

## Report

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### Phasing strategy and access arrangements

### Shifnal Extension

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## 1 Introduction

This report has been prepared by Sweco in support of land being promoted separately by Wallace Land Investments (Wallace) and Miller Homes Limited (Miller). The aim of the report is to provide Shropshire Council (the Council) with further clarity around deliverability of development in respect of the phasing strategy, access arrangements and associated highways improvements, the bypass concept and future traffic movements on the highway network in Shifnal. The report has been prepared following consultation meetings with the Council in November 2019 and release of the Regulation 18: Pre-Submission Draft of the Shropshire Local Plan 2016 to 2038.

## 2 Future highway network in Shifnal

The Council has proposals for a Town Centre Enhancement (TCE) scheme which includes the realignment of the A464 Victoria Road to form a crossroads at its junction with Bradford Street/Aston Street and the provision of formalised pedestrian crossings. The scheme also includes raised plateaus/traffic calming at the Bradford Street/Shrewsbury Road junction, environmental enhancements along Bradford Street and along Market Place extending as far as Church Street. In addition, complimentary improvements are planned for Aston Street to control on-street parking and improve traffic flow.

The TCE scheme is intended to resolve current issues at this key town centre junction by improving capacity and manoeuvrability for vehicles and improving pedestrian crossing movements. It is understood that the improvements have been designed to cater for both growth in general traffic and additional traffic from development coming forward in the current plan period. The Council is however of the view that the improvements would have some resilience to cater for additional traffic beyond 2026.

The TCE scheme is supported by both Shifnal Town Council and Shifnal Forward and will be funded through S106 highway contributions from developments in the current plan period. The Council is looking to tender the works in the second half of 2020.

The Council is currently in the process of commissioning consultants to develop proposals for the Fiveways junction to address current capacity issues and enable the junction to cater for growth in general traffic plus additional traffic from development coming forward in the plan period. As with the TCE scheme, the proposals are to be funded by existing Section 106 highway contributions accrued from developments in the current plan period. Although details of the proposals are not currently available, the Council has indicated that the identified improvement scheme should have some reserve capacity to cater for traffic beyond the current plan period.

To complement the improvement scheme at Fiveways, the Council is considering the implementation of a Traffic Regulation Order (TRO) on Innage Road to improve the flow of traffic. Such a TRO would prohibit waiting on the carriageway between 4 and 7pm, when the main problems are known to occur.

Based on the above, it can be assumed that the future highway network in Shifnal will include capacity improvements at the Victoria Road/Bradford Street/Aston Street junction (the TCE junction) and at Fiveways including improvements on Innage Road.

It can also be assumed that the improved junctions will have some resilience to cater for traffic increases beyond the current plan period in 2026.

### 3 Development opportunity

The development opportunity comprises the areas of land being promoted separately by Wallace and Miller as shown on the Illustrative Phasing Plan prepared by Pegasus, a copy of which is included as Appendix A. Overall, the site has the potential to accommodate a range of approximately 1,121 to 1,265 new homes. This has been calculated by adopting an average density of 35dph across the site. It is understood that densities may vary and that the actual number of new homes could be subject to review on a parcel by parcel basis but for the purposes of this report and to establish a reasonable development opportunity, the maximum of 1,265 new homes has been adopted.

The land comprising the development opportunity is identified in the Pre-Submission Draft of the Local Plan to be released from the greenbelt and safeguarded for future development. Whilst this is welcomed, there are no over-riding transport and access reasons that would preclude this safeguarding designation becoming an allocation to enable delivery of the development in the plan period.

To assist in demonstrating how the development could be delivered, the land has been divided into 3 phases and then further sub-divided into parcels, as indicated in Table 1, for the purpose of assessment. It is acknowledged that the identified phasing strategy is only one of numerous alternative strategies that could be considered given the extent of the land being promoted. However, this phasing model does represent a viable option in the context of the site and highways considerations.

Phase	Parcel	Approx. range of Units
1	1A <sup>1</sup>	175 - 200
	1B	125 - 140
	1C	265 - 300
2	2A	110 - 130
	2B	110 - 115
	2C	120 - 125
3	-	216 - 255
Total		1121 - 1265
<sup>1</sup> Land being promoted by Miller		

Table 1: Potential development phasing and numbers of dwellings

Further details relating to the delivery of the individual parcels, from a highways and transport planning perspective, are presented below.

In Shropshire Council's document Green Infrastructure Strategy - Key Centre – Shifnal, one of the opportunities identified in Key Theme 4: Active Travel, Access and Recreation is the creation of a new Public Right of Way (PRoW) connecting footpath 0141/12/1 with Stafford Avenue. Footpath 0141/12/1 runs in a north to south direction from the A4169 to the south of Shifnal close to the boundary of the Parcel 1B land. The rear gardens of properties fronting Stafford Avenue form the northern boundary of

Parcel 1B. As such, development of Parcel 1B could present an opportunity to deliver the suggested new section of PRoW early in the plan period.

### 3.1 Traffic generation and trip distribution

The likely peak hour traffic generation for the maximum quantum of development for each parcel outlined above has been estimated using trip rates agreed with the Council for consented development in Shifnal. The adopted trip rates and the resulting trip totals for each parcel are summarised in Table 2. It should be noted that overall traffic generation totals are provided in Table 2. It will likely take approximately 12 years before this level of traffic is realised on the network within Shifnal.

Trip Rates							
		AM Peak			PM Peak		
		Arrive	Depart	2-way	Arrive	Depart	2-way
Trips per dwelling		0.160	0.435	0.595	0.436	0.249	0.685
Trip Totals							
Phase	Parcel	AM Peak			PM Peak		
		Arrive	Depart	2-way	Arrive	Depart	2-way
1	1A	32	87	119	87	50	137
	1B	22	61	83	61	35	96
	1C	48	131	179	131	75	206
<b>Sub-total</b>		<b>102</b>	<b>279</b>	<b>381</b>	<b>279</b>	<b>160</b>	<b>439</b>
2	2A	21	57	78	57	32	89
	2B	18	50	68	50	29	79
	2C	20	54	74	55	31	86
<b>Sub-total</b>		<b>59</b>	<b>161</b>	<b>220</b>	<b>162</b>	<b>92</b>	<b>254</b>
3	-	41	111	152	111	63	174
<b>Sub-total</b>		<b>41</b>	<b>111</b>	<b>152</b>	<b>111</b>	<b>63</b>	<b>174</b>
<b>Overall totals</b>		<b>202</b>	<b>550</b>	<b>753</b>	<b>552</b>	<b>316</b>	<b>867</b>

Table 2: Trip rates and traffic generation

Travel to work statistics for the Shifnal super output area, obtained from the 2011 census, provide an indication of how the likely traffic generation would distribute on the highway network in the future. This distribution pattern is summarised in Table 3 below.

