



MetCONNX

Development Application 4 Byford Station

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Byford Rail Extension

Development Application 4 – Byford Station

Document details	
Title	Development Application 4 – Byford Station
Project	Byford Rail Extension (BRE) Design and Construction Project
Laing O’Rourke Project No.	R30
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A	12-Jul-2023	Issued for IPLS	Timothy Hodge	Nicholas Temov	Jonathan Davis
B	8-Aug-2023	Issued for DA	Timothy Hodge	Nicholas Temov	Jonathan Davis

Table 1: Revision History



Acknowledgment of Country

MetCONNX acknowledges the Whadjuk People and the Gnala Karla Booja People as the Traditional Custodians of the land and waters on which Byford Rail Extension Project is located. We pay our respects to Elders, past, present and emerging, and thank them for their continuing connection to country, culture and community.



Executive Summary and Introduction

This Development Application (DA) Report has been prepared by the MetCONNX Alliance (the Alliance) as part of the Byford Rail Extension (BRE). The Alliance was established to form a partnership with the Public Transport Authority (PTA) to design and build a range of public transport improvements in the Armadale and Byford area - including a new elevated station at Armadale, an at-grade station at Byford, and related works.



The new Byford Station will provide important public transport and urban regeneration improvements in the Byford Town Centre (Town Centre) and the surrounding suburbs. It will help to stimulate the development of residential, commercial, and mixed-use activities, whilst providing once-in-a-generation public transport and Town Centre upgrades to be enjoyed by the local community. This can lead to an increase in economic and social activity and provide a variety of new and improved options for living, recreation, and employment. These upgrades create an excellent chance to attract more comprehensive investments and contribute to the creation of a lively district where individuals can opt to reside, work, and visit.

The contents of this DA Report include:

- An overview of the BRE project.
- Relationship to previous DAs for the BRE project and project details.
- An overview of the context of the subject site.
- An overview and explanation of the works that form part of this DA which require approval from the Western Australian Planning Commission.
- An overview and explanation of works that are exempt from the requirement to obtain development approval.
- An assessment of the proposal against the relevant planning requirements and planning merits of the proposal.

DA 4 – Byford Station will include the following works, which are fully described in **Section 6** – Development Details, **Section 7** – Paths and Parking, and **Section 8** – Landscape Design and Public Art.

Works	Details
<p>Byford Station Building and Associated Infrastructure</p> 	<ul style="list-style-type: none"> ▪ Train station and facilities (e.g. Station building, platforms, kiosk, and associated facilities such as waste storage areas) ▪ Lighting (selected areas around the station precinct) ▪ Evans Way (south) ▪ Clara Street West ▪ Sansimeon Boulevard (west) ▪ Sansimeon Boulevard (south) <p><i>*See 3.3 DA 4 Works Extent for more information on roads to be delivered as part of this Development Application</i></p>
<p>Public Art</p> 	<ul style="list-style-type: none"> ▪ Public art as per Public Art Plan (conditioned as appropriate through further development)
<p>Landscaping and Western Plaza</p> 	<ul style="list-style-type: none"> ▪ Landscape upgrades around station buildings and associated infrastructure ▪ Western Plaza (also known as the Welcome Place) with play and grassed areas ▪ Selected landscape upgrades to the east of the rail line
<p>Park and Ride Kiss and Ride Bus Interchange</p> 	<ul style="list-style-type: none"> ▪ 4 standard rigid bus bays, 3 articulated bus bays, 1 TransWA bus bay, 3 standard layover bus bays ▪ 409 park and ride bays, 39 kiss and ride bays, other car parking bays
<p>Surrounding Precinct</p> 	<ul style="list-style-type: none"> ▪ Creation of local roads – Clara Street West, Access Road A, Plaza Road, Evans Way ▪ Local road network accessing precinct – Sansimeon Boulevard West & South

Table 2: Works Overview

This DA Report has been prepared to provide an overview of the subject site and the works associated against the relevant planning framework. This DA Report is also accompanied by supporting plans and technical documents, as discussed throughout this report, which includes:

- Byford Station Final Place Plan
- Byford Station Development Plans
- Urban Design and Landscape Concept
- Public Art
- Engagement Outcomes
- Construction Management Plan
- Stormwater and Drainage Strategy
- Transport Impact Assessment
- Operational Waste Management
- Operational Noise and Vibration Report
- Geotechnical Report
- Sustainability Management Plan
- Lighting Strategy
- Bushfire Management Plan

1. Project Overview

1.1 Structure of Development Applications for the BRE

Six DAs are proposed as part of BRE, with DA 4 – Byford Station the fifth DA to be lodged.

DA	Name	Lodgement To	Approval Authority	Additional information / Notes
DA 1	<ul style="list-style-type: none"> Development Application 1 Viaduct for Armadale Station and Surrounds 	<ul style="list-style-type: none"> City of Armadale 	<ul style="list-style-type: none"> WAPC 	<ul style="list-style-type: none"> Simple DA material outlined by WAPC Some related items are not included in this DA (to be included in DA 3) <ul style="list-style-type: none"> Lighting Public art Façade treatment Approved July 2023
DA 1.5	<ul style="list-style-type: none"> Development Application 1.5 Armadale Temporary Bus Interchange and Associated Early Works 	<ul style="list-style-type: none"> City of Armadale 	<ul style="list-style-type: none"> WAPC 	<ul style="list-style-type: none"> Approved March 2023
DA 2	<ul style="list-style-type: none"> Development Application 2 Eleventh Road Bridge 	<ul style="list-style-type: none"> DevelopmentWA 	<ul style="list-style-type: none"> DevelopmentWA 	<ul style="list-style-type: none"> Under consideration from DevelopmentWA
DA 3	<ul style="list-style-type: none"> Development Application 3 Armadale Station structures, bus interchange facilities, public realm upgrades, viaduct treatments (where applicable), related car parking, and pedestrian and vehicle access) 	<ul style="list-style-type: none"> City of Armadale 	<ul style="list-style-type: none"> WAPC 	<ul style="list-style-type: none"> Under consideration from the WAPC
DA 4 (Subject DA)	<ul style="list-style-type: none"> Development Application 4 Byford Station structures, bus interchange facilities, public realm upgrades, related car parking, and pedestrian and vehicle access 	<ul style="list-style-type: none"> Shire of Serpentine-Jarrahdale 	<ul style="list-style-type: none"> WAPC 	<ul style="list-style-type: none"> N/A Includes the creation of some supporting roads for the precinct (see 3.3 DA 4 Works Extent for more information)
DA 5	<ul style="list-style-type: none"> Development Application 5 Armadale Road Principal Shared Path Bridge and surrounds. 	<ul style="list-style-type: none"> City of Armadale 	<ul style="list-style-type: none"> WAPC 	<ul style="list-style-type: none"> Includes landscaping (north of Armadale Road and areas adjacent to the south) PShP bridge and treatments

Table 3: Development Applications

2. Project Details

2.1 Project Team

Specialisation	Responsible
Planning (Statutory Planning)	MetCONN
Byford Station Development Plans	MetCONN
Urban Design and Landscape	MetCONN
Public Art	MetCONN (Apparatus)
Engagement Outcomes	MetCONN
Construction Management	MetCONN
Stormwater and Drainage	MetCONN
Transport Impact Assessment	MetCONN (Urbsol)
Operational Waste Management	MetCONN (Encycle)
Acoustics	MetCONN (SLR)
Geotechnical	MetCONN
Sustainability Management	MetCONN
Lighting Strategy	MetCONN
Bushfire Management Plan	MetCONN (Linfire)

Table 4: Project Team

2.2 Land Details

Lot	Owner / Land Status	Deposited Plan	Pin	Title	Lot area (m ²)
101	Western Australian Planning Commission	53376	-	4006/481	86,900
34	Public Transport Authority	796	-	2752/649	3,592
1	Ard No 5 Pty Ltd	64664	-	1671/911	197,723
103	State of Western Australia	414923	-	LR3173/472	7,000
N/A	Public Transport Authority	N/A	422668	N/A	102,463

Table 5: Land Details

3. Site Context

3.1 Town Centre

The Shire of Serpentine-Jarrahdale (the Shire) is one of the largest local governments in the greater Perth and Peel Metropolitan Region, spanning an area of 905km², located approximately 45km southeast from the Perth Central Business District. Over the past decade, the Shire has experienced significant growth within its major towns of Byford, Mundijong, Serpentine, and Jarrahdale, as well as in rural-residential areas in Oakford and Darling Downs.

The Shire is known for its connection to the Perth Hills, that extend towards the east and merge with the scenic Darling Scarp. It shares borders with the City of Gosnells and Shire of Kalamunda to the north, the Shire of Beverley to the east, the Shire of Wandering to the south, and the City of Cockburn to the west.

The Shire has an estimated population of 34,770 with a population density of 38.44 persons per square km (*Source: Profile Id 2023*). Major growth in residential development over the past decade has presented great opportunities for the south-eastern metropolitan corridor, with many households choosing to live in the new housing developments that surround an emerging Town Centre. Through its strategic planning, the Shire has noted the importance of sustainable travel options being available to residents and visitors to Byford. An extension of passenger rail services and expansion of local busses will offer more ways for locals to get around and access employment. The development of the station will connect the established eastern end of the Town Centre to new supermarket, retail and community uses on the west.

Future development in the Town Centre is guided by the Byford Local Structure Plan (2011 and amended in 2021) which aligns with the wider Byford District Structure Plan.

Please refer to **Section 18.2** – Local Planning Framework for further details on the Local Planning Framework considerations.



Figure 1: Aerial Plan (Source: nearmap)

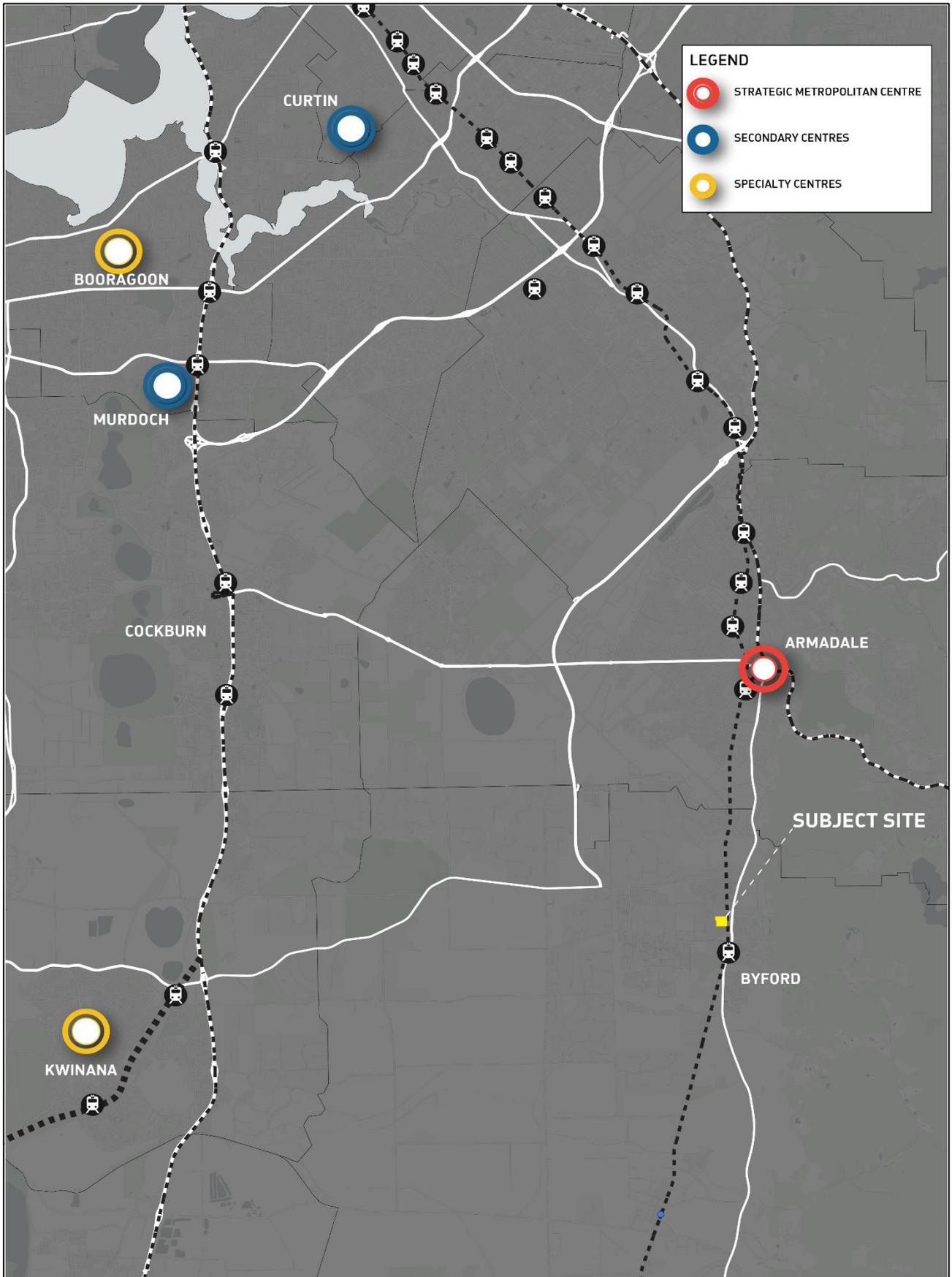


Figure 2: Location Plan

3.2 Land Holdings

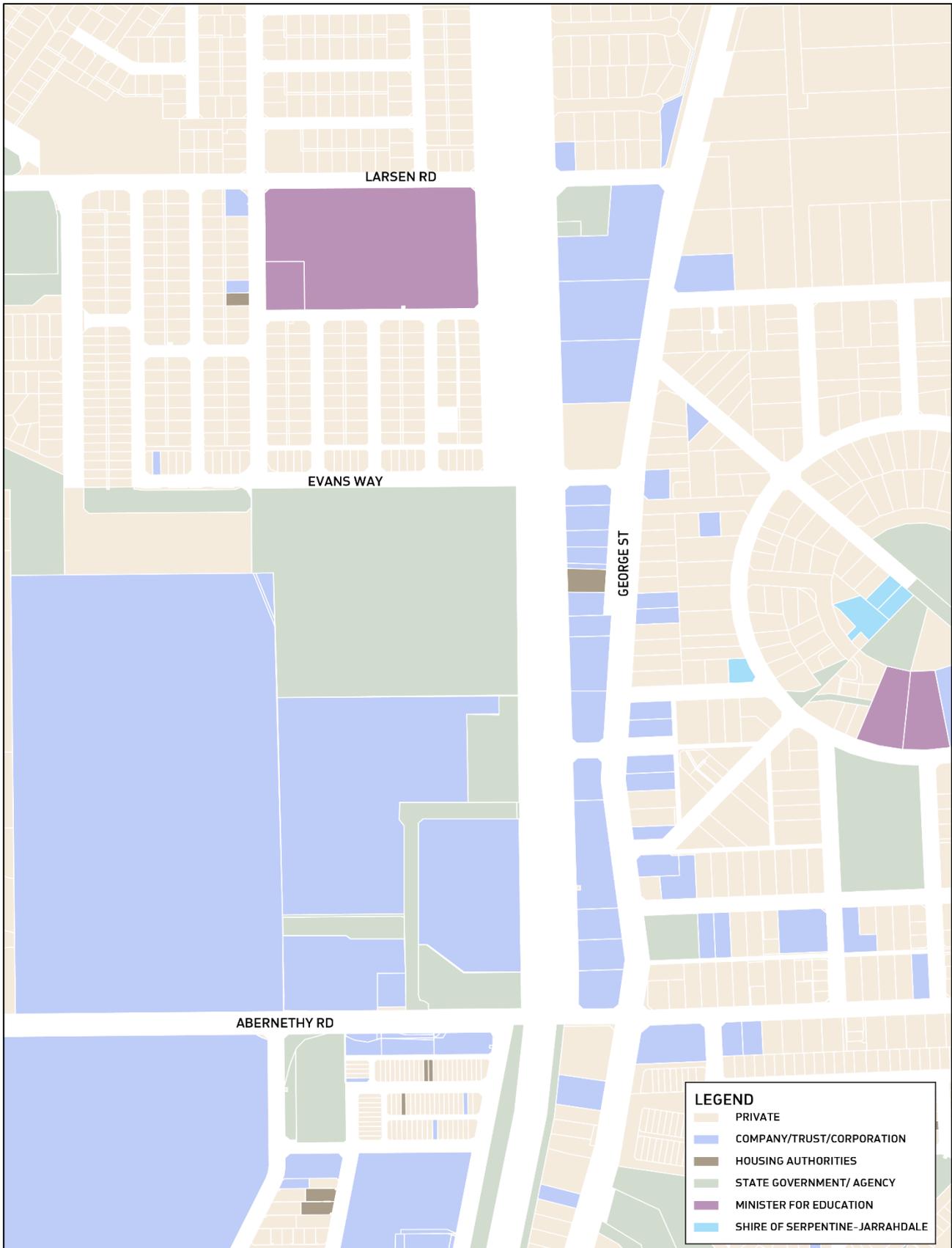


Figure 3: Land Holdings

3.3 DA 4 Works Extent

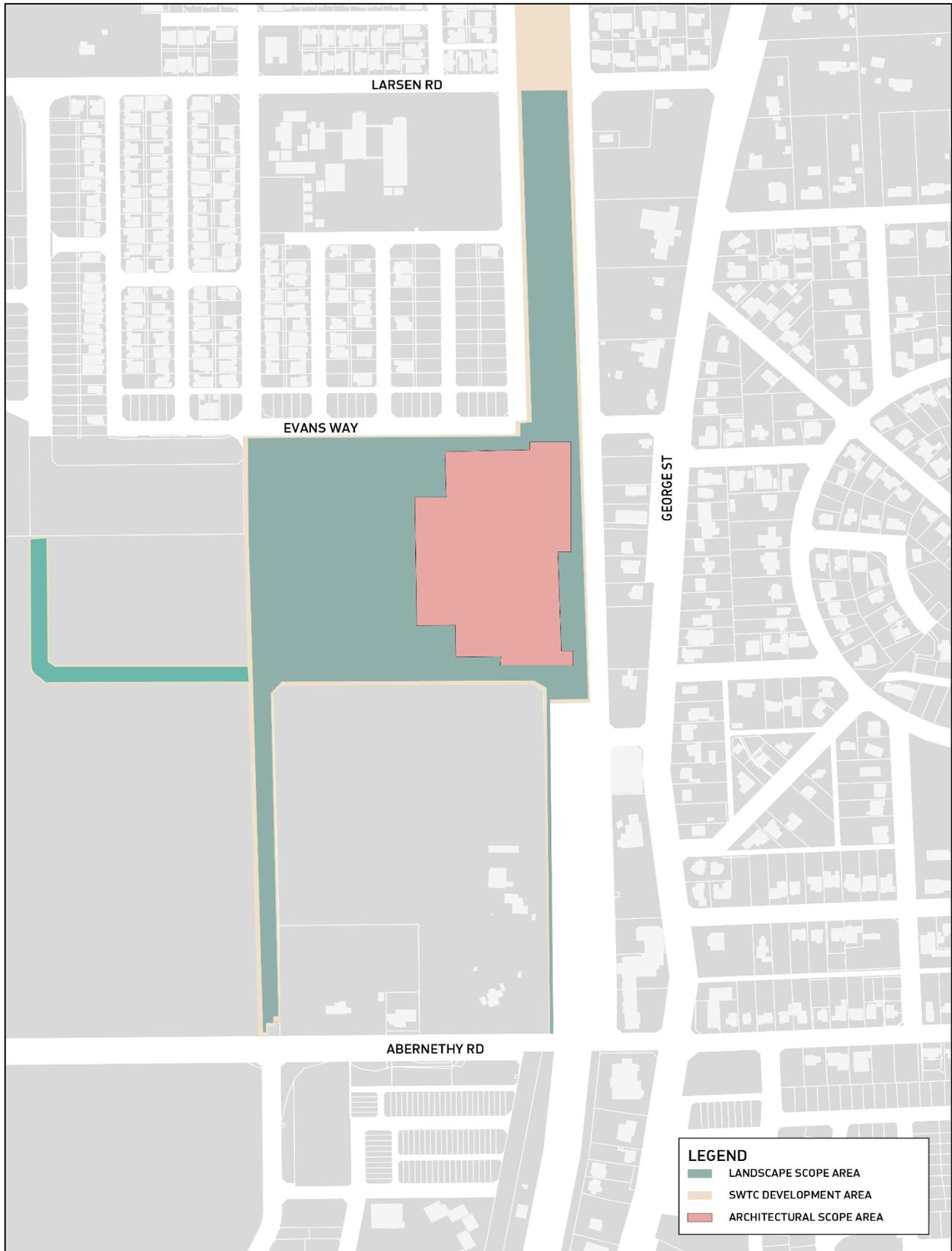


Figure 4: Works Extent (see Figure 5A for roads to be delivered on Day One, see Figure 5B and Figure 15 for further details on all roads)



Figure 5A: DA 4 includes the provision of space for future infrastructure to be accommodated in the Byford Precinct.

Figure 5B: Internal roads and development lots are to be delivered by others (not delivered in this stage of works).

Figure 5: Future Road Delivery

3.4 Planning Approval Applicability

The planning approval process for BRE is informed by several legislative and regulatory provisions, as summarised below:

- The *Planning and Development Act 2005* provides exemptions for 'Public Works' from the need to obtain development approval for such development under the applicable local government planning framework.
- The Metropolitan Region Scheme (MRS) exempts all work for, or in connection with a railway that are located inside a designated railways reservation from the need to obtain development approval, other than for the construction or alteration of a railway station, or any related carparks, public transport interchange facilities or associated means of pedestrian or vehicular access.
- Declaration of Planning Control Area 164 (PCA) was made under Part 7 of the *Planning and Development Act 2005*. A PCA is an enabling planning mechanism that requires all development within the PCA to be considered and determined by the WAPC.
- The *Railway (METRONET) Act 2018* includes BRE which means that certain METRONET works are exempt from the requirement to obtain development approval where these METRONET works are situated outside of the designated Metropolitan Region Scheme Railways Reservation.

3.4.1 *Planning and Development Act 2005 and Public Works Act 1902*

Under Section 6 of the *Planning and Development Act 2005*, there are exemptions from the requirement to obtain development approval under a local planning scheme for 'Public Works' for the Crown, the Governor, a public authority, or a local government.

Public Works are defined by the *Public Works Act 1902*. The definition of public works includes:

(b) any railway authorised by special Act or any other work whatsoever authorised by any Act;

Accordingly, the proposed works for BRE which are considered to be 'Public Works' under Section 6 of the *Planning and Development Act 2005* and do not require approval under the Shire of Serpentine-Jarrahdale Town Planning Scheme No. 2.

3.4.2 Metropolitan Region Scheme

Clause 16 (1a) of the MRS states that development on reserved land that is owned or vested in a public authority, may be commenced, or carried out without approval if the development is permitted development or is expressly authorised under an Act to be commenced or carried out without the approval of the WAPC. Partial works for DA 4 falls within an MRS reserve.

Prior to the declaration of the PCA, the site was located on land zoned 'Urban Development' and/or reserved for 'Railways' under the MRS. The PCA does not change the zoning and is a temporary mechanism for 5 years, unless extended or revoked by the WAPC. Following delivery of the Byford Station, the PTA will lodge an MRS Amendment and rezone the subject site to 'Railway'.

3.4.3 Planning Control Area 164

A Planning Control Area (PCA) prepared under Section 112 of the *Planning and Development Act 2005* (PD Act) was declared over the Armadale and Byford development sites on 22 June 2022. PCA 164 also includes additional land that was identified as being potentially required for the delivery of METRONET within the BRE development area. PCA 164 is shown in Figure 6. All of the works for this DA 4 fall within this PCA.

The purpose of the PCA is to facilitate development of the land for Railway purposes, and to allow the future reservation of land in the MRS.

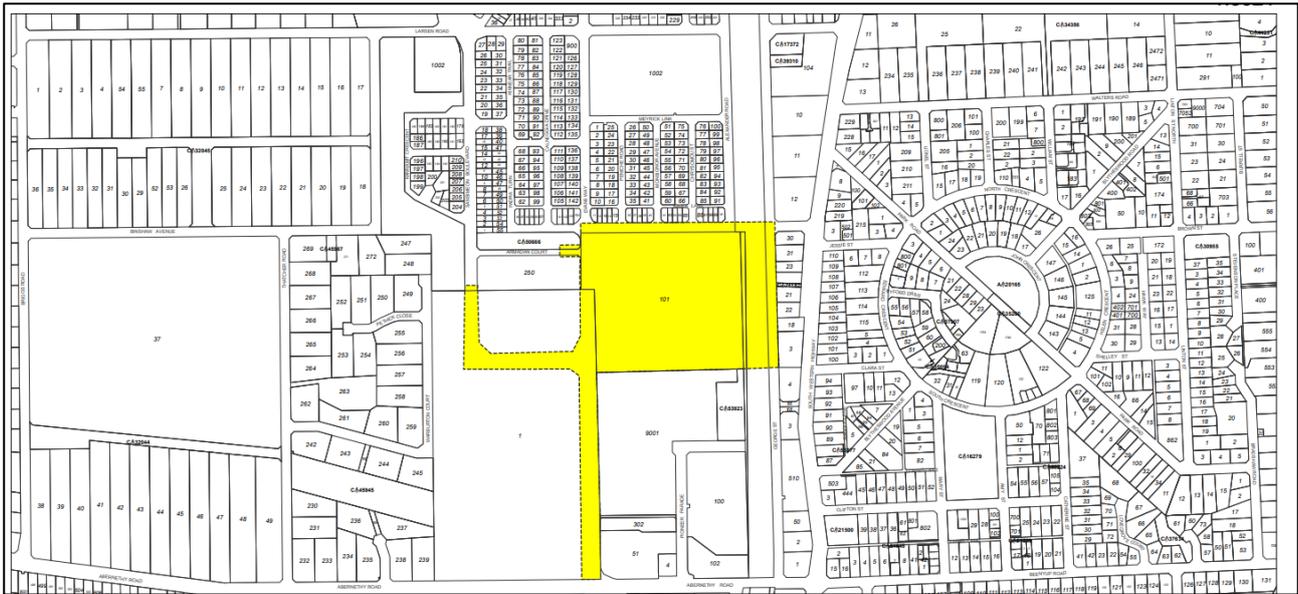


Figure 6: Planning Control Area 164

3.4.4 METRONET Act 2018

The *Railway (METRONET) Act 2018* (METRONET Act) states that METRONET works can be carried out without the approval of the WAPC despite any provisions in the MRS.

METRONET works are defined as:

“works for the purpose of, or in connection with, a METRONET railway but does not include the construction or alteration of a railway station, or any related car parks, public transport interchange facilities or associated means of pedestrian or vehicular access” [emphasis added].

Accordingly, all the railway works other than works for the new station, works in relation to car parks, bus interchange facilities and associated means of pedestrian and vehicle access are exempt works.

Development approval is generally not required for other railway infrastructure in either the existing railway reserve or on non-railway land that is outside of PCA 164. This is because the METRONET Act also exempts these works from requiring development approval under the MRS. As such, any railway works either side of the new station works beyond the bridge abutments/platforms are all works that are exempt from the requirement to obtain development approval.

Whilst some works are exempt from the requirement to obtain development approval, the plans and specialist material provided may illustrate and/or include details of the exempt works, as well as the works requiring WAPC approval. This is because this material has been prepared to inform and guide the project holistically.

3.5 BRE Exemptions Matrix

Planning approval requirements for BRE are unique, given the application of the *Railway (METRONET) Act 2018*, and various reserves and planning controls that apply to the project area. A summary of this information is outlined below.

Table 6 provides a matrix that identifies whether the works are exempt from the requirement to obtain development approval from the WAPC under Planning Control Area 164.

Works Location	METRONET Works ¹ – as defined in Railway (METRONET) Act 2018	METRONET station (Railway station; related car parks; public transport interchange facilities; means of pedestrian or vehicular access to station; public realm)
Works located: Within Planning Control Area, and Within Metropolitan Region Scheme Railway Reserve	<ul style="list-style-type: none"> ▪ Approval required for all works 	<ul style="list-style-type: none"> ▪ WAPC approval required for all works
Works located: Within Planning Control Area, and Outside Metropolitan Region Scheme Railway Reserve	<ul style="list-style-type: none"> ▪ Exempt 	<ul style="list-style-type: none"> ▪ WAPC approval required for all works
Works located: Outside Planning Control Area, and Outside Metropolitan Region Scheme Railway Reserve	<ul style="list-style-type: none"> ▪ Exempt 	<ul style="list-style-type: none"> ▪ WAPC required for all works

Table 6: METRONET Exempt Works

METRONET works means works for the purpose of, or in connection with, a METRONET railway but does not include the construction or alteration of a railway station, or any related car parks, public transport interchange facilities or associated means of pedestrian or vehicular access.

‘METRONET Works’ as described by WAPC as:

- Early works and site establishment works.
- New drainage or alteration to drainage where associated with rail works.
- Temporary road alterations for railway works.
- Railway buildings supporting operational rail works (excluding stations).
- Demolition of existing stations.

3.6 Engagement

The BRE engagement team has included a range of community engagement activities to improve understanding of community values and preferences to inform works and mitigate risks.

The BRE engagement activities aim to:

- Inform the public with balanced and objective information.
- Inform and consult on changes to current amenity.
- Involve and work directly with the public to resolve issues that arise through construction.
- Collaborate with key stakeholders to identify and realise opportunities or mitigate impacts.

Table 7 details at a high level the activities which have been undertaken aimed to improve place outcomes, provide accessible, clear, and timely information; create meaningful, two-way discussion, and mitigate risks. Additionally, the Engagement Outcomes Report detailed in **Appendix G**, details the engagement strategy, social needs analysis, activities to date, and engagement outcomes.

Key Theme	Description	Alliance / Project Response
Security, Safety and Surveillance	Stakeholders have identified the potential for safety and security impacts as an end of line station.	<p>The project has worked on informing residents on safety mechanisms and Crime Prevention Through Environmental Design (CPTED) principles and how they're incorporated into station designs. CPTED principles have been applied throughout design including:</p> <ul style="list-style-type: none"> ▪ Providing open activated areas with clear sightlines that support passive surveillance, implementing ample, well-designed lighting. ▪ Mixed use development sites are considered for the areas adjacent to the Welcome Place (Plaza) and park and ride facilities. ▪ Installation of active CCTV cameras in the station areas. ▪ Clear signage and wayfinding. ▪ Using materials that minimise opportunities for vandalism.
Universal Access	Universal access is very important to the local community.	<p>Universal access has been a key consideration in design, with applications including:</p> <ul style="list-style-type: none"> ▪ Paths designed to accommodate pedestrians, recreational and commuter cyclists, and people with mobility disabilities. ▪ Seating for people to rest within the station and in public space areas. ▪ A safe railway crossing area with tactile paving and audio/visual safety features.

Key Theme	Description	Alliance / Project Response
		Communication with METRONET facilitated Access and Inclusion Reference Groups has ensured feedback is incorporated into designs as they have evolved.
Ease of access to public and multi-modal transport	Local community feedback has indicated that ensuring easy access to the train and bus, as well as multi-modal transport options is important.	Community feedback has been incorporated into design through: <ul style="list-style-type: none"> ▪ Safe, accessible paths which facilitate universal access, that connect stations with local destinations such as shopping and education precincts. This includes a new Principal Shared Path between Armadale and Byford. ▪ A new bus interchange to facilitate bus services that connect stations with local destinations. ▪ Sufficient parking inclusive of ACROD. ▪ Sufficient kiss and ride / park and ride bays. ▪ Sufficient and secure bicycle storage near station entry.
Flood and bush fire mitigation measures.	The station is located in a rural area with a high-water table. The area is vulnerable to both flood and bushfire. Stakeholders have expressed a desire to understand mitigation measures in place to ensure safety and sustainability in this respect.	The project is mindful of the unique area in which the station is located. Risk mitigation has been undertaken to ensure: <ul style="list-style-type: none"> ▪ Adequate drainage consistent with Water Sensitive Urban Design principles. ▪ Bushfire management plans in accordance with SPP 3.7 – Planning in Bushfire Prone Areas.
Placemaking and public spaces	Stakeholder feedback has identified a desire to contribute to place-making. Early positive sentiment has been expressed in relation to opportunities for public spaces at Byford Station. Specific feedback indicated that the local community would like to use the station public space areas for play spaces for young children, events, hospitality and as community meeting place. There has been a high level of interest in ensuring these spaces are welcoming and cater to the needs of their audience, including the incorporation appropriate facilities and aspects to ensure road safety.	A collaborative process has been undertaken with stakeholders in the development of a place plan that sets a vision for the wider Byford station precinct, with opportunities for activation through placemaking. Additional consultation promoted discussion that has influenced the design of proposed public space uses (through shopping centre displays, on-line surveys, small group forums, engagement with local schools, engagement with parents). The result has been a plaza design that is inclusive, with active play areas and opportunities for events to be programmed in the space.
Connectivity	Local community feedback has indicated that pedestrian connectivity and universal access is important. This includes the station as a central point connecting residential areas with shopping and education precincts.	A design that enhances connections through the neighbourhood has been incorporated into the wider precinct through: <ul style="list-style-type: none"> ▪ A local road network and crossing point at Clara Street West. This connection unites eastern and western parts of the Town Centre.

Key Theme	Description	Alliance / Project Response
		<ul style="list-style-type: none"> ▪ The provision of new public spaces with thoughtful landscaping, places to rest and meet, universal access design and pedestrian pathways. ▪ Mixed use development capabilities that are integrated into the precinct.
Sustainability	Sustainable design outcomes are important to stakeholders and the local community.	<p>Environmental, social and economic principles and practices are embedded in project planning, design and delivery. The Sustainability Management Plan attached to this development application demonstrates how this is achieved.</p> <p>The development aims to achieve a four-star rating under the Green Star Railway Stations rating framework.</p>
Indigenous heritage	Recognition of Indigenous cultural heritage is important to the local community.	<p>The stakeholder and community engagement approach demonstrates a high level of respect for heritage to ensure Aboriginal voices are involved and consulted through the course of the project.</p> <p>Our engagement approach seeks to form partnerships and have in depth conversations with the local Aboriginal community in the Shire of Serpentine Jarrahdale.</p> <p>The project is also engaging regularly with the METRONET Noongar Reference Group.</p>
Urban aesthetics and public art	Visual amenity, station and public realm aesthetics are important to stakeholders. Feedback indicates that public art is important to the local community. The community has shown a particular interest in recognition of the role of Byford in the early settler period, including the brickworks and provision of food for the greater metropolitan area.	<p>Byford Station embodies themes identified in the related Place Plan, of 'outdoorish', 'growing', and 'informal'.</p> <p>The station building incorporates brick finishes that carefully match the colour, texture, and visual qualities of the natural surroundings, seamlessly integrating the structure with the aesthetics of the Darling Scarp.</p> <p>Opportunities for public art have been considered, and further details are included in this report.</p>
Construction impacts	Residents and stakeholders have expressed a desire to maintain access and amenity during construction. This is particularly important to local businesses.	<p>The project is working closely with local businesses, residents and community groups to minimise impacts to access and amenity during construction. Building robust collaborative relationships with stakeholders ensures channels of communication remain open and any issues can be addressed in a timely manner.</p> <p>Traffic management plans will also be implemented to ensure all vehicle movements are facilitated safely while maintaining access where possible.</p>
Tree retention	Tree retention is a priority for stakeholders and the community. Where impacts are	In recognition of the high importance of tree retention, a working group has been established to develop strategies and plans to

Key Theme	Description	Alliance / Project Response
	<p>unavoidable, community expectations are for the project to minimise and offset impacts.</p>	<p>achieve maximum tree retention, in collaboration with key stakeholders.</p> <p>The project will ensure design and construction is carefully considered to achieve optimum environmental and social outcomes.</p> <p>The landscape design of the station and wider precinct area also respond to the aspiration for new tree plantings in areas that are currently cleared (for example the Welcome Place, which has a focus on shade and shelter through an improved tree canopy).</p>

Table 7: Engagement Summary

4. Planning Considerations

To facilitate good station design outcomes, the proposed concept for the new Byford Station utilises the principles outlined in the *METRONET Station Precinct Design Guide* and responding to *State Planning Policy 7.0 – Design of the Built Environment (SPP 7.0)*.

The design of Byford Station and its surrounds seeks to respond to the growing needs of a key strategic metropolitan centre. Byford Station will provide a meeting place for the community, creating new public spaces and facilities for locals to use and connect to the public transport network beyond.

The development of Byford Station reflects the WAPC's intention to encourage and consolidate residential and commercial development in key strategic metropolitan centres so they can contribute to a balanced network. In particular, the design of the development is based on the following key design criteria / principles:

- Delivering public realm upgrades to facilitate safe and direct access between bus services, kiss and ride and pedestrian movements to facilitate ease of use.
- Improving pedestrian connectivity through the Town Centre and facilitating accessible paths of travel to alternative modes of transport
- Upgrade paving and landscaping to integrate treatments across the Town Centre promoting a consistent theme and connectivity on a precinct wide basis.

4.1 Architectural Design Statement and Scope of Works and Technical Criteria

The scope of works set by the projects Scope of Works and Technical Criteria (SWTC) includes a number of qualitative design measures which must be met in the design of Byford Station. These requirements have been interpreted and applied by the Alliance, which has resulted in common line-wide architectural themes and site-specific considerations. The final design was presented to the State Design Review Panel (SDRP); three times formally (refer **Section 5** – State Design Review Panel). The SDRP undertook its reviews in accordance with the SPP 7.0 Design Principles. The architectural designs have been refined to respond to the SDRP comments, acknowledging the long-term success of Byford Station will be its integration with the existing neighbourhood and a provision of a safe, reliable, and amenable travel experience for patrons.

4.2 Final Place Plan

As part of the BRE project, the Byford Station Final Place Plan sets out the place planning, public art and landscape concept for Byford Station and its surrounds. The plan focusses on the METRONET deliverables within the project boundary in the area of 500m around the train station at 'day one' of opening, with some considerations for these station surrounds to adapt to future built form as the likely need for park and ride spaces is reduced.

Analysis of the current context, station precinct users, the planning framework, together with the station access strategy, form the base for the Final Place Plan. At the core of the plan sits the site-specific Sense of Place Statements. These guide the place planning, public art and design of the architecture and the public realm.

Please refer to **Appendix C** – Byford Station Final Place Plan.

5. Design Evolution

5.1 State Design Review Panel

The State Design Review Panel (SDRP) provides independent, expert advice to Government agencies, decision makers and proponents regarding the design quality of different projects of all scales. The SDRP helps to improve design quality and were engaged as an important stakeholder on the BRE Project.

Three reviews were undertaken for the BRE Project:

- **Design Review 1**

Completed on 27 October 2020.

- **Design Review 2**

Completed 16 June 2022. This was a review of the reference design of Byford Station.

- **Design Review 3**

SDRP completed 30 May 2023. This was a review for the revised reference design of Byford Station (that focussed on the architecture and ensures Place Plan outcomes are deliverable). The SDRP confirmed that no follow up review was required beyond this point.

SDRP Summary

The design approach is generally supported by the SDRP; however, the areas identified the summary dot points below, and in **Table 8** required further consideration. Refer to the 'Response' in **Table 8** to understand how the recommended changes have been implemented into the final design for DA.

- *The functionality, legibility, and amenity offered by the station precinct will be key to ensuring it becomes a safe and activated space for residents and visitors.*
- *There are numerous aspects of the station design yet to be finalised. While the approach to the development of the station buildings and architectural treatment is encouraging, value engineering processes will likely drive substantial change from the drawings presented.*
- *The number, mix, and 'programme' of functions aiming to be accommodated within the key public realm area adjacent to the station are of concern. A simpler approach, that ensures the appropriate allocation of functions to this limited area, may deliver a more successful outcome for the station precinct.*
- *Further consideration of the pedestrian and cyclist network and connection points should be given, to improve safety and legibility by minimising points of conflict and provide clearer and more direct accessways to destinations within the precinct from surrounding sites, particularly the future Town Centre to the south. A key point for further consideration is the location where the Principal Shared Path intersects with the public realm/plaza space.*
- *In addition, attention to the Clara Street station entry and pedestrian approach would assist in strengthening legibility to minimise people crossing at unsafe junctures, such as adjacent the railway line.*

Principle	SDRP Comment
Context and Character	<p>1. <i>The Panel welcomes the strengthening of the response to Byford's character and context with regard to the architectural language and landscape treatments being proposed. Ensuring this is not lost during any value engineering exercises will be important.</i></p>
	<p>The architectural team will be monitoring the Byford architectural language and landscape treatments throughout the next design phases and during the value engineering process to ensure the intent of the design is maintained through delivery.</p>
Landscape Quality	<p>1. <i>The Panel supports the development of the landscape strategy since DR2, especially its addition as a means of connectivity between the established and future Town Centre areas.</i></p> <p>2. <i>The Panel supports the incorporation of additional planting areas, including medians for all perimeter roads, and replacement trees for George Street and Clara Street to ensure an integrated and attractive station precinct.</i></p> <p>3. <i>The Panel strongly encourages the proponent to continue working with the Shire of Serpentine-Jarrahdale to ensure a coordinated approach to planting.</i></p> <p>4. <i>The design of the public realm areas adjacent to the station will be important to the success of the precinct and should be reviewed to provide a coordinated approach between the intended uses of the space and the layout and design of the landscape within its immediate and wider context.</i></p>
	<p>The design team will continue to work alongside the Shire to integrate the expectations to provide an attractive station precinct at day one, and for the future development of the precinct. Ongoing discussions with the Shire will be undertaken to ensure effective planting and tree selections, several of which are in alignment with the Shire's recommended planting palette.</p> <p>The design team agree that the public realm around the station is a key area for the success of the precinct. The stakeholders engagement will be an ongoing process and coordinated approach between the intended uses of the space and the layout and design of the landscape within its immediate and wider context. Ongoing design review is being undertaken for the public realm areas adjacent the station to enhance the functional uses and connectivity to the broader context.</p>
Built Form and Scale	<p>1. <i>The Panel supports the simplified approach to the design of station buildings and the design principles outlined in the presentation.</i></p> <p>2. <i>The Panel supports the reconfiguration of the car park which allows for a more integrated bus port, a circulation road, and the removal of the Public Transport Authority infrastructure (staff parking, transformer and substation, switch room, pumps). This improves amenity and functionality and provides opportunities for adjacent future development.</i></p>
	<p>These points are noted, as the design of the precinct has evolved to simplify the approach of the station design, and configuration of the car park and associated infrastructure.</p>
Functionality and Build Quality	<p>1. <i>The Panel remains concerned at the design of the surrounding road geometry, particularly in the absence of the traffic analysis requested in DR2, noting that it will have a significant impact on the character of the public realm and the success of the precinct as a pedestrian-oriented transport interchange and Town Centre.</i></p> <p>2. <i>The Panel recommends a more direct route, with a defined crossing point, for the pedestrian pathway between the Station and Town Centre. The current proposal directs pedestrians away from the natural desire line towards the Town Centre, instead directing them westwards along Clara Street, increasing the distance travelled between origin and destination. This may cause unwanted, and potentially unsafe, 'shortcuts' being taken across Clara Street adjacent the station.</i></p> <p>3. <i>The Panel recommends consideration of the wider pedestrian network to ensure a coordinated and consistent approach to north-south pedestrian movement between existing Town Centre and future development.</i></p>

	<p>The primary focus of the road design is on prioritising pedestrian use and creating a public realm that is conducive to pedestrian movement, within an environment where road safety standards need to be met. The civil engineering of the road geometries is on minimum radii for the required design vehicles and is support the traffic analysis of the traffic engineer in the transport impact assessment.</p> <p>The proposed pedestrian circulation plan has already undergone coordination with relevant authorities such as the Shire, Main Roads Western Australia, and Transperth. The designated direct line for pedestrians to cross Clara Street has been identified as the safest route, considering the proximity of the pedestrian crossing and its queuing zone. Although this may result in a slightly increased distance travelled, safety is the main priority.</p> <p>The potential "shortcuts" across Clara Street near the station and rail crossing have been reviewed with our Human Factors consultant and are managed with architectural railings integrated within the landscaping to deter pedestrian and cyclist access.</p> <p>The wider pedestrian network and its integration with the surrounding area has been considered as part of the design process with integrated paths connecting to planned future networks. This ensures that the design considers the needs and convenience of pedestrians beyond just the immediate precinct.</p>
<p>Sustainability</p>	<ol style="list-style-type: none"> 1. <i>The Panel supports the proposed 3-metre swales to facilitate tree canopy throughout the car park and recommends further development of the Water Sensitive Urban Design (WSUD) strategy to help support long-term viability of these trees.</i> 2. <i>The Panel notes that 'coastal sand' (also known as 'builder's sand') will likely be used to provide the site-wide fill of 1.5 - 3.5 metres, which will compromise the survival rate of native or endemic plant species. Detailed attention to species selection is required to ensure benefit to local microclimatic conditions, adheres to WSUD principles, contributes to native fauna, and offers amenity for users.</i> 3. <i>The Panel suggests that further consideration is given (to the extent possible) to how the design can support the planned future rail expansion to the east of the current station.</i> <p>Swales have been designed throughout the car park to encourage healthy growth of trees over the long term, they also act as vegetated drainage areas for the onsite treatment of stormwater as per WSUD principles. Plant selection is informed by the 'Vegetation Guidelines for Stormwater Biofilters in the Southwest of Western Australia (Monash University, 2014). This assists with effective nutrient removal in combination with the proposed filter media.</p> <p>Detail of the plant species selection is currently under review to ensure benefit to local microclimatic conditions, and soil treatments that contribute to the successful maturation of planted flora. For example in planting zones the appropriate topsoil will be used.</p> <p>The planned future rail expansion has been considered in the design process, with space allocated within the rail reserve for the future rail expansion.</p>
<p>Amenity</p>	<ol style="list-style-type: none"> 1. <i>The Panel acknowledges and supports the extensive stakeholder engagement undertaken since DR2 to inform the public realm design and programming. Concern remains, however, regarding the coherence and legibility of the Station precinct public realm and its relationship to Town Centre. The proposed public realm area adjacent to the station incorporates has multiple functions and spaces which appear to lack clarity and purpose: The Green, Play Space, Bush Plaza, and Welcome Gardens. The proponent is strongly encouraged to continue work with the Shire of Serpentine-Jarrahdale to deliver the most viable and beneficial outcome, recognising its general transit orientation and proximity to the station, bus interchange and busy through street.</i> 2. <i>The Panel queries whether The Green will deliver on the intent to provide a safe, activated multi-use space in its location between the bus port and a train station.</i> <p>Since the last SDRP review, designs have evolved for the public spaces around the Byford Station to ensure coherence and legibility of these areas. The SDRP comments have been reviewed with the Shire, and their position remains supportive of the functionality requested and included in the design of the Plaza.</p>

	<p>The design team acknowledged the SDRP comments regarding the Green and have extended the area to provide visual and direct access connectivity between the Green, nature play space and commercial activation of Plaza Road to improve the safety and activation of this multi-use space. The space also has good visual connectivity with other zones and passive surveillance from pedestrian thoroughfares and PTA security managed zones, as well as built up landscaping to define its edges and ensure safe boundaries for younger users.</p> <p>Further design review is being undertaken for the public realm areas adjacent the station and will include engagement with the Shire and other stakeholders.</p>
Legibility	<ol style="list-style-type: none"> 1. <i>The Panel remains concerned regarding the lack of legibility of the movement pathways, street layout, and public realm spaces, both within the proposal area and in the immediate context.</i> 2. <i>The Panel recommends clarifying and strengthening the pedestrian connectivity to the existing Town Centre.</i> 3. <i>Consider incorporation of visual cues and ensure a clear logic to the broader station precinct composition to improve wayfinding. The success of the station precinct will rely not only on the station user experience but also on the journey to and from the station, by all modes of transport. Ensuring minimal barriers or complications is critical to encouraging station use.</i> 4. <i>The Panel recommends signage to require cyclists to stop and dismount within the public realm areas near the station, together with the delineation and signage of alternative, uninterrupted routes for cyclists, to mitigate the high risk of pedestrian and cyclist conflict associated with the Principal Shared Path alignment through the public realm.</i> <p>The enhancement of the connection between the old town and station is recognised as being an important connection, and barriers have been minimised (to the point where they can safely be removed), to ensure free connections from east to west.</p> <p>The legibility of movement pathways has been clarified in the updated drawings from the SDRP presentation and connects to the wider proposed network of cycle routes and pedestrian paths in the Shire's future planning and to the existing Town Centre.</p> <p>Signage and path materiality, colours and finishes are recognised as being important measures to mitigate conflict between cyclists and pedestrians and are being actively pursued and will be refined with the wider design team and Stakeholders in the detailed design phase of the project.</p> <p>Cyclists will be encouraged to dismount within the shared zone adjacent the station, as required by the project brief. Alternative bypass routes will be made available in the future with the Shire's planned on street cycle lanes, and integrated shared and dual use paths in the wider network surrounding the site.</p>
Safety	<ol style="list-style-type: none"> 1. <i>The Panel continues to be concerned regarding the various public realm spaces and the compromised ability to provide activated, safe areas, especially after dark. A more rigorous analysis of how Crime Prevention Through Environmental Design (CPTED) principles can be adequately applied to this area – and the station precinct overall – is required.</i> <p>Ongoing review of CPTED and safety in the design is occurring on the precinct, with Plaza Road introduced to encourage activation along the western edge of the Western Plaza space when mixed use development occurs in this space.</p> <p>The functionality and use of the Public Realm has been discussed with the Shire for activation and community events to provide safe, and active areas, including ensuring spaces are well lit throughout the appropriate times.</p> <p>The lighting strategy provides safe lighting levels and clearly defined areas for users, and ensures sightlines are maintained across the station's Public Realm.</p>
Community	<ol style="list-style-type: none"> 1. <i>The station and associated facilities will provide an important benefit for the wider community and station catchment. The role and function of the station will also add to the services and amenities of the adjacent Town Centre. Careful consideration will need to be given to the nature and purpose of functions to be accommodated in the public realm across the station precinct in response to the surrounding context.</i>

	<p>2. <i>The Panel recommends careful consideration of programming of the public realm. The intent to provide opportunities for occasional events and pop-up vendors may warrant the provision of facilities such as toilets, storage, maintenance, service connections and safety, especially regarding children.</i></p> <p>3. <i>The Panel continues to support the aspiration to contribute to streetscape improvements and the pedestrian experience and encourages continuing to work with the Shire of Serpentine-Jarrahdale to ensure that such improvements are implemented and prioritised.</i></p> <p>The design has responded to the requirements of the SWTC and engagement with the Shire and Community Stakeholders. The SDRP comments have been reviewed with the Shire, and their position remains supportive of the functionality requested and included in the design of the Plaza.</p> <p>Plaza Road has been integrated into the design as an expansion of the Plaza with paved finishes level with the adjacent footpaths, and services provisions to facilitate pop-up vendors, market stall and food truck events. Plaza Road is also not required for the functionality of the park and ride or kiss and ride operations, and therefore can be closed off in events increasing the functional space of the Plaza area for Community events.</p> <p>Additional services connections are also provided within the Plaza to support pop-up vendors and the future integration of permanent café and toilet facilities as requested by the Shire.</p> <p>Further refinement of the proposed elements will be undertaken in consultation with the Shire and other key stakeholders.</p>
<p>Aesthetics</p>	<p>1. <i>The Panel supports the evolution of the overall architectural language, materiality, and direction, noting that several elements (e.g., fencing, urban elements and furniture, signs, exposed building services, utility access points) are still not shown on the diagrams presented and will impact on the final appearance and functionality of the station.</i></p> <p>2. <i>The Panel supports the development of the public art strategy in a manner that ensures a fully integrated outcome.</i></p> <p>Design elements forming part of the station precinct, such as fencing, furniture, signs, exposed building services, utility access points, wayfinding and signage are subject to detailed design. The design team has focussed its attention on an integrated design, to deliver a coordinated and well-designed station and precinct with the right balance between functionality and aesthetics.</p> <p>The Public Art Plan has been developed and will be integrated into the design as the artists come on board.</p>

Table 8: SDRP Summary

6. Development Details

6.1 Byford Station (Train Station and Bus Interchange)

Byford Station is one of two new station areas proposed as part of BRE and will be a long-term asset for the State Government, the Shire, and the Town Centre. As a once-in-a-generation investment, the design focuses on simple and durable construction. The station precinct is designed as a multi-modal transport hub, balancing the functional requirements of all users.

The layout of Byford Station is linear in form and develops along two main buildings components: One is located at the Station west side, facing the public plaza and the other building is located at the entry and adjacent to the platform. Also here the design has utilised the idea of station pods which accommodate the SWTC and Station Accommodation Schedule requirements.

The back of house area and PTA staff amenity rooms, as well as the bicycle store and kiosk are located on the west pod, whilst the CSO and the public amenities including toilets and drinking fountains are on the east pod adjacent to the platform.



Artist interpretation for illustrative purposes only

Render 1: Byford Station (facing north-east)

The urban structure of the Town Centre is characterised by two distinct areas, separated by the railway corridor. The eastern side is the historic centre with a rural feel, including older buildings in a dispersed setting with eminent mature trees. The western side is the contemporary town centre with larger buildings surrounded by a rich supply of car parking.

Currently, the rail corridor is a primary barrier to any movement across the Town Centre. A new train station at the northern side of the Town Centre will improve the connection and urban structure greatly. This would also help to facilitate growth of the Town Centre to the west, while supporting the existing businesses to the east.

Given the land available on the western side is currently undeveloped, it provides a great opportunity to create active areas for living and working beside the station. The design has evolved to make it possible for high quality development outcomes to occur, so the station area is not seen simply as a thoroughfare, but a place that is part of the wider Town Centre.

Opportunities offered through the development of the precinct include:

- Linking the 'old' and 'new' Town Centre, both physically and in character.
- Contributing infrastructure to the development of emerging parts of the western Town Centre.
- Improving active transport connectivity along the west side of the rail corridor.
- Creating recreational connections to the hills and the trotting complex.

6.1.2 Train Station Building

The Byford Station precinct is envisioned as a dynamic multi-modal transport hub, accommodating the functional needs of various users. By integrating different modes of transportation, such as trains, buses, and potentially other means of transit, the design aims to create a seamless and efficient transportation experience for commuters and visitors.

The design of the station building is kept simple, it maintains a key emphasis on functionality and space flexibility, to reflect the look and feel of the place.

The architectural design has been carefully considered the locality, key movement routes, and overall a holistic approach whereby the station building itself forms an integral part of the Town Centre and surrounding context.

The following provisions have been incorporated into its design:

- Bike storage.
- Electrical services, communications, and storerooms.
- A kiosk which is located towards the southern end of the western station building.
- Staff crib room and staff toilets.
- Electrical, services, communications, and storerooms.

Please refer to **Figure 7 – Byford Station Ground Level (axonometric diagram)** and **Render 2 - Concourse Level (artists impression facing east)** for further detail of the internals related to Byford Station.

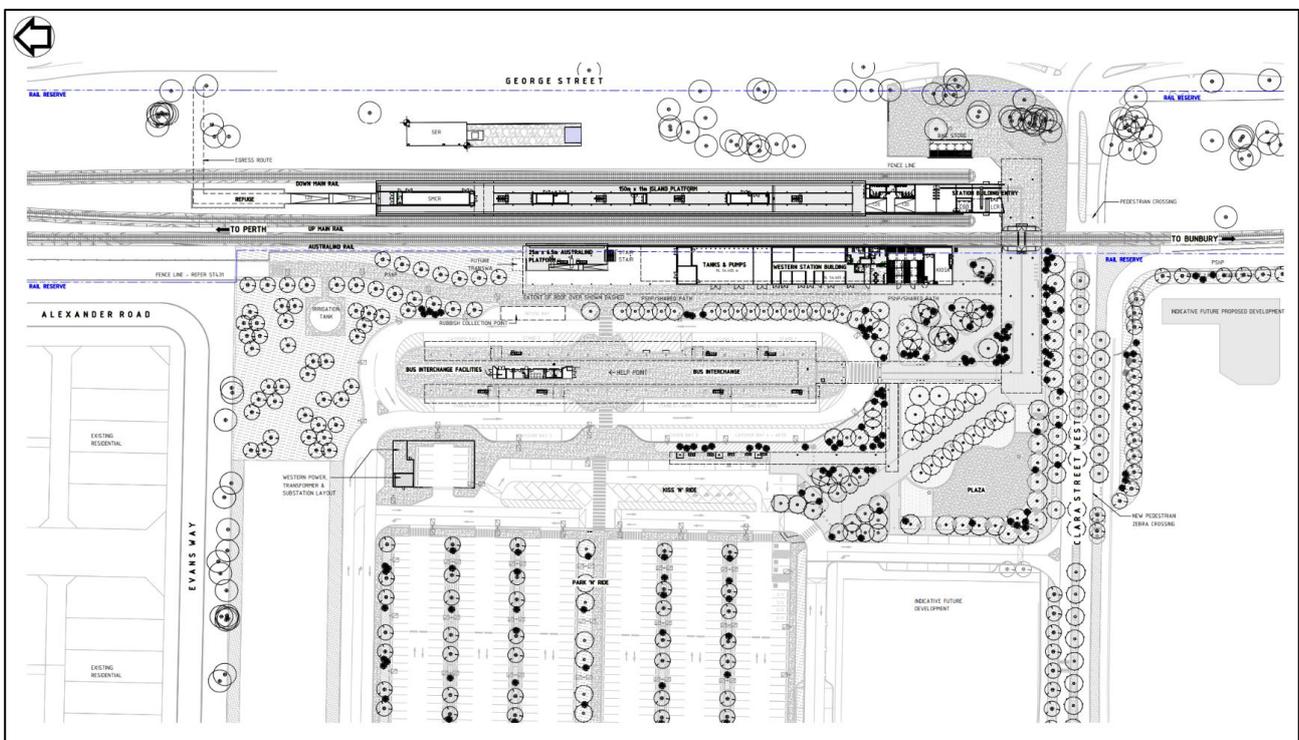


Figure 7: Site Plan (Station)

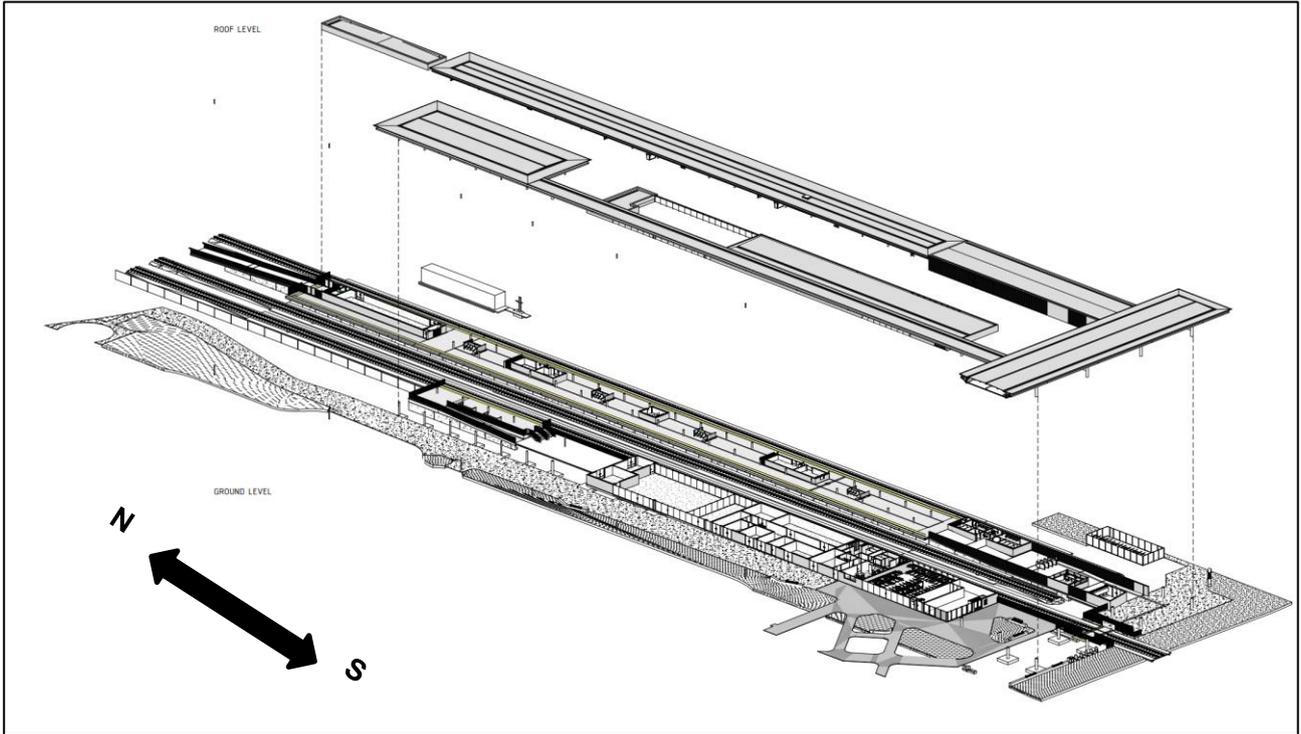


Figure 8: Byford Station Ground Level (axonometric diagram)

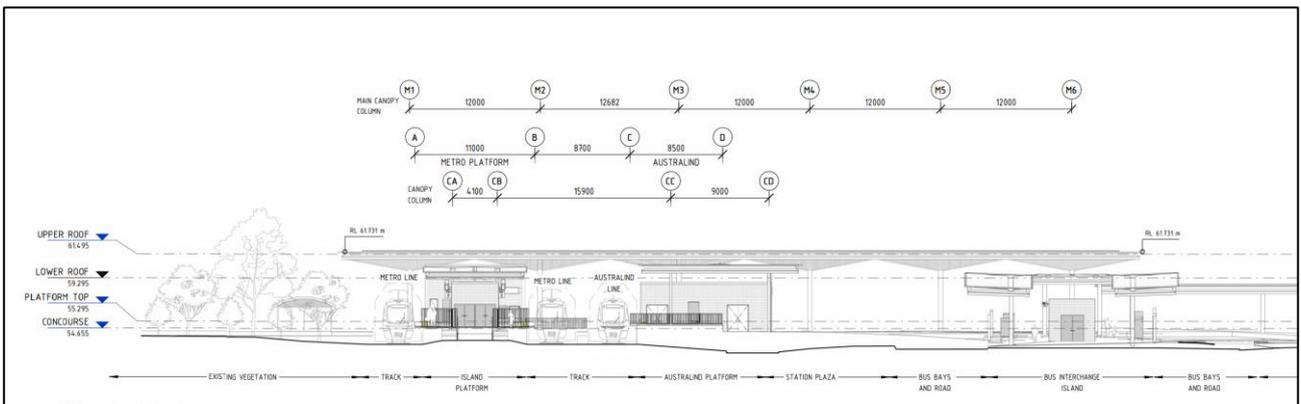


Figure 9: Station Cross-Section (North Elevation)

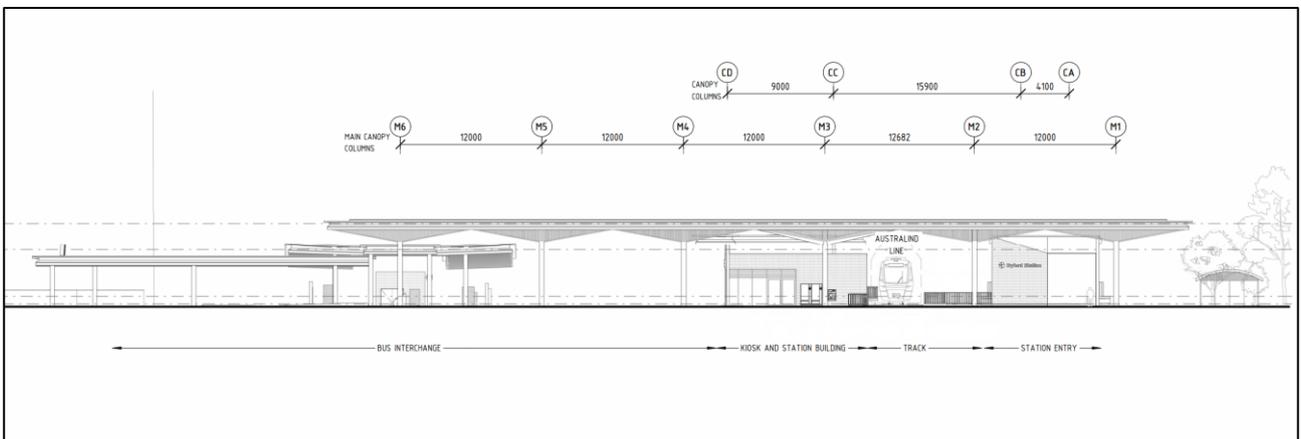


Figure 10: Station Elevation (northern end)



Artist interpretation for illustrative purposes only

Render 2: Concourse Level (artists impression facing east)



Artist interpretation for illustrative purposes only

Render 3: Canopies and Soffits (artists impression facing south)

6.1.3 Station Crossing

As part of the Byford Station proposal, three platforms are planned to be constructed. Additionally, future-proofing measures are included to allow for a potential future Faster Bunbury Train service. To accommodate this, space is allocated beside the eastern rail track for a future track, ensuring flexibility for expansion.

On the western side of the rail line, access to the metropolitan line is provided through an 'at grade' pedestrian crossing. This crossing allows patrons to freely cross the rail line to reach the desired platform. However, to ensure safety, the crossing is equipped with gates that restrict access when the Australind train approaches. These gates are operational four times a day when the train is scheduled to pass through the area.

The inclusion of the 'at grade' crossing with controlled access ensures the safety of passengers utilising the Byford Station. It allows for convenient movement between the platforms and the metropolitan line, while the presence of the gates helps regulate access during specific train timings, reducing the risk of accidents or incidents.

The proposed design takes into consideration both accessibility and safety, aiming to provide a smooth and secure experience for patrons utilising Byford Station and ensuring future adaptability for potential service expansions.

Ensuring the design allows for safe and efficient access and maintenance strategies that do not endanger patrons and maintenance personnel nor disrupt daily operations. Additionally, consideration has been given to how to achieve this without compromising the station's look and feel.

The design incorporates future-proofing measures for potential expansion beside the eastern rail track. By considering the possibility of future lines, the station design considers the anticipated growth and evolving needs of the transportation system. It ensures that station infrastructure can be easily adapted and expanded in the future, minimising disruptions, and maximising the efficiency of the overall rail network.



Render 4: Platforms (facing south-west)

6.1.4 Entrance and Linking Canopies

Comprehensive development of the canopy strategy was undertaken with a goal of minimising excessive columns, providing continuous coverage, and utilising the canopy as a wayfinding device to create a space which both functional and user friendly.

A landmark entrance canopy has been designed to unify the platform areas and provide a protected space across the rail crossing.

Beyond this, a series of linking canopies provide a comfortable pathway for commuters, making the transition from the bus interchange to the platforms using the main entrance canopy.

The linking canopies offer a seamless and sheltered connection, prioritising passenger comfort and security throughout their journey within the Station's premises. It is designed to ensure accessibility, allowing commuters to move safely and conveniently between the bus interchange and the platforms.



Render 5: Entrance Canopy (facing north)

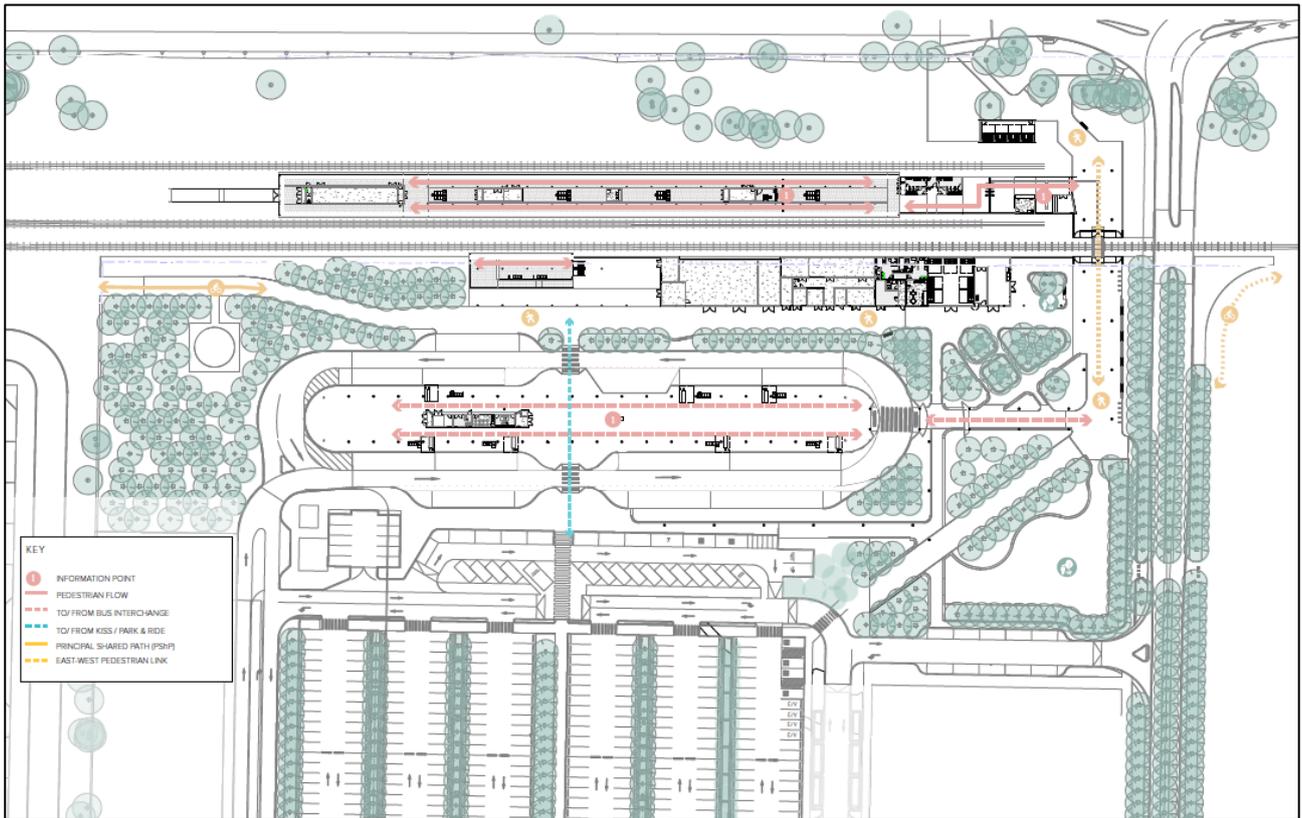


Figure 11: Patron Journeys Along Linking Canopies

6.1.5 Bus Interchange

A bus interchange provides convenient access to local and regional bus services to the west of the station. Busses will circulate through the interchange in a counterclockwise arrangement, with access from a new road created to connect to Evans Way. The bus interchange incorporates:

- 4 x standard bus bays (for 'rigid' bus sizes);
- 3 x standard bus bays (for 'articulated' bus sizes);
- 3 x layover bus bays (for 'rigid' bus sizes); and
- 1 x TransWA bus bay.

6.1.6 Architectural Treatments, Materials and Finishes

The material selections have developed in accordance with the requirements of the Scope of Works and Technical Criteria provided by the PTA, National Construction Code (NCC), Disability Discrimination Act (DDA) as well as the PTA Specification 8803-000-002 – Maintenance and Constructability.

All materials, fittings, fixtures, and finishes have been selected to be of high quality with robust and hard-wearing surfaces, low maintenance and durable anti-vandal qualities, with selections in accordance with the relevant PTA standards.

Material selections are governed by several high-level criteria with the overall aim of achieving high-quality user experience while simultaneously addressing the durability, maintenance, operational, life cycle costing, sustainability and DDA requirements.

A summary of these criteria, as defined by the specification are outlined below:

- Consideration of design life and durability requirements.
- Material selection that provides a high-quality user experience.
- A material palette that reflects the surrounding context and helps to enhance the sense of place.
- Consideration of the vandal risk and anti-vandalism properties of the material.
- Utilisation of local materials when possible and consideration of material origins.
- Consideration of construction methods and ease of installation, considering the kit of parts approach throughout the project.
- Consideration of life cycle costing.

It is expected that material selections may continue to evolve throughout detailed design stages of the project in order to meet the criteria outlined above.

Please refer to **Appendix D** – Byford Station Development Plans which includes a Material Board.

Soffits (Station / Bus Interchange / Kiss and Ride)

The proposed soffit battens are an anodised aluminium extruded framework with services inserted between. The battens have a timber look finish, chosen to blend with the surrounding context of Byford and reflect the natural of the Darling Scarp landscape. They provide visual interest and articulation along the journey through the Station Precinct. Beyond their aesthetic value the battens but also serve a functional purpose. They conceal services, such as wiring and other utilities, creating a clean and streamlined appearance. This helps maintain the visual integrity of the space.

Building Cladding (Station)

The external design of the station building is intended to mirror the characteristics of the Darling Scarp, a geological feature in the region. One specific element of this design is the use of mechanically fixed brick slip cladding, which extends up to three metres in height. Furthermore, the brick slip cladding is finished with an anti-graffiti coating.

This protective coating makes it easier to clean and maintain the appearance of the station building. This feature ensures that the building retains its visual appeal and reduces the impact of vandalism.

Floors (Train Station and Platforms)

For the station paid zone and platform, a terrazzo floor tile has been selected in grey base with light grey stone aggregate. The finished platform surface will be integrated with PTA standards and provide sufficient luminance contrast for patrons with visual impairments. Terrazzo is known for its exceptional durability, making it suitable for high-traffic areas such as platforms and concourses. Its robustness ensures that the floor surface can withstand heavy footfall and maintain its quality over time, reducing the need for frequent maintenance or replacement. In addition to its durability, terrazzo also offers a visually appealing and elegant finish. The variety of colours and patterns available allows for customisation to match the desired aesthetic of the space. This versatility in design ensures that the flooring contributes to the overall visual appeal of the platform and concourse areas.

Please refer to **Appendix D** – Byford Station Development Plans which include a Material Board.

6.1.7 Lighting

Lighting plays an important role in enhancing the sense of safety within the public realm and internally and externally around new station, and can assist in reducing antisocial behaviour, improve visibility and therefore increased use of patronage and use of the public realm by the community.

Well-lit areas are more inviting, creating a welcoming atmosphere that encourages people to gather, socialise, and utilise the public amenities available. It also extends the usability of these spaces into the evening, enhancing their accessibility and promoting community connection. Some features of the lighting design in and around the station include:

Bus Interchange Canopy / Kiss and Ride and Transitional Canopies

LED linear profiles will be installed in the canopy, positioned above to provide downward lighting. This lighting approach helps illuminate the area below, aiding wayfinding between the station and other transportation options.

Similar to the bus interchange canopy, LED linear profiles will be utilised in these canopies. They will be set up to provide downlighting from above, ensuring proper illumination in these areas.

Plaza Areas

Outdoor spotlights will be mounted on 8-meter seesaw-type poles to illuminate the plaza areas. These spotlights will offer focused lighting to specific areas, enhancing visibility and safety. Additionally, LED linear profiles will be integrated into the pitched canopy ceiling, providing pathway lighting from above and brightening key pedestrian zones within the plaza.

Concourse and Canopies

Diffused linear profiles are proposed for the concourse and canopies around the precinct. These linear profiles will be installed into the ceiling between timber battens, creating a visually appealing lighting effect.

While lighting requirements have been informed by the SWTC as *PTA Specification 8803-900-003 – Lighting Design, Installation, and Maintenance*, other important lighting features to note include:

- Within the station building, lighting will be strategically placed to provide clear visibility for commuters, including platforms, waiting areas and walkways. The station entrance will feature brighter lighting to facilitate wayfinding, while the concourse lighting seamlessly integrates with the entry lighting and aids in guiding patrons towards the platforms.
- Beyond the station building, lighting will be designed to illuminate pathways, entrances, parking areas, and surrounding public spaces, ensuring safe navigation for pedestrians and vehicles alike.
- For landscaped areas, dynamic lighting solutions will allow illumination levels to adjust based on natural daylight conditions.
- Shared use pathways are equipped with lighting solutions that prioritise safety, comfortable visibility, and an overall perceived sense of safety for pedestrians and cyclists.

It is important to note that the specific details of the lighting plan may be subject to further design development and consultation, ensuring that it aligns with the overall vision and objectives of the station precinct.

Please refer to **Appendix O** – Lighting Strategy for further information regarding lighting for Byford Station and surrounds.

7. Paths and Parking

Principal Shared Path

The Principal Shared Path (PShP) along the west side of the rail line is a significant addition to the Byford cycle network. It will serve as an essential cycling linkage, connecting Armadale in the north to Abernethy Road in the south. A grade-separated crossing at Larsen Road and an at-grade crossing at Clara Street West will improve the east-west connectivity across the rail line.

Parking

Parking is an important consideration to help public transport patrons use train and bus services from Byford Station. This includes various types of long- and short-term parking, and parking for active modes such as bikes.

Kiss and Ride

Access to the kiss and ride parking area is from a new road connected to Evans Way. This area includes 35 bays across a range of different parking types as required in the SWTC:

- 10 x short term bays
- 8 x kiss and ride bays
- 2 x accessible bays
- 1 x taxi bay
- 4 x PTA service bays – short stay area
- 2 x emergency bays – short stay area
- 1 x tenancy bay – short stay area
- 6 x motorcycle bays

Park and Ride

Access to the park and ride is accessed from a new road connected to Evans Way. The park and ride area allows for 409 bays across a range of different parking types as required in the SWTC:

- 401 standard bays – long stay
- 4 x electric vehicle bays – long stay
- 4 x accessible parking bays – long stay

Additionally, the spatial planning for this area considered the potential future demand for parking. Should the need arise, the PTA has identified the possibility of expanding the parking facilities by 121 extra bays to accommodate additional vehicles.

PTA Staff Parking

These parking spaces are necessary for the operation of the facility and includes 10 car bays in secure area to north of the kiss and ride area.

Bicycle Parking

Two undercover secure bicycle parking areas are proposed for Byford Station. A standard PTA secure bike shelter is proposed east of the station building entry, with an internal secure bike storage area proposed within the western station building. Bicycle parking provides secure parking for:

- 60 x bicycle spaces (eastern bike storage)
- 136 x bicycle spaces (western bike storage – in station building)

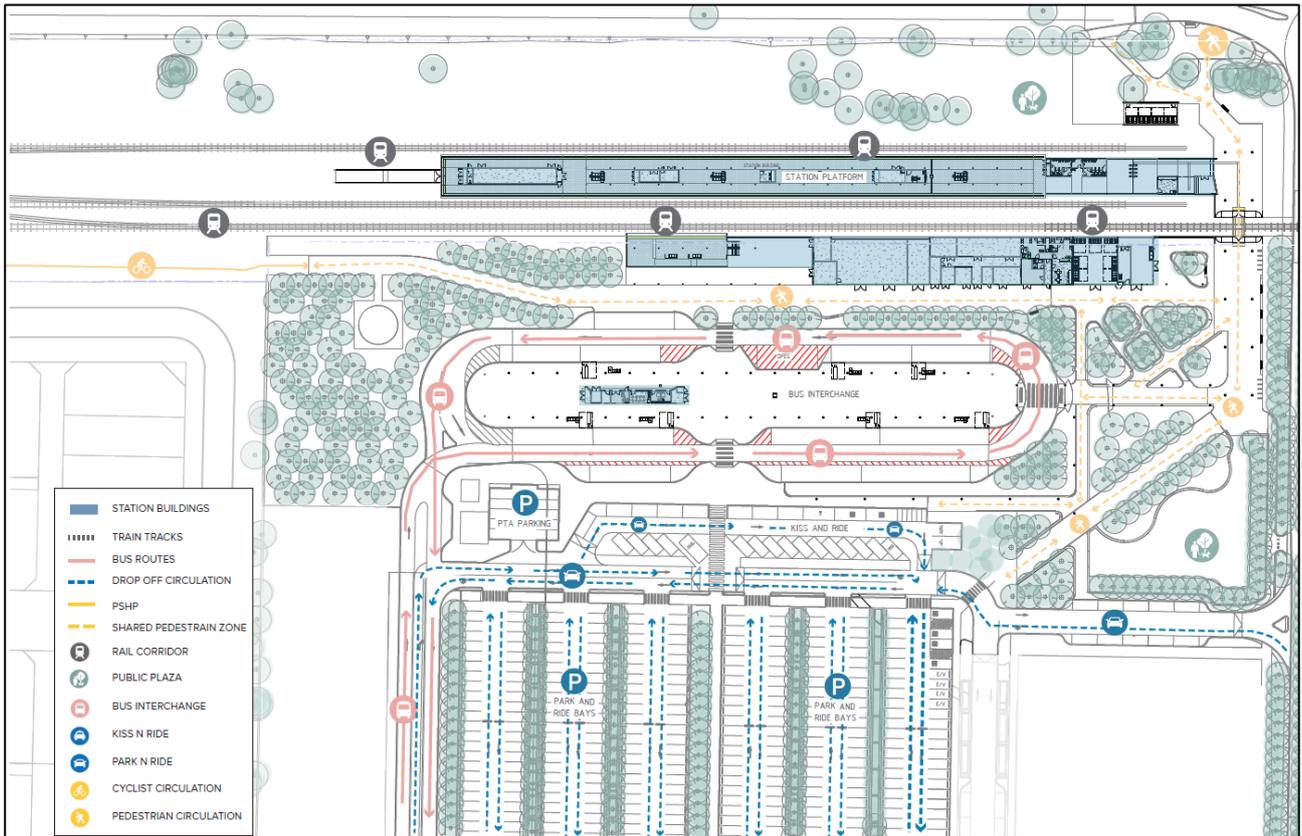


Figure 12: Patron Hierarchy Diagram (demonstrating access to paths, and between the station building and parking)

8. Landscape Design and Public Art

The landscape and precinct design of Byford Station and its associated infrastructure have prioritised certain principles to create an inviting and functional public space. These principles are as follows:

Clear and Intuitive

The ground plane of the station and precinct is designed to be spacious and easy to navigate, providing a strong sense of arrival. There is a focus on creating clear pathways and connections that enhance east/west connectivity, making it intuitive for people to move through the area.

Safe and Welcoming

The design ensures clear and unobstructed connections to the precinct from surrounding areas. It includes strategic placement of lighting and clear sightlines to enhance safety and create a welcoming atmosphere for visitors.

Trees and Shade

The incorporation of trees and shading elements is prioritized to provide shelter, shade, and thermal comfort for people using the public spaces. The presence of vegetation contributes to a more pleasant and sustainable environment.

Multifunctional

The design allows for flexibility within the public realm, enabling various uses and functions. This ensures that the space can adapt and accommodate different activities, events, and community needs.

Culturally Inclusive

The spaces within the precinct are designed to promote social interaction, cultural exchange, and the sharing of knowledge. This inclusivity aims to create an environment where people from diverse backgrounds feel welcomed and encouraged to engage with one another.

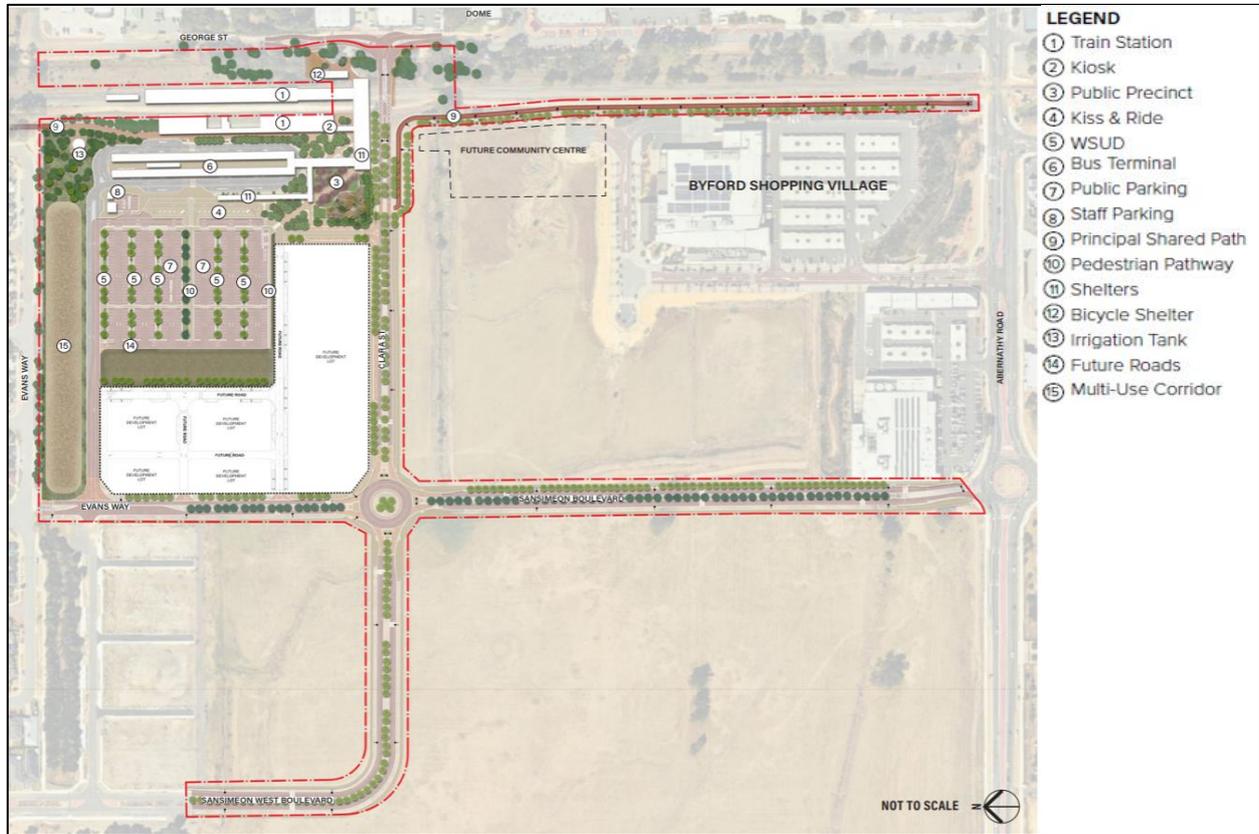


Figure 13: Day 1 Landscape Design



Figure 14: Landscape Zones

The design prioritises clear navigation, safety, shade, flexibility, and cultural inclusivity. These principles ensure that the public spaces surrounding the station are inviting, functional, and cater to the needs of the community. Byford Station is divided into seven distinct landscape zones, each serving a different purpose and offering unique features. These precincts are:

Urban Forest

This precinct is characterised by the presence of trees and greenery, creating a natural and serene environment. It offers a peaceful retreat within the precinct.

PSHP

The PSHP is a dedicated pathway for pedestrians and cyclists, providing a safe and convenient route for active transportation within the precinct.

Welcome Gardens

The Welcome Gardens serve as an inviting and visually appealing entrance to the precinct. They create a welcoming atmosphere for visitors and add aesthetic value to the overall design.

Play Area

This precinct is dedicated to recreational activities, particularly for children. It features play equipment and amenities that provide a fun and engaging experience for young visitors.

The Green

The Green precinct offers open green spaces for various recreational activities such as picnics, gatherings, and events. It serves as a versatile area for outdoor leisure and socialisation.

Western Plaza (also called the Welcome Place)

The Plaza is a central gathering space within the precinct. It may feature seating areas, public art, or amenities for relaxation and social interaction. The Plaza acts as a focal point for community engagement.

Station Forecourt

The Station Forecourt is the area directly in front of the station entrance. It serves as a transition space between the precinct and the station building, providing a convenient and well-designed entry point for commuters. These precincts within the Byford Station precinct offer different experiences and amenities, catering to various needs and activities of the community. They contribute to the overall functionality, aesthetics, and appeal of the station precinct as a whole.



Artist interpretation for illustrative purposes only

Render 6: Pedestrian Path (facing south-west)

8.1.1 Western Plaza

The design of the Western Plaza is focused on providing a spacious, uncluttered space that offers maximum flexibility for events, markets, and food trucks. With the inclusion of tall, clear-trunked trees, the plaza offers shade, shelter, and unobstructed sightlines, enhancing both the safety and comfort of the area.

The area serves as a vibrant and activated space, promoting community engagement and a sense of inclusivity. Its open design and the presence of a seating wall edge create an occupiable boundary, encouraging people to gather, relax, and participate in various activities. The plaza's sloped access to the lawn ensures that it is easily accessible to everyone, including those with mobility challenges, fostering inclusivity within the community. By incorporating turf areas and a multi-functional space called the 'Forrest Garden Play Space,' the Western Plaza provides opportunities for active play, seating areas for relaxation, and flexible areas for community events.

This design approach encourages activation and fosters a sense of community ownership, making the plaza a dynamic and inviting hub for residents and visitors.

In terms of safety, the placement of tall trees strategically provides shade and shelter, creating a comfortable environment for people to gather even during hot weather conditions. Additionally, the plaza's design incorporates sturdy and robust seating arrangements, supporting various activities and ensuring smooth circulation throughout the space.

The Western Plaza offers a visually appealing and flexible public space and emphasises the importance of community activation and safety. It provides a welcoming and accessible area that encourages social interaction, community events, and recreational activities, enhancing the overall experience for residents and visitors.

Please refer to **Appendix E – Urban Design and Landscape Concept** for further information.

8.1.2 Tree Retention and Selection

Trees support and enhance Byford's existing sense of place. They provide practical amenity and ecological benefits to the area too, offering shade and amelioration of the urban heat island effect.

The Alliance appreciates the benefit that tree retention has, combined with the aesthetic and environmental outcomes that benefit the broader Byford community. This, however, has required balance with the practicalities of construction of many new structures including the station buildings and surrounding infrastructure.

In consultation with key stakeholders, a Tree Retention Strategy has been developed to guide the retention, protection, and proposed planting to provide a strong legacy.

The retention of existing mature trees is essential to ensuring continuity of the wider habitat and ecosystem of Byford whilst reducing the need for irrigated areas. Mature trees in and around the rail corridor are to be protected and celebrated as part of the context of site.

The proposed trees will be strategically located to increase shade, canopy coverage, and reduce the urban heat island effect from the proposed infrastructure. They will contribute to the overall look and feel of the site. There are a range of Tree Selection Principles that are being used for the precinct:

Clear Sightlines

Prioritise clear trunked tree species to offer clear sightlines. Ensure trees are located at a suitable distance from crossovers and street intersections.

Diversity

Planting a diversity of tree families, genus, and species will provide visual and seasonal interest and resilience from pest and disease.

Verge Width and Tree Ratio

Select tree species to ensure selections are in scale and harmony with the existing streetscape and its functions.

Large, Canopied Trees

Preferencing taller, broad canopied tree species to maximise shade and cooling benefits.

Close Spacing

Planting trees with a close spacing to provide a quick increase in canopy cover and a continuous and connected canopy cover. Trees planted closely will develop more upright forms and be less susceptible to wind damage and heat stress.

Trees scheduled for removal are required to be removed to accommodate:

- Construction methods (noting that changes to construction methods have led to saving a significant number of trees that were originally anticipated for removal).
- New station and associated infrastructure.
- Minimum setback design parameters set by the PTA for safety or maintenance.

A Tree Retention Strategy is included in **Appendix Q**.

8.1.3 Public Art

The public art opportunities associated with the project are being developed to align with the strategic objectives of METRONET and the Shire. The approach draws inspiration from Noongar and post-colonial culture, history, and landscape. This information is captured in the Public Art Plan, which has the purpose to:

- Inform cultural and creative considerations for contractors delivering design and construction activities associated with BRE.
- Confirm PTA and METRONET expectations for integration of creative practice into the planning and delivery of BRE.
- Provide a curatorial framework to assist contractors and delivery partners in the preparation of pricing for artwork commissions.
- Ensure a consistency across the whole creative program.
- Ensure the design and delivery of permanent works are of consistent high quality.
- Collate project specifics on art, process, and funding into one document.
- Information on stakeholder involvement into public art outcomes.

Other important considerations for the Alliance in relation to public art include:

- The timing of artwork installation which will need to fit with the overall construction program.
- Sustainability of the finished piece. This may include, but not be confined to, the environmental costs associated with light, sound, motion, micro-climate installation, maintenance, and lifespan.
- The design and engineering methods will take into consideration the complexity of fabrication and assembly of the carbon emissions through energy intensity or efficiency.

The integration of public art will be further development through the detailed design phase of the project, and it is expected that an associated standard condition of approval will be applied.

Please refer to **Appendix F** - Public Art for more information on the project approach to public art.

9. Crime Prevention Through Environmental Design (CPTED)

The fundamentals of CPTED have been integrated into the design, including lighting, clear sightlines, elimination of entrapment spots, legible wayfinding, landscaping, and activation.

Natural / passive surveillance and unimpeded views across the precinct and station areas has been considered by:

- Providing a range of spaces that can accommodate a variety of users and number of attendees for both formal and informal gatherings.
- Providing passive surveillance and safe journeying through the site implementing CPTED principles with clear sightlines, good lighting, and intuitive wayfinding.
- Providing clear, direct, and safe movement to the station entry, bus terminal and carparking.
- Encouraging activity within the precinct with walking, play and resting points throughout with formal and informal seating nodes with universal access.

Safety is a crucial aspect considered in the design of the corridor, and it has been influenced by the Department of Planning, Lands and Heritage's draft Safer Places by Design Guidelines. The Byford Station and surrounding precinct incorporates various elements that prioritise the well-being of pedestrians, cyclists and drivers.

The extension of Sansimeon Boulevard and the connection of Clara Street West with the eastern Town Centre include safe and legible crossing points and station access, ensuring a natural passage for people. Activation of the Western Plaza through future development opportunities provides passive surveillance. It emphasises open sightlines, enhancing visibility and creating a sense of openness, contributing to a safer environment. This approach allows for clear lines of sight, promoting observation of surroundings and potential hazards.

The design promotes permeability, facilitating seamless transitions and clear pathways between the station and public realm areas, enhancing accessibility and ease of navigation. The installation of CCTV infrastructure within the station, bus interchange, and parking areas further enhances safety by monitoring and recording activities.

Landscaping has been carefully planned to prevent obstruction of sightlines and concealed areas. Ample lighting has been provided to improve visibility, aiding navigation and increasing the overall sense of safety.

Further consideration to CPTED principles associated with key pedestrian movement and activation areas will be undertaken through the detailed design process. Additionally, the precinct is monitored by 24/7 CCTV surveillance to ensure sufficient surveillance coverage is offered to PTA staff and users of the precinct facilities.

10. Transport Impact Assessment

A Transport Impact Assessment (TIA) has been prepared to analyse the impacts and opportunities with the proposal. The TIA was prepared in accordance with the WAPC's Transport Impact Assessment Guidelines, Volume 4 – Individual Developments and builds upon previous planning phase investigations for the BRE project.

The road networks to be constructed as part of this development, to support appropriate functioning of the new rail and bus facilities will include:

- The construction of Sansimeon Boulevard (South), North of Abernethy Road to form the northern leg of the roundabout at Abernethy Road / Gordin Way.
- The existing Sansimeon Boulevard (West) will be extended south and deviate to the east to intersect the new north-south section of Sansimeon Boulevard (South) through to Abernethy Road.
- A roundabout will be constructed at the intersection of the two Sansimeon Boulevard links.
- From that roundabout, Evans Way will extend to the north and connect into Padra Turn / Evans Way to form a four way intersection. This section of Evans Way will provide access to Byford Station via Access Road A.
- From the same roundabout, Clara Street (West) will be constructed to the east across the rail line and connect into George Street. This section of Clara Street (West) will have a secondary access to the station (left in/out only) via Plaza Road.



Figure 15: Road Network Diagram

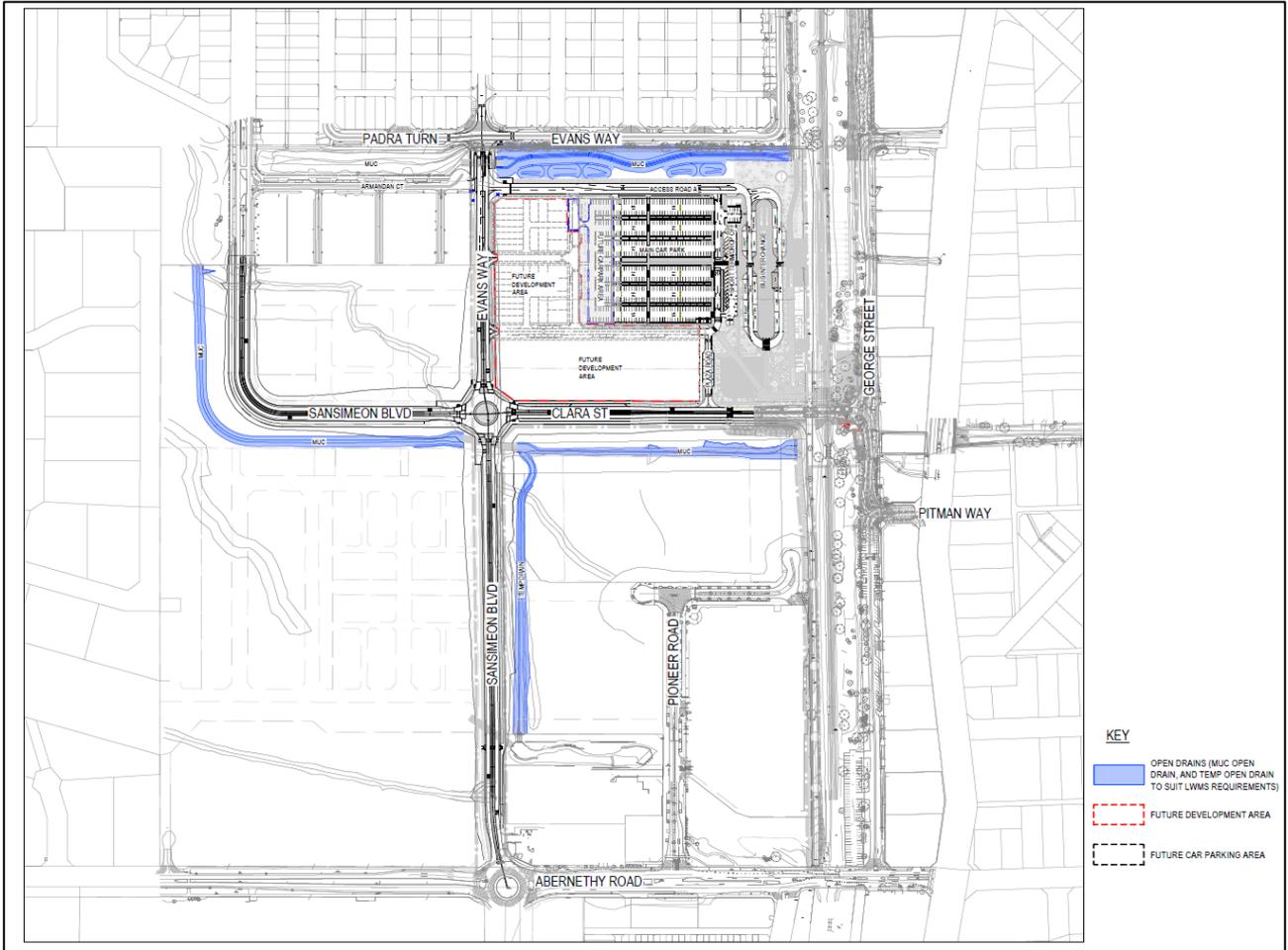


Figure 16: Road Delivery Diagram

10.1 Pedestrian Movement and Vehicle Access Routes

Byford Station will provide an opportunity to realise a much needed second pedestrian link across the rail corridor, connecting the east and west side of the Town Centre. A new rail crossing at Clara Street West creates a comfortable at-grade crossing, without the need to go up or down, while the crossing will close occasionally for the Australind train line.

A Western Plaza marks the new connection between the eastern and western Town Centre. The plaza will have ample travellers moving through, and attractive for both youth and parents with young children. Additional footpaths along Clara Street West and San Simeon Boulevard will further improve the pedestrian permeability around the Town Centre and the connectivity to the high school south of Abernethy Road.

The majority of the suburban development in Byford is happening on the west side of the rail. Most patrons are expected to come from these areas. Finishing Sansimeon Boulevard with a connection to Abernethy Road, will create station access as well as support further development of the western Town Centre.

Clara Street West will create a new internal cross-rail connection between the east and west side of the Town Centre. This new street will deliberately be designed as a slow-speed environment, to emphasise its Town Centre character and prevent it becoming a thoroughfare or vehicular shortcut.

While Larsen Road will be discontinued, a new grade-separated crossing at Thomas Street will improve the east-west accessibility in the arterial network, and a pedestrian overpass (work in progress) will be provided at Larsen Road for pedestrian connectivity over the rail corridor.

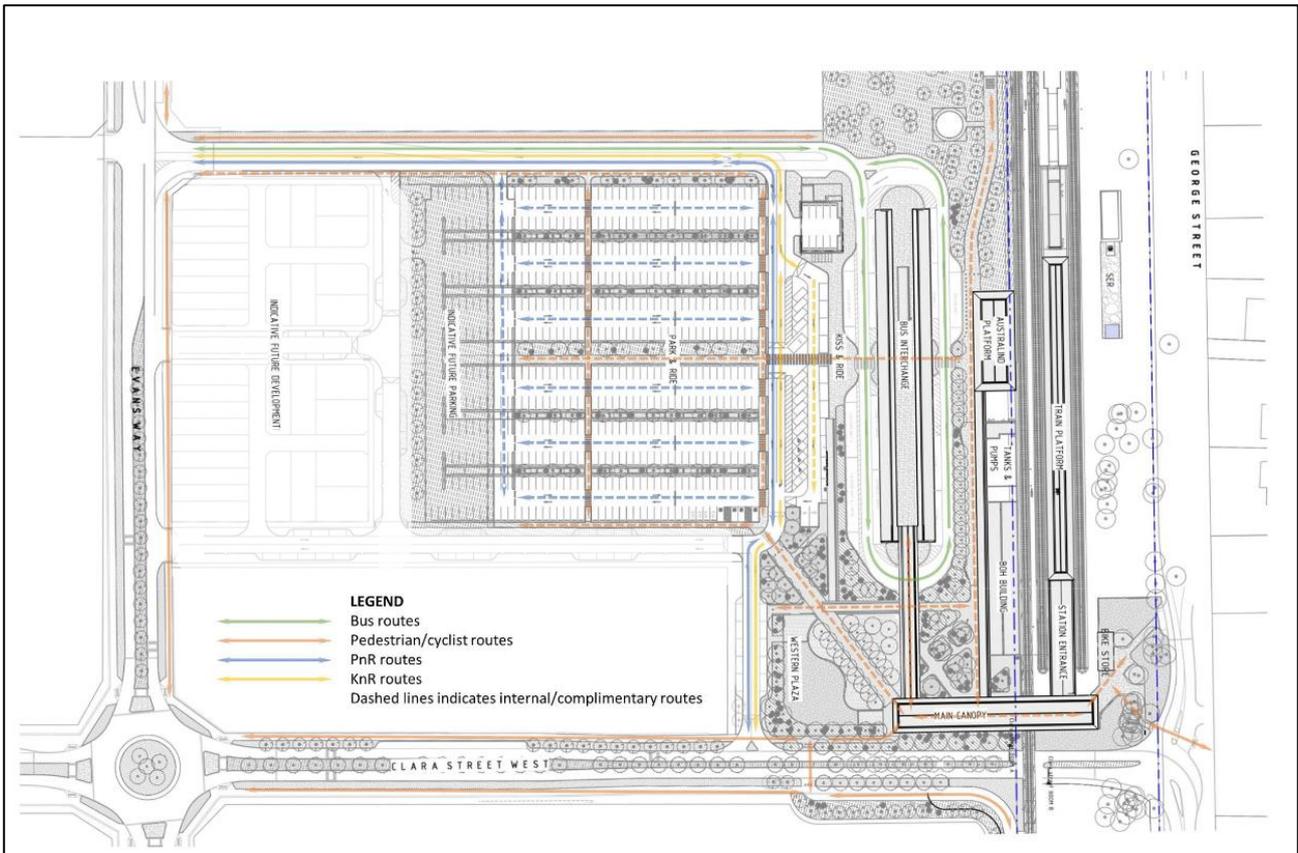


Figure 17: Pedestrian Movement and Vehicle Access Routes

10.2 Cycle Access Routes

The new PShP along the west side of the rail line will create an important cycling linkage in the Byford cycle network. The PShP will connect to Armadale in the north, and to Abernethy Road in the south. The Shire of Serpentine Jarrahdale will realise a PSP from Abernethy Road to Mundijong in the south.

The PShP will be key to create safe cycle connections to important local destinations such as the Town Centre, and the Byford Secondary College south of Abernethy Road.

A grade-separated crossing at Larsen Road and an at-grade crossing at Clara Street West will improve the east-west connectivity across the rail line.

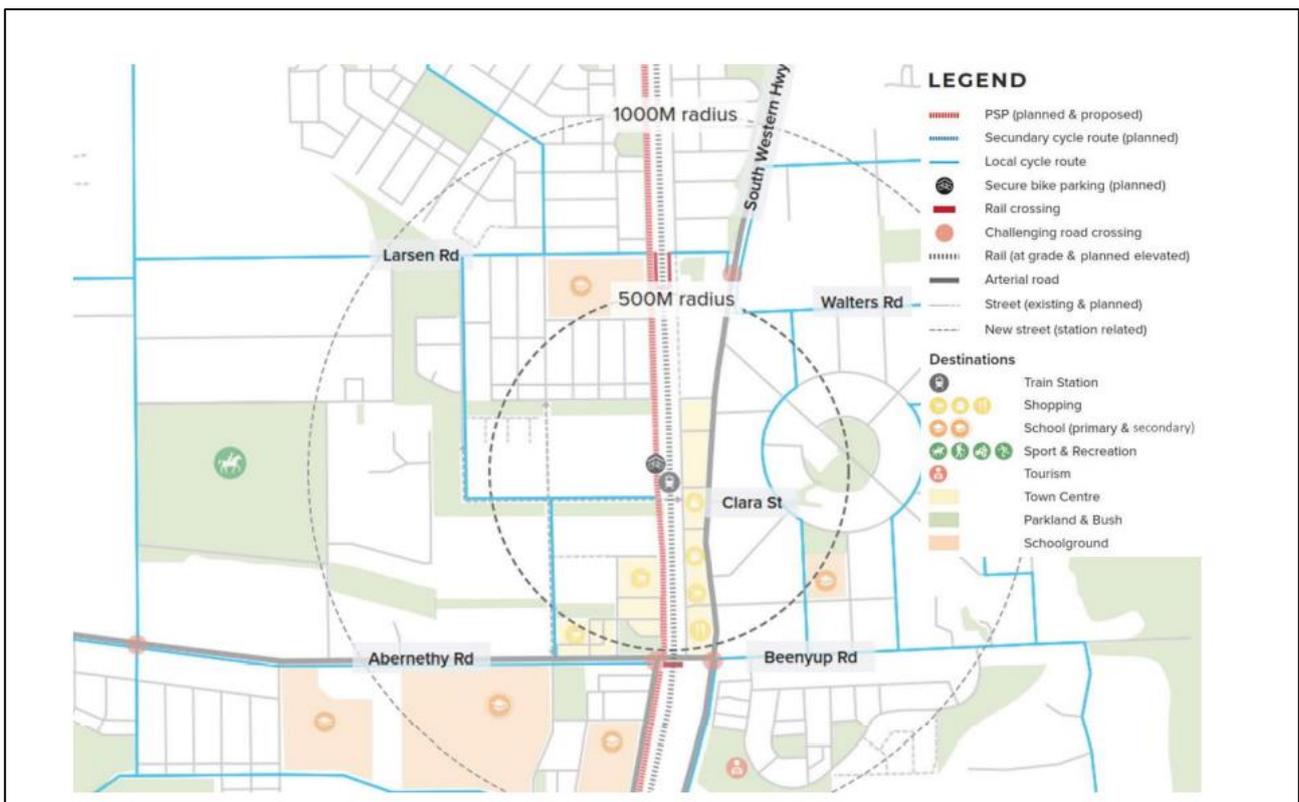


Figure 18: Cycle Access Routes

10.3 Bus Access Routes

While the integration of buses into the station precinct is vital for multi-modal transport options, the design of the precinct is mindful of separating bus movements from pedestrian flows in certain locations. Bus routes are currently being planned by Transperth, anticipated to respond to new growth areas to the west of Byford Station (as outlined within Transperth's Service Development Plan).

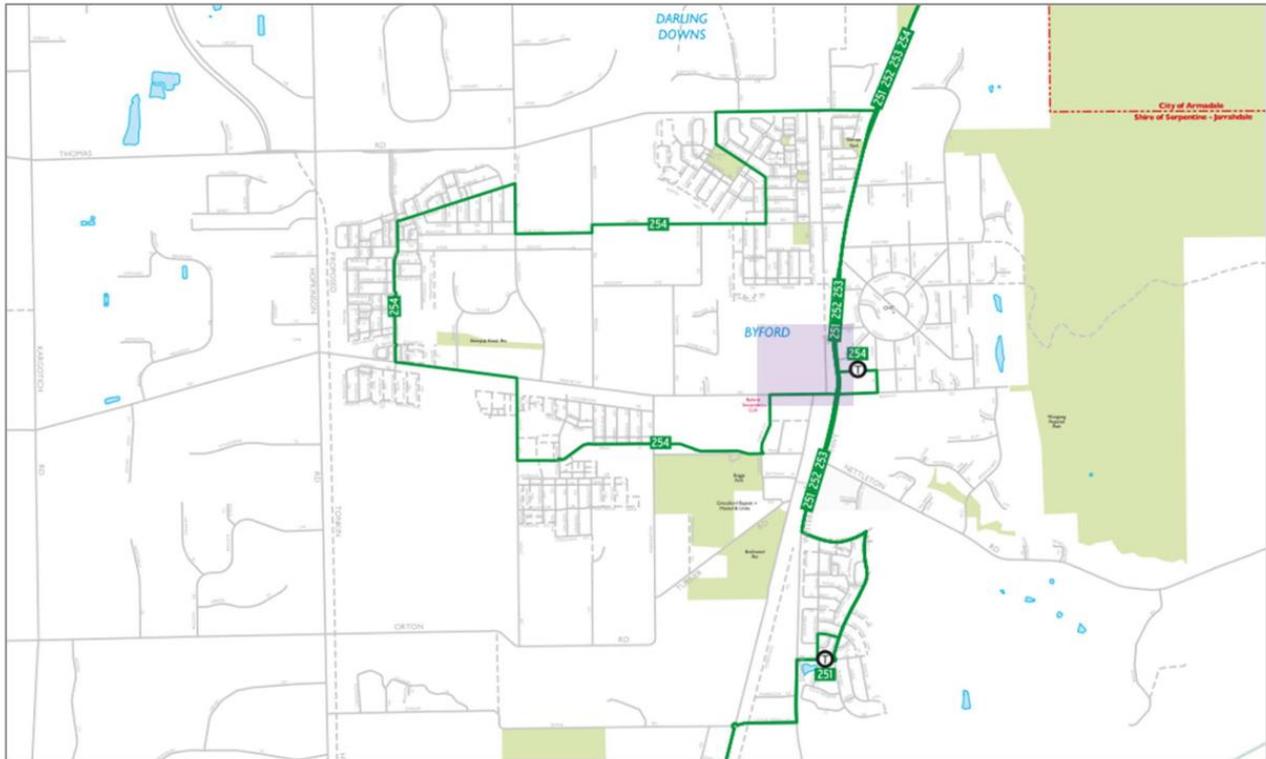


Figure 19: Bus Access Routes

It is important to note that confirmation of the future bus routes is still the subject to future Transperth/PTA Planning.

10.4 Transport Impact Assessment Summary

Based on the operational assessment conducted at DA stage, it has been determined that all assessed intersections are expected to function well during the AM and PM peak traffic periods.

Looking ahead to 2036, the assessment indicates that the key intersections are generally expected to operate satisfactorily, with acceptable levels of saturation, minimal delays, and minimal queues. The only potential operational issue identified is for southbound traffic on Sansimeon Boulevard turning onto Abernethy Road during the PM peak period. This is attributed to high traffic demands on Abernethy Road and not specifically due to station-generated traffic.

Due to uncertainties and conflicting information regarding traffic growth beyond this project on Abernethy Road, it is recommended that a more focused modelling exercise be undertaken by the Shire to consider broader network and consolidated land use assumptions. This will provide a better understanding of future requirements for Abernethy Road.

Regarding the extension of Evans Way to the existing intersection at Evans Way/Padra Turn, potential safety implications were identified if all movements were permitted at the closely spaced intersections of Access Road A, Padra Turn, and Ninka Lane. Various options were explored to improve safety, but the Shire expressed a strong desire to maintain full movements at each location to minimise negative impacts on the local community and maximize accessibility. As a result, the design progressed with full connectivity and movements, but with a raised pavement through the Evans Way/Padra Turn intersection to ensure safe vehicular speeds in the area.

There are significant pedestrian and cycling enhancements and opportunities are created by the development. These include a new PShP along the west side of the rail line, linking Armadale in the north and Abernethy Road in the south. Another pedestrian link across the rail line will connect the east and west sides of the Town Centre. Additional footpaths along Clara Street, and Sansimeon Boulevard will further improve pedestrian permeability around the Town Centre and connectivity to the colleges south of Abernethy Road and will integrate with future planned networks by the Shire as part of the new Town Centre. The design also incorporates appropriate treatments to address potential difficulty in crossing roads or conflicts to ensure pedestrian safety.

Regarding bus traffic, key road access routes to and from Byford Station are similar to the private vehicle network. The construction of Sansimeon Boulevard and Evans Way near the station will provide access to the broader road network, including Larsen Road and Thomas Road to the north, and Abernethy Road and Mead Street to the south. These linkages will facilitate access to the regional road network in the southwest area, accommodating the anticipated development West of the station precinct.

As a result of the assessment undertaken and with regards to the objectives of the TIA, it can be concluded that the proposed station redevelopment:

- Provides for safe and efficient access for all modes to the site.
- Is well integrated with surrounding land uses.
- Does not adversely impact on the surrounding land uses.
- Does not adversely impact on the surrounding transport networks or its users.

Please refer to **Appendix J** – Transport Impact Assessment for full considerations of the transport impacts.

11. Bushfire

A Bushfire Management Plan (BMP) has been prepared to support this DA as the project area contains proposed habitable development located within a designated bushfire prone area that is subject to a BAL rating above BAL-Low. On this basis, the BMP has been addressed the requirements under Policy Measures 6.2 and 6.5 of State Planning Policy 3.7 (SPP 3.7) Planning in Bushfire Prone Areas and Guidelines for Planning in Bushfire Prone Areas.

The project area is located within a predominantly built-up residential area in the centre of Byford townsite, with the nearest significant areas of remnant vegetation being within Brickwood Reserve and Briggs Park approximately 1km south, as well as within Wungong Regional Reserve approximately 1.25 km to the east.

The nearest potential bushfire hazard is from isolated plots of forest and shrubland vegetation constrained in rail and road reserves or along distinct drainage lines to the north, east and south of the project area, while land to the south-west and west consists of vacant land that has been subject to historical clearing, so is now predominantly unmanaged grassland. Following completion of development, much of this vegetation will be modified to a non-vegetated or low threat state, with only minor amounts of forest and shrubland remaining post-development within in narrow plots.

There is still potential bushfire threat from unmanaged grassland to the south-west and south of the station precinct, where continuous fire runs could be up to 500 m which is sufficient to produce a steady state grassfire, however the proposed public roads and the design of the development is such that sufficient separation will be provided from proposed buildings by roads, onsite carparks and future development lots. It is also noted that the proposed public roads through this grassland, in addition to proximity to Byford townsite, will likely facilitate future development of some of these undeveloped areas which would eventually remove the grassland hazard, or at least significantly fragment it.

The habitable elements of the station precinct will be further protected from potential bushfire impacts through the provision of APZs to achieve BAL-19 and separation afforded by the public road network and low threat/non-vegetated landscaping and will be voluntarily constructed to meet the assessed BAL rating, where practicable.

The proposed development is considered a vulnerable land use which triggers additional requirements under Policy Measure 6.6 of SPP 3.7. In accordance with Policy Measure 6.6.1 and Section 5.5 of the Guidelines, development applications for vulnerable land uses require a Bushfire Emergency Evacuation Plan (BEEP) detailing the emergency management provisions for the facility, accompanies the BMP.

It is proposed that a BEEP is not prepared at this time, but is included as a future implementation measure within the BMP to be conditioned as part of the DA. It is advised the most appropriate approach is to have the proposed bushfire emergency management arrangements for the station incorporated into the existing PTA Emergency Management Manual to standardise the procedures.

Summary

Based on the justification provided in the BMP, the bushfire hazards within and adjacent to project area and the associated bushfire risks are manageable through standard management responses outlined in the Guidelines. These responses will be factored into proposed development as early as possible at all stages of the planning process to ensure a suitable, compliant and effective bushfire management outcome is achieved for protection of future life, property and environmental assets.

Please refer to **Appendix P** – Bushfire Management Plan.

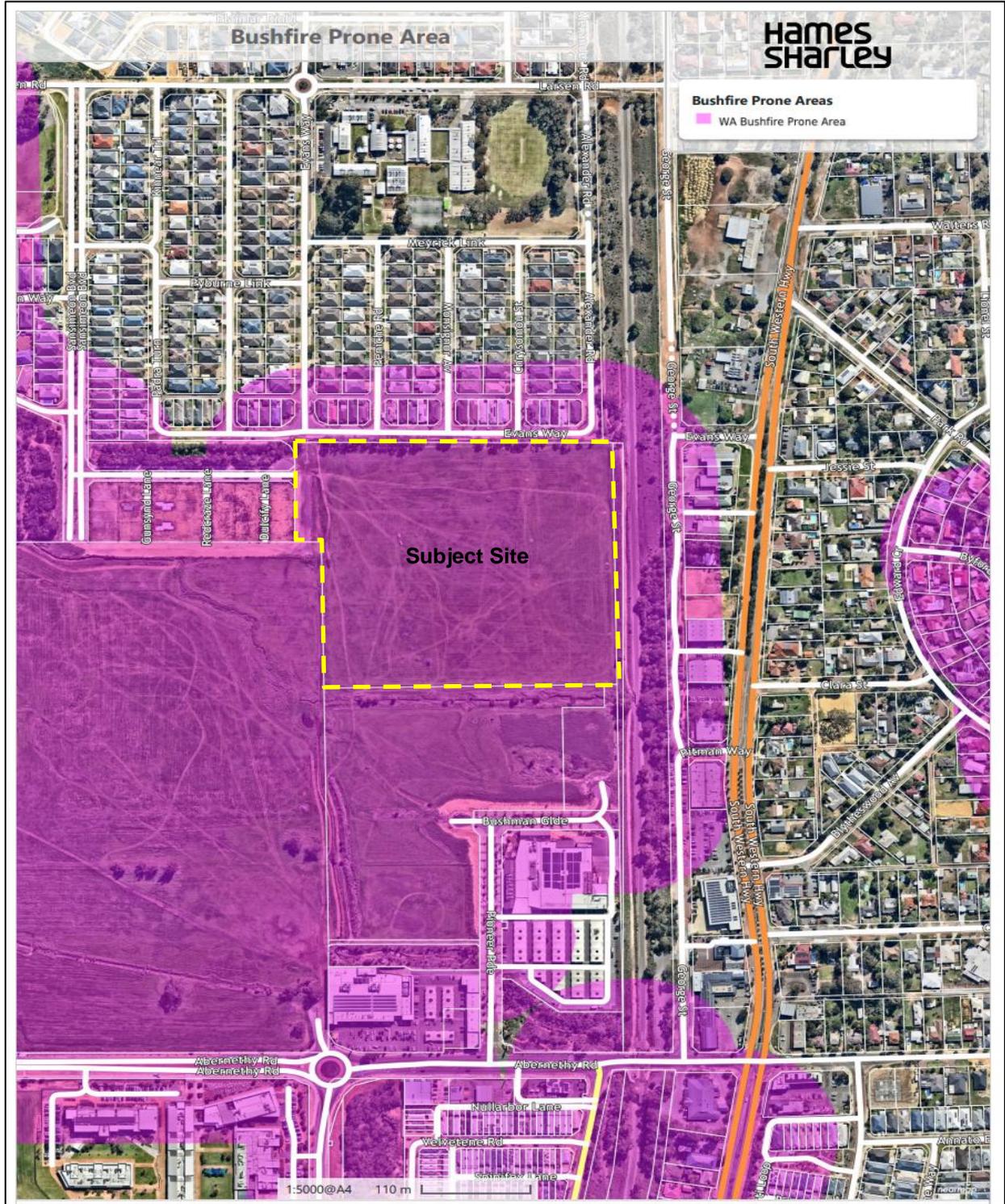


Figure 20: Bushfire Prone Area

12. Stormwater and Drainage Strategy

The preliminary stormwater design is provided to indicatively demonstrate water management design principles. The final stormwater design is expected to be delivered as a condition of development approval, similar to other METRONET station projects.

To develop the Stormwater and Drainage Strategy, the Alliance have taken into consideration the following planning documents:

Abernethy Road Local Water Management Strategy Addendum (HYD20, May 2021)

This document was updated in May 2021 to align the stormwater management strategy with the Local Structure Plan and the District Water Management Strategy (Urbaqua, 2018). The aim of this addendum was to update the 2014 LWMS and ensure that it reflects the most current stormwater management practices.

Byford Town Centre – Structure Plan (May 2021)

This document outlines the development plan for the Town Centre. It provides guidance on land use, infrastructure, and transport planning. The subject site is underdeveloped land (greenfield site) which drains via overland flows into a series of open drains / ditches. The existing site falls from the southeast to northwest.

Connector Roads External to Precinct (San Simeon Boulevard/ Evans Way/ Clara Street)

The stormwater management system includes using bio swales in the median strip to treat the initial runoff. Similar to the existing road section in the northern development, the swales have drain blocks to hold back the first 15mm of water and a catchpit for larger flows. The swales are planted with vegetation and have a special soil to filter pollutants. Minor flows are directed through swales and pipes, while some water spreads on the road. Major flows stay within the road, ensuring safety and keeping lanes partially dry. The system helps clean the water and manage runoff effectively.

Future Roads

Other minor roads, such Access Road A and Access Road B (to be delivered at a later date) will have bio-pockets. Verge bio-pocket details will be in line with Local Government typical engineering details.

12.1 Park and Ride / Bus Interchange

The carpark area runoff is directed to swale median areas that, like Sansimeon Boulevard, incorporate a series of:

- Planted swales with filtration medium and subsoil pipe collection.
- Series of check dams within swales to promote first flush retention and treatment.
- Pit & pipe network to meet serviceability and safe major event conveyance requirements to outfall to adjacent multiuse corridors (MUC) (Oakland North Drain).
- Levels design of carpark ensures flows from high category storm events are directed to the MUCs via overland flow routes.

The carpark runoff is managed through a system that includes swale median areas with planted swales, filtration medium, and subsoil pipe collection. Check dams are incorporated to retain and treat the initial runoff. A pit and pipe network is established to meet conveyance requirements, leading the water to the adjacent multiuse corridors. The carpark design also considers high category storm events, ensuring proper flow management through the use of overland flow routes.

12.2 Bus Interchange

The bus interchange area is mostly covered with a hard surface that slopes downward towards the Oakland North MUC. To manage the initial runoff, efforts are focused on directing it to a specific treatment area located on the northern end. This is because it is challenging to incorporate treatment areas directly within the interchange itself.

For the pedestrian traffic hardstand areas, there is an opportunity to consider using soak wells. These soak wells allow stormwater to seep into the ground, providing natural filtration. It is important to note that the sand fill in this particular area is relatively high, ranging from 1.5 to 2.0 meters. This elevated level of sand fill is a result of accommodating the station and track levels. Proper placement of the final subsoil is crucial to ensure that any localised groundwater mounding is controlled within acceptable limits.

In summary, the strategy involves directing the first flush of runoff to a designated treatment area outside the bus interchange. Additionally, the potential utilisation of soak wells in the pedestrian traffic hardstand areas is being explored, taking into consideration the elevated sand fill levels caused by the station and track configuration. It is essential to carefully manage the placement of subsoil to prevent any undesirable localized groundwater mounding.

Please refer to **Appendix I** - Stormwater and Drainage Management Strategy for more information on stormwater and drainage considerations.

13. Noise and Vibration

An assessment of environmental noise has been undertaken to support development approval of Byford Station and associated station facilities. Predicted noise emissions from the station have been compared with targets derived from a review of relevant state noise policies and industry guidelines.

The predicted results indicate that external noise emissions from the proposed Byford Station and associated station facilities are compliant with applicable state noise policy at all existing anticipated future noise sensitive receptors.

13.1 Bus Interchange

The noise emissions resulting from bus vehicle movements at the station are evaluated according to State Planning Policy 5.4 guidelines. The proposed new bus interchange is designed with a significant distance of approximately 50 meters from the nearest existing residential properties. As a result, it is not anticipated that the bus interchange will contribute to excessive noise levels at these nearby residential areas, which are considered sensitive receivers.

The considerable offset distance between the bus interchange and the neighbouring residential properties ensures that any noise generated by bus operations will not exceed acceptable levels and cause disturbances to the residents. This adherence to noise regulations and the distance between the interchange and the residential properties mitigates potential noise-related impacts and maintains a peaceful living environment for the nearby residents.

13.2 Park and Ride / Kiss and Ride

The proposed park and ride carpark will have a total of 409 bays, while the future carpark will have 121 bays. This kiss and ride will have a total of 35 bays. The predicted noise levels resulting from the operation of the car parks have been assessed in accordance with the findings presented in the Noise and Vibration Report. The results indicate that the predicted noise levels at all existing noise-sensitive locations are compliant with the relevant regulations and guidelines.

In simpler terms, the noise levels expected from the operation of the car parks have been thoroughly assessed and found to meet the required standards. The report confirms that the proposed car parks will not generate excessive noise that could disrupt the surrounding areas identified as noise-sensitive locations. Therefore, the noise impact on nearby environments is expected to be within acceptable limits, ensuring a harmonious coexistence with the surrounding areas.

13.3 Patron Noise

The station layout is designed in such a way that the passenger waiting areas on the platform, waiting areas, and pick-up points are located at distances exceeding 80 meters from residences and open environments. As a result of this generous spacing, the impact of crowd noise levels, considering design criteria and other environmental noise sources, is considered to be insignificant.

The design of the station ensures that the areas where passengers wait for buses and pickups are situated far enough from residential areas and open spaces. This spatial arrangement minimises the potential impact of crowd noise on nearby residences and the surrounding environment. Additionally, when considering the overall environmental noise sources and following the established design criteria, the expected crowd noise levels are deemed to have negligible significance.

The layout of the precinct and its distance from residential areas and open spaces effectively mitigate the potential impact of crowd noise. Therefore, in the context of design criteria and other existing environmental noise sources, the noise levels generated by the crowds are considered to be insignificant.

14. Construction Management

A Construction Management Plan (CMP) has been prepared to support this DA which is expected to be finalised through a condition of development approval. The Construction Management Plan:

- Describes the scope of works to be undertaken including types of activities, work areas and stages.
- Includes construction related sub-plans (i.e. Construction Staging drawings & Site Management Plan).
- Details how the Alliance will manage interactions with surrounding key stakeholders and construct station infrastructure with the least impact to surrounding stakeholders as possible.
- Determines effective construction staging that will ensure current rail operations and the associated transport facilities' operational requirements are maintained, and impact to these is minimised during construction.
- Describes procedures for the management of subcontractors and their plans and work method statements.
- Describes the processes to ensure the compatibility of any necessary temporary works with each other and with the works.
- Describes procedures to demobilise activities and the Works, including demobilisation of personnel, plant and equipment and closeout of stakeholder communications.
- Addresses the management of interfaces with all authorities and other contractors.

14.1 Working Hours

Construction works shall generally be between 7:00am and 7:00pm Monday to Saturday (excluding public holidays). However, to enhance public safety, minimise disruption to peak hour traffic, and meet the required programme, certain works may be required beyond these hours.

The works will be carried out in accordance with noise control practices set out in Section 4.5 of AS 2436-2010 'Guide to Noise Control on Construction, Demolition and Maintenance Sites' and section 6 of the SWTC.

The Community Engagement Plan details the notice to the PTA's Client Representative for approval before issuing notice to local government authorities (LGA), affected residents and/or businesses of construction works hours and any out of hours applications.

These works will be managed as out-of-hours works applications in accordance with Environmental Protection (Noise) Regulations 1997 WA for the approval of the local government authority, and the PTA's Client Representative.

An Out of Hours Noise and Vibration Plan application will be submitted to the LGA seven days prior to the works being proposed to be undertaken and will include the following:

- Reasons for the work to be completed out of hours.
- Proposed noise and/or vibratory activities.
- Predictions of noise levels from the site.
- Predictions / assurance of vibration levels from the site.

- Predictions/assurances of vibration levels from the site.
- Proposed measures to control noise and vibration.
- Monitoring of noise and vibration.
- Notifications to residents and stakeholders of upcoming out of hours work.
- Complaint response procedure.

An Out of Hours Public Notification as part of an Out-of-Hours works application for the predictions of noise will provide an estimation of the potentially impacted premises. Occupants of nearby affected buildings likely to receive noise levels in excess of Assigned Noise Levels defined within *Environmental Protection (Noise) Regulations 1997* (WA) must be advised (i.e. letter drop) at least 24 hours prior to work commencing. The notification must provide reasons as to why the work is necessary, reference to the LGA approval and contact details to register complaints.

14.2 Construction Management

All work will be undertaken in accordance with the Alliance Safety Management System and project safety management plans.

Each construction work area will have a detailed assessment undertaken that considers site-specific requirements for safety, worksite protection including demarcation and signage, particular site risks, community impacts, environmental impacts, local traffic management, live rail interfaces, other contractor interfaces and dependencies, and allocation of overall site responsibilities. Work activities will be undertaken following a risk assessment and described in the SWMSs. These risk assessments will mitigate all known risks relative to the site and work activity and will be included in the work packs.

All construction work will first be digitally engineered and managed via the work packs which contain all input information such as drawings, permits, ITPs, program, safety requirements, risks, and engineering studies. This allows management and control of lots and maintains overall quality assurance. No construction work will start without a work pack.

14.3 Dilapidation Survey

Properties located within 100m of the construction areas for the project will be offered a precondition survey. This is part of our commitment to supporting communities in the project area and minimising any adverse impacts from works.

The Alliance is responsible for identifying and recording any third-party property, including public amenities, located within the 100m zone and/or that may be affected by the works.

In cases where third party assets such as reticulation, bores, drainage, and garden fixtures that may be temporarily impacted, agreements will be made with the property owner to protect or replace them to an equivalent standard to that existing prior to the commencement of the works.

14.4 Access and Approvals

The Alliance will obtain permission for site access to all work areas from the relevant stakeholders prior to commencing construction works. All environmental, LGA and rail authority approvals (outside of what PTA are obtaining) shall be gained prior to construction works commencing on-site. All relevant stakeholders will be kept up to date with progression of and any planned changes to the design or works.

14.5 Traffic Management Plan

A Traffic Management Plan is an ongoing task and is expected to be conditioned as part of the decision notice. It is expected a final CMP will be conditioned as part of the decision notice.

Please refer to **Appendix H** – Construction Management Plan.

15. Sustainability

The METRONET Sustainability Strategy aims to create a sustainable legacy by developing and through planning, design, procurement, and construction of transport infrastructure, train station and precincts.

The objectives of the Sustainability Management Plan are to outline how the Alliance will consider and implement social, environmental, and economic considerations into the project works across the assets life. The design of Byford Station has been developed in accordance with the sustainability framework outlined in the METRONET Sustainability Strategy. The intention is to comply with the Green Star target requirements specified in the SWTC applicable to all METRONET projects.

Specifically for Byford Station, the development aims to achieve a four-star rating under the Green Star Railway Stations rating framework, with the potential for reaching a five-star rating being explored through ongoing efforts. The station's Sustainability Management Plan, outlined in **Appendix N**, outlines the measures in place to achieve these goals.

Passive design measures, such as natural ventilation, shading, weather protection, and thermal performance, have been considered in the design of the station and precinct. Additionally, sustainable construction materials sourced locally will be utilised, recycling facilities and effective waste management strategies will be implemented, and water-sensitive design outcomes will be incorporated into the station and precinct buildings.

Energy efficiency and operational costs over the station's life cycle have been integral aspects of the design process. The selection of materials and finishes has been carefully considered to meet the requirements of the PTA while prioritising energy conservation. For detailed information, please refer to the included Sustainability Management Plan.

16. Geotechnical

The Geotechnical Report provides an updated ground model for Byford Station precinct incorporating historical investigation and Stage 1 supplementary geotechnical investigation data. As part of the geological and geotechnical interpretation to update the existing ground model, two engineering geological long sections along the eastern and western sides of the Byford Station precinct have been produced.

17. Project Delivery / Shutdown

The BRE project is to be constructed predominately during the 18-month shut down period which is anticipated to commence in late 2023. The 18-month shutdown was carefully considered by the PTA along with several alternative options to minimise disruption to existing public transport users, and residents and visitors in the Byford area.

18. State and Local Planning Framework

18.1 State Planning Framework

18.1.1 Perth and Peel @3.5 Million

The Perth and Peel @3.5 Million strategic planning framework seeks to accommodate 3.5 million people by 2050. The aim of the framework is to achieve greater urban consolidation by maximising the use of existing urban land in activity centres, station precincts, and along urban corridors. To accomplish this goal, there will be a focus on developing and evolving new and existing activity centres into vibrant, mixed-use community hubs that are connected to high-quality public transport links.

The DPLH, in collaboration with other State Government agencies, developed the Perth and Peel Subregional frameworks, with the aim of improving connectivity in the Perth and Peel Regions. The frameworks take into consideration a range of important initiatives that aim to enhance connectivity in these regions.

The sub-regional frameworks aim to accommodate future population growth while ensuring the efficiency of the transport system is not compromised. To achieve this goal, the frameworks emphasise the integration of urban and employment nodes with transport infrastructure and services. This includes upgrading and adding new transport infrastructure to the network as needed. The transport network proposed in the Perth and Peel @3.5 Million document includes the extension of the Armadale Rail Line to Byford.

The METRONET strategic plan for the South Metropolitan Peel Sub-region includes plans to extend the Armadale Rail Line to Byford to improve connectivity in the southern region. BRE is a significant component of this plan and involves major works to upgrade the passenger rail line. The project aims to improve the public transport experience for Western Australians and promote urban renewal in the areas surrounding the upgraded rail infrastructure.

BRE aims to upgrade the Armadale Rail Line significantly, introducing new modern rail infrastructure, train stations, and public amenities to improve the overall passenger experience. The proposed upgrades support urban consolidation by substantially improving access across the rail corridor, allowing the Town Centre to become a more unified precinct whilst also providing a catalyst for future development.

18.1.2 Metropolitan Region Scheme (MRS)

The Metropolitan Region Scheme (MRS) is the statutory region planning scheme covering the whole of the Perth Metropolitan Region, within which the Shire is located. It was first gazetted in 1963 and defines the future use of land by dividing it into broad zones and reservations.

A portion of the proposed works fall within an area that is primarily reserved for 'Railways'. Under the MRS 'permitted development' for land reserved for 'Railways' includes:

“works on land reserved for Railways for the purpose of or in connection with a railway”.

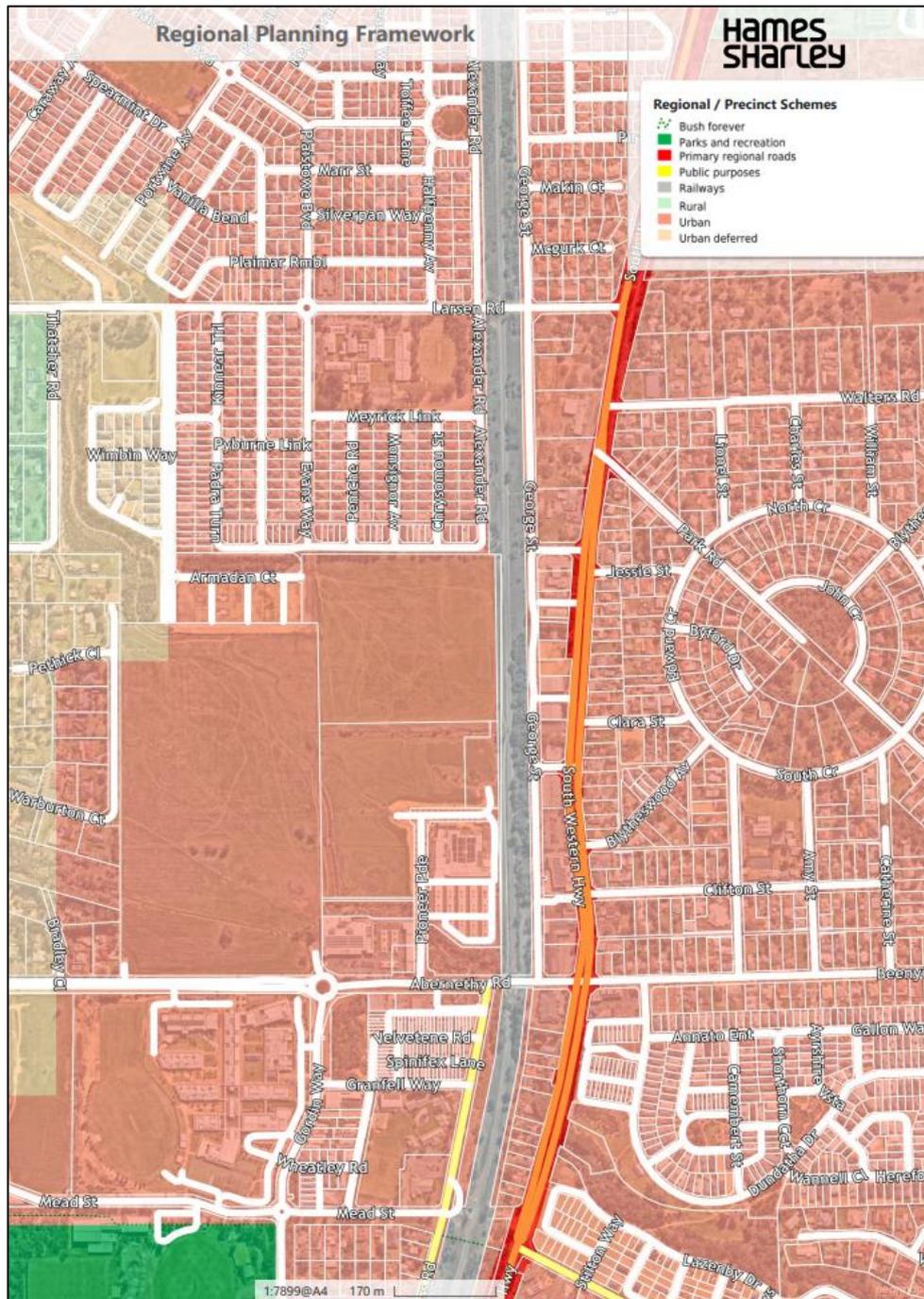


Figure 21: Extract of Metropolitan Region Scheme

18.1.3 State Planning Policy 5.4 – Road and Rail Noise

The criteria relevant to managing the impacts of road and rail noise are outlined within the WAPC's State Planning Policy 5.4 Road and Rail Noise (SPP 5.4). Rail noise has been a key consideration for the project and extensive work has been undertaken to ensure all aspects of the development will comply with all relevant planning and health requirements.

SPP5.4 guides the interface of noise sensitive development and major road and rail transport routes, with the overall aim of protecting significant transport routes whilst minimising the adverse impact of transport noise on sensitive development.

As all new proposed railways are required to meet the specified noise targets of SPP5.4, a Noise and Vibration Assessment has been completed in support of Byford Station.

The policy recognises that in some instances, it may not be reasonable and/or practicable to meet the outdoor noise targets. Where transport noise is above the noise targets, measures are expected to be implemented that balance reasonable and practicable considerations with the need to achieve acceptable noise protection outcomes.

SPP 5.4 classifies a major upgrade to a railway meaning:

- A proposed realignment, either inside or outside the existing rail corridor.
- A rail track duplication.
- Works that are likely to adversely affect a noise sensitive land-use, such as the installation of switches/turnouts, signalling systems, spurs or passing loops, the modification to the track support structure, crossovers, refuges, and relief lines.

The infrastructure upgrades proposed in DA 4 meet this classification of a 'major upgrade to a railway'.

The works proposed in this report will facilitate the replacement and realignment of the existing rail line within the rail corridor so the objectives and requirements of SPP 5.4 apply to the proposed development.

Please refer to **Appendix L** – Acoustics Report for more detail regarding Noise and Vibration for the operation of the railway infrastructure.

The project is committed to conducting comprehensive assessments of potential measures to mitigate railway noise and vibration around Byford Station, particularly in relation to future Transit-Oriented Development (TOD) in the surrounding area. The goal is to ensure that the outcomes align with the expectations of stakeholders. While railway infrastructure and system works are not included in the development approvals process, the design of these elements will prioritise the reduction of noise and vibration associated with the railway, as necessary. The project will maintain close collaboration with the METRONET Office and other key stakeholders to plan for the adjacent precinct, aiming to achieve best practice outcomes in integrated transport and land use planning.

18.1.4 State Planning Policy 7.0 – Design of the Built Environment

SPP 7.0 is the lead policy that elevates the importance of design quality in WA’s built environment, it includes 10 principles for good design and establishes the framework for integrating design review as part of the design process. A detailed explanation of the design evolution (including the response to SDRP comments) is provided in Section 6.

A detailed summary of the design is provided in Section 7, a high-level summary addressing how DA 4 responds to the SPP 7.0 design principles is provided in **Table 10**.

Principle	Response
Context and Character	
Good design responds to and enhances the distinctive characteristics of a local area, contributing to a sense of place.	<p>Byford Station has been carefully integrated into the emerging Town Centre, connecting both sides of the tracks. The design approach embraces and celebrates the histories and stories, aiming to be a good neighbour to the surrounding community.</p> <p>The station's architecture draws inspiration from the surrounding Darling Scarp landscape, with its undulating forms and textures reflected in the station's design elements. Native plantings thoughtfully integrated throughout the surroundings contribute to a sense of place, fostering a connection between the station and its natural context.</p> <p>The large veranda awnings, reminiscent of suburban qualities, not only provide shelter but also serve as welcoming gathering spaces, promoting community engagement.</p> <p>The selection of brickwork and materiality further enhances the station's integration into the local character, complementing the surrounding built environment. Moreover, the open green treed spaces surrounding the station create a refreshing ambiance, creating a pleasant atmosphere for users as they arrive or depart, further reinforcing the station's harmonious relationship with its context.</p>
Landscape Quality	
Good design recognises that together landscape and buildings operate as an integrated and sustainable system, within a broader ecological context.	<p>The landscape approach for Byford Station and the surrounding precinct seamlessly integrating the landscape design and urban design with the architectural form to create safe, active spaces that promote a local bushland character.</p> <p>The station's landscape design not only complements the architectural elements but also creates a welcoming environment for social interaction. By strategically placing trees throughout the station precinct, the design maximises natural shade, enhances amenity, and preserves the bushland character. These trees, with their tall, clear trunks, provide both shelter and clear sightlines, ensuring a comfortable and secure experience for commuters.</p> <p>The relaxed and informal seating and gathering spaces incorporated into the landscape design make the station a perfect place to meet friends or simply 'hangout,' fostering a sense of community engagement. Furthermore, the use of trees, landscape reflects the surrounding bushland, serving as a unifying element between the 'Old Town' and 'New Town' precincts.</p>
Built Form and Scale	
Good design ensures that the massing and height of development is appropriate to its setting and successfully negotiates between existing built form and the intended future character of the local area.	<p>The design of Byford Station considers the specific scale, massing, and height of the surrounding urban environment, through its distinctive architectural elements.</p> <p>The station's built form comprises a series of linear canopies that converge under the entry roof structure, which is envisioned as a versatile "Australian Veranda". As the highest built element, the entry roof serves as a prominent marker, signalling the station's entrance from both east and west approaches while providing a focal point for orientation and wayfinding.</p> <p>The entry roof canopy serves multiple purposes, offering shelter for movement through the station and creating an inviting indoor-outdoor threshold space that encourages</p>

	<p>congregation. This design approach not only achieves functional objectives but also adds a sense of character and identity to the station, exemplifying a thoughtful integration of built form and scale.</p>
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Functionality and Build Quality

<p>Good design meets the needs of users efficiently and effectively, balancing functional requirements to perform well and deliver optimum benefit over the full lifecycle.</p>	<p>Byford Station and its surrounds have been designed as functional buildings and spaces that focus on simplicity, efficiency, and long-term viability.</p> <p>The station's layout ensures a clear arrangement of spaces, with distinct sections for unpaid areas, paid areas, and service spaces, allowing for a seamless flow of passengers. Consideration of factors such as efficient passenger movement during peak times and optimal sightlines demonstrates the commitment to functionality.</p> <p>Additionally, the design prioritises flexibility and adaptability to meet future requirements without major modifications, ensuring the station's longevity. The selection of durable materials, finishes, elements, and systems reflects a dedication to build quality, making maintenance easier and enabling the station to withstand weathering over time. An example of this is the use of brick on the exterior of many station buildings, which is known for its durable qualities.</p> <p>The same attention to build quality extends to the public realm, ensuring appropriate materiality and finishes. Carefully considered architectural and landscape product selections and details contribute to resilience, ease of future upgrades, and minimised maintenance requirements.</p> <p>The design of Byford Station demonstrates a commitment to functionality, durability, adaptability, and sustainability, aiming to provide the community with a reliable and enjoyable transportation experience while considering long-term implications and environmental factors.</p>
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Sustainability

<p>Good design optimises the sustainability of the built environment, delivering positive environmental, social, and economic outcomes.</p>	<p>The design of Byford Station is committed to achieving a four-star Green Star equivalency target rating, both in its design phase and upon completion. The design incorporates various sustainability initiatives tailored to the local climate and site conditions, prioritising passive environmental design measures. These measures include thoughtful orientation, shading strategies, thermal performance considerations, and natural ventilation to optimise energy efficiency and minimise reliance on artificial heating and cooling systems.</p> <p>The precinct brings high quality public transport to an emerging Town Centre, where new residents and businesses benefit from low carbon transport alternatives through train and bus travel. Development lots incorporated into the precinct can accommodate denser, mixed-use activities that encourage locals to live and work beside transit.</p> <p>Social connections between the old Town Centre (east) and the emerging Town Centre (west) are promoted through the Clara Street at-grade connection, and adjacent future Shire community uses south of the station.</p>
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Amenity	
<p>Good design provides successful places that offer a variety of uses and activities while optimising internal and external amenity for occupants, visitors, and neighbours, providing environments that are comfortable, productive, and healthy.</p>	<p>The design of Byford Station and associated infrastructure has a strong focus on the amenity of future users. The public realm design demonstrates the amenity that will be offered back to the community.</p> <p>The station precinct has been thoughtfully designed as an inviting space that goes beyond its primary function of commuting. The Western Plaza within the precinct offers amenities for children and families, including seating, natural shade, and flexible spaces for different uses. Adjacent to Plaza Road, active uses are integrated with play spaces, creating opportunities for engagement.</p> <p>To address amenity impacts, the rail and station infrastructure have undergone acoustic modelling and testing, ensuring compliance with noise regulations.</p> <p>This approach aims to create a comfortable environment by mitigating and controlling noise levels. Furthermore, wind and rain modelling will inform the placement and design of station canopies and shelters, prioritising passenger comfort and protection from adverse weather conditions.</p> <p>The proposed platform widths have been carefully designed to meet PTA requirements, optimising efficiency and supporting positive passenger flow. In addition the rail and station infrastructure has been informed by acoustic modelling and testing. This approach ensures compliance with the <i>Environmental Protection (Noise) Regulations of 1997</i>.</p> <p>By considering acoustic factors, the design aims to mitigate and control noise levels to create a more comfortable environment for station users.</p>
Legibility	
<p>Good design results in buildings and places that are legible, with clear connections and easily identifiable elements to help people find their way around.</p>	<p>Byford Station and its wider precinct support intuitive wayfinding, through multiple pedestrian-friendly routes that traverse the Western Plaza, park and ride, bus and train facilities as well as new development areas adjacent.</p> <p>The logical future street network within the precinct allows for various ways to traverse on foot, promoting easy navigation to and through the station area.</p> <p>Signage, while available as a secondary option, is expected to be minimally required due to the intuitive layout. Access to the train station is facilitated by Clara Street West, a new street that seamlessly crosses the train tracks, connecting the east and west sides of the Town Centre.</p> <p>This design approach enhances legibility and ensures that passengers can effortlessly find their way to the station, fostering a seamless and accessible transportation experience.</p>
Safety	
<p>Good design optimises safety and security, minimising the risk of personal harm and supporting safe behaviour and use.</p>	<p>Safety is a crucial aspect considered in the design of the corridor, and it has been influenced by the DPLH's draft Safer Places by Design Guidelines. Byford Station and surrounding precinct incorporates various elements that prioritise the well-being of pedestrians, cyclists and drivers.</p> <p>The extension of Sansimeon Blvd and the connection of Clara Street West with the eastern Town Centre include safe and legible crossing points and station access, ensuring a natural passage for people. Activation of the Welcome Place through future development opportunities provides passive surveillance.</p> <p>It emphasises open sightlines, enhancing visibility and creating a sense of openness, contributing to a safer environment. This approach allows for clear lines of sight, promoting observation of surroundings and potential hazards.</p>

	<p>The design promotes permeability, facilitating seamless transitions and clear pathways between the station and public realm areas, enhancing accessibility and ease of navigation. The installation of CCTV infrastructure within the station, bus interchange, and parking areas further enhances safety by monitoring and recording activities.</p> <p>Landscaping has been carefully planned to prevent obstruction of sightlines and concealed areas. Ample lighting has been provided to improve visibility, aiding navigation and increasing the overall sense of safety.</p>
Community	
<p>Good design responds to local community needs as well as the wider social context, providing environments that support a diverse range of people and facilitate social interaction.</p>	<p>Byford Station and surrounding precinct incorporating a children and family-oriented design approach. This is prominently seen in the Western Plaza, which offers a range of uses and options tailored to this group.</p> <p>The design fosters a sense of community ownership and connection with the precinct. It provides a well-functioning and safe public transport hub that serves the needs of the community.</p> <p>The integration of the public realm with local movement networks enhances accessibility, allowing residents from the surrounding neighbourhoods to have improved access to the rail corridor and its surrounding areas. This is strengthened by adjacent development lots that open community and commercial uses out onto Plaza Road.</p> <p>Through community engagement, careful consideration of existing and future developments, and investment in the public realm, aims to create vibrant, inclusive, and well-connected public spaces that cater to the diverse needs and interests of the community, while fostering a strong sense of community ownership and connection.</p>
Aesthetics	
<p>Good design is the product of a skilled, judicious design process that results in attractive and inviting buildings and places that engage the senses.</p>	<p>Byford Station embodies themes identified in the related Place Plan, of 'outdoorish', 'growing', and 'informal'.</p> <p>The station building incorporates brick finishes that carefully match the colour, texture, and visual qualities of the natural surroundings, seamlessly integrating the structure with the aesthetics of the Darling Scarp. Other examples include the soffits of the veranda spaces feature warm timber look panels, intentionally chosen to blend harmoniously with the surrounding context of Byford and reflect the natural surrounds.</p> <p>These design choices ensure that Byford Station not only functions as a transport hub but also enhances the visual appeal of the area, contributing to a pleasing and aesthetically cohesive environment.</p>

Table 9: Response to State Planning Policy 7.0 – Design of the Built Environment

18.1.5 Development Control Policy 1.6 – Planning to Support Transit Use and Transit Orientated Development

WAPC Development Control Policy (DCP 1.6) seeks to maximise the benefits to the community of an effective and well used public transit system by promoting and planning the development outcomes that will support and sustain public transport use.

Principle	Response
Proposals for the redevelopment of existing transit facilities and other network changes and improvements	<p>The primary objective of DCP1.6 is to encourage the co-location of development and transportation, promoting the mutual benefits of increased patronage on the public transport system and reduced reliance on private vehicles.</p> <p>Byford Station strongly aligns with the principles of TOD as it provides major opportunities for development around a multi-modal station.</p> <p>While the detailed designs for the station and the future development areas are yet to be finalised, ensuring compliance with TOD remains a vital component of the project.</p> <p>To summarise, the following design elements of Byford Station support TOD principles:</p> <ul style="list-style-type: none"> ▪ The co-location of the bus interchange and station building, along with a comprehensive future bus network, enhances the appeal of multi-modal trips for passengers. ▪ The station's location in close proximity to the Town Centre and surrounding suburbs, facilitates synergy between major bus, road, and rail networks, promoting efficient service provision. ▪ The positioning of the carpark adjacent to the station building provides ample space for future TOD planning and development, encouraging growth to the surrounding areas. <p>Collectively, these supportive measures extend the reach of TOD beyond proximity to the station, fostering integrated development in and around Byford Station.</p>

Table 10: Response to State Planning Policy 1.6 – Planning to Support Transit Use and Transit Orientated Development

18.1.6 METRONET Station Precinct Design Guide

The METRONET Station Precinct Design Guide offers detailed guidance for the design and planning of station precincts, highlighting specific objectives that are crucial for the successful implementation of a METRONET station. One important aspect emphasised in the guide is that a uniform or standardised approach cannot be applied to station design. Instead, each station should be designed on a case-by-case basis, considering factors such as the transit function, context, and future development potential.

This approach is particularly relevant to the train stations in the BRE area (and presumably the Beckenham, Cannington, and/or Queens Park area), as the surrounding centres are undergoing a transitional phase and are considered key growth areas within the south-eastern corridor. Recognising the evolving nature of these centres and their potential for growth, the design of the stations should consider the unique characteristics and requirements of each location. By doing so, the stations can effectively integrate with their surroundings and contribute to the long-term development and transformation of the area.

18.2 Local Planning Framework

18.2.1 Shire of Serpentine-Jarrahdale Local Planning Strategy

The Shire of Serpentine-Jarrahdale Local Planning Strategy (LPS) was endorsed on the 18 March 2022, and reflects the planning intent of the Shire. The LPS has been developed in response to the Shire's unique contextual, whilst aligning with the overarching State and regional frameworks for the region.

The Shire has an estimated population of 34,770 with a population density of 38.44 persons per square km (*Source: Profile Id 2023*). The Shires's development in the past decade and beyond has illustrated the dynamics and current population is susceptible to economic challenges and shifts in behaviour which may present challenges for the sustained population of the Shire. The importance of population growth and development as a central influence of many of the issues and opportunities in the Shire should be noted, highlighting the importance of strategic planning interventions such as the LPS in positioning the Shire to respond to future social and economic change.

It is expected the development of the new Byford Station will address the following desires and local challenges currently experienced by the Shire.

The objectives of the LPS are to:

Place

- Ensure the diversity of natural and cultural landscapes in the Shire are continuing to offer an array of unique experiences to visitors and communities, enhancing social cohesion and a shared sense of place.
- Promote urban consolidation by making better use of existing zoned land and infrastructure through better-quality infill redevelopment and rural living development.

People

- Attract people to the Shire's many places and spaces supported by iconic landscapes, unique histories, range of activities and integrated settlement structures.
- Create well-planned liveable communities that offer a high level of amenity and promote health and wellbeing.
- Explore incentives for the continued investment in research and development to ensure ongoing innovation and training help the Shire remain competitive, resilience and sustainability.

Prosperity

- Enhance local competitiveness by seizing opportunities to diversity through innovation, research and development to create value-added goods, services and increased efficiencies.
- Ensure, as our Shire grows, new homes, employment areas and places to shop are located in areas that are well planned, connected and affordable.
- Ensure as the Shire grows, strong governance will guide well designed growth that makes the most efficient use of existing and planned infrastructure and investment.
- Maintain access to the natural environment and preservation of our high value natural assets for future generations to come.

Population Growth and Development

A key outcome of the LPS has been to invest in public transport as a priority to accommodate a population forecast of 100,000 by 2050.

Challenges	Response
<i>To accommodate a population of over 100,000 with anticipated growth of 6.5% between now and 2050, a particular challenge will be providing infrastructure with adequate capacity in a timely manner without burdening the community and economy in the short term with the cost of providing infrastructure that may not be required for many years.</i>	<p>Byford Station responds to the challenge of accommodating a population of over 100,000 with anticipated growth by adopting a strategic and adaptable approach to infrastructure provision.</p> <p>Flexible and adaptive planning practices, collaboration with stakeholders, and ongoing monitoring and evaluation enable efficient resource allocation and adjustment of infrastructure based on actual needs. Byford Station strives to provide infrastructure with adequate capacity while minimising short-term burdens, promoting responsible development that aligns with population growth and enhances the long-term sustainability of the community and economy.</p>
<i>Accommodating a significant number of new residential dwellings (around 42,242) by 2050 will require significant increases in dwelling density if valued rural land and landscapes are not to be consumed by a continuation of the unsustainable low density urban sprawl that has characterised so much suburban development to date.</i>	<p>Byford Station plans to accommodate a significant number of new residential dwellings (around 42,242) by 2050 by adopting a strategic approach that prioritises higher dwelling density within the station precinct. This approach aims to prevent the consumption of rural land and landscapes, moving away from unsustainable low-density urban sprawl that has characterised previous suburban development.</p> <p>By implementing transit-oriented development principles, urban consolidation strategies, compact design and planning, multi-story development, infrastructure provision, and community engagement, Byford Station seeks to provide housing options that efficiently utilise existing urban areas and minimise the need for further urban sprawl. This approach promotes sustainable growth while preserving rural land and landscapes, meeting the housing needs of the growing population in a more efficient and responsible manner.</p>
<i>To achieve higher density housing this needs to provide greater diversity. For example, dwellings need to be designed to meet the needs of families, share households, couples, and singles - owner occupiers as well as renters.</i>	<p>Byford Station seeks to support future growth in the station precinct which will provide a diverse range of residential dwellings. Future development sites have been considered in the precinct design that surrounds the Western Plaza and the parking areas to the west of the site.</p>
<i>One issue discouraging implementation of higher density housing in what is essentially a peri-urban area is the lack of connectivity - by private vehicles or other transport modes including public transport.</i>	<p>Byford Station actively promotes connectivity by adopting a multifaceted approach that encompasses transportation options, accessibility, and community interactions. Byford Station serves as an integrated transport hub, facilitating seamless connections between different modes of transportation such as trains, buses, and cycling infrastructure. This encourages sustainable travel choices but also enhances accessibility to key destinations within the region.</p> <p>Incorporating well-designed pedestrian and cycling infrastructure, the station prioritises active transportation, fostering connectivity within the precinct. Community gathering spaces further strengthen social interactions and provide opportunities for residents to connect with one another. Through these efforts, Byford Station creates a connected and vibrant community that emphasises accessibility, convenience, and social cohesion.</p>

Table 11: Population Growth and Development

Local Challenges

Challenges	Response
<i>The private car is an even more dominant mode of transport within the Shire than it is across the metropolitan area generally. Public transport and active modes such as walking and cycling are low.</i>	<p>By providing an alternative mode of transportation, Byford Station aims to promote sustainable travel options, alleviate congestion, and enhance the overall urban fabric.</p> <p>Through improving public transport accessibility and encouraging active modes such as walking and cycling, it will prioritise the development of well-integrated transportation networks, including seamless bus and train connections, along with the provision of safe and convenient pedestrian and cycling infrastructure.</p> <p>This approach promotes sustainable mobility choices, enhances urban connectivity, and contributes to the creation of a pedestrian-friendly environment.</p>
<i>Employment locations highlight the absolute need for good transport links from the Shire if residents are going to be able to access jobs.</i>	<p>Recognising the significance of transportation in accessing employment opportunities, the station project will focus on establishing robust transport links from the Shire to employment locations. By facilitating efficient commuting options, it aims to improve job accessibility for residents, reduce transportation barriers, and foster economic development within the region.</p>
<i>Impacts of climate change coupled with natural climate variability continue to be felt. Temperature increases are likely to result in increased needs for cooling and/or impacts on environmental and public health.</i>	<p>In response to the impacts of climate change and natural climate variability, the station design will account for rising temperatures, which may increase the demand for cooling systems. Additionally, the project seeks to mitigate environmental impacts, reduce carbon emissions, and enhance public health by providing a viable alternative to car travel.</p>

Table 12: Local Challenges

BRE supports the State Government’s vision for a well-connected Perth by investing in transport which can ultimately encourage future housing and employment choices. BRE will also support the development of the Byford District Centres and the enable the east-west connectivity and precinct integration between Byford’s established Town Centre with future growth areas to the west, creating a wholly connected Town Centre.

18.2.2 Shire of Serpentine-Jarrahdale Town Planning Scheme No. 2

The Shire's Town Planning Scheme No. 2 (TPS2) is the primary statutory planning instrument which guides development and use of land. The subject site is zoned 'Urban Development' under TPS2 and has been owned by the Western Australian Planning Commission since 2022.

TPS2 provides the zonings for the land immediately adjacent to the Byford Station development area. These zones are also zoned 'Urban Development' and are located towards the south and western boundaries of the subject site.



Figure 22: Extract of Local Planning Scheme

18.2.3 Shire of Serpentine-Jarrahdale Draft Local Planning Scheme No. 3

In June 2020, the Shire supported Draft Local Planning Scheme No. 3 (LPS3). At the time of preparing DA 4, LPS3 is regarded as a ‘seriously entertained’ planning instrument for future development within the Shire. As such, a planning assessment has been undertaken under LPS3 and not TPS2, given its more contemporary nature.

Aims of the Scheme

Aims	Response
<p><i>(a) Protect and enhance the landscape, natural environment, ecological values and environmental quality and improve the sustainable management of natural resources.</i></p>	<p>The design of Byford Station incorporates various green infrastructure elements. Landscaped features serve multiple purposes, including enhancing the visual appeal of the station and contributing to the preservation and improvement of the natural environment.</p> <p>Sustainable design principles are integral to the construction of Byford Station. Energy-efficient systems, such as efficient lighting are incorporated to minimise energy consumption. Water-saving technologies, such as water-efficient fixtures and drainage swales, are implemented to conserve water resources.</p> <p>Environmentally friendly materials and construction practices are employed to minimise waste generation and reduce the overall environmental footprint of the project. These sustainable design strategies ensure that Byford Station operates efficiently and has a reduced impact on the environment throughout its lifecycle.</p> <p>Byford Station's design considers the surrounding environment, aiming to integrate harmoniously with the natural landscape. This sensitivity to the surroundings helps maintain the ecological balance and visual aesthetics of the station's surroundings.</p>
<p><i>(b) Preserve heritage values, amenity and areas of cultural significance and integrate new built environments with the existing local character.</i></p>	<p>Byford Station project encompasses measures to preserve heritage values, amenity, and areas of cultural significance while integrating the new station with the existing local character. This is achieved through the consideration of amenity and cultural significance, and the integration of architectural design and materials that harmonise with the surrounding area.</p> <p>Community engagement plays a vital role in ensuring that local values and aspirations are incorporated into the station's design, while heritage interpretation elements help educate visitors about the area's history. Byford Station strives to maintain the heritage, character, and cultural identity of the Byford community while creating a functional and visually pleasing transportation hub.</p>
<p><i>(c) Support the growth of the local economy to attract business, investment and tourism and generate local employment opportunities.</i></p>	<p>Byford Station plays a vital role in supporting the growth of the local economy by attracting businesses, investment, tourism, and generating employment opportunities. Its strategic location and enhanced connectivity make the area more accessible, thereby increasing its appeal to businesses, investors, and tourists.</p> <p>Additionally, the concept of TOD around the station encourages the integration of mixed-use developments, including residential, commercial, and retail spaces. This fosters a vibrant and economically active environment, attracting investment and stimulating local economic growth.</p> <p>Byford Station also serves as a gateway for tourism, providing convenient access to local attractions, cultural sites, and recreational areas. Byford Station and its associated infrastructure</p>

	<p>creates employment opportunities during the construction phase and ongoing operations.</p> <p>These opportunities span various sectors, from construction jobs to retail and service positions within the station precinct, contributing to local employment and economic resilience.</p>
<i>(d) Deliver a diversity of housing types and lot sizes to accommodate all sectors of the population, respond to changing needs, facilitate ageing in place and provide a range of housing choices.</i>	Byford Station is designed to accommodate future development, aiming to accommodate all sectors of the population, respond to changing needs, facilitate aging in place, and provide a broad range of housing choices. The future development within the station precinct will encompass various housing types and designs to cater to different preferences and requirements.
<i>(e) Support community wellbeing by promoting active, connected, safe and secure pursuits for all.</i>	Byford Station prioritises community wellbeing by promoting active, connected, and safe spaces for all. This is achieved through amenities and infrastructure that support physical activity, community connectivity, safety measures, inclusive design, and community engagement.
<i>(f) Protect rural land for agricultural production and minimise land use conflicts.</i>	Byford Station safeguards rural land for agriculture and minimises land use conflicts through strategic land use planning, buffer zones, collaboration with agricultural stakeholders, support for agricultural infrastructure, and education initiatives. These measures protect agricultural areas, prevent encroachment, and ensure the coexistence of urban development and farming activities.
<i>(g) Create distinctive and well-defined urban centres and townsites which foster a strong sense of place and local identity.</i>	<p>The architectural design of Byford Station and the surrounding buildings takes inspiration from the local context, history, and architectural character. This approach ensures that the station and its surroundings have a unique visual identity that reflects the essence of Byford, contributing to a strong sense of place and a distinct local identity.</p> <p>The design of public spaces within the station precinct is carefully crafted to create high-quality gathering areas that serve as focal points for community interaction. These spaces incorporate elements such as public art, well-considered and designed landscaping, and amenities that are representative of the local identity.</p> <p>Byford Station will incorporate features such as public art that are likely to highlight the area's unique history and heritage – to celebrate the community's roots, preserving and showcasing its cultural identity for both residents and visitors. Community engagement is fundamental to shaping the character and identity of Byford Station. This collaborative approach ensures that the station aligns with the community's vision, reinforcing a strong sense of local identity.</p> <p>Walkability, accessibility, human-scale design, and the integration of local businesses and services contribute to a thriving urban centre. By fostering a sense of pride and connection to the local community, Byford Station seeks to create a distinctive urban centre and embodies a strong sense of place and a cohesive local identity.</p>
<i>(h) Ensure the orderly and proper provision of services and infrastructure.</i>	Byford Station ensures the orderly and proper provision of services and infrastructure through thorough planning and coordination with service providers.

	<p>The station integrates services and infrastructure efficiently, which will comply with all regulations and standards to meet safety and quality requirements.</p> <p>Long-term planning considers future growth and adaptability, while ongoing maintenance and management practices ensure the continued functionality of services. Byford Station's commitment to infrastructure provision guarantees a well-coordinated and reliable system that supports the needs of the development and its community.</p>
(i) Support regional development and improve connections within the broader region.	<p>Byford Station plays a vital role in supporting regional development and enhancing connections within the broader region. As a future transportation hub, it provides convenient access to train services, fostering regional mobility and facilitating economic growth. The integration with other modes of transportation and multi-modal connectivity improves accessibility and strengthens connections between communities, promoting sustainable travel within the region.</p> <p>By attracting businesses, investment, and tourism, Byford Station creates economic opportunities and contributes to the regional economy. Its alignment with regional planning strategies ensures a coordinated approach to development, while collaboration with stakeholders fosters cohesive regional growth. Byford Station's presence enhances regional connections, supports economic development, and promotes a sense of connectivity and prosperity throughout the broader region.</p>

Table 12: Aims of the Scheme

Urban Development

Urban Development Objectives	Response
<p><i>Objectives</i></p> <ul style="list-style-type: none"> ▪ <i>To provide an intention of future land use and a basis for more detailed structure planning in accordance with the provisions of this Scheme.</i> ▪ <i>To provide for a range of residential densities to encourage a variety of residential accommodation.</i> ▪ <i>To provide for the progressive and planned development of future urban areas for residential purposes and for commercial and other uses normally associated with residential development.</i> ▪ <i>To provide an intermediate transitional zone following the lifting of an urban deferred zoning within the Metropolitan Region Scheme.</i> 	<p>Byford Station provides a clear intention for future land use within the area. It serves as a catalyst for further detailed structure planning, ensuring that future development in the vicinity follows a coordinated and well-planned approach.</p> <p>Byford Station promotes a range of residential densities and land uses for the area. This approach encourages a mix of housing types, including apartments, townhouses, and detached houses, catering to different needs and lifestyles.</p> <p>The development of the Byford Station and its associated infrastructure supports the progressive and planned development of future urban areas. It serves as a focal point for future residential, commercial, and other associated uses in the surrounding vicinity, ensuring a well-coordinated and phased approach to development. Byford Station facilitates the transition of previously designated land into an urban area, enabling the planned development of residential and associated uses in accordance with the local planning framework</p> <p>Byford Station development aligns with the stated urban development objectives by providing a clear vision for future land use, accommodating a variety of residential densities, facilitating planned and progressive development, and serving as an intermediate transitional zone following zoning changes.</p>

Table 13: Urban Development

Byford District Structure Plan

The Byford District Structure Plan was originally prepared in 2005 to provide high-level strategic guidance on future planning and development in the Byford locality. Since the preparation of this document, the Shire has undergone a significant change due to exponential population growth, most of which has occurred in Byford.

An update was commenced and endorsed by Council in 2021, the draft Byford District Structure Plan (DSP) was prepared in collaboration with key stakeholders including relevant government agencies, major landholders and the community. As a broad district level planning instrument, its primary aim is to guide future planning and development in the Byford area. This will include land uses, major roads, rail and other community infrastructure for a population of 50,000 people, as was proposed in the Shire's Serpentine Jarrahdale 2050 Vision (SJ 2050). It is intended that the DSP will form the general basis for subsequent preparation of Local Structure Plans on a precinct basis.

Regarding Byford Station, the DSP is clear in stating its intent to establish an exemplar TOD. The location of Byford Station (as part of DA 4) aligns with the location set out in the DSP.

Byford Town Centre Structure Plan

The Byford Town Centre Local Structure Plan (LSP) was originally approved in December 2015, with amendments occurring in 2018 and more recently 2022. The most recent amendment was sought to the Structure Plan to facilitate the urban development of Lot 1 Abernethy Road and make provision for the future development of the METRONET Train Station Precinct on Lot 101. The Amendment provides for an urban environment which contributes to the vitality of the Town Centre through the revised spatial allocation of appropriate land uses and residential densities.

The primary intent of the LSP is to allocate a mix of land uses which are suited to and complement the site's location and surrounding land uses through a modified urban layout, providing an appropriate land use transition across the site, which is legible and pedestrian orientated, whilst also addressing the significant drainage requirements for the site.

The LSP is intended to provide for a land use transition from the Town Centre and indicative METRONET station to the 'Special Residential' precinct to the west. The proposed LSP has been considered in the context of the existing and draft state and local planning frameworks, as well as the drainage requirements for the broader area, which impact upon the design of the site.

Under the LSP Lot 101 is identified as 'Mixed Use'. Whilst DA 4 focusses primarily on Byford Station and its associated infrastructure, Figure 12 demonstrates that the proposal aligns with the LSP in the following ways:

- It proposes a highly flexible urban structure, identifying multiple future development lots with capacity to be developed as mixed use in the future.
- Clara Street is extended westward across the railway corridor.
- The northern boundary of Lot 101 has been set aside for revegetation.

18.2.4 Local Planning Policies

The requirement to obtain development approval through the Shire is not required for this DA, and therefore the Shire's Local Planning Policies (LPP) do not require consideration by the WAPC when deciding on this application.

Despite this, the Alliance understands the impacts that the introduction of a new train station and public realm upgrades will have on the future development of Byford, and has therefore had consideration for the following:

Local Planning Policy 4.15 – Bicycle Facilities Policy

The purpose of LPP 4.15 – Bicycle Facilities Policy are to:

- Encourage cycling and improve conditions for bike riders in proposed urban developments.
- Ensure the provision of appropriate bicycle facilities.
- Provide an alternative to private vehicle transport through provision of secure and effective end of trip facilities.
- Provide guidance to developers on the design and requirements of bicycle and end of trip facilities for both commuters and visitors.

Meeting community demands and providing alternative access to train and bus station are a priority of METRONET. To meet the growing demands for bike parking facilities, Byford Station has been future proofed as part of the broader program to meet the growing demand for bicycle parking at METRONET stations.

Byford Station includes provisions for 196 bicycle parking bays which provides security and peace of mind for patrons that their bike will be safe. This will hopefully encourage more people travelling to and from the Town Centre with the confidence to utilise alternative modes of transport.

Local Planning Policy 3.8 - Byford Town Centre Built Form Guidelines

This LPP applies to all subdivision and development applications within the Byford Town Centre Local Structure Plan (LSP) area and will guide the provision of infrastructure and assessment of applications with regards to the built forms within the structure plan area.

There are four main precincts identified with the LSP:

- METRONET Station Precinct.
- Commercial Precinct.
- South Western Highway Precinct.
- Residential Precinct.

The METRONET Precinct is a key opportunity to facilitate the desired collaboration between the landowner, State Government, community and the LG in delivering what will be an exceptional precinct for the community.

METRONET Precinct Policy Provisions	Response
<i>The METRONET Precinct should be connected to the surroundings and provide high quality public areas for people to gather and human scale architecture to frame streets and public areas. Urban forest canopy coverage should be the essential theme of the streetscape and provide shade to pedestrians, create a buffer between road users and pedestrians and help to mitigate heat island effect.</i>	<p>Byford Station is thoughtfully connected to its surroundings and prioritises the creation of high-quality public areas for community gatherings. The station design incorporates human-scale architecture that frames streets and public spaces, creating a visually appealing and comfortable environment for pedestrians. The concept of an urban forest canopy coverage is central to the streetscape design, with a focus on incorporating trees and vegetation that provide shade to pedestrians.</p> <p>This not only enhances the comfort of those walking but also acts as a buffer between road users and pedestrians, improving safety and creating a pleasant walking experience. Additionally, the presence of a well-planned urban forest helps mitigate the heat island effect, reducing the temperature and creating a more sustainable and comfortable microclimate. Byford Station's design emphasizes the importance of a green and shaded streetscape, connecting people with nature and creating inviting public areas that promote community engagement and well-being.</p>
<i>On the main street leading to the train station, architecture should remain the same proportions and repeat some elements, shapes, materials, maintain the line of window rows and the same height of surrounding buildings.</i>	<p>The station building incorporates brick finishes that carefully match the colour, texture, and visual qualities of the natural surroundings, seamlessly integrating the structure with the aesthetics of the Darling Scarp. Other examples include the soffits of the veranda spaces feature warm timber look panels, intentionally chosen to blend harmoniously with the surrounding context of Byford and reflect the natural surrounds.</p> <p>These design choices ensure that the Byford Station not only functions as a transport hub but also enhances the visual appeal of the area, contributing to a pleasing and aesthetically cohesive environment.</p>
<i>Vertical articulation is encouraged for taller structures, to assist in grounding the building within the streetscape. Upper floors can have an extra setback to maintain the human scale and create verandas contributing to passive surveillance of the street. A variety of materials and articulated forms to break up overall building mass is recommended.</i>	<p>The design of Byford Station considers the specific scale, massing, and height of the surrounding urban environment, through its distinctive architectural elements. The station's built form comprises a series of linear canopies that converge under the entry roof structure, which is envisioned as a versatile "Australian Veranda." As the highest built element, the entry roof serves as a prominent marker, signalling the station's entrance from both east and west approaches while providing a focal point for orientation and wayfinding.</p>

	<p>The entry roof canopy serves multiple purposes, offering shelter for movement through the station and creating an inviting indoor-outdoor threshold space that encourages congregation. This design approach not only achieves functional objectives but also adds a sense of character and identity to the station, exemplifying a thoughtful integration of built form and scale.</p>
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Table 14: METRONET Station Precinct Policy Provisions

Local Planning Policy 3.5 - Byford Town Centre Public Realm Guidelines

This LPP applies to all subdivision and development applications within the LSP area and will guide the provision of infrastructure and assessment of applicants with regards to the built forms within the structure plan area. Please refer to **Figure 22** – Byford Town Centre Public Realm Guidelines.

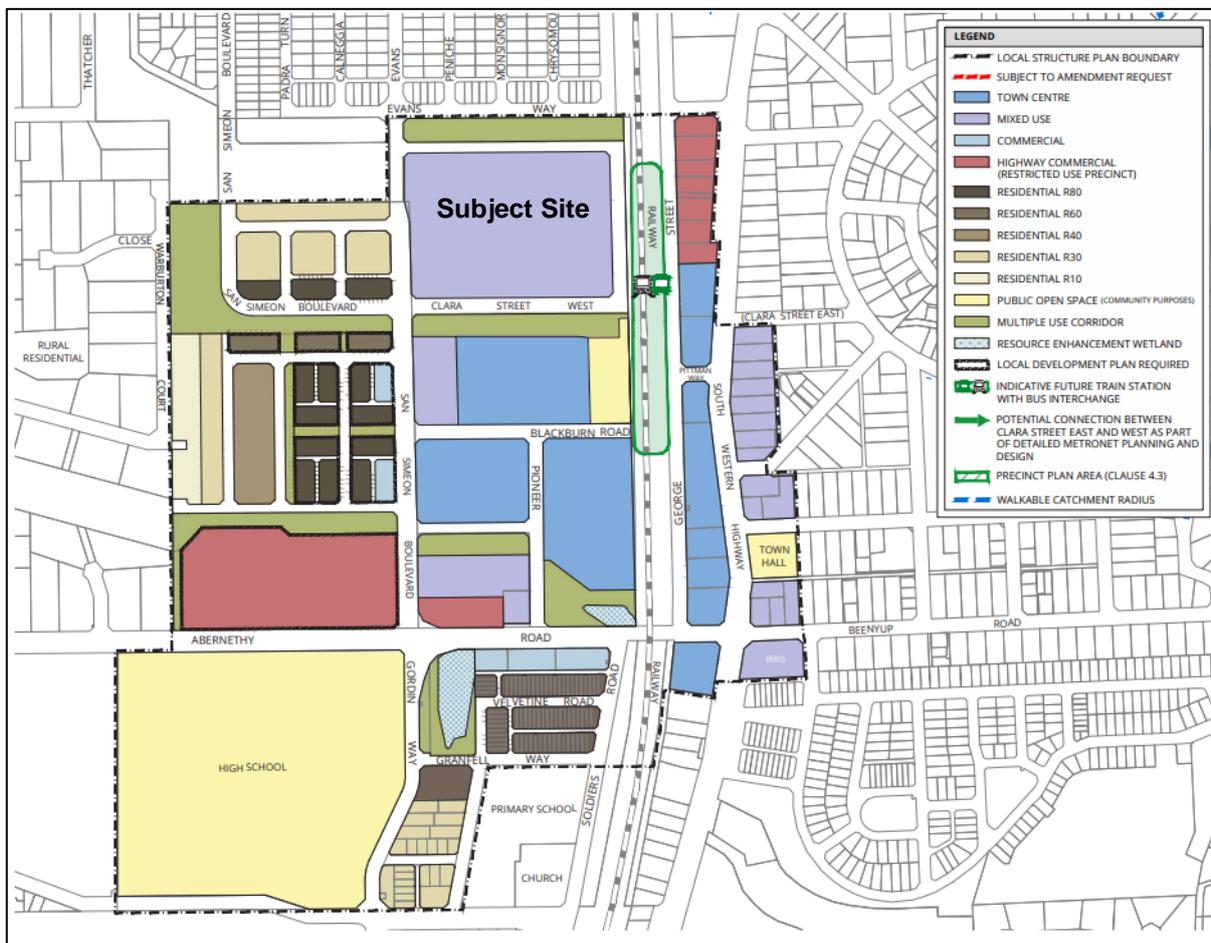


Figure 23: Extract of Local Planning Policy 3.5 – Byford Town Centre Public Realm Guidelines

The assessment this LPP 3.5 has considered and responses to Section 2.0 Vision and Principles to provide a holistic assessment of the urban design considerations for the METRONET Station Precinct.

Vision and Principles	Response
<p><i>A Vibrant and Integrated District Centre</i></p>	<p>Byford Station promotes a vibrant and integrated district centre through a range of strategies that enhance community engagement, economic vitality, and social interactions.</p> <p>Byford Station embraces a mixed-use development approach, for future blending residential, commercial, and retail spaces within the district centre. This integration will create a dynamic environment where residents can live, work, and access essential services within close proximity, fostering convenience and a sense of vibrancy.</p> <p>Well-designed public spaces and plazas are incorporated into the station's design, serving as gathering points for community activities and events. These facilities act as focal points for community engagement, offering spaces for learning, recreation, and social connections, which enhance the vibrancy and sense of community within the district centre.</p> <p>To create an inviting and pedestrian-friendly environment, the design of the district centre emphasizes active street frontages. Pedestrian-friendly walkways, outdoor seating.</p> <p>Lastly, cultural and arts integration plays a significant role in the district centre's vibrancy. Byford Station incorporates public art and open spaces to infuse the area with creativity and cultural expression. These initiatives add a unique character to the district centre, provide opportunities for artistic collaborations, exhibitions, and community events, and enrich the overall cultural fabric of the community.</p> <p>By combining mixed-use development, public spaces, community facilities, local business support, active street frontages, and cultural integration, Byford Station creates a vibrant and integrated district centre. These efforts foster a strong sense of community, enhance economic activity, and promote social interactions, contributing to a thriving and cohesive urban environment.</p>
<p><i>Identifiable Character and Distinct Sense of Place</i></p>	<p>Byford Station offers a distinct character and a strong sense of place through its thoughtful architectural design, contextualisation with the local environment, incorporation of public art and landscaping, promotion of community engagement, establishment of a local identity and branding, and pedestrian-friendly design. The station's architecture reflects the surrounding area and utilizes materials and colours that resonate with the local context. Public art installations and landscaping features further enhance its visual appeal and connection to the community.</p> <p>By providing gathering spaces and amenities, Byford Station encourages social interactions and community engagement, fostering a sense of belonging. Its local identity and branding create a recognizable and unique character. Additionally, the station's pedestrian-friendly design promotes exploration and interaction, enhancing the overall experience and contributing to a vibrant sense of place. Through these elements, Byford Station establishes itself as a distinct and vibrant hub that reflects the local community and creates a strong district sense of place.</p>
<p><i>A Safe Pedestrian and Transit Oriented Place</i></p>	<p>The extension of Sansimeon Boulevard and the connection of Clara Street West with the eastern Town Centre include safe and legible crossing points and station access, ensuring a natural passage for people. Activation of the Welcome Place through future development opportunities provides passive surveillance. It emphasises open sightlines, enhancing visibility and creating a sense of openness, contributing to a safer environment. This approach allows for clear lines of sight, promoting observation of surroundings and potential hazards.</p>

	<p>The design promotes permeability, facilitating seamless transitions and clear pathways between the station and public realm areas, enhancing accessibility and ease of navigation. The installation of CCTV infrastructure within the station, bus interchange, and parking areas further enhances safety by monitoring and recording activities.</p> <p>Landscaping has been carefully planned to prevent obstruction of sightlines and concealed areas. Ample lighting has been provided to improve visibility, aiding navigation and increasing the overall sense of safety.</p>
<p><i>A Place that Capitalises on its Environmental Assets</i></p>	<p>Byford Station maximises its environmental assets by utilising the natural features and resources of the surrounding area to create a sustainable and harmonious development. It incorporates green infrastructure, energy-efficient systems, and water management practices to enhance the environmental quality of the precinct. The station integrates with the natural landscape, preserving native vegetation and creating wildlife habitats, where possible.</p> <p>Byford Station demonstrates its commitment to sustainability, minimising its ecological footprint, and enhancing the overall environmental well-being of the area.</p>
<p><i>A Water Integrated Place</i></p>	<p>Swales have been designed throughout the car park to encourage healthy growth of trees over the long term, they also act as vegetated drainage areas for the onsite treatment of stormwater as per WSUD principles. Plant selection is informed by the 'Vegetation Guidelines for Stormwater Biofilters in the Southwest of Western Australia (Monash University, 2014). This assists with effective nutrient removal in combination with the proposed filter media.</p> <p>Detail of the plant species selection is currently under review to ensure benefit to local microclimatic conditions, and soil treatments that contribute to the successful maturation of planted flora. For example in planting zones the appropriate topsoil will be used.</p>

Table 15: LPP 3.5 Vision and Principles

Local Planning Policy 2.4 – Water Sensitive Design

The objectives of LPP 2.4 are to:

- Assist in enhancing the beneficial uses of all watercourses and wetlands in the Shire. In particular, these beneficial uses are their use:
 - As a habitat for: locally indigenous fauna, including migratory or threatened species; or locally indigenous flora, including threatened species.
 - For the maintenance of the diversity and abundance of locally indigenous fauna and flora species.
 - To provide a biologically productive and genetically diverse natural environment and maintain ecological processes.
 - To reduce the impact of storm events and flooding.
 - To create and enhance recreational opportunities in parts of the Shire of Serpentine Jarrahdale.
 - In helping form the natural, rural landscape and amenity of the Shire.
 - Their value and association with Aboriginal spirituality and European heritage.
- Ensure water sensitive design best management practices are implemented for all new proposals in the Shire.
- Improve water quality in the Shire and quality of water entering receiving water bodies.
- Develop a network of multiple use corridors throughout the Shire.

The use of swales has been a key consideration for Water Sensitive Urban Design (WSUD). The design of swales throughout the car park promote the healthy growth of trees over the long term. By incorporating swales, the car park is creating an environment that supports the growth and development of trees, which brings numerous benefits such as shade, improved air quality, and aesthetic value.

The selection of plants for the swales is informed by the 'Vegetation Guidelines for Stormwater Biofilters in the Southwest of Western Australia' developed by Monash University in 2014. These guidelines provide recommendations on suitable plant species that are effective in stormwater biofiltration systems in the specific climatic conditions of the southwest region of Western Australia. By choosing appropriate plant species, the swales can effectively contribute to the removal of nutrients and other pollutants from the stormwater.

The specific plant species selection for the station and Western Plaza is currently under review to ensure that they will benefit the local microclimatic conditions. This means that plants will be chosen based on their ability to thrive in the local climate and contribute positively to the surrounding environment. Additionally, soil treatments will be implemented to support the successful growth and maturation of the planted flora. This may involve using appropriate topsoil in designated planting zones to provide the necessary nutrients and conditions for the plants to establish and flourish.

Please refer to **Appendix I** – Stormwater and Drainage Strategy for more information on stormwater and drainage considerations.

Local Planning Policy 1.6 – Public Art for Major Developments

The objectives of LPP 1.6 – Public Art are to:

- Create artworks in public spaces that are site specific, meaningful and integrated into built and natural forms within the Shire.
- Enhance public enjoyment, engagement and understanding of places through the integration of public art, thereby enhancing sense of place.
- Enhance the appearance, character and value of buildings and places through the inclusion of high quality public art.
- Establish a clear and equitable system for the provision of public art in the development process.

The public art opportunities associated with the Byford Rail extension are being developed to align with the strategic objectives of METRONET and the Shire. The approach draws inspiration from Noongar and post-colonial culture, history, and landscape.

The integration of public art will be further development through the detailed design phase of the project, and it is expected that an associated standard condition of approval will be applied.

Please refer to **Appendix F** – Public Art for further information on the Public Art Plan.

19. Conclusion

The new Byford Station represents a significant investment in the Byford community. The project will create new station infrastructure and public realm facilities, providing numerous benefits to residents and workers in the area.

Byford Station will result in a more efficient and accessible transportation facility for residents and workers in Byford and Perth's south-eastern corridor. Additionally, the new public realm facilities will offer attractive spaces for various activities, promoting community engagement and well-being. This relates to:

- The provision of high-quality built form design.
- The provision of new public realm areas (for passive and active recreation).
- High quality wayfinding to and from Byford Station and throughout the public realm.
- Designated bus and car movement for improved safety and ease of movement through the Town Centre.
- Consideration for future streets and development lots to create mixed use opportunities in the adjacent Byford precinct.

Considering the significant advantages that Byford Station upgrade will bring to the local community, we respectfully request the Shire's support and recommendation for the approval of this application to the relevant authorities. The project aligns with the Shire's vision for sustainable development and will contribute to the overall improvement of public transport and community facilities in Byford.

The Alliance respectfully requests the WAPC approve the application on the advice from the Shire, subject to appropriate and reasonable conditions. These conditions will ensure compliance with standards, regulations, and environmental considerations while addressing any concerns that may arise during the approval process.

With the WAPC and the Shire's support, this project will provide transformative and lasting benefits to the Town Centre, local residents and visitors.