



Figure 22. Flow Difference – With Development Scenario vs Non Highway Mitigation Scenario – Amber Valley - Evening Peak

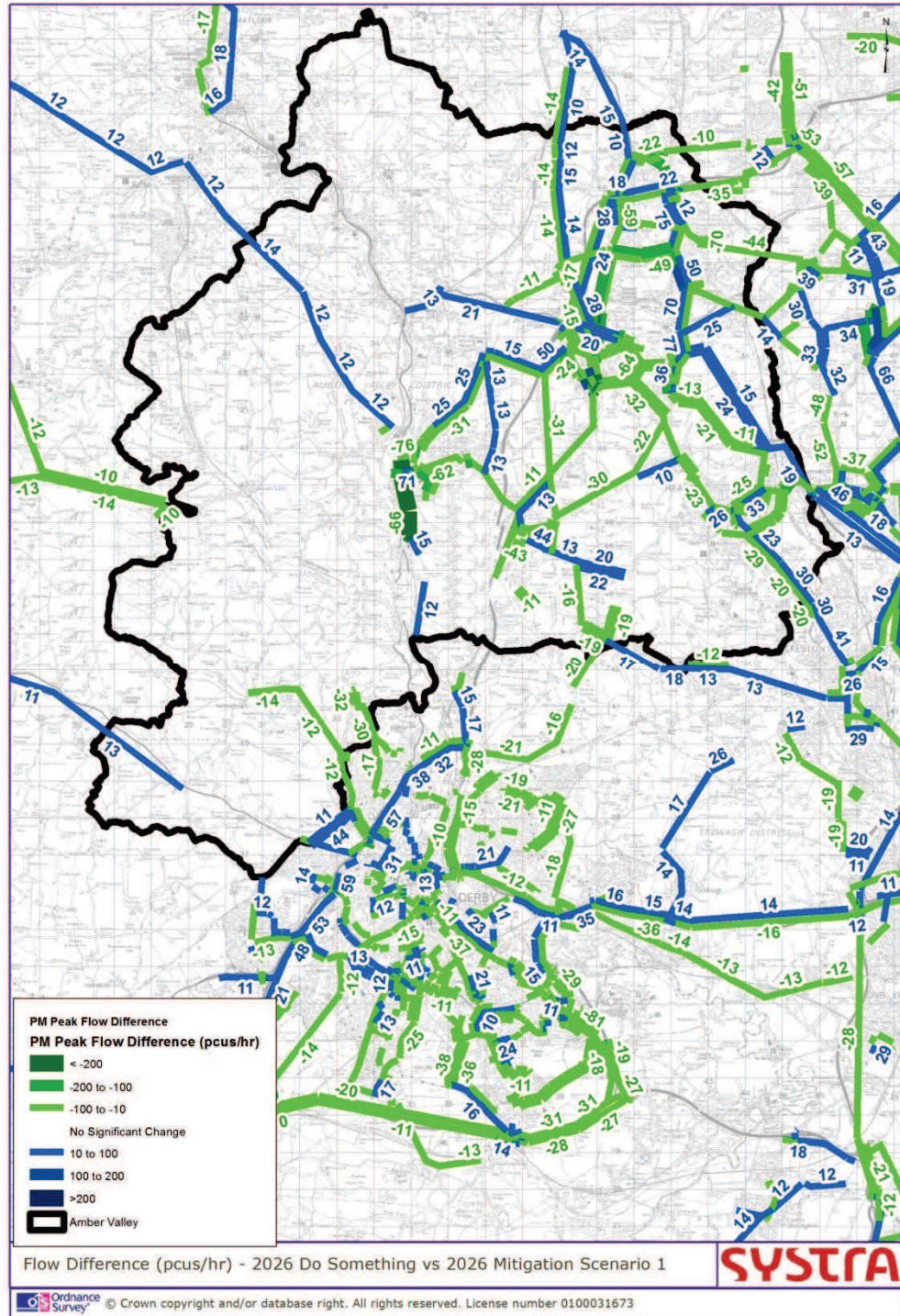




Figure 23. Relief of Junction Congestion – With Development Scenario vs Non Highway Mitigation Scenario – Amber Valley - Morning Peak

