

CPG-PGM-MAN-278

Work Plan Methodology Template

October 1, 2018

User Manual

Prepared by the CPG Track and Structures Department



Purpose

The purpose of this Work Plan Methodology Template (WPMT herein) User Manual is to provide step-by-step instructions for completing the template in accordance with requirements established by the Regional Express Rail (RER) project delivery technical support groups. The procedure described in this user manual is designed to provide Metrolinx Consultants and Contractors a common framework for preparing work plan methodologies, and to provide the Metrolinx Project Delivery Teams an understanding of their roles during the review and administration process.

Introduction

The Work Plan Methodology (WPM herein) is a road map of all tasks laid out in a detailed schedule to assist field personnel and supervision to ensure planned activities are carried out in a safe and productive fashion, and to mitigate service disruptions, thereby reducing the impact to customers. Such planning shall be documented in a WPM. The WPM shall address the resources, methodology, permits, potential safety risks, associated control and mitigation measures, schedule risks, service and operational impacts, roadway impacts, surrounding community impacts, utility impacts and timing of tasks to ensure task completion in a safe and realistic manner. The WPM shall be sufficiently broad in scope and be detailed enough to address the needs of a multi-user intended audience.

The WPMT is the new Metrolinx corporate standard, replacing previous versions including, Site Specific Methodology Plan Submittal Template (CSMP), for Contractors to describe the methodology used for capital construction work within the Metrolinx Railroad Right-of-Way. WPMT is required for each work task or activity undertaken on site that affects the track structure (including zone of influence), the signal system or could potentially disrupt rail operations.

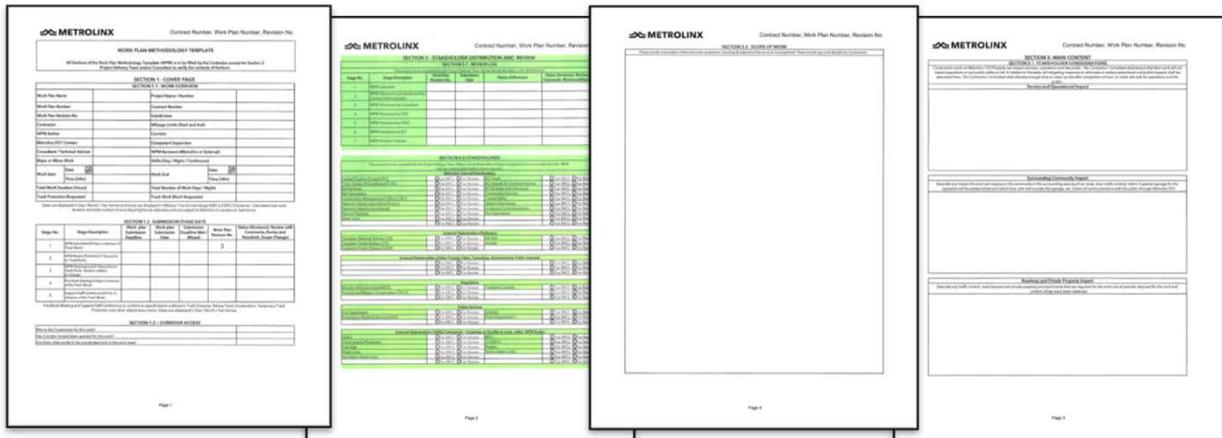


Figure 1: An Illustration of the Work Plan Methodology Template

The WPMT is provided in a fillable PDF format and is intended to be completed by the Contractor using their preferred PDF reader/writer software. For Metrolinx employees, a digital copy of the [Work Plan Methodology Template](#) can be found on Mylinx and a physical copy will be appended in future outgoing contract documents. To complete the WPMT, the Contractor can use the tab key (on the keyboard) to navigate to the next fillable cell. In addition to this User Guide, the WPMT includes instructions under section titles, which the user can reveal more information about any particular fillable cell by hovering their mouse pointer over a fillable cell.

WPMT Sections

The WPMT includes six (6) sections; all sections of the WPMT shall be completed by the Contractor except for Section 2: Stakeholder Distribution and Review.