Direction	Percentage
To/from the west via A464 Priorslee Road	58%
To/from the south-west via A4169	13%
To/from the east via Aston Street/Aston Road	11%
To/from the south-east via A464 Wolverhampton Road	18%
	100%

Table 3: Likely distribution pattern of development traffic generation

The above distribution pattern should be regarded as robust for assessment purposes since 11 percent of the total trips would be to destinations within the Shifnal super output area.

## 4 The link road concept

The development opportunity is a means of supporting the sustainable growth of Shifnal and will also help to avoid town centre congestion. The required access infrastructure provides an opportunity to create a strategic highway route, (the link road), around the south and west of Shifnal town centre. The link road would provide a connection between the A464 Wolverhampton Road and A4169. The development opportunity would also facilitate a potential future extension of the link road to A464 Priorslee Road, via a link beneath the railway viaduct, thereby aligning with the requirements of paragraph 5.214 (d) of the draft Local Plan, which states "...A future opportunity to connect the A4169 and the A464 through the railway embankment creating a 'safety valve' for the capacity of the Five Way junction". Examination of available data suggest that approximately 35% of the total traffic present on Market Place during the peak hours is through traffic travelling on the A464 corridor. Similarly, 25% of the total is through traffic travelling between the A464 (Market Place) corridor and the A4169 corridor using a combination of Victoria Road, Innage Road and Church Street depending upon the direction of travel. A new strategic route to the south and west would enable a large proportion of this through traffic to be removed from the town centre highway network further reducing traffic pressure at the TCE junction.

The spine roads serving the development parcels and the junctions at their interfaces with the existing highways would be designed with enough reserve capacity to cater for both development generated traffic and strategic, through traffic. As indicated, the link road concept is to provide a connection between the A464 Wolverhampton Road and the A4169. At this stage, it has been assumed that the link road would take the form of a two-way single carriageway road. Providing infrastructure that caters for both the needs of the development and for strategic traffic very much accords with Policy DP. 27 Infrastructure Provision of the draft Local Plan which requires new developments to fund necessary improvements where there is a shortfall in infrastructure provision.

For the purpose of assessment, it has been assumed that the spine roads would take the form of 7.3m wide single carriageway roads with 2m footways along each frontage. Further detail in relation to the specification / design of the roads and speed limits would be established at a later date but this report demonstrates that the principles of a link road, as identified in the draft local plan, can be established as the site is delivered. Details for the various sections of the link road are discussed later under development phasing.

## 5 Potential development and associated infrastructure

This section considers potential phasing on the basis of Table 1, but it is recognised that the site could accommodate a range of units subject to further consideration of density, housing mix, etc. The following sections describe the phasing and delivery of the development and associated infrastructure for each parcel from a highways and transport planning perspective and how each of the spine roads could be incorporated into the link road in the future. It needs to be recognised that the link road has been designed to demonstrate feasibility. It does not represent a definitive arrangement at this stage and will be developed in conjunction with masterplan design for the various phases of the overall development. The overall potential link road route is shown on the Illustrative Phasing Plan included as Appendix A.

### 5.1 Parcel 1A

Parcel 1A comprises the Miller land, which could accommodate up to 200 units.

The access needs of this parcel would be provided by a spine road which forms junctions with both the A464 Wolverhampton Road and Park Lane. The spine road would form the first section of the link road and as such, would be designed to serve as a strategic, through route. Junctions would be provided at suitable locations along its length to serve the new development.

The main access for this parcel would be the junction with the A464 Wolverhampton Road. In the short term, it is envisaged that the new junction would take the form of a ghost island priority junction, however, the new junction could take the form of a roundabout in the future, in line with development of the link road subject to more detailed design in due course. At that time, complementary signing and gateway treatment could be implemented on the A464 (to the north of the new junction) to route strategic traffic along the link road, thereby reducing traffic volumes on the highway network through the town centre.

The western end of the spine road would form a junction with Park Lane. In the short term, it is envisaged that the new junction would take the form of a simple priority junction with Park Lane being the major arm. However, there may be a requirement to change the priorities of the junction in the future to reflect priority to link road traffic. However, this will be subject to more detailed design in due course.

The provision of a highway connection between the A464 Wolverhampton Road and Park Lane would assist in relieving current congestion problems around St Andrews C of E Primary School by providing parent traffic with an alternative route to access/egress the area.

As indicated above, the final specification of the spine road and its junctions would be subject to more detailed design in due course, however the above demonstrates the potential to incorporate this spine road into the link road is feasible, if and when it is required.

### 5.2 Parcel 1B

Parcel 1B comprises the land within the control of Wallace with a frontage onto the A4169. The access needs for this parcel would be served by a spine road which forms



a roundabout junction with the A4169. The new development would be served by appropriately spaced junctions along the spine road, which would be designed to enable them to also serve as a strategic, through route.

The new roundabout would be designed with enough reserve capacity to enable it to cater for all the development generated traffic plus the strategic, through traffic that would re-assign to the link road once completed.

It is envisaged that Parcel 1B would be developed west to east from the A4169 frontage, with development commencing at the same time as Parcel 1A. The addition of a fourth arm to the proposed roundabout junction with the A4169 would facilitate access into the Phase 3 land (as discussed below).

As indicated above, the early development of Parcel 1B could present an opportunity to deliver the suggested new section of PRow connecting footpath 0141/12/1 with Stafford Avenue early in the plan period and thus supporting delivery of wider local plan strategy objectives.

### 5.3 Parcel 1C

Parcel 1C would be developed west to east on completion of Phase 1B. The spine road provided as part of Parcel 1B would be extended eastwards across Wesley Brook and then southwards as far as the Parcel 2A development land. A secondary road, connecting to the spine road, would be provided internal to the site to serve the new development comprising the Parcel 1C land.

A car parking area would be provided at the eastern end of the secondary road for use by parents dropping off and picking up children from St Andrews C of E Primary School, thus providing an alternative route to the school for traffic accessing from the west and south west. Consideration could also be given to the provision of a one-way connection between Park Lane and the secondary road internal to the site, which would operate westbound only, to provide an alternative exit route from Park Lane for parent traffic. Such a link would also assist in minimising the current congestion problems on Park Lane.