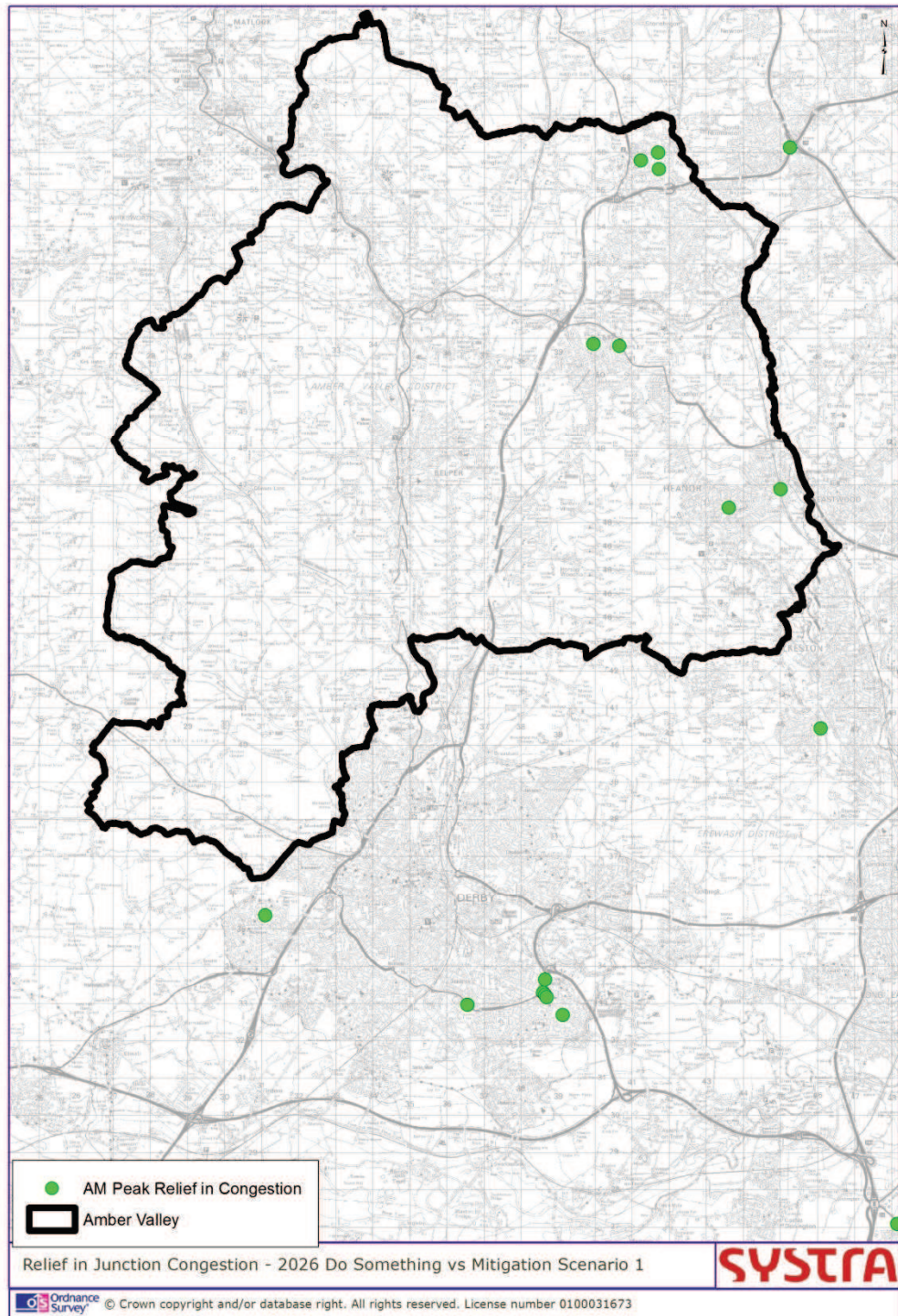
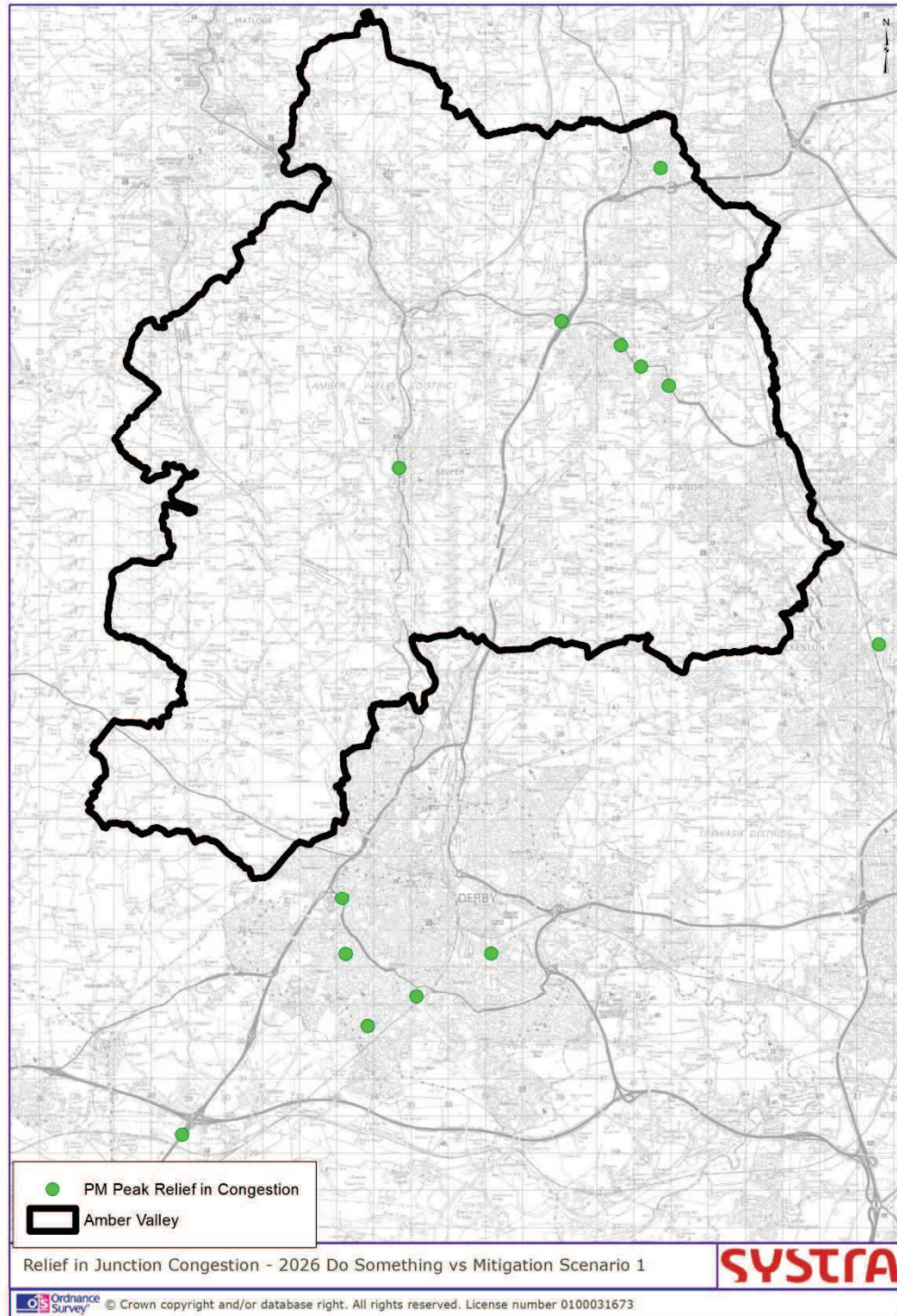




