CROSSRIVERRAIL
DELIVERY AUTHORITY

Cross River Rail
Project and Controls Integration

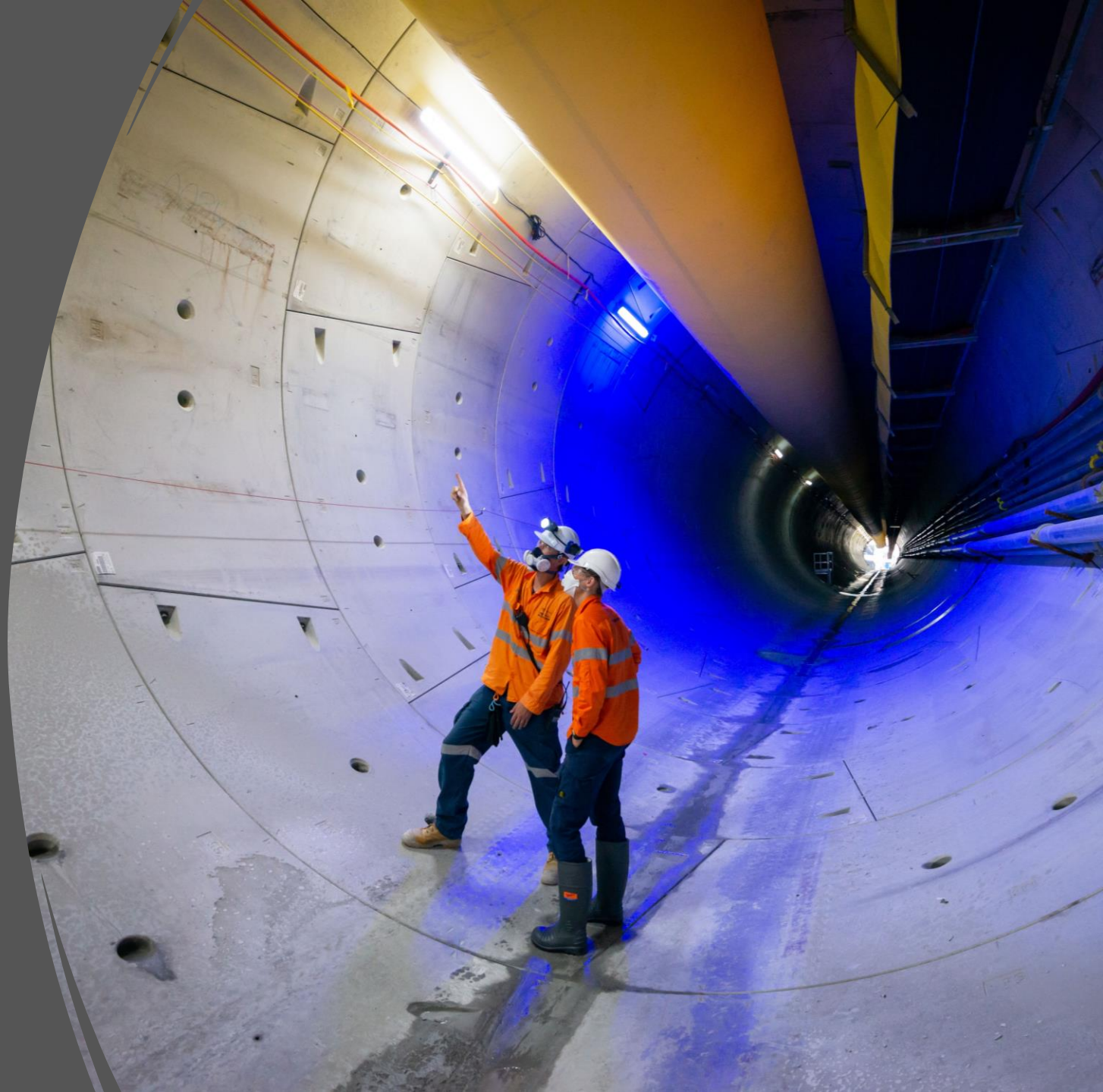
Agenda

Cross River Rail

- our Project

- our Progress

- our Project Controls approach



Cross River Rail

10.2 km
new rail line

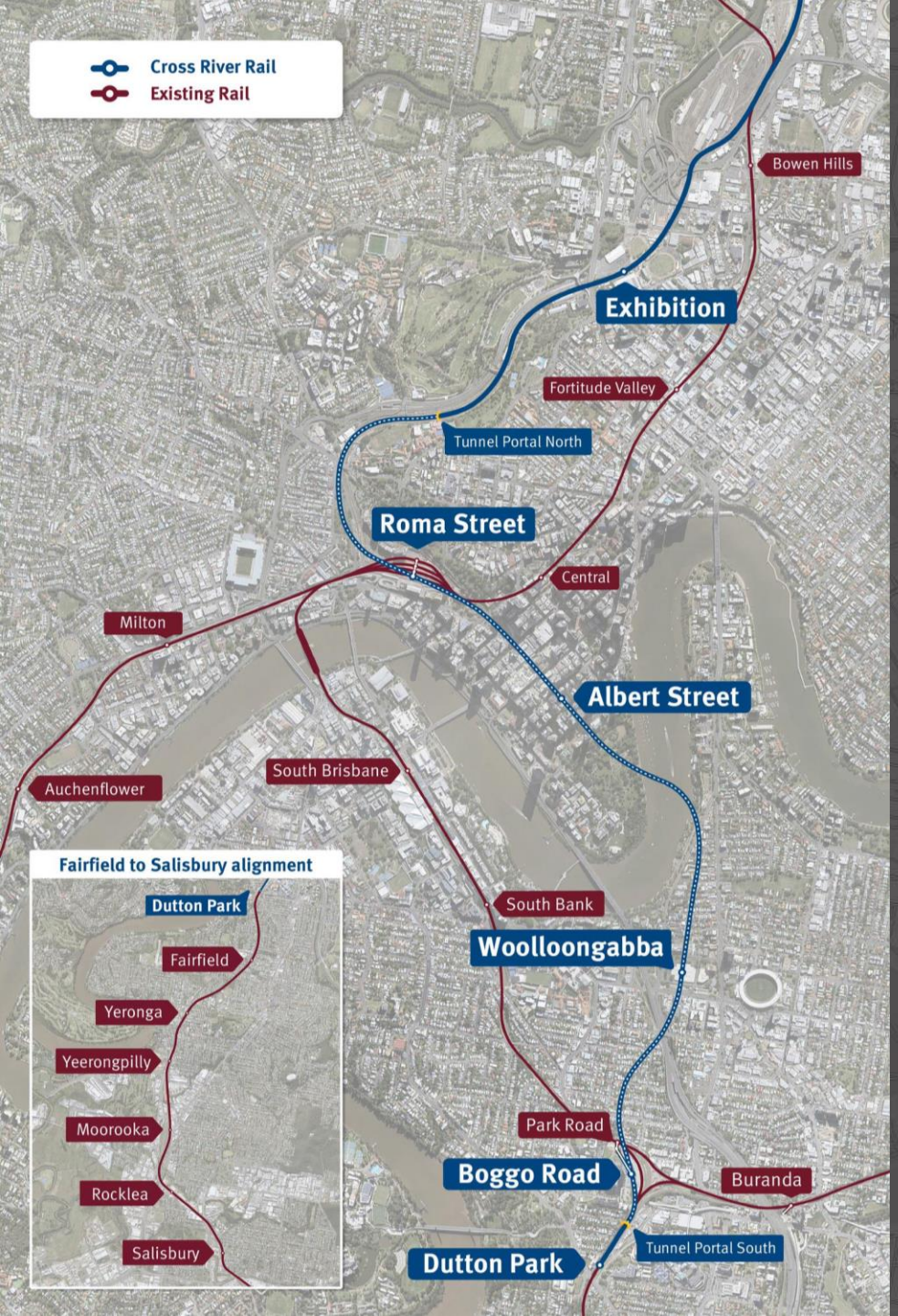
5.9km twin tunnels under the Brisbane River and CBD

4 new underground stations

8 rebuilt stations

3 new Gold Coast stations

1 new world class signalling system



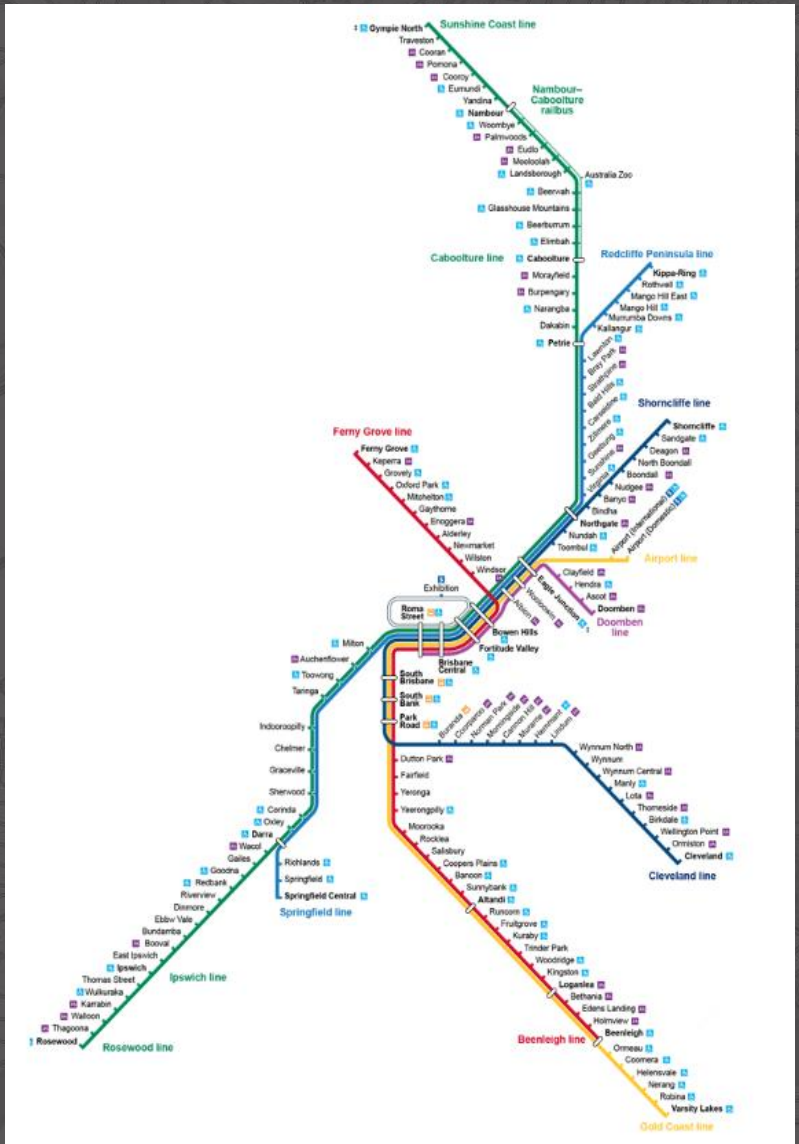
Cross River Rail as a solution

- Shorter journey times door to door
- Capacity to increase train frequencies as population grows
- Second river crossing, reducing network frailty
- New stations in more convenient locations
- Integration with new roads & new bus services
- Will make public transport more popular

CROSSRIVERRAIL

A catalyst for wider rail transformation

- Current QR rail network map



- Released 2 August 2022

- Future rail network map

Supporting our economy

7,700 jobs in total
(current workforce - 2,700)