### 5.4 Parcels 2A, 2B and 2C

These land parcels would be developed simultaneously following the completion of Parcel 1C. The spine road provided as part of Parcels 1B and 1C would be extended through Parcels 2A, 2B and 2C to form a new junction with Park Lane at the point of the junction already provided to serve Parcel 1A. The provision of this infrastructure would see the completion of the link road, providing a continuous highway connection between A464 Wolverhampton Road to the south east of Shifnal and the A4169 to the west. As indicated, the priorities at the Park Lane junction would be revised at this time and the southern section of Park Lane would be staggered to give priority to strategic, through traffic using the link road.

### 5.5 Parcel 3

The Parcel 3 land would be developed following the completion of Parcels 2A, 2B and 2C. Access would be provided via the addition of a fourth arm to the new roundabout provided on the A4169 to serve Parcel 1B. A spine road would then be formed internal to the site to provide access to the new development. This spine road would be

designed to facilitate a potential extension of the link road to the A464 Priorslee Road via the railway underpass at some future date. A future extension of the link road would provide a continuous highway connection between the A464 Wolverhampton Road to the south east of Shifnal and the A464 Priorslee Road to the west and substantially reduce the need for traffic to pass through the town centre.

## 6 Traffic implications

A high-level, numerical assessment has been undertaken of the likely traffic implications at the key junctions in the town centre, namely the TCE junction and Fiveways, associated with development of the various land parcels. This assessment is based on the potential development phasing and number of dwellings outlined in Table 1 and the information presented in Tables 2 and 3.

The likely flow increases associated with each parcel are presented on Figures 1 to 9, included as Appendix B. The implications of these flow increases are discussed in the following paragraphs along with the wider traffic implications for traffic movements on the highway network in Shifnal associated with delivery of the various sections of the link road. It should be noted that the introduction of a range of units for each phase is unlikely to unduly affect the conclusions drawn from this high-level assessment.

### 6.1 Parcels 1A and 1B

It is envisaged that Parcels 1A and 1B would be developed simultaneously, with Parcel 1A accessed from the A464 Wolverhampton Road and Parcel 1B accessed from the A4169. As noted earlier, the development of Parcel 1B could present an opportunity to improve pedestrian connections by delivering the suggested new section of PRow connecting footpath 0141/12/1 with Stafford Avenue, as outlined in the Shropshire Council's Green Infrastructure Strategy thereby reducing the need for vehicular traffic to access the town centre and the station.

It can be seen from Figure 6 that the maximum traffic increases on any approach at the TCE junction, associated with Parcels 1A and 1B, would be around 60 to 70 vehicles per hour during the peak hours. Similarly, the maximum traffic increase on any one approach at Fiveways would be around 50 to 80 vehicles per hour during the peak hours. Traffic increases of this magnitude are equivalent to around 1 additional vehicle per minute and are unlikely to be detectable within the day to day variation in flow through the junctions. As such, it is envisaged that the improvements proposed at the junctions by the Council would have enough reserve capacity to cater for this extra traffic in addition to the likely traffic associated with development of the proposed allocated sites, although, this would need to be confirmed via a Transport Assessment undertaken at the appropriate time.

### 6.2 Parcel 1C

It is envisaged that the development of Parcel 1C would follow that of Parcels 1A and 1B.

It can be seen from Figure 3 that the maximum traffic increase on any approach at the TCE junction, above and beyond the traffic increases associated with Parcels 1A and 1B, would be up to 40 vehicles per hour during both the AM peak hour and around 20 vehicles during the PM peak hour. Traffic increases of this magnitude are equivalent to approximately 1 additional vehicle every 2 minutes and are unlikely to be detectable within the day to day variation in flow through the junction. However, the traffic impact of this extra traffic would be confirmed via a Transport Assessment undertaken at the appropriate time.

As indicated above, development of Parcel 1C would provide an alternative route to St Andrews C of E Primary School for parent traffic accessing from the west and south west.

### 6.3 Parcel 2A, 2B and 2C

The delivery of Parcels 2A, 2B and 2C would see the completion of the link road between the A464 Wolverhampton Road and the A4169, which would provide an alternative routeing option for both development and strategic, through traffic. As such, it is appropriate to consider the traffic implications of the traffic increases associated with development of Parcels 2A, 2B and 2C in combination with that from Parcels 1A, 1B and 1C.

It can be seen from Figure 8 that the maximum traffic increase on any approach at the TCE junction would be around 50 vehicles per hour during both peak hours. This represents a reduction in traffic flow through the junction when compared to that for Parcels 1A, 1B and 1C alone, (see Figure 7), which reflects the completion of the link road.

Traffic increases of this magnitude are equivalent to less than 1 additional vehicle per minute, which is unlikely to be detectable within the day to day variation in flow through the junction. However, the traffic implications of the extra traffic would be confirmed via a Transport Assessment undertaken at the appropriate time.

Figure 8 also shows that the maximum traffic increase on any approach at Fiveways would be around 250 vehicles per hour during both peak hours. Traffic increases of this magnitude are likely to have a material impact on the operation of the junction.

The completion of the link road would have wider traffic management benefits for the town centre since they would enable traffic currently travelling north on A464 Wolverhampton Road and turning left down Church Lane to access the A4169, to route via the link road. Similarly, the reverse movement would reduce traffic flows at both the Fiveways and TCE junctions. In addition, traffic currently travelling through Shifnal on the A464 corridor would have a choice of routes: either continuing through the town centre; or, alternatively, using the link road and A4169 Innage Road. This could lead to a re-distribution of traffic at Fiveways.

The implications of the potential changes to the re-routeing of traffic in Shifnal in the future have not been examined in detail at this time. The potential changes are likely to have positive benefits in terms of traffic reduction at the TCE junction, which would assist in offsetting the traffic increases associated with the development. However, the need for further improvements/re-modelling at Fiveways, above and beyond the improvements likely to be brought forward by SCC within the current plan period, would be confirmed via a Transport Assessment undertaken at the appropriate time.

### 6.4 Parcel 3

The Parcel 3 land would be developed last and the spine road serving the development would facilitate a potential future extension of the link road through to A464 Priorslee Road.

The development of Parcel 3 would see completion of the overall development opportunity. As such, it is appropriate to consider the traffic implications of the total traffic increases associated with development of all the land parcels in combination, as shown in Figure 9.

It can be seen from Figure 9 that the maximum traffic increase on any approach at the TCE junction would be around 50 vehicles per hour during the AM peak hour and 60 vehicles during the PM peak hour. This represents a reduction in traffic flow through the junction when compared to that for Parcels 1A, 1B and 1C alone (see Figure 7), which reflects the completion of the link road.

