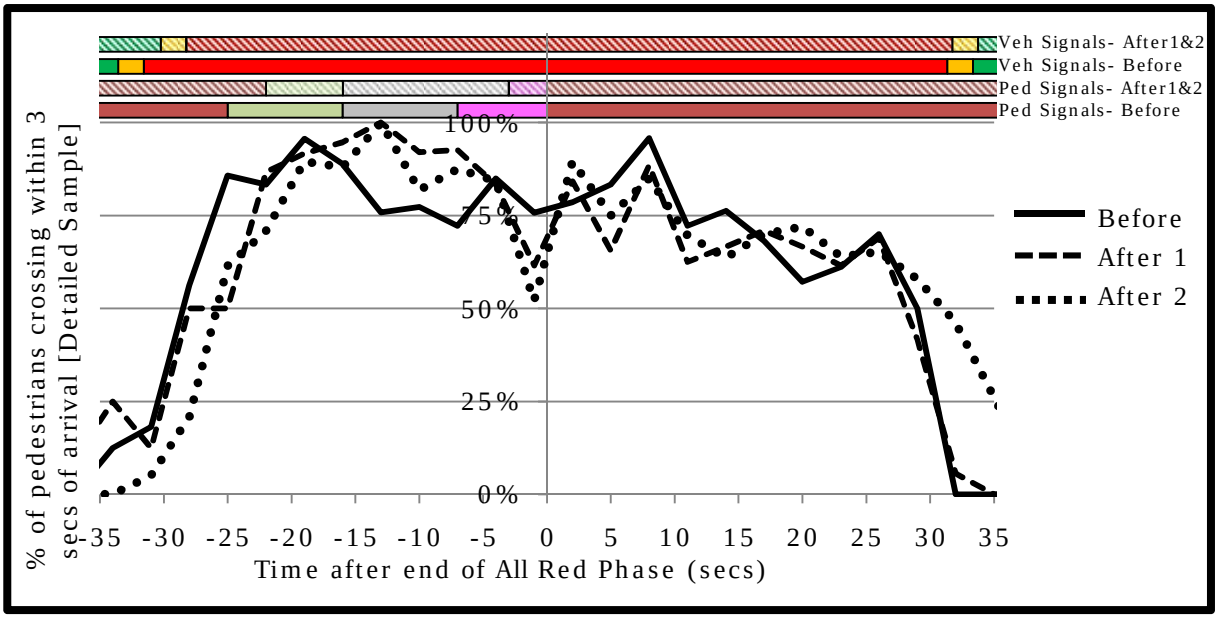

Figure C-17 Impact of PCaTS on decision to cross, relative to the end of the All Red, (Kingsway)

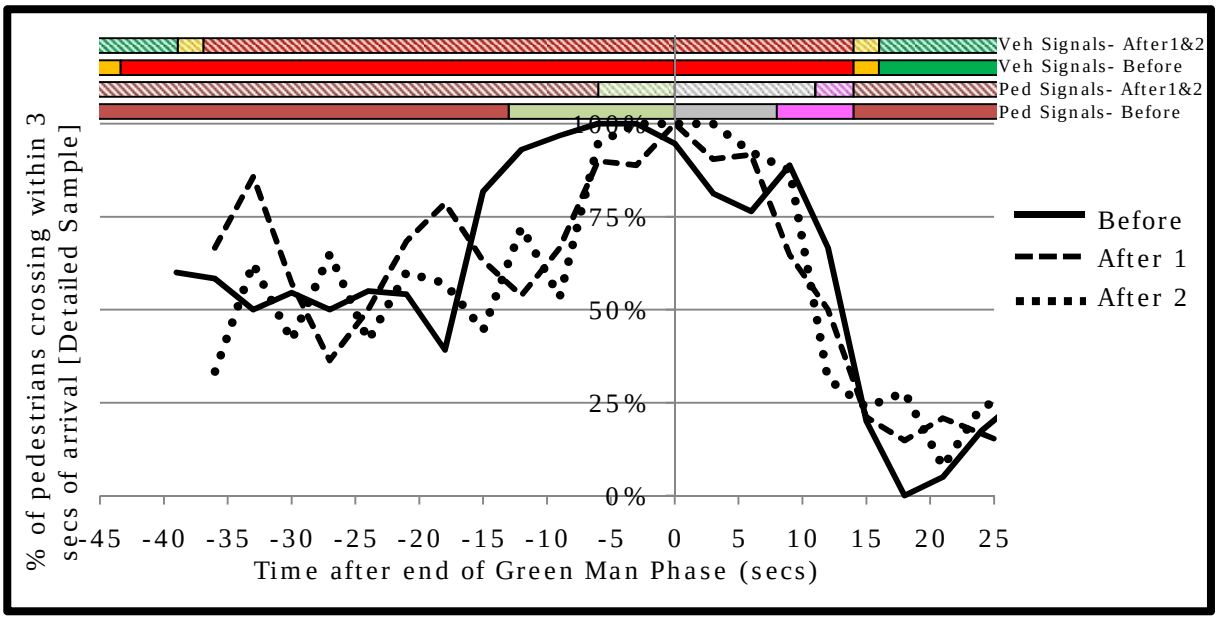

Figure C-18 Impact of PCaTS on decision to cross, relative to the end of the Green Man, (Finsbury)

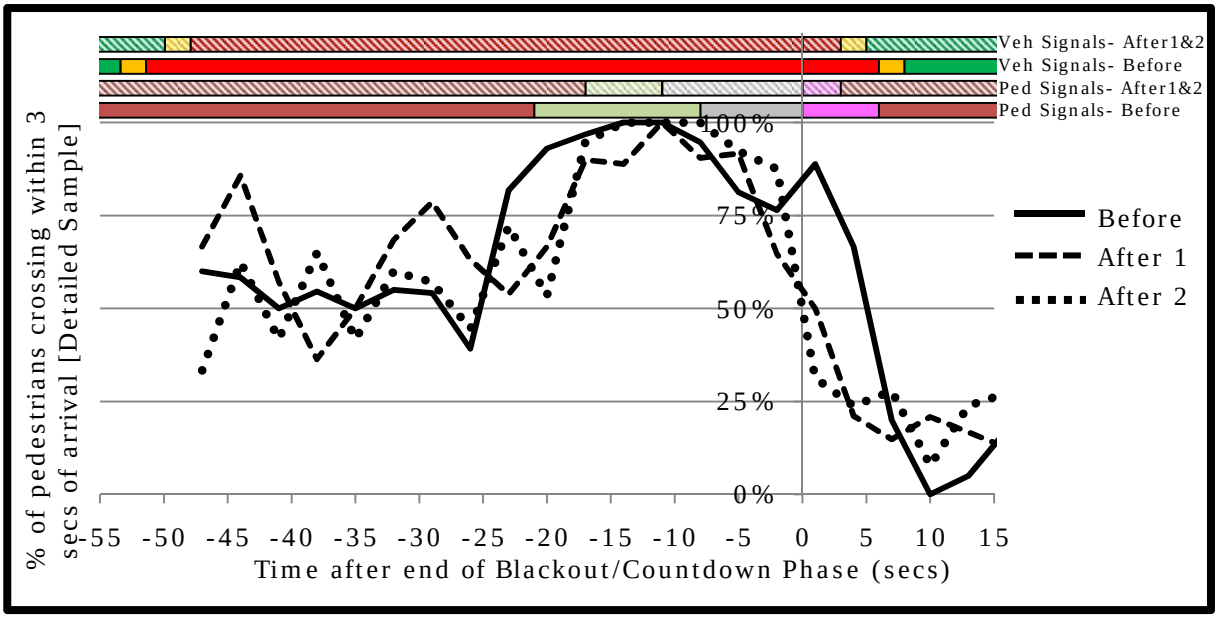

Figure C-19 Impact of PCaTS on decision to cross, relative to the end of the Blackout, (Finsbury)

