Technical Memo
HOBSONVILLE GROVE

Clause 23 – Transportation

Harrison Grierson Consultants Limited

TO:	Clare Covington, Planning Manager - Auckland	**HG PROJECT NO:**	A2212330.03
FROM:	Ruby Kim, Transportation Team Leader	**DATE:**	31 Jul 2024

1.0 BACKGROUND

Austino NZ Limited (Austino) lodged a private plan change application with Auckland Council (AC) to rezone lane at 84 and 100 Hobsonville Road. As part of the application an Integrated Transport Assessment (ITA) dated 10 April 2024 was included. AC have completed an assessment of the information supplied and now requires further information pursuant to clause 23 of Schedule 1 of the RMA to continue processing the private plan change request.

This technical memo is in response to Auckland Council's letter 'RE: Clause 23 further information request – Hobsonville Grove Private Plan Change Request' dated 27 May 2024.

2.0 CLAUSE 23 FURTHER INFORMATION REQUEST

The matters relating to transportation are summarised in Table 1 and our response is documented in the following sections.

TABLE 1: TRANSPORT MATTERS (CLAUSE 23 – 27 MAY 2024)

#	Specific Request	Reasons for request
Transport – Russell Brandon, Flow Transportation Specialists Ltd		
T1 Block 1 access	As per the Auckland Transport request, please confirm the mechanism by which access to all of Block 1 via Westpoint Drive can be ensured.	Section 6.1 of the ITA states that access to block 1 is proposed via the existing road connection on Westpoint Drive. Block 1 is under 2 separate titles with different owners (Austino and Auckland Council). The road connection referred to in Figure 22 of the ITA does not provide a public road link to the southern site (Austino) over the northern site (Auckland Council). It is only a intersection/vehicle crossing that has been constructed within the Westpoint Drive road reserve. Construction of this road stub does not guarantee access to the southern site through the northern site.
T2 Cycle facility provision	Please provide further justification for not specifying a requirement for cycle facilities on collector roads in the precinct plan, or update the collector road requirements.	The ITA states that for roads carrying 3,000 vehicles per day and speed environments 30 km/hr or less cyclists can share the road. Traffic volumes on the collector road will be less than 3,000 vehicles per day while Block 2 is developed in isolation. However when adjacent sites are developed, and if the collector road continues further west as is indicated, traffic volumes could increase. Also regardless of volumes, the Auckland Transport Engineering Design Code – Cycling Infrastructure

#	Specific Request	Reasons for request
		specifies that collector type roads should have cycle facilities. Considering the potential future transport network in this area, cyclists need to be provided for on the collector road network.
T3 Cycle and active mode connectivity	Please clarify how the cycling/active mode connections to the surrounding existing and future roads can be ensured.	The ITA noted shared paths on the concept connection point for Block 2, implying that there is an intention to provide for cyclists to have dedicated facilities between Block 2 and Westpoint Drive. We also acknowledge that the indicative connection to the Spedding Road corridor was added in response to previous feedback about active mode. The policies and assessment criteria refer to cycle connectivity to Westpoint Drive and the future Spedding Road corridor, but the transport connection rules and precinct plan do not specifically require this. The precinct plans just notes "connections" Given that the link between the Block 2 connection and the collector road is noted as a local road, specifying cycle facilities on collector roads will not address this either.
Transport – Katherine Dorofaeff, Auckland Transport		
AT1	Were the traffic volumes obtained from AFC (SATURN model data) queried given the low traffic volumes along Hobsonville Road? If so, did they provide any comments? The 2028 AFC data has low volumes on Hobsonville Road and high volumes on Westpark Drive. This appears unrealistic. What are your comments on this?	In response to a previous request, the applicant confirmed that the traffic volumes for Hobsonville Road were obtained from AFC (STATURN model data). However the previous request specifically asked about the low traffic volumes along Hobsonville Road in the AFC data. This aspect has not been responded to.
AT2	The SCATS summaries have been reviewed by Commute. Please model the intersections with standard SCATS phasing (single diamond overlap with separate side road phases – A, D, E, F + variable F1 and F2 phases). These are the phases as the intersections run now. The modelling appears to include adjusted amber and all red times (i.e. intergreen times). Please confirm whether this is the case. Also recommend running intersections to standard 100 second SCATS network cycle time.	The reason for this request is to better understand the modelling assumptions and therefore the traffic effects of the proposal.
AT3	Provide further information about how it is intended to access 84 Hobsonville Road. The ITA identifies that this block will be accessed by a local road connection over Rawiri Stream from Westpoint Drive. AT supports road and vehicle access	It is desirable to avoid or restrict vehicle access onto Hobsonsville Road as this is an arterial road, with proposed separated cycle facilities. Rather than relying on future assessments against the VAR in E27, consideration should be given to future access requirements at ITA and planning stage.

#	Specific Request	Reasons for request
	being provided from Westpoint Drive rather than Hobsonville Road. However the applicant has provided a response table which suggests there will be additional vehicle accesses onto Hobsonville Road and Westpark Drive.	The reason for this request is to better understand the traffic effects of the proposal, and ways in which adverse effects may be mitigated.

3.0 HG RESPONSE

3.1 T1 – BLOCK 1 ACCESS

The access to the southern section of Block 1 will be an extension of the road connection from Westpoint Drive, as there is no other road frontage where access is permitted or proposed. We confirm no access is proposed from Hobsonville Road. Please refer to Section 8.8 of the AEE. It is noted Section 8.8 of the lodged AEE only discusses the transportation effects of Block 2, not Block 1. This section has been amended to include comments on Block 1.

3.2 T2 – CYCLE FACILITY PROVISION

We were unable to find the reference to requiring cycle facilities on Collector roads within the Auckland Transport's (AT) Traffic Design Manual (TDM) for Engineering Design Code – Cycling Infrastructure.

However, we agree that once the neighbouring lots between Trig Road and Westpoint Drive are developed, the level of vehicle traffic on the main collector road will most likely be more than 3,000 vehicles per day. To provide future proofing of the collector roads the following amendment for Collector (Residential) roads is proposed for Table 6 within the ITA. The first column shows the indicative road function and design elements proposed as proposed in the ITA and the second column shown the proposed amendment.

<table>
<tr><th></th><th>Collector (Residential) – Original in ITA</th><th>Collector (Residential) – Amendment Proposed</th></tr>
<tr><td>Role and function</td><td>Provide neighbourhood travel between local and arterial roads and direct access to adjacent lands. Buses generally operate on collector roads within neighbourhoods.</td><td>Provide neighbourhood travel between local and arterial roads and direct access to adjacent lands. Buses generally operate on collector roads within neighbourhoods.</td></tr>
<tr><td>Minimum road reserve width (m)</td><td>16.9m

= two 3.3m lanes and 5.15m footpath zone on both sides of the road
<table><tr><th colspan="2">Minimum Urban Footpath Zone Dimensions (AT TDM)</th></tr><tr><td>Kerb</td><td>0.15m</td></tr><tr><td>Front berm</td><td>2.2m</td></tr><tr><td>Footpath</td><td>1.8m</td></tr><tr><td>Back berm</td><td>1.0m</td></tr><tr><td>TOTAL</td><td>5.15m</td></tr></table></td><td>22.1m

= two 1.8m cycleways, two 0.8m buffer/separators, two 3.3m lanes and 5.15m footpath zone on both sides of the road
<table><tr><th colspan="2">Minimum Urban Footpath Zone Dimensions (AT TDM)</th></tr><tr><td>Kerb</td><td>0.15m</td></tr><tr><td>Front berm</td><td>2.2m</td></tr><tr><td>Footpath</td><td>1.8m</td></tr><tr><td>Back berm</td><td>1.0m</td></tr><tr><td>TOTAL</td><td>5.15m</td></tr></table></td></tr>
<tr><td>Number of lanes</td><td>2 (one in each direction)</td><td>2 (one in each direction)</td></tr>
<tr><td>Speed limit</td><td>30km/hr</td><td>30km/hr</td></tr>
<tr><td>Access restrictions</td><td>In accordance with Vehicle Access Restrictions under E27.6.4.1</td><td>In accordance with Vehicle Access Restrictions under E27.6.4.1</td></tr>
<tr><td>Median</td><td>Flush medians are not to be used except locally for safety.</td><td>Flush medians are not to be used except locally for safety.</td></tr>
<tr><td>Bus provision</td><td>Buses generally operate on collector roads within neighbourhoods</td><td>Buses generally operate on collector roads within neighbourhoods</td></tr>
<tr><td>On-street parking</td><td>Parallel parking to be restricted to one side of the road (where carriageway is less than 7m)</td><td>Parallel parking to be restricted to one side of the road (where carriageway is less than 7m)</td></tr>
<tr><td>Cycle facilities</td><td>Cyclists to share the road in 30km/hr zone with vehicle traffic of less than 3,000 ADT</td><td>Buffered lane (<3,000 ADT) or a protected cycleway (>3,000 ADT) to be provided in 30km/hr zone</td></tr>
<tr><td>Pedestrian provision</td><td>A minimum footpath width of 1.8m on both sides of the road</td><td>A minimum footpath width of 1.8m on both sides of the road</td></tr>
</table>

Table I1.10.3 of the Hobsonville Grove Precinct has been amended to ensure that any collector road within it provides either a buffered lane or a protected cycleway in a 30km/hr zone. Subdivisions and developments that provide a Collector Road that do not include cycle facilities will require resource consent for a restricted discretionary activity.

