



Crossing into exciting territory

In overseeing one of Victoria's largest infrastructure projects in recent years, the Level Crossing Removal Authority has sought to make a positive contribution to the industry when it comes to sourcing steel locally.

Over the past two years, the Authority has already overseen upgrades to eight train stations and the removal of 10 dangerous level crossings across metropolitan Melbourne, separating road and rail to eliminate the need for boom gates.

Overall, 50 level crossings are slated for removal by 2022 and more train stations will be either upgraded or built from scratch, with construction underway at 15 level crossing sites as of August this year.

Alongside more than 12 million hours worked to date, the amount of resources needed for this project is extensive.

For example, as of July, the Authority had overseen the construction of more than 12,000 piles in various forms, more than 100,000 square metres of capping and 6000 sleepers.

In projects completed or awarded to date, thousands of tonnes of steel have been purchased for use in a myriad of ways, ranging from the cladding on the outside of station buildings, to supporting beams and steel reinforcing inside concrete.

Take Burke Road in Glen Iris for example – the first level crossing removed under the project in January 2016 with around 130 tonnes of steel reinforcement positioned in 56 hours as part of the works to support the bridge deck. .

Another example of steel use can be seen in the completed North, McKinnon and Centre Road level crossing removals, with a total of 3000 tonnes of steel reinforcement supplied.

The use of Australian resources is paramount, and the Level Crossing Removal Project (LCRP) is committed to maximise the use of locally milled steel as a strategic project of the Victorian Industry Participation Policy (VIPP).

The VIPP establishes a commitment to local industry, and emphasises the importance of jobs and business growth to all departments and agencies.

Through this, the Authority encourages contractors to use Australian-milled steel wherever possible, with the aim of helping the benefits flow on to local suppliers.

"The large-scale of this project opens up significant opportunities, not only to improve the transport system but also to boost the local economy," Level Crossing Removal Authority CEO, **Kevin Devlin** said.

With the VIPP in mind, the LCRP has utilised local steel suppliers, both big and small.

One of those suppliers located just down the highway is Geelong-based Glassmetal Industries, which has historically supplied signage to the rail network over the past two decades.

For the LCRP, Glassmetal Industries provided steel-bonded vitreous enamel (VE) panels and signage for the Gardiner, Ormond, McKinnon and Bentleigh train station rebuilds.

General Manager, **Adam Morgan** estimated that his business has supplied at least 10 tonnes of steel to the four station upgrades.

"(The LCRP) was a really good project because we hadn't been involved in cladding for quite a while, even though the company has clad over 1000 buildings in its history," Mr Morgan said.

"It was really exciting for us to get back involved after a period of inactivity in that sector of the market."

Looking to projects currently under construction, nine level crossings along the Caulfield to Dandenong line are being eliminated by elevating the rail, while five train stations along that line will also benefit from upgrades.

Approximately 40,000 tonnes of steel will be used across the Caulfield to Dandenong project overall with Australian steel already used for approximately 99 percent of permanent structures as of July.

Around 2200 steel-reinforced concrete segments are required for the section of elevated rail between Caulfield and Hughesdale, with each measuring around three metres long, 5.5 metres wide, 3.2 metres high and weighing approximately 30 tonnes.

The segments are manufactured at a purpose-built pre-cast factory in Pakenham, before being lifted onto trucks and driven to an assembly site at Murrumbeena Station.

“The pre-cast factory is a shining example of our steel use in action,” Mr Devlin said.

“Inside the 54,000 square-metre yard, the assembly process unfolds to transform the reinforced steel frames into strong concrete segments.

“By keeping production in the area, we’re supporting local manufacturing and transport jobs.”

Once at Murrumbeena, two gantry cranes assemble the segments into bridge spans of up to 40 metres (420 tonnes), and lift them onto the elevated structure.

The innovative straddle carrier then travels back and forth along the elevated deck to install the new spans, allowing trains to continue running underneath and minimising disruption to commuters on Melbourne’s busiest train line.

One local supplier who is providing steel to this site – as well as other LCRP sites – is Liberty OneSteel, whose contribution to the Caulfield to Dandenong project already weighs in at approximately 5500 tonnes as at August.

This tonnage includes loose reinforcing bar, mesh and complex prefabricated elements, with a further 4500 tonnes of steel still to be supplied.

Prior to this project, Liberty OneSteel had also supplied the Burke, North, McKinnon and Centre upgrades with contractor John Holland, which required 3000 tonnes of reinforcing bar and mesh – including 1700 tonnes of Bamtec carpets – supplied over a seven-day occupation in 2016.

In addition to level crossing removals, another aspect of the LCRP includes the Mernda Rail Extension which involves eight kilometres of new rail line laid and the construction of three new train stations between South Morang and Mernda.

Using different Australian suppliers, this project will use steel products for pile cage and pre-cast reinforcing, structural purposes, metal deck roofing, miscellaneous metalwork such as for handrails, stations, bridge structures and the track itself.

Also, currently rolling out is the duplication of single track on the Hurstbridge line between Heidelberg and Rosanna, as well as rail, signalling and power upgrades along the Pakenham/Cranbourne line in preparation for the introduction of High Capacity Metro Trains.

“With LCRP activity now underway in virtually every corner of Melbourne, the significant amount of local resources contributed – including steel – will only continue to rise,” Mr Devlin said.

“That can only lead to more positive flow-on effects for the industry, which is playing a major part in shaping the future of the city’s advancing road and rail network.”



Workers inside a steel frame made for concrete segments

Bayswater Station ramp steelwork