The following list summarizes the key WPMT sections and their functions:

- Section 1: Cover Page
- Section 2: Stakeholder Distribution and Review
- Section 3: Main Content
- Section 4: Additional Requirements for Signal Work
- Section 5: Attachments and Personnel List
- Section 6: Risk Assessment (RA) and Site Safety

Section 1 - Cover Page

The WPMT includes a Cover Page for the Contractor to identify the key components of the work to be performed. In Section 1.1- Work Overview, the Contractor shall identify: Work Plan Name; Project Name; Work Plan number; Project Number; Work Plan Revision Number; Contract Number; Contractor Name; Subdivision, WPM Author; Mileage Limits; Metrolinx PDT Contact; Corridor; Consultant or Technical Advisor; Competent Supervisor Identification; Select between Major and Minor Work; Select between Shifts Day, Night and Continuous); Identify Work Start and End Dates and Times; Identify if work requires Track Protection and if a Track Block is required, as well as a Comments section to be used for additional information/clarifications.

Version Control

The Header of the WPMT automatically generates a file name in the required format. Users of the WPMT can save the document by selecting the header, copying the header, clicking on the "Save As" button and pasting the selection as a file name. See the diagram below for an illustrated example of the file save process.

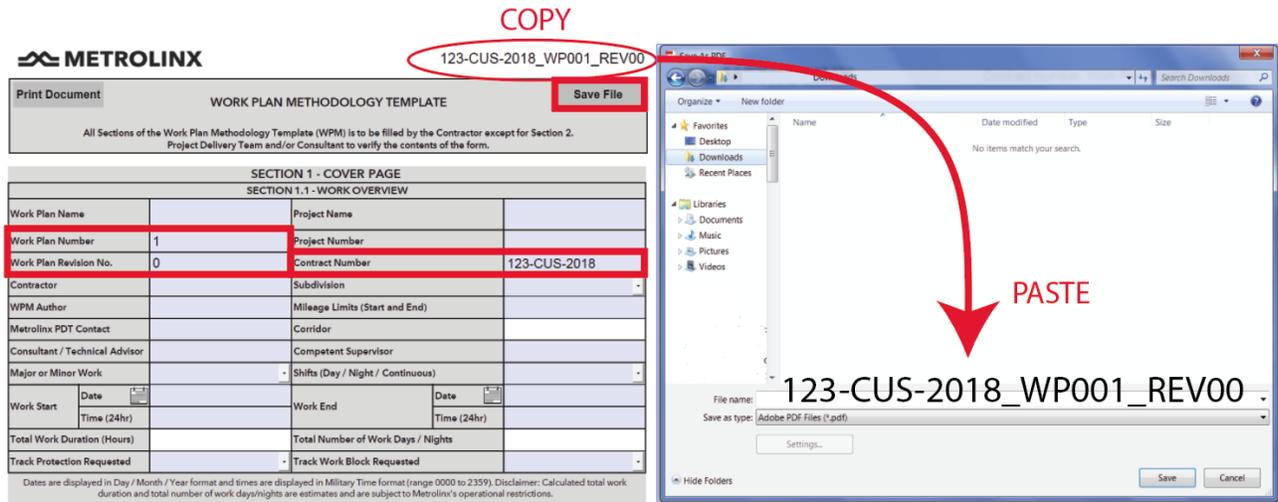


Figure 2: File Saving Process

Drop Down List

The WPMT PDF includes drop-down lists to expedite the completion of the form. For example, the drop-down list for Subdivision can be toggled by clicking the down facing arrow located at the right end of the cell. The user can scroll down options and select an option by clicking on the option with their mouse. Where applicable, the WPMT will fill in connected cells automatically; In the example below, the Corridor cell is automatically populated as "Milton" when the user selects the "Galt" Subdivision.

