Appendix B

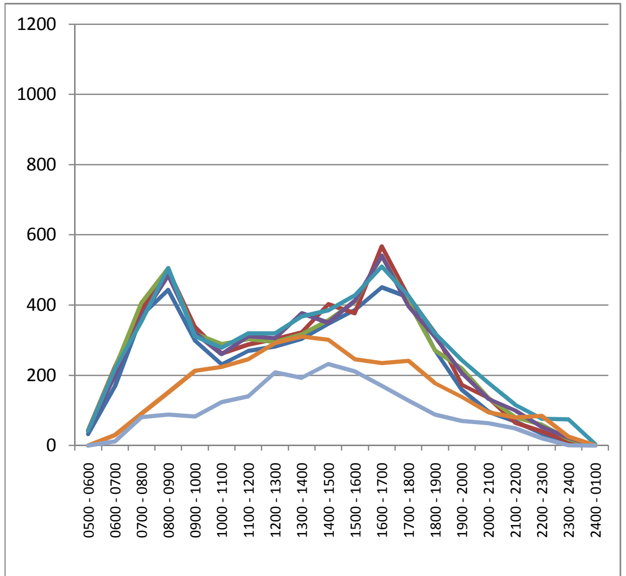
Boardings by Time of Day and Day of Week by Route: Go Wellington

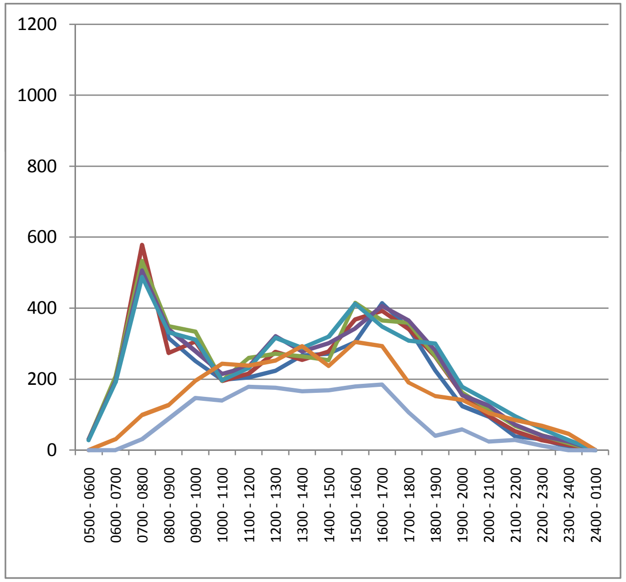
Average Boardings per Route per Hour

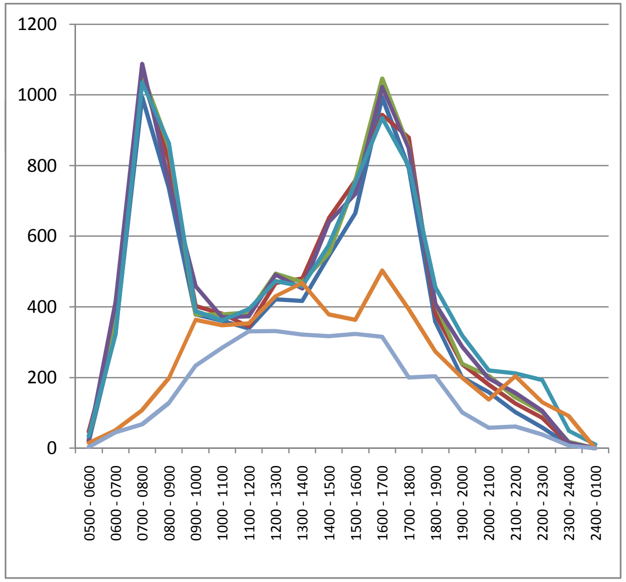
ROUTE 01	M	Tu	W	Th	F	Sa	Su
0500 - 0600	32.7	42.4	41.4	41.0	42.0	0.0	0.0
0600 - 0700	169.0	223.3	219.9	198.7	218.7	30.0	11.9
0700 - 0800	370.6	386.9	406.9	365.4	354.3	90.4	81.1
0800 - 0900	443.3	500.4	505.0	484.4	505.1	150.4	88.0
0900 - 1000	298.3	337.4	318.4	320.4	310.4	213.1	82.9
1000 - 1100	230.6	261.6	288.0	260.6	278.7	223.3	123.3
1100 - 1200	269.6	287.6	302.9	311.4	319.1	245.4	140.0
1200 - 1300	282.0	302.6	295.1	305.6	319.0	291.7	207.9
1300 - 1400	303.9	322.4	316.7	377.0	367.4	310.7	192.9
1400 - 1500	346.9	402.4	356.4	349.3	385.0	301.6	232.1
1500 - 1600	385.7	376.4	409.7	412.1	428.1	245.6	211.1
1600 - 1700	450.4	567.1	538.4	540.9	509.3	234.9	170.3
1700 - 1800	422.6	424.1	409.0	396.4	426.7	241.1	128.1
1800 - 1900	271.0	321.1	270.7	309.0	319.0	177.3	88.0
1900 - 2000	158.3	172.9	219.3	206.0	243.3	138.6	70.0
2000 - 2100	96.4	135.4	135.3	132.7	178.0	94.7	63.6
2100 - 2200	68.9	65.1	80.6	100.1	116.1	80.1	48.6
2200 - 2300	33.3	40.1	58.9	52.7	76.6	84.1	21.0
2300 - 2400	12.6	12.7	17.6	21.9	74.4	24.9	0.7
2400 - 0100	0.0	0.0	0.0	0.0	4.0	0.4	0.0

ROUTE 02	M	Tu	W	Th	F	Sa	Su
0500 - 0600	28.7	31.4	30.0	31.3	28.0	0.0	0.0
0600 - 0700	192.0	195.3	206.7	195.6	190.6	30.7	0.0
0700 - 0800	522.7	578.0	533.6	506.0	487.7	99.4	30.7
0800 - 0900	316.0	273.1	348.7	339.6	331.4	126.9	88.3
0900 - 1000	250.4	306.1	333.6	279.0	311.3	195.6	146.9
1000 - 1100	198.6	194.4	195.7	214.4	196.7	243.1	139.7
1100 - 1200	204.4	215.9	259.9	235.7	231.1	237.9	178.6
1200 - 1300	224.0	277.1	271.6	320.9	316.4	252.4	176.1
1300 - 1400	267.0	253.9	264.0	277.3	287.6	292.7	165.4
1400 - 1500	271.0	277.7	253.0	301.3	318.9	237.4	168.4
1500 - 1600	304.4	368.0	415.3	342.4	412.1	304.4	179.7
1600 - 1700	414.3	392.3	365.3	406.3	348.0	293.0	185.1
1700 - 1800	343.9	341.1	358.6	365.0	308.9	190.1	106.3
1800 - 1900	224.7	263.3	266.3	280.3	300.3	152.0	40.0
1900 - 2000	124.6	157.3	162.3	154.7	178.1	141.6	58.3
2000 - 2100	94.4	96.0	114.6	125.1	138.3	104.7	24.4
2100 - 2200	38.9	52.6	68.4	71.0	95.1	84.4	28.9
2200 - 2300	30.9	27.6	40.9	40.6	59.4	68.1	12.7
2300 - 2400	8.1	14.1	19.9	24.6	27.9	46.0	0.0
2400 - 0100	0.0	0.0	0.0	0.0	0.0	0.3	0.0

ROUTE 03	M	Tu	W	Th	F	Su	Su
0500 - 0600	18.6	47.0	24.3	21.6	33.9	15.0	3.4
0600 - 0700	331.7	330.0	358.0	414.1	323.1	51.1	45.1
0700 - 0800	993.7	1051.9	1059.3	1087.3	1035.4	107.7	67.6
0800 - 0900	737.3	814.4	856.6	755.9	864.6	197.1	127.7
0900 - 1000	378.6	402.0	377.7	458.3	387.7	363.0	233.6
1000 - 1100	361.0	380.4	378.9	370.9	361.7	347.9	284.7
1100 - 1200	338.7	344.4	383.7	373.3	393.3	353.7	330.4
1200 - 1300	421.7	467.6	493.4	490.7	472.9	430.4	331.9
1300 - 1400	417.0	480.6	470.4	452.4	458.3	467.3	321.7
1400 - 1500	543.4	650.4	552.3	640.1	574.7	378.9	317.0
1500 - 1600	665.3	757.4	754.7	719.4	750.3	363.1	323.3
1600 - 1700	993.1	943.6	1045.9	1022.3	934.7	502.7	314.9
1700 - 1800	793.0	878.9	850.6	848.0	798.3	393.4	200.1
1800 - 1900	357.3	380.9	408.3	408.4	455.4	273.6	203.4
1900 - 2000	200.1	238.0	239.1	286.7	319.1	199.3	101.7
2000 - 2100	158.7	180.6	204.7	197.3	219.7	137.6	57.9
2100 - 2200	102.6	126.7	143.4	156.9	212.0	203.4	61.3
2200 - 2300	58.6	86.3	102.4	105.9	192.7	129.9	38.6
2300 - 2400	9.1	11.3	17.4	14.7	49.9	91.6	7.1
2400 - 0100	0.0	0.0	0.0	0.0	10.9	0.0	0.0

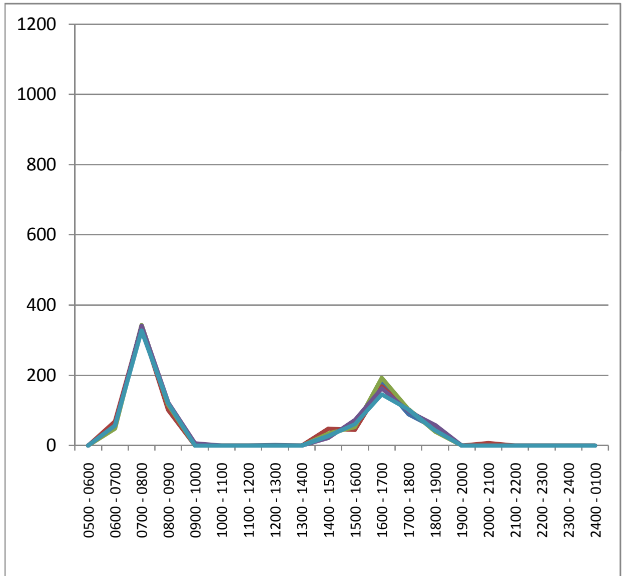




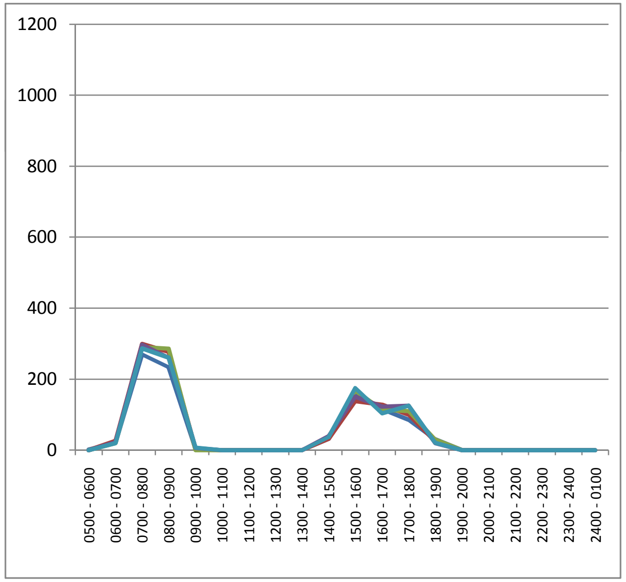


Average Boardings per Route per Hour

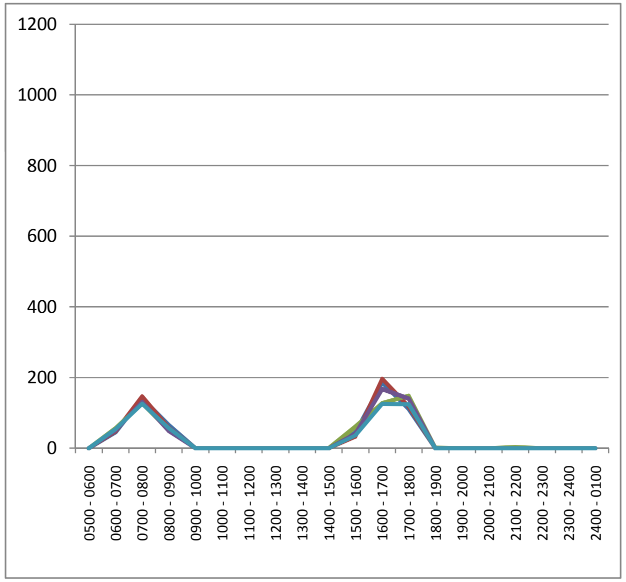
ROUTE 04	M	Tu	W	Th	F	Sa	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0		
0600 - 0700	59.0	68.6	48.0	56.7	57.3		
0700 - 0800	340.9	337.6	342.7	341.4	327.1		
0800 - 0900	101.6	101.0	115.4	122.7	119.9		
0900 - 1000	0.0	0.0	0.0	5.9	0.0		
1000 - 1100	0.0	0.0	0.0	0.0	0.0		
1100 - 1200	0.0	0.0	0.0	0.0	0.0		
1200 - 1300	1.9	0.0	0.0	0.0	0.0		
1300 - 1400	0.0	0.0	0.0	0.0	0.0		
1400 - 1500	33.7	48.3	34.7	21.7	26.7		
1500 - 1600	60.9	44.0	52.4	72.4	61.0		
1600 - 1700	177.4	167.9	193.1	162.3	145.9		
1700 - 1800	88.7	101.3	103.9	97.9	102.6		
1800 - 1900	49.9	51.1	39.7	59.1	43.6		
1900 - 2000	0.0	0.0	0.0	0.0	0.0		
2000 - 2100	0.0	7.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		
2200 - 2300	0.0	0.0	0.0	0.0	0.0		
2300 - 2400	0.0	0.0	0.0	0.0	0.0		
2400 - 0100	0.0	0.0	0.0	0.0	0.0		



ROUTE 05	M	Tu	W	Th	F	Sa	Su
0500 - 0600	2.0	0.0	0.0	0.0	0.0		
0600 - 0700	20.3	25.9	19.7	22.3	19.9		
0700 - 0800	269.4	299.7	290.7	297.4	286.9		
0800 - 0900	233.9	277.1	286.3	260.1	260.7		
0900 - 1000	4.4	4.7	0.0	5.7	6.7		
1000 - 1100	0.0	0.0	0.0	0.0	0.0		
1100 - 1200	0.0	0.0	0.0	0.0	0.0		
1200 - 1300	0.0	0.0	0.0	0.0	0.0		
1300 - 1400	0.0	0.0	0.0	0.0	0.0		
1400 - 1500	31.3	31.3	37.9	39.1	37.1		
1500 - 1600	158.9	137.6	167.3	150.4	174.6		
1600 - 1700	115.6	127.7	113.9	122.4	103.1		
1700 - 1800	85.3	100.0	110.1	125.3	124.9		
1800 - 1900	30.7	24.4	29.9	19.4	20.4		
1900 - 2000	0.0	0.0	0.0	0.0	0.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		
2200 - 2300	0.0	0.0	0.0	0.0	0.0		
2300 - 2400	0.0	0.0	0.0	0.0	0.0		
2400 - 0100	0.0	0.0	0.0	0.0	0.0		



ROUTE 06	M	Tu	W	Th	F	Su	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0		
0600 - 0700	44.9	47.6	56.6	50.6	54.6		
0700 - 0800	141.3	146.6	126.4	131.1	125.7		
0800 - 0900	66.0	57.7	51.3	48.7	56.4		
0900 - 1000	0.0	0.0	0.0	0.0	0.0		
1000 - 1100	0.0	0.0	0.0	0.0	0.0		
1100 - 1200	0.0	0.0	0.0	0.0	0.0		
1200 - 1300	0.0	0.0	0.0	0.0	0.0		
1300 - 1400	0.0	0.0	0.0	0.0	0.0		
1400 - 1500	0.0	0.0	0.0	0.0	0.0		
1500 - 1600	44.4	32.4	60.6	40.9	35.9		
1600 - 1700	185.3	196.4	127.9	167.7	125.4		
1700 - 1800	110.7	117.6	148.9	140.1	123.9		
1800 - 1900	0.0	0.0	1.9	0.0	0.0		
1900 - 2000	0.0	0.0	0.0	0.0	0.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	3.6	0.0	0.0		
2200 - 2300	0.0	0.0	0.0	0.0	0.0		
2300 - 2400	0.0	0.0	0.0	0.0	0.0		
2400 - 0100	0.0	0.0	0.0	0.0	0.0		

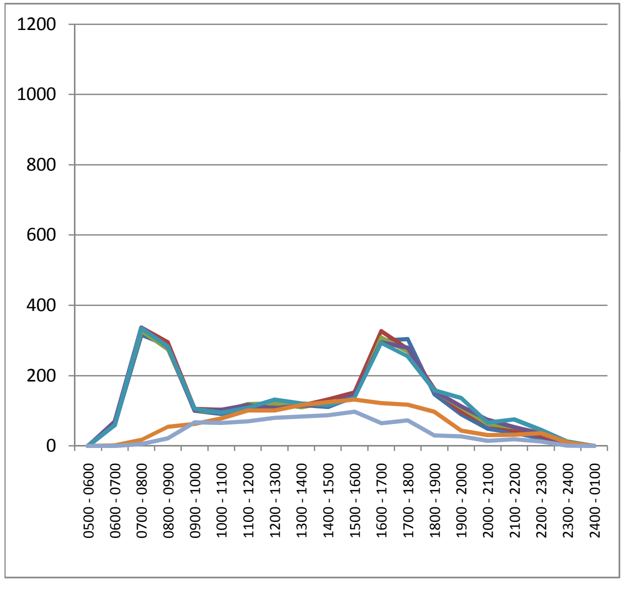


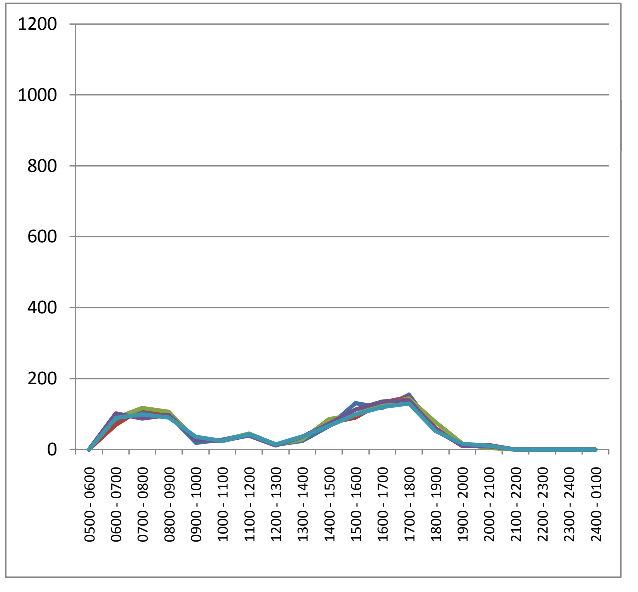
Average Boardings per Route per Hour

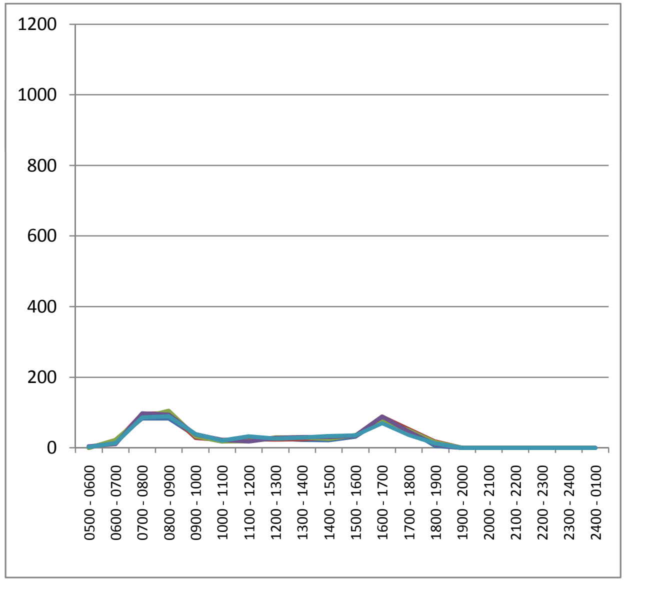
ROUTE 07	M	Tu	W	Th	F	Sa	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0600 - 0700	60.7	64.0	65.3	69.6	59.0	1.3	0.0
0700 - 0800	315.9	336.6	327.1	336.7	335.3	17.3	5.0
0800 - 0900	285.0	294.4	274.7	282.4	283.1	54.4	21.3
0900 - 1000	100.1	105.6	100.6	100.6	105.1	62.7	66.9
1000 - 1100	90.7	102.3	96.4	102.3	94.9	78.1	65.3
1100 - 1200	110.3	108.3	119.1	116.0	108.0	100.6	69.7
1200 - 1300	105.3	111.6	120.7	106.7	132.0	100.9	80.1
1300 - 1400	116.1	114.3	110.3	114.7	120.6	116.3	83.6
1400 - 1500	110.6	131.9	123.1	117.1	115.7	124.7	87.6
1500 - 1600	140.1	151.4	136.0	145.3	135.9	131.6	97.1
1600 - 1700	299.3	326.9	308.9	294.6	292.9	121.9	64.7
1700 - 1800	303.7	275.6	268.1	279.6	255.1	117.4	72.6
1800 - 1900	147.0	161.4	156.6	156.6	158.3	97.4	29.6
1900 - 2000	90.1	97.3	109.1	112.7	136.0	43.0	27.4
2000 - 2100	48.7	61.9	62.6	74.4	66.4	31.0	14.7
2100 - 2200	37.1	44.4	52.1	53.4	75.7	32.0	18.4
2200 - 2300	21.4	27.6	36.7	34.7	45.0	36.4	12.1
2300 - 2400	4.4	5.7	7.6	4.6	12.3	10.1	1.0
2400 - 0100	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ROUTE 08	M	Tu	W	Th	F	Sa	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0		
0600 - 0700	75.7	69.3	88.6	101.9	89.1		
0700 - 0800	108.7	116.4	116.7	86.9	99.0		
0800 - 0900	98.3	96.0	105.9	97.6	90.4		
0900 - 1000	18.4	28.6	27.6	27.1	35.9		
1000 - 1100	28.1	23.7	24.9	25.3	23.7		
1100 - 1200	43.3	40.9	44.7	39.9	43.3		
1200 - 1300	13.3	12.3	13.7	11.4	14.6		
1300 - 1400	24.6	36.3	28.9	35.6	36.7		
1400 - 1500	65.9	74.4	85.1	73.0	66.1		
1500 - 1600	130.7	90.4	98.1	112.7	98.4		
1600 - 1700	117.3	132.3	127.6	135.3	120.0		
1700 - 1800	155.1	147.9	144.1	139.7	129.4		
1800 - 1900	53.9	60.3	77.1	57.6	51.9		
1900 - 2000	11.6	9.4	15.9	10.0	16.4		
2000 - 2100	8.7	12.1	4.7	8.9	11.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		
2200 - 2300	0.0	0.0	0.0	0.0	0.0		
2300 - 2400	0.0	0.0	0.0	0.0	0.0		
2400 - 0100	0.0	0.0	0.0	0.0	0.0		

ROUTE 09	M	Tu	W	Th	F	Su	Su
0500 - 0600	0.0	1.1	0.0	4.6	2.4		
0600 - 0700	20.1	16.7	22.1	10.9	13.0		
0700 - 0800	82.7	96.6	85.7	97.6	86.0		
0800 - 0900	83.4	97.6	104.6	94.0	89.9		
0900 - 1000	34.6	27.6	32.4	38.1	38.9		
1000 - 1100	18.3	22.4	17.4	22.3	20.3		
1100 - 1200	24.3	24.1	18.9	17.4	32.7		
1200 - 1300	26.4	23.7	29.3	27.7	25.7		
1300 - 1400	22.0	24.0	29.7	30.4	28.9		
1400 - 1500	21.3	28.9	25.4	31.0	33.0		
1500 - 1600	31.1	34.4	36.1	34.4	34.7		
1600 - 1700	80.0	88.1	74.4	88.3	69.4		
1700 - 1800	49.1	53.6	50.0	45.6	36.1		
1800 - 1900	5.3	17.4	16.3	9.4	12.3		
1900 - 2000	0.0	0.0	0.0	0.0	0.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		
2200 - 2300	0.0	0.0	0.0	0.0	0.0		
2300 - 2400	0.0	0.0	0.0	0.0	0.0		
2400 - 0100	0.0	0.0	0.0	0.0	0.0		





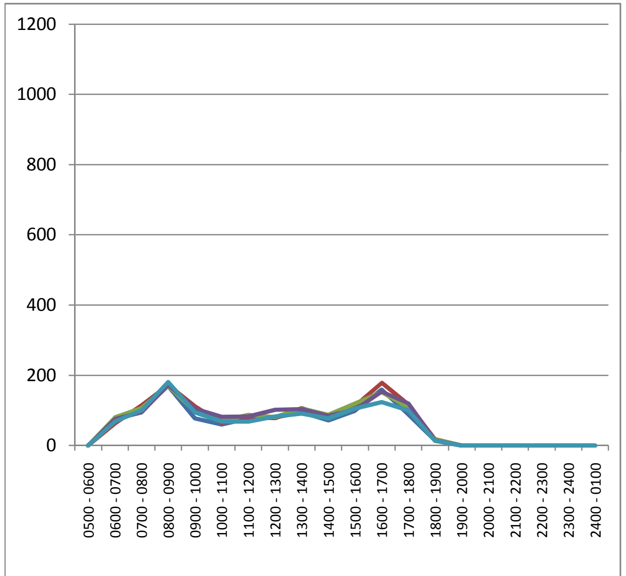


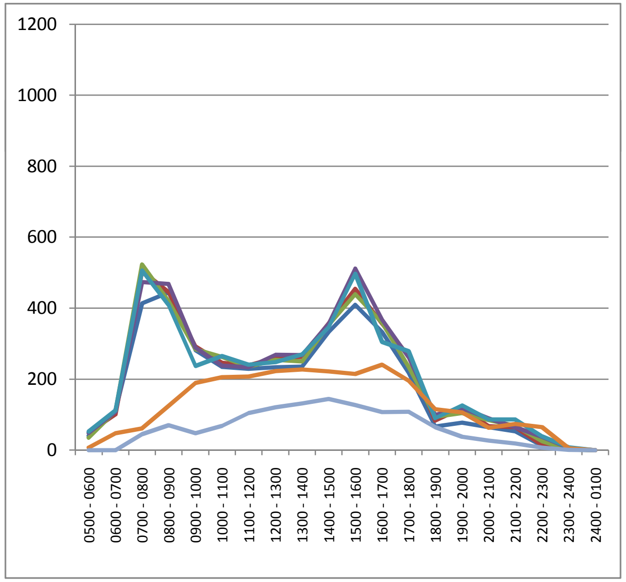
Average Boardings per Route per Hour

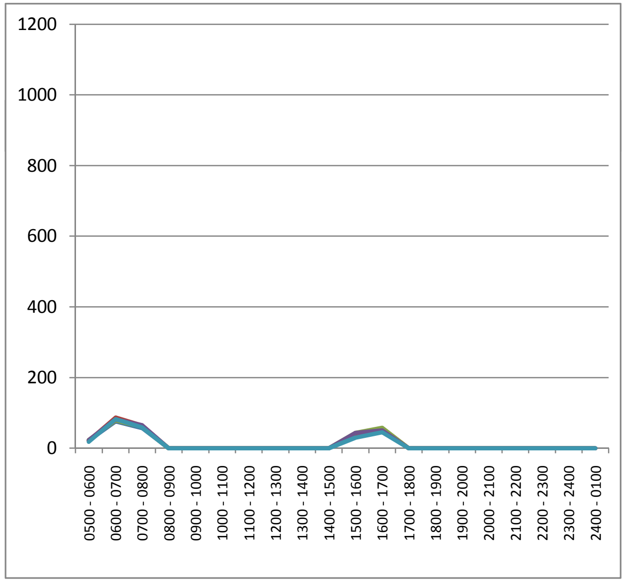
ROUTE 10	M	Tu	W	Th	F	Sa	Su
0500 - 0600	0.0	0.0	0.0	0.1	0.0		
0600 - 0700	70.4	62.1	79.7	74.9	68.4		
0700 - 0800	98.9	114.0	106.4	94.1	100.0		
0800 - 0900	170.4	171.7	170.4	172.9	180.9		
0900 - 1000	77.1	111.0	96.3	104.0	94.3		
1000 - 1100	59.6	64.7	69.4	82.0	67.6		
1100 - 1200	77.1	79.7	86.7	82.6	68.4		
1200 - 1300	80.0	77.6	80.4	101.7	82.4		
1300 - 1400	94.7	106.6	105.1	103.3	91.1		
1400 - 1500	71.9	79.7	87.3	84.1	77.3		
1500 - 1600	99.0	112.9	118.7	101.7	105.1		
1600 - 1700	158.9	178.6	151.9	154.0	123.6		
1700 - 1800	88.1	116.4	108.3	120.3	100.0		
1800 - 1900	14.4	17.9	16.6	14.7	13.6		
1900 - 2000	0.0	0.0	0.0	0.0	0.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		
2200 - 2300	0.0	0.0	0.0	0.0	0.0		
2300 - 2400	0.0	0.0	0.0	0.0	0.0		
2400 - 0100	0.0	0.0	0.0	0.0	0.0		

ROUTE 11	M	Tu	W	Th	F	Sa	Su
0500 - 0600	40.1	49.7	35.0	48.9	52.4	6.7	0.0
0600 - 0700	112.1	101.1	109.9	108.1	111.3	47.4	0.0
0700 - 0800	413.0	504.1	523.4	473.6	506.0	61.6	45.3
0800 - 0900	443.4	444.3	419.3	468.4	408.1	124.0	69.7
0900 - 1000	281.4	292.6	283.9	288.9	237.0	188.9	47.9
1000 - 1100	234.1	246.1	262.7	237.6	265.3	205.1	68.7
1100 - 1200	228.9	238.6	235.4	233.9	241.0	207.4	104.7
1200 - 1300	233.7	260.0	254.1	268.9	247.6	222.9	120.7
1300 - 1400	235.7	262.3	250.1	268.1	270.0	227.3	131.7
1400 - 1500	333.0	355.9	352.6	356.1	346.7	222.1	144.4
1500 - 1600	409.7	455.0	439.1	511.6	496.7	214.4	127.1
1600 - 1700	333.1	356.4	358.7	367.0	305.0	240.7	107.6
1700 - 1800	218.0	266.3	234.9	261.6	278.9	195.6	108.0
1800 - 1900	66.3	82.6	93.9	98.7	89.6	114.9	64.4
1900 - 2000	77.7	117.9	104.1	118.6	126.4	105.9	37.7
2000 - 2100	64.7	67.1	84.9	89.3	86.6	62.7	26.9
2100 - 2200	52.9	64.7	68.6	65.0	86.1	73.7	19.1
2200 - 2300	12.0	14.4	25.0	37.7	38.7	65.0	6.6
2300 - 2400	2.7	2.3	1.9	6.0	8.1	5.3	0.9
2400 - 0100	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ROUTE 13	M	Tu	W	Th	F	Su	Su
0500 - 0600	21.7	21.9	23.4	22.1	18.0		
0600 - 0700	76.3	86.4	79.0	81.7	82.0		
0700 - 0800	57.1	64.4	59.9	65.4	58.6		
0800 - 0900	0.0	0.0	0.0	0.0	0.0		
0900 - 1000	0.0	0.0	0.0	0.0	0.0		
1000 - 1100	0.0	0.0	0.0	0.0	0.0		
1100 - 1200	0.0	0.0	0.0	0.0	0.0		
1200 - 1300	0.0	0.0	0.0	0.0	0.0		
1300 - 1400	0.0	0.0	0.0	0.0	0.0		
1400 - 1500	0.0	0.0	0.0	0.0	0.0		
1500 - 1600	37.7	41.0	43.4	43.1	29.7		
1600 - 1700	53.3	56.4	57.4	50.9	45.1		
1700 - 1800	0.0	0.0	0.0	0.0	0.0		
1800 - 1900	0.0	0.0	0.0	0.0	0.0		
1900 - 2000	0.0	0.0	0.0	0.0	0.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		
2200 - 2300	0.0	0.0	0.0	0.0	0.0		
2300 - 2400	0.0	0.0	0.0	0.0	0.0		
2400 - 0100	0.0	0.0	0.0	0.0	0.0		





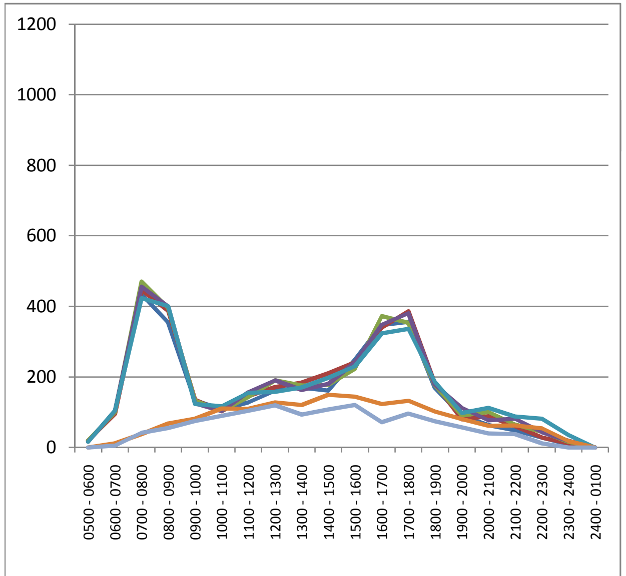


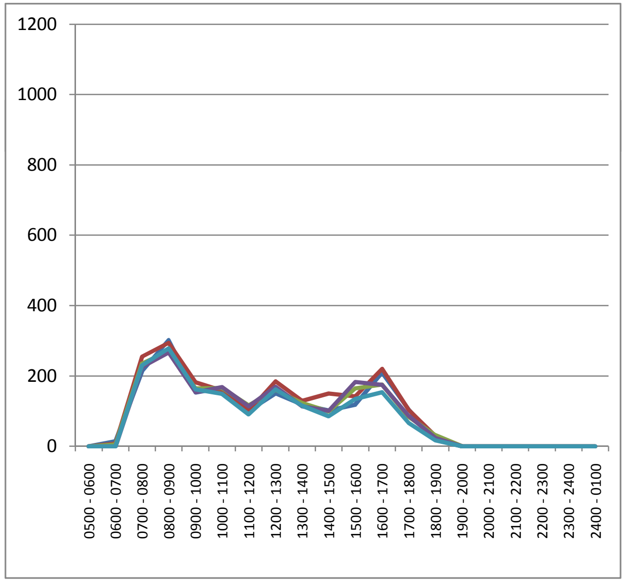
Average Boardings per Route per Hour

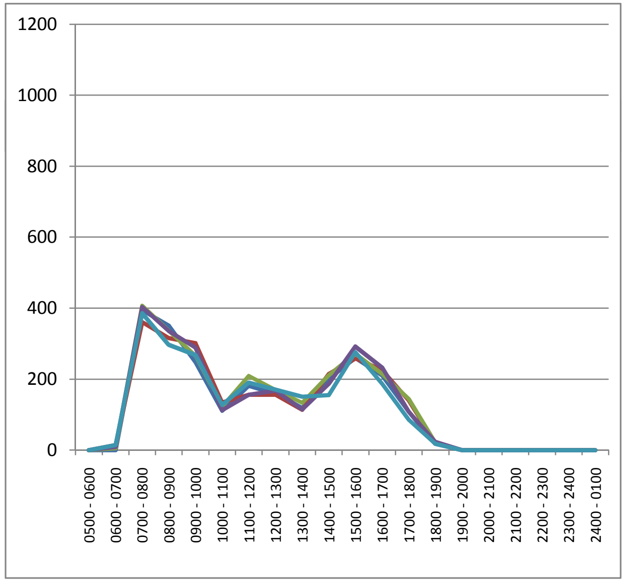
ROUTE 14	M	Tu	W	Th	F	Su	Su
0500 - 0600	18.1	19.4	20.0	16.1	15.9	0.0	0.0
0600 - 0700	100.4	95.3	99.9	104.0	105.1	11.9	4.9
0700 - 0800	434.3	446.9	470.1	456.1	423.0	37.6	41.4
0800 - 0900	354.1	388.1	395.1	399.3	400.7	67.4	55.4
0900 - 1000	132.6	136.0	132.4	124.9	122.9	81.3	75.0
1000 - 1100	107.7	102.4	103.3	103.3	116.7	110.6	89.1
1100 - 1200	127.4	145.6	142.3	156.7	154.4	109.9	103.6
1200 - 1300	161.0	170.9	190.0	189.7	157.7	127.4	119.7
1300 - 1400	169.4	184.0	176.0	162.7	170.4	120.1	92.9
1400 - 1500	160.9	209.7	177.9	180.3	197.1	149.1	107.6
1500 - 1600	249.3	240.7	223.0	241.0	230.1	143.7	120.1
1600 - 1700	347.1	339.9	372.0	347.7	323.7	122.9	71.7
1700 - 1800	355.6	385.9	352.9	380.3	336.1	132.3	95.7
1800 - 1900	168.1	180.6	175.4	177.7	185.6	101.7	73.7
1900 - 2000	88.4	79.9	90.0	112.4	97.4	80.6	56.7
2000 - 2100	63.3	88.4	100.4	76.7	111.7	61.6	39.7
2100 - 2200	48.4	60.4	64.9	81.4	87.7	62.3	38.1
2200 - 2300	27.9	28.1	44.4	43.0	81.4	54.4	11.6
2300 - 2400	8.7	11.1	16.0	18.4	35.0	18.3	0.0
2400 - 0100	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ROUTE 17	M	Tu	W	Th	F	Sa	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0		
0600 - 0700	13.9	8.0	4.7	0.0	0.0		
0700 - 0800	213.4	254.9	235.6	225.1	230.4		
0800 - 0900	301.9	294.3	271.3	266.1	278.1		
0900 - 1000	153.1	182.1	164.3	153.7	161.9		
1000 - 1100	166.0	158.1	165.6	168.0	149.1		
1100 - 1200	100.7	100.0	116.3	113.6	91.0		
1200 - 1300	149.6	185.0	160.1	169.1	162.1		
1300 - 1400	118.3	128.6	123.1	113.9	115.1		
1400 - 1500	101.7	149.6	98.9	100.6	85.6		
1500 - 1600	118.3	142.0	164.7	183.0	134.3		
1600 - 1700	209.3	220.1	175.3	174.4	153.9		
1700 - 1800	104.6	103.4	83.1	86.6	66.0		
1800 - 1900	19.9	29.6	31.7	23.1	16.9		
1900 - 2000	0.0	0.0	0.0	0.0	0.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		
2200 - 2300	0.0	0.0	0.0	0.0	0.0		
2300 - 2400	0.0	0.0	0.0	0.0	0.0		
2400 - 0100	0.0	0.0	0.0	0.0	0.0		

ROUTE 18	M	Tu	W	Th	F	Sa	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0		
0600 - 0700	0.0	14.4	5.1	8.6	14.4		
0700 - 0800	394.4	361.1	406.4	403.0	386.4		
0800 - 0900	351.0	315.3	336.0	335.3	296.6		
0900 - 1000	247.4	301.6	264.7	288.9	267.6		
1000 - 1100	110.6	134.1	122.9	113.0	127.1		
1100 - 1200	181.1	156.0	209.6	155.9	190.0		
1200 - 1300	158.4	156.0	169.0	167.3	170.7		
1300 - 1400	119.0	113.4	133.7	114.4	150.6		
1400 - 1500	201.4	215.0	211.0	186.4	154.7		
1500 - 1600	259.7	257.7	271.9	292.1	275.6		
1600 - 1700	210.1	225.7	214.9	232.9	186.1		
1700 - 1800	108.3	139.6	144.1	108.0	85.4		
1800 - 1900	17.6	20.0	20.1	23.3	17.7		
1900 - 2000	0.0	0.0	0.0	0.0	0.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		
2200 - 2300	0.0	0.0	0.0	0.0	0.0		
2300 - 2400	0.0	0.0	0.0	0.0	0.0		
2400 - 0100	0.0	0.0	0.0	0.0	0.0		

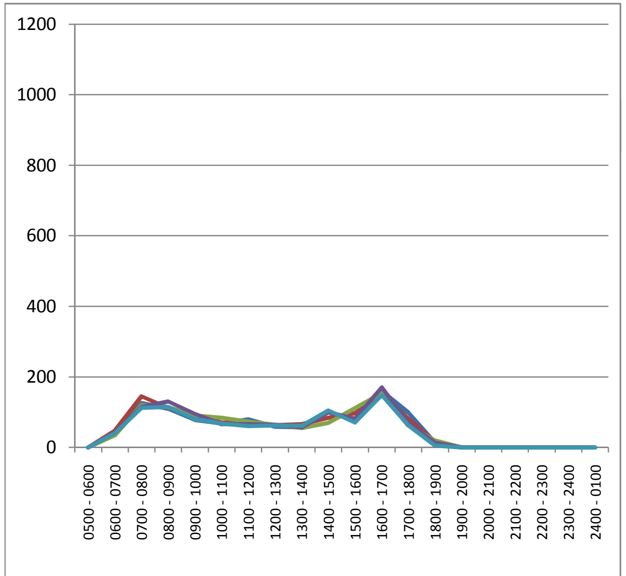




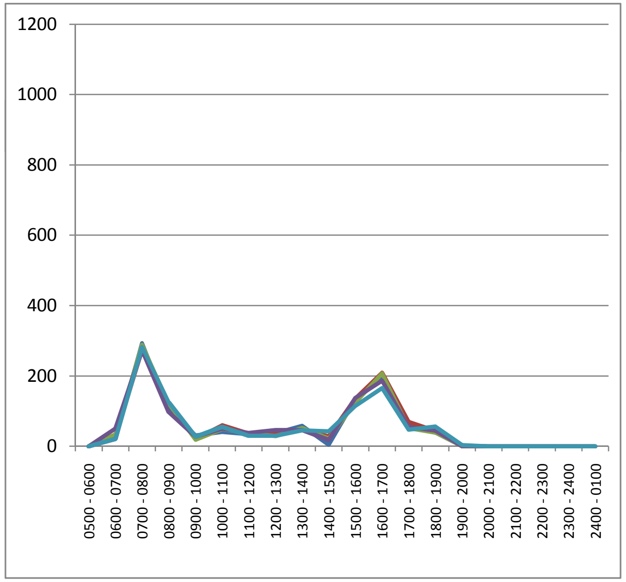


Average Boardings per Route per Hour

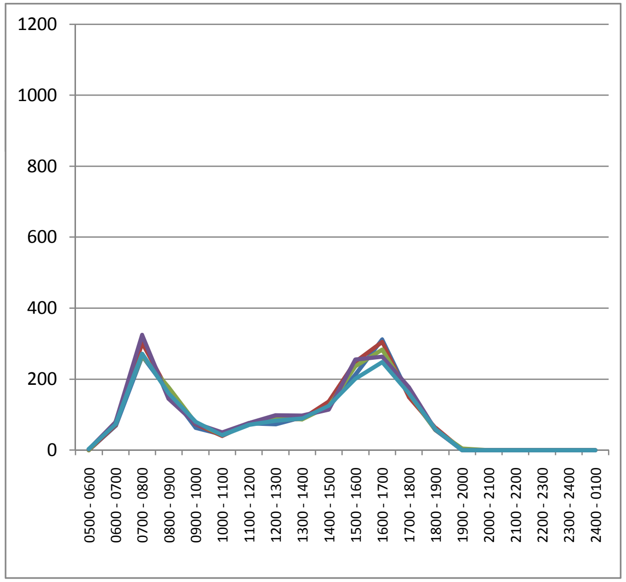
ROUTE 20	M	Tu	W	Th	F	Su	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0		
0600 - 0700	38.3	48.1	34.0	42.0	40.7		
0700 - 0800	125.4	145.1	120.7	114.7	112.6		
0800 - 0900	109.9	111.7	114.0	129.9	114.4		
0900 - 1000	78.1	91.7	90.6	95.3	80.0		
1000 - 1100	68.0	70.3	84.4	66.0	68.0		
1100 - 1200	79.1	72.4	73.3	66.1	60.6		
1200 - 1300	58.9	63.3	64.1	64.0	62.7		
1300 - 1400	57.0	65.6	54.9	57.0	61.4		
1400 - 1500	101.3	83.9	69.1	99.6	105.3		
1500 - 1600	76.0	96.4	111.0	81.0	70.9		
1600 - 1700	159.3	150.7	154.3	170.0	148.0		
1700 - 1800	98.3	81.6	62.4	68.4	62.7		
1800 - 1900	14.0	16.1	19.4	13.4	4.9		
1900 - 2000	0.0	0.0	0.0	0.0	0.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		
2200 - 2300	0.0	0.0	0.0	0.0	0.0		
2300 - 2400	0.0	0.0	0.0	0.0	0.0		
2400 - 0100	0.0	0.0	0.0	0.0	0.0		



ROUTE 21	M	Tu	W	Th	F	Sa	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0		
0600 - 0700	20.4	29.9	33.9	50.6	21.4		
0700 - 0800	292.6	274.6	288.1	274.0	281.6		
0800 - 0900	106.0	123.6	121.9	96.9	125.7		
0900 - 1000	30.6	22.0	18.9	26.9	27.1		
1000 - 1100	40.4	60.1	48.6	50.1	55.3		
1100 - 1200	34.3	35.9	36.9	38.3	29.4		
1200 - 1300	37.4	39.3	29.3	45.7	29.4		
1300 - 1400	57.9	47.9	51.7	46.0	45.6		
1400 - 1500	4.0	27.9	21.4	17.9	42.4		
1500 - 1600	133.4	135.7	123.1	137.1	114.0		
1600 - 1700	190.7	208.9	207.6	186.3	165.7		
1700 - 1800	61.6	69.1	51.4	54.4	47.3		
1800 - 1900	39.0	43.1	38.9	44.7	56.0		
1900 - 2000	0.0	0.1	0.7	0.6	3.4		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		
2200 - 2300	0.0	0.0	0.0	0.0	0.0		
2300 - 2400	0.0	0.0	0.0	0.0	0.0		
2400 - 0100	0.0	0.0	0.0	0.0	0.0		



ROUTE 22	M	Tu	W	Th	F	Sa	Su
0500 - 0600	0.0	0.0	0.0	2.7	3.1		
0600 - 0700	68.4	69.9	79.1	79.1	72.6		
0700 - 0800	264.7	302.1	265.4	324.7	271.9		
0800 - 0900	164.4	164.0	176.3	144.6	159.7		
0900 - 1000	63.1	72.9	76.1	75.0	80.0		
1000 - 1100	43.7	39.3	41.9	49.1	42.0		
1100 - 1200	75.9	75.0	75.6	75.4	71.4		
1200 - 1300	72.6	84.1	92.4	98.3	83.0		
1300 - 1400	93.1	88.4	86.0	96.9	89.1		
1400 - 1500	121.4	137.1	123.0	114.0	125.4		
1500 - 1600	211.7	248.4	236.3	254.7	200.6		
1600 - 1700	312.4	305.1	282.7	263.0	247.7		
1700 - 1800	158.1	150.0	160.7	177.9	160.3		
1800 - 1900	56.9	63.0	56.9	57.3	59.6		
1900 - 2000	0.6	0.0	4.1	0.0	0.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		
2200 - 2300	0.0	0.0	0.0	0.0	0.0		
2300 - 2400	0.0	0.0	0.0	0.0	0.0		
2400 - 0100	0.0	0.0	0.0	0.0	0.0		

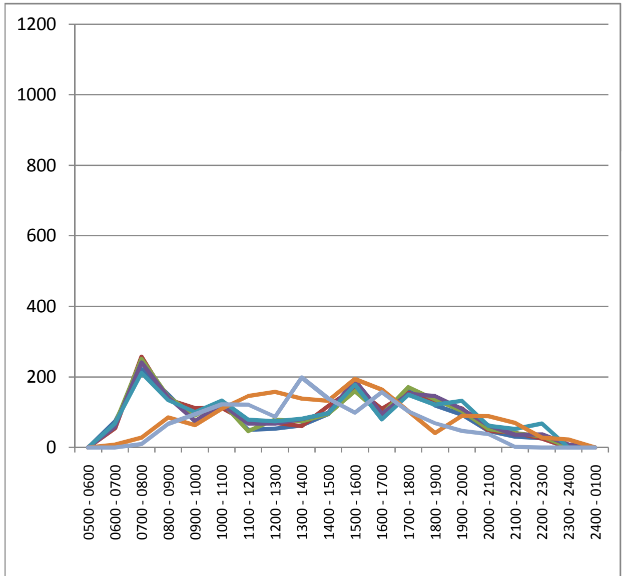


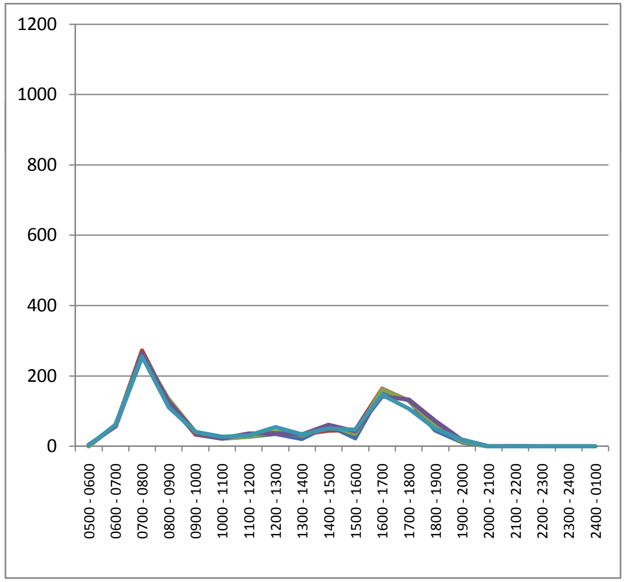
Average Boardings per Route per Hour

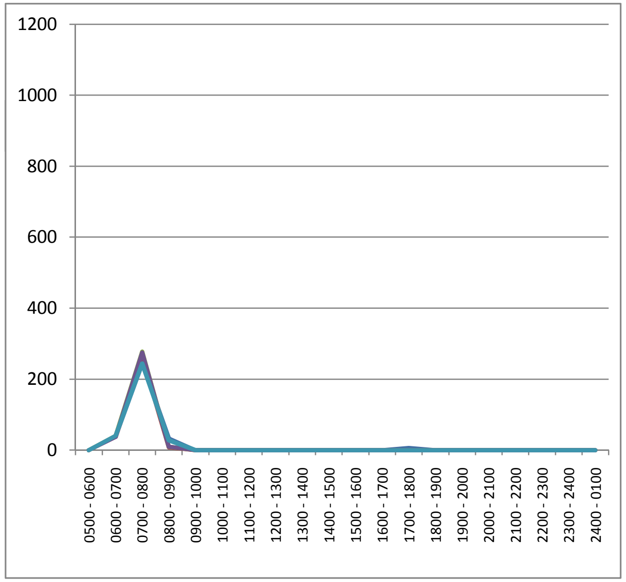
ROUTE 23							
	M	Tu	W	Th	F	Su	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0600 - 0700	74.4	54.3	65.6	58.4	67.3	7.7	0.0
0700 - 0800	222.0	257.4	250.6	240.7	210.6	27.7	9.9
0800 - 0900	150.1	136.0	144.1	142.1	133.6	84.6	67.0
0900 - 1000	73.1	111.1	90.1	75.1	100.0	63.0	94.3
1000 - 1100	125.7	111.7	128.7	121.9	133.3	109.6	122.1
1100 - 1200	49.3	71.7	45.9	67.9	78.4	146.0	121.6
1200 - 1300	53.0	69.1	79.0	67.6	73.9	157.9	86.6
1300 - 1400	62.7	60.3	73.7	80.4	81.7	138.7	198.1
1400 - 1500	94.1	117.6	95.0	97.7	96.4	131.9	138.0
1500 - 1600	176.4	169.3	159.4	189.1	177.1	193.7	98.1
1600 - 1700	83.0	109.0	93.3	95.0	79.1	163.9	156.1
1700 - 1800	164.4	155.1	171.3	151.9	149.1	102.0	102.4
1800 - 1900	119.3	132.1	135.4	145.4	121.0	40.3	68.3
1900 - 2000	93.4	110.3	103.0	109.7	132.4	89.7	47.0
2000 - 2100	46.6	46.7	52.0	61.9	61.4	88.3	37.6
2100 - 2200	30.7	41.4	40.7	35.6	52.4	69.1	2.0
2200 - 2300	26.1	24.9	31.9	37.3	68.0	28.1	0.0
2300 - 2400	0.0	0.0	2.0	7.6	0.0	22.1	0.0
2400 - 0100	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ROUTE 24							
	M	Tu	W	Th	F	Sa	Su
0500 - 0600	2.3	2.9	0.0	4.0	2.3		
0600 - 0700	57.6	58.3	60.7	56.1	60.7		
0700 - 0800	255.4	272.3	263.1	263.1	255.1		
0800 - 0900	120.4	125.9	133.9	127.7	110.7		
0900 - 1000	33.1	33.9	40.1	39.3	41.0		
1000 - 1100	21.1	24.6	22.3	22.1	27.1		
1100 - 1200	27.3	32.7	27.0	36.6	30.9		
1200 - 1300	35.3	37.0	40.6	37.4	54.1		
1300 - 1400	20.3	34.0	30.9	33.1	33.4		
1400 - 1500	57.7	44.1	58.6	60.4	50.6		
1500 - 1600	22.3	46.3	35.1	42.6	47.3		
1600 - 1700	157.9	164.0	161.7	141.6	146.4		
1700 - 1800	130.3	129.9	128.7	132.9	107.1		
1800 - 1900	44.7	52.4	58.7	71.3	50.0		
1900 - 2000	10.4	18.6	13.3	18.3	18.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.7	0.0		
2200 - 2300	0.0	0.0	0.0	0.0	0.0		
2300 - 2400	0.0	0.0	0.0	0.0	0.0		
2400 - 0100	0.0	0.0	0.0	0.0	0.0		

