

Your ref: PG-STU-035 Our ref: SPN/2173 Enquiries: Gildenhuys, Johan (Johan.Gildenhuys@dplh.wa.gov.au)

City of Kalamunda P O Box 42 Kalamunda 6926 WA

Transmission via electronic mail to: enquiries@kalamunda.wa.gov.au; chris.lodge@kalamunda.wa.gov.au

Dear Sir/Madam

REQUEST TO MODIFY - FORRESTFIELD NORTH RESIDENTIAL PRECINCT STRUCTURE PLAN SPN/2173 LODGEMENT ID: 2018-213503

Pursuant to Schedule 2, Clause 22(1)(b) of the Planning and Development (Local Planning Schemes) Regulations 2015 (Regulations), the Western Australian Planning Commission (WAPC), requires the City of Kalamunda to modify and resubmit Forrestfield North Residential Precinct Structure Plan in accordance with the attached Schedule of Modifications

You are requested to undertake the required modification(s) to the Structure Plan and provide an updated copy of the Structure Plan to the WAPC. When submitting the modified document, please provide a final copy of the complete modified Structure Plan (including spatial data in the format and manner specified in the Structure Plan Framework) as well as a separate document containing the updated Volume 1 and 2, to the WAPC for endorsement and publication in accordance with Schedule 2, Clause 26 of the Regulations.

The final modified document can be lodged via the Department of Planning's online eLodgement portal by selecting the 'Modification' option and selecting the following lodgement ID: 2018-213503 from the drop down menu. The portal can be accessed at the Department's website, or at: https://elodgement.planning.wa.gov.au/.

Yours sincerely,

Ms Sam Fagan Secretary

Western Australian Planning Commission

13/12/2019

Attachment 11 - Schedule of Modifications

Schedule of Recommended Modifications Combined with City of Kalamunda

Draft Forrestfield North Residential Precinct Local Structure Plan

No.	Section/Clause/Page	Modification	Reason
Local	Government	•	-
1	Cover Page	Modify date	Administrative
2	Exec Summary, p. v	Dot point 8 – include reference to 'roads'.	Administrative
3	Exec Summary, p.vi	 Update structure plan key elements to reflect modified LSP and Development Plan. Remove reference to light industrial composite lots. Add 's' after 'development contribution' in para 4. 	Administrative
4	Exec Summary, p. vii	Update 'Table 1 – Structure Plan Summary' figures to reflect modified LSP.	Administrative
Part 1	- Implementation	ingares to remote meanined zer :	
5	4.1,p.3	Remove all references to light industrial use and 'Light Industry Use Area' provisions (a)-(c).	Response to submissions. Light industrial use not required.
6	4.2,p.4	Update development cell references (number of cells) to reflect modified LSP and Development Plan.	Administrative
7	4.3,p.8	Update 'Table 3 – Conditions of Subdivision and Development' by adding in additional Item 'Number 20 – Light Industrial Interface Management', and insert provisions to ensure future subdivisions address the interface to light industrial uses on the western side of Sultana Road West.	To ensure interface considerations when development proceeds.
8	6.2,p.9	Update 'Table 4 – Local Structure Plan Normalisation into Local Planning Scheme No. 3' be removing 'Light industry' row from table.	Administrative
9	Plan 1 – Local Structure Plan Map,p.11	Replace Plan 1 with modified LSP.	Administrative
10	Plan 2 – Development Plan, p.13	Replace Plan 2 with modified Development Plan.	Administrative
Local	Structure Plan Map mod	ifications	•
11	indicative local street co along the approximate a local street then follows to Milner Road, along p	eld Road extension removed and replaced with an onnecting existing Littlefield Road to Stewart Road alignment of pre-existing bridle trail. An indicative a "U" shape connecting south from Stewart Road re-existing lot boundary at northern end and then purpose site and local open space area.	Response to submissions. Utilising the existing road and bridle trail network where possible reduces infrastructure costs and provides landowners with greater design flexibility at future planning stages. Neighbourhood Connector road type

		not required to service this northern portion of the precinct.
12	Road Network - Indicative local street forming extension of Raven Street south east from Milner Road to ecological corridor to be removed.	Road network is being modified to utilise existing road connections. This indicative local street is no longer required based on the reconfigured road network.
13	Road Network - Roundabout at the intersection of indicative local street in the vicinity of the intersection of Milner Road and Raven Street to be removed.	Intersection no longer proposed, therefore roundabout is redundant.
14	Road Network -Indicative local street extending from Stewart Road south west to the Community Purpose site / Local Open Space area to be removed.	Road network is being modified to utilise existing road connections. This indicative local street is no longer required based on the reconfigured road network.
15	Road Network - Brae Road Neighbourhood Connector extension to be removed and then modified to reflect existing road alignment to transition into the TOD Connector District Integrator A road.	Response to submission. Road network is being modified to utilise existing road connections. This modified road link is no longer required based on the reconfigured road network.
16	Road Network - TOD Connector District Integrator A road reconfigured to run adjacent to property boundary on southern edge and to then reflect existing alignment of Brae Road before transitioning into new road connection through to Milner Road south of the Community Purpose site and Local Open Space area. Dog leg near Local Open Space area to be removed and replaced with T-intersection into Brae Road.	Road network is being modified to utilise existing road connections. Dog leg no longer required based on modified road alignment.
17	Residential Medium/High Density - Band of Residential High Density surrounding Community Purpose site and Local Open Space to be reconfigured to respond to modifications made to TOD Connector configuration and removal of dog leg.	Reconfigured 'Residential High Density' area to respond to modified alignment of TOD Connector.
18	Road Network - Road category for the proposed TOD Connector east of Brand Road through to Roe Highway and proposed fly-over at Roe Highway to be modified to District Integrator A (Potential Future).	Road category to be modified to reflect likely longer-term connectivity option across Roe Highway.

19	Residential Medium Density, Environmental Conservation, Local Open Space - Underlying land use description of the proposed TOD Connector east of Brand Road through to Roe Highway and proposed fly-over at Roe Highway to be modified to Residential Medium Density and Local Open Space where it bisects Environmental Conservation and Local Open Space areas.	Underlying land use descriptions to be modified to protect and retain long term road alignment option for Roe Highway flyover.
20	Local Open Space, Environmental Conservation - Local Open Space strip to western side of Environmental Conservation Area providing southern link between primary school site and future TOD Connector alignment to be converted to Environmental Conservation.	Provision of a pedestrian and cycle link to the primary school within Local Open Space area not required due to indicative local street link in this location abutting environmental Conservation area that can serve this function.
21	Residential Medium / High Density, Local Open Space - Residential Medium/High Density areas north and south of TOD Connector west of Brand Road to be modified to encroach east into Local Open Space forming part of ecological corridor by approximately 50m up to environmental Conservation areas and maintaining a minimum width of 50m in the ecological corridor.	Conflicts with the agreed environmental outcome and advice provided by the environmental agencies and is not supported.
22	Road Network - Indicative local street alignments to be modified to reflect changes to Residential Medium/High Density areas north and south of TOD Connector west of Brand Road where modified to encroach east into Local Open Space forming part of ecological corridor. Northern link of indicative local street to connect south to connect with TOD Connector. Southern link of indicative local street to extend south to connect with Sultana Road West. See comments under modification 11 for further information.	Road network to be modified to respond to adjustments made to land use arrangements.
23	Environmental Conservation, Local Open Space - Existing bridle trail to the east of Brae Road forming an effective extension of Stewart Road to the east of Brae Road to be modified from Environmental Conservation to Local Open Space where it abuts an Environmental Conservation area to the north east.	Inclusion of the bridle trail as Local Open Space rather than Environmental Conservation allows greater opportunities for potential use as part of the pedestrian and cycle movement network in the locality.
24	Environmental Conservation, Local Open Space - Centrally located Environmental Conservation area surrounded by Local Open Space north of the TOD Connector between Brand Road and Brae Road to be reconfigured to reflect the modified TOD Connector Alignment. Local Open Space surrounding the Environmental Conservation area is to be removed.	Changes required due to modified TOD Connector alignment. Local Open Space is not required to provide a buffer to the Environmental Conservation

