

Appendix 7.1

Junction Operation Results

Appendix 7.1

Junction Performance

Shannon Park Roundabout

2025 Base Year	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
N28 North	3.9	79%	5.2	84%	3.3	75%	3.5	77%	2.9	75%
N28 East	0.5	34%	1.3	53%	3.9	77%	74.6	113%	6.1	87%
R611 South	1.6	60%	7.5	89%	3.9	78%	4.6	82%	2.4	71%

2029 Construction Year, Without Development	0600-0700 AM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC
N28 North	6.3	86%	4.2	81%
N28 East	0.6	37%	16.7	98%
R611 South	2.1	66%	3.4	78%

2029 Construction Year, With Development	0600-0700 AM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC
N28 North	21.9	98%	5.8	86%
N28 East	0.8	44%	53.2	109%
R611 South	2.8	73%	4	81%

2030 Opening Year, Without M28, Without Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
N28 North	7.3	88%	11.8	93%	5.9	84%	6.3	86%	4.7	83%
N28 East	0.6	38%	1.8	61%	10.3	92%	168.4	133%	23.2	101%
R611 South	2.3	68%	31.2	102%	8.9	91%	7.2	88%	3.8	80%

2030 Opening Year, Without M28, With Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
N28 North	8.4	90%	13.1	94%	6.2	85%	6.4	87%	4.7	83%
N28 East	0.7	39%	1.9	61%	13.2	94%	174.2	134%	30.7	103%
R611 South	2.4	69%	34.1	103%	9.8	92%	7.2	88%	3.8	80%

2030 Opening Year, With M28, Without Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
N28 North	0.2	15%	0.2	16%	0.2	14%	0.2	15%	0.2	14%
N28 East	0.3	21%	0.6	32%	0.8	39%	1.3	55%	0.7	42%
R611 South	0.3	20%	0.3	24%	0.4	26%	0.4	27%	0.3	26%

2030 Opening Year, With M28, With Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
N28 North	0.2	15%	0.2	16%	0.2	14%	0.2	15%	0.2	14%
N28 East	0.3	22%	0.6	32%	0.8	40%	1.3	55%	0.8	43%
R611 South	0.3	20%	0.3	24%	0.4	26%	0.4	27%	0.4	26%

2035 Opening Year +5, Without Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
N28 North	0.2	16%	0.2	17%	0.2	15%	0.2	15%	0.2	15%
N28 East	0.3	22%	0.6	34%	0.8	41%	1.5	57%	0.8	44%
R611 South	0.3	21%	0.3	25%	0.4	27%	0.4	29%	0.4	27%

2035 Opening Year +5, With Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
N28 North	0.2	16%	0.2	17%	0.2	15%	0.2	16%	0.2	15%
N28 East	0.3	23%	0.6	34%	0.9	42%	1.5	58%	0.8	45%
R611 South	0.3	21%	0.3	25%	0.3	23%	0.4	29%	0.4	27%

2045 Opening Year +15, Without Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
N28 North	0.2	17%	0.2	18%	0.2	17%	0.2	17%	0.2	16%
N28 East	0.3	25%	0.7	37%	1.1	46%	1.9	64%	0.9	48%
R611 South	0.3	23%	0.4	28%	0.5	31%	0.5	33%	0.4	30%

2045 Opening Year +15, With Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
N28 North	0.2	18%	0.2	19%	0.2	17%	0.2	17%	0.2	16%
N28 East	0.4	26%	0.7	38%	1.1	48%	1.9	64%	1	49%
R611 South	0.3	23%	0.4	28%	0.5	31%	0.5	33%	0.4	30%

Appendix 7.1

Junction Performance

Raffeen Bridge Junction

2025 Base Year	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
Raffeen Left Turn to N28	0.3	19%	0.5	34%	0.2	14%	0.2	14%	0.1	12%
Raffeen Right turn to N28	0.1	10%	0.3	19%	0.5	33%	0.5	34%	0.3	24%
N28 Right Turn to Raffeen	0	5%	0.1	11%	0.2	14%	3.5	77%	0.3	19%

