

# Some Important Issues Raised in SIDRA User Support Queries

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**Presentation at the SIDRA USER GROUP MEETING  
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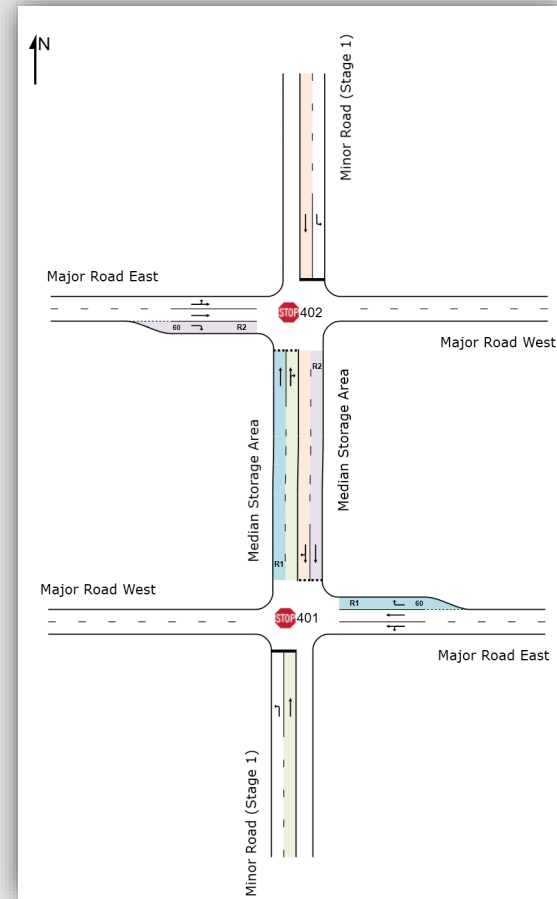
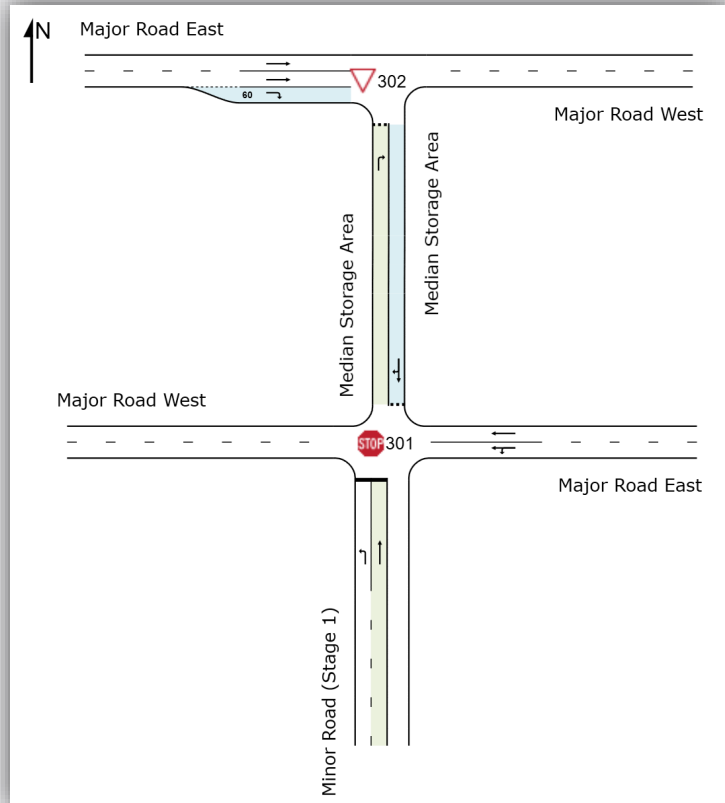
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# Issues to be discussed

- ❖ Staged Crossing new template
- ❖ Average and Percentile Queues
- ❖ Pedestrian Minimum Times, Clearance 1 and Clearance 2 Times
- ❖ Phase Actuation and Phase Frequency
- ❖ Phase Actuation and Pedestrian Actuation
- ❖ Variable Phase Sequence Analysis
- ❖ Lane Blockage and Lane Movements in Network
- ❖ Volume Data
- ❖ SCATS MF for Saturation Flow Calibration
- ❖ Other User Questions

# Staged Crossing new template



# Average and Percentile Queues

- **95% Back of Queue** is the default for individual Site analysis, but in Network analysis, **Average Back of Queue** is reported by default.

