[redacted]

**From:** [redacted]
**Sent:** Friday, 25 February 2022 12:30 PM
**To:** [redacted]
**Cc:** [redacted]
**Subject:** [External] - Response to RFI2_2021/6169 621 Burwood Highway, KF - Subdivision Application
**Attachments:** 19095-SM01[2].pdf; 190752SPA405A.pdf; 190752SPA400A.pdf; 190752SPA401A.pdf; 190752CLP402A.pdf; 190752SPA403A.pdf; 190752SPA404A.pdf; 19095-SM01[5].pdf; DELWP Letter to KCC (Subvidision Permit) dated 10 August 2021 (PG response).pdf; Engeny responses MW Letter to KCC (Subdivision Permit) dated 9 June 2021.pdf



All,

Please see responses below to RFI2 (Greg Kent email dated 8 October 2021) from Knox City Council (KCC), incorporating requests to KCC from Melbourne Water and DELWP.

These responses have been documented to enable efficient review with bold and green highlighted wording from Council in its RFI2 followed by responses from Development Victoria (including those from its relevant specialists) but not highlighted.

Regards,

[redacted]

Ps. Please note my new email and the change of office address following our move in January 2022. It would be appreciated if you could update your records accordingly.

[redacted]



**From:** [redacted]
**Sent:** Friday, 8 October 2021 16:13
**To:** [redacted]
**Cc:** [redacted]
**Subject:** Further info review 2021/6169 621 Burwood Highway, KF - Subdivision application

Attention: Collie

Please note the points raised in the correspondence relate to items raised in Council's further information request dated 14 July 2021 that remain outstanding or are unsatisfactory. It is advised that this correspondence is not an assessment of the issues also raised in the further information letter and their absence in this correspondence does not indicate that they have been resolved. Rather they will be considered at the time of further assessment.

Further the application and information provided to date is under assessment by Council's consulting Ecologist and that further information may be required once the assessment has concluded. Please be aware that comment from our ESD, Open Space and Waste teams are still outstanding and will be forwarded as soon as possible (highlighted in blue)

The response to further information submitted by Collie on 24 August 2021 which require further action are highlighted in green below.

**Melbourne Water**
**Melbourne Water response to the further information submitted:**
**The response to Melbourne Water's formal RFI from the applicant is insufficient.**
**Pursuant to Section 56(2) of the Planning and Environment Act 1987, Melbourne Water's request for further information for these two applications remain valid in their entirety. I take this opportunity to respond to some of the points raised by the applicant in their 'response' to Council (24 August 2021):**

- **peference to 'as advice sought from DELWP' is an unacceptable response to the RFI**
- **The ecological reports referenced in the response to where the depth comparison for the Blue Billed Duck was obtained must be provided to Melbourne Water**
- **Further information/details on why the habitat wetland cannot be offline to the stormwater treatment wetlands (specifically – ecological reporting to substantiate)**
- **The full Aquatica survey report referenced in this latest response should be provided to Melbourne Water.**

Development Victoria is confused about the responses from Melbourne Water Corporation (MWC) in respect of the subdivision application. While it is acknowledged that the parent title that includes the ESO2 and LSIO is to be modified with the excision of land (stages 1 and 2) for further subdivision for lots for dwellings, there is no proposal to subdivide the land affected by the ESO2 / LSIO. Matters relating to the ESO2 / LSIO should be confined to the utility installation planning permit application as it is only the specific land affected by the ESO2 / LSIO, which is affected by those provisions.

Furthermore, the subdivision of lots identified as stages 1 and 2 will not drain into / have any impact on the existing farm dam or the ESO2 / LSIO areas.

Responses from PGA to RFI1 and RFI2 (and the PGA advice provided as part of the planning permit application package) deal with the temporary stormwater treatment proposed for stages 1 and 2 (and later stages 3 to 5). This treatment and temporary stormwater management do not rely on the proposed utility installation or the existing dam. MWC as the proposed catchment authority for floodplain management, has made no comments on the temporary stormwater treatment proposed for stages 1 and 2.

Comments about the existing dam are not relevant therefore, to the subdivision application and it is noted that in accordance with the incorporated Comprehensive Development Plan (CDP) under the Knox Planning Scheme (the Scheme), the existing dam is to be removed.

Nevertheless, attached is the Melbourne Water letter sent to Knox City Council as the responsible authority, with annotations in response from Engeny. Similarly, attached (DELWP Letter to KCC (Subdivision Permit) dated 10 August 2021 (PG response).pdf) is the DELWP letter sent to Knox City Council but annotated with Development Victoria responses (in red). In both cases, the responses should be read recognising that some further work, as reflected in this response to Council, supersedes the individual responses and should be read in that light.

**Mixed use area.**
***The width of the proposed mixed use area is inconsistent with the Burwood Highway and Scoresby Road Knoxfield Comprehensive Development Plan (September 2018). It appears to be only 60 metres wide in lieu of 114 metres.***
The mixed use area allows for a mix of uses including residential use. As noted in the incorporated comprehensive development plan (CDP) under the comprehensive development zone (CDZ) schedule 2 (CDZ2), a dwelling is a section 1 'as of right' use in the mixed use area.

The remainder of the mixed use area is earmarked for a mix of uses utilising the Highway frontage but with ample depth to cater for buildings, car parking and landscape.

***Further details are required on how the mixed use area will integrate with the residential area.It should also be considered that a park is integrated into the mixed use precinct for better connection to the shared path and providing for opportunities for active frontage directly onto the open space.***
The mixed use area (southern part) between the south edge of stage 1 subdivision and Burwood Highway is yet to be planned in detail, is retained in the balance lot and is not the subject of the current subdivision application.

The most logical interface however, has been determined to be a local street but with the use of laneways to minimise the number of dwellings fronting the street and thus minimise potential conflict with alternative land uses.

**Response – Council is currently seeking urban design advice on the issue. The information provided is considered unsatisfactory. The following application requires at Schedule 2 to Clause 37.02 Comprehensive Development Zone are as follows:**
**4.0 Buildings and works**
**An application to construct a building or construct or carry out works must be generally in accordance with the Burwood Highway and Scoresby Road Knoxfield Comprehensive Development Plan (September 2018) incorporated pursuant to Clause 72.04 of the Knox Planning Scheme and must include the following information, as appropriate, to the satisfaction of the responsible authority: Concept plans drawn to scale which show:**
**The key attributes of the land, its context, the surrounding area and its relationship with existing and proposed uses on adjoining land.**
**– Building orientation and location, including heights and setbacks generally in accordance with the Burwood Highway and Scoresby Road Knoxfield Comprehensive Development Plan (September 2018).**
**How the layout pattern and proposed development responds to the site analysis and treats residential interfaces.**
The clause 4 referred to above does not apply to the subdivision application as there are no buildings or works that require a planning permit application. Roadworks (development and use) in the subdivision is exempt from a planning permit requirement under clauses 62.01 and 62.02-2 of the Scheme while, a dwelling on a lot in accordance with the Small Lot Housing Code (SLHC) is exempt from a planning permit (development and use) in the mixed use area under the incorporated CDP.

The interface street has been proposed as a wider road reserve to cater for on-street parking provision to support the south mixed use area. Further detail will be provided as part of the future planning for the remainder of the mixed use area.

Design ideas from Architectus indicate that there is ample room for the development of a range of more intense development and uses along the Burwood Highway frontage in accordance with the CDP.

**Balance lot.**
***Proposed earthworks and levels for future development have not been detailed in the balance lot. Any proposed earthworks on the balance or other lots must be detailed. It is also noted that the balance lot covers the section containing the body of water known as 'Lake Knox'.***
***Comments raised and information required under planning application P/2021/6170 will also be taken into consideration when a final assessment is undertaken for this application for this subdivision.***
Proposed earthworks in the balance lot under this permit application relate only to the temporary stormwater treatment, which is a minor utility installation and is exempt from a planning permit. Nevertheless, the attached (19095-SM01[5].pdf) plan shows the proposed earthworks associated with the 'Temporary Stormwater Management Plan', 14 February 2022 by PGA for Development Victoria.

The farm dam on the property (and never previously known as 'Lake Knox') is related to a separate planning permit application for a utility installation and it is this permit application under which assessment of the new wetlands should be considered and assessed. It must be noted that the utility installation site is in the balance lot and is not proposed to be subdivided. Furthermore, considerations / assessment under the LSIO and ESO2 that cover the utility installation area DO NOT affect the stages 1 and 2 subdivision area and cannot be used to assess the stages 1 and 2 subdivision.

**Response – The information provided is considered unsatisfactory. Noting that the existing dam is located within the balance lot and works from Stages 1 and 2 will be reliant on works through the balance lot to the wetlands. The following application requires at Schedule 2 to Clause 37.02 Comprehensive Development Zone are as follows:**
As responded to above under the MWC comments, stages 1 and 2 will NOT be reliant on works through the balance lot to the wetlands. The temporary stormwater management (detailed in later responses below) is completely independent of the existing dam / proposed utility installation.

**4.0 Buildings and works**
**An application to construct a building or construct or carry out works must be generally in accordance with the Burwood Highway and Scoresby Road Knoxfield Comprehensive Development Plan (September 2018) incorporated pursuant to Clause 72.04 of the Knox Planning Scheme and must include the following information, as appropriate, to the satisfaction of the responsible authority:**
**Concept plans drawn to scale which show:**

- **proposed earthworks and levels for future development.**

**This extends also to proposed drainage/stormwater management works.**
The temporary stormwater treatment (retarding basin and stormwater drains) is defined under the Scheme as a 'minor utility installation'. Under clauses 62.01 and 62.02-1, a minor utility installation is exempt from the requirement for a planning permit. Clause 4 in CDZ2 does not apply therefore, in this case. Nevertheless, plans will be prepared to satisfy the engineering department at Knox City Council.

Refer to the revised PGA temporary stormwater management plan (attachment 19095-SM01[Rev. 5]) which shows additional detail for the temporary sediment pond (section, levels and earthwork cut / fill batters). This includes the proposed drainage outfall alignment, which it is important to note does not connect to the existing dam or require construction works in the vicinity of the existing dam.

Detailed catchment analysis will be provided during design in response to appropriate permit conditions. Major and minor catchment plans for individual stages is typically provided as part of functional layout plans.

Local overland flow analysis, to be completed during design, will ensure that major storm event flood levels will be catered for appropriately in road reserve and with sufficient freeboard to properties.

**Further a section of the balance lot also falls within the Clause 42.01 Environmental Significance Overlay Schedule 2. Application requirement are set out in Section 3 of this Clause.**
As noted above, there are no proposed buildings or works in the ESO2 area proposed by the subdivision application. Even if this were not the case, roadworks and a minor utility installation are exempt from the requirements of a planning permit and thus cannot be assessed / conditioned as if a planning permit was required.

**Dwellings proposed under the Small Lot Housing Code.**
***The building orientation and location, including heights and setbacks should be generally in accordance with the Burwood Highway and Scoresby Road Knoxfield Comprehensive Development Plan (September 2018). Examples must be provided of how the dwellings will comply with the Small Lot Housing Code and the approved development plan.***
The subdivision of stages 1 and 2 will clearly set the scene for dwelling orientation and location. Similarly, insofar as heights and setbacks are specified on the CDP, they will be met. The Small Lot Housing Code (SLHC) applies to all the lots in stages 1 and 2 and dwellings that comply with the SLHC are exempt from the need for a planning permit. The responsible authority cannot require that examples must be provided of how dwellings will comply with the SLHC but the dwellings must comply as signed-off by the relevant building surveyor. Nevertheless, Development Victoria may provide some typical dwelling plan / elevation examples.

Furthermore, Landscape and Residential Design Guidelines, Architectus, 18 August 2021 have been prepared to guide builders on requirements, noting that all dwellings in stages 1 and 2 are to be constructed under builder packages issued to selected builders by Development Victoria. These Guidelines have been attached for information only. The responsible authority cannot require that examples must be

provided of how dwellings will comply with the SLHC but the dwellings must comply as signed-off by the relevant building surveyor.

**Lot design.**
***There is concern regarding the narrow lots, particularly when they are single fronted and the lack of opportunity for landscaping and on-street car parking opportunities. Lots with a frontage of 7.5 metres (m) or less should be provided via rear or side access lanes, places or streets.***
The lots are rear-loaded (from laneways) where less than 6 metres wide, in accordance with the SLHC. The significant number of rear-loaded lots provides for on-street car parking to meet the Scheme requirement of one per two dwellings. The on-street car spaces are well-distributed around stages 1 and 2. For more detail, refer to the One Mile Grid Traffic Impact Assessment report (19 February 2021), provided with the planning permit application package.

**Response – The information provided is considered unsatisfactory.**
**Clause 56.04-2 Lot area and building envelopes objective includes to provide lots with areas and dimensions that enable the appropriate siting and construction of a dwelling, solar access, private open space, vehicle access and parking, water management, easements and the retention of significant vegetation and site features. Standard C8 Further:**
**Clause 56.03-5 Neighbourhood character objective To design subdivisions that respond to neighbourhood character. Standard C6 Subdivision should: Respect the existing neighbourhood character or achieve a preferred neighbourhood character consistent with any relevant neighbourhood character objective, policy or statement set out in this scheme.**
**This information is required to undertake a assessment of the Clauses within Clause 56 Residential Subdivision of the Knox Planning Scheme.**
All the lots have been designed to accommodate dwellings designed and sited in accordance with the SLHC. The selected builders have all designed dwelling products that comply with the SLHC for all lots in stages 1 and 2. Dwelling plans have been checked and approved by Development Victoria.

Development in accordance with the SLHC is exempt from the need for a planning permit and thus from any planning application assessment or permit conditions.

The site development is based on a preferred neighbourhood character as discussed in the planning permit application and its background reports and especially the Architectus report. The proposed lots are all in accordance with this preferred neighbourhood character. In particular, the incorporated CDP includes as one of its purposes "To ensure that development occurs in an orderly and staged manner, with new built form that can accommodate a significantly higher intensity of activity commensurate with the role of the Knox Central Activity Centre". The masterplan for the site and the CDZ2 / CDP were developed in unison and all reflect the preferred neighbourhood character for the site. This was exhibited, tested and finally approved as part of the amendment C160 to the Scheme.

**ESD**
**Response to be provided via separate email when received from the relevant Department/Officer.**
Nothing has been received from Council.

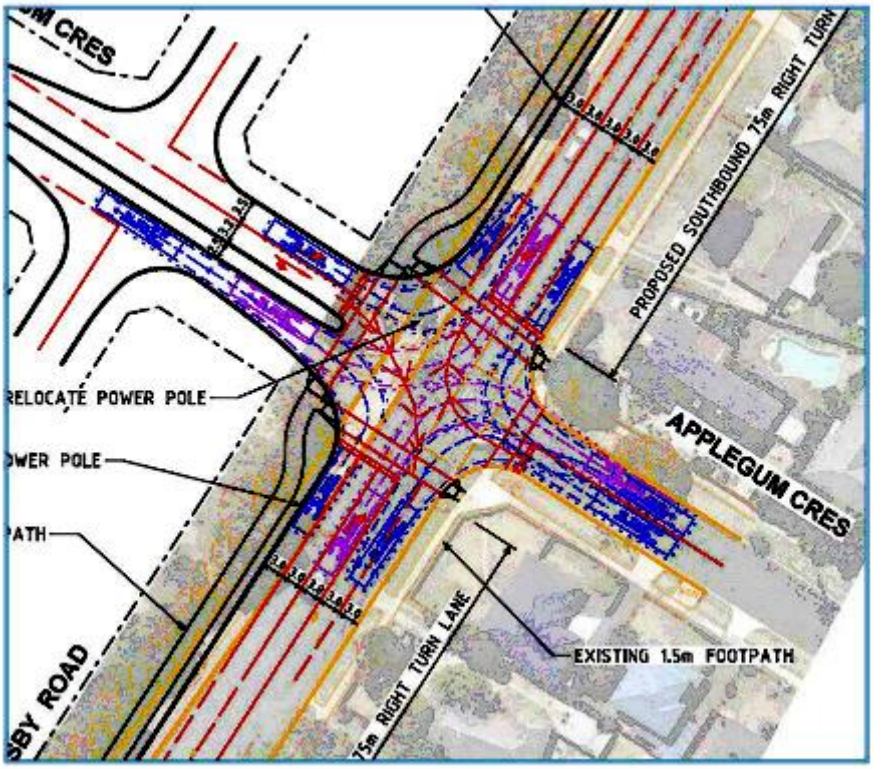
**Traffic and transport.**
***Council Traffic and Transport have raised the following in relation to traffic distribution and movements in blue. DV FYI responses are in black. Council response on DV FYI is highlighted in green.***

***The through/right turn from the site at the intersection of Scoresby Rd and Applegum Cres is 3 times as high as the through/right at the intersection of Burwood Hwy and Lakewood Res. Is a dedicated right arrow needed for access out of the estate?***
These movements are not comparable, as the Lakewood Drive intersection only serves a small DELWP office. The intersection analysis shows that the shared right and through movement from the site operates with a Degree of Saturation of under 0.6, which indicates it is only operating at about 60 per cent of its capacity. The operation as shown therefore, is very good.

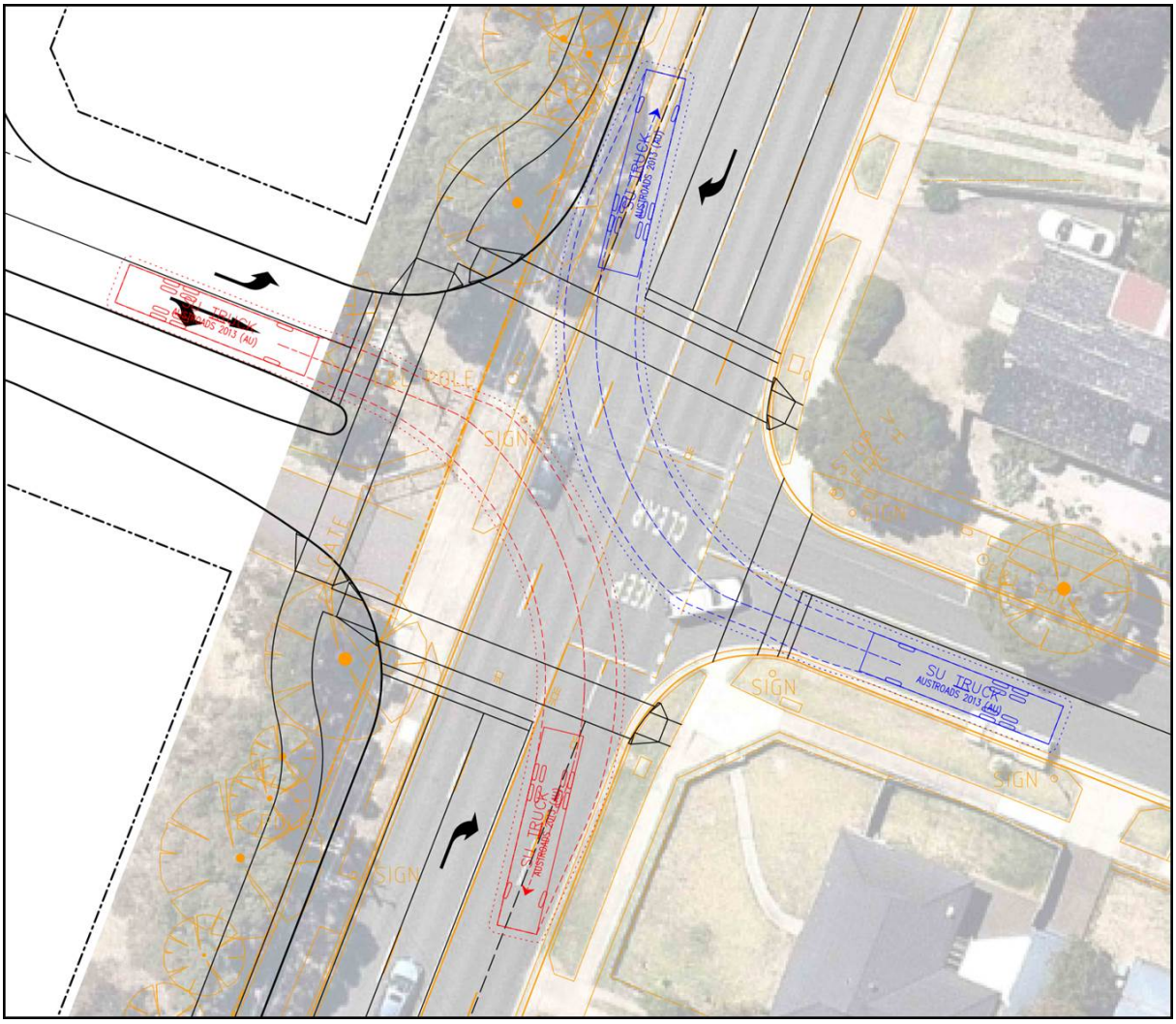
Note that there is only expected to be a limited through volume from west to east, so the shared lane has a minimal impact. Due to the constraints of Applegum Crescent opposite, the right turn lane must be shared with the through

lane, otherwise the through movement will not align with the departure side of the intersection. A separate right turn arrow may therefore be blocked by an occasional through movement and providing a separate right turn phase will take away time from the intersection time and impact on other movements. Given that this movement operates at approximately 60 per cent of capacity, no modifications to this operation are required.

**DoT will be the responsible Road Authority to review and approve the intersection capacity and lane configuration. As such, similar to the need for a left turn slip lane from the development onto Scoresby Road, Council will rely on the preference from DoT for the intersection layout.**
**With the intersection design, the developer needs to ensure opposing right turn movements from Applegum Cres have enough vehicle clearances at the same phase.**




Swept path diagrams by OMG have been prepared for the opposing right turn movements as shown below, confirming that these can occur simultaneously, even for large 12.5m trucks/buses (SU TRUCK as shown).




***Increase in right turns at the intersection of Burwood Hwy and Scoresby Rd is only 7 and no increase at the intersection of Burwood Hwy and Lakewood Drive. Is the modelling factored in any U-turn traffic movement? How will the U-turn traffic compare to right turn traffic?***

Increases in right turns at the Burwood Highway and Scoresby Road intersection are shown in Figure 33 and Figure 34 of the traffic report to be higher than seven movements. There are no increases in right turns at Lakewood Drive, as this access does not serve the subject site.

**The traffic statistics have been checked and the numbers are correctly accounted for.**

***The roads must meet sight distance requirements in accordance with Dot (roads) and Austroads guidelines (Table 3.2 Austroads Road Design Part 4A: Unsignalised and signalised intersections).***

The road network has been designed as a very low speed environment and all roads through the site are straight, other than the slight deviation in Road E and the Access Road. In these locations, the deviation will assist in slowing traffic speeds. Furthermore, the raised crossing just east of the deviation in Street E and the raised intersection on Access Road, will ensure that very low speeds are maintained on approach to the deviation. The straight alignment of roads provides good sight distances and the impact of slow point treatments, bends and deviations, ensure low speeds and minimise sight distance requirements.

Regardless, sight distance diagrams (refer appendix B typical sight distances) demonstrate that sight distances for approach speeds in excess of 20km/h are available. This is considered appropriate, given the location of the raised intersection and speed crossing on the critical approaches, which will have advisory speed limits of 20km/h.

**Council's preference is to have speed hump to further enforce the low speed (20km/h). At a later stage, Council will review each laneway and nominate speed hump when needed. Other than just the length of the laneway, other middle point treatment, such as pedestrian path access point, could also be considered to be used to reduce**

**motorist speed along the laneway. Adequate sight distance is required from the pedestrian path onto the road, which will require some sightline splay.**
An example laneway design has been prepared by OMG (refer attachment 190752CLP402A). This demonstrates the following points:

- the length of Laneway D is approximately 74 metres. All other laneways are less than 80 metres long, except for Laneway F along the western site boundary, which is split into four sections; each being less than 80 metres long. Due to the limited length, it is considered that midblock speed control is not required (but could be provided if desired);
- aligning the pedestrian path to be located more centrally to the reserve will allow for suitable sight distances to the laneway and vice-versa. This pedestrian path alignment can be accommodated in the detailed design. It is also possible to include further road narrowing at the pedestrian crossing location if desired.

***The right angle bens require a painted centreline and raised reflective markers to separate traffic travelling in opposite directions.***
This detail can be provided at the detail design stage after the issue of a planning permit.
**Agree**

***A give way sign and line marking is required at the proposed intersections Street A /laneway H, Street B/laneway E and Street A/access road to Burwood Highway.***
As above.
**Agree**

***A suitable name should be provided for each road as well as the walkway for block 23A.***
As above.
Agree

***Street lighting is to be provided by the developer ensuring adequate lighting at intersections, bends, laneways, walkways and at the end of shared driveways as per AS1158. Appropriate line marking and signage for the roads is also to be provided for good visibility at night.***
As above.
**Agree**

**Developer is to make contact with Council subdivision engineer to discuss street lighting and utility services requirements.**
***A review of the dimensions on all the cross-sections showed 3m shared path, 1.5m footpath, 7.3m pavement width for high level access street and 2.3m indented parking bays for collector road. This spatial allocation is considered as adequate except the clearance between the footpath and private land title boundary. The clearance indicated on the plan is 0.05m which is not enough for pedestrian and children bike rider safety with clearance to vegetation and fences within private property. The 50cm also restricts maintenance works on the footpaths, needing to access private land. Even the suggestion of an easement creates an added complication for maintaining the path and access as over time, owners forget or ignore the easement conditions and it will become problematic in trying to enforce the restriction. Care needs to be taken so that the reason for the original offsets is not lost and the path is no longer serviceable. As such, a desirable clearance of 0.5m or a minimum clearance of 0.3m is needed for safety and maintenance purposes.***
Throughout Knox (as an example, just look at the footpath / front fence alignments directly opposite in Scoresby Road) front fences abut footpaths. Development Victoria does not agree and has been provided with no evidence from Council to support its contention that a footpath setback from the property line is required for "safety and maintenance purposes". Furthermore, such a setback would diminish the verge width available for tree planting and tree root growth. The very minor setback proposed by Development Victoria is only to allow for survey peg protection.

**Across Knox, some streets have little set back (none, 0.05m) whereas others could have around 0.5 to 0.6m. In reality, the setback clearance varies because of different requirements at the time of development. Knox City Council standard drawings give a good indication of 0.6m as a guide. There is no good reason to provide a reduced clearance at a new development site when we should strive for good clearance and safer design.**

**Around 0.5m clearance is needed for footpath maintenance purpose. When a footpath is lifted causing a tripping hazard, Council usually apply asphalt to fill the gap. Without some clearance on the side of the footpath, the maintenance crew cannot gain access without walking into private property. With footpath renewal, the entire footpath slab is demolished and lifted away, a 0.05m clearance gives no room for error and makes demolition impossible without encroaching on private land.**

**Pedestrian and kids bike rider also need good clearance on the edge of the footpath for road safety reason. Required by Road Rules, if kids bike rider and accompanying adult are riding on the left hand side of the footpath, some clearance is needed for handlebars of the bicycle.**
**Alternatively, we can also consider a reduced clearance but impose an easement inside the frontage of the private land. The easement will give access to third party and also restrict the type of objects that can be placed along the frontage.**
It is important to note that the development does not propose front fences, which will provide an appropriate preferred character and attractive design outcome along the frontage of all lots.

Based on PGA experience with footpath reconstruction in areas of Greater Melbourne, a zero offset provision is commonplace and neither prohibits maintenance nor does it create significant access issues for maintenance crews.

***The laneway is proposed to have a road reserve of 7m with 7m road carriageway. There needs to be some buffer between the roadway and the title boundary, typically a 5.5m carriageway with around 1m of buffer for vehicle access safety.***
The laneways are proposed with typical dimensions in accordance with standard practice and provide a pavement in excess of the standard under clause 56 of the Scheme, where an Access Lane has a 5.5 metres carriageway with no verge and the 5.5m carriageway is noted as being sufficient to "*provide adequate access to a standard 3.5m wide single garage built to the property line*".

Nevertheless, it is proposed to provide a central trafficable area of approximately 6 metres in width, which provides some flexibility in garage design, with small landscape outstands (approximately 0.5 metre x 0.5 metre) on lot boundaries, to provide some separation between garage access points. This will ensure that suitable access width (at least 6.5m) is available for access to both double and single garages adjacent to one another and provide some opportunity for landscaping and street lighting.

**Council requires examples of swept path diagrams for single, double garages access for the laneway. The diagrams should also display the location of planter boxes. It helps to investigate their placement. At this stage, it is understood that no waste bins are proposed along the landway.**
An example laneway design has been prepared (refer attachment 190752CLP402A) as noted earlier. Swept paths (refer attachments 190752SPA403A and 190752SPA404A) have also been prepared by OMG. Example double or single garages have been shown based on the lot width, with planting outstands shown between garage doors, extending 0.5m into the 7.0m laneway. The attached swept paths demonstrate suitable garage access, with no overhang of the landscape outstands (clearance envelope only). Whilst some spaces may require a corrective movement, the single garages, and at least one space in each double garage are shown to be accessible in the minimum number of movements.

With regard to bins, the attached (refer attachment 19075CLP402A) demonstrates that the bin placement for the laneway dwellings can occur along the side streets, in this case Street 3, with 5 or 6 bin sets shown on each side of the laneway. It is shown that these bins take up approximately half of the street frontage, which allows for gaps for landscaping or sight distances, or potentially kerbside parking. Given that the pedestrian access to the laneway dwellings will be from the northern or southern road frontages (not the laneway), it is anticipated that visitor parking will typically occur along the northern or southern roads, rather than the side road (Street 3). It is expected that kerbside parking therefore, will not typically interfere with bin collection. Regardless, this is typical for all residential areas, where kerbside parking has the potential to occur adjacent a bin placement area.

***Traffic management is required to discourage the use of the laneways (other than for access to garages and rubbish collection), keep the speed to approximately 10km/h and provide a safe shared zone for pedestrians with appropriate signage as per the Knox Planning Scheme clause 56.06-8. There is no laneway traffic calming scheme proposed at the current plans.***

The laneways are located and designed as short vehicle access lanes to rear-loaded lots, where pedestrian activity is expected to be negligible (as each lot will have alternate pedestrian access). The longer laneway along the western boundary has been provided with speed control devices along its length, to ensure low speeds are maintained, though it is expected that traffic will typically only travel a short section of this laneway before turning east.

Access to the laneways from other roads will be provided via crossovers rather than typical road intersections, making it be clear to drivers entering the laneways of their status as a low-speed lane. Furthermore, the pavement treatment within the laneways ill vary from the surrounding road network and where appropriate, landscaping outstands will at the laneway entry, to further manage speed perceptions and encourage a low speed environment.

The additional traffic management treatments therefore, are not required along the laneways. The plan that the majority of the laneway frontages will have direct garage access limits any scope for traffic management treatments.

It is not necessary to provide shared zone signage in each laneway, as there are specific requirements for formal 'shared zones' which will not likely be met by the proposed laneways (as there will be very little pedestrian traffic), and all formally signed shared zones require Department of Transport approval.

**As mentioned above regarding laneway speed hump and speed management treatment, Council will review laneway design at a later stage to investigate the speed control design requirement.**
Understood.

***The footpath connections across the laneways may have limited visibility due to the proximity of garages adjacent to the laneways. Raised platforms or similar traffic devices to keep speeds down within the laneways should be considered at these locations.***
Laneways C, D and G have pedestrian crossings approximately mid-block along the laneways and there is opportunity in these areas to include traffic management, which can be identified at the detailed design stage. The following options could be considered within the area of the crossing points:

- the landscape outstands proposed elsewhere within the laneway could be utilised (with low height planting) subject to swept path review of adjacent garage access, to provide further indication of the crossing point and further narrow the crossing width;
- a different pavement treatment at the crossing point to highlight the crossing;
- bollards or planting adjacent the pedestrian path to prevent vehicles from using the path area.

Noting the width of the pedestrian crossing area and the very low speed operation of the laneways, the above treatments would provide appropriate control of the crossing point.

**As mentioned above regarding laneway speed hump and speed management treatment, Council will review laneway design at a later stage to investigate the speed control design requirement.**
Agreed.

***Residential off-street car parking is not mentioned in the report. It is expected that the standard residential off street car parking rate will be provided as 1 space per 1 or 2 bedrooms and 2 spaces per 3 or more bedrooms.***
The provision of car parking for each dwelling will be in accordance with Scheme requirements.
**Agree**

***Regarding on-street visitor car parking, the submitted Traffic Report mentioned that kerbside or indented parking in excess of 1 space per 2 dwellings can be provided, with a relatively even distribution of car parking across the site. However, below are some considerations around the placement of proposed parking close to intersections and bends and where roads are reduced to a single lane of traffic due to parking. The number of available parking spaces is likely to be reduced to ensure suitable two way access and safety at intersections:***

***Parking must be at least 10m clear of all unsignalised intersections (as per the Victorian Road Rules)***
The parking plan shown in Figure 32 of the Traffic Impact Assessment report provides clearances to intersections of at least 10 metres.

**Council will review the visitor car parking plan to show which spaces are considered as acceptable. Visitor car parking spaces too close to an intersection or bends will be removed. During the meeting, it is revealed that it is highly likely there are enough visitor car parking within the site even if the unsafe are to be removed.**
Understood.

***Parking is likely to be restricted within 20m of the 90 degree bends to allow for adequate sight distance for motorists***
Clearances to bends are provided of at least 10 metres. This is appropriate as it matches the 10 metres clearance from for intersections and the bends will ensure that all traffic is moving slowly on the bend (as opposed to intersections, where priority traffic does not necessarily need to slow down).
**As above**

***Driveways and crossovers for any superlot should not be within 6m from the tangent points at an intersection as per AS2890.1, clause 3.2.3. Driveways and crossovers adjacent to 90 degree bends are to be designed as per an intersection.***
*There are no superlots proposed within the subdivision.*

*Individual lot design generally allows for crossovers to each lot to be located away from intersections, with corner lots having a long side abuttal which allows for flexibility in crossover locations. Regardless, it is expected typically that all lots will be accessed from the short road abuttal and as a result, some corner lots will likely be accessed from within 6 metres of the intersection tangent point.*

*It is noted that the Australian/New Zealand Standard for Parking facilities, Part 1: Off-street car parking (AS/NZS 2890.1:2004), does not differentiate between road types in relation to the crossover location and the same requirements are placed on sub-arterial, collector and local road intersections. Furthermore, the requirement applies to Category 1 and 2 access facilities, which can include developments of up to 100 parking spaces onto a local road, and additionally, there is no consideration of design speeds at the intersection.*

*In terms of the proposed development, all streets will be local roads expected to carry less than 1,000 vehicles per day. Only the main entry boulevard is expected to exceed traffic volumes of 2,000 vehicles per day.*

*The internal roads will have target speeds of less than 40km/h, assisted by traffic management treatments, the short length of most internal roads and the fact that traffic will typically be turning at the intersection adjacent.*

*Finally, each crossover will serve only a single lot and therefore, will carry no more than 7 vehicle trips per day.*

*Based on all of the above, for low speed, low traffic volume, local residential streets serving only a single residence, it is appropriate that some crossovers may be located within 6 metres of the turning radius of an adjacent intersection.*

**A more detailed design (including streetscape) will need to show that the sub-standard crossover must have adequate sight distances when exiting property. Likewise, motorists from the intersection must also have a good view of the vehicle exiting the property.**
This will be resolved in detailed design, following the issue of the relevant permit.

***Long lengths of parking without a break to allow vehicles to overtake or pass an oncoming vehicles is not supported. 'No Parking' areas may be required to allow two vehicles from opposite directions to pass if there is not adequate road space for two way traffic.***
The parking plan (in the Traffic Impact Assessment report) is designed to show the full potential available on-street parking spaces (approximately 300 spaces over the whole site) and is not indicative of the actual likely demand for parking.

Nevertheless, the parking plan shows parking typically only on one side of each street. Where a 7.3 metres road pavement is provided however, sufficient space remains for vehicles to pass regardless of the potential for a long length of kerbside parking. Where parking is shown on the narrower roads, a maximum

length of 6 parked vehicle is shown. Should this parking be highly utilised, it may be necessary to provide No Parking or No Stopping restrictions although, it is noted that the narrower pavement is only used on short roads which are anticipated to serve a limited number of dwellings, and over short distances only. It is expected therefore, that the impact of occasional kerbside parking along these roads will not have a significant negative impact on the operation of the roads but more so, will likely assist in maintaining low traffic speeds. The provision of No Stopping areas is likely to be unnecessary.

**As mentioned above, Council will review the visitor car parking plan and work with the applicant for acceptable on-street car parking spaces allocation.**
Understood.

***The lots are not wide enough to accommodate a driveway and parking space. A minimum 3m wide crossing (as required in the Planning Scheme) with adjacent splays (refer to Council standards), is approximately 5.5m wide at the road pavement. Any frontage less than 11m is unlikely to be suitable for parking.***
The parking plan allows for potential crossover locations. It is not required to provide one kerbside parking space per lot and when considering side abuttals to lots, the impact of combining adjacent crossovers and roads with dwellings only on one-side, the potential for kerbside parking is considerable, as indicated in the parking plan.

**The applicant is to pay attention to crossover location and maximise on-street parking oppuntunity as much as possible.**
***A single parking space requires a minimum length of 5.4m between the splays of crossovers. Where there are multiple cars parked parallel, the Australian Standards require a minimum 6m long car space so that cars can manoeuvre into and out of the space.***
The parking plan shows kerbside parking spaces in excess of these dimensions, with a typical extract below highlighting the different dimensions for end bays rather than central bays.
**Agree**

***There is a conflict between bin placement (for dwellings with laneway access) and proposed parking on the nearby streets (see example below from One Mile Grid's Waste Management Plan and Traffic Impact Assessment).***
It is acknowledged that kerbside parking is shown on some streets where bin collection is also nominated, though this is standard for kerbside parking to be allowed where kerbside bin collection is required. This would occur in the vast majority of streets throughout the Municipality.

Regardless, where the dwellings with laneway access are provided, the combining of all vehicle access to the rear laneway results in kerbside parking being available along all other road frontages. For example, Block 19 and 20 accommodate in excess of 1 kerbside space per 2 dwellings even when removing the parking spaces shown where the bin collection is likely.

Noting that the rear-loaded lots will have primary pedestrian access (particularly for visitors) on the frontage roads, and with no crossovers to the frontage roads, the use of the side road abuttals for visitor parking is considered to be unlikely and therefore, the side roads are expected to be clear for bin collection. Additionally, the side road abuttals provide a considerably greater length than required for waste collection and therefore, the occasional use of kerbside parking is not expected to limit the availability of bin collection locations.

**Bin placement will need to be further reviewed with the Waste Management Team. Areas of lesser conflicts with street parking should be identified as good bin placement locations.**
As identified previously, given that the pedestrian access to the laneway dwellings will be from the northern or southern road frontages (not the laneway), it is anticipated that visitor parking will occur typically along the northern or southern roads, rather than the side road (Street 3). It is expected that kerbside parking therefore, will not interfere typically with bin collection.

***The landscape master plan provides some details on the lot layout, footpath, and indented parking bays. However, details relating to the location of crossovers and garages are needed to check for turning access movements. This is especially important for a narrow rear laneway access.***

As above, the Scheme provides that a 5.5m wide laneway is sufficient for access to a 3.5m wide single garage and therefore, the proposal to provide a 7 metres wide laneways, with at least 6.5m provided for garage access, is appropriate.

**As above mentioned, examples of swept path diagrams must be provided for illustration.**
An example laneway design has been prepared by OMG (refer attachment 190752CLP402A) as have swept paths (refer attachments 190752SPA403A and 190752SPA404A), as noted earlier.

***Details of crossover locations must be provided and include swept path assessments. Intersections to be designed in accordance with - AustRoads Design vehicles and Turning Path Templates Guide (AP-G34-13) were required.***
The internal road network generally comprises standard residential street cross-sections, and it is proposed to generally adopt standard crossover designs for property access and therefore, lot access will be provided appropriately.

Similarly, the internal intersections are designed as standard residential T-intersections, with standard kerb radii, which are designed to allow for the required vehicles. Swept paths (refer appendix C typical swept paths) for a standard intersection design, show the movement of cars and service vehicles. It is acknowledged that should a passenger vehicle and a service vehicle arrive at the intersection simultaneously, the service vehicle may need to allow the passenger vehicle to leave the intersection before continuing, as is standard practice at the majority of residential intersections in the Municipality.

**Swept path diagram along tight bends must be provided to demonstrate encroachment over the centre-line. Council reviews two 99$^{th}$ per centile passing side by side and also a waste collection vehicle and 99$^{th}$ per centile. If encroachment is excessive, sight distance design across the bend must be fully detailed and provided to ensure they can view and give way to each other.**
Additional swept paths for a typical 90-degree bend have been provided (refer attachment 190752SPA405A), which demonstrate that a large waste vehicle (9.8m waste truck) and a large car (B99) can travel through the bend simultaneously, in both directions, maintaining minimum clearances through the swept path. Whilst acknowledged as being relatively tight, this is typical for a local road network and would be repeated in midblock locations where kerbside parking is present and at intersections.

The low frequency of waste truck movements, combined with the low frequency of coincidence with a large (B99) vehicle, indicates that typically, manoeuvring around the bends will be much easier, with additional clearance available.

***Below are further comments and further information for the construction of the dwellings and road infrastructure: Waste collection vehicle turning template at specific bends and intersections.***
As above, the internal intersections are standard residential T-intersections, designed with standard kerb radii.

**Road standard at intersection and bend, together with standard kerb radii do not give details on the width of the road in association. As such, without swept path diagrams, we do not know the clearances needed. Hence, waste collection vehicle turning template at specific bends and intersections will still be required.**
As noted above, swept path diagrams have been provided for 90-degree bends (refer attachment 190752SPA405A) and earlier for intersections (refer attachments 190752SPA400A, 190752SPA401A and 190752SPA402A). It should be noted that the intersections selected are the worst-case scenarios, where turns are to and from a narrower 5.5 metres wide pavement and simultaneous turns for large vehicles cannot be accommodate. This is typical for residential streets throughout the urban area and requires simply that vehicles may need to wait for a large vehicle to turn before entering the intersection.

***A length of 1.7m per dwelling is required along the road reserve to cater for waste and recycling bins. However, the placement of bins along the road reserve for greater than 10m is not acceptable as it may create sight distance issues.***
Typically, no more than five dwellings will place bins adjacent to that run of dwellings although there are some locations where a laneway serves up to seven dwellings. For these locations, side street abuttals are much greater than 10 metres and therefore, bins can be placed with suitable breaks if necessary. The location of street trees will provide breaks between bins placed for collection.
**Agree**

***Kerb profiles***
Kerb profiles will be prepared at the detail design stage after the issue of a planning permit and in accordance witj an 'engineering plans'condition. The profiles will be finalised in consultation with the Council engineers.
**Agree**

***Road pavement profiles and road surface specifications***
As above.
**Agree**

***Road and footpath gradients***
As above.
**Agree**

***Sight distance assessment at specific intersections***
As provided in various responses, sight distances at intersections are appropriate.
**Agree**

***Two-way vehicles turning movements at bends and intersections***
The internal intersections are standard residential T-intersections, designed with standard kerb radii, and all bends are provided with similar radii to the T-intersections.
**Mentioned above.**
As above.

***Raised T-intersections to be designed in accordance with VicRoads Road Design Note RDN 03-07 – Raised Safety Platforms (RSPs).***
Accepted.
**Agree**

***Waste management.***
**Response to be provided via separate email when received from the relevant Department/Officer.**
Nothing has been received from Council.

***Landscape.***
**Response to be provided via separate email when received from the relevant Department/Officer.**
Refer to separate response from Development Victoria to Council landscape comments.

Kind Regards, [redacted].

[redacted]

*Knox City Council acknowledges the traditional custodians of the City of Knox, the Wurundjeri and Bunurong people of the Kulin Nation.*

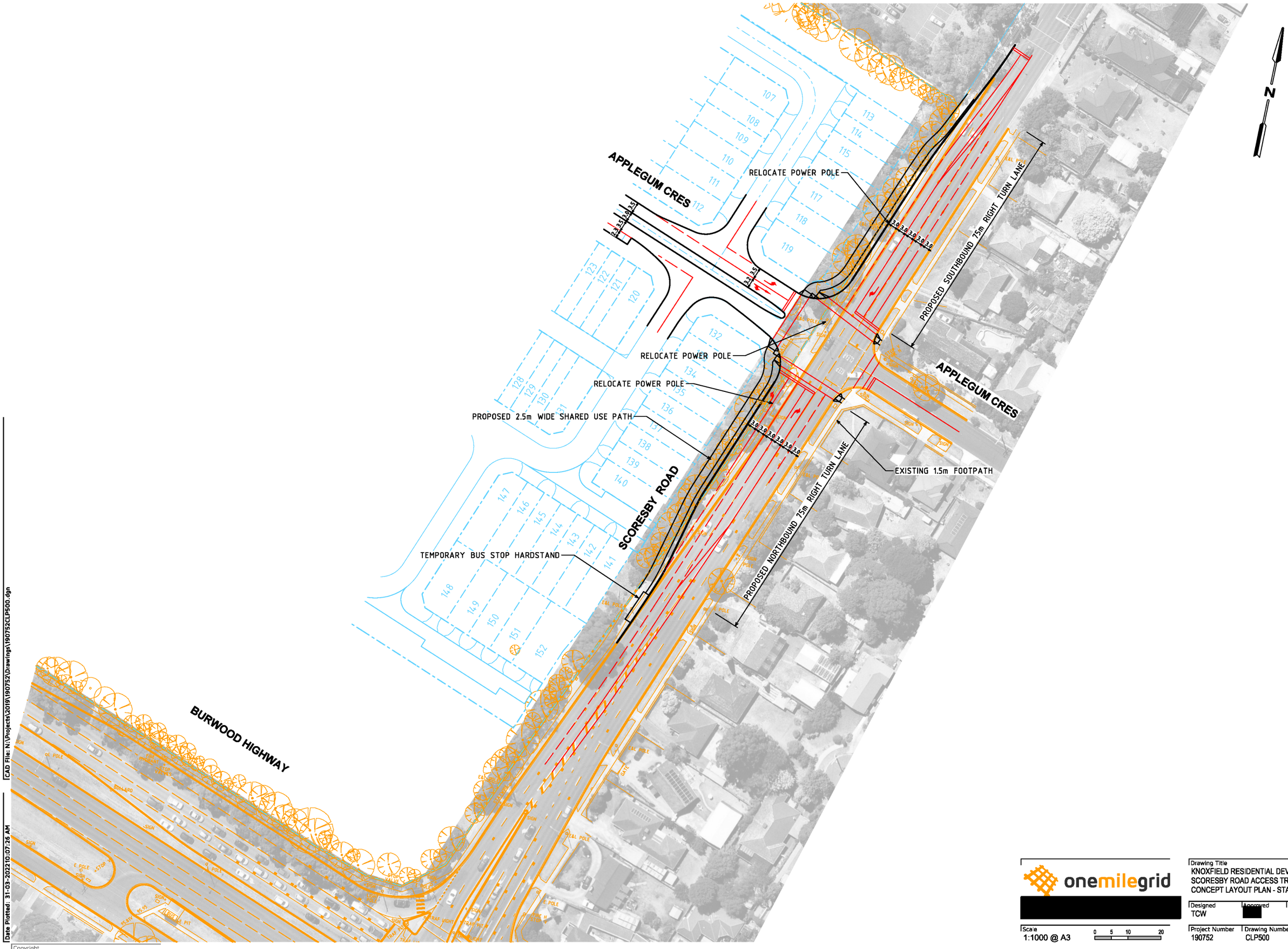
8000) and destroy the original message.

KNOX CITY COUNCIL

[redacted]

**********

PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS EMAIL

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Date Plotted: 31-03-202210:07:26 AM



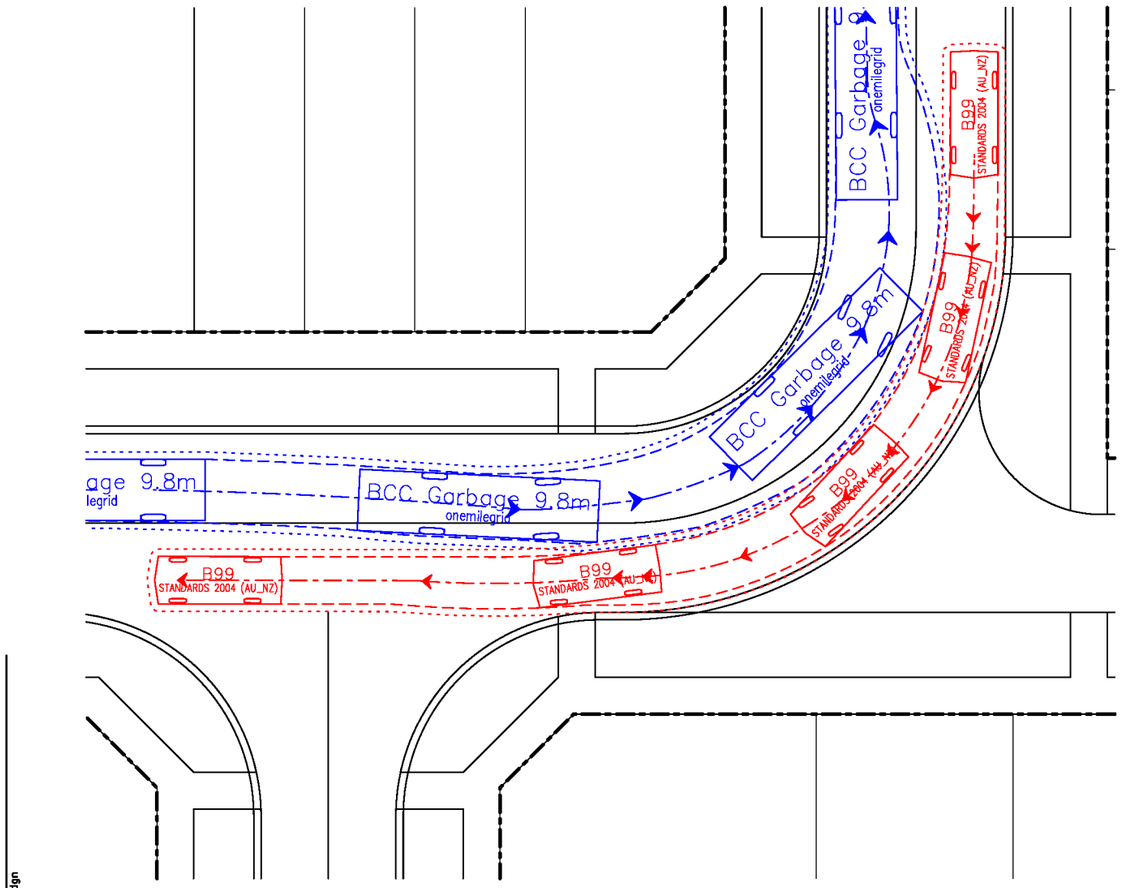
onemilegrid

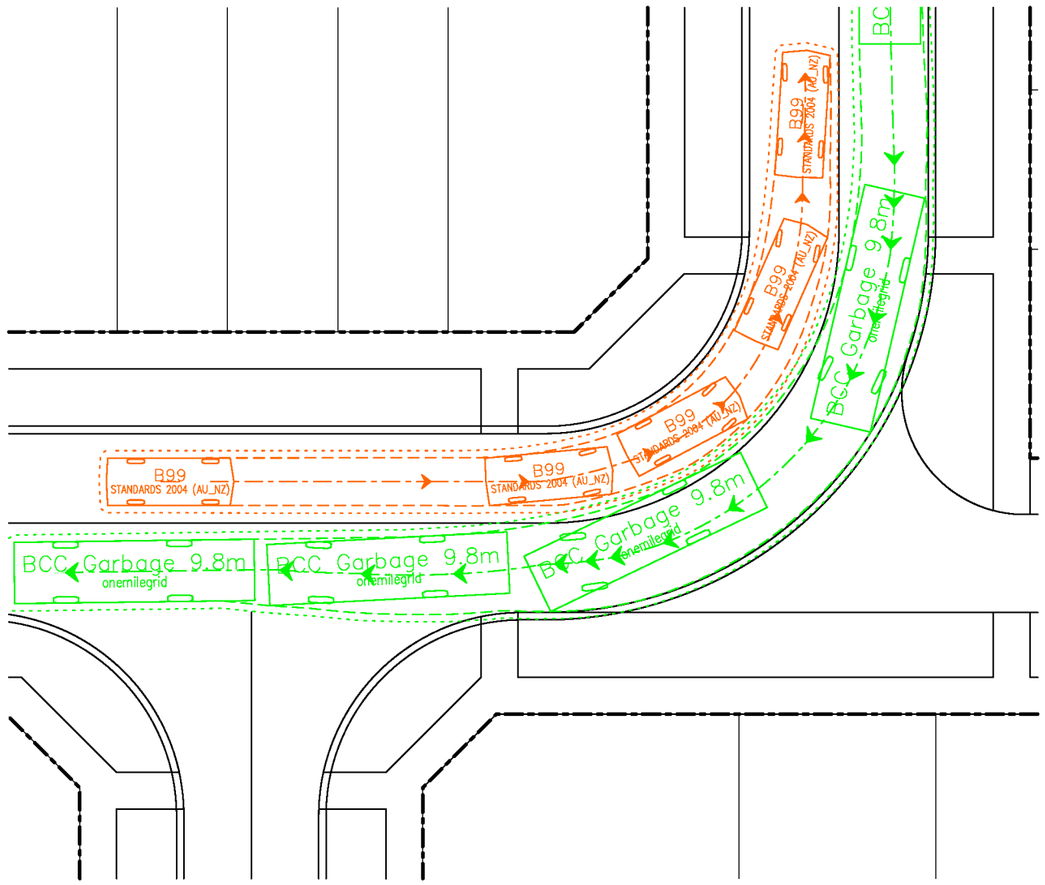
Drawing Title
KNOXFIELD RESIDENTIAL DEVELOPMENT
SCORESBY ROAD ACCESS TREATMENT
CONCEPT LAYOUT PLAN - STAGE 1

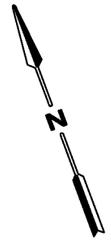
| Designed | Approved | Melway Ref |
|---|---|---|
| TCW | [redacted] | 73 D1 |

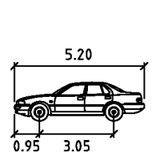
Scale
1:1000 @ A3
0 5 10 20

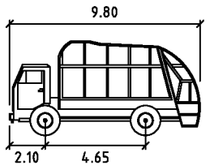
| Project Number | Drawing Number | Revision |
|---|---|---|
| 190752 | CLP500 | A |




| B99 | meters |
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| Track | : 1.84 |
| Lock to Lock Time | : 6.0 |
| Steering Angle | : 33.9 |

| BCC GARBAGE 9.8m | meters |
|---|---|
| Width | : 2.50 |
| Track | : 2.50 |
| Lock to Lock Time | : 4.0 |
| Steering Angle | : 35.8 |

## SWEPT PATH LEGEND

– – – – – DESIGN VEHICLE SWEPT PATHS SHOWN DASHED
--------- 300mm CLEARANCE ENVELOPE SHOWN DOTTED

[redacted]

Scale
1:250 @ A3
0 1.25 2.5 5

Drawing Title
KNOXFIELD RESIDENTIAL DEVELOPMENT
ROAD ALIGNMENT
SWEPT PATH ANALYSIS

| Designed | Approved | Melway Ref |
|---|---|---|
| TCW | [redacted] | 73 D1 |

| Project Number | Drawing Number | Revision |
|---|---|---|
| 190752 | SPA405 | A |

CAD File: \\auvlcs03\Company\Projects\2019\190752\Drawings\190752SPA405.dgn

Date Plotted: 15-10-2021 09:14:32



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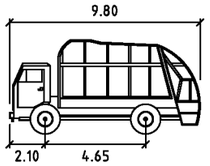
Aerial photography provided by Nearmap




BCC GARBAGE 9.8m meters

| | |
|---|---|
| Width | : 2.50 |
| Track | : 2.50 |
| Lock to Lock Time | : 4.0 |
| Steering Angle | : 35.8 |

## SWEPT PATH LEGEND

– – – – – DESIGN VEHICLE SWEPT PATHS SHOWN DASHED
--------- 300mm CLEARANCE ENVELOPE SHOWN DOTTED

N

STREET 3

STREET B

BCC Garbage 9.8m
onemilegrid

BCC Garbage 9.8m
onemilegrid

BCC Garbage 9.8m
onemilegrid

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Date Plotted: 09-08-20211:39:36 PM



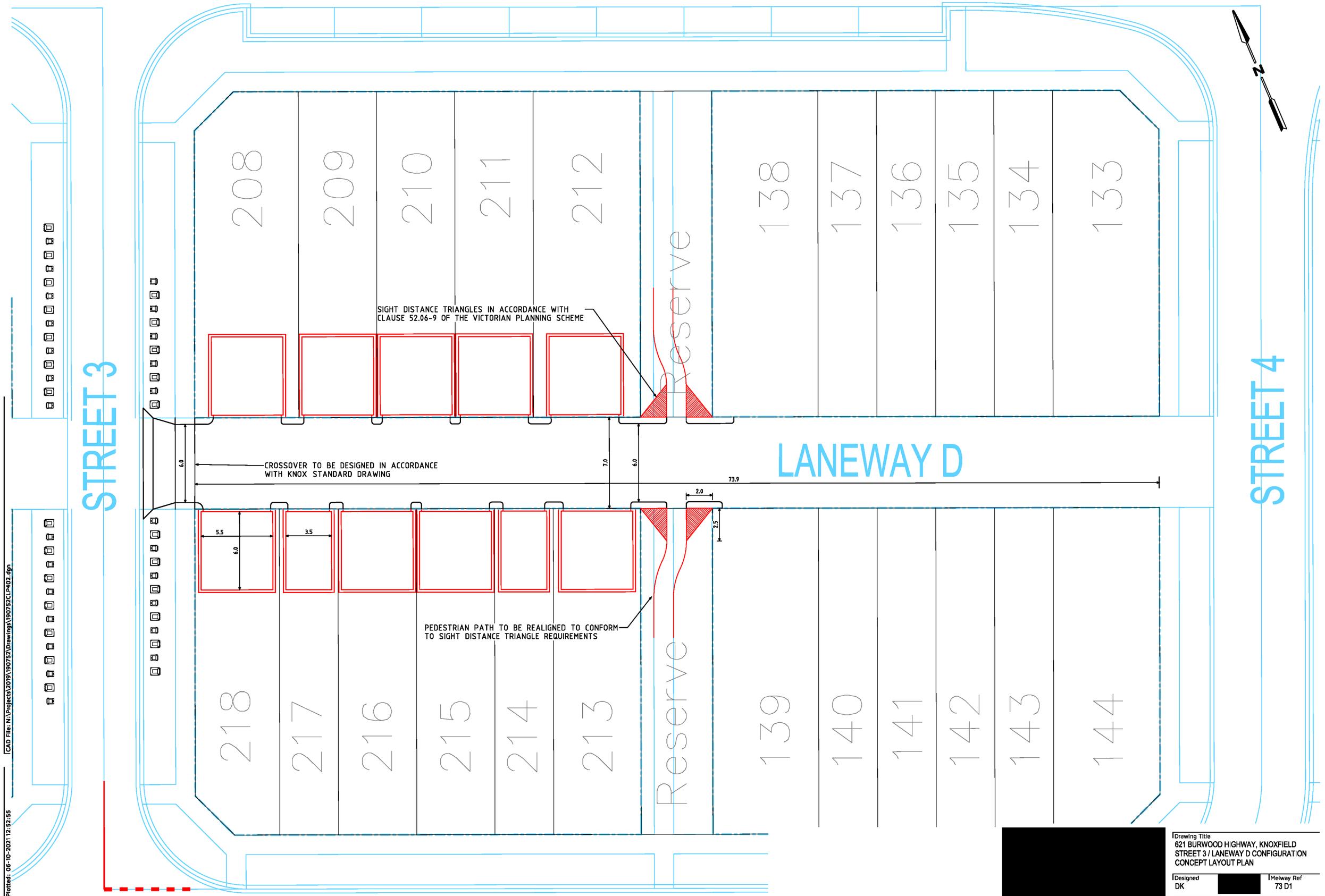
Aerial Photography
Aerial photography provided by Nearmap

[redacted]

Drawing Title
KNOXFIELD RESIDENTIAL DEVELOPMENT
SITE VEHICLE ACCESS
SWEPT PATH ANALYSIS

| Designed | [redacted] | Melway Ref |
|---|---|---|
| MOB | | 73 D1 |

| Scale | Project Number | Drawing Number | Revision |
|---|---|---|---|
| 1:200 @ A3 (0 1 2 4) | 190752 | SPA400 | A |

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Date Plotted: 06-10-2021 12:52:55



Drawing Title
621 BURWOOD HIGHWAY, KNOXFIELD
STREET 3 / LANEWAY D CONFIGURATION
CONCEPT LAYOUT PLAN

| Designed | Melway Ref |
|---|---|
| DK | 73 D1 |

| Project Number | Drawing Number | Revision |
|---|---|---|
| 190752 | CLP402 | A |

Scale
1:250 @ A3

0 2 4 8

STREET 3

STREET 4

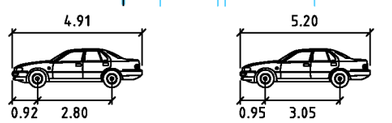
LANEWAY D

208 209 210 211 212 Reserve 138 137 136 135 134 133

218 217 216 215 214 213 Reserve 139 140 141 142 143

B99 STANDARDS 2004 (AU_NZ)

B85 STANDARDS 2004 (AU_NZ)

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| Steering Angle | : 34.1 | Steering Angle | : 33.9 |

## ENTRY MANOEUVRES

– – – – – DESIGN VEHICLE SWEPT PATHS SHOWN DASHED
--------- 300mm CLEARANCE ENVELOPE SHOWN DOTTED

[redacted]

Drawing Title
621 BURWOOD HIGHWAY, KNOXFIELD
STREET 3 / LANEWAY D CONFIGURATION
SWEPT PATH ANALYSIS - EXIT

Designed: DK
[redacted]
Melway Ref: 73 D1

Scale: 1:250 @ A3
0 2 4 8

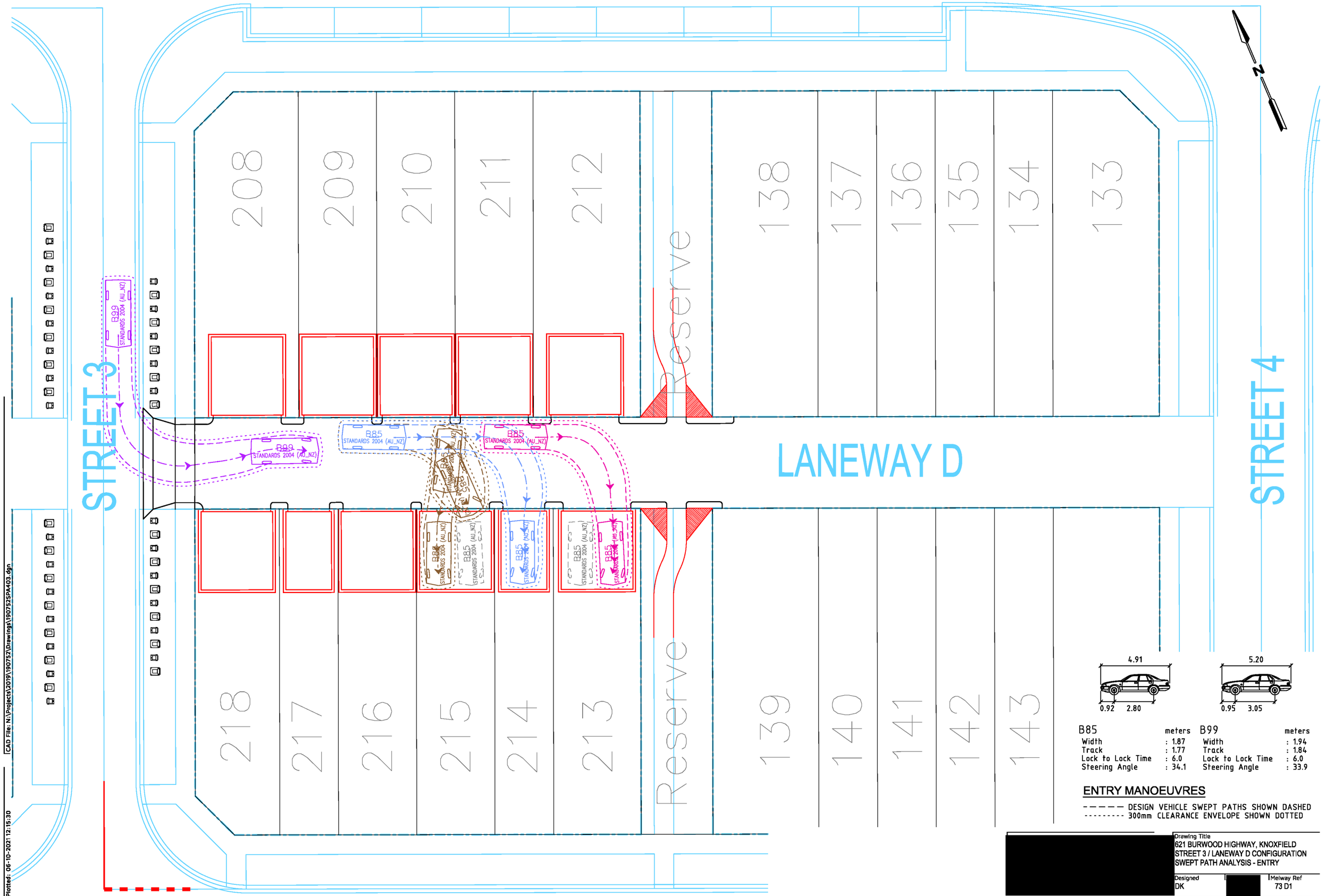
Project Number: 190752
Drawing Number: SPA404
Revision: A

CAD File: N:\Projects\2019\190752\Drawings\190752SPA404.dgn

Date Plotted: 06-10-2021 12:17:05



Aerial Photography
Aerial photography provided by Nearmap



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|---|---|---|---|
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| Track | : 1.77 | Track | : 1.84 |
| Lock to Lock Time | : 6.0 | Lock to Lock Time | : 6.0 |
| Steering Angle | : 34.1 | Steering Angle | : 33.9 |

## ENTRY MANOEUVRES

- - - - - DESIGN VEHICLE SWEPT PATHS SHOWN DASHED
--------- 300mm CLEARANCE ENVELOPE SHOWN DOTTED

[redacted]

Drawing Title
621 BURWOOD HIGHWAY, KNOXFIELD
STREET 3 / LANEWAY D CONFIGURATION
SWEPT PATH ANALYSIS - ENTRY

Designed: DK
[redacted]
Melway Ref: 73 D1

Scale: 1:250 @ A3
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Project Number: 190752
Drawing Number: SPA403
Revision: A

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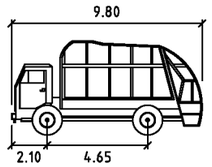


BCC GARBAGE 9.8m meters

| | |
|---|---|
| Width | : 2.50 |
| Track | : 2.50 |
| Lock to Lock Time | : 4.0 |
| Steering Angle | : 35.8 |

## SWEPT PATH LEGEND

– – – – – DESIGN VEHICLE SWEPT PATHS SHOWN DASHED
--------- 300mm CLEARANCE ENVELOPE SHOWN DOTTED




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Date Plotted: 09-08-20211:39:34 PM



Aerial Photography
Aerial photography provided by Nearmap

[redacted]

Drawing Title
KNOXFIELD RESIDENTIAL DEVELOPMENT
SITE VEHICLE ACCESS
SWEPT PATH ANALYSIS

| Designed | [redacted] | Melway Ref |
|---|---|---|
| MOB | | 73 D1 |

| Scale | Project Number | Drawing Number | Revision |
|---|---|---|---|
| 1:200 @ A3 (0 1 2 4) | 190752 | SPA401 | A |

PROPOSED
HABITAT WETLAND

ULTIMATE
SEDIMENT BASIN

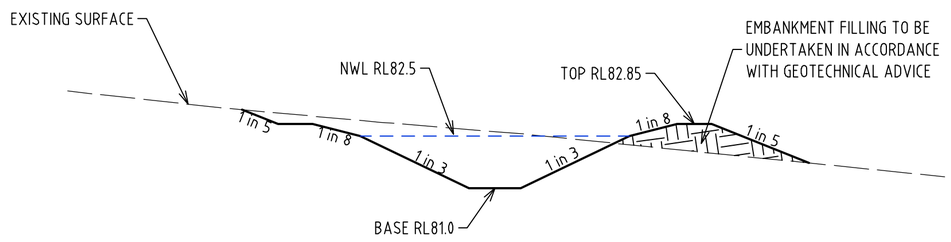
EXISTING DAM

PROPOSED
TREATMENT
WETLAND

TEMPORARY SEDIMENT BASIN
OUTFALL TO BLIND CREEK.
DISCHARGE OVERLAND TO
EXISTING SITE DRAINAGE PIT VIA
EXISTING OPEN DRAIN.

TEMPORARY
SEDIMENT BASIN
APPROX AREA =300m2
MAX DEPTH = 1.5m

STAGE 1
STAGE 2
STAGE 3
STAGE 4
STAGE 5
STAGE 6
STAGE 7




TEMPORARY SEDIMENT BASIN TYPICAL SECTION
H1:250 V1:125

NOTES:

1. TEMPORARY SEDIMENT BASIN PROPOSED TO BE LOCATED IN STAGE 5 OF THE SUBDIVISION AND PROVIDE AN OUTLET FOR STAGES 1 TO 4 OF DEVELOPMENT,
2. TEMPORARY SEDIMENT BASIN TO OUTLET INTO EXISTING SITE DRAINAGE PIT AND PIPE INFRASTRUCTURE VIA EXISTING OPEN DRAINS ON THE WEST SIDE OF THE PROPERTY. EXISTING SITE DRAINAGE OUTFALLS TO BLIND CREEK.
3. SEDIMENT BASIN TO BE DESIGNED AND SIZED IN ACCORDANCE WITH MELBOURNE WATER GUIDELINES.
4. DISCHARGE FLOW RATE TO BE CONTROLLED TO PRE-DEVELOPED LEVEL VIA AN OUTLET CONTROL PIT AND ORIFICE LOCATED IN THE TEMPORARY SEDIMENT BASIN.
5. TEMPORARY SEDIMENT BASIN REQUIRED UNTIL SUCH TIME THAT THE FOLLOWING SEQUENCE OF SITE WORKS HAS OCCURED:
   - 5.1. HABITAT WETLAND CONSTRUCTED AND ESTABLISHED.
   - 5.2. EXISTING DAM CAN THEN BE FILLED.
   - 5.3. ULTIMATE SED BASIN AND TREATMENT WETLAND CONSTRUCTED, ESTABLISHED AND BOUGHT ONLINE.
6. HABITAT WETLAND CONSTRUCTION IS PLANNED TO BE INCLUDED IN CONJUNCTION WITH EARLY STAGES OF DEVELOPMENT.

TEMPORARY STORMWATER MANAGEMENT PLAN

1:1250 @ A1

| REV | DESCRIPTION | DATE |
|---|---|---|
| 2 | AMENDED TO ADDRESS COUNCIL RFI RESPONSES | 04.11.2021 |

KNOXFIELD DEVELOPMENT
609-621 BURWOOD HWY
KNOXFIELD

DRAWING No. 19095 - SM1 Rev. 1

PROPOSED SUBDIVISION - TEMPORARY STORMWATER MANAGEMENT PLAN

BLIND CREEK

PROPOSED
HABITAT WETLAND

EXISTING DAM
EXTENTS

FUTURE
SEDIMENT BASIN

EXISTING DAM

FUTURE
TREATMENT
WETLAND

EXISTING DAM
EXTENTS

STAGE 7

TEMPORARY SEDIMENT BASIN
OUTFALL TO BLIND CREEK.
DISCHARGE TO EXISTING SITE
DRAINAGE PIT VIA BASIN
CONTROL PIT AND OUTFALL PIPE.

TEMPORARY
RETARDING BASIN
APPROX AREA =1200m2
DEPTH = 1.35m
AVAILABLE STORAGE =1700m3

STAGE 6

STAGE 5

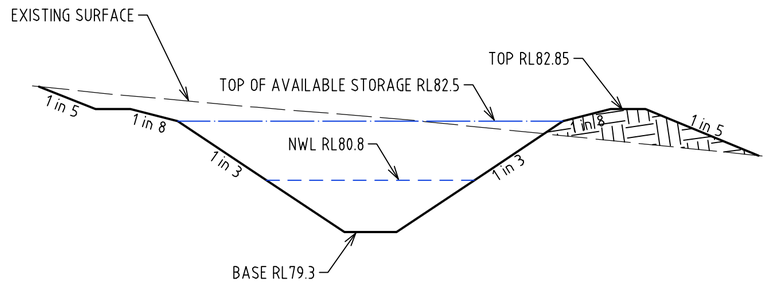
TEMPORARY
SEDIMENT BASIN
APPROX AREA =680m2
MAX DEPTH = 1.5m (BELOW NWL)

STAGE 4

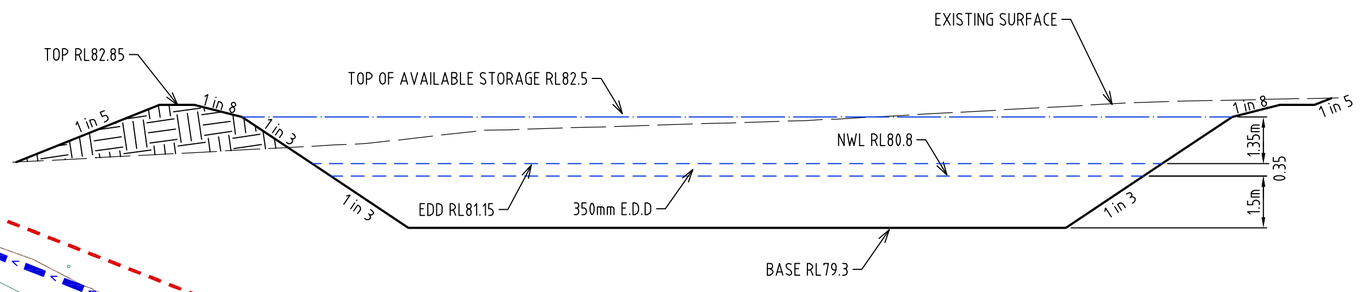
STAGE 3

STAGE 1

STAGE 2




TEMPORARY SEDIMENT / RETARDING BASIN TYPICAL
SECTION A-A
H1:250 V1:125




TEMPORARY SEDIMENT / RETARDING BASIN TYPICAL
SECTION B-B
H1:250 V1:125

TEMPORARY STORMWATER MANAGEMENT PLAN

1:1250 @ A1

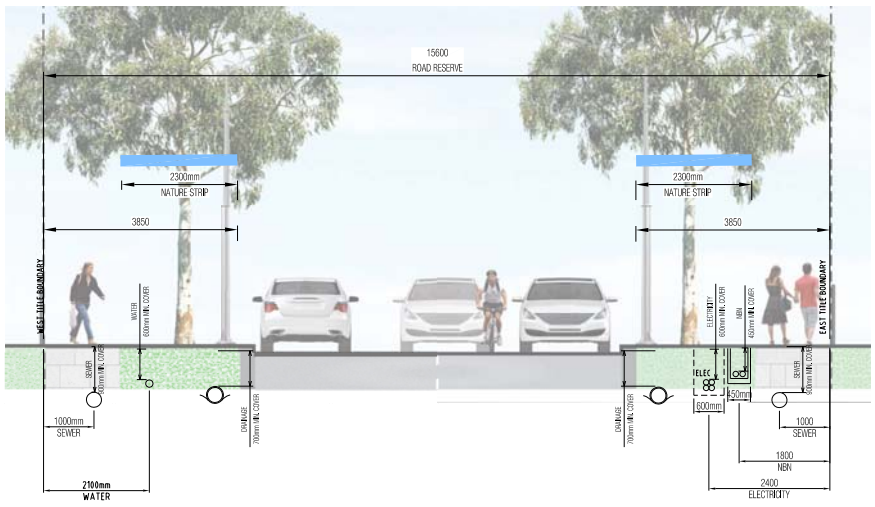
| REV | DESCRIPTION | DATE |
|---|---|---|
| 5 | AMENDED TO ADDRESS COUNCIL RFI RESPONSES | 14.02.2022 |

KNOXFIELD DEVELOPMENT
609-621 BURWOOD HWY
KNOXFIELD

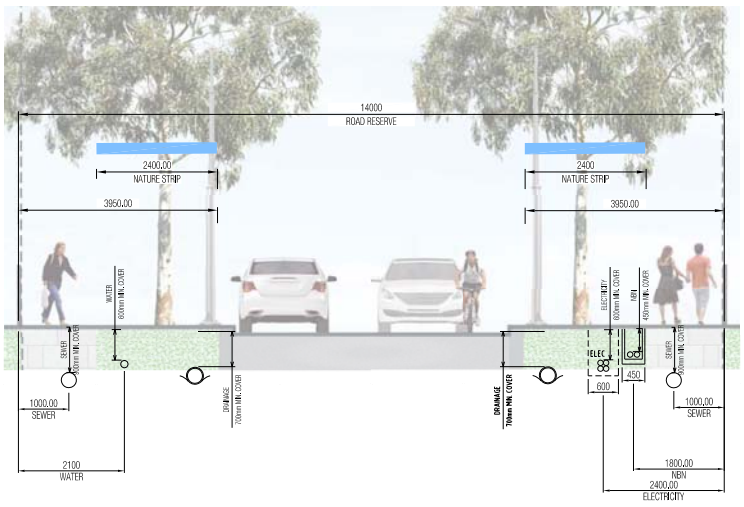
[redacted]

DRAWING No. 19095 - SM1 Rev. 5

PROPOSED SUBDIVISION - TEMPORARY STORMWATER MANAGEMENT PLAN




1 ACCESS STREET 15.6 ROAD RESERVE (2.3m NATURESTRIP) 1:75




2 14m ROAD RESERVE CROSS SECTION (2.4M NATURESTRIP) 1:75

## LEGEND

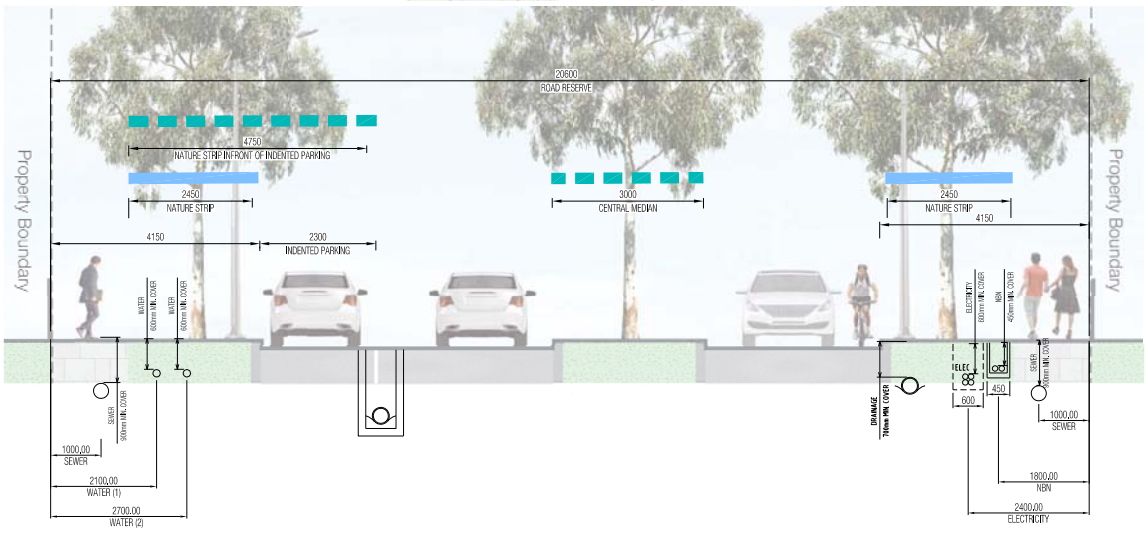
STAGE BOUNDARY

STREETSCAPE VERGES

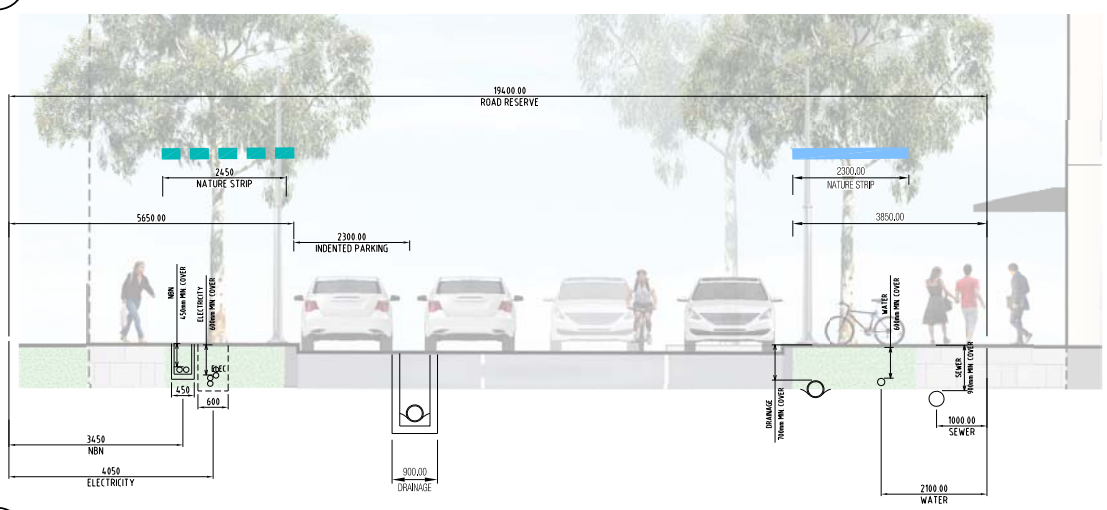
PRIMARY STREET
2.6m WIDTH VERGE: LARGE TREES

SECONDARY STREET
2.3m WIDTH VERGE: MEDIUM - SMALL TREES

SECONDARY STREET - LANEWAYS
SMALL TREES


3 ENTRY BOULEVARD WITH INDENTED PARKING ONE SIDE 20.6 ROAD RESERVE (2.5m & 2.6m NATURESTRIP) 1:75




4 19.4 ROAD RESERVE WITH INDENTED PARKING (2.3m & 2.6m NATURESTRIP) 1:75

**KNOXFIELD**
**INDICATIVE STREET TREE SPECIES LIST** - SUBJECT TO DETAILED DESIGN & DOCUMENTATION

| | Botanical Name | Common Name | D / E | Size (M) |
|---|---|---|---|---|
| PRIMARY STREET - 2.6M WIDTH VERGE - LARGE TREES | | | | |
| | *Angophora costata* | Smooth-barked Apple | E | 20 x 10 |
| | *Corymbia citriodora* | Lemon Scented Gum | E | 20 x 15 |
| | *Corymbia maculara* | Spotted Gum | E | 30 x 10 |
| | *Eucalyptus cephalocarpa* | Silver Stringybark | E | 15 x 10 |
| | *Eucalyptus goniocalyx* | Long-leafed Box | E | 15 x 10 |
| | *Eucalyptus rubida* | Red Stringybark | E | 15 x 10 |
| | *Eucalyptus melliodora* | Yellowbox | E | 20 x 10 |
| | *Eucalyptus obliqua* | Messmate | E | 30 x 20 |
| | *Eucalyptus polyanthemos* | Red Box | E | 15 x 10 |
| | *Eucalyptus radiata* | Narrow-leafed Peppermint | E | 15 x 8 |
| | *Eucalyptus rubida* | Candlebark | E | 20 x 15 |
| | *Eucalyptus viminalis* | Manna Gum | E | 25 x 15 |
| | *Eucalyptus yarraensis* | Yarra Gum | E | 15 x 7 |
| | *Quercus rubra* | Red Oak | D | 20 x 9 |
| | *Quercus palustris* | Pin Oak | D | 15 x 8 |
| | *Ulmus parvifolia* | Chinese Elm | D | 13 x 11 |
| SECONDARY STREET - 2.3M WIDTH VERGE - SMALL - MEDIUM TREES | | | | |
| | *Acacia implexa* | Lightwood | E | 8 x 7 |
| | *Acacia melanoxylon* | Blackwood | E | 12 x 6 |
| | *Acer x freemanii 'Jeffersred'* | Autumn Blaze Maple | D | 13 x 10 |
| | *Angophora hispida* | Dwarf Apple | E | 7-8 x 5-6 |
| | *Backhousia citriodora* | Lemon-scented Myrtle | E | 6 x 4 |
| | *Brachychiton populneus x acerifolius 'Jerilderie Red'* | Kurrajong | E | 8 x 7 |
| | *Corymbia citriodora 'Scentuous'* | Scentuous Lemon Scented Gum | E | 7 x 3 |
| | *Corymbia ficifolia (Grafted cultivars)* | Flowering Gum | E | 3-6 x 3-4 |
| | *Elaeocarpus 'Prima Donna'* | Prima Donna | E | 8 x 4 |
| | *Elaeocarpus reticulatus* | Blueberry Ash | E | 7 x 5 |
| | *Eucalyptus cinerea* | Argyle Apple | E | 12 x 7 |
| | *Eucalyptus crenulata* | Buxton Gum | E | 12 x 7 |
| | *Eucalyptus leucoxylon ssp.megalocarpa 'Elite'* | Elite Yellow Flowering Gum | E | 8 x 5 |
| | *Eucalyptus scoparia 'Dromana'* | Scoparia Dromana | E | 8 x 6 |
| | *Eucalyptus torquata* | Coral Gum | E | 6 x 3 |
| | *Melia azedarach 'Elite'* | White Cedar | D | 10 x 8 |
| | *Pyrus calleryana 'Aristocrat'* | Aristocrat Pear | D | 11 x 7 |
| | *Pyrus calleryana 'Chanticleer'* | Chanticleer Callery Pear | D | 10 x 5 |
| | *Stenocarpus sinuatus* | Firewheel Tree | E | 10 x 3 |
| | *Tristaniopsis laurina var. Luscious* | Kanooka Water Gum | E | 8 x 4 |
| | *Waterhousia floribunda* | Weeping Lilly-pilly | E | 15 x 8 |
| SECONDARY STREET TREES - SMALL TREES SUITABLE FOR LANEWAYS | | | | |
| | *Pyrus calleryana 'Capital'* | Capital Pear | D | 11 x 1-3 |
| | *Lagerstroemia indica x fauriei 'Tuscarora'* | Tuscarora Crepe Myrtle | D | 8 x 4 |
| | *Lagerstroemia indica x fauriei 'Lipan'* | Lipan Crepe Myrtle | D | 4 x 3 |
| | *Lagerstroemia indica x fauriei 'Tonto'* | Tonto Crepe Myrtle | D | 3 x 3 |

NOTE:
- ELECTRICAL SERVICES MAY BE INSTALLED DEEPER THAN SHOWN UPON CO-ORDINATION DURING DETAILED DESIGN.
- SERVICE DEPTHS ARE SHOWN AT MINIMUM COVER DEPTHS AND ARE SUBJECT TO FINAL DETAILED CIVIL DESIGN.
- DRAINAGE PITS WITHIN NATURESTRIPS NOT SHOWN AS STREET TREES WILL NOT BE LOCATED AT DRAINAGE PIT LOCATIONS IN LINE WITH OFFSET REQUIREMENTS.

**KNOXFIELD**

STAGE 1 & 2 MASTERPLAN

STREET TREE SPECIES LIST & ROAD CROSS SECTIONS EXAMPLES

1:500 @ A1 DATE NOV 2021 JOB No.1878C

DWG No. 2108H LSK01 [A] J:\1878 Knoxfield\5. Design\Drawings\AutoCAD\Knoxfield Existing Native & Non NativeTrees and TPZs.dwg

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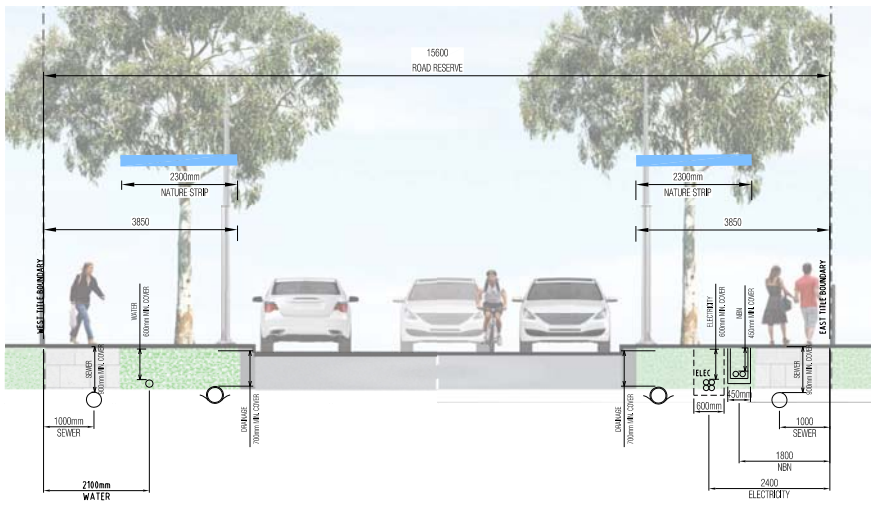
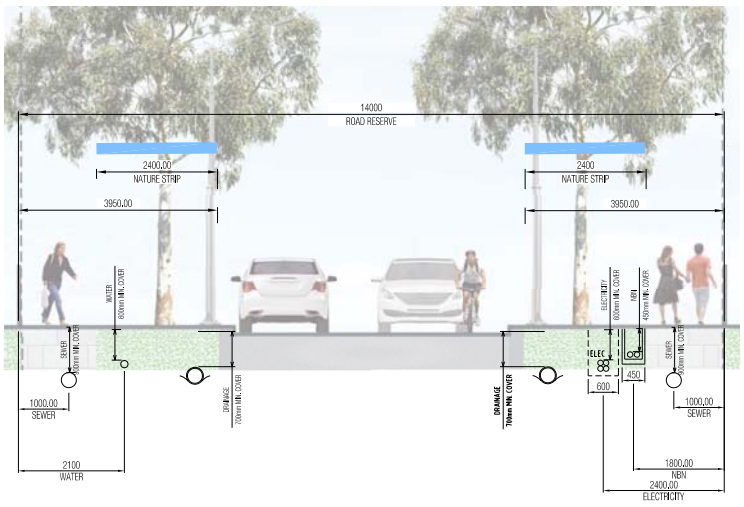



1 ACCESS STREET 15.6 ROAD RESERVE (2.3m NATURESTRIP) 1:75




2 14m ROAD RESERVE CROSS SECTION (2.4M NATURESTRIP) 1:75

## LEGEND

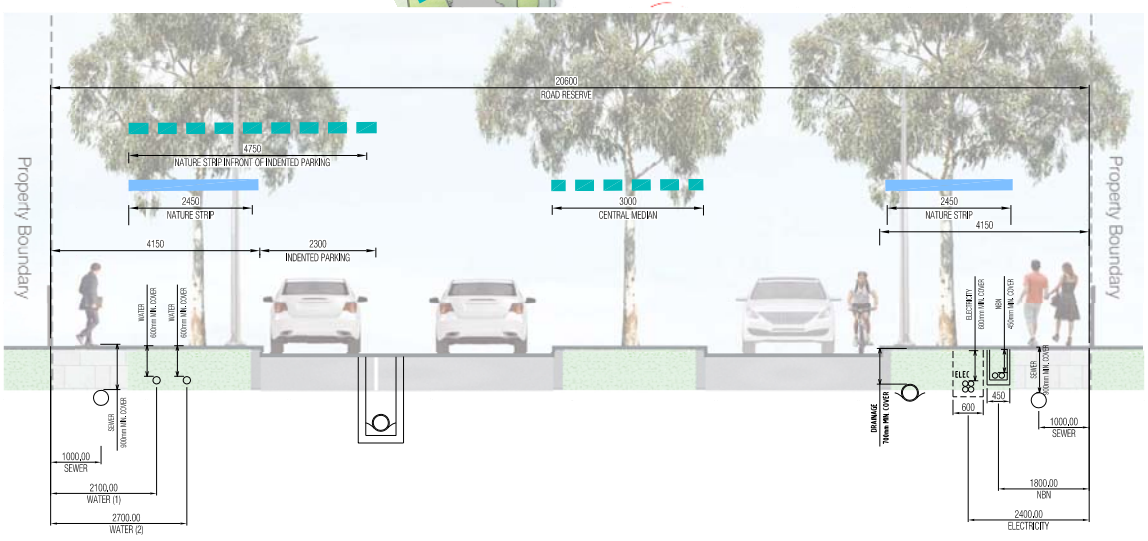
STAGE BOUNDARY

STREETSCAPE VERGES

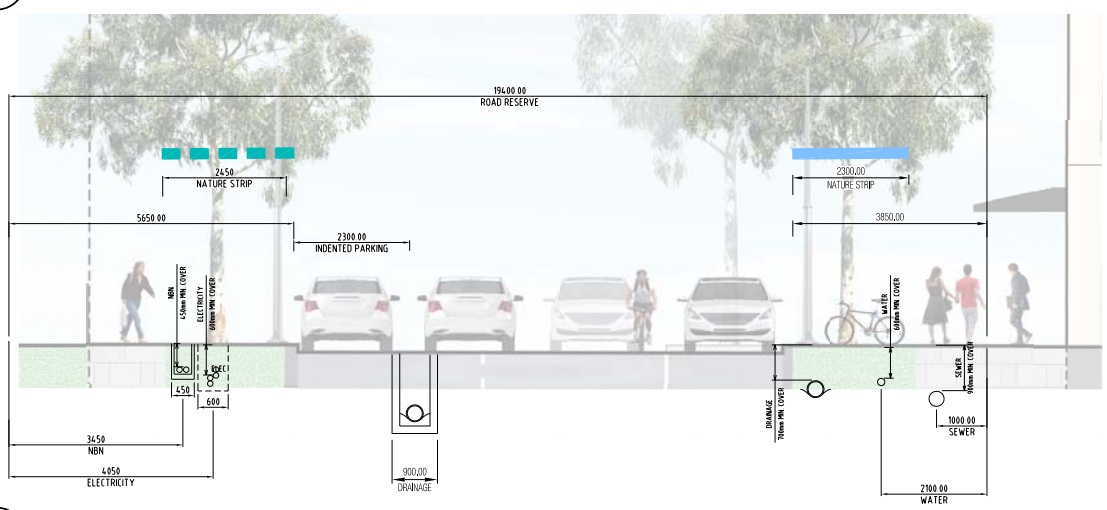
PRIMARY STREET
2.6m WIDTH VERGE: LARGE TREES

SECONDARY STREET
2.3m WIDTH VERGE: MEDIUM - SMALL TREES

SECONDARY STREET - LANEWAYS
SMALL TREES


3 ENTRY BOULEVARD WITH INDENTED PARKING ONE SIDE 20.6 ROAD RESERVE (2.5m & 2.6m NATURESTRIP) 1:75




4 19.4 ROAD RESERVE WITH INDENTED PARKING (2.3m & 2.6m NATURESTRIP) 1:75

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**INDICATIVE STREET TREE SPECIES LIST** - SUBJECT TO DETAILED DESIGN & DOCUMENTATION

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|---|---|---|---|---|
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| | *Corymbia citriodora* | Lemon Scented Gum | E | 20 x 15 |
| | *Corymbia maculara* | Spotted Gum | E | 30 x 10 |
| | *Eucalyptus cephalocarpa* | Silver Stringybark | E | 15 x 10 |
| | *Eucalyptus goniocalyx* | Long-leafed Box | E | 15 x 10 |
| | *Eucalyptus rubida* | Red Stringybark | E | 15 x 10 |
| | *Eucalyptus melliodora* | Yellowbox | E | 20 x 10 |
| | *Eucalyptus obliqua* | Messmate | E | 30 x 20 |
| | *Eucalyptus polyanthemos* | Red Box | E | 15 x 10 |
| | *Eucalyptus radiata* | Narrow-leafed Peppermint | E | 15 x 8 |
| | *Eucalyptus rubida* | Candlebark | E | 20 x 15 |
| | *Eucalyptus viminalis* | Manna Gum | E | 25 x 15 |
| | *Eucalyptus yarraensis* | Yarra Gum | E | 15 x 7 |
| | *Quercus rubra* | Red Oak | D | 20 x 9 |
| | *Quercus palustris* | Pin Oak | D | 15 x 8 |
| | *Ulmus parvifolia* | Chinese Elm | D | 13 x 11 |
| SECONDARY STREET - 2.3M WIDTH VERGE - SMALL - MEDIUM TREES | | | | |
| | *Acacia implexa* | Lightwood | E | 8 x 7 |
| | *Acacia melanoxylon* | Blackwood | E | 12 x 6 |
| | *Acer x freemanii 'Jeffersred'* | Autumn Blaze Maple | D | 13 x 10 |
| | *Angophora hispida* | Dwarf Apple | E | 7-8 x 5-6 |
| | *Backhousia citriodora* | Lemon-scented Myrtle | E | 6 x 4 |
| | *Brachychiton populneus x acerifolius 'Jerilderie Red'* | Kurrajong | E | 8 x 7 |
| | *Corymbia citriodora 'Scentuous'* | Scentuous Lemon Scented Gum | E | 7 x 3 |
| | *Corymbia ficifolia (Grafted cultivars)* | Flowering Gum | E | 3-6 x 3-4 |
| | *Elaeocarpus 'Prima Donna'* | Prima Donna | E | 8 x 4 |
| | *Elaeocarpus reticulatus* | Blueberry Ash | E | 7 x 5 |
| | *Eucalyptus cinerea* | Argyle Apple | E | 12 x 7 |
| | *Eucalyptus crenulata* | Buxton Gum | E | 12 x 7 |
| | *Eucalyptus leucoxylon ssp.megalocarpa 'Elite'* | Elite Yellow Flowering Gum | E | 8 x 5 |
| | *Eucalyptus scoparia 'Dromana'* | Scoparia Dromana | E | 8 x 6 |
| | *Eucalyptus torquata* | Coral Gum | E | 6 x 3 |
| | *Melia azedarach 'Elite'* | White Cedar | D | 10 x 8 |
| | *Pyrus calleryana 'Aristocrat'* | Aristocrat Pear | D | 11 x 7 |
| | *Pyrus calleryana 'Chanticleer'* | Chanticleer Callery Pear | D | 10 x 5 |
| | *Stenocarpus sinuatus* | Firewheel Tree | E | 10 x 3 |
| | *Tristaniopsis laurina var. Luscious* | Kanooka Water Gum | E | 8 x 4 |
| | *Waterhousia floribunda* | Weeping Lilly-pilly | E | 15 x 8 |
| SECONDARY STREET TREES - SMALL TREES SUITABLE FOR LANEWAYS | | | | |
| | *Pyrus calleryana 'Capital'* | Capital Pear | D | 11 x 1-3 |
| | *Lagerstroemia indica x fauriei 'Tuscarora'* | Tuscarora Crepe Myrtle | D | 8 x 4 |
| | *Lagerstroemia indica x fauriei 'Lipan'* | Lipan Crepe Myrtle | D | 4 x 3 |
| | *Lagerstroemia indica x fauriei 'Tonto'* | Tonto Crepe Myrtle | D | 3 x 3 |

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1:500 @ A1 DATE NOV 2021 JOB No.1878C

DWG No. 2108H LSK01 [A] J:\1878 Knoxfield\5. Design\Drawings\AutoCAD\Knoxfield Existing Native & Non NativeTrees and TPZs.dwg

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