2029 Construction Year, Without Development	0600-0700 AM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC
Raffeen Left Turn to N28	0.3	22%	0.2	13%
Raffeen Right turn to N28	0.1	11%	0.4	27%
N28 Right Turn to Raffeen	0.1	5%	0.3	20%

2029 Construction Year, With Development	0600-0700 AM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC
Raffeen Left Turn to N28	0.4	27%	0.2	14%
Raffeen Right turn to N28	0.2	14%	0.5	30%
N28 Right Turn to Raffeen	0.1	7%	0.3	22%

2030 Opening Year, Without M28, Without Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
Raffeen Left Turn to N28	0.3	22%	0.7	39%	0.2	16%	0.2	17%	0.2	13%
Raffeen Right turn to N28	0.1	12%	0.3	23%	0.7	39%	0.8	44%	0.4	28%
N28 Right Turn to Raffeen	0.1	5%	0.1	12%	0.2	16%	5.9	86%	0.3	21%

2030 Opening Year, Without M28, With Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
Raffeen Left Turn to N28	0.3	23%	0.7	40%	0.2	16%	0.2	17%	0.2	13%
Raffeen Right turn to N28	0.1	13%	0.3	24%	0.7	40%	0.8	44%	0.4	28%
N28 Right Turn to Raffeen	0.1	6%	0.1	12%	0.2	16%	6	86%	0.3	21%

2030 Opening Year, With M28, Without Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
Raffeen Left Turn to N28	0.3	18%	0.5	34%	0.2	14%	0.2	15%	0.2	12%
Raffeen Right turn to N28	0.1	9%	0.2	17%	0.5	32%	0.4	26%	0.3	22%
N28 Right Turn to Raffeen	0	3%	0.1	6%	0.1	9%	1.1	50%	0.1	12%

2030 Opening Year, With M28, With Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
Raffeen Left Turn to N28	0.3	18%	0.5	34%	0.2	14%	0.2	15%	0.2	12%
Raffeen Right turn to N28	0.1	9%	0.2	17%	0.5	32%	0.4	26%	0.3	22%
N28 Right Turn to Raffeen	0	3%	0.1	7%	0.1	9%	1.1	50%	0.2	12%

2035 Opening Year +5, Without Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
Raffeen Left Turn to N28	0.3	19%	0.6	36%	0.2	15%	0.2	15%	0.2	13%
Raffeen Right turn to N28	0.1	9%	0.2	18%	0.6	34%	0.4	28%	0.3	23%
N28 Right Turn to Raffeen	0	3%	0.1	7%	0.1	9%	1.2	53%	0.2	13%

2035 Opening Year +5, With Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
Raffeen Left Turn to N28	0.3	20%	0.6	36%	0.2	15%	0.2	15%	0.2	13%
Raffeen Right turn to N28	0.1	9%	0.2	18%	0.6	34%	0.4	28%	0.3	23%
N28 Right Turn to Raffeen	0	3%	0.1	7%	0.1	10%	1.2	53%	0.2	13%

2045 Opening Year +15, Without Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
Raffeen Left Turn to N28	0.3	22%	0.7	40%	0.2	17%	0.2	17%	0.2	14%
Raffeen Right turn to N28	0.1	11%	0.3	21%	0.7	39%	0.5	33%	0.4	26%
N28 Right Turn to Raffeen	0	3%	0.1	8%	0.1	10%	1.5	58%	0.2	14%

2045 Opening Year +15, With Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
Raffeen Left Turn to N28	0.3	22%	0.7	40%	0.2	17%	0.2	17%	0.2	14%
Raffeen Right turn to N28	0.1	11%	0.3	21%	0.7	39%	0.5	33%	0.4	26%
N28 Right Turn to Raffeen	0	4%	0.1	8%	0.1	11%	1.5	58%	0.2	14%

Appendix 7.1

Junction Performance

Shanbally Roundabout

2025 Base Year	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
N28 to Cork	0.8	40%	1.5	55%	2.9	71%	147.8	126%	5.5	85%
Marian Terrace	0.1	11%	0.2	19%	0.1	11%	1.2	55%	0.2	20%
N28 to Ringaskiddy	4.8	82%	9.3	91%	0.5	29%	0.3	23%	0.3	25%

