

ECI Savings on existing Highway schemes in Wolverhampton

Background:

The scheme was designed to improve the approaches on the A4123 Birmingham New Road and the A463 Shaw Road in the Hurst Hill area, approximately 3.5 miles south of Wolverhampton. The works consisted of the following main elements-

- Site clearance
- Drainage and Ducting
- Installation of new traffic signals including a toucan crossing
- Road widening and pedestrian islands
- Kerbing and ACO drainage
- Extensive Utility diversions

Work was constrained to off peak working during the hours of 09.30 to 15.00 due to high traffic flows along the route.

At the outset of the scheme the Client was unable to supply any existing Health and Safety files.

Following an award in June 2016 City of Wolverhampton Council and Eurovia engaged in a series of meetings to look closely at how the scheme could be built. Upon examining the proposed scheme drawings, it became very evident that the statutory undertakers' drawing's shown several conflicts with the construction details. It was then decided to set up further meetings with

Wolverhampton, AECOM the Principal Designers and Eurovia. Meetings were arranged with all effected parties and a strategy for dealing with the timing, programming of the works was agreed.

Objectives:

Once it was agreed that the main issue was dealing the utility diversion it was decided to call all parties into joint meetings. The purpose of these meetings was to: -

- Agree that the team involved in the ECI process would also be the scheme delivery team
- Establish a duration for each diversion both lead in times and construction time.
- Establish a joint programme that was acceptable to all parties, ensuring that the construction of the works and diversions could be progressed together utilising the traffic management arrangements for the main works and be completed within the timescales required by the Client.
- The Client required costings that were up to date from utility companies.
- To check that the Utilities had the labour resource to cope with the agreed programme.

Project:

Birmingham New Road / Shaw Road

Client:

Wolverhampton City Council

Partner/Associate: **AECOM**

Contractor: **Eurovia**

Contract value: **£1,321,676.43**

Length of project: **42 weeks**

Key achievements:

The statutory undertakers' plans supplied by BT showed that fibre -optic cables were directly located beneath a mature hedge that needed removing as part of the works to facilitate the new carriageway widening. Following on from this it was decided to hold meetings with utility companies to clearly understand what was required; this led to some companies agreeing to allow works done by the others due to the depth and position of the plant.

Meetings were held with representatives of all effected utilities at the same time together with the Client and the Client's designer present. These meetings were arranged by Eurovia and further meetings were also arranged to discuss the outcomes.

The position and locations of the trial holes were agreed jointly based on the stats information and how the scheme could be built. This was paramount to assess the risks involved and how the programme could be developed around the constraints that were to be imposed.

These depths and positions were established by a series of carefully planned trial holes. These positions were carefully established from utility information and ground radar data. Following some trial holes, it became apparent the information supplied was not nor accurate and further holes were undertaken to locate the service. During this work we found the gas main was in poor condition and was leaking and required renewal along a longer length. If this had been found during the construction works severe delays to the programme would have transpired.

The original gas diversion was in two sections with four connections running both in the carriageway and footway. Following the trial hole work it became one continuous diversion running in the new footway. This allowed carriageway works to continue to reduced levels so other diversions could be completed.

Diversions for telecommunications companies were completed mainly by one company as several different ducts needed to be lowered before they could get to theirs. This approach was only agreed as all companies were present at the meetings.

Construction work, which finally started in October 2016, was then programmed to run concurrently with the utility work to ensure effective working was achieved.

Works completed 13 weeks sooner than proposed completion date. Due mainly to the need to complete works ahead of impending works on the M5, for which this route is a diversion route for motorway traffic. The need to complete early needed two authorities to agree to lift the restrictions of working off peak only.

Once the programme of utility diversions was agreed the traffic management requirements for the main works was amended to allow all parties to work in tandem. The main programme that included the utility works was controlled by Eurovia, this was a major benefit allowing greater overall control.

Finances:

The savings generated by these actions consisted of the following –

1. Stats quotation was originally £371,655 based upon trial hole information and avoiding potential clashes this figure was revised to £297,774 giving a saving of £73,881
2. Further savings on the C4 based on the actual works on site due to ECN controlling utility companies on site gave resulted in a final bill of £266,793 gave a saving of £30,981. The total savings for the statutory undertaker's works was £104,862 (28%)
3. The works being accelerated due to the need to have the route available for the impending motorway works gave a saving of £148,354. (11.2%) This gave a programme saving of 13 weeks on the original completion date hence reducing preliminary costs to the Client. The overall programme was reduced by 8 weeks and meant work was completed in April 2017 in time for the M5 works.
4. The total cost of these savings was £253,217 (19.3%)

Looking to the future:

This approach of engaging with utility companies early and carrying out extensive trial hole works has been taken forward to the next scheme, Stafford Road, and is already showing even greater benefits to the Client. Early indications have shown savings could be in the region of £1 million.

A full Audit on utility C3/C4 between client and contractor in the ECI process is now a normal action.

This approach shows the benefit of having time to conduct effective ECI and periods of 4 to 6 months should be allowed for.

Trial holes have proved invaluable as utility plans were inaccurate.

The setting up of the site team, Contracts Manager, Site Agent and Quantity Surveyor, at the ECI phase proved

critical to the entire process. Being involved at the ECI meetings ensured they had a clear understanding of the aims and objectives of the client and how the cost savings and programme would operate when it came to the construction stage. It also gave all parties the contact names for the Statutory Undertakers planners and supervisors who would carry out the works. Very often this level of contact is difficult to establish once the scheme moves along the planning and design stage. On all future schemes we will ensure the ECI team and site team are made up of the key persons who will construct the scheme.

Figure 1 Shaw Road widened junction to the left with Birmingham New Road lane 1 widening to the right



Contacts

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