	OUTLINE METHODODOLOGY	No: S4007-MSG-OM-FRAP-01
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MEREWAY SLUICE GATE		Issue: 0
		Date: 16/07/19

Mereway Sluice Gate Replacement	
Issue details:	0
Distribution:	
Originated by: B Dovey	Reviewed/authorised for issue: F Pizzardi

1. General Scope

This document captures the outline methodology (in principle) for the gate replacement and improvement works to Mereway Sluice. The intention of this methodology is to provide a broad outline of works being undertaken for the purposes of understanding, for the FRAP permit application. Full method statements have not been developed yet and will only be finalised prior to site commencement. While the methodology captures the main, key aspects of the works, this would not be full and final based on further works which could/would be instructed by our client.

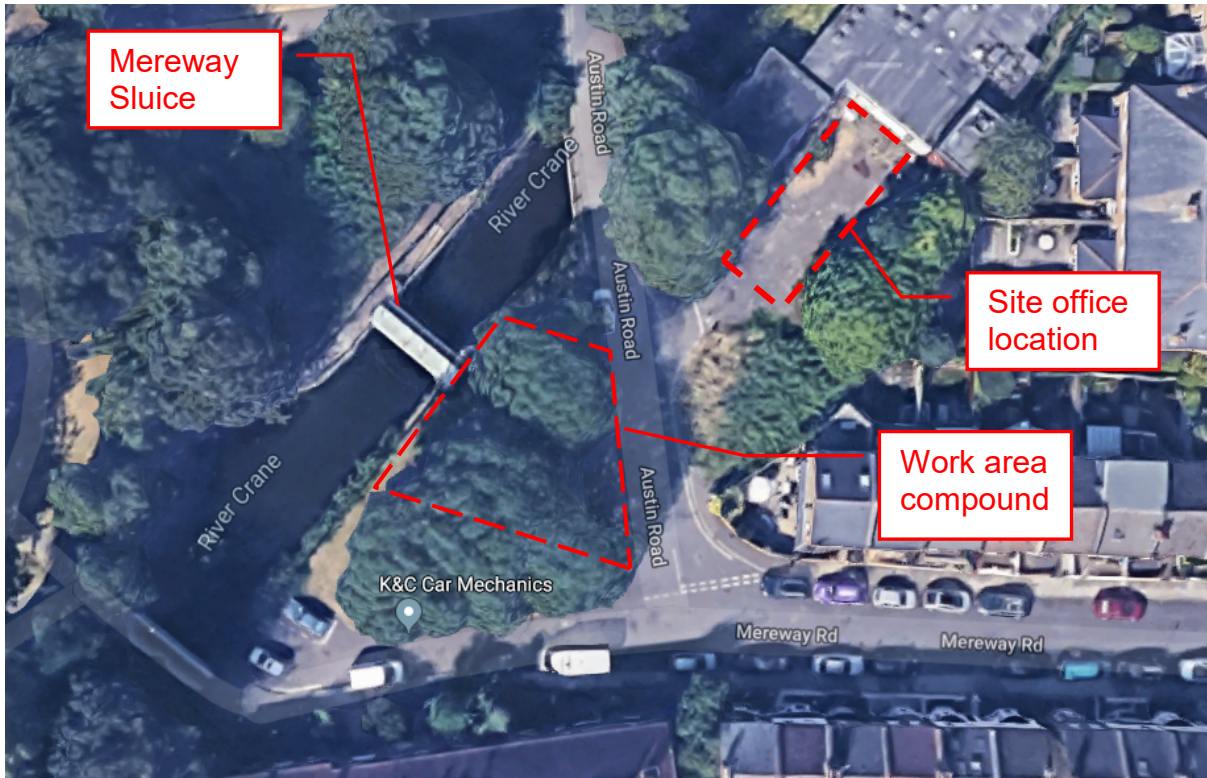
The work required can be summarised, in plain terms, as the replacement of the old (end of service) weir gate with a new gate. In addition, some further enhancements to this site will also be undertaken which will involve the replacement of the current weir access bridge, lighting and gate control panel. This forms part of a strategy to provide better water management, retention and flood mitigation.

2. Establishment and pre-start

Prior to works commencement, the following outline steps will be undertaken;

- Client to undertake advance warnings and notice of entries (letter drops and/or other) to any affected landowners for the commencement of the works.
- Entry/condition photographic surveys will be undertaken prior to entering any areas for record purposes.
- Mobilise the site compound boundary using standard anti-climb steel fencing (herras-style).
- Mobilise temporary, mobile welfare and office units. These will be gas powered eco-container units delivered by road transport along with other sundry equipment needed.
- It's worth noting that the site offices will be across the road from the actual work area sited in an existing, disused car park. The work area is close to the weir gate for ease of operation and safe containment. The map below provides a view of the 2 locations.