3.3 T3 – CYCLE AND ACTIVE MODE CONNECTIVITY

To ensure cycling/active mode connections to the surrounding existing and future roads, the following can be built into the Private Plan:

- Cycle facilities to be provided on collector roads (covered with T2, Section 3.2 of this memo).
- Cycle facilities to be provided on bridge connection over Rawiri Stream regardless of road typology.
- Cycle connections to be provided to Spedding Road at the north of Block 2.

3.4 AT1 – TRAFFIC VOLUMES

The traffic volumes have been obtained from Auckland Transport. It is understood AT obtained the traffic volumes from the SATURN model. The low traffic volumes along Hobsonville Road were not queried by AT.

In order to represent a more realistic traffic volume for Hobsonville Road, background growth is assumed using the Stats NZ population projection for the Upper Harbour local board area. There are three (3) average annual population growth percentages (low, medium and high), of which the high percentage (2.5%) has been used for the conservative approach. Note - Stats NZ considers the medium projection suitable for assessing future population changes.

The 2.5% average annual percentage growth rate has been applied on the existing flows for all movements at the intersection of Westpoint Drive and Hobsonville Road to form the 2028 no development model. Using the calibrated SCATS data presented in Table 8 of the ITA, the traffic movements for 2028 is summarised below:

Approach	Turn	2023		2028	
	Type	AM	PM	AM	PM
North	LT	1	21	1	24
	TT	555	657	628	743
	RT	7	5	8	6
East	LT	120	89	136	101
	TT	8	1	9	1
	RT	28	27	32	31
South	LT	7	2	8	2
	TT	529	593	599	671
	RT	51	121	58	137
West	LT	6	6	7	7
	TT	8	1	9	1
	RT	2	21	2	24
	TOTAL	1322	1544	1496	1747

3.5 AT2 – SCATS/SIDRA MODELLING

The intersection of Westpoint Drive and Hobsonville Road has not been modelled using the standard SCATS phasing (diamond overlap) as the result of this does not reflect the queue lengths that were observed during our survey. Both AM and PM peak period models were calibrated using site survey data and then used to undertake scenario testing.

Nevertheless, results are provided for the intersection remodelled with the suggested changes:

- Increased traffic volumes through the intersection of Westpoint Drive/Hobsonville Road from AFC/SATURN's 1,322/1,544 (AM/PM) to 1,496/1,747 (AM/PM).
- SIDRA intersections modelling with standard SCATS phasing (single diamond overlap with separate side road phases – A, D, E, F + variable F1 and F2 phases).
- Intersection run to standard 100 second SCATS network cycle time.

The results of the intersection modelling are shown below:

No Development

Approach	2023				2028			
	AM		PM		AM		PM	
	LoS	Queue (m)	LoS	Queue (m)	LoS	Queue (m)	LoS	Queue (m)
South	D	239.6	C	173.4	D	271.9	C	210.8
East	C	21.8	C	21.3	C	27.3	C	24.4
North	E	273.0	C	213.3	E	310.6	D	301.4
West	C	2.6	D	7.6	C	3.1	D	8.8
Intersection	D	273.0	C	213.3	D	310.6	C	301.4

With Development

Approach	2023				2028			
	AM		PM		AM		PM	
	LoS	Queue (m)	LoS	Queue (m)	LoS	Queue (m)	LoS	Queue (m)
South	E	319.4	D	309.8	E	336.9	D	325.5
East	C	22.3	C	20.2	C	27.9	C	24.0
North	D	251.0	C	241.9	D	286.5	D	320.1
West	C	54.6	D	37.2	D	57.6	D	37.8
Intersection	E	319.4	D	309.8	D	336.9	D	325.2

The full SIDRA outputs including movement summaries and phasing summaries are included in Appendix A of this memo.

The results of the specified standard SCATS phasing for the 2023 base scenario show queue lengths of 80-170m longer than that observed on site. Taking this into account, it can be considered in reality, the modelled scenario is not likely to materialise.

3.6 AT3 – HOBSONVILLE ROAD

Section 6.1 of the ITA discusses the access arrangements proposed for the development of both Block 1 (84 Hobsonville Road) and Block 2 (100 Hobsonville Road). In particular, Figure 22 of the ITA shows the intended access point for Block 1 which is from the existing road connection on Westpoint Drive. We can confirm that there are no vehicle accesses proposed onto Hobsonville Road for any part of the proposed plan change areas (Block 1 and Block 2).

Appendix A: SIDRA Intersection Modelling

MOVEMENT SUMMARY

Site: 101 [Hobsonville/Westpark 2023 AM (No Development) (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Hobsonville Road South														
1	L2	7	4.0	7	4.0	*0.915	58.8	LOS E	33.1	239.6	1.00	1.13	1.30	28.5
2	T1	529	4.0	557	4.0	0.915	54.2	LOS D	33.1	239.6	1.00	1.13	1.30	28.7
3	R2	51	4.0	54	4.0	0.496	57.5	LOS E	2.7	19.8	1.00	0.75	1.00	27.7
Approach		587	4.0	618	4.0	0.915	54.5	LOS D	33.1	239.6	1.00	1.09	1.27	28.6
East: Westpark Drive East														
4	L2	120	4.0	126	4.0	*0.437	26.5	LOS C	3.0	21.8	0.95	0.77	0.95	36.4
5	T1	8	4.0	8	4.0	0.208	46.3	LOS D	1.8	12.8	0.95	0.72	0.95	29.7
6	R2	28	4.0	29	4.0	0.208	50.9	LOS D	1.8	12.8	0.95	0.72	0.95	29.5
Approach		156	4.0	164	4.0	0.437	31.9	LOS C	3.0	21.8	0.95	0.76	0.95	34.5
North: Hobsonville Road North														
7	L2	1	4.0	1	4.0	*0.949	65.9	LOS E	37.7	273.0	1.00	1.21	1.41	27.0
8	T1	555	4.0	584	4.0	0.949	61.3	LOS E	37.7	273.0	1.00	1.21	1.41	27.2
9	R2	7	4.0	7	4.0	0.068	54.9	LOS D	0.4	2.6	0.97	0.66	0.97	28.3
Approach		563	4.0	593	4.0	0.949	61.2	LOS E	37.7	273.0	1.00	1.21	1.41	27.2
West: Westpoint Drive West														
10	L2	6	4.0	6	4.0	0.008	22.9	LOS C	0.2	1.3	0.61	0.62	0.61	37.8
11	T1	8	4.0	8	4.0	0.019	26.9	LOS C	0.4	2.6	0.74	0.54	0.74	36.2
12	R2	2	4.0	2	4.0	0.019	31.5	LOS C	0.4	2.6	0.74	0.54	0.74	35.8
Approach		16	4.0	17	4.0	0.019	26.0	LOS C	0.4	2.6	0.69	0.57	0.69	36.7
All Vehicles		1322	4.0	1392	4.0	0.949	54.3	LOS D	37.7	273.0	0.99	1.10	1.28	28.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Hobsonville Road South												
P1	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	208.0	212.8	1.02
East: Westpark Drive East												
P2	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	207.3	211.9	1.02

North: Hobsonville Road North												
P3	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	208.0	212.8	1.02
West: Westpoint Drive West												
P4	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	208.0	212.8	1.02
All Pedestrians		200	211	44.3	LOS E	0.1	0.1	0.94	0.94	207.8	212.6	1.02

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [Hobsonville/Westpark 2023 PM (No Development) (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Hobsonville Road South														
1	L2	2	4.0	2	4.0	*0.684	29.5	LOS C	24.0	173.4	0.85	0.76	0.85	37.0
2	T1	593	4.0	624	4.0	0.684	24.9	LOS C	24.0	173.4	0.85	0.76	0.85	37.3
3	R2	121	4.0	127	4.0	*0.784	58.5	LOS E	6.7	48.8	1.00	0.90	1.25	27.5
Approach		716	4.0	754	4.0	0.784	30.6	LOS C	24.0	173.4	0.87	0.79	0.92	35.2
East: Westpark Drive East														
4	L2	89	4.0	94	4.0	*0.273	27.9	LOS C	2.9	21.3	0.89	0.75	0.89	35.9
5	T1	1	4.0	1	4.0	0.163	46.0	LOS D	1.4	9.9	0.95	0.72	0.95	29.6
6	R2	27	4.0	28	4.0	0.163	50.6	LOS D	1.4	9.9	0.95	0.72	0.95	29.3
Approach		117	4.0	123	4.0	0.273	33.3	LOS C	2.9	21.3	0.91	0.74	0.91	34.1
North: Hobsonville Road North														
7	L2	21	4.0	22	4.0	0.780	29.0	LOS C	29.5	213.3	0.90	0.83	0.92	37.1
8	T1	657	4.0	692	4.0	*0.780	24.4	LOS C	29.5	213.3	0.90	0.83	0.92	37.4
9	R2	5	4.0	5	4.0	0.032	50.5	LOS D	0.2	1.7	0.94	0.65	0.94	29.3
Approach		683	4.0	719	4.0	0.780	24.8	LOS C	29.5	213.3	0.90	0.83	0.92	37.3
West: Westpoint Drive West														
10	L2	6	4.0	6	4.0	0.013	33.8	LOS C	0.2	1.6	0.76	0.64	0.76	34.0
11	T1	1	4.0	1	4.0	0.116	44.5	LOS D	1.1	7.6	0.93	0.70	0.93	29.9
12	R2	21	4.0	22	4.0	0.116	49.1	LOS D	1.1	7.6	0.93	0.70	0.93	29.7
Approach		28	4.0	29	4.0	0.116	45.7	LOS D	1.1	7.6	0.90	0.69	0.90	30.5
All Vehicles		1544	4.0	1625	4.0	0.784	28.5	LOS C	29.5	213.3	0.89	0.80	0.92	35.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

