Kellystown
Local Area Plan

Adopted 11th January 2021

Appendix 5
Traffic Modelling Assessment

Comhairle Contae
Fhine Gall
Fingal County
Council

Appendix 5
Kellystown LAP - Modelling Assessment Results

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Glossary

- AM: ante meridiem peak period (07:00 – 10:00)
- LT: Lunch time period (10:00 – 13:00)
- SR: School Run (13:00 – 16:00)
- PM: Post meridiem peak period (16:00 – 19:00)
- V/C: Volume over Capacity at Junctions
- Active mode: Walking and Cycling
- Origin: trips leaving Kellystown
- Trip Generation: indicates how many trips the new development at Kellystown will generate
- Trip Distribution: indicates where the trips from Kellystown go, i.e. which areas/towns
- Mode Share: Indicates the percentage of trips by car, public transport or active modes

Modelling Methodology

Forecast Land Use

Forecast ERM

Standard Outputs

- Mode Share
- Trip Distribution
- Person Trip Generation / Attraction

Forecast Demand

Calibrated 2019 LAM

LAM

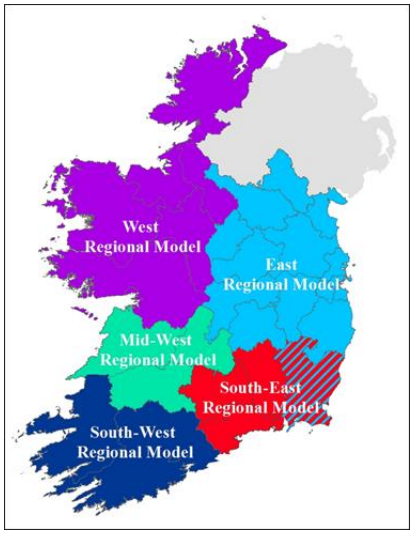
Forecast Road Network

Road Assignment

Analysis of Results / Outputs

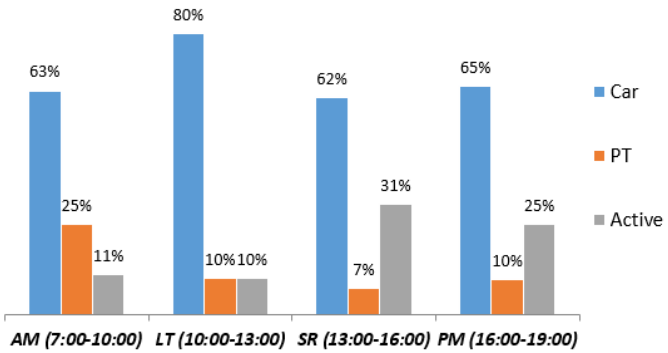
Standard Outputs

- Contribution to external road network
- Junction Delay
- Volume over Capacity (V/C)



ERM - Mode Share

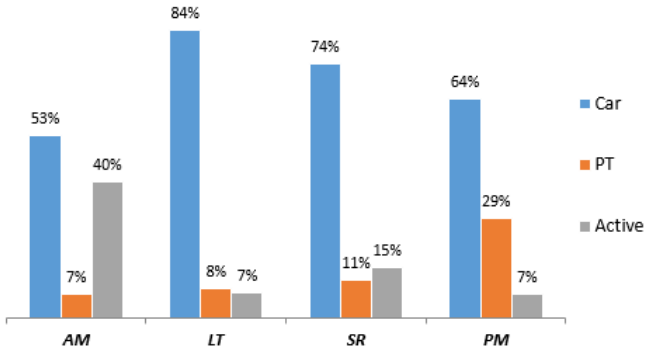
Origin Mode Share



Demand

Time Period	Car	PT	Active	Total
AM (7:00-10:00)	1,793	717	319	2,829
LT (10:00-13:00)	1,026	132	129	1,287
SR (13:00-16:00)	1,716	203	868	2,787
PM (16:00-19:00)	1,075	164	421	1,661

Destination Mode Share



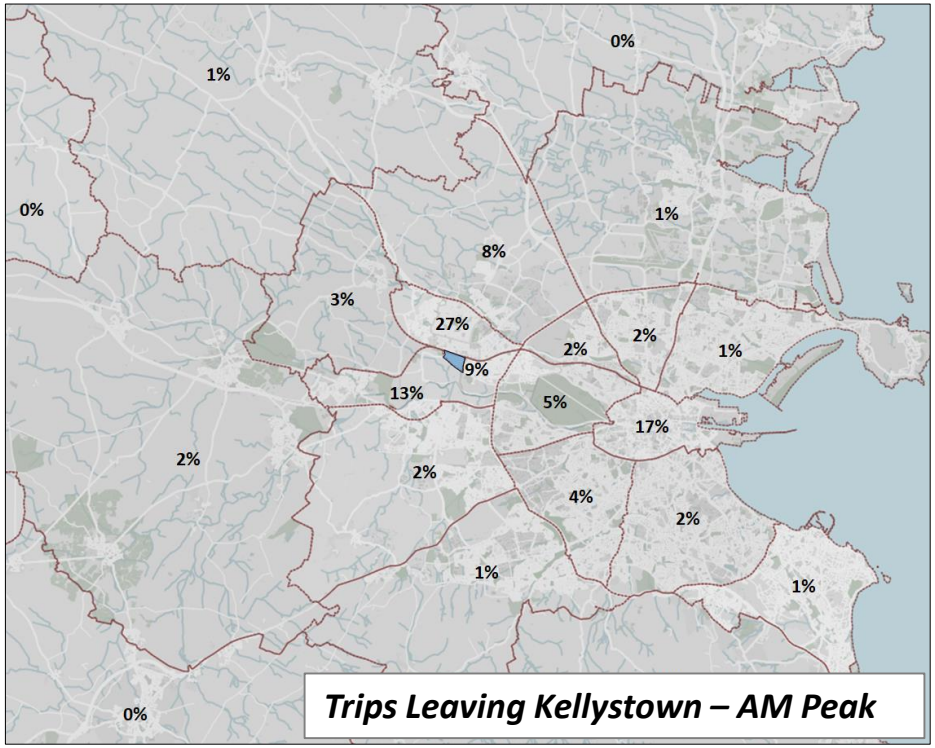
Demand

Time Period	Car	PT	Active	Total
AM	1,756	229	1,312	3,297
LT	507	51	45	603
SR	1,208	180	237	1,625
PM	972	444	104	1,520

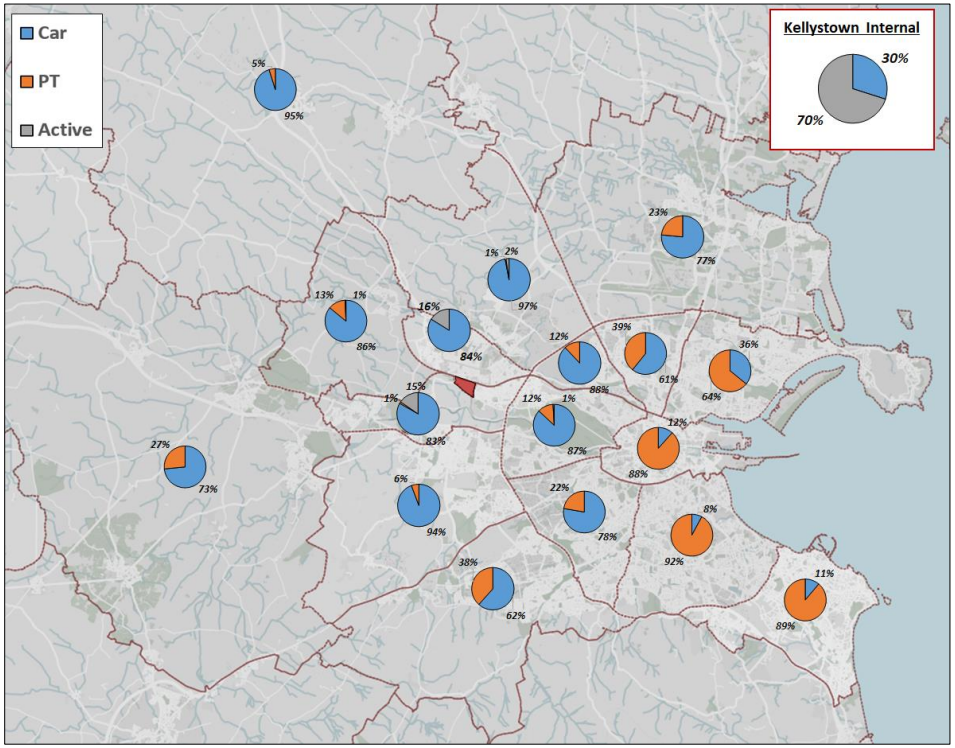
- The Kellystown development will generate approx. 2,800 person trips in the AM peak period (07:00 – 10:00);
- The car mode share is 63%, which equates to approx. 625 car trips exiting Kellystown in the AM peak hour (08:00 – 09:00);
- 25% of trips leaving Kellystown in the AM peak are using PT – predominantly the upgraded DART Expansion Network travelling towards the city centre;
- The Active (Walking & Cycling) mode share is relatively high in the AM and SR (School Run 13:00 – 16:00) time periods reflecting children and parents travelling to school;
- Active mode share is also relatively high for trips leaving Kellystown in the PM peak (25%). Trip Distribution Analysis indicates that approx. 61% of all trips leaving Kellystown in the PM are travelling locally to areas such as Clonsilla, Coolmine and Blanchardstown for shopping, visiting friends etc.