2029 Construction Year, Without Development	0600-0700 AM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC
N28 to Cork	1.2	43%	10.3	93%
Marian Terrace	0.1	12%	0.3	22%
N28 to Ringaskiddy	8.5	89%	0.4	27%

2029 Construction Year, With Development	0600-0700 AM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC
N28 to Cork	1.7	54%	37.1	105%
Marian Terrace	0.1	12%	0.3	24%
N28 to Ringaskiddy	46.7	103%	0.5	33%

2030 Opening Year, Without M28, Without Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
N28 to Cork	0.9	45%	2	62%	4.8	81%	269.3	140%	11.6	94%
Marian Terrace	0.1	12%	0.3	21%	0.2	13%	1.5	61%	0.3	23%
N28 to Ringaskiddy	9.5	91%	31.5	100%	0.6	33%	0.4	26%	0.4	28%

2030 Opening Year, Without M28, With Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
N28 to Cork	1	47%	2.1	63%	5.7	83%	277.6	141%	15.5	97%
Marian Terrace	0.1	12%	0.3	22%	0.2	13%	1.5	61%	0.3	23%
N28 to Ringaskiddy	11.5	93%	36.8	102%	0.7	34%	0.4	26%	0.4	28%

2030 Opening Year, With M28, Without Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
N28 to Cork	0.1	10%	0.2	14%	0.3	18%	0.6	32%	0.3	21%
Marian Terrace	0.1	10%	0.2	17%	0.1	9%	0.7	40%	0.2	15%
N28 to Ringaskiddy	1.4	56%	1.8	62%	0.3	20%	0.2	16%	0.2	17%

2030 Opening Year, With M28, With Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
N28 to Cork	0.1	10%	0.2	14%	0.3	19%	0.6	32%	0.3	22%
Marian Terrace	0.1	10%	0.2	17%	0.1	9%	0.7	40%	0.2	15%
N28 to Ringaskiddy	1.5	57%	1.8	63%	0.3	21%	0.2	16%	0.2	17%

2035 Opening Year +5, Without Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
N28 to Cork	0.1	11%	0.2	15%	0.3	19%	0.6	33%	0.3	22%
Marian Terrace	0.1	11%	0.2	18%	0.1	10%	0.7	42%	0.2	16%
N28 to Ringaskiddy	1.6	59%	2	65%	0.4	22%	0.2	17%	0.2	18%

2035 Opening Year +5, With Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
N28 to Cork	0.1	11%	0.2	15%	0.3	20%	0.6	34%	0.3	23%
Marian Terrace	0.1	11%	0.2	18%	0.1	10%	0.7	42%	0.2	16%
N28 to Ringaskiddy	1.7	60%	2.1	66%	0.4	22%	0.2	18%	0.2	18%

2045 Opening Year +15, Without Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
N28 to Cork	0.2	12%	0.2	16%	0.3	22%	0.7	37%	0.3	24%
Marian Terrace	0.1	12%	0.3	19%	0.1	11%	0.8	46%	0.2	17%
N28 to Ringaskiddy	2	65%	2.7	72%	0.4	25%	0.3	19%	0.3	20%

2045 Opening Year +15, With Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
N28 to Cork	0.2	12%	0.2	17%	0.4	22%	0.7	37%	0.3	25%
Marian Terrace	0.1	12%	0.3	19%	0.1	11%	0.9	46%	0.2	17%
N28 to Ringaskiddy	2.1	66%	2.8	72%	0.4	25%	0.3	20%	0.3	20%

Appendix 7.1

Junction Performance

Port of Cork Junction

2025 Base Year	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
Port of Cork Access	1.8	36%	3.8	60%	5.5	40%	4.9	55%	1	20%
N28 to Cork	4.7	19%	6.4	28%	7.8	40%	13	55%	10.3	46%
R613 Barnahely Road	4.2	58%	5.4	61%	3.2	39%	6.9	55%	5.5	47%
N28 to Ringaskiddy	16.3	58%	13.9	61%	6.5	38%	5.2	30%	5	30%

