

**SCHEDULE 33  
WORKS REPORTS****PART 1  
MONTHLY WORKS REPORT****1. MONTHLY WORKS REPORT**

- 1.1 The provisions of Part 1 of this Schedule 33 shall apply to the monthly Works Report, which shall be submitted to the City in accordance with Schedule 10 – Review Procedure to this Project Agreement.
- 1.2 The monthly Works Report shall include, without limitation, the following:
- (a) an executive summary describing the general status of the Works;
  - (b) status of the Works by high-level work breakdown segment and project phase, including:
    - (i) accomplishments in past month;
    - (ii) planned activities for next three months;
    - (iii) a narrative description of any Disputes related to the Works, including any action that has taken place over the past month to resolve such Disputes;
    - (iv) permits;
    - (v) details of staffing numbers for the Project and Key Individuals;
    - (vi) schedule of submissions with corresponding City response requirements;
    - (vii) progress against design and construction milestones; including person-hours against activities;
    - (viii) progress photos; and
    - (ix) details of any delays which shall be specifically highlighted together with details of the impacts and corrective actions and program recovery proposals;
  - (c) outstanding contractual decisions;
  - (d) status of all reports submitted pursuant to the requirements of the Project Agreement;
  - (e) an updated Works Schedule in printed (PDF) and native Oracle Primavera Project Management P6 format (XER), including person-hours resources to activities;

- (f) environmental monitoring and compliance status;
- (g) quality assurance and quality control, including:
  - (i) update of quality control and quality assurance activities and personnel responsible;
  - (ii) monthly Quality Management System reports, Quality Audit reports and summary information from the Non-Conformance Tracking System, as described in Schedule 11 – Quality Management;
  - (iii) internal and external audits; and
  - (iv) training metrics;
- (h) organization/staffing changes and additions for Project Co and Construction Contractor;
- (i) tangible capital asset controls;
- (j) health and safety, including:
  - (i) lost time injuries; and
  - (ii) accidents with no lost time;
- (k) subcontract status, including:
  - (i) consultants;
  - (ii) Subcontracts awarded;
  - (iii) tenders;
  - (iv) labour report (average workforce); and
  - (v) Subcontractor 3 month rolling program;
- (l) financial cost control status, including:
  - (i) progress as measured by Earned Value Management key performance factors, including: Schedule Performance Index (SPI); Cost Performance Index (CPI); Schedule variance (SV); Cost Variance (CV); Planned Value (PV); Earned Value (EV); Actual Cost (AC); Estimate to Complete (ETC); and, Estimate at Completion (EAC);
  - (ii) Variations;
  - (iii) insurance summary;

- (iv) Construction Contractor default status; and
  - (v) cash flow projection (capital cost components);
  - (m) Risk Management, including:
    - (i) updated Risk Register;
    - (ii) Risk response plans requiring action from the City;
    - (iii) claims;
    - (iv) liens;
    - (v) environmental issues;
    - (vi) labour;
    - (vii) market conditions;
    - (viii) outstanding disputes;
    - (ix) operational risks;
    - (x) Subcontractor risks; and
    - (xi) other risks;
  - (n) status of any integration, testing and commissioning activities.
- 1.3 Updated versions of each of the Project Management Plan and Risk Management Plan, which shall be submitted to the City in accordance with Schedule 10 – Review Procedure to this Project Agreement and shall be submitted with the first Works Report.

