


**LEVEL
CROSSING
REMOVAL**
PROJECT

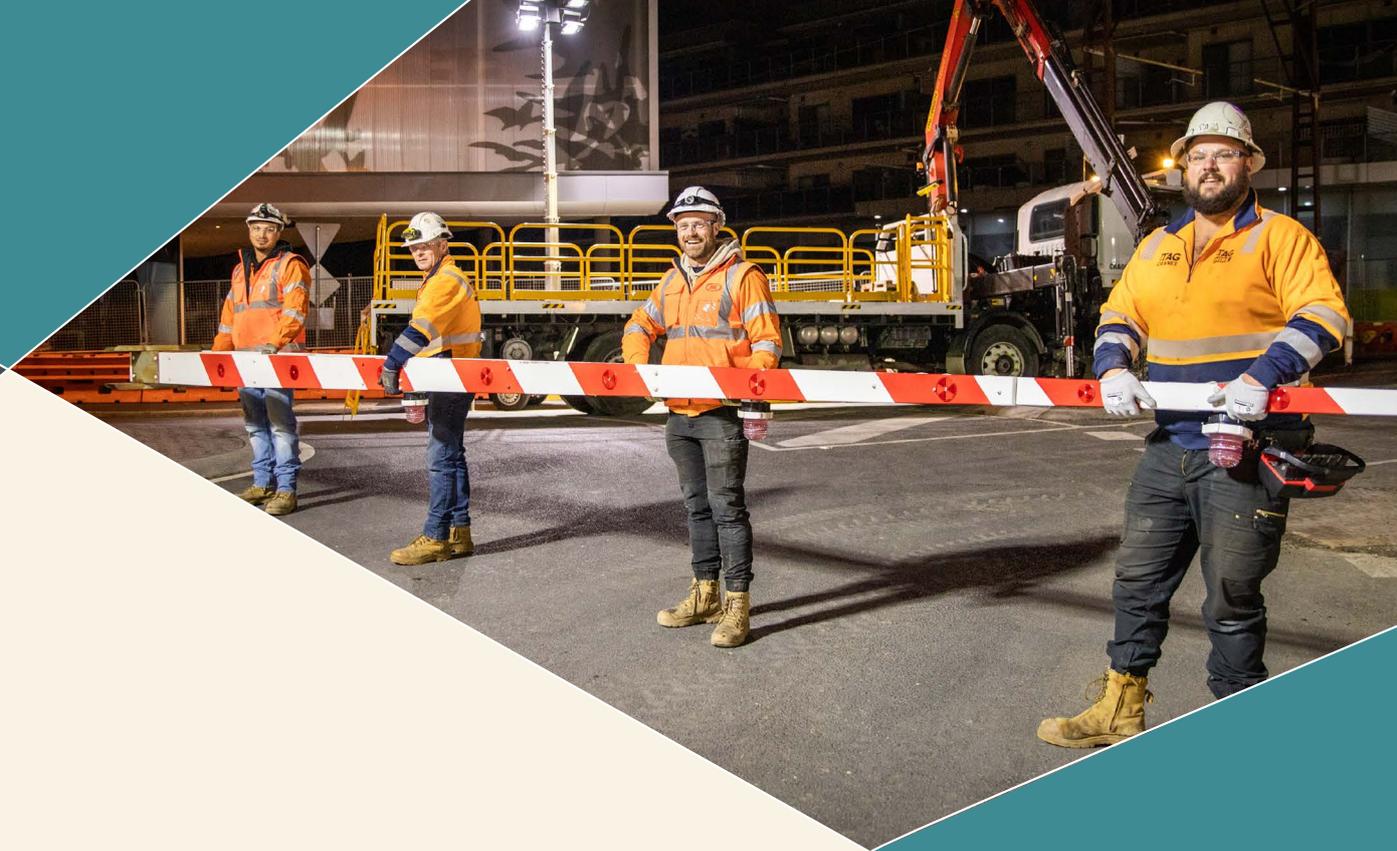
SOUTHERN
PROGRAM ALLIANCE

SOUTHERN PROGRAM ALLIANCE
ADDITIONAL WORKS PACKAGE 1
CHELTENHAM + MENTONE

AUSTRALIAN CONSTRUCTION ACHIEVEMENT AWARD 2022

TECHNICAL PAPER





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ABOUT THE PROJECT



Entrance to the new Mentone Station

In 2014, the Victorian Government announced it was removing 50 of Melbourne's most dangerous and congested level crossings by 2022.

In 2018, the Government expanded this to 75 level crossings by 2025 and then in 2021 this was increased to 85 level crossings.

Valued at \$536 million, the Additional Works Package 1 (AWP1) was awarded to the Southern Program Alliance (SPA) in early 2019.

The project is part of the \$4 billion Frankston line upgrade which includes removing 20 level crossings and constructing 13 new stations.

Located on the Frankston line in Melbourne's south east, the project scope was to remove three level crossings in Cheltenham and Mentone and includes:

- Removing level crossings at Park Road and Charman Road in Cheltenham, and Balcombe Road in Mentone, by redirecting trains into two rail trenches

- Building new, modern stations at Cheltenham and Mentone
- Upgrading the surrounding station precincts, including a Mentone Station Heritage Deck and Gardens; multilevel carpark in Cheltenham; and a 3.5 kilometre shared-use path between Cheltenham and Mentone

THE SOUTHERN PROGRAM ALLIANCE

comprises of ACCIONA, Coleman Rail, WSP, Metro Trains Melbourne (MTM) and the Level Crossing Removal Project (LXRP). It is one of five LXRP Program Alliances responsible for removing dangerous and congested level crossings in Melbourne, Victoria.





PRIOR TO SPA

Before works began to remove the three level crossings, every day more than 200 trains and about 38,000 vehicles passed through these level crossings. Boom gates were down for up to 40 per cent (49 minutes) of the 7–9am morning peak.

Near-miss collisions between trains and vehicles or pedestrians, especially students attending several schools close to the level crossings, substantiated a strong case to remove these level crossings for good.

