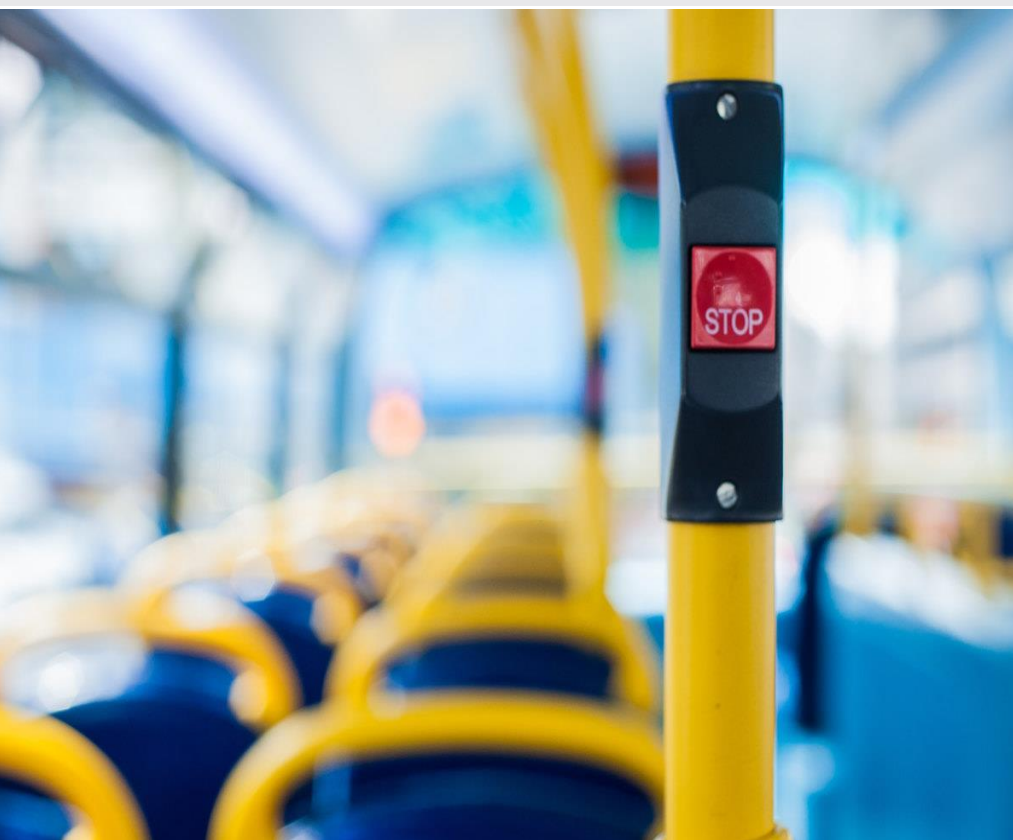


Uttlesford Transport Study

784-B029347

A120 CORRIDOR MODEL OUTPUTS



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TETRA TECH

1 | BACKGROUND

1.0 BACKGROUND

1.1 OVERVIEW

- 1.1.1 This technical note details the impacts of Uttlesford Local Plan development on the performance of the A120 corridor within the district.
- 1.1.2 It also examines the ability of supporting interventions to mitigate Local Plan development impacts on the corridor, together with the wider changes in travel demand that the area will face by 2040.

1.2 DEVELOPMENT SITES MODELLED & PROPOSALS IN THE LOCAL PLAN

- 1.2.1 The following sites and quantum of housing were modelled and assessed in the A120 corridor study area:
- Land off The Broadway, Great Dunmow
 - Land east of High Lane, Stansted Mountfitchet
 - Land west of Cambridge Road and north of Walpole Meadows
 - Land east of High Lane, Stansted Mountfitchet
 - Land east of High Lane, Stansted Mountfitchet
 - Warish Hall Farm, Takeley
 - Land at Parkers Farm Takeley
- 1.2.2 In total these sites accommodate 4,200 dwellings, with further allocations elsewhere across the district.
- 1.2.3 Following the conclusion of the assessment, Uttlesford District Council reconsidered the location and quantum of development to come forward within the A120 corridor. A revised figure of 2,895 homes was subsequently included in the Regulation 18 Local Plan. More broadly the quantum of housing included within the Local Plan is less than that modelled.
- 1.2.4 Changes in the reduced scale of growth proposed to come forward is partly off-set by the granting of planning permission for some 1,200 dwellings to the west of Great Dunmow at 'Easton Park'. This is also not captured in the assessment as planning permission wasn't granted prior to this technical note being produced.

1.3 SCENARIOS & FOCUS OF ASSESSMENT

- 1.3.1 The assessment of the impacts of Local Plan development has been undertaken using the A120 Corridor VISUM Model. Technical details of the model and the methodology applied in the assessment of the network are described in separate technical notes.
- 1.3.2 Five scenarios have been assessed focusing upon:
- The performance of the corridor in the 2021 (Base Year) and 2040 (Reference Case).
 - The comparative performance of the corridor with Local Plan sites in place (in 2040).
 - Interventions to encourage sustainable travel.
 - Highway capacity improvements.
- 1.3.3 The assessment of the performance of the corridor is based upon the following metrics:
- The volume of traffic on the A120 in both the AM and PM peak periods.
 - Journey times on the corridor in both the AM and PM peak periods, and the associated speed of traffic.
 - Junction delays in both the AM and PM peak periods.

1.4 FURTHER READING

1.4.1 This technical note focuses on the performance of the A120 corridor. It should be read in conjunction with the following technical notes:

- TN110 | Uttlesford Transport Study Baseline Report
- TN401 | Strategic Impacts Technical Note
- TN402 | Saffron Walden Model Outputs Technical Note.
- TN403 | Great Dunmow Model Outputs Technical Note.
- TN404 | Takeley Model Outputs Technical Note.
- TN405 | Stansted Mountfitchet Model Outputs Technical Note.
- TN406 | Thaxted & Newport Model Outputs Technical Note.

1.5 MORE INFORMATION

1.5.1 For more information on the content of this technical note please contact:

Stuart Harrison

Principal Transport & Infrastructure Planner
Uttlesford District Council
stuart.harrison@essex.gov.uk

or

Ben King

Associate Director
Tetra Tech
ben.king@tetratech.com



TETRA TECH

2 | VOLUME OF TRAFFIC

2.0 VOLUME OF TRAFFIC

2.1 OVERVIEW

2.1.1 This section presents changes in the volume of traffic along the A120 corridor in the AM and PM peak periods for the following scenarios:

- Base Year (2021)
- Reference Case (2040)
- Long Plan Growth (2040)
- Mitigation Package 1 – Sustainable Transport Interventions (2040)
- Mitigation Package 2 – Sustainable Transport Interventions plus junction capacity improvements (2040)

2.1.2 Comparisons are drawn between the scenarios to identify the impact of the Local Plan on the volume of traffic on the A120 corridor and the ability of the supporting interventions to mitigate and manage flow.

2.2 AM PEAK PERIOD

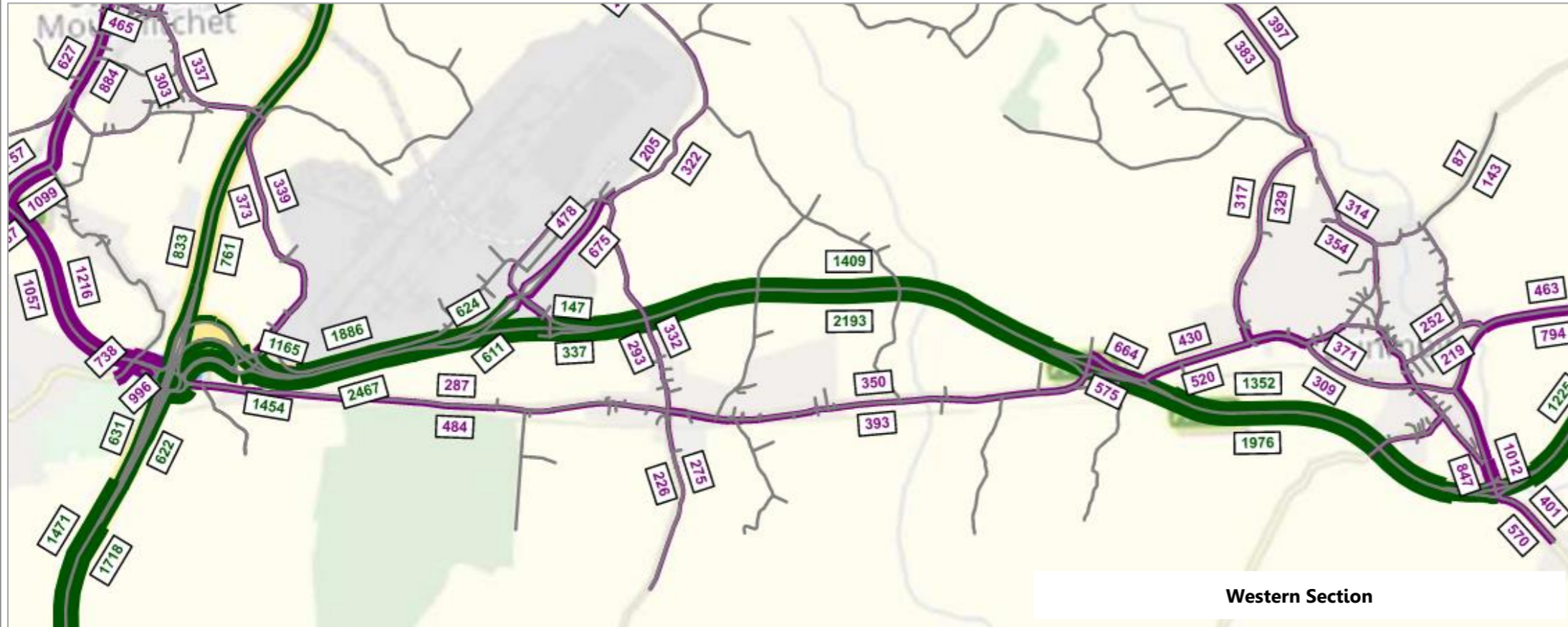
2.2.1 **Figure 2-1 to Figure 2-5** highlight changes in the volume of traffic on the A120 in the AM peak period. The key findings of this analysis show:

- In the 2021 Base Year, the highest volume of traffic is on the westbound section of the carriageway, immediately to the south of the airport, with a flow of almost 2,500 vehicles per hour (VPH). Westbound flows reduce to around 2,000 VPH close to Great Dunmow and are around 1,500 VPH to the south-east of the town.
- By comparison, eastbound flows in the AM peak period are considerably lower, along the length of the corridor (differing by as much as a third in places). It demonstrates a tidality of flow, predominantly associated with commuting trips wishing to access the M11 via J8.
- In the 2040 Reference Case, the volume of traffic in the period increases substantially, in both directions and along the entire length of the A120 corridor.
- At its busiest, westbound flows will grow to almost 3,500 VPH in the period, on the section immediately to the south of the airport, representing an increase of over 1,000 VPH. A similar level of increase will be experienced south of Great Dunmow, immediately to the west of Dunmow South Interchange.
- Further increases in the volume of traffic will be apparent when the Local Plan site allocations are taken into account, although the scale of growth is more moderate than in the Reference Case. Some additional 250 VPH travelling westbound are forecast on the busiest section of the A120 south of the airport, whilst increases around Great Dunmow will be minimal.
- The ability of the two mitigation packages to address the increase in demand associated with the Local Plan sites is mixed. The sustainable transport measures reduce the increase of vehicles from around 250 to 185 VPH on the busiest section of the carriageway south of the airport. However, the provision of an alternative routing option through Takeley in Mitigation Package 2, sees traffic re-route off the A120, reducing the overall volume of eastbound trips to a level below that experienced in the Reference Case.

Figure 2-1: Volume of Traffic (Link Flow) in the 2021 Base Year (AM)

Notes:

- Volume of traffic is presented in vehicles per hour.
- Weight of bar reflects size of flow.
- Purple represents links on the local road network.
- Green represents links on the Strategic Road Network (SRN)



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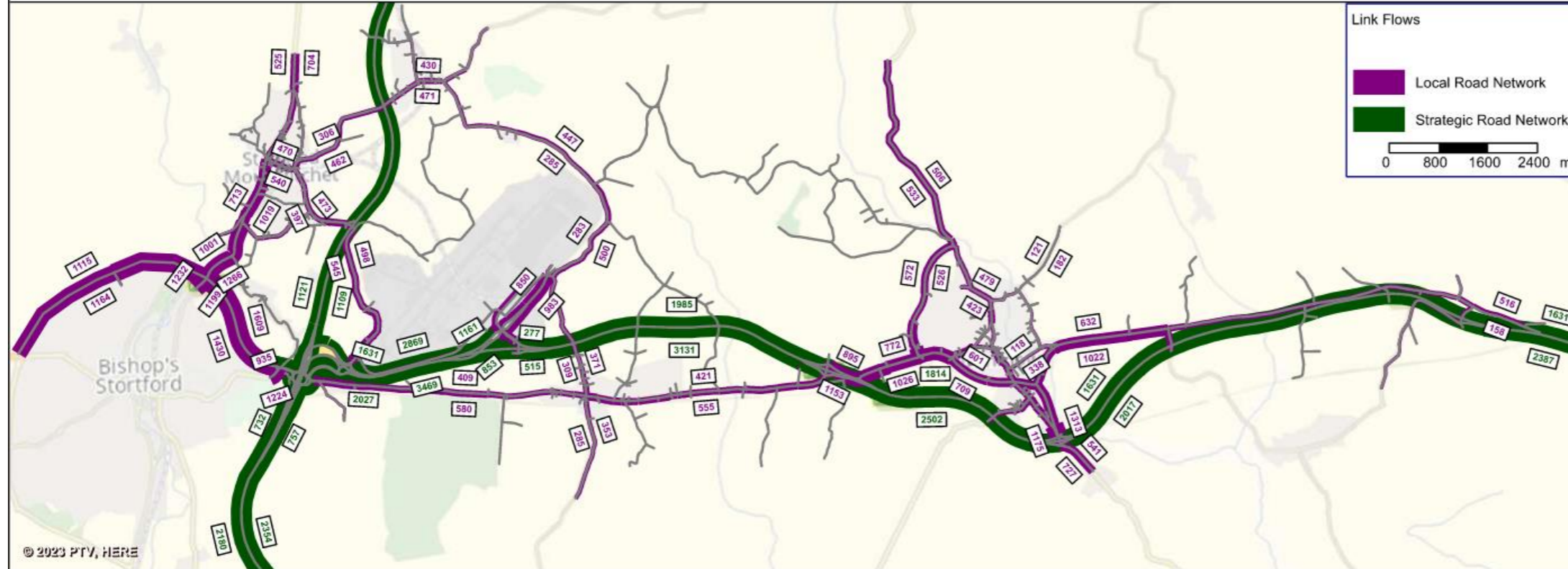
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AM Reference Case 2040 Link Flows

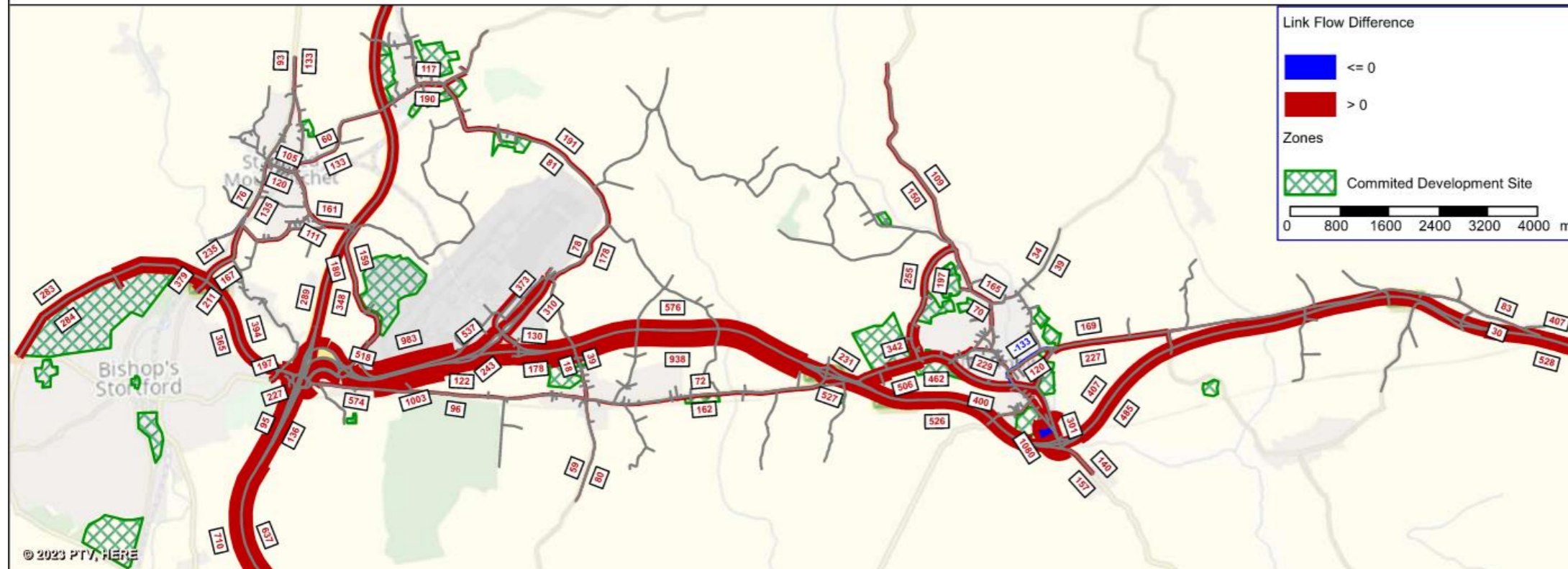


VISUM 2022.01

Link Flow In Total Number of Vehicles

Date: 13.09.2023

2040 AM Reference Case - 2021 AM Base



VISUM 2022.01

Link Flow Difference In Total Number of Vehicles

Date: 13.09.2023

Figure 2-2: Volume of Traffic (Link Flow) in the 2040 Reference Case and Differences in Flow from 2021 Base Year (AM)

Notes:

- Volume of traffic is presented in vehicles per hour.
- Weight of bar reflects size of flow.
- Purple represents links on the local road network.
- Green represents links on the Strategic Road Network (SRN)
- Red represents an increase in flow.
- Blue represents a decrease in flow.

