

Meadowvale

717 Appin Road, Gilead

Indicative Concept Master Plan – Planning Proposal
Supplementary Traffic Analysis

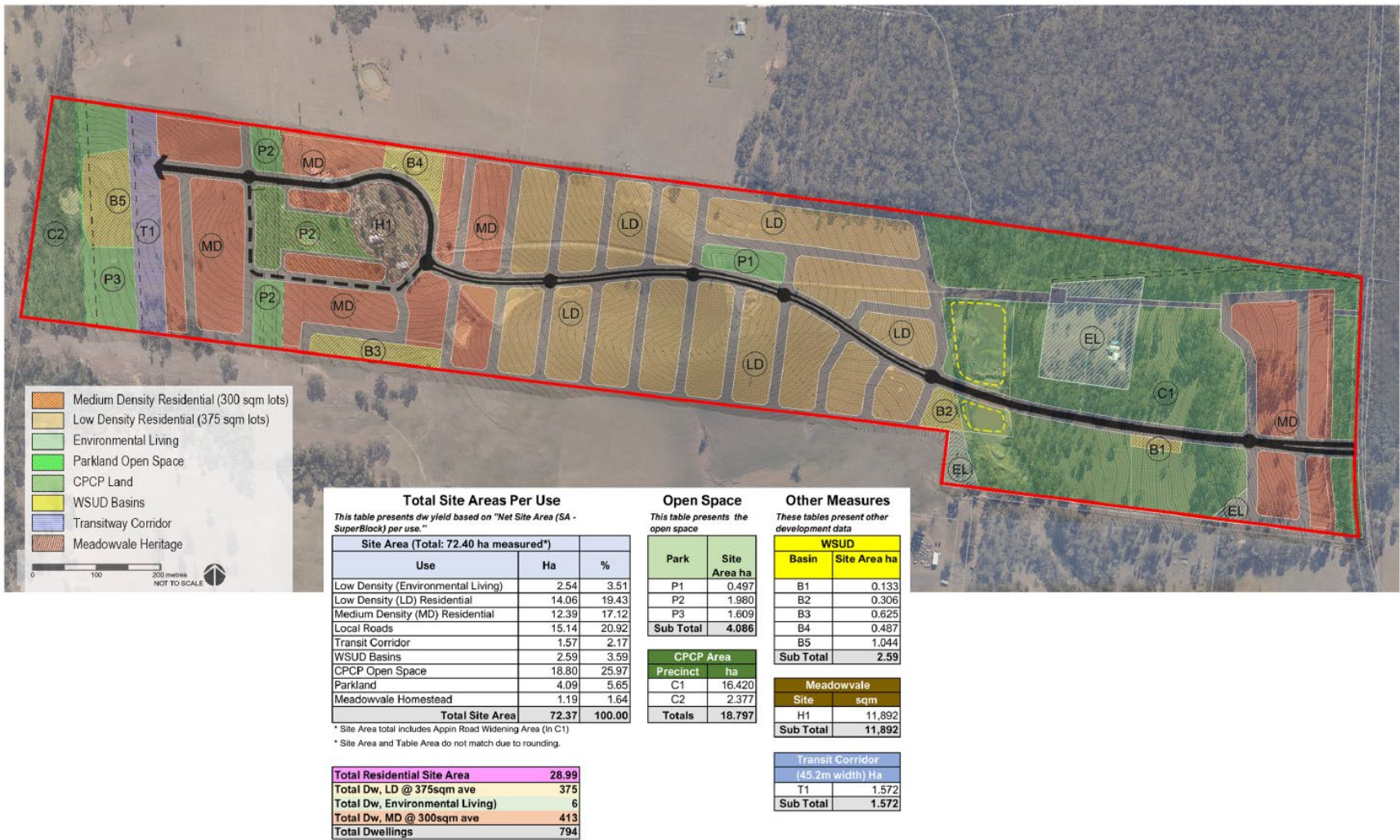
- In December 2023, Meadowvale Developments Pty Ltd submitted a Planning Proposal to Campbelltown City Council (Council) for the site at 717 Appin Road Gilead.
- The Meadowvale Planning Proposal seeks to rezone the site to enable urban development at the site.
- A Master Plan (December 2023) concept was submitted with the Planning Proposal which included a development yield of 1,000 residential dwellings with a mix a low and medium density housing.
- The Master Plan was supported by the *Planning Proposal – Strategic Transport Assessment* (prepared by TTPP, 12 Dec 2023).
- A key feature of the Master Plan is the provisions to accommodate the Greater Macarthur Transit Corridor. The provision for the Transit Corridor will enable the creation of a north - south transport spine running through and connecting the various precincts within the Greater Macarthur Growth Area.

Purpose of this Supplementary Traffic Analysis

- Pre-Gateway assessment of the Meadowvale Planning Proposal is underway by Council in consultation with Meadowvale various stakeholders and agencies, including Transport for NSW (TfNSW).
- In response to feedback provided by Council and the various agencies during the assessment process to date, the Master Plan concept has been refined with the number of proposed residential dwellings reduced to 794 dwellings.
- Consultation with TfNSW has identified the general provision required for a future Transitway Corridor through the Meadowvale site (ie. Alignment). However, the timing of the construction of the Transitway Corridor with connections to the Meadowvale site are unknown.
- Thus, it is envisaged that urban development of Meadowvale (the site) will occur prior to the construction of the Transitway Corridor.
- Council has requested that *supplementary traffic analysis* be undertaken to consider the level of urban development (ie. number of dwellings) that can be accommodated by the available site access opportunities prior to a connection to the Transitway.
- The assessment findings presented herein, provide the supplementary analysis requested by Council.