Project Name			Project Name		
Project Number			Project Number		
Contract Number			Contract Number		
Subdivision			Subdivision		Galt
Mileage Limits (Start and End)			Mileage Limits (Start and End)		
Corridor		USRC Galt Lower Galt Weston Pearson Halton Guelph Newmarket Bala	Corridor		Milton
Competent Supervisor			Competent Supervisor		
Shifts (Day / Night / Continuous)			Shifts (Day / Night / Continuous)		
Work End	Date		Work End	Date	
	Time (24hr)			Time (24hr)	
Total Number of Work Days / Nights			Total Number of Work Days / Nights		
Track Work Block Requested			Track Work Block Requested		

Figure 3: An example illustrating the use of a drop-down list within the WPMT.

Competent Supervisor

The Primary Competent Supervisor shall be identified on the cover page of the WPMT by the Contractor. A Competent Supervisor Declaration form must be appended to the WPMT and a reference to the Competent Supervisor Declaration shall be made in Section 5.2 - Additional Procedures and Safety Plans. To identify more than one competent supervisor under this WPMT, a list shall be provided in Section 3.5 and will accompany the work plan with competent supervisor declarations for each. The Contractor’s site staff shall be coordinated and directed by the Competent Supervisor. They shall be briefed on the content of the WPM prior to the commencement of work and should be able to reference the WPM in the event of accident or incident occurrence.

Major or Minor Work

The Work shall be defined as Major Work if it has any of the following characteristics:

- Requires a track block for continuous eight hours or more;
- Track will require surfacing or distressing after the works have been completed;
- A Temporary Slow Order (TSO) will be required on completion;
- The signal system will be disrupted;
- Multiple tracks will be affected;
- A significant risk of track settlement exists after the works have been completed;
- The track layout will be changed.

The Work shall be defined as Minor Work if it involves small quantities of work which results in a low risk of disruption to the rail network operations. Works shall be considered minor if they do not fall into the Major Work category and if they require a track block for a period of less than eight hours.

Total Work Duration

The WPMT estimates the Total Work Duration according to the input the user selects for shift type and Work Start/End Dates and Times. For the Shifts (Day / Night / Continuous) drop-down cell: Day shift option refers to work that will take place over consecutive days during daytime hours, between the Work Start Time and Work End Time, and pause overnight until the Work End Date. Night shift option refers to work that will take place overnight over consecutive days, between the Work Start Time and Work End Time, and pause during daytime hours until the Work End Date. The Continuous shift option refers to a continuous work period from the Work Start Date and Time until the Work End Date and Time; an example of a continuous shift is a continuous weekend work block.

Dates shall be entered in Day / Month / Year format and times shall be entered in the Military Time format (range 0000 to 2359). The example below indicates a Continuous shift type with work starting at 2100 (9:00 PM) on 05/Jan/2018 (Friday) and ending at 0500 (5:00AM) on 08/Jan/2018 (Monday); This would correspond to 3 hours of work on 05/Jan/2018, 24 hours of work on 06/Jan/2018, 24 hours of work on 07/Jan/2018, and 5 hours of work on 08/Jan/2018 accumulating to 56 hours.