MAR 2019	CONTRACT AWARDED EARLY WORKS COMMENCE
NOV 2019	PILING COMMENCES
MAR 2020	MENTONE & CHELTENHAM STATIONS CLOSE
MAY 2020	BALCOMBE, CHARMAN & PARK ROADS CLOSE & BOOM GATES REMOVED MAJOR OCCUPATION COMMENCES
JUN 2020	BALCOMBE, CHARMAN & PARK ROAD BRIDGES OPEN TO TRAFFIC
JUL 2020	MAJOR OCCUPATION FINISHES MENTONE STATION OPENS
AUG 2020	CHELTENHAM STATION OPENS
DEC 2020	MENTONE HERITAGE DECK & GARDENS OPEN
JUL 2021	CHELTENHAM STATION FORECOURT & MULTILEVEL CARPARK OPEN



DELIVERING THE PROJECT

Following the awarding of the contract for AWP1, the Southern Program Alliance began early works in 2019 including Combined Services Route, utilities relocation, and vegetation removal.

Major works began in late 2019 with the mammoth task of installing approximately 2000 CFA piles to create the foundations of the retaining walls for the two rail trenches.

A series of smaller rail occupations prior to the major occupation allowed the delivery team to conduct piling across the level crossings to construct the pile bridge support for the new road bridges.

The old Cheltenham and Mentone stations closed in March 2020 and the station platforms were demolished to allow for piling through these areas.

In mid-May, the Balcombe Road level crossing in Mentone closed permanently with the boom gates and other level crossing infrastructure removed. In late-May the 57-day major occupation – the longest LXP rail occupation at the time – kicked off with the permanent closure of the

Charman Road and Park Road level crossings in Cheltenham followed by the demolition of track infrastructure and the commencement of the bulk excavation of the rail trenches to remove approximately 200,000m³ of soil.

This massive construction task to build the rail trenches and road bridges included installing:

- Around 5.8km of track
- 8km of overhead wires
- 25,000 tonnes of ballast
- 36 super T-beams weighing between 30 and 60 tonnes each
- Over 400 precast planks for bridge decks weighing approximately 12 tonnes each
- Almost 7000 tonnes of reinforcing mesh steel

By June 2020, the new Charman, Park, and Balcombe Road bridges opened to vehicles and pedestrians and improved traffic flow through the two suburbs. Trains returned to the Frankston Line when the new Mentone Station opened on 20 July followed by Cheltenham Station on 16 August.

Following the successful opening of the stations, the teams continued with community spaces

and facilities. In December 2020, the project opened the Mentone Station Heritage Deck and Gardens, showcasing refurbished heritage-listed station buildings and five heritage-listed trees which were preserved during construction. In July the remaining works in Cheltenham were completed, including the multilevel carpark and station forecourt which features five palm trees carefully removed from the original station and replanted at the new station entrance.

Traffic management was critical to the success of the removal of the three level crossings and construction of the new stations. Successful engagement with Kingston City Council and VicRoads was key for road closure approvals. The project also held Traffic Management Liaison Group meetings with relevant stakeholders including VicRoads and emergency services to introduce traffic plans and traffic impact assessments to discuss alternative bus routes, detour routes, VMS signs, and traffic light loop adjustments. SPA also rolled out Mooven – a traffic monitoring app – which determined new traffic signalling sequences for optimised traffic flow.

MEET THE PROJECT TEAM



TY NEWMAN – DELIVERY MANAGER (FORMER AWP1 CONSTRUCTION MANAGER)

Ty Newman was the Construction Manager for AWP1 following his role on the Seaford level crossing removal at SPA. He is currently the Delivery Manager across all SPA packages. He has extensive experience in transport infrastructure and has worked across multiple projects in the United Kingdom including Stansted and Heathrow airports, King's Cross and St Pancras Station, and the Channel Tunnel rail link. He has also worked on pipeline projects throughout Australia and major multipurpose building construction including hospitals and high-rise buildings.



STUART SMITH – AREA MANAGER (FORMERLY OF MENTONE)

Stuart has extensive experience in engineering and infrastructure construction, having worked across multiple major transport infrastructure projects including Structures Engineering Lead with JHG on the McKinnon, Centre, and North Roads level crossing removals for LXP and as Senior Project Engineer lead for Metro Tunnel. Stuart joined SPA as Engineering Manager in 2018 for the Seaford Road level crossing removal and in 2019 became Area Manager for Mentone on AWP1. His biggest achievements are implementing successful design and delivery programs and developing new high-performing project teams.



ANTHONY BRASACCHIO – CONSTRUCTION MANAGER (FORMER AREA MANAGER OF CHELTENHAM)

Anthony is a proven Construction Manager who has managed large scale complex works in brownfield environments. Anthony has a diverse range of experience over his 15 years in infrastructure delivery and has been involved in delivering highly complex projects on some of Melbourne's largest and most iconic freeways. Anthony has managed multiskilled teams in significant alliance projects over a number of years including the successful delivery of the Cheltenham scope of AWP1.



ALEX DWYER – ENVIRONMENTAL MANAGER

Following his completion of Environmental Science at Griffith University, Alex joined the Department of Transport and Main Roads in Queensland as an Environmental Officer where he worked in flood recovery. In 2012 he joined Acciona Infrastructure Australia and worked on multiple transport projects throughout Australia including on the Warrell Creek to Nambucca Heads Highway upgrade where he was responsible for the management of environmental and sustainability elements of the project. He joined SPA in 2018 on the Initial Works Package and has remained Environmental Manager across all SPA packages.



BYRON DAVY – SUSTAINABILITY MANAGER

Byron is a highly experienced sustainability professional, bringing over 15 years' experience in driving sustainable outcomes across government, NGO and construction sectors. He has demonstrated experience integrating sustainability objectives and requirements into tender design, construction, and cost planning as well as working closely with the design and construction teams to identify opportunities to enhance sustainability outcomes. As a Green Star and Infrastructure Sustainability Accredited Professional, he focuses on material selections, climate change resilience, and carbon neutrality. Byron was the Sustainability Manager throughout the AWP1 package of works, and with the greater sustainability team, has targeted and achieved leading outcomes in both Green Star and ISCA outcomes.



