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Edinburgh Tram Project
Full Progress Report No. 9
27th May to 23rd June 2012
FINAL

CONFIDENTIAL – LEGALLY PRIVILEGED AND FOI(S)A EXEMPT

July 12



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Rev	Originator	Approved	Date
0	Shirley-Anne Collin	Julian Weatherley	29 th June 2012
1	Shirley-Anne Collin	Julian Weatherley	2 nd July 2012
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DOCUMENTS			

1 Executive Summary

This report covers progress made during the period from 27th of May to 24th of June 2012. It incorporates progress reported within Infraco and CAF Progress Reports No. 5-2 to 26th of May 2012.

There were 17 incidents recorded during the period none of which were identified as Serious / Significant. Actions identified as part of the "Think Before You Act" session have now been confirmed and authorised by attendees. McNicolas have held a safety stand-down workshop attended by their entire workforce during the period.

Discussions continue between Infraco and SEPA in relation to soil removed from Baird Drive. Further information is to be provided by Infraco to enable conclusion.

Nine weeks of the 22 week time bank have been confirmed as being eroded as a result of disruption due to utilities works in Shandwick Place and the Waverley end of Princes Street. Infraco have indicated that further erosion has occurred during the reporting period and Turner & Townsend's current estimate is that this will be confirmed as 12 weeks erosion by the end of June 2012.

Revision 5 of the contract programme has been submitted by Infraco and approved by Turner & Townsend. An updated Master Schedule has been produced by Turner & Townsend to show the complete project programme. This shows a project end date of 7th of May 2014 (excluding risk and opportunity).

McNicolas have been continuing with the excavation for tram box construction and the installation of drainage in order to mitigate against disruption to the On Street Infraco works programme. Good progress has been made in addressing residual utility conflicts with the majority of the on street areas now in the possession of Infraco.

Preparations remain on programme for the commencement of the York Place utilities works by the 16th of July 2012. These works will be undertaken in two phases the completion of which is currently estimated to be in December 2012. At the council's request, T&T are considering a number of delivery models for these works.

A localised section of a sewer in Grosvenor Street has been repaired following its collapse. Discussions are ongoing with Scottish Water in relation to financial responsibility.

Tender returns for the Leith Walk utilities works and currently being assessed. Following initial advice that these works should be postponed CEC have now confirmed their desire for a commencement date for late August 2012.

Infraco works in the On Street areas have progressed in Haymarket, Shandwick Place and St Andrew Street although BBS have advised of further slippage to the On Street programme. Further erosion of the "time bank" is anticipated as a result.

Princes Street remedial works have been completed and the road opened to traffic on 30 June following handover from Infraco to CEC.

Following completion of Issue For External Approval (IFEA) drawings, Infraco have been instructed to commence their tender process for the Edinburgh Gateway king post wall solution.

A number of Off Street works items have progressed this period including: trackwork through the Edinburgh Park corridor and Carrick Knowe, the installation of Balgreen Access Bridge, ducting and drainage to Gogar landfill, Gyle Broadway crossing and Bankhead drainage works. The airport retaining wall is also nearing completion.

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Soil mixing has commenced through the Murrayfield Corridor.

BAA have raised concerns over the constructed levels of the Eastfield Avenue road crossing. CEC are in discussions with BAA over a resolution.

Sixteen trams have now been delivered to the depot with fourteen trams having been issued with Tram Routine Test Certificates.

The forecast cost has increased by £319K principally from the inclusion of the Princes Street outstanding works (Infracore advised that options to include carriageway repairs had been rejected prior to mediation) and also taking a more prudent position on the non-recovery of Infracore prelims for the de-scope items, drainage and track excavation works undertaken by McNicholas.

The risk and opportunity forecast is being updated and will be presented to the CEC project team for comment before formal issue. In the interim a provisional risk forecast of £5M has been included as was discussed at the Tram Briefing Meeting on the 17th of May.

Allowances in the Anticipated Change section of the report have been reduced following a clarification on the scope of track bridging and OLE piling.

2 Health, Safety & Environment

During the last period Turner & Townsend have been working to implement a number of key initiatives regarding health and safety on the project, including:

- Closing out the report and Action Plan relating to the 'Think before you act' session.
- Reviewing health and safety submissions of the tendering contractors for the Scottish Water legacy works contract in Leith Walk.

A series of leading indicators has been identified which focus on the implementation of the contractor's management arrangements. These leading indicators will be monitored during the joint monitoring activities that are being undertaken on the contractors. The leading indicators include:

- The ratio of operatives to supervisory staff
- The number of hours being worked by individuals on high risk activities
- Confirmation of the status of the Construction Phase Plan.
- Evidence of the safe system of work being briefed.
- Evidence of site inductions being carried out.
- Adherence to PPE requirements
- Compliance with certification requirements
- Condition of accommodation / welfare facilities

2.1 Management of Health & Safety

Joint monitoring between Turner & Townsend and the Principal Contractors has continued to progress well during this period, with a noticeable impact on the McNicholas sites. A principle focus has been on the management of the McNicholas works for the utilities diversion works in York Place.

The process to review changes instructed to McNicholas, to aid the control of working hours on site and to provide further clarity on the number of operatives and supervisors is now being included within the leading indicators for the project, these can be found on the Health and safety dashboard. Further leading indicators are being developed by Turner & Townsend as an output from the 'Think before you act' forum.

The list of project stakeholder's personnel who can access work sites without prior notification has been agreed with the Principal Contractors. This will enable the procedure for visiting work sites to be implemented, which will facilitate the access by regular visitors e.g. representatives from the utility companies.

A process of internal Turner & Townsend coaching has been implemented to ensure that there is a consistent approach to the joint monitoring that is being undertaken with the Principal Contractors.

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Bilfinger Berger – Siemens held their monthly Occupational Health & Safety Meeting which was attended by McNicholas and Turner & Townsend Senior management along with representatives from Transport Scotland and City of Edinburgh Council. Agenda items for the meeting included:

- Feedback on the drugs and alcohol testing.
- Details of the health checks that were to be offered by BBS.
- “Healthy Working Lives” Initiative.
- Welfare inspections programme.
- Prevention of Vandalism.
- Member of public incidents.
- Presentations to local Primary Schools.
- Positive intervention booklets.
- Legionella.

McNicholas held a “Stand-Down for Safety Day” on the 14th of June for their workforce. A total of 82 persons attended the sessions which addressed issues including, public safety, safe Excavations, Risk assessments, Hazard spotting and reporting near misses.

Turner & Townsend participated in the Bilfinger Berger – Siemens visit to Balgreen Primary School on the 18th of June. The visit utilised the Network Rail 365 bus for a presentation, and also included a dumper and mini excavator being sited in the playground.

2.2 Incident reporting

During the last period there were 17 incidents on the Edinburgh Tram Project. None of the incidents were identified as Serious / Significant.

Two members of the public incidents related to noise generated by construction activities

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Incidents reported within this period:

Date	Location	Detail	Contractor	Classification
29/05/2012	Balgreen	Damage to C&W ducts and fibre cables.	Expanded	Service damage
08/06/2012	Hanover St / Princes St	Damage to the power supply to traffic lights on the Mound	Crummock	Service damage
07/06/2012	Haymarket Depot	During excavation for pilecap the bucket of the excavator brushed the side of a fireclay duct resulting in damage to LV cable.	Expanded	Service damage
14/06/2012	Broomhouse Drive	An LV electrical supply on a redundant bus shelter was damaged by an excavator at Broomhouse Drive on the guided busway	Crummock	Service damage
18/06/2012	Stenhouse St	Damage to 25mm dia gas main.	Crummock	Service damage
18/06/2012	Athol Crescent	Damage to LV street lighting cable.	McNicholas	Service damage
20/06/2012	Princes St	Damage to Scottish Water culvert – crown of sewer penetrated (approx 400mm x 400mm).	Crummock	Service damage
21/06/2012	Broughton St	Damage to 35mm cable during excavation works	McNicholas	Service damage
30/05/2012	St Andrew Square	Blockage to concrete pump. Blockage cleared itself and blew back into operative, knocking him backwards. Other person was hit by concrete.	Crummock	Minor injury
18/06/2012	Haymarket	Person received injury to hand - hit finger with hammer	Grahams	Minor injury
18/06/2012	Section 5C	Person received injury to hand - broken thumb due to being trapped between rail and sleeper.	Bam Rail	Minor injury
14/06/2012	Princes St	Person received cut to leg.	Crummock	Minor injury
31/05/2012	Coates Crescent	Member of public (local resident) complained via CEC out of hours service that a generator (McNicholas' welfare cabin, clothes drying) that had been left running was causing noise nuisance.	McNicholas	Environmental
04/05/2012	Manor Place	MOP (local resident) contacted CEC by email twice over the weekend to complain over lorry movements on Manor Place, in breach of local access arrangements. Complaint also related to work being undertaken from 08.00 on Sunday (03/06/12) in breach of CoCP relaxation. Complaint also alleged that a lamp post had been damaged.	McNicholas	Environmental
21/06/2012	Coates Crescent	Member of public complained via CEC out of hours service regarding level of noise	McNicholas	Environmental
29/05/2012	Compound, north side Edinburgh Park Bridge	Tractor and dump trailer reversed into sleepers.	Coffey	Near miss
07/06/2012	Gogar Bridge	Site worker cleaning holding down bolt arrangement on outside of green fence with no harness.	Bourne Rail	Unsafe condition

0 - Significant Incidents

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2.3 Safety Initiatives

All parties who attended the “Think before you Act” session have now signed up to the action plans developed following the session. CAF have advised that they did not consider they had a role in the process and so have not produced an action plan.