More than 1700 subcontractors and suppliers have already benefitted

$3.3m Per day

$100m Per month

Also delivering…

450
Apprentice/Trainees over the life of the project

614,000
apprentice hours planned over the life of the project

Currently at
343
apprentice/trainees

Currently at
598,000
hours

CROSSRIVERRAIL
DELIVERY AUTHORITY

Four major works packages

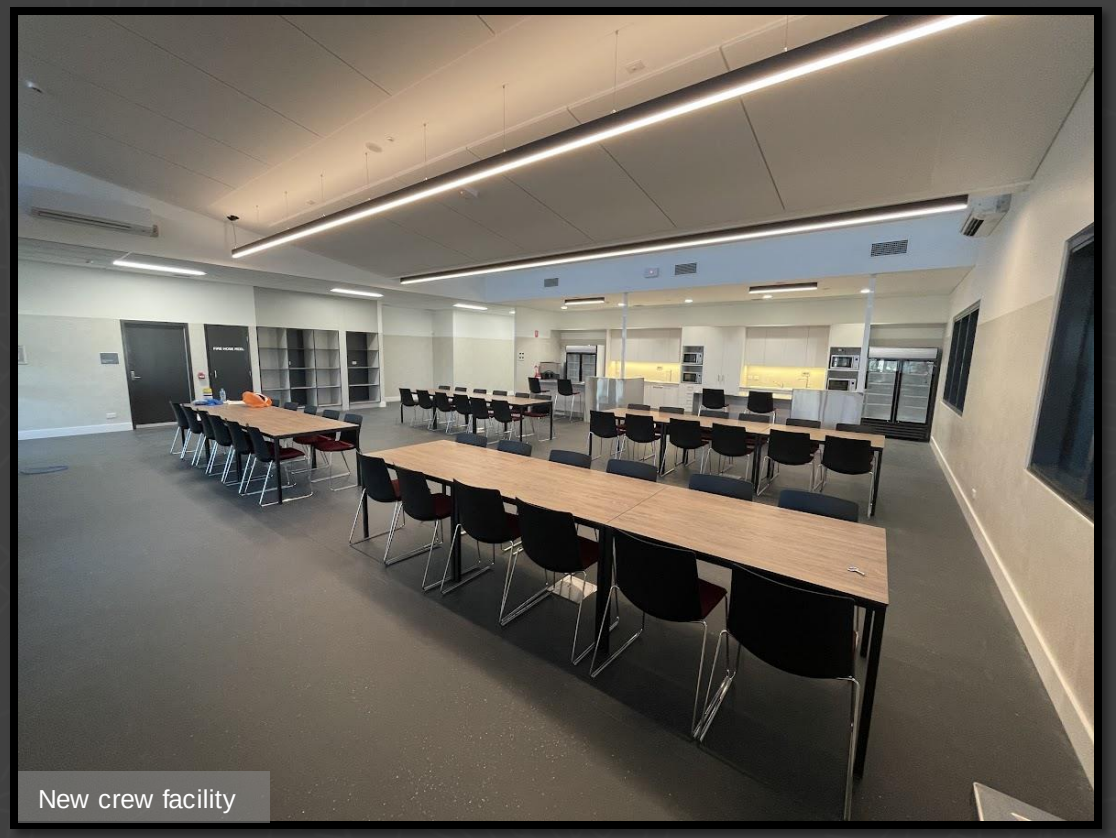
Tunnel, Stations & Development: *Pulse*	Rail, Integration & Systems: *Unity Alliance*	European Train Control System *Sequence Alliance*	New Gold Coast Stations
CIMIC PACIFIC partnerships UGL CPB CONTRACTORS Ghella bam JACOBS DIF AECOM	CPB CONTRACTORS UGL JACOBS AECOM	HITACHI Ansaldo STS SYSTRA	**Pimpama** ADCO **Hope Island station** acciona Georgiou **Merrimac** *shortlisting*