MARCO ROCCI – SAFETY MANAGER

Marco has extensive experience in OH&S across multiple infrastructure projects. He joined JHG in 2009 and worked on the Sugarloaf pipeline and Baron Water cutting projects before moving to McConnell Dowell in 2011 as a safety coordinator on the Breakwater Road Bridge. He joined JHG again in 2012 as a safety manager, working on the LXP program including the inaugural Burke Road level crossing removal and Skye-Overton. He joined SPA in 2019 as a Program Safety Manager for AWP1 and recently became the Alliance Safety Manager in 2022.



SHAUNA MOORE – SENIOR PROJECT ENGINEER

Shauna has over 10 years' global experience on a wide range of projects ranging from domestic and residential projects, landfill regeneration, windfarms, and has just completed her 4th level crossing project. She started with SPA in 2018 and in 2019 she joined the AWP1 team as a Senior Project Engineer for structures at Mentone. She recently completed delivery of the Bonbeach level crossing removal and is currently working on the Melbourne Underground Rail Loop. Shauna is passionate about changing the industry by increasing diversity especially for women in construction and making the industry more sustainable and environmentally friendly.



WILL STREET – RAIL CONSTRUCTION MANAGER

Will has several years of experience in the rail industry and has taken on multiple roles across various phases of a project life cycle including transitioning into Construction and Project Management for several brownfield rail projects in Melbourne. He has worked on various projects including Regional Rail Link Work Package B, Preston Depot Redevelopment, Southland Stations and is now the Rail Construction Manager for SPA across all packages of works. On AWP1 Will looked after all rail construction including installation of new rail infrastructure from Highett to Parkdale, modified traction substations, new Signalling Computer-Based Interlocking (CBI) and a new Train Control System.



SASHA WHITE – DESIGN MANAGER

Sasha provides leadership to a design team of over 200 designers at SPA. He has project managed both structural and interdisciplinary design teams on large scale infrastructure projects and previously managed the Bridge & Structures team in the WSP Transport Infrastructure Business Group. His experience extends across a broad range of technical disciplines including rail, civil works, and station building designs. He has also utilised the latest software programs to design numerous steel, reinforced and prestressed concrete structures.

INNOVATIONS



Precast lift pit installation in the Cheltenham rail trench



SPA embedded innovation and productivity into its design and delivery of AWP1. In 2020, SPA launched its Continuous Improvement initiative, SPA2020+, with the goal to “Sustainably deliver infrastructure to improve people’s lives.”

Using lessons learnt from its Initial Works Package, SPA identified opportunities for productivity improvements in its design and construction methodology for AWP1.

These innovations helped successfully deliver the project and have in turn been promoted to LXP, through its Joint Coordination Committee, and to the broader rail and transport infrastructure sector, potentially leading to industry-wide change.

Below are some of SPA’s innovations from AWP1 promoted at LXP’s Virtual Innovation Market – a virtual platform where LXP Program Alliances can share

innovations and technologies – which have been widely praised by other Alliances for their improved efficiency, safety, and cost saving.

TEMPORARY PROPPING OF INTEGRAL BRIDGES

SPA used permanent works bridge girders as temporary propping for the trench retaining wall at Cheltenham. The use of bridge beams as temporary props had a direct bearing on the critical path program. The concept effectively removed eight shifts in the main occupation by removing the design constraint of the bridge deck being poured prior to excavating to the founding level. This had three benefits for SPA. Firstly, there were cost benefits as the trench wall could be optimised based on a propped design. Secondly, there were significant program benefits during the occupation including handover deadlines by de-coupling the excavation of the trench from casting and curing the deck slab. Lastly, it was suitable to use with integral

abutment bridges which have long-term maintenance benefits by eliminating bearings and expansion joints. With more rail trenches likely to be built in metropolitan areas of Australia where space is confined, this unique and creative innovation to propping retaining walls will improve the efficiency when excavating trenches and improve the durations of overall rail occupations. This in turn minimises the impact to local communities and commuters.

QUI CUTTER PILE BREAKING METHOD

Before beginning piling works at Mentone and Cheltenham, the project investigated innovations in piling technology and adopted the ‘qui cutting’ method. The technique, which uses a chemical reaction to generate cracks in the concrete pile to easily remove the head of the concrete pile, was used at Mentone and Cheltenham sites during piling between November 2019 and May 2020.

This reduced labour costs by removing the need for workers to use jackhammers to break apart pile heads, eliminated safety risks from the use of jackhammers including nerve damage, and increased the speed of breaking piles. LXP approved the qui cutter initiative as an innovation and included it in its innovation register.

PRECAST LIFT PITS

Lift installation and commissioning is typically on the critical path to completion and opening of stations. At Cheltenham Station the opportunity to commence the lift overrun pits early was not available as the lifts are situated at the deepest point of the trench and the entire station build was completed during the occupation following completion of the trench excavation, retaining wall and structures works with no ability to complete any early works. To assist in optimising the critical path and mitigating the risk to handover to rail systems during the occupation, a change

was instigated to cover the lift overrun pits to precast rather than in situ concrete.

This delivered two key benefits. Firstly, the main occupation critical path was able to be reduced by 40 hours to mitigate duration extensions in other activities discovered during the detailed planning of the main occupation program. Secondly, a financial benefit for the project was able to be realised as market pricing for form reo and pour works was significantly higher than the precast option. Additionally, SPA used a 750-tonne crane to install the lift pits as well as the super-T beams which saved time and costs in reduced crane mobilisation and congestion on site.

REDUCER ELBOW HARD-LINE COVER

During concrete pump operations, the area at the hopper of the concrete pump is required to be attended by both the pump operator and concrete delivery driver. This area is

immediately adjacent to a hard-line reducer elbow that suffers high wear due to the nature of its position and the pump operations resulting in potential for personal injury if this hard-line fails.