Bilfinger Berger – Siemens, have implemented the use of Positive Intervention forms to record good practice and near misses across the project. The feedback identified on these form will be used to develop further initiatives.

2.4 CDM Regulations

During the period Reigart were appointed as contractor for the demolition works of the toilet block at Cathedral Lane. A review was undertaken of their documentation including construction phase plan and method statement & risk assessments. The demolition works commenced on the 18th of June.

2.5 Environmental

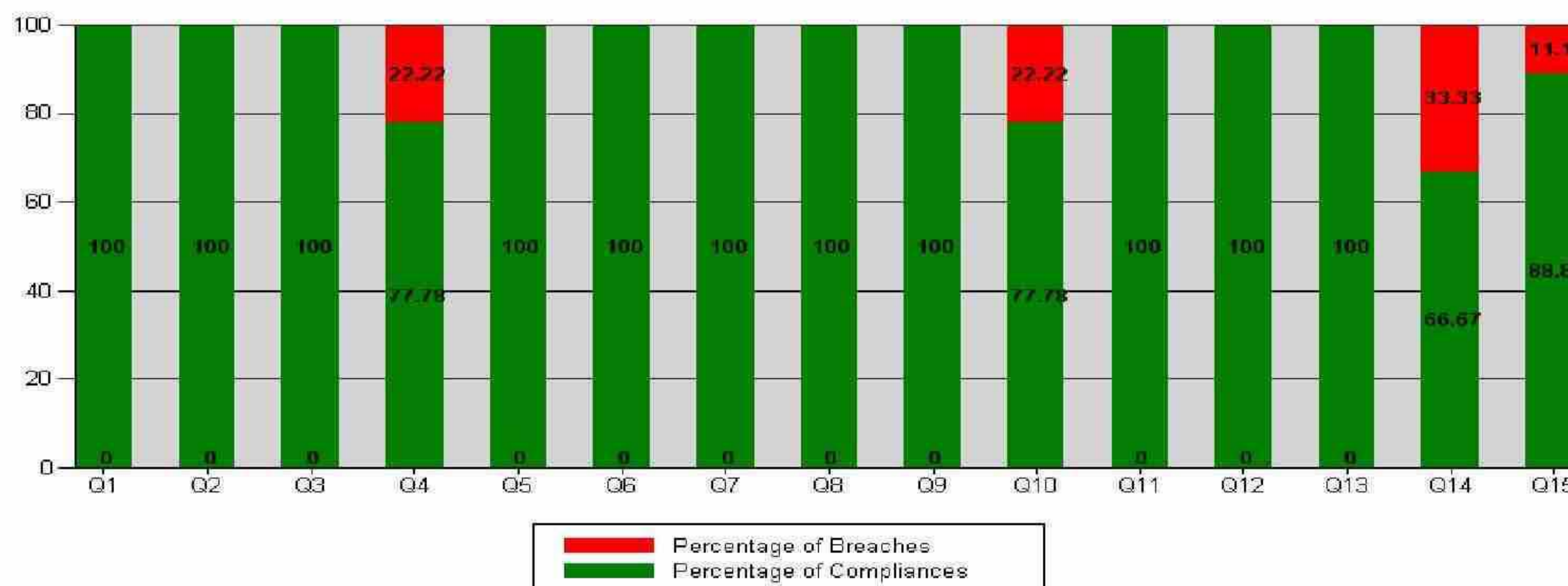
An inspection of the London Road Clock took place 19th of June. The clock is currently in storage at a CEC yard in Pencuick. The clock requires restoration; including sand blasting and re painting. A large foundation will be required and the clock will need to be lifted into place using a crane, thus traffic management will need to be considered. The report detailing current monuments status across the project with estimated costs will be reissued week commencing 25th of June 2012.

An Environmental Inspection took place at St Andrew’s Square / Elder Street on 15th June. No significant issues identified. Further inspections are scheduled for the 26th of June with McNicholas and the 27th of June with Bilfinger Berger - Siemens – Section 5 /7.

2.6 CoCP

A CoCP (Noise) Briefing was developed by Turner & Townsend, as a result of a number of complaints having been received from members of the public. This has been issued to all Turner & Townsend Project Managers and the Environmental Contacts for each contractor.

CoCP compliance was recorded at 93%. The results of the CoCP monitoring have been passed to CEC Communication Team. Details of these are included below.



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Q1. Hours of Work	Q9. Emergency Access
Q2. Notification	Q10. Parking
Q3. Notices	Q11. Litter and general housekeeping
Q4. Fencing and Hoarding	Q12. Dust
Q5. Noise	Q13. Smoking
Q6. Waste Management	Q14. Members of the Public
Q7. Waste Water and Run-Off	Q15. PPE and Behaviours
Q8. Water	



3 Programme

3.1 Programme Structure

3.1.1 Rev5 Programme Development

Infraco have issued an amended contract programme (Rev 5) to take account of the currently anticipated construction sequence and methodology, key changes include:

- Murrayfield Corridor Structures
- Edinburgh Gateway Civils works
- Deletion of Section 1A
- Inclusion of revised Section B Test & Commissioning activities.
- Durations to suit current track construction methodology

The Rev5 programme does not include the changes agreed in the Cost Engineering initiative implemented in early 2012 (On-street) or any amendments relating to the York Place 'Radical Programme'.

Following discussions with CEC and Infraco the Rev5 programme was accepted by Turner & Townsend on 1st June 2012. Corresponding changes have been made to the Master Schedule.

In the Master Schedule, and Rev5 programme, the critical path for the completion of Section B (Depot to Airport) has now changed to include both the completion of the Airport Tram Stop and Airport Retaining Wall.

3.1.2 York Place 'Radical Programme'

The implementation of Option 2 of the York Place Radical Programme has been confirmed by CEC. This comprises:

- Partial closure of York Place on the 16th of July, maintaining two bus lanes through the work site.
- 2 phases of Utilities diversions works. The first running from the 16th of July and the second commencing following the removal of the Waverley Junction 'plug' on the 16th of September. Drainage works would commence in the second phase.
- The forecast completion of the utilities diversions works is currently the 11th December 2012, resulting in Infraco commencing works immediately following Christmas 2012.

Detailed programmes are being developed by McNicholas. Once completed any revised durations for the works will be amended in the Master Programme to reflect the detailed planning.

3.1.3 Master Schedule

The Master Schedule is the Turner & Townsend hosted programme which contains all known aspects of the project. It is built upon the contractual Rev4 programme, and includes:

- Utilities Diversions Work
- Cost Engineering initiatives implemented in early 2012
- Rev5 Changes
- York Place Radical Programme
- Latest data relating to delays and construction dates

This results in the Master Schedule being used as the overall project management tool and it is used to calculate the forecast dates supplied to CEC in dashboards and reports.

3.1.4 Critical Path (Master Schedule)

It is to be noted that the current forecast completion dates are in advance of the contractual dates. The Critical Path referred to below, relates to the 'Longest Path' through the programme which would adversely affect the currently forecast end date if delayed.

Following the inclusion of the York Place 'Radical Programme' changes within the Master Programme, the critical path for the completion of Section C & D has changed with two separate areas now equally critical:

On Street: *Section 1D (Shandwick Place) / Section 1D E&M Installations*

Off Street: *Section 5C (Edinburgh Gateway) / Section 5A Testing & Commissioning*

3.2 Progress this period

Good progress is currently being made across the majority of the length of the route with the exception of Edinburgh Gateway and York Place which have yet to commence.

The current known delays attributable to utility clashes at Shandwick Place, St Andrews St and South St Andrews St / Waverley Junction are nearing resolution. Shandwick Place was handed back to Infracore during the week beginning 11th of June; Haymarket (with the exception of the collapsed sewer remedial works) week beginning the 18th of June; and St Andrews Square week beginning the 18th June.

There has been a delay in the planned handover at Waverley Junction and there is a risk of further delays as a result of Type 2 utility clashes in Shandwick Place in the future. The time impact of these delays is currently unknown, as the scale of the clashes will only be assessed as they emerge, but a cautious estimate is that these Type 2 clashes could result in an additional four week delay.

The advance works at Cathedral Lane are progressing well. The sheet piling works in the Murrayfield Corridor have been completed and the focus is now on the Ground Improvement activities.

The forecast completion for Section B is now 10 calendar days late. Efforts are being made to recover this to the contractual date of 8th of March 2013.