Meadowvale Indicative Concept Master Plan (September 2025)

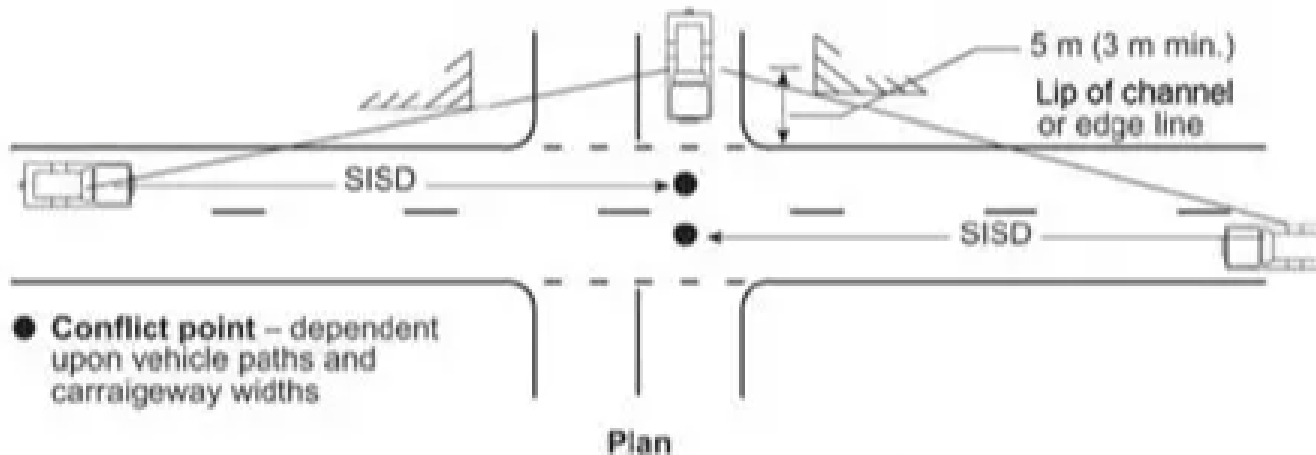
- The revised Meadowvale Concept Master Plan prepared by Inspire Planning is shown below.



- The revised (draft) Meadowvale Master Plan Concept includes the following key transport features:
 - 794 residential dwellings (375 low density + 413 medium density + 6 Environmental Living dwellings).
 - Primary vehicle access (intersection) at Appin Road
 - Emergency (bushfire) access at Appin Road
 - Retention of the existing access to the Meadowvale farmhouse (single dwelling access)
 - Provisions for future vehicle access to Transitway and adjoining potential urban development (north and south of site).

Site Access Location – Appin Road

- TTPP has undertaken an assessment of potential site access locations along the site's frontage to Appin Road.
- Prior to the future connection of the site to the Transitway Corridor, Appin Road will be the primary access for vehicles entering and exiting the site.
- The key determinate for site access at Appin Road regardless of which intersection arrangement is implemented will be 'safe sight distances'.
- As per Austroad guidelines, sight lines are calculated as per the extract below. For the current road speed of 80km/hr + 10km/hr, the sight distance (SISD) requirement will be 214 metres.



Site Access Location – Appin Road

Table 3.2: Safe intersection sight distance (SISD) and corresponding minimum crest vertical curve size for sealed roads ($S < L$)

Design speed (km/h)	Based on safe intersection sight distance for cars ⁽¹⁾ $h_1 = 1.1$; $h_2 = 1.25$, $d = 0.36$ ⁽²⁾ ; Observation time = 3 sec					
	$R_T = 1.5$ sec ⁽³⁾		$R_T = 2.0$ sec		$R_T = 2.5$ sec	
	SISD (m)	K	SISD (m)	K	SISD (m)	K
40	67	4.9	73	6	–	–
50	90	8.6	97	10	–	–
60	114	14	123	16	–	–
70	141	22	151	25	–	–
80	170	31	181	35	–	–
90	201	43	214	49	226	55
100	234	59	248	66	262	74
110	–	–	285	87	300	97
120	–	–	324	112	341	124
130	–	–	365	143	383	157

Design
Speed
+10km/h
on posted
speed limit

- 1 If the average grade over the braking length is not zero, calculate the safe intersection sight distance (SISD) values using the correction factors in Table 3.4 (or use Equation 2) by applying the average grade over the braking length.
- 2 A coefficient of deceleration of greater than 0.36 is not provided in this table. The provision of SISD requires more conservative values than for other sight distance models (e.g. the stopping sight distance model allows values up to 0.46 in constrained situations). This is because there is a much higher likelihood of colliding with hazards at intersections (that is, other vehicles). Comparatively, there is a relatively low risk of hitting a small object on the road (the stopping sight distance model).
- 3 A 1.5 sec reaction time is only to be used in constrained situations where drivers will be alert. Typical situations are given in Table 4.2 of AGRD Part 3 (Austroads 2016b). The general minimum reaction time is 2 sec.

Notes:

K is the length of vertical curve for a 1% change in grade.