The recommended solution for concrete operations during the AWP1 major occupation was to install a protective sleeve on both straight-line reducers and elbow reducers prior to any pumping operation in order to isolate the potential for injury and/or safety incidents occurring in the work zone should the reducer fail.

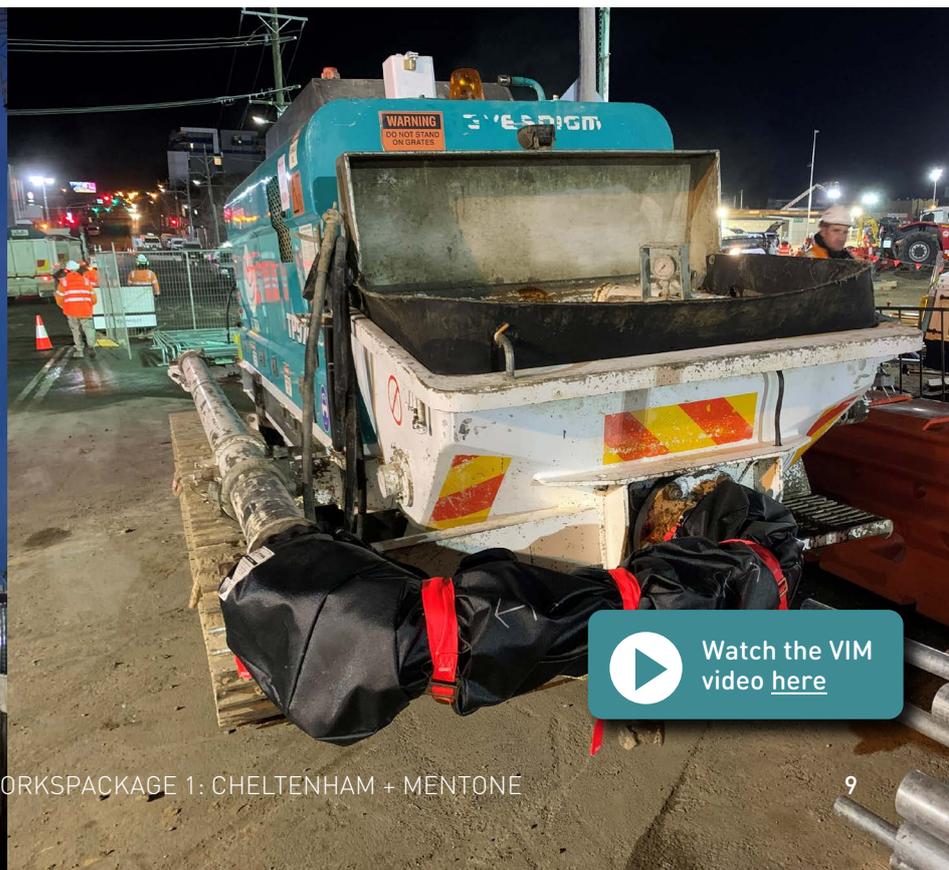
The innovation uses a commercially available product called a Rhino Wrap that is cut to size, wrapped around the steel line reducer, and secured in place with straps. The elbow protective sleeve is easy to install and can be easily removed to enable UTT monitoring and line priming/blowout. The benefits of this innovation are its reduction of safety incidents and risk of personal injury as well as cost saving from down-time caused by a hard-line failure incident.



Watch the VIM video [here](#)

Inset left: Qui Cutter

L-R: Bridge girders in action, Reducer Elbow Hard-Line Cover



Watch the VIM video [here](#)

SUSTAINABILITY AND THE ENVIRONMENT



Landscaping at the new gardens in Mentone

RATING

SPA was also required to achieve a minimum score of 65 under ISCA v1.2 and a 4-Star Green Star outcome. SPA set its sights higher – 75 points for ISCA and a 5-Star Green Star outcome.

The AWP1 design submission targeted a ‘Leading’ design rating from ISCA due to its ballast reuse program, Indigenous engagement in design, and overall reduced energy and materials use. SPA achieved 87 points for its design submission.

SPA also earned a 5-Star Green Star design review rating for both Cheltenham and Mentone stations, representing Australian excellence in building design. Cheltenham Station received a score of 70/100 and Mentone Station received a score of 71/100.

The interim design rating was gained by:

- Green Star-compliant energy and water metering
- Australian best-practice acoustic controls and conditions

- Green Star-compliant materials throughout the stations
- Innovation points awarded for SPA’s local procurement approach, the project’s community benefits, and educating contractors about Green Star.

WATER AND ENERGY REDUCTION

SPA sought project-wide opportunities to reduce water and energy consumption by:

- Using the Victorian Government’s Energy Upgrade Scheme to halve the Wells Road facility’s (SPA’s logistical and storage warehouse) energy consumption, saving annually around 85 tonnes of CO₂-e (with the facility in operation at least five years)
- Offsetting 100% of electricity greenhouse gases in seven SPA offices – 263 tonnes CO₂-e reduction annually
- Installing solar PV system of ~20kW solar systems at Mentone and Cheltenham stations, providing a 40% reduction in peak electrical demand
- Achieving an 80% improvement on GHG emissions reduction for Mentone Station and a 50% improvement on GHG emissions reduction for Cheltenham Station
- Using VT Hybrid lighting during construction works, reducing fuel consumption by 90% compared with diesel towers and 66% compared with conventional LED towers. LXP has shared this innovation with other Alliances via its innovation register
- Fitting efficient water fixtures to capture rainwater flow from the station roofs into on-site storage tanks to be used for toilets and platform washdowns instead of potable water

- Planting drought-resistant landscaping in and around the station precincts to reduce water usage for landscaping maintenance.