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As a result of the Cost Engineering initiatives implemented in early 2012, both the Section C & D dates are being forecast to be achieved ahead of the contractual dates. This improvement is further enhanced by the implementation of the York Place Radical Programme. Currently, the Section C & D dates are being forecast as 6th of February 2014 and the 7th of May 2014 respectively.

3.3 22 Week "Time Bank"

Based on Infraco's programme update contained within their period 5-2 progress report, and subsequent agreement in the 'Planners Forum', 9 weeks of the 22 week cost engineering programme saving had been eroded as a result of utilities works and the re-design of the On Street drainage.

Some further erosion has taken place within the current reporting period (ending 23rd of June) and Turner & Townsend's current assessment is that 12 weeks of the "time bank" will have been eroded by the end of the reporting period. This will be confirmed following the receipt of the Infraco period 5-3 progress report.

It is to be noted that drawdown against the 22 week saving is analysed using the Infraco Rev4C programme, which does not contain utility diversion works. The critical path runs through Shandwick Place in this document.

With respect to the Rev4C programme, the erosion of the 22 weeks is primarily driven by the delays at Shandwick Place, St Andrew Street and Princes Street attributable to drainage works. Infraco have subsequently been handed back Shandwick Place and it is anticipated that the erosion of the 22 weeks will peak in the Infraco 5-3 progress report.

Delays have also been evident at South St Andrews/Waverley Junction and these also contribute to the erosion of the 22 weeks. Some issues have been encountered in handing this back to Infraco as planned, with the potential that this area could become the 'driver' for the erosion of the 22 weeks going forward.

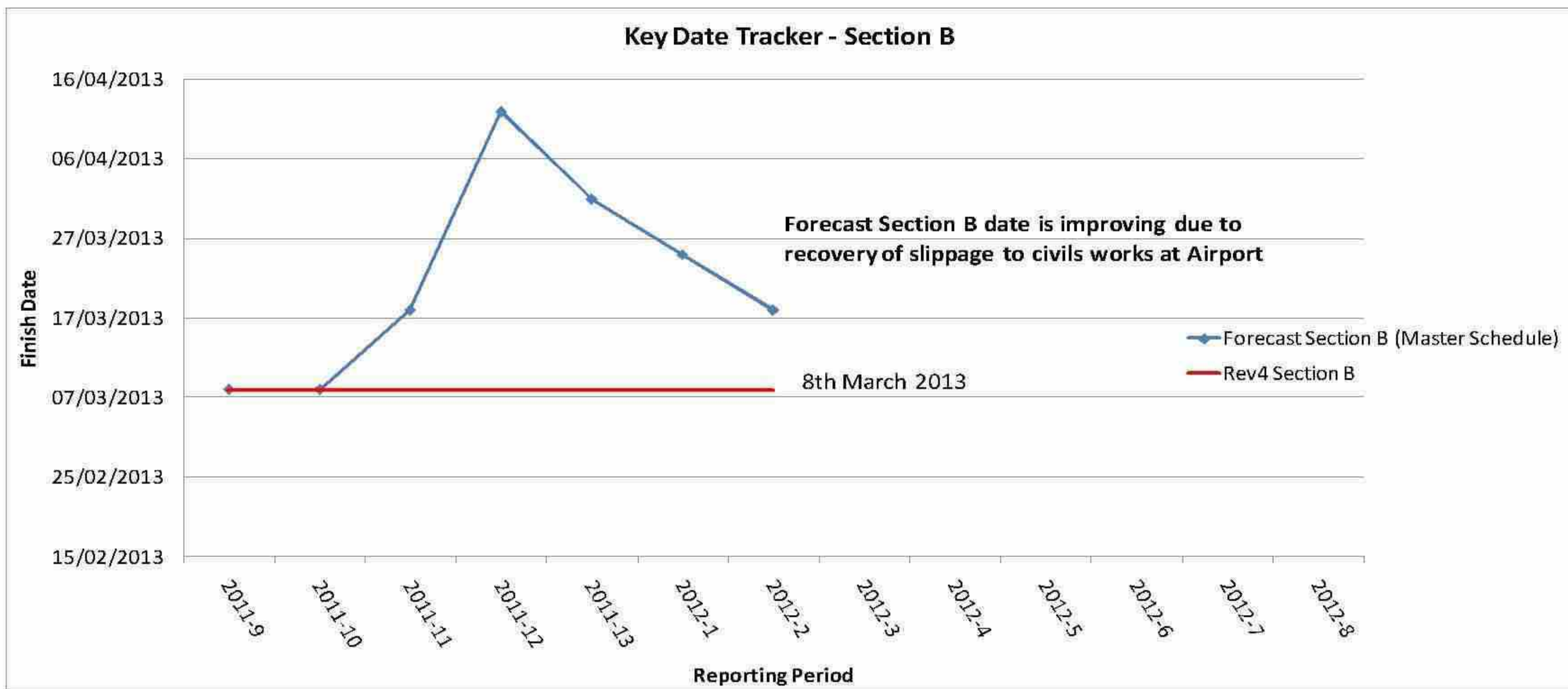
Although delays have been evident with respect to the Infraco works, McNicholas have made significant progress with the drainage and track bed works. This progress is being taken into account in discussions with Infraco on the overall progress position.

3.4 Key Dates Tracker

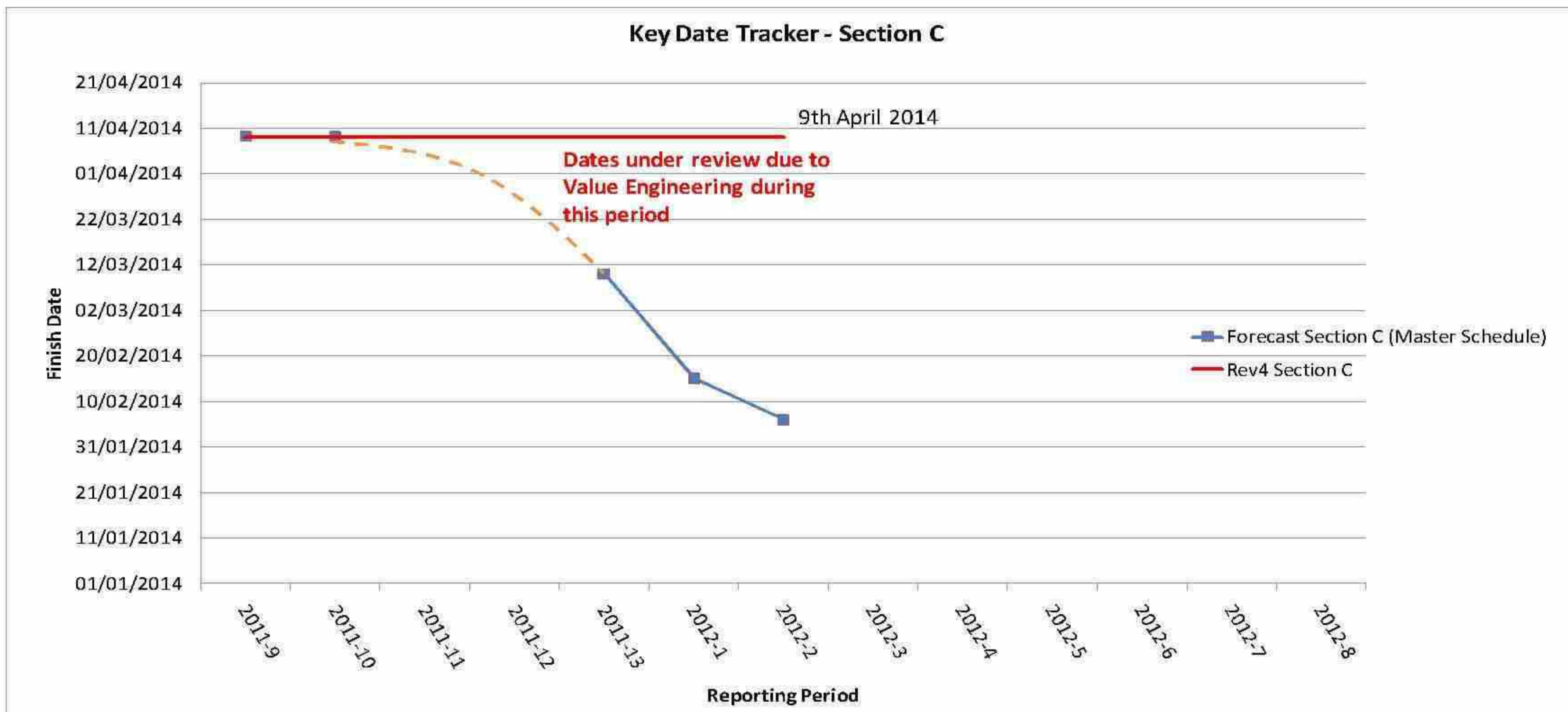
Three charts are included below which track the forecast dates (from the Master Schedule) for the Sectional Completion milestones against the contractual dates and their movement throughout the project lifecycle to date.