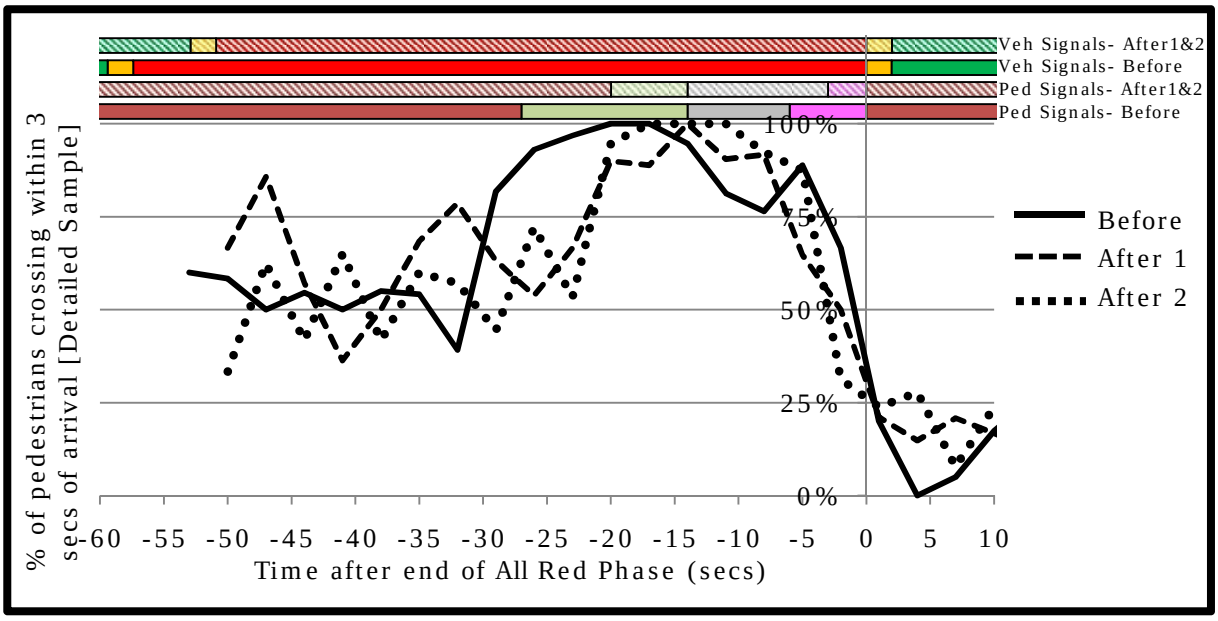

Figure C-20 Impact of PCaTS on decision to cross, relative to the end of the All Red, (Finsbury)

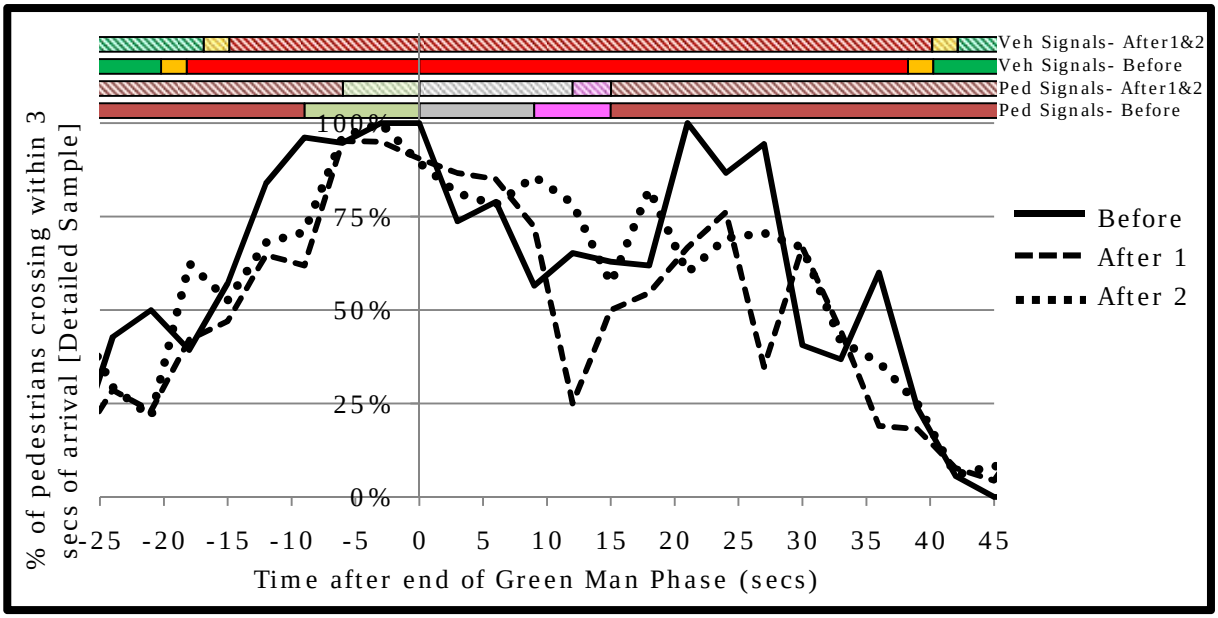

Figure C-21 Impact of PCaTS on decision to cross, relative to the end of the Green Man, (Blackfriars)