ROUTE 25							
	M	Tu	W	Th	F	Sa	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0		
0600 - 0700	39.4	37.4	40.3	36.6	40.4		
0700 - 0800	244.7	262.0	277.6	274.7	244.7		
0800 - 0900	32.7	7.9	9.3	9.6	27.4		
0900 - 1000	0.0	0.0	0.0	0.0	0.0		
1000 - 1100	0.0	0.0	0.0	0.0	0.0		
1100 - 1200	0.0	0.0	0.0	0.0	0.0		
1200 - 1300	0.0	0.0	0.0	0.0	0.0		
1300 - 1400	0.0	0.0	0.0	0.0	0.0		
1400 - 1500	0.0	0.0	0.0	0.0	0.0		
1500 - 1600	0.0	0.0	0.0	0.0	0.0		
1600 - 1700	0.0	0.0	0.0	0.0	0.0		
1700 - 1800	5.9	0.0	0.0	0.0	0.0		
1800 - 1900	0.0	0.0	0.0	0.0	0.0		
1900 - 2000	0.0	0.0	0.0	0.0	0.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		
2200 - 2300	0.0	0.0	0.0	0.0	0.0		
2300 - 2400	0.0	0.0	0.0	0.0	0.0		
2400 - 0100	0.0	0.0	0.0	0.0	0.0		

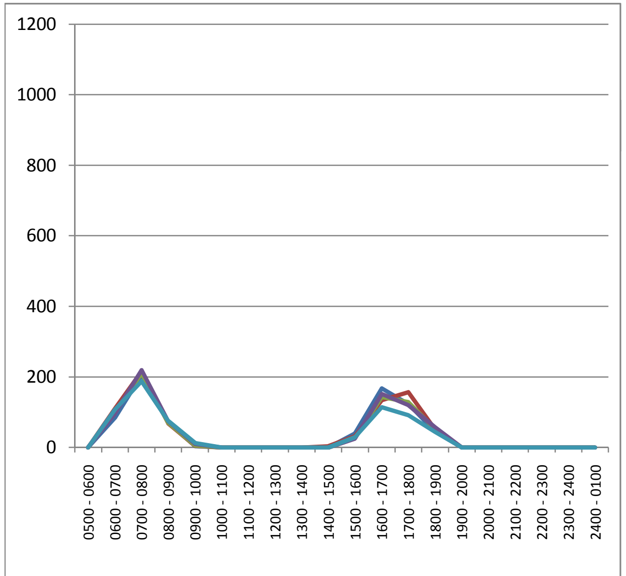




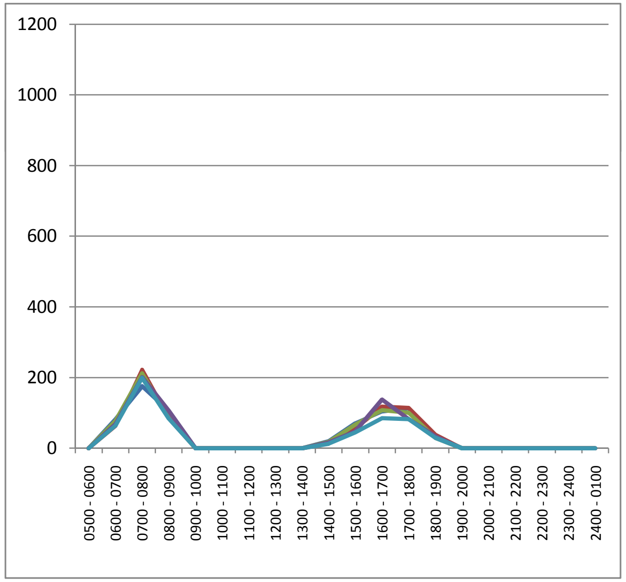


Average Boardings per Route per Hour

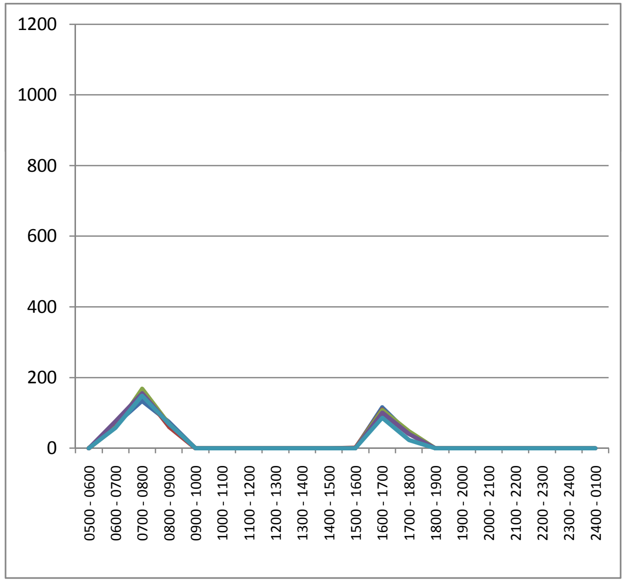
ROUTE 30	M	Tu	W	Th	F	Su	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0		
0600 - 0700	84.0	110.0	101.0	96.7	107.7		
0700 - 0800	205.3	215.6	210.1	218.9	187.0		
0800 - 0900	70.9	67.7	69.7	74.1	75.1		
0900 - 1000	3.4	4.7	5.0	9.4	12.0		
1000 - 1100	0.0	0.1	0.0	0.0	0.0		
1100 - 1200	0.0	0.0	0.0	0.0	0.0		
1200 - 1300	0.0	0.0	0.0	0.0	0.0		
1300 - 1400	0.0	0.0	0.0	0.0	0.0		
1400 - 1500	0.0	3.1	0.0	0.0	0.0		
1500 - 1600	40.0	31.9	25.9	24.7	28.9		
1600 - 1700	167.7	133.9	143.1	151.3	113.6		
1700 - 1800	123.3	156.3	128.4	119.0	91.7		
1800 - 1900	45.3	51.6	52.4	56.4	44.0		
1900 - 2000	0.0	0.0	0.0	0.0	0.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		
2200 - 2300	0.0	0.0	0.0	0.0	0.0		
2300 - 2400	0.0	0.0	0.0	0.0	0.0		
2400 - 0100	0.0	0.0	0.0	0.0	0.0		



ROUTE 31	M	Tu	W	Th	F	Su	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0		
0600 - 0700	81.9	63.1	78.0	68.4	64.4		
0700 - 0800	175.6	222.0	211.4	201.4	199.4		
0800 - 0900	105.9	86.3	87.4	106.1	83.9		
0900 - 1000	0.0	0.0	0.1	0.0	0.0		
1000 - 1100	0.0	0.0	0.0	0.0	0.0		
1100 - 1200	0.0	0.0	0.0	0.0	0.0		
1200 - 1300	0.0	0.0	0.0	0.0	0.0		
1300 - 1400	0.0	0.0	0.0	0.0	0.0		
1400 - 1500	19.3	14.0	18.0	16.4	12.3		
1500 - 1600	70.3	56.9	66.4	47.0	44.4		
1600 - 1700	103.7	117.4	108.0	137.7	85.1		
1700 - 1800	113.0	113.7	100.6	82.4	82.0		
1800 - 1900	32.6	38.3	29.6	34.4	30.0		
1900 - 2000	0.0	0.0	0.0	0.0	0.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		
2200 - 2300	0.0	0.0	0.0	0.0	0.0		
2300 - 2400	0.0	0.0	0.0	0.0	0.0		
2400 - 0100	0.0	0.0	0.0	0.0	0.0		



ROUTE 32	M	Tu	W	Th	F	Su	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0		
0600 - 0700	67.0	61.7	58.9	76.7	58.0		
0700 - 0800	133.7	157.1	168.0	155.9	148.9		
0800 - 0900	74.6	61.1	69.6	68.4	69.4		
0900 - 1000	0.0	0.0	0.0	0.0	0.0		
1000 - 1100	0.0	0.0	0.0	0.0	0.0		
1100 - 1200	0.0	0.0	0.0	0.0	0.0		
1200 - 1300	0.0	0.0	0.0	0.0	0.0		
1300 - 1400	0.0	0.0	0.0	0.0	0.0		
1400 - 1500	0.0	0.0	0.0	0.0	0.0		
1500 - 1600	0.0	2.0	0.0	0.0	0.0		
1600 - 1700	115.4	109.4	107.9	100.0	86.1		
1700 - 1800	42.3	43.4	47.9	40.7	23.4		
1800 - 1900	0.0	0.0	0.0	0.0	0.0		
1900 - 2000	0.0	0.0	0.0	0.0	0.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		
2200 - 2300	0.0	0.0	0.0	0.0	0.0		
2300 - 2400	0.0	0.0	0.0	0.0	0.0		
2400 - 0100	0.0	0.0	0.0	0.0	0.0		

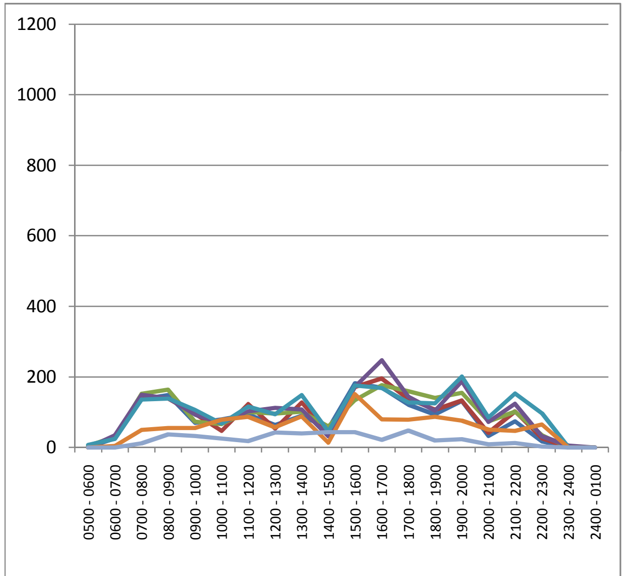


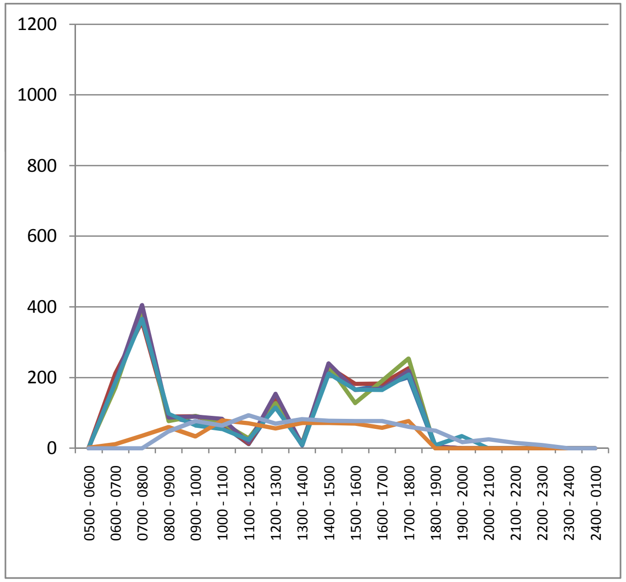
Average Boardings per Route per Hour

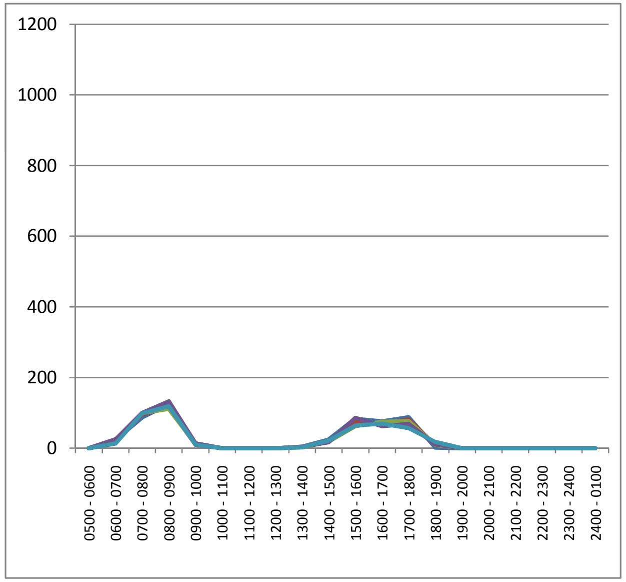
ROUTE 43	M	Tu	W	Th	F	Su	Su
0500 - 0600	0.6	0.0	4.1	0.0	7.4	0.0	0.0
0600 - 0700	26.3	31.7	29.7	35.4	24.0	4.1	0.0
0700 - 0800	136.7	144.6	152.0	149.0	136.1	49.1	11.7
0800 - 0900	148.1	138.9	163.4	139.3	138.1	55.4	37.3
0900 - 1000	69.9	95.3	73.0	93.1	105.6	55.3	32.6
1000 - 1100	79.9	46.9	66.1	69.0	67.4	79.0	25.3
1100 - 1200	93.1	123.1	100.6	102.0	116.1	86.6	17.4
1200 - 1300	62.9	53.3	95.6	111.9	93.7	56.6	42.0
1300 - 1400	89.9	127.9	101.1	107.4	148.6	87.6	39.6
1400 - 1500	53.6	39.6	59.3	31.1	45.1	13.6	42.9
1500 - 1600	182.3	170.9	133.9	172.1	175.9	151.6	43.4
1600 - 1700	169.4	195.7	176.6	247.6	168.4	79.3	21.4
1700 - 1800	121.4	137.1	159.6	143.7	128.0	78.3	47.4
1800 - 1900	93.3	106.6	139.9	104.3	124.7	87.1	19.4
1900 - 2000	131.3	132.9	154.6	187.1	201.0	75.6	23.4
2000 - 2100	32.6	41.9	74.3	72.6	85.0	50.6	8.7
2100 - 2200	74.1	102.6	101.7	123.6	153.0	46.4	12.4
2200 - 2300	16.6	26.1	34.7	31.1	96.6	65.4	2.1
2300 - 2400	1.1	0.0	0.0	4.9	0.0	0.0	0.0
2400 - 0100	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ROUTE 44	M	Tu	W	Th	F	Su	Su
0500 - 0600	0.0	0.0	1.9	0.0	0.0	1.3	0.0
0600 - 0700	187.3	212.0	170.7	187.9	185.7	11.3	0.0
0700 - 0800	379.1	357.7	393.6	405.0	366.3	34.7	0.0
0800 - 0900	88.9	89.6	77.1	86.7	97.7	59.7	47.9
0900 - 1000	71.1	90.7	91.7	89.3	63.7	33.6	76.6
1000 - 1100	66.3	68.9	72.6	83.1	53.7	79.0	64.1
1100 - 1200	11.9	12.1	27.6	16.1	23.0	70.4	92.9
1200 - 1300	123.6	138.9	128.0	153.4	114.7	55.9	69.6
1300 - 1400	8.0	11.9	13.7	10.0	10.1	71.4	82.0
1400 - 1500	226.3	229.6	232.4	240.1	211.0	71.7	78.1
1500 - 1600	165.3	181.7	127.6	165.1	165.7	69.7	76.6
1600 - 1700	177.6	183.0	190.0	168.6	164.3	57.9	77.0
1700 - 1800	201.3	226.7	254.0	219.3	208.4	77.0	60.6
1800 - 1900	5.0	4.3	0.0	5.4	7.7	0.0	50.0
1900 - 2000	0.0	0.0	0.0	0.0	34.6	0.0	17.1
2000 - 2100	0.0	0.0	0.0	0.0	0.0	0.0	24.9
2100 - 2200	0.0	0.0	0.0	0.0	0.0	0.0	15.3
2200 - 2300	0.0	0.0	0.0	0.0	0.0	0.0	8.9
2300 - 2400	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2400 - 0100	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ROUTE 45	M	Tu	W	Th	F	Su	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0		
0600 - 0700	23.7	18.1	18.0	25.0	13.1		
0700 - 0800	86.7	95.4	99.7	100.7	98.6		
0800 - 0900	124.0	115.0	111.6	133.1	118.3		
0900 - 1000	13.4	9.7	11.3	13.1	9.4		
1000 - 1100	0.0	0.0	0.0	0.0	0.0		
1100 - 1200	0.0	0.0	0.0	0.0	0.0		
1200 - 1300	0.0	0.0	0.0	0.0	0.0		
1300 - 1400	4.0	3.4	2.9	4.0	2.4		
1400 - 1500	24.6	20.0	18.4	16.6	21.4		
1500 - 1600	83.0	73.6	62.0	85.4	63.7		
1600 - 1700	75.9	68.6	75.1	61.9	69.1		
1700 - 1800	88.0	81.7	77.1	68.4	57.3		
1800 - 1900	1.4	9.0	8.6	11.0	17.7		
1900 - 2000	0.0	0.0	0.0	0.0	0.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		
2200 - 2300	0.0	0.0	0.0	0.0	0.0		
2300 - 2400	0.0	0.0	0.0	0.0	0.0		
2400 - 0100	0.0	0.0	0.0	0.0	0.0		



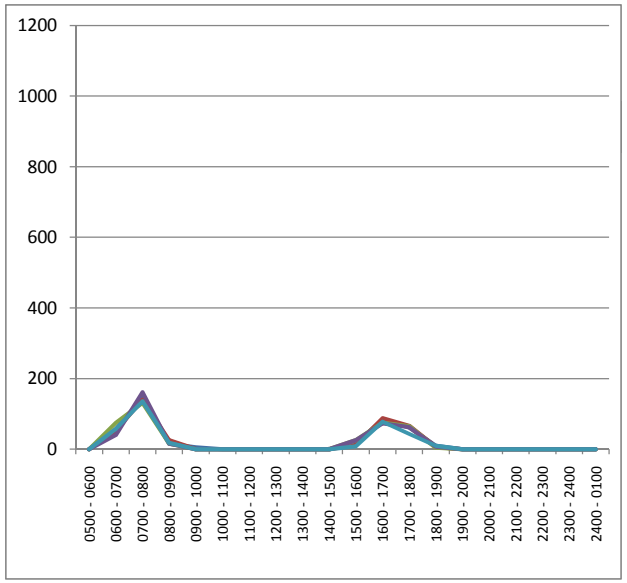


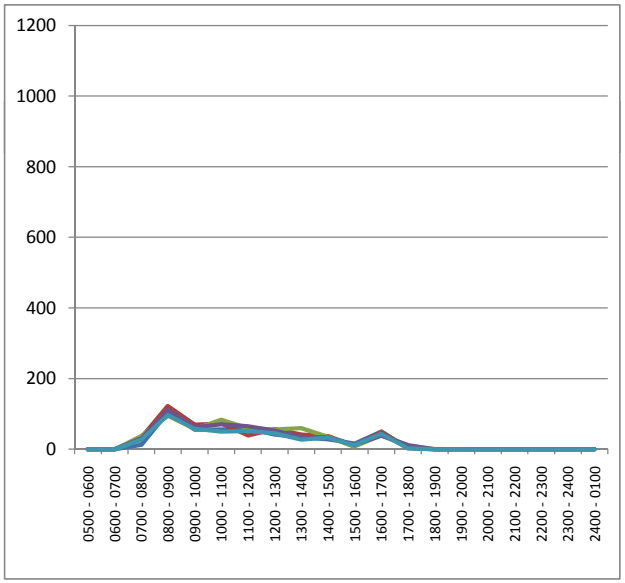


Average Boardings per Route per Hour

ROUTE 46	M	Tu	W	Th	F	Su	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0		
0600 - 0700	56.7	52.3	74.7	40.4	57.7		
0700 - 0800	145.3	140.0	130.9	161.0	136.1		
0800 - 0900	14.7	24.7	15.9	16.4	18.3		
0900 - 1000	4.9	0.0	0.0	0.0	0.0		
1000 - 1100	0.0	0.0	0.0	0.0	0.0		
1100 - 1200	0.0	0.0	0.0	0.0	0.0		
1200 - 1300	0.0	0.0	0.0	0.0	0.0		
1300 - 1400	0.0	0.0	0.0	0.0	0.0		
1400 - 1500	0.0	0.0	0.0	0.0	0.0		
1500 - 1600	16.0	11.6	25.4	25.4	8.1		
1600 - 1700	84.3	87.4	75.4	73.1	77.4		
1700 - 1800	61.6	65.6	64.6	62.6	42.9		
1800 - 1900	9.4	6.3	4.1	6.9	9.9		
1900 - 2000	0.0	0.0	0.0	0.0	0.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		
2200 - 2300	0.0	0.0	0.0	0.0	0.0		
2300 - 2400	0.0	0.0	0.0	0.0	0.0		
2400 - 0100	0.0	0.0	0.0	0.0	0.0		

ROUTE 47	M	Tu	W	Th	F	Su	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0		
0600 - 0700	0.0	0.0	0.0	0.0	0.0		
0700 - 0800	12.6	32.3	37.7	31.0	26.6		
0800 - 0900	104.9	122.6	94.4	111.1	97.0		
0900 - 1000	55.1	69.4	56.7	62.3	57.7		
1000 - 1100	55.9	72.1	83.0	70.1	49.9		
1100 - 1200	58.0	39.0	59.4	64.7	51.3		
1200 - 1300	41.9	56.4	56.0	52.7	45.1		
1300 - 1400	33.6	41.4	60.0	34.1	26.7		
1400 - 1500	27.9	36.6	34.7	34.3	33.6		
1500 - 1600	15.7	8.9	7.4	12.3	10.3		
1600 - 1700	50.9	48.7	38.6	39.1	42.9		
1700 - 1800	2.7	4.1	10.1	11.6	2.6		
1800 - 1900	0.1	0.1	0.7	0.0	0.0		
1900 - 2000	0.0	0.0	0.0	0.0	0.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		
2200 - 2300	0.0	0.0	0.0	0.0	0.0		
2300 - 2400	0.0	0.0	0.0	0.0	0.0		
2400 - 0100	0.0	0.0	0.0	0.0	0.0		

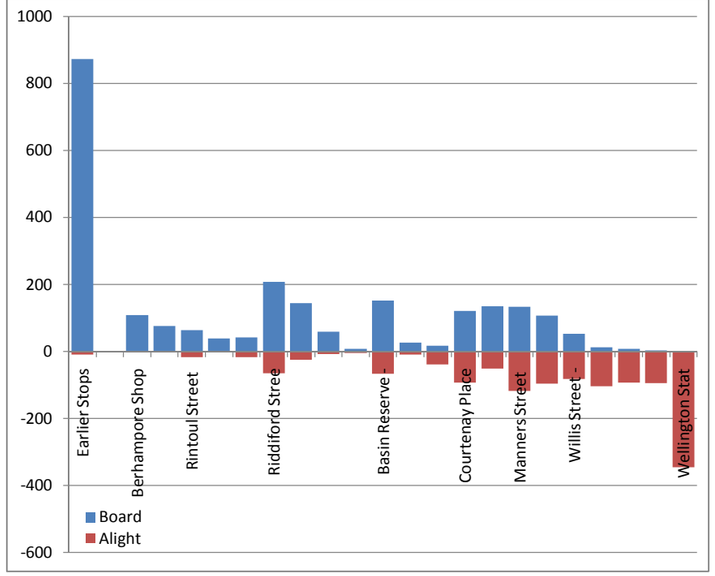




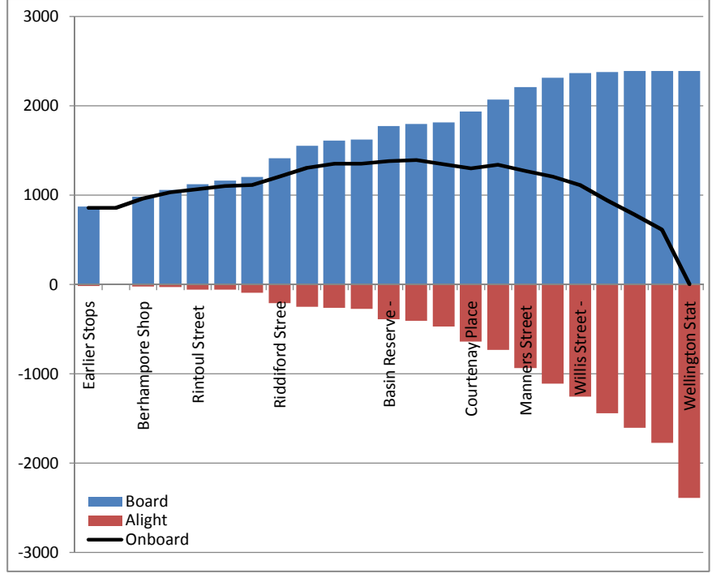
Appendix C

Weekday Load Profiles for Key Routes: Go Wellington

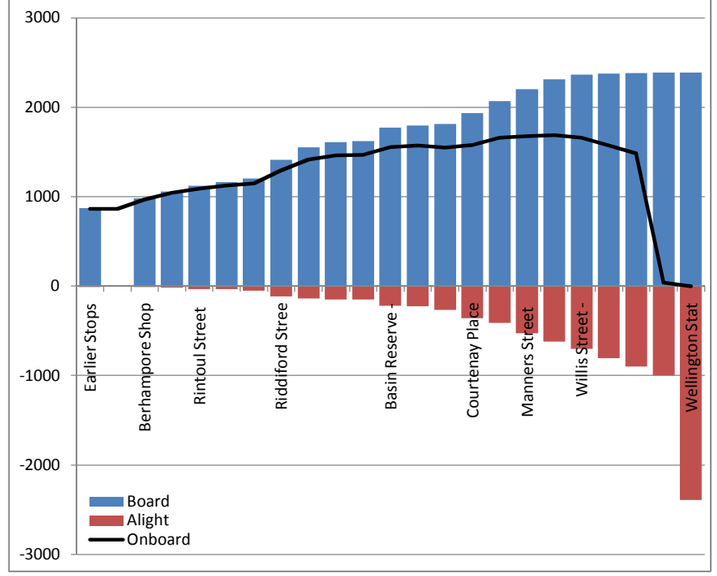
R01 Inbound - Average Thursday Boardings and Alightings



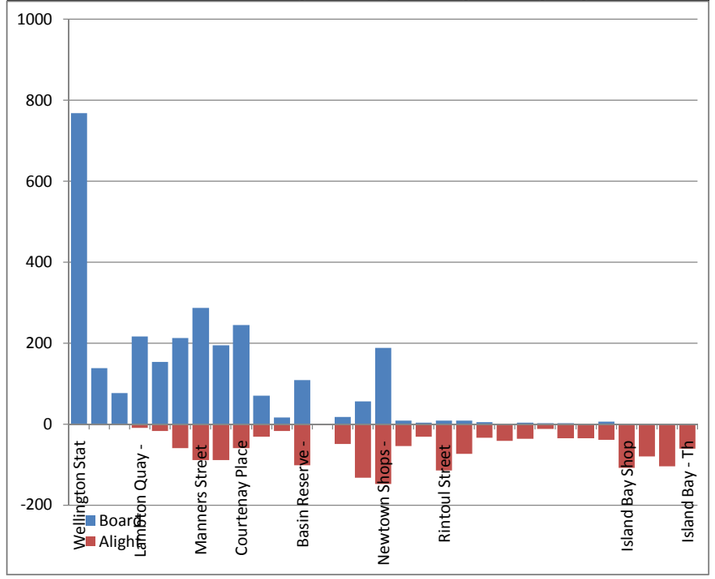
R01 Inbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



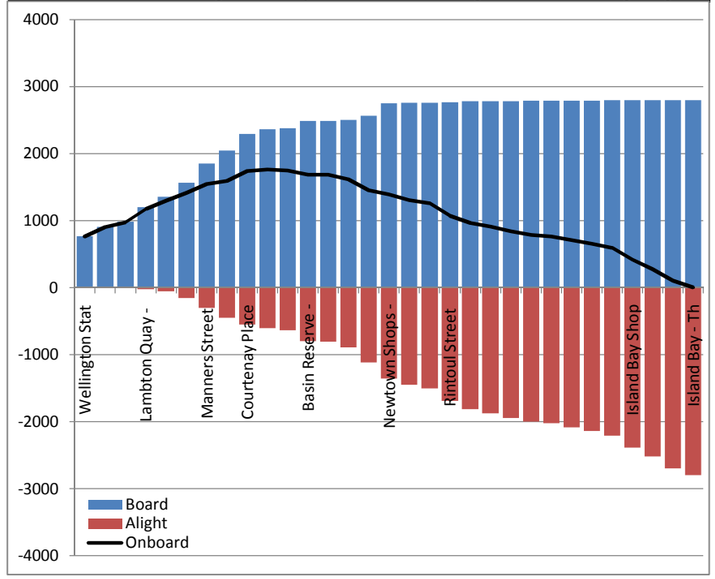
R01 Inbound - Average Thursday Cumulative Boardings and Max Alightings



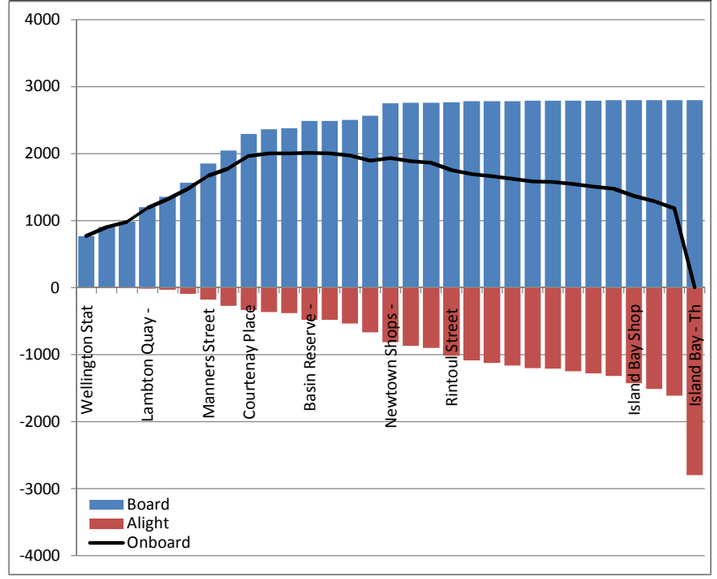
R01 Outbound - Average Thursday Boardings and Alightings



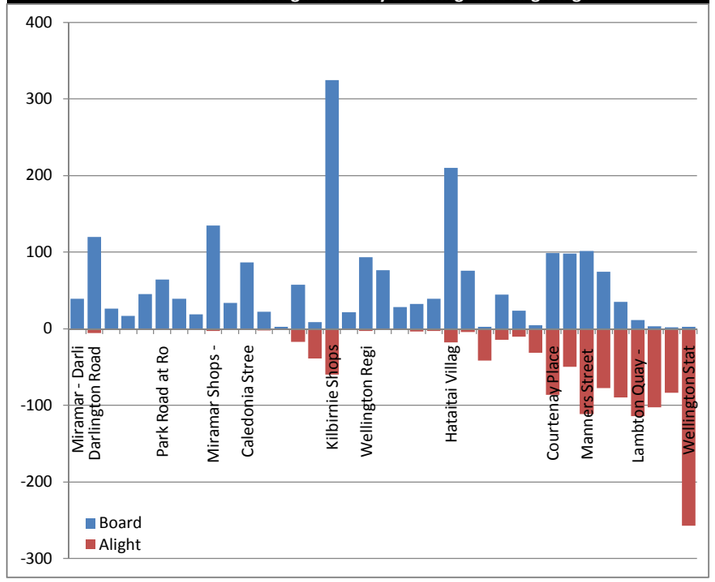
R01 Outbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



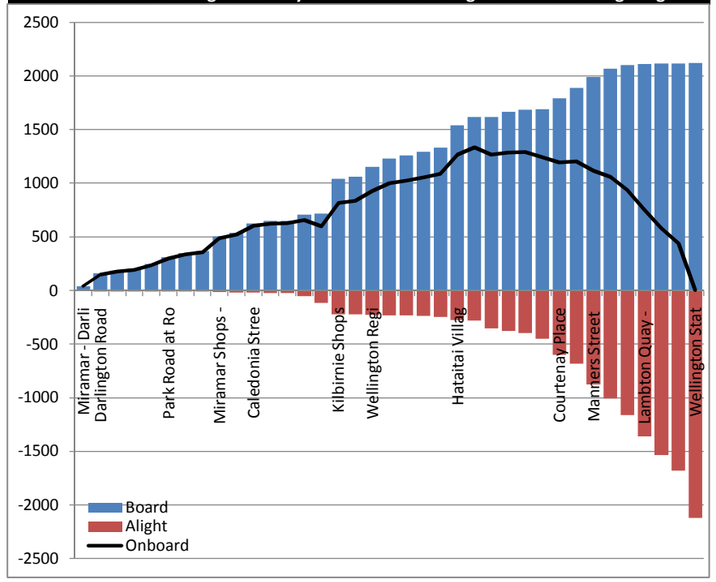
R01 Outbound - Average Thursday Cumulative Boardings and Max Alightings



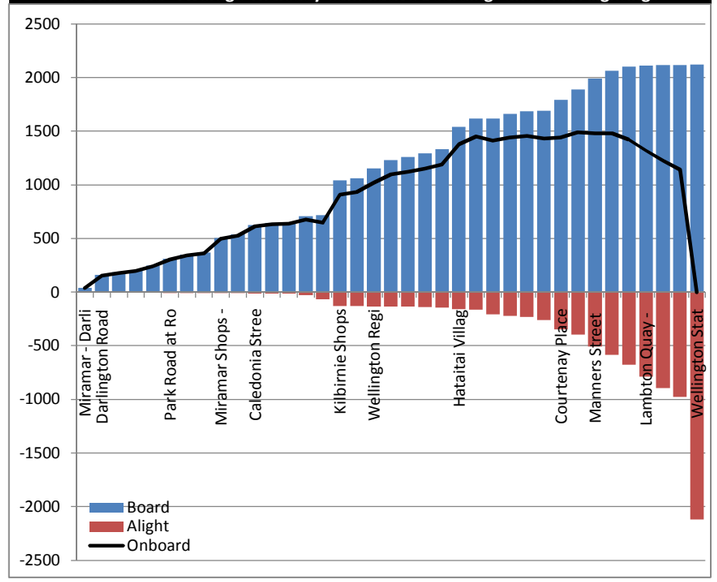
R02 Inbound - Average Thursday Boardings and Alightings



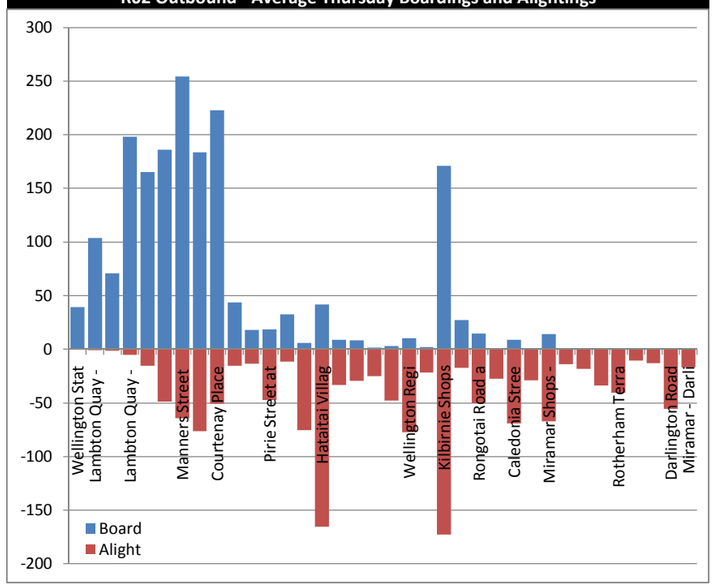
R02 Inbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



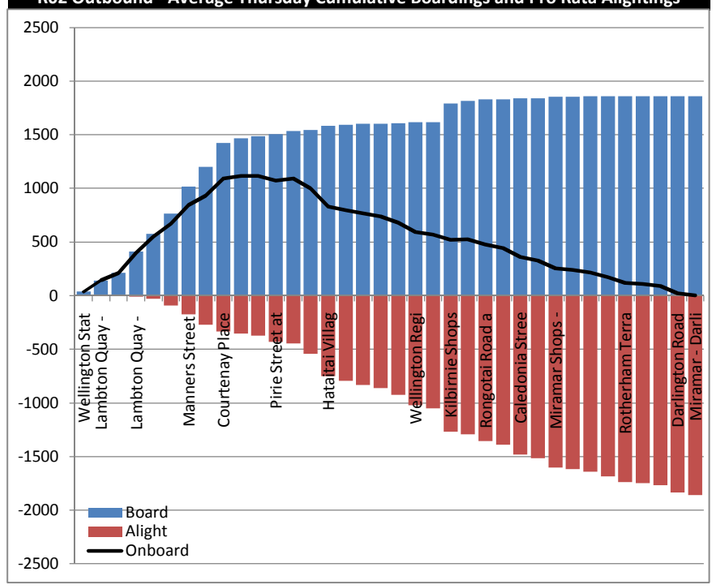
R02 Inbound - Average Thursday Cumulative Boardings and Max Alightings



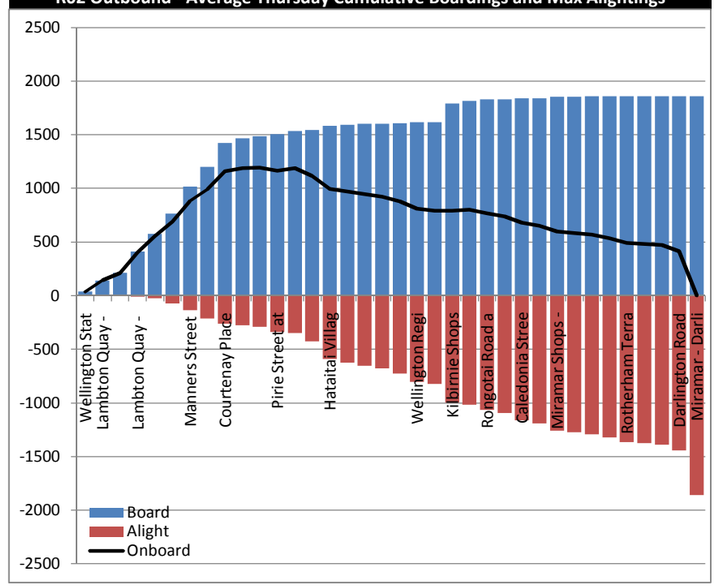
R02 Outbound - Average Thursday Boardings and Alightings



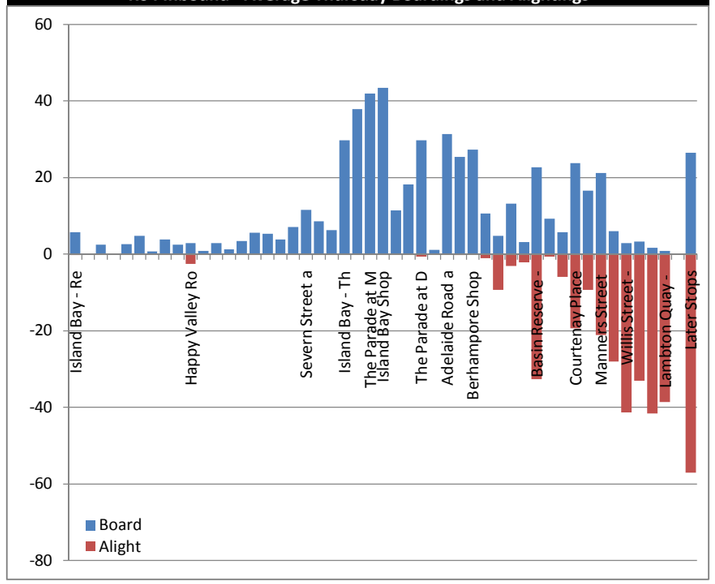
R02 Outbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



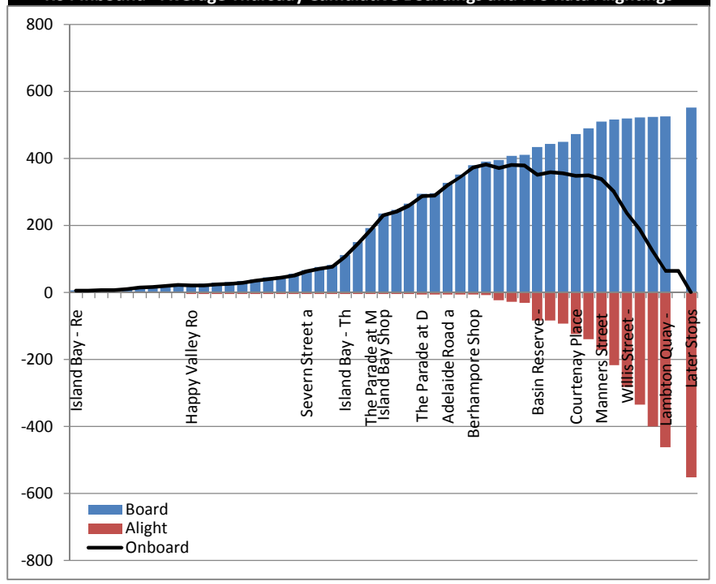
R02 Outbound - Average Thursday Cumulative Boardings and Max Alightings



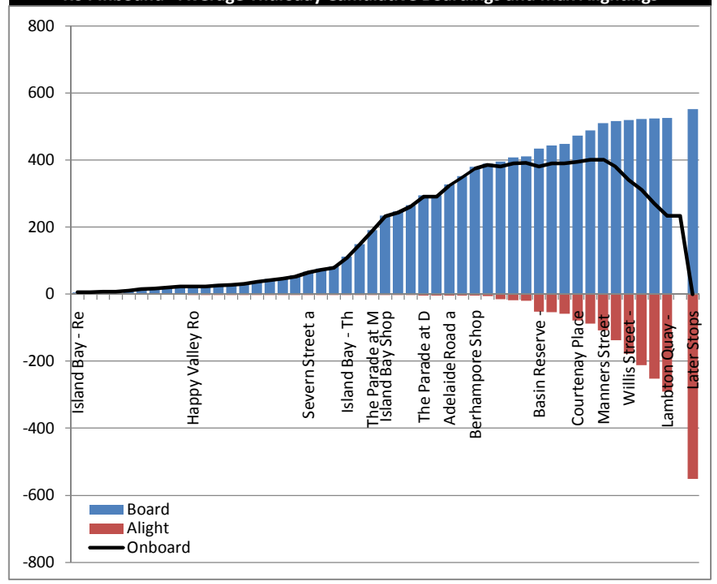
R04 Inbound - Average Thursday Boardings and Alightings



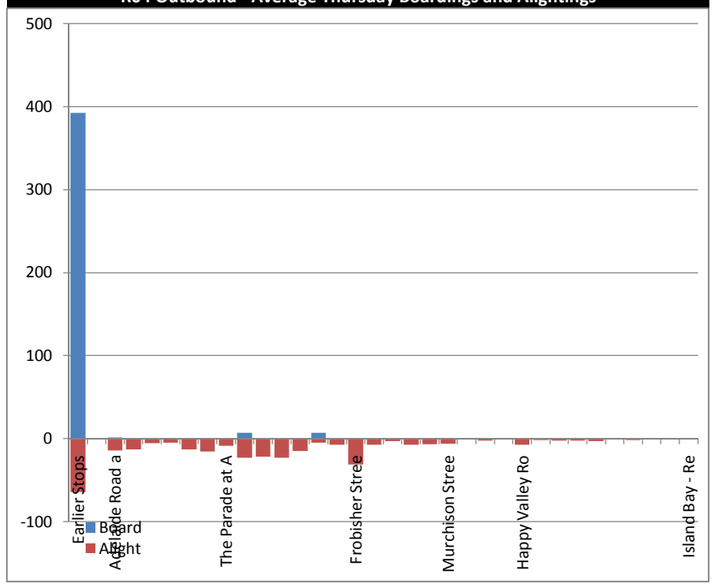
R04 Inbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



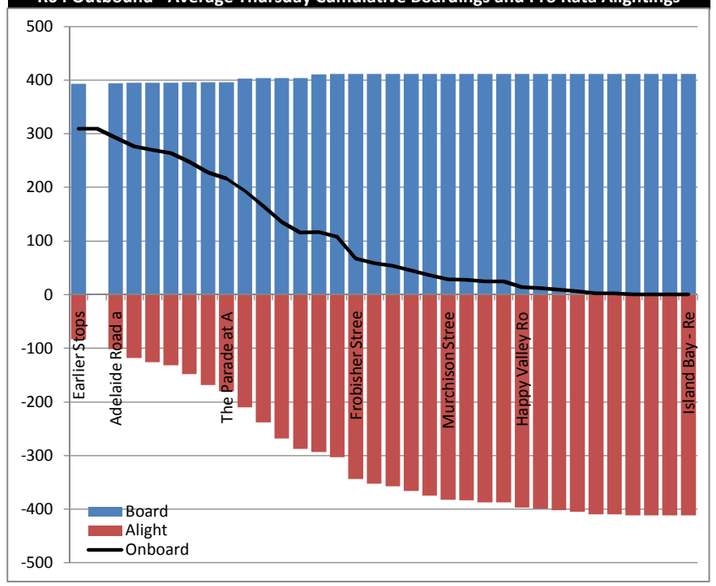
R04 Inbound - Average Thursday Cumulative Boardings and Max Alightings



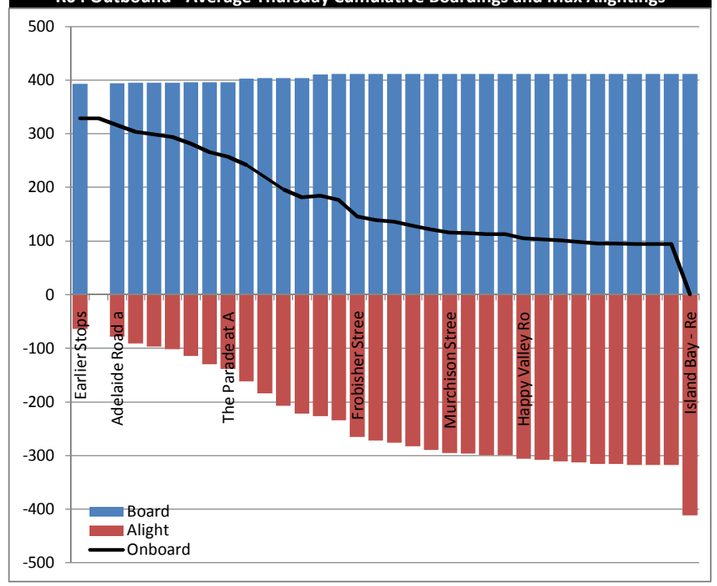
R04 Outbound - Average Thursday Boardings and Alightings



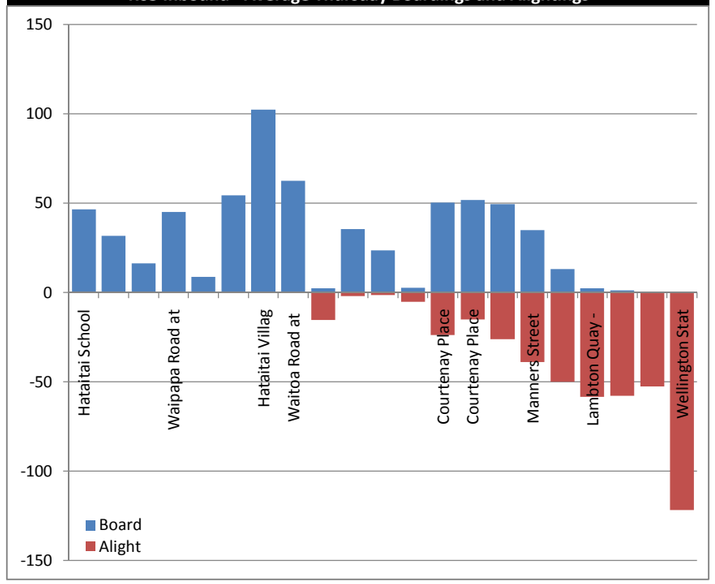
R04 Outbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



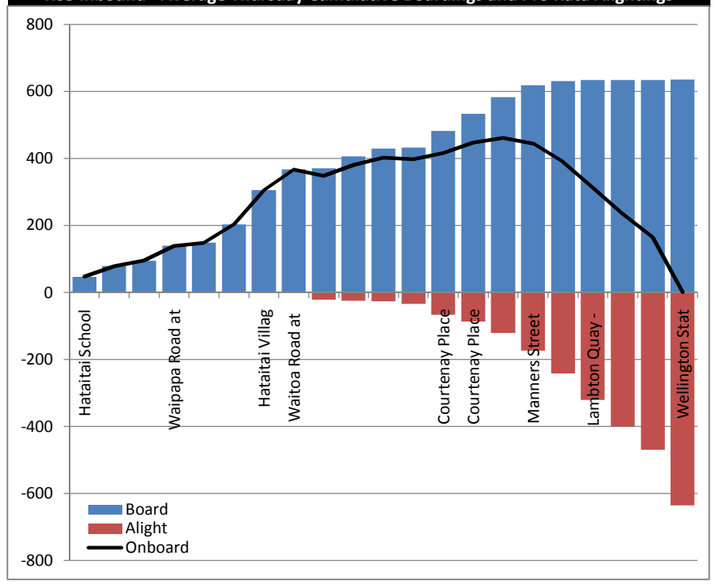
R04 Outbound - Average Thursday Cumulative Boardings and Max Alightings