It is important to check which queue is being reported (look at the table header) when comparing Site and Network values.

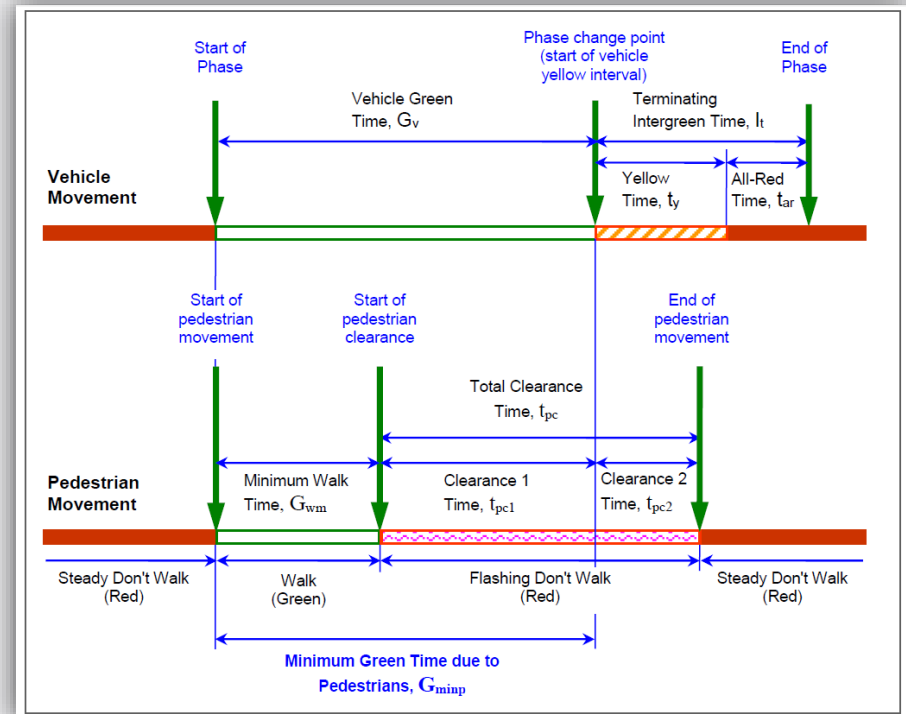
- **95% Back of Queue** reported in Network analysis may exceed the distance between Sites, but **Average Back of Queue** will always fit.

The will be **Excess Back of Queue** values assigned to **upstream continuous lanes**.

- **95% Back of Queues** for internal Network legs may not be meaningful.

# Pedestrian Minimum Times

- **Minimum Pedestrian Time** in the Pedestrians dialog defines the **Minimum Walk + Clearance 1 Time**. If you wish to modify the pedestrian minimum required time, you need to change this parameter.
- Pedestrian Minimum Required Times are applied to **vehicle movements** running in the same phases.



# Pedestrian Minimum Times

## Error Case

In some cases (usually more complicated phasing cases), the program may not be able to reduce pedestrian minimums **if specified phase times are too short**.

The error reported may relate to a vehicle movement but you should **decrease the Minimum Pedestrian Time** for the parallel pedestrian movement to resolve this.

# Clearance 1 and Clearance 2 times

**Minimum Clearance Time ( $t_{pcm}$ )** is the minimum value that applies to the **Total Clearance Time**. It is not the **Clearance 1 Time ( $t_{pc1}$ )**:

$t_{pc} \approx \max(L_{pc} / v_{pc}, t_{pcm})$  : Total Clearance Time

$t_{pc1} = t_{pc} - t_{pc2}$  : Clearance 1 Time

$G_{minp} = G_{wm} + t_{pc1}$  : Pedestrian Minimum Time

**SIDRA INTERSECTION Version 9:**

- **Clearance 1 Time** and **Clearance 2 Time** input
- **Pedestrian Analysis** report

Crossing Speed	1.2 m/sec
Minimum Walk Time	5 sec
Minimum Clearance Time	5 sec
Clearance 1 Time	Program ▼
Clearance 2 Time	Input ▼
	2 sec
Start Loss	2 sec
End Gain	3 sec

Clearance 1 Time	Input ▼
	Program
	Input

Clearance 2 Time	Input ▼
	Input
	Yellow Time
	Intergreen Time

# Phase Actuation and Phase Frequency

- **Phase Frequency** only applies when **Phase Times** are user-specified.
- **Implied Phase Frequency** is calculated when Phase Times are less than minimum.