**Note: ERM Zone includes Luttrellstown Community College and Scoil Choilm Community National School*

ERM - Trip Distribution

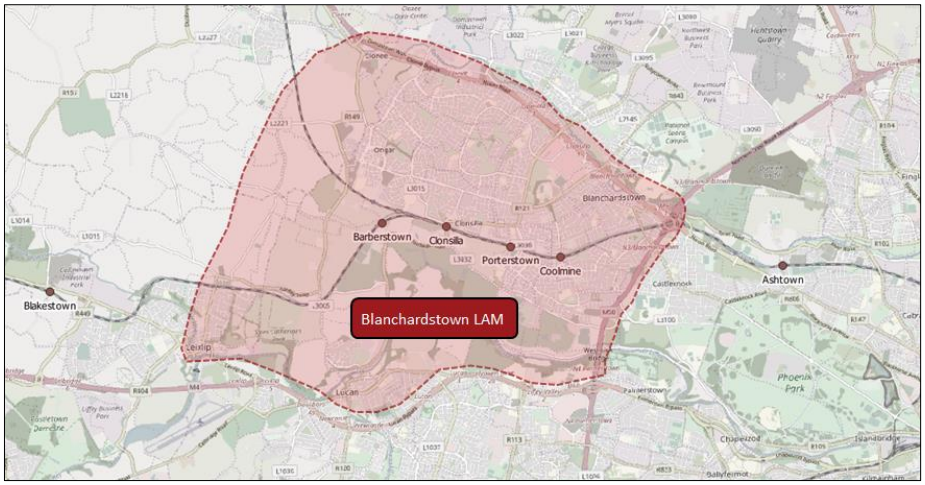


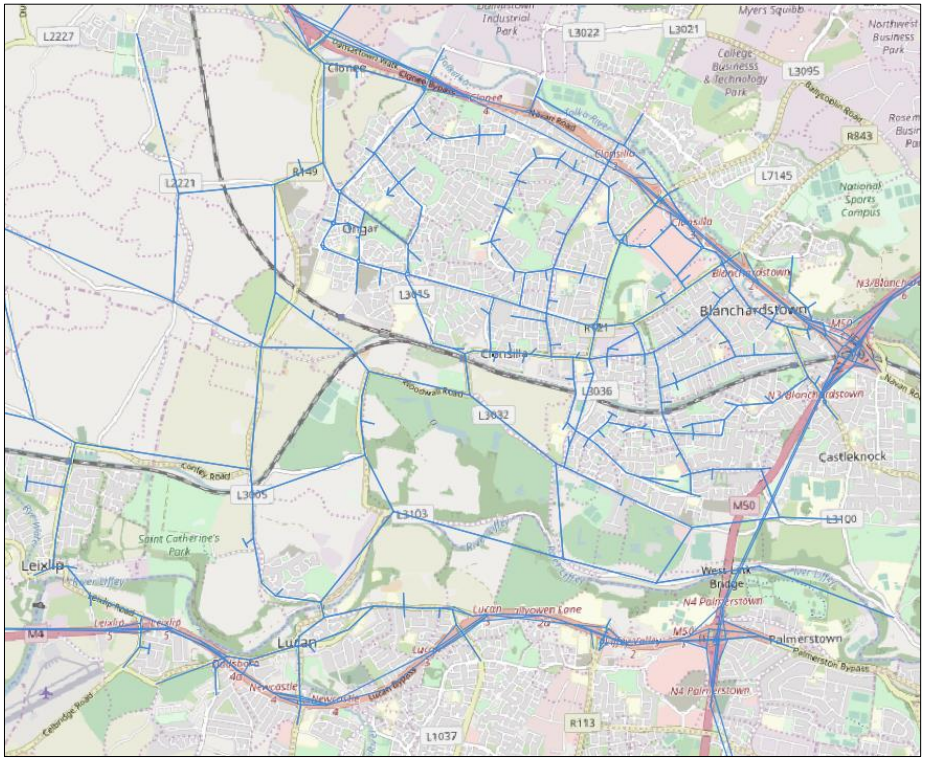
Trips Leaving Kellystown Mode Share – AM Peak



- 52% of trips leaving Kellystown in the AM Peak travel within the N3/N4/M50 boundary area;
- 9% of trips remain within the Kellystown development – local school trips;
- High walk and cycle (Active) mode share for internal trips – children and parents travelling to school;
- 17% of trips (~480) travelling towards Dublin City Centre in the AM Peak;
- Of these trips, 88% are undertaken using PT – primarily using the upgraded DART Expansion Network;
- Local trips to areas such as Coolmine, Clonsilla and Blanchardstown are predominantly undertaken by car.

Calibrated Local Area Model



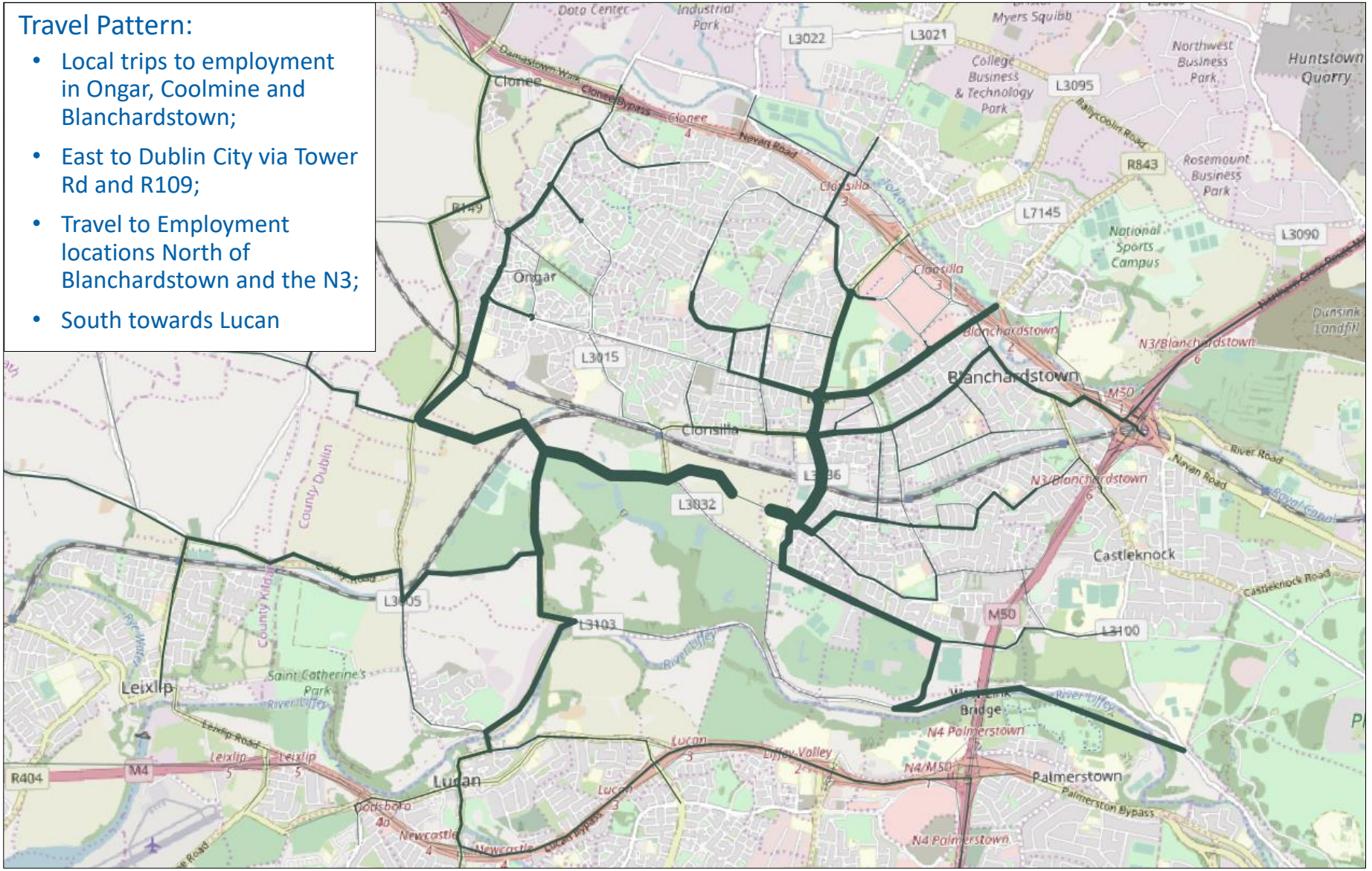


- Developed from the ERM as part of the Maynooth Line Transport Study;
- Updated Network and Zonal detail to provide an accurate representation of the model area;
- Calibrated and Validated to 2019 traffic count data for the AM (08:00 – 09:00) and PM (17:00 – 18:00) peak hours in-line with TII Guidance;
- Provides a robust representation of vehicular traffic on the road network within the model area;
- Used to test the impact of the future development at Kellystown on the local road network, focusing on:
  - Contribution to overall link flows;
  - Volume over Capacity at key junctions; and
  - Change in Delay at Key junctions when compared to a 'No Development' scenario