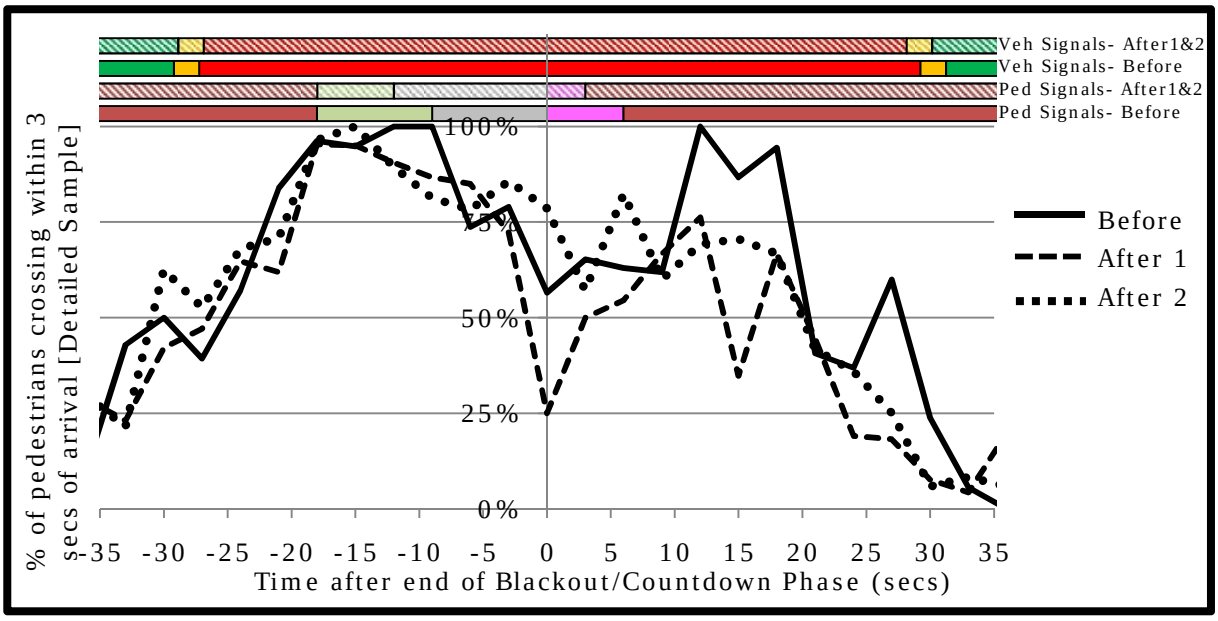

Figure C-22 Impact of PCaTS on decision to cross, relative to the end of the Blackout, (Blackfriars)

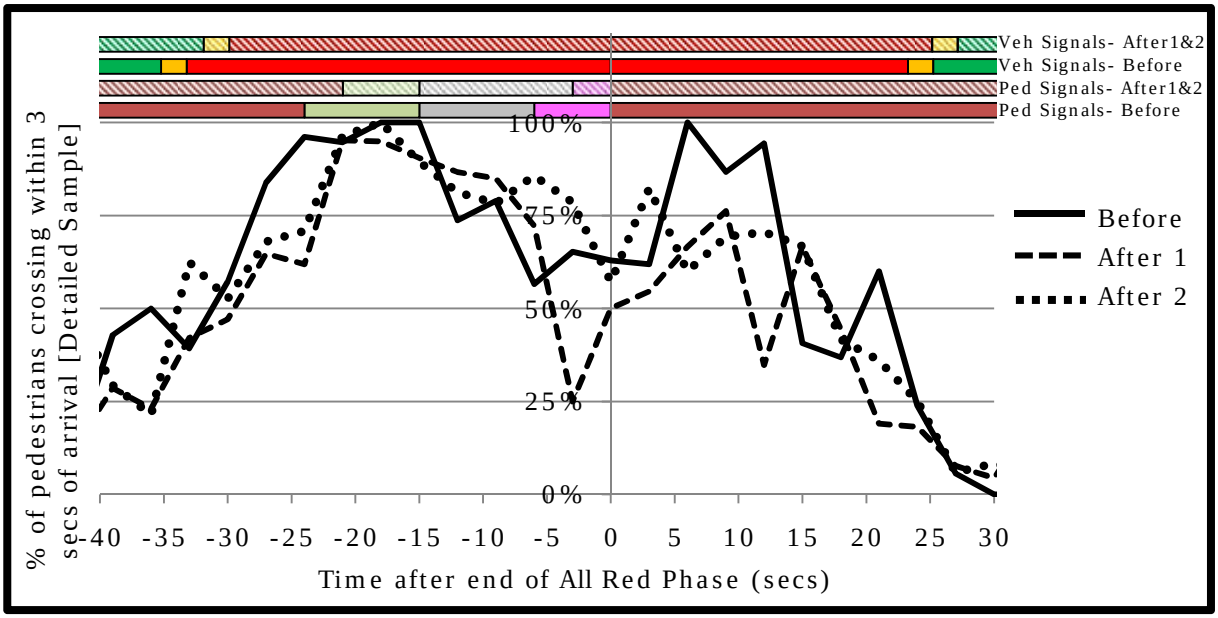

Figure C-23 Impact of PCaTS on decision to cross, relative to the end of the All Red, (Blackfriars)

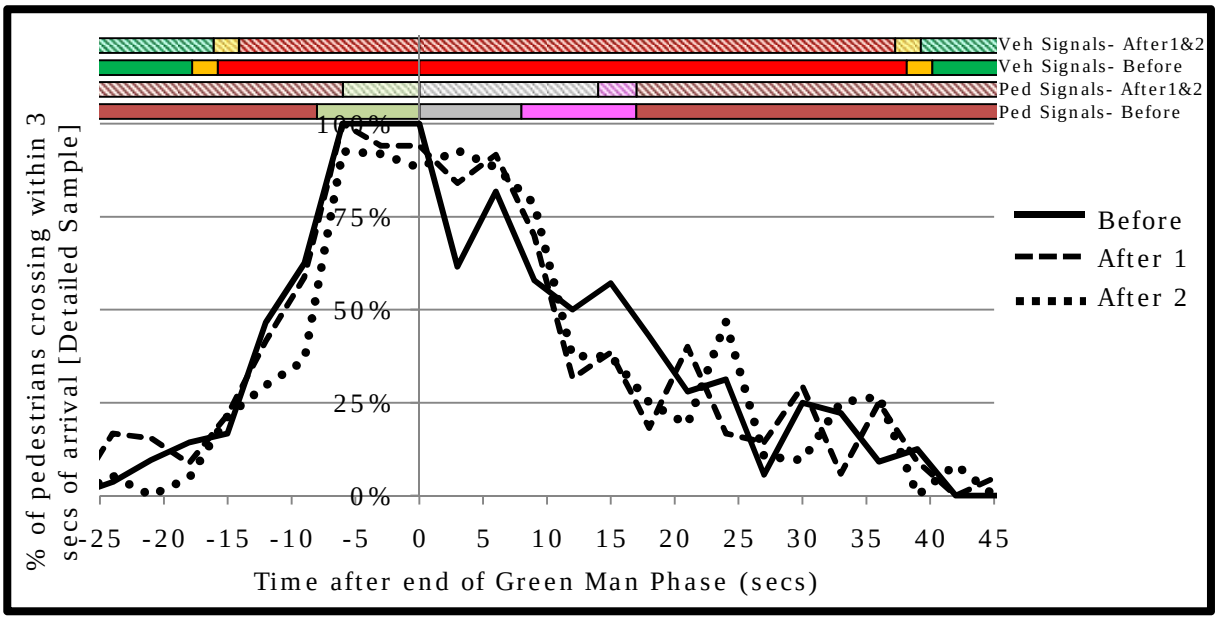

Figure C-24 Impact of PCaTS on decision to cross, relative to the end of the Green Man, (Balham)

