



## **Major Infrastructure Proposal Assessment Public Transport Authority**

### **Platform and Signalling Upgrade Program Phase 1 and Phase 2 Upgrades Project**

#### **Summary Assessment Report**

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January 2024

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### **Acknowledgment of Country**

Infrastructure WA acknowledges the Traditional Custodians of Western Australia and their continuing connection to the land, waters and community. We pay our respects to all members of the Aboriginal communities and their cultures; and to Elders both past and present.

# Major Infrastructure Proposal Assessment Summary Report

## Purpose

This assessment report has been prepared in carrying out Infrastructure WA's (IWA) legislative function to assess and report to the Premier on major infrastructure proposals. The assessment has been carried out on the Public Transport Authority's (PTA) Platform and Signalling Upgrade Program (PSUP) Phase 1 and Phase 2 upgrades project business case. Additional supporting information received, consultation and further research undertaken by IWA was also used to support the analysis.

## 1. IWA observations

The PTA's PSUP Phase 1 and Phase 2 upgrades project business case has been developed under the umbrella of an overarching PSUP Program Business Case. As a result, IWA's Step 3 Major Infrastructure Proposal Assessment (MIPA) of PTA's Phase 1 and Phase 2 proposal has been undertaken taking into account the program business case.

The PSUP Program Business Case details an approach to sequentially expand capacity on the Midland – Fremantle and Armadale rail lines through phased works.

The Phase 1 & Phase 2 proposal is the first of the proposed PSUP packages to seek funding for further planning and delivery of priority platform station upgrades. IWA considers that the PSUP Phase 1 and Phase 2 proposal contains sufficient information and is of a suitable standard to inform a government investment decision relating to proposed Phase 1 and Phase 2 works.

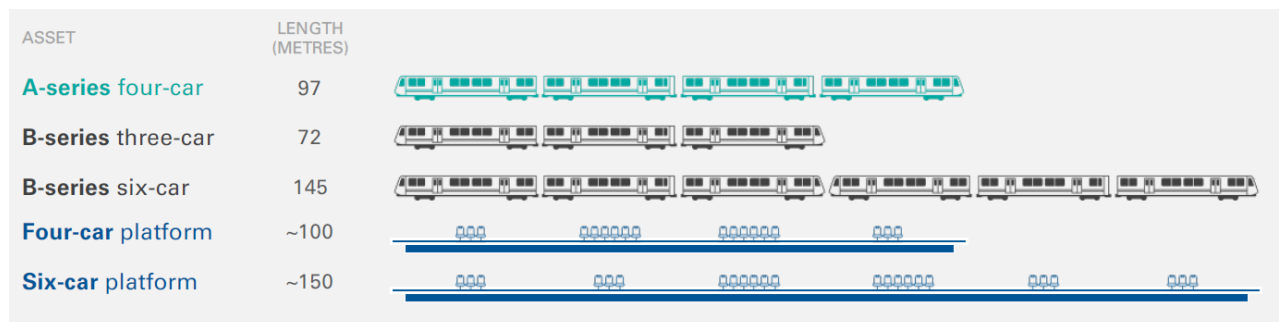
## Context

### 1.1 Project background

Perth's metropolitan rail network is the central component of the City's public transport infrastructure and enables passengers to rapidly transit to and from the CBD and key activity centres. Perth's rail network is comprised of the more recently constructed Joondalup and Mandurah lines, built in the 1990s and 2000s respectively, and the Armadale, Fremantle, and Midland Lines (collectively referred to as the Heritage lines in this document), originally built over 130 years ago.

Most of the stations along the Heritage lines have a platform length of less than 100 meters and are currently serviced by four car, A series trains and three car, B series trains. For PTA's planning purposes four car, A series trains are assumed to accommodate 500 passengers and are 97 meters in length and three car, B series trains 400 passengers at 72 metres in length (see Figure 1). The A series railcar fleet is to be gradually phased into retirement by 2026, with operations on the Heritage lines to be replaced by B series trains.

Figure 1: Summary of A and B series trains and platform lengths (Source: PTA)



## 2. Strategic merit

### 2.1 Alignment

The intent of PSUP aligns with IWA's *Foundations for a Stronger Tomorrow: State Infrastructure Strategy* (SIS) (2022), which recommends optimising existing infrastructure asset bases and improving the quality and consistency of strategic infrastructure planning and processes. The proposal also aligns with Infrastructure Australia's *Reforms to meet Australia's future infrastructure needs – Australian Infrastructure Plan 2021*, which recommends coordination of infrastructure upgrade programs to increase the combined impact of existing transport funding on safety, capacity, accessibility, connectivity and user experience outcomes and is considered to be a key enabler for key State Government strategies including the *Perth and Peel @ 3.5 Million* planning frameworks, supporting significant growth in population along established rail corridors.

