

SILVERTOWN TUNNEL

Volume 3: Project Agreement – Schedules 2 to 31

Schedule 2 – Programme

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SCHEDULE 2

PROGRAMME

Part 1 - Project Co Tender Programme

1. Key Dates

1.1 The Parties acknowledge that the Project Co Tender Programme is set out in paragraph 2 (*Project Co Tender Programme*).

1.2 The Project Co Tender Programme includes the following key dates:

Table 1 - Key dates

Event	Date
Anticipated Signalling Commissioning Date for the final Traffic Signalling System	██████████
Anticipated Passive User Charging Infrastructure Inspection Date	██████████
Anticipated proposed TfL UC Installation Period Commencement Date	██████████
Anticipated PTU Inspection Date	██████████
Anticipated Permit to Use Date	██████████
Planned Permit to Use Date	██████████

2. Project Co Tender Programme

Excluded commercially sensitive information

SCHEDULE 2

PROGRAMME

Part 2 - Project Co Detailed Works Programme

1. Preparation, Reporting and Updating

1.1 Project Co shall:

1.1.1 develop the Project Co Detailed Works Programme from the Project Co Tender Programme; and

1.1.2 update the Project Co Detailed Works Programme,

in accordance with the requirements of this Part 2 (*Project Co Detailed Works Programme*).

1.2 Project Co shall submit the initial Project Co Detailed Works Programme in accordance with the timing of clause 15.2 (*Project Co Detailed Works Programme*) and the requirements of this Part 2 (*Project Co Detailed Works Programme*).

1.3 Project Co shall update and submit to TfL the Project Co Detailed Works Programme:

1.3.1 as necessary in accordance with the requirements of clause 15.3 (*Notification of delays in progress of the Works*);

1.3.2 as required pursuant to paragraph 5 (*Design and Construction Report*) of Part 2 (*Reports*) of Schedule 16 (*Records and Reporting*); and

1.3.3 as a minimum every TfL Reporting Period,

and Project Co shall ensure that each update of the Project Co Detailed Works Programme submitted pursuant to this paragraph 1.3 shall be accompanied by a programme narrative which shall include the following:

- a. details of any variance in available time risk allowance in the Project Co Detailed Works Programme when compared against the previous Project Co Detailed Works Programme submitted to TfL, together with an explanation of such variance;
- b. details of any significant changes in the Project Co Detailed Works Programme when compared against the previous Project Co Detailed Works Programme submitted to TfL including any revisions to the critical path;
- c. a list of any Compensation Events, TfL Changes or Qualifying Events that have occurred or are occurring with an explanation of their impact on the Project Co Detailed Works Programme;
- d. details of changes to any key dates (which shall include, but not be limited to, the key dates listed in Table 1 (*Key Dates*)), milestones and associated float in the Project Co Detailed Works Programme;
- e. details of any programme delay mitigation measures which have been incorporated into the Project Co Detailed Works Programme;

- f. details of any other changes Project Co has made to the Project Co Detailed Works Programme along with a description of their impact;
 - g. justifications for any amendments to the Project Co Detailed Works Programme which have resulted in items/works in the Project Co Detailed Works Programme having durations of longer than fifty (50) days; and
 - h. justifications for any amendments to the Project Co Detailed Works Programme which have resulted in a float of greater than fifty (50) days.
- 1.4 Project Co shall ensure that any Project Co Detailed Works Programme submitted to TfL pursuant to clause 15.3 (*Notification of Delays in progress of the Works*) shall demonstrate how the Works are to be fully resource loaded with people, key plant and equipment (which shall include piling rigs as a minimum) and key material usage rates (which shall include, but not be limited to, excavated material from the tunnel alignment and volume of concrete for elements of the reinforced concrete structures).

2. Planning Standards

- 2.1 Project Co shall ensure that the Project Co Detailed Works Programme shall:
- 2.1.1 be prepared in accordance with best practice as defined by the "Planning, Scheduling, Monitoring and Control Guide (2015)" published by the Association for Project Management;
 - 2.1.2 have a work breakdown structure to define work streams with at least as much detail as Table 2.1 (*WBS Template Levels 1-4*) and Table 2.2 (*Further Example WBS Template*);
 - 2.1.3 be submitted:
 - a. in electronic format using Oracle Primavera P6 enterprise project management and programming software (such version to be backwards-compatible with version 8.2) or such other format agreed by TfL; and
 - b. in PDF format;
 - 2.1.4 be fully logically linked;
 - 2.1.5 be of sufficient detail to ensure a safe and feasible construction methodology;
 - 2.1.6 identify a summary programme in linked bar chart format showing critical paths, sectional completion dates, key dates and other major milestones;
 - 2.1.7 require all activities to have an original baseline and reporting period baseline to show variance against previous versions;
 - 2.1.8 not include more than ten per cent (10%) of tasks with durations longer than fifty (50) days; and
 - 2.1.9 be accompanied by a programme narrative in accordance with the requirements of 1.3 (Project Co shall update and submit to TfL the Project Co Detailed Works Programme).