Some site by site highlights

CROSSRIVERRAIL
DELIVERY AUTHORITY

Mayne Yard North

Mayne Yard North



New crew facility

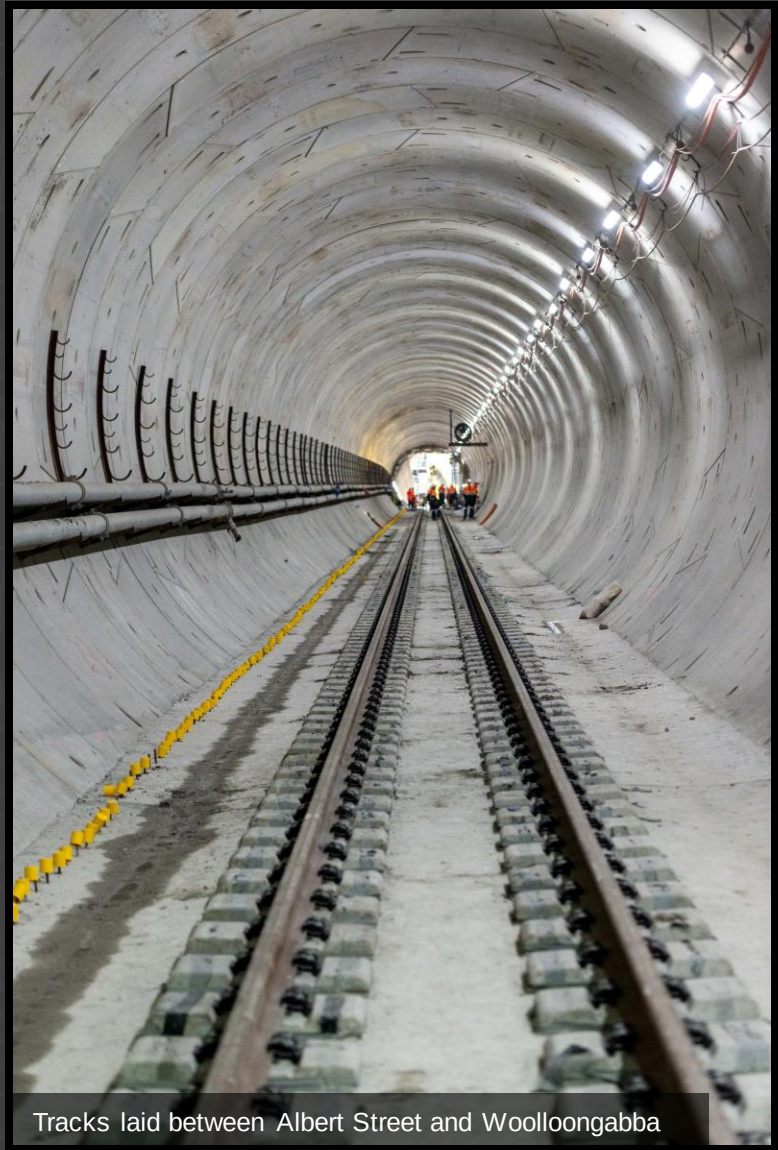
Exhibition

Old station now fully demolished, OHLE installation underway

Victoria Park Feeder station progressing

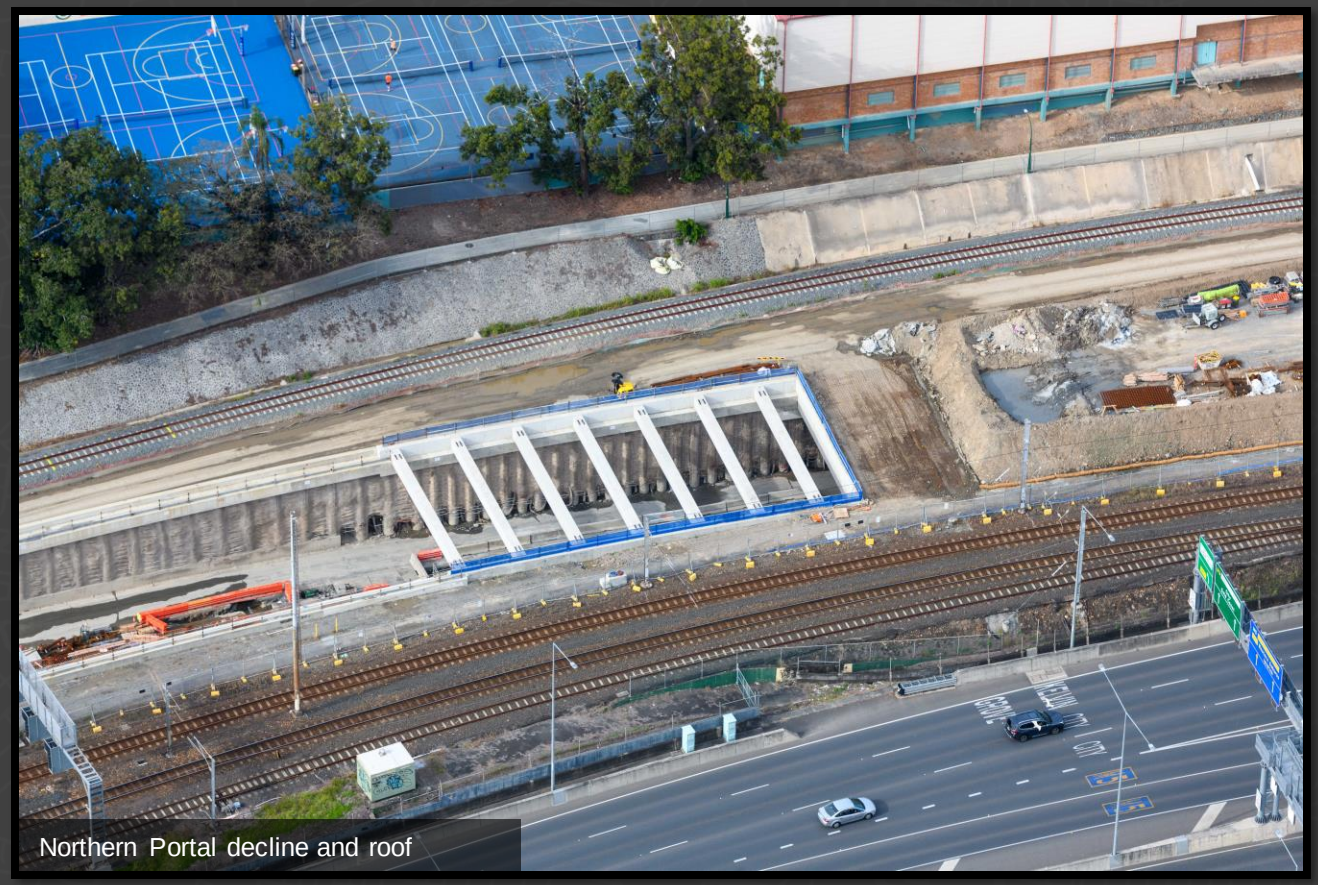
Twin Tunnels complete

Tunnels emerge from Northern Portal

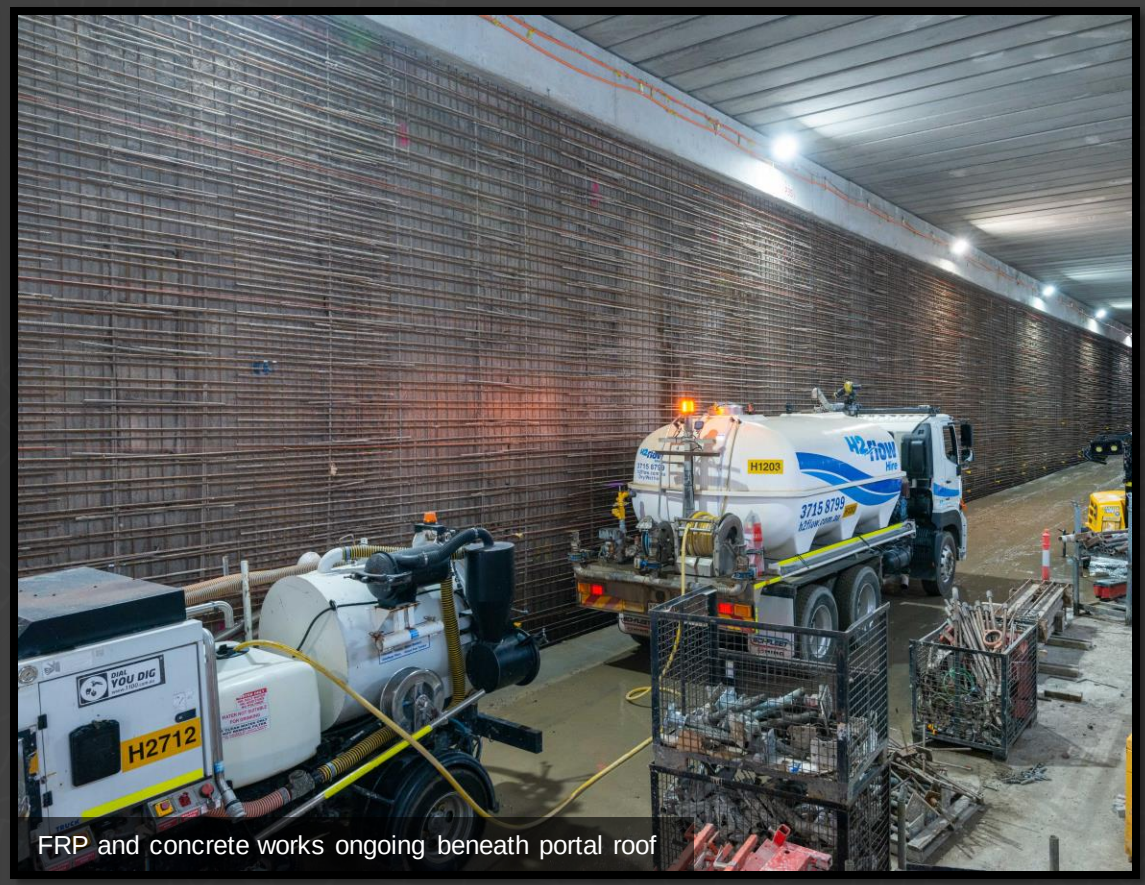


Tracks laid between Albert Street and Woolloongabba

Northern Portal



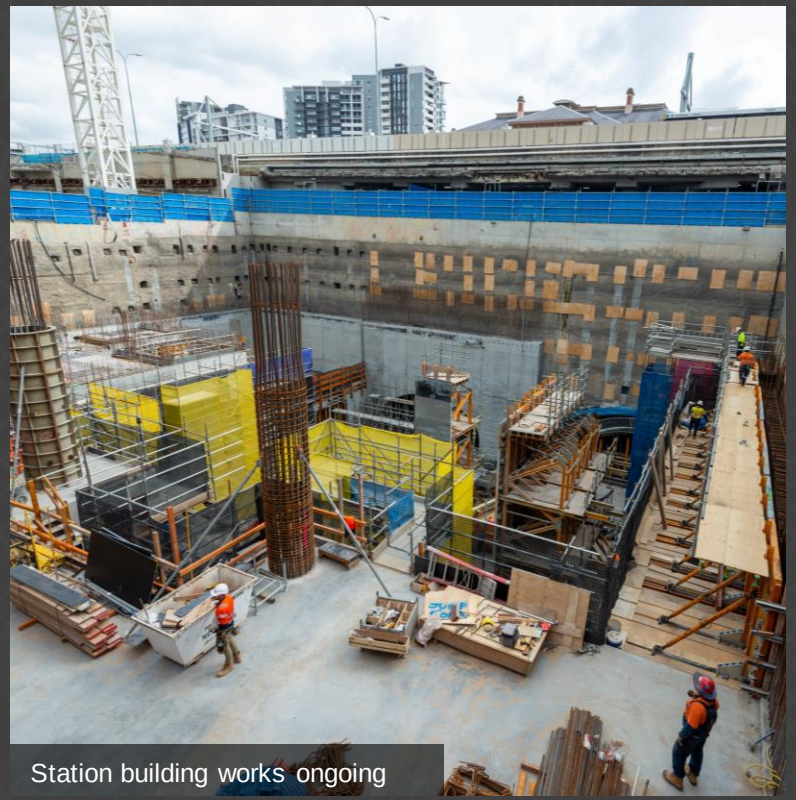