SUSTAINABLE MATERIAL USE

SPA used sustainable materials where possible across Cheltenham and Mentone including:

- Using steel for the station building structures sourced from steel makers with ISO 14001 Environmental Management System accreditation from suppliers who are members of the World Steel Association’s Climate Action Programme
- Using minimal PVC materials where possible and if required materials had to meet Best Practice Guidelines for PVC use.

MATERIAL REUSE

SPA reduced 37% of materials across AWP1 by adopting the following measures:

- Salvaging and repurposing bluestone from the Mentone Station gardens and heritage bricks from the former station precinct for use in the new Mentone Station Heritage Deck and Gardens

- Reusing soil on-site where opportunities were available
- Revision of pile design from continuous to contiguous flight auger (CFA) piles for the rail trenches
- Removal of the requirement for a tanking slab at Cheltenham
- Reusing 8000 tonnes of ballast
- Redesigning the trench retaining wall ends by replacing concrete piles with concrete panels.

PALM TREE TRANSPLANTATION

Five palm trees were removed from the old Cheltenham Station precinct and transported off-site in early 2020. These palm trees held much value and sentiment for locals and therefore were incorporated into the new station designs following community feedback.

Due to the limited space on an embankment where the palm trees were located, the traditional method of excavating around the entirety of the roots was not feasible. Instead, airbags were used to cut the roots of the palm trees as an alternative method.

To achieve this, small trenches were dug on a 45-degree angle under each tree. The trees were then supported by a sling while pneumatic airbags were inserted into the trenches and inflated.

The airbags effectively “popped” the root ball of the palm tree up and out, causing the roots to break and freeing the palm tree from the ground. The five palm trees were safely replanted between August and October 2020.

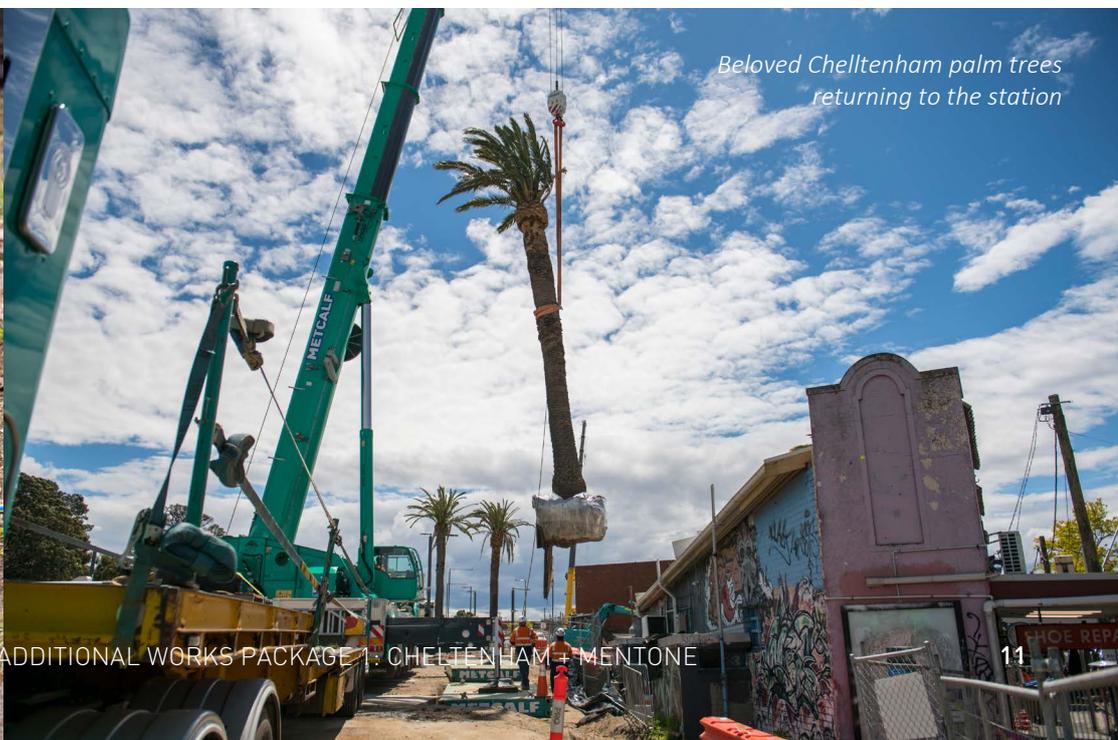
VEGETATION AND LANDSCAPING

At Cheltenham and Mentone where vegetation removal was required, the project worked closely with arborists to determine which trees needed to be removed and how to minimise environmental impact. The project also worked with environmental specialists to safely remove wildlife. SPA planted roughly 40,000 plants and trees along the rail corridor in Mentone and Cheltenham as well as in the new Mentone Station gardens. Additionally, SPA returned several species of plants to the new Mentone Station gardens which had been carefully removed prior to the works including birds of paradise and succulents.

Close up of the airbag used to remove the palm trees



Beloved Cheltenham palm trees returning to the station



*Mentone Station building
being temporarily relocated*

*Inset: Refurbished heritage-
listed Mentone Station*



MENTONE STATION AND GARDENS

The Mentone Station and gardens are listed on the Victorian Heritage Register which obligated SPA to protect the heritage-listed station buildings and five heritage listed trees in the gardens. While the larger up-track building remained protected in place during works, the smaller down-track station building was carefully relocated nearby to enable piling for the rail trench.

The station building was lifted intact by a heavy-duty crane using a steel frame as the lifting point. The building was returned to its original position in July 2020 following the major occupation. The canopies of both buildings were removed and stored off-site during major construction. SPA refurbished the old station buildings and partially fitted them out as part of the construction of the Mentone Station Heritage Deck.

The five heritage-listed trees were protected by temporary fencing during works. This allowed for clear delineation and protection

from construction activities in the gardens, successfully preventing any damage to the trees.

The importance of protecting these heritage-listed assets was also driven by community engagement, especially with the Friends of Mentone Station and Gardens group. The new Mentone Station Heritage Deck and Gardens opened in December 2020 and in May 2021 SPA and LXP hosted an official opening ceremony community event with

the Friends of Mentone Station and Gardens group.