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P1	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	208.0	212.8	1.02
East: Westpark Drive East												
P2	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	207.3	211.9	1.02

North: Hobsonville Road North											
P3	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	208.0	212.8	1.02
West: Westpoint Drive West											
P4	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	208.0	212.8	1.02
All Pedestrians		200	211	44.3	LOS E	0.1	0.1	0.94	0.94	207.8	212.6	1.02

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [Hobsonville/Westpark 2023 AM (With Development) (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance

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South: Hobsonville Road South														
1	L2	64	4.0	67	4.0	*0.979	80.2	LOS F	44.1	319.4	1.00	1.31	1.53	24.4
2	T1	529	4.0	557	4.0	*0.979	75.6	LOS E	44.1	319.4	1.00	1.31	1.53	24.5
3	R2	51	4.0	54	4.0	0.496	57.5	LOS E	2.7	19.8	1.00	0.75	1.00	27.7
Approach		644	4.0	678	4.0	0.979	74.6	LOS E	44.1	319.4	1.00	1.27	1.49	24.7
East: Westpark Drive East														
4	L2	120	4.0	126	4.0	*0.437	26.6	LOS C	3.1	22.3	0.95	0.77	0.95	36.4
5	T1	8	4.0	8	4.0	0.208	46.3	LOS D	1.8	12.8	0.95	0.72	0.95	29.7
6	R2	28	4.0	29	4.0	0.208	50.9	LOS D	1.8	12.8	0.95	0.72	0.95	29.5
Approach		156	4.0	164	4.0	0.437	31.9	LOS C	3.1	22.3	0.95	0.76	0.95	34.5
North: Hobsonville Road North														
7	L2	1	4.0	1	4.0	0.919	56.6	LOS E	34.7	251.0	1.00	1.13	1.30	29.0
8	T1	555	4.0	584	4.0	0.919	52.0	LOS D	34.7	251.0	1.00	1.13	1.30	29.2
9	R2	43	4.0	45	4.0	0.418	57.1	LOS E	2.3	16.6	1.00	0.74	1.00	27.8
Approach		599	4.0	631	4.0	0.919	52.4	LOS D	34.7	251.0	1.00	1.10	1.28	29.1
West: Westpoint Drive West														
10	L2	22	4.0	23	4.0	0.031	23.8	LOS C	0.7	4.9	0.63	0.66	0.63	37.4
11	T1	8	4.0	8	4.0	0.376	31.4	LOS C	7.5	54.6	0.85	0.78	0.85	33.5
12	R2	173	4.0	182	4.0	0.376	36.0	LOS D	7.5	54.6	0.85	0.78	0.85	33.2
Approach		203	4.0	214	4.0	0.376	34.5	LOS C	7.5	54.6	0.83	0.77	0.83	33.7
All Vehicles		1602	4.0	1686	4.0	0.979	57.1	LOS E	44.1	319.4	0.97	1.09	1.27	28.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Hobsonville Road South												
P1	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	208.0	212.8	1.02
East: Westpark Drive East												
P2	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	207.3	211.9	1.02

North: Hobsonville Road North												
P3	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	208.0	212.8	1.02
West: Westpoint Drive West												
P4	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	208.0	212.8	1.02
All Pedestrians		200	211	44.3	LOS E	0.1	0.1	0.94	0.94	207.8	212.6	1.02

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [Hobsonville/Westpark 2023 PM (With Development) (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Hobsonville Road South														
1	L2	143	4.0	151	4.0	*0.906	48.2	LOS D	42.8	309.8	1.00	1.09	1.20	30.9
2	T1	593	4.0	624	4.0	*0.906	43.6	LOS D	42.8	309.8	1.00	1.09	1.20	31.1
3	R2	121	4.0	127	4.0	*0.882	64.8	LOS E	7.2	52.1	1.00	1.01	1.49	26.3
Approach		857	4.0	902	4.0	0.906	47.4	LOS D	42.8	309.8	1.00	1.07	1.24	30.3
East: Westpark Drive East														
4	L2	89	4.0	94	4.0	*0.288	27.1	LOS C	2.8	20.2	0.90	0.75	0.90	36.2
5	T1	1	4.0	1	4.0	0.163	46.0	LOS D	1.4	9.9	0.95	0.72	0.95	29.6
6	R2	27	4.0	28	4.0	0.163	50.6	LOS D	1.4	9.9	0.95	0.72	0.95	29.3
Approach		117	4.0	123	4.0	0.288	32.7	LOS C	2.8	20.2	0.91	0.74	0.91	34.3
North: Hobsonville Road North														
7	L2	21	4.0	22	4.0	0.834	35.5	LOS D	33.4	241.9	0.95	0.92	1.03	34.8
8	T1	657	4.0	692	4.0	0.834	31.0	LOS C	33.4	241.9	0.95	0.92	1.03	35.1
9	R2	19	4.0	20	4.0	0.138	52.8	LOS D	1.0	6.9	0.96	0.70	0.96	28.8
Approach		697	4.0	734	4.0	0.834	31.7	LOS C	33.4	241.9	0.95	0.92	1.03	34.9
West: Westpoint Drive West														
10	L2	45	4.0	47	4.0	0.086	32.3	LOS C	1.7	12.1	0.76	0.71	0.76	34.4
11	T1	1	4.0	1	4.0	0.416	42.8	LOS D	5.1	37.2	0.95	0.78	0.95	30.3
12	R2	106	4.0	112	4.0	0.416	47.4	LOS D	5.1	37.2	0.95	0.78	0.95	30.1
Approach		152	4.0	160	4.0	0.416	42.9	LOS D	5.1	37.2	0.89	0.76	0.89	31.3
All Vehicles		1823	4.0	1919	4.0	0.906	40.0	LOS D	42.8	309.8	0.97	0.97	1.11	32.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Hobsonville Road South												
P1	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	208.0	212.8	1.02
East: Westpark Drive East												
P2	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	207.3	211.9	1.02

North: Hobsonville Road North											
P3	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	208.0	212.8	1.02
West: Westpoint Drive West											
P4	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	208.0	212.8	1.02
All Pedestrians		200	211	44.3	LOS E	0.1	0.1	0.94	0.94	207.8	212.6	1.02

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [Hobsonville/Westpark 2028 AM (No Development) (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Hobsonville Road South														
1	L2	8	4.0	8	4.0	*0.918	57.0	LOS E	37.6	271.9	1.00	1.12	1.28	28.9
2	T1	599	4.0	631	4.0	0.918	52.4	LOS D	37.6	271.9	1.00	1.12	1.28	29.1
3	R2	58	4.0	61	4.0	0.564	58.1	LOS E	3.1	22.8	1.00	0.77	1.05	27.6
Approach		665	4.0	700	4.0	0.918	53.0	LOS D	37.6	271.9	1.00	1.09	1.26	29.0
East: Westpark Drive East														
4	L2	136	4.0	143	4.0	*0.496	27.0	LOS C	3.8	27.3	0.96	0.78	0.96	36.2
5	T1	9	4.0	9	4.0	0.236	46.5	LOS D	2.0	14.7	0.96	0.73	0.96	29.7
6	R2	32	4.0	34	4.0	0.236	51.2	LOS D	2.0	14.7	0.96	0.73	0.96	29.4
Approach		177	4.0	186	4.0	0.496	32.4	LOS C	3.8	27.3	0.96	0.77	0.96	34.4
North: Hobsonville Road North														
7	L2	1	4.0	1	4.0	*0.951	64.4	LOS E	42.9	310.6	1.00	1.21	1.39	27.3
8	T1	628	4.0	661	4.0	0.951	59.8	LOS E	42.9	310.6	1.00	1.21	1.39	27.5
9	R2	8	4.0	8	4.0	0.078	55.0	LOS D	0.4	3.0	0.97	0.66	0.97	28.3
Approach		637	4.0	671	4.0	0.951	59.7	LOS E	42.9	310.6	1.00	1.20	1.39	27.5
West: Westpoint Drive West														
10	L2	7	4.0	7	4.0	0.011	25.6	LOS C	0.2	1.6	0.65	0.63	0.65	36.8
11	T1	9	4.0	9	4.0	0.025	30.2	LOS C	0.4	3.1	0.78	0.57	0.78	35.1
12	R2	2	4.0	2	4.0	0.025	34.8	LOS C	0.4	3.1	0.78	0.57	0.78	34.7
Approach		18	4.0	19	4.0	0.025	28.9	LOS C	0.4	3.1	0.73	0.59	0.73	35.7
All Vehicles		1497	4.0	1576	4.0	0.951	53.1	LOS D	42.9	310.6	0.99	1.09	1.27	28.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Hobsonville Road South												
P1	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	208.0	212.8	1.02
East: Westpark Drive East												
P2	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	207.3	211.9	1.02

North: Hobsonville Road North												
P3	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	208.0	212.8	1.02
West: Westpoint Drive West												
P4	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	208.0	212.8	1.02
All Pedestrians		200	211	44.3	LOS E	0.1	0.1	0.94	0.94	207.8	212.6	1.02