Traffic increases of this magnitude are equivalent to around 1 additional vehicle per minute, which is unlikely to be detectable within the day to day variation in flow through the junction. However, the traffic implications of the extra traffic would be confirmed via a Transport Assessment undertaken at the time of the proposals being firmed up by the way of a planning application.

Figure 9 also shows that the maximum traffic increase on any approach at Fiveways would be around 320 vehicles per hour during both peak hours. Traffic increases of this magnitude are likely to have a material impact on the operation of the junction.

As indicated above, the completion of the link road would have wider traffic management benefits for the town centre since they would enable traffic currently travelling north on A464 Wolverhampton Road and turning left down Church Lane to access the A4169, to route via the link road. Similarly, the reverse movement would reduce traffic flows at both the Fiveways and TCE junctions. In addition, traffic currently travelling through Shifnal on the A464 corridor would have a choice of routes: either continuing through the town centre; or, alternatively, using the link road and A4169 Innage Road. This could lead to a re-distribution of traffic at Fiveways.

Again, the implications of the potential changes to the re-routeing of traffic in Shifnal in the future have not been examined in detail at this time. The potential changes are likely to have positive benefits in terms of traffic reduction at the TCE junction, which would assist in offsetting the traffic increases associated with the development.

However, the need for further improvements/re-modelling at Fiveways, above and beyond the improvements likely to be brought forward by SCC within the current plan period, would be confirmed via a Transport Assessment undertaken at the time of the proposals being firmed up by the way of a planning application.

The suitability of the proposed new junctions with the A4169 and the A464 Wolverhampton Road would also be confirmed via a Transport Assessment undertaken at the time of the proposals being firmed up by the way of a planning application.