		area where a local
		street is provided as the interface as
		proposed.
		See modification 243.
		This email was
		received during
		mediation.
25	Road Network -Indicative local street configuration surrounding	Modified indicative
	Environmental Conservation area to the north of the TOD Connector	local street network
	between Brand Road and Brae Road to be reconfigured to reflect modified	required to reflect
	Environmental Conservation area.	changes to
		Environmental
		Conservation area.
26	Road Network - The indicative local street network in the Residential	By extending the
	Medium Density cell in the north - east section of the project area north of	indicative local street
	Brae Road and adjacent to Roe Highway is to be extended all the way	network potential
	round the residential block to join back to Brae Road.	access into the
		development cell is
		enhanced and the
		opportunity for a more
		appropriate interface
		to Roe Highway
		maintained.
27	Residential Medium Density, Road Network, Local Open Space -	Response to
	Residential Medium Density cell located west of the Brand Road and Brae	submissions.
	Road intersection is to be extended to encompass the Local Open Space	Extent of Residential
	strip to the south west and a further portion of Local Open Space adjacent	Medium Density area
	to the Parks and Recreation Reserve (Bush Forever area) located on Brae	to be extended to
	Road. The indicative local street network is to be modified accordingly	allow for greater
	around the perimeter of the cell.	development options for landowners,
		-
		including the retention of an existing house
		and improvements.
		Conservation areas
		are not impacted
		upon.
28	Remove light industry and community purpose sites and update relevant	Response to
	sections in Part 1 and 2.	submissions.
		Light industry area
	Light Industry and Residential Medium / High Density - Light Industry area	with residential use
	to the north of Sultana Road West to be removed and replaced with	component not
	'Residential Medium / High Density'.	considered to be the
		most appropriate
	Community purpose site/Residential Medium / High density housing. –	interface to residential
	remove community purpose site and replace by Residential High Density.	areas. Sultana Road
	Reconfigure public open space if required for drainage.	West is considered to
		be the most
	Also, remove all reference to Community Hub site in Part 2 under	appropriate
	paragraphs 2.7.2 & 2.7.2.1 & 2.7.12 & 2.7.9.5 and in other parts of the	boundary between the
	draft LSP where the community purpose site/hub is mentioned (including	land uses of light
	community hub preliminary concepts plan at Appendix 2).	industrial and
		residential.

		Community purpose site - Submission from landowner at 69 Milner Road upheld. Support the removal of community purpose site and relocation at the TOD precinct close to Forrestfield station as activity generator.
29	Road Network - Existing southern retained component of Brae Road immediately north of Sultana Road West to be retained and extended north through to TOD Connector with indicative local street alignment to deviate west at northern end to provide appropriate intersection geometry with TOD Connector.	Enhanced accessed proposed between Sultana Road West and TOD Connector, including potential short to medium term access solution in the absence of the TOD Connector linking to Milner Road within this timeframe.
30	Residential High Density - Residential High Density area south of TOD Connector to be modified and confined to the area west of the Brae Road indicative local street connection.	Reconfigured 'Residential High Density' area to respond to modified alignment of TOD Connector and Brae Road indicative local street link.
31	Road Network-The indicative local street network in the Residential Medium Density cell in the south east section of the project area east of Brand Road, south of the future TOD Connector alignment and adjacent to Roe Highway is to be extended all the way round the residential block to join back to Sultana Road West.	By extending the indicative local street network potential access into the development cell is enhanced and the opportunity for a more appropriate interface to Roe Highway maintained.
32	Road Network - Indicative local street forming effective extension of Stewart Road east of Brae Road to be removed.	Removal of undesirable four-way intersection between Brae Road and Stewart Road with sufficient indicative local street access into cell maintained east of Brae Road.
33	Road network - Indicative local street to be provided on northern side of primary school site adjacent to Local Open Space.	Response to submission. Provide clarification of required extent of road frontage to

			primary school site.
34	modified from Neig	ae Road east of Brand Road intersection to be hourhood Connector to indicative local street.	Modification to reflect more appropriate and accurate road category for this section of Brae Road.
	Two-Explanatory Rep		1
35	1.3.3.7,p.35	Modify paragraph 2 to reflect removal of light industry area from LSP and insert commentary on provisions being inserted in LSP to ensure future subdivisions address the interface to light industrial uses on the western side of Sultana Road West.	To ensure interface considerations at development stage. Buffering not required.
36	1.3.3.11,p.37	Remove clause relating to DC 4.1 and renumber remaining clauses accordingly.	Administrative
37	2.1.9.3,p.57	Update 'Figure 18 – Retention of Environmental Values' to reflect modified Development Plan	Administrative
38	2.1.9.3,p.58	Updated 'Predicted environment outcome' figures listed in dot points to reflect modified LSP.	Administrative
39	2.3,p.62	Update 'Groundwater and Surface Water' section in accordance with modified LWMS.	Administrative
40	2.5.1.3,p.69	Update 'Post Development Vegetation Classification' in accordance with modified BMP (if necessary).	Administrative
41	2.5.1.3,p.70	Update 'Figure 22 – Post-development Vegetation Class and Effective Slope' to reflect modified Development Plan.	Administrative
42	2.5.1.4,p.73	Update 'Figure 23 – Post-development Bushfire Hazard Levels' to reflect modified Development Plan.	Administrative
43	2.7.1.1,p75	Modify dot point 7 to reflect removal of light industry area from the LSP and insert commentary on provisions being inserted in LSP to ensure future subdivisions address the interface to light industrial uses on the western side of Sultana Road West.	Administrative
44	2.7.1.2,p. 76	Update 'Table 7 – Population Projections (Forrestfield North Project Area)' to reflect modified LSP. See comments below.	Administrative
45	2.7.1.3,p. 76	Update 'Table 8 – Projected Development Yields' to reflect modified LSP and Development Plan.	Administrative
46	2.7.2,p. 77	Update structure plan key elements to reflect modified LSP and Development Plan, including removal of references to additional structuring roads and light industrial composite lots.	Administrative
47	2.7.2,p. 78	Update 'Figure 24 – Indicative Built Form Plan' to reflect modified LSP and Development Plan.	Administrative
48	2.7.3,p. 80	Confirm that 30ha of open space is still proposed within project area and modify reference if necessary.	Administrative. Update as a result of LWMS
49	2.7.3,p. 81	Update 'Table 9 – Public Open Space Schedule' to reflect modified LSP and Development	Administrative