Figure 24. Relief of Junction Congestion – With Development Scenario vs Non Highway Mitigation Scenario – Amber Valley - Evening Peak





Network Indicators

- 6.4.9 The Network Indicators for the Non Highway Mitigation and With Development Scenarios are provided in Tables 14 and 15. This indicates that congestion in Amber Valley, as indicated by the over-capacity queues indicator, is partially mitigated as a result of the Non Highway Mitigation proposals (27% in the AM peak and 27% in the PM peak).
- 6.4.10 This results in an increase of average speed of around 2% in the morning peak and 2% in the evening peak, with a partial mitigation of 31% in the morning peak and 32% in the evening peak.

Table 14. Network Indicators (morning peak) – Amber Valley

INDICATOR	MORNING PEAK			
	REF CASE	WITH DEV.	NON-HIGHWAY MITIGATION SCENARIO	PERCENTAGE MITIGATION
Over Capacity Queues (PCU Hrs)	220	514	436	27%
Total Travel Time (PCU Hrs)	6,124	7,206	6,985	20%
Total Travel Distance (PCU kms)	324,116	354,964	351,924	10%
Average Speed (km/hr)	52.9	49.3	50.4	31%



Table 15. Network Indicators (evening peak) – Amber Valley

INDICATOR	EVENING PEAK			
	REF CASE	WITH DEV.	NON-HIGHWAY MITIGATION SCENARIO	PERCENTAGE MITIGATION
Over Capacity Queues (PCU Hrs)	171	365	313	27%
Total Travel Time (PCU kms)	5,856	6,989	6,752	21%
Total Travel Distance (PCU kms)	318,540	356,356	351,923	12%
Average Speed (km/hr)	54.4	51	52.1	32%



6.5 Modelling Results – Derby City

Flow Difference

- 6.5.1 Figures 25 and 26 show the flow difference between the Non-Highway Mitigation and the 'With Development' (No Mitigation) scenarios for the morning and evening peak hours respectively. Blue lines indicate roads which are forecast to experience an increase in traffic between the With Development Scenario and the Non Highway Mitigation Scenario, whilst green lines indicate roads which are forecast to experience a decrease in traffic.
- 6.5.2 Reduction in traffic is forecast along the following routes in Derby City as a result of the Non Highway Mitigation measures:
- A6 between Thulston Roundabout and the A50 (Both peaks);
 - Shardlow Road (Both peaks);
 - A38 north of Burnaston (Both peaks);
 - Rykneld Road through Micklemeadow (Both peaks);
 - A52 Brian Clough Way (Both peaks);
 - T12 (Morning Peak); and
 - A61 Sir Frank Whittle Road (Evening Peak).