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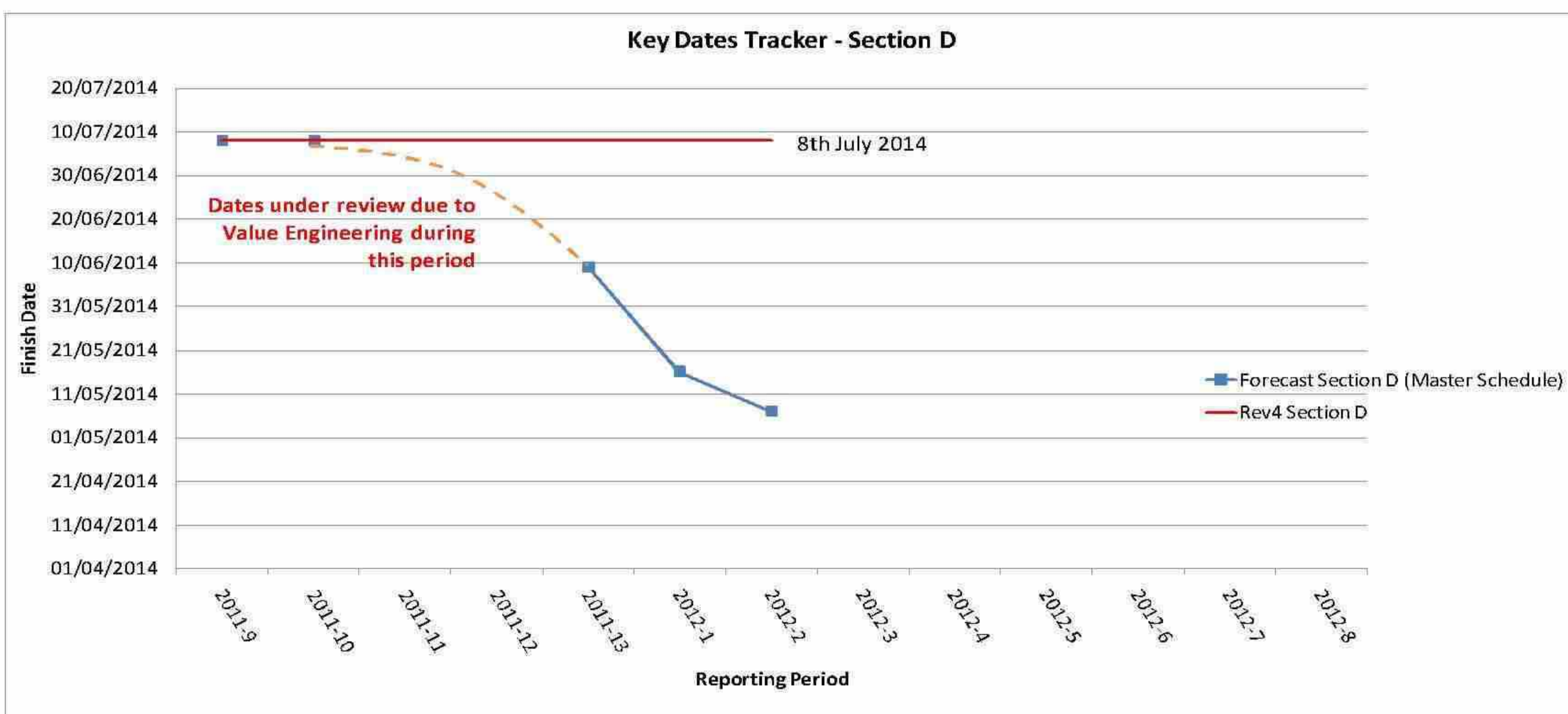
Section B; Test Track Complete



Section C; All Construction Complete (including T1 & T2 testing)



Section D; Open for Revenue

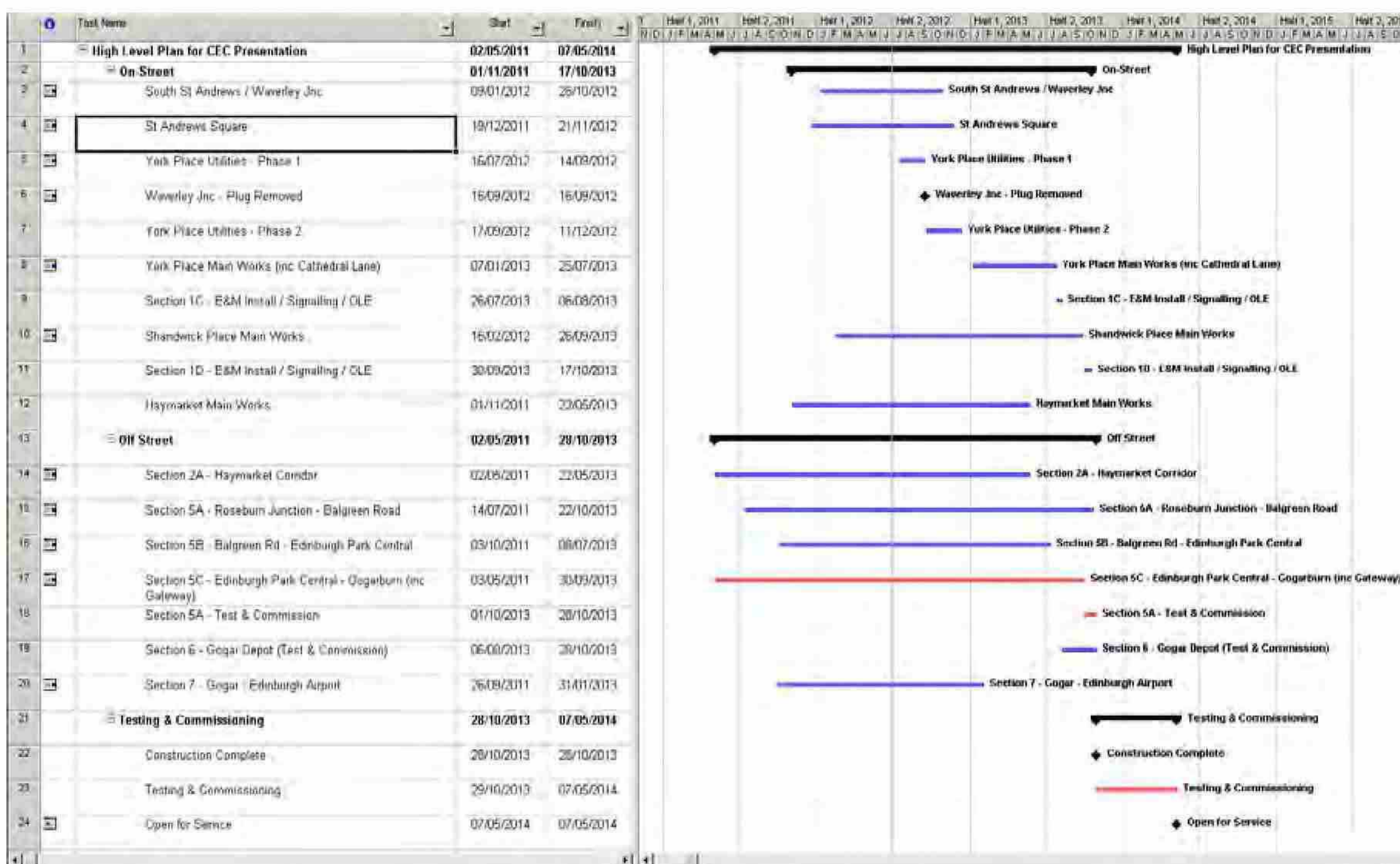


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It is to be noted that whilst the Infracore Rev4C programme is stating an ongoing slippage to end dates, the master schedule take account of positive influences, such as: the re-sequencing of Cathedral Lane Substation; and the York Place 'Radical Programme'. This results in an improvement to the forecast project completion.

The high level programme shown below shows the relationship between the on street and off street primary and secondary critical paths. The project will focus increasingly on these over the coming weeks with a view to agreeing an optimum programme to completion by the Autumn of 2012.



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4 Risk

4.1 QSRA Tracker

Several iterations of the Quantitative Schedule Risk Analysis have been carried out since September 2011. The table below summarises the process.