		Plan.	
50	2.7.4,p. 81	Update development cell references (number of cells) to reflect modified LSP and Development Plan.	Administrative
51	2.7.4.1,p. 82	Modify paragraph 6 reference from 'MIRF' to 'MRIF'.	Administrative
52	2.7.6,p. 84	Dot point 2 - confirm that 30ha of open space is still proposed within project area and modify reference if necessary.	Administrative. Update as a result of LWMS
53	2.7.7,p. 86	Update total precinct traffic generation figures in final paragraph if necessary. See comments below.	Administrative
53	2.7.7.1,p. 87	Modify dot point 2 referring to Brae Road to 'Realignment of part of Brae Road west of the TOD Connector intersection'.	As a result of a submission received to keep road reserves as far as possible.
54	2.7.7.2,p. 88	Update 'Figure 25 – Road Types Within Development' to reflect modified LSP and Development Plan.	Administrative
55	2.7.7.2,p. 89	Update 'Figure 26 – Daily Traffic – Internal Network – 2031' to reflect modified LSP and Development Plan.	Administrative
56	2.7.7.2,p. 92	Remove 'Figure 33 – Road Cross Section – Littlefield Boulevard' and renumber remaining figures and associated figure references accordingly through remainder of document.	This modification is a result of the removal of 'Littlefield Boulevard' structuring road and more emphasis on the efficient use of existing road reserves.
57	2.7.7.4,p. 94	Update 'Figure 36 – Intersection Control' to reflect modified LSP and Development Plan.	Administrative
58	2.7.7.4,p. 95	Update 'Figure 37 – Proposed Pedestrian and Cyclist Paths' to reflect modified LSP and Development Plan.	Administrative
59	2.7.7.6,p. 97	Update 'Figure 38 – Public Transport Plan' to reflect modified LSP and Development Plan.	Administrative
60	2.7.8.3,p. 100	Update 'Surface Water Management Strategy' section in accordance with modified LWMS, including references to catchment area details.	As a result of DWER submission
61	2.7.9.2,p. 111	Update 'Figure 39 – Aircraft Affected Areas' to reflect modified LSP and Development Plan.	Administrative
62	2.7.9.5,p. 112	Modify dot point 2 to reflect removal of light industry area from LSP and refer to area on opposite side of Sultana Road West.	Administrative
63	2.7.9.4,p. 113	Update 'Figure 40 – Road Traffic Affected Areas' to reflect modified LSP and Development Plan.	Administrative
64	2.7.10.4,p. 116	Paragraph 1 – remove references to 'Industrial Composite land-uses'.	Administrative
65	2.7.11,p. 118	Update development cell references (number of cells) to reflect modified LSP and Development Plan.	Administrative

		- Domeyo references to flight industrial	
		Remove references to 'light industrial'	
		development' and adjust staging commentary	
		accordingly.	
66	2.7.12.3,p. 119	Confirm number of lots required for acquisition under DCP and modify commentary accordingly.	Administrative
67	2.7.11,p. 120	Update 'Figure 41 – Indicative Staging' to reflect modified LSP and Development Plan.	Administrative
68	Appendix, p. 3 125	Insert updated 'Landscaping Concept Plan' to	Administrative
		reflect modified LSP and Development Plan.	
69	Appendix, p. 4 127	Insert updated 'Stormwater Plan' to reflect modified LSP and Development Plan.	Administrative
		ces (April 2018), Appendix A - Environmental Assess	sment and Management
Strate	egy (EAMS) - Strategen E	Environmental (April 2018)	
70	Cover page	Modify date.	Administrative
80	Second cover page	Modify date.	Administrative
81	Table of contents and beyond	Add report version.	Administrative
82	1.1,p. 1	Update footer to reflect updated version.	Administrative
83	1.1.2,p. 2	Take out reference to 'small composite business operator lots' in list of LSP elements.	Administrative
84	1.2,p. 6	Update 'Figure 2: Forrestfield North Local Structure Plan' to reflect updated LSP.	Administrative
85	3.4.3,p. 48	Update 'Table 16: Proposed Environmental	Depends on WAPC
	J. 1.6, p. 10	Conservation Reserves (EC) for retention and	decision if this is
		conservation of key environmental matters within	required.
		the Residential Precinct' to reflect updated EC	. oqu ou.
		areas to be retained reflected in the updated LSP.	
86	3.4.3,p. 48	Update 'Table 17: Occurrence of key	Administrative
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	environmental matters within the POS areas' to	
		reflect updated POS areas to be retained	
		reflected in the updated LSP.	
87	3.4.5,p. 50	Update EC calculations to reflect reconfigured	Administrative
	J. 110, p. 00	retention areas.	
88	3.4.6,p. 51	Update 'Figure 13: Retention of Environmental	Administrative
		Values' to reflect correct underlying land use	
1/01::-	ao 2 Tachnical Annardi	colours and EC/ POS areas.	Dian (DMD) Ctratage
		ces (April 2018), Appendix B - Bushfire Management	rian (Divir) - Strategen
	onmental (April 2018)	Chango data	Administrativo
89 90	Cover Page	Change date.	Administrative
	Second Cover page	Change date.	Administrative
91	Document Control	Change relevant dates and add report version.	Administrative
92	Contents page and beyond	Change footer date.	Administrative
93	1,p. 2	Update 'Figure 1: Draft LSP', to reflect latest version.	Administrative
94	1,p. 3	In the proposed LSP listed elements, remove	Administrative
		reference to light industrial composite lots.	
		Update other listed elements as necessary.	
95	Figure 4,p. 11	Update 'Figure 4: Post-development vegetation	Administrative
		class and effective slope' to reflect updated LSP.	
96	Figure 6,p. 14	Update 'Figure 6: Post-development bushfire	Administrative
		hazard levels' to reflect updated LSP.	
97	4.1.2,p. 17	Update reference to development cells to reflect	Administrative
-	'F	updated LSP and Development Plan.	
	1	· F	

98	4.1.2,p. 17	Confirm that reference to indicative revegetation link (second last paragraph) is still relevant. If not, remove reference.	Administrative
99	4.1.2,p. 16-18	Update reference to development cells and EC/POS numbers in entire section to reflect updated LSP and Development Plan.	Administrative
100	4.1.2,p. 17	Dot point 5, remove reference to Littlefield Road.	Administrative
101	4.1.2,p. 18	Refer to the last dot point. Remove any reference to the cul-de-sac.	Administrative
102	5.1,p. 19	Remove reference to a cul-de-sac in section A3.3 of 'Table 1 – Compliance Table'.	Administrative
103	Appendix 1	Update 'Appendix 1: Concept Landscape Plan (Place Laboratory)' to reflect updated LSP.	Administrative
104	Appendix 4	Update 'Appendix 4: Town Park Functional Diagram (Place Laboratory)' to reflect updated Town Park configuration.	Administrative
	ne 2 - Technical Appen ge Acoustics (April 2018	dices (April 2018), Appendix C Transportation Noise As8)	ssessment - Lloyd
105	Technical Report page	Update version and modify date of Report.	Administrative
106	1,p. 2	Update 'Figure 1-2 Draft Local Structure Plan' to reflect updated LSP.	Administrative
107	2,p. 3	Update 'Figure 2-1 Aircraft Noise Exposure Forecast (ANEF) Contours' to reflect updated LSP configuration.	Administrative
108	2,p. 4	Update 'Figure 2-2 Aircraft Maximum Noise Levels, dB(A)' to reflect updated LSP configuration.	Administrative
109	3.3.2,p. 11	Update 'Figure 3-3 Indicative Building Heights for Forrestfield North' to reflect updated LSP configuration.	Administrative
110	3.3.3,p. 13	Update 'Table 3-3 Traffic Information Used in the Modelling – Future' if traffic volumes have changed due to new road configurations e.g. TOD Connector.	Administrative
111	4.2.2,p. 16	Update 'Figure 4-1 Vibration from Forrestfield Freight Rail Terminal (SLR Study)' to reflect updated LSP configuration.	Administrative
112	4.2.2,p. 17	Update 'Figure 4-2 LAeq Noise Levels from FFRT (SLR Study)' to reflect updated LSP configuration.	Administrative
113	4.2.3,p. 22	Update 'Figure 4-7 Future Road Traffic LAeq(Day) Noise Contours: Ground Level' to reflect updated LSP configuration.	Administrative
114	4.2.3,p. 23	Update 'Figure 4-8 Future Road Traffic LAeq(Day) Noise Contours: First Level' to reflect updated LSP configuration.	Administrative
115	4.2.3,p. 24	Update 'Figure 4-9 Future Road Traffic LAeq(Day) Noise Contours: Second Level' to reflect updated LSP configuration.	Administrative
116	4.2.3,p. 25	Update 'Figure 4-10 Future Rail Traffic LAeq(Day) Noise Contours: Ground Level' to reflect updated LSP configuration.	Administrative
117	4.2.3,p. 26	Update 'Figure 4-11 Future Rail Traffic LAeq(Day) Noise Contours: First Level' to reflect updated	Administrative