## **Appendix A – Illustrative phasing plan**











## **Appendix B – Flow increase figures**

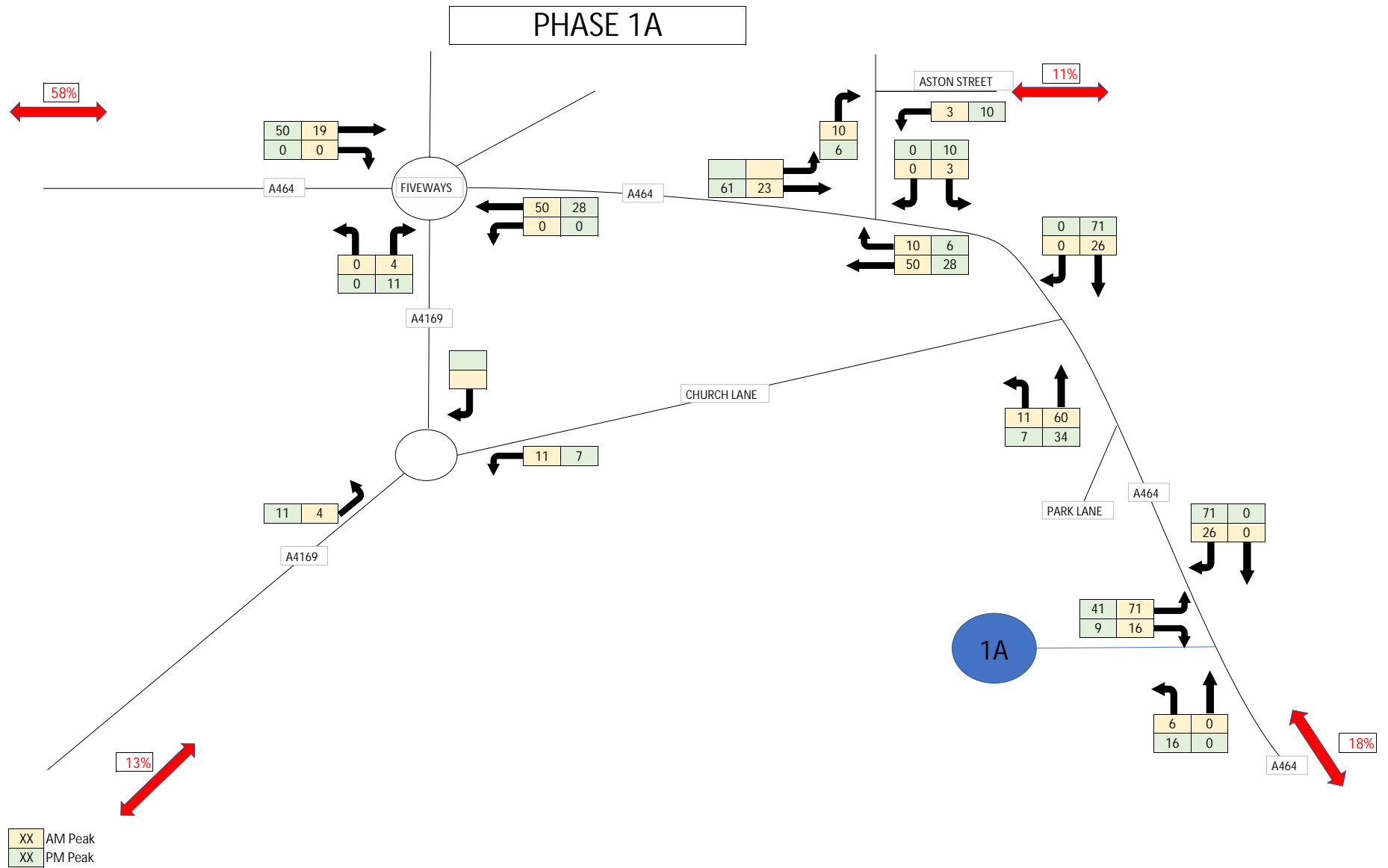