This means that a phase time less than the pedestrian minimum may be accepted. This implies that the pedestrian movement is not called every cycle.



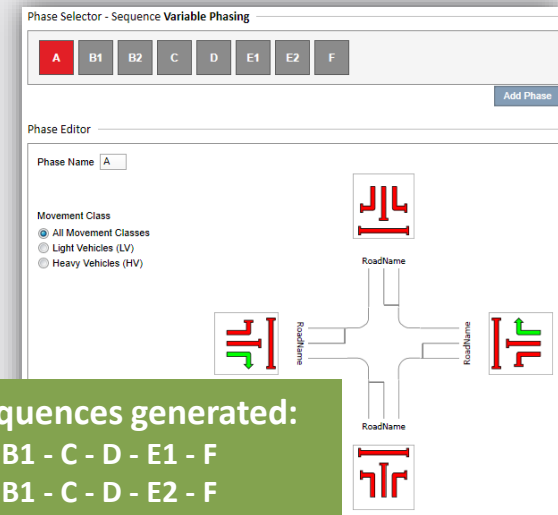
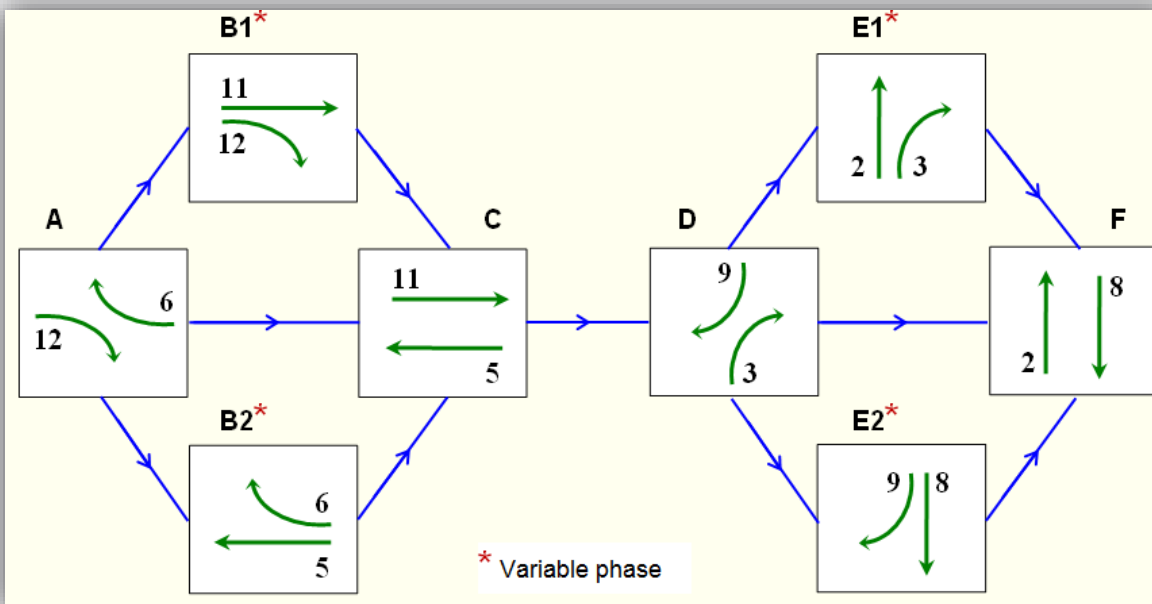
# Phase Actuation and Pedestrian Actuation

- **Phase Actuation** and **Pedestrian Actuation** only apply if the program is calculating phase times.
- **Phase Actuation** for vehicle movements is “None” by default. It is intended for minor phases not called in every cycle and running at minimum time when called. It is specified as “vehicle movement actuation”!
- **Pedestrian Actuation** is “Program” by default. This means that a phase time less than that needed to satisfy pedestrian minimum may be calculated if pedestrian volumes are low, particularly with shorter cycle times.
- Actuation settings are **NOT related to Variable Phasing**.