	LSP configuration.	
4.2.3,p. 27	Update 'Figure 4-12 Future Rail Traffic LAeq(Day) Noise Contours: Second Level' to reflect updated LSP configuration.	Administrative
5.2,p. 29	Update 'Figure 5-1 Aircraft Affected Areas' to reflect updated LSP configuration.	Administrative
5.4,p. 30	Add commentary after 'Light Industry' to reference the location of this land use being on the western side of Sultana Road West e.g. Light Industry (located on the western side of Sultana Road West).	Administrative
5.4,p. 31	Update 'Figure 5-2 Road Traffic Affected Areas' to reflect updated LSP configuration.	Administrative
5.4,p. 32	Update 'Figure 5-3 LAeq(Day) Road Traffic Future Noise Level Contours: Ground Level with 4m High Wall alongside Road Highway' to reflected updated LSP configuration.	Administrative
	5.2,p. 29 5.4,p. 30 5.4,p. 31 5.4,p. 32	4.2.3,p. 27 Update 'Figure 4-12 Future Rail Traffic LAeq(Day) Noise Contours: Second Level' to reflect updated LSP configuration. 5.2,p. 29 Update 'Figure 5-1 Aircraft Affected Areas' to reflect updated LSP configuration. 5.4,p. 30 Add commentary after 'Light Industry' to reference the location of this land use being on the western side of Sultana Road West e.g. Light Industry (located on the western side of Sultana Road West). 5.4,p. 31 Update 'Figure 5-2 Road Traffic Affected Areas' to reflect updated LSP configuration. 5.4,p. 32 Update 'Figure 5-3 LAeq(Day) Road Traffic Future Noise Level Contours: Ground Level with 4m High Wall alongside Road Highway' to

Volume 2 - Technical Appendices (April 2018), Appendix D - Local Water Management Strategy (LWMS) - Strategen Environmental (April 2018)

Note: yellow highlighted sections will only need to be actioned if population densities/ projections are modified. Otherwise, ignore.

123	Cover page	Modify date.	Administrative
124	Second cover page	Modify date.	Administrative
125	Document control page	Add report version.	Administrative
126	1.1,p. 1	Update estimated yield to reflect updated dwelling calculations.	Administrative
127	1.1,p. 1	Update listed open space figure.	Administrative
128	1.3,p. 4	Replace 'Figure 2: Local Structure Plan' with updated LSP.	Administrative
129	5.1.1,p. 35	Point 3, take out reference to 'Littlefield Road' in listed major streets.	Administrative
130	5.1.1,p. 37	Update 'Figure 11: Stormwater plan' to reflect updated LSP.	Administrative
131	5.1.1,p. 39	Update 'Table 7: Detention storage volumes' to reflect accurate calculations and catchment numbers.	Administrative
132	5.1.1,p. 39	Update 'Table 8: Event Inundation' to reflect accurate calculations and catchment numbers.	Administrative
133	5.1.2,p. 40	Update 'Section 5.1.2 Major drainage system' to reflect accurate calculations and catchment numbers consistent with the updated drainage system as a result of the updated LSP.	Administrative
134	5.1.4,p. 43	Last paragraph of the section, update reference to POS numbers to ensure it is consistent with the updated Stormwater Plan/ relevant figures.	Administrative
135	5.2,p. 43	Update 'Table 9: Pre-and post-development land use' to reflect the updated catchment areas and calculations reflective of the updated LSP.	Administrative
136	5.2.1,p. 44	Update 'Table 11: Pre-development flows for critical elements' to reflect updated catchment	Administrative

		zones reflective of the updated LSP.	
137	5.2.2,p. 44	Update 'Table 12: Post-development flows' to	Administrative
	- 7F	reflect updated catchment zones reflective	
		of the updated LSP.	
138	<mark>7.1,p. 48</mark>	Update '7.1: Potable water consumption' section	Administrative
		to reflect updated estimated population	
		figures.	
139	7.2.2,p. 49	Update '7.2.2: Water use requirements' section to	Administrative
		reflect estimate irrigation rates associated with	!
		updated POS areas.	
140	7.2.3,p. 51	Update 'Figure 12: Landscaping Plan' to reflect	Administrative
		updated LSP.	
141	Appendix 6 – Water	Recalculate total residential area and subsequent	Administrative
	Balance, 1.	water use.	
4.40	Residential	Decelerate total	A desirate C
142	Appendix 6 – Water	Recalculate total commercial and industrial area	Administrative
	Balance, 3.	and subsequent water use.	
	Commercial and		
143	Industrial Appendix 6 – Water	Recalculate total POS, roads and verges area	Administrative
143	Balance, 4. POS,	and subsequent water use.	Administrative
	Roads and	and subsequent water use.	
	Verges		
144	Appendix 6 – Water	Recalculate total other area and subsequent	Administrative
 	Balance, 5. Other	water use.	, tarriinoti ati vo
145	Appendix 7 –	Update Structure Plan Streets – DCS irrigation	Administrative
	Irrigation Schedule,	calculations to reflect updated stormwater	
	Structure Plan Streets	plan/ water use.	
146	Appendix 7 –	Update Open Space calculations to reflect	Administrative
	Irrigation Schedule,	updated POS and Environmental Conservation	
	Open Space	areas and irrigation calculations.	
		ces (April 2018), - Appendix E Community Infrastruct	ure Strategy (CIS) -
	Strategic (April 2018)		- (i t'
	yellow highlighted section ied. Otherwise, ignore.	ns will only need to be actioned if population densitie	s/ projections are
147	Cover page	Modify date.	Administrative
148	Executive	Modify 'Schedule of Amenities (specifically year to	Administrative
1-70	summary,p.4	develop)', to reflect accurate data based on	/ willinguative
	Carrinary, p. T	recalculated population projections.	
149	Executive	Update 'Cost of Implementation table' to reflect	Administrative
1	summary,p.5	accurate data based on recalculated	, tallillion and
		population projections.	
150	Executive	Update 'Methodology Table' to reflect accurate	Administrative
1	summary,p.6	data based on recalculated population	
		projections.	
151	2.1,p. 7	In first paragraph, modify the date of the study.	Administrative
152	3.1,p. 9	Update 'District Structure Plan Summary Table –	Administrative
		Table 2':	
		Row 3 to reflect recalculated total land use	
		areas. Remove reference to Industrial	
		land use completely.	
		• Row 6 to reflect updated estimated number of	
		dwellings.	
		 Row 7 to reflect updated residential site density. 	