Northern Portal decline and roof



FRP and concrete works ongoing beneath portal roof

Roma Street

Services building reached ground level

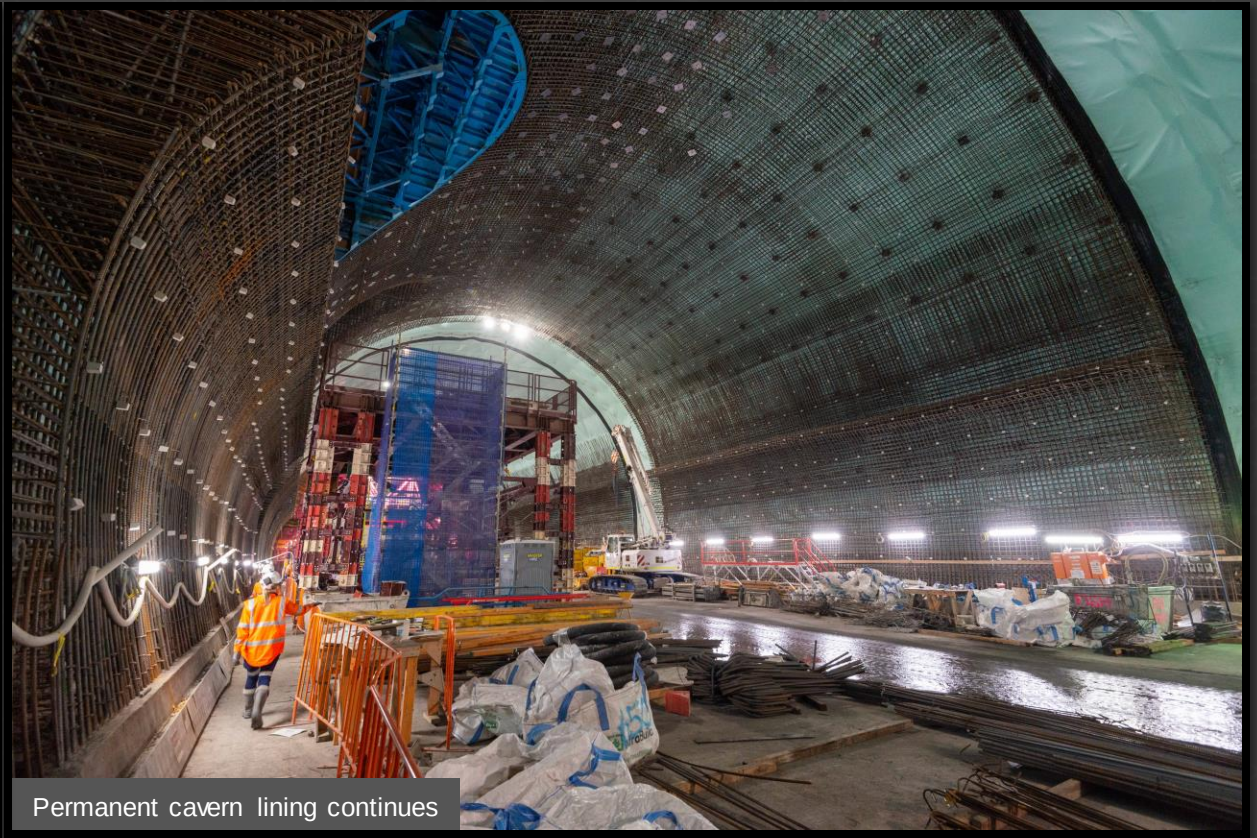


Station building works ongoing

Cavern lining works continue

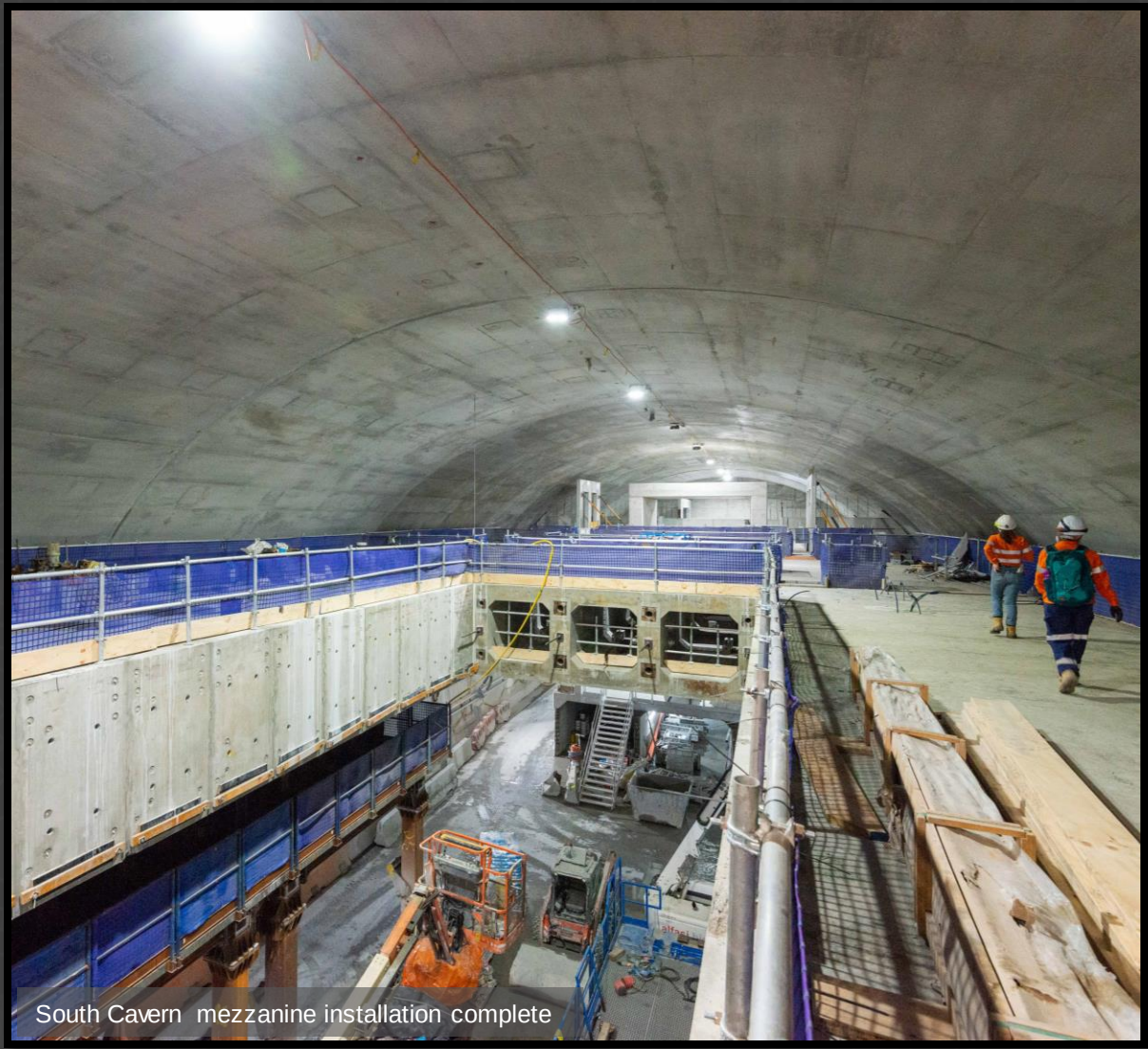
Albert Street

Station entry building construction ongoing

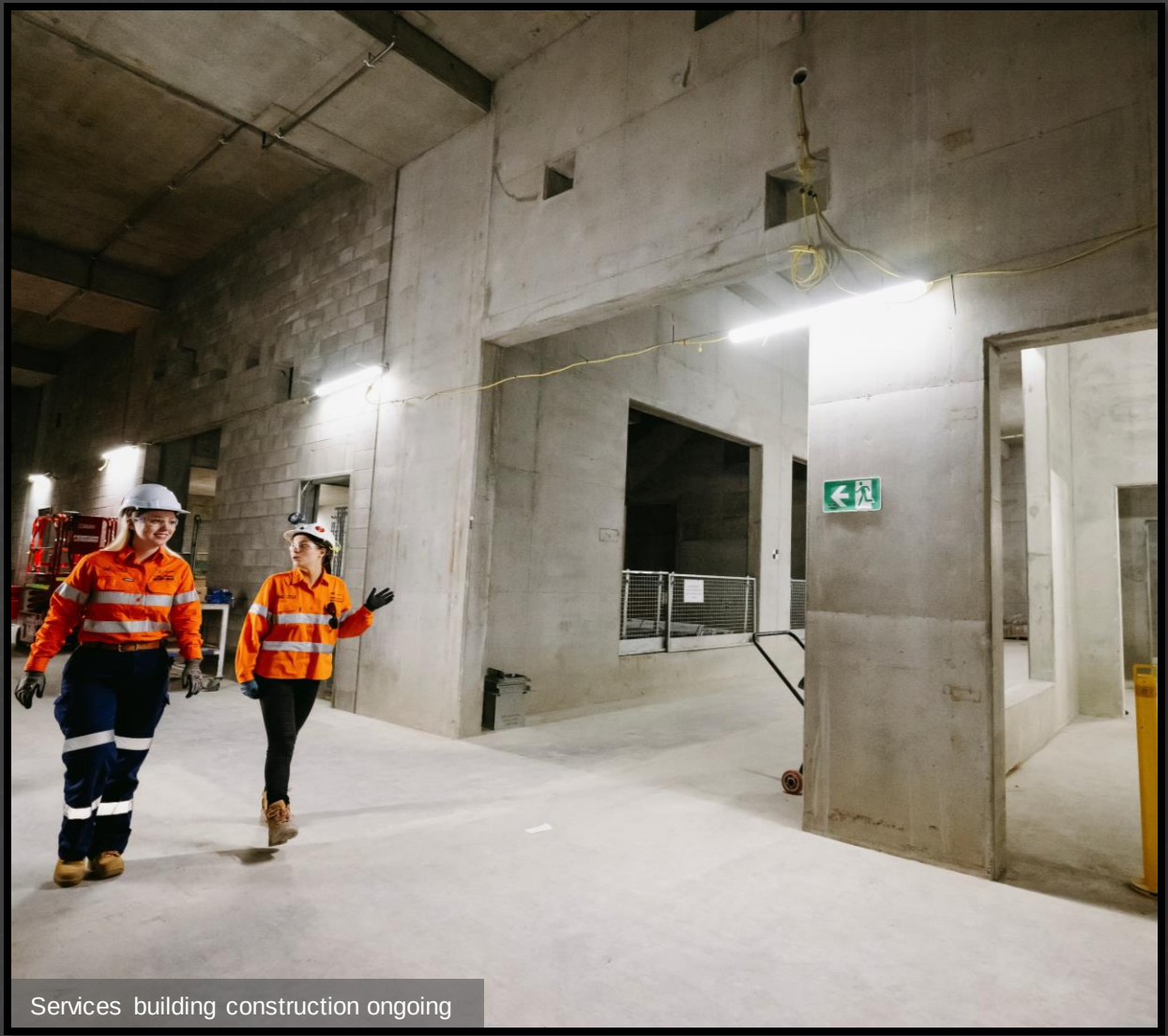


Permanent cavern lining continues

Woolloongabba



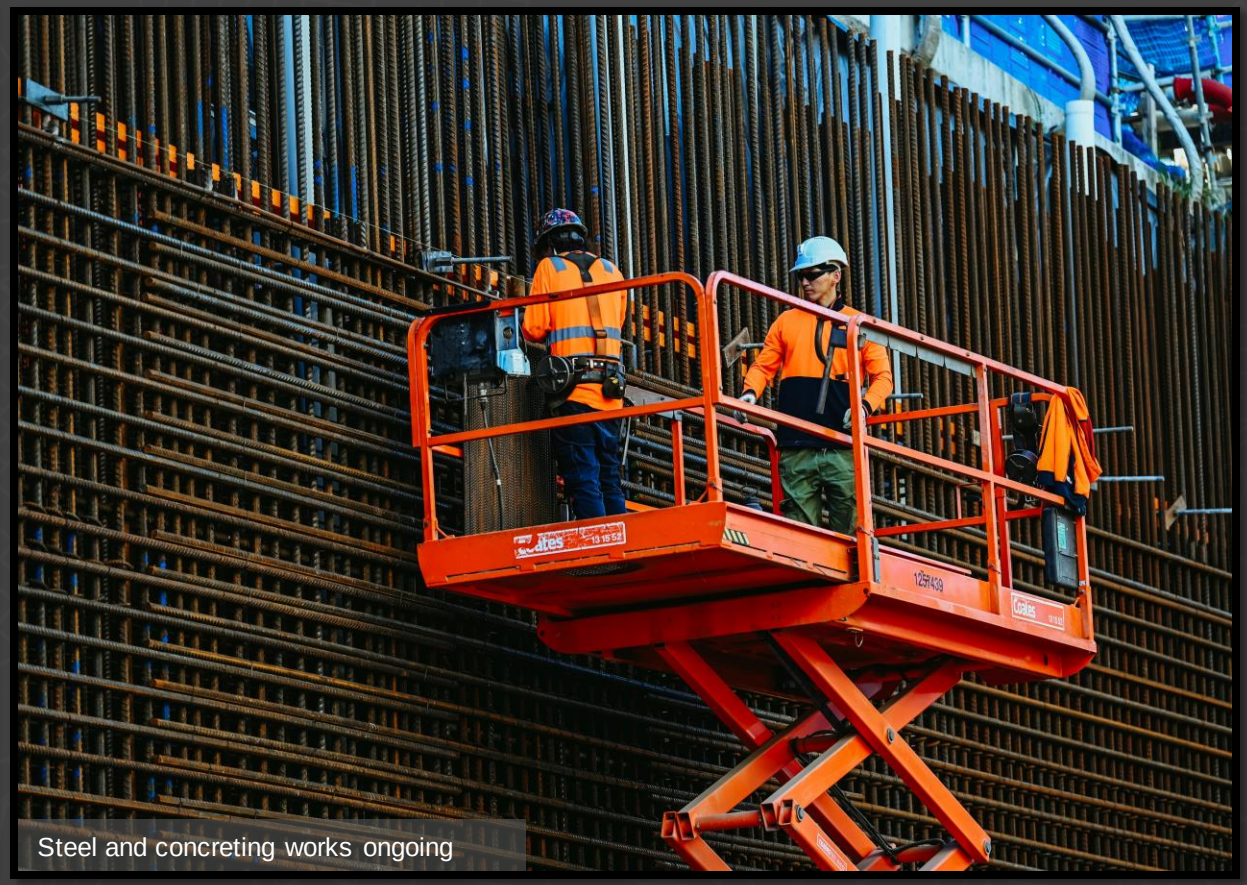
South Cavern mezzanine installation complete