Table 2.1 - WBS Template Levels 1-4

Level	WBS Code	Task Name
1	1	Requirements
2	1.1	Activity A
2	1.2	Activity B
2	1.3	Activity C
1	2	Design
2	2.1	Activity A
2	2.2	Activity B
2	2.3	Activity C
1	3	Construction
2	3.1	Activity A
2	3.2	Activity B
2	3.3	Activity C
1	4	Testing
2	4.1	Activity A
2	4.2	Activity B
2	4.3	Activity C

Table 2.2 - Further Example WBS Template

WBS	Task Name	Duration	Start	Finish
1	Better WBS	15 days	Wed 9/22/04	Tue 10/12/04
1.1	System Integration	15 days	Wed 9/22/04	Tue 10/12/04
1.1.1	Canada Payroll	15 days	Wed 9/22/04	Tue 10/12/04
1.1.1.1	Extract Program	1 wk	Wed 9/22/04	Tue 9/28/04
1.1.1.2	Validation	3 days	Wed 9/29/04	Fri 10/1/04
1.1.1.3	Conversion	2 days	Mon 10/4/04	Tue 10/5/04
1.1.1.4	Import	1 wk	Wed 10/6/04	Tue 10/12/04
1.1.2	US Payroll	15 days	Wed 9/22/04	Tue 10/12/04
1.1.2.1	Extract Program	2 days	Wed 9/22/04	Thu 9/23/04
1.1.2.2	Validation	3 days	Fri 9/24/04	Tue 9/28/04
1.1.2.3	Conversion	1 wk	Wed 9/29/04	Tue 10/5/04
1.1.2.4	Import	1 wk	Wed 10/6/04	Tue 10/12/04
1.1.3	Mexico Payroll	15 days	Wed 9/22/04	Tue 10/12/04
1.1.3.1	Extract Program	1 wk	Wed 9/22/04	Tue 9/28/04
1.1.3.2	Validation	2 days	Wed 9/29/04	Thu 9/30/04
1.1.3.3	Conversion	3 days	Fri 10/1/04	Tue 10/5/04
1.1.3.4	Import	1 wk	Wed 10/6/04	Tue 10/12/04

3. Contents

3.1 Project Co shall ensure that the Project Co Detailed Works Programme shall, at a minimum, cover each of the activities specified below, with further breakdowns of each of these activities and other details as may reasonably be required and requested by TFL from time to time:

3.1.1 safety and quality management including:

- a. preparation of key safety documents; and
- b. preparation of key quality and management documents;

3.1.2 design and planning (including preparation, notice/submission and review periods);

3.1.3 the occupation of land including the access and expiry dates from the Site Access Programme in accordance with the requirements of Schedule 4 (*Land and Access Requirements*);

3.1.4 mobilisation including:

- a. site setup (geographically based);
- b. welfare;
- c. traffic management (if required);
- d. any relevant mobilisation activities required by or relating to the Transferred Third Party Functions; and
- e. plant mobilisation;

3.1.5 design and Necessary Consents including:

- a. consultations;
- b. design;
- c. review periods;
- d. planning applications; and
- e. Necessary Consents, including consents relating to the Transferred DCO Functions;

3.1.6 highways and general including:

- a. fencing;
- b. site clearance;
- c. Temporary Traffic Management Measures and Network Occupancy;
- d. utilities and services;

- e. drainage;
 - f. earthworks;
 - g. road restraint systems;
 - h. road pavement works;
 - i. lighting and electrical work;
 - j. noise barriers;
 - k. the urban realm including footways and cycleways;
 - l. landscaping and planting;
 - m. signs and markings; and
 - n. traffic signals and technology;
- 3.1.7 tunnel including:
- a. preparation works;
 - b. TBM procurement;
 - c. tunnel boring;
 - d. cross passages;
 - e. cut and cover
 - f. retaining walls;
 - g. portal structures and buildings;
 - h. drainage;
 - i. road pavement;
 - j. lighting;
 - k. ventilation;
 - l. power and power distribution;
 - m. fire safety;
 - n. communication equipment;
 - o. signs and signals;
 - p. CCTV and incident detection;
 - q. service buildings and plant rooms; and
 - r. system monitoring and control;

- 3.1.8 other structures including:
 - a. temporary works;
 - b. piling;
 - c. substructure;
 - d. fabrication;
 - e. superstructure; and
 - f. finishes;

- 3.1.9 miscellaneous including:
 - a. works required pursuant to the Transferred Third Party Functions (including means of access);
 - b. surveys and investigations;
 - c. monitoring;
 - d. environmental protection and mitigation;
 - e. procurement of major plant, materials, equipment (to the extent not covered elsewhere in the Project Co Detailed Works Programme);
 - f. archaeological works;
 - g. works in the river;
 - h. Passive User Charging Infrastructure;
 - i. power provision (for all purposes);
 - j. availability monitoring system; and
 - k. maintenance compounds;

- 3.1.10 testing and commissioning including:
 - a. factory testing (by equipment type);
 - b. site testing;
 - c. certification; and
 - d. connection to TfL control rooms including systems integration and testing with TfL and third party systems as required; and

- 3.1.11 completion and handover including:
 - a. notification periods;
 - b. inspections;

- c. certification;
- d. Site Access Expiry Dates and handover dates for Sections of the Site;
- e. handover dates for the Additional Assets; and
- f. the Permit to Use Date.