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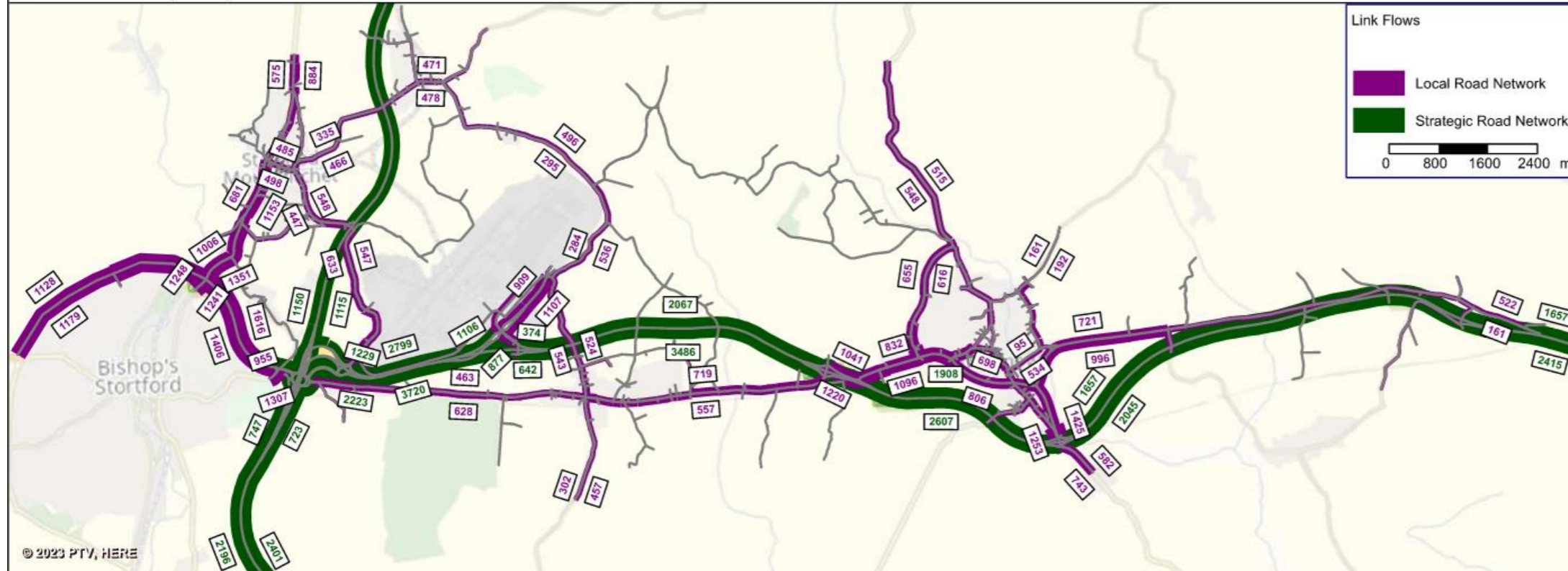
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North

AM Local Plan (Core) 2040 Link Flows

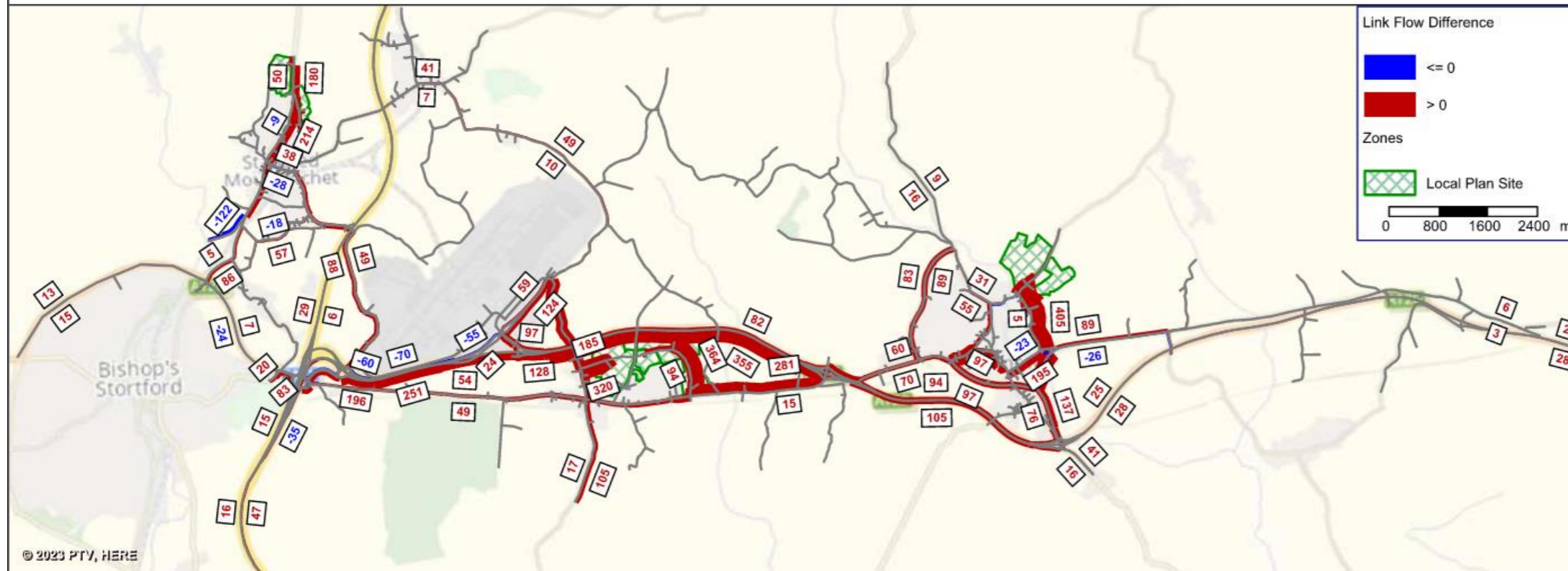


VISUM 2022.01

Link Flow In Total Number of Vehicles

Date: 18.09.2023

2040 AM Local Plan Growth - 2040 AM Reference Case



VISUM 2022.01

Link Flow Difference In Total Number of Vehicles

Date: 18.09.2023

Figure 2-3: Volume of Traffic (Link Flow) in the 2040 Local Plan Scenario and Differences in Flow from Reference Case (AM)

Notes:

- Volume of traffic is presented in vehicles per hour.
- Weight of bar reflects size of flow.
- Purple represents links on the local road network.
- Green represents links on the Strategic Road Network (SRN)
- Red represents an increase in flow.
- Blue represents a decrease in flow.

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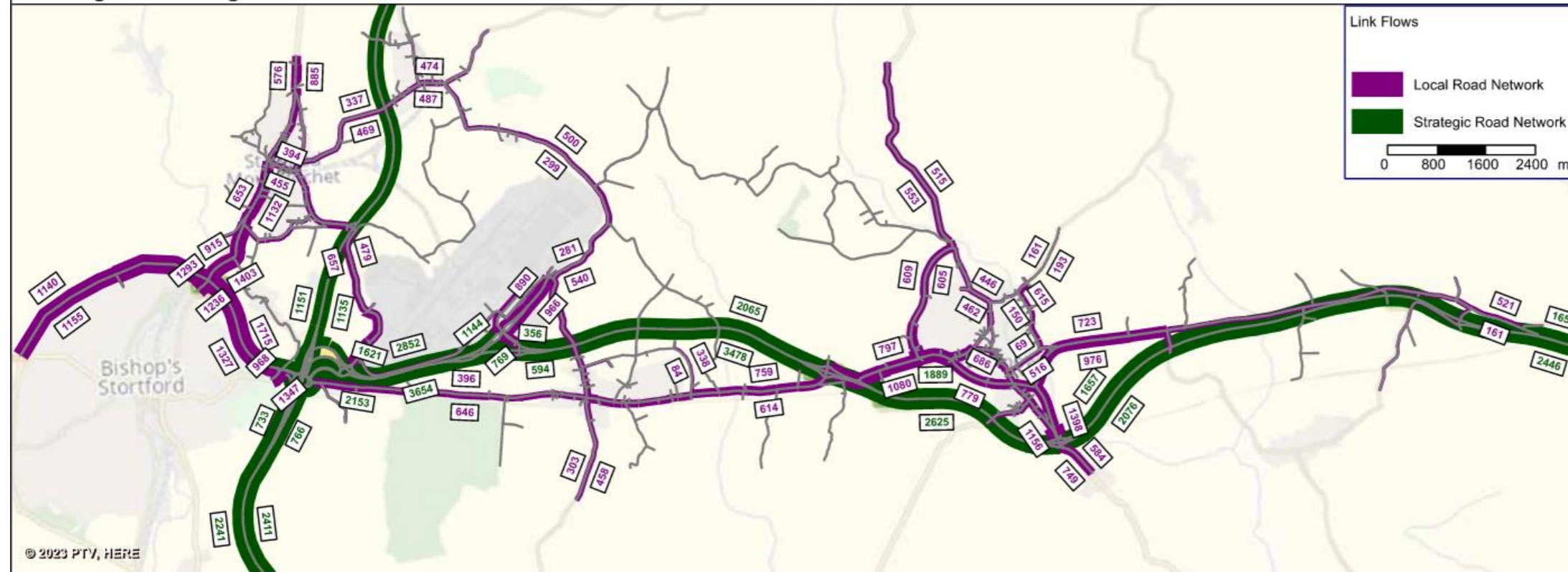
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AM Mitigation Package 1 2040 Link Flows



Link Flows

- Local Road Network
- Strategic Road Network

0 800 1600 2400 m

Figure 2-4: Volume of Traffic (Link Flow) in the 2040 Mitigation Package 1 and Differences in Flow from Reference Case (AM)

Notes:

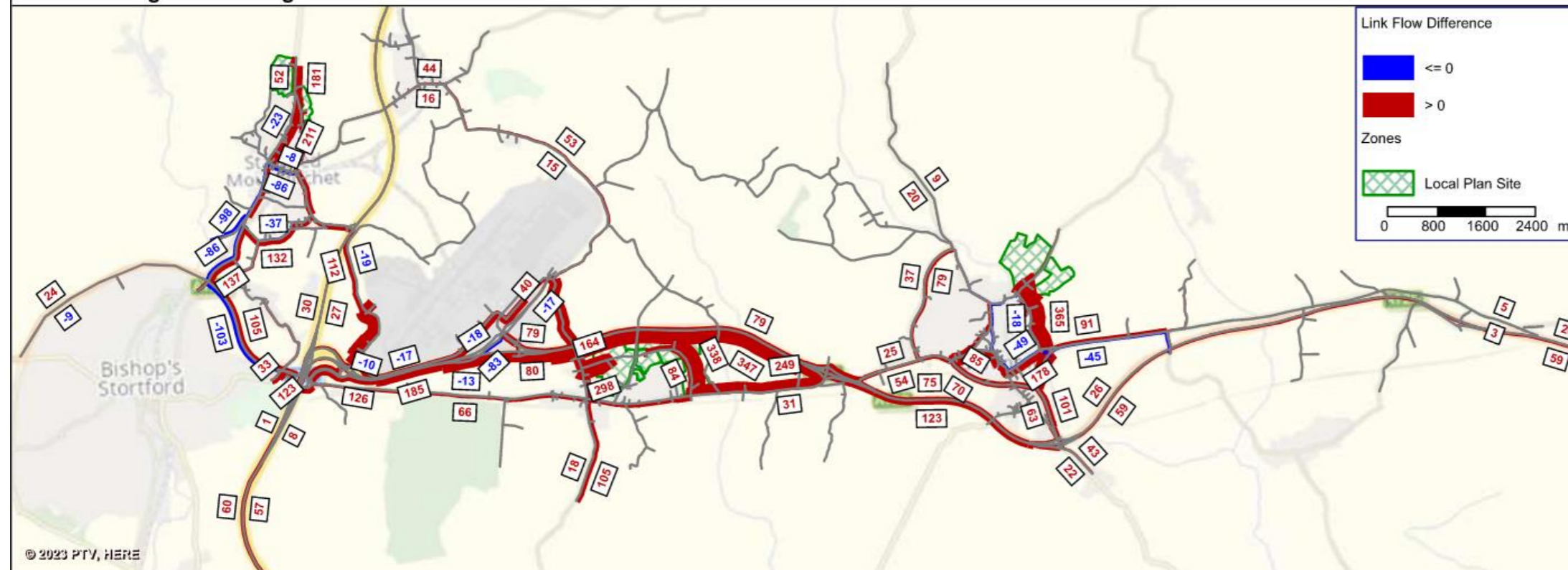
- Volume of traffic is presented in vehicles per hour.
- Weight of bar reflects size of flow.
- Purple represents links on the local road network.
- Green represents links on the Strategic Road Network (SRN)
- Red represents an increase in flow.
- Blue represents a decrease in flow.

VISUM 2022.01

Link Flow In Total Number of Vehicles

Date: 18.09.2023

2040 AM Mitigation Package 1 - 2040 AM Reference Case



Link Flow Difference

- <= 0
- > 0

Zones

- Local Plan Site

0 800 1600 2400 m

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VISUM 2022.01

Link Flow Difference In Total Number of Vehicles

Date: 18.09.2023



2.3 PM PEAK PERIOD

2.3.1 **Figure 2-6** to **Figure 2-10** highlight changes in the volume of traffic on the A120 corridor in the PM peak period. The key findings of this analysis highlight:

- In the 2021 Base Year, the highest volume of traffic is on the eastbound section of the carriageway, immediately to the south of the airport, with a flow of almost 3,000 VPH. Eastbound flows reduce to around 2,500 VPH close to Great Dunmow, and around 2,000 VPH to the south-east of the town.
- By comparison, westbound flows in the PM peak period are considerably lower, along the length of the A120 corridor (differing by as much as 50% in places) which reflects the strong tidality of flow.
- In the 2040 Reference Case, the volume of traffic in the PM peak increases substantially, in both directions and along the entire length of the A120 corridor.
- At its busiest, eastbound flows will grow to over 4,000 VPH, on the section immediately to the south of the airport, representing an increase of over 1,100 VPH. The largest increase however will be close to Dunmow South Interchange where a further 1,400 VPH are predicted to access the network.
- Further increases in the volume of traffic are apparent when the Local Plan site allocations are taken into account, although the scale of growth is more moderate than in the Reference Case. The most pronounced increase will be on the central section of the corridor between the airport and Great Dunmow with almost an additional 200 VPH travelling westbound and 170 VPH travelling eastbound. The additional impacts around M11 J8 will be minimal.
- The ability of the two mitigation packages to address the increase in demand associated with the Local Plan sites is difficult to identify. This is as a result of the Northside development adjacent to the airport being included within the same scenario. It will generate an increase in traffic on the network and appears to negate any reduction in vehicles as a result of the provision of realistic alternatives to the car.
- What can be seen however, is that the provision of an alternative routing option through Takeley in Mitigation Package 2, sees traffic re-route off the A120, reducing the overall volume of eastbound trips to a level commensurate with that experienced in the Reference Case.

2.4 SUMMARY

2.4.1 Analysis of the volume of traffic on the A120 corridor highlights that by 2040 there will be significantly more traffic on the network, driven by committed developments coming forward and a sizeable growth in patronage at Stansted Airport.

2.4.2 Whilst the Local Plan will add further demand to the corridor, the increases are relatively minor, and only a fraction of the growth in demand that will occur anyway. A combination of the sustainable transport interventions and highway capacity based improvements will reduce this impact, to the extent that on the central section of the corridor, the level of demand could be lower than in the Reference Case.



Figure 2-6: Volume of Traffic (Link Flow) in the 2021 Base Year (PM)

Notes:

- Volume of traffic is presented in vehicles per hour.
- Weight of bar reflects size of flow.
- Purple represents links on the local road network.
- Green represents links on the Strategic Road Network (SRN)

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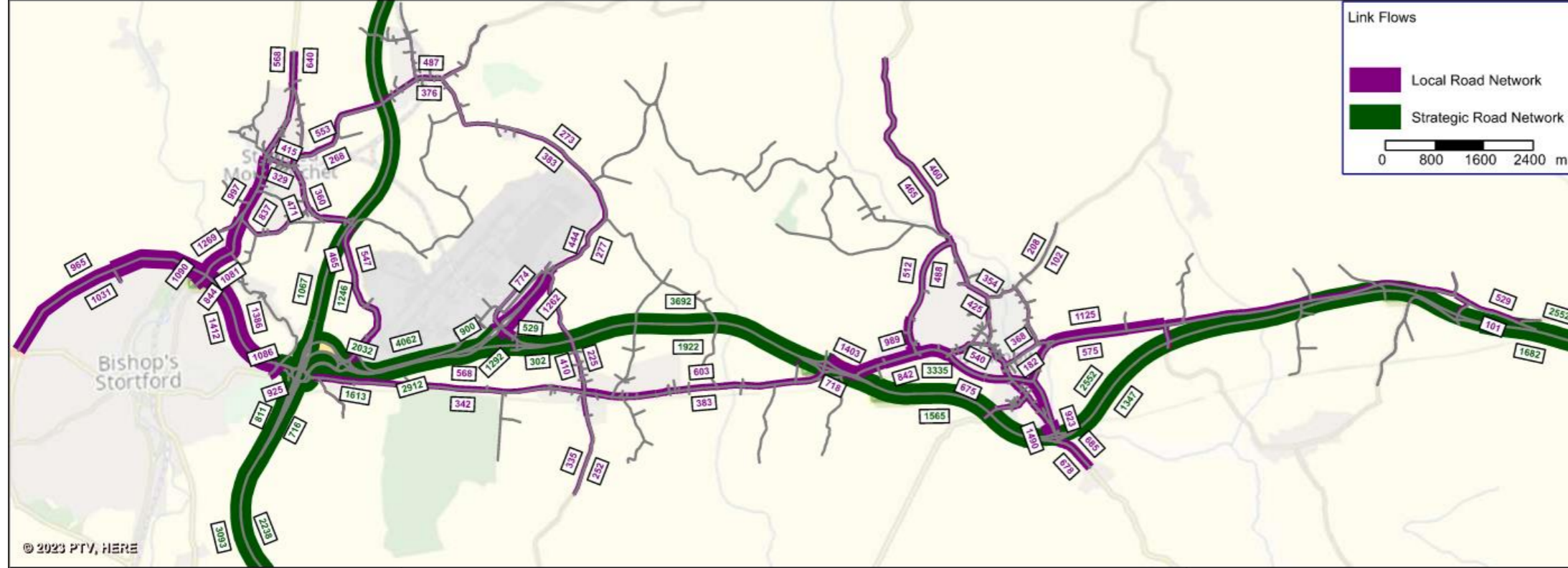
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PM Reference Case 2040 Link Flows

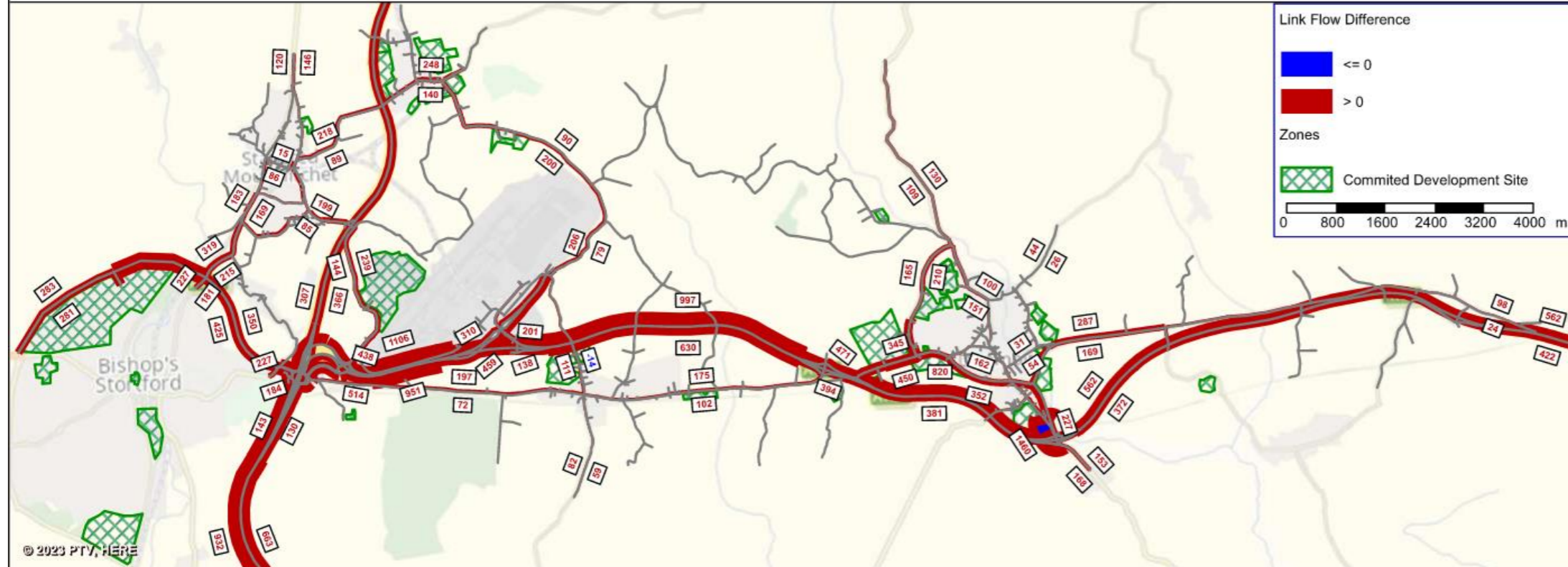


VISUM 2022.01

Link Flow In Total Number of Vehicles

Date: 13.09.2023

2040 PM Reference Case - 2021 PM Base



VISUM 2022.01

Link Flow Difference In Total Number of Vehicles

Date: 13.09.2023

Figure 2-7: Volume of Traffic (Link Flow) in the 2040 Reference Case and Differences in Flow from 2021 Base Year (PM)

Notes:

- Volume of traffic is presented in vehicles per hour.
- Weight of bar reflects size of flow.
- Purple represents links on the local road network.
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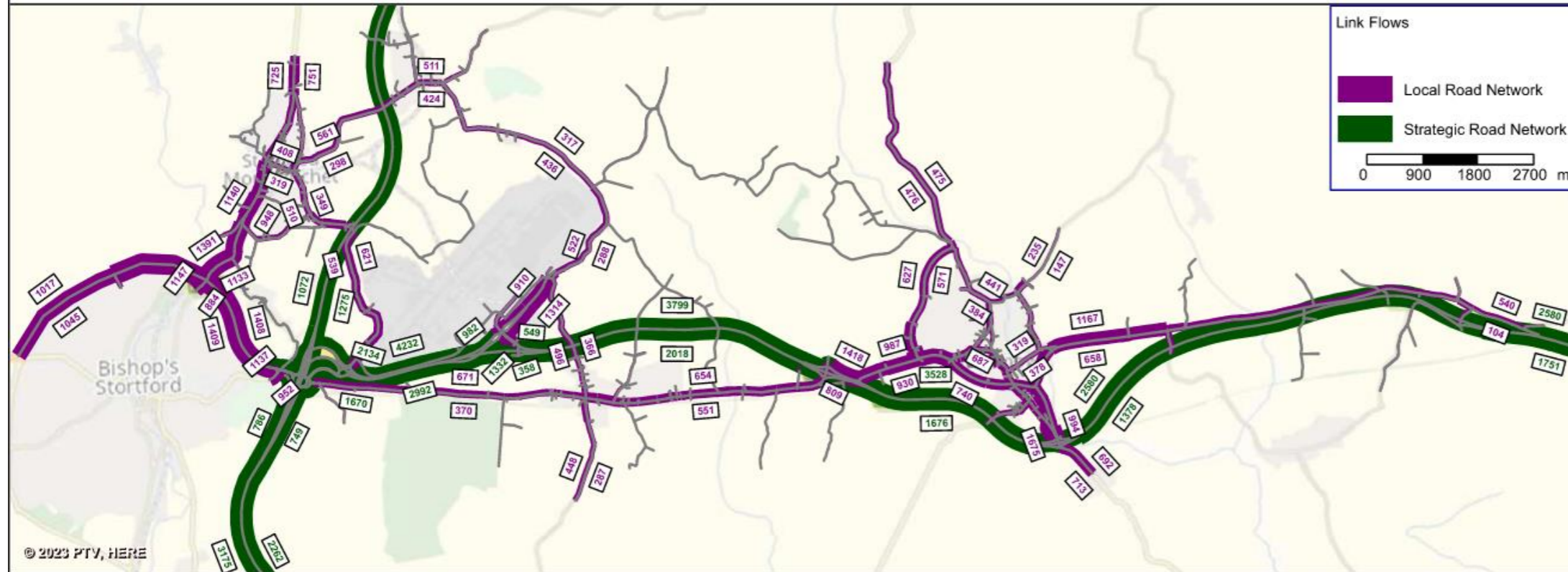
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PM Local Plan Growth 2040 Link Flows