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [Hobsonville/Westpark 2028 PM (No Development) (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Hobsonville Road South														
1	L2	2	4.0	2	4.0	*0.774	31.4	LOS C	29.1	210.8	0.90	0.83	0.91	36.3
2	T1	671	4.0	706	4.0	0.774	26.8	LOS C	29.1	210.8	0.90	0.83	0.91	36.6
3	R2	137	4.0	144	4.0	*0.799	58.2	LOS E	7.6	55.4	1.00	0.92	1.26	27.6
Approach		810	4.0	853	4.0	0.799	32.2	LOS C	29.1	210.8	0.92	0.84	0.97	34.7
East: Westpark Drive East														
4	L2	101	4.0	106	4.0	*0.294	27.8	LOS C	3.4	24.4	0.89	0.76	0.89	36.0
5	T1	1	4.0	1	4.0	0.186	46.2	LOS D	1.6	11.4	0.95	0.72	0.95	29.5
6	R2	31	4.0	33	4.0	0.186	50.8	LOS D	1.6	11.4	0.95	0.72	0.95	29.3
Approach		133	4.0	140	4.0	0.294	33.3	LOS C	3.4	24.4	0.90	0.75	0.90	34.1
North: Hobsonville Road North														
7	L2	24	4.0	25	4.0	0.883	39.8	LOS D	41.6	301.4	0.98	1.00	1.12	33.5
8	T1	743	4.0	782	4.0	*0.883	35.2	LOS D	41.6	301.4	0.98	1.00	1.12	33.7
9	R2	6	4.0	6	4.0	0.035	49.4	LOS D	0.3	2.1	0.93	0.65	0.93	29.6
Approach		773	4.0	814	4.0	0.883	35.4	LOS D	41.6	301.4	0.98	1.00	1.12	33.7
West: Westpoint Drive West														
10	L2	7	4.0	7	4.0	0.015	33.8	LOS C	0.3	1.9	0.77	0.64	0.77	33.9
11	T1	1	4.0	1	4.0	0.145	45.9	LOS D	1.2	8.8	0.95	0.71	0.95	29.6
12	R2	24	4.0	25	4.0	0.145	50.5	LOS D	1.2	8.8	0.95	0.71	0.95	29.4
Approach		32	4.0	34	4.0	0.145	46.7	LOS D	1.2	8.8	0.91	0.70	0.91	30.3
All Vehicles		1748	4.0	1840	4.0	0.883	33.9	LOS C	41.6	301.4	0.94	0.90	1.03	34.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Hobsonville Road South												
P1	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	208.0	212.8	1.02
East: Westpark Drive East												
P2	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	207.3	211.9	1.02

North: Hobsonville Road North											
P3	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	208.0	212.8	1.02
West: Westpoint Drive West											
P4	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	208.0	212.8	1.02
All Pedestrians		200	211	44.3	LOS E	0.1	0.1	0.94	0.94	207.8	212.6	1.02

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [Hobsonville/Westpark 2028 AM (With Development) (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Hobsonville Road South														
1	L2	57	4.0	60	4.0	*0.964	71.4	LOS E	46.5	336.9	1.00	1.25	1.44	25.9
2	T1	599	4.0	631	4.0	*0.964	66.8	LOS E	46.5	336.9	1.00	1.25	1.44	26.0
3	R2	58	4.0	61	4.0	0.564	58.1	LOS E	3.1	22.8	1.00	0.77	1.05	27.6
Approach		714	4.0	752	4.0	0.964	66.5	LOS E	46.5	336.9	1.00	1.21	1.41	26.1
East: Westpark Drive East														
4	L2	136	4.0	143	4.0	*0.496	27.1	LOS C	3.9	27.9	0.96	0.78	0.96	36.2
5	T1	9	4.0	9	4.0	0.236	46.5	LOS D	2.0	14.7	0.96	0.73	0.96	29.7
6	R2	32	4.0	34	4.0	0.236	51.2	LOS D	2.0	14.7	0.96	0.73	0.96	29.4
Approach		177	4.0	186	4.0	0.496	32.5	LOS C	3.9	27.9	0.96	0.77	0.96	34.4
North: Hobsonville Road North														
7	L2	1	4.0	1	4.0	0.924	55.5	LOS E	39.6	286.5	1.00	1.13	1.29	29.3
8	T1	628	4.0	661	4.0	0.924	50.9	LOS D	39.6	286.5	1.00	1.13	1.29	29.5
9	R2	39	4.0	41	4.0	0.379	57.0	LOS E	2.1	15.0	1.00	0.73	1.00	27.9
Approach		668	4.0	703	4.0	0.924	51.2	LOS D	39.6	286.5	1.00	1.11	1.28	29.4
West: Westpoint Drive West														
10	L2	21	4.0	22	4.0	0.032	26.5	LOS C	0.7	5.0	0.67	0.66	0.67	36.4
11	T1	9	4.0	9	4.0	0.436	35.2	LOS D	8.0	57.6	0.90	0.79	0.90	32.4
12	R2	171	4.0	180	4.0	0.436	39.8	LOS D	8.0	57.6	0.90	0.79	0.90	32.1
Approach		201	4.0	212	4.0	0.436	38.2	LOS D	8.0	57.6	0.87	0.78	0.87	32.5
All Vehicles		1760	4.0	1853	4.0	0.964	54.0	LOS D	46.5	336.9	0.98	1.08	1.25	28.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Hobsonville Road South												
P1	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	208.0	212.8	1.02
East: Westpark Drive East												
P2	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	207.3	211.9	1.02

North: Hobsonville Road North												
P3	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	208.0	212.8	1.02
West: Westpoint Drive West												
P4	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	208.0	212.8	1.02
All Pedestrians		200	211	44.3	LOS E	0.1	0.1	0.94	0.94	207.8	212.6	1.02

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [Hobsonville/Westpark 2028 PM (With Development) (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Hobsonville Road South														
1	L2	140	4.0	147	4.0	*0.895	42.9	LOS D	44.9	325.2	0.98	1.05	1.14	32.3
2	T1	671	4.0	706	4.0	*0.895	38.3	LOS D	44.9	325.2	0.98	1.05	1.14	32.6
3	R2	137	4.0	144	4.0	0.887	64.7	LOS E	8.2	59.3	1.00	1.01	1.48	26.3
Approach		948	4.0	998	4.0	0.895	42.8	LOS D	44.9	325.2	0.99	1.04	1.19	31.5
East: Westpark Drive East														
4	L2	101	4.0	106	4.0	*0.310	27.7	LOS C	3.3	24.0	0.90	0.76	0.90	36.0
5	T1	1	4.0	1	4.0	0.186	46.2	LOS D	1.6	11.4	0.95	0.72	0.95	29.5
6	R2	31	4.0	33	4.0	0.186	50.8	LOS D	1.6	11.4	0.95	0.72	0.95	29.3
Approach		133	4.0	140	4.0	0.310	33.2	LOS C	3.3	24.0	0.91	0.75	0.91	34.1
North: Hobsonville Road North														
7	L2	24	4.0	25	4.0	0.902	44.2	LOS D	44.2	320.1	1.00	1.05	1.18	32.1
8	T1	743	4.0	782	4.0	0.902	39.6	LOS D	44.2	320.1	1.00	1.05	1.18	32.4
9	R2	18	4.0	19	4.0	*0.175	55.8	LOS E	0.9	6.8	0.98	0.70	0.98	28.1
Approach		785	4.0	826	4.0	0.902	40.2	LOS D	44.2	320.1	1.00	1.05	1.18	32.2
West: Westpoint Drive West														
10	L2	43	4.0	45	4.0	0.100	36.5	LOS D	1.7	12.5	0.81	0.71	0.81	33.1
11	T1	1	4.0	1	4.0	0.505	46.3	LOS D	5.2	37.8	0.98	0.78	0.98	29.5
12	R2	103	4.0	108	4.0	0.505	50.9	LOS D	5.2	37.8	0.98	0.78	0.98	29.2
Approach		147	4.0	155	4.0	0.505	46.6	LOS D	5.2	37.8	0.93	0.76	0.93	30.3
All Vehicles		2013	4.0	2119	4.0	0.902	41.4	LOS D	44.9	325.2	0.98	1.00	1.15	31.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Hobsonville Road South												
P1	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	208.0	212.8	1.02
East: Westpark Drive East												
P2	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	207.3	211.9	1.02

North: Hobsonville Road North												
P3	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	208.0	212.8	1.02
West: Westpoint Drive West												
P4	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	208.0	212.8	1.02
All Pedestrians		200	211	44.3	LOS E	0.1	0.1	0.94	0.94	207.8	212.6	1.02

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

Site: 101 [Hobsonville/Westpark 2023 AM (No Development) (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