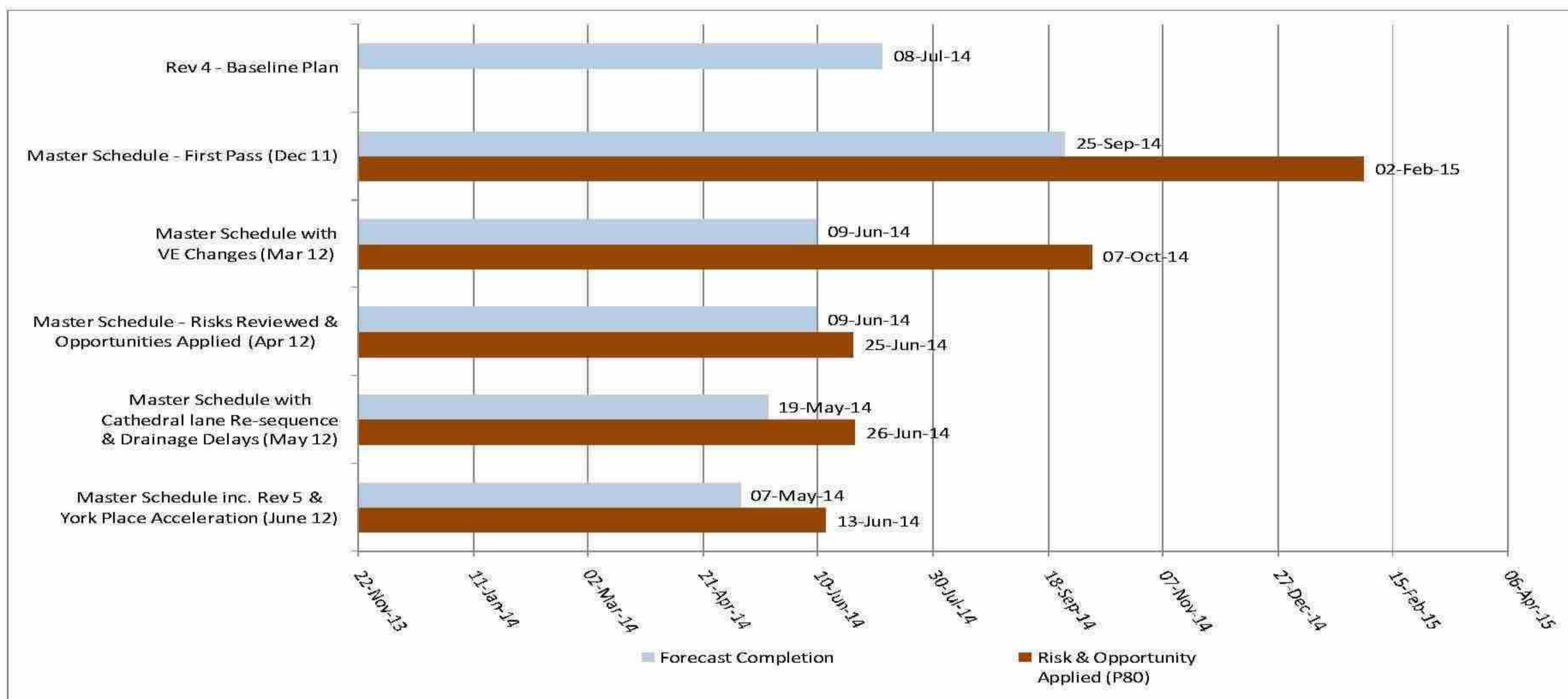
P80 represents an 80% likelihood of completing the milestone on that date, it is usual practice to utilise the P80 date as a standard at this stage of the project lifecycle.

An updated QSRA has been carried out following the agreement of the Rev5 programme and York Place 'Radical Programme' initiative. Further details and results are included in the tables and charts below.

Going forward it is envisaged that the QSRA will become a quarterly analysis unless there are any new significant changes to programme or delivery strategy.

QSRA Iteration	What is Included (Description)
Master Schedule – First Pass	High Level schedule produced for QSRA analysis. Including utilities diversions.
Master Schedule with VE Changes	Post VE exercise Revised On-Street phasing Removal of summer embargoes More mature Risk Register
Master Schedule – Risks Reviewed & Opportunities Applied	Updated programme Detailed Risk review Identification of opportunities and application to the QSRA
Master Schedule with Cathedral Lane Re-Sequence	Further updated programme Early start of Cathedral Lane Sub-Station works Impacted Scottish Water risks Risk Review
Master Schedule – including Rev5 and York Place 'Radical Programme' changes	Further updated programme Rev 5 changes to Off-Street section Early start of utility diversion works at York Place Risk Review

The chart below shows the forecast dates (before risks are included) and the 'impacted' dates at each iteration:



4.2 Project Risk update

Each period the risk register is reviewed and risks are assessed on an ongoing basis, with a general trend of reduction of risks as the team continually mitigate against the potential impact.

At the last 4 weekly risk review the following risks were positively reduced:

Risk	Mitigations
Damage to Utility Apparatus (By McNicholas)	Robust Permit to Dig procedures in place Communications in place to call out utility for urgent repairs Audit of McNicholas permit to dig procedures was carried out and supervision increased
Late 3rd party claims for utility/property damages from works	Utility provider presence on site SW legacy works included in forecast Ensuring robust sign off process with utility companies
Approval of plans for Edinburgh Gateway.	Plans have been approved and now included in Rev 5 plan. New Risk identified related to gateway scope creep and over positive planning of reduced scope of works
H&S Breaches, Incidents and stoppages	Focus on method statements, working practices and H&S standards Increasing awareness and raising issues through: 1) Meeting of principles to identify improvement plans 2) Weekly Safety meetings with McNicholas and rolling action log being managed

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	3) Leading Indicators developed to monitor McNicholas Safety performance
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New risks which were identified within the latest period.

New Risk	Cause
Risk that scope of work at Edinburgh Gateway increased and has been underestimated	Reduction of scope of works and programme duration in Rev 5
Increased risk of utilities delays at Shandwick Place	Type 2 clashes in Shandwick Place when further excavations are carried out.

A Variety of opportunities have been realised or identified and included in the QSRA analysis:

- Removal of Tram Kiosk work - Realised
- T1 testing of off street section proves successful therefore planned full line testing can be reduced
- McNicholas works (York Place) take less time than planned for at preset
- Start testing and commissioning on off street earlier by accelerating gateway and 5a structure
- Edinburgh Gateway IFC design submission being brought forward

A trend of improving results has emerged due to continual mitigation of risks and work by the project team. It is prudent to be aware that the QSRA results could worsen if any programme blockers or significant emerging risks are identified within the project lifecycle.

5 Commercial

5.1 **Cost Summary** (note – presentation of risk and opportunities to be agreed with CEC following review of the draft of this report).

Amount (£K)	Contract Sum	Approved Change	Revised Contract Sum
Totals	479,660	4,356	484,016
Change in Progress			10,165
Anticipated Change			12,180
Contributions			-8,275
Forecast Change / Contributions			14,070
Forecast Total			498,086
Risks (refer commentary on risk forecast in risk section below)			5,000
Opportunities (refer opportunities section below)			
Risks & Opportunities			5,000
Revised Forecast			503,086
Budget			500,154

5.2 **Movement from previous period**

The Infraco forecast (excluding risk but including all changes and contributions) has increased by £319k from the previous forecast. Significant changes from the previous period's report include:

- The overall forecast for piled OLE bases has **reduced** by approximately £150k. This is due to a reduction in the number of piled bases around Haymarket as investigative works have proved that gravity bases can be accommodated.
- Princes Street Outstanding Works carried out by Infraco has **increased** the forecast by £290k. No provision was included for this work previously as liability was not clear.
- The provision for track bridging has **reduced** by £350k as the requirements for this work become more apparent

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- The forecast of the saving associated with removing drainage and excavation from Infraco's scope has **increased** the forecast by £450k. This results from discussions with Infraco regarding the application of subcontractor and consortium mark-ups on scope deductions and represents a more conservative view of the achievable saving value.

The Utility forecast has increased by £344k in the period. Significant changes from the previous period's report include:

- Princes Street Outstanding works carried out by McNicholas has **increased** the forecast by £143k.
- Shandwick Place excavation (previously part of the Infraco scope) has **increased** the forecast by £180k.

5.3 Commentary on summary table

- Approved change has increased by £483k to £4,356k. The principal changes are for provision of traffic management in section 1A, Gogar Depot 1800 mm diameter manhole, the omission of track welding equipment and certification of period ending 28/4/12 on street works change. A detailed summary is provided in the Approved Changes section of the report below.
- At the Tram briefing meeting, 17th May 2012, the draft cost risk forecast and schedule risk forecast was presented. The cost risk forecast at £4,000k and a net schedule risk forecast of £1,000k has been used in place of the forecast balance of contingency to help inform the out-turn forecast. The risk forecast is based upon P50 (level of confidence) and the schedule forecast is based upon P80 (level of confidence). It should be recognised that the forecast has an accuracy tolerance, i.e. some items may be descoped e.g. Scottish Water legacy and vice versa other items such as Prelims/Overhead & Profit (OHP) on Infraco de-scope items and off-street utilities costs paid by CEC may not be recovered from Infraco. These items will be included in the updated Cost Risk Estimate for discussion.
- The drawdown certificate shows a reduction of 9.1 weeks on the original Infraco 22 week cost engineering programme (Rev4c). The Master Programme has been updated using the May period progressed version of the Rev 5 programme and our assessment of the On-Street Works. The Master Programme will be used to assess programme risk and opportunities.
- An alternative option is being examined for the execution of the track box excavation and proving utilities by using Crummock in a direct contract with CEC. However, until a methodology is agreed, we have assumed that McNicholas will undertake track box excavation as per previous forecast.
- The key sensitivities are additional utilities diversions, the scope of the Scottish Water legacy works, commercial evaluation issues (Infraco unwilling to apply prelims/OHP on de-scope items), claiming for costs in prior On Street Works Estimate periods and disruption claims for loss of productivity. Contractual entitlement is yet to be proven.