Junction Congestion

- 6.5.3 A junction is considered to become relieved of congestion when the With Development Scenario V/C ratio is more than 85% and due to mitigation it decreases to below 85% in the Non-Highway Mitigation Scenario. The reduction in V/C ratio is presented for such junctions and are colour coded in green.
- 6.5.4 Figures 27 and 28 show the forecast reduction in junction congestion between the With Development and Non-Highway Mitigation scenarios for the morning and evening peak hours respectively.
- 6.5.5 The majority of junctions relieved of congestion as a result of the Non Highway Mitigation in Derby City are found in the south of the city with an orientation towards the south east in the Morning Peak and the south west in the Evening Peak.
- 6.5.6 The following junctions are forecast to be relieved of congestion in the Morning Peak:
- A5111 Osmaston Park Road/Moor Lane Junction;
 - A5111 Raynesway/ Beech Avenue Junction;
 - A5111/Shardlow Road Roundabout;
 - Shardlow Road/Elvaston Lane Junction; and
 - Shardlow Road/Nunsfield Drive.
- 6.5.7 The following junctions are predicted to be relieved of congestion in the Evening Peak:
- A5111/Kingsway Retail Park Roundabout;
 - Burton Road/Shepherd Street Junction;
 - Stenson Road/Breedon Avenue Junction;
 - Sinfin Lane/Kitchener Avenue; and
 - A6 London Road/A5194/Ascot Drive Roundabout.



Figure 25. Flow Difference – With Development Scenario vs Non Highway Mitigation Scenario – Derby City – Morning Peak

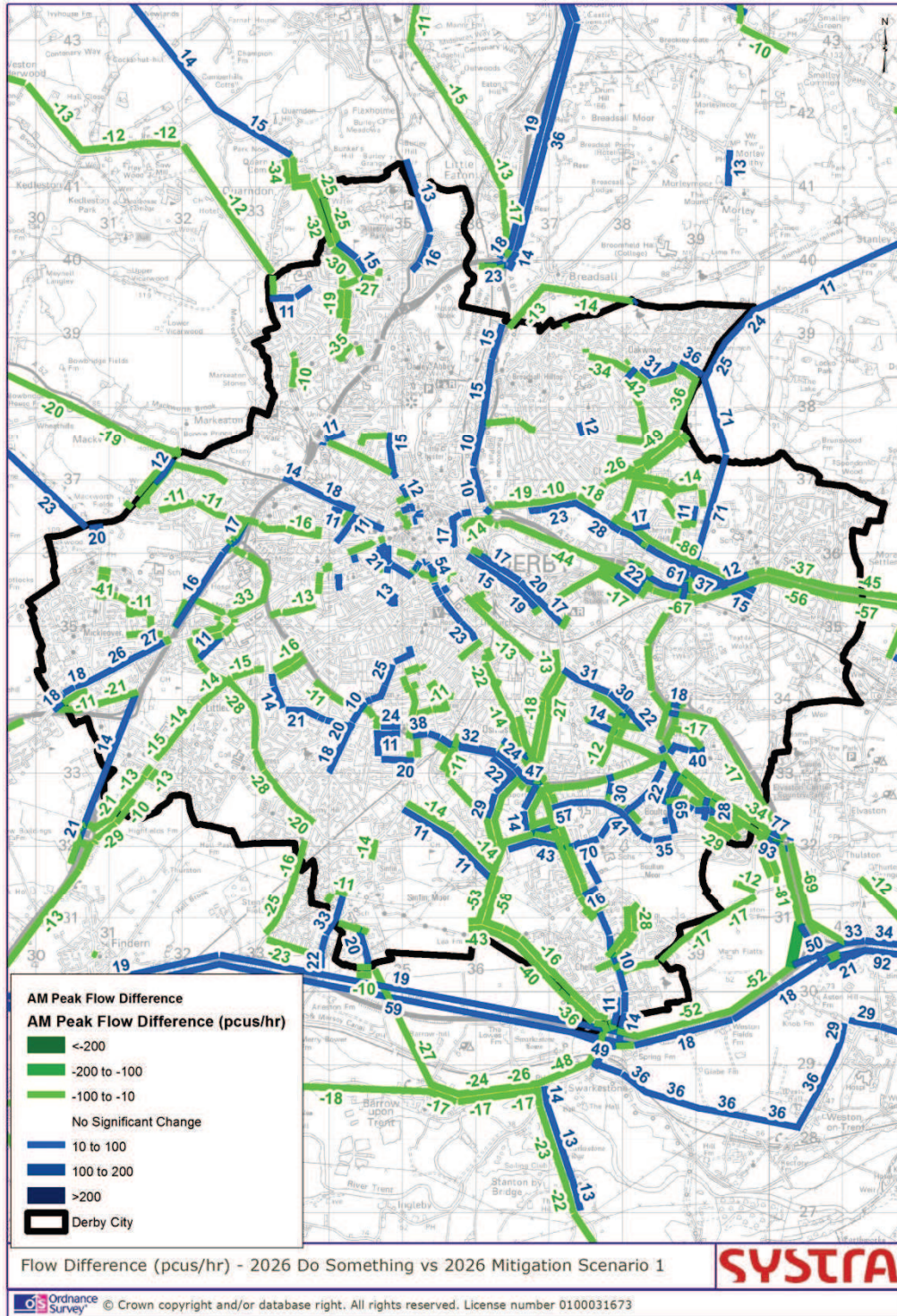




Figure 26. Flow Difference – With Development Scenario vs Non Highway Mitigation Scenario – Derby City - Evening Peak