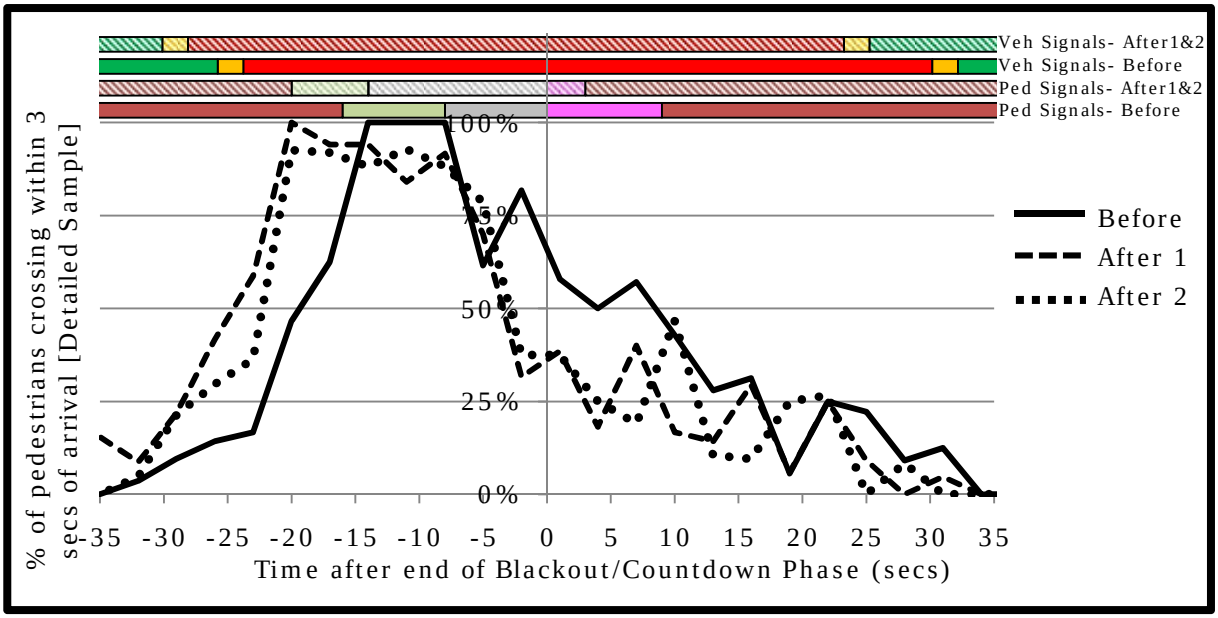

Figure C-25 Impact of PCaTS on decision to cross, relative to the end of the Blackout, (Balham)

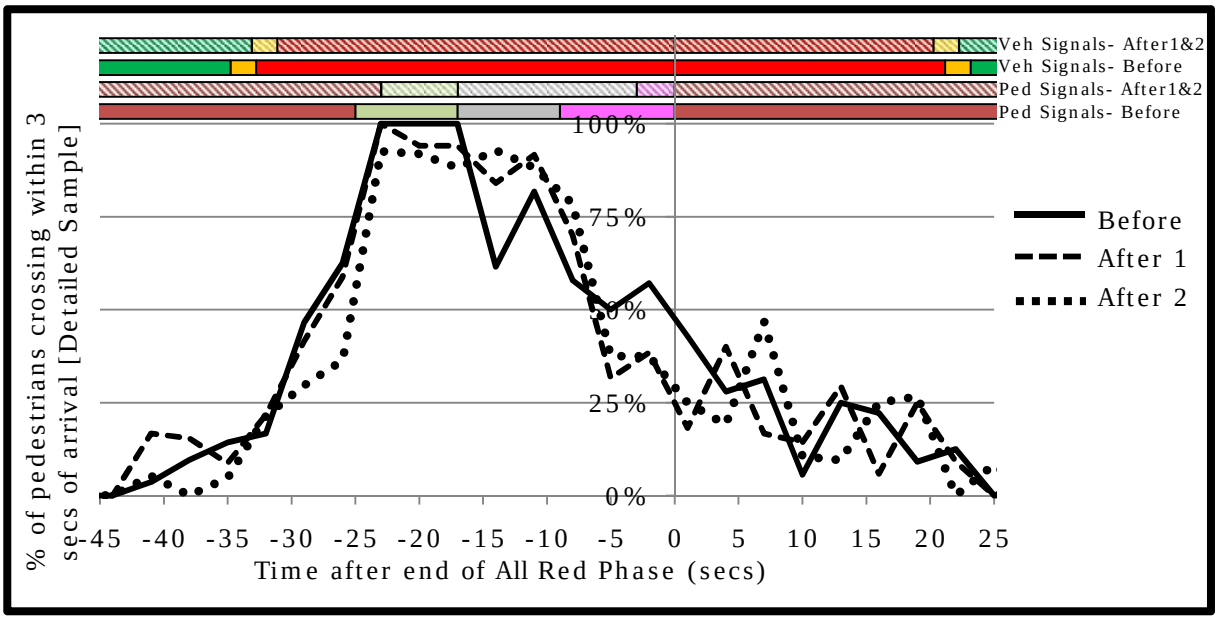

Figure C-26 Impact of PCaTS on decision to cross, relative to the end of the All Red, (Balham)

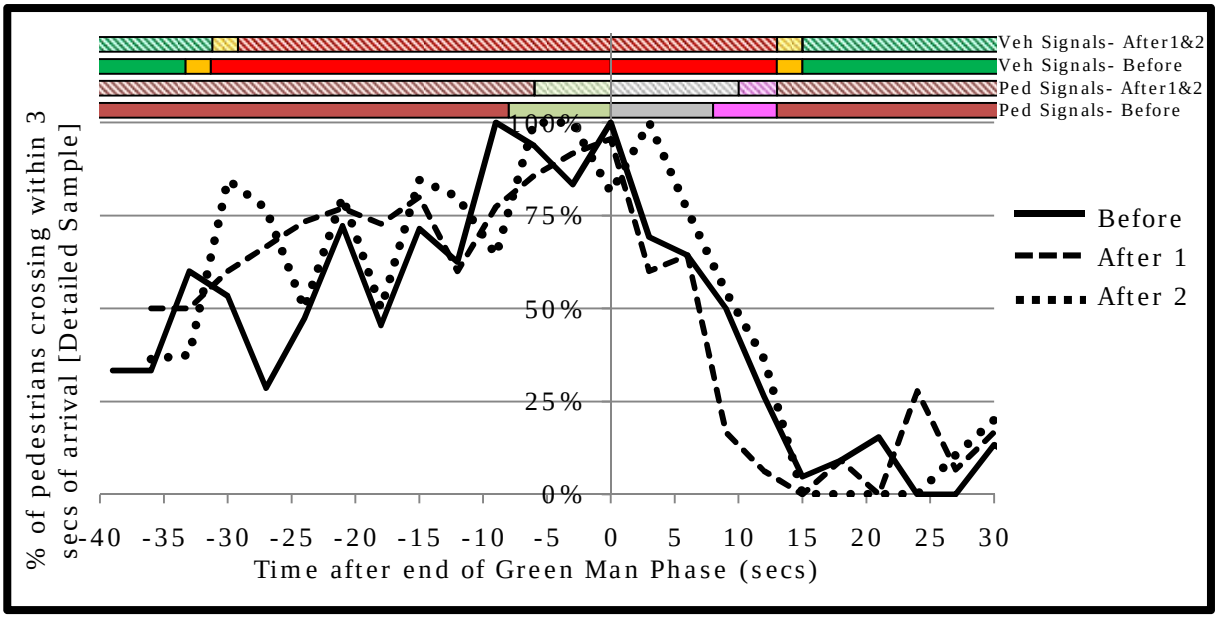

Figure C-27 Impact of PCaTS on decision to cross, relative to the end of the Green Man, (Tower Br.)