# Variable Phase Sequence Analysis

- Variable Phases define **alternative phase sequences** that will be evaluated.
- Only **one representative sequence** will be chosen.

## Diamond Overlap Variable Phase Sequence

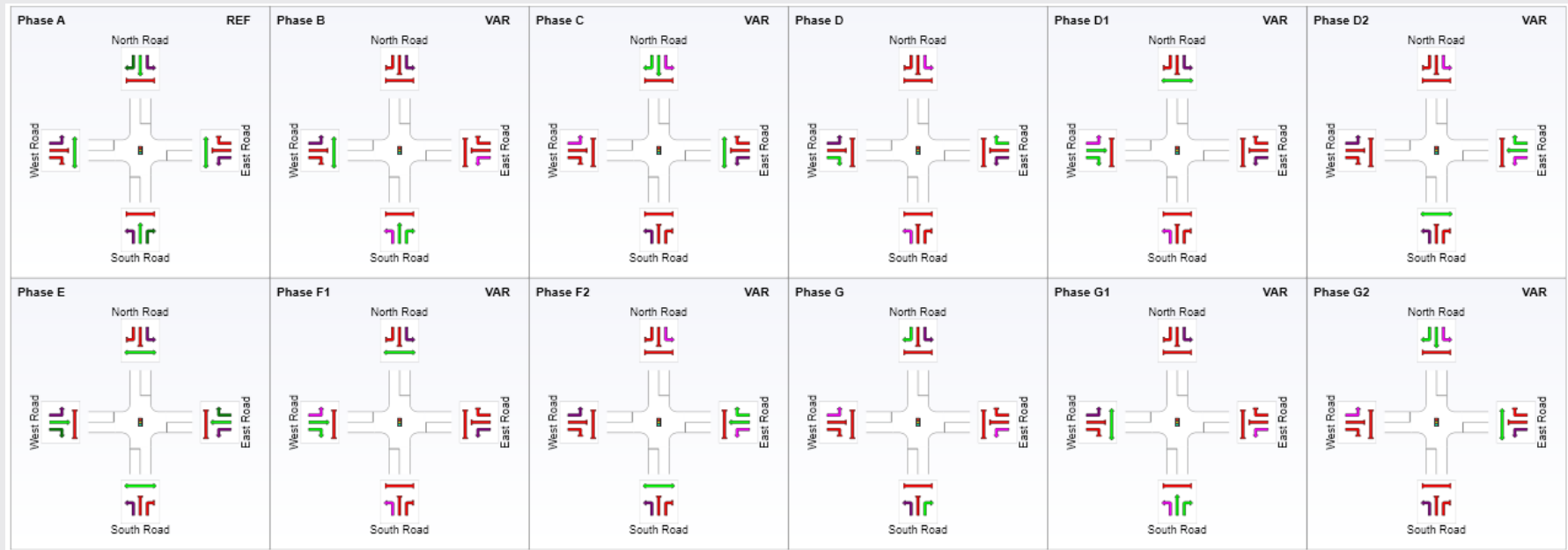


### Sequences generated:

A - B1 - C - D - E1 - F  
A - B1 - C - D - E2 - F  
A - B1 - C - D - F  
A - B2 - C - D - E1 - F  
A - B2 - C - D - E2 - F  
A - B2 - C - D - F  
A - C - D - E1 - F  
A - C - D - E2 - F  
A - C - D - F