Services building construction ongoing

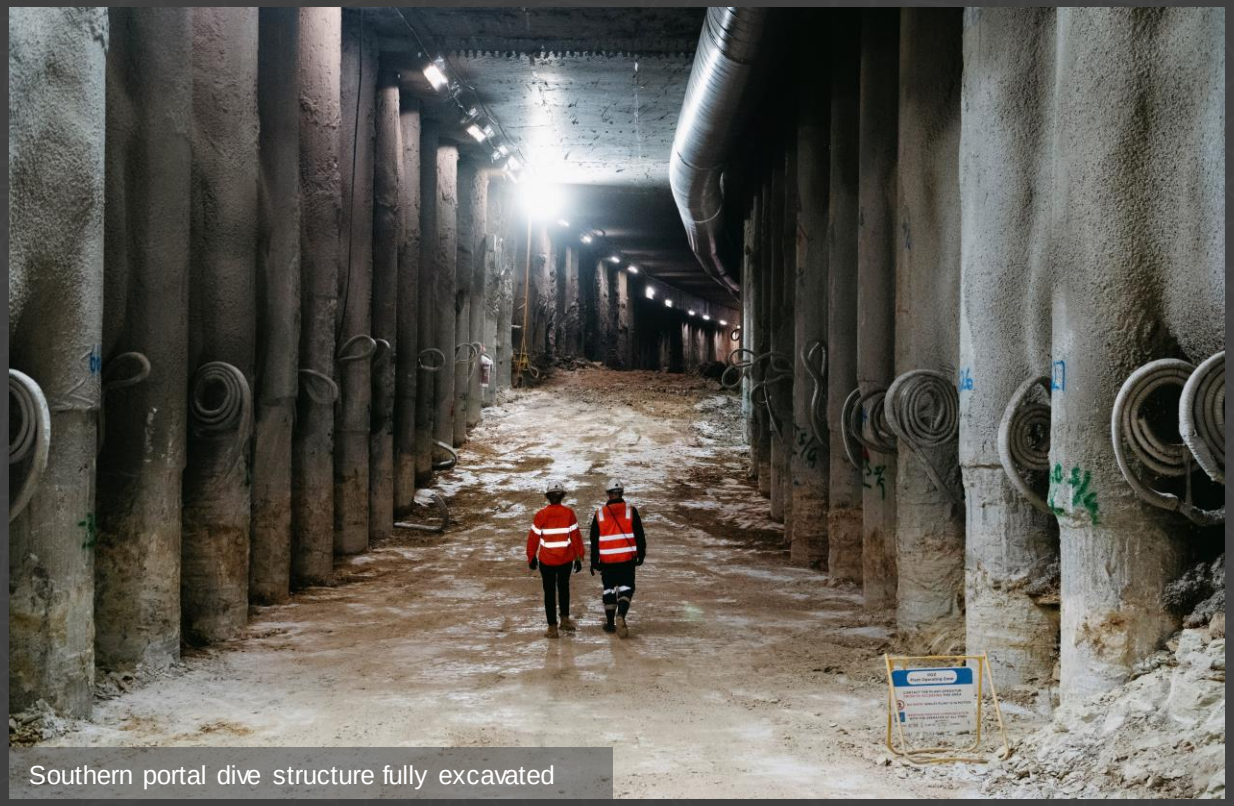
Boggo Road

Mezzanine installation commenced

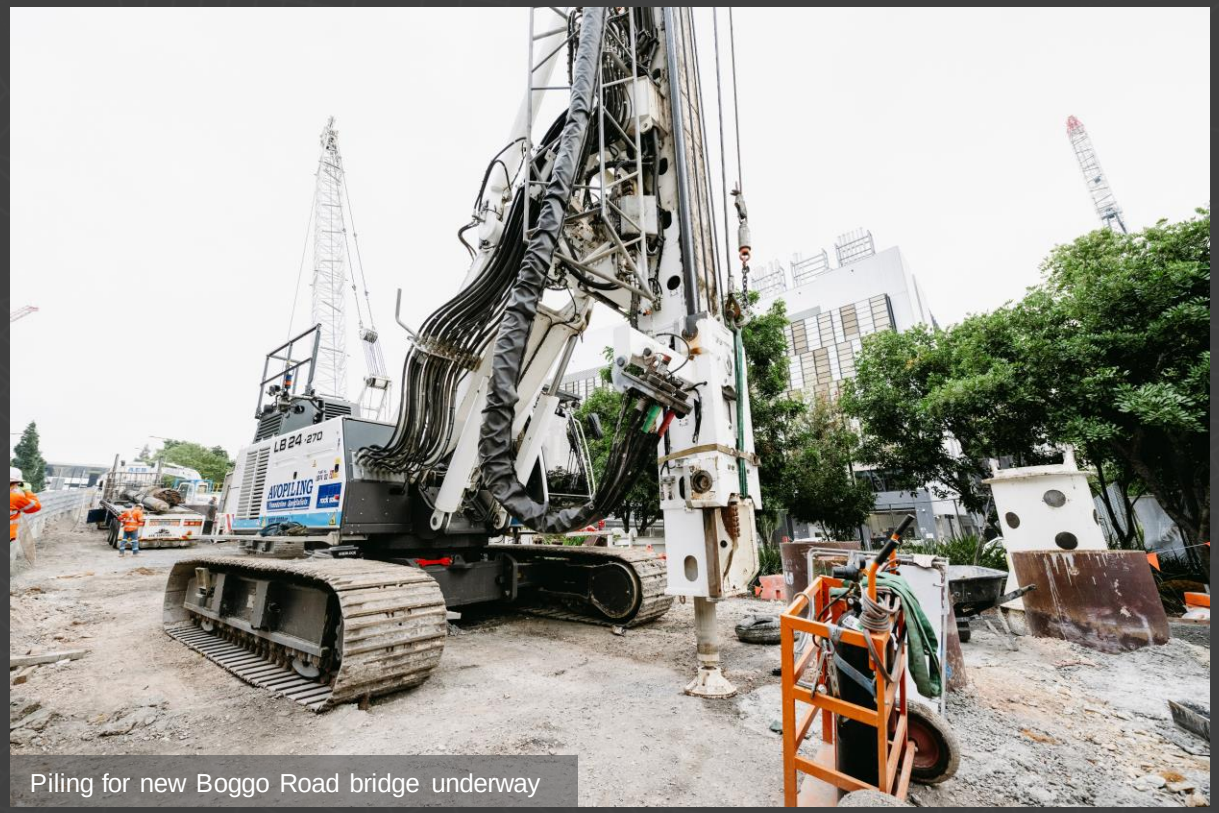


Steel and concreting works ongoing

Southern Portal



Southern portal dive structure fully excavated

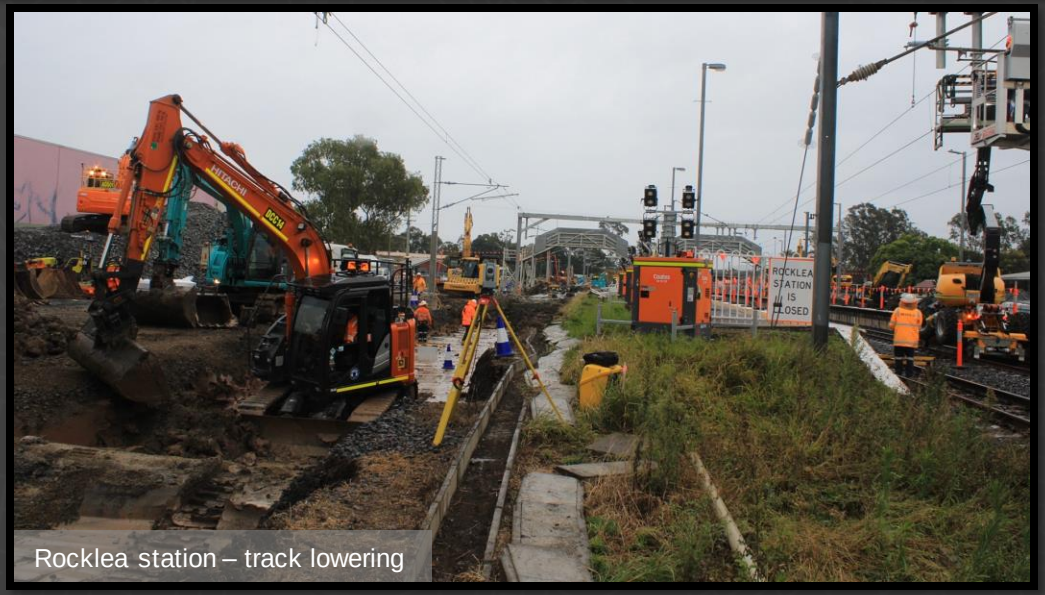


Piling for new Boggo Road bridge underway

Yeronga, Fairfield and Rocklea

Yeronga Station

Fairfield Station



Rocklea station – track lowering

New Gold Coast Stations

Hope Island Station, off Hope Island Road

Merrimac Station, off Gooding Drive

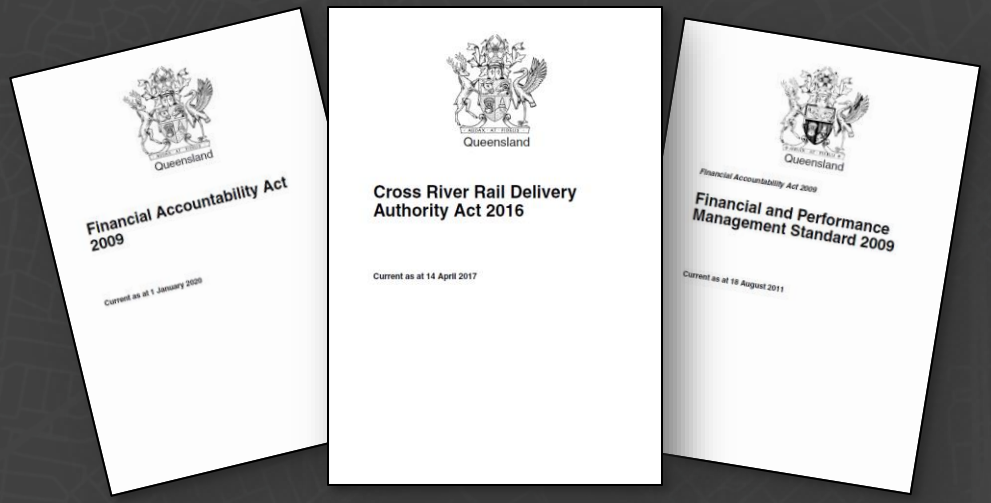
Pimpama early works

Signalling system

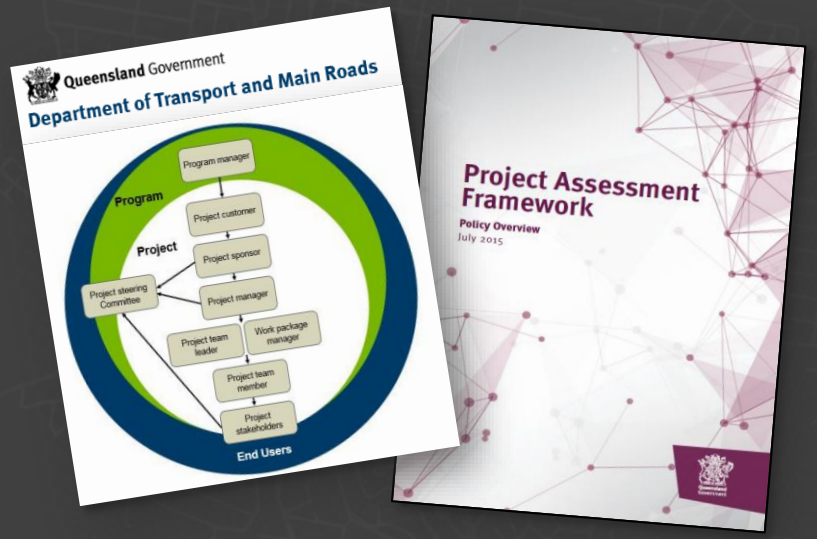
Our Project Controls approach

Delivering within a complex Government Framework

Required to meet Queensland Government Legislation

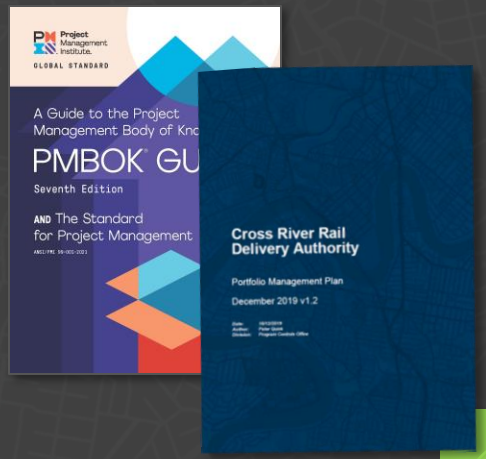


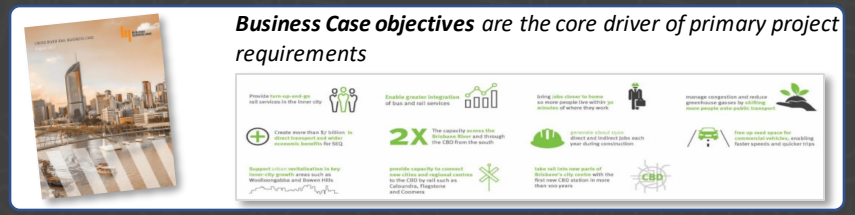
Required to align with Key Queensland Government Frameworks



Required to Deliver Complex Requirements

Tailoring foundational standards to manage work





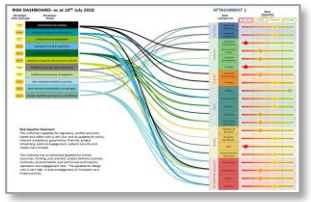
SPONSOR REQUIREMENTS

PROGRAM REQUIREMENTS

Structured approach to Risk Appetite helps isolate key Strategic Risks

Strategic Risks:

Risk Appetite:

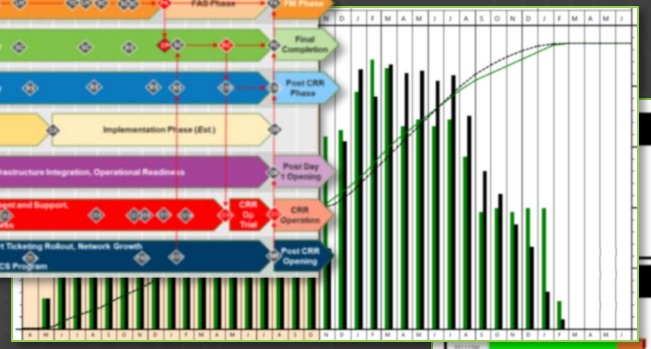


STRATEGIC RISKS

OPERATIONAL RISKS

Program schedule:

Program Budget:

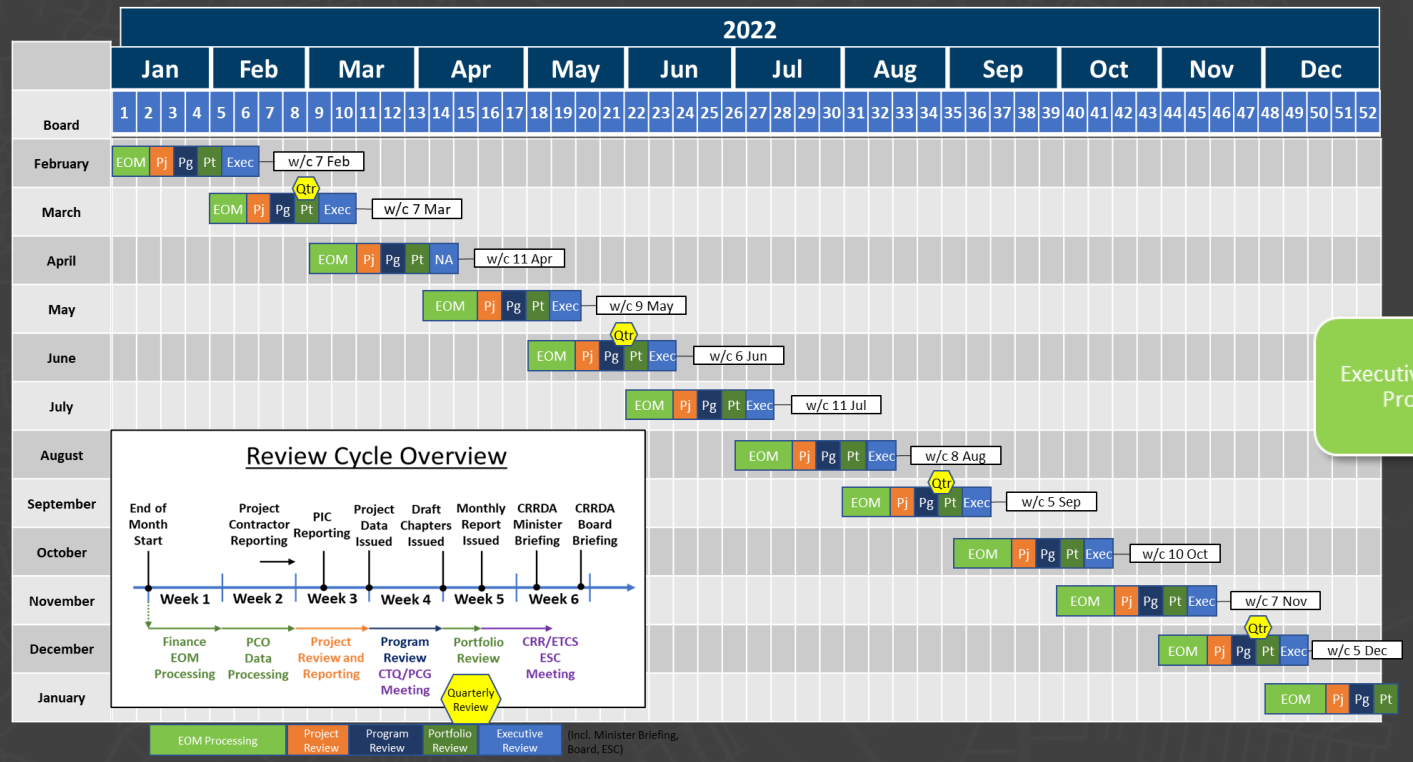


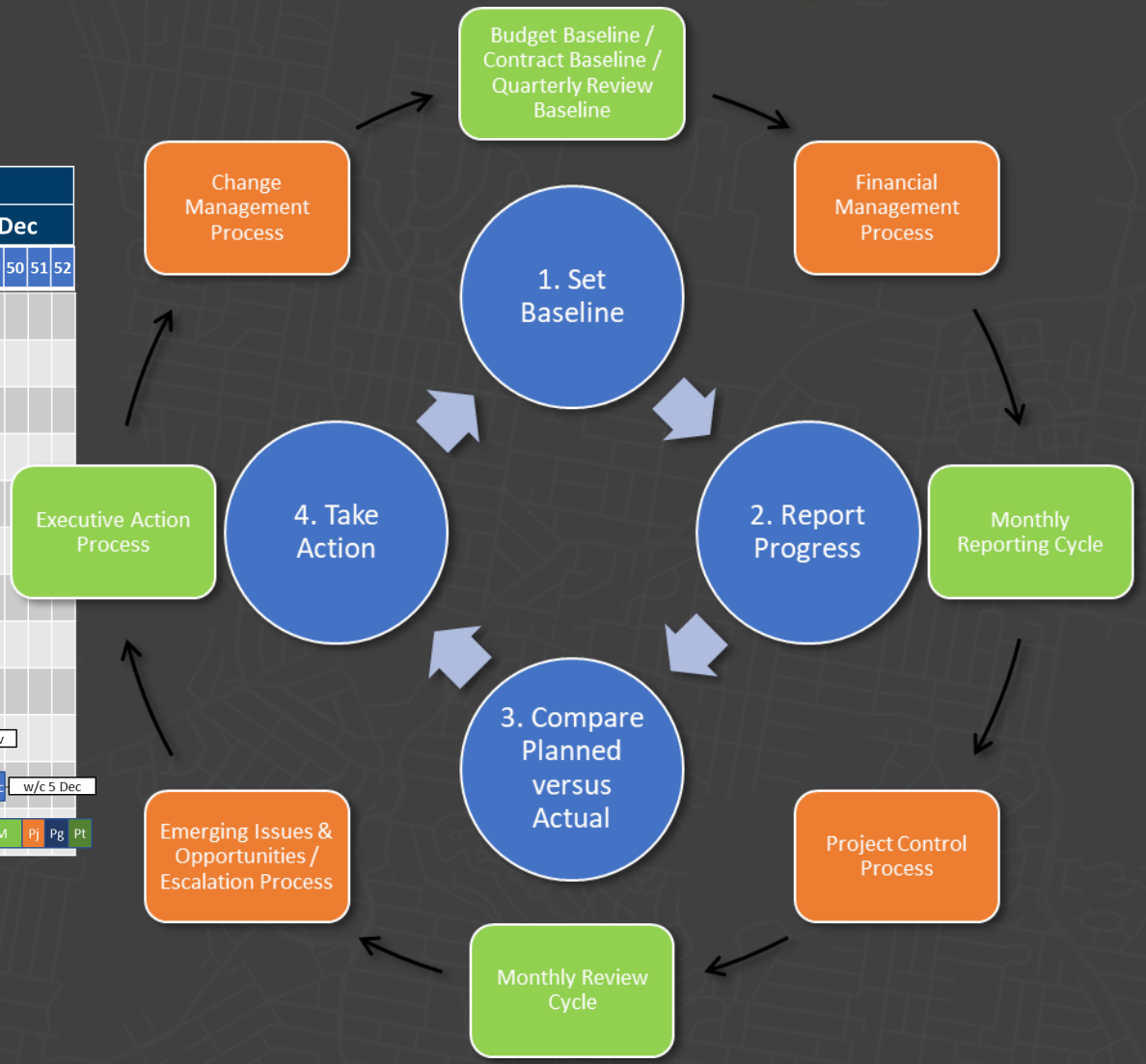
Risk -v- Requirements:

Governance:

- Portfolio level – *Reviewed Quarterly*
- Program level - *Reviewed Monthly*

On a routine and repeatable basis





Resulting in an Integrated Outcomes/Requirements Framework

The State Infrastructure Plan (SIP) *includes a framework to plan and prioritise infrastructure investment and delivery.*