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5.4 Infraco (including Utility drawdown's and scope changes)

5.4.1 Approved Changes (Movement in the Period)

The changes approved this period at the CEC/Turner & Townsend weekly change meetings are provided below.

Approved Change	Amount (£K)
Previous approved change	3,873
tnc566: On Street Generally - Ducting Design Changes Due to Utilities Conflicts	50 *
tnc567: On Street Generally - Drainage Design Changes Due to Utilities Conflicts and design required to meet SW approvals	50 *
tnc568: On Street Generally - Trackform Design Changes Due to Utilities Conflicts	20 *
tNC572: Cathedral Lane Substation - Retaining Wall Design (cost finalisation)	3 *
tnc609: Finalisation of traffic management provision in section 1A (Forth Ports / Leith Walk)	133
tnc618: Gogar Depot 1800 mm Diameter Manhole - TQ736	6
tnc619: Omit Track Welding Equipment	-14
ICCO007 – On Street Changes to 28/4/12	235
	4,356

* Variance to previously approved change

5.4.2 Changes in Progress

Changes in Progress include items which cannot be mitigated and the change is agreed in principle. New items included in this section of the cost report during the period are:

- tNC640 - Unimog Insurance: £-1k
- tNC643 - Edinburgh Gateway Construction: £0k
- tNC647 – St Andrew Square cross sections to support VE on carriageway reconstruction & kerb realignment: £10k
- tNC648 - Cabinet Position For Street Lighting - design: £10k
- tNC649 - Princes Street Blister - Design Works: £0k
- tNC651 - Defer Off Street Tramstop Shelter Installation and Fit-out: £50k
- tNC653 - Provision of IFC Drawings in DWG CAD format: £5k

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- tNC652 - Maintenance of The Depot Workshop Equipment: £50k
- tNC655 - Revise CCTV & PA coverage at Murrayfield tram stop: £5k
- tNC657 - Drainage As Built Drawings - Princes Street: £15k

5.4.3 Anticipated Changes

The movements in the period are provided below:

Anticipated Change to 25 May reporting date		£11,997K
Infraco Works		
Cathedral Lane Substation	Costs transferred to changes in progress	-250k
Track Lowering - bridging trackform over utilities in St Andrew Square	Design solution reassessed.	-350k
Piled OLE base in lieu of utility diversion	Some costs transferred to change in progress; overall costs reduced	-10k
Further design changes to OLE resulting from utilities (York Place)	Costs transferred to changes in progress	-50k
Remove drainage from Infraco scope	Non-recovery of Infraco and sub-contractor prelims / overhead and profit as defined in contract Schedule Part 45.	200k
Remove excavation of trackbox from Infraco's contract	Non-recovery of Infraco and sub-contractor prelims / overhead and profit as defined in contract Schedule Part 45.	250k
Schedule Part E, Items 7. OLE Pole surface finish and decorative top (Finials)	Costs transferred to changes in progress	-50k
Redesign of OLE bases along Roseburn corridor where they are sited outside of the LOD	Design cost adjustment	-90k
Utility Diversions		
UNC 012 - Provision of a Budget to allow for the SW Sewer Repair due to Collapse	It is currently assumed that these costs will be recovered from the project insurers. This is included within the contribution section	£260k
UNC 013 - Provision of a Budget to allow for the additional works to Princes St prior to Completion &	Work carried out on legacy items by McNicholas to facilitate the opening	£100k

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Handover	of Princes Street by 30 June	
UNC 017 - Provision of a Budget to allow for the return to Track Excavation Works in Shandwick Place	Work to be carried out by McNicholas to clear utilities from the permanent works. There will be an offsetting deduction from the Infraco contract for this work	£180k
UNC 019 - Provision of a Budget to allow for the foundation of the Heart of Midlothian War Memorial	This work was previously included in the Ancient Monuments budget which is currently being reviewed	£11k
Minor amendments resulting from a review of forecast		£19k
		£11,991

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5.4.4 Contributions Register

Contributions from 3rd party, stakeholder or other CEC budgets are being developed in order that the amounts can be finalised. The current position is as follows.

Works	£K	Status / Action
Edinburgh Gateway – legacy design and project management	940	TS have been provided with details and agreement of expenditure is agreed each period
New Ingliston – ducts & crossings	540	Agreed with NIL
Cathedral Lane Sub-station	470	Costs submitted to Henderson Global (HG) amounting to £470k for design and the amended construction scope resulting from HG's requirements. £400k is included in the cost report to provide tolerance should the full amount not be recoverable from HG. Note that the final scope / costs are subject to site constraints.
RBS Tramstop	560	Agreed with RBS
St Andrew Sq Public Realm design	133	Contribution confirmed from separate CEC budget
CEC miscellaneous (George St)	318	Contribution received from separate CEC budget
Haymarket Station redevelopment	36	NR have agreed to undertake removal of staircase and parapet, NR to fund costs of sub-station plinth amendments and re-routing of Scottish Power cable.
Setts in On-Street Works	890	Forecast cost associated with setts in St Andrew Square. Final rates and costs to be agreed with Infracore.
Edinburgh Gateway	4,200	A final construction estimate on the agreed scope is currently being prepared by BBS. Costs will be funded by Transport Scotland.
Grosvenor Street Sewer – Insurance claim	188	Ongoing with Insurers
Total	8,275	

5.4.5 Risk and Contingency Analysis

At the Tram briefing meeting, 17th May 2012, the draft cost risk forecast and schedule risk forecast was presented. The cost risk forecast at £4,000k and a net schedule risk forecast of £1,000k has been incorporated into this periods cost report in place of the forecast balance of contingency to help inform the out-turn forecast. The risk forecast is based upon P50 (level of confidence from the cost range) and the schedule forecast is based upon P80. Further discussions can take place regarding the use of a P80 risk forecast which would provide a more prudent view of expected outcome given the issues on utilities diversions and legacy issues.

It should be recognised that the risk simulation forecast provides a tolerance range of outcomes. For example some items may be de-scoped e.g. Scottish Water legacy and vice versa other items such as the off-street utilities costs paid by CEC may not be recovered from Infraco. In future forecasts the probability of some of these key risks will be evaluated in greater detail with the CEC client team to ensure that there is a detailed understanding of what factors will cause the risk and the extent to which the mitigations will be successful or not.

The key sensitivities are:

- Emerging Infraco scope items where there is ambiguity in the IFC drawings – examples include the Scot Rail access gate where the IFC drawings show a simple arrangement and Infraco now claim that ScotRail have made additional security requirements and pedestrian access arrangements. This type of example and others such as the duct conflict with the existing Network Rail fence post foundations at Haymarket Yards indicate that a number of ambiguous design scope issues will continue to emerge.
- Schedule opportunities – critical path and end date assuming York Place is brought forward and therefore critical path moves to Shandwick Place which is currently being affected by the drainage re-design. Also the presumption that the testing and commissioning period can be reduced by 3 months.
- Commercial principles for securing schedule savings – the cost engineering instructions provided a framework for sharing savings on a 50/50 basis with CEC. Infraco have presented a view that they have re-sequenced their works and therefore should be reimbursed their share of the saving. This equates to £6M. The counter argument is that the cost report includes all their contract prelims and provided the project is finished on time then no further cost should be authorised.
- Emerging scope on the utilities diversions – when workfaces are opened up, additional or different conflicts emerge.

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5.4.6 Opportunities and Baseline Project Instructions

A summary of the original amounts included in the cost engineering instructions are provided below. Given that the majority of items have been instructed, are in progress or in the case of the programme savings resulting from the embargo and TM removals, are subject to risk and opportunity from re-scheduling, it is proposed that these items are monitored in other sections of the report. The comment column indicates where the opportunity is tracked.