### 2.2 Problems and opportunities

The proposal seeks to ensure that the Perth metropolitan rail network is aligned with the future needs of the community, meets projected demand for rail services and provides effective and efficient passenger rail services. The A series trains will be progressively retired as METRONET's new C-series railcars are rolled out on to the network. As such, the B series trains will replace A series operations on the Heritage lines. As outlined in Figure 2, there are a number of platforms on these lines that do not have sufficient platform length to support six car B series trains. Without upgrades to platform lengths or operational changes, only three car B series trains will be able to operate, limiting service capacity.

The following METRONET projects will also shortly commence operations; Morley – Ellenbrook Line and Thornlie – Cockburn Link (TCL). These projects, along with other network upgrades such as the new Airport line (opened in 2022), Midland and Bayswater stations, METRONET Level Crossing Removal Program and Perth Stadium station are being constructed with a platform length of 150 meters to accommodate six car train operations.

In addition, the Ellenbrook and Airport lines will utilise the Inner Midland Line and the TCL will utilise the inner Armadale line stations. Without upgrades to existing four car platforms or operational changes, these new lines will be restricted to three-car operations, which over time will impact on forecast passenger demands.

Figure 1: PSUP Scope of Works (Source: PTA)



### 3. Options assessment

The PSUP presents a comprehensive options identification and assessment process, which identified five high level concepts to address the defined problems and opportunities. The concepts considered operational changes, capital investment and a combination of both.

Four options were selected to proceed to future evaluation. These options were:

- Platform extensions and signalling upgrades
- Signalling upgrades
- Selective door opening and signalling upgrades
- Retain A- series trains and undertake signalling upgrades.

Following evaluation, PSUP Phases 1 and 2 are the first platform extension packages recommended at Claisebrook, Maylands, Meltham and Victoria Park stations to cater for increased demand on the Ellenbrook, inner Midland, Airport, TCL and inner Armadale lines. In addition, the option recommends a number of minor signalling and other infrastructure upgrades to enable train



frequencies of up to 15 trains per hour to support capacity requirements prior to the commencement of high capacity signalling in the early 2030's.

## **Societal impacts**

### **3.1 Economic and financial assessment**

The assumptions underpinning the economic and financial evaluations were logical and reasonably applied to give a relative comparator between the shortlisted options.

Key benefits were attributable to travel time savings; reduced unexpected wait time; reduced crowded in-vehicle time; and non-monetised benefits such as road user benefits, environmental benefits and fare revenue benefits.

### **3.2 Social assessment**

The proposal adopts relevant aspects of Gnarla Biddi, the overarching METRONET Aboriginal Engagement Strategy, to ensure consistency in engagement with Aboriginal communities between PSUP and recent major Perth rail infrastructure works including METRONET projects.

PTA notes that it also intends to implement the project in accordance with the overarching METRONET sustainability strategy, providing consistency in approach. It is recommended that information on proposed climate mitigation and adaption measures is presented in future PSUP phase submissions to demonstrate to Government the project's approach and contribution to meeting government targets, and to understand any implications on future project budgets.

### **3.3 Environmental assessment**

PTA has undertaken preliminary environmental assessments of the proposed stations and corridor and found native vegetation within the rail corridor is limited and only contained in isolated locations. Environmental, heritage and cultural values will be progressively assessed throughout the delivery of the program planning.

## **Recommended option and project definition**

The Phase 1 & Phase 2 proposal seeks a Government investment decision and funding for the first two recommended phases of priority PSUP works, being:

- PSUP Phase 1 – \$250 million for detailed planning/design and delivery of critical platform extension works and associated upgrades that will enable six car trains to operate on the Ellenbrook line. This includes platform extensions at Claisebrook, Maylands and Meltham stations.
- PSUP Phase 2 – \$40 million to deliver platform extensions and associated upgrades that will enable six car trains to operate on the TCL. This includes extension of the platform at Victoria Park station and other potential minor works.

## **4. Deliverability**

The nature of the works to be planned and delivered in Phase 1 & 2 are considered to be relatively low in terms of risk and complexity, however, further progress on work supporting the deliverability case is required.