FIGURE: 1

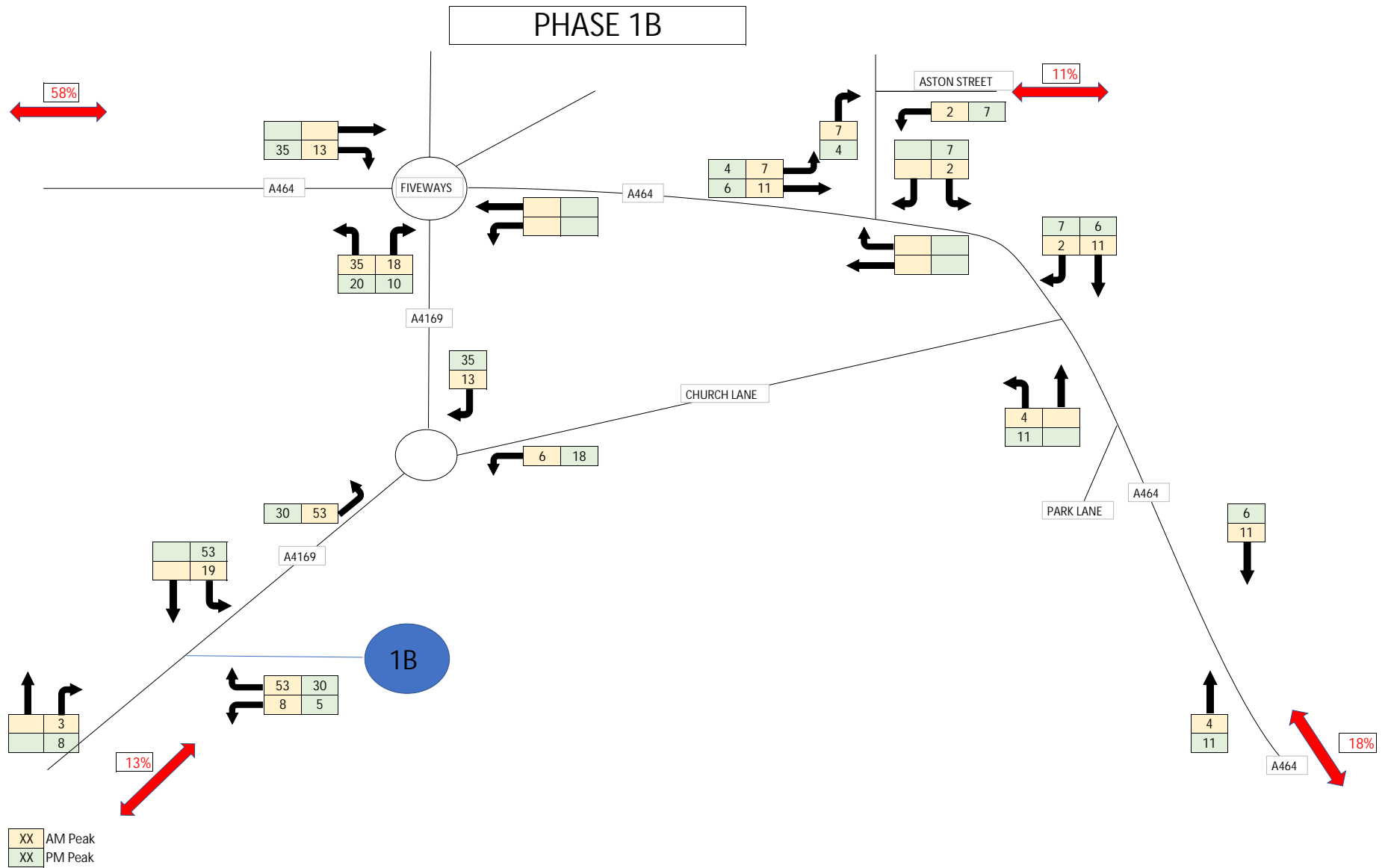


FIGURE: 2



FIGURE: 3

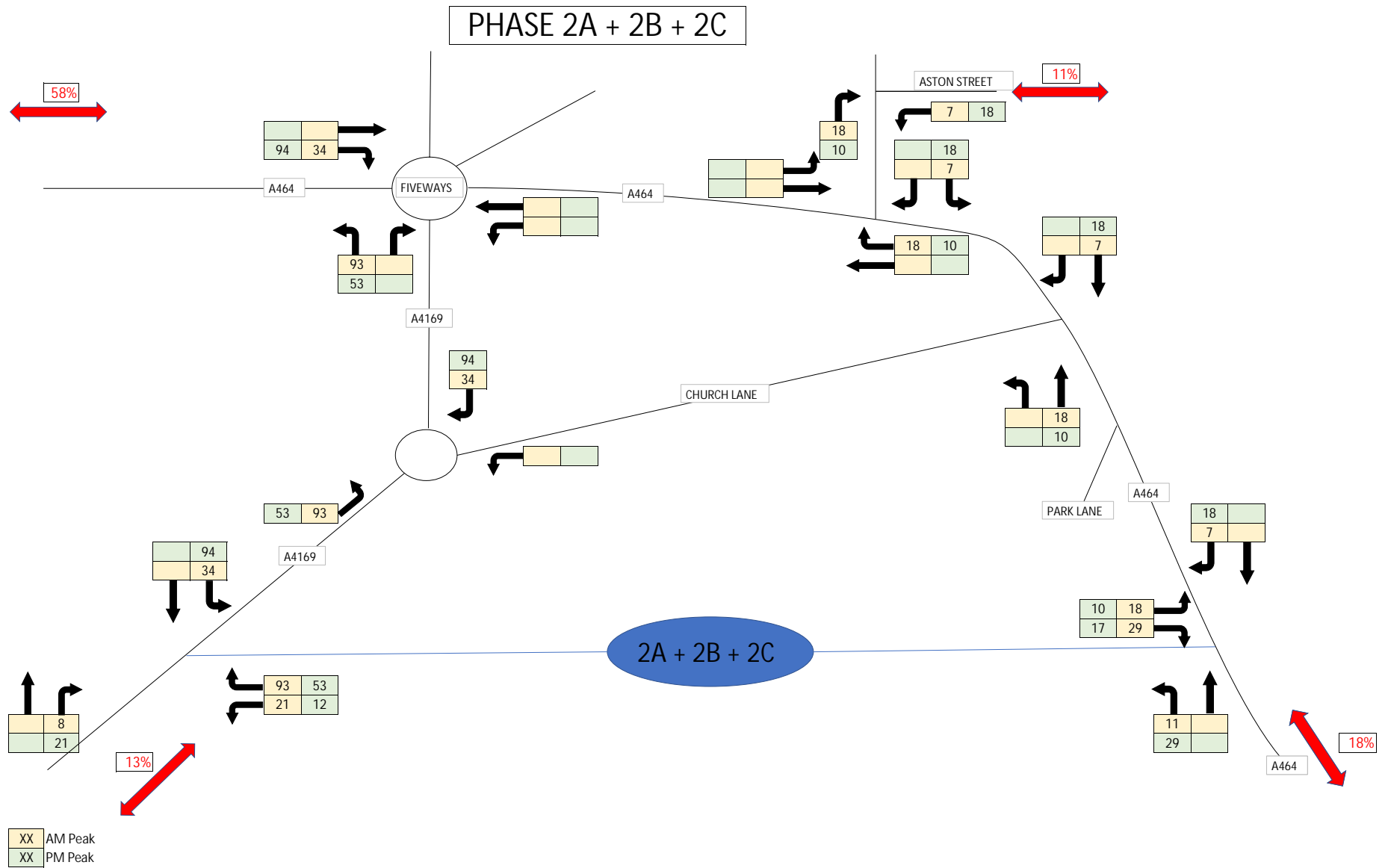


FIGURE: 4