Note: all figures are net

Item	£K	Comment
Remove embargoes and revised TM	6,460	22 week saving eroded by 9.1 weeks which excludes full extent of utilities diversion works. Master schedule shows 25 June 2014 completion compared to 8 July 2014. Schedule risk and opportunity forecast to track early / late completion.
Edinburgh Gateway		Instructed, covered in contribution section.
Setts (separate CEC budget)	1,000	Instructed –potential saving of £95k for revised. Specification (setts, prismo and concrete) and monitored through changes in progress. £888k for setts in St Andrews Square which is included in the contribution register.
De-scope public realm at St Andrew Sq	700	Instructed, monitored through changes in progress
Contributions 3rd Party Agreements	2,500	Note: this is the amount for some contributions in the Cost Engineering report. This amount is not carried forward; refer Contribution Register for current position.
De-scope works at Forth Ports	2,445	Instructed, approved change
Omit Airport Tram Kiosk and Canopy	150	Instructed, monitored through changes in progress
Temporary tram stop at York Place	150	Instructed, monitored through changes in progress
Redeployment of Trams	CEC	Included in CEC budget code
Cancel track York Place to Newhaven	1,100	Instructed, approved change
Omit Siemens works at Tower Place	100	Instructed, approved change
Turner & Townsend / CEC resources		Ongoing
Shared recovery vehicle		Not taken forward
Road re-construction depth	700	Instructed, monitored through changes in progress
Design freeze north of York Place	t.b.c	Infraco design costs expended
Reduced requirement for storage		Included in CEC budget code
Lay off TM at Forth Ports/Leith Walk	t.b.c	TM not included in Infraco budget provision
Roseburn Viaduct Cladding	300	Instructed, monitored through changes in

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		progress
De-scope crew relief facilities (Haymarket)	70	Instructed, monitored through changes in progress
Opportunities secured	8,365	
Opportunities to secure	7,310	

5.4.7 On Street – Schedule 45 Pricing Assumption Variations and Commercial Issues

In previous reports we have described the basis of pricing assumption variations which enable adjustment to the On-Street contract price and also emerging issues regarding the basis of the settlement agreement. The following classifies agreement of change in the following way:

- Green: variation principle and amount agreed
- Amber: variation principle agreed, work ongoing and amount to be agreed
- Red: variation principle and amount not agreed

PMC	Description	(£K)
	On – Street	
15	Utility conflicts – investigation	17
25, 72 & 87	OLE foundations resulting from discovery of utilities	730
28	Temporary accommodation for utilities contractor	2
29	Road re-construction protocol (opportunity to reduce depth)	0
32	Utilities affecting site clearance - disconnect power to bus trackers	0
35,79,99,100, 101	Utilities contractor affecting Infracore progress	61
36, 44	Utilities affecting progress	83
37	Slit trench to validate utilities	7
38	Move 3 OLE foundations (St Johns Church)	12
40	Scottish Water diversion Princes St	253
43	Christmas embargo – temporary infill Princes St	204
52, 104, 137, 144	Traffic Management costs for amended programme constraints	160

33, 68	Revised drainage design	89
69	Geotextile liner to Clifton Terrace void	2
73	Princes Street additional works	30
	Total On-Street Works Estimate	1,650
	Off Street	
t.b.c	Payment for Utility diversions Off Street outwith BBS's scope	340
61	Temporary footpath and drainage - Roseburn Viaduct	30
t.b.c.	Low voltage supplies to Airport Tramstop cabinet	30
	General	
	Rev3A to Rev 4 programme – evidence of delay costs (BB only, Siemens t.b.c)	600
	Depot doors – new drains to prevent water ingress	t.b.c
	Re-configure ducts at Haymarket Yards owing to fence post foundation within LOD	t.b.c
	Snags/defects in Princes Street – ponding, rutting in road surface, etc. These have been approved since they were excluded from the mediation proposals for the road rail remediation for Princes St.	250
		2,900

Items within the Red category include:

- Utilities Off-Street £340k – one of the principles of the settlement agreement is that Infraco take the risk for utilities off street. CEC have had to pay utility company invoices and cost recovery has been sought from Infraco. Infraco have provided a position paper outlining why some of the utilities movements should be payable by the Client. The pre-mediation proposals have now been received and they include £321k for diversions. Further work is needed to convince Infraco that they should review actual costs vs. costs within their contract price.
- Rev3A to Rev 4 programme – Infraco have applied for £1,400k, however in our view they have not submitted evidence that the costs have been incurred which is a requirement of the Independent Certifier's opinion. Infraco have committed to provide further information to evidence that the costs have been incurred.
- Depot doors new drains to prevent water ingress – Infraco are reviewing matters with suppliers; they have also stated that the design is based upon value engineering and design approvals.

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- Re-configure ducts at Haymarket Yards owing to fence post foundation within LOD – Infraco installed a bank of ducts and then have stated that they need to be amended owing to conflicts with the Network Rail fence post foundations. Unencumbered access within the LoD should be provided however re-work could have been avoided when the workface was opened up.
- Snags/defects in Princes Street ponding, rutting in road surface, etc. These have now been agreed as Infraco claim they were excluded from the pre-mediation proposals and agreement was required to agree outstanding works and snagging lists in order that the 30th June 2012 would be delivered.

5.5 Utilities

5.5.1 Budget

The approved budget of £7,773k is unchanged during this period and is based on the original budget plus approved changes 1 and 2.

5.5.2 Contract

The contractor has offered a saving from the 11.48% management fee to 9.3% on the basis that as the contract is NEC Option E, cost reimbursable, the costs are audited and concluded on a quarterly basis. A condition of this proposal is that the client takes the risk of the £10k excess should any claims arise from Public Liability Claims. A final proposal has been submitted for approval.

In addition savings of 5% to 10% in labour, plant and material costs have been secured for the cost reimbursable elements.

These changes have been incorporated into our forecast.

5.5.3 Approved Changes

There have been a number of changes to the scope of the McNicholas works which have increased the overall value. These are summarised below:

- UNC-001: Budget drawdown for core scope - £1,800k
- UNC-002: Budget drawdown for core scope - £3,061k
- UNC-003: Hire of TM and heras fencing at site of Lindsay Road; - £15k
- UNC-005: Construction and completion of Retaining Walls at Tower Place Bridge - £50k
- UNC-006: Drainage installation works descoped from the Infraco Contract - £797k
- UNC-007: Ducting work associated with Cathedral Lane substation descoped from the Infraco contract - £380k
- UNC-008: Asbestos survey on the existing toilet block at Cathedral Lane - £3k
- UNC-009: Repair works required within the Crawley Tunnel on Princes Street. - £40k

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- UNC-010: Additional CAD technician to the utilities contractor's design team to support delivery of additional scope items - £20k
- UNC-011: Additional McNicholas Management team (up to End June 2012) due to increased work scope - £36k
- UNC-012: SW Sewer Repair due to Collapse - £260k
- UNC-013: Works to Princes Street prior to completion & handover - £100k
- UNC-014: Completion of BT 12 way in advance of main York Place works - £123k
- UNC-017: Track Excavation Works in Shandwick Place descoped from the Infraco contract - £180k
- UNC-019: Foundation of the Heart of Midlothian War Memorial - £11k

5.5.4 Changes in Progress

The contract form is NEC Option E – Cost Reimbursable. The contract is being administered by an NEC change management system which tracks orders/changes for specific items of work. This enables control over commitments and managing expenditure.

5.5.5 Anticipated Change

The cost estimate was originally developed on the basis of a cost per conflict type. Given a greater understanding of the nature of the diversions required, a programme with resources to suit the scope and programme sequence has been developed. This resource plan has been used to form the basis of the estimate. This estimate is under continual review, comparing actual progress against planned and actual resources against planned. The sequence of work is as follows.

Priority	Original strategy	Revised strategy
Priority 1: works in advance of Infraco	Overhead Line Bases Road Level Conflicts Tram Ducting Chambers Tram Ducting Track Construction	Overhead Line Bases Road Level Conflicts Tram Ducting Chambers Tram Ducting Track Construction Drainage – transfer of some drainage networks in Haymarket, Shandwick Place and St Andrew Square from Infraco Drainage excavation, proving and identification of new routes owing to utility conflicts Drainage gulley's IMU drains Track box and Tram duct excavation in Haymarket, Shandwick Place and St Andrew Square from Infraco Duct excavation Cathedral Lane Some kerb realignment

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Priority 2: works in parallel with Infracore through call off or isolated work areas	Traffic Signal Pole Street Lighting Column Road Sign Base Kerb Re-alignment Drainage Drainage Gulley	Traffic Signal Pole Street Lighting Column Road Sign Base Remaining kerb re-alignment
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The key issues being addressed in the estimate include:

- There is a high degree of variability in work scope for each conflict, for example: removal of foam concrete, steelwork within the road construction, abortive excavations owing to utilities not in the locations shown on the drawings.
- The unit cost per conflict included in the original cost estimate may not account for inefficiencies resulting in the accelerated programmes for Shandwick and St Andrew Sq.
- Scottish Water has submitted a proposal for management and supervision costs for On-Street, Off-Street and Legacy Works for the project until 2014. These costs are being challenged; however they are in excess of the forecast allowance which is based upon a December 2013 completion. A meeting was held 21 June 2012 and it was agreed that we will review the target programme dates for each section of the work which will assist Scottish Water determine what type and level of resource is needed. A further meeting is scheduled for the 17th of July 2012 to conclude matters.

5.5.6 Legacy "snags" / defect correction Scottish Water assets Haymarket to York Place

The scope of work is being developed through evaluation of the "snagging" lists and engagement with Scottish Water.

The current estimated cost is £1,094k and the scope is being developed and agreed with Scottish Water.

Grade 3, 4 and 5 sewer repairs – Scottish Water claim that they are committed to doing these works however in our view they would fall within the requested works provisions of the 3rd party agreement and therefore be funded by Scottish Water. These are not included in the cost report at this stage.