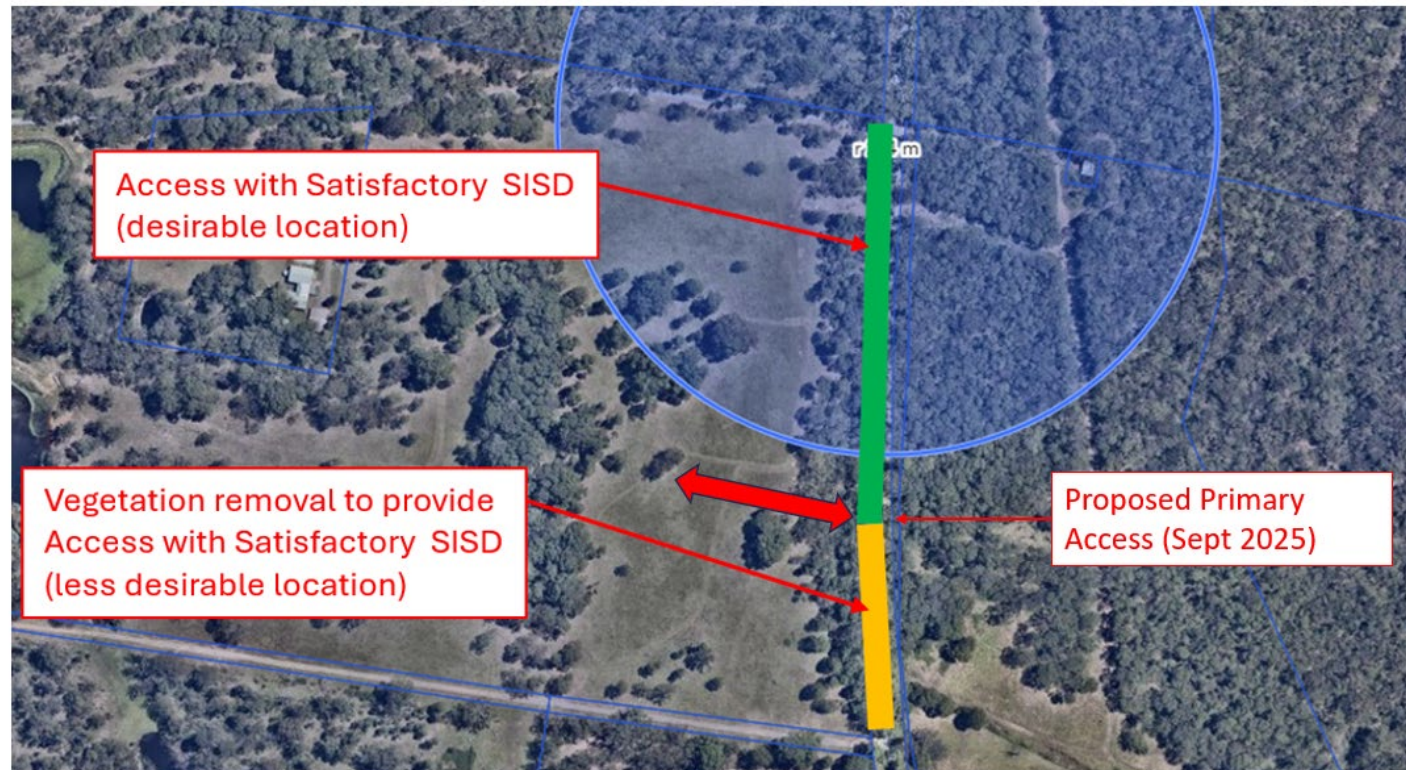
To determine SISD for trucks around horizontal curves, use Equation 2 with an observation time of 2.5 sec.

Main Roads Western Australia have adopted a desirable minimum reaction time of 2.5 sec and an absolute minimum reaction time of 2.0 sec. A reaction time of 1.5 sec is not to be used in Western Australia.

Combinations of design speed and reaction times not shown in this table are generally not used.