GOVERNMENT OBJECTIVES (SIP)

State Government Domain

A series of strategic planning exercises identified the ***Need for CRR****. The* ***Outcomes,*** *as summarised in the* ***CRRDA Act*** *are to drive economic development and efficiently deliver the CRR Project.*

OUTCOMES (CRRDA Act)

REQUIREMENTS (TMR 10 YR RNS)

TMR's 10 yr RNP *will reconfirm the needs of CRR, as well as inform any change from the original plans.*

Outcomes *are business management objectives that reflect stakeholder needs.*

Outcomes

Sponsor Outcomes (CRR Business Case)

Requirements Analysis

Validation

System Requirements

Sponsor Requirements (TMR's CRR Requirements)

Sponsor Requirements *define, through statements, TMR's requirements.*

Requirements Definition

Verification

Systems requirements *are formal statements that are structured and can be validated.*

CRRDA Domain

Operational Outcomes *outline what the system needs to do, and are defined in the CONOPS Parts C - E*

CRR Elements of CONOPS Parts C,D and E

Requirements Analysis

Validation

Program Requirements (CRR Elements of CONOPS Part A+B)

Program Requirements *provide further detail to the sponsor requirements, These will be further expanded upon by proponents into a set of systems requirements.*

Requirements Definition

Verification

Contract Documents

Project Requirements (RIS)

Project Requirements (TSD)

Project Requirements *provide further detail to the program requirements.*

Contract Documents *are defined in a suite of contract documents, including for example the PA, PAA, PSTR, SPR, CG conditions etc.*

Requirements Definition

Verification

Proponent Domain

Contractor Bid (RIS)

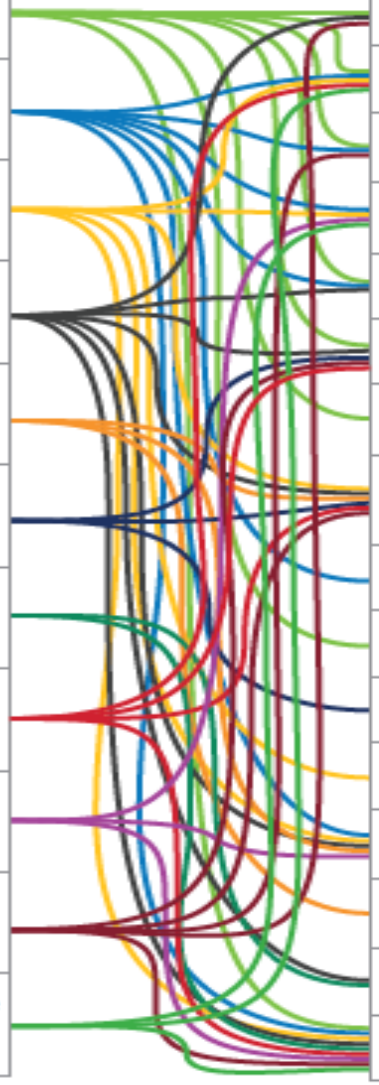
Contractor Bid (TSD)

Contractor's Bids *when approved will form the new project baseline.*

Breaking down key objectives into deliverable requirements:

Business Case Objectives

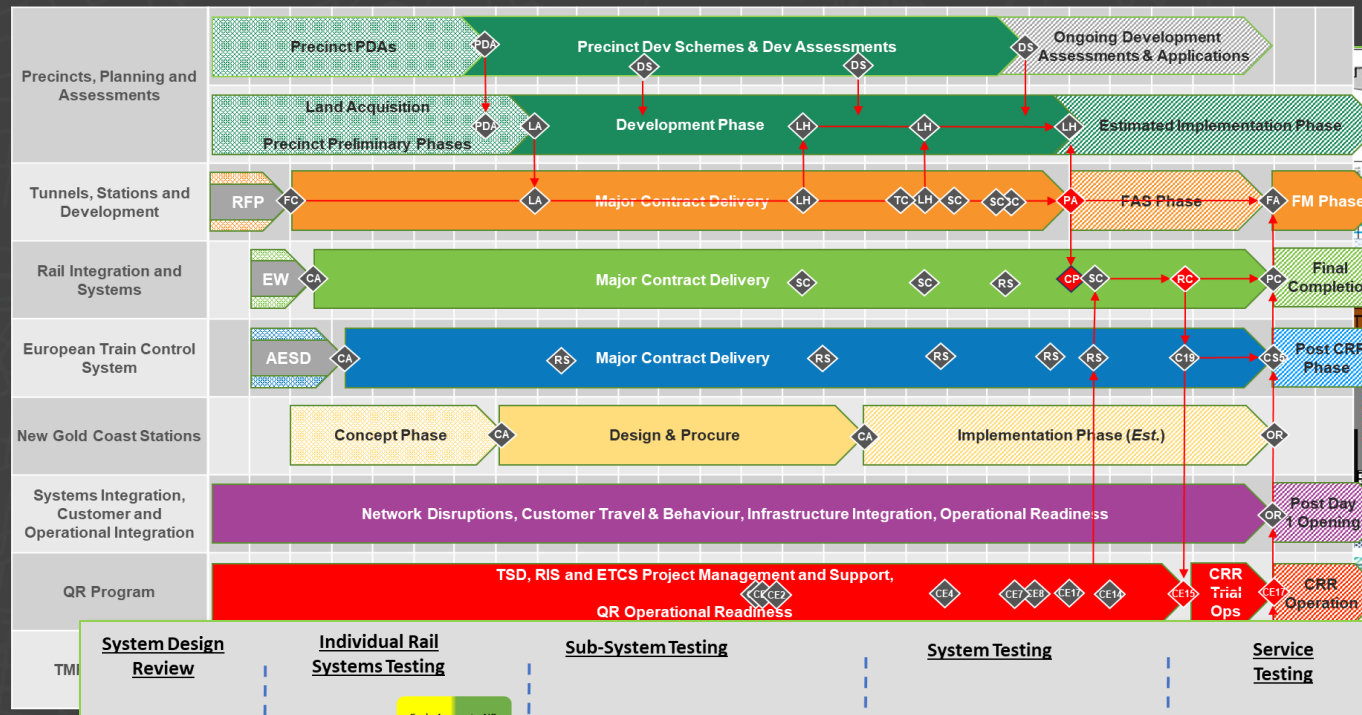
	Provide turn-up-and-go rail services in the inner city
	Enable greater integration of bus and rail services
	Bring jobs closer to home so more people live within 30 minutes of where they work
	Manage congestion and reduce greenhouse gasses by shifting more people onto public transport
	Create more than $7 billion in direct transport and wider economic benefits for SEQ
2X	The capacity across the Brisbane River and through the CBD from the south
	Generate about 1500 direct and indirect jobs each year during construction
	Free up road space for commercial vehicles, enabling faster speeds and quicker trips
	Support urban revitalisation in key inner city growth areas such as Woolloongabba and Bowen Hills
	Provide capacity to connect new cities and regional centres to the CBD by rail such as Caloundra, Flagstone and Coomera
CBD	Take rail into new parts of Brisbane's city centre with the first new CBD station in more than 100 years