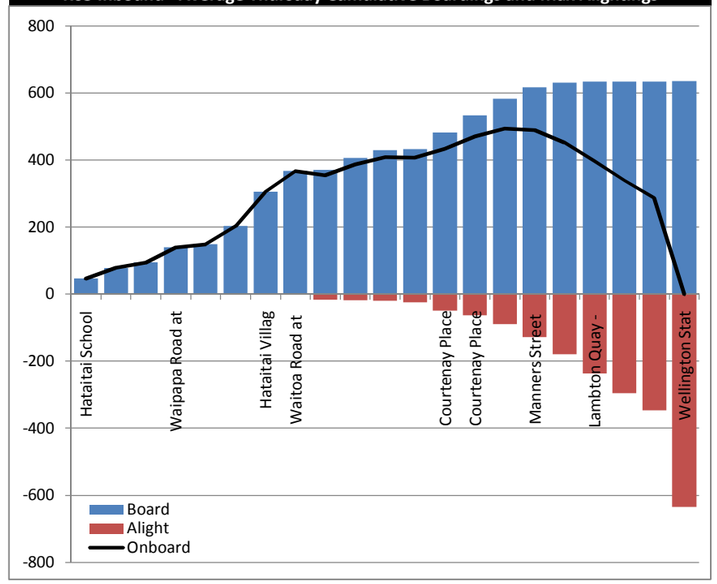
R05 Inbound - Average Thursday Boardings and Alightings



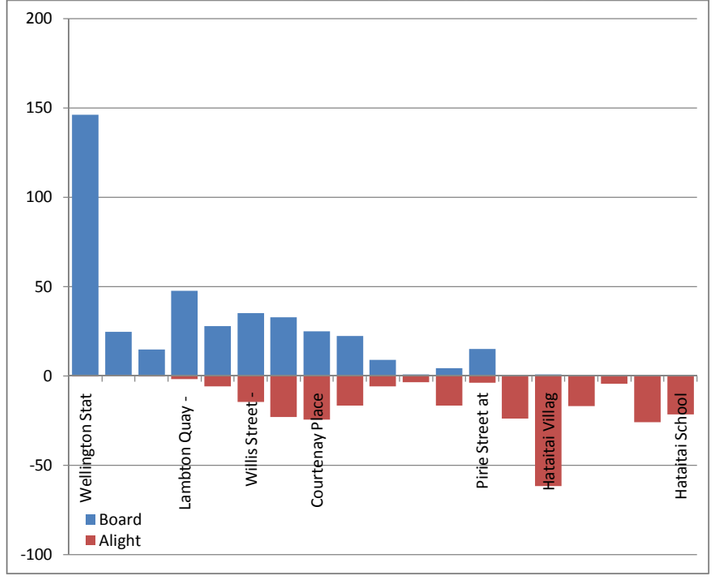
R05 Inbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



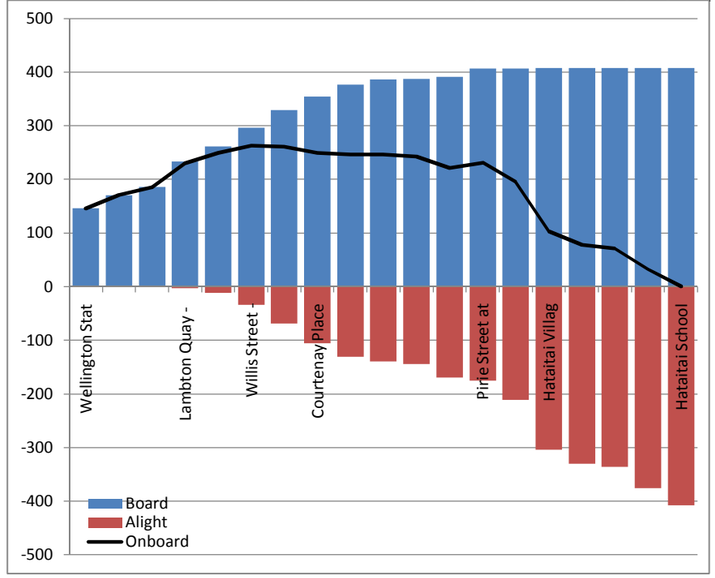
R05 Inbound - Average Thursday Cumulative Boardings and Max Alightings



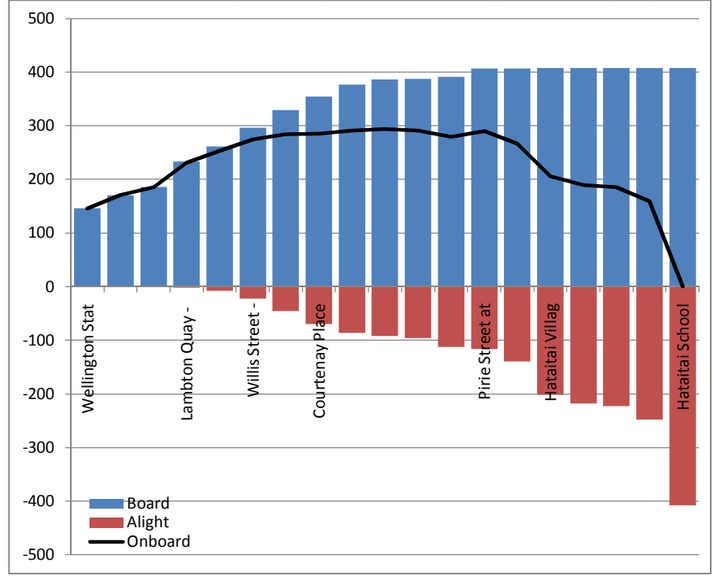
R05 Outbound - Average Thursday Boardings and Alightings



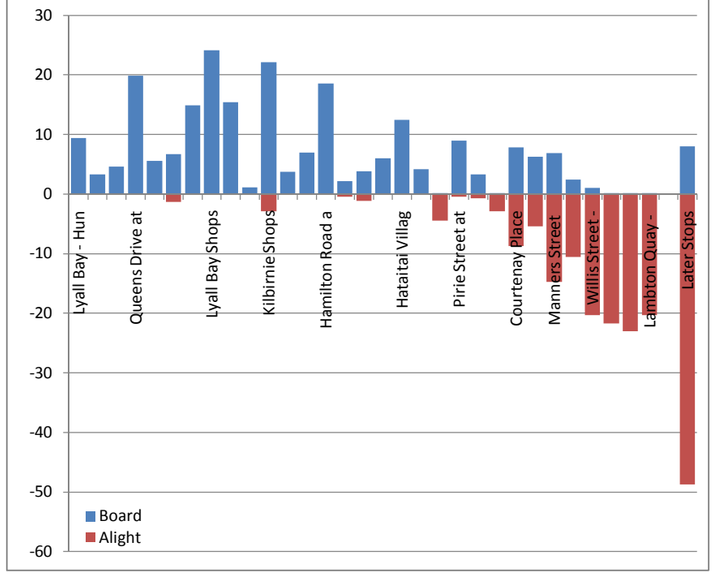
R05 Outbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



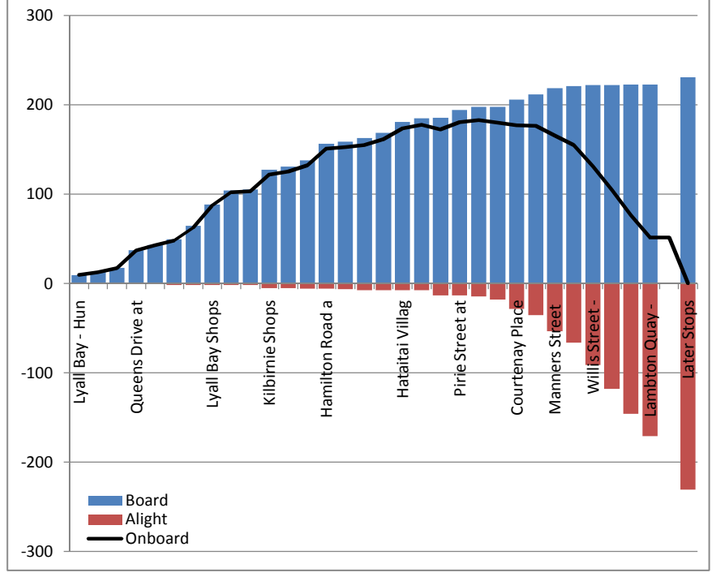
R05 Outbound - Average Thursday Cumulative Boardings and Max Alightings



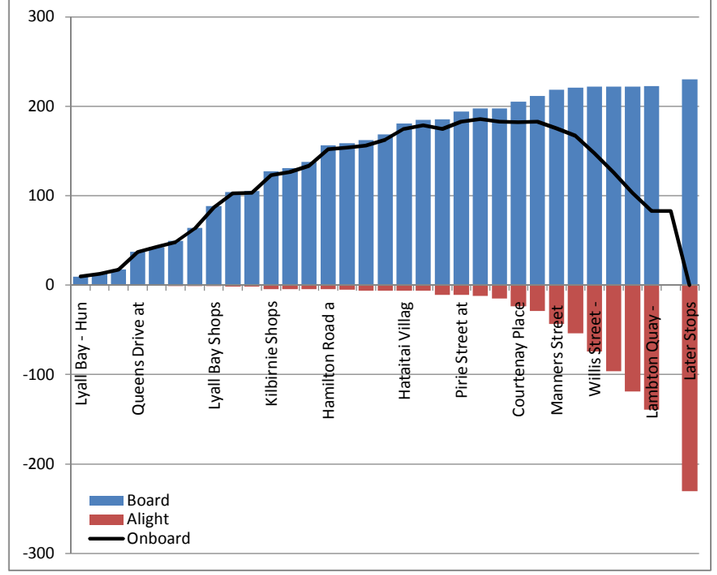
R06 Inbound - Average Thursday Boardings and Alightings



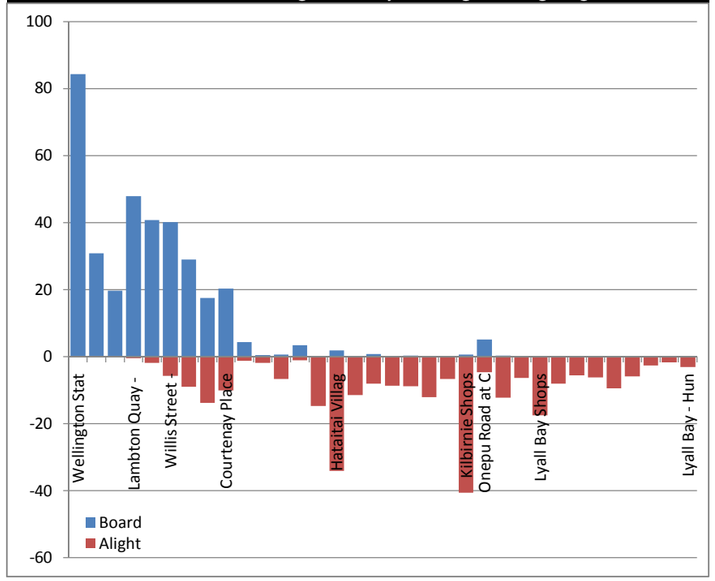
R06 Inbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



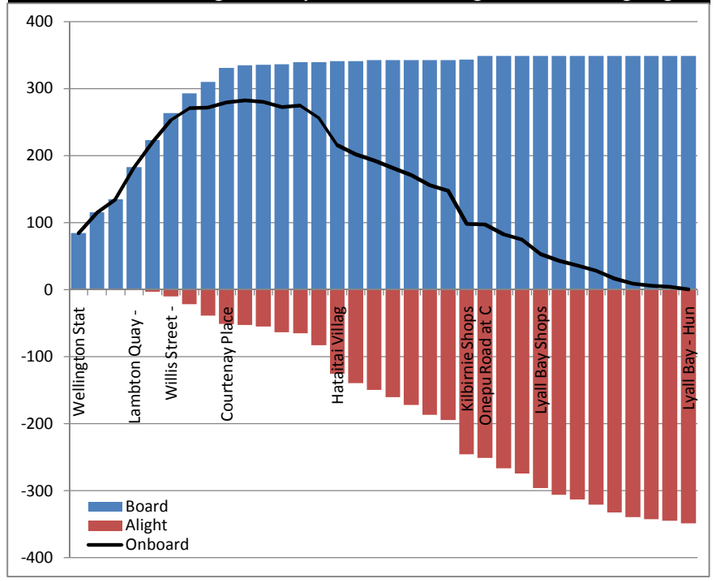
R06 Inbound - Average Thursday Cumulative Boardings and Max Alightings



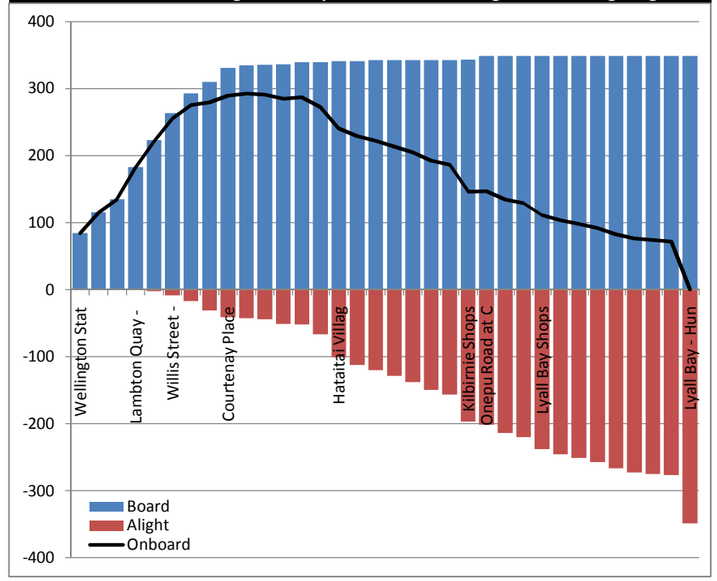
R06 Outbound - Average Thursday Boardings and Alightings



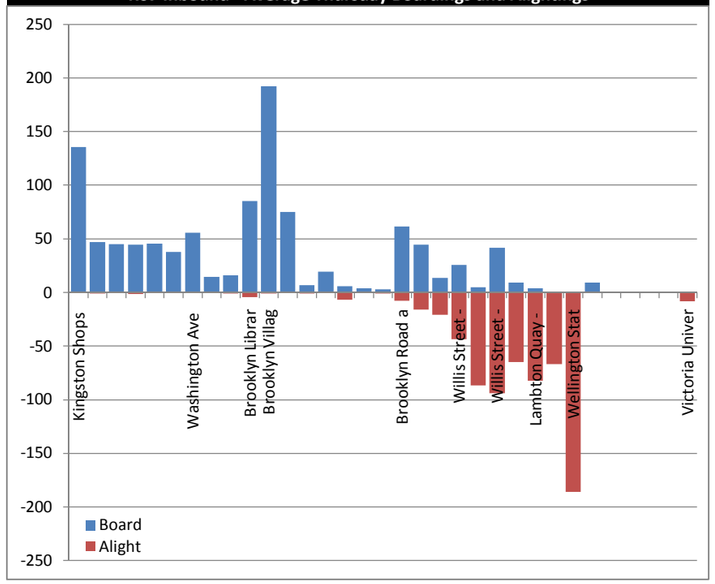
R06 Outbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



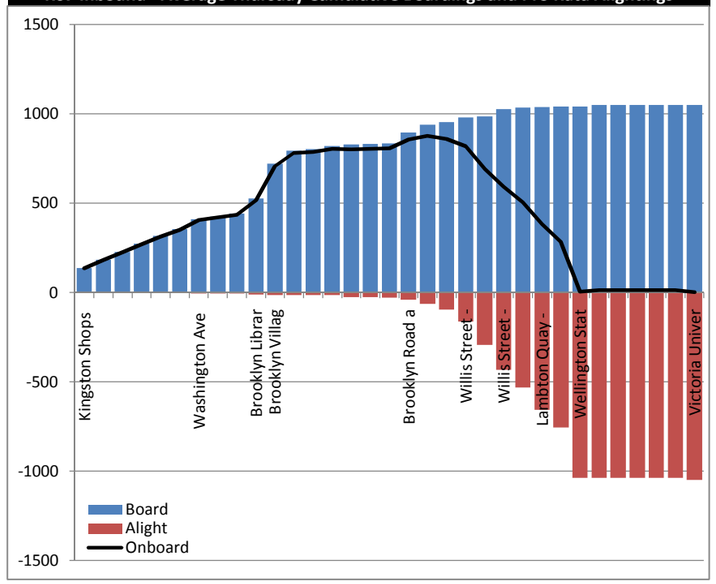
R06 Outbound - Average Thursday Cumulative Boardings and Max Alightings



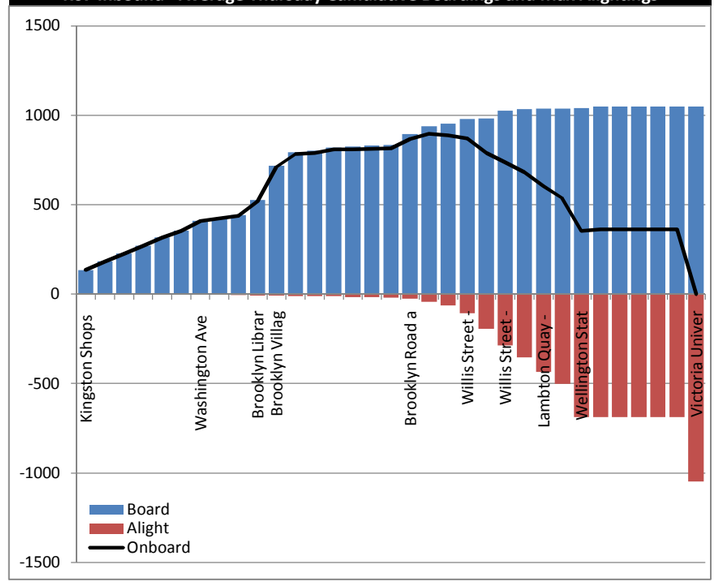
R07 Inbound - Average Thursday Boardings and Alightings



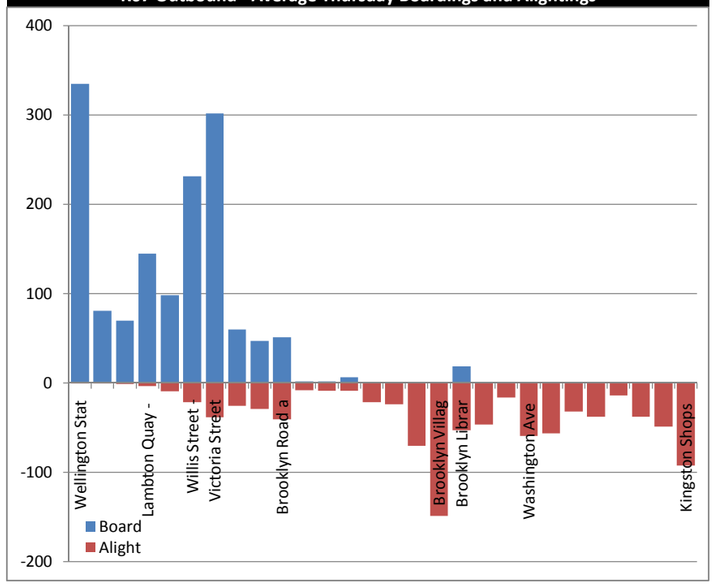
R07 Inbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



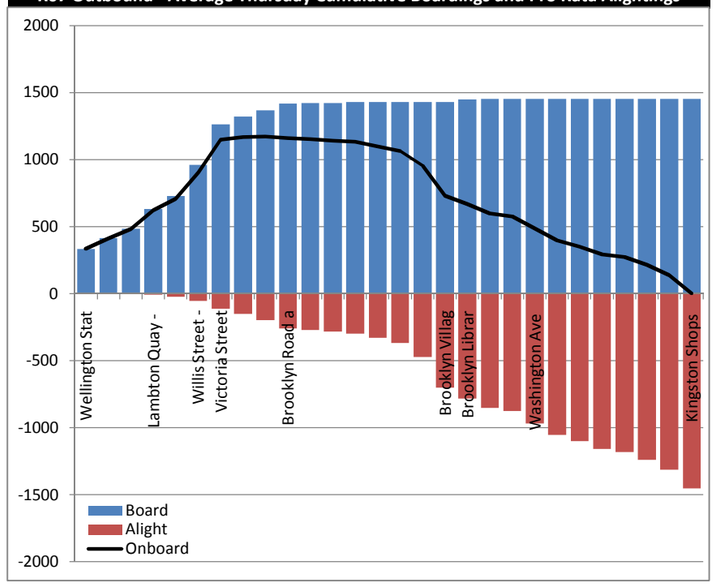
R07 Inbound - Average Thursday Cumulative Boardings and Max Alightings



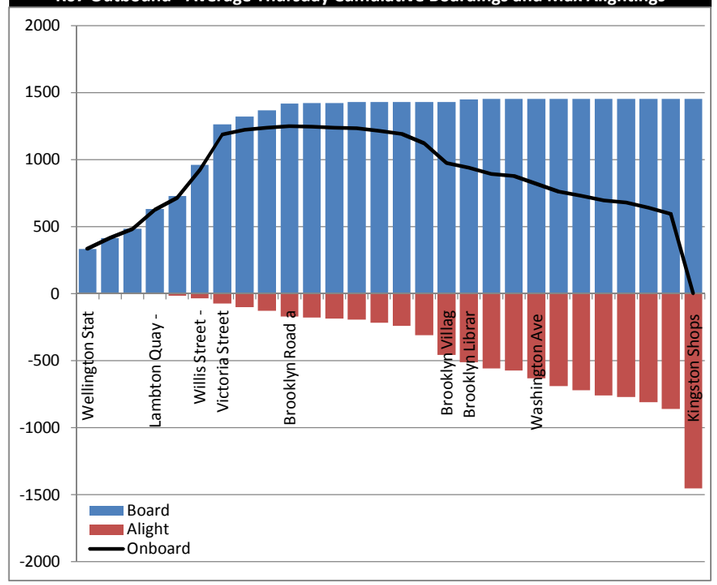
R07 Outbound - Average Thursday Boardings and Alightings



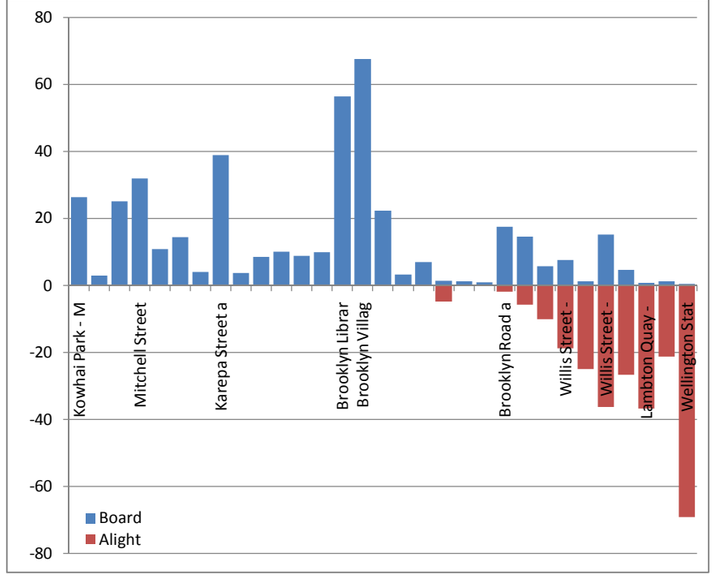
R07 Outbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



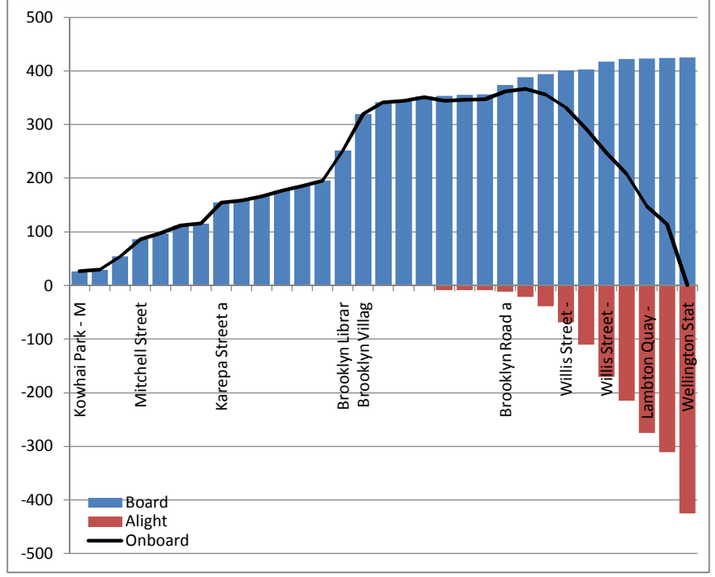
R07 Outbound - Average Thursday Cumulative Boardings and Max Alightings



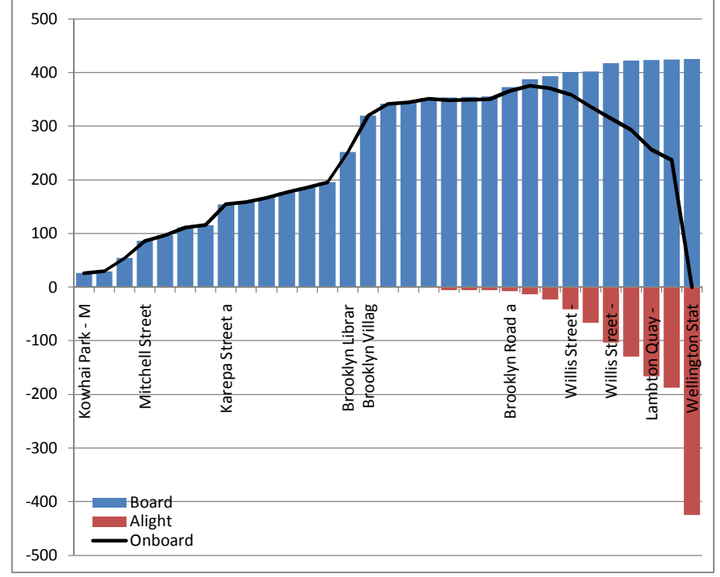
R08 Inbound - Average Thursday Boardings and Alightings



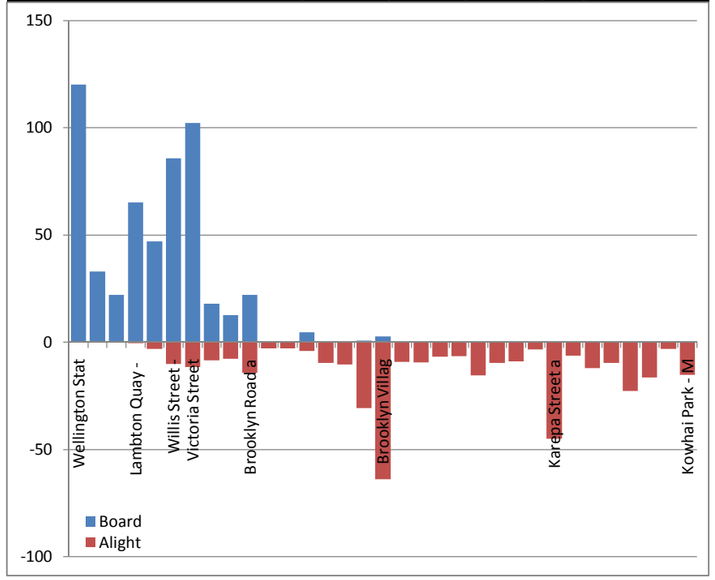
R08 Inbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



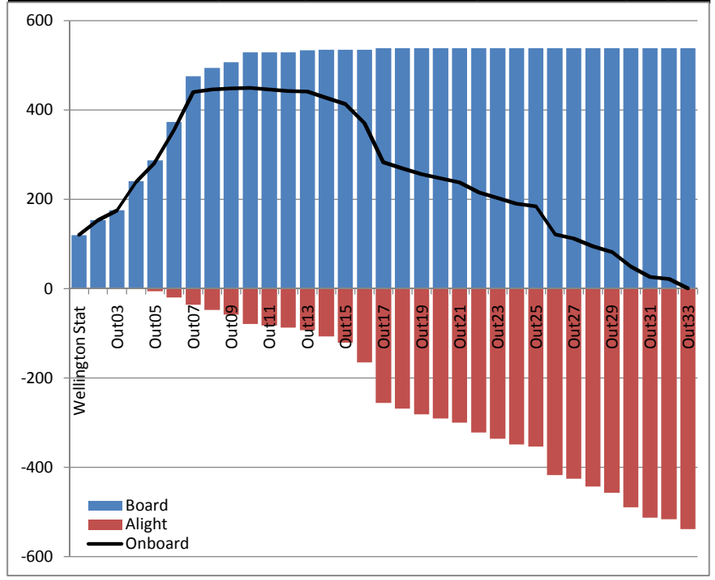
R08 Inbound - Average Thursday Cumulative Boardings and Max Alightings



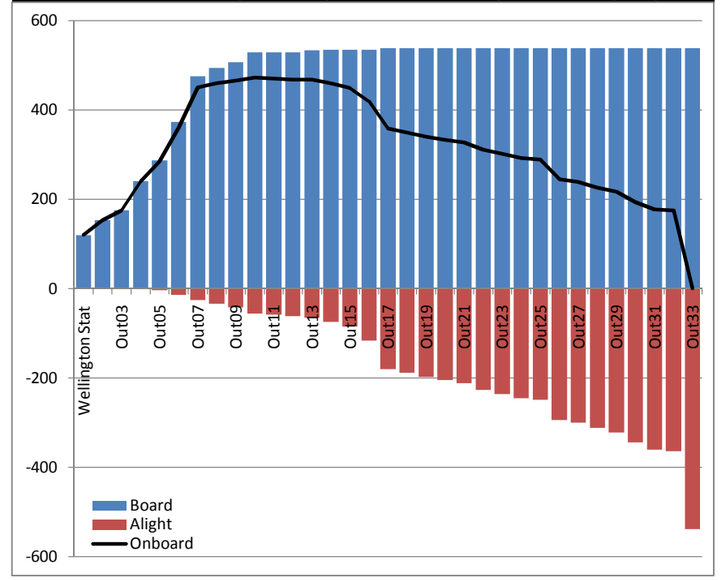
R08 Outbound - Average Thursday Boardings and Alightings



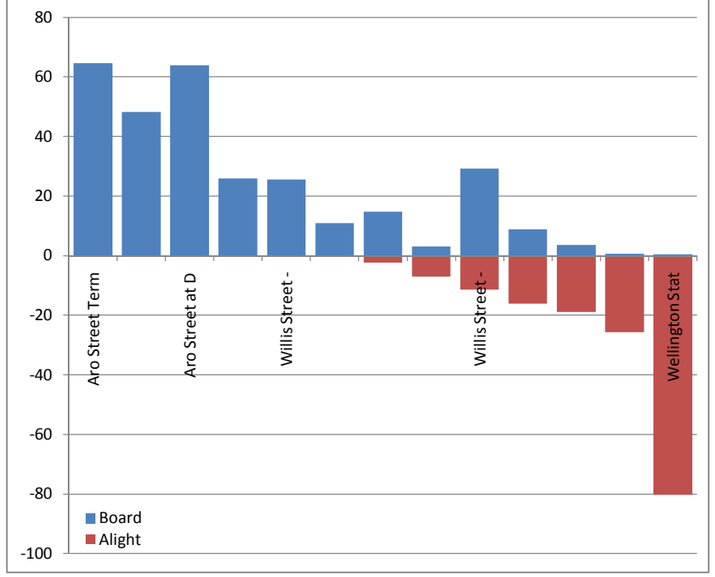
R08 Outbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



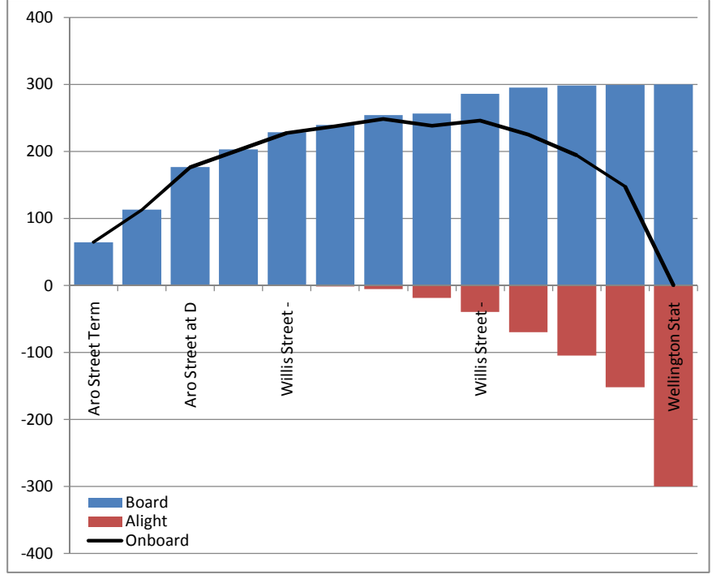
R08 Outbound - Average Thursday Cumulative Boardings and Max Alightings



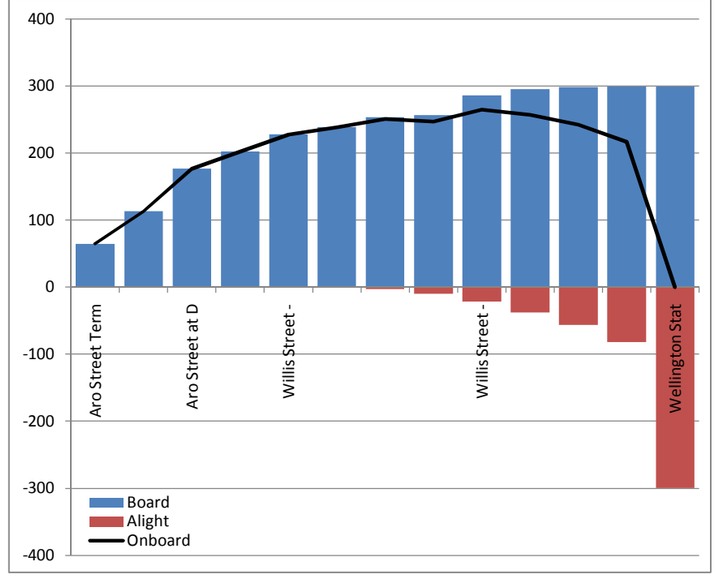
R09 Inbound - Average Thursday Boardings and Alightings



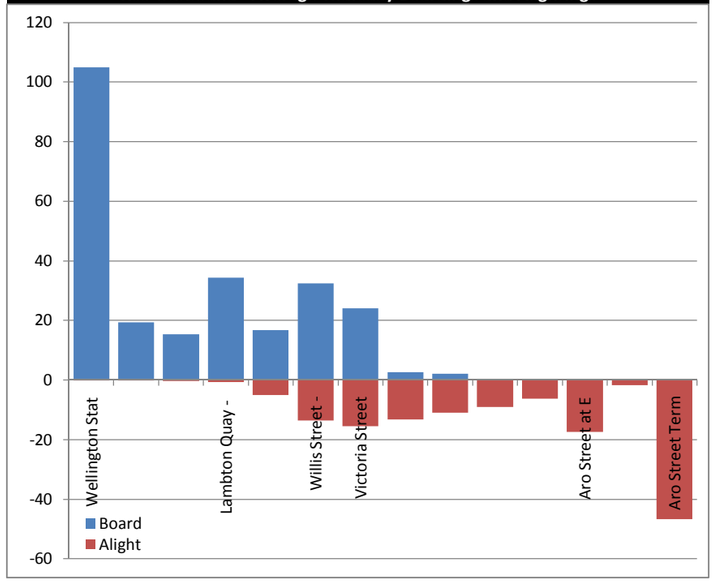
R09 Inbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



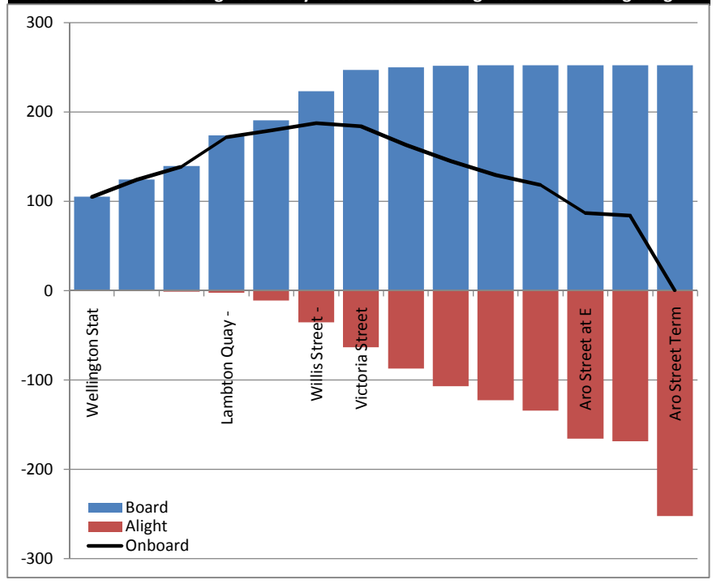
R09 Inbound - Average Thursday Cumulative Boardings and Max Alightings



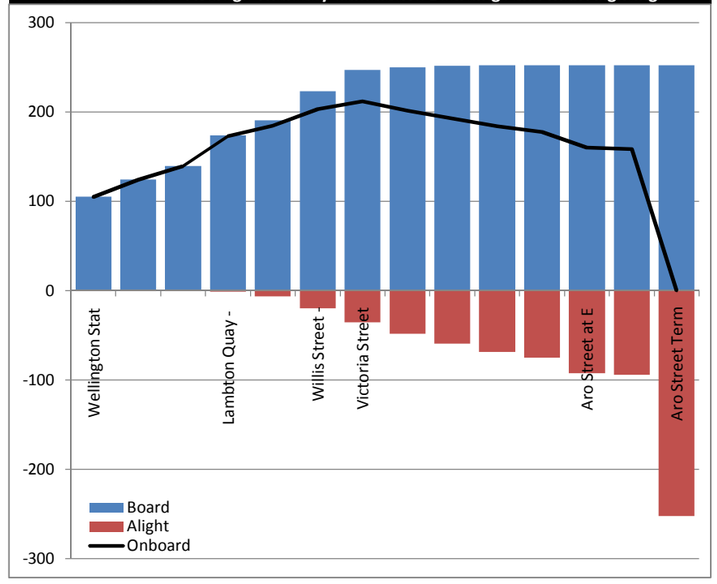
R09 Outbound - Average Thursday Boardings and Alightings



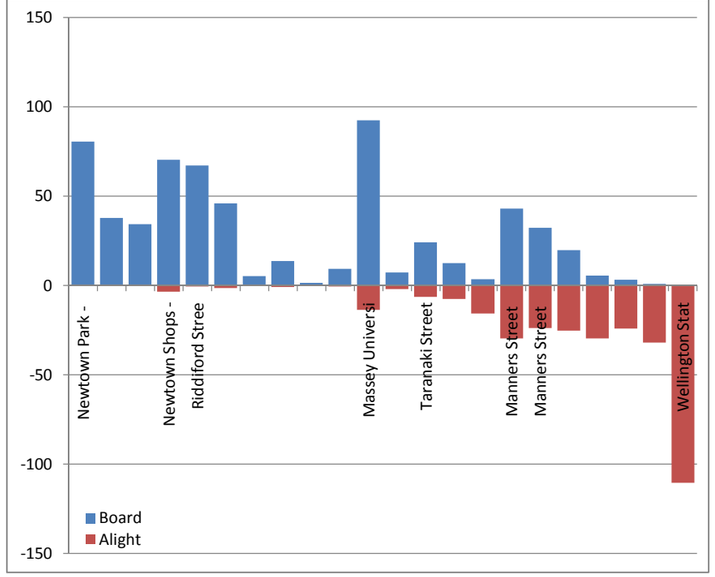
R09 Outbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



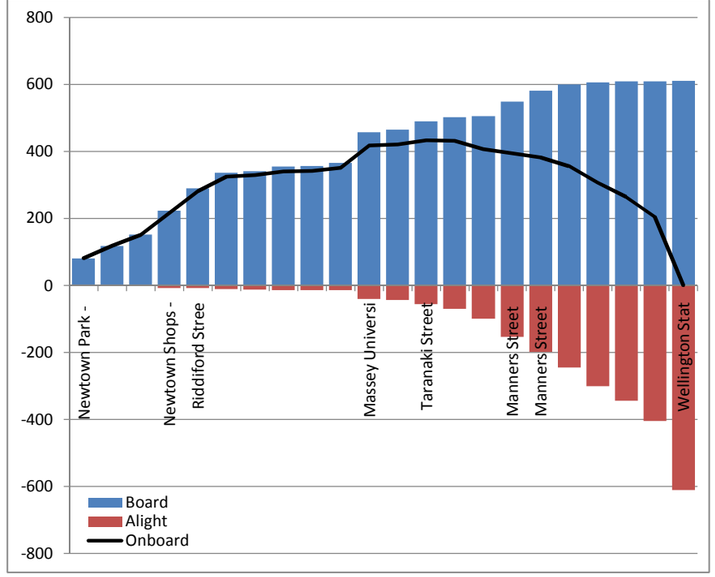
R09 Outbound - Average Thursday Cumulative Boardings and Max Alightings



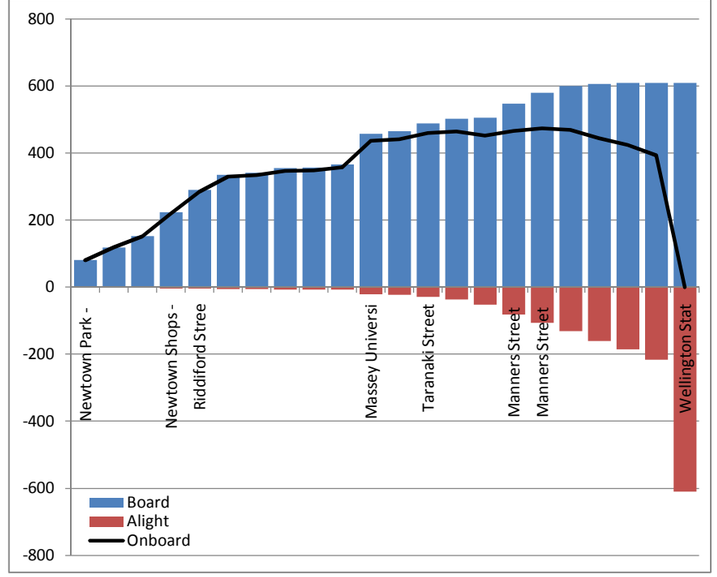
R10 Inbound - Average Thursday Boardings and Alightings



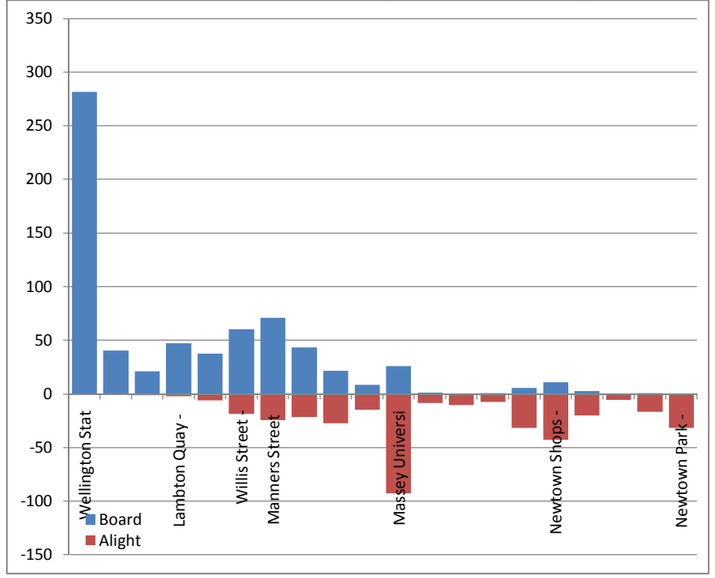
R10 Inbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



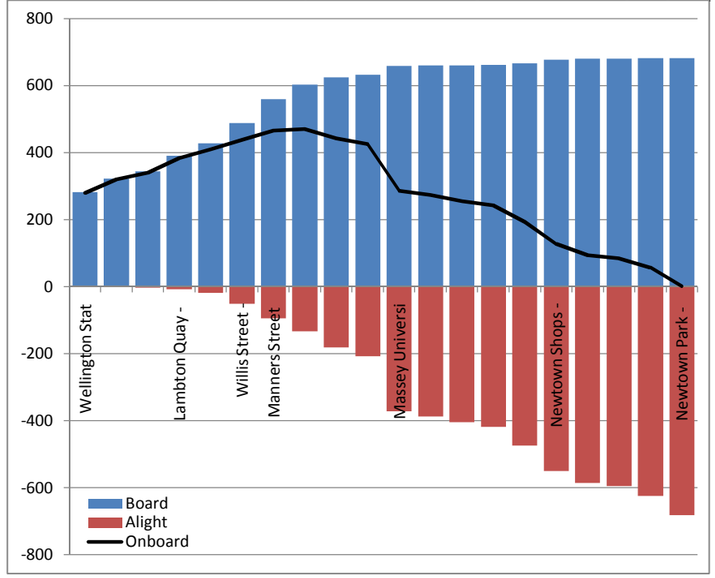
R10 Inbound - Average Thursday Cumulative Boardings and Max Alightings



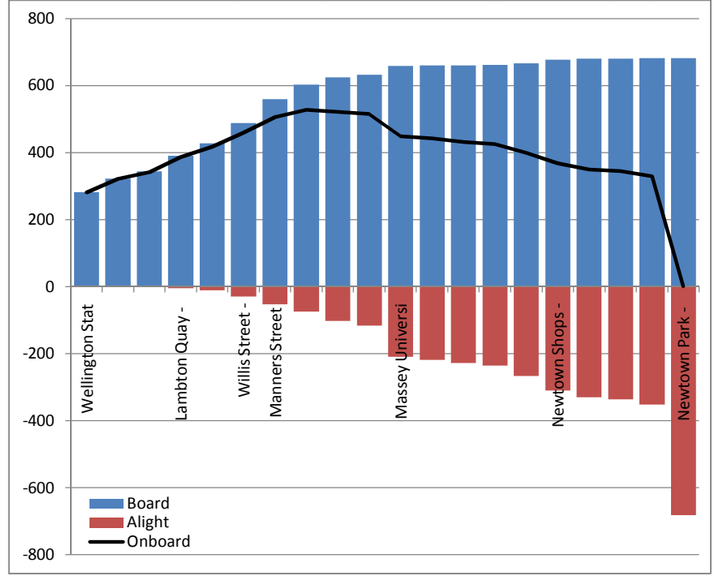
R10 Outbound - Average Thursday Boardings and Alightings



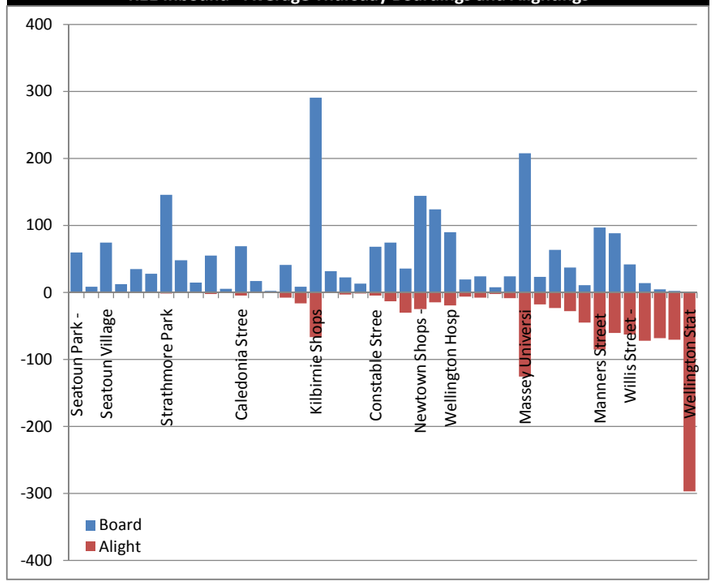
R10 Outbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



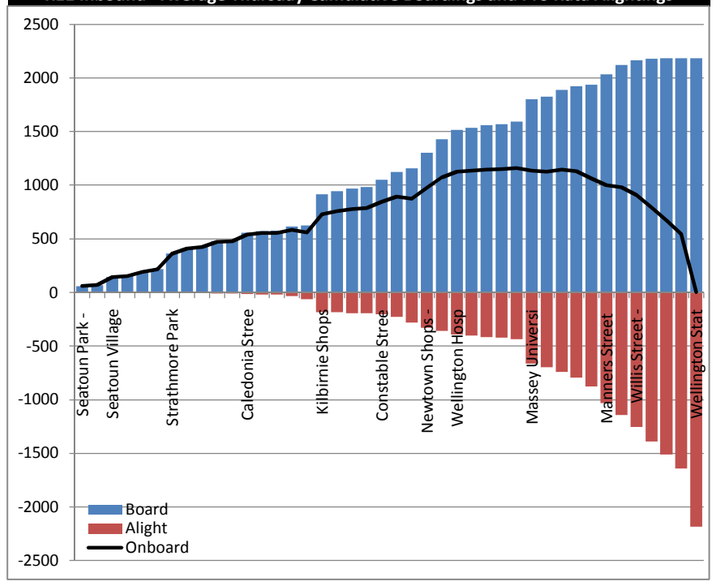
R10 Outbound - Average Thursday Cumulative Boardings and Max Alightings



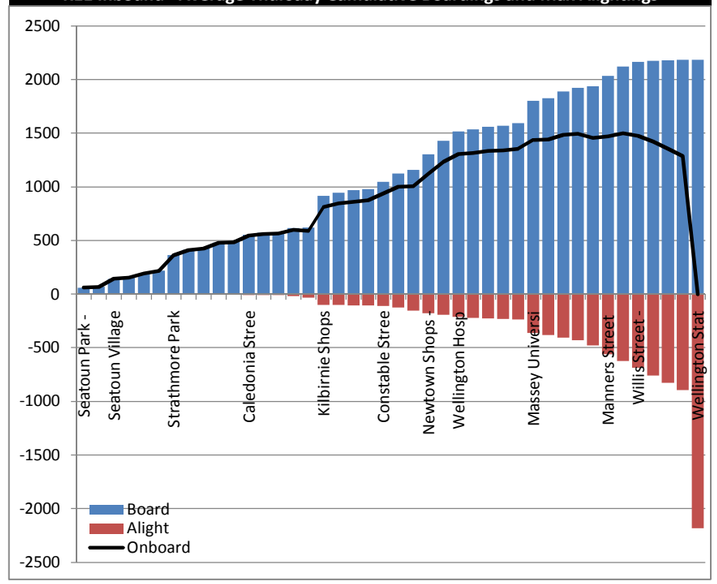
R11 Inbound - Average Thursday Boardings and Alightings



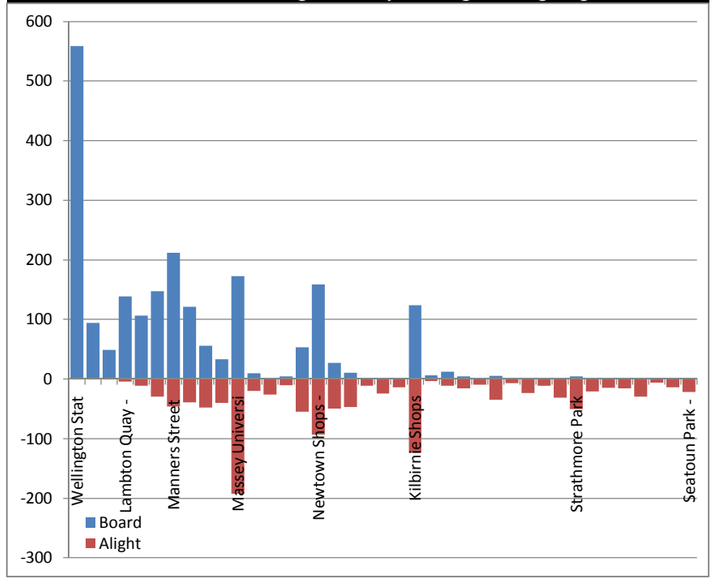
R11 Inbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