GOOD WORKS

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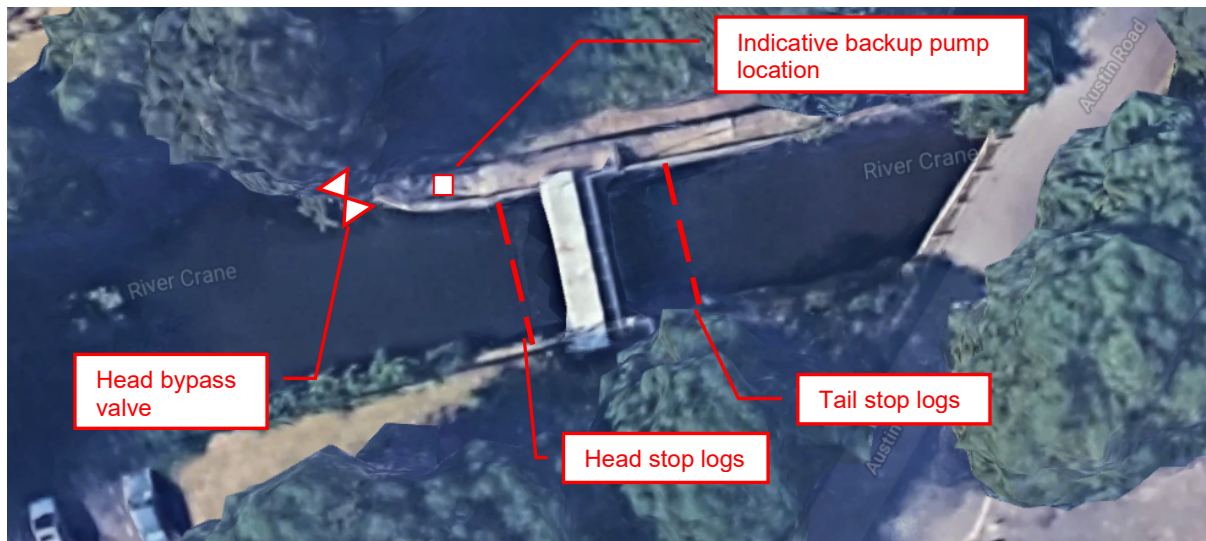
- In addition to the office set-up, a work compound will be set-up close to the sluice gate. This will consist of rigid track matt style components. These will be beneficial due to their ease of installation (and removal) and minimal reinstatement needed after removal. These are also greatly recommended in areas containing existing trees due to their protective nature and ability to safeguard root zones.
- Along with the above work area set-up, the requirements relating to tree surgery will be undertaken as specified in the contract such that trees are felled or trimmed to facilitate safe access and for lifting operations.

3. Site Works - Start-up

- Commence site work when fully mobilised (offices & welfare).
- Complete activity briefings, tool box talks and ensure all permits required (permit to lift, break ground etc.) are fully completed, understood and signed.
- Temporary works arrangements to be set up (out channel) to allow for flow maintenance and control during works.
- Install stop logs to the sluice (in channel) and seal sufficiently.
- Note the requirements for flow management and control as detailed in the *Flood Protocol*.
- Position temporary water pump in place to assist with flow control (if needed). The existing bypass channel is to be used and the penstock (valve) will be opened or closed accordingly to set the required flow and water level.

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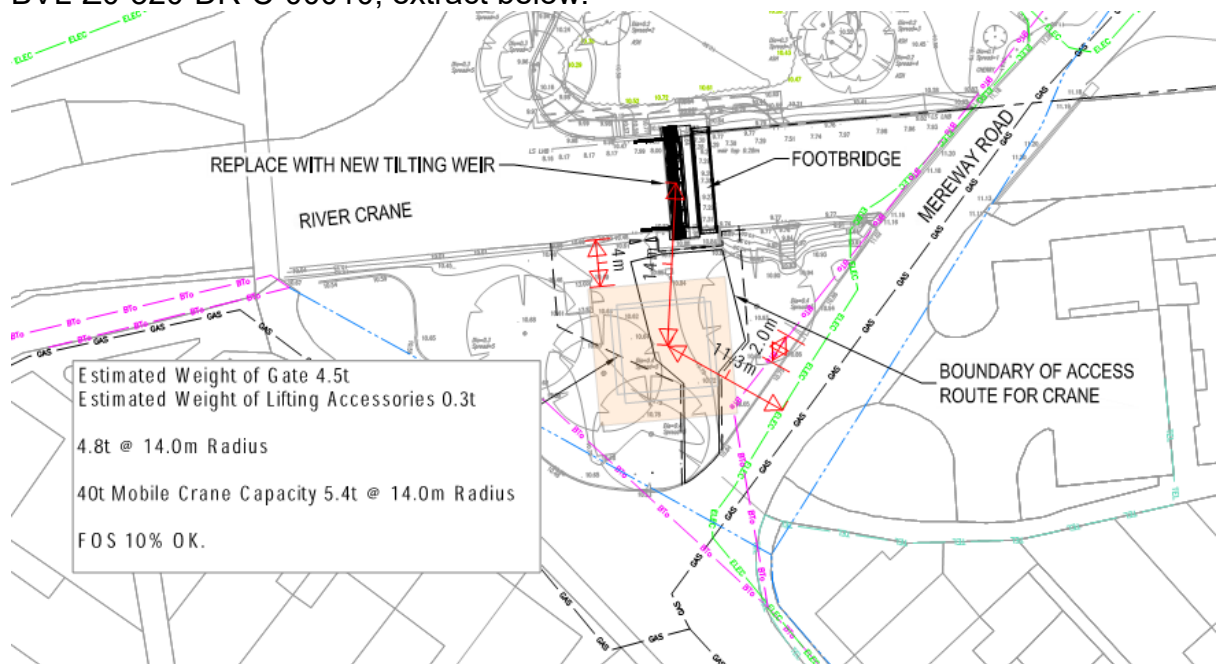
- The in channel work area will also be checked and cleaned (power washed) as needed to ensure that walking/working surfaces are free of slippery material and/or debris.
- The map below provides a simple plan of the TW (temporary works) to be installed.