CHELTENHAM STATION

Although not heritage-listed, SPA disassembled the former Cheltenham Station buildings which were built in the late-1880s to be restored and repurposed.

Working in collaboration with LXP and Bayside City Council, the smaller Frankston-bound station building will be rehomed in Cheltenham Park close to



*Mentone Station Heritage Deck and
Gardens opening event for the community*

the new station precinct as part of a multi-purpose community facility. This smaller building was removed off-site in April 2020 when SPA carefully disassembled it by removing individual walls and chimney bricks and storing them for restoration.

The larger city-bound station building was removed during the major occupation in May 2020. As part of an agreement with VicTrack, the asset owner, the station building was delivered to the Mornington Railway Preservation Society to assist in the operations of the heritage railway group. This again demonstrates that SPA recognises history as an important factor when building new rail infrastructure for communities.

Although it was not feasible to incorporate the old station buildings into the new station precinct, SPA worked in

collaboration with the necessary stakeholders to identify and implement a solution that would not only protect the historical value of the buildings but also give them new life and meaning for the local community.

TRACK INFRASTRUCTURE DONATION

SPA donated and delivered more than six kilometres of rail, 5000 sleepers, and a range of other track materials from Cheltenham and Mentone to several heritage railway organisations throughout Victoria.

The concrete sleepers donated by SPA replaced old and rotting wooden sleepers used on these heritage railways and provide a much longer lifespan for these railway routes compared to wooden sleepers. This in turn allows these groups to continue their operations, reduce maintenance costs, and helps

support regional tourism in Victoria.

This initiative illustrates how major rail infrastructure projects can not only save on material wastage of track assets but also provide niche rail operations such as these historic railway groups a new lease on life with upgrades to their rail network, allowing them to operate into the future.



Victoria's much-loved heritage steam trains are being kept on track by a special recycling scheme. Rather than being thrown out, waste from the level crossing removal project is being used to send some rail lines back to the future. [@NickMcCallum7 #7NEWS](https://www.7news.com.au)



[Click here to watch Channel 7 News coverage](#)

[Watch the LXP video here](#)

Cheltenham Station building being disassembled

Inset: Arrival of the larger Cheltenham Station building to Mornington



SAFETY WORKING WITH COVID-19



Mandatory mask wearing on site

The major works for Additional Works Package 1 took place during the COVID-19 pandemic including during the first lockdown in March 2020 and continued up until the fourth lockdown in May and June 2021.

Construction on large-scale public infrastructure projects, including on SPA, was deemed critical under each of these lockdowns.

SPA recognised that sustainability on such a large project also needed to include staff and workforce health and wellbeing. Maintaining a strong retention rate for its workforce and staff was vital to delivering AWP1 in a safe and sustainable way. Therefore, during a time of increased stress and anxiety due to the pandemic, SPA came up with several novel solutions to retain its workforce and continue works on AWP1 in a sustainable manner.

SPA implemented all DHHS COVID-19 recommendations and regulations including:

- Mandatory social-distancing including at pre-starts, on-site, and in offices for those

unable to work from home

- Mandatory mask wearing where workers were unable to carry out duties socially distanced
- Mandatory mask wearing indoors and outdoors when mask wearing restrictions were in place during 2020 and 2021 lockdowns
- Working from home arrangements for those able to work from home and protocols for those unable to work from home such as workers, engineers, and safety coordinators.

SPA also went above and beyond to keep its staff and workforce safe during the pandemic, implementing the following initiatives:

- Launching the “I’m Essential” campaign recognising the hard work of the workforce and staff during the early stages of the pandemic
- Promoting its Employee Assistance Program
- Free COVID-19 testing for workers and staff at Cheltenham and Mentone through Incolink – a health and wellbeing initiative for

workers in the construction industry. This initiative was strongly supported by LXP, the Victorian Government, and the CFMEU Vic-Tas.

- Clear communications through emails, SMS notifications, posters, and TV screens to inform workers and staff of current rules, health recommendations, and administrative processes for positive COVID-19 results or testing requirements
- Managing staff and worker movements including limiting unnecessary travel between certain sites and offices
- Mandatory temperature testing and scanning on at the entrance of each site and office
- Enhanced hospital-grade

cleaning of site compounds and offices

- Staggered shifts and break times
- Installing Perspex screens across all offices and sites where necessary
- Virtual morning teas with regular site updates and motivational speakers
- Launching the My Wellbeing Platform to provide health and wellbeing tips and programs for staff and workers.

SPA parent company ACCIONA also rolled out on AWP1 a trial to test disposable masks worn by workers and staff. These masks were sent to a laboratory to test for traces of COVID-19 to combat the pandemic on worksites.

Watch The House Of Wellness coverage of the mask testing [here](#)

Implementing these novel solutions required no legislation. SPA recognised the immediacy of implementing COVID-19 protocols and procedures at an early stage of the pandemic, thus preparing its workforce. By acknowledging



Top: Mobile COVID-19 testing on site for SPA staff and workers
Below: Examples of the "I'm Essential" campaign posters

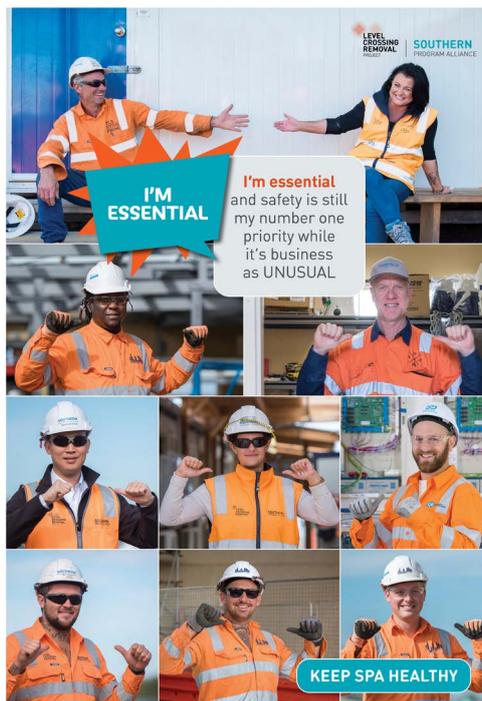
the gravity of the situation and how important it is to keep one another safe while continuing with works, SPA was able to demonstrate a strong and healthy work culture based around safety and wellbeing during the pandemic.