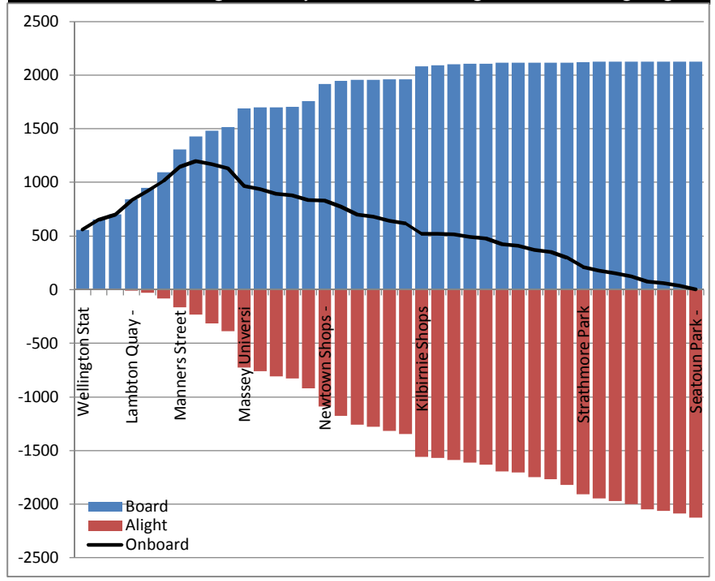
R11 Inbound - Average Thursday Cumulative Boardings and Max Alightings



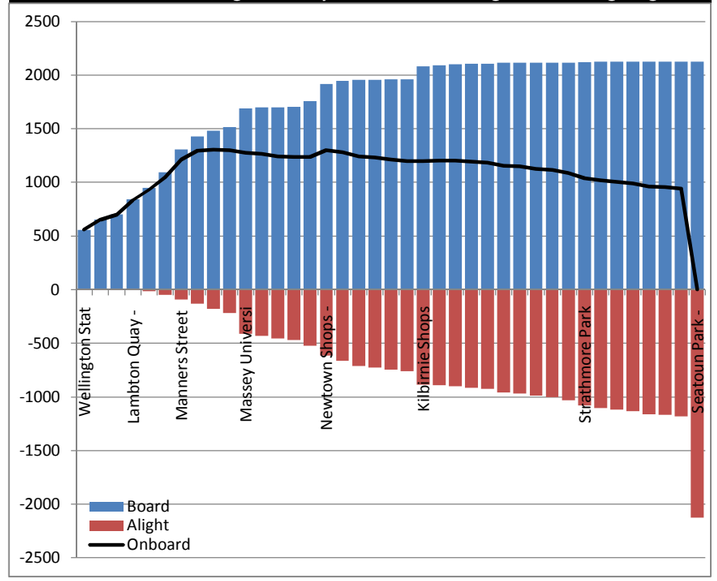
R11 Outbound - Average Thursday Boardings and Alightings



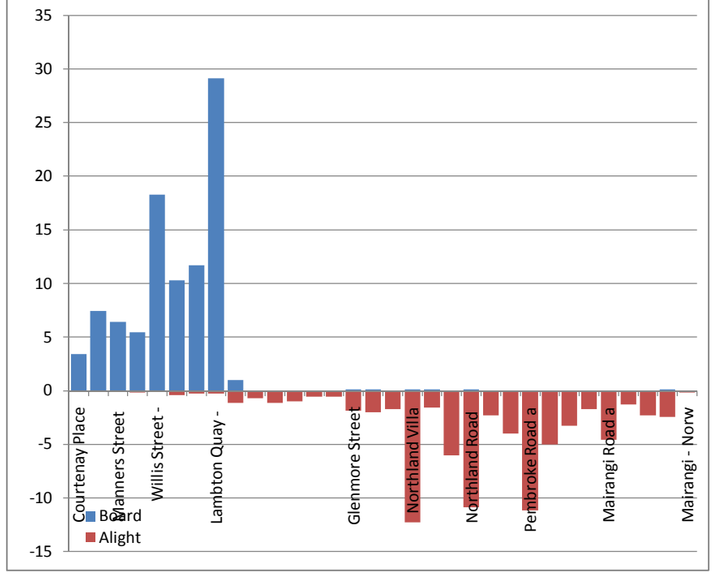
R11 Outbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



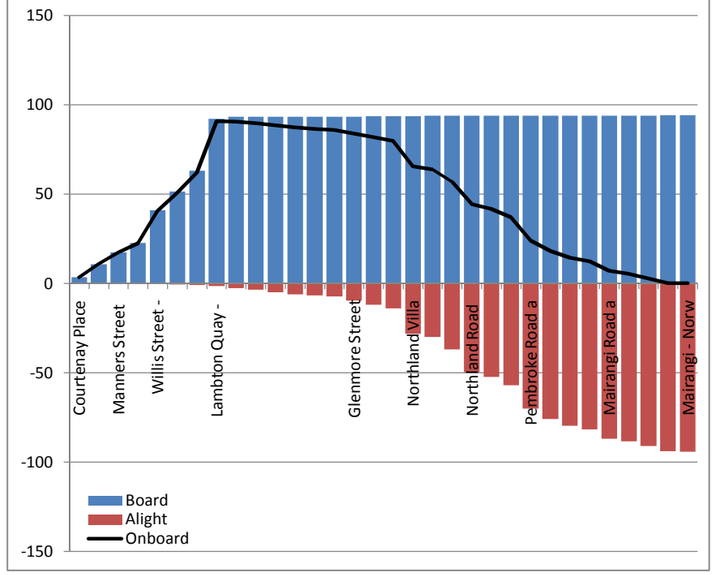
R11 Outbound - Average Thursday Cumulative Boardings and Max Alightings



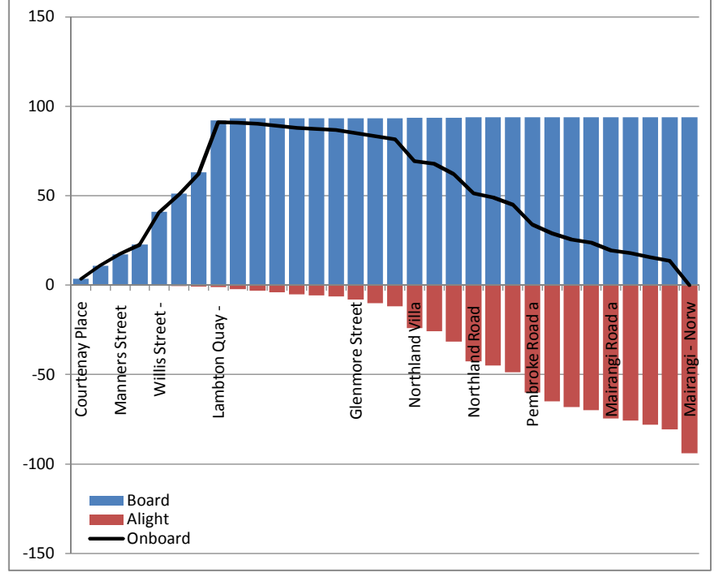
R13 Inbound - Average Thursday Boardings and Alightings



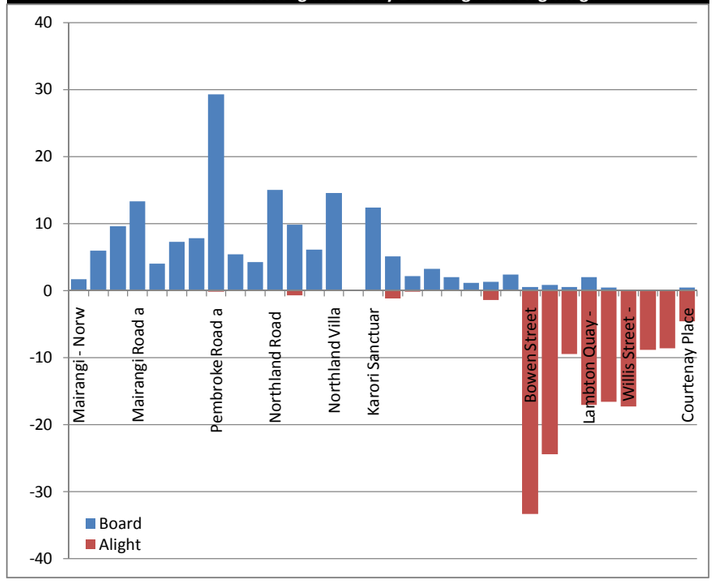
R13 Inbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



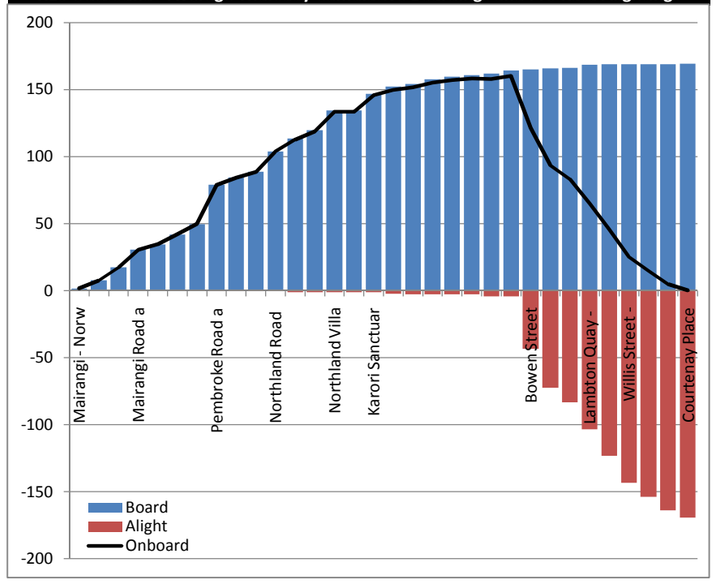
R13 Inbound - Average Thursday Cumulative Boardings and Max Alightings



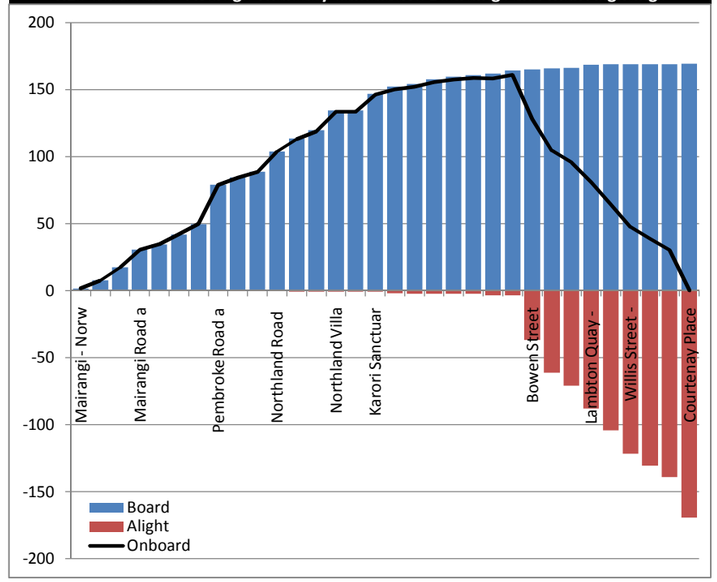
R13 Outbound - Average Thursday Boardings and Alightings



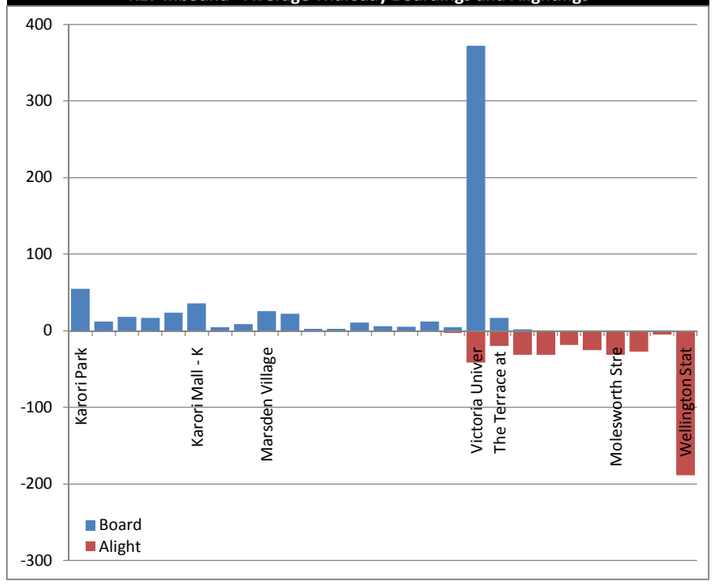
R13 Outbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



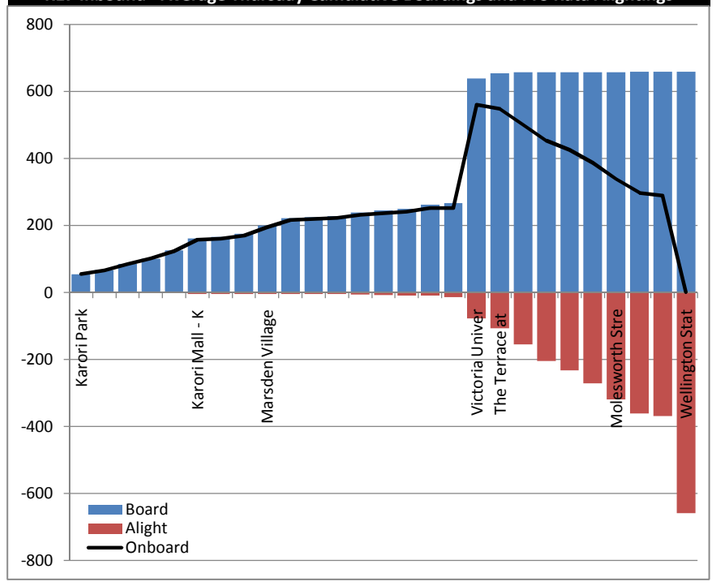
R13 Outbound - Average Thursday Cumulative Boardings and Max Alightings



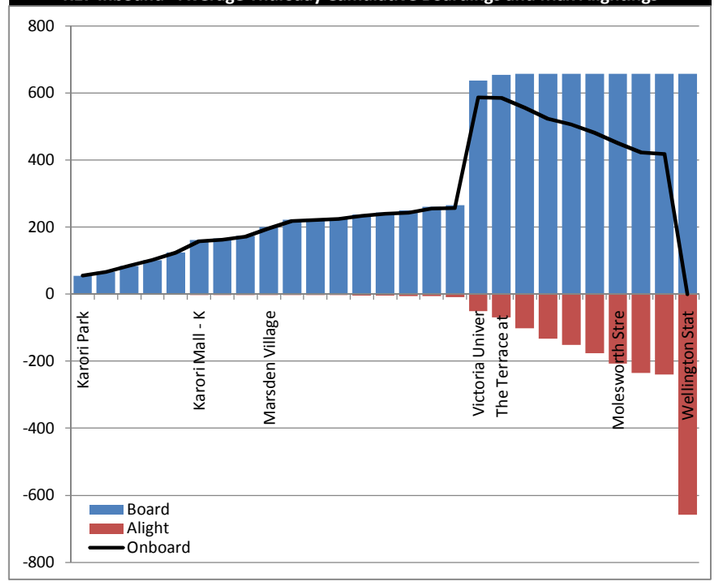
R17 Inbound - Average Thursday Boardings and Alightings



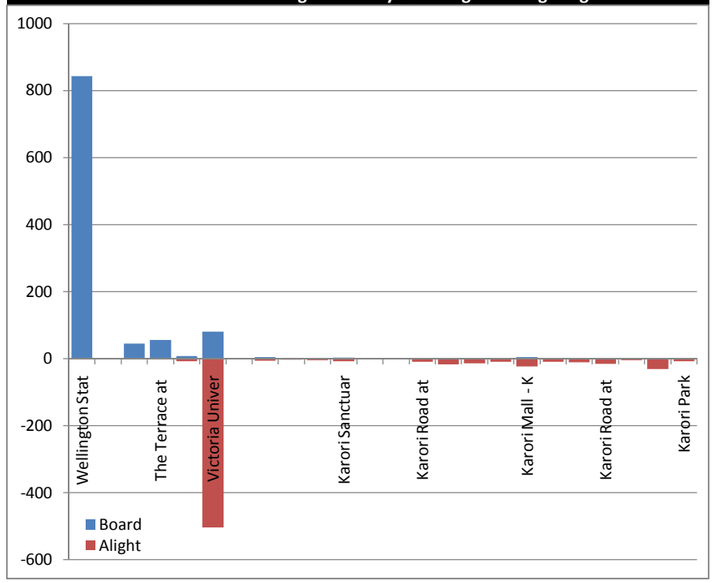
R17 Inbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



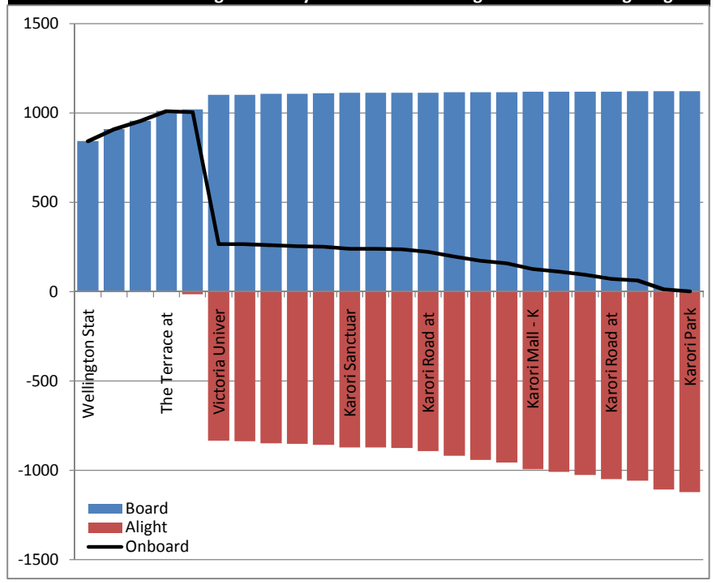
R17 Inbound - Average Thursday Cumulative Boardings and Max Alightings



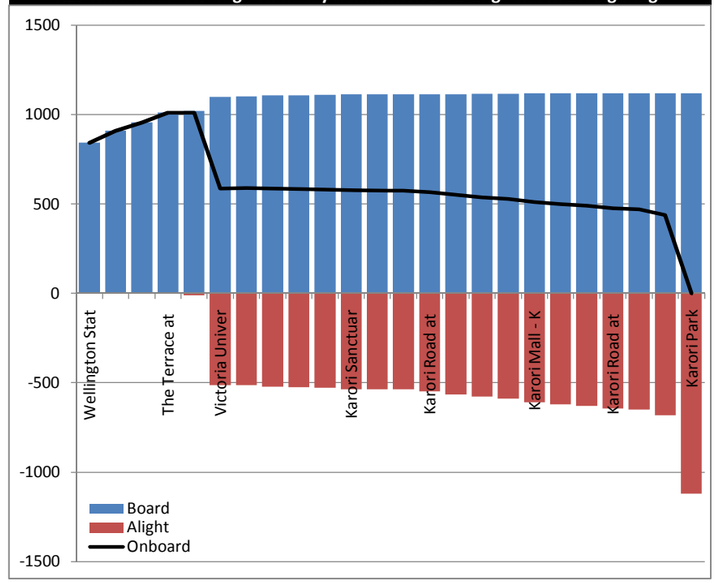
R17 Outbound - Average Thursday Boardings and Alightings



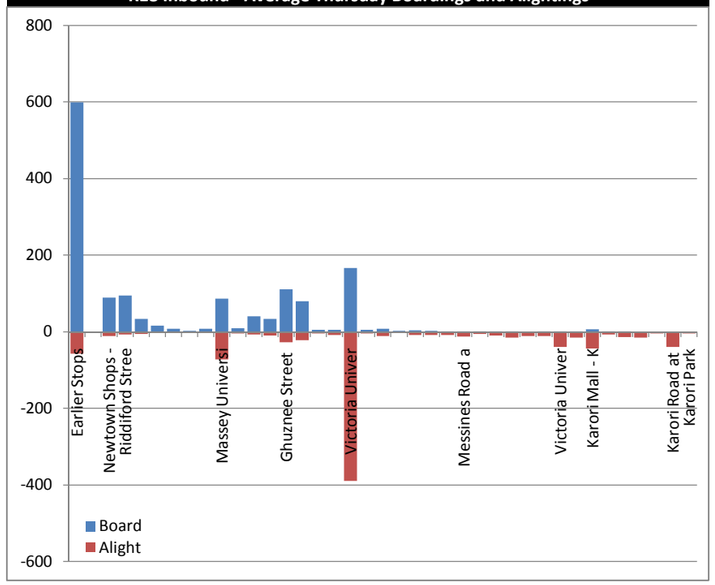
R17 Outbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



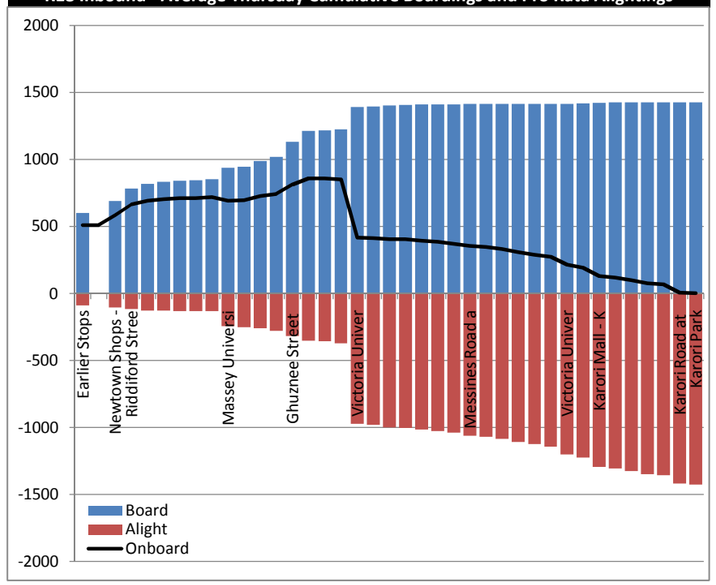
R17 Outbound - Average Thursday Cumulative Boardings and Max Alightings



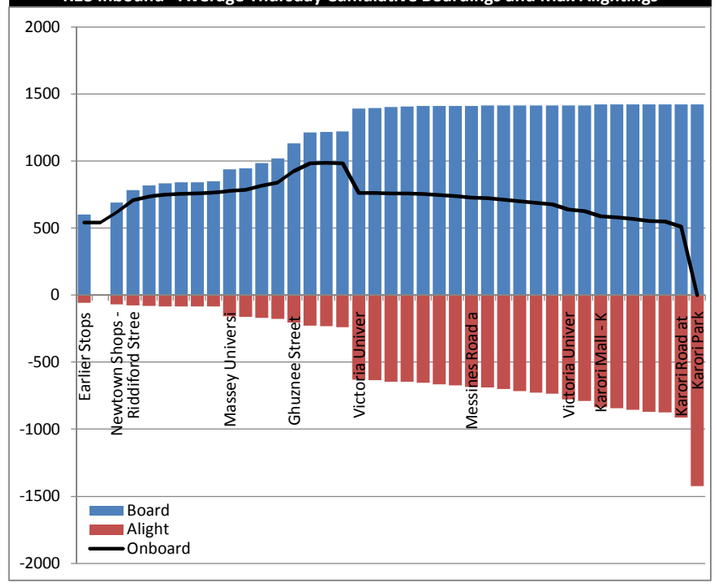
R18 Inbound - Average Thursday Boardings and Alightings



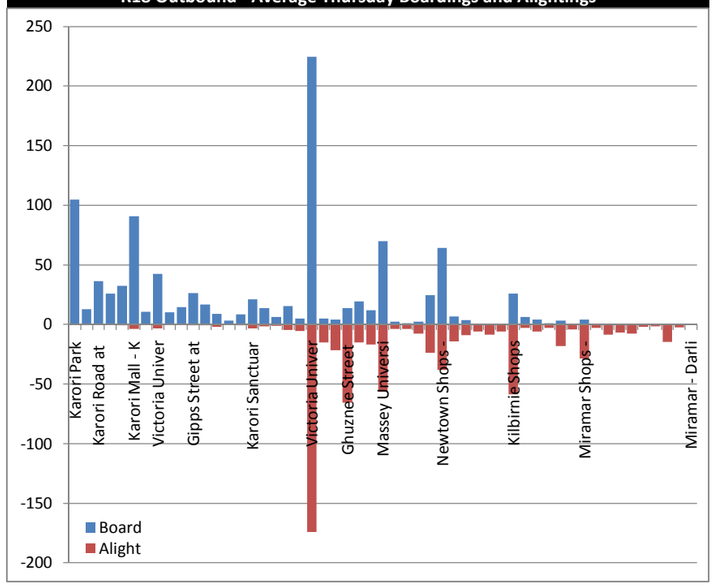
R18 Inbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



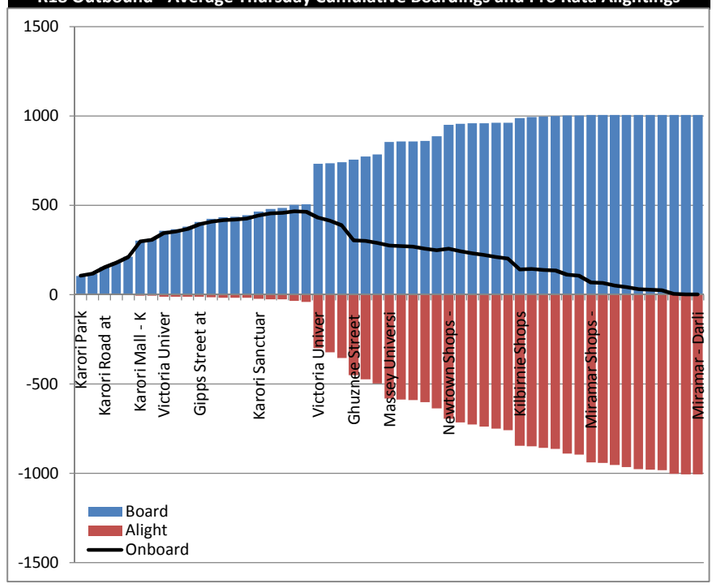
R18 Inbound - Average Thursday Cumulative Boardings and Max Alightings



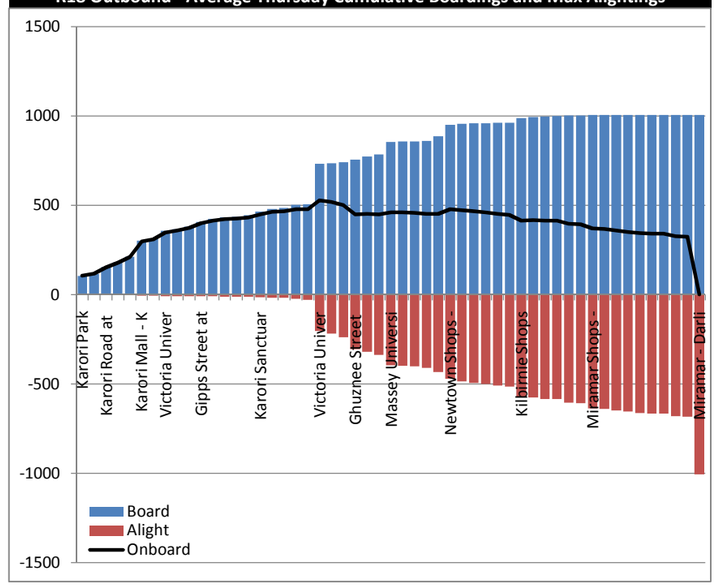
R18 Outbound - Average Thursday Boardings and Alightings



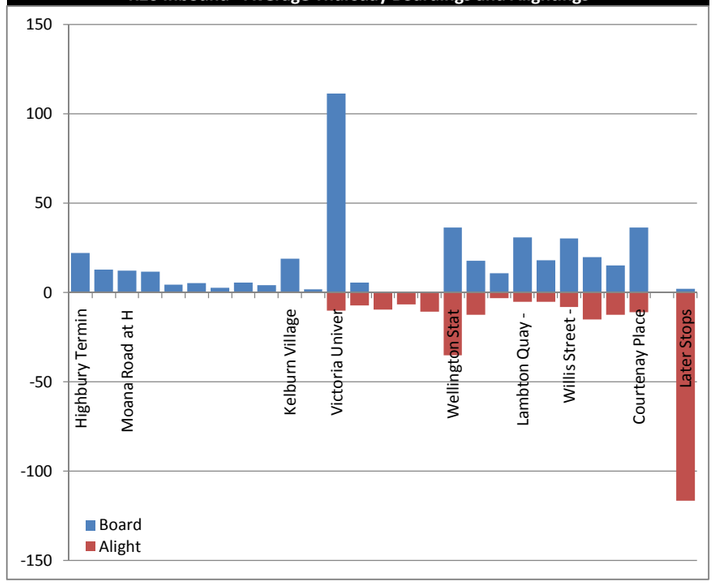
R18 Outbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



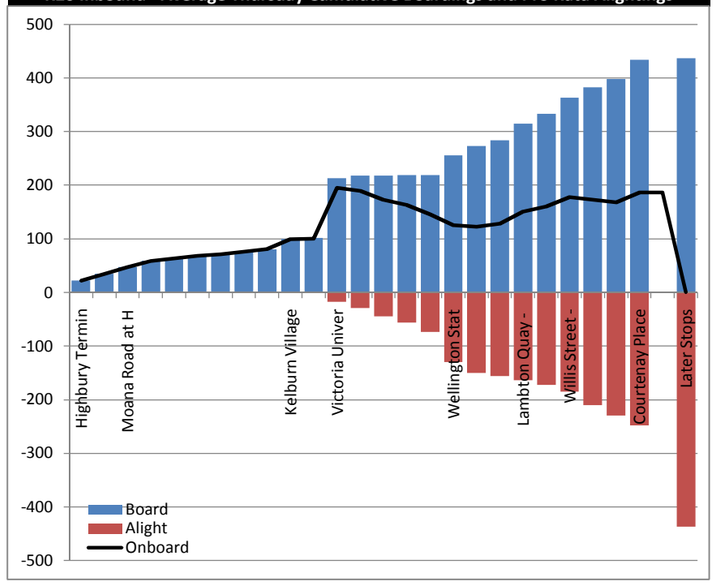
R18 Outbound - Average Thursday Cumulative Boardings and Max Alightings



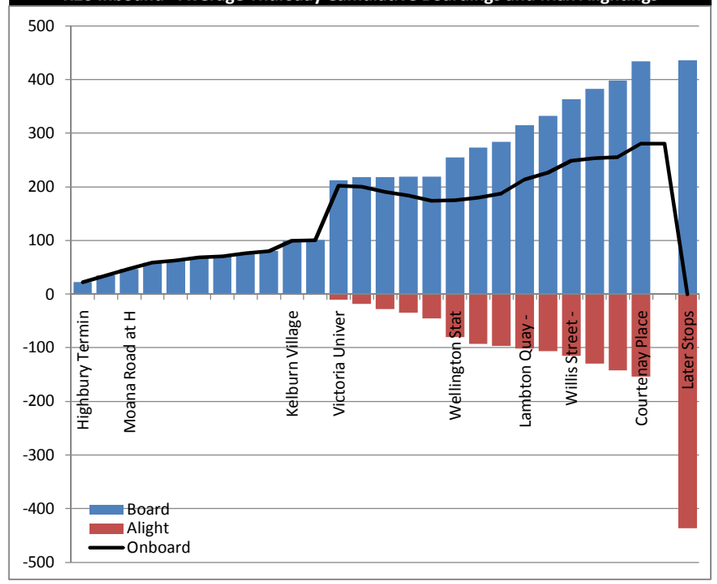
R20 Inbound - Average Thursday Boardings and Alightings



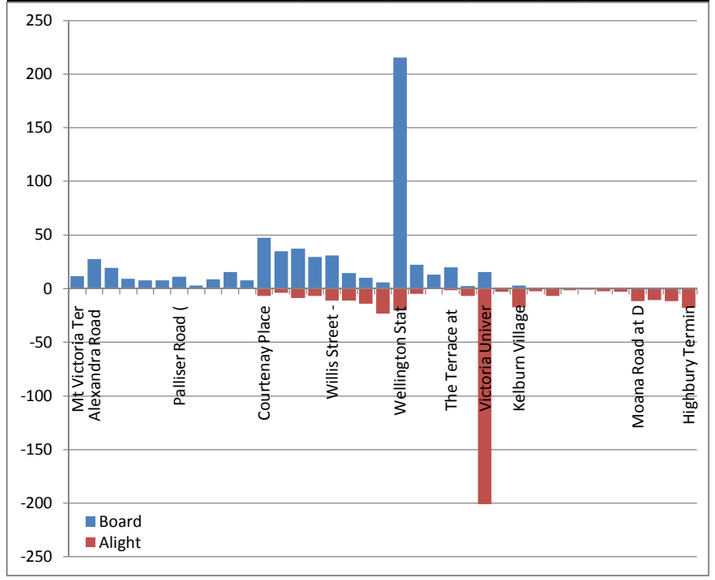
R20 Inbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



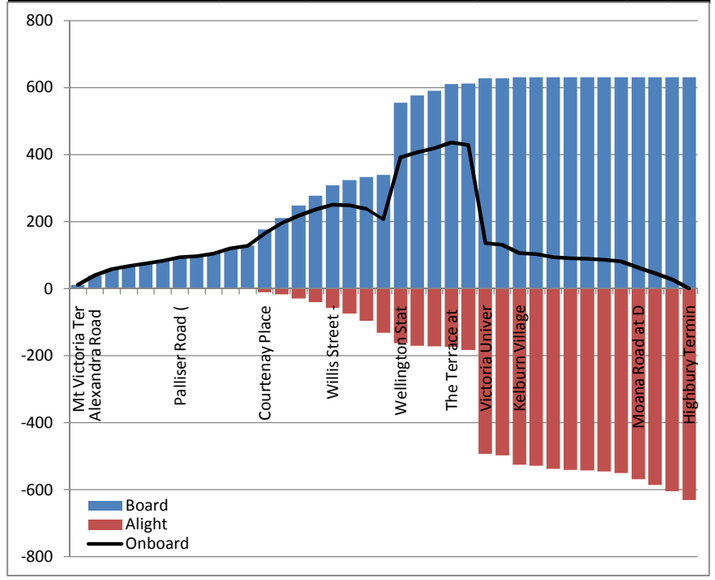
R20 Inbound - Average Thursday Cumulative Boardings and Max Alightings



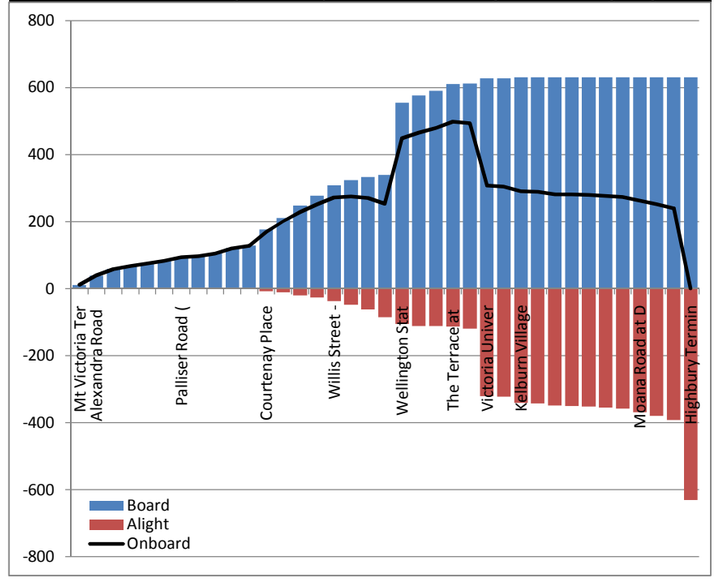
R20 Outbound - Average Thursday Boardings and Alightings



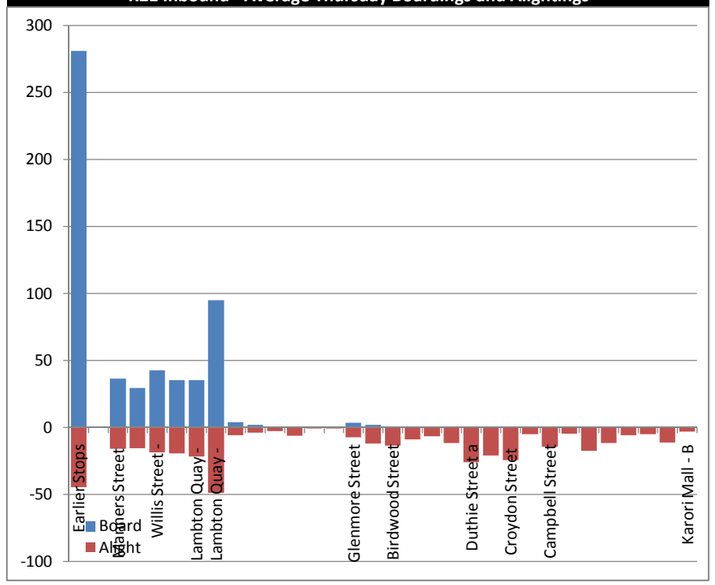
R20 Outbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



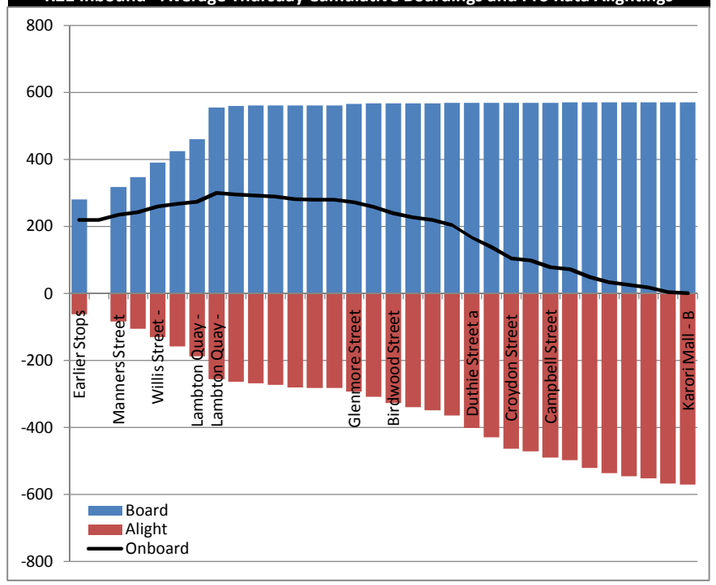
R20 Outbound - Average Thursday Cumulative Boardings and Max Alightings



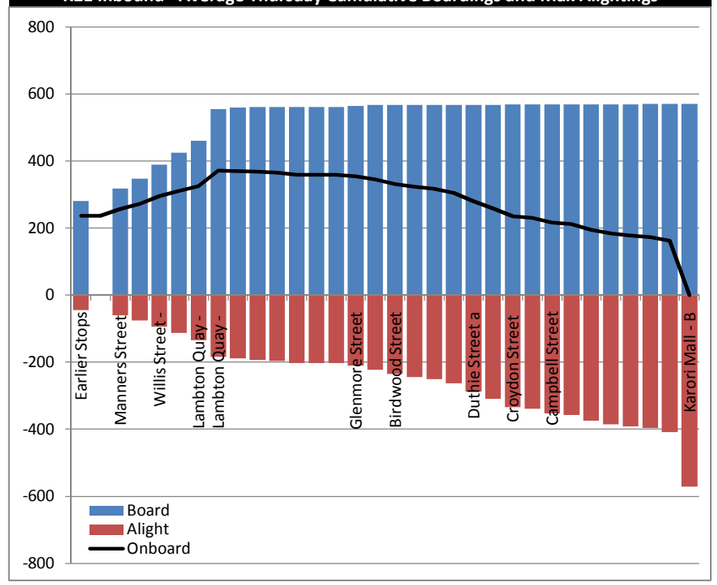
R21 Inbound - Average Thursday Boardings and Alightings



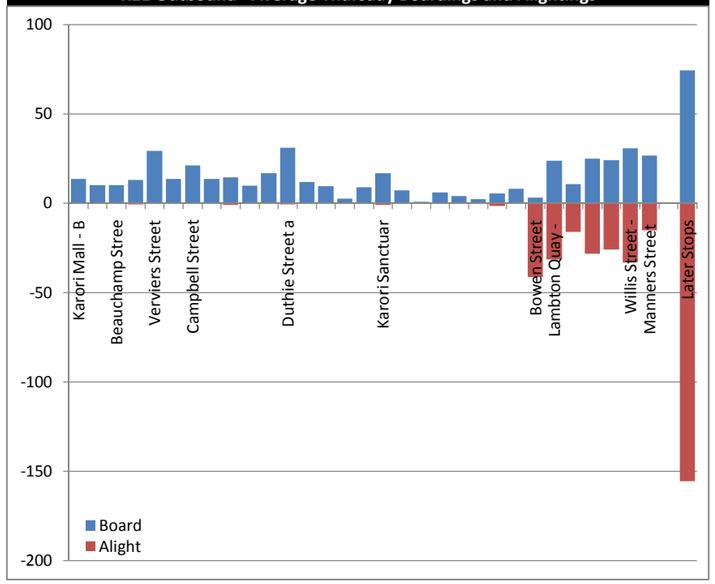
R21 Inbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



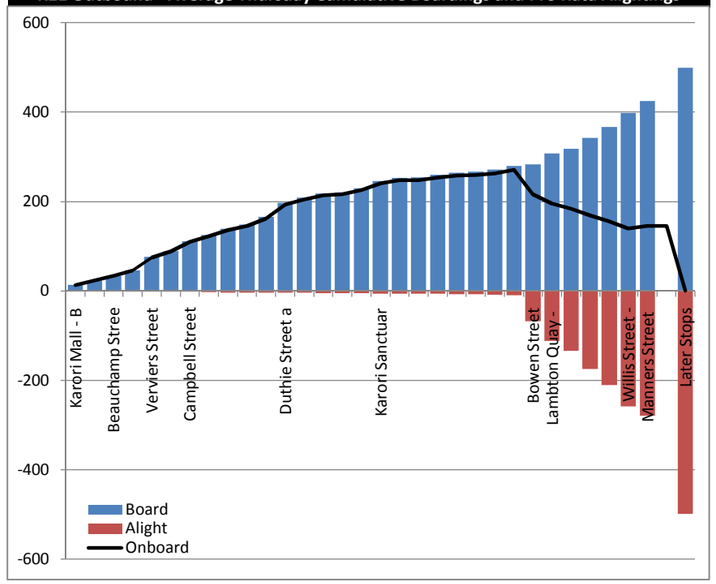
R21 Inbound - Average Thursday Cumulative Boardings and Max Alightings



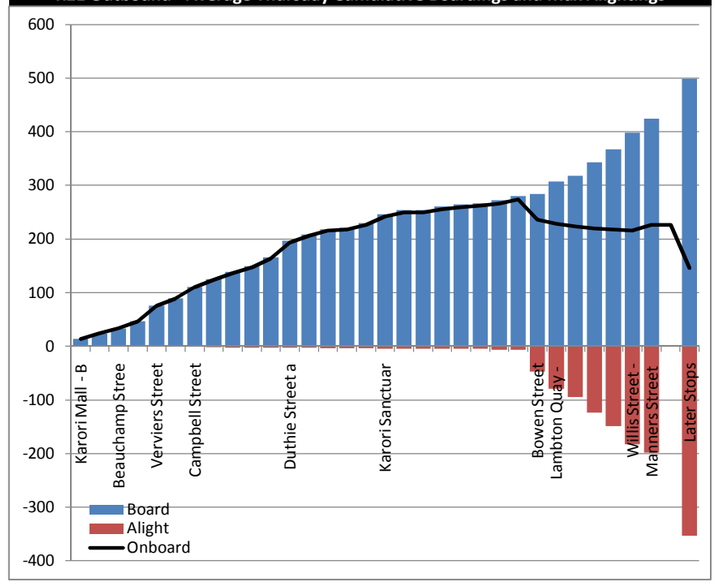
R21 Outbound - Average Thursday Boardings and Alightings



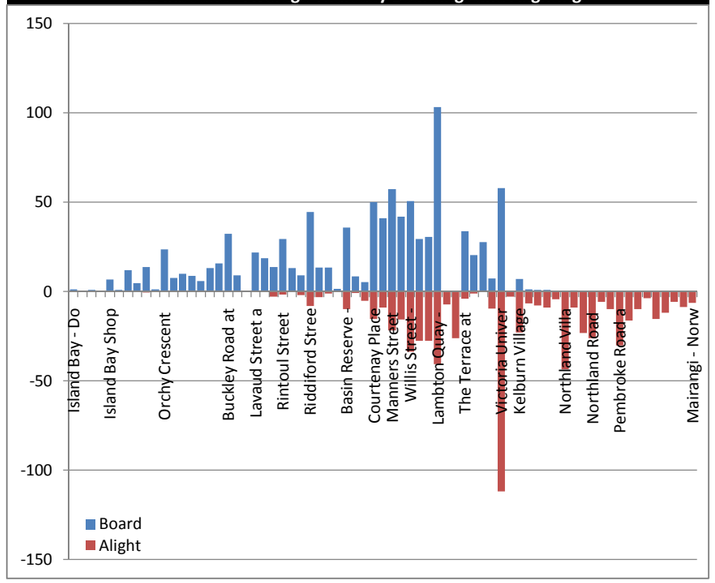
R21 Outbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



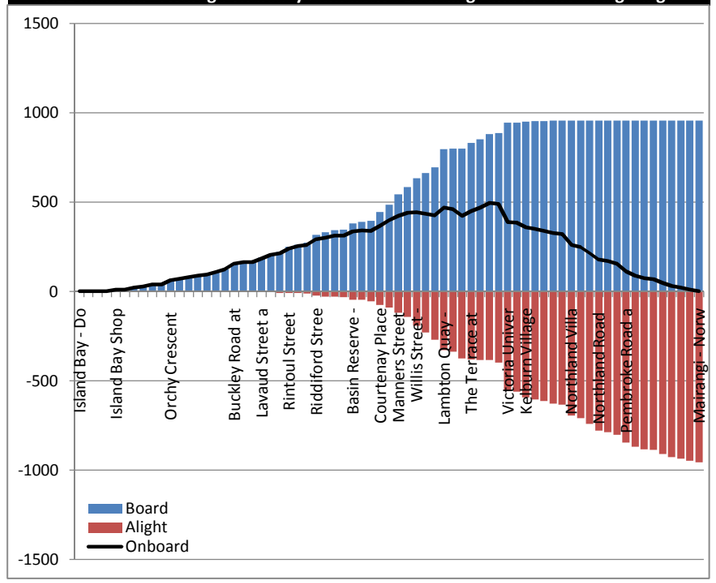
R21 Outbound - Average Thursday Cumulative Boardings and Max Alightings



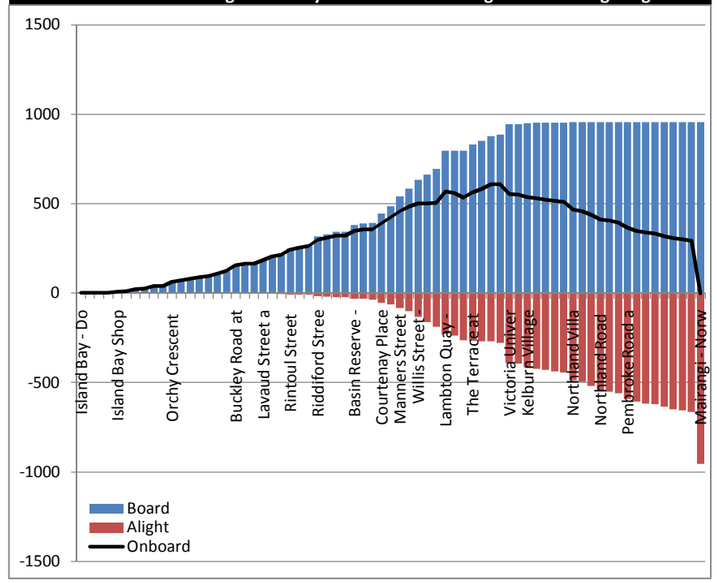
R22 Inbound - Average Thursday Boardings and Alightings



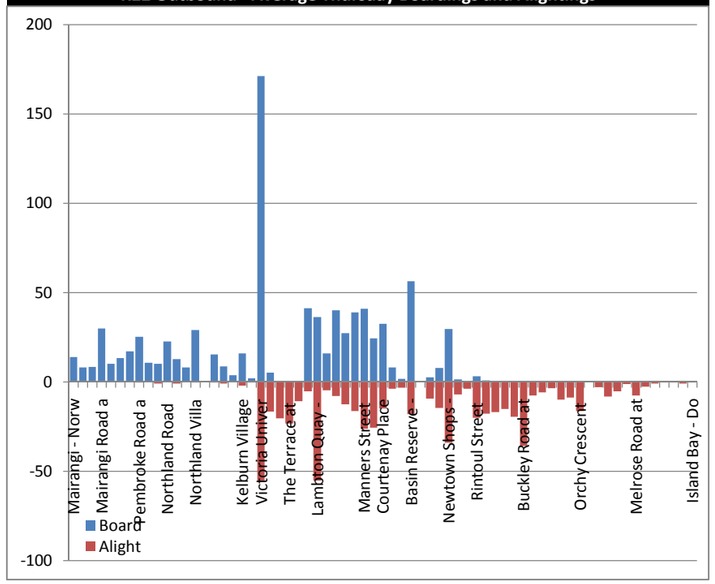
R22 Inbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



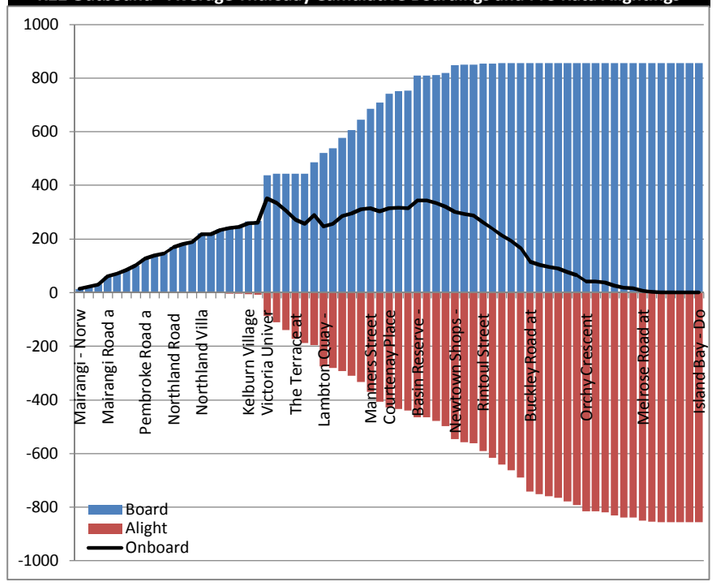
R22 Inbound - Average Thursday Cumulative Boardings and Max Alightings



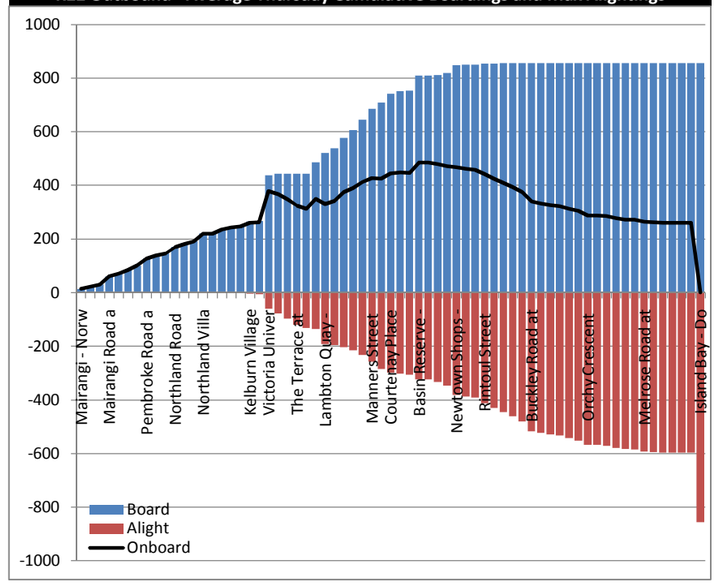
R22 Outbound - Average Thursday Boardings and Alightings