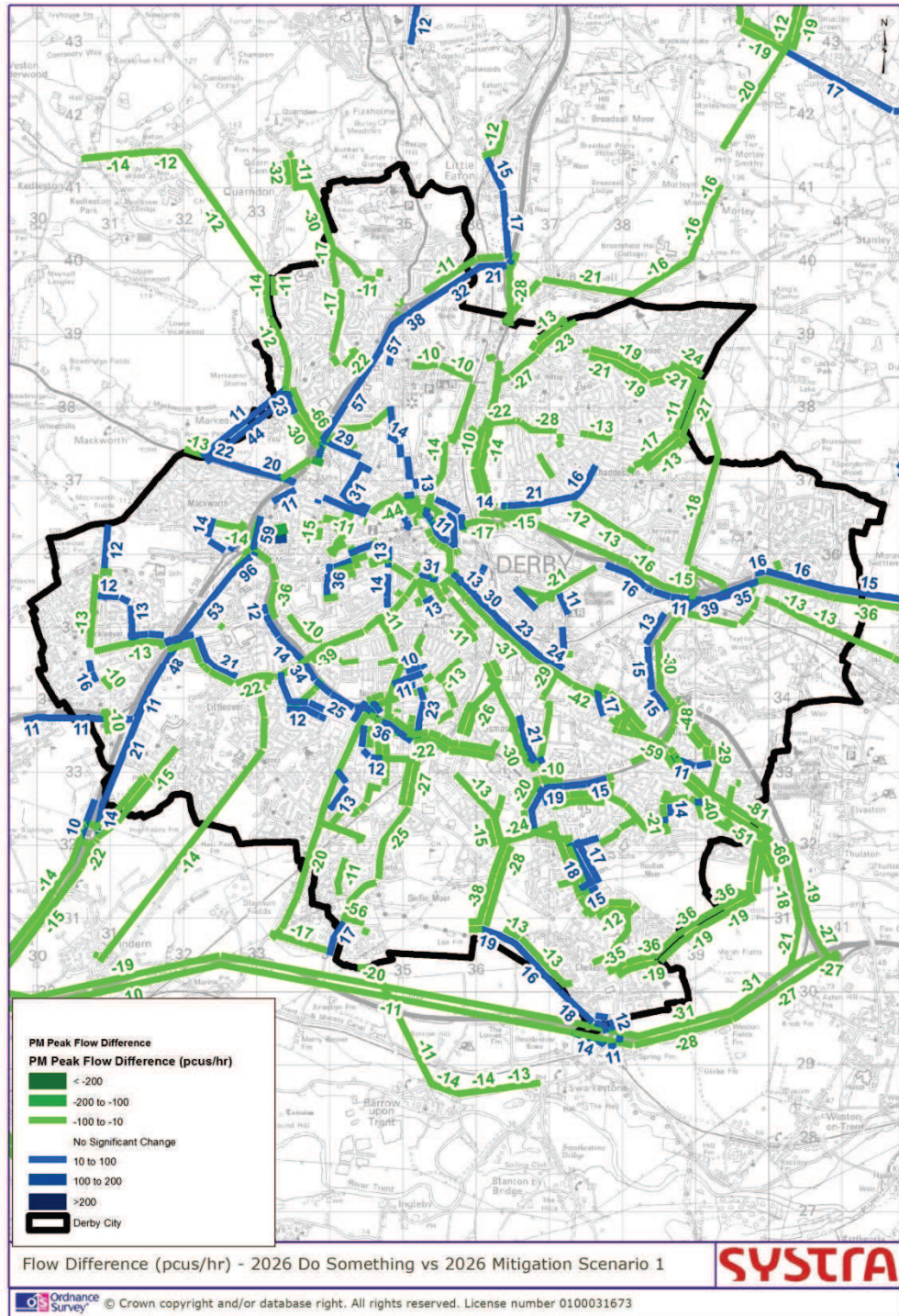




Figure 27. Relief of Junction Congestion – With Development Scenario vs Non Highway Mitigation Scenario – Derby City - Morning Peak