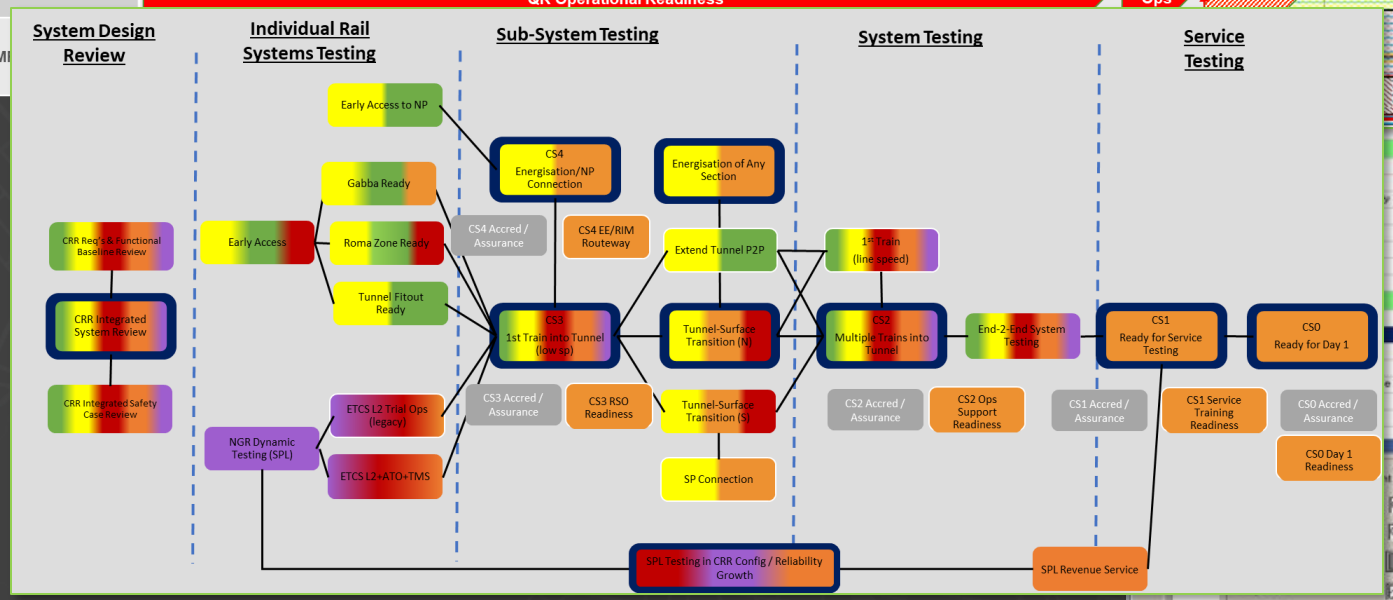


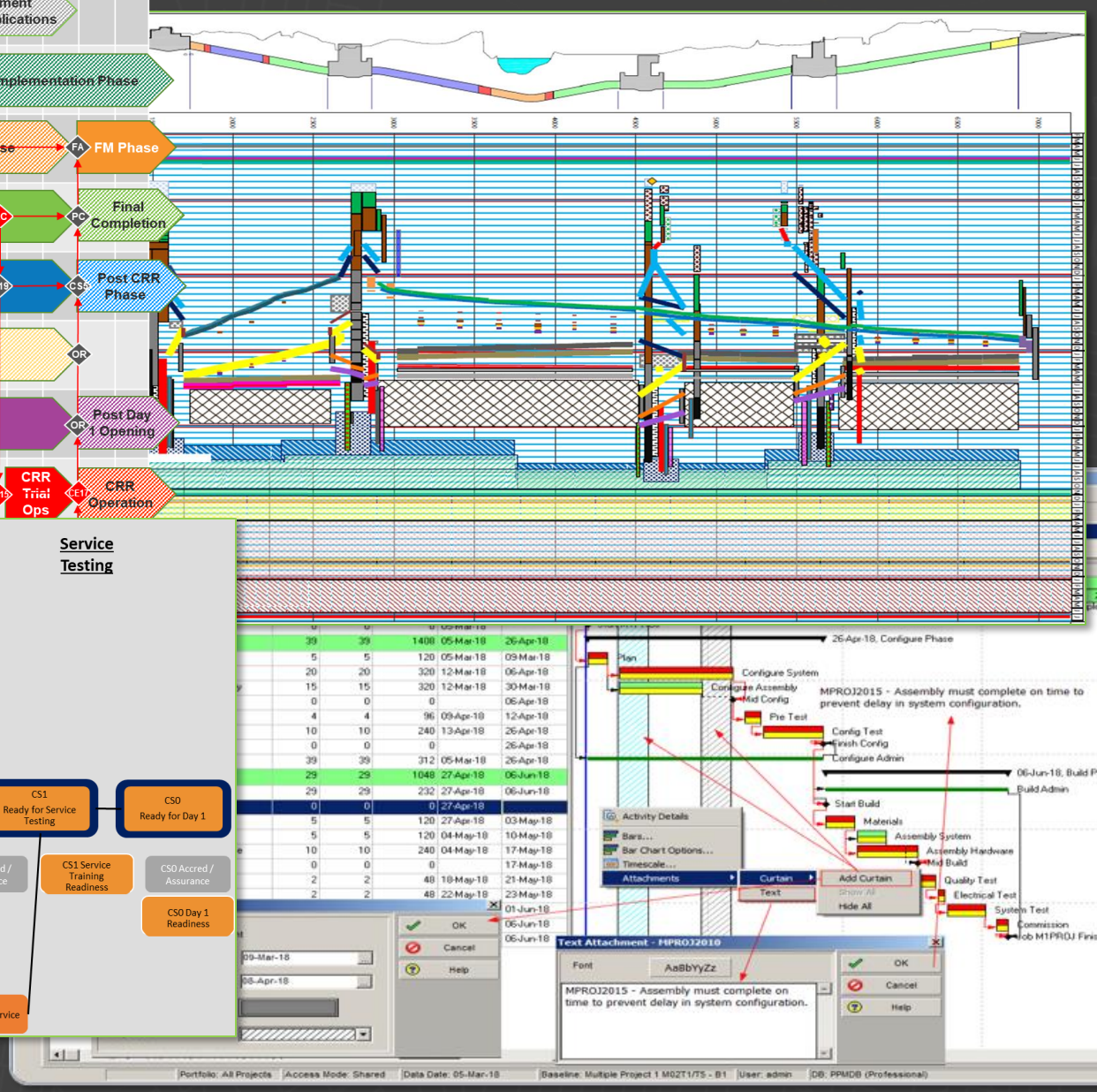
Sponsor Requirements

SR1	CRR will deliver an increase of approximately 50% in network capacity, which is additional capacity of about 18,000 rail passenger journeys per day. This will be the key catalyst for transforming the south-east Queensland rail network into a modern digital railway as part of the single integrated transport network accessible to everyone.
SR2	CRR will improve customer experience by reducing journey times and improving frequency by rail through the corridor and to/from Brisbane city.
SR3	CRR will change sectorisation of the rail network by connecting all southern services on the Gold Coast line through a new core section through the city to the North Coast and Redcliffe Peninsula lines.
SR4	CRR will feature new tunnel infrastructure to four underground inner-city stations at Boggo Road, Woolloongabba, Albert Street and Roma Street. It will also include redevelopment of Exhibition station and Dutton Park station.
SR5	CRR will provide world class passenger facing rail safety measures such as platform screen doors at all new underground stations.
SR6	The core section of CRR will achieve a safe, efficient and reliable operational capacity of ultimately 24 TPH in both directions (with service plans aligned with demand).
SR7	CRR will be capable of operating 24 hours a day on special occasions, but will more generally operate 22 hours per day for two days per week (Friday and Saturday) and 20 hours per day on other days (Sunday to Thursday) to provide maintenance windows.
SR8	The CRR infrastructure will support long-term social and economic benefits including future introduction of higher capacity (9-car) trains and thus stations need to allow future provision for 9-car length platforms and associated infrastructure to accommodate the increased passenger throughput.
SR9	CRR will accommodate the Next Generation Ticketing systems as stipulated by TMR in consultation with CRR.
SR10	CRR will be supported by track, stabling and station upgrades that improve the efficiency and use of the CRR tunnel.
SR11	CRR will be designed to support operations with the New Generation Rollingstock (NGR) and integrate with Queensland's new signaling technology (ETCS Level 2 with an ATO overlay).
SR12	New CRR stations and infrastructure will provide for all passenger accessibility requirements.
SR13	New CRR stations will integrate into urban design fabric of the CBD precincts, supporting efficient and effective pedestrian movements, and promoting opportunities for modal integration including pedestrians and cyclists.
SR14	CRR will support the continued sharing of rail network between passengers and freight trains with rail freight operators having the same or better levels of access to the network as without the project.
SR15	Coordinator-General conditions
SR16	Stakeholder requirements

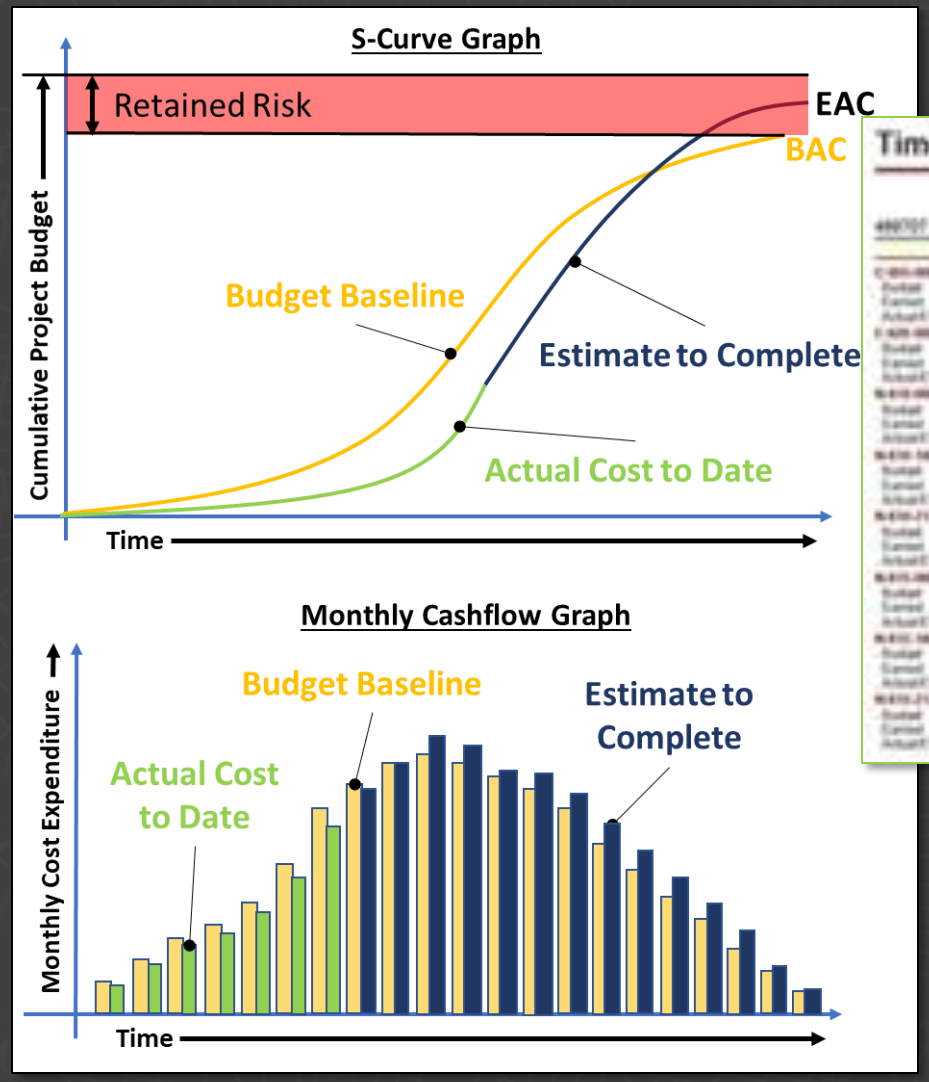
Managing complex works and integration over time