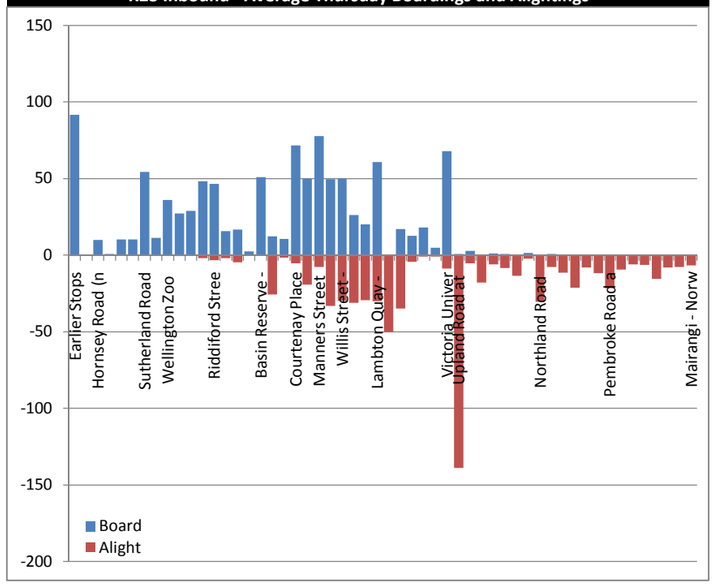
R22 Outbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



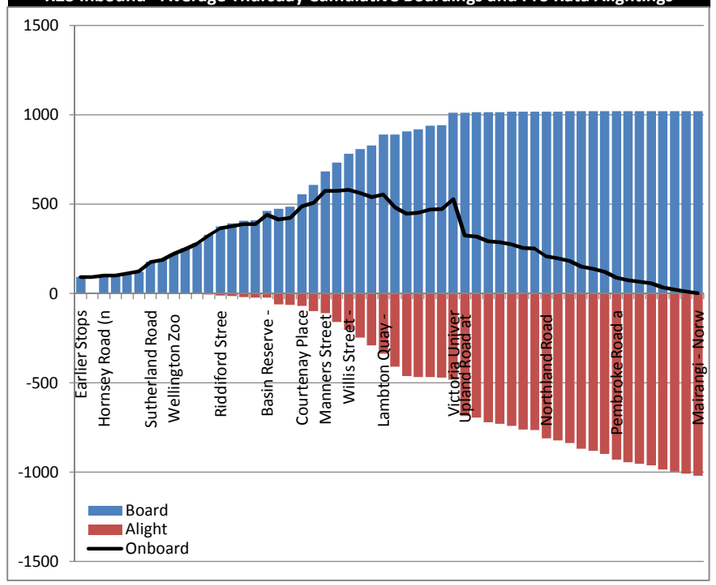
R22 Outbound - Average Thursday Cumulative Boardings and Max Alightings



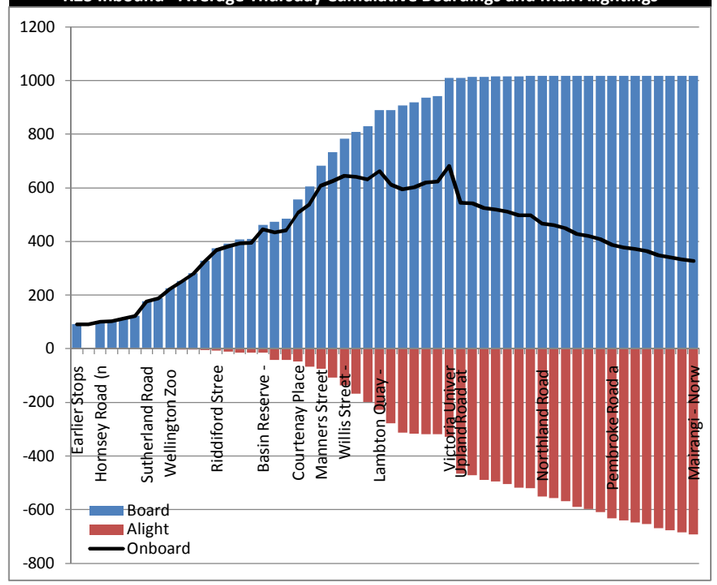
R23 Inbound - Average Thursday Boardings and Alightings



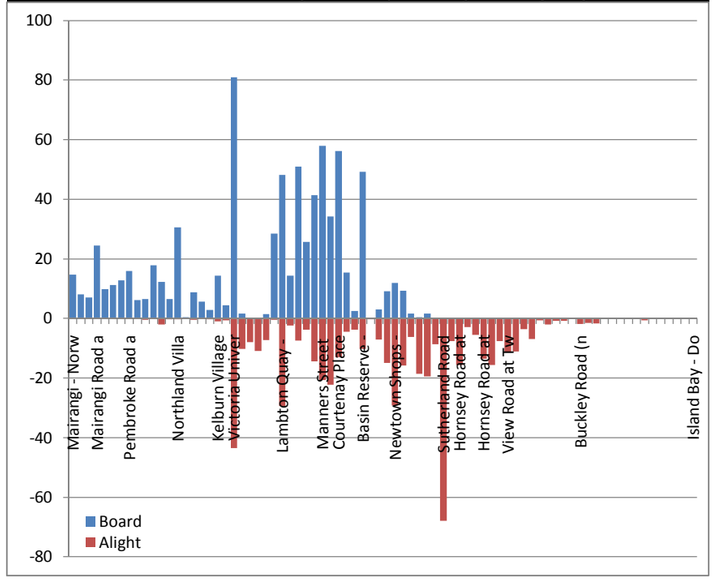
R23 Inbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



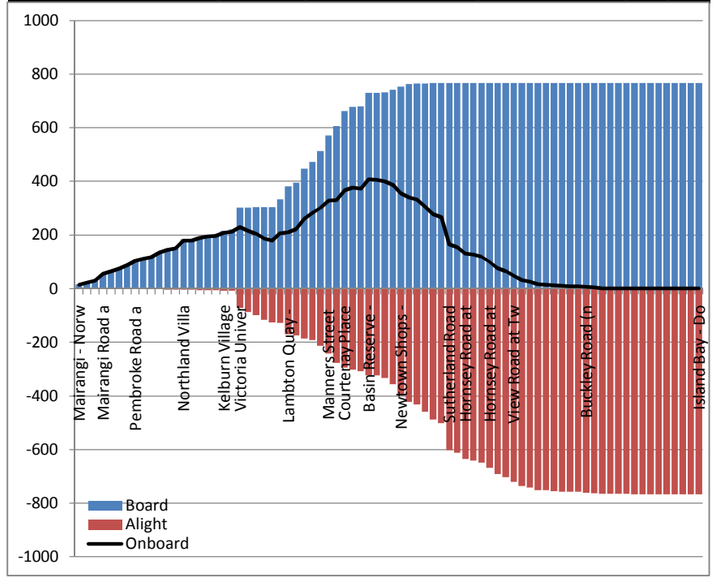
R23 Inbound - Average Thursday Cumulative Boardings and Max Alightings



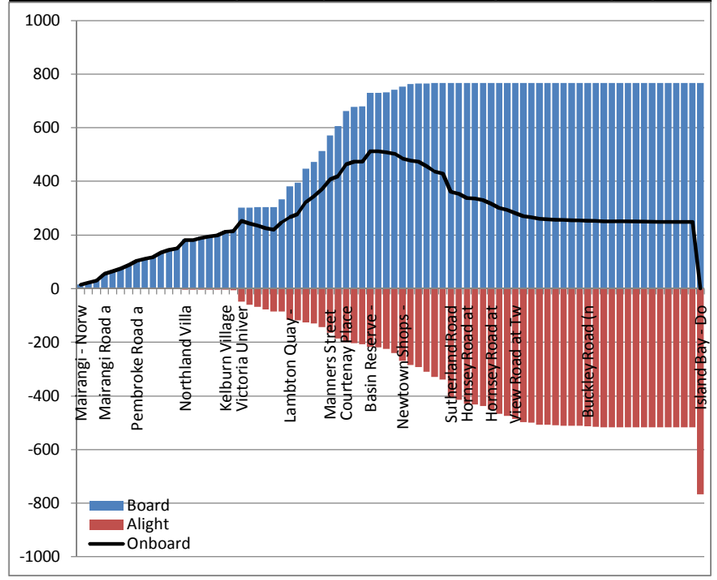
R23 Outbound - Average Thursday Boardings and Alightings



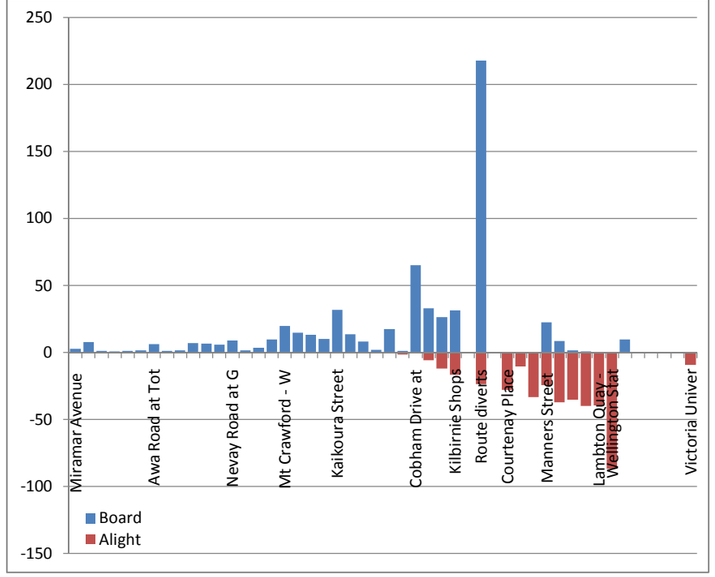
R23 Outbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



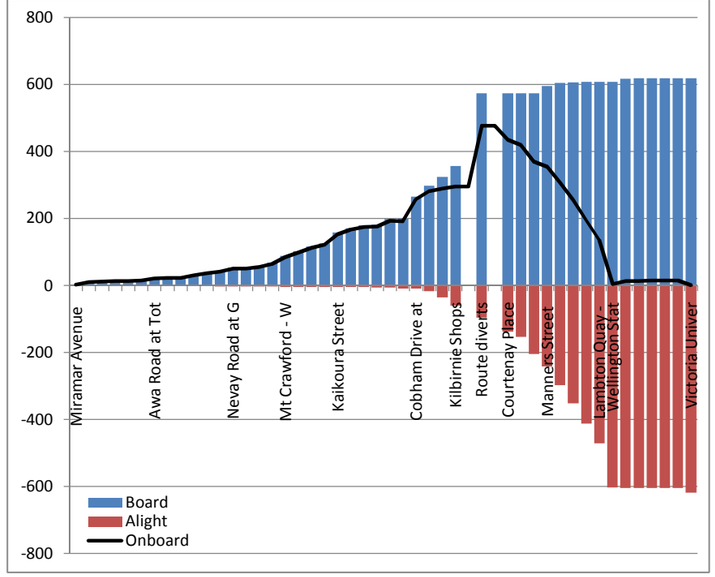
R23 Outbound - Average Thursday Cumulative Boardings and Max Alightings



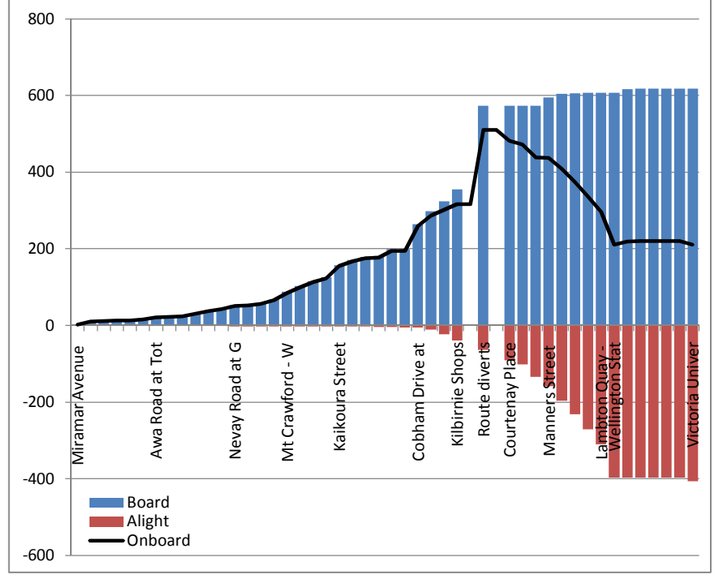
R24 Inbound - Average Thursday Boardings and Alightings



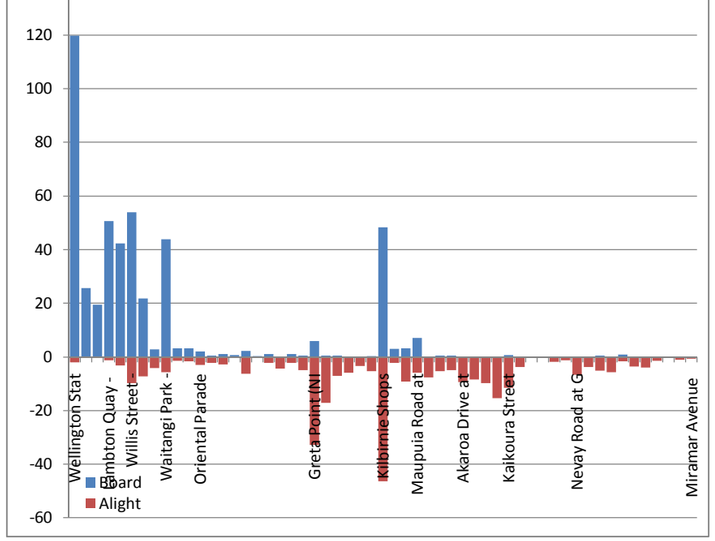
R24 Inbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



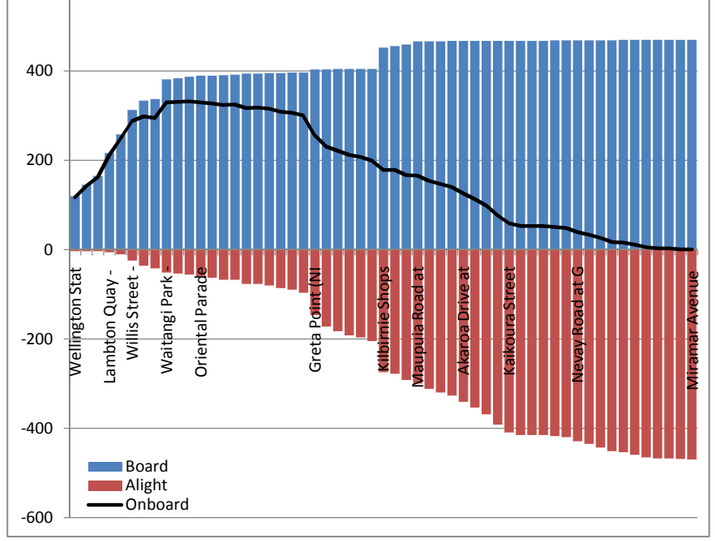
R24 Inbound - Average Thursday Cumulative Boardings and Max Alightings



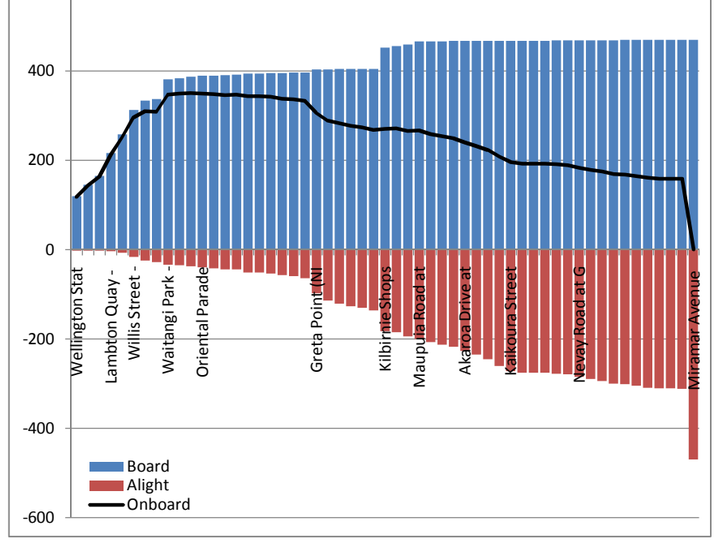
R24 Outbound - Average Thursday Boardings and Alightings



R24 Outbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



R24 Outbound - Average Thursday Cumulative Boardings and Max Alightings

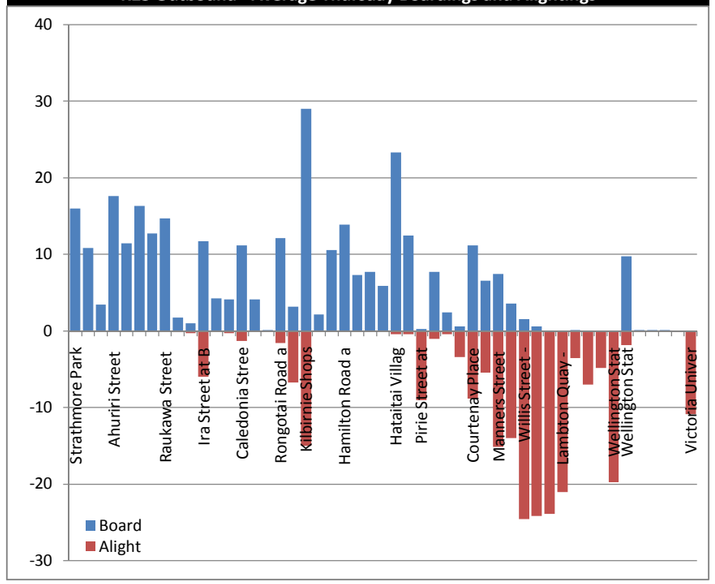


No R25 Inbound Data

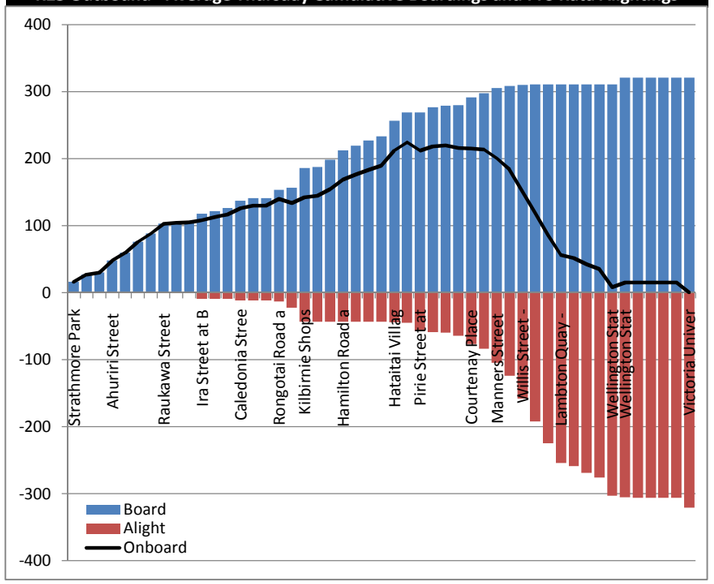
No R25 Inbound Data

No R25 Inbound Data

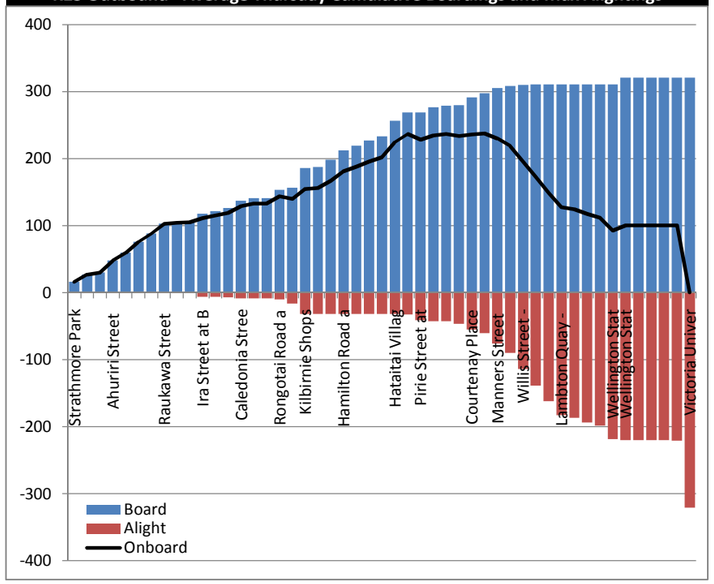
R25 Outbound - Average Thursday Boardings and Alightings



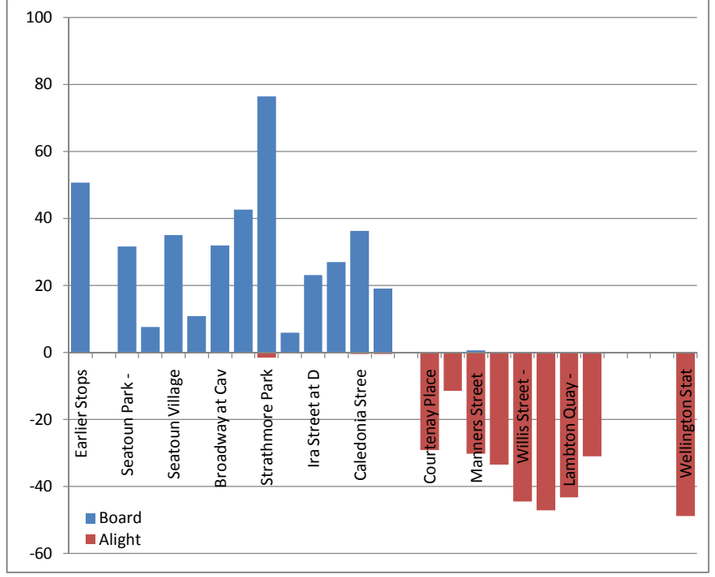
R25 Outbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



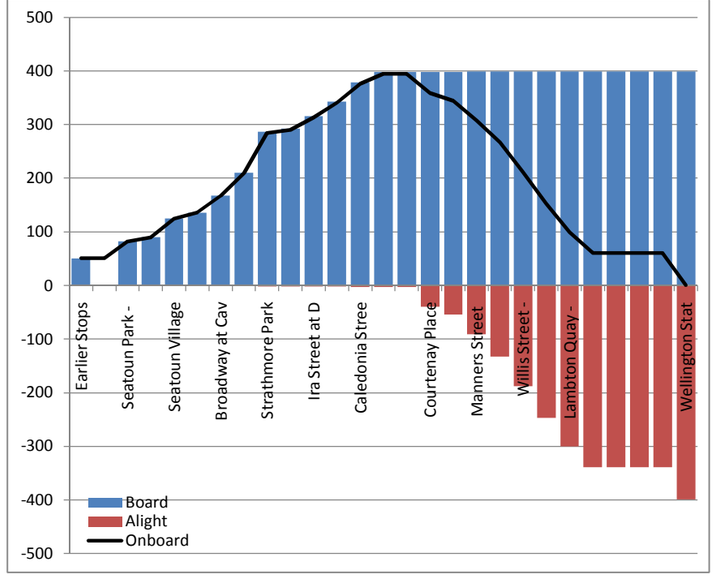
R25 Outbound - Average Thursday Cumulative Boardings and Max Alightings



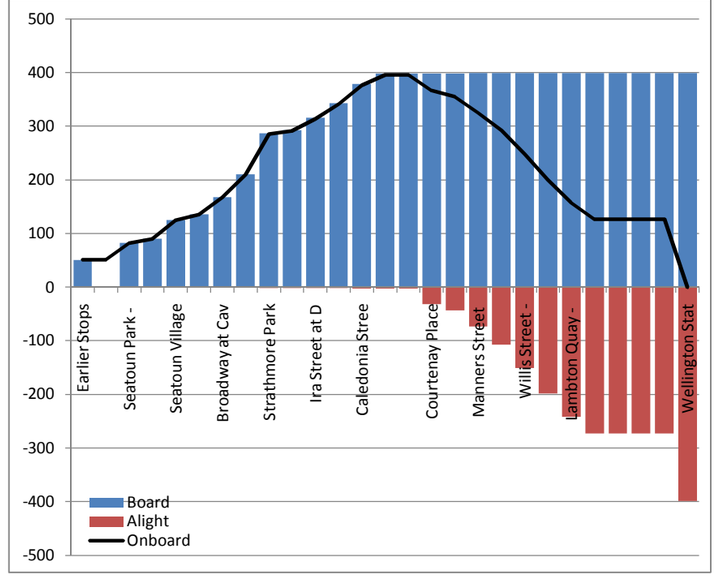
R30 Inbound - Average Thursday Boardings and Alightings



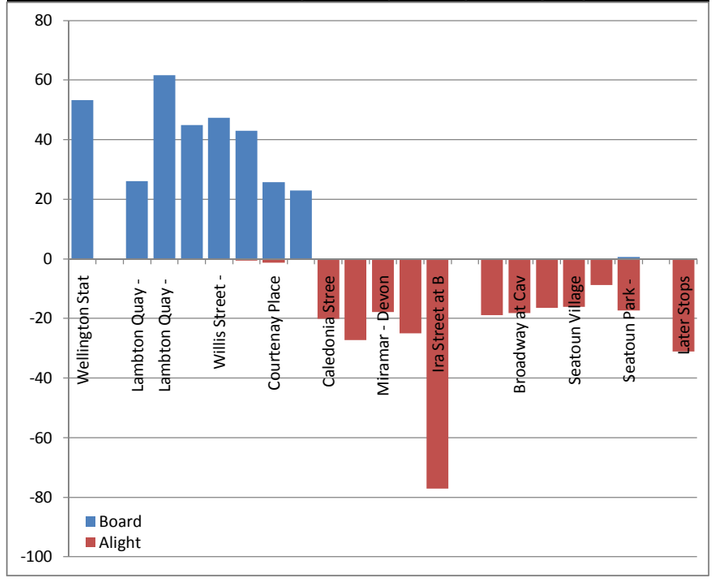
R30 Inbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



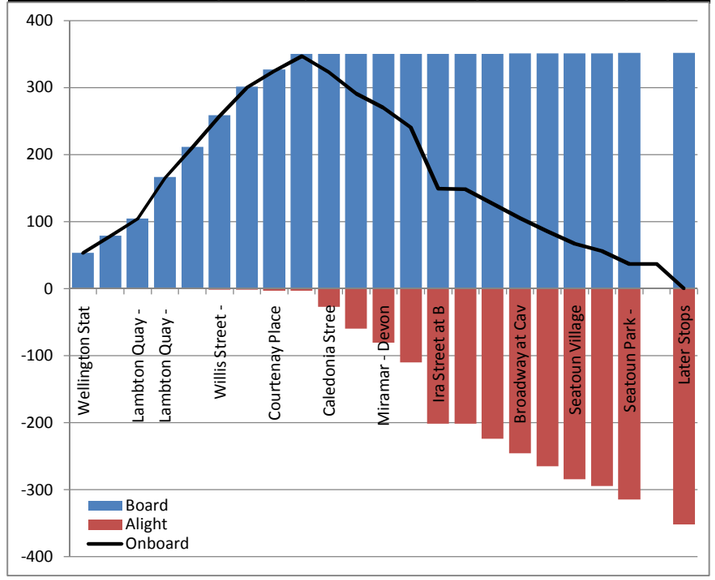
R30 Inbound - Average Thursday Cumulative Boardings and Max Alightings



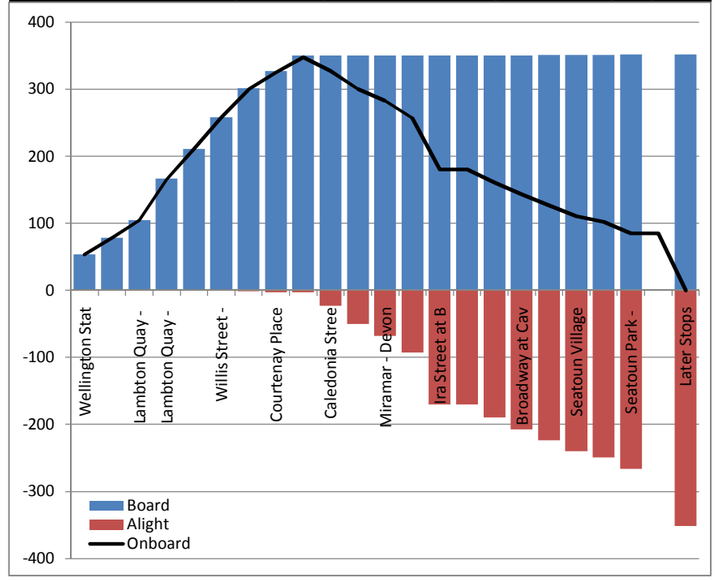
R30 Outbound - Average Thursday Boardings and Alightings



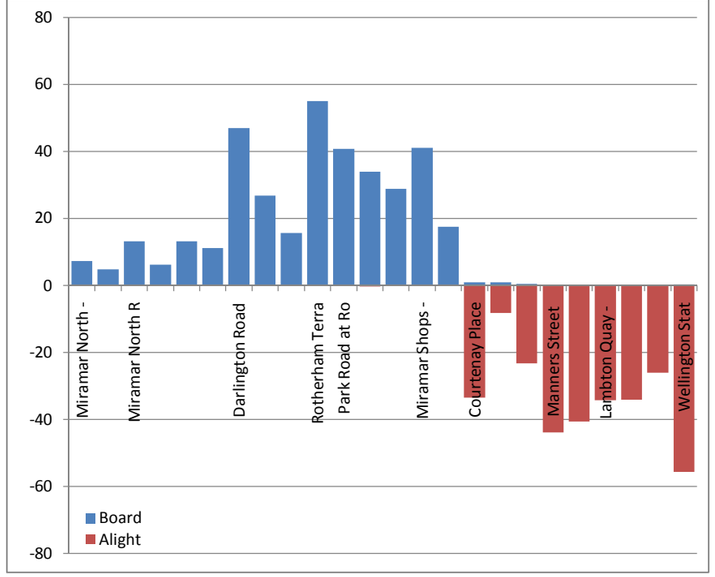
R30 Outbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



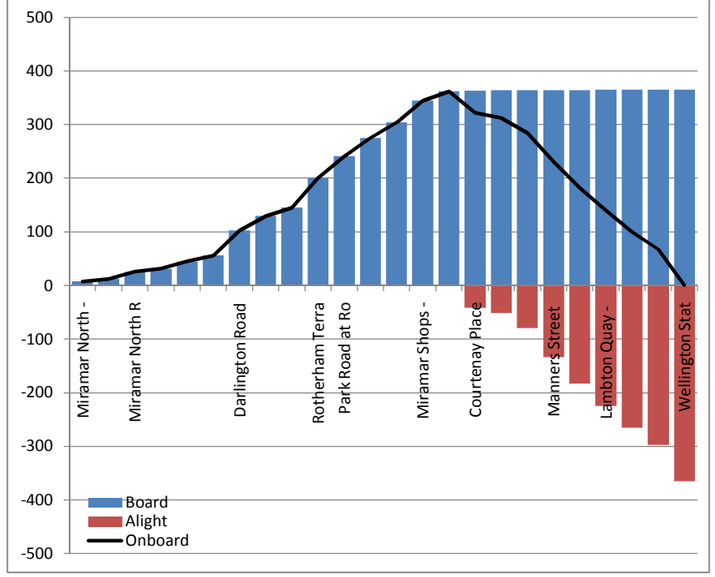
R30 Outbound - Average Thursday Cumulative Boardings and Max Alightings



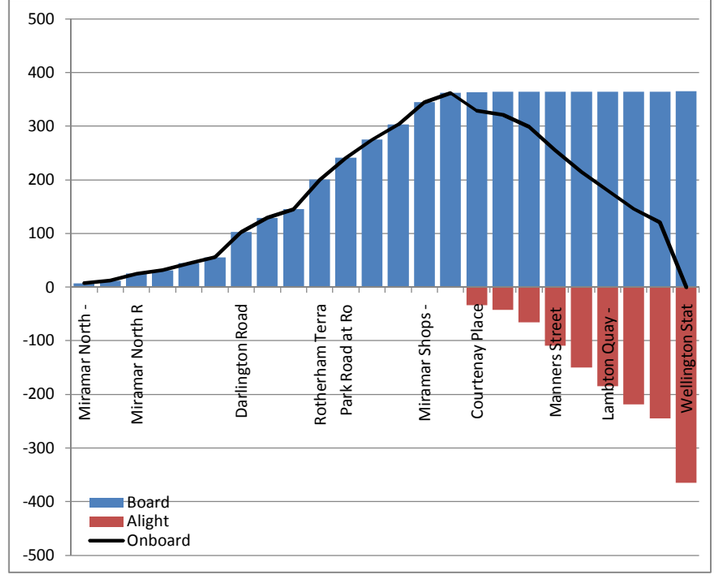
R31 Inbound - Average Thursday Boardings and Alightings



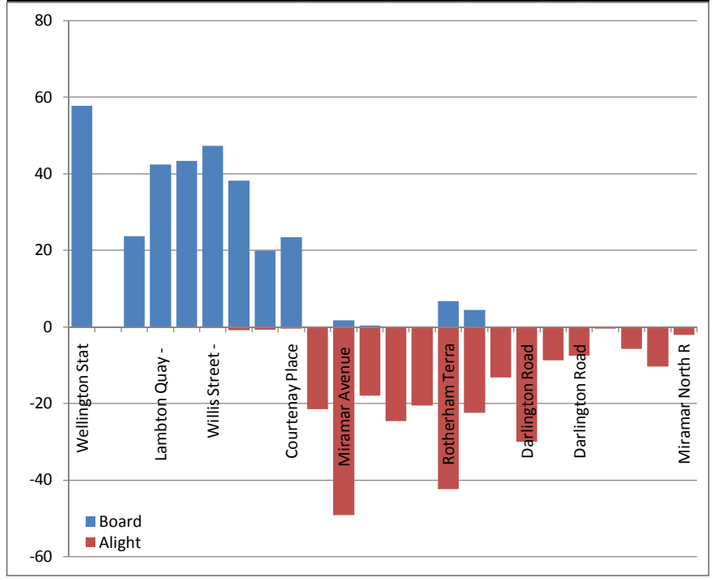
R31 Inbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



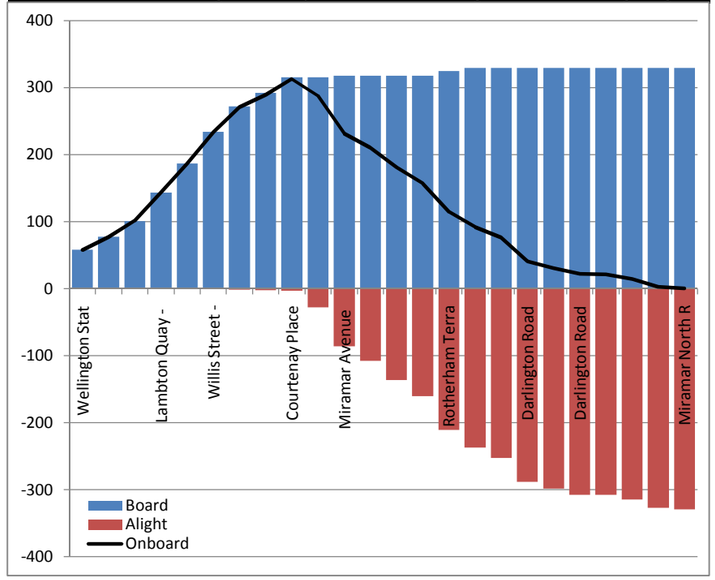
R31 Inbound - Average Thursday Cumulative Boardings and Max Alightings



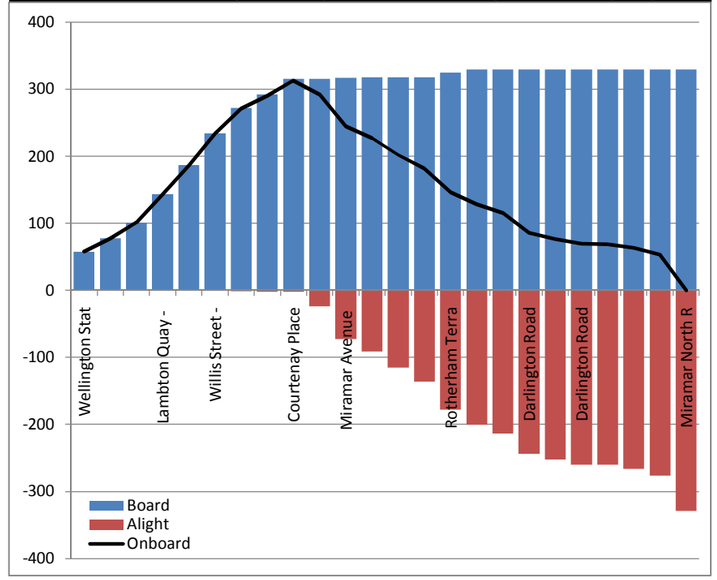
R31 Outbound - Average Thursday Boardings and Alightings



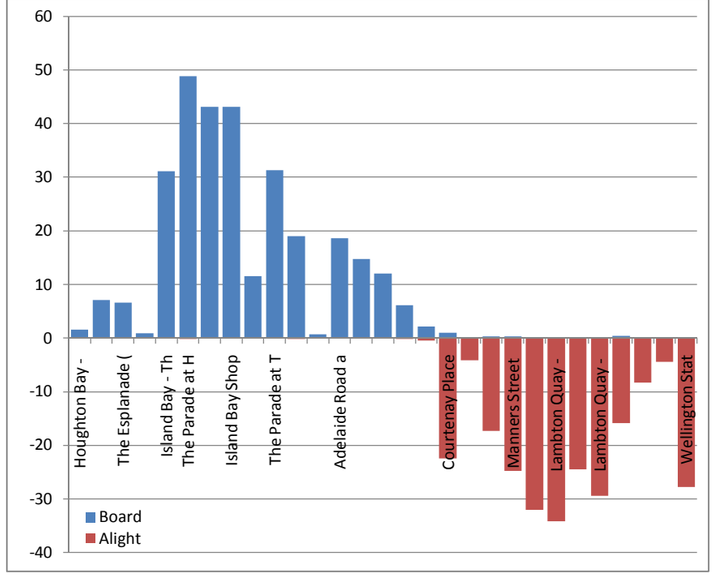
R31 Outbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



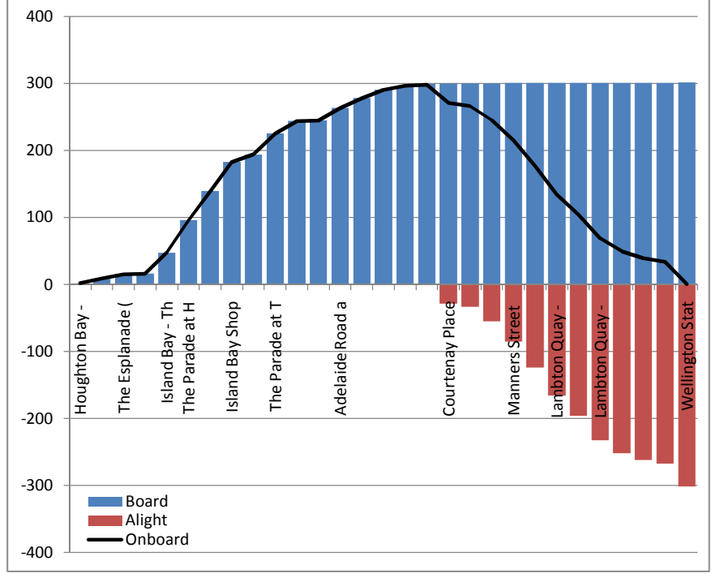
R31 Outbound - Average Thursday Cumulative Boardings and Max Alightings



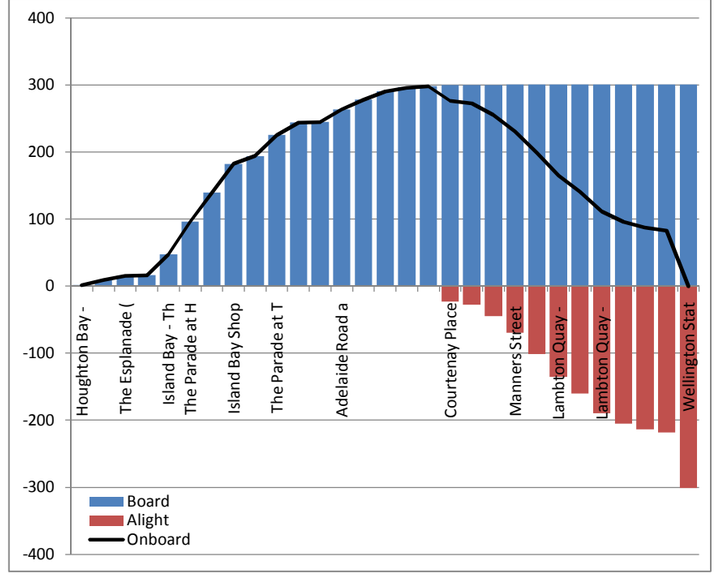
R32 Inbound - Average Thursday Boardings and Alightings



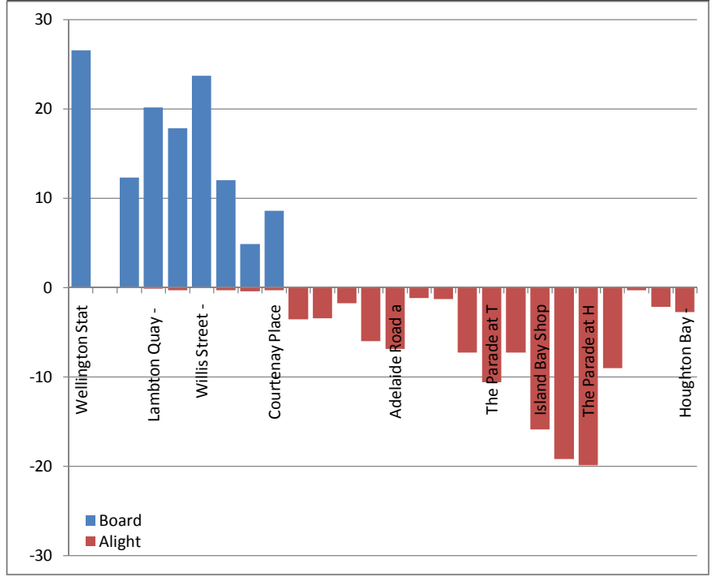
R32 Inbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



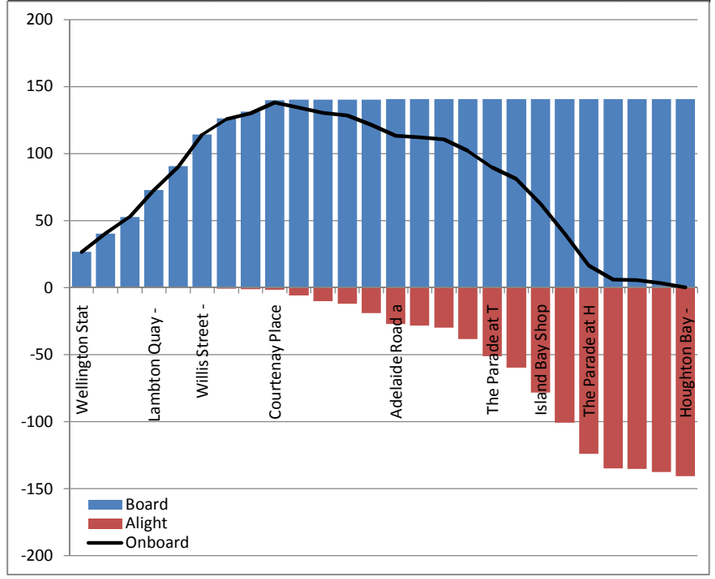
R32 Inbound - Average Thursday Cumulative Boardings and Max Alightings



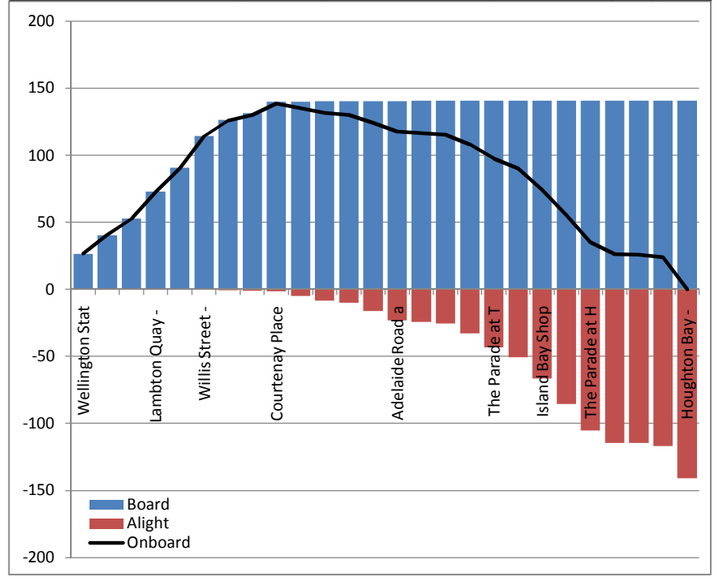
R32 Outbound - Average Thursday Boardings and Alightings



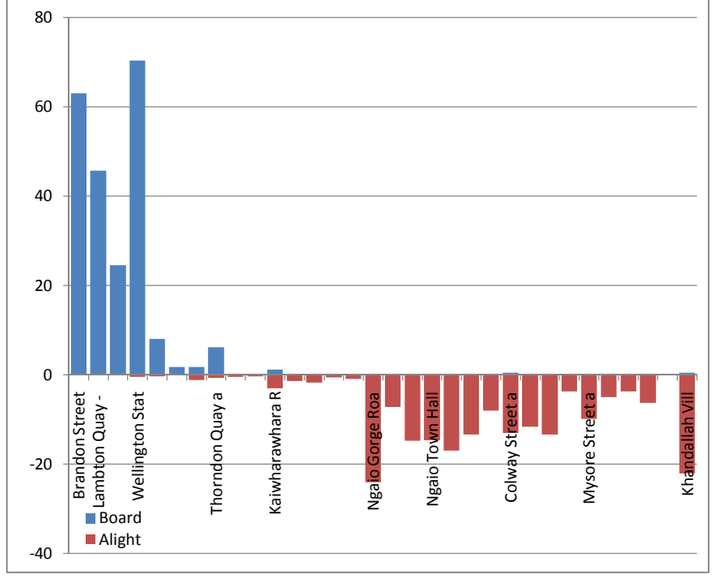
R32 Outbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



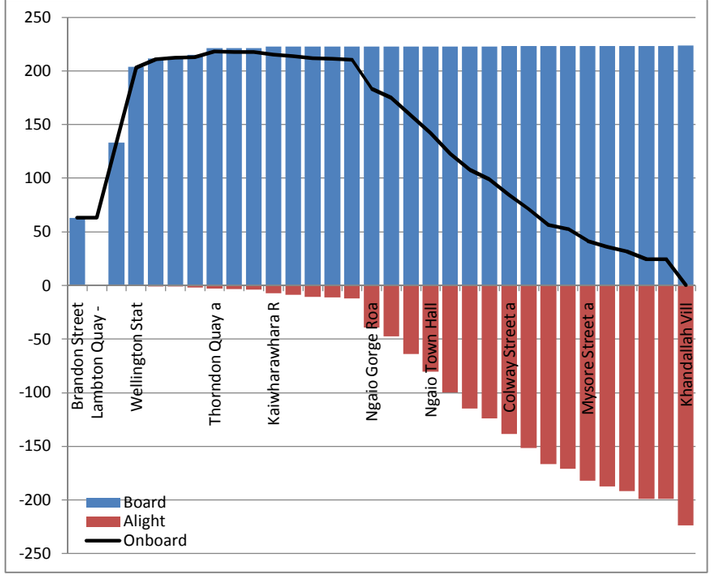
R32 Outbound - Average Thursday Cumulative Boardings and Max Alightings



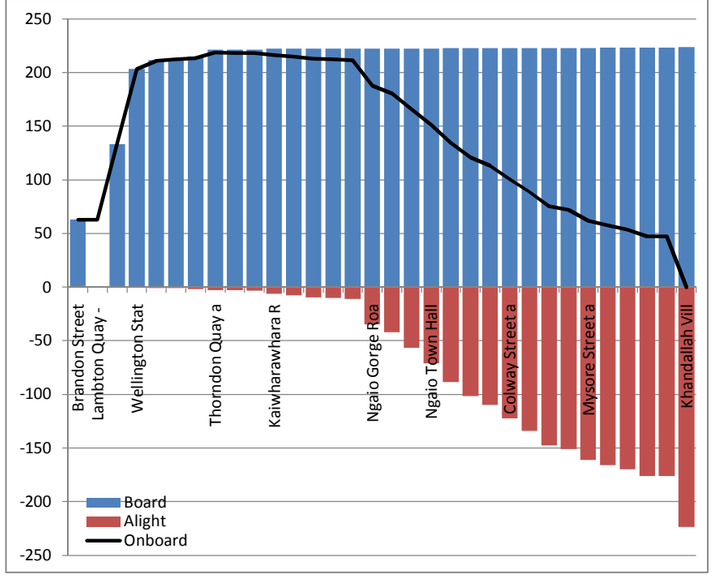
R45 Inbound - Average Thursday Boardings and Alightings



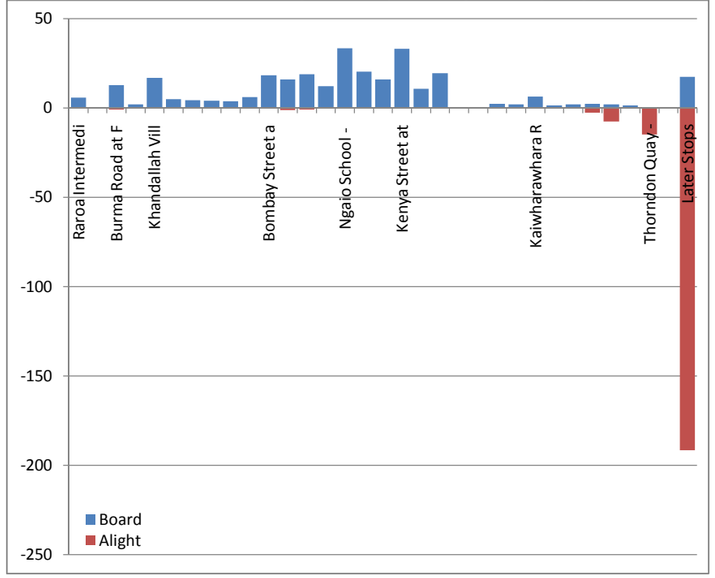
R45 Inbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



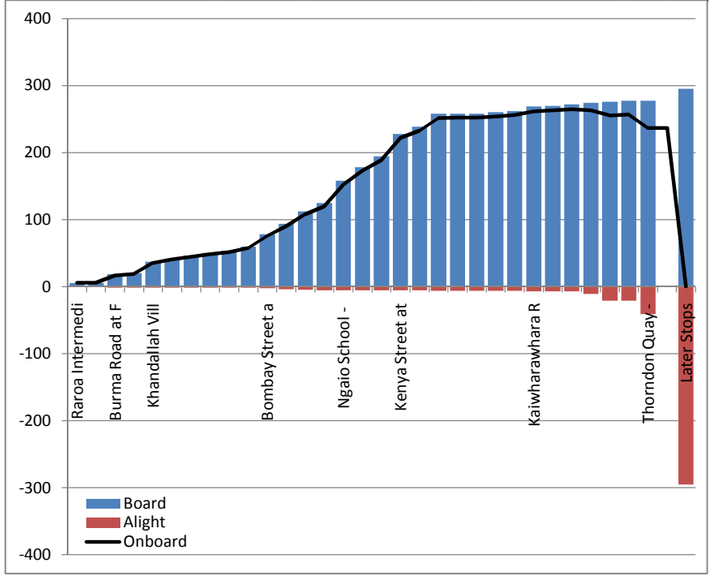
R45 Inbound - Average Thursday Cumulative Boardings and Max Alightings