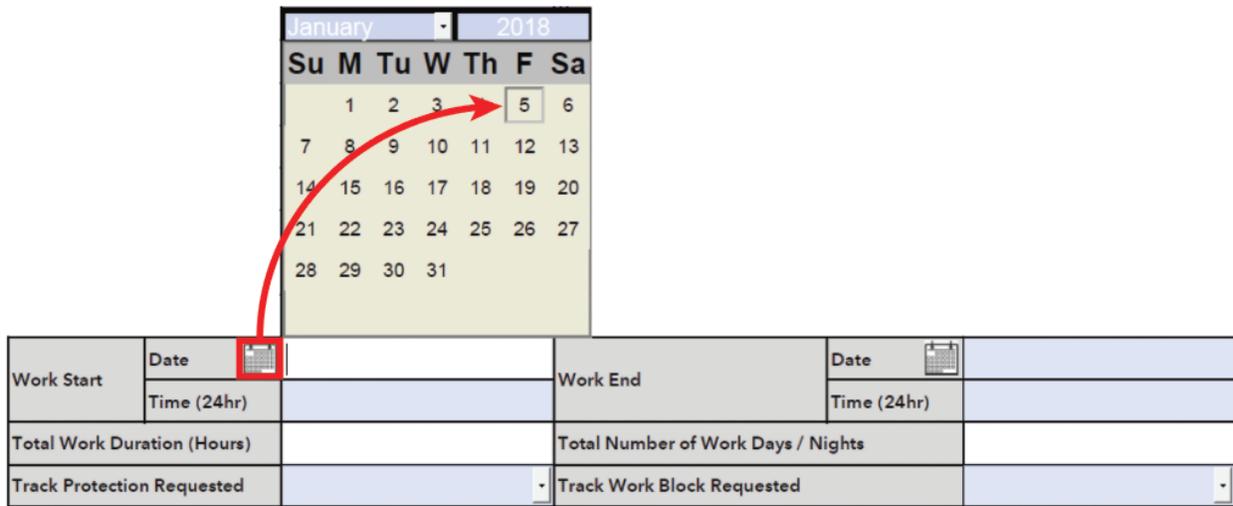


Figure 4: Illustration indicating use of the Calendar Icon to set the Work Start Date to 05/Jan/2018. The user can select the date by clicking on the calendar icon with their mouse, selecting the month by using the drop-down, typing the year, and selecting the day.

Major or Minor Work		Shifts (Day / Night / Continuous)	Continuous
Work Start	Date 05/Jan/2018	Work End	Date 08/Jan/2018
	Time (24hr) 2100		Time (24hr) 0500
Total Work Duration (Hours) 56		Total Number of Work Days / Nights 4	
Track Protection Requested		Track Work Block Requested	

Figure 5: Example of a Continuous Shift starting at 2100 (6:00 PM) on 05/Jan/2018 and ending at 0500 (5:00AM) on 08/Jan/2018, estimated Total Work Duration is 56 hours.

Submission Timelines

Each WPM will be subject to Metrolinx stakeholder acceptance. Metrolinx will ensure satisfaction of the fundamental objectives of safe execution whilst maintaining operational service in the review of the WPM. The process for acceptance of a WPM includes five (5) Submission Stage Gates for the Contractor to follow before

work can be initiated on Metrolinx Railroad Right-of-Way as indicated in Section 1.2 - Submission Stage Gate and in Figure 6 below.

1. Initial WPM must be submitted by the Contractor to the Consultant and or the Construction Contract Administrator (CCA) forty (40) calendar days in advance of the proposed work.
 - The Consultant/CCA will receive the WPM from the Contractor, distribute it to all applicable stakeholders and administer the review. The Consultant will review the WPM for conformance in accordance with the Contract Documents and provide comments within fourteen (14) calendar days. Consultant retains the right to request revisions to the WPM from the Contractor before commencing distribution to additional stakeholders.
 - The Owner, Metrolinx Project Delivery Team (PDT herein), will receive the WPM from the Consultant/CCA and distribute it to applicable internal stakeholders within Metrolinx for their review. The Metrolinx PDT will collect comments from internal stakeholders, compile them using the [Metrolinx Review Comments Worksheet](#) and deliver the comments to the Consultant/CCA.
 - The Consultant/CCA shall compile all stakeholder review comments, including Metrolinx comments, and provide to the Contractor.
 - The Contractor shall receive the review comments from the Consultant/CCA and make applicable revisions to the WPM.
2. The Contractor will revise the WPM according to the review comments received from the Consultant/CCA. The WPM will be finalized by the Contractor twenty-one (21) calendar days before the proposed work. If applicable,
3. WPM will be reviewed for Final Approval by the Consultant/CCA and the Owner seven (7) calendar days prior to the proposed work.
4. A Pre-Block meeting shall be held by the Contractor four (4) days prior to track block with all major support staff and stakeholders.
5. A Conference call shall be conducted by the Contractor within twenty four (24) hours of work block to ensure all contractors and support staff are aware of requirements within the WPM and to finalize any outstanding issues.