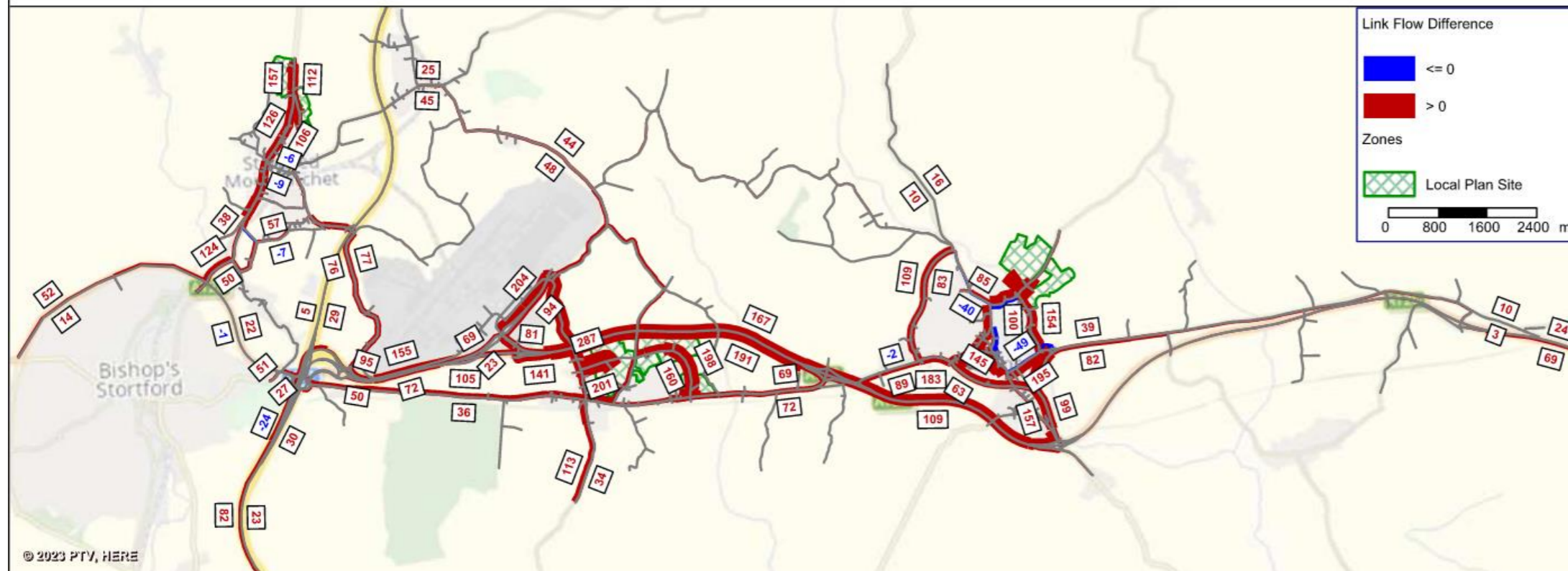


VISUM 2022.01

Link Flow In Total Number of Vehicles

Date: 13.09.2023

2040 PM Local Plan Growth - 2040 PM Reference Case



VISUM 2022.01

Link Flow Difference In Total Number of Vehicles

Date: 18.09.2023

Figure 2-8: Volume of Traffic (Link Flow) in the 2040 Local Plan Scenario and Differences in Flow from Reference Case (PM)

Notes:

- Volume of traffic is presented in vehicles per hour.
- Weight of bar reflects size of flow.
- Purple represents links on the local road network.
- Green represents links on the Strategic Road Network (SRN)
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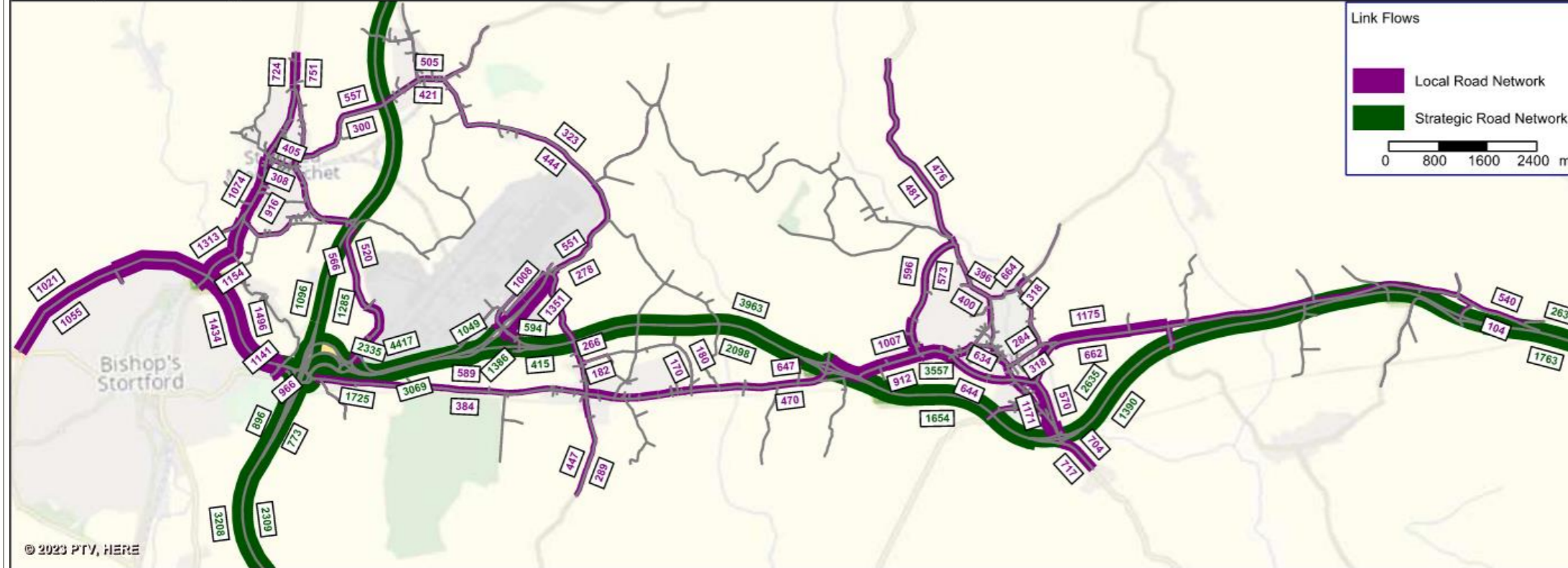
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PM Mitigation Package 1 2040 Link Flows

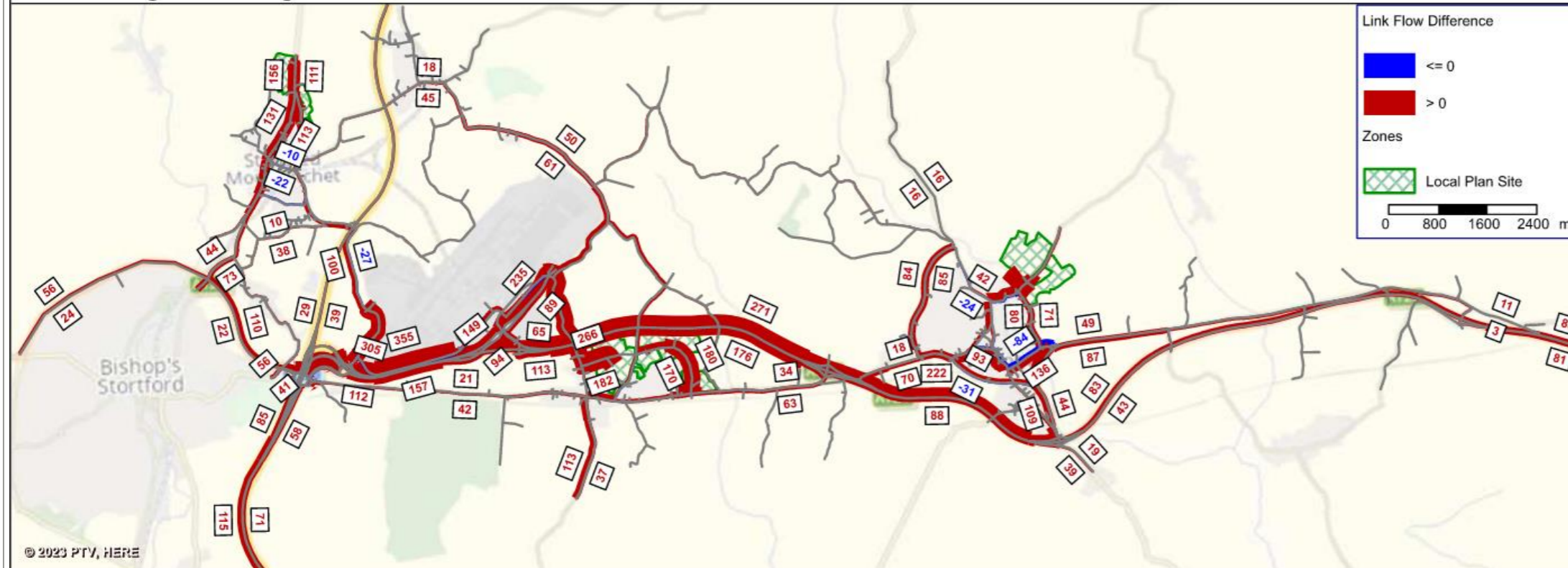


VISUM 2022.01

Link Flow In Total Number of Vehicles

Date: 18.09.2023

2040 PM Mitigation Package 1 - 2040 PM Reference Case



VISUM 2022.01

Link Flow Difference In Total Number of Vehicles

Date: 18.09.2023

Figure 2-9: Volume of Traffic (Link Flow) in the 2040 Mitigation Package 1 and Differences in Flow from Reference Case (PM)

Notes:

- Volume of traffic is presented in vehicles per hour.
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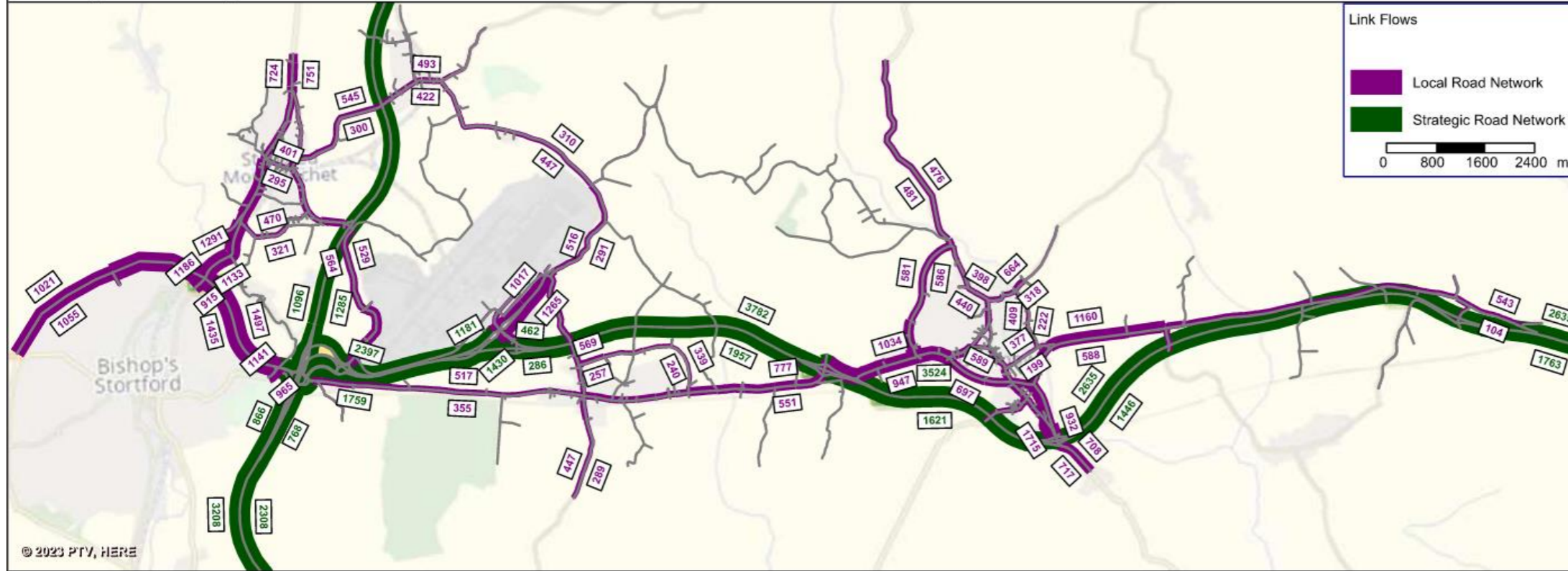
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PM Mitigation Package 2 2040 Link Flows

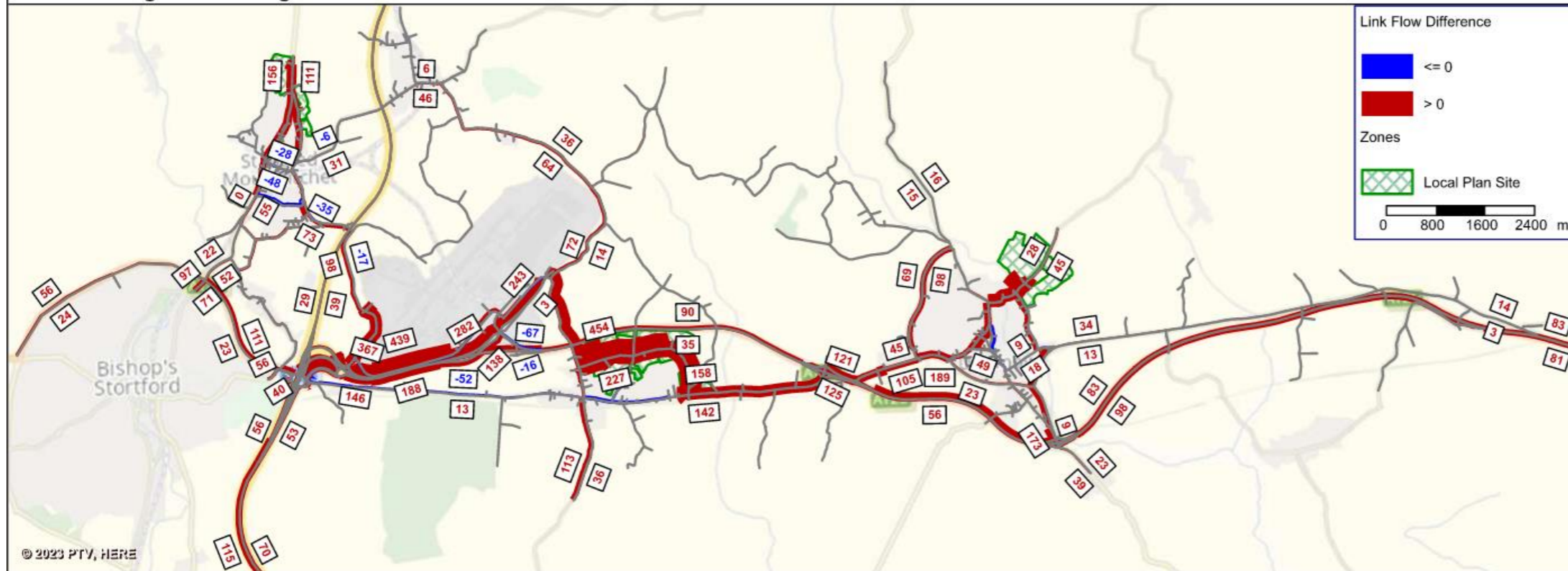


VISUM 2022.01

Link Flow In Total Number of Vehicles

Date: 18.09.2023

2040 PM Mitigation Package 2 - 2040 PM Reference Case



VISUM 2022.01

Link Flow Difference In Total Number of Vehicles

Date: 18.09.2023

Figure 2-10: Volume of Traffic (Link Flow) in the 2040 Mitigation Package 2 and Differences in Flow from Reference Case (PM)

Notes:

- Volume of traffic is presented in vehicles per hour.
- Weight of bar reflects size of flow.
- Purple represents links on the local road network.
- Green represents links on the Strategic Road Network (SRN)
- Red represents an increase in flow.
- Blue represents a decrease in flow.

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3 | JOURNEY TIMES & THE SPEED OF TRAFFIC

3.0 JOURNEY TIMES & THE SPEED OF TRAFFIC

3.1 OVERVIEW

3.1.1 This section presents changes in the journey times and speed of traffic along the A120 corridor in the AM and PM peaks for the following scenarios:

- Base Year (2021)
- Reference Case (2040)
- Long Plan Growth (2040)
- Mitigation Package 1 – Sustainable Transport Interventions (2040)
- Mitigation Package 2 – Sustainable Transport Interventions plus junction capacity improvements (2040)

3.1.2 Comparisons are drawn between the scenarios to identify the impact of Local Plan traffic on the corridor and the ability of the supporting interventions to mitigate and manage traffic flow.

3.2 AM PEAK PERIOD

3.2.1 **Table 3-1** and **Table 3-2** highlight journey times and the speed of traffic along the 13.5 mile length of the A120 corridor between M11 J8 and the edge of Braintree (at School Lane), in the AM peak period, and how these changes between scenarios.

3.2.2 The key findings are that:

- In the 2021 Base Year, average speeds along the corridor were above 60mph in both directions. Westbound traffic is slightly slower and therefore journey times are slightly longer, reflecting the tidality of the flow and the impact of the greater number of vehicles commuting towards the M11.
- The impact of the increase in demand associated with the Reference Case related growth is reflected in the average speed of vehicles, particularly for westbound traffic. Speeds will reduce by 4mph, equating to a journey time increase of almost a minute. The impact on eastbound movement is less pronounced with speeds 2mph slower than in the Base Year.
- With the introduction of Local Plan demand, the A120 will see almost a 4mph reduction in the speed of eastbound traffic but only a 1mph reduction in the speed of westbound traffic.
- When viewing the impact of the mitigation packages on journey times against the Local Plan and Reference Case scenarios, the figures should be treated with a degree of caution. As part of these scenarios a recently approved development at Northside, adjacent to Stansted Airport was coded into the modelling process¹. This places more trips on the network and the impact of this is seen in the increased journey times within Mitigation Package 1.
- However, coupled with highway capacity improvements on the local road network, there will be an overall improvement in the efficiency with which traffic uses the road network and average speeds in both directions will return to similar levels as the Reference Case.

Table 3-1: Journey Times in the AM Peak Period (seconds)

Scenario	Eastbound	Westbound
Base Year (2021)	771	799
Reference Case (2040)	797	855

¹ Northside was incorporated into Mitigation Package 1 (as opposed to the Reference Case) due to the timing of the planning permission being granted.

Scenario	Eastbound	Westbound
Local Plan Growth Scenario	842	869
Mitigation Package 1 – (Sustainable Transport)	804	890
Mitigation Package 2 – (Highway Capacity)	803	874
Changes between Scenarios		
Reference Case > Base Year	+26	+55
Local Plan > Reference Case	+45	+15
Mitigation Package 1 > Reference Case	+7	+35
Mitigation Package 2 > Reference Case	+6	+19

Table 3-2: Average Speed in the AM Peak Period (MPH)

Scenario	Eastbound	Westbound
Base Year (2021)	65.3	62.7
Reference Case (2040)	63.2	58.6
Local Plan Growth Scenario	59.8	57.6
Mitigation Package 1 – (Sustainable Transport)	62.6	56.3
Mitigation Package 2 – (Highway Capacity)	62.7	57.4
Changes between Scenarios		
Reference Case > Base Year	-2.1	-4.0
Local Plan > Reference Case	-3.4	-1.0
Mitigation Package 1 > Reference Case	-0.5	-2.3
Mitigation Package 2 > Reference Case	-0.5	-1.3

3.3 PM PEAK PERIOD

3.3.1 **Table 3-3** and **Table 3-4** highlight journey times and the speed of traffic along the 13.5 mile length of the A120 corridor between M11 J8 and the edge of Braintree (at School Lane), in the PM peak period, and how these changes between scenarios.