The sewer collapse in Haymarket is to be recovered through the insurance provisions.

5.5.7 Legacy "snags" / defect correction Scottish Water assets York Place to Newhaven

Tenders were received on 8 June 2012. The tender prices for the scoped / target cost element of the work are as follows:

- Tender 1 - £259,875.15
- Tender 2 - £413,739.92
- Tender 3 - £683,881.02

The tender review is ongoing and award will be based on a 60 / 40 Quality / Price ratio.

The budget for the scoped works is £1,450k. In comparing the budget with the returned tenders the following points should be noted:

- Tenderers 1 & 2 have incorrectly priced the tender in relation to health and safety, quality and management supervision of the works and in addition tenderer 1 has substantially underestimated the works required to the sewer network and therefore it is likely that, once the issues have been clarified, their final tendered prices will increase.
- Tendered scope is based on information supplied by Scottish Water and a desk top study of the as-built network. The risk of any change to the scope and target cost remains with CEC. Our experience to date has shown that the scope increases once the works have been opened up and our budget contains a significant amount of risk in relation to this unknown. For example, to rebuild a manhole it may be necessary to move utilities which would result in an increase to the target cost.

With regards to the un-scoped works, which will form part of the contract once the works can be properly defined, the budget is £1,250k. These works include primarily the separation of the gas and water main works and works from the foot of Constitution Street to Ocean Terminal. The length of separation works is not yet established.

CEC have advised that the Council are reviewing the integration of public realm, road repairs and the legacy works. The programme will be re-scheduled to accommodate the outcome of this review.

The current overall forecast remains at £2,700k however the scope and costs are being developed to determine the most cost effective solution.

5.5.8 Legacy works constructed under MUDFA

Meetings have taken place on a regular basis to resolve the cost share, betterment and supervision costs to September 2012. Scottish Water proposals for management and supervision costs for On-Street, Off-Street and Legacy Works for the project until 2014 have also been reviewed. These costs are being challenged; however they are in excess of the forecast allowance which is based upon a December 2013 completion.

A meeting was held 21 June 2012 and it was agreed that we will review the target programme dates for each section of the work which will assist Scottish Water determine what type and level of resource is needed. A further meeting is scheduled for the 17th of July 2012 to conclude matters.

5.6 Tram Vehicles

The budget for Tram Vehicles is £62.4m which is lower than the contract sum at £63.6m.

There are no changes to the forecast during the period.

5.7 Payments and Cash flow

A summary of the certified amounts are provided below.

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	Certified £K	Planned £K	Comment
Infraco	297,080	300,300	Planned – based upon Rev 3A programme
Utilities	7,300	6,050	McNicholas plus SUC costs
Trams	57,650	58,550	Payments generally in accordance with milestone schedule. Incomplete milestones are not included in certified amounts.

6 On Street - Enabling Works & Utility Legacy Works

6.1 General

It was reported previously that there was an increase in the number of instances where Turner & Townsend were taking back sites to deal with residual utilities issues, particularly tram ducting conflicts, that were either not completed prior to handover or which were discovered after the sites were handed back to Infraco.

In recognising this issue a target of mid June was set to find technical solutions to all major conflicts and a rigorous management regime was put in place to deal with issues as they arose. This approach has in the main been successful and significant areas of the On Street section are now in the possession of Infraco and the main tram works are progressing well. There will continue to be instances where discrete areas will need to be taken back to deal with minor conflicts, outstanding Scottish Water legacy issues and what are termed "type 2" conflicts including proving areas for road signs and the like. This has always been envisaged and, in agreement with Infraco, Turner & Townsend will be deploying gangs who will be available as required.

6.2 York Place Planning

It has been agreed with CEC that the York Place enabling works will commence on 16th July and be carried out in two phases. Phase 1 will entail partially closing York Place while leaving two operational bus lanes, one in each direction, with access and egress into Elder Street. During Phase 1 the bus station on Elder Street will remain open. In Phase 2 York Place is closed from Broughton Street to North St Andrew Street and the bus station is relocated. It is currently envisaged that Phase 2 will commence at the end of September when Infraco is able to provide a traffic lane at the junction of South St Andrew Street and Princes Street. All enabling works are scheduled to be completed by the end of 2012.

Planning of the enabling works is well underway and in consultation with CEC it was agreed that the McNicholas scope of work through York Place would increase based on lessons learned from other sections of the works to include the utility conflicts, "track box" excavation, drainage and all tram ducting. This proposal was put to Infraco and in response an alternative strategy was put forward involving Infraco's sub-contractor Crummock. This is currently being investigated and Turner & Townsend have been requested to provide a recommendation on the way forward by 29 June 2012.

A key driver in facilitating early works in York Place is the completion of some ducting and demolition enabling works at Cathedral Lane/Elder Street and a 12 way BT diversion at Broughton Street. All these works have commenced and are on target to be completed before 16th July 2012.

6.3 Legacy Works

As reported previously there remain some key water issues that have the potential to cause significant difficulty for the project. These include apparatus currently located within the tram Dynamic Kinematic Envelope and the tram DKE+2m that cannot be diverted and apparatus without the necessary separation distance from other utilities as a consequence of congested areas. Progress with Scottish Water on how to best deal with these issues has got underway again following a period when other matters were taking precedence. As set out above the residual legacy issues not dealt with during the utility conflict diversions will need to be done in consultation with Infraco and at such a time as to minimise any delays.

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Regarding the legacy works north of York Place, the tenders were received on 8 June and the preliminary evaluation is nearing completion. Turner & Townsend is aware that the target date for commencement of the works is currently under review by CEC, an update on this matter will be provided at the Client Briefing Meeting on the 5th of July 2012.

The reinforced concrete works at Tower Place Bridge and the remedial works at Lindsay Road are progressing well and are expected to be complete by the end of June.

6.4 Grosvenor Street Sewer Collapse

Following the sewer collapse in Grosvenor Street the tram drainage was redesigned to take account of the collapse and the necessary repairs and drainage works are now complete. In consultation with Scottish Water, Turner & Townsend has been investigating the cause of the collapse. At present the cause remains unclear and the report being compiled is not likely to draw any definite conclusions. A further update will be provided at the Tram briefing Meeting.

6.5 Look Ahead

Focus will be on completing the small remainder of tram ducting conflicts discussed above to ensure Infraco can continue to work. Demolition works at Cathedral Lane, BT works at Broughton Street and ducting works at Elder Street are all due to be completed in the period with enabling works in York Place due to commence. Turner & Townsend will also continue to react to utility discoveries by Infraco and will work with Infraco in planning any Scottish Water remedial works and any "type 2" conflict works not diverted prior to sites being handed back. These include conflicts in footpaths under sign and signal bases that are best dealt with as Infraco carries out its works.



Elder St – Cathedral Lane

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7 On Street - Main Works

7.1 Progress in Period.

Infraco has continued with track slab construction in areas not affected by the drainage redesign and tram ducting conflicts.

Despite Infraco works being disrupted in a number of areas during the period areas of sites have been handed back to Infraco and by the end of the period all areas from Haymarket to Lothian Road and from Princes Street to North St Andrew Street will be in the possession of Infraco with some minor exceptions agreed with Infraco.

Works in St Andrew Square have again progressed in the period although Infraco is continuing to report that the completion date for St Andrew Street is likely to slip to November 2012. This is significant as the project critical path remains through this area in the event that the value engineering proposals through York Place cannot be delivered. Turner & Townsend is working with Infraco and CEC to assist in recovering any time lost through this area.

In the event that the value engineering proposals through York Place are realised, which is looking more likely, the critical path for the On Street section transfers to Shandwick Place. Delays through Shandwick Place as a consequence of utility conflicts, drainage re-design and tram ducting conflicts have been quite significant and by mid June 2012 and Turner & Townsend are estimating that 12 weeks of the 22 week value engineering "time bank" has currently been eroded. In response to this Turner & Townsend will be working with Infraco and CEC to assist in recovering any lost time through this area

Princes Street works are due to be completed by the 29th June 2012 and the street handed back to the city. A detailed snagging list was agreed with Infraco before the period commenced and works are progressing well to address these items. An update will be provided at the Tram Briefing Meeting.

Planning approval was granted for the Dublin Street Steps on the 20th June 2012. The only issue now left to resolve is reaching agreement with the building owner on the east corner of the street.

7.2 Key Issues

7.2.1 Time Bank Recovery

As the areas occupied by Infraco move into a more steady state Turner & Townsend will be working with Infraco and CEC to explore ways of recovering some of the 22week time bank.

7.3 Look Ahead

7.3.1 Haymarket to North St Andrew Street (excluding Princes Street)

Infraco Works from Haymarket to Lothian Road and through St Andrew Square will continue in the period with the completion of tram ducting, construction of the track improvement layer and construction of any outstanding OLE basis. In Shandwick Place there remains a section of track box to be cut and proved and in consultation with Infraco it has been agreed that Turner & Townsend will carry out this work using McNicholas.

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Lindsay Road nearing completion



Tower Place Bridge nearing completion