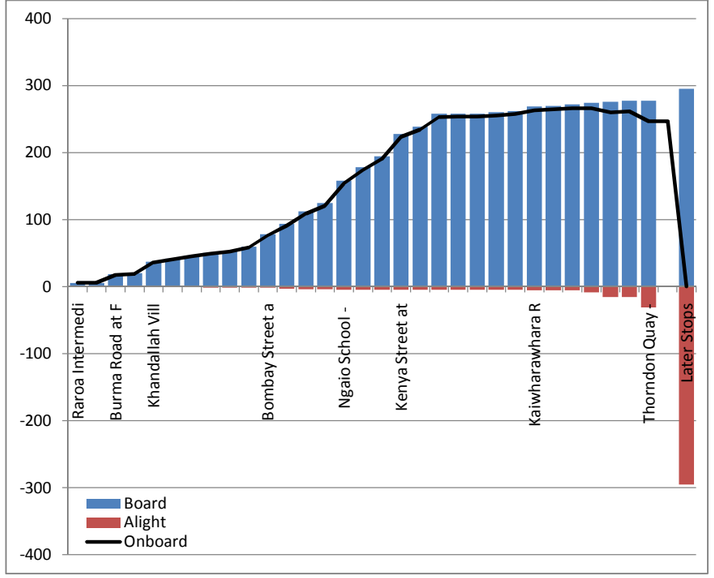
R45 Outbound - Average Thursday Boardings and Alightings



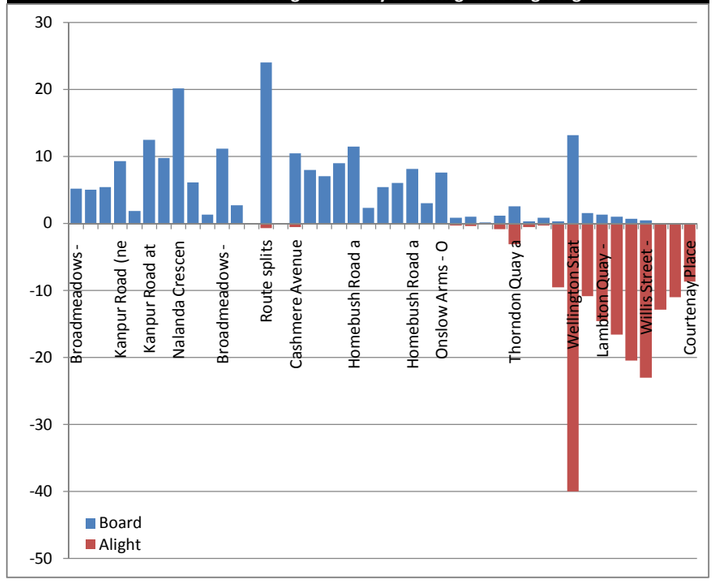
R45 Outbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



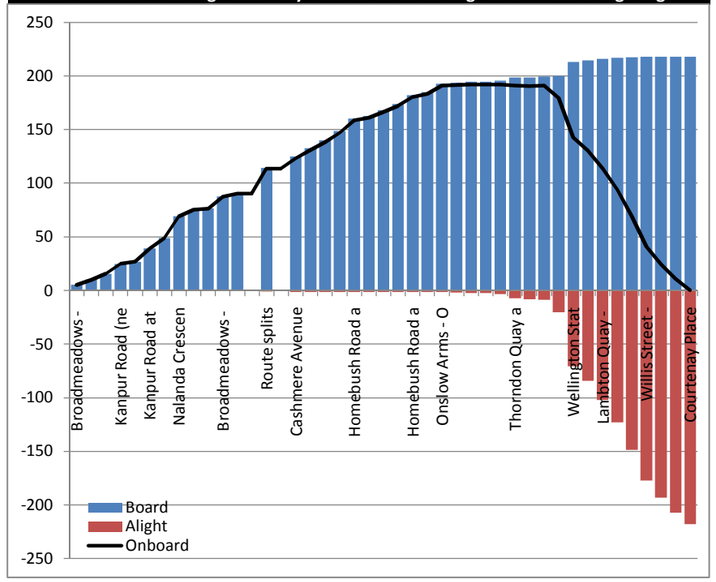
R45 Outbound - Average Thursday Cumulative Boardings and Max Alightings



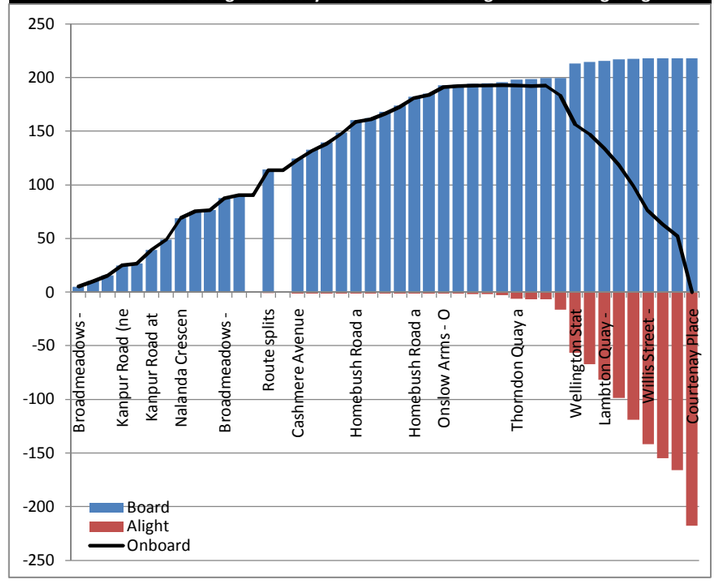
R46 Inbound - Average Thursday Boardings and Alightings



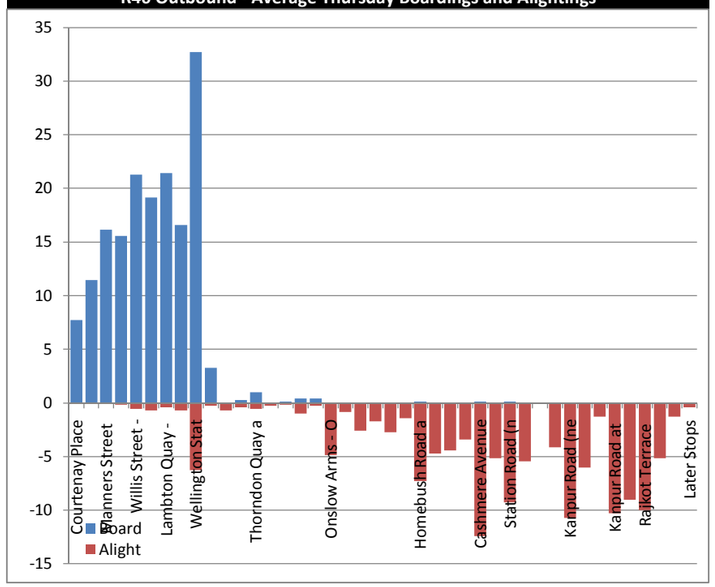
R46 Inbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



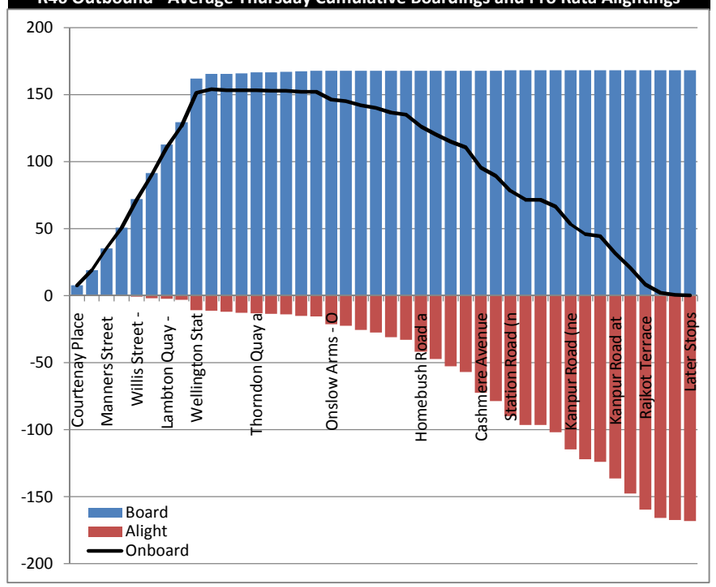
R46 Inbound - Average Thursday Cumulative Boardings and Max Alightings



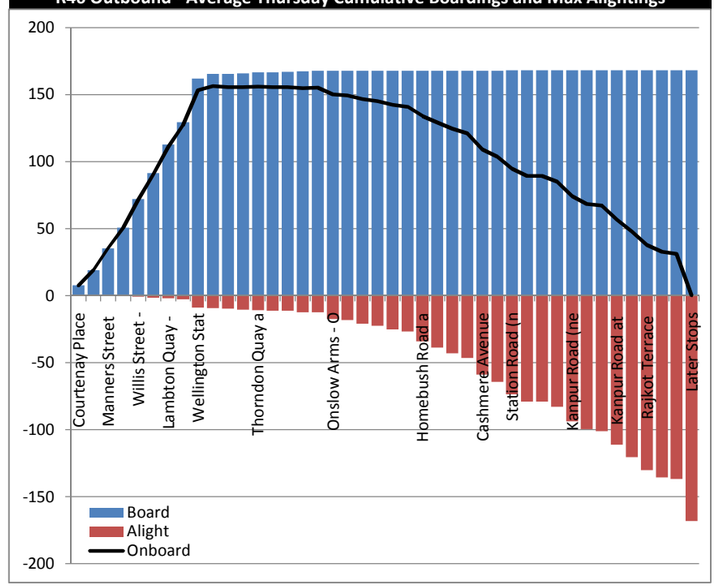
R46 Outbound - Average Thursday Boardings and Alightings



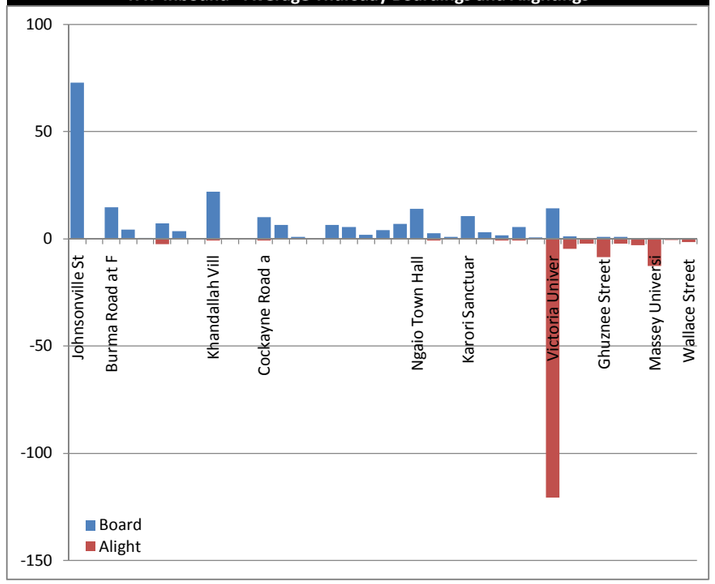
R46 Outbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



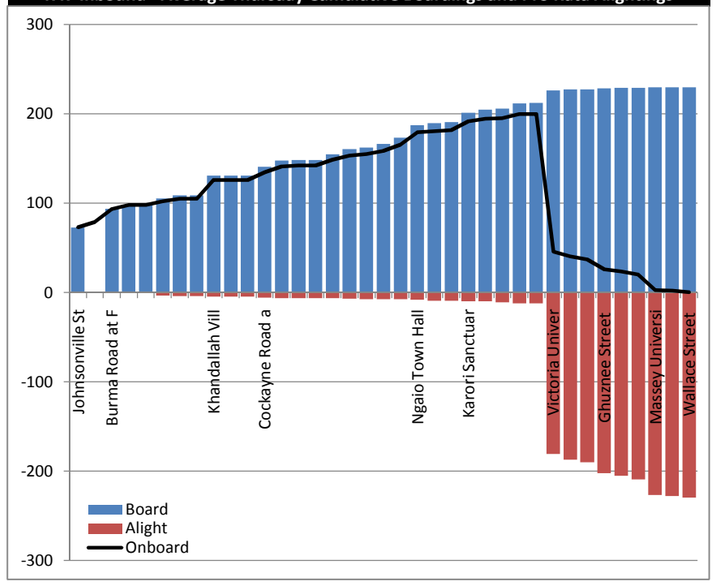
R46 Outbound - Average Thursday Cumulative Boardings and Max Alightings



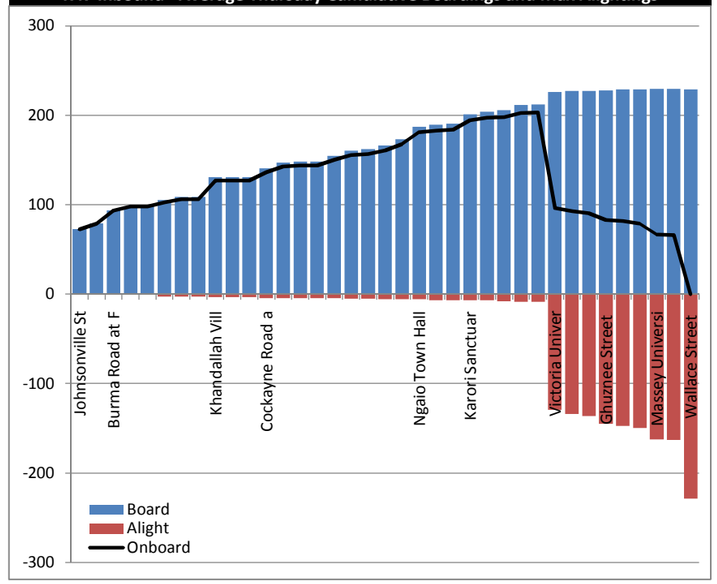
R47 Inbound - Average Thursday Boardings and Alightings



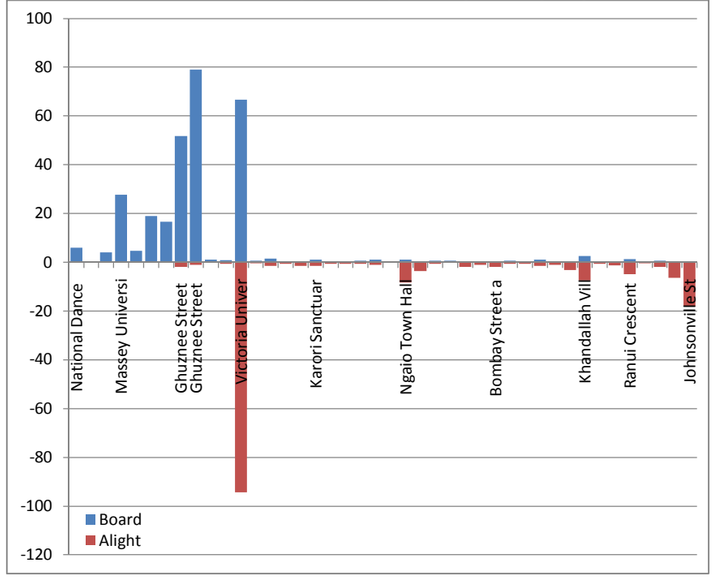
R47 Inbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



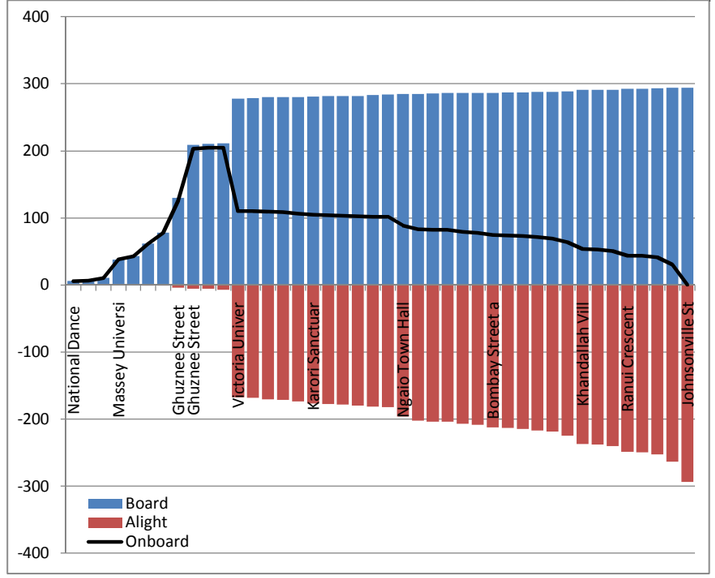
R47 Inbound - Average Thursday Cumulative Boardings and Max Alightings



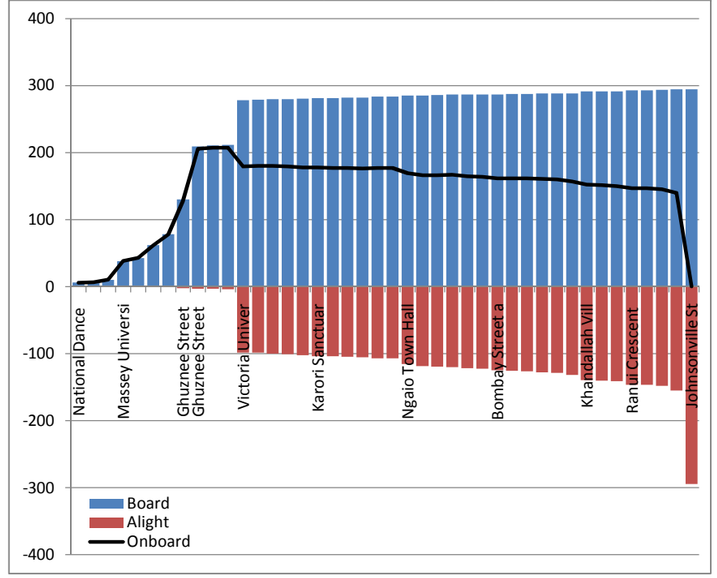
R47 Outbound - Average Thursday Boardings and Alightings



R47 Outbound - Average Thursday Cumulative Boardings and Pro Rata Alightings



R47 Outbound - Average Thursday Cumulative Boardings and Max Alightings

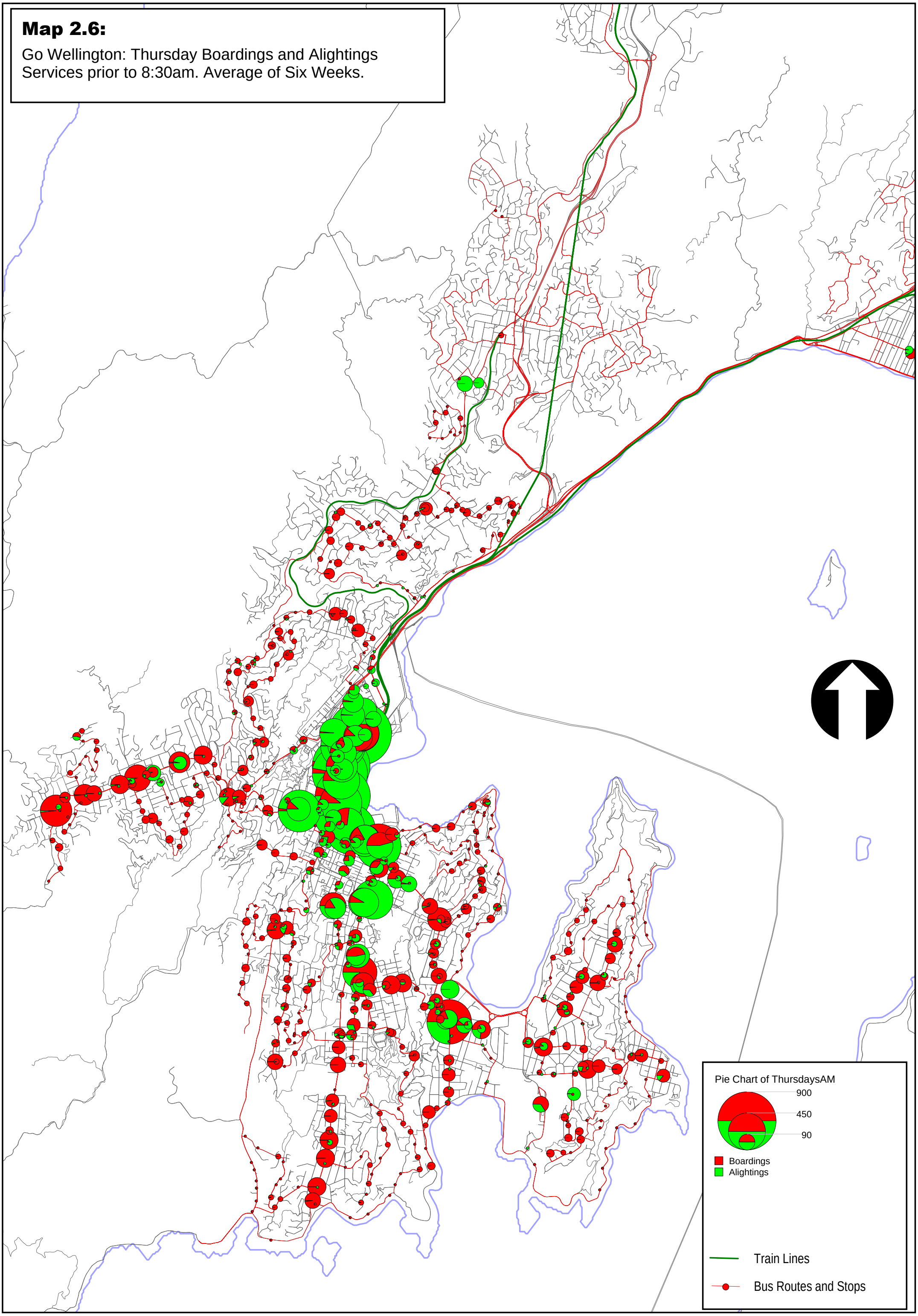


Appendix D

Mapping of Boardings and Alighting: Go Wellington

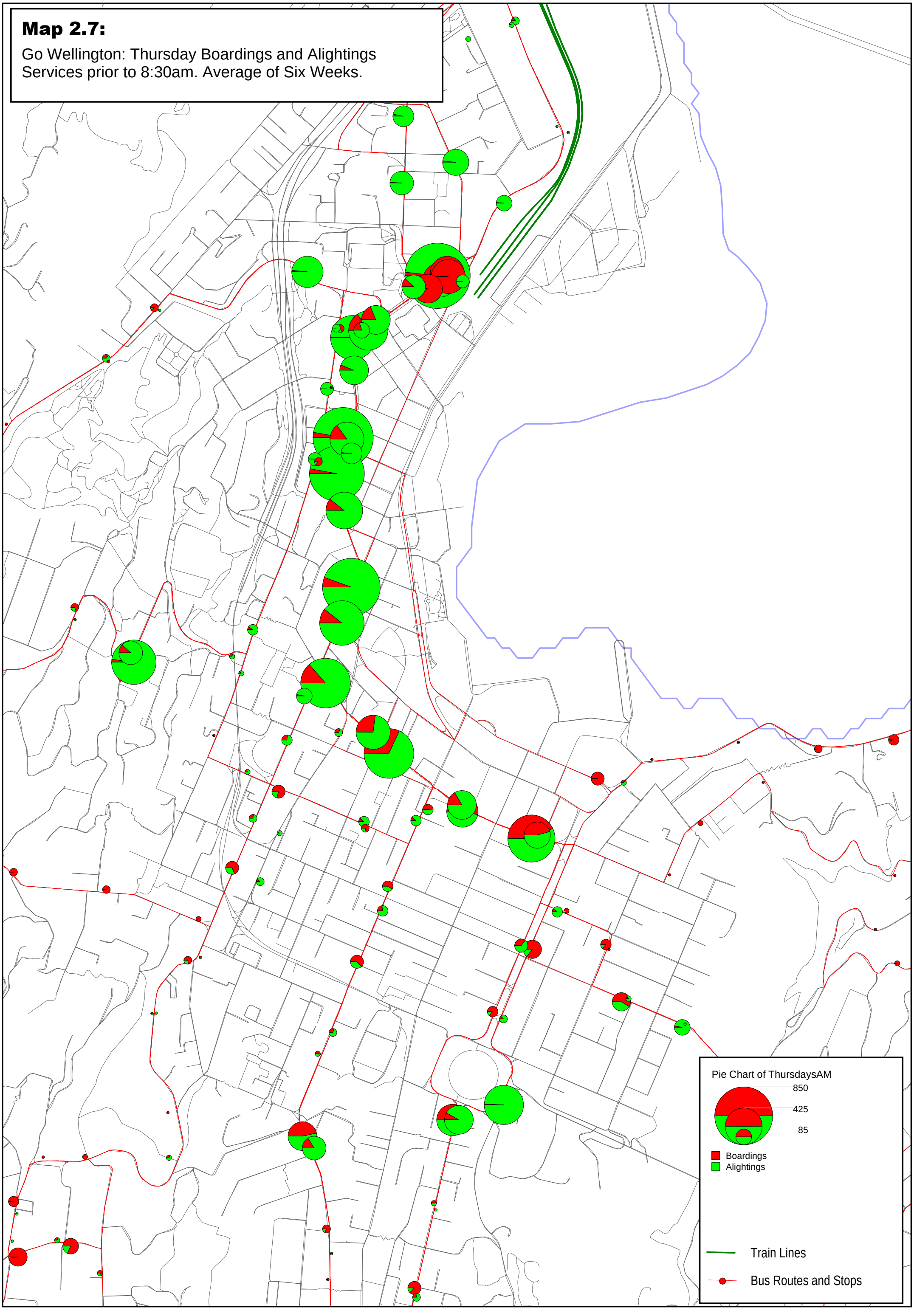
Map 2.6:

Go Wellington: Thursday Boardings and Alightings
Services prior to 8:30am. Average of Six Weeks.



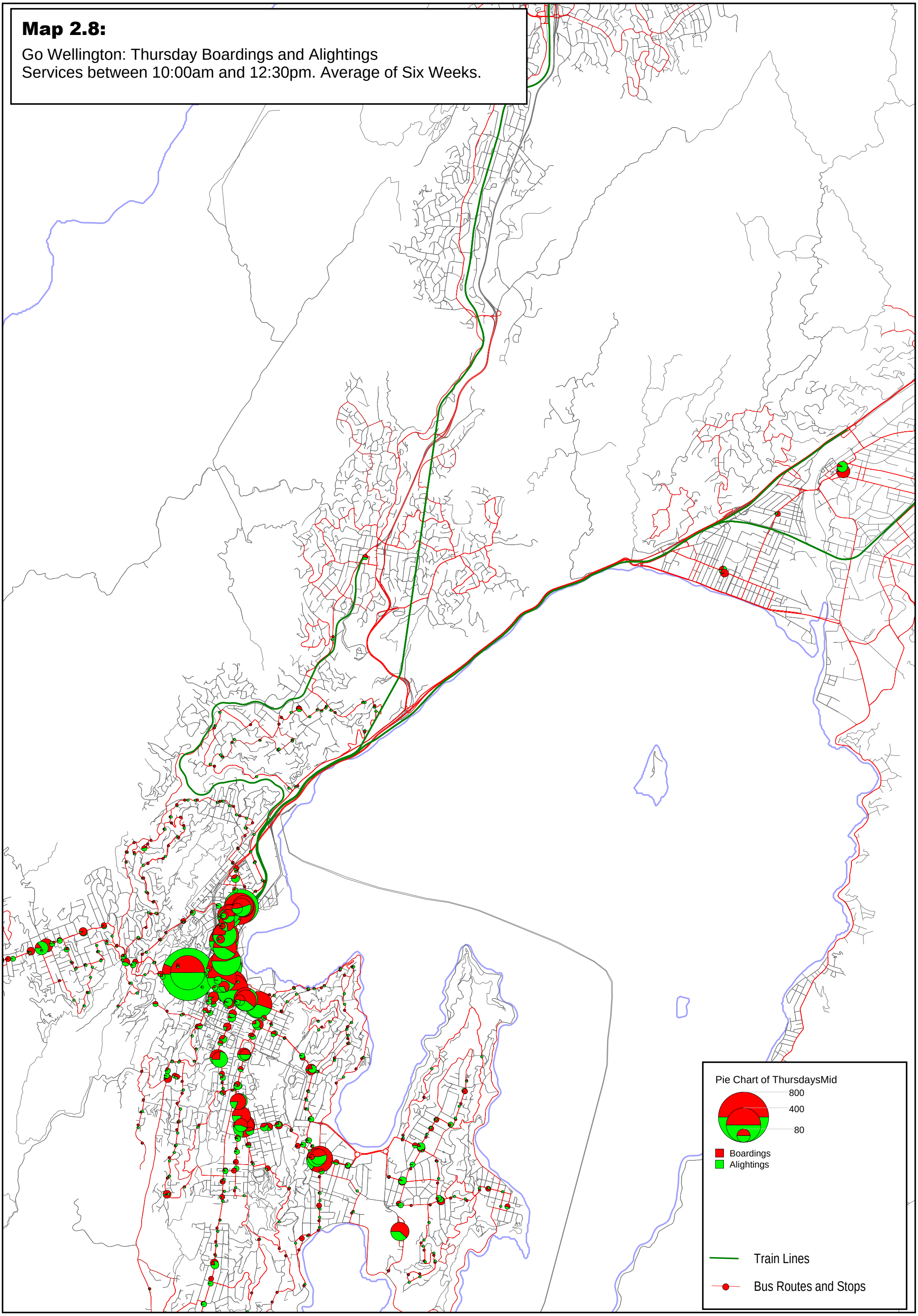
Map 2.7:

Go Wellington: Thursday Boardings and Alightings
Services prior to 8:30am. Average of Six Weeks.



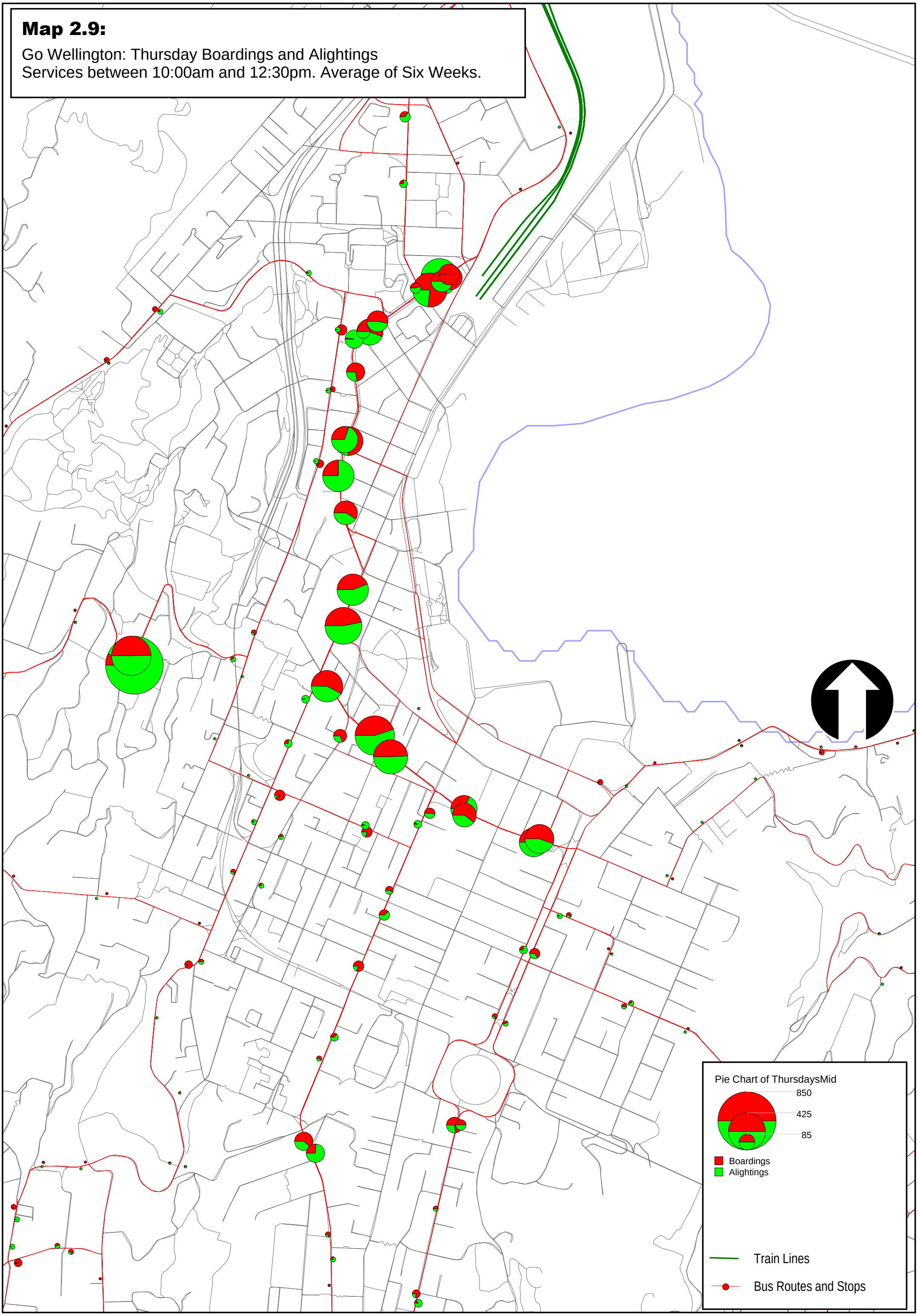
Map 2.8:

Go Wellington: Thursday Boardings and Alightings
Services between 10:00am and 12:30pm. Average of Six Weeks.



Map 2.9:

Go Wellington: Thursday Boardings and Alightings
Services between 10:00am and 12:30pm. Average of Six Weeks.

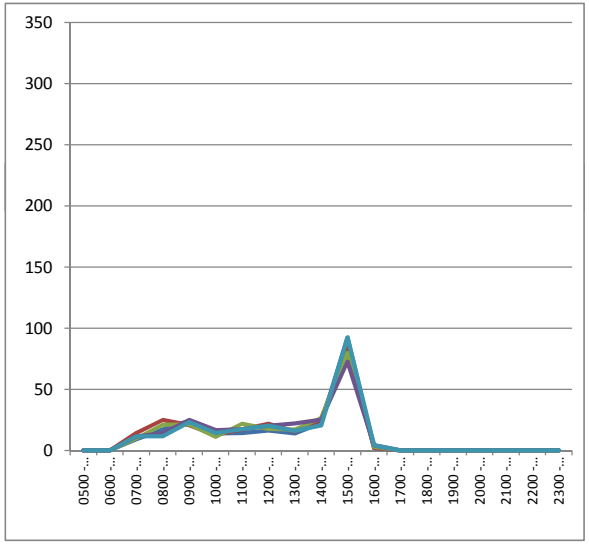


Appendix E

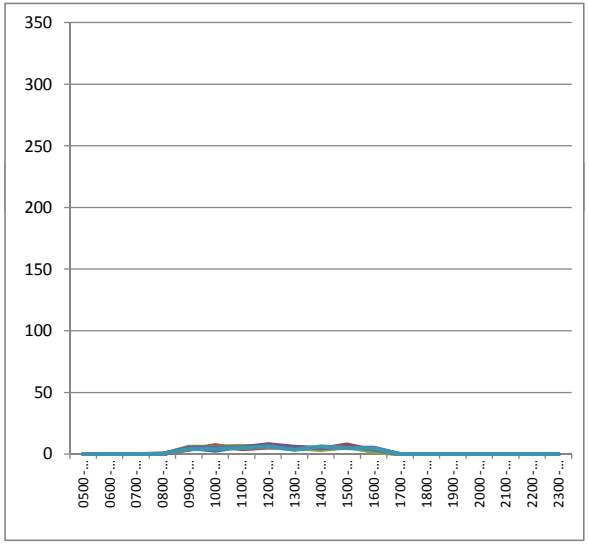
Boardings by Time of Day and Day of Week, by Route: Mana

Average Boardings per Route per Hour

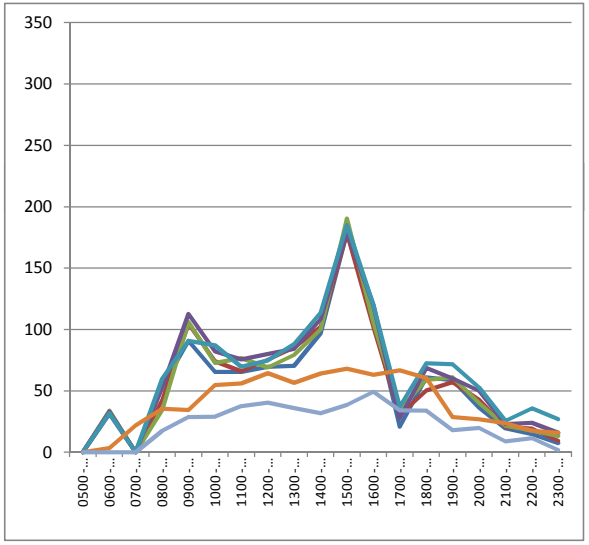
ROUTE 211	M	Tu	W	Th	F	Sa	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0		
0600 - 0700	0.0	0.0	0.0	0.0	0.0		
0700 - 0800	9.0	14.1	9.9	11.4	11.6		
0800 - 0900	17.1	24.9	21.1	14.1	11.7		
0900 - 1000	24.3	20.7	21.3	24.9	23.1		
1000 - 1100	13.9	13.0	11.1	16.6	14.1		
1100 - 1200	14.3	17.0	21.7	17.4	17.3		
1200 - 1300	16.4	21.9	17.7	20.3	20.3		
1300 - 1400	14.0	15.4	17.0	22.1	16.1		
1400 - 1500	22.7	25.3	26.4	25.3	20.4		
1500 - 1600	92.1	84.0	79.6	72.7	92.4		
1600 - 1700	2.0	2.1	3.0	4.1	4.1		
1700 - 1800	0.0	0.0	0.0	0.0	0.0		
1800 - 1900	0.0	0.0	0.0	0.0	0.0		
1900 - 2000	0.0	0.0	0.0	0.0	0.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		
2200 - 2300	0.0	0.0	0.0	0.0	0.0		
2300 - 2400	0.0	0.0	0.0	0.0	0.0		



ROUTE 50	M	Tu	W	Th	F	Sa	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0		
0600 - 0700	0.0	0.0	0.0	0.0	0.0		
0700 - 0800	0.0	0.0	0.0	0.0	0.0		
0800 - 0900	0.0	0.3	0.0	0.0	0.1		
0900 - 1000	5.0	3.6	5.9	5.0	4.1		
1000 - 1100	2.9	7.1	5.9	5.3	4.3		
1100 - 1200	6.0	4.0	6.6	5.4	4.9		
1200 - 1300	6.3	5.4	5.7	7.9	6.1		
1300 - 1400	4.4	5.1	5.1	5.9	3.4		
1400 - 1500	4.3	4.4	3.1	4.7	6.1		
1500 - 1600	5.0	7.6	5.9	6.1	4.9		
1600 - 1700	5.1	2.9	1.7	3.7	4.6		
1700 - 1800	0.0	0.0	0.0	0.0	0.0		
1800 - 1900	0.0	0.0	0.0	0.0	0.0		
1900 - 2000	0.0	0.0	0.0	0.0	0.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		
2200 - 2300	0.0	0.0	0.0	0.0	0.0		
2300 - 2400	0.0	0.0	0.0	0.0	0.0		



ROUTE 52	M	Tu	W	Th	F	Su	Su
0500 - 0600	0.0	0.0	0.0	0.1	0.0	0.0	0.0
0600 - 0700	31.3	32.3	34.0	33.0	31.7	3.4	0.0
0700 - 0800	0.1	0.0	0.0	0.0	0.0	21.9	0.0
0800 - 0900	52.9	42.9	34.3	52.4	59.9	35.6	17.6
0900 - 1000	90.9	104.7	106.1	112.7	90.7	34.3	28.6
1000 - 1100	65.4	74.1	72.9	82.1	87.0	54.7	29.0
1100 - 1200	65.4	66.0	76.6	75.6	69.6	56.1	37.6
1200 - 1300	69.7	75.3	69.0	80.0	74.7	64.4	40.3
1300 - 1400	70.3	85.1	79.3	84.1	88.1	56.6	36.0
1400 - 1500	97.0	101.9	100.1	108.6	113.6	64.1	31.9
1500 - 1600	178.9	178.7	190.3	179.7	185.1	68.0	38.6
1600 - 1700	111.6	101.9	105.7	119.7	119.4	63.0	49.3
1700 - 1800	20.9	30.6	35.0	27.7	37.0	66.9	34.1
1800 - 1900	61.0	50.4	59.0	68.6	72.4	60.6	33.9
1900 - 2000	58.6	57.1	61.0	60.0	71.6	28.7	17.9
2000 - 2100	36.3	42.9	40.1	50.1	52.6	26.9	19.9
2100 - 2200	19.6	20.6	21.6	22.9	25.4	23.7	8.9
2200 - 2300	14.9	19.3	17.7	23.9	35.7	17.6	11.4
2300 - 2400	7.4	9.4	13.3	16.0	26.9	15.9	1.7

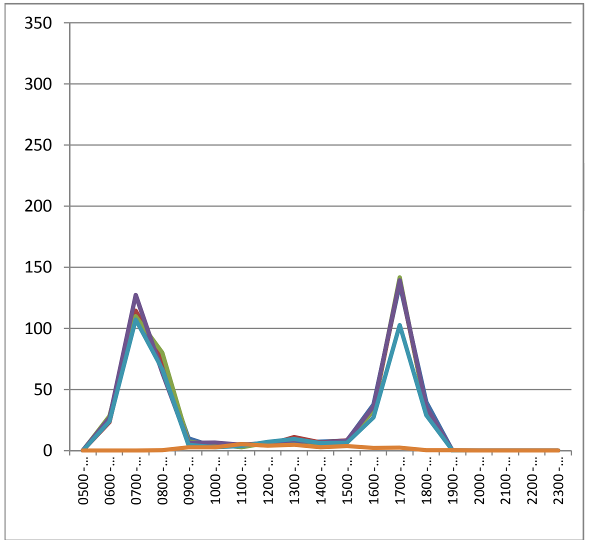


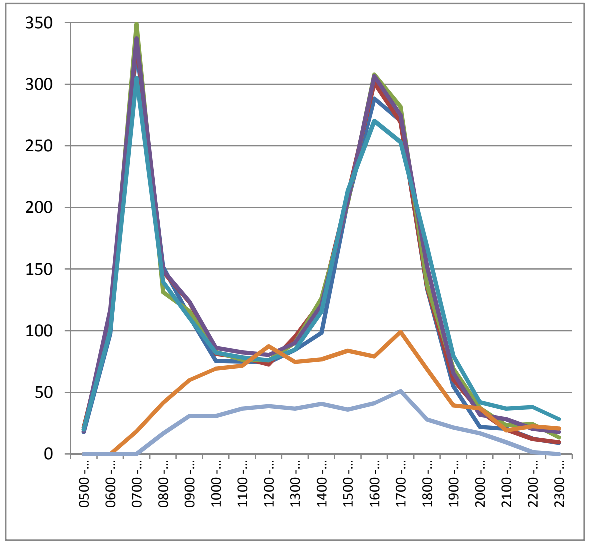
Average Boardings per Route per Hour

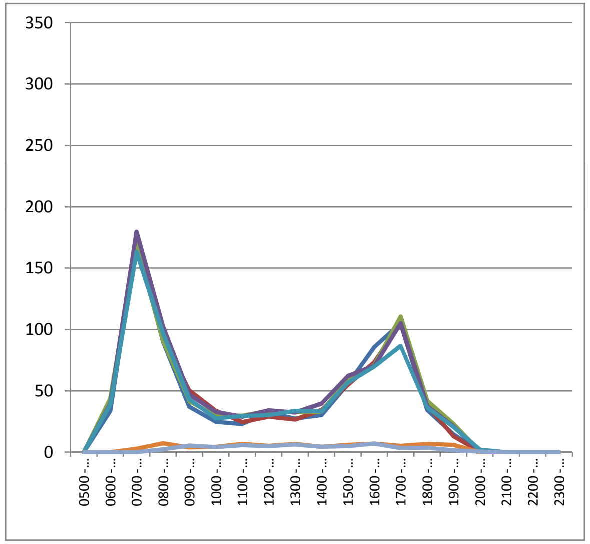
ROUTE 53	M	Tu	W	Th	F	Sa	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0	0.0	
0600 - 0700	26.9	23.0	28.4	26.4	24.0	0.0	
0700 - 0800	108.7	114.6	110.1	127.4	107.1	0.0	
0800 - 0900	70.3	75.9	80.1	64.0	66.7	0.3	
0900 - 1000	10.1	6.9	7.3	6.3	4.9	2.7	
1000 - 1100	3.0	5.3	5.0	6.6	2.6	2.7	
1100 - 1200	5.3	5.0	2.7	4.7	3.7	5.3	
1200 - 1300	4.1	4.9	6.4	6.4	7.1	4.0	
1300 - 1400	6.4	11.0	9.1	8.7	9.4	4.9	
1400 - 1500	7.4	6.7	5.3	6.4	6.0	2.6	
1500 - 1600	8.1	8.4	6.9	8.1	6.4	3.7	
1600 - 1700	37.9	32.4	33.6	36.0	27.0	2.3	
1700 - 1800	136.0	139.6	141.7	139.3	102.9	2.4	
1800 - 1900	40.0	32.0	31.4	35.6	28.9	0.4	
1900 - 2000	0.0	0.0	0.0	0.0	0.0	0.3	
2000 - 2100	0.0	0.0	0.0	0.0	0.0	0.0	
2100 - 2200	0.0	0.0	0.0	0.0	0.0	0.0	
2200 - 2300	0.0	0.0	0.0	0.0	0.0	0.0	
2300 - 2400	0.0	0.0	0.0	0.0	0.0	0.0	

ROUTE 54	M	Tu	W	Th	F	Sa	Su
0500 - 0600	17.7	21.4	20.0	18.4	20.0	0.0	0.0
0600 - 0700	97.9	108.3	107.7	117.0	100.1	0.0	0.0
0700 - 0800	329.0	334.3	349.0	337.1	305.0	18.3	0.0
0800 - 0900	151.7	147.9	131.4	148.9	139.7	41.6	16.6
0900 - 1000	111.6	123.1	115.9	123.9	110.4	60.0	30.7
1000 - 1100	75.4	81.1	82.7	86.1	82.3	69.1	30.7
1100 - 1200	75.0	78.4	76.4	82.6	78.3	71.6	36.9
1200 - 1300	74.1	72.7	75.9	80.3	76.0	87.4	38.9
1300 - 1400	84.3	95.1	90.1	90.0	84.4	74.7	36.7
1400 - 1500	98.4	123.7	126.3	121.0	115.4	76.7	40.6
1500 - 1600	205.1	209.9	203.6	205.0	213.4	83.9	36.0
1600 - 1700	288.4	301.1	307.9	306.7	270.3	79.0	41.1
1700 - 1800	270.1	269.3	281.9	275.0	253.1	99.0	51.0
1800 - 1900	133.9	134.9	137.0	152.1	167.9	68.7	28.0
1900 - 2000	54.9	60.1	69.1	65.7	79.6	39.4	21.4
2000 - 2100	22.0	34.7	37.3	31.9	41.9	37.1	16.9
2100 - 2200	20.3	20.0	23.1	28.1	36.9	19.1	9.6
2200 - 2300	12.3	12.1	24.3	20.4	38.1	22.4	1.6
2300 - 2400	9.0	9.6	13.3	17.7	28.1	20.6	0.0

ROUTE 55	M	Tu	W	Th	F	Su	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0600 - 0700	33.7	40.4	44.0	39.6	38.9	0.0	0.0
0700 - 0800	172.6	176.9	169.7	179.7	163.1	2.9	0.0
0800 - 0900	89.9	93.7	90.6	102.1	96.7	7.3	2.4
0900 - 1000	37.1	50.3	41.6	47.0	43.1	3.9	5.4
1000 - 1100	24.9	33.6	30.0	32.9	27.6	4.4	4.1
1100 - 1200	23.0	24.6	29.7	29.0	29.4	6.7	5.7
1200 - 1300	32.1	28.9	33.7	34.1	30.3	5.1	5.0
1300 - 1400	27.4	26.6	32.6	32.3	33.6	6.7	6.1
1400 - 1500	30.1	34.4	33.1	39.7	33.3	4.4	4.4
1500 - 1600	55.6	54.9	58.6	62.0	56.6	6.0	5.0
1600 - 1700	85.7	73.4	71.3	70.4	70.0	7.1	7.0
1700 - 1800	105.0	105.0	110.6	105.1	86.6	5.3	3.4
1800 - 1900	34.3	38.1	42.0	37.4	36.6	6.9	3.7
1900 - 2000	14.6	13.1	23.1	21.1	20.7	5.9	1.4
2000 - 2100	0.6	0.4	0.4	0.6	2.0	0.0	0.6
2100 - 2200	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2200 - 2300	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2300 - 2400	0.0	0.0	0.0	0.0	0.0	0.0	0.0

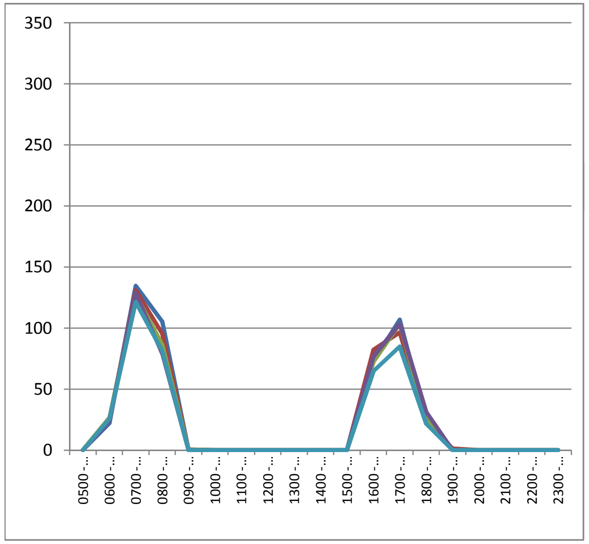




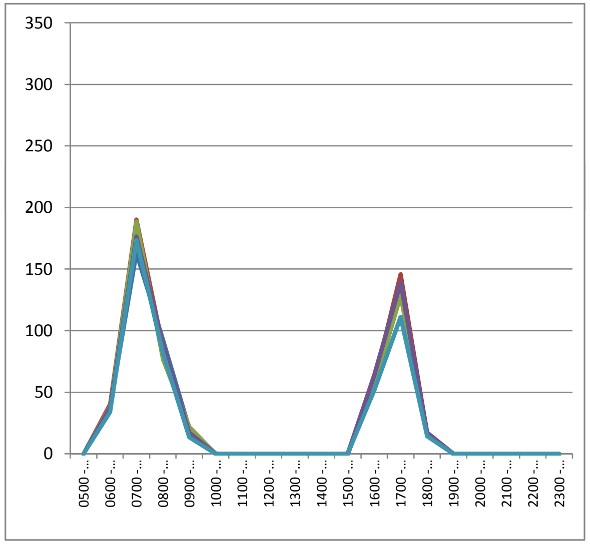


Average Boardings per Route per Hour

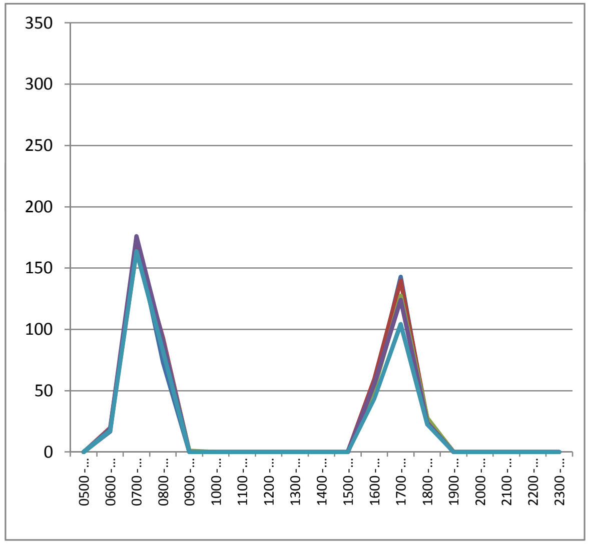
	ROUTE 56						
	M	Tu	W	Th	F	Sa	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0		
0600 - 0700	22.1	24.6	26.6	24.1	25.7		
0700 - 0800	134.7	131.1	127.0	129.0	121.3		
0800 - 0900	105.4	95.4	86.6	78.6	81.1		
0900 - 1000	0.4	0.7	0.7	0.0	0.0		
1000 - 1100	0.0	0.0	0.0	0.0	0.0		
1100 - 1200	0.0	0.0	0.0	0.0	0.0		
1200 - 1300	0.0	0.0	0.0	0.0	0.0		
1300 - 1400	0.0	0.0	0.0	0.0	0.0		
1400 - 1500	0.0	0.0	0.0	0.0	0.1		
1500 - 1600	0.0	0.0	0.0	0.0	0.0		
1600 - 1700	73.0	82.4	72.3	76.7	64.7		
1700 - 1800	106.9	96.4	103.4	103.4	84.9		
1800 - 1900	23.3	24.6	25.6	31.3	21.6		
1900 - 2000	0.0	1.4	0.0	0.0	0.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		
2200 - 2300	0.0	0.0	0.0	0.0	0.0		
2300 - 2400	0.0	0.0	0.0	0.0	0.0		