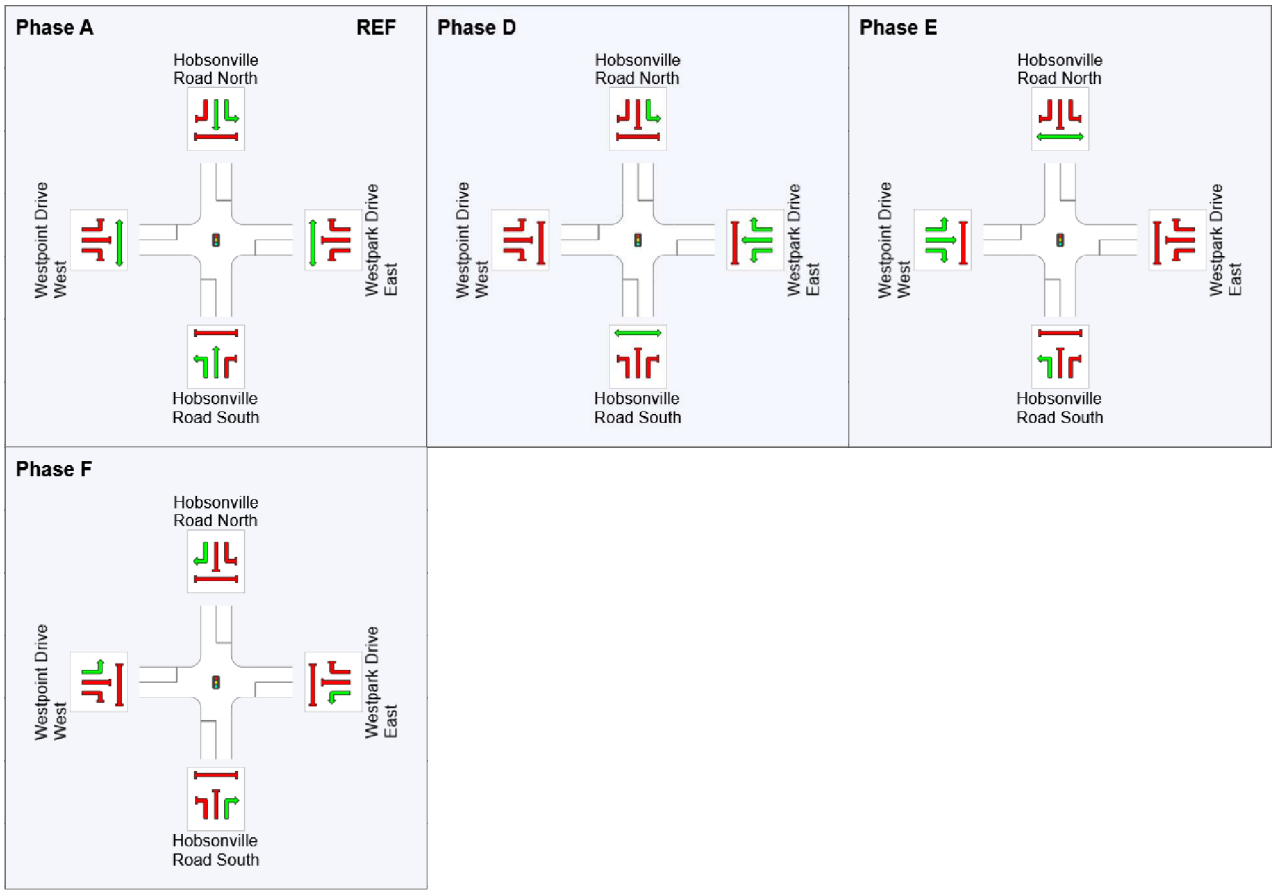
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, D, E, F, F1*, F2*
Output Phase Sequence: A, D, E, F
(* Variable Phase)

Phase Timing Summary

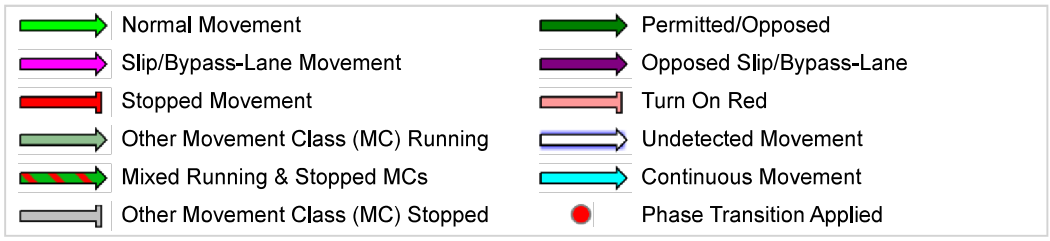
Phase	A	D	E	F
Phase Change Time (sec)	0	37	53	88
Green Time (sec)	31	10	29	6
Phase Time (sec)	37	16	35	12
Phase Split	37%	16%	35%	12%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 101 [Hobsonville/Westpark 2023 PM (No Development) (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)
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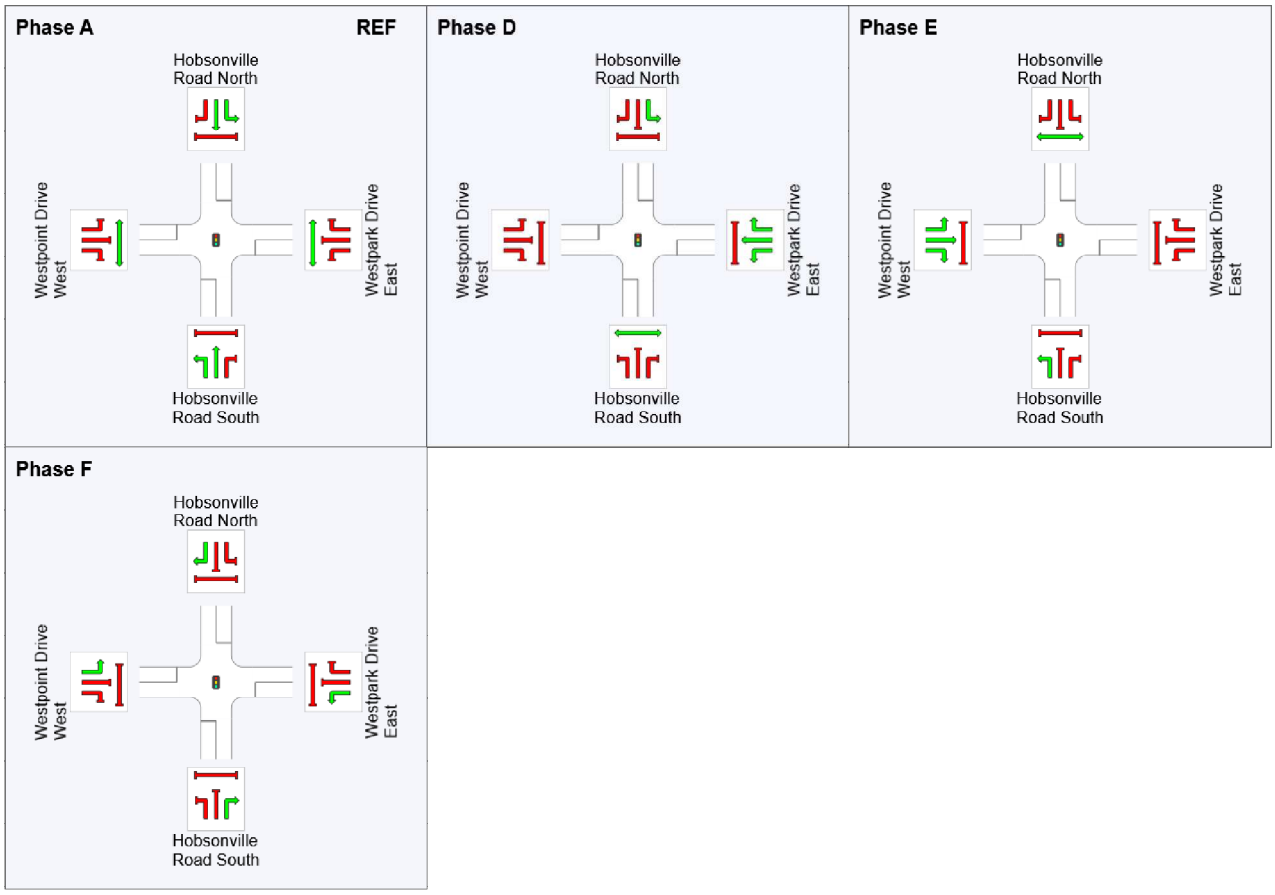
Phase Times determined by the program
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, D, E, F, F1*, F2*
Output Phase Sequence: A, D, E, F
(* Variable Phase)

Phase Timing Summary

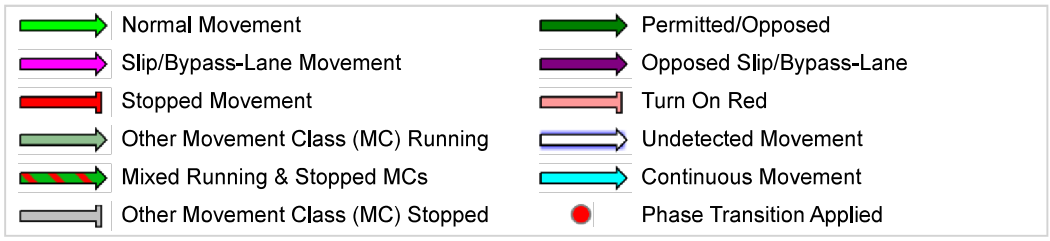
Phase	A	D	E	F
Phase Change Time (sec)	0	52	68	85
Green Time (sec)	46	10	11	9
Phase Time (sec)	52	16	17	15
Phase Split	52%	16%	17%	15%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 101 [Hobsonville/Westpark 2023 AM (With Development) (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