2029 Construction Year, Without Development	0600-0700 AM		1800-1900 PM	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
Port of Cork Access	2.1	42%	1.1	22%
N28 to Cork	5.2	21%	11.3	50%
R613 Barnahely Road	4.8	63%	6.3	50%
N28 to Ringaskiddy	19.3	63%	5.4	33%

2029 Construction Year, With Development	0600-0700 AM		1800-1900 PM	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
Port of Cork Access	2.3	42%	1.1	22%
N28 to Cork	7.8	27%	15.6	59%
R613 Barnahely Road	6.2	78%	7	59%
N28 to Ringaskiddy	36.4	79%	7.8	40%

2030 Opening Year, Without M28, Without Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
Port of Cork Access	2.2	43%	4.7	67%	6.8	45%	6.1	61%	1.2	22%
N28 to Cork	5.3	21%	7.3	31%	8.8	44%	15.2	62%	11.5	51%
R613 Barnahely Road	4.9	65%	6.3	67%	3.8	45%	8.2	61%	6.4	51%
N28 to Ringaskiddy	20.7	65%	17.9	68%	7.8	45%	6.2	35%	5.6	34%

2030 Opening Year, Without M28, With Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
Port of Cork Access	2.2	43%	4.8	69%	6.8	47%	6.2	63%	1.2	22%
N28 to Cork	6	23%	7.8	32%	9.9	47%	15.6	63%	12.6	53%
R613 Barnahely Road	5.1	67%	6.5	69%	3.7	47%	8.4	62%	6.6	53%
N28 to Ringaskiddy	23.1	68%	19.5	70%	8.2	45%	6.4	36%	5.8	34%

2030 Opening Year, With M28, Without Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
Port of Cork Access	2	27%	3.7	35%	5.5	32%	5.1	40%	1.2	22%
N28 to Cork	2.5	16%	3.8	32%	4.1	32%	5.6	40%	4.8	32%
R613 Barnahely Road	3.1	27%	4.1	35%	3.3	32%	5.8	40%	4.5	32%
N28 to Ringaskiddy	3.4	27%	3.6	35%	2.1	19%	1.7	14%	1.6	13%

2030 Opening Year, With M28, With Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
Port of Cork Access	1.9	27%	3.8	35%	5.5	33%	5.3	40%	1.1	22%
N28 to Cork	2.6	16%	3.8	32%	4.4	33%	5.8	40%	4.9	32%
R613 Barnahely Road	3.2	27%	4.1	35%	3.3	33%	6	40%	4.6	32%
N28 to Ringaskiddy	3.6	28%	3.7	35%	2.2	18%	1.7	14%	1.5	13%

2035 Opening Year +5, Without Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
Port of Cork Access	2.1	29%	4	37%	6	34%	5.5	42%	1.2	23%
N28 to Cork	2.6	17%	4	34%	4.3	34%	6	42%	4.9	33%
R613 Barnahely Road	3.3	29%	4.3	37%	3.5	34%	6.3	42%	4.9	33%
N28 to Ringaskiddy	3.6	29%	3.8	37%	2.3	20%	1.9	16%	1.5	13%

2035 Opening Year +5, With Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
Port of Cork Access	2.1	29%	4	37%	6.1	35%	5.7	42%	1.2	23%
N28 to Cork	2.6	17%	4	33%	4.5	34%	6	42%	5	33%
R613 Barnahely Road	3.4	29%	4.3	37%	3.4	34%	6.3	42%	5	34%
N28 to Ringaskiddy	3.7	29%	3.9	37%	2.2	20%	1.9	16%	1.5	13%

2045 Opening Year +15, Without Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
Port of Cork Access	2.5	31%	4.8	41%	7.2	39%	6.4	47%	1.3	26%
N28 to Cork	2.9	18%	4.4	37%	5	39%	6.8	46%	5.4	35%
R613 Barnahely Road	3.7	32%	5.3	41%	4	39%	7.3	47%	5.3	36%
N28 to Ringaskiddy	4.1	32%	4.4	41%	2.7	24%	2.1	18%	1.8	15%

