

Tie – Utilities, trams, Charrette impact.

Charrette reviews, impact on MUDFA and other utilities works.

1. Introduction

“Charrette” reviews of a number of areas of the tram lines are under consideration. Due to their timing, they will have potentially significant impacts on the utilities programme, including the design work, the MUDFA site works, and other utility diversion works. This paper highlights the principal anticipated and potential effects.

2. Direct effects:

2.1. Constitution Street.

Moving the Foot of the Walk tram stop into Constitution Street.

This will cause the tram infrastructure to occupy the entire width of the street leaving no space in which to place diverted utilities. This street is already particularly congested with utilities, and is narrow even without the tram stop. There is a potential engineering solution in the form of a culvert/service tunnel along the southern part of the street; this option would require further development, taking into account commercial, legal and operational impacts, to confirm if it could be employed.

Construction of a services tunnel would clearly be more expensive than the conventional practice of burying of apparatus, however it should be viable technically. The acceptability of this unconventional approach has not yet been rigorously tested with utility companies or the roads authority. There will also be implications regarding future maintenance responsibility for the underground structure.

It is unlikely that any of the utility companies would be willing to accept a share of the maintenance liability. Responsibility would consequently lie with **tie**, the tram operator, or CEC. It can reasonably be anticipated that the utilities would require guarantees and other undertakings in respect of such a service tunnel. It is also conceivable that, in the event of such a tunnel giving rise to increased maintenance costs to the utilities, they may seek some form of compensatory financial contribution from **tie**.

As an alternative to this services tunnel, services could be in theory be diverted to run in another street parallel to Constitution Street – however this would add complexity by going outwith the LoD and would make servicing properties on Constitution Street difficult.

2.2. Leith Walk

Varying the tram alignment progressively along the road and using side poles for OLE support instead of building fixings.

The alignment variations might only have a minor net effect on the MUDFA construction requirements, however much of the design work carried out to date would be rendered abortive.

The use of poles instead of building fixings would be likely to increase the amount of diversion work required and limit the space available for diversions, due to the size of foundations required to support the poles.

The utility companies' apparatus enabling works will have been completed before the OLE poles would be installed. Unless the pole locations and the detailed design of each pole base is known at the time the utilities' works are carried out, it would be impossible to make appropriate allowances and additional works to accommodate the bases would be inevitable.

In addition, the pole foundations – up to 3m deep – could affect a number of tunnels and underground structures, and/or could also lead to expensive, and previously unrequired, diversions being required.

2.3. Picardy Place

Lowering level of the tram track at the East end of York Place and through Picardy Place.

This would require more utility diversions than had previously been envisaged, including sewer diversions and the demolition and reconstruction of large BT manholes. Both of these types of work are very expensive, complex and have significant programme implications

There may also be structural implications for adjacent buildings, with regard to the potential effects of deep level working in this area. This may also be affected by party wall legislation.

2.4. St Andrew's Square

Moving the tram track all to St Andrew's Street instead of split with St David's Street.

There is a substantial amount of communications cabling on St Andrew's street that would require more diversion work than the present scheme implies. Some apparatus may need to be diverted outwith the area

altogether. This would incur additional cost and complication as the work would be outside the Limits of Deviation and necessitate the use of the utilities' own statutory powers.

However, a considerable amount of work on St David's Street would be avoided. Furthermore, St David's street would potentially be available as a services diversion corridor, and the change may make traffic management easier.

The initial impression is that this change might lead to a net benefit in utility construction work in the area.

3. Timescale implications

There is potentially a considerable potential delay to both the MUDFA and non-MUDFA utilities design and implementation work due to these changes.

The following sequence would apply:

1. Design changes agreed and instructed;
2. Track alignment and OLE pole design carried out;
3. Road design carried out to suit;
4. Utilities design carried out to suit road, track and OLE pole design.

Clearly the utilities design cannot take place in these areas until there is at least some design work carried out for the infrastructure and road works. Equally clearly the construction work cannot take place until the design work is completed.

Stages 1-3 above would require to be progressed quickly in order to prevent delays to the MUDFA contractor. If this sequence were to be short-cut and utilities design work carried out before the infrastructure design was adequately developed, there is a high risk of abortive work and double-diversions (where a service is diverted and then subsequently diverted again).

Any delay to the utilities construction works might result in delays to the Infraco contract due to availability of access through reduced flexibility or prolonged site occupation, for example.

4. Cost implications

It should also be clear that if the MUDFA contractor is significantly delayed, the additional costs due to increased preliminaries would also be significant. The cost difference in actual construction requirements would be covered by, or derived from, the rates in the bills of quantities.

5. Other Implications and Risks

If it is necessary to carry out utilities design and even construction work before the infrastructure design work is adequately developed, there are risks of:

- (i) abortive design work leading to additional cost and delay; and
- (ii) double-diversion of apparatus, leading to additional cost, delay and also a serious reputational impact – bearing in mind one main reason for MUDFA was to minimise repeated works on the same street.

6. Conclusion

It should be possible to accommodate the proposed changes in the utilities work. However, there will be impacts:

- There *will be* additional costs in the MUDFA contract;
- There *will be* delays in completing the utility design work;
- There *may be* delays to the MUDFA contract;
- There *may be* an adverse reputational / public perception impact;
- There *may be* knock-on delays to the Infraco contract.

To minimise the potential delays, it is essential that all parties involved ensure that the revised infrastructure and road design can be progressed with some urgency, without undue interference and with everyone being mindful of the overall programme for the Project.