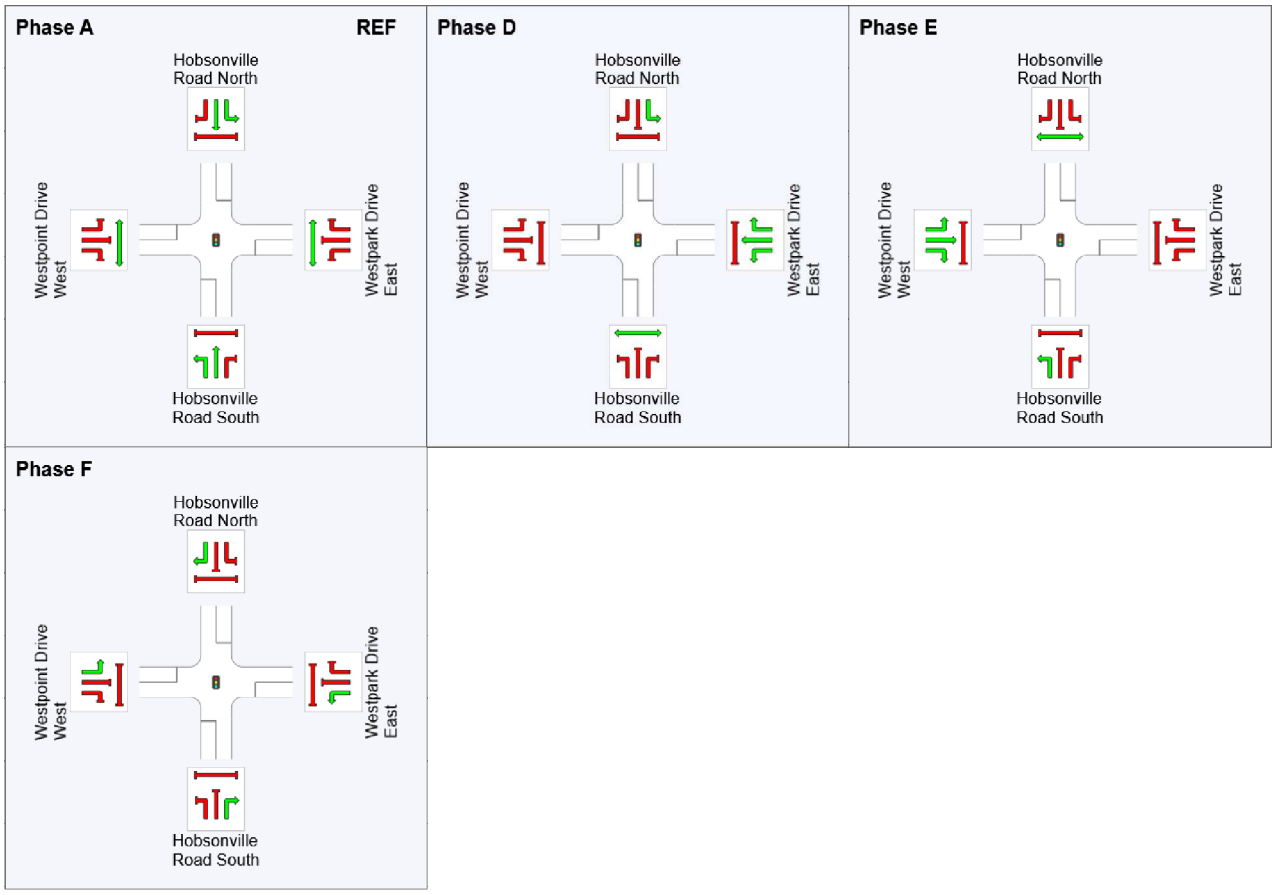
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, D, E, F, F1*, F2*
Output Phase Sequence: A, D, E, F
(* Variable Phase)

Phase Timing Summary

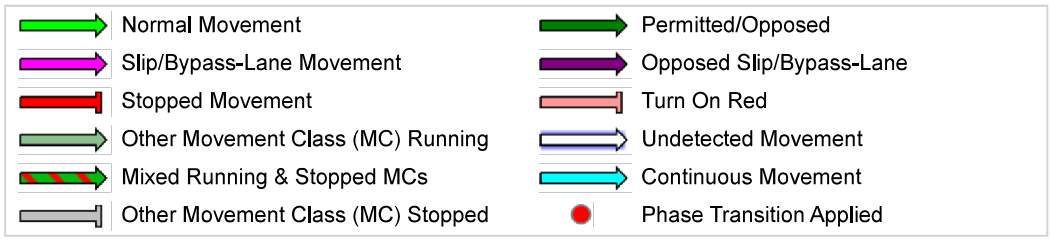
Phase	A	D	E	F
Phase Change Time (sec)	0	38	54	88
Green Time (sec)	32	10	28	6
Phase Time (sec)	38	16	34	12
Phase Split	38%	16%	34%	12%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 101 [Hobsonville/Westpark 2023 PM (With Development) (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

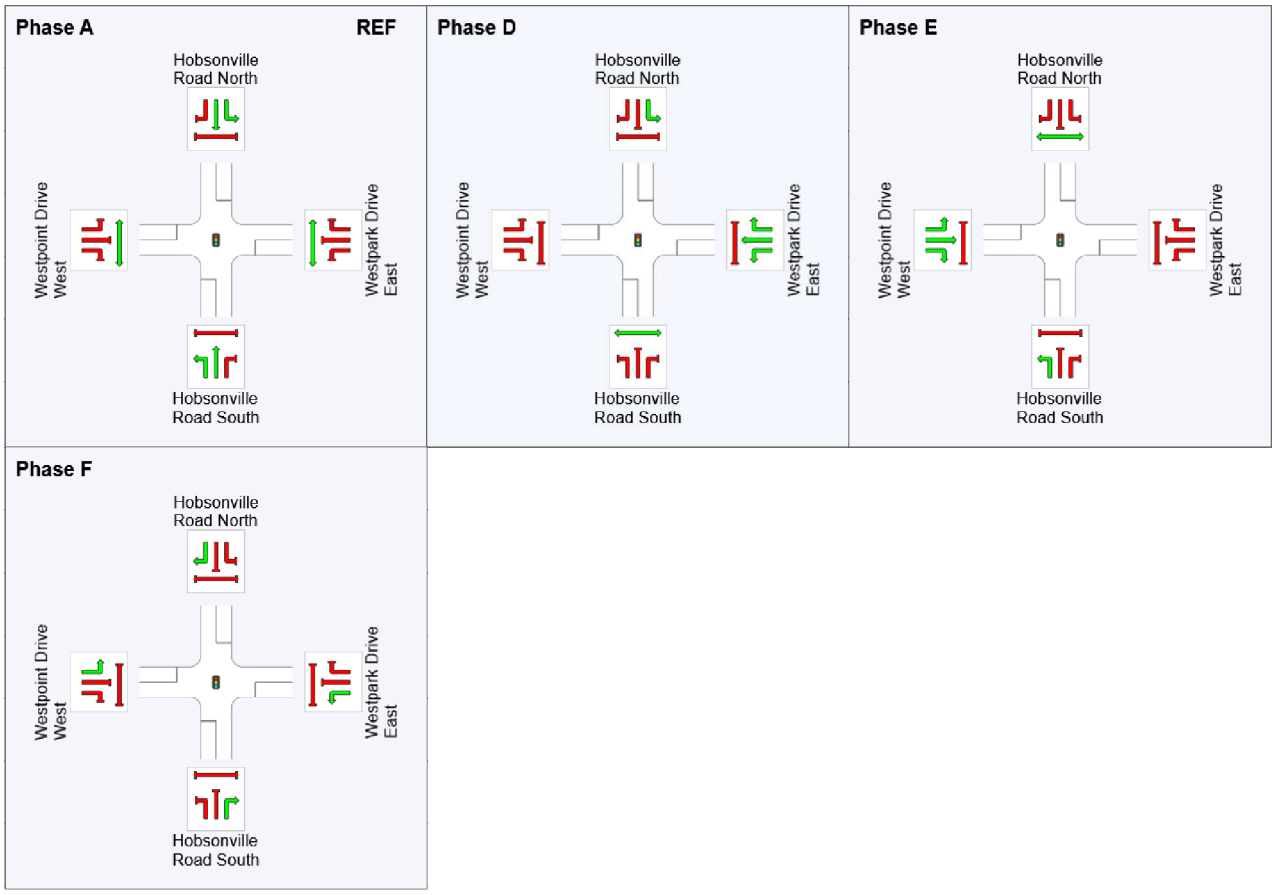
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, D, E, F, F1*, F2*
Output Phase Sequence: A, D, E, F
(* Variable Phase)

Phase Timing Summary

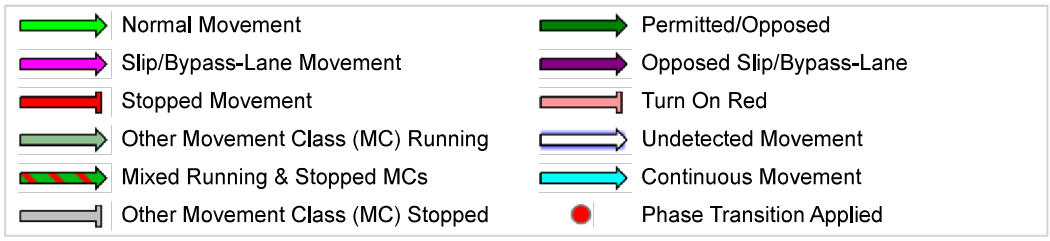
Phase	A	D	E	F
Phase Change Time (sec)	0	49	65	86
Green Time (sec)	43	10	15	8
Phase Time (sec)	49	16	21	14
Phase Split	49%	16%	21%	14%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 101 [Hobsonville/Westpark 2028 AM (No Development) (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