Implementing similar solutions in the rail sector, which has a transient flow of contractors and subcontractors, will ensure that health and wellbeing is at the forefront of many rail projects. This will provide a sustainable workflow on future projects where workers and staff wellbeing is not only acknowledged but actively promoted.

SPA also continued with its non-COVID-19 health and wellbeing initiatives throughout AWP1 to ensure the safety and wellbeing of its workforce.

Other health and wellbeing initiatives rolled out across AWP1 include:

- Physiotherapist talks on-site to demonstrate exercises to prevent injury
- SPA Safety Day to bring together workers together to recognise safety achievements and reiterate SPA's safety messages
- Skin cancer checks
- Discounted memberships with local gyms.



INDIGENOUS ENGAGEMENT



Totem poles outside Mentone Station

Cheltenham and Mentone are located on contested Aboriginal land. Currently, three groups of traditional owners claim the area – the Bunurong, Boon Wurrung, and Wurundjeri.

SPA's co-design process with local Aboriginal knowledge holders demonstrated how authentic and ethical engagement can culturally and economically empower local Aboriginal communities while providing strong sustainable outcomes that incorporate the area's diverse history and viewpoints.

SPA exceeds requirements that traditionally limit Aboriginal participation in rail projects to casual labour forces (achieving participation targets) or legislative compliance.

RECONCILIATION PLAN AND FRAMEWORK

SPA developed and implemented a project-specific Reconciliation

Action Plan (RAP) to provide program governance.

SPA committed from the outset to implement the 'Reconciliation and Aboriginal Participation on Major Infrastructure Projects' Framework. This approach focuses on sustainable, long term outcomes to building the Aboriginal estate. The framework commits to working with Aboriginal people in the design, building, and operation of the project and is place-based, participatory and focused on designing highest social and economic impacts and outcomes for Aboriginal people.

STATION INDIGENOUS DESIGN ELEMENTS

SPA's design team worked in close collaboration with Traditional Owners and the SPA Aboriginal Affairs Consultant early in the project to incorporate Indigenous elements into the design of the new Cheltenham and Mentone stations including urban design and landscaping.

SPA believes it is important to leave legacies for communities that integrate Aboriginal elements into their designs to acknowledge the Traditional Owners and the importance of cultural Indigenous history in the areas in which SPA works.

Various workshops were held with the Traditional Owners to bring them along the journey of design.

These workshops were able to incorporate several design elements into the new Cheltenham and Mentone stations including:

- Diamond patterns symbolising unity and other symbols etched into the footpath and around the station forecourt areas
- Welcome mat design pattern at the entrance of Cheltenham Station
- Installation of six totem poles outside Mentone Station featuring patterns representing the diverse Bunurong clans.

MENTONE STATION AND HERITAGE DECK SMOKING CEREMONY

Mentone sits in contested Aboriginal land between Bunurong, Boon Wurrung, and Wurundjeri groups. To avoid favouritism of one particular group over another, SPA engaged with all three Traditional Owner groups to participate in the official opening event of the new Mentone Station Heritage Deck and Gardens in May 2021. All three groups were invited to perform the traditional smoking ceremony. This marks the first time the three groups have been invited to perform the ceremony together, representing an important novel solution for sustainably engaging with Traditional Owners in the future. Rather than disregard one group, SPA has demonstrated that by engaging with all Traditional Owner groups it addressed grievances and helps foster greater collaboration between groups. This allows for greater cooperation between Traditional Owner groups and rail projects working on contested Aboriginal land.

PROCUREMENT

SPA has several targets for its Aboriginal workforce engagement. The first is a target of 2.5% of all hours performed on the project by Indigenous people. The second target is a 3% spend of social enterprise which includes Aboriginal-owned and run businesses.

SPA engaged with several Indigenous-owned contractors to carry out works at Cheltenham and Mentone Stations. These include:

- The installation of sustainable energy solutions (solar) by Aboriginal business Bunjil
- Monero constructions

delivered footpaths, kerbing and general concrete work

- Totem poles designed by Steve Parker, an Aboriginal artist, for the Mentone Station precinct.

As a result of these targets, over 40,000 hours of work have been performed by Aboriginal people across a variety of Aboriginal and non-Aboriginal companies. Additionally, over \$11 million has been spent on Aboriginal businesses as part of works at Cheltenham and Mentone.

These listed initiatives have generated positive outcomes for local Indigenous people and communities, whose designs have become vehicles for economic and cultural empowerment, and to reconnect Country and people. This helps encourage more socially sustainable outcomes for Indigenous communities and workforce.

The designs have helped enrich SPA's infrastructure, adding meaning and deeper Indigenous connections for the wider community's appreciation. Proactively seeking these opportunities across the rail industry helps develop a new Aboriginal design vernacular so design and knowledge is used in a contemporary way in major transport infrastructure projects to reflect Aboriginal Australia's history and living culture.

SKILLS AND CAPABILITY

SPA's legislative target under the Major Projects Skills Guarantee (MPSG) framework, which encourages opportunities for cadets, apprentices, and trainees, was 10% (95,555 hours) of the deemed labour hours at the TOC phase of AWP1. The project significantly exceeded this target by achieving almost 130,000 MPSG hours.

Under its contract for AWP1 with LXRP, SPA was required to spend



Traditional smoking ceremony at Mentone

3% of its TOC (approximately \$15,500,000) on social procurement. SPA far exceeded this, with almost \$27,000,000 of social procurement spend – almost double than required.

This included spend on wages for priority job seeker cohorts including veterans, refugees, and Aboriginal and Torres Strait Islanders.