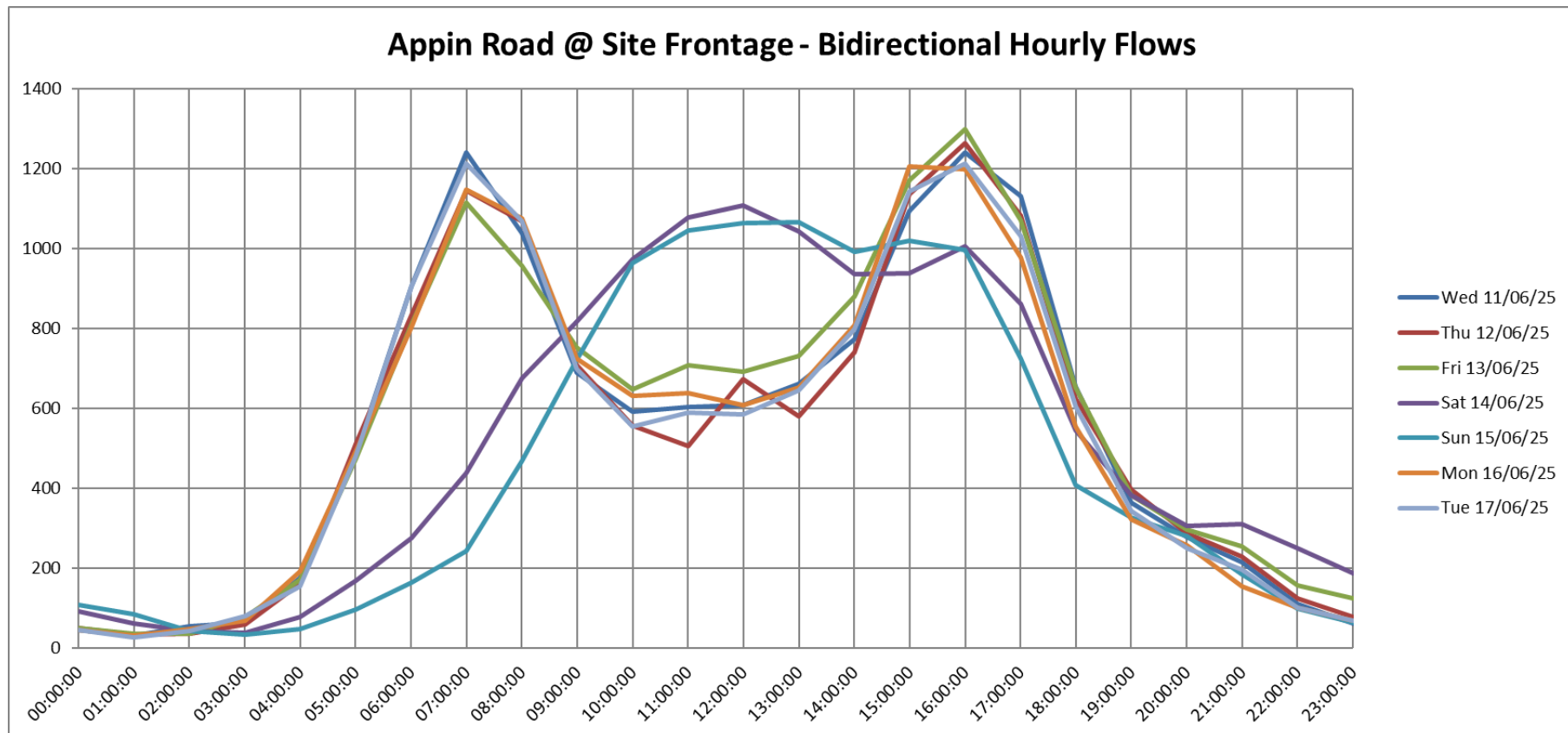
Site Access Location – Appin Road

- Based on the application of the 'sight distance' requirements' to the site's frontage conditions along Appin Road, the following opportunities for site access locations were identified.
- The proposed location of the 'primary access' would lie within the 'satisfactory' sight distance zone.



Updated Appin Road Traffic Counts

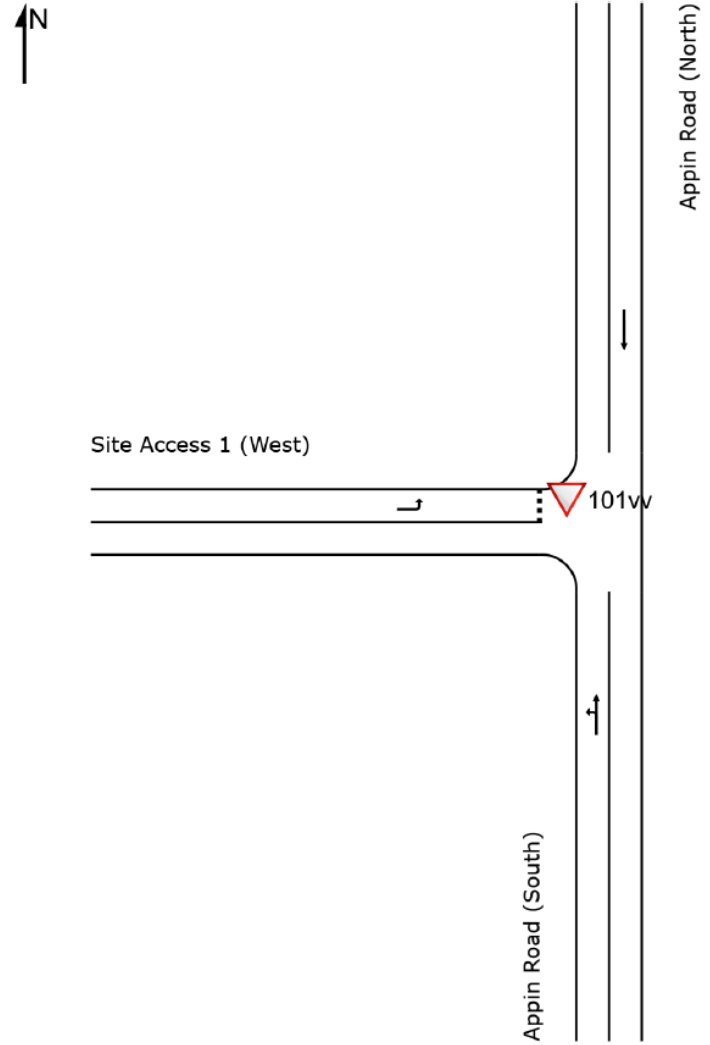
- As part of the supplementary traffic assessment, updated (June 2025) traffic flows surveys were undertaken on the Site's frontage to Appin Road and used in the supplementary traffic assessment. The surveyed flows are presented below.