		 Row 8 to reflect updated estimated population. 	
		 Row 11 to reflect updated estimate commercial 	
		floor space.	
		 Row 12 to reflect updated estimated area and 	
		percentage of public open space	
		given to regional open space.	
		• Row 13 to reflect updated estimated percentage	
153	11.2,p. 35	of natural area. Update 'Figure 10: Community Hub and Town	Administrative
155	11.2,μ. 33	Park Precinct Preliminary Concept Plan' to reflect	Autimistrative
		updated LSP configuration.	
154	11.2.1,p. 36	Update 'Figure 11: Town Park Preliminary	Administrative
	71	Concept Plan' to reflect updated LSP	
		configuration.	
155	<mark>12,p. 38</mark>	Update 'Implementation Timeline' text to reflect	Administrative
		updated population projections.	
156	12,p. 38	Update 'Figure 13: Community Infrastructure	Administrative
		Development Precincts' to reflect updated	
157	12,p. 39	LSP configuration. Update 'Table 8: Staged Implementation	Administrative
157	12,p. 39	Schedule' to reflect updated years to implement	Administrative
		or develop based on updated population	
		projections.	
158	12,p. 29	Update the Strategy Table to reflect updated	Administrative
		years to develop based on updated	
		population projections.	
159	13.4,p. 48	Update 'Table 15: Summary of Community	Administrative
		Infrastructure Costs' to reflect updated years	
		to develop based on updated population	
160	13.4,p. 49	projections. Update 'Table 16: Escalation of Community	Administrative
100	13.4,p. 48	Infrastructure Costs to Build-Out' to reflect	Auministrative
		updated years to develop based on updated	
		population projections.	
161	14,p. 50	Update 'Table 17: Assessment of developer	Administrative
		contributions for community infrastructure' to	
		reflect updated development start dates and	
		forecast population figures.	
		ices (April 2018), Appendix F - Transport Impact Asse	essment (TIA) - KCTT
(April 2			- Laurella etta ara ana
	yellow highlighted section ed. Otherwise, ignore.	ons will only need to be actioned if population densitie	s/ projections are
162	Cover page	Modify date and Rev number.	Administrative
163	Second cover page	Add revision number and date.	Administrative
164	1,p. 4	Dot point 3, update total dwellings to reflect	Administrative
	<u> </u>	updated LSP.	
165	<mark>1,p. 5</mark>	Second last dot point, change generated traffic to	Administrative
		reflect updated data relevant to updated LSP.	
166	2.3,p. 7	Update the Table to reflect accurate residential	Administrative
		dwelling figures relevant to the updated	
		LSP.	
167	2.10,p. 19	Update the Table to reflect accurate vehicle	Administrative
		parking requirements based on updated yield	
		calculations.	

168	2.16,p. 24	Update the Table to remove reference to	Administrative
100	2.10,p. 24	'Composite lots'.	/ diffinistrative
		Update the Table to account for the removal of	
		the above.	
		 Update the Table to reflect updated yields and 	
		traffic generation.	
169	2.21,p. 28	Update Road01a (TOD Connector) table to reflect	Administrative
		updated traffic projections and information.	
170	2.21,p. 29	Update Road01a' (TOD Connector) table to	Administrative
		reflect updated traffic projections and information.	
171	2.21,p. 30	Update Road01b (TOD Connector) table to reflect	Administrative
4=0	0.04	updated traffic projections and information.	
172	2.21,p. 31	Update Road01b' (TOD Connector) table to	Administrative
470	0.01	reflect updated traffic projections and information.	
173	2.21,p. 35	Remove reference to Road 03 (Little Boulevard).	Administrative
174	2.21,p. 38	Update Road06 (Sultana Road West) table to	Administrative
		reflect updated traffic projections and information	
175	2.21 n. 20	given the removal of composite lots.	Administrative
175	2.21,p. 39	Updated Road07 (Brae Road) table to reflect updated traffic projections and information.	Administrative
176	2.21,p. 48	Renumber '2.21 Proposed Intersection Controls'	Administrative
170	2.21,μ. 40	to '2.22' and renumber following subheadings	Administrative
		accordingly. This is due to a double up of 2.21	
		which was used in the previous section '2.21	
		Proposed Road Network'. Note - reference to	
		the heading numbers as existing for this	
		Schedule.	
177	2.21,p. 48	Update 'Proposed Intersection Controls' section	Administrative
		to reflect updated LSP intersection locations as	
		outlined on the updated LSP.	
178	2.22,p. 48	Update 'Proposed internal Transport Networks'	Administrative
		section to reflect updated internal network and	
4=0	0.00	relevant information reflective of the updated LSP.	
179	2.23,p. 49	Update 'Changes to External Transport Networks'	Administrative
		section to reflect updated external network	
		pressures and relevant information reflective of	
180	2.25,p. 51	the updated LSP. Update 'Analysis of Transport Network' section to	Administrative
100	2.20,μ. στ	reflect updated road traffic volumes relevant to	Administrative
		the updated road network reflective of the	
		updated LSP.	
181	Appendix 1 – The	Replace 'Draft Local Structure Plan' with updated	Administrative
	Layout of the	LSP.	
	Proposed		
	Development, Draft		
	LSP		
182	Appendix 2 –	Update 'Public Transport Plan – Proposed' with	Administrative
	Transport Planning	updated plan reflective of updated LSP.	
	and Traffic Plans,		
	Proposed Public		
400	Transport Plan	Hedeta (Decreased D. L. C. 1997)	A destrois (C
183	Appendix 2 –	Update 'Proposed Pedestrian and Cyclist Paths'	Administrative
	Transport Planning and Traffic Plans,	plan with updated plan reflective of updated LSP.	
	and maine rialis,		l

	Proposed Pedestrian and Cyclist Paths		
184	Appendix 2 – Transport Planning and Traffic Plans, Daily Traffic – Internal Network - 2031	Update 'Daily Traffic – Internal Network – 2031' plan with updated plan reflective of updated LSP.	Administrative
185	Appendix 2 – Transport Planning and Traffic Plans, Daily Traffic – Internal Network - 2050	Update 'Daily Traffic – Internal Network – 2050' plan with updated plan reflective of updated LSP.	Administrative
186	Appendix 2 – Transport Planning and Traffic Plans, Road Types within Development	Update 'Road Types within Development' plan with updated plan reflective of updated LSP.	Administrative
187	Appendix 2 – Transport Planning and Traffic Plans, Intersection Control	Update 'Intersection Control' plan with updated plan reflective of updated LSP.	Administrative
188	Appendix 2 – Transport Planning and Traffic Plans, Developer Contribution Plan	Update 'Developer Contribution Plan (DCP) Items – Road and Road Reserve Upgrades' plan with updated plan reflective of updated LSP.	Administrative
189	Appendix 3 – SIDRA Intersection Analysis, 2,p. 5	KCTT to provide drawings of all 7 external zones.	Administrative
190	Appendix 3 – SIDRA Intersection Analysis, 4,p. 8	Roe Highway/ Berkshire Road intersection to be included and modelled.	Administrative
191	Appendix 3 – SIDRA Intersection Analysis, 5,p. (entire section) 10	All SIDRA modelling to be updated in accordance with the Main Roads Modelling Guidelines.	Administrative
192	Appendix 3 – SIDRA Intersection Analysis, 5,p. 10	Insert the Bus movement class defined for the two Maida Vale roundabouts (currently zero bus volume in all scenarios).	Administrative
193	Appendix 3 – SIDRA Intersection Analysis, 5,p. (entire section) 10	Revise the 'Heavy Vehicle' movement class at relevant intersections to be in accordance with MRWA's modelling requirements.	Administrative
194	Appendix 3 – SIDRA Intersection Analysis, 5.4,p. 25-27	Update all figures (23-27) to reflect updated intersection in accordance with updated LSP.	Administrative
195	Appendix 4 – Traffic Modelling Report, 2.2,p. 8	 Update the Table to remove reference to 'Composite lots'. Update the Table to account for the removal of the above. Update the Table to reflect updated yields and traffic generation. 	Administrative
196	Appendix 4 – Traffic Modelling Report, 3.1,p. 12-13	Update 'Trip Distribution' section to reflect updated internal zones and traffic generation. Remove all reference to composite lots.	Administrative