SPA was also committed to upskilling other areas of the workforce during its AWP1 works and rolled out numerous training and development initiatives including:

- The Coleman Rail IBL Cadetship, providing workplace experience, job training, and mentorship for undergraduate engineering students while they completed their university degrees
- Signalling Cadetship Program, embedding engineers who are taking further studies in signalling and electrical engineering into SPA's signalling team for job training on AWP1
- Gen44 Career Seekers, providing internship and work experience opportunities for refugees and asylum seekers, in collaboration with SPA's parent company, ACCIONA, on various packages of works at SPA, including AWP1.

COMMUNITY AND STAKEHOLDER ENGAGEMENT



Local traders on board for a community event organised by SPA

SPA's community, trader, and schools engagement consistently exceeded the AWP1 contract's set targets. Bringing communities along on major construction journey provided all parties with untold benefits: it helps people engage with, and support, the construction industry, and helps our industry modernise.

With good engagement comes community support for development, stronger awareness of the infrastructure potential to enhance community life, and improves communities' understanding of the sector and its complexities.

SURVEY RESULTS

Every six months the SPA project engagement is audited: how it is engaging and informing the community, stakeholders, road users and rail passengers of disruptions or impacts? This includes timely response

to outstanding enquiries and frequency of communications.

Community satisfaction is measured via a survey conducted by IPSOS. Each IPSOS survey has indicated community satisfaction over and above the 70 per cent benchmark in SPA's contract.

RESIDENT RELOCATION

To accommodate local residents during noisy works, SPA offered relocation options for affected households. Noise-modelling carried out by the environment team to measure decibel levels identified households which

would require relocation. Relocation options varied depending on the needs of certain households including household sizes and geographic preferences. A local travel agent managed the booking process and assisted in identifying suitable accommodation options including serviced apartments and short-term house rentals. Other respite options were also offered including noise cancelling headphones to households and individuals who chose not to take up relocation. In total, SPA purchased 5,186 nights for

WAVE 1 JULY 2019	COMMUNITY & STAKEHOLDER 78.9%
	ROAD AND RAIL 70.4%
WAVE 2 JULY 2020	COMMUNITY & STAKEHOLDERS 81.9%
	ROAD AND RAIL 76.6%
WAVE 3 APRIL 2021	COMMUNITY 78.4%
	STAKEHOLDERS 91.0%
	ROAD AND RAIL 80.7%

Cheltenham residents and 4,115 nights for Mentone residents across the entirety of the project.

TRADER ENGAGEMENT

Cheltenham and Mentone both have large shopping villages with 138 traders and 109 traders respectively. These include restaurants, cafes, bars, professional services, and speciality shops.

SPA's key trader objectives were to:

- Maintain and build on positive relationships with local traders
- Inform traders of disruptions and impacts of construction works
- Support traders through a variety SPA and LXP initiatives
- Face-to-face updates and virtual meetings during COVID-19 lockdown
- 'Shop Local' campaign to encourage people to shop in Cheltenham and Mentone
- Competitions including golden ticket competition for the public
- SPA workforce competitions and vouchers to encourage workers to shop locally
- Promoting local traders through news media, community updates, and LXP's social media channels
- Using local physiotherapists to speak to workers onsite during major construction
- Offering free mentoring sessions with Small Business Victoria

SCHOOLS ENGAGEMENT

SPA worked with five high schools and two primary schools in Mentone and one primary school and a special needs centre in

Cheltenham. School communities were significant stakeholders in Mentone and Cheltenham where more than 6500 students were directly impacted by the works (within one kilometre of work areas).

SPA's key objectives towards schools were to:

- Maintain and build on positive relationships with each school
- Inform each school of construction impacts and disruptions including school bus detours
- Involve school and students in the project to leave a legacy
- Educate students on different STEM careers and facets of infrastructure construction projects.

SPA's key school initiatives included:

- Regular updates on road and public transport disruptions

- Pop-up info sessions at schools with engineers and communications team members
- Trenching and water filtering activities with SPA engineers
- SPA participation in careers expos
- Art murals by Cheltenham Primary School and St Patrick's Primary School
- Mentone Ambassadors' Program which provided students opportunity to speak to engineers
- International Women's Day breakfast hosted at local venue for school students and teachers
- SPA work experience with St Bede's and Mentone Grammar students.



Area manager Stuart Smith talking to students from Mentone



Site compound hoarding with artwork by Cheltenham Primary students

CONCLUSION



Balcombe Road boom gate removal

The Additional Works Package 1 transformed the communities of Cheltenham and Mentone.

By removing three dangerous and congested level crossings, building two new stations, and revitalising the areas with open spaces and shared-use paths, the project helped remove barriers and reunite local residents living either side of the railway line.

People can now safely and easily cross the line to take children to schools, visit each other, support local cafes and businesses, and enjoy new, convivial open spaces.

The two-month construction blitz (late-May to late-July 2020) involved 24/7 works and 1,700 workers who excavated 200,000 cubic metres of soil, built two kilometres of rail trenches, and two new stations. The work during COVID-19 lockdowns, included temperature testing, mandatory masks, and social distancing.

New innovations and thinking outside the box allowed the

design and delivery teams to implement new ways of undertaking construction that improved safety as well as increased efficiency and cost saving for the project.

Design and delivery incorporated sustainability initiatives and demonstrated respect for residents' sense of 'place'. To people's delight, building materials were recycled, trees transplanted, solar panels installed at stations, potable water use lowered by 80% and energy use by 35%, and heritage buildings and gardens were protected. Local community groups contributed ideas and support for the new Mentone Station Heritage Deck and Gardens, and the project collaborated with local Indigenous communities and artists to incorporate Indigenous design elements in the new station precincts for all to enjoy.

From design to construction to completion, the Additional Works Package 1 has encapsulated excellence in engineering and the project team and broader SPA support team have demonstrated commitment to quality and delivery that has been celebrated by the community, the Level Crossing Removal Project, and the Victorian Government as a whole.