**4. Site Works – Main Works**

- Civil works will/could continue regardless of the M&E elements although some are required to facilitate the gate and new walkway installation.
- Gate will only be removed once the temporary works have been installed.
- Electricians to attend site to isolate power and disconnect redundant equipment.
- Mobile crane to attend site and set up in designated location for lifting.
- Redundant gate, drive units and walkway to be disconnected and lifted out of the channel onto a laydown area close to the crane. These will be collected from site and will be disposed of, off-site by recycling.
- Civil works will be undertaken to the channel walls to allow the new gate and bridge to be position and fixed. These civil works consist of general concrete infill works.
- Infill works will be undertaken by simple formwork (timber shutter) installation onto the existing concrete face and once sealed, pouring concrete into the formwork. Formwork will be removed once the concrete has cured.
- Additional minor repairs will be confirmed and undertaken to any cracks within the channel walls. These to be agreed. This operation will also be a minor one with access from within the dewatered channel and simple pointing.
- Further civil works include the excavation and installation of new small draw pits for the new cables to be installed. These will be small 600 x 600 x 600 (preformed) chambers and will be installed such that the existing cable ducts could be used, where practically possible.

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- In locations where existing ducts cannot be used, then routes will be marked out and new ducts installed to suit.
- The new sluice gate will arrive on site via road transport and will be positioned close to the crane working area.
- The gate will be attached to the crane lifting chains, via its designated lifting points and will be lifted from the transport and into position (in channel).
- Further components relating to the gates' drive unit will arrive and be lifted in a similar manner.
- The gate connection works will continue as required ahead of the arrival of the new sluice walkway.
- The walkway will arrive in a similar manner as the gate and will also be lifted and placed into position using the crane.
- An outline check has been undertaken for these lifting operations and deemed that a small 40t all-terrain crane will be suitable to undertake these works. The preliminary, outline plan for these lifting works is captured in drawing 122749-BVL-Z0-320-DR-C-00010, extract below.



- All gate installation works will be additionally supplemented by the installation of new cables, telemetry system and an electric car charging point, which will be undertaken by skilled operatives in conjunction with a specialist electrical supplier. These works will be out of channel.
- Works will be undertaken for the installation of a new debris grating to the bypass channel. Access to this will be via small boat or simply waded (if water levels are low enough) to comfortably remove the existing grate and valve. Thereafter, the new components will be offered up and fixed to the concrete bank wall.
- Flow will be maintained using the backup water pump and a temporary plug would be installed to block off the pipe during the course of the new valve and grating installation works.

- Installation works will commence their conclusion with the final elements of new boundary fencing being installed and the testing, commissioning, training and hand-over of the newly completed sluice.

5. Completion

- Once all works have been concluded and the new equipment fully and successfully commissioned, site materials (temporary works, access towers, tools & equipment) will be taken back to the compound and off-hired for collection and/or removed by road transport to alternate sites or storage.
- The temporary track matting will be lifted and collected as it was delivered. It is envisaged that no further works would be required to the footprint of this matting and that natural vegetation growth will reinstate the area without any assistance. This is the benefit to using this product and as experienced with many other past work sites, see before and after photos below.



Photo showing a green field area after track matt removal. Matts were removed in November and the photowas taken in late January. Significant, natural growth can be seen already.

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Photo showing unassisted, natural growth after a further 6 months. Track matt area has fully recovered with no signs of the matting ever being present.

- Any pre-existing road furniture and/or signage that was temporarily removed to access the location (if any) will be reinstated as previous.
- The site office compound will be demobilised also in reverse of its mobilisation, via road transport.
- Both the site and office compound will be assessed in relation to the entry survey undertaken and once reinstated accordingly, will be signed off with the Client and all works, at this stage will be fully concluded.