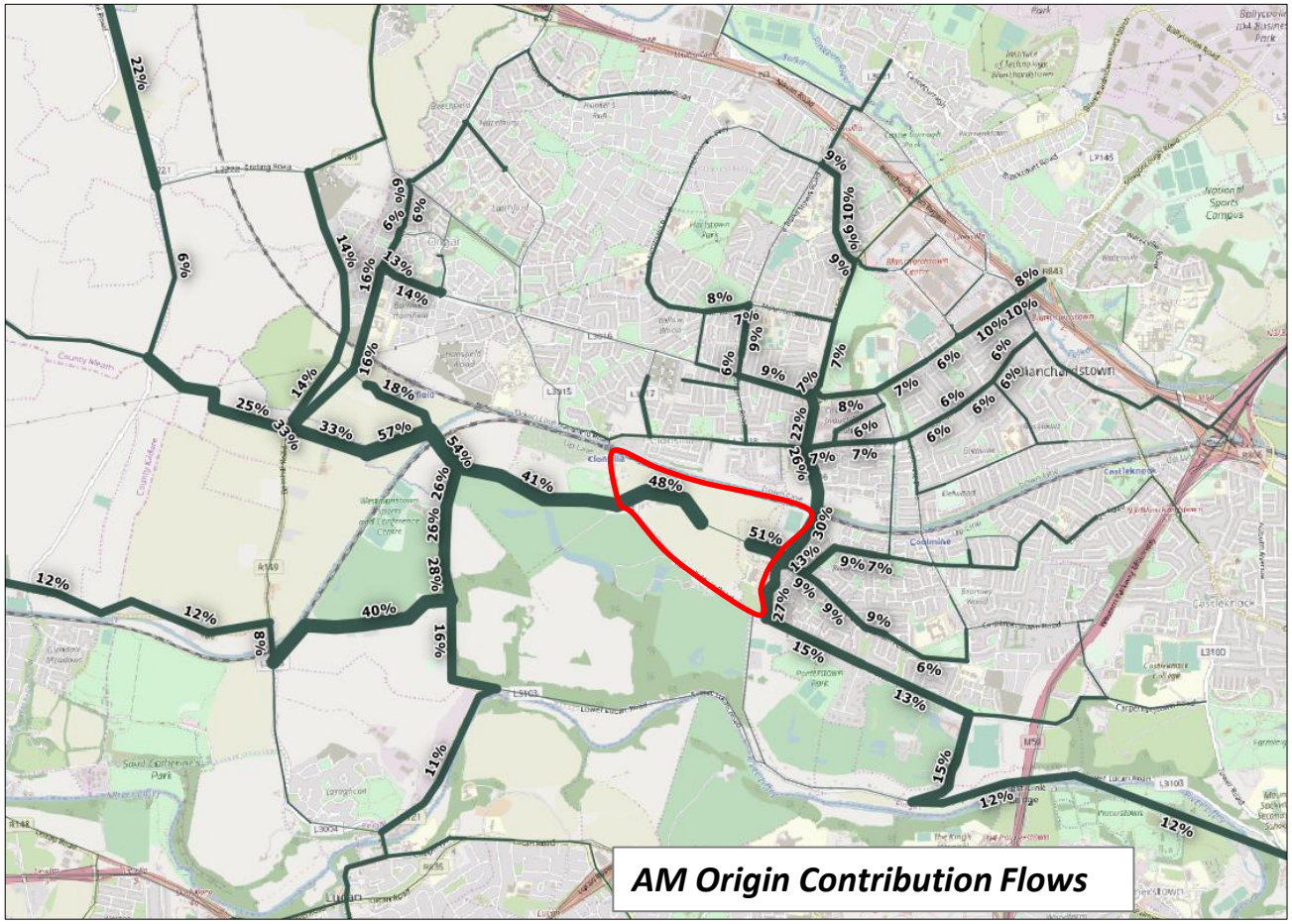
AM Origin Vehicle Flows

Travel Pattern:

- Local trips to employment in Ongar, Coolmine and Blanchardstown;
- East to Dublin City via Tower Rd and R109;
- Travel to Employment locations North of Blanchardstown and the N3;
- South towards Lucan



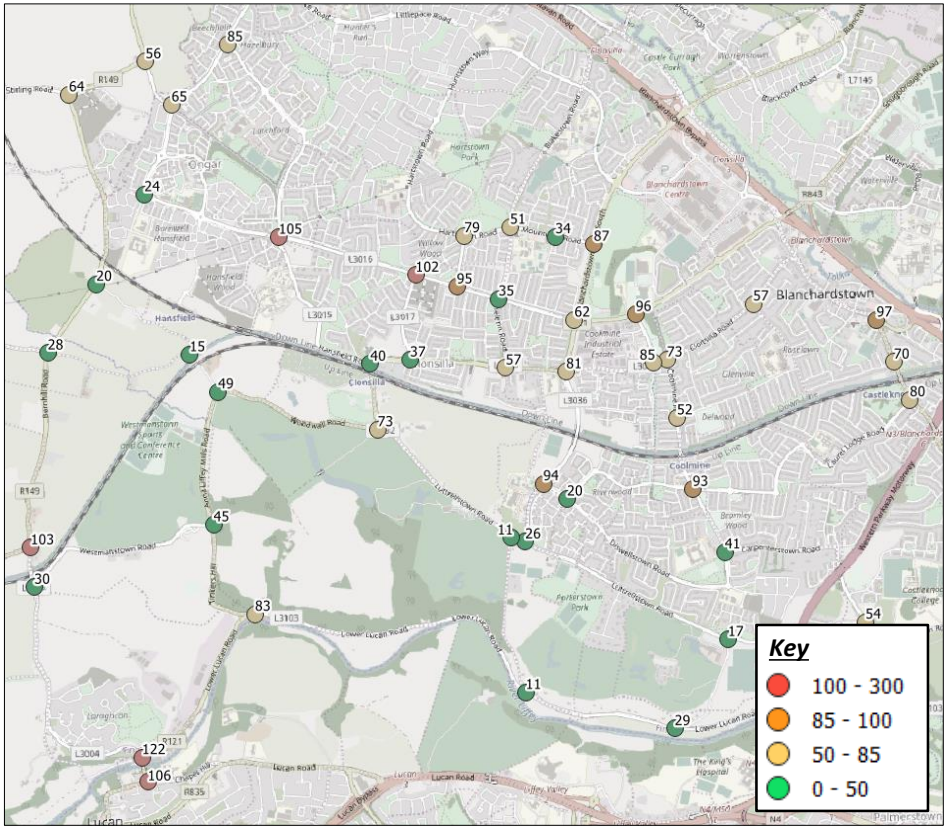
AM Origin Contribution Flows



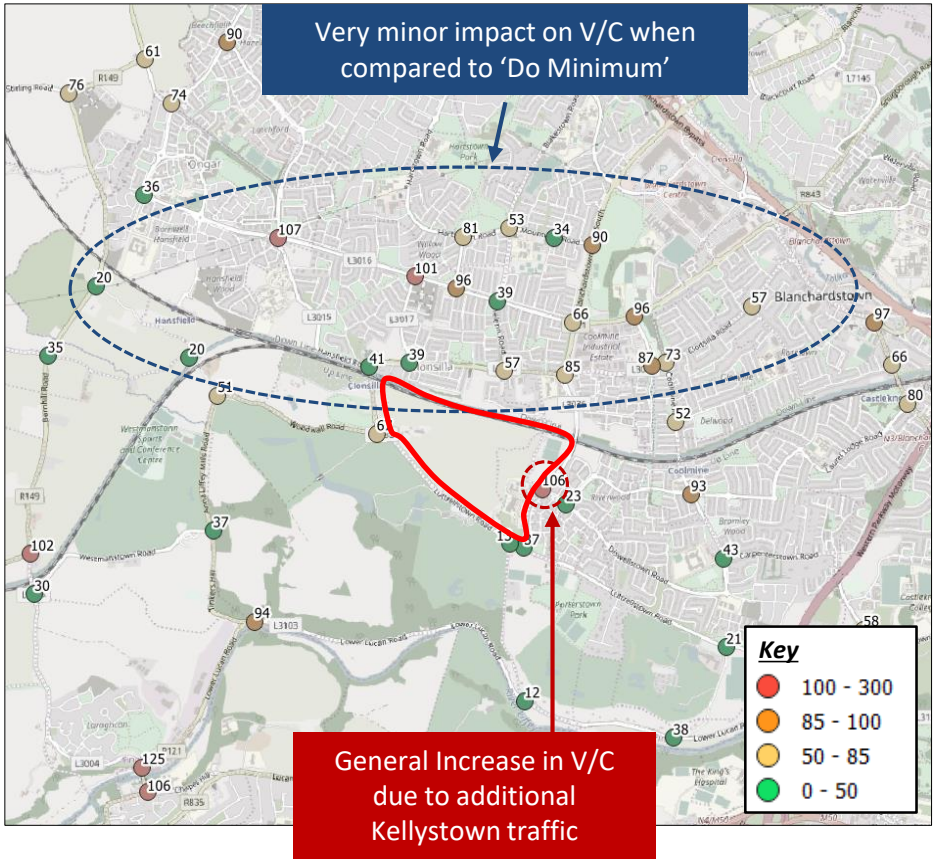
- Represents % of overall traffic on each link that has originated in Kellystown;
- Highest contribution on local roads such as the Diswellstown Rd, the R121 and Blanchardstown Rd South;
- Traffic originating at Kellystown has a very minor contribution (<5%) to overall traffic on the main strategic national roads in the area i.e. the N3, N4 and M50
- Indicates that Kellystown should have the highest impact on local junctions in close proximity to the development;
- Junctions North of Lucan are already quite heavily congested in the AM peak. Kellystown will contribute approx. 11% of flows entering these junctions on the Lower Lucan Rd.