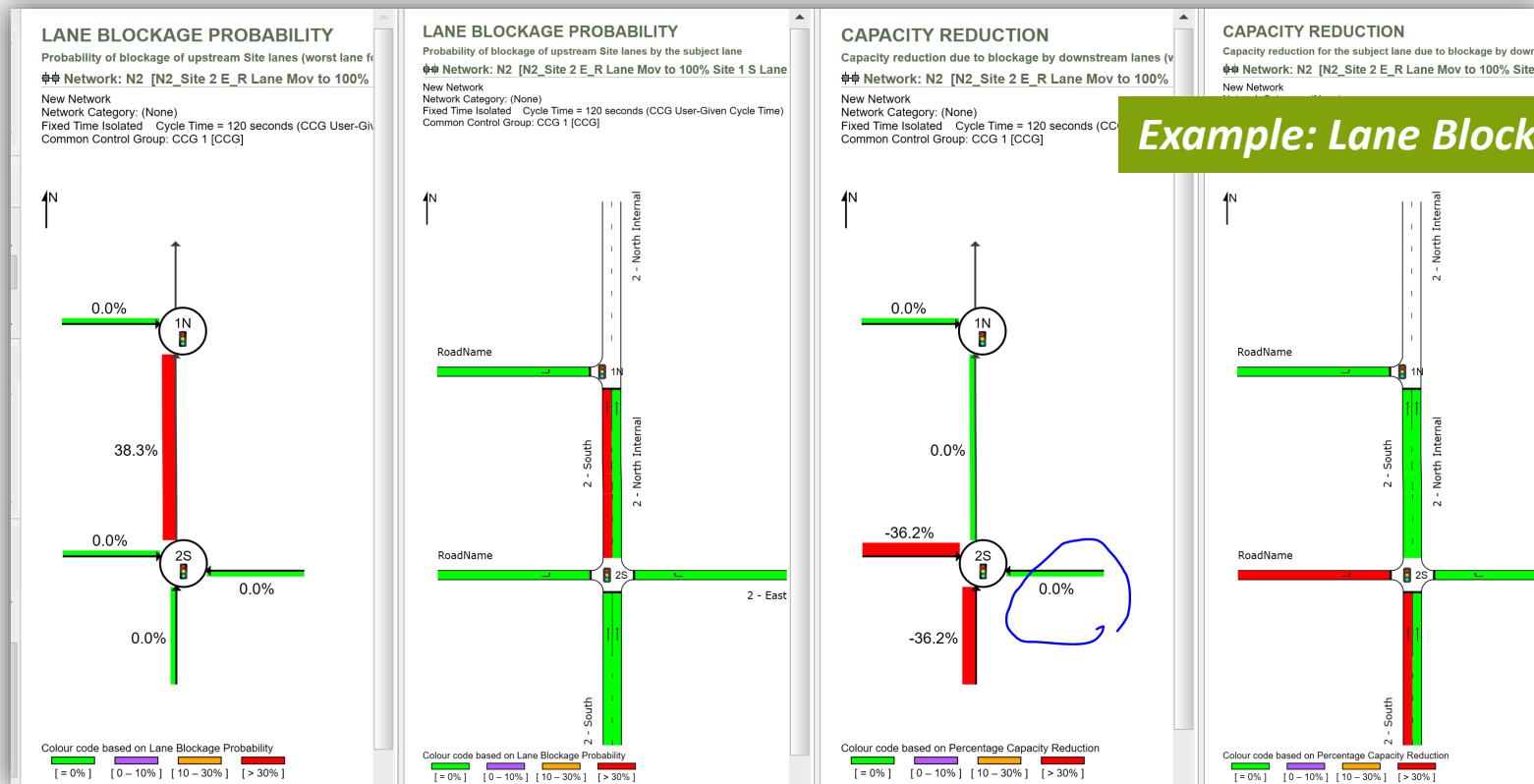
# Variable Phase Sequence Analysis

- Specification of **overly complex arrangements** of variable phases may lead to **processing errors** in some cases, e.g.



