

- 23 weeks saved on piling
- £758k reduction in plant, material, and prelims cost
- 600 lorry movements eliminated
- 330T CO2 saved on transport

Case Study

A500 Etruria Widening Open three months early

PROJECT	A500 Etruria Widening
CUSTOMER	Highways England
LOCATION	Etruria, Stoke-on-trent
CONTRACT	CDF Framework
COMPLETION	2019





Need

Stoke-on-Trent is growing and the A500 provides a strategic link connecting the city with the M6, local housing and the Etruria Valley Development.

To ease congestion and improve safety between Porthill and Wolstanton junctions, a £17.5m scheme was proposed to widen this section of the A500 from two lanes to three in each direction. The extra lane would allow local traffic to hop between junctions avoiding the main flow.

A new cycle and pedestrian way along the northbound carriageway would link the city cycleway with the Etruria development.

Procured under the CDF Framework, Highways England expected efficient delivery of the scheme in a way that kept everyone safe and reduced disruption to daily life.

Solution

Our detailed design and methodology had to fully consider the impact on a live network, the road was close to residential properties and businesses. Three areas were identified to make the biggest improvement to scheme outcomes: piling; phasing and keeping people fully informed and engaged.

Piling

During tender an opportunity to replace concrete CFA piles with a steel sheet piled retaining wall was identified but noise and vibration for local housing was a concern. The solution, developed with our supplier Ivor King, was to use a silent 'push-in' hydraulic rig which eliminated the 7,500m³ stone piling mat leading to significant benefits:

- 23 weeks saved from piling programme
- £758k reduction in plant, material, and prelims cost
- 600 lorry movements prevented from increasing local congestion.
- 330T CO² saved from less transport of material, plant operation and 23-week site reduction.
- Dust and noise at key receptors stayed within agreed levels for the project.

Phasing

Careful planning created a phasing to keep the network running smoothly during construction.

The retaining wall was the main activity for Phase 1 and all lanes were kept open with daytime working. In Phase 2 we moved the road works to nights which kept all lanes open during the day to reduce disruption. Demolition of the central reservation was an exception, where two weekend closures were scheduled to reduce the noise for nearby homes. However, Storm Dennis tested the team's agility as they

lost a weekend and had to condense the work into one intensive, well-planned closure.

Covid working restrictions then came into place which impacted on methods but also meant less traffic. The team quickly adapted and took the opportunity to move to daytime working with one lane open saving 3 weeks on programme despite social distancing.

Engagement

Our approach was to take everyone on the design and construction journey. We supported Highways England public events to communicate the phasing, the weekend closures and night working. Follow up letters, visual infographics and news maintained the dialogue and the good relationships.



Outcome

Highways England opened the A500, three months ahead of schedule. Along with early opening and cost savings the team achieved further benefits:

- Recovery time targets for stranded vehicles were bettered every month.
 - AFR was zero
 - 40% of suppliers were local SME's.
 - 29,636 tonnes material reused or recycled
- Widening of this section of the A500 increases capacity, eases congestion, and improves journey time reliability to support local growth.