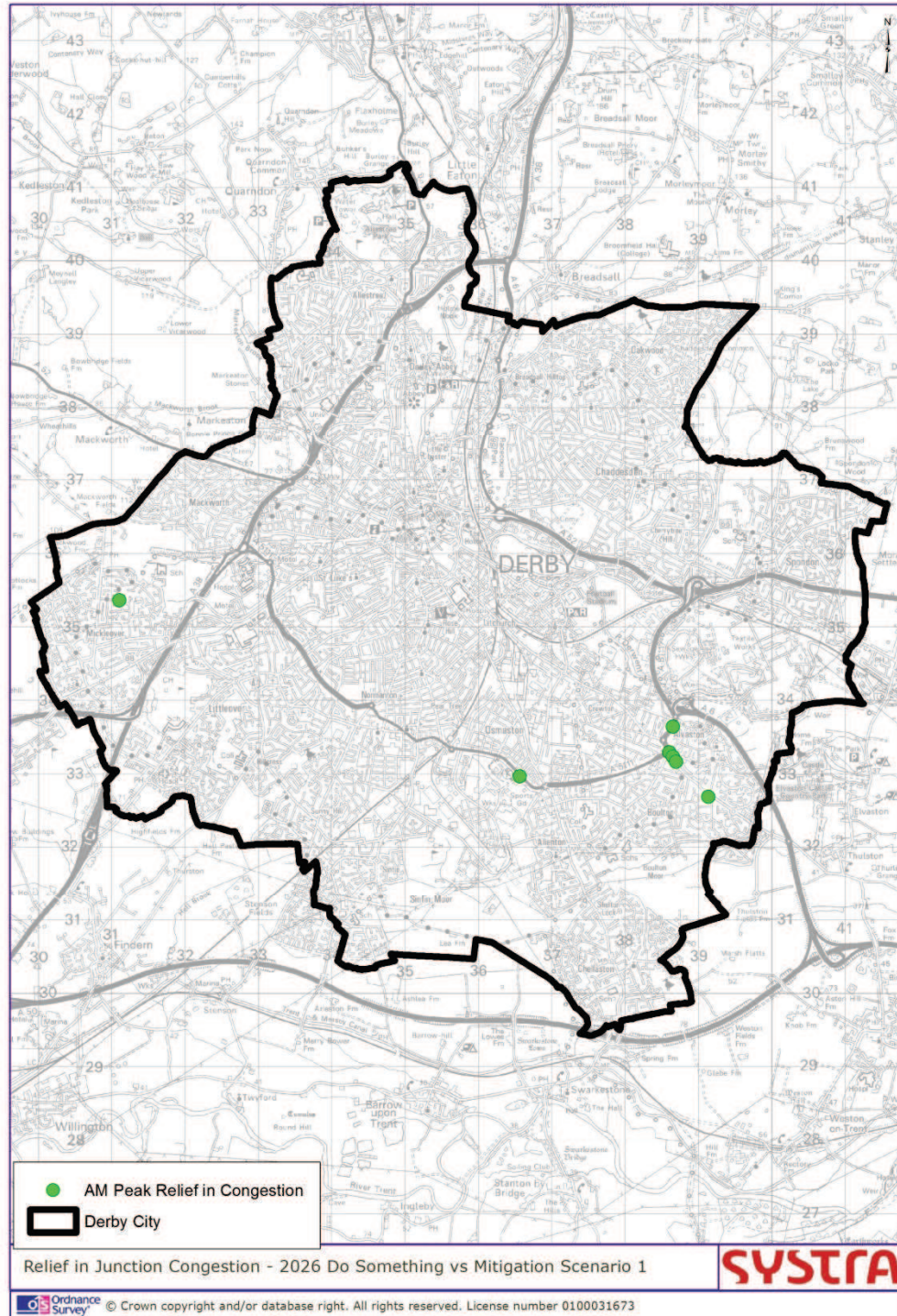
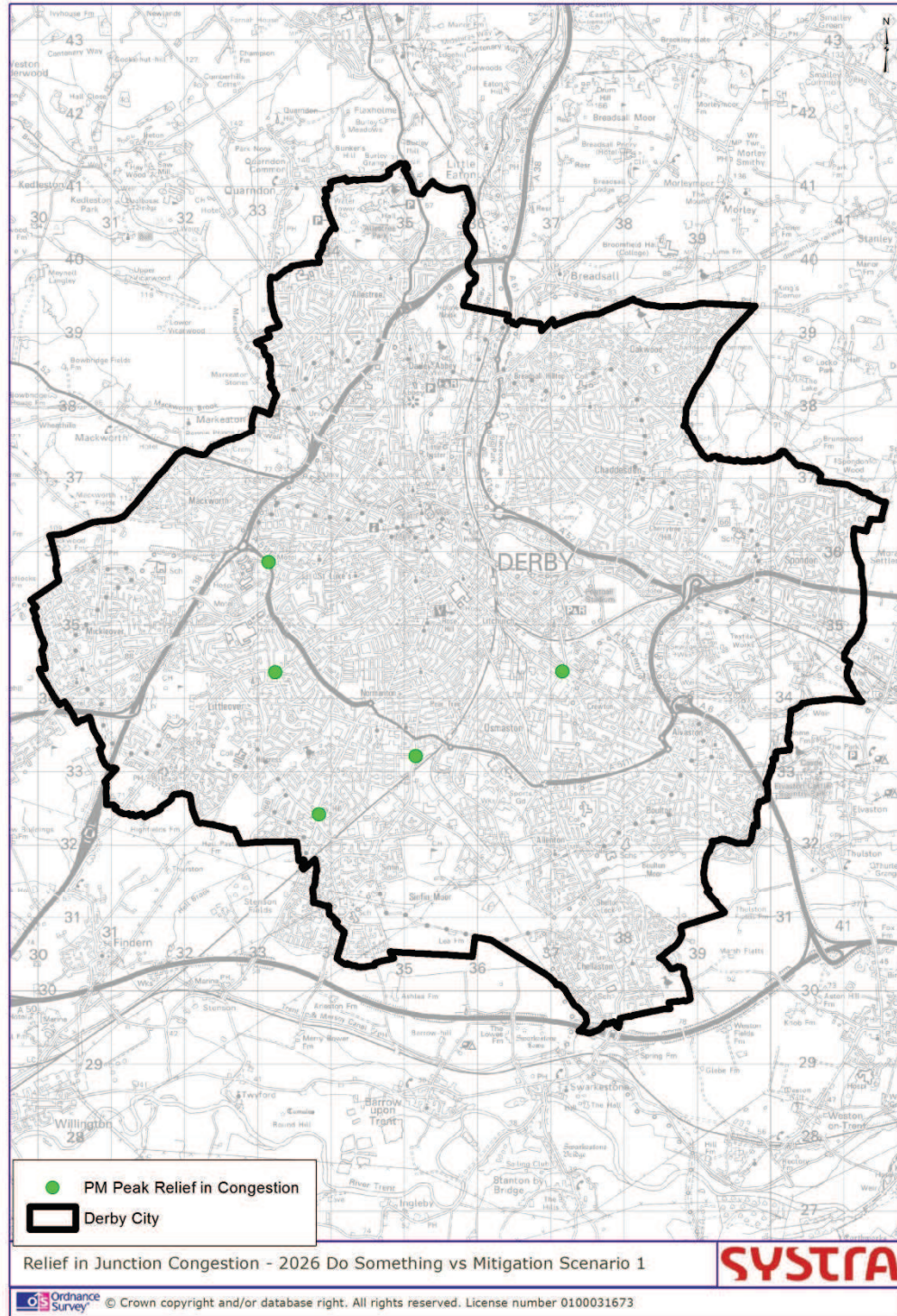