# Lane Blockage and Lane Movements in Network Model

Capacity Reduction due to Lane Blockage was not modelled because of the way Lane Movements were specified

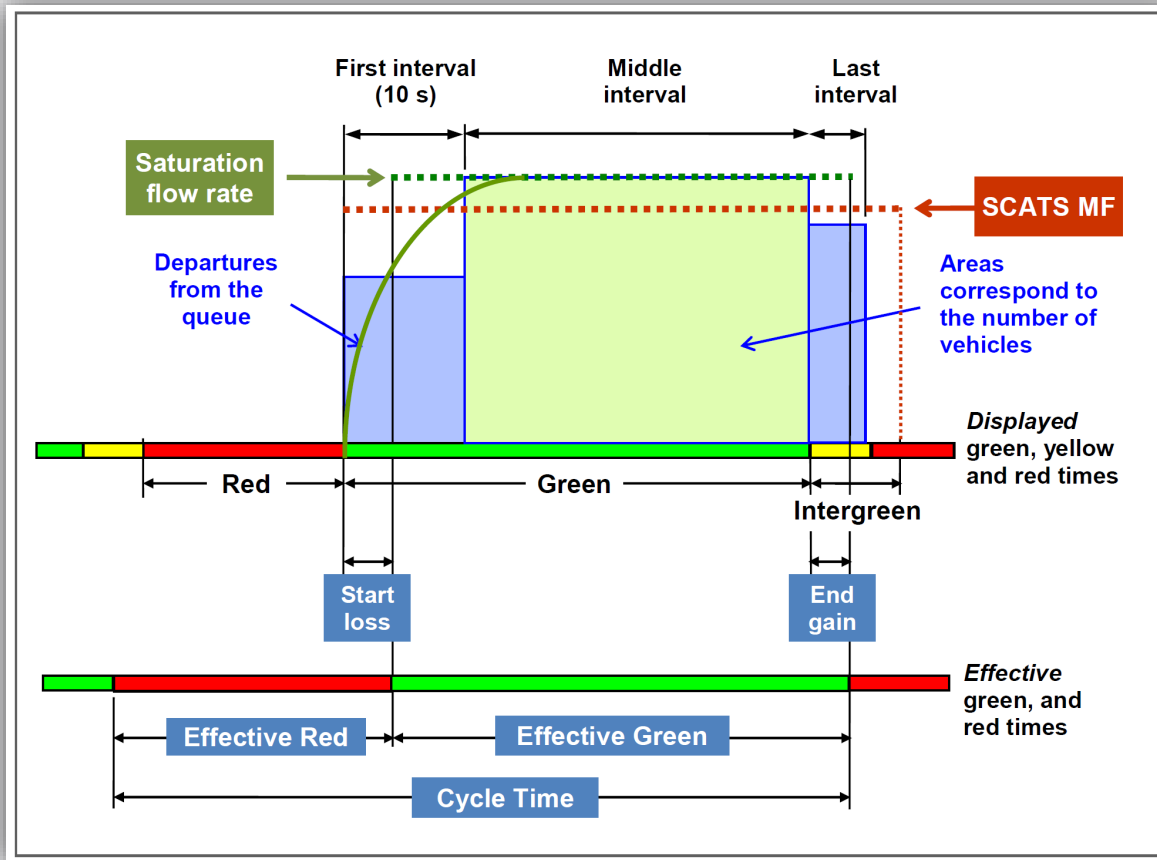


# Volume Data

- **Peak Flow Factor** of 95% applies by default with a 30-minute peak. Therefore the demand volumes reported in the output will be higher than the input volumes if the default peaking parameters are used.
- **If volumes are known** for the peak period, e.g. 15 minutes, then these should be used directly with **Unit Time = Peak Flow Period**. No Peak Flow Factor will apply in this case.
- **Network Volumes** are determined from Site Volume inputs. It is a user responsibility to get these consistent between Sites in a Network. The **Midblock Flows** display is useful for checking this.

**Capacity Constraint** applied at upstream lanes will cause **Arrival Flows** less than **Demand Flows** at downstream lanes.

# SCATS MF for Saturation Flow Calibration



# Other User Questions

- Modelling **red arrow drop-off**. Separate phase or modify timing parameters?
- More than two green periods leading to error
- Differences between **single Site and Network Site results**
- Modelling **Keep Clear** at a Stop or Give Way Site – use of **Minimum Departures** parameter?
- Movement definitions – **turn bans** and inclusion of **U-turns**.
- **Raised Safety Platform** – reduced saturation flow rates and saturation speeds
- **Very large heavy vehicle** parameters

# END OF PRESENTATION

*Thank you!*



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