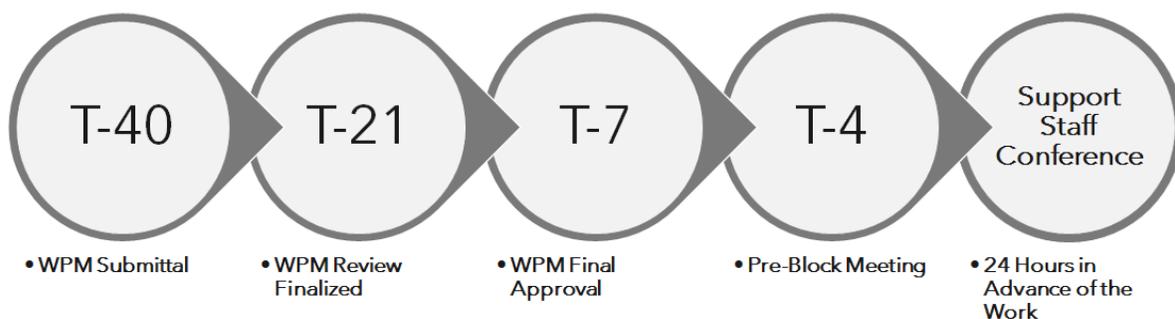


Figure 6: Work Plan Methodology Submission Timelines

Section 1.2 - **Submission Stage Gate** provides an overview of this process within the WPMT. Building on the previous example of the continuous weekend work block, the WPMT calculates the submission timelines when the Work Start Date is entered.

Work Start	Date	05/Jan/2018	Work End	Date	08/Jan/2018
	Time (24hr)	2100		Time (24hr)	0500
Total Work Duration (Hours)		56	Total Number of Work Days / Nights		4
Track Protection Requested			Track Work Block Requested		

Dates are displayed in Day / Month / Year format and times are displayed in Military Time format (range 0000 to 2359). Disclaimer: Calculated total work duration and total number of work days/nights are estimates and are subject to Metrolinx's operational restrictions.

SECTION 1.2 - SUBMISSION STAGE GATE						
Stage No.	Stage Description	Work plan Submission Deadline	Work plan Submission Date	Submission Deadline Met / Missed	Work Plan Revision No.	Status (Reviewed, Review with Comments, Revise and Resubmit, Scope Change)
1	WPM Submittal (40 Days in advance of Track Block)	26/Nov/2017			0	
2	WPM Review Finalized (21 Days prior to Track Block)	15/Dec/2017				
3	WPM Final Approval (7 Days prior to Track Block, decision subject to change)	29/Dec/2017				
4	Pre-block Meeting (4 Days in Advance of the Track Block)	01/Jan/2018				
5	Support Staff Conference (24 Hrs. in Advance of the Track Block)	04/Jan/2018				

Figure 7: Work Plan Methodology Submission Timelines for Work Starting Date of 05/Jan/2018

The Contractor shall complete the Work Plan Submission Dates and the corresponding Work Plan Revision Number. The WPMT automatically calculates the timeframe and populates to inform the user if the Submission Deadlines are met or missed. The status of the WPM will be populated by the Metrolinx PDT and returned to the Contractor.

SECTION 1.2 - SUBMISSION STAGE GATE						
Stage No.	Stage Description	Work plan Submission Deadline	Work plan Submission Date	Submission Deadline Met / Missed	Work Plan Revision No.	Status (Reviewed, Review with Comments, Revise and Resubmit, Scope Change)
1	WPM Submittal (40 Days in advance of Track Block)	26/Nov/2017	26/Nov/2017	Deadline Met	0	Review with Comments
2	WPM Review Finalized (21 Days prior to Track Block)	15/Dec/2017	16/Dec/2017	Deadline Missed	1	Reviewed
3	WPM Final Approval (7 Days prior to Track Block, decision subject to change)	29/Dec/2017	29/Dec/2017	Held on Time	1	Accepted
4	Pre-block Meeting (4 Days in Advance of the Track Block)	01/Jan/2018	01/Jan/2018	Held on Time	1	Reviewed
5	Support Staff Conference (24 Hrs. in Advance of the Track Block)	04/Jan/2018	04/Jan/2018	Held on Time	1	Reviewed

Figure 8: Work Plan Methodology Submission Timeline Status and Revision Number

Section 1.3 - **Corridor Access** contains key questions regarding Safety Regulations and access to the Rail Corridor. This section determines who the Constructor on the project is, if the possibility of adjacent or overlapping works are inherent in the work location and if the timelines and approval processes of Schedule 34 - Rail Corridor Access have been obtained.