Max Turn V/C – Kellystown Vs Do Min

Do Minimum (AM) – Maximum V/C



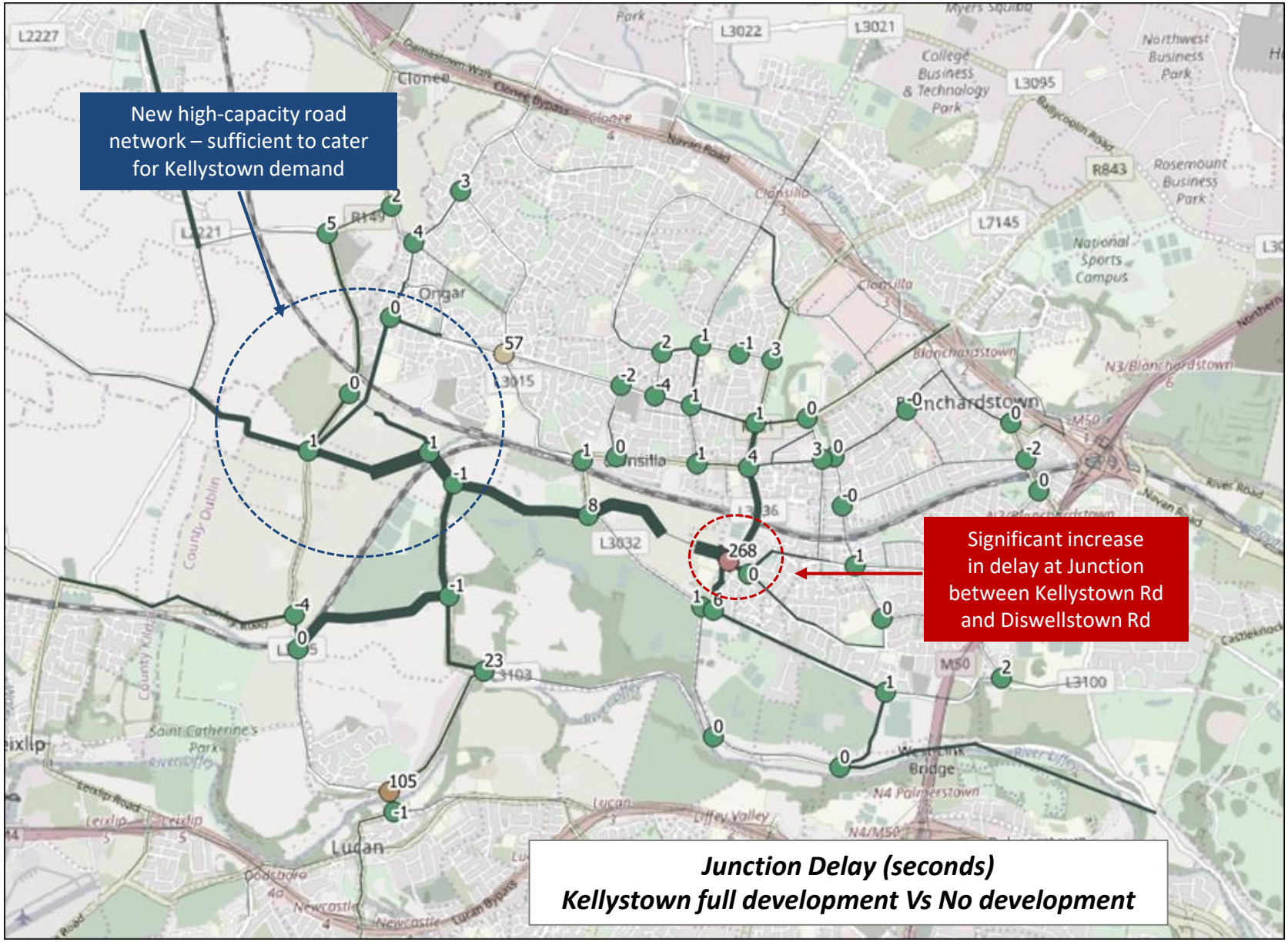
Kellystown (AM) – Maximum V/C



Turning Movements with V/C > 85%

Time Period	V/C (%)	Do Min	Kellystown
AM	>85%	6%	9%
PM	>85%	5%	7%

Junction Delay – Kellystown Vs Do Min

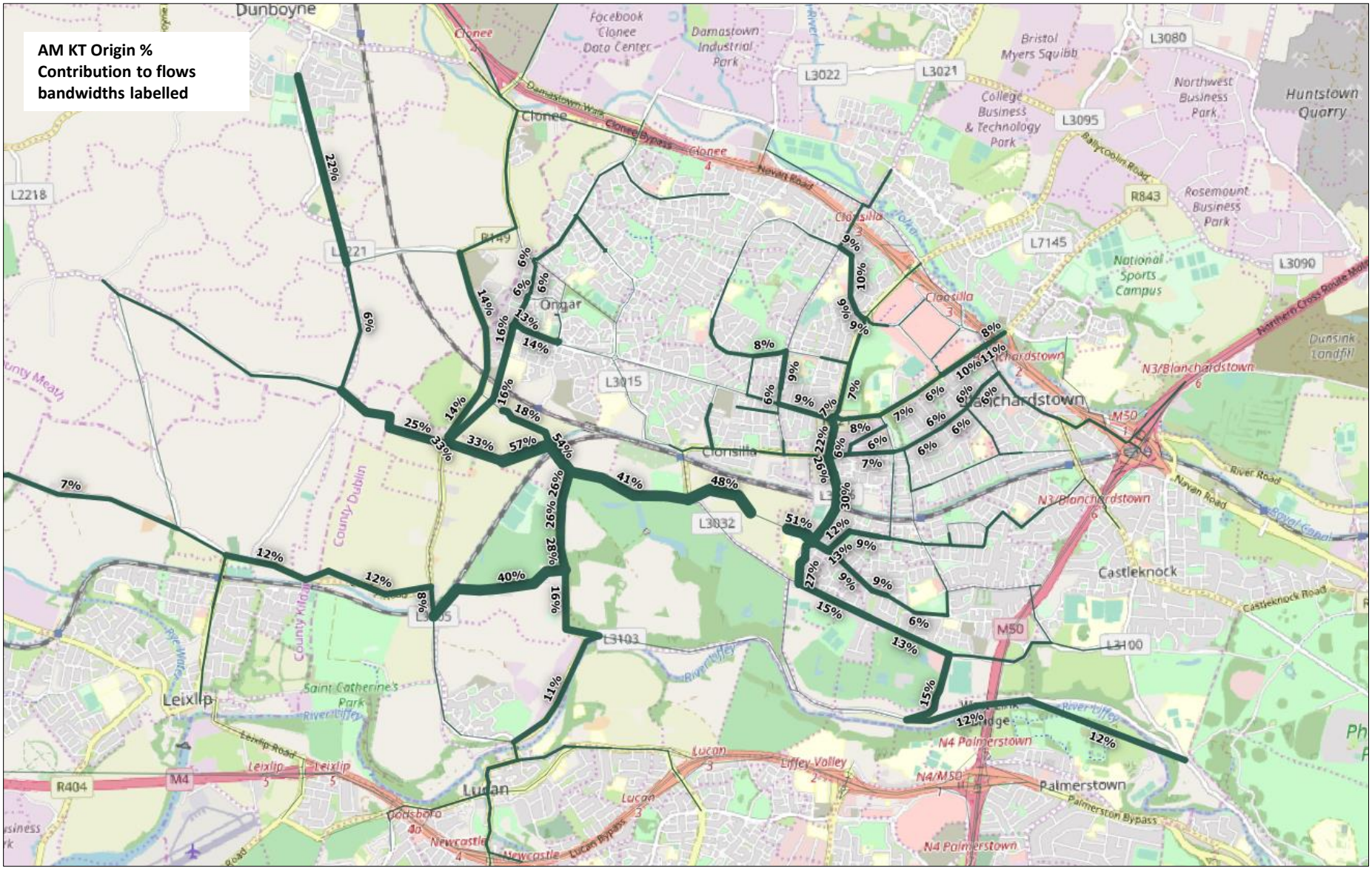


Results Charts:

- % Contribution
- SLA (Selected Link Analysis)
- Delay with % Contribution

% Contribution

- values less than 5% not labelled



% Contribution

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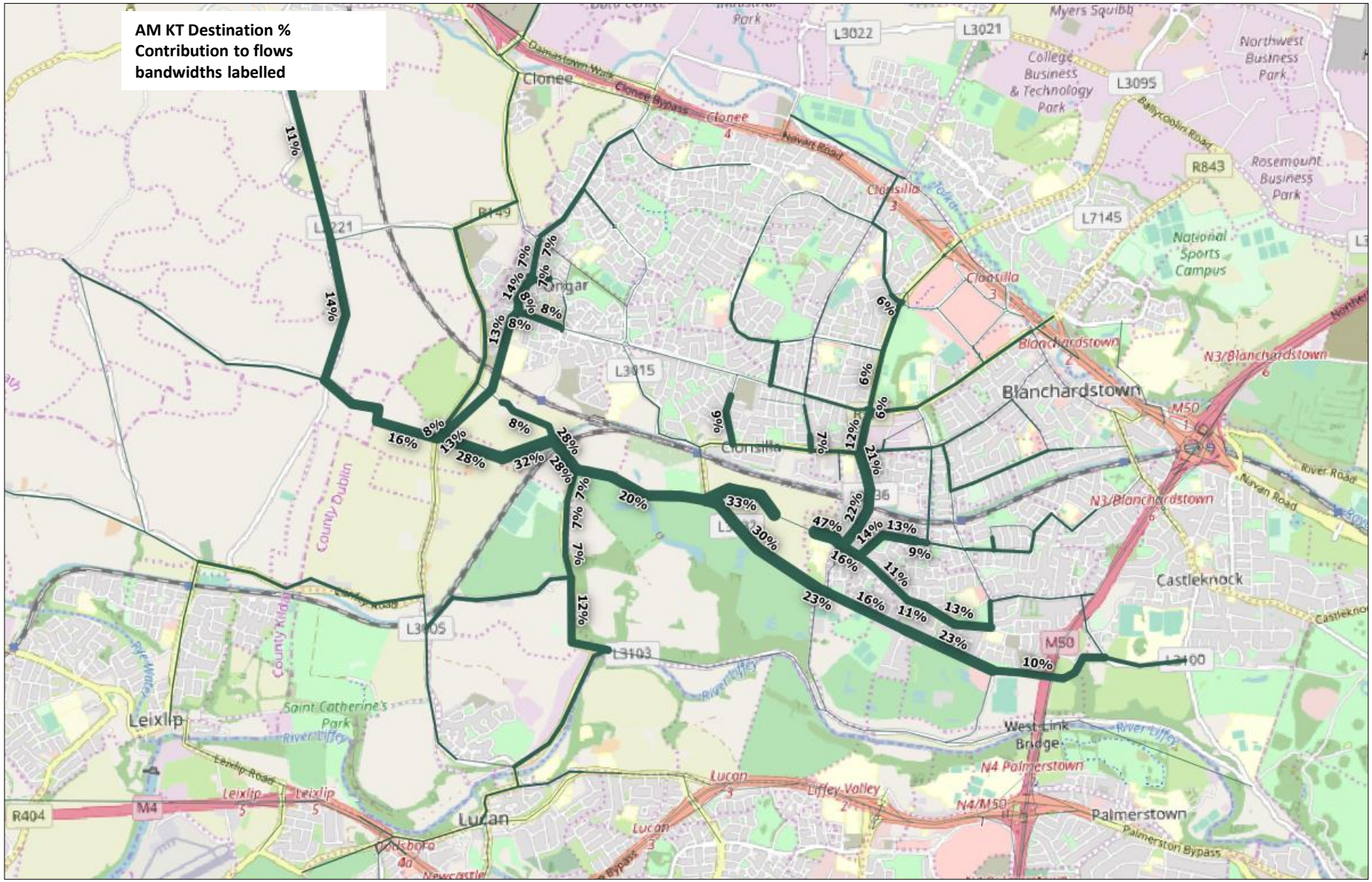
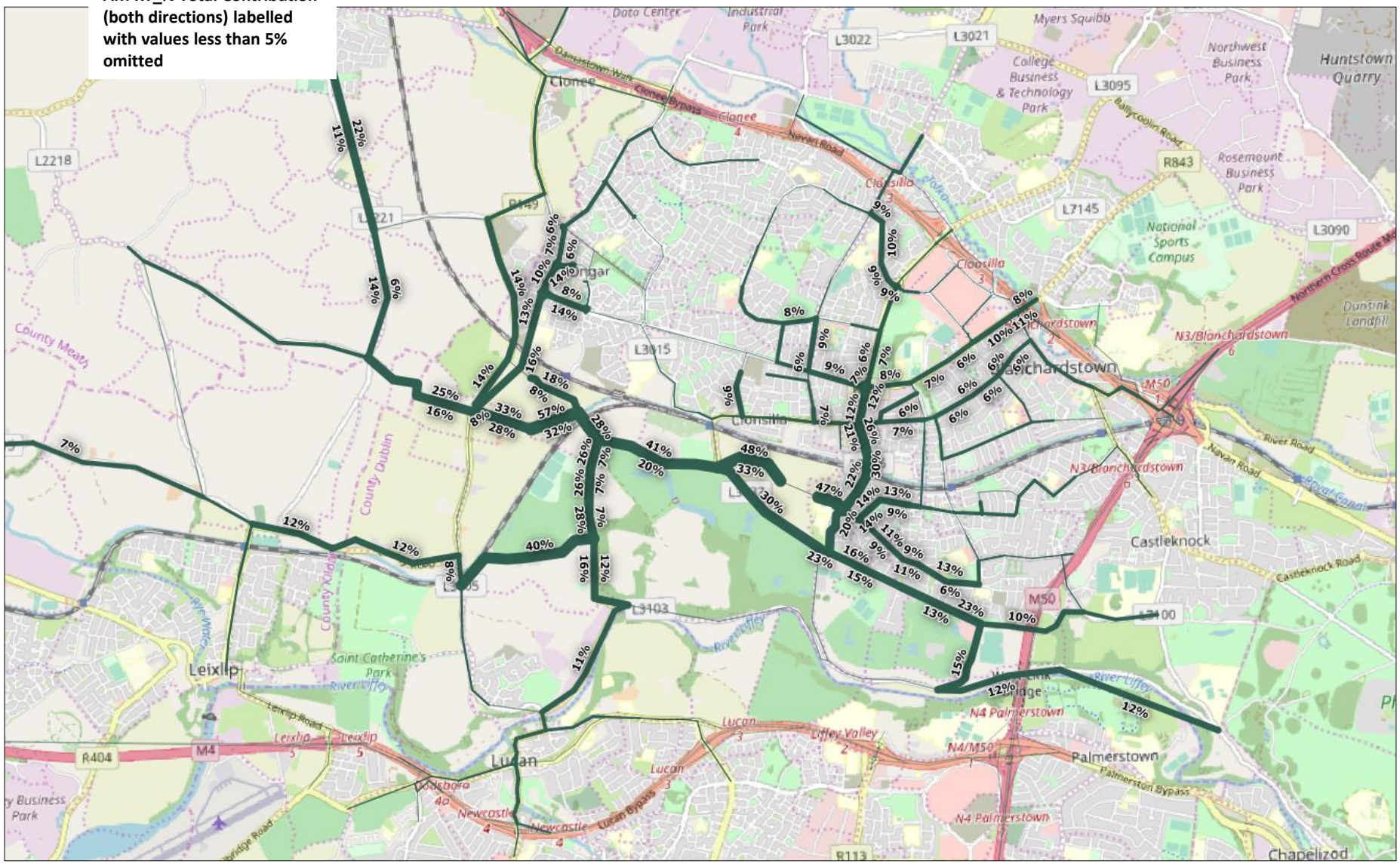


% Contribution

- values less than 5% not labelled

AM KT_% Total Contribution (both directions) labelled with values less than 5% omitted