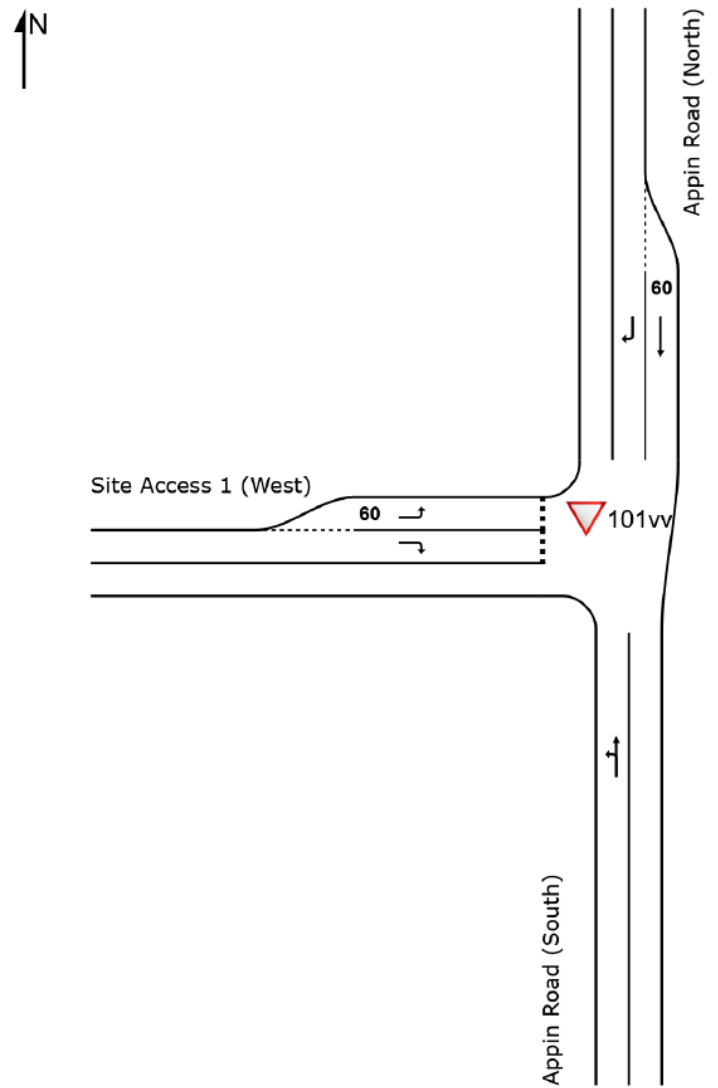
- The traffic assessment presented in the Meadowvale Planning Proposal – Strategic Transport Assessment (December 2023) has been updated and re-assessed for the revised (July 2025) Meadowvale Master Plan.
- The revised assessment has taken into consideration the following:
 - Reduction of yield to 886 dwellings
 - 2025 Appin Road traffic surveys to form new Base Case
- The revised assessment has considered the following development scenarios:
 - 2025 Base Case + Site development with primary access to Appin Road – No Transitway Connection
 - 2030 Base Case + background growth (5 years) + Site development with primary access to Appin Road – No Transitway Connection
 - 2035 Base Case + background growth (10 years) + Site development with primary access to Appin Road – No Transitway Connection

- The revised assessment has considered the following primary site access intersection configurations at Appin Road:
 - Left in / Left Out Only at site access road (priority controlled)
 - Basic Auxiliary Right Turn (priority controlled)
 - Channelised Right turn (priority controlled)
 - Seagull intersection
 - 2 lane roundabout
 - Traffic signals – 1 through lane on Appin Road approaches
 - Traffic signals – 2 through lanes on Appin Road approaches
- The layout for each primary site access intersection layout is presented in the following pages.
- Each intersection type and scenario was assessed using SIDRA modelling software to determine at what level of site generated traffic the intersection operation would reach capacity (ie. LoS D/E).

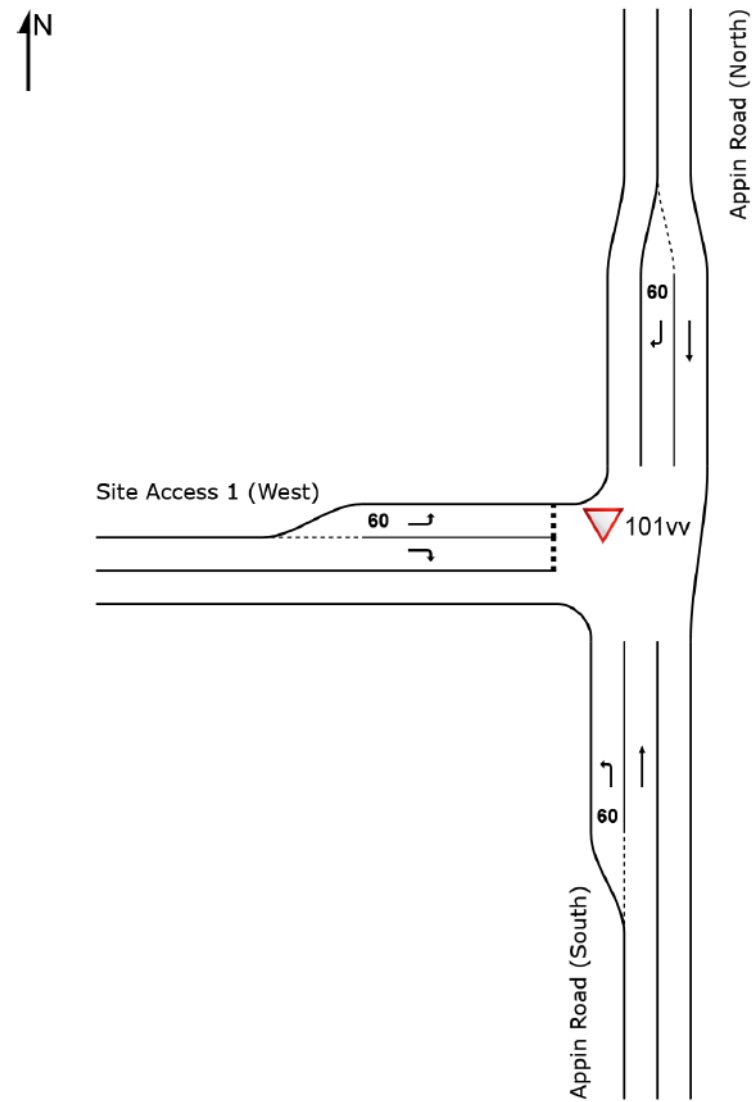
Site Access Intersection Type – Left In / Left Out Only