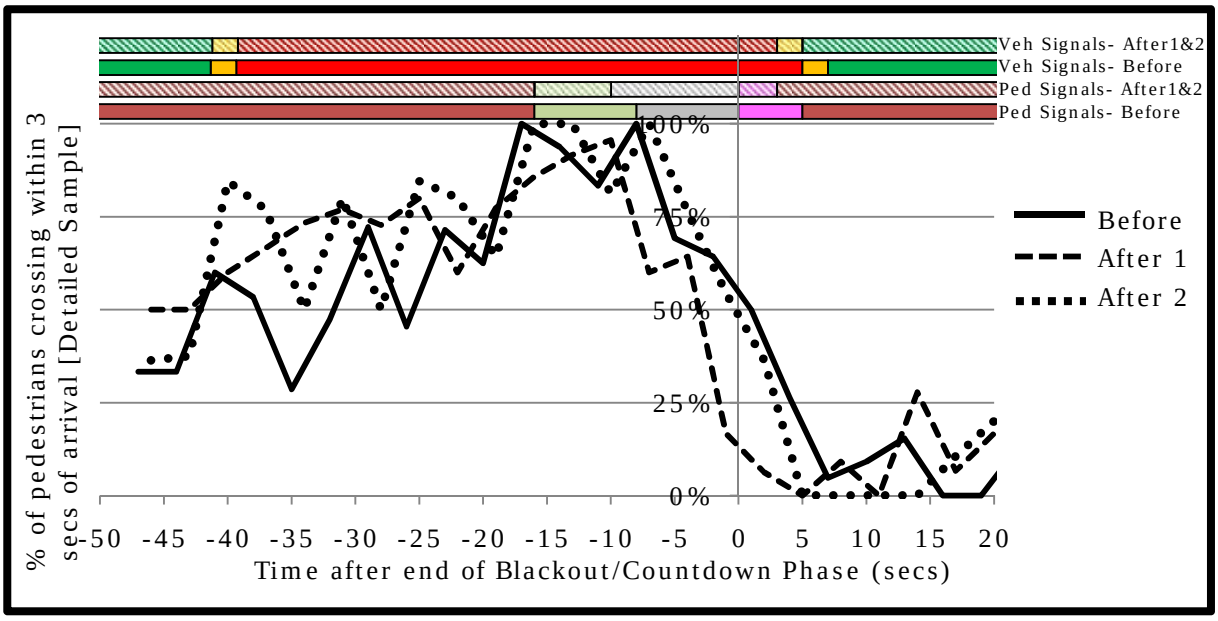

Figure C-28 Impact of PCaTS on decision to cross, relative to the end of the Blackout, (Tower Br.)

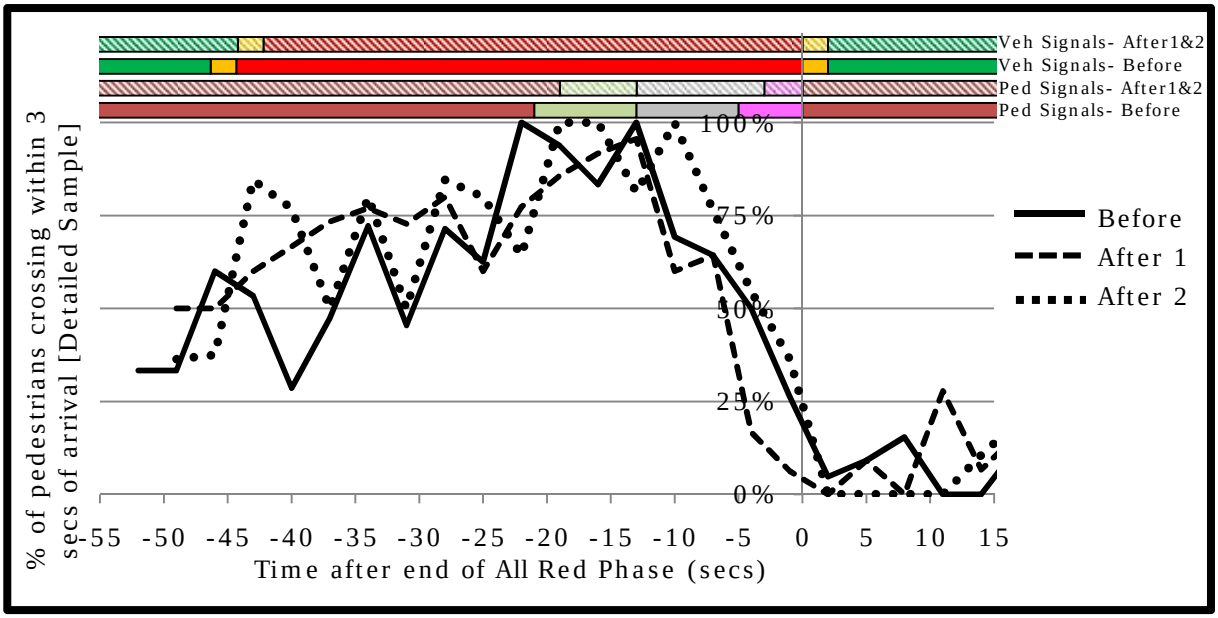

Figure C-29 Impact of PCaTS on decision to cross, relative to the end of the All Red, (Tower Br.)

C.5 Number of Pedestrians per Signal Cycle

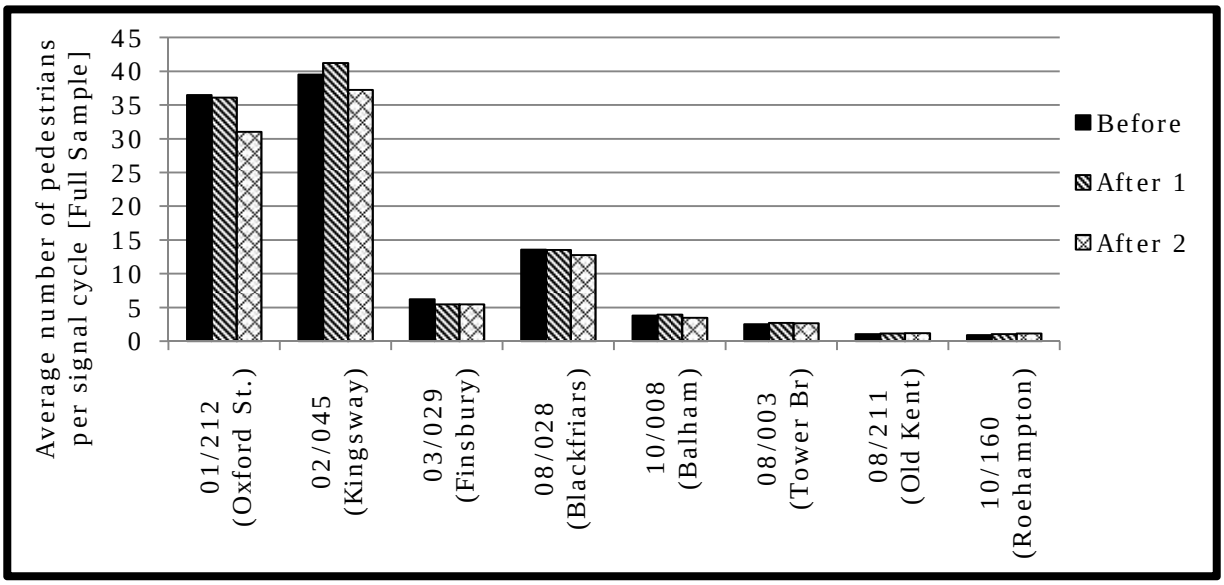

Figure C-30 Average number of pedestrians per signal cycle

C.6 Walking Speed

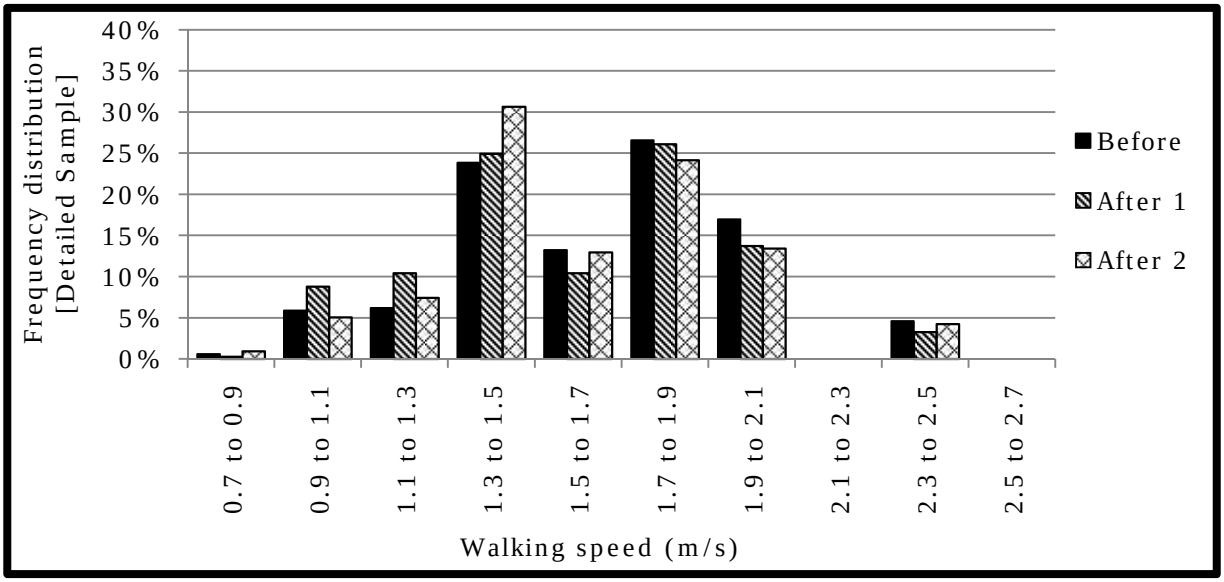

Figure C-31 Frequency distribution of walking speed (m/s), Oxford St.

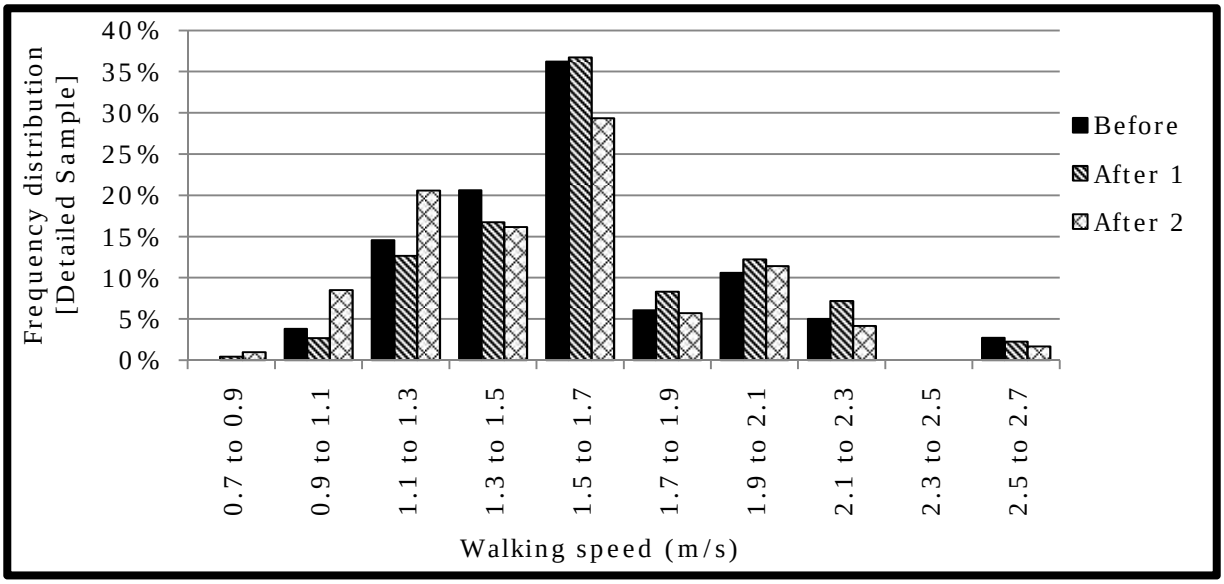

Figure C-32 Frequency distribution of walking speed (m/s), Kingsway

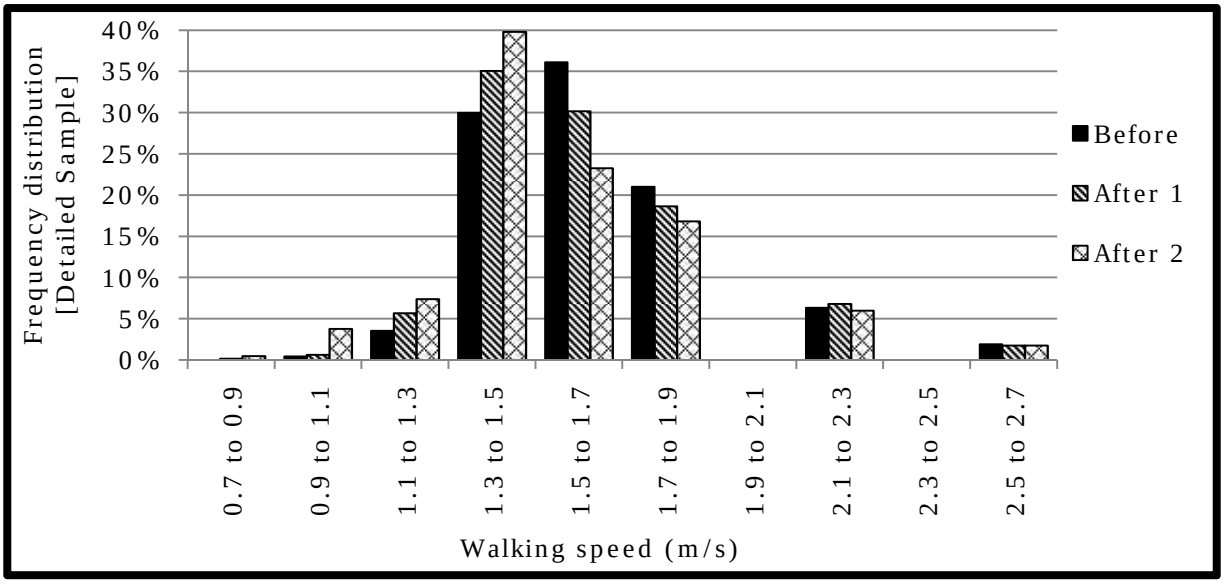

Figure C-33 Frequency distribution of walking speed (m/s), Finsbury

C.7 Child Observed Crossing Behaviour

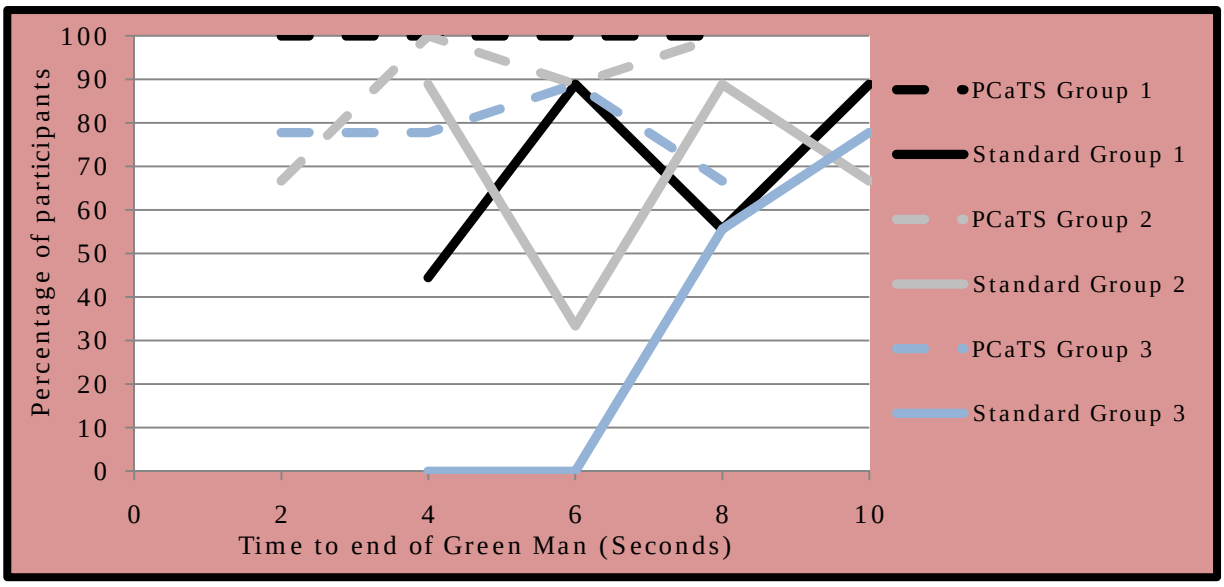

Figure C-34 Percentage of children who crossed the road fully at each crossing type, at individual arrival times