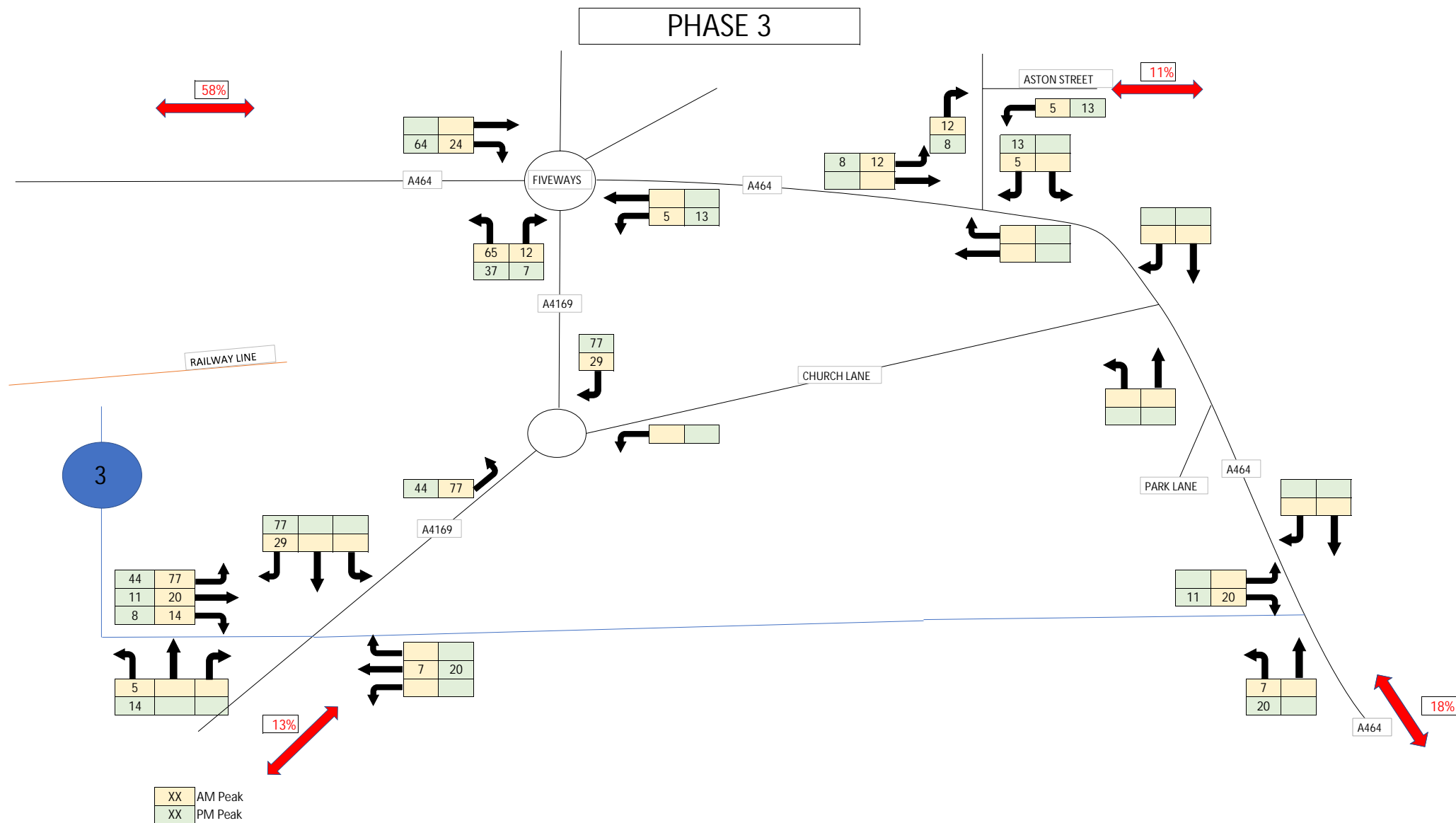


FIGURE: 5

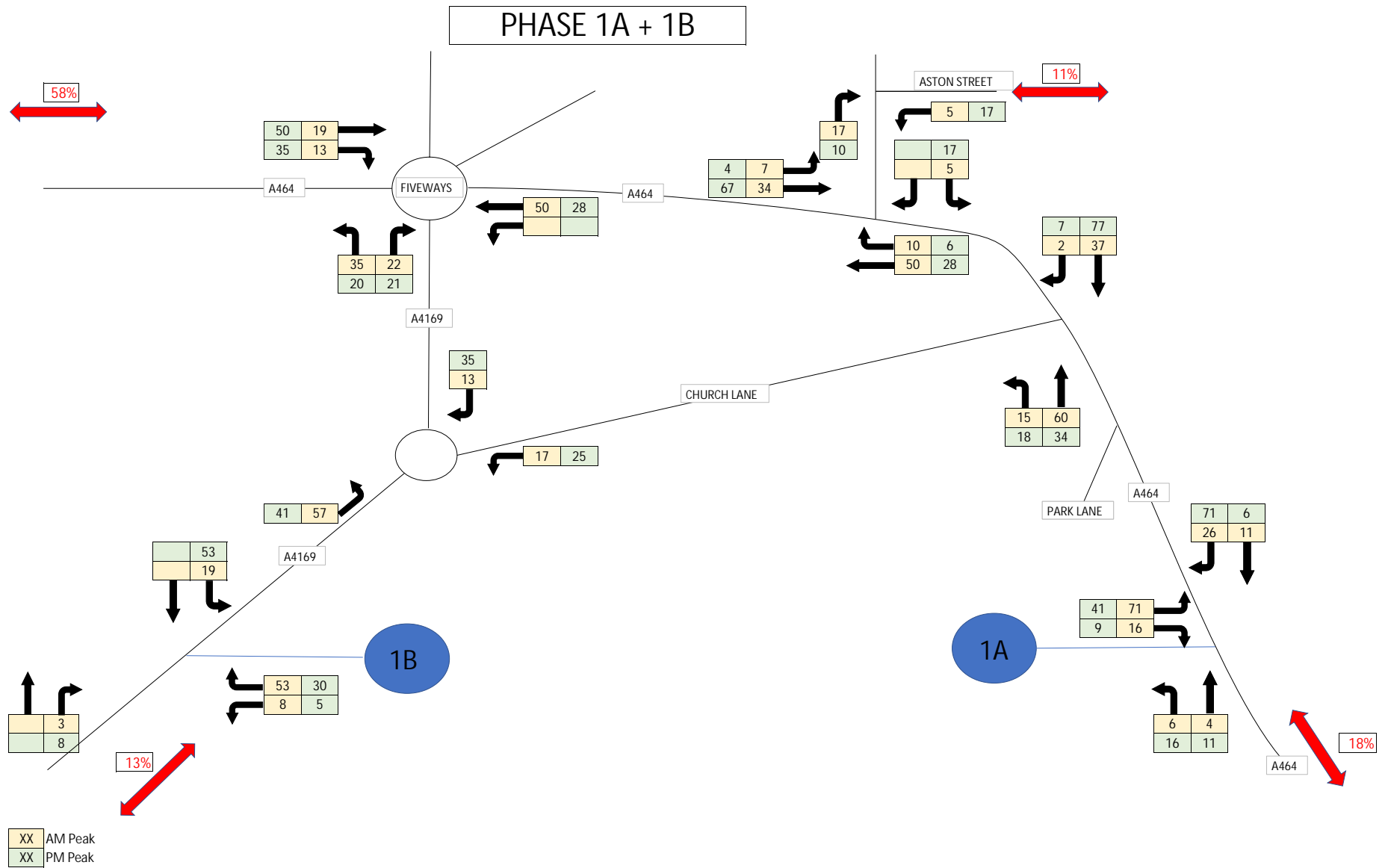


FIGURE: 6

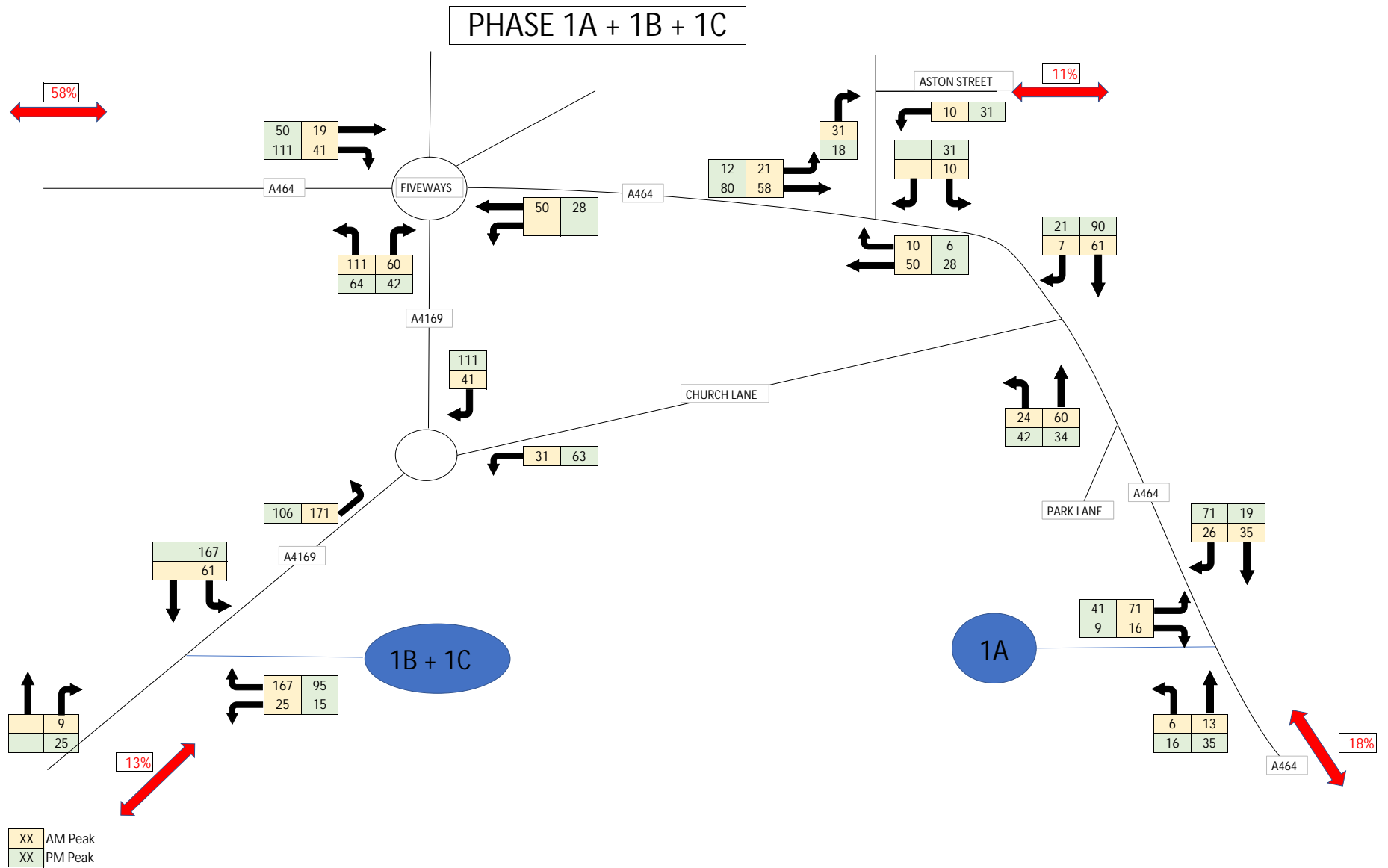