**SCHEDULE 33  
WORKS REPORTS**

**PART 2  
TECHNICAL REPORTS**

**2. TECHNICAL WORKS REPORTS**

2.1 The provisions of Part 2 of this Schedule 33 shall apply to the technical Works Reports, which shall be submitted to the City under separate cover from the monthly Works Report described in Part 1 of this Schedule 33 and in accordance with Schedule 10 – Review Procedure to this Project Agreement, and shall, without limitation, contain the following:

**Table 2.1 – Technical Works Reports**

| <b>Deliverable Name</b>       | <b>Due Date</b>                                   | <b>Deliverable Submission Period</b> | <b>Submitted under the Review Procedure</b> | <b>Reference Section</b> |
|-------------------------------|---|--------------------------------------|---|--------------------------|
| Tunnel Technical Works Report | Monthly, as noted in Section 2.2 of this Schedule | Design and Construction Period       | Yes   | 2.2                      |
| Interim Tunnel Notifications  | As noted in Section 2.3 of this Schedule          | Design and Construction Period       | Yes   | 2.3                      |
|                               |   |                                      |   |                          |

2.2 The Tunnel Technical Works Report shall be submitted once per month commencing 30 working days prior to the start of construction, and without limitation, contain the following:

- (a) Executive Summary
  - (i) Overall narrative and summation of the previous months work and plan and schedule for the next 3 months.
- (b) Protection of Adjacent Structures
  - (i) Updated Schedule of Assets.

- (ii) Summation of Geotechnical instrumentation monitoring including all events that resulted in either a Trigger Level, or an Action Level exceedance has occurred.
- (c) General
- (i) Geological mapping records and field logs.
  - (ii) Geological as-built longitudinal section of the Tunnel. The section is to be a developed longitudinal section, depicting the observed geology along the length of the Tunnel for the invert, sidewalls and crown.
  - (iii) Quality Control testing data and reports for materials used in Construction of the Tunnels.
  - (iv) Excavation support installation logs and placement records, and testing data for the main support measures.
  - (v) Summation of meeting agendas and minutes, action plans, reports and data.
  - (vi) Summation of results of data acquisition and monitoring for excavation performance and deformations within Tunnels.
  - (vii) Summation of electrical and other inspection reports, including ventilation, muck haulage, and water discharge.
  - (viii) Summation of inspection stops, equipment maintenance, lost ground, gassy conditions, or emergency conditions.
  - (ix) Summation of shift reports identifying labour, equipment and materials utilized for final lining activities.
- (d) Mined Structures
- (i) Production performance and proof testing data for key tunnel support elements including:
    - (A) Shotcrete;
    - (B) Rock dowels or bolts; and
    - (C) Fiberglass dowel or bolts.
  - (ii) The logs and survey notes that shall include the following information:
    - (A) Measurements of in-tunnel or other deformations;
    - (B) Construction loading or other activities in the vicinity of instrumentation; and

- (C) Any cracks in or damage to any in-tunnel or surface Structures, or other events.
  - (e) Bored Tunnels
    - (i) Summation of TBM daily and weekly records identifying the following:
      - (A) Shift reports and grout sample testing;
      - (B) Notifications of low or high grout takes; and
      - (C) Test results.
    - (ii) Tail void grouting, summation of daily and weekly records identifying the following:
      - (A) Shift reports and grout sample testing;
      - (B) Notifications of low or high grout takes; and
      - (C) Test Results.
    - (iii) For segmental linings, summation of records for fabrication, transport to site, damage and repairs, dimension checks, mockup or fit ups, quality control records, and installation records.
  - (f) Cut and Cover Structures
    - (i) Summation of test reports for:
      - (A) Load testing of soil and rock anchors;
      - (B) Weld inspections;
      - (C) Waterproofing tests and inspections; and
      - (D) Concrete, reinforcement, and embedment tests.
  - (g) Blasting
    - (i) Blasting Records in accordance with the City Special Provision F-1201.
- 2.3 Interim Tunnel Notifications shall be articulated and submitted to the City for the following events, no later than the time frames as specified below:
- (a) Protection of Adjacent Structures
    - (i) Geotechnical instrumentation monitoring data: 1 day of obtaining data;

- (ii) Trigger Level exceedance: within four hours of determination and every four hours after until levels have stabilized;
- (iii) Action Level exceedance: within one hour of determination and every one hour after until levels have stabilized.