Figure 28. Relief of Junction Congestion – With Development Scenario vs Non Highway Mitigation Scenario – Derby City - Evening Peak





Network Indicators

6.5.8 The Network Indicators for the Non Highway Mitigation and With Development Scenarios are provided in Tables 16 and 17. In terms of over-capacity queues, the non-highway mitigation package results in 9% mitigation across both peaks.

In terms of average speed, the percentage mitigation achieved is 13% in the AM peak and 21% in the PM peak.

Table 16. Network Indicators (morning peak) – Derby City

INDICATOR	MORNING PEAK			
	REF CASE	WITH DEV.	NON-HIGHWAY MITIGATION SCENARIO	PERCENTAGE MITIGATION
Over Capacity Queues (PCU Hrs)	404	759	726	9%
Total Travel Time (PCU Hrs)	11,817	13,204	13,101	7%
Total Travel Distance (PCU kms)	387,553	412,249	410,874	6%
Average Speed (km/hr)	32.8	31.2	31.4	13%



Table 17. Network Indicators (evening peak) – Derby City

INDICATOR	EVENING PEAK			
	REF CASE	WITH DEV.	NON-HIGHWAY MITIGATION SCENARIO	PERCENTAGE MITIGATION
Over Capacity Queues (PCU Hrs)	466	828	794	9%
Total Travel Time (PCU Hrs)	12,097	13,373	13,195	14%
Total Travel Distance (PCU kms)	392,976	416,365	414,025	10%
Average Speed (km/hr)	32.5	31.1	31.4	21%



6.6 Modelling Results – South Derbyshire

Flow Difference

- 6.6.1 Figures 29 and 30 show the flow difference between the Non-Highway Mitigation scenarios and the 'With Development' (No Mitigation) for the morning and evening peak hours respectively. Blue lines indicate roads which are forecast to experience an increase in traffic between the With Development Scenario and the Non Highway Mitigation Scenario, whilst green lines indicate roads which are forecast to experience a decrease in traffic.
- 6.6.2 Reduction in traffic is forecast along the following routes in South Derbyshire as a result of the Non Highway Mitigation measures:
- A50 between the A38 and A6 (Evening Peak);
 - A5132 Twyford Road (Morning Peak);
 - Common Road, Swadlincote (Both peaks);
 - A514 Swadlincote Road (Both peaks);
 - York Road, Swadlincote (Both peaks);
 - Wilmot Road, Swadlincote (Both peaks);
 - Darklands Road, Swadlincote (Both peaks); and
 - B5353 Newhall Road (Both peaks).

