

A NEW APPROACH

MULTIFACETED ROAD AND CIVIL WORKS CONTRACTOR NA GROUP IS EMPLOYING SOME UNIQUE APPROACHES TO COMPLETE A HIGH-STAKES PROJECT ON SYDNEY'S M5 ON TIME.

As part of Sydney's Orbital Network, the M5 Motorway, operated by Interlink Roads, is a critical corridor for the city's south-west region and the New South Wales capital's wider road network.

Like any high volume road corridor, when maintenance works need to take place, it can prove a complicated undertaking full of logistical challenges.

National road and civil works contractor NA Group is undertaking resheeting works on the ramps and bridge decks for a large portion of the M5. Interlink Roads were given confidence by previous concrete road rehabilitation and minor civil works carried out by the contractor on the M5, which emphasised safety, quality and overall customer satisfaction.

The project has been split into two stages due to the disruptions to regular traffic flow when road work is undertaken on the motorway, and the onset of winter,

when temperatures are not ideal for achieving compaction.

"Phase one began in May and will run up until mid-June and the second phase will begin in September. The client basically investigated what's critical and what's less critical – what needs to be this side of the end of financial year and what can be done on the other side," explains Ronan Vinuya, NA Group Project Engineer. "The most imperative thing for us is that, whatever the case, the ramps and bridge decks need to be open to the public by 5am each morning, fully paved, including temporary line marking – there can be no milled surfaces for the public to drive through.

"The basis for the resheets is for the client to improve the pavement skid resistance. All bridge decks and ramps leading to the M5 were investigated to determine which works were necessary to complete.

The project's first phase involves the

asphalt resurfacing of 13 ramps and four bridge decks, and is currently underway.

Due to the timelines and safety implications of working in a tight workzone, the contractor is employing a range of unique management processes and approaches to finish the project without affecting the normal day-to-day traffic flow.

"We are doing a couple of different things to look after the quality of the pavement in this first stage, which started at the end of May," says Mr. Vinuya. This includes resource allocation, specialist plant and equipment and use of available technologies.

"The biggest thing for us right now is that the traffic control and paving crews are NA Group staff, not contractors. This enables us to coordinate teams in house and ensure quality outcomes on a daily basis with the same crew members on the project from start to finish, including traffic controllers. Everyone on site fully understands the

project challenges and safety aspects."

The NA Group crew is complementing this internal business approach by using only Wirtgen Group Vögele pavers and the manufacturer's latest material transfer vehicle, the MT 3000 2 Offset PowerFeeder.

Mr. Vinuya has used the standard, larger and higher material transfer vehicles (MTV), but says the MT is smaller and more mobile for tight worksites. "A standard MTV can carry around 25 tonnes of material, while the MT carries around 16, but it is more manoeuvrable and works better for smaller sites as well as being easier to transport to and from site, such as what we are doing.

"It perfectly adapts to all of NA's paving fleet, which uses all Vögele pavers. The pavers already have more benefits than others on the market, especially the quality of the screed technology."

He says technical support from Wirtgen has been an asset to the NA Group team so far. "Ralf Peter, Vögele Australia's Product and Technical Manager, was out on site for the first week and he's been training our guys to make sure all our things are working well."

Further to the plant innovations on site, NA Group is employing a unique pavement application for the project. "We're almost in winter time and one of the main considerations with asphalt is the workability and ambient temperature of the material," says Mr. Vinuya. "Given that we are this late into autumn, going into the cold winter we are adding an additive called Sasobit."

When added to asphalt Sasobit enables the material to hold its workability at a low temperature – like in winter, for instance.

"In this particular context, it's a wax that enables the bitumen to hold its temperature. It is used for warm mix asphalt but when used in regular temperature asphalt it allows



NA Group is employing paperless documentation on the project.

more working time to compensate for the colder air and ground temperature."

Mr. Vinuya says the product isn't new to the market, but has proved an innovative alternative to conventional asphalt production on this project, given that works may be carried out on cooler nights.

NA Group's on site field technician is utilising a non-nuclear pavement quality indicator (PQI) for quality checks to help monitor the compaction of those pavements.

As a non-nuclear and non-invasive gauge, the PQI uses electrical waves rather than radiation to check the compaction quality of the pavement. "Rollers will often have standard rolling patterns, but compaction can also be impacted by weather conditions, temperature and other elements. With help of PQI we are able to measure the compaction and see if the mat and compaction quality is being met," he says.

By changing how it measures pavement compaction, NA Group is aiming to optimise the efficiency of its asphalt crew. This sentiment goes hand-in-hand with another unique approach the contractor is employing

on the project – paperless documentation.

"NA Group's paperless documentation processes is quite a unique thing in the market. We use it across all our work crews in the business," says Mr. Vinuya. Every crew has a dedicated HSEQ Officer on site that has a smartphone device capable of producing reports, such as inductions, pre-starts, quality reports and consultation documents. "It's paperless, making things easier as it's all documented – everything is a bit more holistic. Everything's sent to our HSEQ Officer on site. Anything safety and quality-wise is being prompted to them."

Mr. Vinuya says a high point for the NA Group is the focus on paperless documentation, as it leaves no uncertainty about many elements of the job. "At the completion of each shift, we provide a report to our client in PDF format that includes step by step photos of all process, mix types and quantities of material used. "All of our clients are asking about these paperless models, and I believe that that's where the industry is going too."

With work now underway for the crucial first stage of the project, Mr. Vinuya is confident that the approaches that NA Group is employing will produce a high quality result, while remaining grounded to the significance of the task at hand. "There's a lot of planning, logistics and preparations needed to be put in place," he says. "This is definitely the most high stakes project I've been a part of while at NA Group.

"NA Group has a reputation of providing outstanding quality, timely, cost-efficient project delivery and genuine commitment to safety and innovation, which are some of the reasons we were chosen to deliver this M5 project." ■



NA Group is utilising a new Wirtgen MT 3000 2 Offset PowerFeeder for the job.



The project's first stage involves resheeting on 13 ramps on the M5.