Section 2 - Stakeholder Distribution and Review

Section 2 - *In addition to the WPM status, the Stakeholder Distribution and Review is the only section of the WPMT to be completed by the Project Delivery Team*. This section includes a Review Log which will be completed by the corresponding Stakeholder. The Stakeholder conducting the review will indicate the revision number of the WPM, review/distribution date, their name and the status of their review. Upon receiving Metrolinx comments regarding a WPM submission, the Contractor shall update the Revision Log on the next submission to ensure appropriate version control is accomplished. A WPM will be returned with one of three

status comments:

1. Reviewed (approved for the next stage)
2. Reviewed with Comments
3. Revise and Resubmit

The Contractor shall abide by the status as determined by Metrolinx.

Stakeholder Distribution

Section 2.2 - Stakeholders shall be identified by the Metrolinx PDT. The PDT shall indicate if the Stakeholder receiving the WPM is expected to review the WPM (For Review) or if the WPM is distributed to the Stakeholder for their Information Only (For INFO). The spare cells should be used to include any applicable Stakeholders that are missing from the distribution list.

Review Sheet

A [Metrolinx Review Comments Worksheet](#) has been embedded within the WPMT for the convenience of the PDT and the reviewer. This sheet can be accessed by clicking on the Attachments button under the Navigation Pane when using Adobe Acrobat DC. If the Navigation Pane is not already toggled, the user can right click on an empty location inside the document and select the bottom option labelled "Show Navigation Pane Buttons". The Attachment button, having the paper clip with a plus symbol "+" icon, can be found on the Navigation Pane. These instructions are applicable for Adobe Acrobat DC, which is the preferable software to use when completing this document. Other software may require further and/or different steps to identify and include more attachments. Both the Comment Sheet Excel file and the WPMT PDF file require saving to keep changes that are completed inside the Comment Sheet.

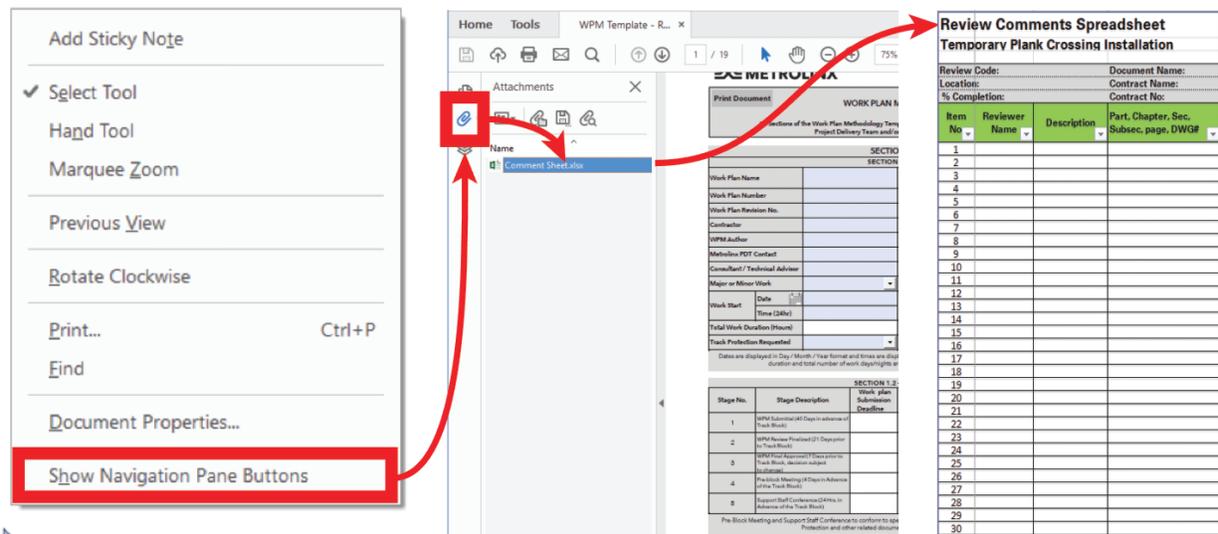


Figure 9: Illustration for navigating to the imbedded Comment Sheet.