2045 Opening Year +15, With Development	0600-0700 AM		0630-0730 AM		1400-1500 PM		1530-1630 PM		1800-1900 PM	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
Port of Cork Access	2.5	31%	4.8	41%	7.1	39%	6.5	47%	1.3	26%
N28 to Cork	2.9	18%	4.5	36%	5	39%	6.7	47%	5.5	36%
R613 Barnahely Road	3.7	32%	4.7	41%	3.9	39%	7.3	47%	5.3	36%
N28 to Ringaskiddy	4.2	32%	4.5	41%	2.6	23%	2.2	18%	1.8	15%

Appendix 7.1

Junction Performance

Ferry Port Access Junction

2025 Base Year	0600-0700		0630-0730		1400-1500		1530-1630		1800-1900	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
Shamrock Place	0.4	28%	0.4	29%	0.2	19%	0.7	42%	0.8	43%
N28 Westbound	0	0%	0	0%	0	5%	0.1	6%	0	0%
Ferry Port (Left Turn)	0	0%	0	0%	0	2%	0	2%	0	0%
Ferry Port (Right Turn)	0	0%	0	0%	0	2%	0	1%	0	0%
N28 Eastbound	2.7	73%	1.8	63%	0.1	9%	0.1	8%	0.5	33%

2029 Construction Year, Without Development	0600-0700		1800-1900	
	Queue (PCU)	RFC	Queue (PCU)	RFC
Shamrock Place	1	47%	0.9	47%
N28 Westbound	0	0%	0	0%
Ferry Port (Left Turn)	0	0%	0	0%
Ferry Port (Right Turn)	0	0%	0	0%
N28 Eastbound	0.6	36%	0.6	36%

2029 Construction Year, With Development	0600-0700		1800-1900	
	Queue (PCU)	RFC	Queue (PCU)	RFC
Shamrock Place	0.5	32%	1	49%
N28 Westbound	0	0%	0	0%
Ferry Port (Left Turn)	0	0%	0	0%
Ferry Port (Right Turn)	0	0%	0	0%
N28 Eastbound	5.7	82%	0.7	37%

2030 Opening Year, Without M28, Without Development	0600-0700		0630-0730		1400-1500		1530-1630		1800-1900	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
Shamrock Place	0.5	31%	0.5	32%	0.3	21%	0.9	47%	0.9	48%
N28 Westbound	0	0%	0	0%	0.1	5%	0.1	7%	0	0%
Ferry Port (Left Turn)	0	0%	0	0%	0	2%	0	2%	0	0%
Ferry Port (Right Turn)	0	0%	0	0%	0	2%	0	1%	0	0%
N28 Eastbound	4	80%	2.4	69%	0.1	10%	0.1	9%	0.6	36%

2030 Opening Year, Without M28, With Development	0600-0700		0630-0730		1400-1500		1530-1630		1800-1900	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
Shamrock Place	0.5	31%	0.5	32%	0.3	21%	0.9	47%	0.9	48%
N28 Westbound	0	0%	0	0%	0.1	5%	0.1	7%	0	0%
Ferry Port (Left Turn)	0	0%	0	0%	0	2%	0	2%	0	0%
Ferry Port (Right Turn)	0	0%	0	0%	0	2%	0	1%	0	0%
N28 Eastbound	4.2	81%	2.5	69%	0.1	10%	0.1	9%	0.6	37%

2030 Opening Year, With M28, Without Development	0600-0700		0630-0730		1400-1500		1530-1630		1800-1900	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
Shamrock Place	0.5	31%	0.5	32%	0.3	20%	0.8	44%	0.9	47%
N28 Westbound	0	0%	0	0%	0	2%	0	3%	0	0%
Ferry Port (Left Turn)	0	0%	0	0%	0	2%	0	2%	0	0%
Ferry Port (Right Turn)	0	0%	0	0%	0	2%	0	1%	0	0%
N28 Eastbound	0.5	32%	0.4	27%	0	4%	0	3%	0.2	14%