197	Appondix 4 Troffic	Undata 'Traffic Flow Distribution and External	Administrative
197	Appendix 4 – Traffic	Update 'Traffic Flow Distribution and External	Administrative
	Modelling Report,	Road Networks' to remove reference to	
	3.3,p. 14	composite lots.	
198	Appendix 4 – Traffic	Update 'Figure 1: Links Traffic Volumes – Daily	Administrative
	Modelling Report, 4,p.	Traffic – External Networks 2031' to reflect	
	15	updated LSP configuration.	
199	Appendix 4 – Traffic	Update 'Figure 2: Links Traffic Volumes – Daily	Administrative
	Modelling Report, 4,p.	Traffic – External Network 2050' to reflect	
	16	updated LSP configuration.	
200	Appendix 4 – Traffic	Update 'Figure 3: Links Traffic Volumes – Daily	Administrative
	Modelling Report, 4,p.	Traffic – Internal Network 2031' to reflect updated	
	17	LSP configuration.	
201	Appendix 4 – Traffic	Update 'Figure 4 Links Traffic Volumes – Daily	Administrative
	Modelling Report, 4,p.	Traffic – Internal Network 2050' to reflect	, tarrimion davo
	18	updated LSP configuration.	
Volum		ces (April 2018), Appendix G - Infrastructure Servicin	a Papart (ISP) KCTT
(April 2		CO (April 2010), Appelluix G - Itiliastructure Gervicht	g Nepoli (ION) - NOTI
202	1	Modify date and version.	Administrative
	Cover page		Administrative
203	Document control	Modify date and version.	Administrative
004	page,p2		A 1 · · · · · ·
204	Executive	Wastewater Infrastructure section, remove	Administrative
	Summary,p6	reference to 'Industrial Composite land uses'.	
205	2.1,p. 9	Update Figure 1: Local Structure Plan (Draft) by	Administrative
		TPG + Place Match' to reflect updated LSP and	
		reference element as the author.	
206	2.1,p. 10	Update 'Table 2: Forrestfield North DSP and	Administrative
		Residential LSP Indicative Yields' to remove any	
		reference to Industrial Development Type and	
		update other development figures according to	
		the updated LSP.	
207	2.4,p. 13	Paragraph at the top of the page, delete extra 'e'	Administrative
		in word 'thee' to read 'the'.	
208	2.7,p. 13	Update 'Table 7: Proposed Road Network' to	Administrative
	71-	reflect updated LSP road configurations.	
209	2.4, p.14		Administrative
200	2.1, p.11	intersections identified in updated LSP.	, tarrimion and
210	2.6,p. 18	Remove reference to 'Littlefield Road' in the list of	Administrative
210	2.0,p. 10	key locations for the detention and storage of	7 tarriirii da a a a c
		stormwater runoff.	
DDI L	/WAPC Additional mod		
211			As a result of
∠	Bushfire Management	Ensure "hazard separation" (in form of public	
	Plan	roads, public open space etc) is annotated on the	submission 31
		structure plan as per DFES submission to ensure	(DFES)
		that no residential zoned land is affected by	
0		BAL40 or BAL-FZ at subsequent planning stages.	
212	In the Executive	Include reference to the interface between the	As a result of
	Summary, Page vi,	residential/TOD precinct along the following:	submission 32
	Paragraph 1 as an	"The delivery of an appropriate interface to the	(Metronet)
	additional bullet point.	Forrestfield Station Transit Oriented Development	
		to the west of the residential precinct"	
213	Part 2, Page 75	Include new dot points:	As a result of
		Please include reference to the	submission 32
		interface between the residential/TOD	(Metronet)
l		interiace between the residential/ I OD	,

		 precinct. Specifically, the proposed activity centre which connects across Milner road into the TOD precinct. Please include reference to the new train station which provides public transport access to residents of the residential precinct. 	
214	Part 2, Page 84	Include new dot point to reference the new train station which provides public transport access to residents of the residential precinct.	As a result of submission 32 (Metronet)
215	Part 2, Page 93. 2.7.7.4	Include new text noting the importance of providing pedestrian links to Forrestfield station.	As a result of submission 32 (Metronet)
216	Part 2, Page 96, 2.7.7.5	Include new text noting the importance of providing cycling links to Forrestfield station. Note should also be made regarding provision of bicycle parking at station for use by residents.	As a result of submission 32 (Metronet)
217	Part 2, Page 96, 2.7.7.7	Text to be amended to refer in general terms to a public transport authority park and ride facility being provided, with final parking bay numbers and location to be determined through further detailed planning and design.	As a result of submission 32 (Metronet)
218	Part 2, Page 97	Plan should be amended to remove 'proposed'. Station and associated facilities are now under construction.	As a result of submission 32 (Metronet)
219	Transport Impact Assessment	Correct stated trip generated rates of (0.15 and 0.45 vph) which is a typographical error - see trip generation calculation table.	As a result of submission 34 (Main Roads)
220	Transport Impact Assessment	SIDRA intersection analysis – section 2 – Traffic Generation and Distribution Analysis. The 7 external zones defined for traffic distribution are unclear. They should be conveyed visually with respect to the LSP area. Modification - KCTT advised that the figure for the 7 external zones has been prepared. It will be included in the final revision of the report.	As a result of submission 34 (Main Roads)
221	Transport Impact Assessment	SIDRA Intersection Analysis – Section 4 – Summary of Results. The Roe Hwy/Berkshire Road interchange has not been modelled. This is a critical omission that this interchange will be the closest and therefore the primary full-movement point of access into Roe Hwy and the wider metropolitan state road network for the LSP area. Provide update. Modification - KCTT advised that the model will be adjusted to reflect the yields for the Residential Precinct ultimate scenario and will be	As a result of submission 34 (Main Roads)
222	Transport Impact Assessment	included in the final revision of the report. Sidra modelling - Update in the context of any modifications to the road network.	As a result of submission 34 (Main

	T		Doods)
			Roads) (Main Roads)
223	Transport Impact Assessment	SIDRA Model. Movement Definitions. It is unclear on the underlying reasoning for a separate 'Development Light Vehicle' movement class to be defined. Further explanatory comment is required.	As a result of submission 34 (Main Roads)
224	Transport Impact Assessment	The 'Bus' movement class defined for two Maida Vale roundabouts seems redundant, with zero bus volumes in all scenarios. KCTT advised that it was unintentionally omitted between two revisions. Modification – to be addressed in the final revision of the report.	As a result of submission 34 (Main Roads)
225	Transport Impact Assessment	The default 'Heavy Vehicles' movement class used does not adequately reflect the heavy vehicle traffic at this interchange. The smallest Austroads HV class, Class 3, has a vehicle length of 12.5m long, so the 10m vehicle length adopted for the SIDRA default 'Heavy Vehicles' is an underestimation. As the Class 3 Heavy Vehicle is the predominant Heavy Vehicle type (9.2% of Roe Hwy North bound off-ramp and 14.2% for Roe Hwy South bound on-ramp, based on MRWA Traffic Map data), the Heavy Vehicle movement class used should at least reflect that type of vehicle. KCTT advised that heavy vehicle modelling will be set up as per the current version of MRWA's modelling guidelines (which were published after the completion of the report). Modification - This modification will be addressed in the final revision of the report.	As a result of submission 34 (Main Roads)
226	Transport Impact Assessment	SIDRA Model. Volumes. It is unclear how the projected background/base peak period volumes have been derived from the ROM24 2031 daily volumes. The derivation process needs to be outlined. It is also unclear how the percentages for the 'Development Light Vehicle' movement class have been derived. There are considerable midblock traffic volumes gains and losses between the three sites comprising the network model. These midblock in/outflows are unrealistic given that there cannot possibly be any traffic sinks/sources occurring within the interchange, and thus must be resolved in further detail.	As a result of submission 34 (Main Roads)