Section 3 - Main Content

Section 3 includes larger fillable cells that could be used similar to a word editor as these cells enable multiple lines and features such as wrapped text. If additional information is to be appended, the "attachment function" (see above) can be used at any time.

Section 3.1 ***Stakeholder Considerations***, the Contractor shall describe all mitigating measures to eliminate or reduce operational and public impacts. Risks to operations, adjacent neighbors and the travelling public shall be identified in detail and included in Section 6.4 Risk Assessment Summary.

Section 3.2 ***Scope of Work***, the Contractor shall provide a description of the work to be completed, including all objectives that are to be accomplished, including any multi-disciplinary involvement.

Section 3.3 ***Detailed Task Description***, the Contractor shall provide a detailed description of the work, including both pre and post-work activities, in a chronological order to be performed. If there are more than 15 tasks on the WPM, the user can click the "Add Another Page" button at the top left corner of the page to spawn another 15 cells. The Contractor shall append a Gantt Chart, which will complement the tasks by indicating a schedule based pictorial of the tasks described in this section.

Section 3.4 ***Resources***, the Contractor shall specify the Labour forces, Machinery, and Materials required to complete each task outlined in Section 3.3 Detailed Task Description. In *Part A Labour*, the Contractor shall identify the Quantity of a particular Worker Type per each Shift (Day or Night). In *Part B Machinery*, the Contractor shall list all Machinery and identify if the owner/operator of the Machinery is the Contractor (GC herein) or the Subcontractor (Sub herein). Availability of a mechanic and spare parts is also addressed. In *Part C Materials*, the Contractor shall identify materials to be used, if backup material is available and to which task the material corresponds with.

Section 3.5 ***Work Groups Involved***, the Contractor shall identify the work groups (Contractor and Subcontractors) that are to be coordinated with for the work and identify which Competent Supervisor is responsible for the specific work group.

Section 3.6 ***Schedule Risk Description***, the Contractor shall list Critical Milestones to be completed referencing associated Task Numbers from Section 3.3 Detailed Task Description and list outside influences that could potentially cause delays.

Section 3.7 ***Contingency Plan***, the Contractor shall list additional resources that can be utilized if required, identify the number of hours allocated to contingency, and provide the contingency plan for each Critical Milestone referencing associated Task Numbers from Section 3.3 Detailed Task Description.

Section 3.8 ***Point of No Return Decision (Go or No Go)***, the Contractor shall determine Critical Milestones from Section 3.3 Detailed Task Description and append a Recovery Plan to be used in the event the Critical Milestones are not met before the required Time and Date. The Contractor shall: describe when the point of no return is reached in the schedule providing a date and time; describe in detail who from the Contractor is allowed to make the decision, who from the stakeholders they should consult with and when the decision has to happen; and describe the influences that trigger the point of no return.

Sections 3.9 ***Track Block*** and 3.10 ***Track Protection***, the Contractor shall Identify Tracks Required for the Track Block, if other Railway Owners are involved, identify the type of flagging (Track Flagging or Signals Support) required and identify the company that will provide the Track protection.

Section 3.11 ***Pre-Work***, the Contractor shall describe the tracks that will be affected during Pre-Work, if a condition assessment has been completed, if the work will be completed in stages and list, in order of criticality, the work to be completed before the track block.

Section 3.12 ***In-Service Inspection***, the Contractor shall identify the specific required inspections by checking the corresponding boxes. The Contractor shall list the Inspectors, along with their qualifications and which Company they represent. The Work is split into three discipline categories: Signals (Blue), Track (Yellow), and Bridges and Structures (Red).

Section 3.13 *Post-Work*, the Contractor shall identify any work that must be completed after the track block and identify the approximate Timeline to Complete the task, as well as if a separate WPM is required.

Section 3.14 *Utility Impact*, the Contractor shall state if Utility Locates are required for the work outlined in the WPM and declare if locates are current and complete. The Contractor shall list any Utility companies that are impacted by the work and append copies of locates and/or other supporting documentation regarding the protection of the utilities to the WPM, and reference them in Section 5 Attachments. Additional cells are provided to address any stakeholders not previously identified.

Section 4 - Additional Requirements for Signal Work

Section 4 shall be completed, in addition to previous sections, if the scope of work includes a signal work component. The Signal Work methodology shall be described in detail in Section 3.3 *Detailed Task Description*.

Section 4.1 *Testing Documents*, the Contractor shall list all GO Transit Signal & Communication Standards (GI herein) and all GO Transit Signals & Communications Code of Practices (SCP herein) that will be used to carry out the Signals Scope of Work. The drop-down lists can be used to select the applicable SCP's and GI's, as well as track mileage the test will be performed.

Any additional signal drawings or additional documents not listed in Section 4.1, can be included and referenced in Section 4.2 *Design Documentation and Supplemental Drawings*.

Section 4.3 *Crossing Deactivation*, the Contractor shall identify any and all crossings that will be temporarily disabled to accommodate the anticipated works.

Section 4.4 *Signal Test Equipment and Tools*, the Contractor shall identify all specialized tools required for testing, as well as latest calibration date.

Section 5 - Attachments and Personnel List

Section 5.1 *Overview of Site*, the Contractor shall confirm that the listed Diagrams/Documents are appended to the WPM and indicate the file name in which the files are located. Section 5.2 *Additional Procedures/Safety Plans*, shall include both the Competent Supervisor Declaration Form, the Site Specific Emergency Plan (SSEP), as well as reference the proposed use of Temporary Rail Bypass Couplers (TRBC), if applicable, and any other applicable plans or procedures listed. If any additional documents are attached to the WPM, the Contractor shall reference them in Section 5.3 *Additional Attachments*.

Section 5.4 *Contractor Staff and Sign Off*, the Contractor shall list key staff and subcontractors and their workers anticipated to be working on the task and their Employee name, Role and associated Company. Contractor must ensure that a briefing contain the main elements of this WPM (including safety and emergency measures) take place on site prior to the work commencing. Workers involved in task to sign-off on WPMT prior to commencing work.

Section 5.5 *External Contact List*, the Contractor shall identify and list the support staff such as the Contract Administrator or Technical Advisor, as well as the applicable Contract Maintenance Provider personnel.

Section 5.6 *Metrolinx Contact List*, the Contractor shall identify and list the Metrolinx staff involved in the project, such as the Project Coordinator, Project Manager, as well as any applicable Specialist personnel.

Section 5.7 *Emergency Contact List*, the Contractor shall identify and list the applicable emergency contact information.

Additional cells are provided in the above three Sections to address any persons not previously identified.

Section 6 - Risk Assessment (RA) and Site Safety

In Section 6.1 *Required CMO Permits*, where Metrolinx is the Constructor, the Contractor shall use the checkbox to indicate which of the CMO Work Permits are required for the work described within the WPM. If the work involves working at heights or work in a confined space, the details of a Site Specific Emergency Rescue Plan must be provided in Section 6.2 *Emergency Rescue Plans*.

The Contractor shall complete Section 6.4 *Risk Assessment Summary* table in accordance with the instructions provided. The Contractor shall assess using Section 6.3 *Risk Assessment Matrix*, each activity described in Section 3.3 *Detailed Task Description* in the Risk Assessment Summary table. If more rows are required, the user shall click on the "Add Another RA Page" Button found on the top right corner of the last page. **Note:** There is no button to remove added pages. This function must be performed through manual editing of the pdf.

Disclosure

In the case that the rules and processes outlined in this User Manual contradict the rules and processes described in the Contract Documents, the requirements outlined in the Contract Documents shall supersede this User Manual.