2030 Opening Year, With M28, With Development	0600-0700		0630-0730		1400-1500		1530-1630		1800-1900	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
Shamrock Place	0.5	31%	0.5	32%	0.3	20%	0.8	44%	0.9	47%
N28 Westbound	0	0%	0	0%	0	2%	0	3%	0	0%
Ferry Port (Left Turn)	0	0%	0	0%	0	2%	0	2%	0	0%
Ferry Port (Right Turn)	0	0%	0	0%	0	2%	0	1%	0	0%
N28 Eastbound	0.5	32%	0.4	27%	0	4%	0	4%	0.2	14%

2035 Opening Year +5, Without Development	0600-0700		0630-0730		1400-1500		1530-1630		1800-1900	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
Shamrock Place	0.5	32%	0.5	33%	0.3	21%	0.8	46%	1	49%
N28 Westbound	0	0%	0	0%	0	2%	0	3%	0	0%
Ferry Port (Left Turn)	0	0%	0	0%	0	2%	0	2%	0	0%
Ferry Port (Right Turn)	0	0%	0	0%	0	2%	0	1%	0	0%
N28 Eastbound	0.5	33%	0.4	29%	0	4%	0	4%	0.2	15%

2035 Opening Year +5, With Development	0600-0700		0630-0730		1400-1500		1530-1630		1800-1900	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
Shamrock Place	0.5	32%	0.5	33%	0.3	21%	0.8	46%	1	49%
N28 Westbound	0	0%	0	0%	0	2%	0	3%	0	0%
Ferry Port (Left Turn)	0	0%	0	0%	0	2%	0	2%	0	0%
Ferry Port (Right Turn)	0	0%	0	0%	0	2%	0	1%	0	0%
N28 Eastbound	0.5	33%	0.4	29%	0	4%	0	4%	0.2	15%

2045 Opening Year +15, Without Development	0600-0700		0630-0730		1400-1500		1530-1630		1800-1900	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
Shamrock Place	0.6	35%	0.6	36%	0.3	23%	1	50%	1.2	53%
N28 Westbound	0	0%	0	0%	0	2%	0	3%	0	0%
Ferry Port (Left Turn)	0	0%	0	0%	0	2%	0	2%	0	0%
Ferry Port (Right Turn)	0	0%	0	0%	0	2%	0	1%	0	0%
N28 Eastbound	0.6	36%	0.5	31%	0	4%	0	4%	0.2	16%

2045 Opening Year +15, With Development	0600-0700		0630-0730		1400-1500		1530-1630		1800-1900	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
Shamrock Place	0.6	35%	0.6	36%	0.3	23%	1	50%	1.2	54%
N28 Westbound	0	0%	0	0%	0	2%	0	3%	0	0%
Ferry Port (Left Turn)	0	0%	0	0%	0	2%	0	2%	0	0%
Ferry Port (Right Turn)	0	0%	0	0%	0	2%	0	1%	0	0%
N28 Eastbound	0.6	36%	0.5	31%	0.1	4%	0	4%	0.2	16%

Appendix 7.1

Junction Performance

Ferry Port Access Junction

Note - All Scenarios are 'with development', as the junction is not in place in scenarios without development.

2029 Construction Year	0600-0700 AM		1800-1900 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC
Indaver Entrance	0.2	15%	0.2	18%
N28 Right Turn to Indaver	0.8	44%	0.2	17%

2030 Opening Year	0600-0700 AM		1800-1900 PM		0630-0730 AM		1400-1500 PM		1530-1630 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
Indaver Entrance	0	3%	0	4%	0	2%	0	4%	0	1%
N28 Right Turn to Indaver	0.1	5%	0	1%	0	3%	0	2%	0	1%

2035 Opening Year +5	0600-0700 AM		1800-1900 PM		0630-0730 AM		1400-1500 PM		1530-1630 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
Indaver Entrance	0	3%	0	4%	0	2%	0	4%	0	1%
N28 Right Turn to Indaver	0.1	5%	0	1%	0	3%	0	2%	0	1%

2045 Opening Year +15	0600-0700 AM		1800-1900 PM		0630-0730 AM		1400-1500 PM		1530-1630 PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC
Indaver Entrance	0	3%	0	4%	0	2%	0	4%	0	1%
N28 Right Turn to Indaver	0.1	5%	0	1%	0	3%	0	2%	0	1%