	ROUTE 57						
	M	Tu	W	Th	F	Sa	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0		
0600 - 0700	38.0	40.4	38.7	37.6	33.9		
0700 - 0800	163.3	190.3	188.6	176.4	173.6		
0800 - 0900	92.6	86.7	77.0	89.0	82.0		
0900 - 1000	20.7	14.3	21.9	17.0	13.3		
1000 - 1100	0.1	0.0	0.0	0.0	0.0		
1100 - 1200	0.0	0.0	0.0	0.0	0.0		
1200 - 1300	0.0	0.0	0.0	0.0	0.0		
1300 - 1400	0.0	0.0	0.0	0.0	0.0		
1400 - 1500	0.0	0.0	0.0	0.0	0.0		
1500 - 1600	0.0	0.1	0.0	0.0	0.0		
1600 - 1700	61.4	58.7	55.4	64.1	51.4		
1700 - 1800	138.7	145.9	128.4	139.0	111.0		
1800 - 1900	15.3	16.3	15.7	17.0	14.1		
1900 - 2000	0.0	0.0	0.0	0.0	0.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		
2200 - 2300	0.0	0.0	0.0	0.0	0.0		
2300 - 2400	0.0	0.0	0.0	0.0	0.0		

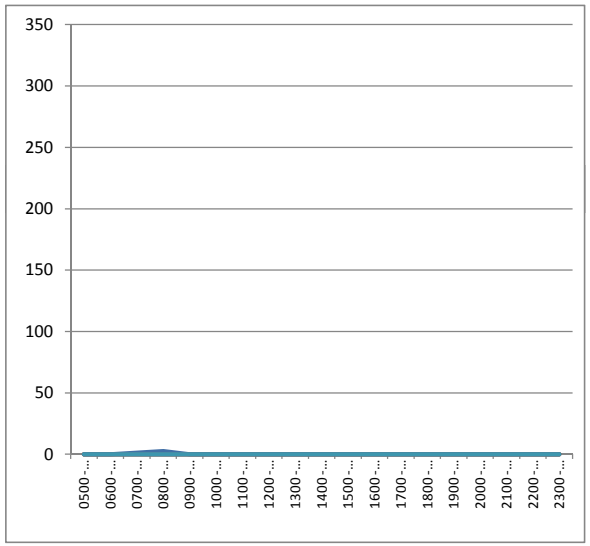


	ROUTE 58						
	M	Tu	W	Th	F	Su	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0		
0600 - 0700	16.6	19.9	19.0	19.0	17.6		
0700 - 0800	173.7	167.9	163.1	176.1	163.9		
0800 - 0900	73.0	92.9	90.7	90.9	82.1		
0900 - 1000	0.0	0.4	1.0	0.0	0.0		
1000 - 1100	0.0	0.0	0.0	0.0	0.0		
1100 - 1200	0.0	0.0	0.0	0.0	0.0		
1200 - 1300	0.0	0.0	0.0	0.0	0.0		
1300 - 1400	0.0	0.0	0.0	0.0	0.0		
1400 - 1500	0.0	0.0	0.0	0.0	0.0		
1500 - 1600	0.0	0.0	0.0	0.0	0.0		
1600 - 1700	53.3	59.6	51.6	55.7	43.6		
1700 - 1800	143.0	139.9	127.6	124.1	104.4		
1800 - 1900	23.1	26.7	27.9	23.9	22.4		
1900 - 2000	0.0	0.0	0.0	0.0	0.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		
2200 - 2300	0.0	0.0	0.0	0.0	0.0		
2300 - 2400	0.0	0.0	0.0	0.0	0.0		



Average Boardings per Route per Hour

ROUTE 60							
	M	Tu	W	Th	F	Su	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0		
0600 - 0700	0.0	0.0	0.0	0.0	0.0		
0700 - 0800	1.3	0.0	0.0	0.0	0.0		
0800 - 0900	2.6	0.0	0.0	0.0	0.0		
0900 - 1000	0.0	0.0	0.0	0.0	0.0		
1000 - 1100	0.0	0.0	0.0	0.0	0.0		
1100 - 1200	0.0	0.0	0.0	0.0	0.0		
1200 - 1300	0.0	0.0	0.0	0.0	0.0		
1300 - 1400	0.0	0.0	0.0	0.0	0.0		
1400 - 1500	0.0	0.0	0.0	0.0	0.0		
1500 - 1600	0.0	0.0	0.0	0.0	0.0		
1600 - 1700	0.0	0.0	0.0	0.0	0.0		
1700 - 1800	0.0	0.0	0.0	0.0	0.0		
1800 - 1900	0.0	0.0	0.0	0.0	0.0		
1900 - 2000	0.0	0.0	0.0	0.0	0.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		
2200 - 2300	0.0	0.0	0.0	0.0	0.0		
2300 - 2400	0.0	0.0	0.0	0.0	0.0		



Average Boardings per Route per Hour

ROUTE 250CL

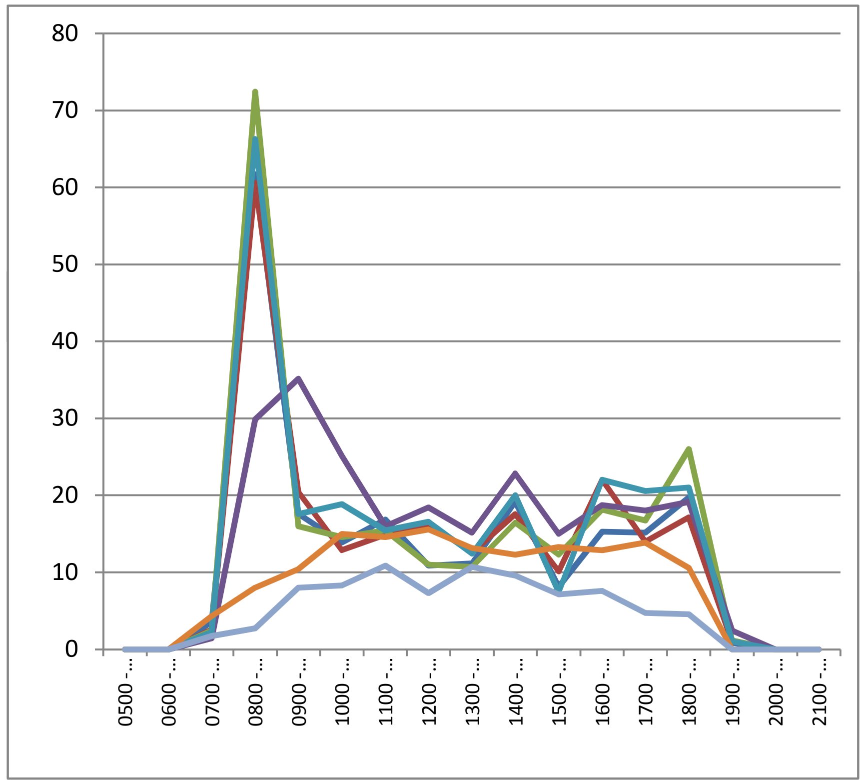
	M	Tu	W	Th	F	Sa	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0600 - 0700	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0700 - 0800	3.6	2.6	2.4	1.4	2.3	4.3	1.7
0800 - 0900	61.7	60.6	72.4	29.9	66.3	8.0	2.7
0900 - 1000	17.6	20.4	16.0	35.1	17.6	10.4	8.0
1000 - 1100	13.9	12.9	14.6	25.1	18.9	15.0	8.3
1100 - 1200	16.9	14.9	15.4	16.0	15.4	14.6	10.9
1200 - 1300	10.9	16.3	11.0	18.4	16.6	15.6	7.3
1300 - 1400	11.1	12.6	10.7	15.1	12.4	13.1	10.7
1400 - 1500	19.1	17.6	16.4	22.9	20.0	12.3	9.6
1500 - 1600	8.1	10.1	12.3	15.0	7.4	13.3	7.1
1600 - 1700	15.3	22.0	18.1	18.7	22.0	12.9	7.6
1700 - 1800	15.1	14.0	16.7	18.0	20.6	13.9	4.7
1800 - 1900	19.7	17.1	26.0	19.1	21.0	10.6	4.6
1900 - 2000	0.9	1.0	1.1	2.4	1.0	0.0	0.0
2000 - 2100	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2100 - 2200	0.0	0.0	0.0	0.0	0.0	0.0	0.0

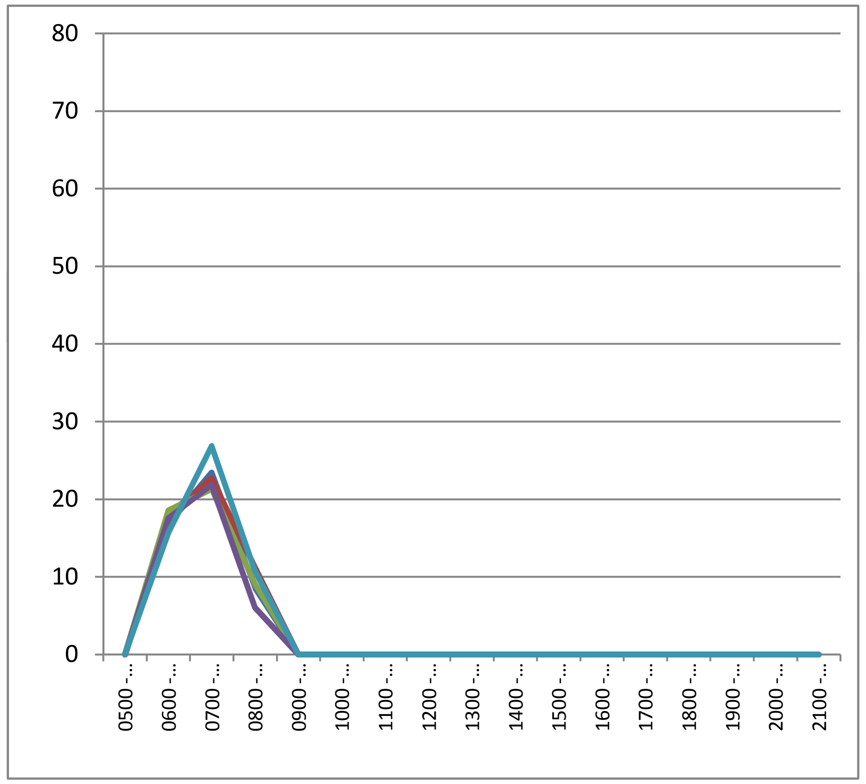
ROUTE 250IN

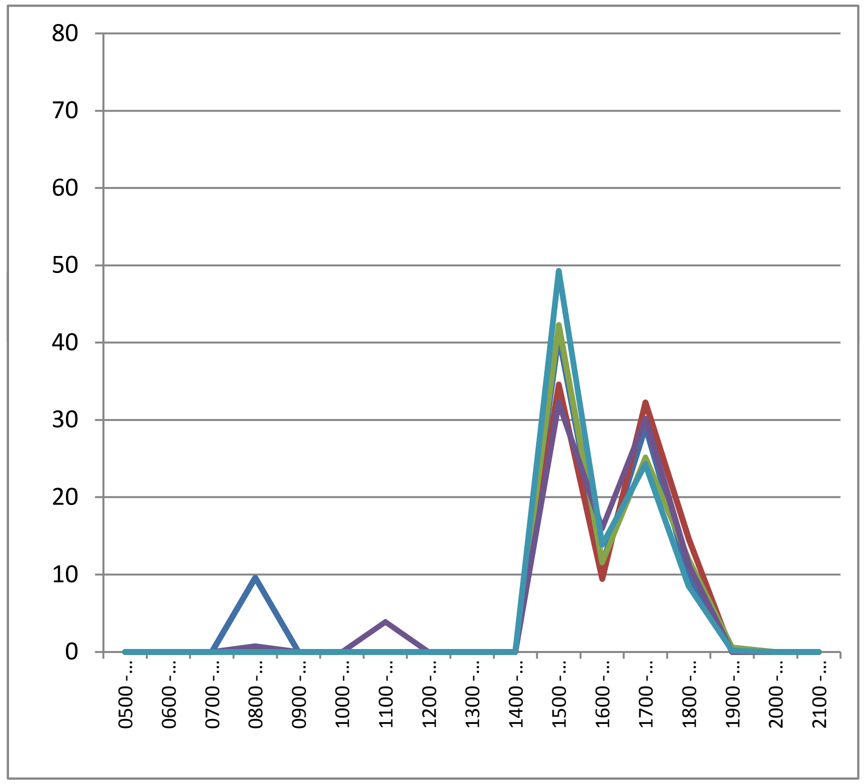
	M	Tu	W	Th	F	Sa	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0		
0600 - 0700	16.9	18.0	18.6	17.6	15.7		
0700 - 0800	23.4	22.7	21.3	21.9	26.9		
0800 - 0900	8.6	11.1	9.0	6.0	10.7		
0900 - 1000	0.0	0.0	0.0	0.0	0.0		
1000 - 1100	0.0	0.0	0.0	0.0	0.0		
1100 - 1200	0.0	0.0	0.0	0.0	0.0		
1200 - 1300	0.0	0.0	0.0	0.0	0.0		
1300 - 1400	0.0	0.0	0.0	0.0	0.0		
1400 - 1500	0.0	0.0	0.0	0.0	0.0		
1500 - 1600	0.0	0.0	0.0	0.0	0.0		
1600 - 1700	0.0	0.0	0.0	0.0	0.0		
1700 - 1800	0.0	0.0	0.0	0.0	0.0		
1800 - 1900	0.0	0.0	0.0	0.0	0.0		
1900 - 2000	0.0	0.0	0.0	0.0	0.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		

ROUTE 250JC

	M	Tu	W	Th	F	Su	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0		
0600 - 0700	0.0	0.0	0.0	0.0	0.0		
0700 - 0800	0.0	0.0	0.0	0.0	0.0		
0800 - 0900	9.6	0.0	0.0	0.7	0.0		
0900 - 1000	0.0	0.0	0.0	0.0	0.0		
1000 - 1100	0.0	0.0	0.0	0.0	0.0		
1100 - 1200	0.0	0.0	0.0	3.9	0.0		
1200 - 1300	0.0	0.0	0.0	0.0	0.0		
1300 - 1400	0.0	0.0	0.0	0.0	0.0		
1400 - 1500	0.0	0.0	0.0	0.0	0.0		
1500 - 1600	40.9	34.6	42.3	32.3	49.3		
1600 - 1700	11.3	9.4	11.6	16.0	13.9		
1700 - 1800	29.1	32.3	25.1	30.1	24.3		
1800 - 1900	9.9	14.6	11.9	11.1	8.4		
1900 - 2000	0.1	0.0	0.6	0.0	0.1		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		







Average Boardings per Route per Hour

ROUTE 250RI

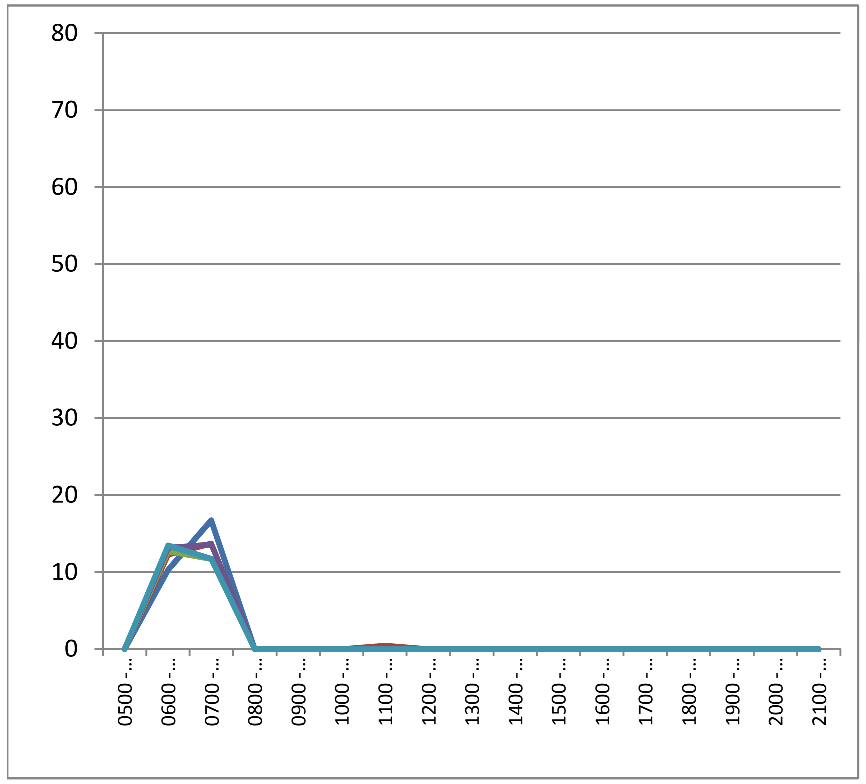
	M	Tu	W	Th	F	Sa	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0		
0600 - 0700	10.3	12.3	12.7	13.1	13.4		
0700 - 0800	16.7	13.7	11.7	13.6	11.7		
0800 - 0900	0.0	0.0	0.0	0.0	0.0		
0900 - 1000	0.0	0.0	0.0	0.0	0.0		
1000 - 1100	0.0	0.0	0.0	0.0	0.0		
1100 - 1200	0.0	0.4	0.0	0.0	0.0		
1200 - 1300	0.0	0.0	0.0	0.0	0.0		
1300 - 1400	0.0	0.0	0.0	0.0	0.0		
1400 - 1500	0.0	0.0	0.0	0.0	0.0		
1500 - 1600	0.0	0.0	0.0	0.0	0.0		
1600 - 1700	0.0	0.0	0.0	0.0	0.0		
1700 - 1800	0.0	0.0	0.0	0.0	0.0		
1800 - 1900	0.0	0.0	0.0	0.0	0.0		
1900 - 2000	0.0	0.0	0.0	0.0	0.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		

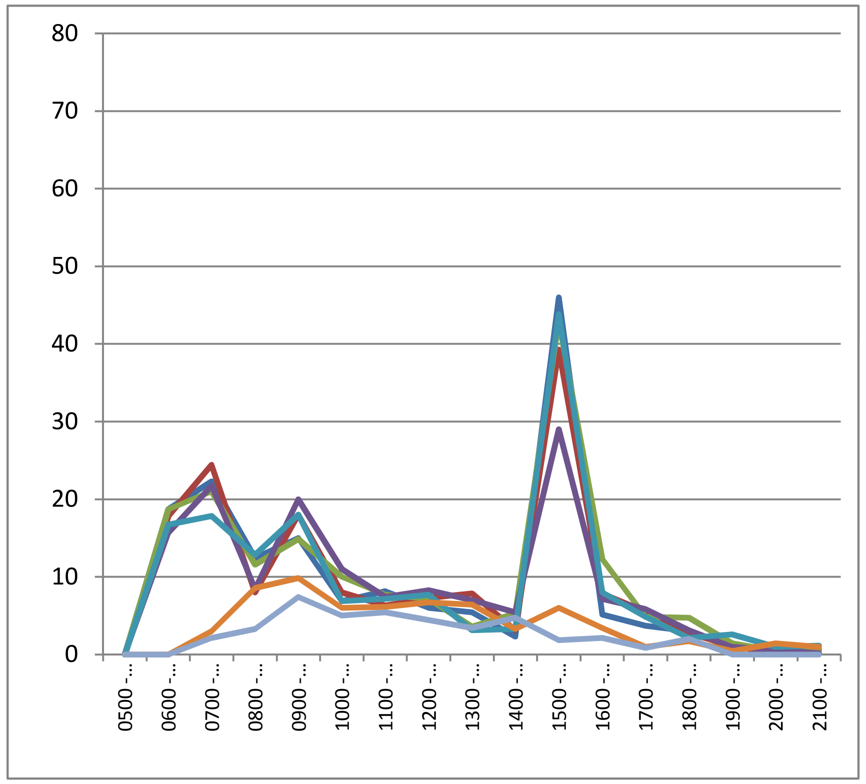
ROUTE 260IN

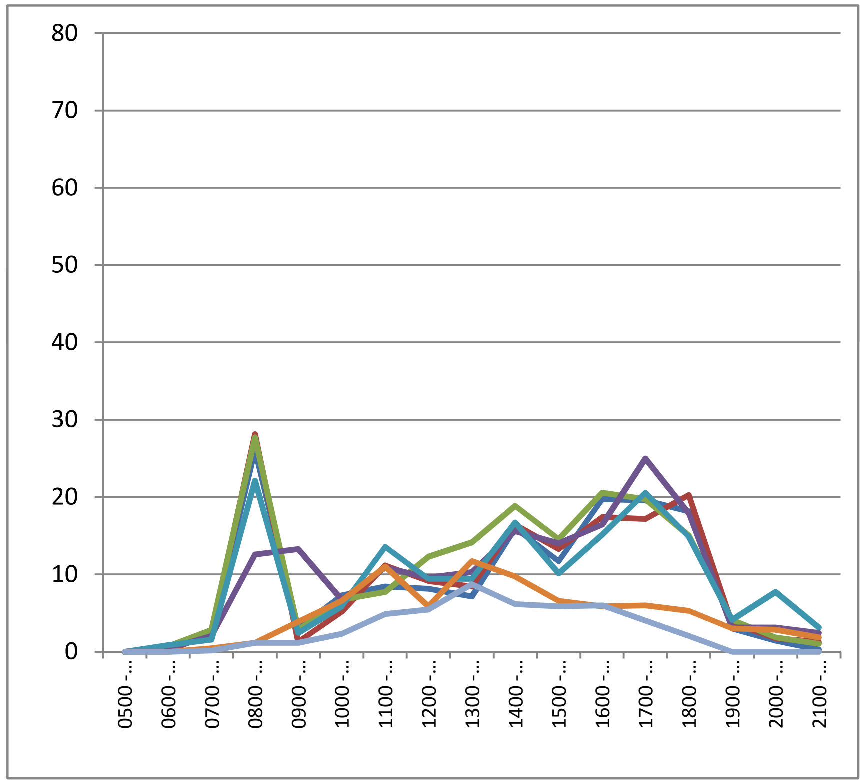
	M	Tu	W	Th	F	Sa	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0600 - 0700	18.7	17.9	18.7	15.7	16.7	0.0	0.0
0700 - 0800	22.3	24.4	21.0	21.7	17.9	3.0	2.1
0800 - 0900	12.4	8.0	11.6	8.4	12.9	8.6	3.3
0900 - 1000	15.0	18.0	14.9	20.0	18.0	9.9	7.4
1000 - 1100	6.9	8.0	10.0	11.0	6.9	6.0	5.0
1100 - 1200	8.1	6.3	7.7	7.4	7.1	6.1	5.4
1200 - 1300	6.0	7.3	7.1	8.3	7.7	6.7	4.4
1300 - 1400	5.4	7.9	3.6	7.0	3.1	6.4	3.4
1400 - 1500	2.3	3.1	5.3	5.4	3.3	3.3	4.7
1500 - 1600	46.0	39.3	43.0	29.0	43.9	6.0	1.9
1600 - 1700	5.1	7.9	12.3	7.1	8.0	3.4	2.1
1700 - 1800	3.7	5.6	4.9	5.9	4.9	1.0	0.9
1800 - 1900	3.0	2.7	4.7	3.1	2.1	1.7	2.0
1900 - 2000	0.9	1.1	1.4	1.0	2.6	0.4	0.0
2000 - 2100	0.6	0.0	0.4	0.6	1.0	1.4	0.0
2100 - 2200	0.1	0.6	0.7	0.1	1.1	1.0	0.0

ROUTE 260OT

	M	Tu	W	Th	F	Su	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0600 - 0700	0.1	0.1	0.7	0.4	0.9	0.0	0.0
0700 - 0800	2.4	2.3	2.9	2.0	1.6	0.4	0.1
0800 - 0900	26.1	28.1	27.7	12.6	22.1	1.1	1.1
0900 - 1000	3.0	1.3	2.9	13.3	2.4	3.9	1.1
1000 - 1100	7.3	5.1	6.7	6.7	5.9	6.6	2.3
1100 - 1200	8.4	11.1	7.7	10.9	13.6	11.0	4.9
1200 - 1300	8.1	9.1	12.3	9.6	9.4	5.9	5.4
1300 - 1400	7.1	8.4	14.1	10.3	9.4	11.7	8.7
1400 - 1500	16.0	16.4	18.9	15.6	16.7	9.7	6.1
1500 - 1600	11.7	13.3	14.6	14.0	10.1	6.6	5.9
1600 - 1700	19.7	17.4	20.6	16.4	15.1	5.9	6.0
1700 - 1800	19.6	17.1	19.7	25.0	20.6	6.0	4.0
1800 - 1900	18.1	20.3	15.0	17.9	14.9	5.3	2.0
1900 - 2000	3.0	3.7	4.1	3.1	4.1	3.0	0.0
2000 - 2100	1.4	1.7	1.9	3.1	7.7	2.9	0.0
2100 - 2200	0.3	1.3	1.0	2.4	3.1	1.9	0.0





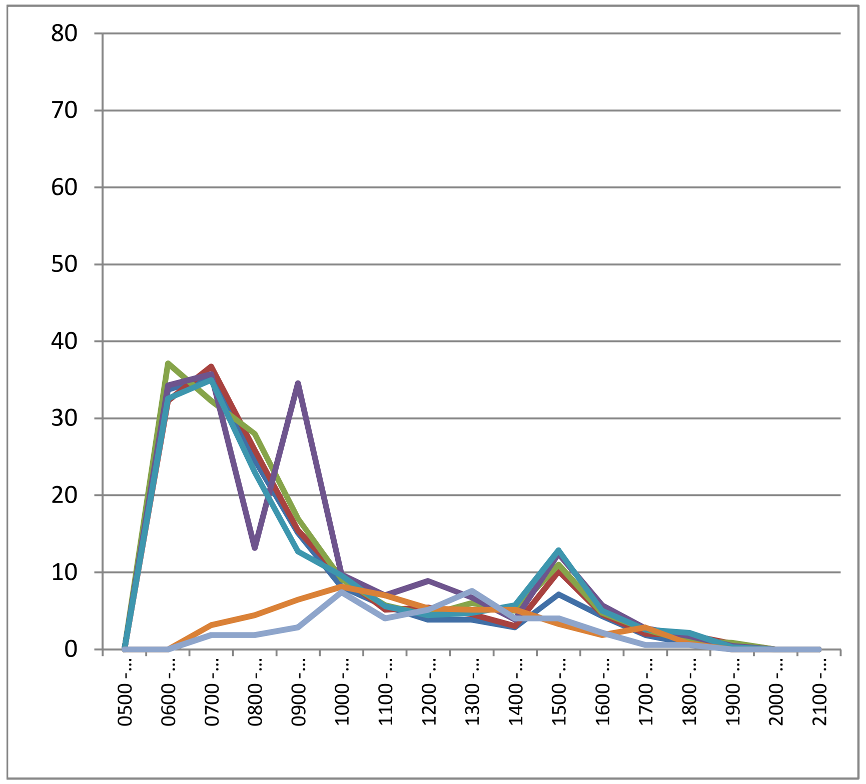


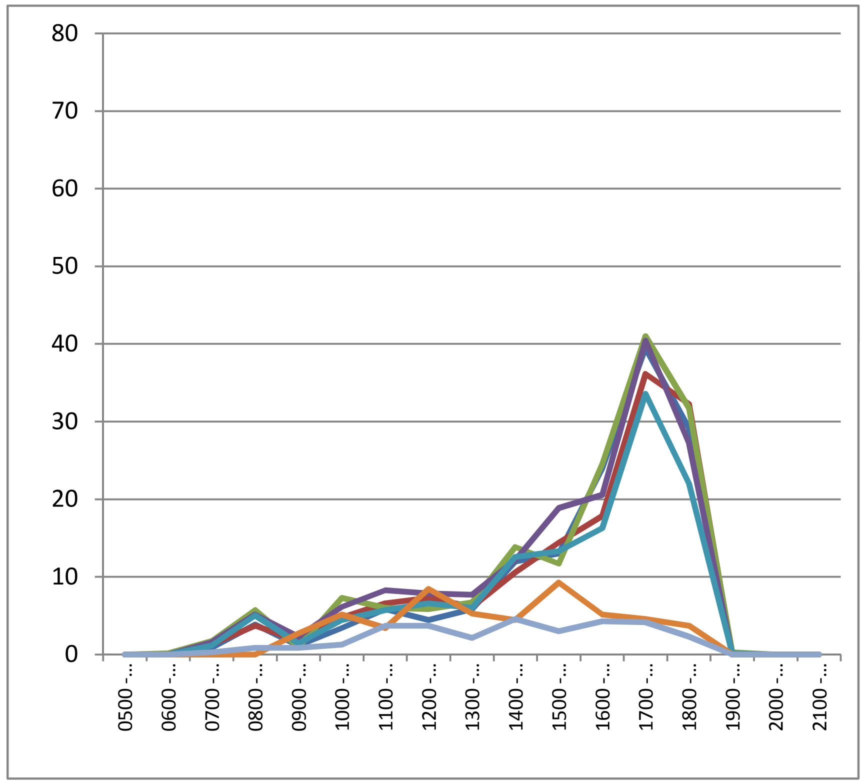
Average Boardings per Route per Hour

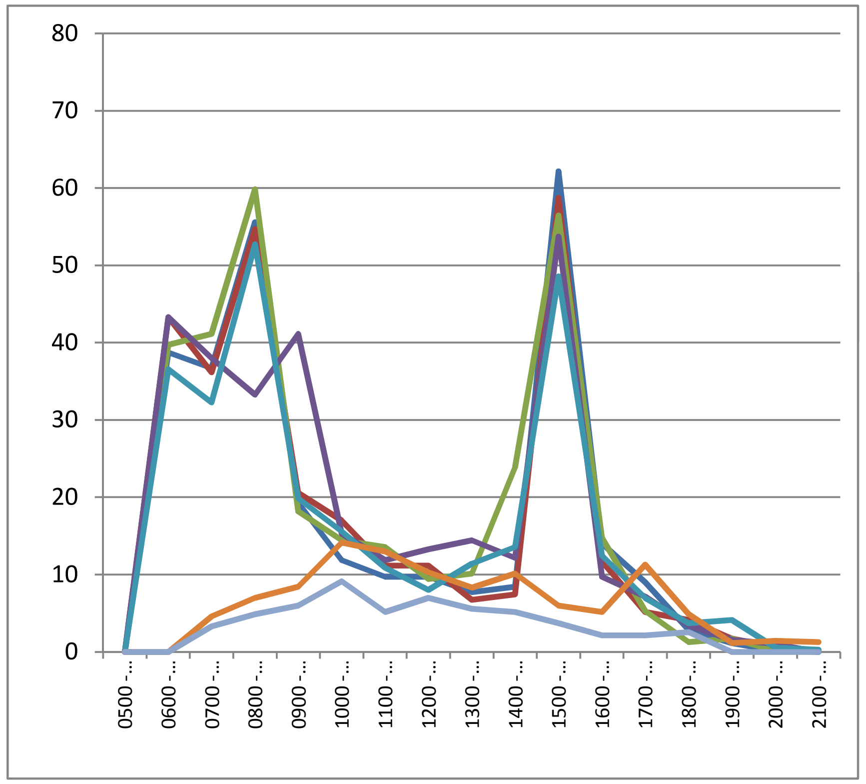
ROUTE 261IN	M	Tu	W	Th	F	Sa	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0600 - 0700	33.7	32.3	37.1	34.3	32.6	0.0	0.0
0700 - 0800	35.6	36.7	32.3	35.7	35.0	3.1	1.9
0800 - 0900	24.6	25.9	28.0	13.1	23.0	4.4	1.9
0900 - 1000	15.1	15.4	17.0	34.6	12.7	6.4	2.9
1000 - 1100	8.1	9.4	9.1	9.7	9.6	8.1	7.4
1100 - 1200	5.6	5.1	5.7	7.0	5.6	7.0	4.0
1200 - 1300	3.9	5.4	4.4	8.9	4.4	5.3	5.1
1300 - 1400	3.9	4.6	6.0	6.7	4.7	5.1	7.6
1400 - 1500	2.9	3.0	5.0	3.9	5.7	5.1	4.0
1500 - 1600	7.1	10.1	11.0	12.4	12.9	3.3	4.0
1600 - 1700	4.3	4.6	4.7	5.7	5.0	1.9	2.1
1700 - 1800	1.9	2.0	2.6	2.7	2.6	2.9	0.6
1800 - 1900	0.7	1.9	1.0	1.7	2.1	0.7	0.6
1900 - 2000	0.4	0.7	0.9	0.4	0.3	0.0	0.0
2000 - 2100	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2100 - 2200	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ROUTE 261OT	M	Tu	W	Th	F	Sa	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0600 - 0700	0.0	0.0	0.1	0.0	0.0	0.0	0.0
0700 - 0800	0.9	1.3	1.7	1.6	1.1	0.0	0.3
0800 - 0900	3.9	3.7	5.7	5.1	5.0	0.0	0.9
0900 - 1000	1.1	1.7	1.0	2.3	1.4	2.7	0.9
1000 - 1100	3.4	4.7	7.3	6.1	4.4	5.1	1.3
1100 - 1200	5.9	6.6	6.0	8.3	5.7	3.4	3.7
1200 - 1300	4.4	7.3	5.9	7.9	6.6	8.4	3.7
1300 - 1400	5.9	6.1	6.7	7.7	6.0	5.3	2.1
1400 - 1500	12.0	10.6	13.9	12.1	12.6	4.4	4.6
1500 - 1600	13.0	14.4	11.7	18.9	13.3	9.3	3.0
1600 - 1700	24.0	17.9	24.6	20.6	16.3	5.1	4.3
1700 - 1800	39.4	36.1	41.0	40.4	33.6	4.6	4.1
1800 - 1900	29.1	32.3	31.7	27.1	22.0	3.7	2.3
1900 - 2000	0.0	0.0	0.3	0.0	0.1	0.0	0.0
2000 - 2100	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2100 - 2200	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ROUTE 262IN	M	Tu	W	Th	F	Su	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0600 - 0700	38.7	43.3	39.7	43.3	36.6	0.0	0.0
0700 - 0800	36.7	36.1	41.1	38.0	32.3	4.6	3.3
0800 - 0900	55.6	54.7	59.9	33.3	52.7	7.0	4.9
0900 - 1000	19.3	20.6	18.1	41.1	19.9	8.4	6.0
1000 - 1100	11.9	17.0	14.4	15.3	15.6	14.1	9.1
1100 - 1200	9.7	11.1	13.6	11.9	10.9	13.0	5.1
1200 - 1300	9.7	11.1	9.4	13.3	8.0	10.3	7.0
1300 - 1400	7.7	6.7	10.1	14.4	11.4	8.3	5.6
1400 - 1500	8.4	7.4	23.9	12.1	13.6	10.1	5.1
1500 - 1600	62.1	58.7	56.4	53.7	48.6	6.0	3.7
1600 - 1700	14.0	11.7	14.7	9.7	12.4	5.1	2.1
1700 - 1800	9.0	5.1	5.3	7.1	7.0	11.3	2.1
1800 - 1900	2.9	4.1	1.3	3.4	3.7	4.9	2.6
1900 - 2000	1.1	1.7	1.7	1.6	4.1	1.1	0.0
2000 - 2100	0.1	0.6	0.1	1.0	0.6	1.4	0.0
2100 - 2200	0.0	0.1	0.3	0.0	0.3	1.3	0.0







Average Boardings per Route per Hour

ROUTE 262OT

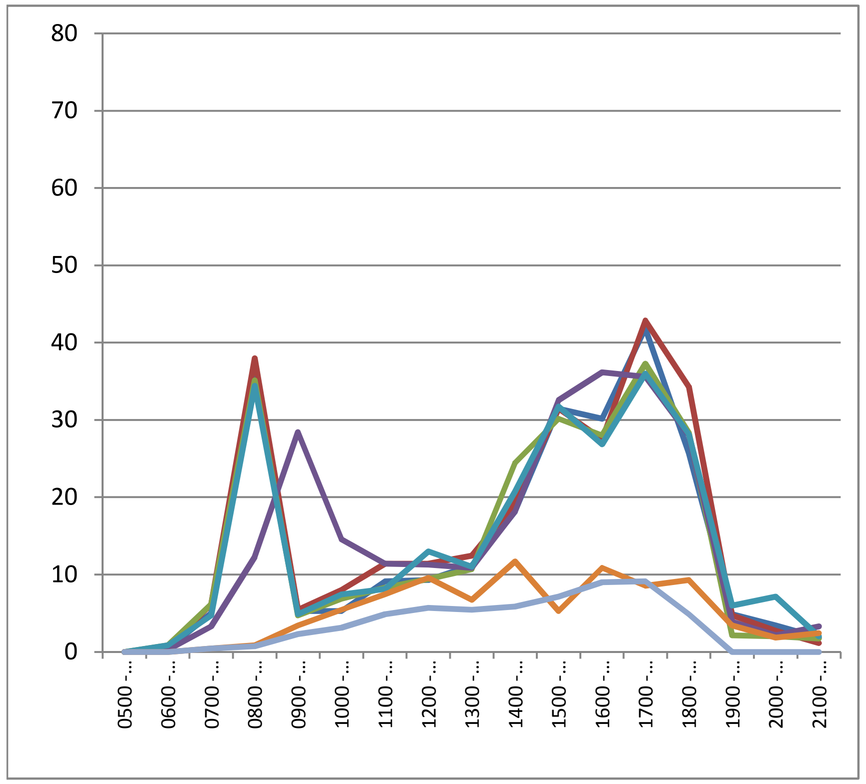
	M	Tu	W	Th	F	Su	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0600 - 0700	0.4	0.4	0.9	0.3	0.9	0.0	0.0
0700 - 0800	5.0	6.1	6.1	3.3	4.7	0.4	0.4
0800 - 0900	37.1	38.0	35.1	12.3	34.4	0.9	0.7
0900 - 1000	5.3	5.4	4.7	28.4	4.9	3.4	2.3
1000 - 1100	5.3	8.0	6.9	14.6	7.4	5.4	3.1
1100 - 1200	9.1	11.4	8.3	11.4	8.1	7.4	4.9
1200 - 1300	9.3	11.4	9.4	11.3	13.0	9.6	5.7
1300 - 1400	11.1	12.4	10.7	10.9	11.0	6.7	5.4
1400 - 1500	18.1	19.3	24.4	18.1	20.7	11.7	5.9
1500 - 1600	31.4	31.4	30.1	32.6	31.7	5.3	7.1
1600 - 1700	30.1	27.6	28.0	36.1	26.9	10.9	9.0
1700 - 1800	41.9	42.9	37.3	35.6	36.0	8.6	9.1
1800 - 1900	25.7	34.3	28.3	28.0	28.1	9.3	4.9
1900 - 2000	4.9	4.7	2.1	3.9	6.0	3.4	0.0
2000 - 2100	3.4	2.7	2.0	2.1	7.1	1.9	0.0
2100 - 2200	1.9	1.1	1.7	3.3	2.0	2.4	0.0

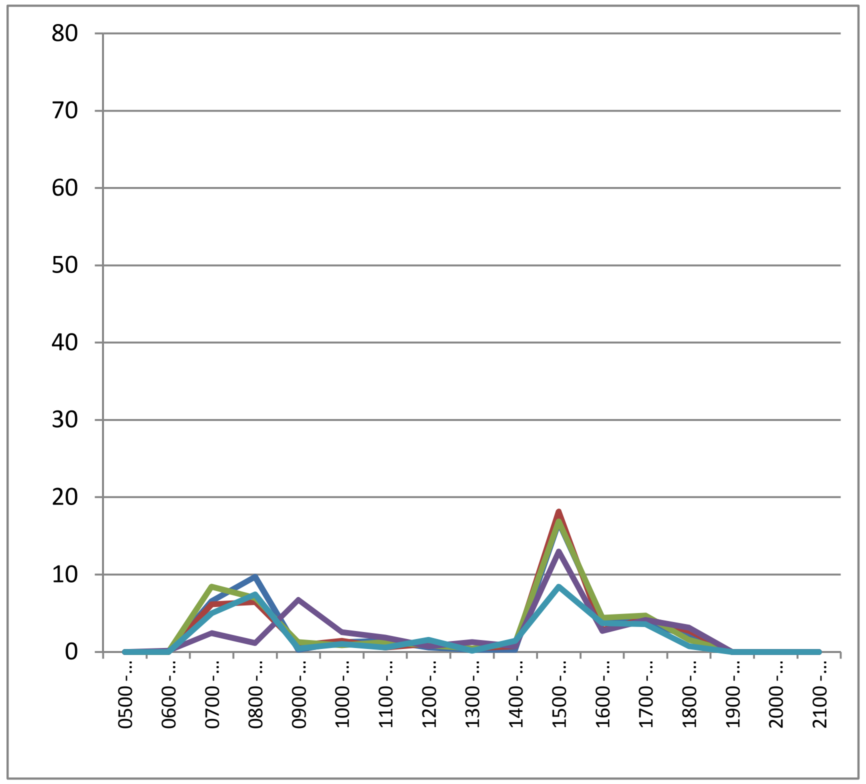
ROUTE270CL

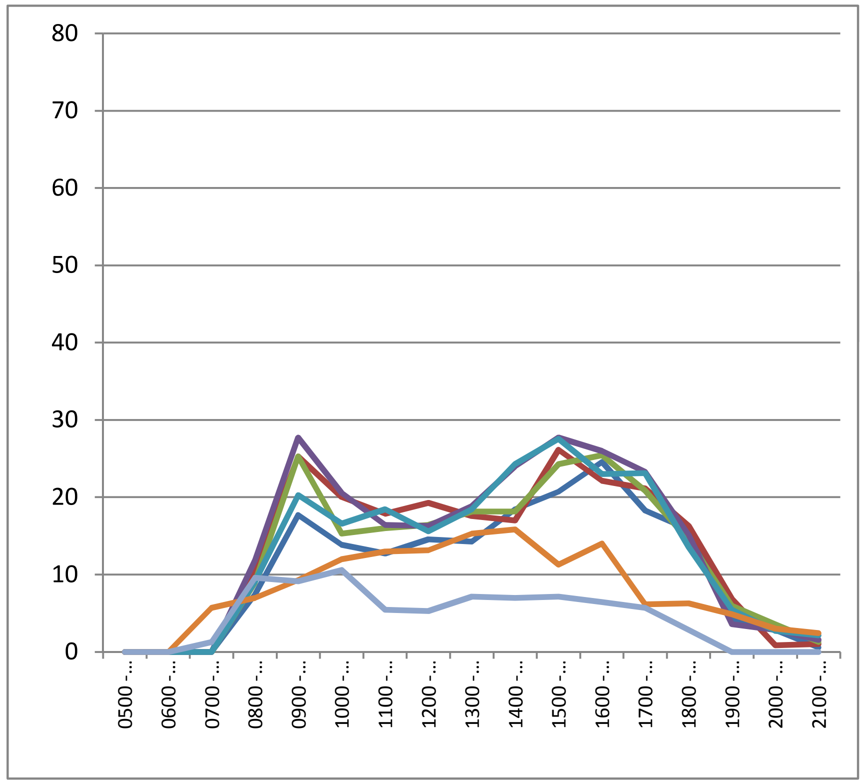
	M	Tu	W	Th	F	Su	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0		
0600 - 0700	0.0	0.0	0.0	0.1	0.0		
0700 - 0800	6.6	6.1	8.4	2.4	5.0		
0800 - 0900	9.7	6.4	7.0	1.1	7.4		
0900 - 1000	0.3	0.9	1.3	6.7	0.4		
1000 - 1100	1.3	1.4	0.9	2.6	1.0		
1100 - 1200	1.4	0.6	1.3	1.9	0.6		
1200 - 1300	0.6	1.0	0.9	0.7	1.6		
1300 - 1400	0.3	0.4	0.4	1.3	0.1		
1400 - 1500	0.3	0.7	1.1	0.7	1.4		
1500 - 1600	16.7	18.1	16.9	13.0	8.4		
1600 - 1700	4.4	2.9	4.4	2.7	3.7		
1700 - 1800	3.7	4.3	4.7	4.1	3.6		
1800 - 1900	2.1	2.7	1.6	3.1	0.7		
1900 - 2000	0.0	0.0	0.0	0.0	0.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		

ROUTE 280CI

	M	Tu	W	Th	F	Su	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0600 - 0700	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0700 - 0800	0.0	0.0	0.0	0.0	0.0	5.7	1.3
0800 - 0900	7.4	10.9	9.0	11.9	9.1	7.0	9.6
0900 - 1000	17.7	25.3	25.3	27.7	20.3	9.3	9.1
1000 - 1100	13.9	20.0	15.3	20.6	16.6	12.0	10.6
1100 - 1200	12.7	17.9	16.0	16.4	18.4	13.0	5.4
1200 - 1300	14.6	19.3	16.4	16.3	15.6	13.1	5.3
1300 - 1400	14.3	17.6	18.1	18.9	18.4	15.3	7.1
1400 - 1500	18.4	17.0	18.1	24.0	24.3	15.9	7.0
1500 - 1600	20.7	26.1	24.3	27.7	27.6	11.3	7.1
1600 - 1700	24.6	22.1	25.4	26.0	23.0	14.0	6.4
1700 - 1800	18.3	21.1	20.9	23.3	23.1	6.1	5.7
1800 - 1900	15.9	16.3	14.4	15.1	13.6	6.3	2.9
1900 - 2000	4.3	6.9	6.0	3.6	5.4	4.9	0.0
2000 - 2100	2.9	0.9	3.6	2.9	2.7	3.0	0.0
2100 - 2200	0.6	1.0	1.3	1.6	2.1	2.4	0.0

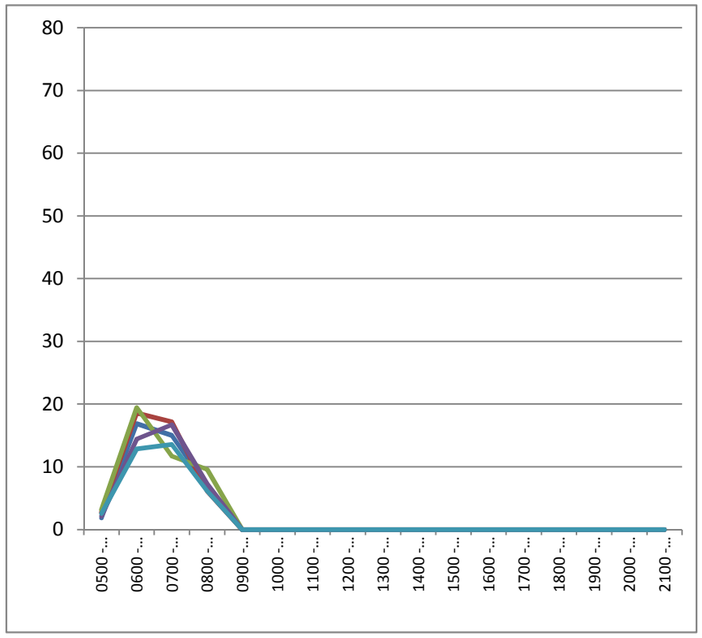




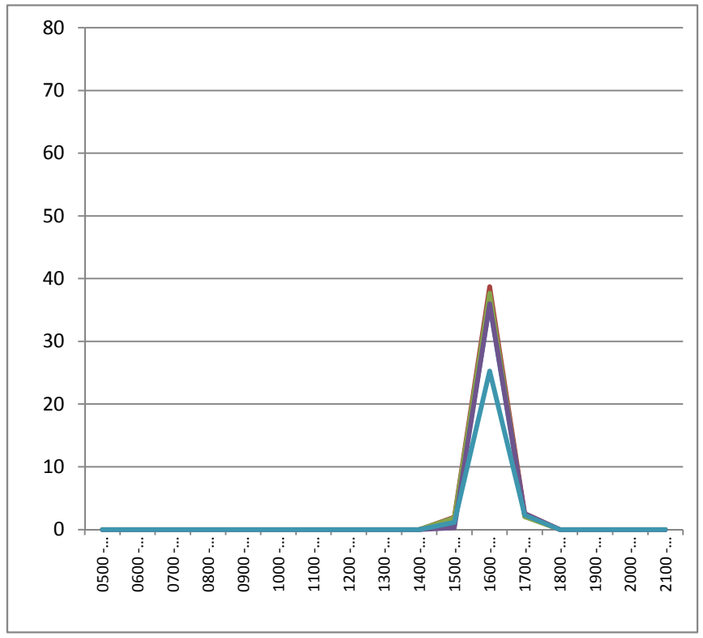


Average Boardings per Route per Hour

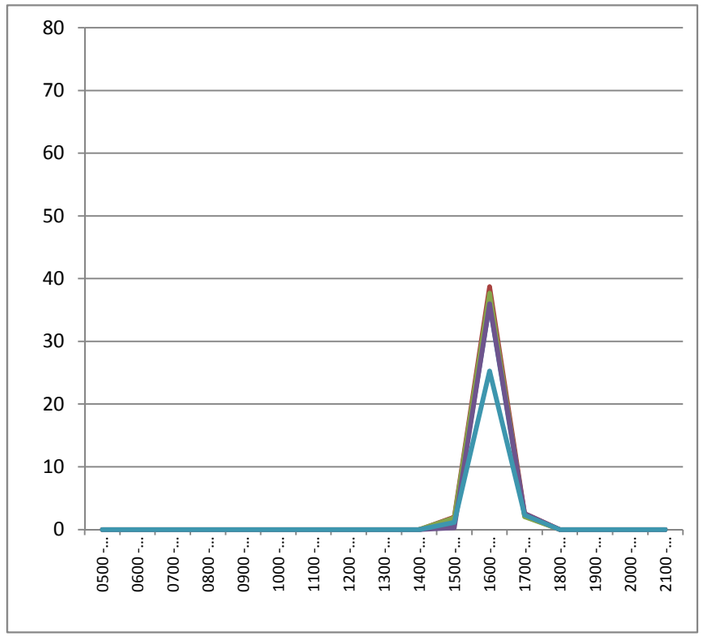
ROUTE 280IN	M	Tu	W	Th	F	Su	Su
0500 - 0600	1.9	2.7	3.1	2.1	2.6		
0600 - 0700	16.9	18.6	19.4	14.4	12.9		
0700 - 0800	15.0	17.1	11.7	16.7	13.6		
0800 - 0900	6.9	6.1	9.6	7.3	6.1		
0900 - 1000	0.0	0.0	0.0	0.0	0.0		
1000 - 1100	0.0	0.0	0.0	0.0	0.0		
1100 - 1200	0.0	0.0	0.0	0.0	0.0		
1200 - 1300	0.0	0.0	0.0	0.0	0.0		
1300 - 1400	0.0	0.0	0.0	0.0	0.0		
1400 - 1500	0.0	0.0	0.0	0.0	0.0		
1500 - 1600	0.0	0.0	0.0	0.0	0.0		
1600 - 1700	0.0	0.0	0.0	0.0	0.0		
1700 - 1800	0.0	0.0	0.0	0.0	0.0		
1800 - 1900	0.0	0.0	0.0	0.0	0.0		
1900 - 2000	0.0	0.0	0.0	0.0	0.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		