Junction Congestion

- 6.6.3 A junction is considered to become relieved of congestion when the With Development Scenario V/C ratio is more than 85% and due to mitigation it decreases to below 85% in the Non-Highway Mitigation Scenario. The reduction in V/C ratio is presented for such junctions and are colour coded in green.
- 6.6.4 Figures 31 and 32 show the forecast reduction in junction congestion between the With Development and Non-Highway Mitigation scenarios for the morning and evening peak hours respectively.
- 6.6.5 Only a few junctions are relieved of congestion as a result of the Non Highway Mitigation in South Derbyshire, these include
- A514/Woodhouse Street, Swadlincote (Morning Peak);
 - York Road, Wilmot Road, Swadlincote (Evening Peak); and
 - Foston Interchange/Watery Lane (Evening Peak).



Figure 29. Flow Difference – With Development Scenario vs Non Highway Mitigation Scenario – South Derbyshire – Morning Peak

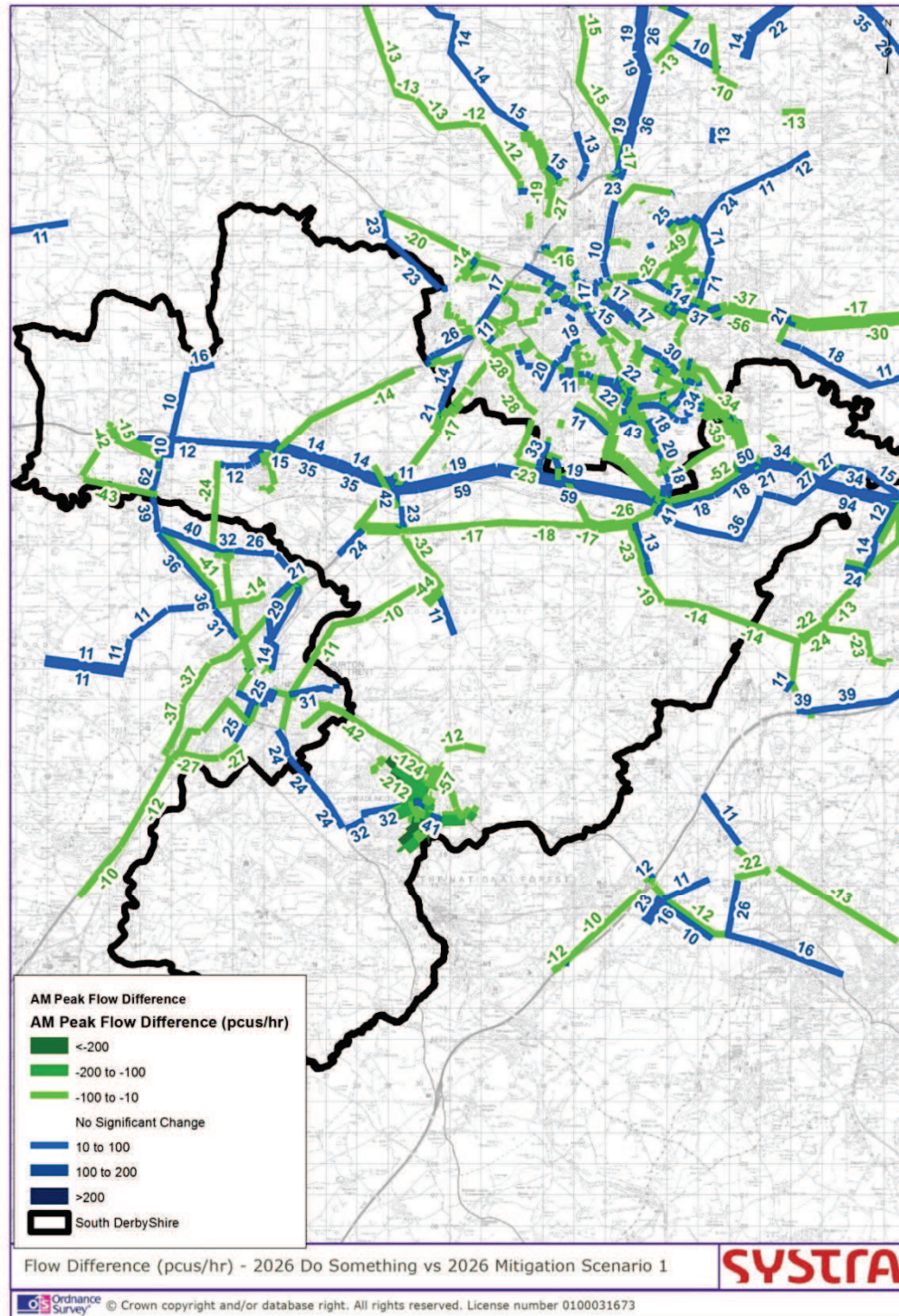




Figure 30. Flow Difference – With Development Scenario vs Non Highway Mitigation Scenario – South Derbyshire - Evening Peak