% Contribution

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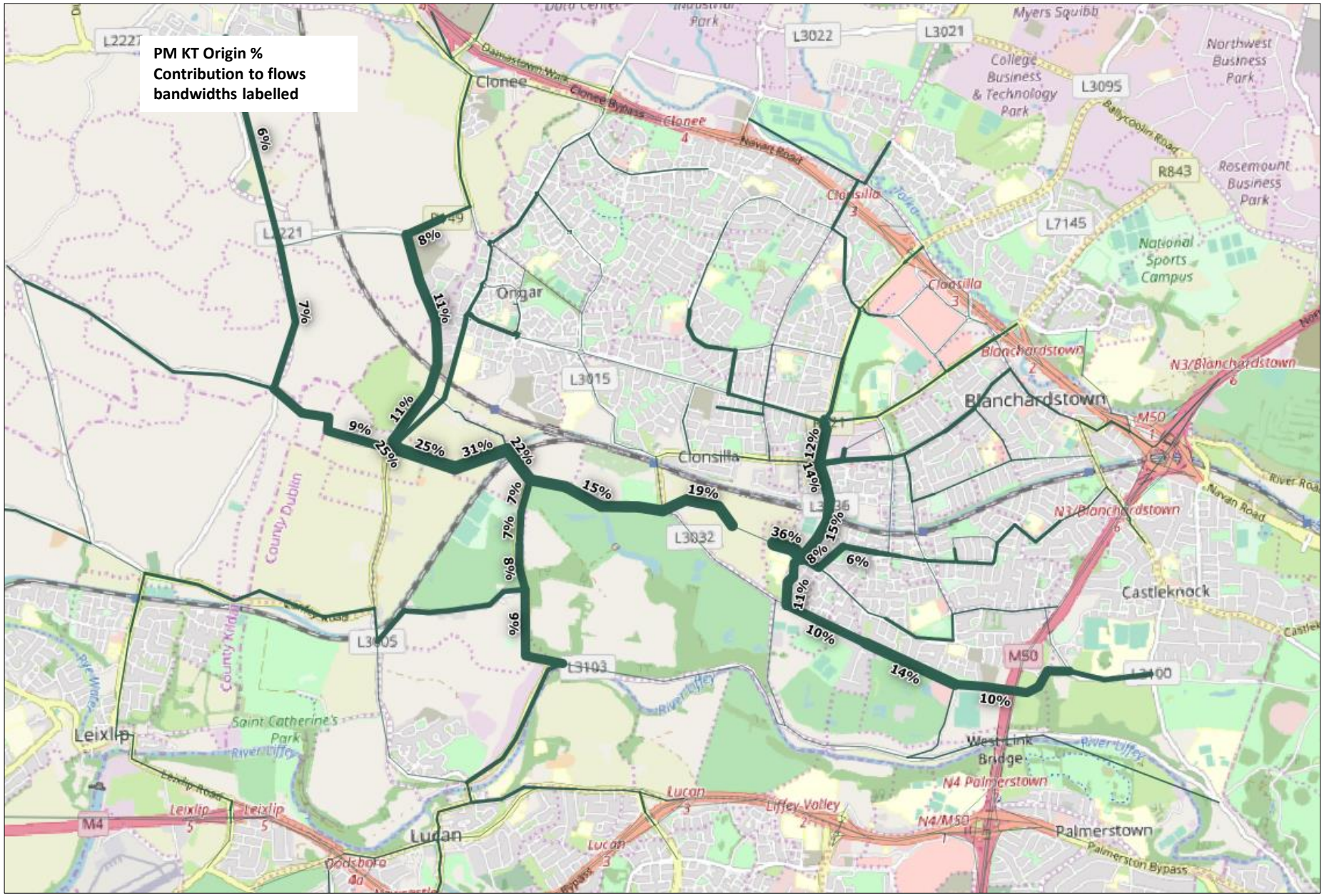

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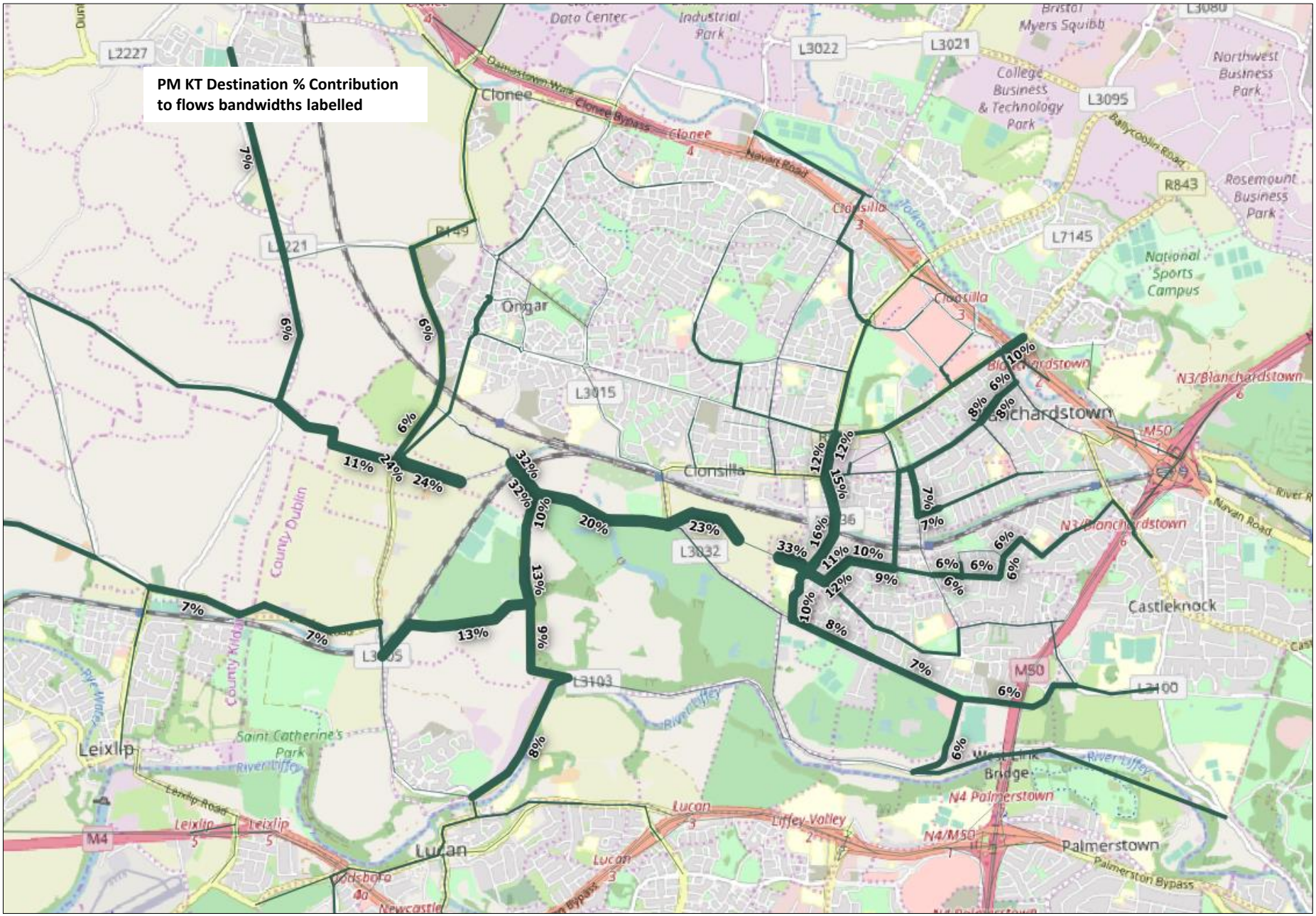