Site Access Intersection Type – Basic Auxiliary Right turn

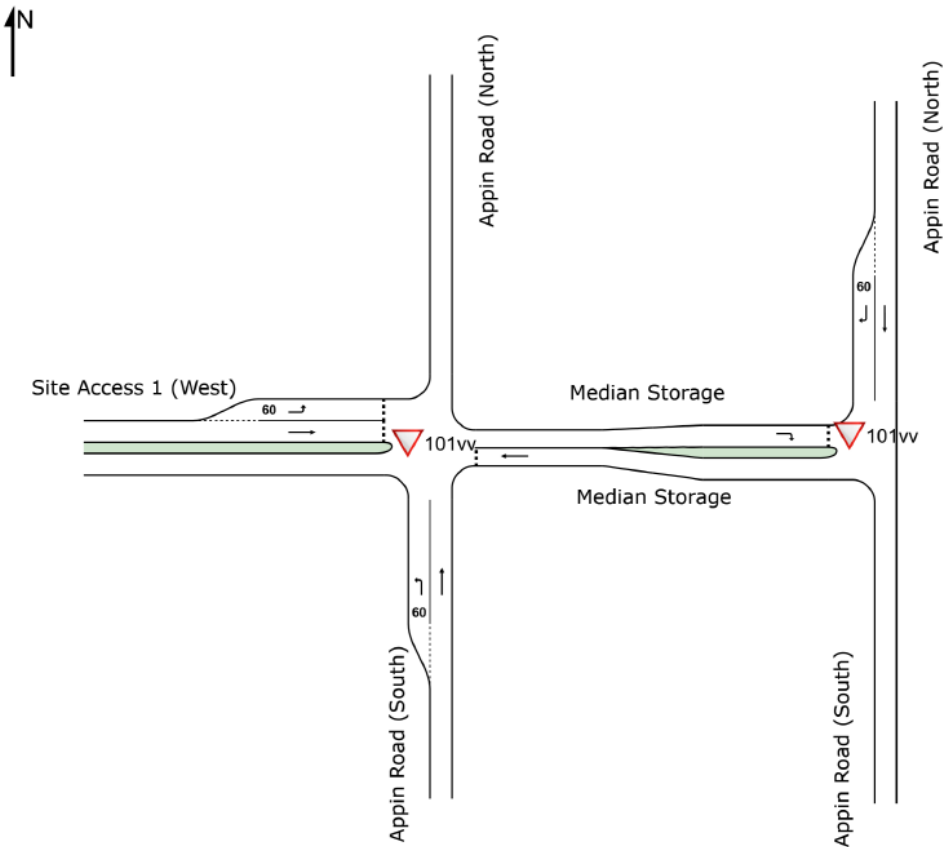


Site Access Intersection Type – Channelised Right turn

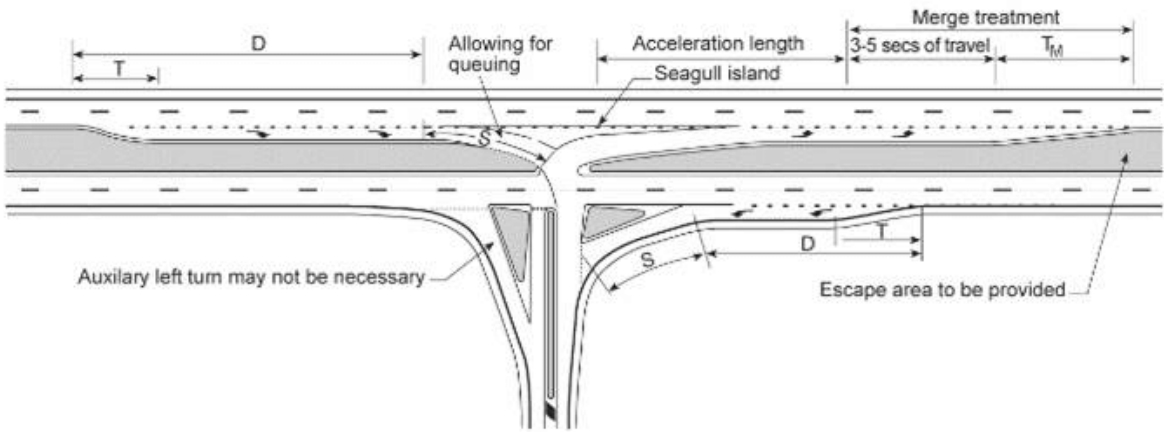


Site Access Intersection Type – Seagull

Modelled Layout

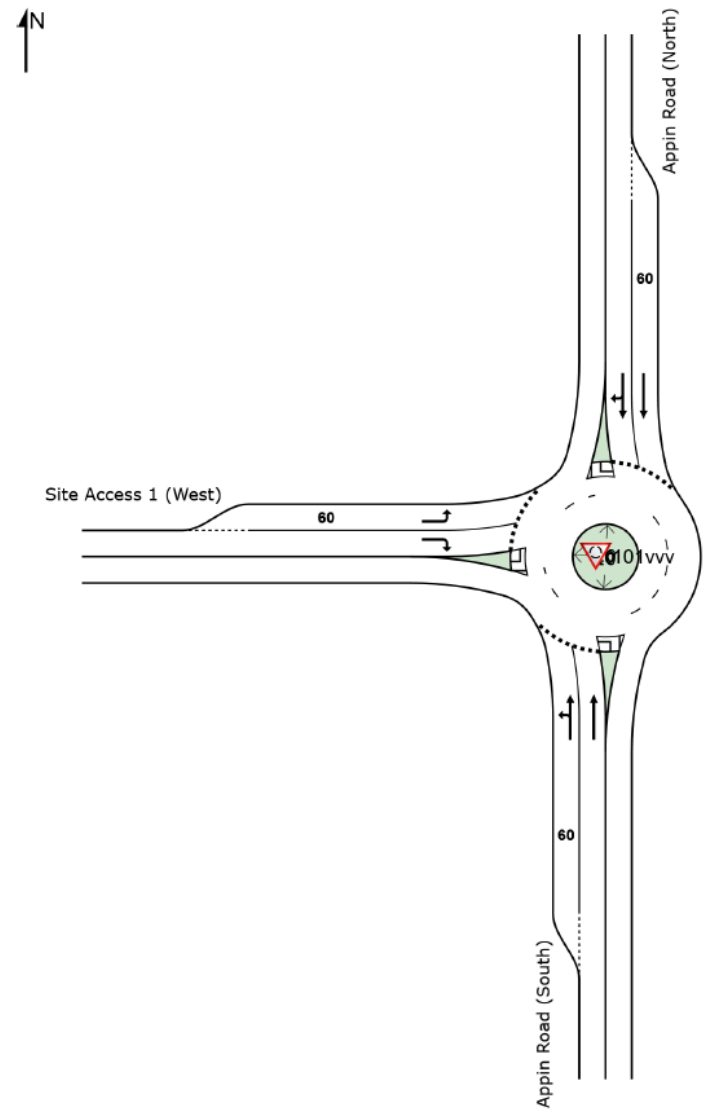


Example of Actual Layout

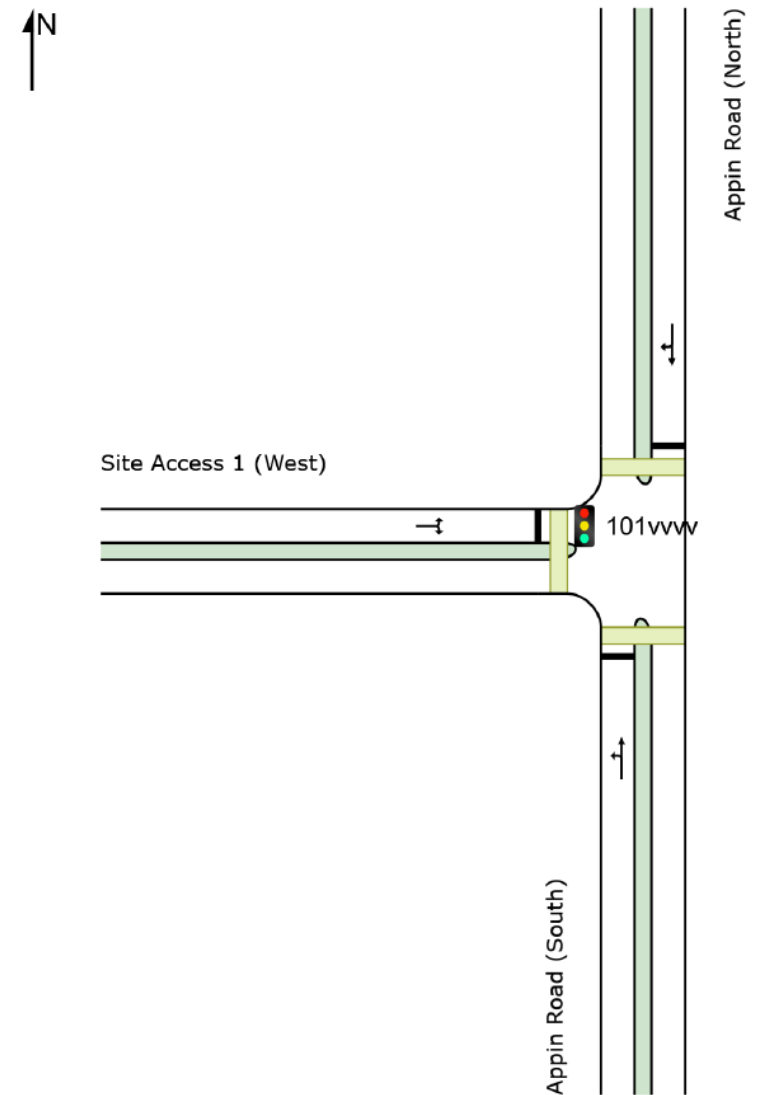


SITES IN NETWORK		
Site ID	CCG ID	Site Name
▽101vw	NA	AM Stage 1
▽101vw	NA	AM Stage 2

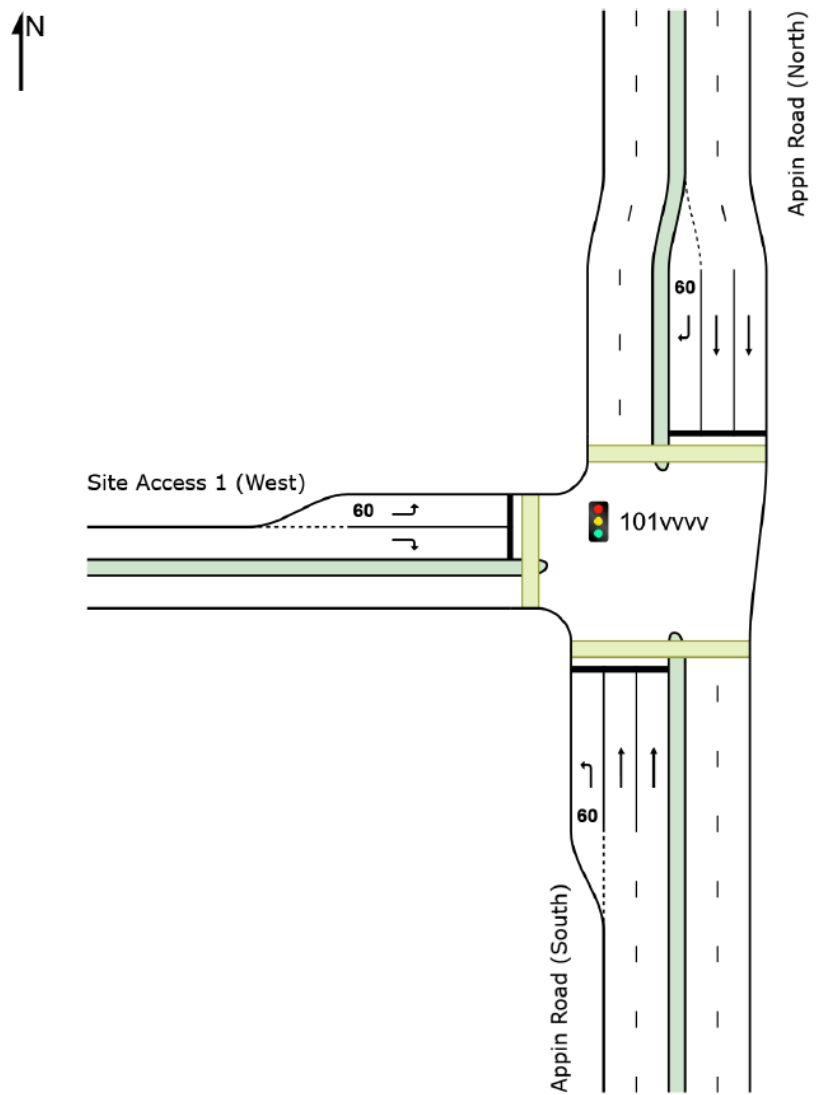
Site Access Intersection Type – 2 lane Roundabout



Site Access Intersection Type – Traffic Signals (1 lane Appin Road)



Site Access Intersection Type – Traffic Signals (2 lanes Appin Road)



Pre – Transitway Corridor Site Access Assessment – Traffic Flows

- The revised SIDRA analysis determined the following traffic volumes that could be generated by urban development of the Meadowvale site for each intersection type and for each future year scenario.

Largest traffic volume that can be accommodated by intersection (i.e., point just before LOS E to nearest 25 movements) based on existing flow proportions on Appin Road.			
Layout	2025	2030	2035
Left in / Left out	1250	1225	1150
Basic Auxiliary Right-turn	175	125	25
Channelised Right-turn	100	50	<25
Seagull	700	675	600
2-lane Roundabout	1175	1125	1000
1-lane Signals	400		
2-lane Signals		1525	1500

Pre – Transitway Corridor Site Access Assessment – Dwelling Yield

- The traffic generation rates for residential development utilised in the Planning Proposal – Strategic Transport Assessment (TTPP Dec 2023) were as follows:
 - Low Density dwellings = 0.95 / 0.99 trips per dwelling per peak hour (AM / PM)
 - Medium Density dwellings = 0.65 trips dwelling per peak hour
- For the purpose of assessing the intersection type capacity, an average trip rate per dwelling has been estimated using the proportion of low – medium density dwelling type proposed in the revised Master Plan (July 2025) and the higher PM Peak rate for the low density dwellings.
- The estimated average trip rate used is 0.78 vehicle trips per peak hour per dwelling.

Pre – Transitway Corridor Site Access Assessment – Dwelling Yield

- The application of the average trip rates to the determined capacity traffic levels for each site access intersection type is presented in the table below.

Intersection Type	No. Dwellings that can be Accommodated with Satisfactory Site Access Intersection Operation		
Year Scenario	2025	2030	2035
Left in / Left Out	1,544	1,513	1,419
Basic Auxiliary Right Turn	216	154	31
Channelised Right Turn	123	62	31
Seagull	864	833	7,41
2 lane Roundabout	1,450	1,389	1,235
1 Lane Signals	494	-	-
2 Lane Signals	-	1,883	1,852

- The assessment of the revised Master Plan and site access intersection options at Appin Road prior to the future connection of the site to the Transitway Corridor has indicated that:
 - Left in / left out intersection treatment would provide capacity for full development of the site (ie. 794 dwellings) but would not facilitate vehicle access into the site from the north. It is expected that the majority of demand for entry movements would be from the north.
 - The Basic Auxiliary, Channelised Right Turn and Seagull intersection types will provide capacity to accommodate a portion of the ultimate development yield of Meadowvale, but not all of it. The capacity will decrease over future years. These intersection types could be considered as short-term intersection treatments prior to full development of the site, connection to the Transitway and / or potential extension of duplication of Appin Road to the south.
 - Both a 2 lane roundabout and signalised 2 lane intersection would accommodate proposed site yields for existing and future (2035) years prior to the connection of the site to the transitway.



tpp

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