ROUTE 285IN	M	Tu	W	Th	F	Su	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0		
0600 - 0700	0.0	0.0	0.0	0.0	0.0		
0700 - 0800	0.0	0.0	0.0	0.0	0.0		
0800 - 0900	0.0	0.0	0.0	0.0	0.0		
0900 - 1000	0.0	0.0	0.0	0.0	0.0		
1000 - 1100	0.0	0.0	0.0	0.0	0.0		
1100 - 1200	0.0	0.0	0.0	0.0	0.0		
1200 - 1300	0.0	0.0	0.0	0.0	0.0		
1300 - 1400	0.0	0.0	0.0	0.0	0.0		
1400 - 1500	0.0	0.0	0.0	0.0	0.0		
1500 - 1600	1.0	2.0	1.9	0.3	1.1		
1600 - 1700	35.9	38.7	37.7	36.0	25.3		
1700 - 1800	2.1	2.6	2.0	2.6	2.3		
1800 - 1900	0.0	0.0	0.0	0.0	0.0		
1900 - 2000	0.0	0.0	0.0	0.0	0.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		



ROUTE 285OT	M	Tu	W	Th	F	Su	Su
0500 - 0600	0.0	0.0	0.0	0.0	0.0		
0600 - 0700	0.0	0.0	0.0	0.0	0.0		
0700 - 0800	0.0	0.0	0.0	0.0	0.0		
0800 - 0900	0.0	0.0	0.0	0.0	0.0		
0900 - 1000	0.0	0.0	0.0	0.0	0.0		
1000 - 1100	0.0	0.0	0.0	0.0	0.0		
1100 - 1200	0.0	0.0	0.0	0.0	0.0		
1200 - 1300	0.0	0.0	0.0	0.0	0.0		
1300 - 1400	0.0	0.0	0.0	0.0	0.0		
1400 - 1500	0.0	0.0	0.0	0.0	0.0		
1500 - 1600	1.0	2.0	1.9	0.3	1.1		
1600 - 1700	35.9	38.7	37.7	36.0	25.3		
1700 - 1800	2.1	2.6	2.0	2.6	2.3		
1800 - 1900	0.0	0.0	0.0	0.0	0.0		
1900 - 2000	0.0	0.0	0.0	0.0	0.0		
2000 - 2100	0.0	0.0	0.0	0.0	0.0		
2100 - 2200	0.0	0.0	0.0	0.0	0.0		

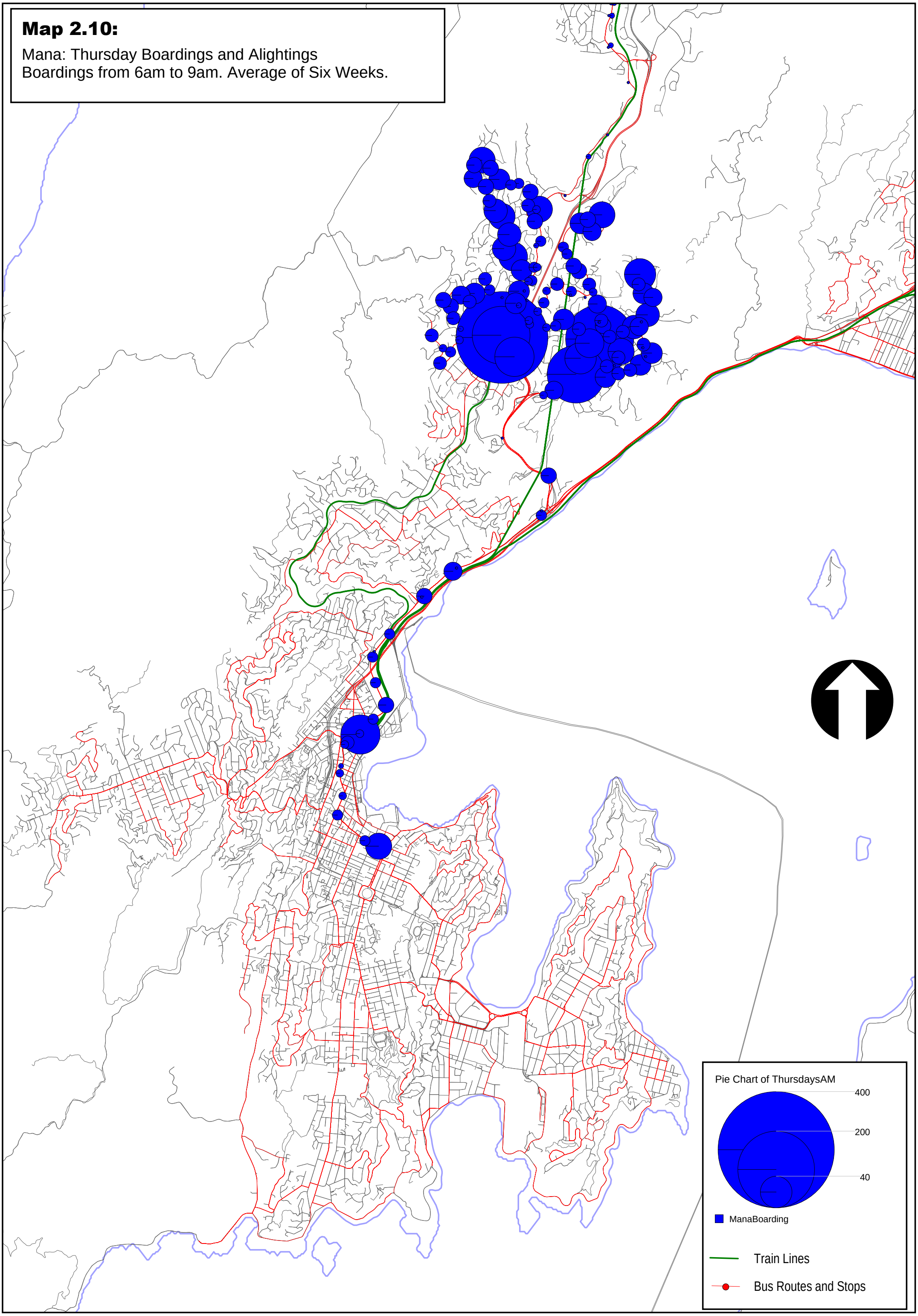


Appendix F

Mapping of Boardings: Mana

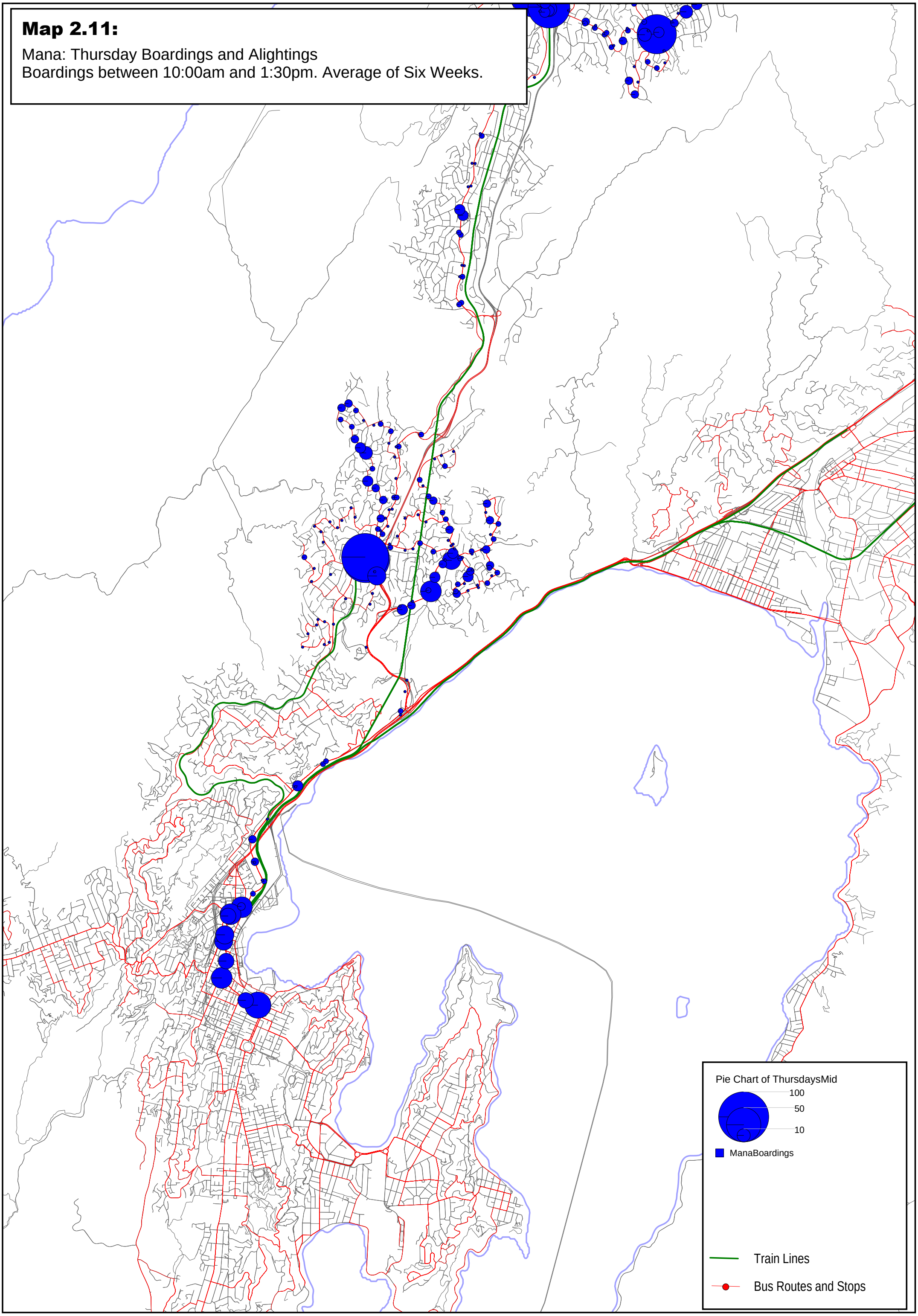
Map 2.10:

Mana: Thursday Boardings and Alightings
Boardings from 6am to 9am. Average of Six Weeks.



Map 2.11:

Mana: Thursday Boardings and Alightings
Boardings between 10:00am and 1:30pm. Average of Six Weeks.



Appendix G

Mapping of All Boardings in AM Peak (Go Wellington, Mana, Johnsonville Rail)

Map G.1:

Wellington Operators: Thursday Boardings at Stop Level from 6:30am to 8:30am. Average of Six Weeks.

Boardings by Stop

380

190

38

Go Wellington

Mana

Newlands

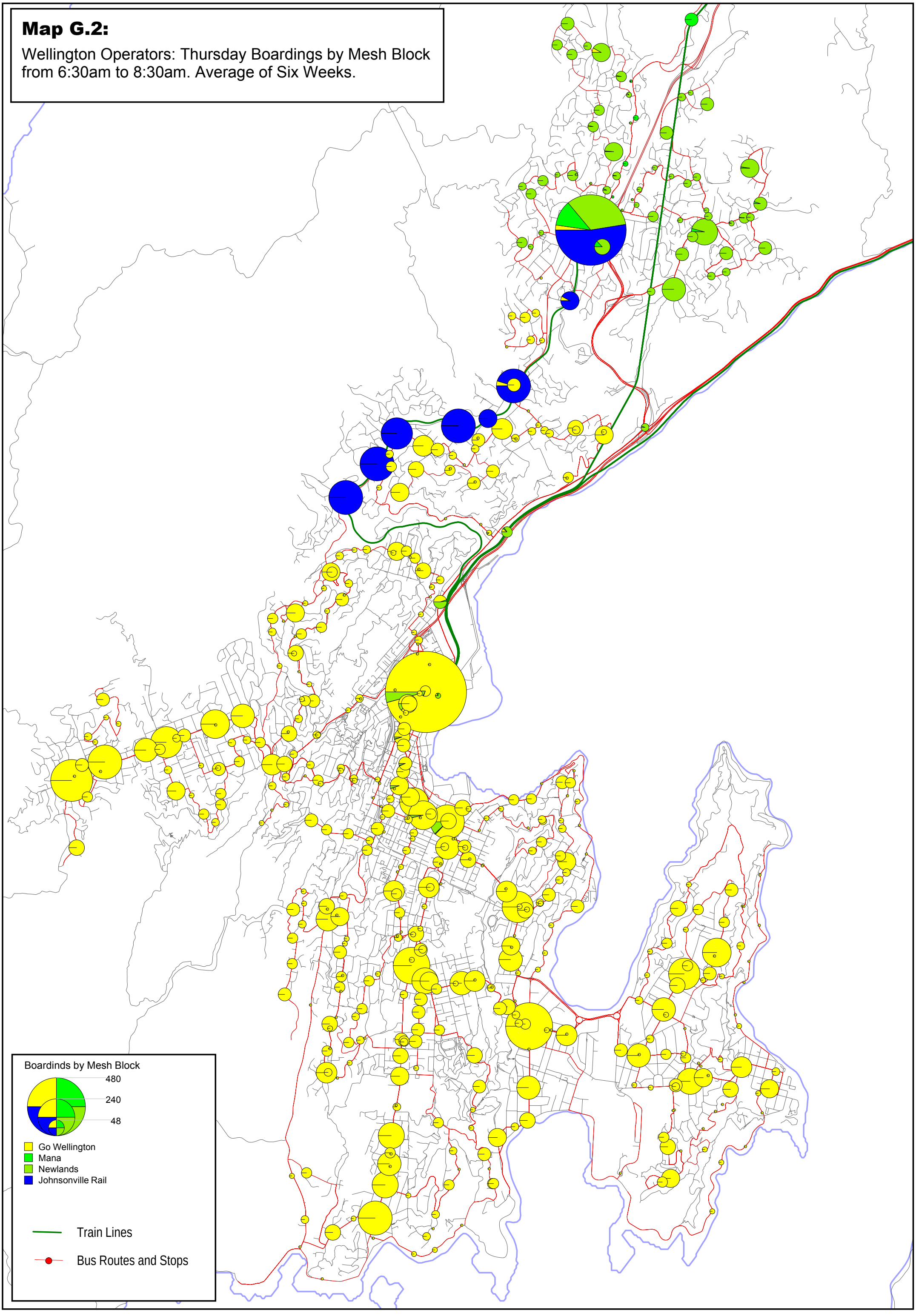
Johnsonville Line

Train Lines

Bus Routes and Stops

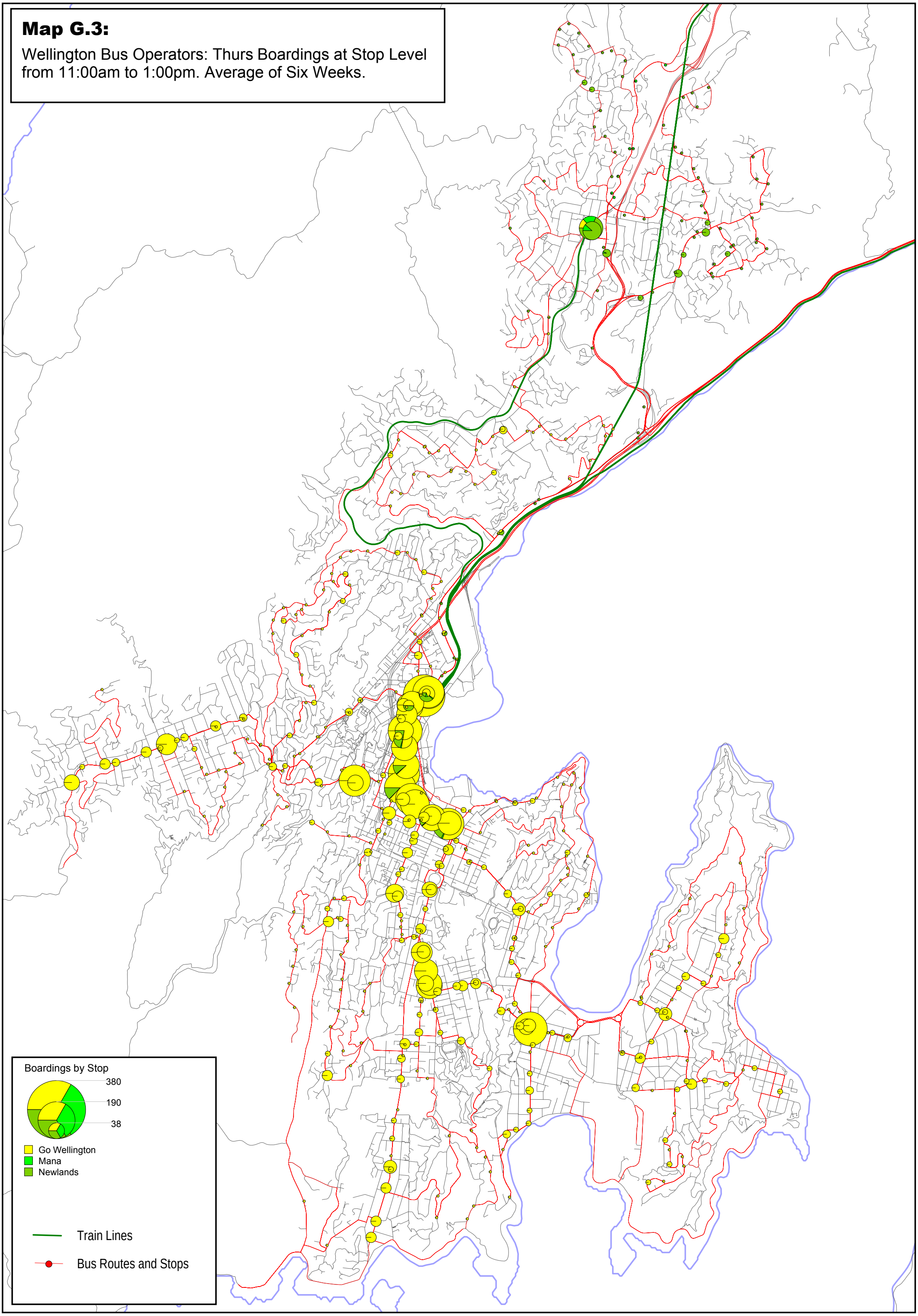
Map G.2:

Wellington Operators: Thursday Boardings by Mesh Block from 6:30am to 8:30am. Average of Six Weeks.



Map G.3:

Wellington Bus Operators: Thurs Boardings at Stop Level from 11:00am to 1:00pm. Average of Six Weeks.



Map G.4:

Wellington Bus Operators: Thurs Boardings by Mesh Block from 11:00am to 1:00pm. Average of Six Weeks.

Boardinds by Mesh Block

480

240

48

Go Wellington

Mana

Johnsonville Rail

Train Lines

Bus Routes and Stops

Appendix H

Peer Assessment – Case Studies

Case Studies of Transfer Policy Changes

While transfer policy is often debated amongst those in the transport industry, there is a distinct lack of both collection and reporting surrounding the impacts of changes to transfer policies. It appears however, that the increasing prevalence of electronic ticketing across major PT networks is providing an opportunity for both PT authorities and service operators to consider their transfer policies and how these can be optimised to meet patronage and revenue goals.

This section contains case studies of the two most common transfer changes covered in the literature:

- Introduction of travel cards;
- Shift from no transfer policy to integrated fares;

The case studies in the second section will be of most relevance to the Wellington context

Introduction of travel cards

The most common changes to transfer policy studied extensively in the literature is the introduction of multi-time passes that allow for an unlimited number of PT trips within a certain time period (usually two hours, one day or one month). These have been introduced in numerous cities worldwide normally with goals to increase PT patronage. Whilst in all cases these have had the desired impacts of increased patronage, the impacts on revenue have been less uniform.

Fitzroy and Smith (1998) in their study of travel cards in Freiburg, Germany found that the introduction of these cards had increased bus travel between 9% and 14% with no significant deterioration of the operating deficit of the bus service company. Similarly, London Transports (1993) quantification of their travel card introduction found high increases in passenger miles (33% for underground, 20% for bus) that were accompanied by positive effects on revenue as a result of the substantial increases in patronage across the network.

These results are seen as somewhat atypical in the literature, as they go against the strong findings of relatively inelastic demand for PT services (Pucher & Kurth, 1996). Doxey (1984, cited in (Prat, 2003)) concludes that travel cards have a negative impact on revenue as a result of the inelastic demand. However, he ignores additional generation of PT trips that such a fare network might attract. In Pucher and Kurth's (1996) analysis of five cities across Germany and Vienna that introduced integrated fare networks, they found that substantial increases in government subsidies were required. Operating deficits grew substantially, with the proportion of csots covered by fare revenues in Zurich falling from 78% in 1985 to only 42% in 1993. Again, these results need to be interpreted with caution as a number of other changes were also implemented in this time, such as service improvements and new vehicles.

Two cities that have introduced travel cards have been the subject of investigation to attempt to isolate the impacts of the travel card from other changes being undertaken – Melbourne in 1980, and Madrid in 1987.

Melbourne, Australia 1980

Don et al. (1983) and Carolan (1983) undertook analysis following the introduction of an all-day travel cards ('Metrocard') in the Melbourne PT network in 1980. These were introduced to address PT patronage goals, after it was found that 23% of all current trips currently included a transfer (Don, Singleton, & Wallis, 1983). The aim was for the PT network to be seen as fully co-ordinated, with those

required to change vehicles not being penalised for doing so. These travel cards operated as one-day passes, allowing unlimited PT trips throughout the day, hence providing for free transfers for those users. These passes differ from the system Melbourne has today which is one of universal free transfers for all users.

It was also believed that Metrocard would reduce the complexity of the fare network and be more attractive to new PT users (Don, Singleton, & Wallis, 1983). Private buses were excluded, but the Metrocard enabled travel across trains, trams and MMTB (Melbourne Metropolitan Transit Board) buses within the day of purchase.

Analysing the impacts of the travel card in the 26 week period following the introduction found that 34 million trips (28%) were made on travel cards, compared with 89 million trips (72%) on all other types of tickets. The split of revenue was remarkably similar, with travel cards associated with revenues of $18m (28%), compared with other ticket types of $46m (72%) (Don, Singleton, & Wallis, 1983). The revenue gained from travel cards as a percentage was actually slightly higher than that of total trips.

Over the period analysed, total PT ridership increased by 2% and PT revenue increased by 12%, although it is not possible to link these increases directly to the integration of the fare network. Don et al. (1983) believe that the introduction may have had no substantial impact on PT ridership. Nonetheless, the average number of trips taken on the travel cards ranged from between 3.3 and 4.3 dependent on the mode of purchase, averaging 3.75 trips across all travel card users (Don, Singleton, & Wallis, 1983).

With regards to revenue impacts, (Carolan, 1983) notes the unique situation minimised the risks by PT service agencies in the introduction of the Metrocard. The State Government acknowledged the risk of declining revenues and provided guarantees to top-up any revenue seen to be lost during the trial period. However, as noted above, this was unnecessary with increasing revenues coming from a large increase in PT patronage over the period.

Madrid, Spain, 1987

Prat (2003) examined the historical changes seen in Madrid following a range of changes in the mid-1980s. These included major improvements of the PT network to be more integrated and of a higher quality, but also in 1987 the creation of an integrated fare network. This was based on a monthly travel card that allowed unlimited travel for holders across the entire network.

Prat (2003) first examined the uptake of the travel card option across the two major PT modes in Madrid, bus and underground (UG). Table 1 summarises her findings.

Table 20: Changes in proportions of ticket types in Madrid, 1987-2001

	Bus		Underground	
Type of ticket	1987	2001	1987	2001
Single	27 %	4 %	48 %	5 %
Multi-ride ticket	57 %	24 %	37 %	35 %
Travel card	16 %	72 %	15 %	60%

Source: Concorcio Transportes de Madrid (cited in Prat, 2003)

Prat (2003) found that the travel card had replaced nearly all of the single cash fares for both modes. However, multi-ride tickets remained almost constant on the UG, despite falling by over half on bus trips. Prat explains the difference as a result of the transfer inequality between the two modes. While transfers are free for all travel card users on all modes, transfers are also free for UG users transferring between services. Conversely, bus users are required to pay for any transfers, so have a higher incentive to move

to the travel card than regular UG users. This highlights the unequal impacts that transfer policies can have on users when not applied uniformly across the whole PT network.

From 1986 to 2001, patronage grew by more than 50% in Madrid and Prat (2003) wanted to disaggregate the patronage increases to attempt to attribute the rises to the various changes that were undertaken to the PT network in this time. She undertook a regression analysis of the patronage increases in relation to fare prices, the total route length of the network components, the travel card introduction and GDP22. In doing this, she left the travel card as the blank variable, with the remainder unexplained by the other factors assumed to be explained by the introduction of the travel card. Table 2 summarises Prat's findings.

Table 21: Estimated impact on PT patronage of variables, Madrid, 1986-2001

Variable	Impact on bus patronage	Impact on UG patronage
Fare index	- 5.5%	- 15.8%
GDP	+ 12.8%	+ 18.7%
Bus route length	+ 16.3%	n/a
Underground (UG) route length	- 16.1%	+ 27.1%
Petrol price	- 0.4%	n/a
Suburbinisation	+ 15.4%	n/a
Employment	n/a	+ 29.3 %
Travel card (remainder)	+ 7.1%	+ 14.9%

Source: (Prat, 2003)

Prat's analysis found that the long term impact of the travel card on patronage was an increase of between 7% (bus) and 15% (underground). This is in line with the increases observed by others following the introduction of travel cards in Freiburg and London (Fitzroy & Smith, 1998; London Transport Planning Department, 1993).

In relation to revenue impacts, Madrid also saw a reduction in revenue as a result of the relatively high penetration of the lower cost travel card (Prat, 2003), similar to that observed in Purcher and Kuth (1996). In fact, Prat concludes that as a result of high price elasticity of single and multi-ride fares, there is likely to be scope for Madrid to adopt non-uniform pricing across the PT network and see positive increases in both PT patronage and revenue.

Shift from no transfer policy to integrated fares

A second type of shift in transfer policy observed in the literature is the introduction of integrated fares across a network. This type of change has only been practically possible with the introduction of integrated ticketing, that is able to accurately determine the correct price for each trip, and minimise issues of fare evasion that are far higher in paper based networks (Perk, Volinski, & Kamp, 2004). In an integrated network, users are charged based on the total fare for travelling between zones within a network, regardless of the number of transfers that are made to get to the final destination. This is similar to the change that is proposed for Wellington.

[22] Prat also included measures of petrol prices and suburbanisation for bus travel, and a measure of employment for underground travel

New York, USA, 1997

In 1997 New York took the opportunity to implement a number of initiatives that helped to improve public transport usage across the network, while moving to electronic ticketing (the MetroCard). Arguably the most successful of these was the removal of fares for transferring – in that customers transferring between services (including inter-modal transfers i.e. between subway and bus) were not charged for a new trip, but for the whole journey from start to finish regardless of transfers (Scaller, 1998).

In the six months immediately following the introduction of the Metrocard there were no other initiatives undertaken, so this data is the best proxy for identifying the real impacts on patronage and revenue of the new fare network. Table 3 summarises the short term impacts for the two main modes, and also across the whole PT network. It found that increases in patronage were strong (particularly for travel on the subway), but that these were not enough to offset the falls in average fare by removing the cost of the transfer. In total, the change lead to a short term reduced revenue of 1.2%.

Table 22: Short term Impacts of Metrocard introduction in New York, 1996-1997

Variable	Local bus	Underground	Total PT network
Impact on patronage	+ 2.7 %	+ 18.6 %	+ 7.2 %
Impact on average fare	- 4.2 %	- 15.4 %	- 7.8 %
Impact on total revenue	**- 1.6 %**	**+ 0. 4%**	**- 1.2 %**

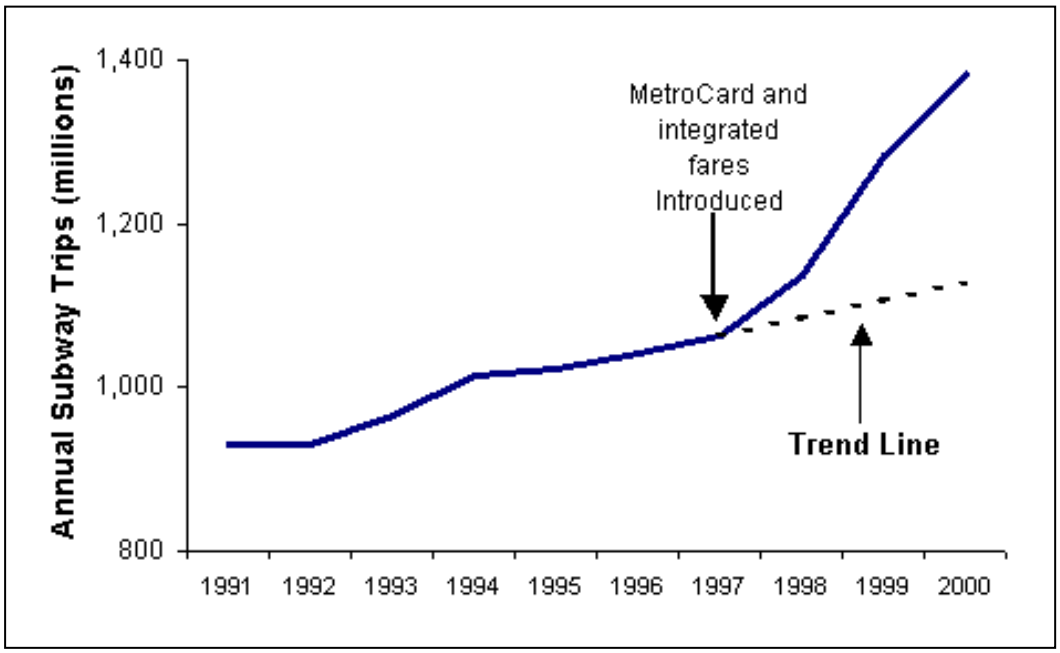
Source: New York City Transit

The medium-term impacts of these changes were stronger than expected. While 9% of subway commuters lived in two-fare zones, and hence were expected to enjoy the benefits of such a scheme, there was widespread uptake of free transfers, and patronage rapidly increased (Scaller, 1998). In particular:

- Bus patronage rose 18% in the second half of 1997 (compared with 3% in the first half)
- Subway patronage rose 3.6% over the same period (compared with 1.3% in the first half)
- Uptake of the MetroCard increased from 15% to 59%

The medium term impacts on subway patronage levels are shown in the following figure.

Figure H.1: Patronage on New York subway, 1991-2000



Source: (Scaller, 1998)

The success of the programme was also seen in relation to other schemes introduced such as the "11 for 10 trips" frequent-user discount introduced in 1998. While these increased patronage further, they did not do so to the extent as was seen with free transfers. This is likely due to the fact that while the "11 for 10" offer addressed the cost issue of public transport, the free transfer scheme not only reduced the cost of transfers, but also increased the flexibility, convenience and simplicity of the network for users (Scaller, 1998).

Gwangju, South Korea, 2006

In 2006, Gwangju, the sixth-largest city in South Korea, introduced a system of free intermodal transfers along it PT network (buses and one subway line). While flat fares were already in place along the subway line operating in the city, free transfers connected the bus network to the subway line, allowing for increased connectivity of the network and increased convenience for users. Free transfers must be used within a certain time period (one hour after boarding a bus, and thirty minutes after alighting from the subway) to apply, and are only facilitated with the use of the smart card ('traffic card').

Free transfers cannot be used between services of the same type (i.e. between two different bus services). As there is only one subway line at present, this means that the total number of transfers per journey would be two (bus-subway-bus). Whilst no links to the transfer network can be proved, continually increasing PT patronage in Gwangju has been sufficiently high that a second subway line is scheduled for completion in 2012. There will likely a need to revisit the transfer policy at this time.

Singapore, 2010

The Public Transport Council (PTC) in Singapore introduced that a new fare network to address transfers in July 2010. By implementing a 'journey distance' based network for determining fares along the entire network, PTC removed the fare penalties that had existed under the previous operational model. Users are now charged one fare for their entire journey and allowed to make any number of transfers they between services and modes, within some eligibility constraints.

Prior to the implementation, PTC acknowledged that there would be differential impacts of the new fare and transfer policy on current users. Namely, those that typically took longer distance trips with a higher number of transfers would receive higher cost savings than those taking short trips with minimal transfers, as the new network increased the base fare in order to reduce the distortion of fare penalties. PTC determined the likely impact on users would be:

- 63% of commuters would have reduced costs of around $25 a year
- 24% of commuters would have increased costs of around $16 a year

While not stated, it is unlikely that PTC would have shifted to a new fare structure that would lead to projected revenue losses based on current usage patterns. As such, it is likely that the generation rate of new PT trips would balance out any revenue lost. From the figures above, if PT usage patterns remained unchanged, for every 100 passengers, the PTC would have reduced revenues of $1,191 per annum. However, as the network is now better integrated, it is likely to be of increased attractiveness to both existing and new users, and PTC would need to believe that patronage would increase by 9 trips per year per person[23] (between 2-3%) to breakeven under the new fare structure.

It should be noted that there has been publicised public distrust of the new network, highlighting the importance of both public consultation and on-going information to clarify the changes and the impacts of these for PT users.

[23] At an average journey cost of $1.40 assuming 2010 PT usage rates of ~1 trip per person per day

Case Studies of Network Rationalisation and Simplification

Similar to the issues surrounding quantifying the impacts of transfer policy, there are difficulties in determining the actual impact of simplifications to PT networks. This is because these changes are often undertaken at the same time that numerous other changes are also made. The following sub-sections outline examples of simplified PT networks, often built around core lines with an emphasis on increased transfers.

Melbourne, Australia and Toronto, Canada

Mees (2000) completed a comparison of Toronto in Canada with Melbourne in Australia to attempt to understand the impacts of the more connected Toronto network with that of Melbourne. The two cities have similar populations, incomes and urban forms (Mees et al., 2010), but Mees (2000) asserts that the integration of PT services in Toronto is responsible for the large differences in PT trends between the two cities from 1960 to 1990. In particular, he points to the integration of rail with bus services that lead to a more intensive and cost-efficient use of the rail lines in Toronto. The competition between the separate train and tram agencies in Melbourne was also seen as a barrier to increased PT usage.

From 1960-1990, the number of annual PT journeys increased by 22% in Toronto, while they fell by 56% in the same time period in Melbourne. The share of PT trips also held stable in Toronto at 33%, while it fell from 42% to 19% in Melbourne. This is despite the fact that Toronto not only has a smaller rail network, but also receives significantly lower public subsidies.

Zürich, Switzerland

Zürich is seen as many transport professionals as the best example of PT provision, with some of the highest PT usage rates in the developed world. Comparing Zürich can be compared to both Auckland and Wellington in relation to size and PT usage. The population of the City of Zürich is comparable to that of Wellington region (360,000 vs. 450,000), while the Canton (State) of Zürich is roughly the same of that of the wider Auckland region (approximately 1.3 million residents). However, Zürich's capita PT usage is around five times that of Wellington, and over ten times that achieved in Auckland (Mees et al., 2010). Neilsen et al. (2005) also note that PT supply and demand in Zürich are both well above the level seen in cities of a similar size and structure, and that most of the increase has been at the expense of private automobile travel. Indeed in Zürich, 40.7% of all work trips are taken by PT, and 47.2% by private vehicle, compared with 17.1% by PT, and 69.6% by private vehicle in Wellington.

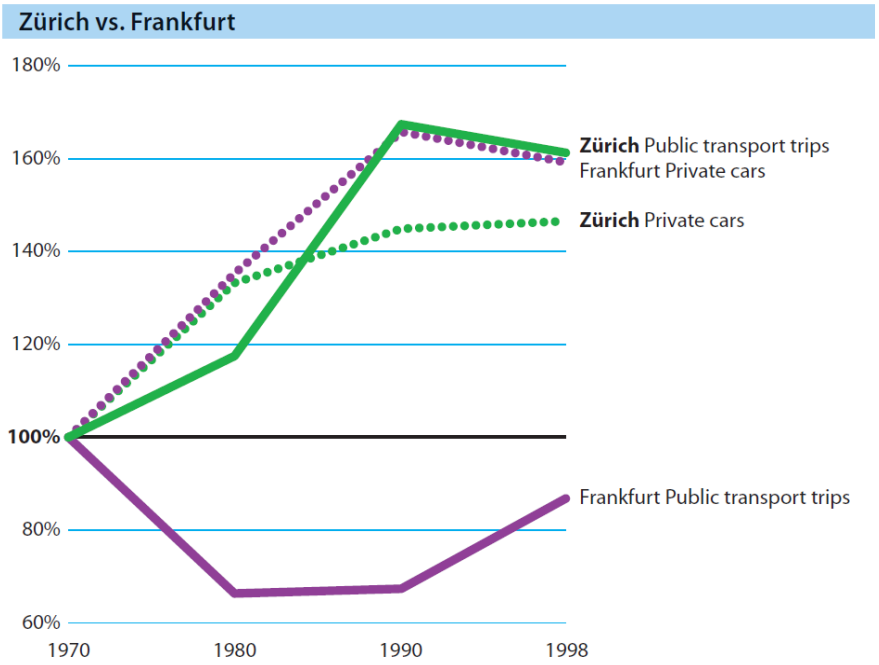
While the PT network is seen as high quality, it is the comprehensive network planning that has been undertaken in Zürich (Mees et al., 2010). Neilsen et al., 2005 state that:

> *Analyses of the public transport network show that the density of lines and the high frequency of services are key factors in the success of Zürich… Moreover, in Zürich the lines run in many directions, not only between a suburb and the city centre. The lines form a proper network and the high frequency means that the waiting times at the large number of interchanges are short. (Neilsen et al., 2005, 90-92).*

Comprehensive off-peak, cross-city and intra-suburb services are also supported by policies that restrict parking and road space allocation for cars, as well as priority for PT on all roads that has been in place for 30 years. In comparison to Frankfurt, Zürich has increased per capita PT demand by 60% since 1970,

whereas Frankfurt has decreased 14% (Schley, 2000 cited in Neilsen et al., 2005), as shown in Figure H.2.

Figure H.2: Percentage changes in private cars and PT trips in Frankfurt and Zürich, 1970-1998



Source: Schley (2000, as presented in Neilsen et al., 2005, p89).

Jönoköping, Sweden

Jönoköping is a small city of 81,000 in Sweden. In 1996, the PT network of Jönoköping was overhauled, with the existing network of numerous low frequency and direct lines replaced by three main pendulum lines running across the urban centre, with all other lines connecting to one of these three lines. This was seen as a radical change for residents and in some cases, these were supplemented by additional feeder routes (Neilsen and Lange, 2009).

The simplification of routes in Jönoköping was complemented by a modernised bus fleet and also upgrades to interchanges, as transfers between services were now facilitated by the network design. The new main pendulum lines attracted so many passengers that services were increased to run at 5-10 minute frequencies throughout most of the day, rather than just at peak times (Neilsen and Lange, 2009).

Prior to the restructure of the network, Jönoköping was experiencing declines in PT patronage of around 1-2% annually. Following the network simplification, patronage began to increase, rising 15% from 1996 to 2002. This was set across a backdrop of declining PT patronage across comparable Swedish cities. Furthermore, the total share of trips increased from 19% to 22% and farebox recovery ratio has increased 13% since 1996. Neilsen and Lange (2009) argue that these statistics all point to the positive impacts of network rationalisation, where these focus on simple and frequent routes and efficient systems for transferring to replace low-frequency direct routes.

Lemgo, Germany

Lemgo is a small city in the Lippe district of North Rhine-Westphalia in Germany. In 1994, the bus network in the city undertook a network rationalisation that led to the creation of four pendulum routes across the city – three connecting to the city centre and the fourth to a major industrial centre (Neilsen

and Lange, 2009). Lemgo had a population of 30,000 at the time of network reconfiguration, and a similar program was also undertaken in the nearby Lindau with 24,000 residents.

The new trunk routes in Lemgo meant that each line had an immediate catchment of 8,000 residents within a short walking distance. The initial frequencies of the lines were 30 minutes throughout the day, with the frequency doubling in peak periods. Lemgo also implemented a 'pulse' timetable schedule with buses on all four lines synchronising their arrival at the central bus station. (Neilsen and Lange, 2009).

Neilsen and Lange (2009) assert that the impacts on bus patronage continue to be impressive. 80% of PT passengers in the immediately following year were new PT customers, and the city achieves total patronage of nearly 2,000,000 PT trips annually. Public subsidies required to fund the PT network previously also fell dramatically, from 7.5DM to 0.5DM. This was drive by an increase in farebox recovery associated with the increased patronage, which rose to 70% of total operating costs.

London, United Kingdom

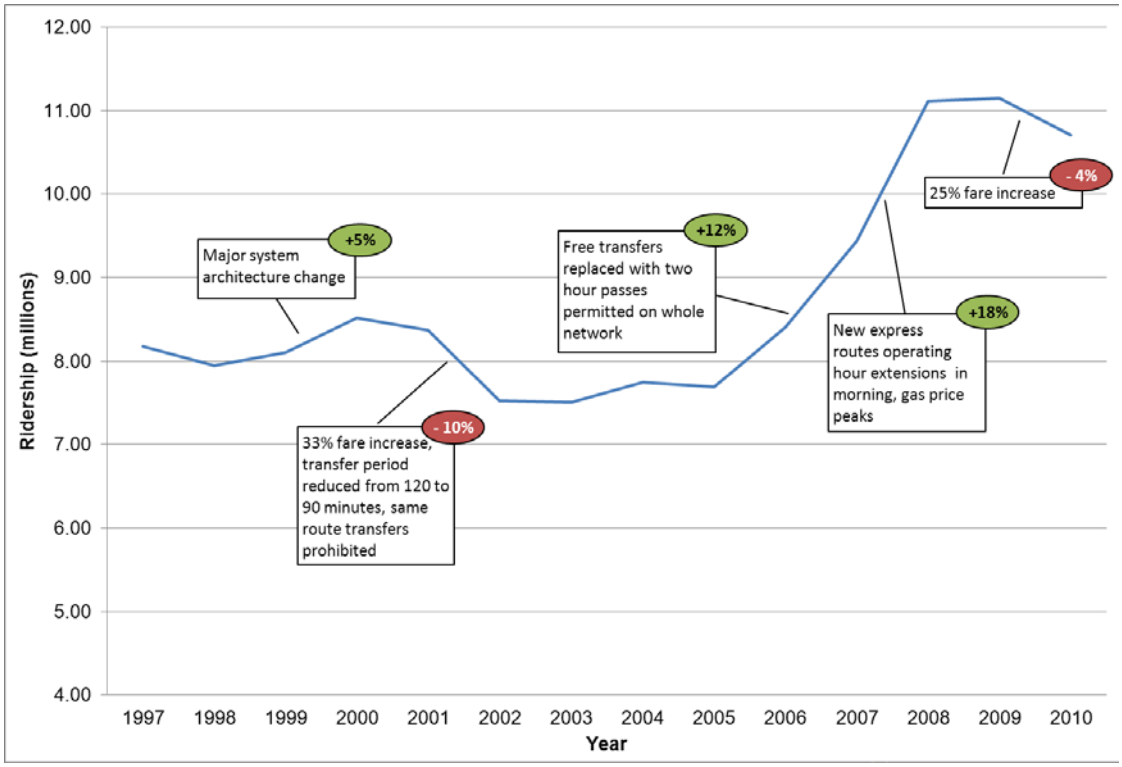
White et al. (1992) undertook a review of transport in London that sought to examine the impacts of a change in bus frequencies in North West London. Bus services currently running at 20 minute frequencies were replaced by minibuses which were able to run at 10 minute headways. They found that there was a distinct change in behaviour of PT users, in that they now simply arrived at any time at the stop rather than planning their trip in advance as they had done with lower frequencies. White et al. assert that this is due to the significant decrease in potential wait time, and that this can lead to increased patronage as users face less of a time penalty in waiting for services.

These findings are in line with the assertion of Dodson et al. (2011) that direct routes with higher frequencies attract higher frequencies by removing the requirement to plan for PT trips. Network planning should limit the deviations in physical routes for bus lines and increase frequency rather than increase spatial coverage to better increase patronage.

Spokane, Washington, USA

Spokane in Washington State, USA has undertaken a number of changes to their networks and in the last 15 years. The impacts on PT patronage have been largely as expected. Increases in fares in 2000 and 2009 saw decreases in patronage, in line with inelastic PT demand. In relation to network rationalisation and simplification however, both a major system redesign in 1999, and the extension of operating hours in 2007 led to significant increases in patronage, as shown in Figure H.3.

Figure H.2: Public Transport ridership in Spokane, 1997-2010



Source: Spokane Transit

Appendix I

Potential Impacts of Transfer Penalty Removal in Wellington

To examine the potential impacts of the proposed changes in transfer policy in Wellington, we have also undertaken an analysis of the current level of transferring within the current network. This is only available for those passengers using electronic ticketing (Snapper cards) as these provide a complete data set of boarding and alighting behaviour, as well as times and bus stops used. This data has been completed examining only NZBus data due to the availability of information. However, given that all other operators currently allow free transfers between their own services, this is unlikely to have too much of a distortionary impact on the results.

The data presented in this section refers to only Snapper users, so caution should be taken in the interpretation of these. However, we have no reason to believe that Snapper users as a whole present a significantly different composition to the total PT population. It has also assumed that all trips in the database handled were single trips, so the impacts of monthly passes have been excluded from this analysis. We have also excluded the potential impacts of a fare zone cap on transfer revenues, as this is a fare issue that will be handled separately from that of transfers. However, we note that such a policy would further help to offset any lost revenue from the removal of transfer fares.

Using this database of linked trips, we calculated the number of transfers that occur on a daily basis in the period from 28 February through until 17 April 2011. Transfers were identified where two trips were taken by the same passenger ID number from the Snapper system in the same day, where:

- The second boarding is within 30 minutes of the first alighting; and
- The second boarding stop is less than 400m from the first alighting stop.

The number of total transfers identified the number of linked trips in this subset and the percentage of these trips is summarised in Table 4. This covers transfers in the week of 28 Feb – 6 March 2011, and also a weekly total, and a total for the whole sample period.

Table 23: Transfer total of linked trips in Wellington, 28 Feb – 17 April

Day/Date	Total transfers	Total linked trips	Percentage
Monday 28 Feb	1,002	33,821	3.0%
Tuesday 1 Mar	1,042	35,450	2.9%
Wednesday 2 Mar	1,100	36,734	3.0%
Thursday 3 Mar	1,063	35,703	3.0%
Friday 4 Mar	1,122	35,974	3.1%
Saturday 5 Mar	437	9,375	4.7%
Sunday 6 Mar	235	6,025	3.9%
Weekly total	**6,001**	**193,082**	**3.1%**
Period total (28 Feb – 17 Apr)	**40,904**	**1,369,404**	**3.0%**

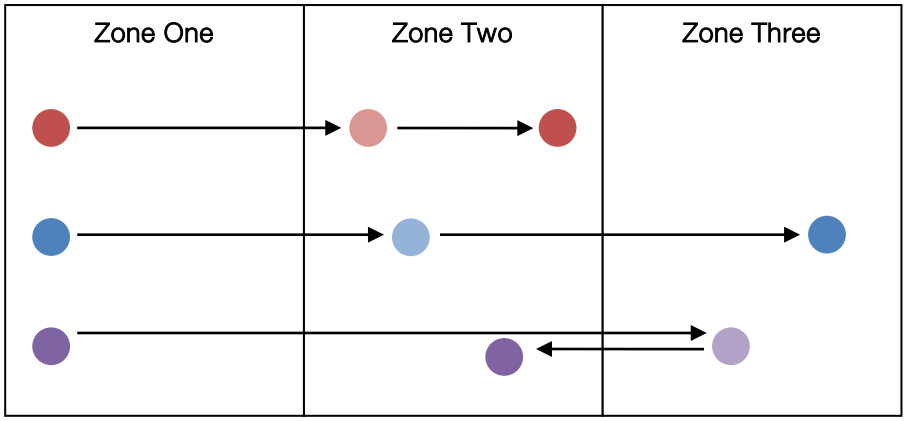
The table highlights that transfers are not a large part of the system, with an average of all trips around 3% across the period. Transfers appear to be slightly higher on weekends, which potentially highlights that weekend PT users are more likely to rely on these services than those travelling during the week (especially commuters).

The possible revenue impacts of a change in transfer policy are difficult to calculate, as the exact elasticity of demand and attractiveness of transfers are impossible to calculate for the Wellington context. From the experiences discussed in the preceding sections however, we know there will be two major drivers of change. The first is a fall in the average trip fare that arises as existing transfers become free, rather than being paid as a separate fare in the current situation. The second is an increase in patronage generated due to the improvement in connectivity of the network and ease of travel for both existing and new users.

The revenue impact is difficult to estimate as the exact type of transfer behaviour across the network cannot be easily determined. We have identified three predominant types of transfer that exist within the system. These are presented in Figure 0.4:

- In the first example, the second trip is within the destination zone, so from a pricing perspective, the total distance of the trip does not change. This results in a one zone revenue loss for the transfer trip, with the second trip now free. Under Snapper pricing, this would be $1.60.
- In the second example, the second trip continues the journey into a further fare zone. This will result in a smaller impact on revenue, as the free transfer is offset by an increased journey fare. However, instead of paying two one-zone fares, the passenger will only pay one two-zone fare. Under Snapper pricing, the revenue impact of this trip would be $0.74 (the difference between two one-zone fares, and a two zone fare).
- The third example is likely to be less common, but is possible within the system. The second trip is either a return in the same direction, or in a perpendicular direction that shifts it into a zone previously passed through. This would have the largest impact on revenue, and the trip shown in the figure would now only incur a one-zone fare, having previously paid a two-zone fare, and a one-zone fare. Under Snapper pricing, this would have a revenue impact of $2.64.

Figure 0.3: Transfer types



Recognising that the most likely transfers in the system are likely to be the first or second type from the above example, we have used an average revenue loss of $1.44, which assumes a split of 6:3:1 for the three types of transfer trips identified. We have used the new fares implemented on November 1, 2011, and also the prices for Snapper rather than cash fares. It is likely that users would need to be using Snapper cards or some other form of electronic ticketing to be eligible for free transfers.

We now take the average revenue loss and the average level of transfers in the system (from Table 4) to calculate the total impact given the current level of trips. In the 2009/10 financial year, the total number of bus trips was 23,650,000, which equates to roughly 455,000 trips per week across all operators. Under these assumptions, the potential farebox revenue impact would be $19,650 per week, or $1,000,000 per annum. However, this figure excludes any new trip generation resulting from a more connected network for both existing and new users.

Patronage gains experienced as a result of changes in transfer policy alongside other improvements have ranged from 3% (buses in New York) through to 15% (underground in Madrid) and as high as 33% in London. To break-even revenue with the change of transfer policy in Wellington, new trip revenue would need to equal that lost as a result of free transfers. Table 5 summarises the calculations in relation to

both the total number of new trips required, and also what this would mean on a per capita basis for Wellington[24].

Table 24: New trips needed to break-even fare revenue under new transfer policy (per annum)

Trip type	Number of new trips req.	Per capita trip increase	Percentage of total trips
One zone trips	640,000	3.7	2.7%
Two zone trips	420,000	2.4	1.8%
Three zone trips	310,000	1.8	1.3%

The analysis shows that the required trip generation per capita to breakeven are low, and in fact below the patronage increases seen in the international literature, which generally see an increase of between 5-10% following the implementation of free transfers. As such, it is likely that implementing free transfers would have both a positive impact on both revenue and patronage for PT in Wellington.

[24] Population base for the study area population used - 172,000 in 2006.