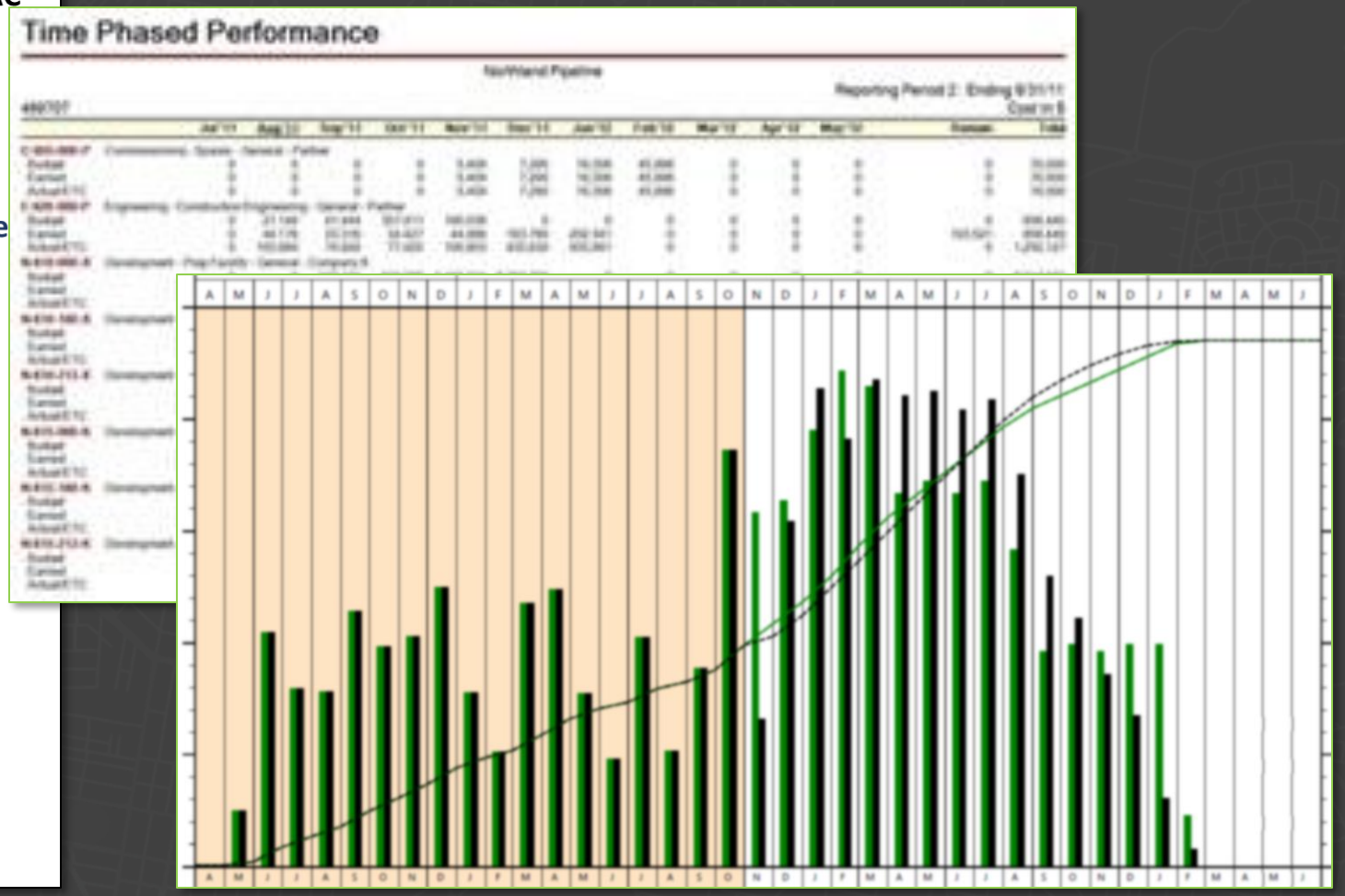




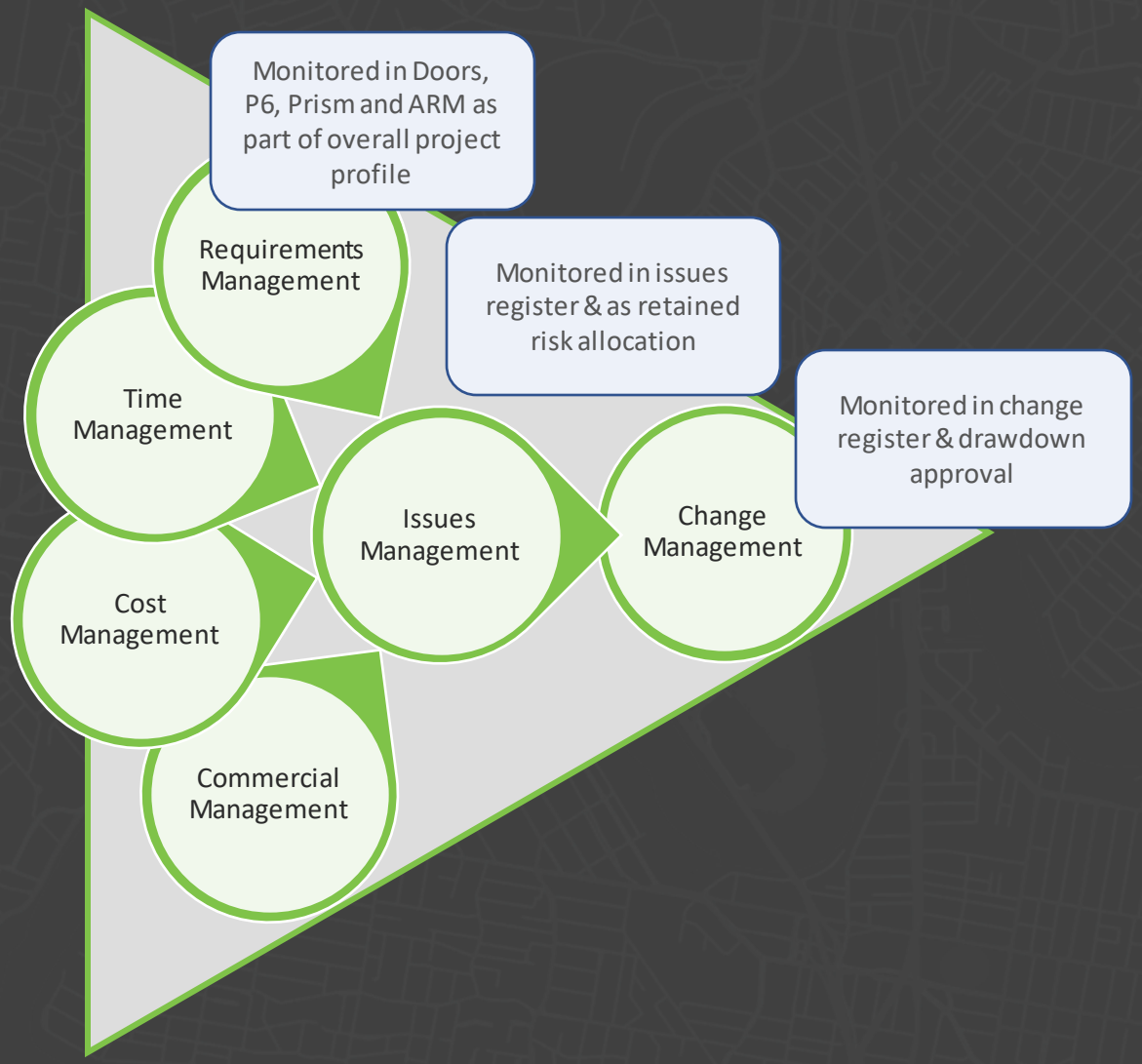


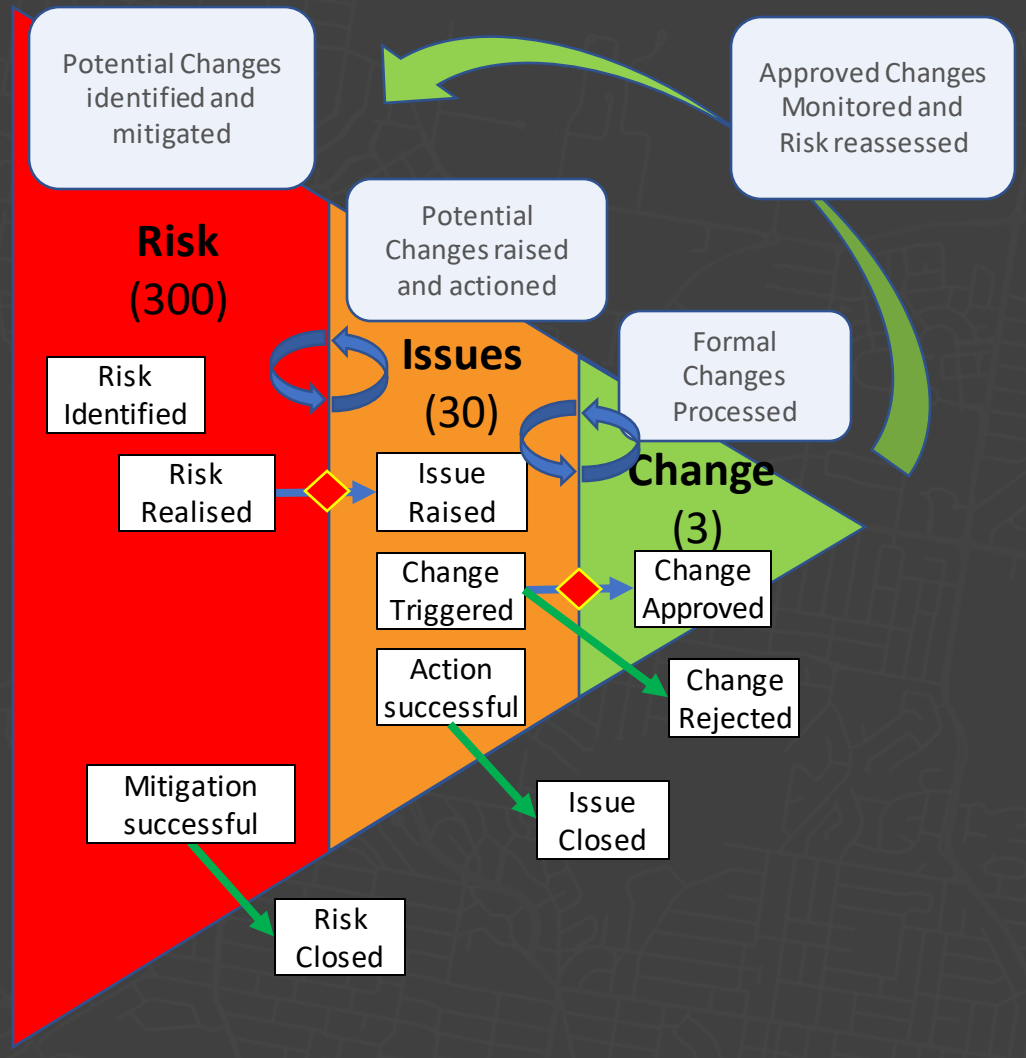
Managing a complex budget for key stakeholders



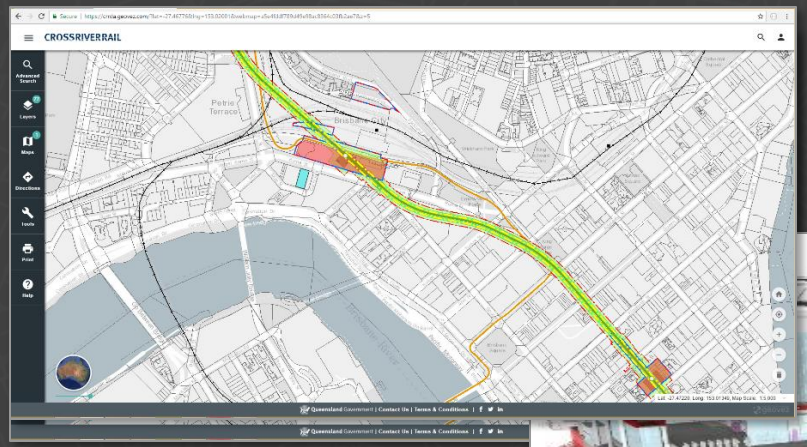


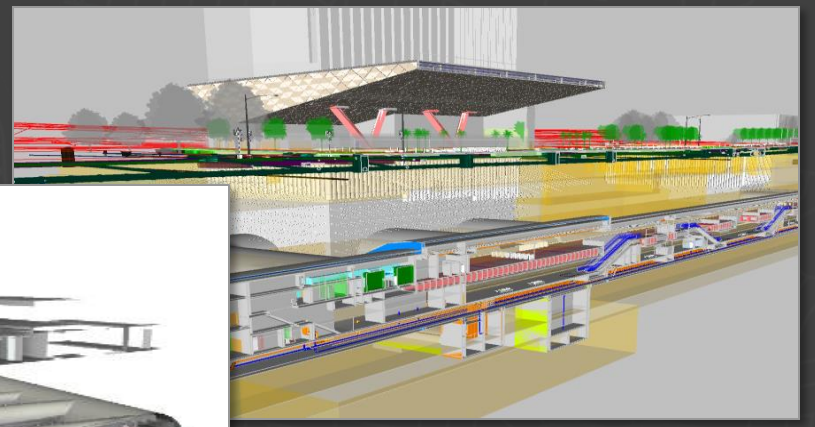
A Staged Approach to Risk Management

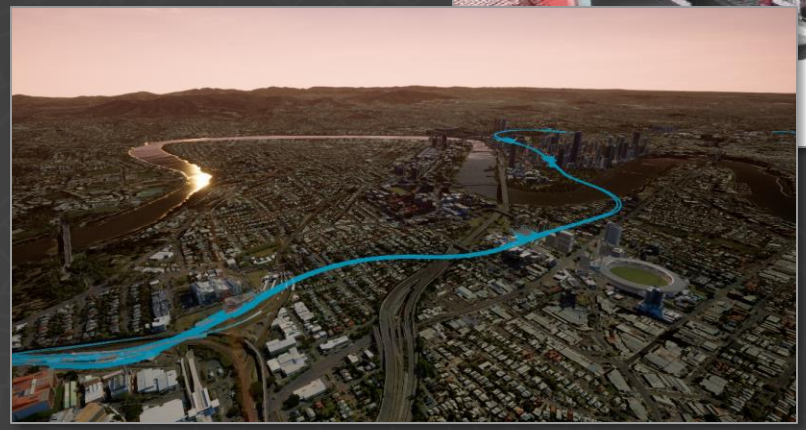


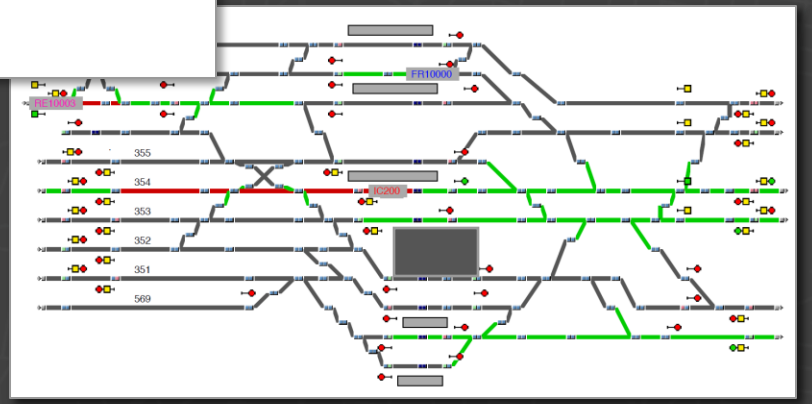


Leading the uptake of digital project management

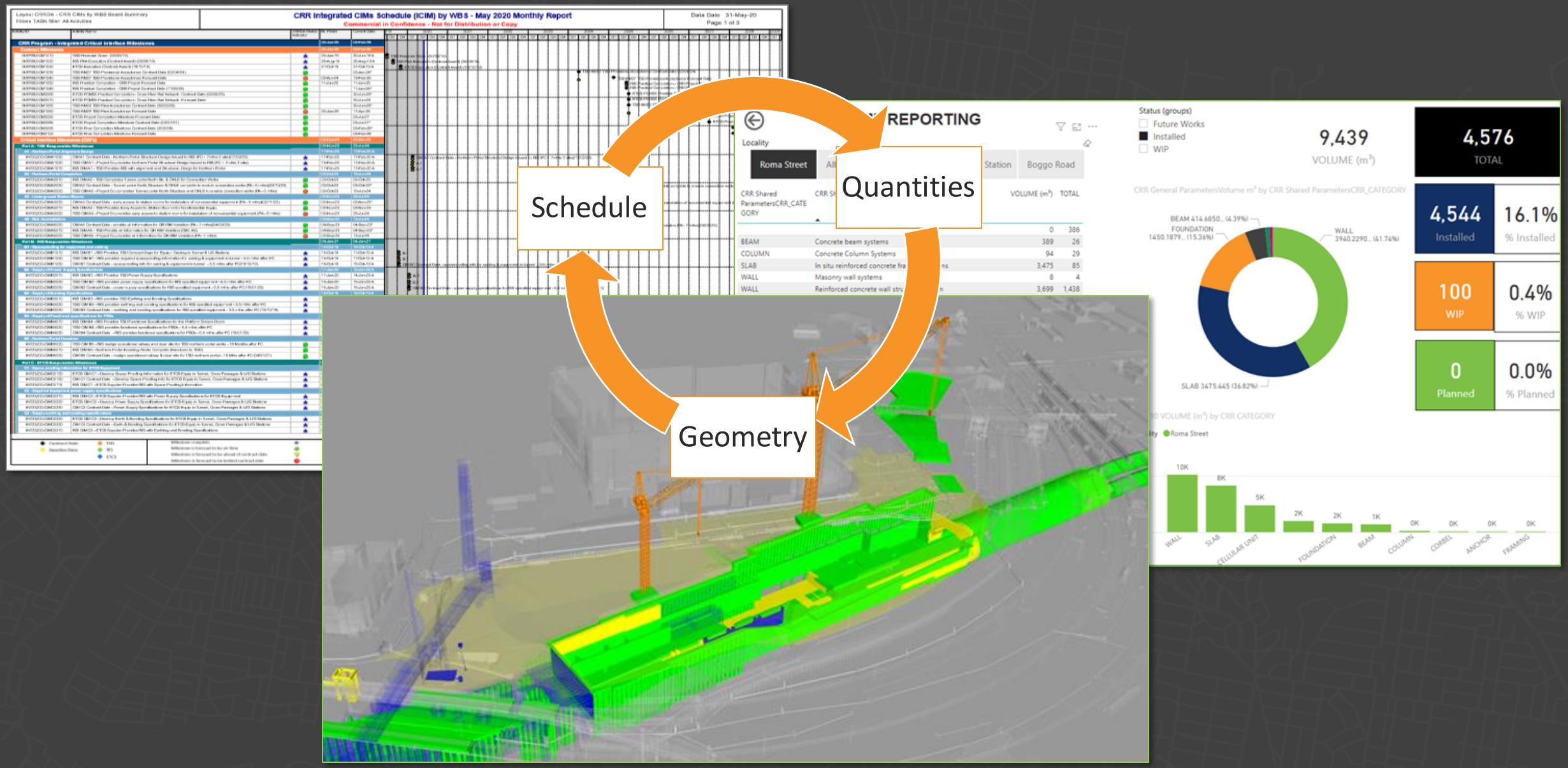








Integrating traditional methods with new innovations



Integrating trusted methods with new

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