

MUDFA Prolongation Issues Summary

Traffic management

- The extent of City wide diversions etc required to accommodate the works following traffic management modelling is much greater than anticipated by all parties.
- Stakeholder / traffic management review panel restrictions on traffic management installations to accommodate work sites and the subsequent delay issues related to same ie sequencing of TM for the number of junctions MUDFA are able to close or affect at any given time and the extent of the TM for bus movements/times etc.

Re-alignment of the Tram at Haymarket – This realignment was required by CEC following a safety case audit, this caused significant additional works to the planned utility diversions resulting in substantially increased scope particularly for the gas and water diversions which originally were largely outwith the DKE and then had to be relocated in a heavily congested area. A great deal of the works to be carried out have required hand digging as the congestion precluded machine digging.

Unexpected Buried Structures Encountered –substantial buried structures encountered at Haymarket, Lothian Road , Princes St, and Leith Walk have resulted in considerable delay to the utility diversions planned. We required to establish the nature, condition, archaeological significance, and owners of the buried structures and then the production of a design solution, with approval process for the required utility diversions.

Bodies discovered in Constitution St.

We discovered a number bodies in Constitution St and Elm Row occasioning delay while the archaeological and disposal issues were attended to.

Design approval process

To date we are still awaiting some IFA drawings to complete the required approval process, there have been substantial delays on design, through discovery of fresh information as we excavated roads, found congestion where there was supposed to be none, in Lothian Rd alone we have had 3 separate instances of encountering unknown structures, with consequent redesign.

The extent and number of unexpected existing utilities – a significant number of unexpected or unknown utilities have been encountered along the route of the proposed utility diversions resulting in significant delay to assess the extent, establish nature of the encountered utilities, whether they are live or abandoned and who owns same etc. None of these utilities are shown on the statutory utility companies records nor where they identified in the design investigation works carried out by SDS prior to design. The discovery of unidentified utilities has resulted in a number of diversions being designed on site by the MUDFA tie/CUS team to mitigate the effects of the delays. Palmerston Place is a good example the design provided by SDS is 80% inaccurate and there is actually little if any space available to accommodate the required diversionary works for the tram, this is being dealt with by designing and installing the utility diversions as the works progress which is very time

consuming but is the best method of mitigating delay, short of excavating all of the roads/footpath along the whole length of the street on both sides of the road to establish what is actually present before then producing a design to navigate around the existing utilities and accommodate the tram.

Additional Works Required By SUC's – the requirements of the SUC's once the existing assets have been exposed/encountered have also resulted in delay such as the existing BT chamber at Palmerston Place which BT are demolishing and rebuilding at their own cost due to the condition of the existing structure which does not meet BT's specification this has resulted in a three/four week delay in the area to the MUDFA diversions.

Increased scope - as a result of discovering unexpected existing utilities and the consequential affect on other utility diversions previously carried out which all have a consequential affects on durations of the works. By way of example we have required to construct 52 side entry manholes that were not originally within scope.

Condition and extent of existing basement structures extending out from building below the existing road – a significant number of basements have been encountered particularly in the Haymarket, St Andrews Square and Broughton Road areas have delayed the works in the same way as the unexpected buried structures encountered.

Imposed Embargos

The programme has required to de-commission and recommission works in both Leith and the City Centre to meet the requirements of Christmas and Easter embargos.