3.3.2 The key findings are that:

- There is considerably more variability in journey times and average speeds in the PM peak period than in the AM peak period, both between scenarios and in terms of the direction of traffic.
- In the 2021 Base Year, average speeds along the corridor were around 8mph faster for westbound traffic heading towards the M11 (at 65mph) compared to eastbound traffic heading towards Braintree (at 57mph). this presents further evidence of the strong tidality of flow and the impact of the respective volume of traffic on the efficiency of the corridor.
- The impact of the increase in demand associated with the Reference Case related growth is reflected in the average speed of vehicles, particularly for eastbound traffic. Speeds will reduce by over 6mph, compared to only 1mph for the westbound flow. It will see journey times for traffic travelling towards Braintree increase by almost two minutes.

- By comparison, the introduction of Local Plan traffic will see minimal additional impact on the network in the PM peak, with only single digit increases in journey times.
- When viewing the impact of the mitigation packages on journey times against the Local Plan and Reference Case scenarios, the figures should be treated with a degree of caution. As part of these scenarios a recently approved development at Northside, adjacent to Stansted Airport was coded into the modelling process. This results in placing more trips on the network and the impact of this is seen in the increase in journey times within Mitigation Package 1.
- However, coupled with highway capacity improvements on the local road network, there will be an overall improvement in the efficiency with which traffic uses the road network and average speeds for westbound traffic will return to similar levels as the Reference Case, whilst eastbound traffic will face journey times comparable to those in the Base Year, a significant improvement over conditions in the Reference Case.

Table 3-3: Journey Times in the PM Peak Period (seconds)

Scenario	Eastbound	Westbound
Base Year (2021)	874	767
Reference Case (2040)	987	781
Local Plan Growth Scenario	994	783
Mitigation Package 1 – (Sustainable Transport)	976	890
Mitigation Package 2 – (Highway Capacity)	876	791
Changes between Scenarios		
Reference Case > Base Year	+113	+14
Local Plan > Reference Case	+8	+3
Mitigation Package 1 > Reference Case	-111	+110
Mitigation Package 2 > Reference Case	-110	+10

Table 3-4: Average Speed in the PM Peak Period (MPH)

Scenario	Eastbound	Westbound
Base Year (2021)	57.6	65.4
Reference Case (2040)	51.0	64.2
Local Plan Growth Scenario	50.6	64.0
Mitigation Package 1 – (Sustainable Transport)	57.5	56.3
Mitigation Package 2 – (Highway Capacity)	57.4	63.3
Changes between Scenarios		
Reference Case > Base Year	-6.6	-1.2
Local Plan > Reference Case	-0.4	-0.2
Mitigation Package 1 > Reference Case	6.4	-7.9
Mitigation Package 2 > Reference Case	6.4	-0.9

3.4 SUMMARY

- 3.4.1 Analysis of the journey times and average speed of traffic on the A120 corridor highlights that by 2040 there will be an impact on the efficiency of the operation of the network, driven by committed developments coming forward and a sizeable growth in patronage at Stansted Airport (as captured in the Reference Case).
- 3.4.2 Whilst the Local Plan will add further demand to the corridor, the increases are comparatively small.
- 3.4.3 The impact of the Northside development recently granted planning permission and reflected in Mitigation Package 1, hides the benefits of the delivery of sustainable transport measures in the wider corridor. However, alongside the highway capacity improvements on the local network, there will be clear benefits to the SRN, particularly for eastbound traffic in the PM peak period.



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4 | JUNCTION DELAY

4.0 JUNCTION DELAY

4.1 OVERVIEW

4.1.1 This section discusses junction and link delay along the A120 corridor in the AM and PM peaks for the following scenarios:

- Base Year (2021)
- Reference Case (2040)
- Long Plan Growth (2040)
- Mitigation Package 1 – Sustainable Transport Interventions (2040)
- Mitigation Package 2 – Sustainable Transport Interventions plus junction capacity improvements (2040)

4.1.2 Comparisons are drawn between the scenarios to identify the impacts of Local Plan traffic on the corridor and the ability of the supporting interventions to mitigate and manage flow.

4.2 AM PEAK PERIOD

4.2.1 **Figure 4-1 to Figure 4-5** highlight the levels of delay at the junctions on the A120 between M11 J8 to a point west of Braintree, in the AM peak.

4.2.2 The key findings are that:

- In the 2021 Base Year, the worst performing junction is the intersection to the east of Great Dunmow. Delays are seen to be approaching one minute on the worst performing arm.
- Whilst delays at the M11 J8 are smaller on the individual nodes, there is a higher cumulative delay as a result of often multiple conflicting traffic movements vehicles face when navigating through the intersection.
- In the 2040 Reference Case, there will be considerably longer delays around Great Dunmow – the eastern intersection will see traffic queuing for over four minutes on the worst performing arm, whilst the Dunmow South Intersection will experience delays of over three minutes.
- In terms of M11 J8, several of the individual nodes will be subject to longer delays, most notably the southbound off slip. The Priory Wood roundabout continues to operate efficiently in this scenario.
- With the addition of Local Plan traffic, the queuing at both the Dunmow East and Dunmow South Intersections will increase albeit only fractionally at the former. At Dunmow South arms of the roundabouts to the north and south of the carriageway will be subject to a more tangible increase in delays.
- At M11 J8, four of the individual nodes will have delays approaching or exceeding one minute. In addition, the eastbound arm of the Priory Wood Roundabout will also see delays of 60 seconds.
- From the assessment of the model outputs, it is difficult to pinpoint the ability of the package of sustainable transport measures to mitigate the impact of the Local Plan sites (Mitigation Package 1). This is due to new development at Northside adjacent to the airport being included in the same scenario. This development increases traffic on the network and the length of queuing on the M11 J8 southbound off slip in particular.
- Conversely, the Northside development will provide some capacity improvements at the junction, and other nodes will benefit, together with Priory Wood Roundabout.
- In the final scenario, Mitigation Package 2, the effect of the interventions is clear at Dunmow South Intersection, where delays will reduce considerably. Problems persist at Dunmow East, although no specific intervention was considered at that location within the assessment.

- Finally, at M11 J8, the mitigation package has little impact on its operation – unsurprisingly as the mitigation is focused on local junction improvements elsewhere on the network. The issues at M11 J8 are apparent before the Local Plan related demand is taken into account and it is not the role of the Local Plan to identify the necessary reconfiguration required.

4.3 PM PEAK PERIOD

4.3.1 **Figure 4-6 to Figure 4-10** highlight the levels of delay at the junctions on the A120 between M11 J8 to a point west of Braintree, in the PM peak.

4.3.2 The key findings are that:

- In the 2021 Base Year, there are no queuing issues on junctions surrounding Great Dunmow. However, delays are apparent at each of the seven individual nodes which comprise the intersection. Whilst individually, none are greater than one minute, they will have a cumulative impact on journey times and point to a network that is not operating efficiently.
- In the 2040 Reference Case, PM peak period demand will see a significant deterioration in the performance of the Priory Wood Roundabout with delays on the approach from the M11 J8 increasing to around two and a half minutes. This length of delay could see traffic queuing back and impacting movements around M11 J8.
- In terms of M11 J8, several of the nodes will see increases in delay, but differences compared to the Base Year will be relatively modest. Junctions around Great Dunmow will continue to operate efficiently with the exception of Dunmow East where delays will occur, albeit not exceeding 60 seconds.
- With the addition of Local Plan traffic there will be further marginal increases in the time required to navigate M11 J8 and Priority Wood roundabout. The increase in demand will add to the known issues but make no material difference to its operation.
- Mitigation Package 1 also includes the Northside development which is coming forward adjacent to the airport. Junction improvements which will be delivered as part of this scheme, together with the sustainable transport interventions proposed as part of the Local Plan combine to address much of the known queuing at M11 J8 in the PM peak. Whilst some residual delays will remain, they will be consistent with those in the Reference Case.
- The highway capacity improvements to junctions on the local road network as part of Mitigation Package 2 appear to do little to impact on the efficiency of the Grade Separated Junctions on the A120.

4.4 SUMMARY

4.4.1 There are existing issues with the performance of M11 J8 and these will be compounded by committed growth coming forward as reflected in the Reference Case. Local Plan traffic will add to pressures at M11J8 and the A120 junctions serving Great Dunmow.

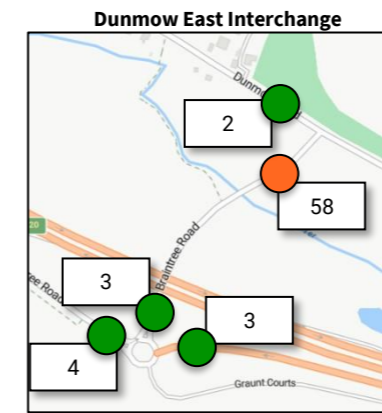
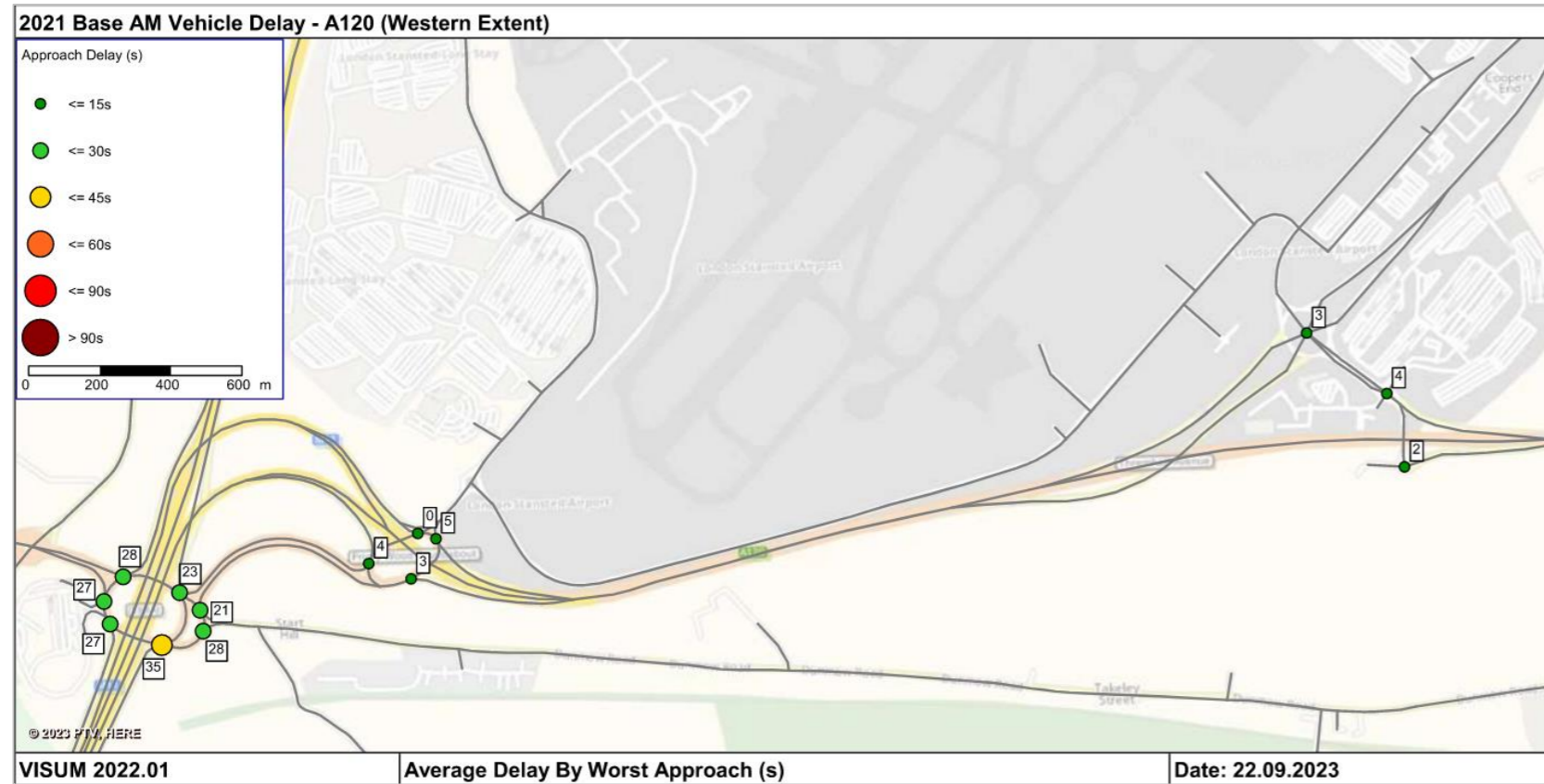
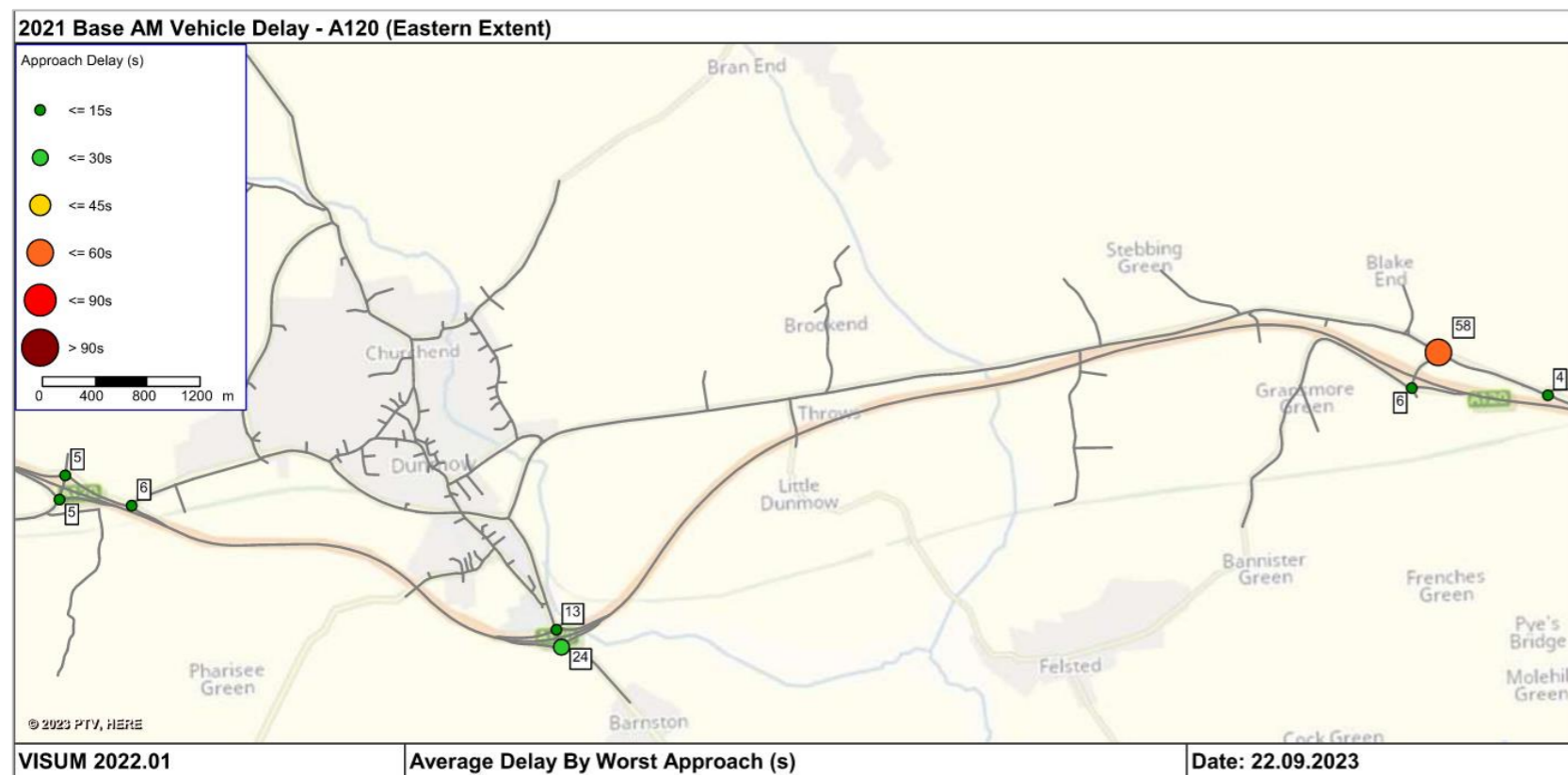


Figure 4-1: Length of Delay at Junctions in the 2021 Base Year (AM)

Notes:

- Delays are in seconds per vehicle.
- Represents average queue time in the respective peak period.
- Delays on the worst approach shown in main figure.
- Delays on all approaches at worst performing junctions are shown in the inserts.