KCTT have utilised the ROM24 2031 daily volumes to create the demand matrix and distribute the traffic between the 7 external zones. The traffic demands between any two zones were estimated and calibrated using Paramics modelling software, until the traffic flows reflected the ROM24 data as closely as possible. FFN generated traffic was processed separately in the Paramics model, and the turn counts were derived from this model through the analyser component of Paramics and used for the SIDRA models. Modification - Clarify any uncertainty in report 227 Transport Impact DPLH transport Trip Generation - Section 2.16 of the TIA report Assessment planners' comments. prepared by KCTT (April 2018) has applied a Further clarification reciprocity rate of 80% for the proposed school required. site. As such it is anticipated that only 20% of school trips will be generated from outside of the LSP area. Justification is required for this as the LSP area is intended to accommodate higher density housing which generally attracts less families and a significant number of students may be attending the school from outside the LSP area. KCTT advised that there is an estimated yield of 3.576 dwellings within the LSP area. The LSP report indicates an estimated population of 8,582 in the FFN Residential Precinct. This was based on an estimated household size of 2.7 persons per dwelling for houses and 2.2 persons per dwelling for apartments. According to the City of Kalamunda's household summary profile.id.com.au 9% of the City's residents are of primary school age. 80% of the assumed 450 children is 360 which is approximately 4.2% of the expected number of future FFN residents, less than half of the City of Kalamunda average. This more than accounts for the likely reduction in school age children within higher density housing forms. Even if the ratio is changed in favour of trips outside of the LSP area, this will not have a significant impact on traffic distribution and the surrounding road network. The school is expected to generate only up to 580 VPD which is less than 3% of the total Residential Precinct traffic generation.

Based on the above KCTT believe that the

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		original distribution (80% local / 20% outside LSP area) should be maintained.	
		Modification - Include justification in report to clarify	
228	Transport Impact Assessment	SIDRA Analysis - <u>Maida Vale Road and Milner</u> Road intersection	DPLH transport planners' comments
		The above intersection is proposed to be a roundabout in the ultimate scenario (2050) and SIDRA analysis for the above intersection during PM peak shows a Level of Service (LOS) E with significant queue distance of 541.6m on eastern leg of Maida Vale Road. This is unacceptable and requires further investigation. The TIA should say this is unacceptable and requires investigation.	
		KCTT advised that this intersection should be reviewed in further detail as part of the structure planning process for the TOD Precinct.	
		As a consequence of responding to submissions and through the evolution of the planning for FFN, the internal movement networks for both the Residential and TOD Precincts are being modified. KCTT believe rearranging the road network within these precincts could alleviate the pressure and demand on this and other key intersections within the subject area.	
		It would be greatly beneficial if MRWA could provide their updated ROM model to assess projected growth of passing traffic in current economic and population growth conditions.	
		It should also be noted that traffic projections for this area are exceptionally high. Short of creating three lane roundabouts and grade separated intersections, delays are inevitable.	
		Most comments also pertain to the 2050 model. For the purposes of the modelling it has been assumed that FFN will be fully built by 2031 (this may be highly optimistic – see comments below), therefore delays are also associated with passing traffic. MRWA projections for passing traffic (derived from ROM models) in this area are exceptionally high – in some locations 4-5% annual growth, even without taking into account all planned development within the City of Kalamunda in this area. We do believe this should be revisited as it is quite obvious that economic, population and traffic growth is not occurring at the speed envisaged in 2016.	

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		Modification – Update as per KCTT advice i.e recognise issue raised in report.	
229	Transport Impact Assessment	SIDRA Analysis - Milner Road and TOD Connector intersection	DPLH transport planners' comments
		SIDRA analysis for the above intersection during the 2031 PM peak hour shows LOS E with a queue distance of 257.9m for north-west leg of the TOD Connector which has been resolved for the 2050 scenario by proposing a short-turning lane at the above intersection. It is recommended to provide this layout treatment by 2031 and TIA to reflect.	
		KCTT have pointed out in the reports that the key will be monitoring the key intersections' performance and acting accordingly.	
		This was pointed out given the surrounding area is not developing at the speed predicted in the previous decade. Development speed is significantly lower due to the slow-down in real estate market and general economic conditions in the WA economy.	
		Furthermore, the actual means and efficiency of transportation and associated traffic flow itself are expected to change significantly in the next 2-3 decades (autonomous vehicles, 'smart' infrastructure etc). These are the factors to be considered when committing land for intersection upgrades long before the upgrade is due. Considering these factors will reduce the risk of oversizing the intersection and inefficiently using land and resources.	
		Modification not required – Premature to require modification. Make clear matter is subject to monitoring for 2050 scenario.	
230	Transport Impact Assessment	Milner Road, Berkshire Road and Dundas Road intersection	DPLH transport planners' comments
		SIDRA Analysis - SIDRA analysis to 2050 (both AM and PM) for the above intersection shows LOS F (unacceptable performance). The above intersection forms part of Main Roads WA RAV 7 network, with up to 36.5m heavy vehicles having access to these roads. It is expected that Milner Road will become part of the RAV network in future due to industrial land uses north-east of Berkshire Road. TIA to say that a detailed analysis of this major intersection be undertaken	

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		to provide an acceptable solution.	
		KCTT advised that, as stated above, the SIDRA analysis for 2050 is to be considered with caution. We are at the beginning of an era of 'smart' cities, 'smart' infrastructure and expected traffic flows with high percentage of autonomous vehicles. This is why it is not appropriate to use conservative annual growth rates for assessing traffic demands 30 years in advance. Conversely, SIDRA analysis at 2031 may provide an insightful look into the operation of key intersections 12 years from now.	
		A detailed SIDRA analysis for 2050 may only show what will happen if traffic keeps the assumed traffic growth across three decades using current technologies. As could be expected, using these analysis assumptions, most key intersections will reach or surpass their capacity at some point in the future.	
		With all the above in mind, KCTT are of the opinion that key intersections should be modelled to cater the estimated traffic demand in the 2031 models. For the 2050 models, they should be looked at as the worst-case scenario. To mitigate future risk, the performance of key intersections should be monitored, and the infrastructure upgraded in a timely manner, only if necessary.	
		Modification – indicate that SIDRA analysis for 2050 is to be considered with caution.	
231	Draft Structure Plan Map and section 2.77 of Part 2	Road reserve widths are not complying with Liveable Neighbourhood Policy. District Integrator A - 35.6m required instead of 30.2m; District Integrator B - 29.2m required instead of 25m). Review document and maps to align road hierarchy with policy.	DPLH transport planners' comments
		KCTT advised that the brief for the project was to design a bespoke urban environment and level of amenity where future road designs may deviate from strict adherence to Liveable Neighbourhoods requirements. Road reservations are designed to cater for a variety of requirements (ecological requirements, storm water management, generous pedestrian spaces, constraining operating vehicular speed etc) to create a distinct character and identity for the area. Strict adherence to Liveable Neighbourhoods requirements is not considered to deliver higher order project objectives for the future	
		development of FFN.	

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		Variation to road reserve widths not supported. Modification required as per Liveable Neighbourhoods (LN) road reserve requirements. In addition to this, include a section in the structure plan that provides for flexibility and variations with LN road reserve width requirements where it can be demonstrated at subdivision stage that: - traffic modelling supports variation; - it is necessary to achieve environmental outcomes; and - LN road design principles are not compromised.	
232	Draft Structure Plan Map	A concern has been raised with the local government's recommendation to create a T-junction of the TOD connector with Brae Road as this could create significant traffic delays when the structure plan area is connected with Maida Vale over Roe Highway. Realign TOD Connector to provide a direct connection towards the TOD precinct or alternatively consider roundabout. A roundabout is the preferred option to slow down traffic towards the TOD precinct. KCTT is of the opinion the potential delays should be checked first in SIDRA before a roundabout is proposed. The concept road design indicates that the TOD Connector will have clear priority at this intersection, and this can be further refined in the detailed design phase. Channelizing the left-turn from TOD connector towards the TOD Precinct will enable for an uninterrupted traffic flow of the dominant movement. Detailed modelling, to be conducted for the final revision of the report, will provide the insight into the performance of different configuration options for this intersection. Modification — Include section in the explanatory section of the LSP which requires SIDRA analysis to determine whether a roundabout or T-junction is required or conduct detailed modelling for final revision of report to confirm uninterrupted traffic flow.	DPLH transport planners' comments
233	Part 1- Implementation, Part 2 under point 2.7.9	The structure plan is to state that noise assessments are to occur and implemented at development and subdivision stages recognising	As a result of submission 35 (PTA, WA)
234	Part 1- Implementation, Part 2	noise impacts from the new Forrestfield Station. Provide explanation on cell density plans how they fit into the planning framework.	As a result of DPLH submission (32)
235	Part 1, Clause 4.3	The set of conditions that are proposed in the draft LSP for subdivision and development should	To align with WAPC practice

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		indicate that its purpose is only to guide and do not fetter decision-making or model conditions of the WAPC.	
236	Part 1 and 2	Obtain the Department of Water and Environmental Regulation's support to the finalise the draft Local Water Management Strategy and attach to Volume 2.	As a result of DWER submission and final draft LWMS completed.
237	Part 1 and 2 (table 9)	Finalise the public open space areas and related public open space schedule requirements in accordance with the WAPC's <i>Liveable Neighbourhoods</i> policy. The ultimate land use for the public open space is	As a result of DWER submission and final draft LWMS completed
238	Part 1 under a new heading 6.2 Public Open Space	Include the following paragraph: A minimum of 10% public open space of the gross subdivisible area is to be provided subject to the requirements of Liveable Neighbourhoods being met to the satisfaction of the local government and the WAPC. Public open space is generally to be provided in accordance with the Structure Plan Map and the Public Open Space Schedule included in Part 2, with an updated Public Open Space Schedule to be provided at the time of subdivision for determination by the WAPC, upon the advice of the local government"	To ensure that public open space schedules are updated as development progresses.
239	Part 1, under section 4	 Add the following heading: 4.4 Management of Environmental Conservation Areas and Local Open Space Under this new section outlines that: proposed environmental conservation areas are to be protected initially under a Planning Control Area and ultimately under the Metropolitan Region Scheme as Parks and Recreation Reserves; proposed local open space areas are to be managed under the City of Kalamunda Local Planning Scheme No. 3, which requires development to be generally in accordance with the Forrestfield North Residential Precinct Local Structure Plan; environmental conservation areas and local open space are to be managed and protected as described by the approved Strategic Conservation Management Plan and Management Agreement (Appendix 5 and 6). 	As a result of the environmental peer review and mediation outcomes.
240	Part 1, after Appendix 4	Insert the following documents as appendixes and number appropriately:	Administrative update as a result of the environmental peer

241	Part 2, section 2.1.9.4	 Strategic Conservation Management Plan duly signed by the City of Kalamunda and the Western Australian Planning Commission (WAPC) on advice of the Department of Water and Environmental Regulation (DWER) and the Department of Biodiversity, Conservation and Attractions (DBCA) Management agreement between the WAPC and the City of Kalamunda duly signed, which provides specific detail on how conservation and biodiversity values will be maintained and enhanced over time. Add the following heading under section 2.1.9.4: Management of environmental conservation areas and local open space areas Under this new section explain/outline the following principles and update any paragraphs under section 2.1.9.4 that may be in conflict with the paragraphs below: proposed environmental conservation areas are to be protected initially under a Planning Control Area and ultimately under the Metropolitan Region Scheme (MRS) as Parks and Recreation Reserves. It is intended that land identified for Environmental Conservation will be formally reserved as Parks and Recreation under the Metropolitan Region Scheme. Landowners who have property affected by the reservation can find more information about their options at: https://www.dplh.wa.gov.au/your-property-and-region-schemes proposed local open space areas are to be managed under the City of Kalamunda Local Planning Scheme No. 3, which requires development to be generally in accordance with the Forrestfield North Residential Precinct Local Structure Plan; environmental conservation areas and local open space are to be managed and protected as described by the approved Strategic Conservation Management Plan and Management Agreement (Appendix 5 and 6). 	review and mediation outcomes. Update as a result of the environmental peer review and mediation outcomes.
242	Part 2	Update all paragraphs in relation to the Strategic Conservation Management Plan where it is proposed that such plan be done at the individual subdivision stages of the development.	The advertised document proposed that a Strategic Conservation

243	Part 2 section 2.77	Make clear that the Strategic Conservation Management Plan is provided as part of the structure plan process and not at the individual subdivision stages of the development. Include appropriate wording in this section	Management Plan is proposed at the individual subdivision stages of the development. Part 2 requires updating as a result of the mediation outcome. To ensure that traffic
	'Movement Network'	that requires traffic assessment in stage context when subdivision occurs.	assessment occurs when stages are developed.
244	Structure Plan Map	Primary school site to have access from 3 roads	As a result of DPLH submission (32)
245	Structure Plan Map	Remove note in the legend - "Finalised POS sizeWAPC"	Note not necessary. Administrative nature.
246	Structure plan map – local open space areas	Public open space refinements (areas 1-4) as reflected in email correspondence 21 August 2019 from Element (Graeme Wallace).	As a result of the environmental peer review. Refinements do not affect conservation areas.
247	LSP Report (Volume 1 – 2.7.10.4 Wastewater, 2.7.11 Staging and Volume 2 2.8 Wastewater)	Update the LSP Report (Volume 1 – 2.7.10.4 Wastewater, 2.7.11 Staging and Volume 2 2.8 Wastewater) to state that Water Corporations preferred strategy is that all connections in Forrestfield North drain to the southwest in accordance with the Water Corporation Planning. Note in the LSP Report (Volume 1 – 2.7.10.4 Wastewater, 2.7.11 Staging and Volume 2 2.8 Wastewater) that Water Corporation may consider alternative sewer connections to the north where an engineer can demonstrate this is possible and that capacity is available. Update the Staging Plan to more accurately reflect the above information.	To provide clarity. As per City email dated 12/11/2019. WC confirmed on 13/11/2019 that modification is in order.