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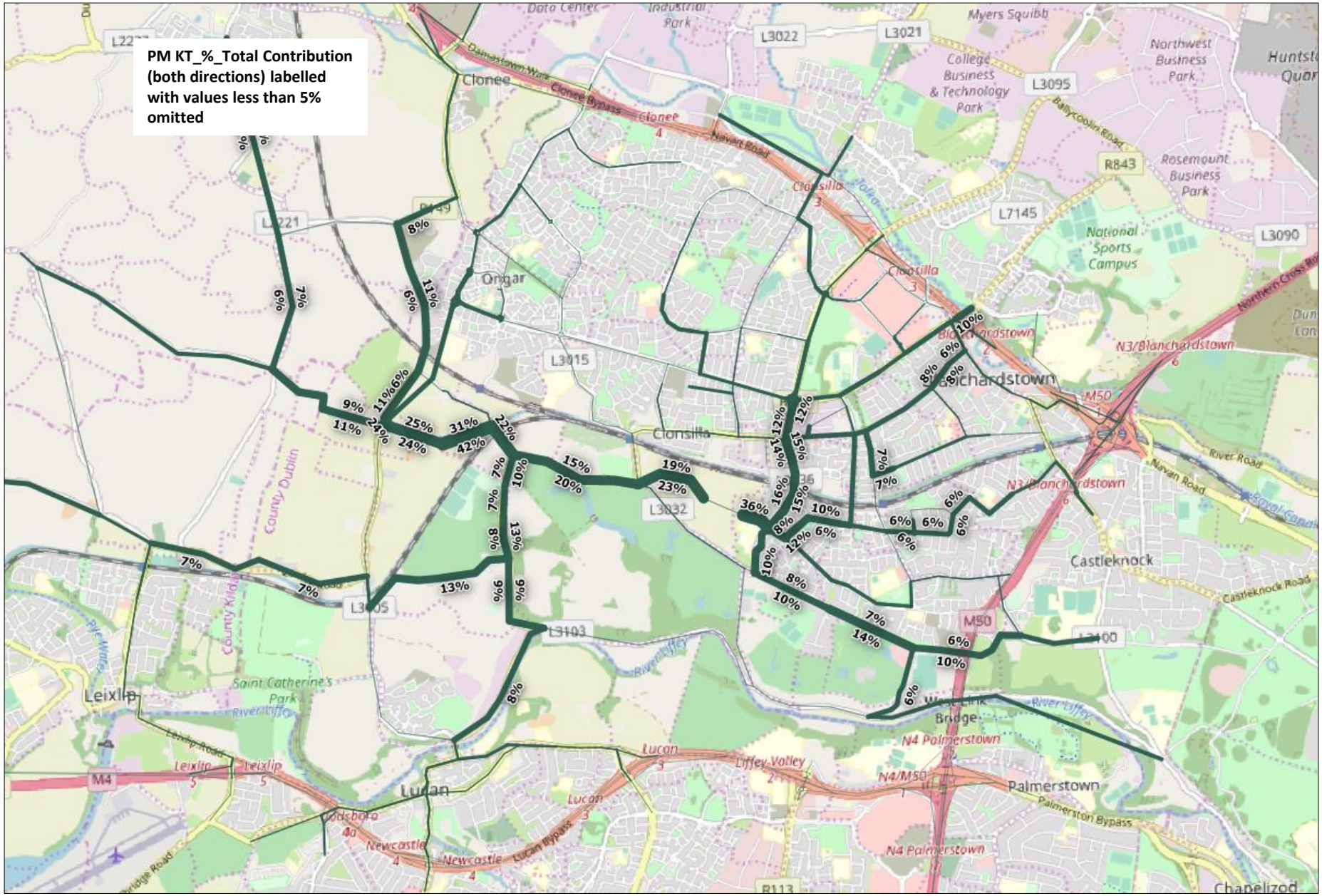
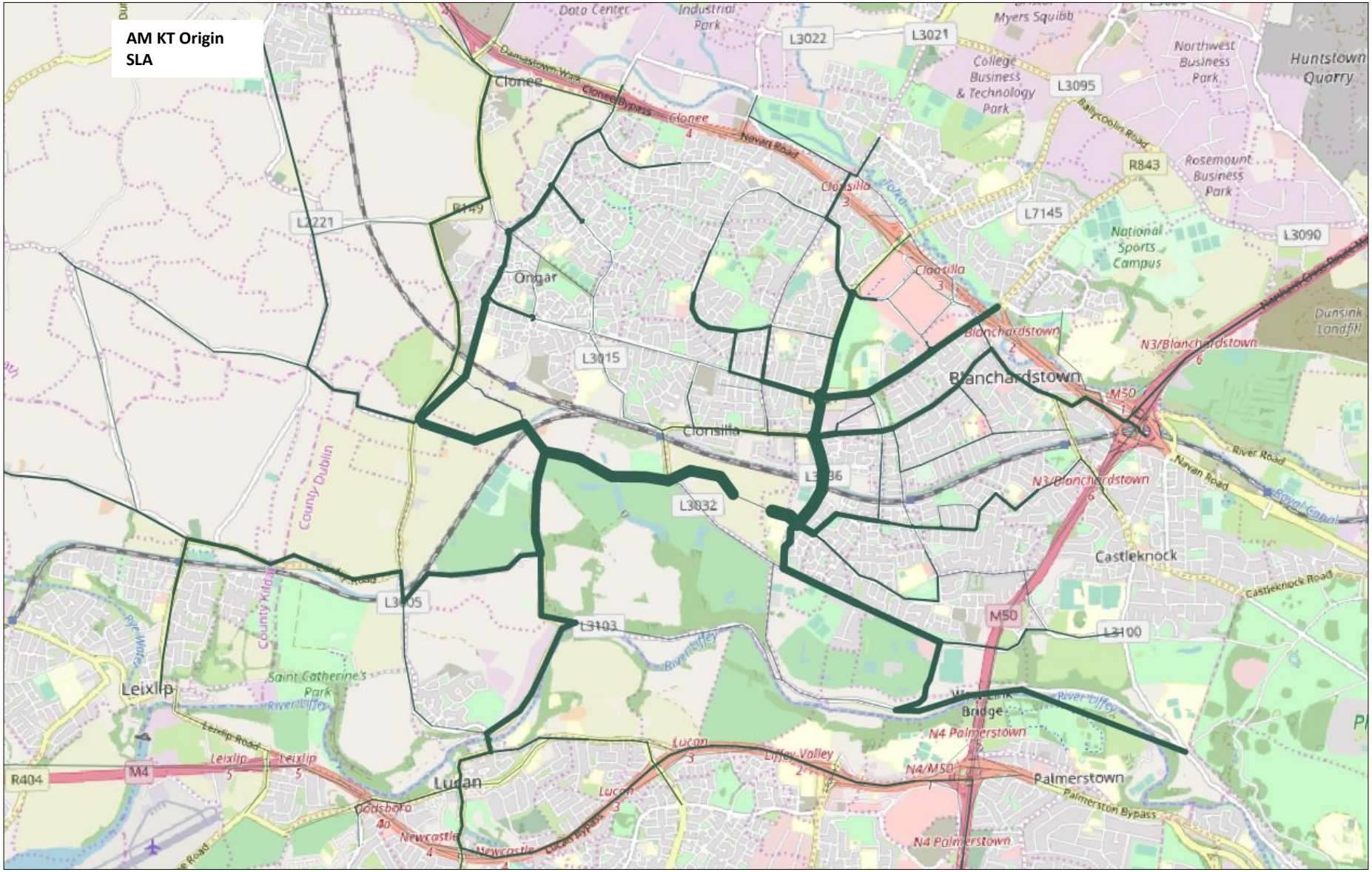


SLA (Selected Link Analysis)