FIGURE: 7



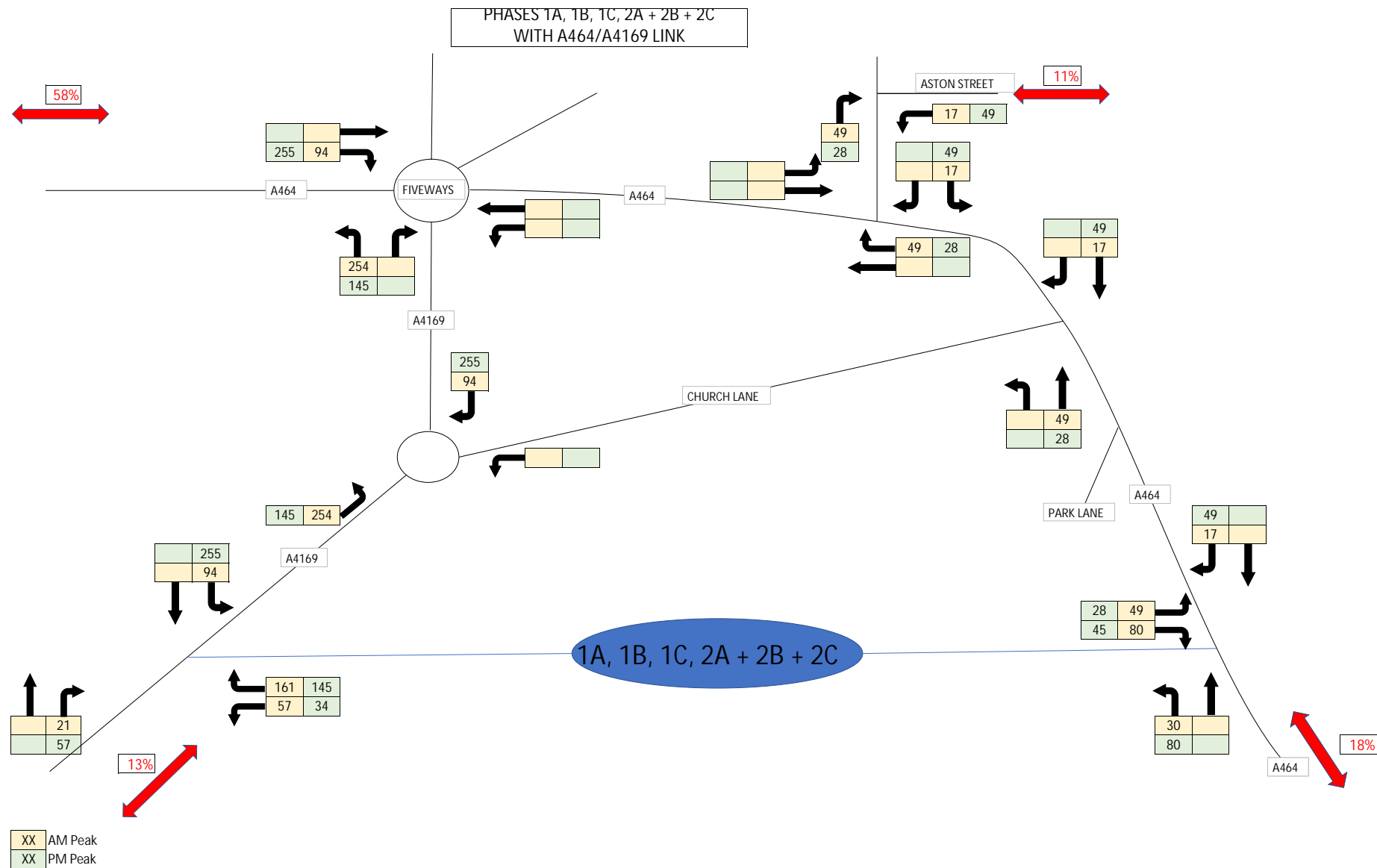


FIGURE: 8

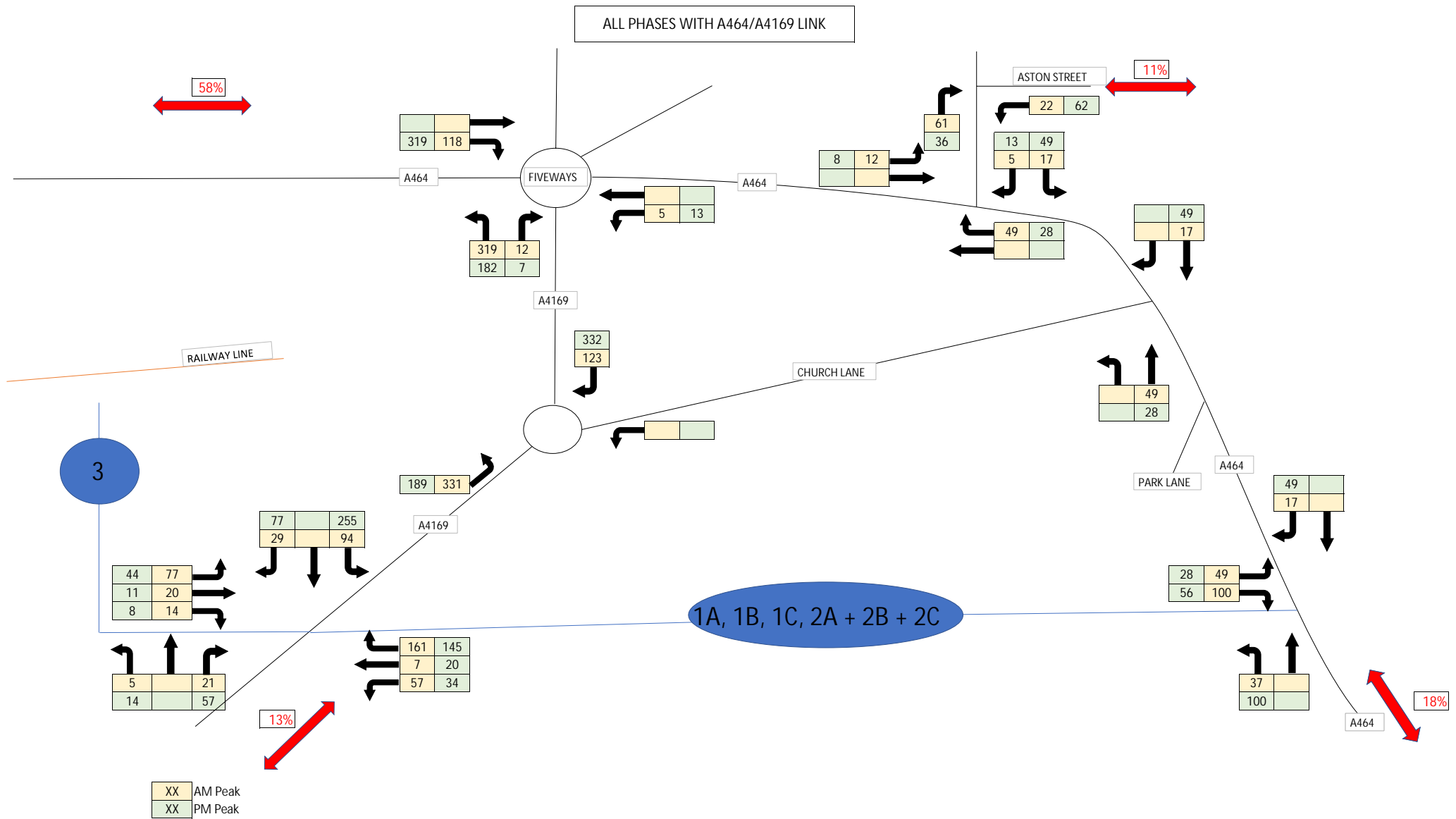


FIGURE: 9