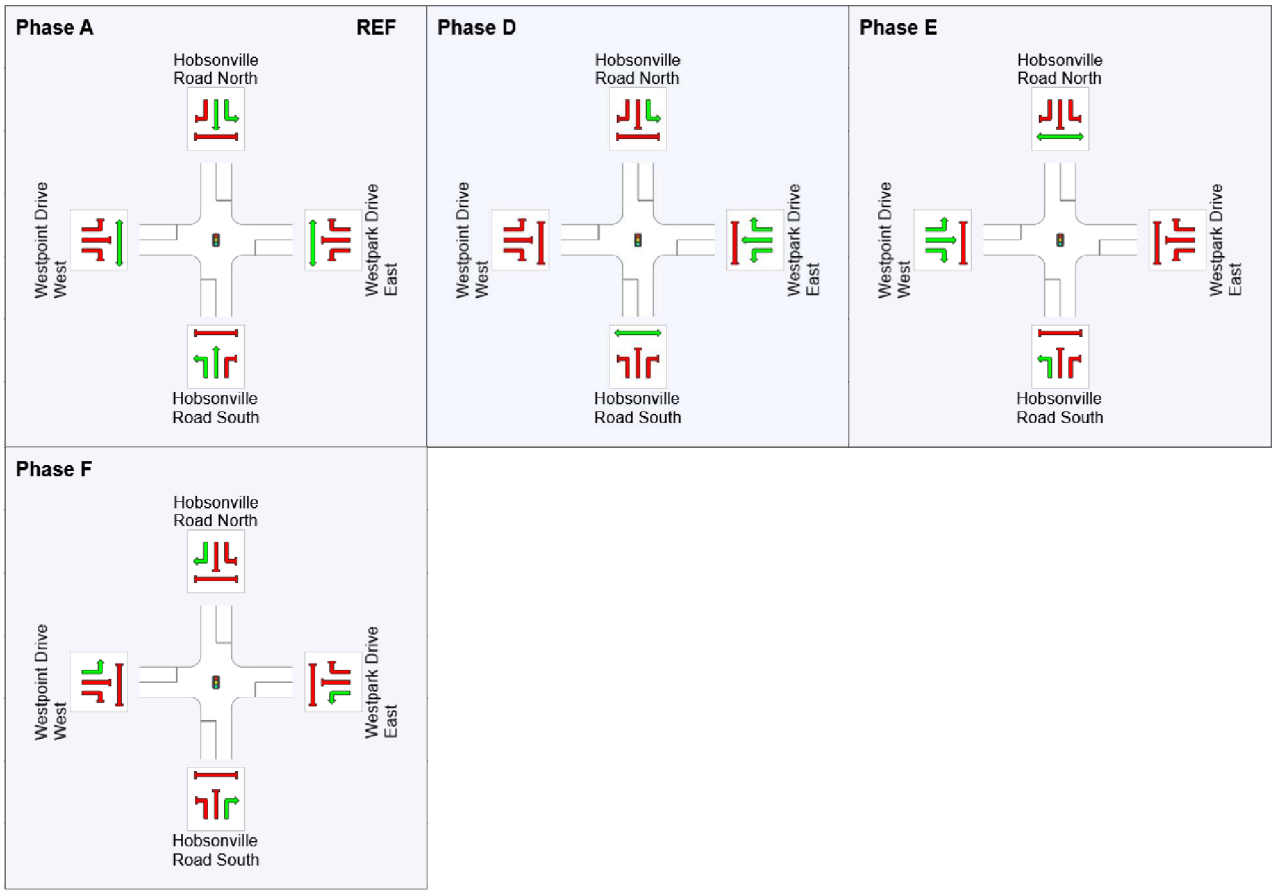
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, D, E, F, F1*, F2*
Output Phase Sequence: A, D, E, F
(* Variable Phase)

Phase Timing Summary

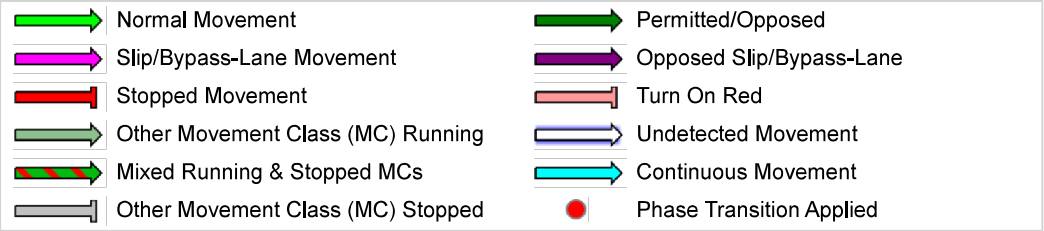
Phase	A	D	E	F
Phase Change Time (sec)	0	41	57	88
Green Time (sec)	35	10	25	6
Phase Time (sec)	41	16	31	12
Phase Split	41%	16%	31%	12%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 101 [Hobsonville/Westpark 2028 PM (No Development) (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

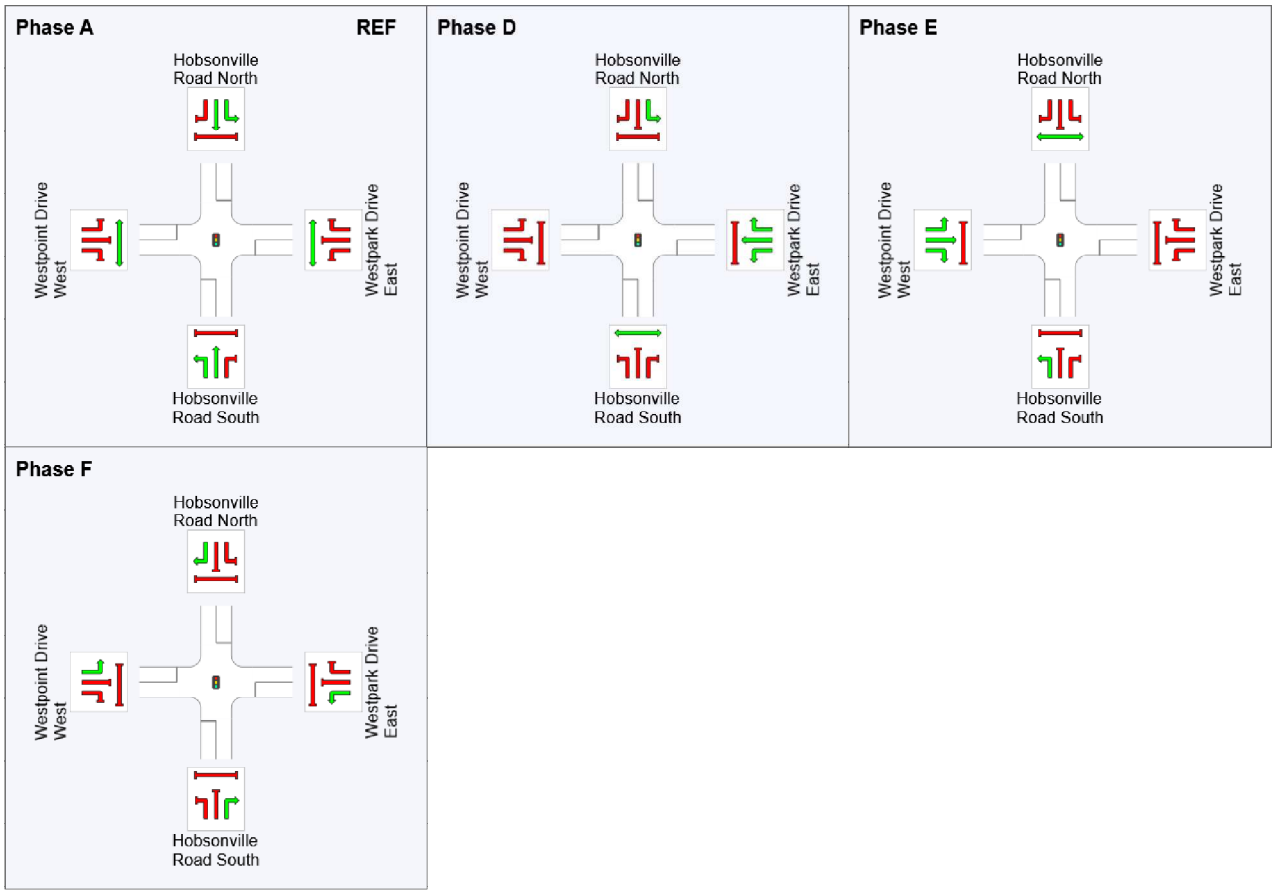
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, D, E, F, F1*, F2*
Output Phase Sequence: A, D, E, F
(* Variable Phase)

Phase Timing Summary

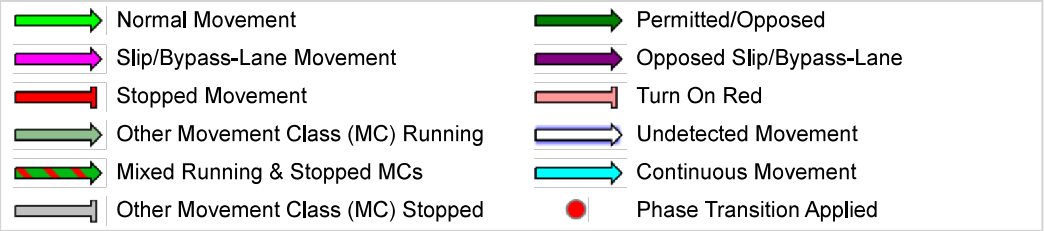
Phase	A	D	E	F
Phase Change Time (sec)	0	52	68	84
Green Time (sec)	46	10	10	10
Phase Time (sec)	52	16	16	16
Phase Split	52%	16%	16%	16%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 101 [Hobsonville/Westpark 2028 AM (With Development) (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