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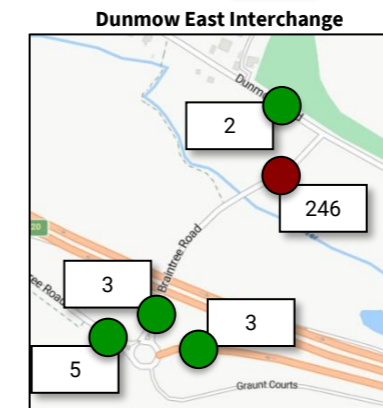
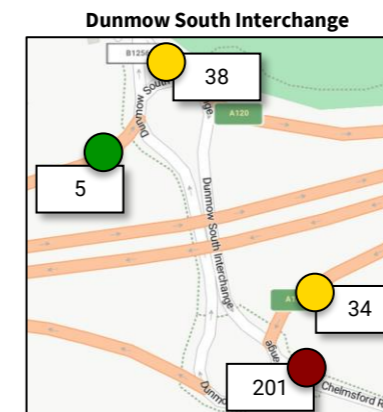
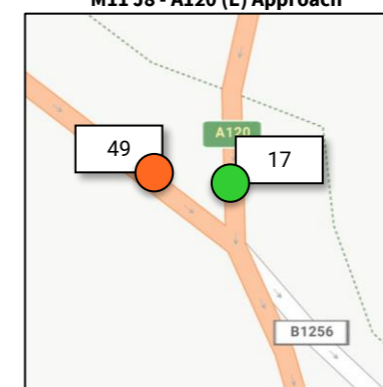
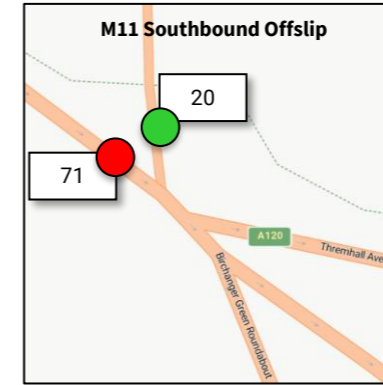
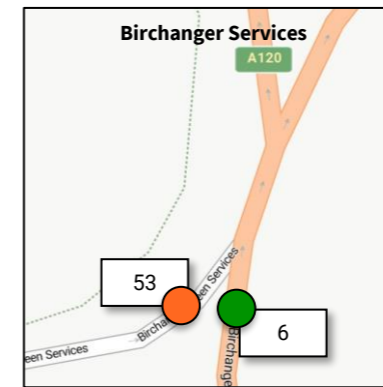
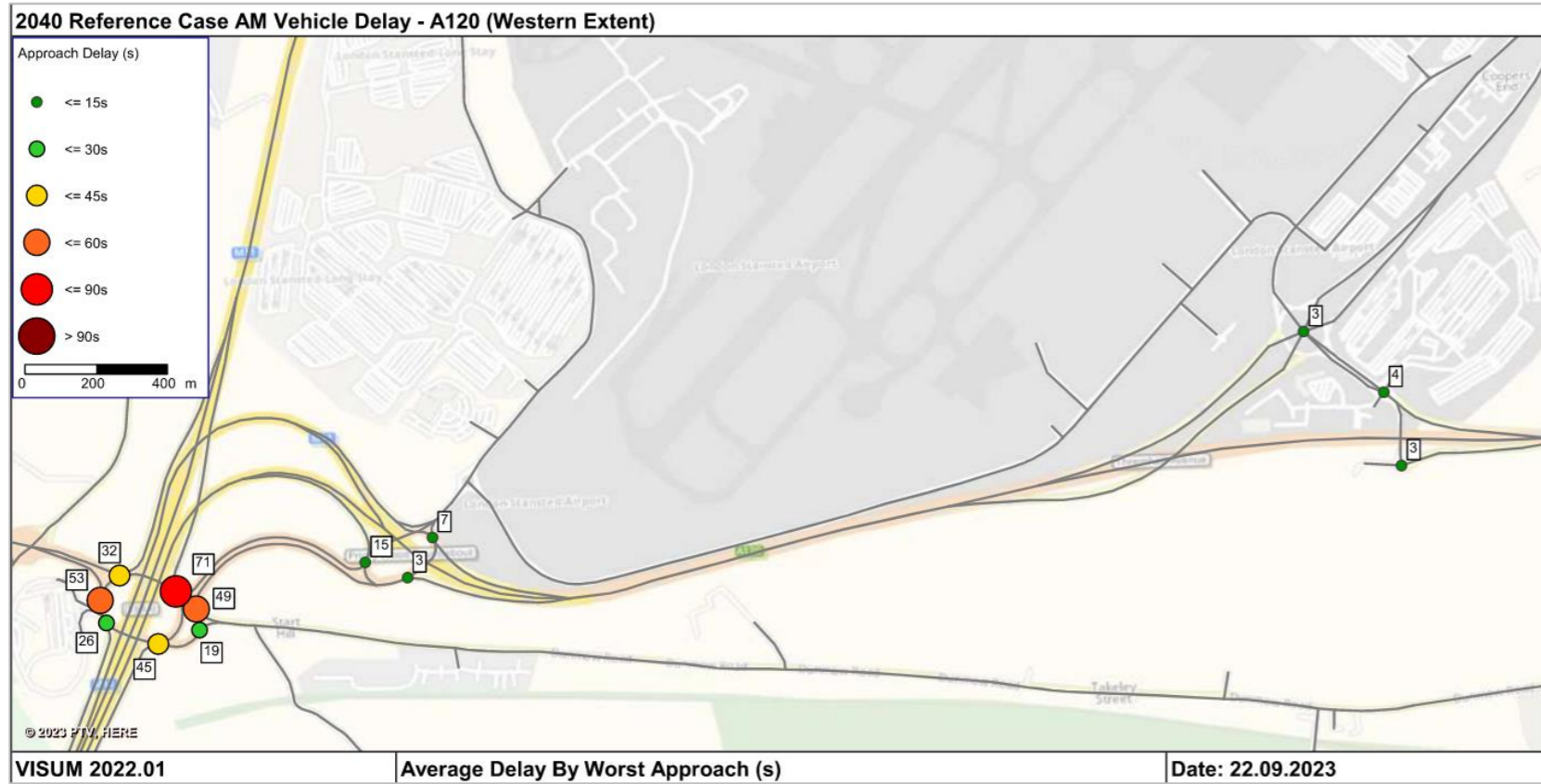
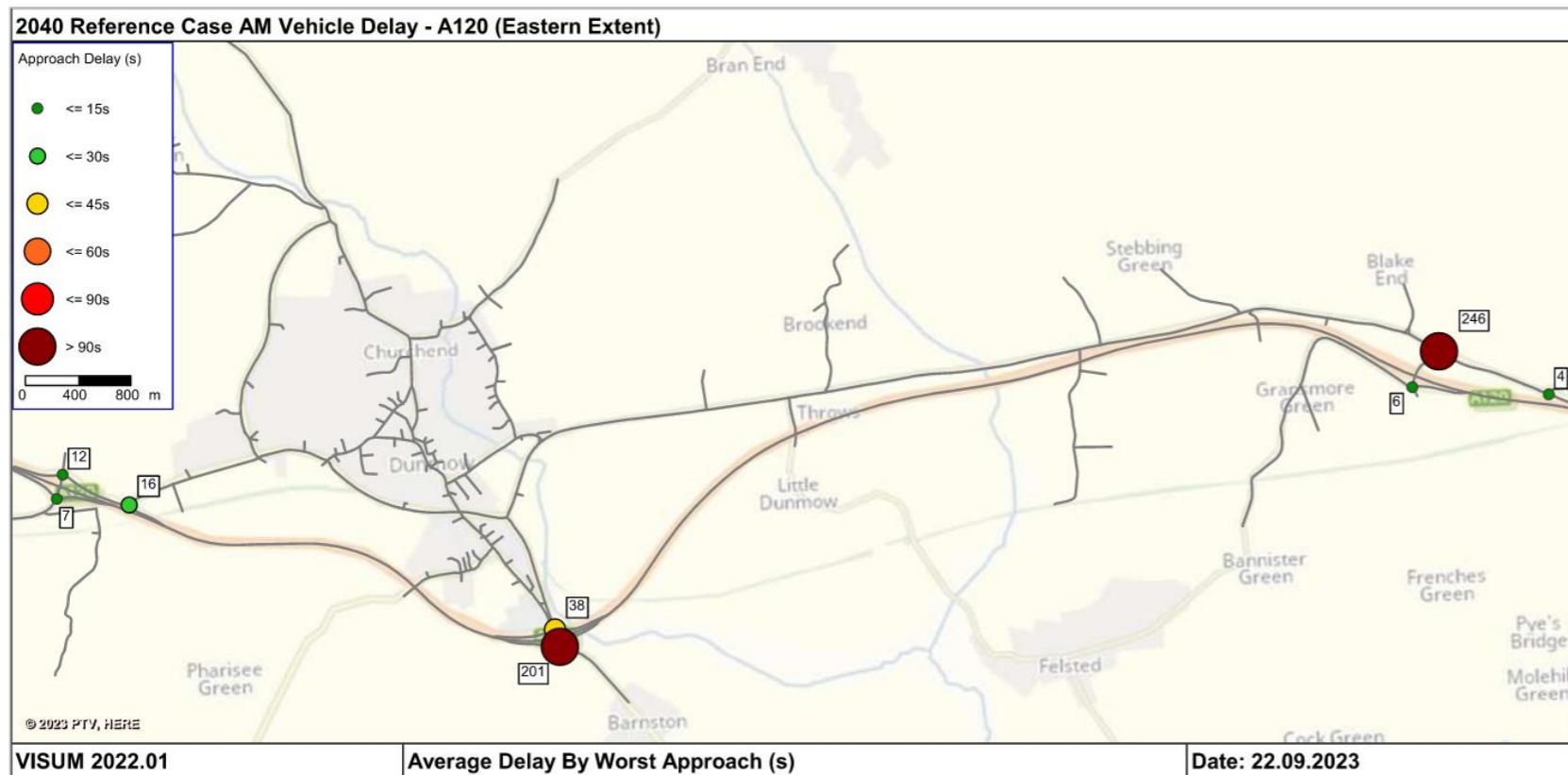


Figure 4-2: Length of Delay at Junctions in the 2040 Reference Case (AM)

Notes:

- Delays are in seconds per vehicle.
- Represents average queue time in the respective peak period.
- Delays on the worst approach shown in main figure.
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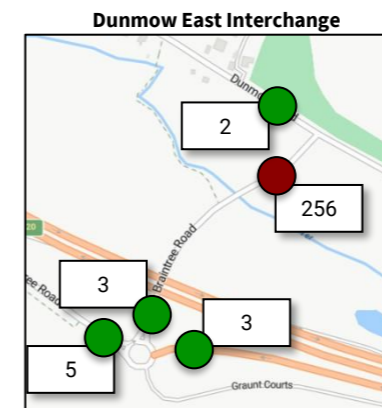
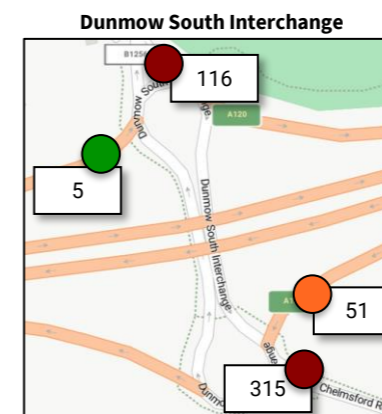
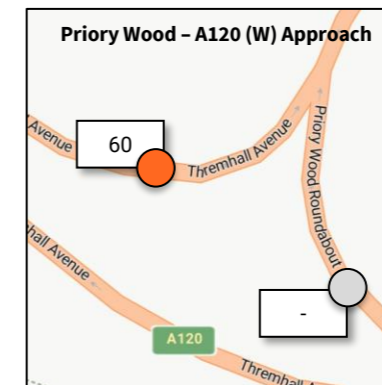
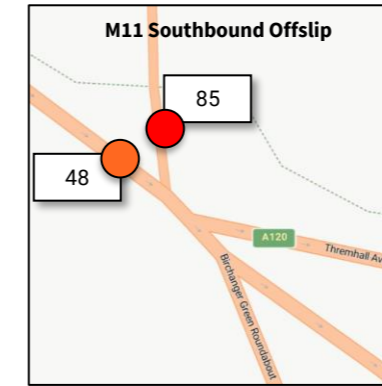
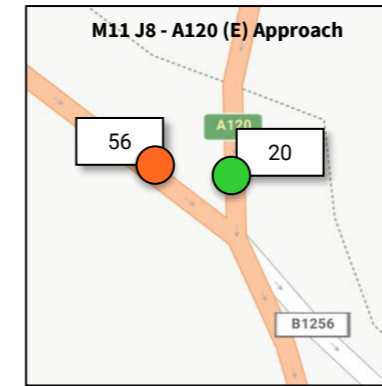
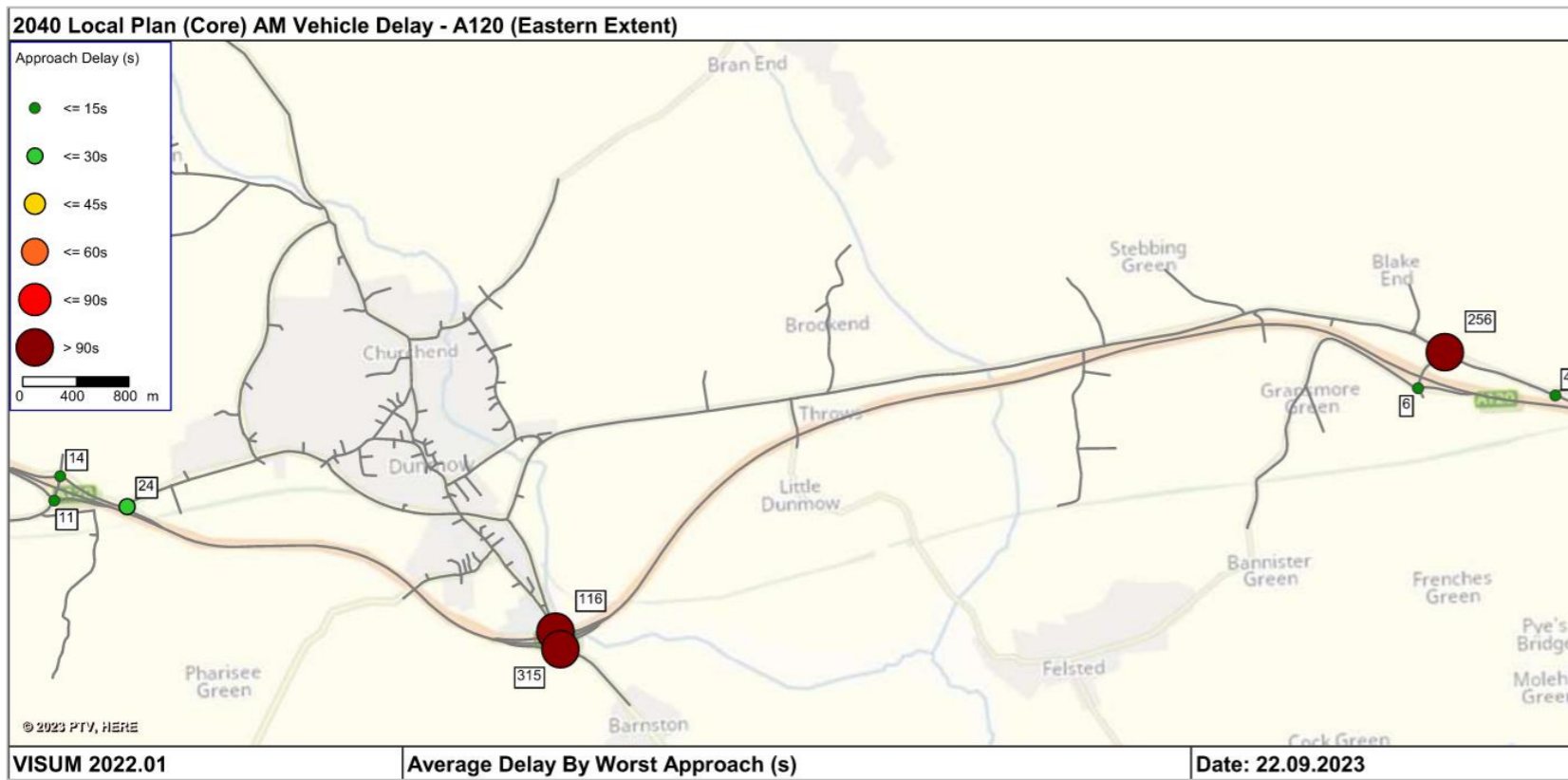
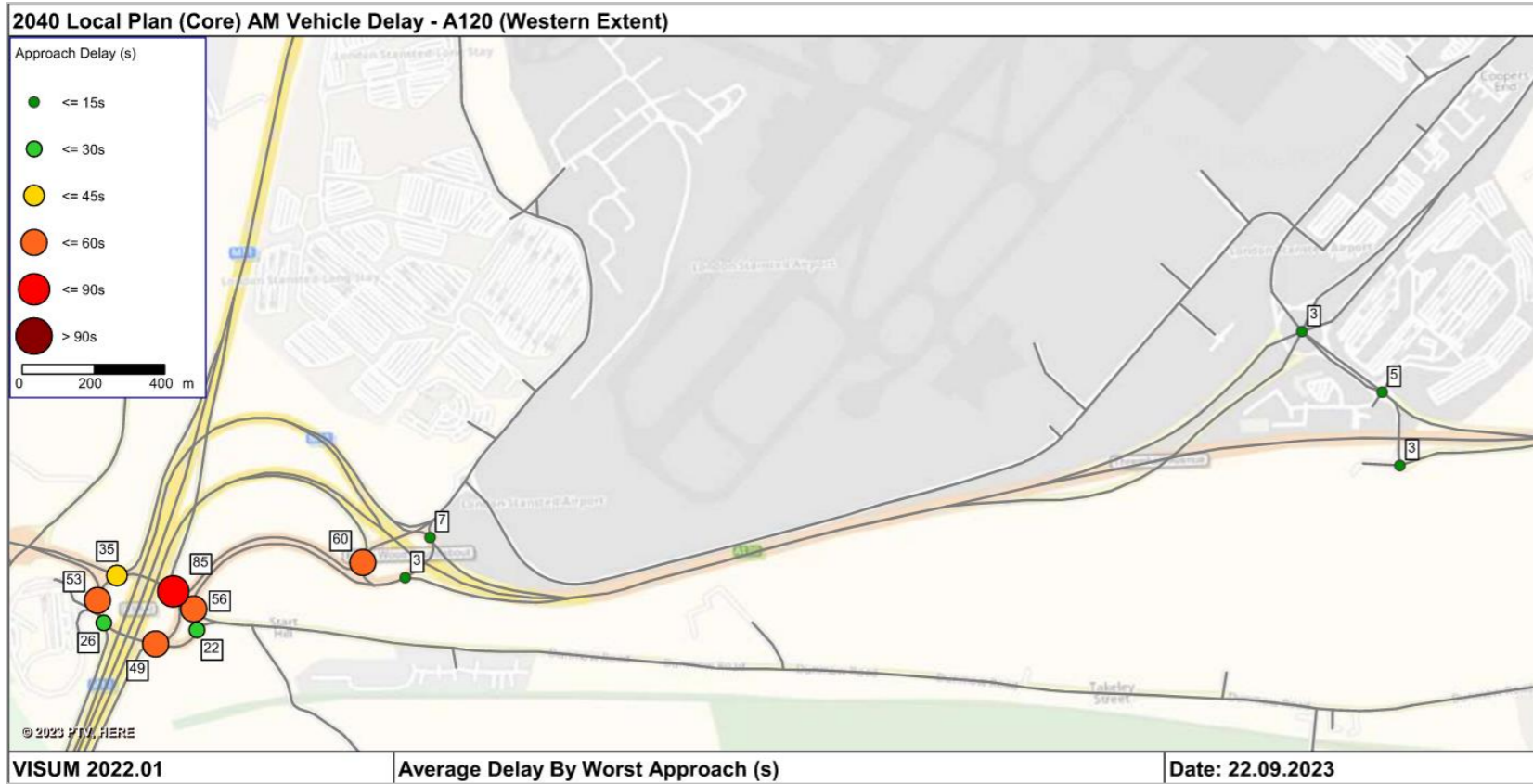
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Figure 4-3: Length of Delay at Junctions in the 2040 Local Plan Growth Scenario (AM)



Notes:

- Delays are in seconds per vehicle.
- Represents average queue time in the respective peak period.
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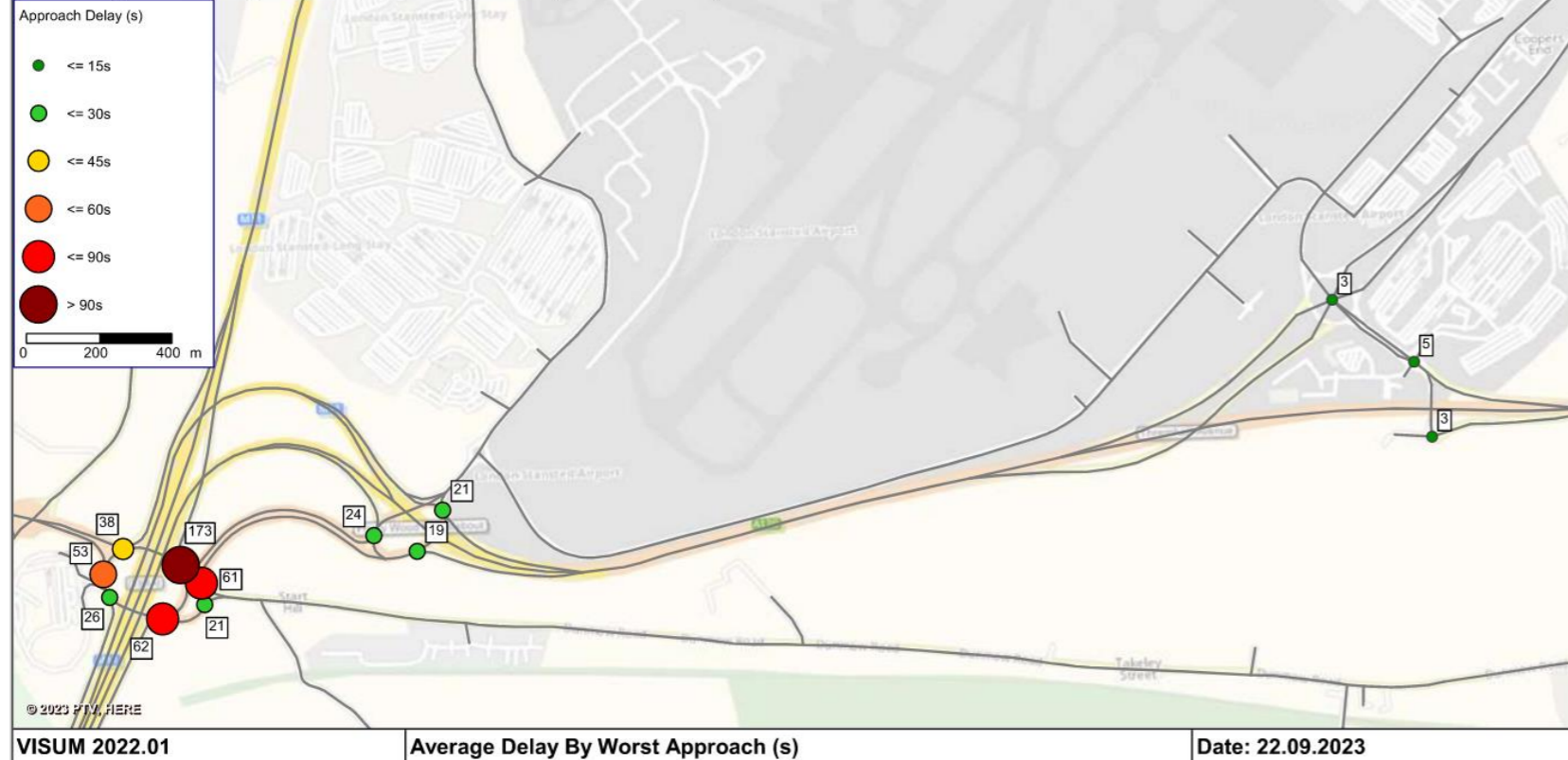
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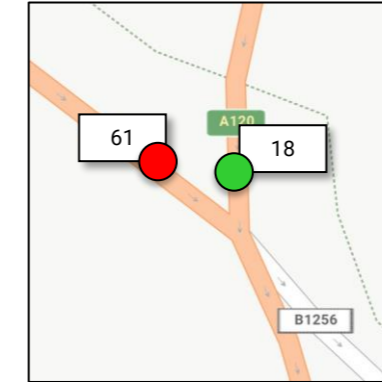
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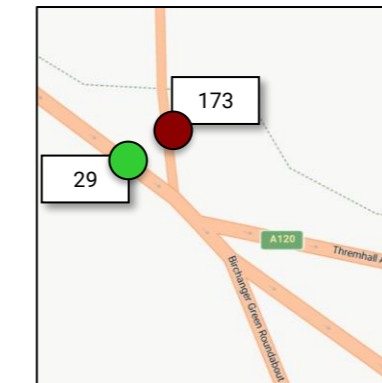
2040 Mitigation Package 1 AM Vehicle Delay - A120 (Western Extent)



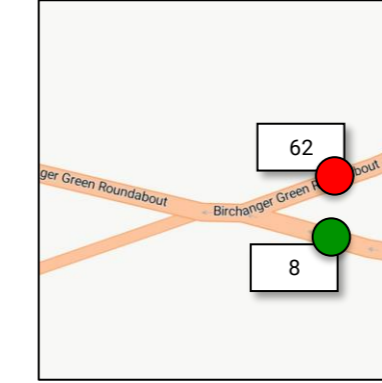
M11 J8 - A120 (E) Approach



M11 Southbound Offslip



M11 J8 SE Circulator



Dunmow South Interchange

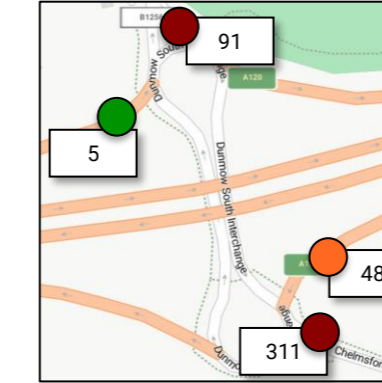
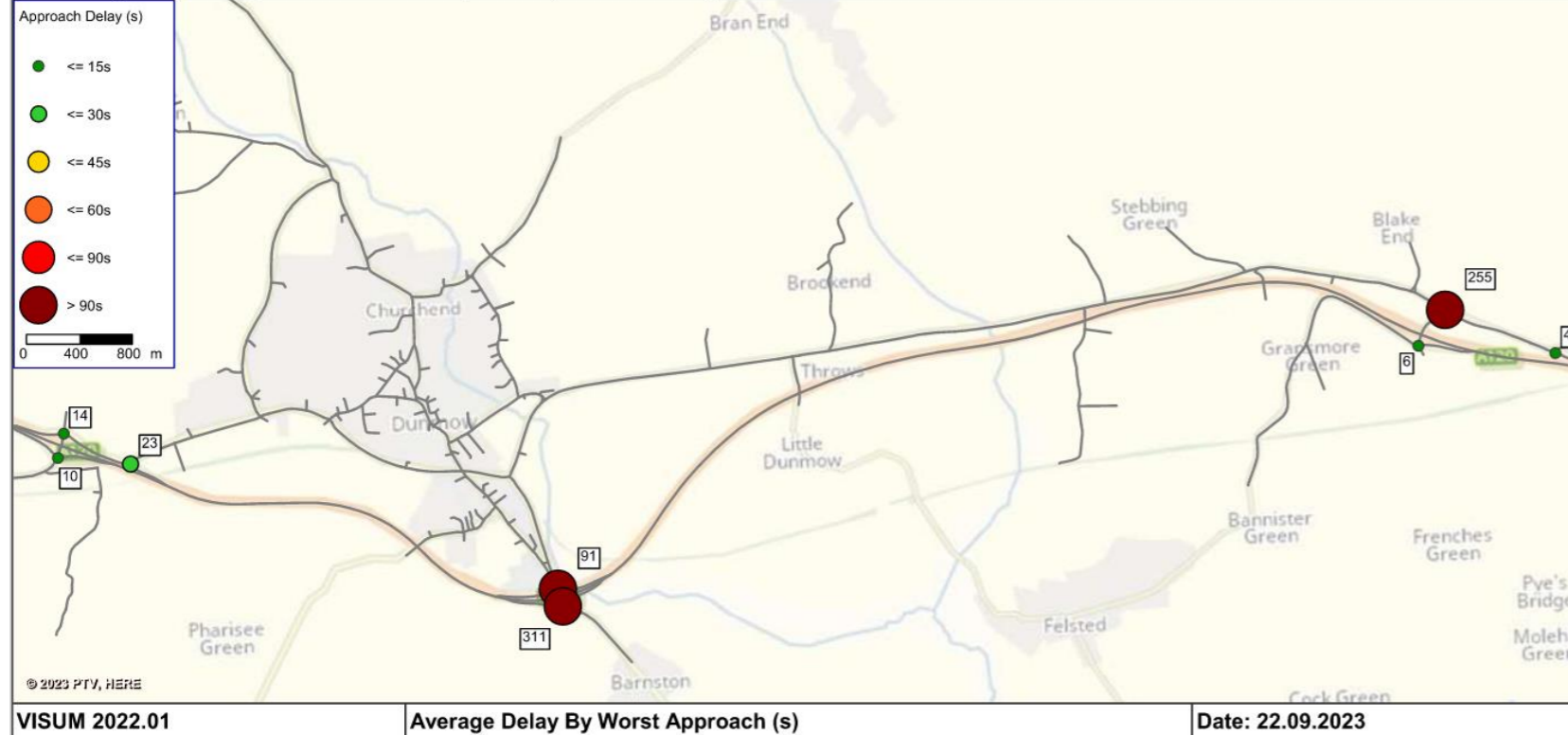


Figure 4-4: Length of Delay at Junctions in Mitigation Package 1 (AM)

Notes:

- Delays are in seconds per vehicle.
- Represents average queue time in the respective peak period.
- Delays on the worst approach shown in main figure.
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2040 Mitigation Package 1 AM Vehicle Delay - A120 (Eastern Extent)



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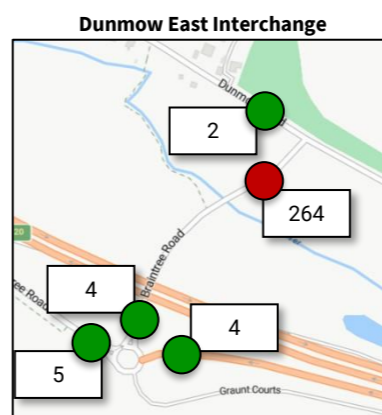
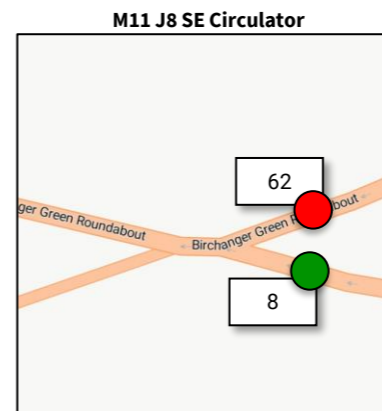
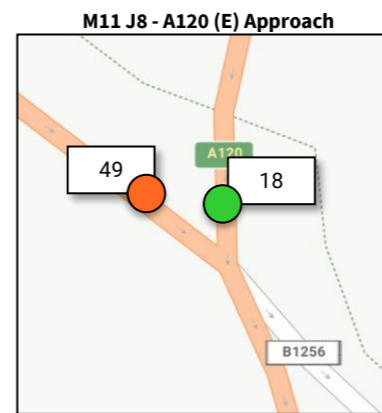
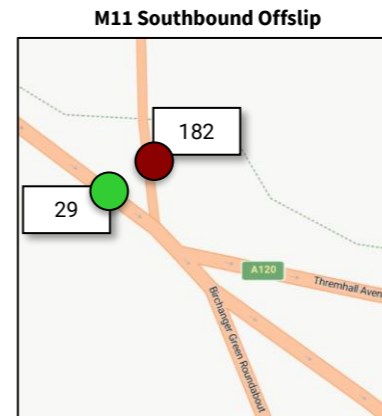
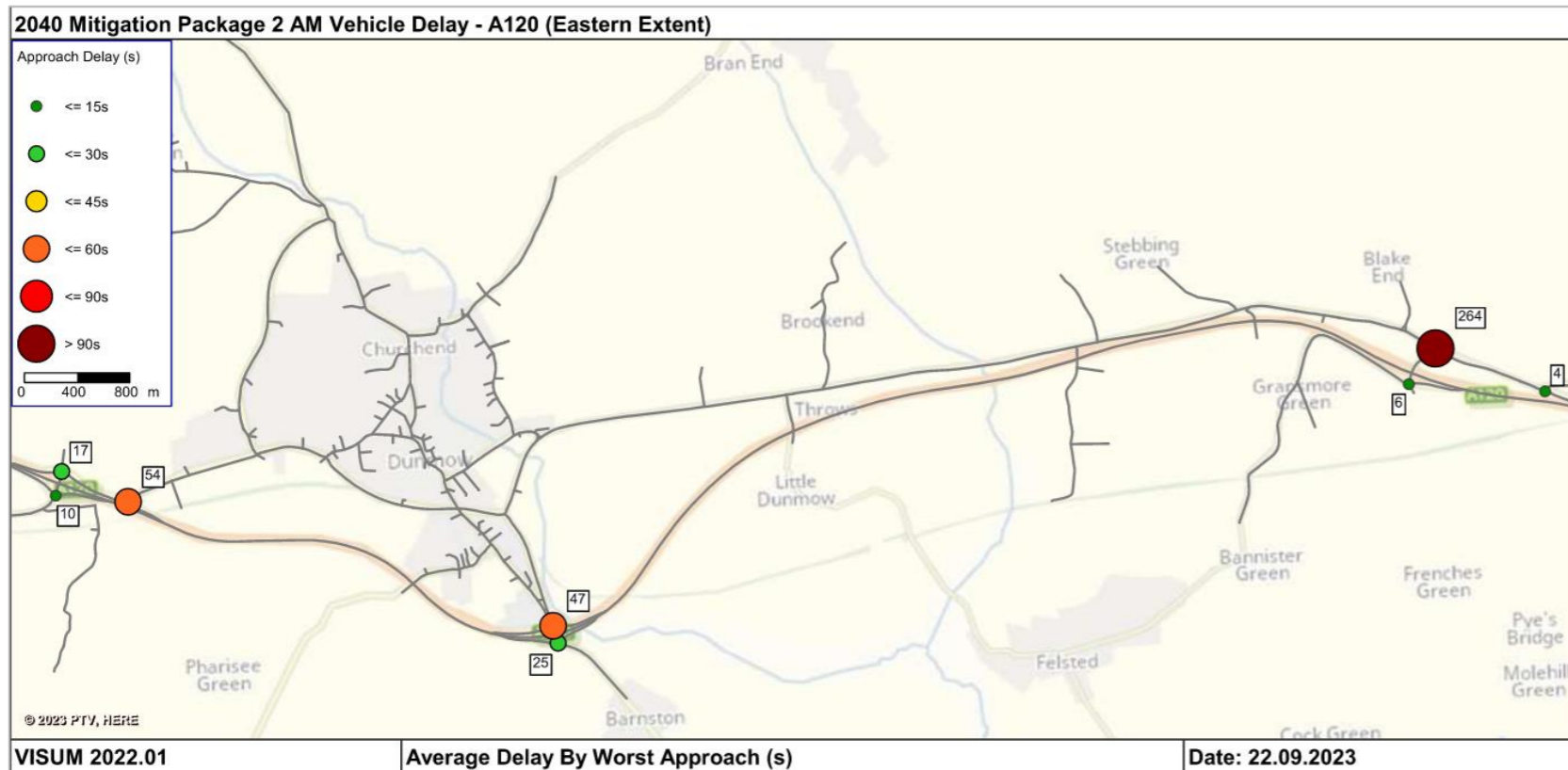
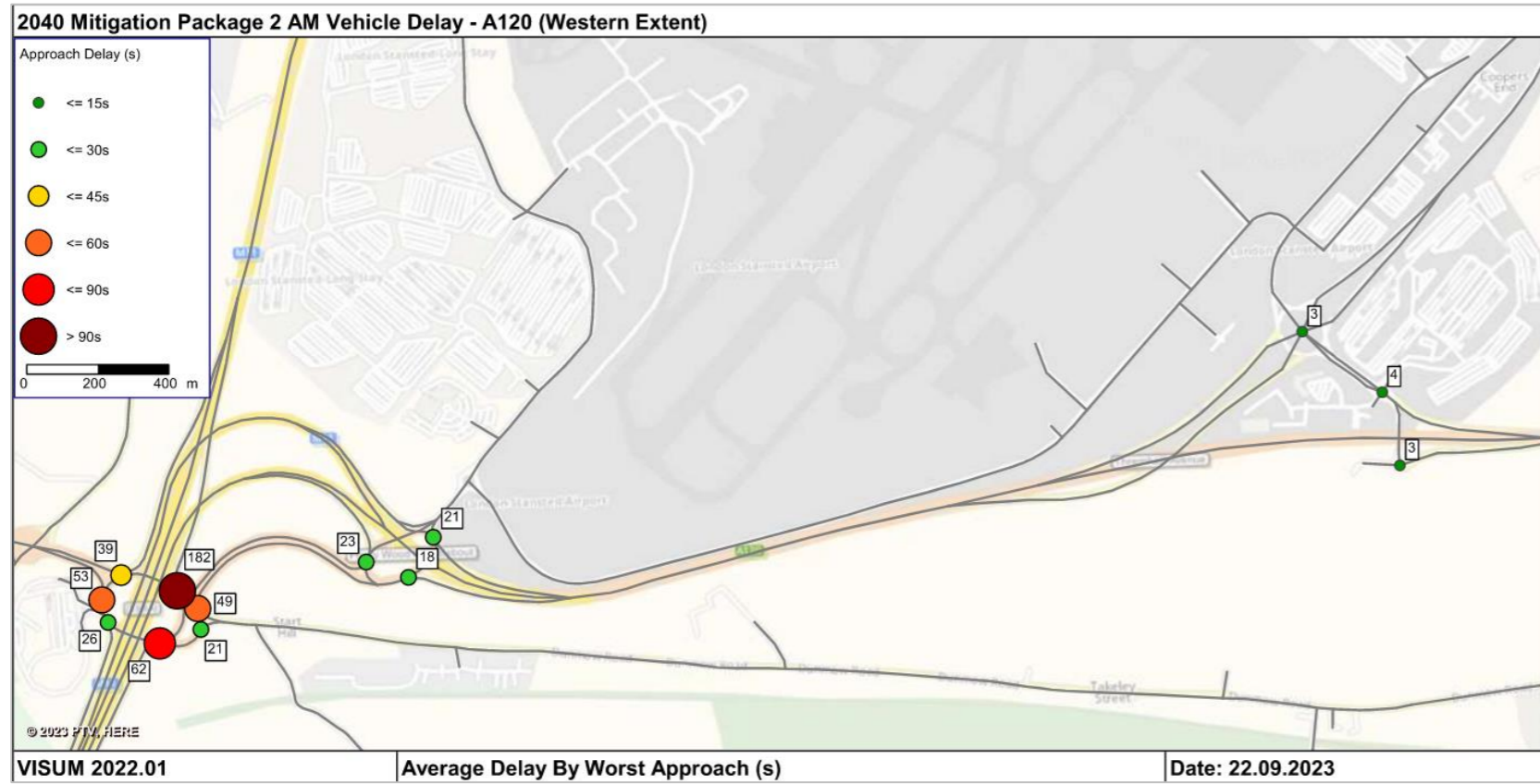


Figure 4-5: Length of Delay at Junctions in Mitigation Package 2 (AM)

Notes:

- Delays are in seconds per vehicle.
- Represents average queue time in the respective peak period.
- Delays on the worst approach shown in main figure.
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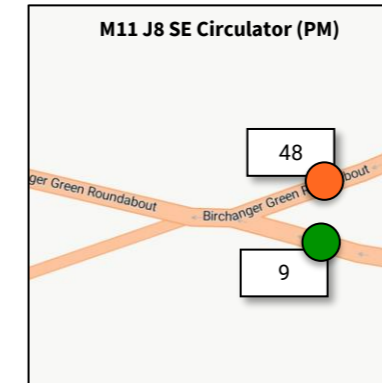
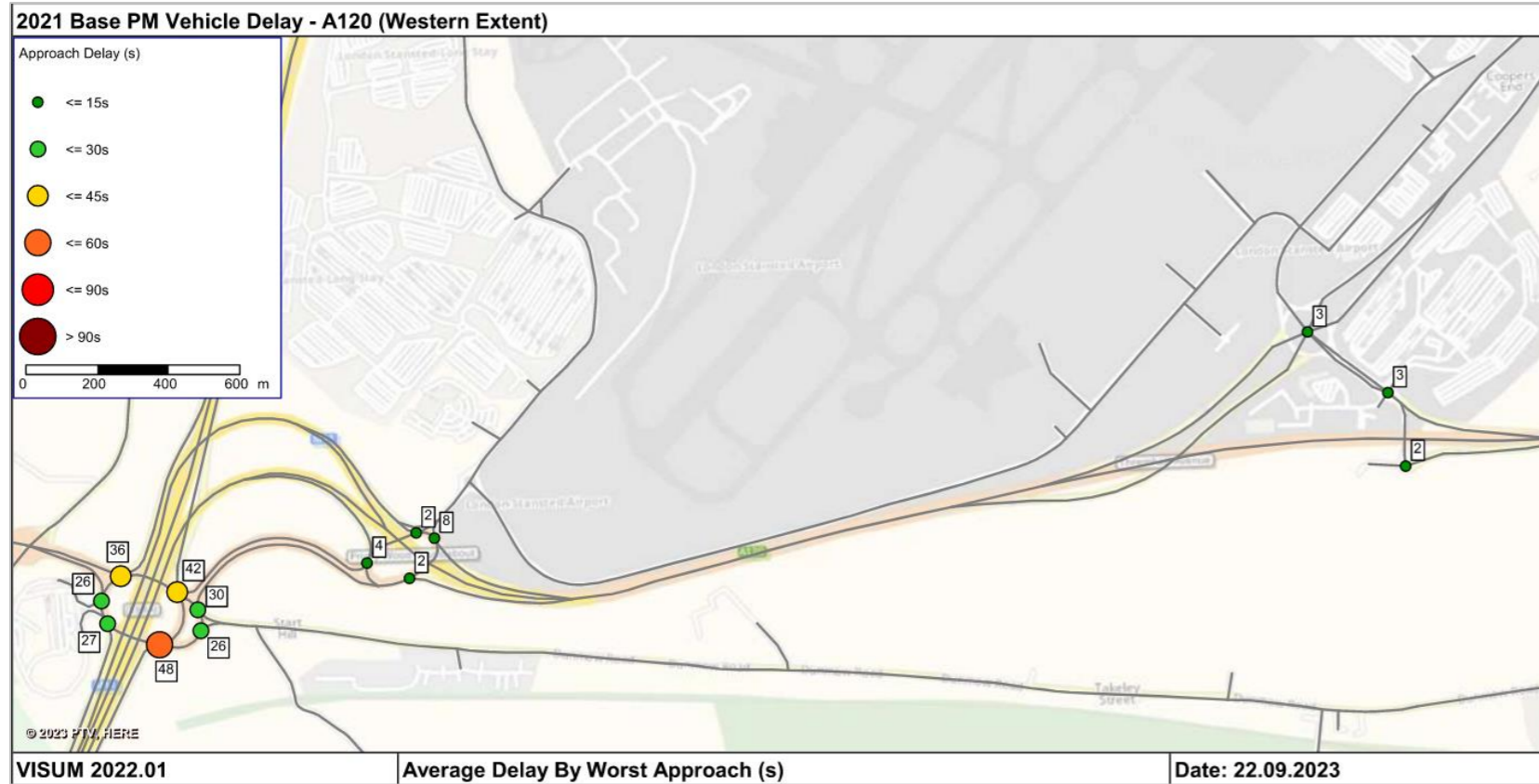
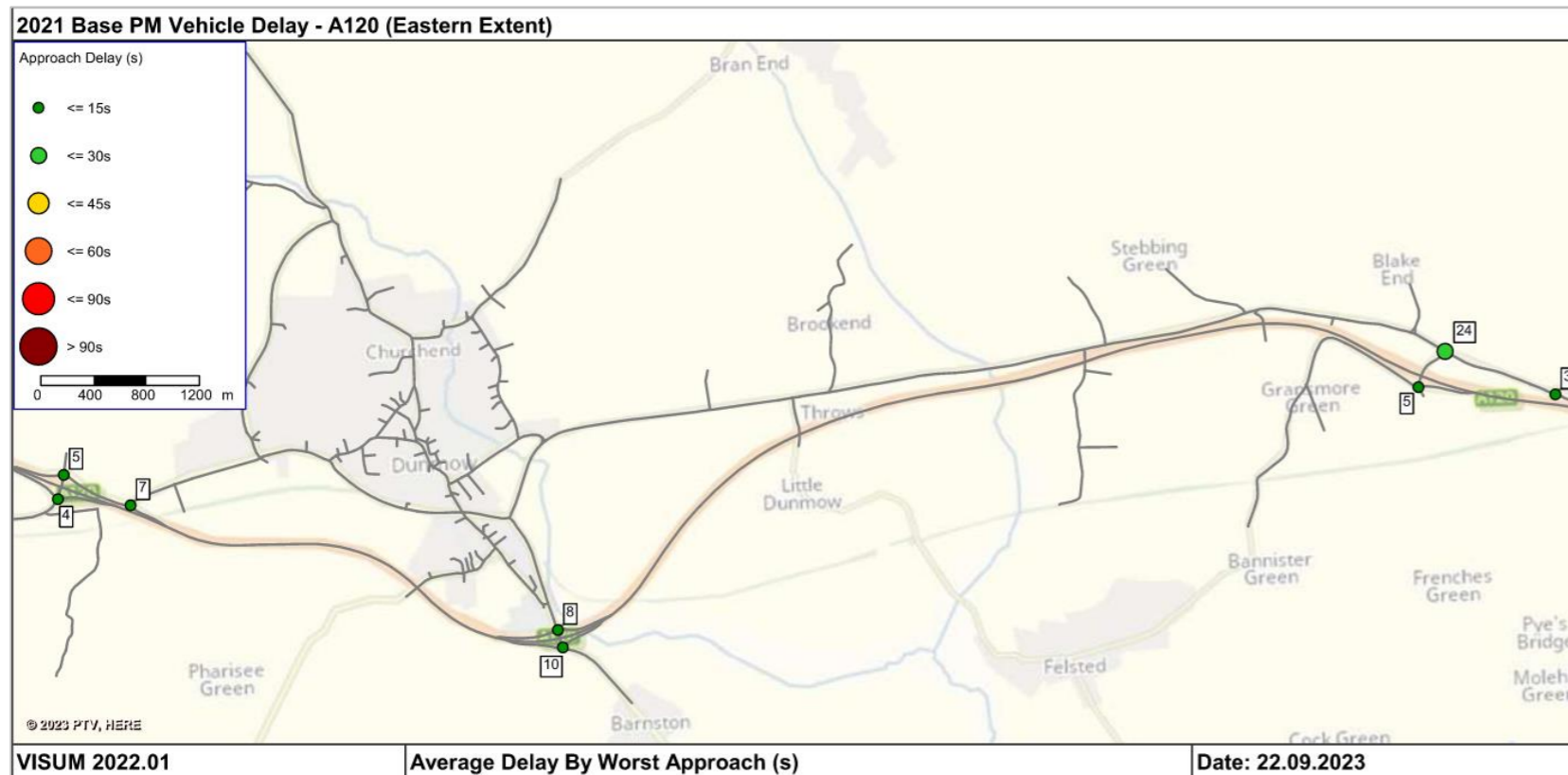


Figure 4-6: Length of Delay at Junctions in the 2021 Base Year (PM)

Notes:

- Delays are in seconds per vehicle.
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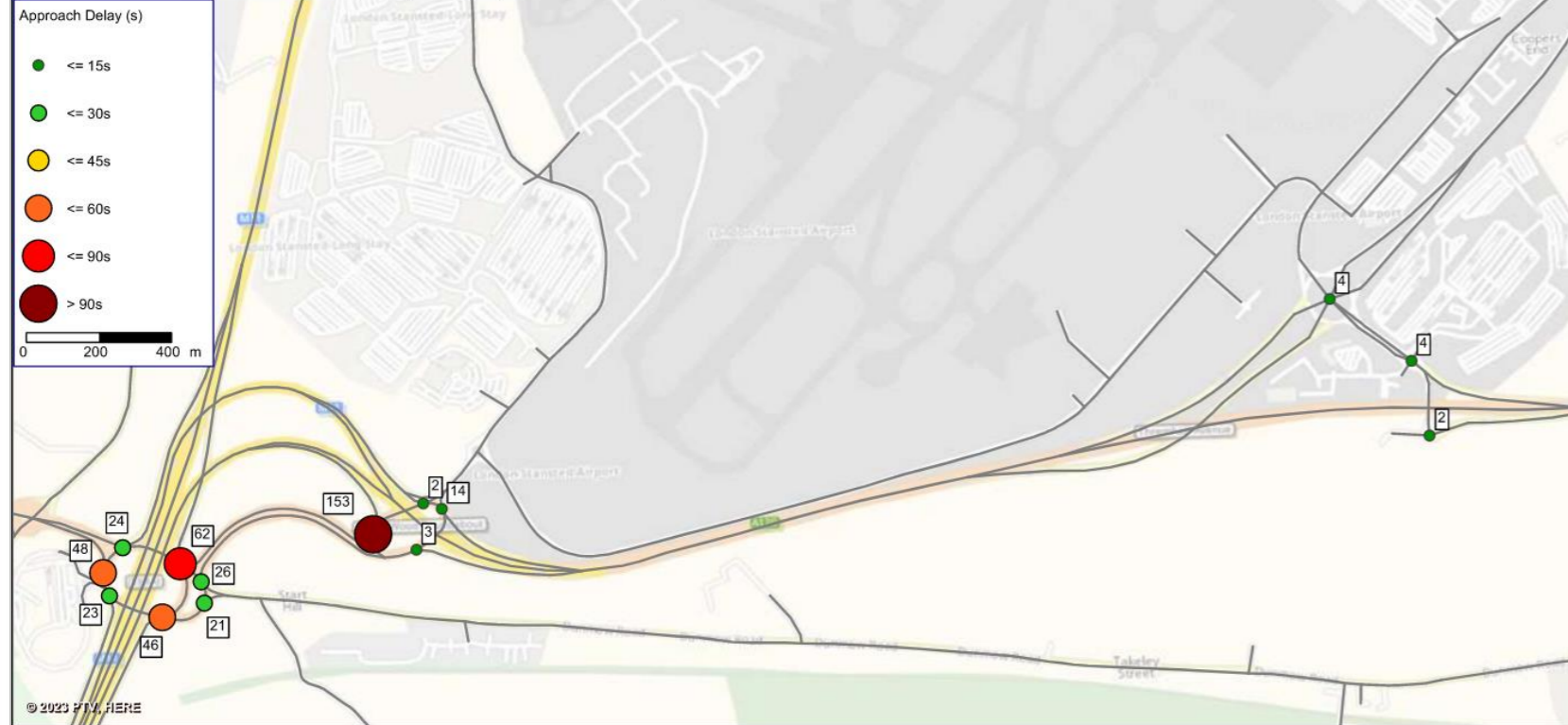
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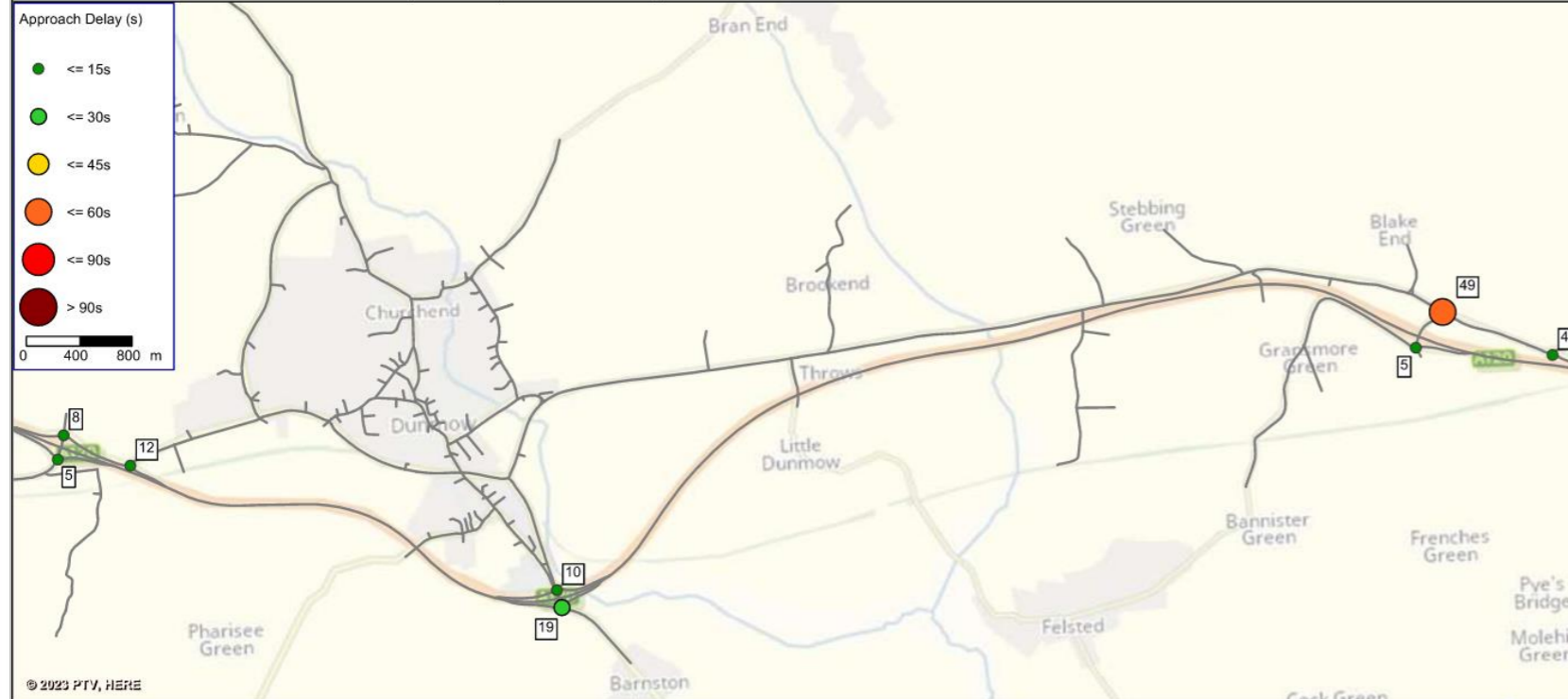


2040 Reference Case PM Vehicle Delay - A120 (Western Extent)



VISUM 2022.01 | Average Delay By Worst Approach (s) | Date: 22.09.2023

2040 Reference Case PM Vehicle Delay - A120 (Eastern Extent)



VISUM 2022.01 | Average Delay By Worst Approach (s) | Date: 22.09.2023

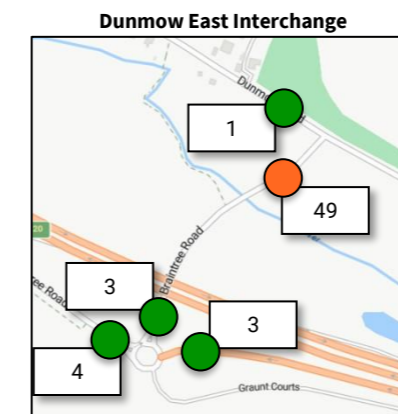
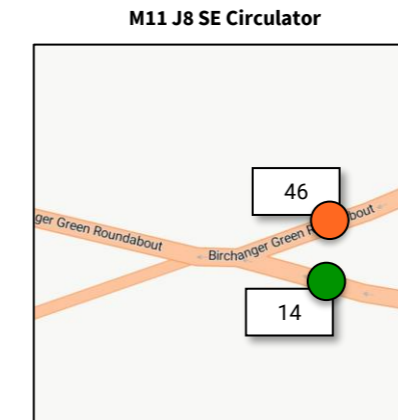
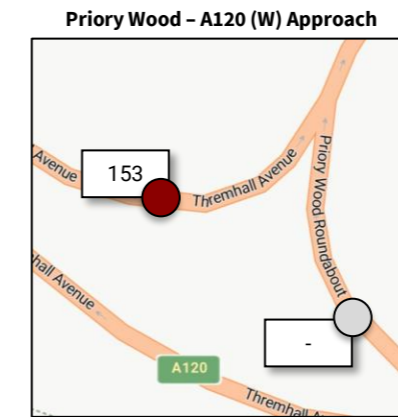
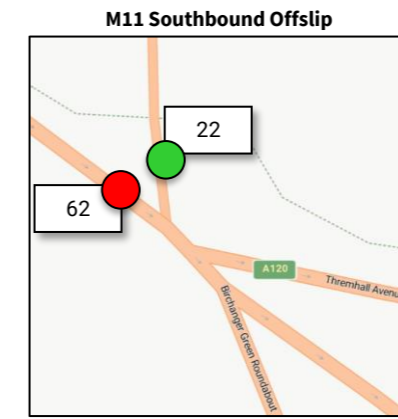


Figure 4-7: Length of Delay at Junctions in the 2040 Reference Case (PM)

Notes:

- Delays are in seconds per vehicle.
- Represents average queue time in the respective peak period.
- Delays on the worst approach shown in main figure.
- Delays on all approaches at worst performing junctions are shown in the inserts.

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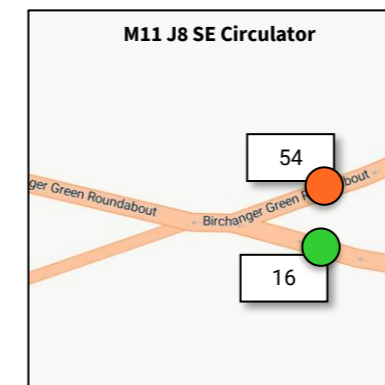
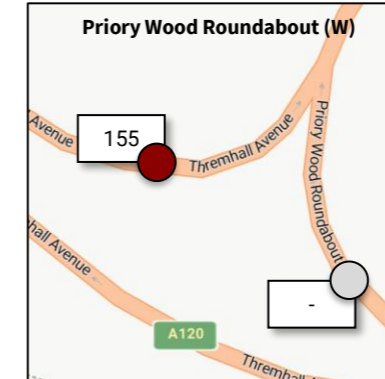
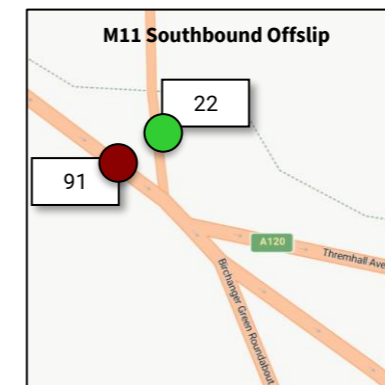
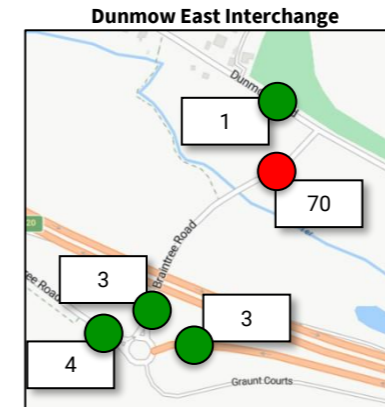
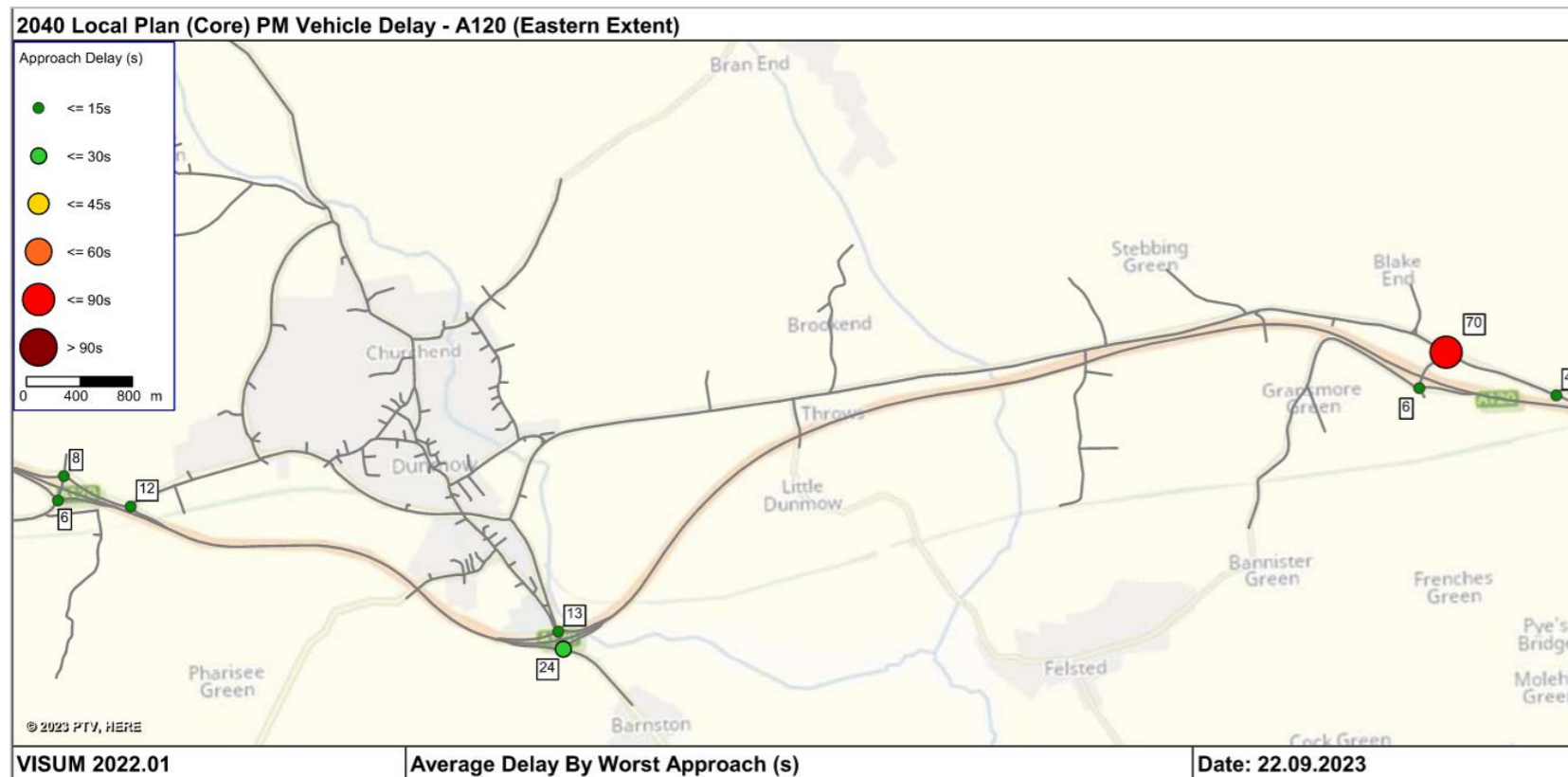
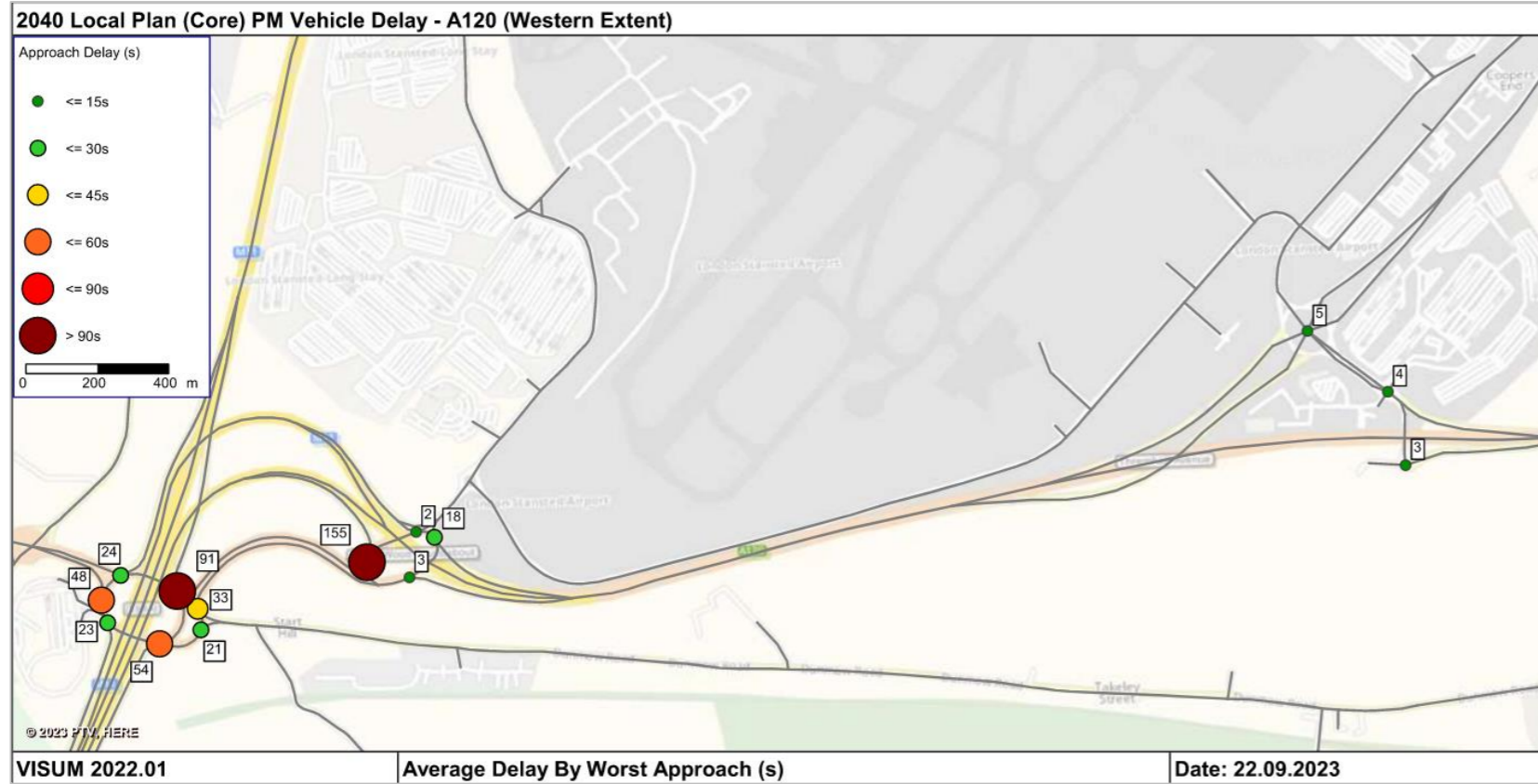


Figure 4-8: Length of Delay at Junctions in the 2040 Local Plan Growth Scenario (PM)

Notes:

- Delays are in seconds per vehicle.
- Represents average queue time in the respective peak period.
- Delays on the worst approach shown in main figure.
- Delays on all approaches at worst performing junctions are shown in the inserts.