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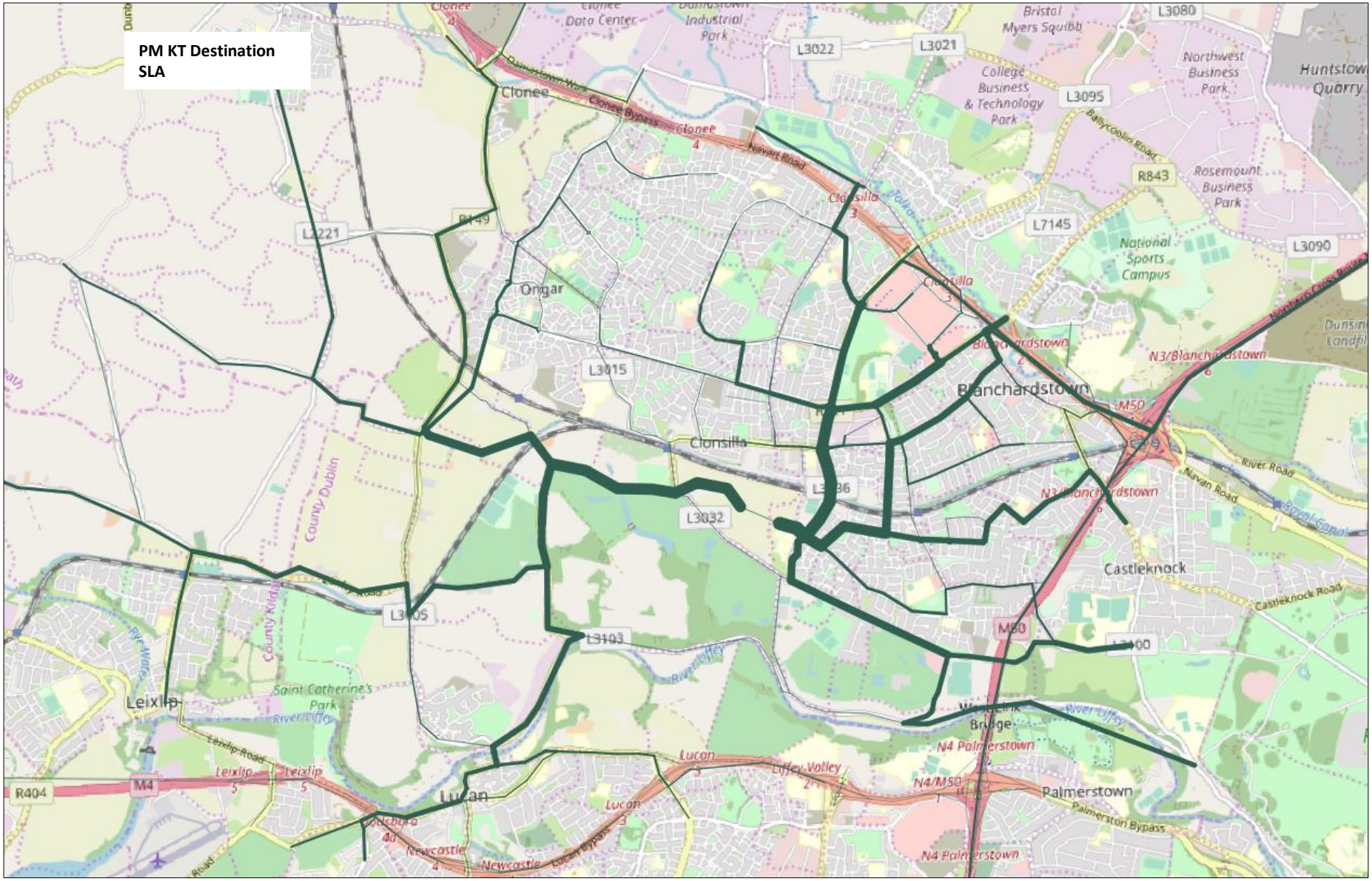
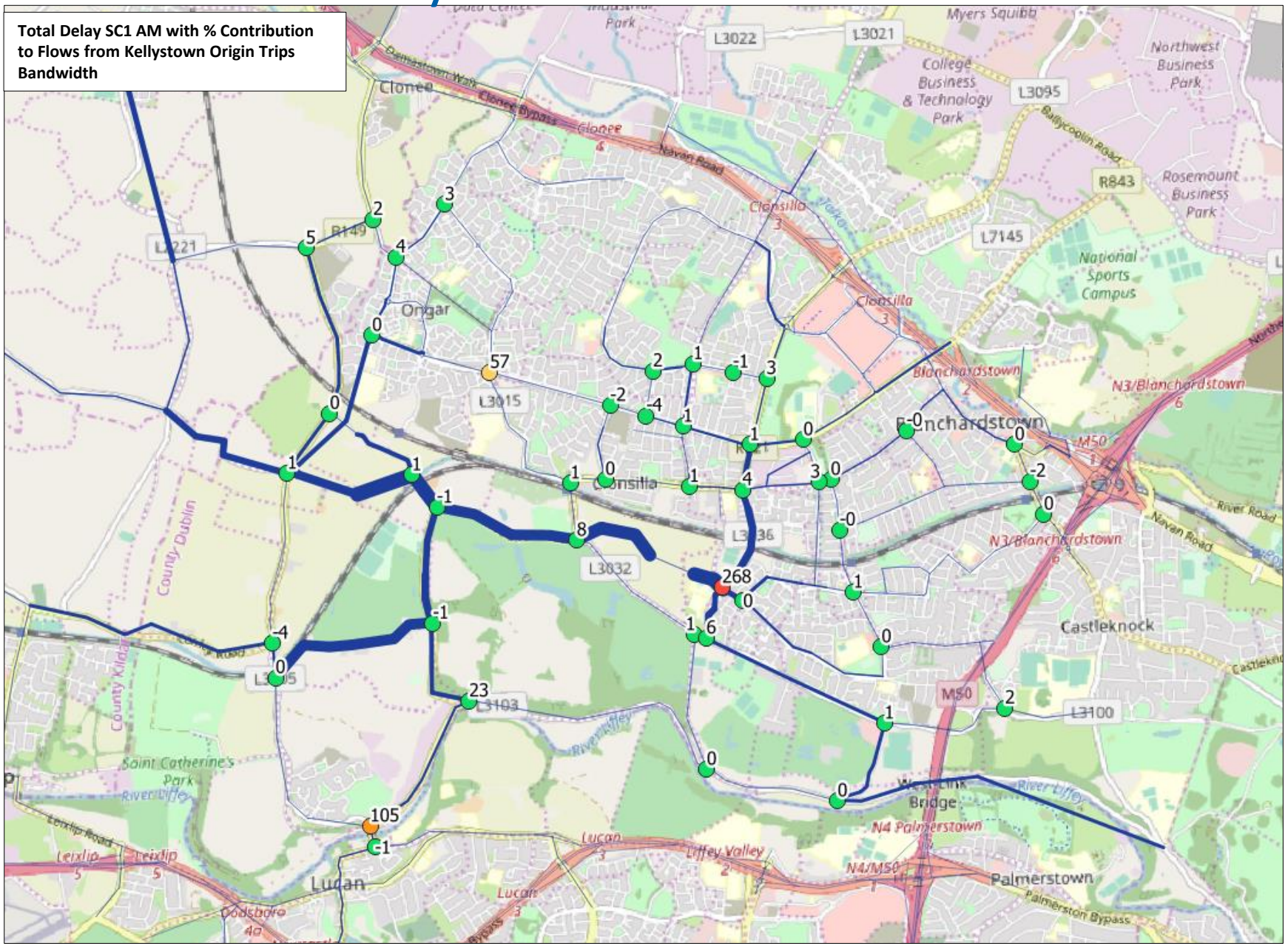
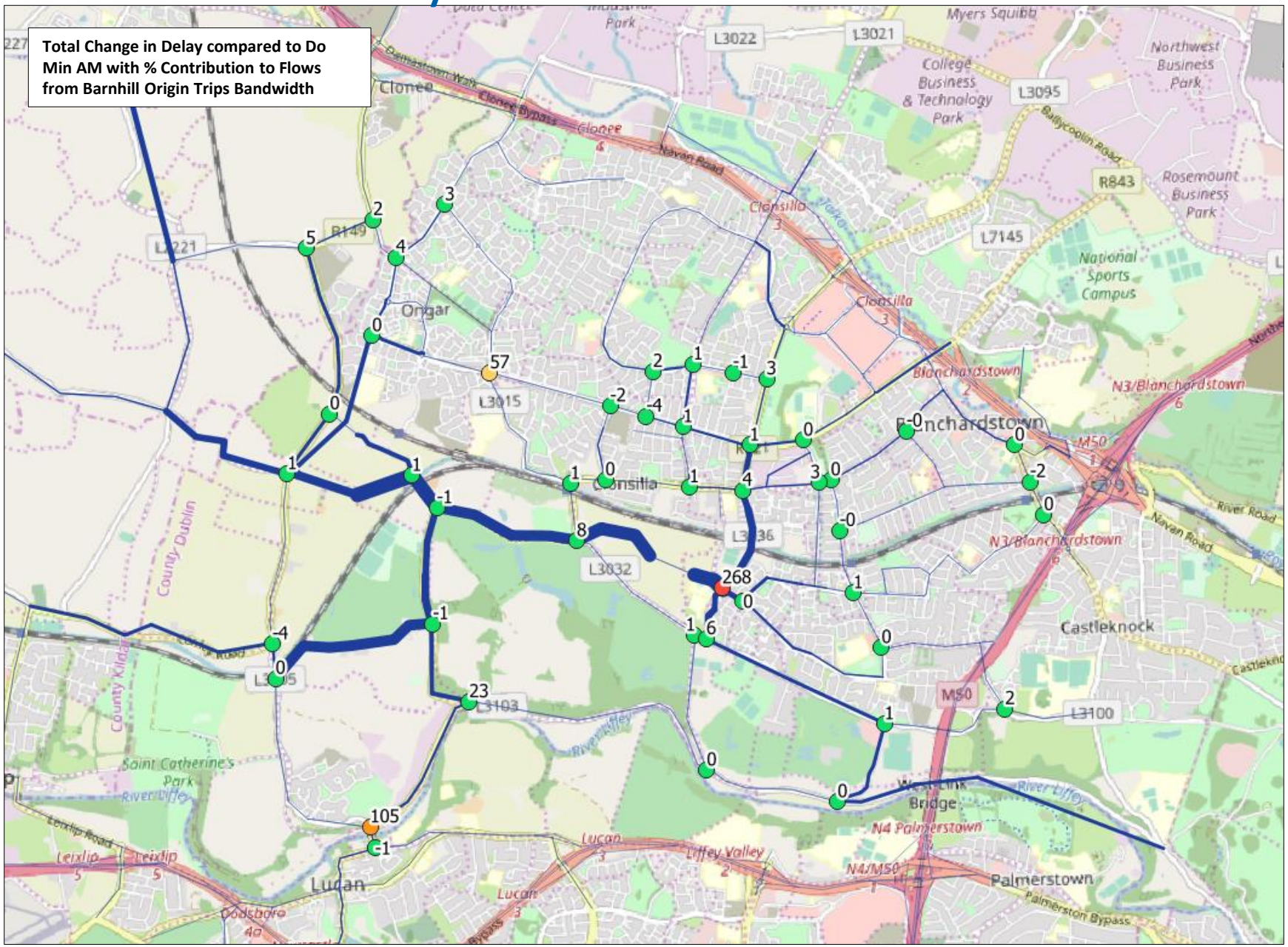


Delay with % Contribution



Delay with % Contribution



Delay with % Contribution