C.8 Vehicle Flows

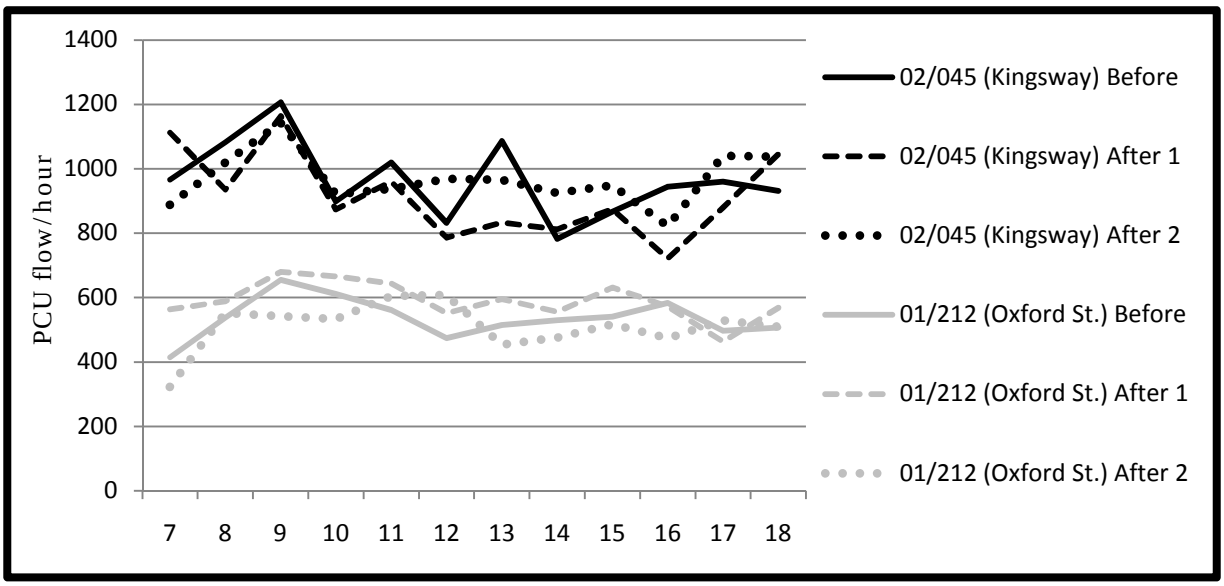

Figure C-35 Vehicle flow profiles – Group 1a

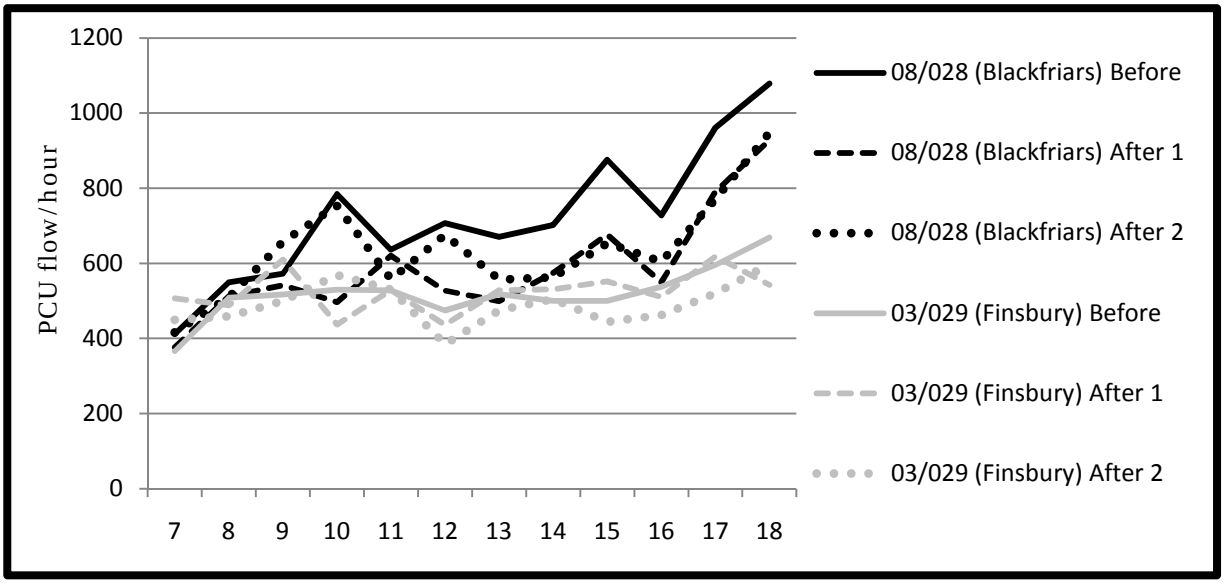

Figure C-36 Vehicle flow profiles – Group 1b

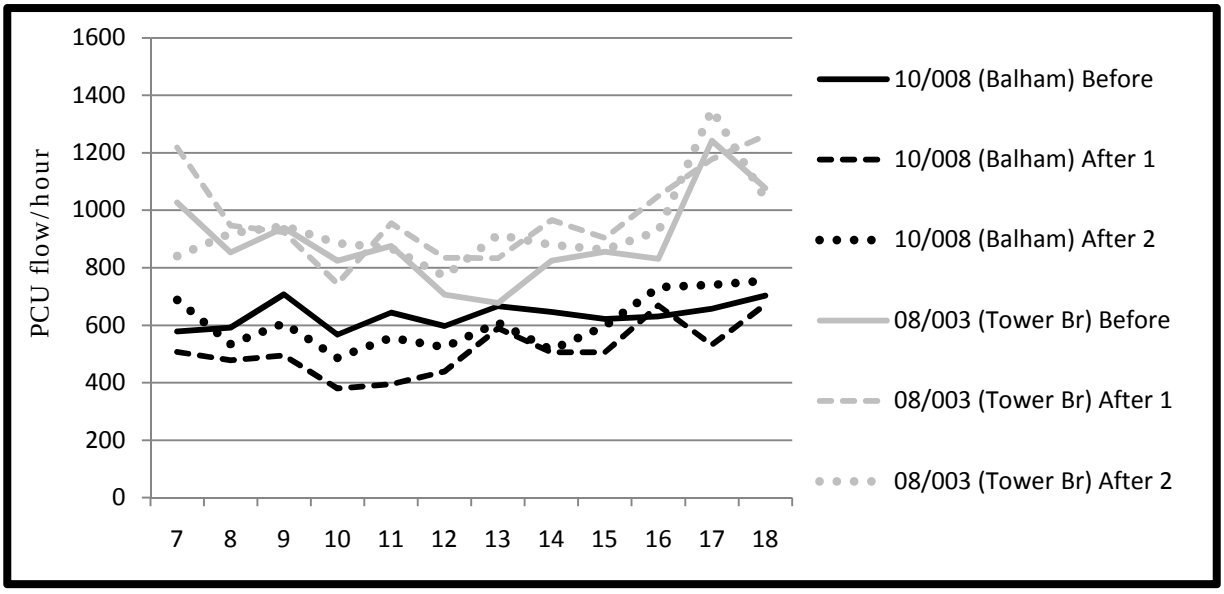

Figure C-37 Vehicle flow profiles – Group 2a

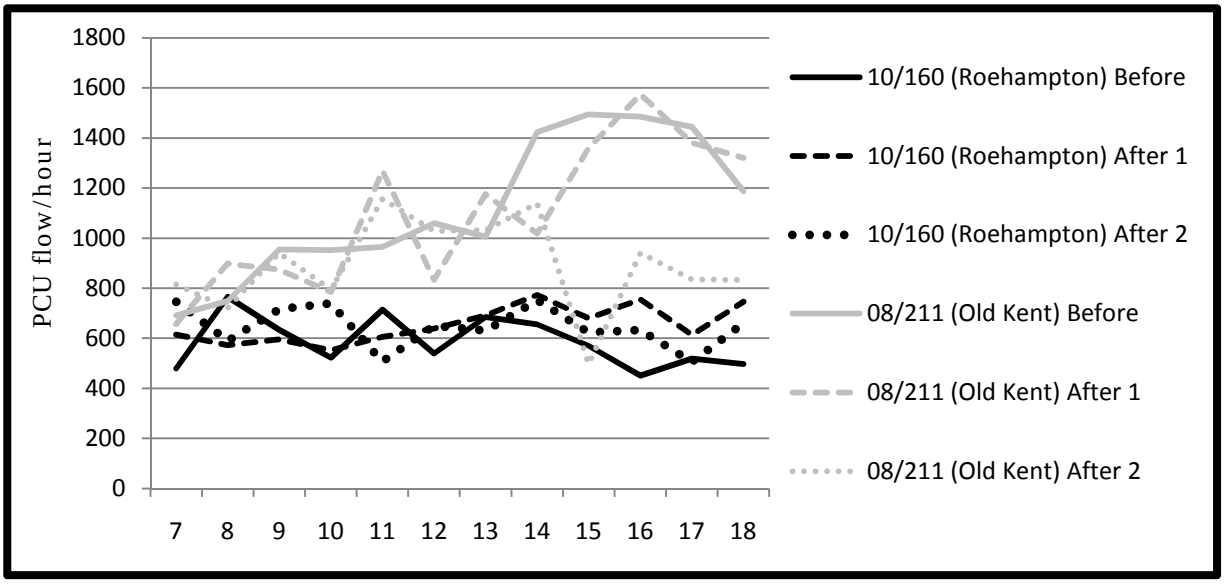

Figure C-38 Vehicle flow profiles – Group 2b