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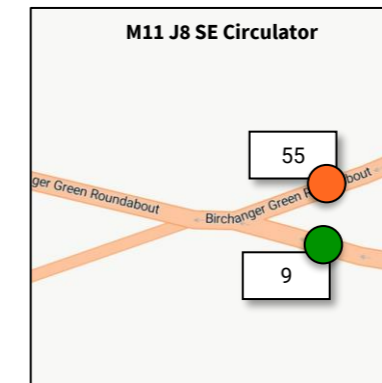
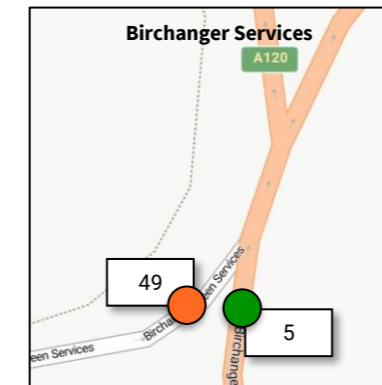
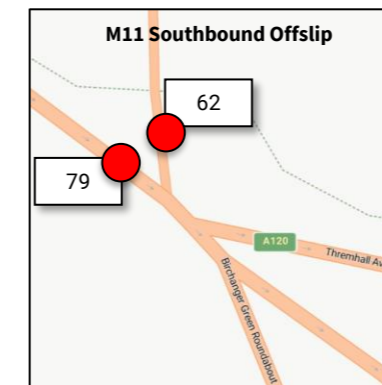
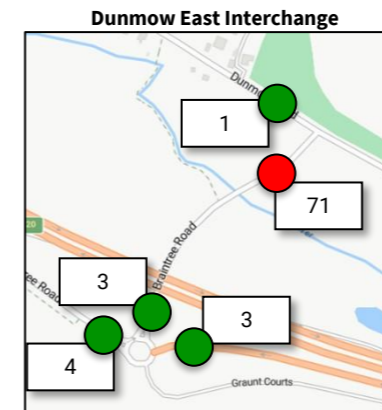
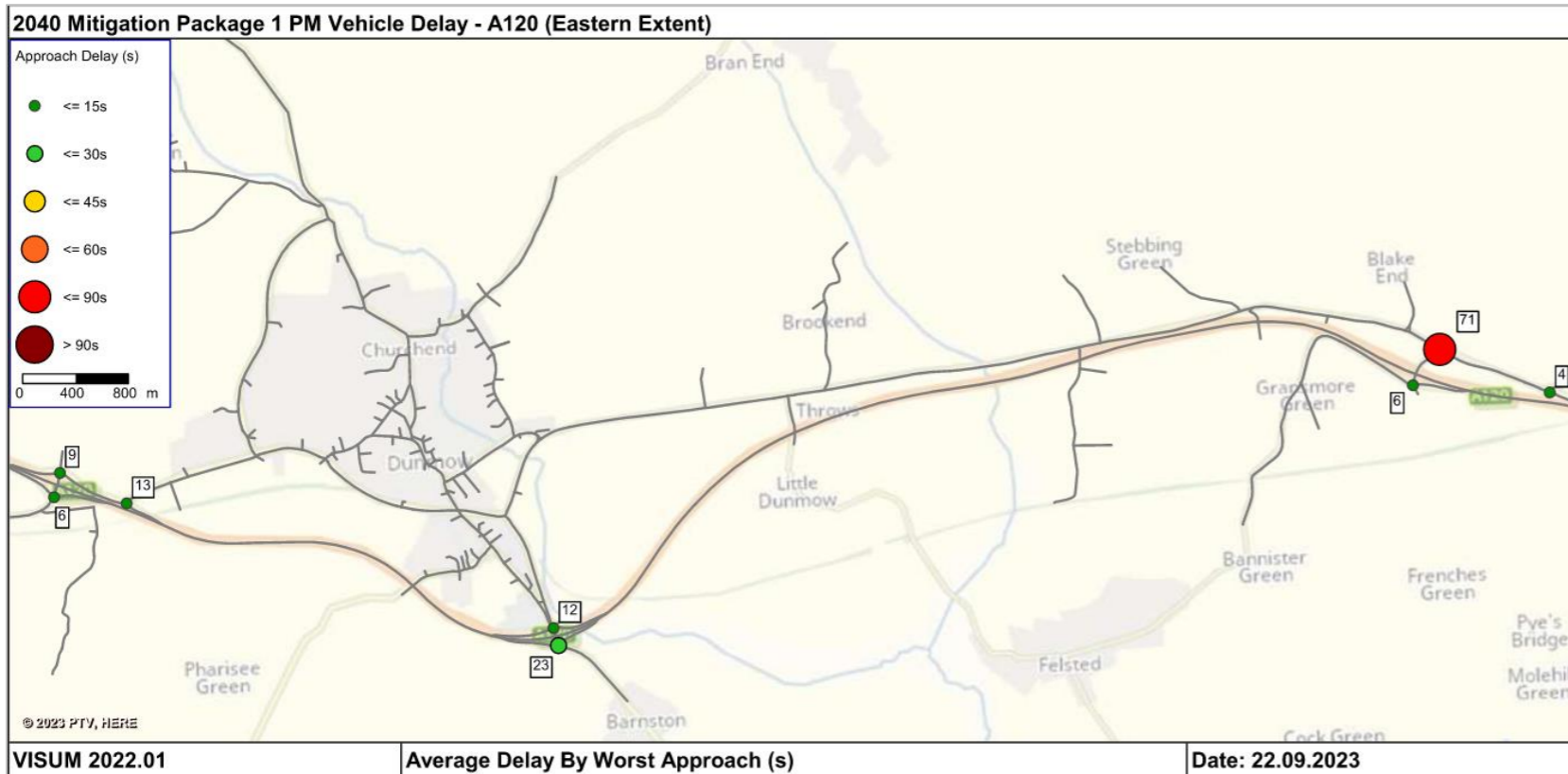
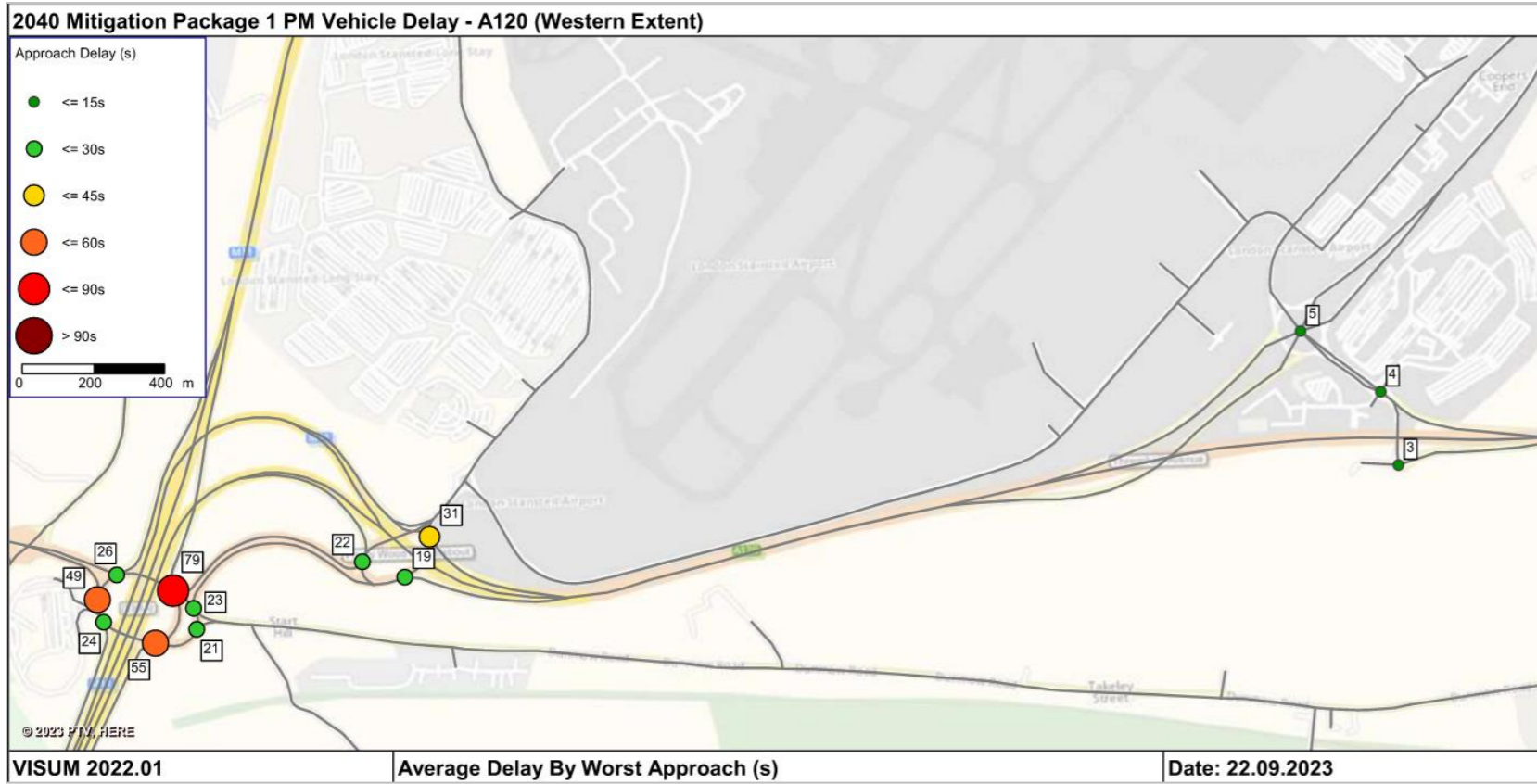


Figure 4-9: Length of Delay at Junctions in Mitigation Package 1 (PM)

Notes:

- Delays are in seconds per vehicle.
- Represents average queue time in the respective peak period.
- Delays on the worst approach shown in main figure.
- Delays on all approaches at worst performing junctions are shown in the inserts.

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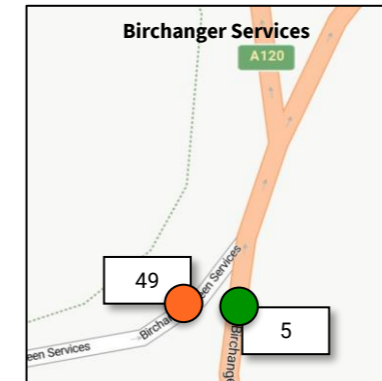
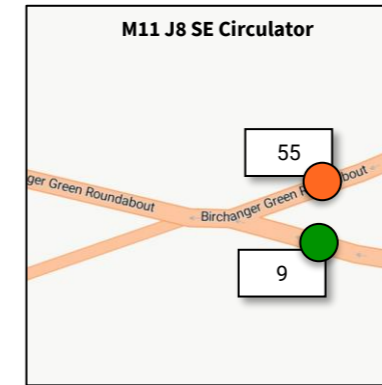
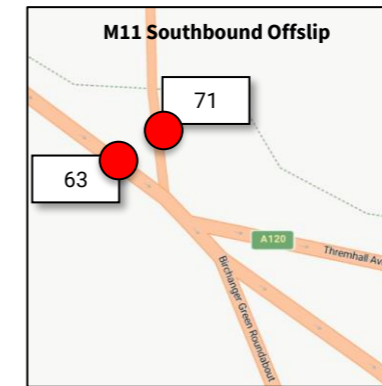
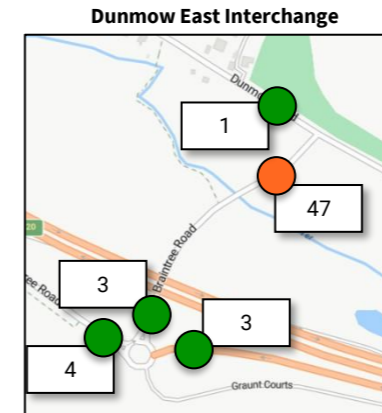
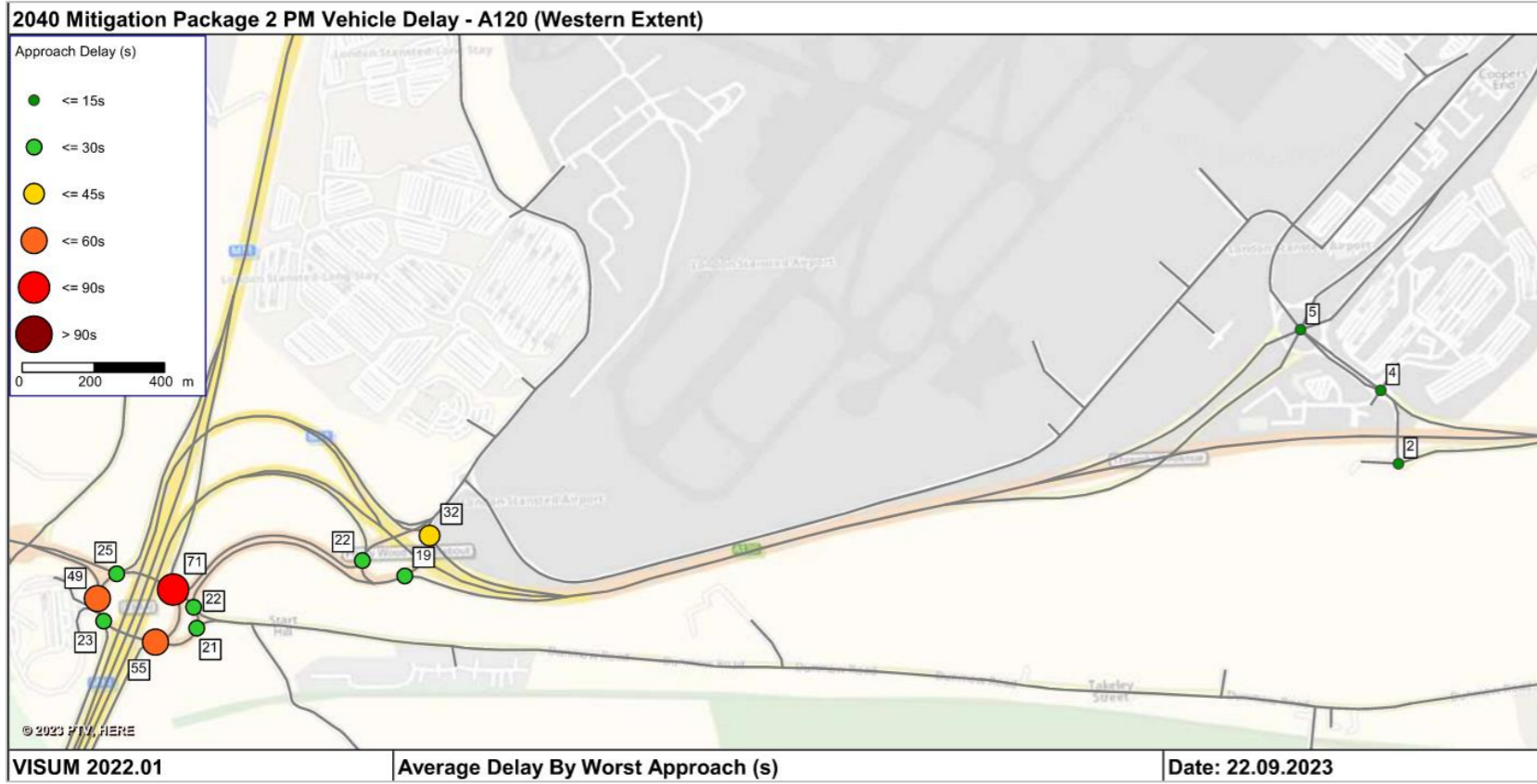
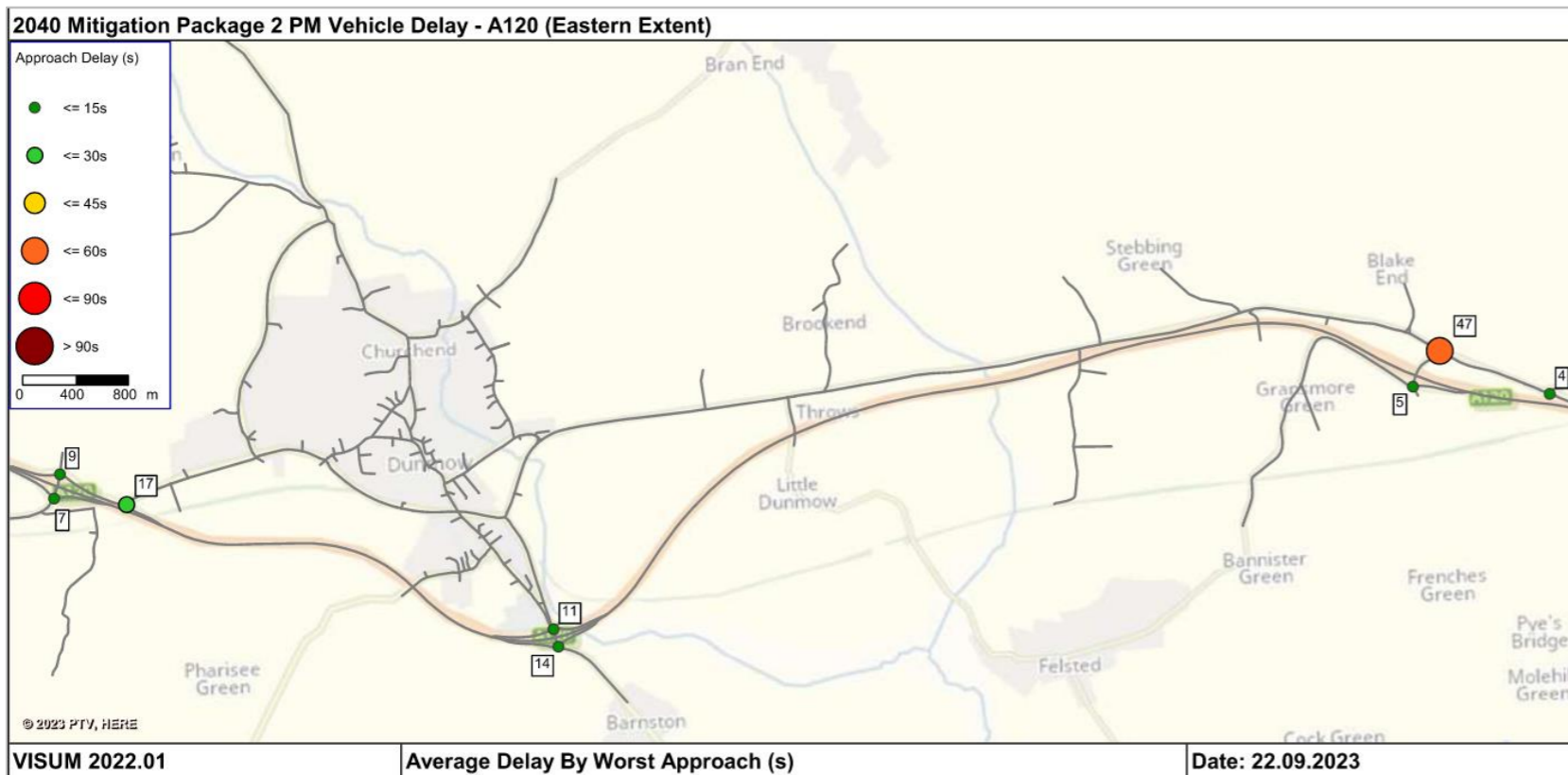


Figure 4-10: Length of Delay at Junctions in Mitigation Package 2 (PM)

Notes:

- Delays are in seconds per vehicle.
- Represents average queue time in the respective peak period.
- Delays on the worst approach shown in main figure.
- Delays on all approaches at worst performing junctions are shown in the inserts.



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5 | SUMMARY

5.0 SUMMARY

5.1 OVERVIEW

- 5.1.1 This technical note has detailed which will occur on the A120 corridor through Uttlesford in the period up to 2040. It highlights that even before development comes forward through the Local Plan that the M11 J8 and Dunmow South and East Intersections in particular, will be subject to increasing levels of delay. This is as a result of increases in the volume of traffic and will be felt in terms of reduced speeds and increased journey times.
- 5.1.2 The Local Plan will add to the level of demand on the corridor but only marginally when compared to other increases as a result of committed developments and expansion of operations at Stansted Airport.

5.2 RECOMMENDED INTERVENTIONS

- 5.2.1 The interventions proposed to mitigate the increases in travel demand across Uttlesford are all schemes that would be delivered on the local road network and not the SRN. These will still have an impact on the A120 however, in terms of reducing demand through securing a modal shift and through the more efficient operation of the local road network influencing route choice.
- 5.2.2 Whilst there is clearly a need for a long term solution to address delays which occur at M11 J8, the key driver for this is not the Local Plan. In this respect no proposed scheme has been identified.
- 5.2.3 It is anticipated that when a solution has been determined, Local Plan development sites would contribute a commensurate amount towards the costs of the scheme, proportionate to the scale of impact this technical note demonstrates.

Contact Details:

Ben King
Associate Director, Tetra Tech
ben.king@tetratech.com

or

Ben Green
Senior Transport Planner, Tetra Tech
benjamin.green@tetratech.com



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