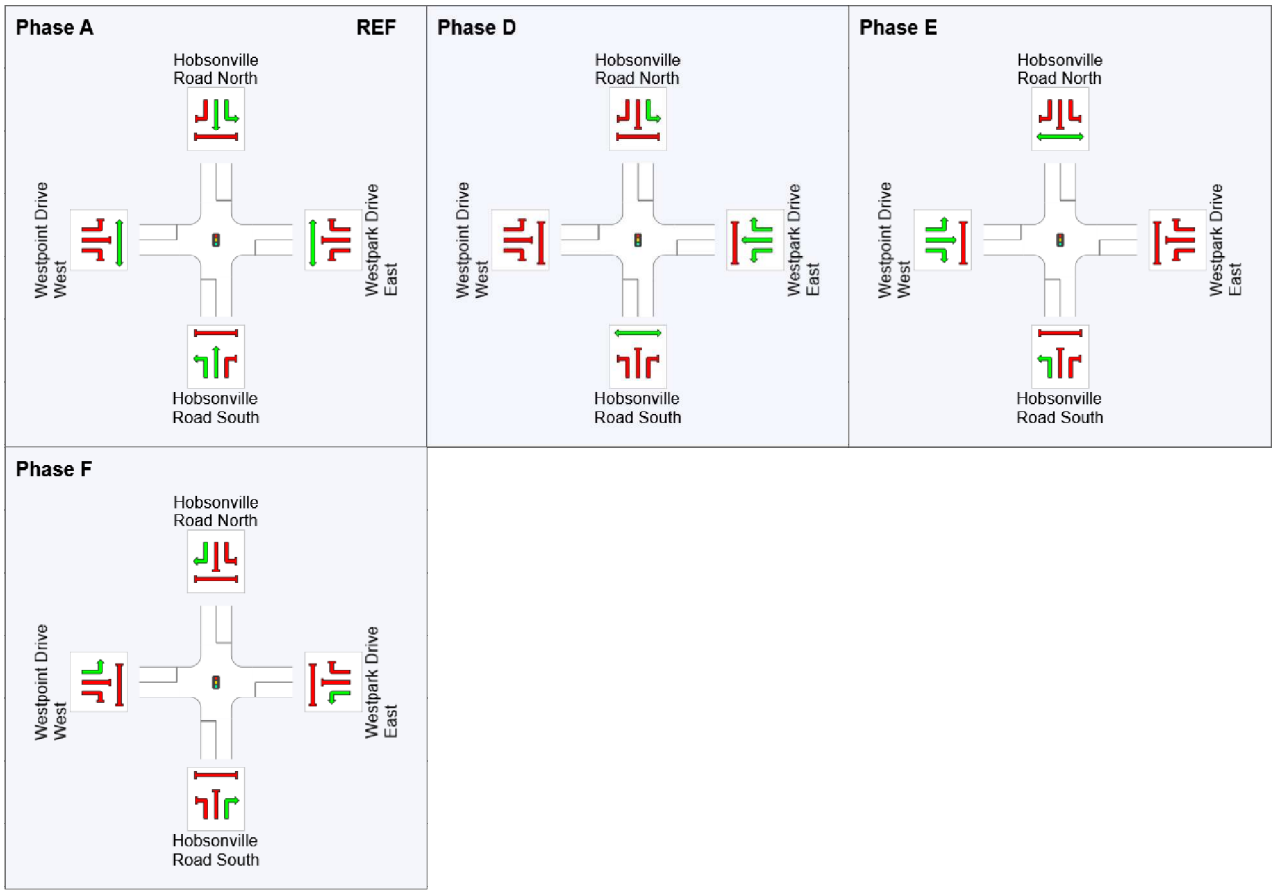
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, D, E, F, F1*, F2*
Output Phase Sequence: A, D, E, F
(* Variable Phase)

Phase Timing Summary

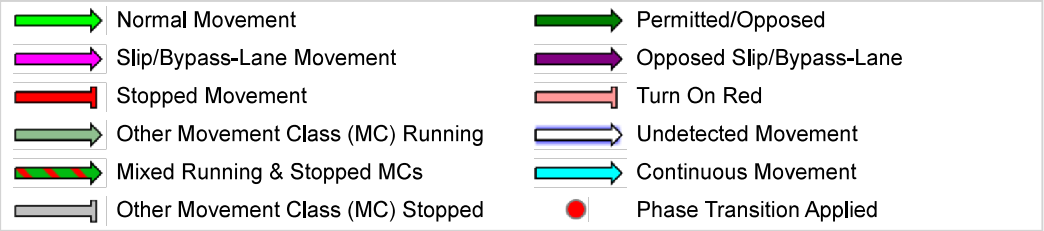
Phase	A	D	E	F
Phase Change Time (sec)	0	42	58	88
Green Time (sec)	36	10	24	6
Phase Time (sec)	42	16	30	12
Phase Split	42%	16%	30%	12%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 101 [Hobsonville/Westpark 2028 PM (With Development) (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, D, E, F, F1*, F2*
Output Phase Sequence: A, D, E, F, F2*
(* Variable Phase)

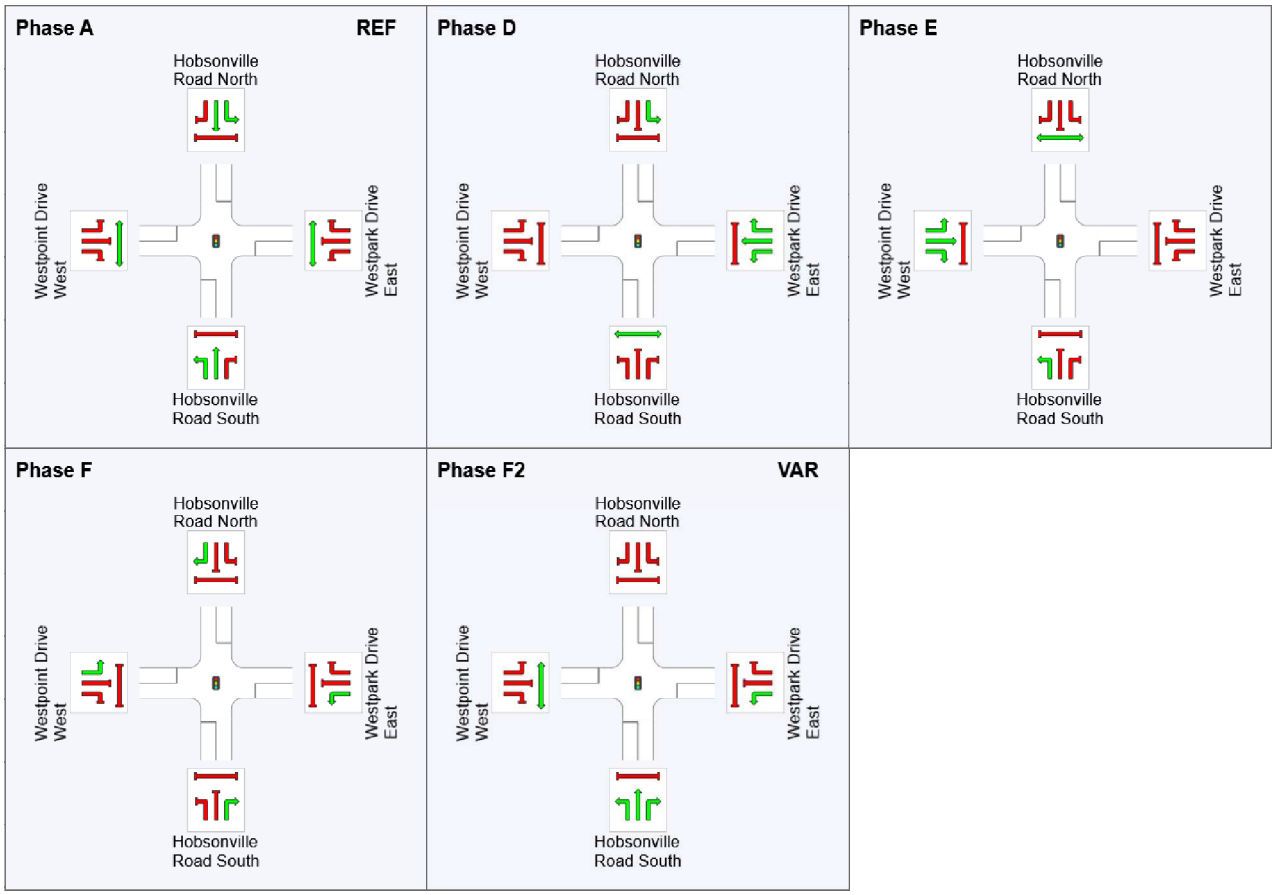
Phase Timing Summary

Phase	A	D	E	F	F2
Phase Change Time (sec)	0	51	67	85	97
Green Time (sec)	45	10	12	6	***
Phase Time (sec)	51	16	18	12	3
Phase Split	51%	16%	18%	12%	3%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

*** No green time has been calculated for this phase because the next phase starts during its intergreen time. This occurs with overlap phasing where there is no single movement connecting this phase to the next, or where the only such movement is a dummy movement with zero minimum green time specified. If a green time is required for this phase, specify a dummy movement with a non-zero minimum green time.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase