METROLINX

Metrolinx Rail Corridor Asset Handover Protocol

RC-0503-01

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Metrolinx,

an Agency of the Government of Ontario

Preface

This is the fifth edition of the Metrolinx Rail Corridor Asset Handover Protocol (formerly GO Transit Rail Corridors Infrastructure Handover Protocols) and supersedes all the previous editions. This version includes:

- Prescriptive language around roles and responsibilities of all parties involved in performing any infrastructure changes to Track & ROW, Signals & Communications, and Civil Structures Assets;
- Refined timelines specific for documentation submittals and notification requirements for in-service and handover inspections for heavy rail infrastructure;
- Updates to the Asset Handover roadmap, including revised forms and templates for in-service, handover, and asset registry updates; and
- Introduces the following appendices:
    - Appendix A: Deficiency List Template;
    - Appendix B: Signals Handover Road Map;
    - Appendix C: Track Handover Road Map;
    - Appendix D: Civil Handover Road Map; and
    - Appendix E: Forms and Certificates

This protocol applies to complete infrastructure assets and systems applicable for Track & ROW, Signal and Communications, and Civil Structures components and is applicable to Metrolinx Project Delivery Teams and supporting contractors/vendors for GO/UPE heavy rail contracts.

This document was developed by the Asset Management - Track Office, Engineering and Asset Management Division, Metrolinx.

Suggestions for revision or improvements can be sent to the Metrolinx Asset Management - Track office, Attention: Director of Asset Management - Track, who shall introduce the proposed changes to the Metrolinx Asset Management - Track office. The Director of the Asset Management - Track office ultimately authorizes the changes. Submitted suggestions should include a description of the proposed change, background of the application and any other useful rationale or justification. The submitter's name, company affiliation (if applicable), email address, and phone number must also be included.

May 2024

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TABLE 1-1: SUPPORTING DOCUMENTS & REFERENCES

Reference	Document Title
MX-ALM-STD-001	Asset Information Standard
MX-ALM-STD-002	Civil Asset Information and Data Dictionary
MX-ALM-STD-005	Signals Asset Information and Data Dictionary
MX-ALM-STD-006	Track Asset Information and Data Dictionary
CKH-ASMT-PRC-002	Metrolinx Asset Information Handover Procedure
CKH-ASMT-FRM-002	Asset Document Control List Template (ADCL)
CKH-ASMT-FRM-005	Asset Information Handover Acceptance Certificate
RC-0506-03SIG-01	GO Signals & Communications Standards - General Instructions
RC-0506-03SIG-02	GO Signals & Communications Standards - Codes of Practice
MyLinx ALM page	Asset Document Control List Job Aid
MyLinx ALM page	Master Asset List Job Aid
MX-SEA-STD-006	RAMS Risk Assessment Process (CMREA Section 7)
CKH-ENG-PRC-001	Procedure for Requesting Deviations to Metrolinx Standard Requirements

Acronyms and Abbreviations

TABLE 1-2 ACRONYMS AND ABBREVIATIONS

Acronym	Full Name
ADCL	Asset Document Control List
AREMA	American Railway Engineering and Maintenance of Way Association
CMREA	Canadian Methods for Risk Evaluation and Assessment
CROR	Canadian Railway Operating Rules
CWR	Continuous Welded Rail
E&AM	Engineering and Asset Management
EOR	Engineer of Record (Technical Advisor)
FAT	Factory Acceptance Test(s)(ing)
GI	General Instruction(s)
IFC	Issued For Construction
MAL	Master Asset List
MD	Maintenance Delivery (Metrolinx)
MX	Metrolinx
PDT	Project Delivery Team
PSO	Permanent Slow Order
ROW	Right of Way
SAT	Site Acceptance Test(s)(ing)
SCP	Standard Code(s) of Practice
S&C	Signals and Communications
TA	Technical Advisor
TSO	Temporary Slow Order

Terms & Definitions

TABLE 1-3 TERMS & DEFINITIONS

Term	Definition
Asset Document Control List (ADCL)	Asset Document Control List – means the list of documents to be created during a project and submitted to Metrolinx by the Contractor and then processed to the Electronic Document and Record Management System (EDRMS).
Asset Handover Certificate	A document summarizing the quality assurance documentation used to construct/build the specific item of rail corridor infrastructure and document deliverables. This document certifies that all deficiencies have been addressed and all documents have been provided as indicated by the Asset Information Handover Acceptance Certificate. Maintenance of the location indicated is the responsibility of MD, and ownership has been handed over to E&AM.
Asset Information Handover Acceptance Certificate	A written confirmation from Metrolinx Asset Class Leads (respective VP or their representative) that the Contractor has provided all required Asset Information, and that it has been validated and accepted. by Metrolinx for inclusion in the asset registry.
Authorized Signal Inspector	Individual who is certified and authorized as a Signal Inspector for the purposes of performing in-service inspections, as determined by Metrolinx.
Authorized Track Inspector	Individual who is certified and authorized as a Track Inspector for the purposes of performing in-service inspections, as determined by Metrolinx.
Authorized Civil Structures Inspector	The Engineer of Record or designate who is authorized to be the Civil Inspector for the purposes of performing in-service inspections, as determined by Metrolinx.
Civil Structure	A Structure within Metrolinx Railway Corridor property, including Railway Carrying Bridges, Overhead Bridges (rail & road), Culverts that directly cross Metrolinx tracks and associated culvert catch basins and culvert maintenance holes, Pedestrian Bridges and Tunnels outside station limits, Retaining Walls, Noise Barriers, Heavy Rail Tunnels, and Signal Bridge/Cantilever Structures.
Engineering & Asset Management	E&AM provides a comprehensive evaluation of asset risks, conditions, and performance across the transit system. The E&AM team's primary goal is to align with Metrolinx's strategic objectives, ensuring adherence to Transport Canada standards by implementing necessary risk mitigation strategies. This includes formulating a targeted action plan to secure and execute essential projects.

Focused Audit (Signals & Communication)	A "spot" visual inspection of a Signal System installation is performed by a Metrolinx representative in the presence of a signal contractor. The location selection criteria consist of either an increase in relative failure frequency or evidence of recent signal changes. Note: This audit is above and beyond a required installation walkthrough. Note: The focused Audit could be done for any discipline within the Right of Way based on the criticality of the specific component being assessed.
GO Transit S&C General Instructions (S&C GIs)	Signals and Communications maintenance and testing requirements and practices must be complied with to ensure the integrity and safety of railway signals and communications installations.
GO Transit S&C Standard Codes of Practice (S&C SCPs)	Signals and Communications construction, installation, and other requirements and practices must be complied with to ensure the integrity and safety of railway signals and communications installations
Handover	Delineation of the periods of time before and after full ownership of the changes to the infrastructure is transferred from the PDT to MD/E&AM, and all required documentation has been provided. The Asset Handover Certificate is issued at this stage. After the handover, MD/E&AM owns the assets and is responsible for ensuring ongoing maintenance is undertaken on the affected assets, notwithstanding warranty work.
In-Service Certificate	A document summarizing the quality assurance documentation used to construct/build the specific item of rail corridor infrastructure identified. This document certifies that the item is safe and fit for purpose. PDT remains responsible for correcting defects to restore the class of track and any other deficiencies noted. A copy of the deficiency list will be attached to the In-Service Certificate.
In-Service	Delineation of the periods of time before and after changes are made to the railway corridor infrastructure assets and their operational status. An In-Service certificate is issued at this stage. After assets are placed into service, regulatory inspections, and urgent maintenance for the purpose of restoring service are the responsibility of MD/E&AM. PDTs remain responsible for correcting defects to restore the class of track and any other deficiencies. Note: Civil Structures E&AM is responsible for Civil Structures regulatory inspections unless an official handover occurs 1 year from the in-service certificate date, at which time the PDT is responsible for ensuring regulatory inspections are addressed.
Master Asset List (MAL)	Master Asset List – means the list of asset data to be created or updated by the Contractor and then processed to the Enterprise Maintenance Management System (EMMS) and Enterprise Geographical Information System (EGIS) in connection with the Project.
Qualified Person	"Qualified person" means, in respect of a specified duty, a person who, because of their knowledge, training and experience, is qualified to perform that duty safely and properly. Where applicable, holds the requisite certification or license to be deemed 'qualified.'

1. Overview

1.1 Objectives

1. To establish precise railway-specific criteria governing the smooth transfer of responsibility and handover for railway components, like tracks, signals, civil structures, or other railway corridor infrastructure, from construction teams to operations. This protocol defines criteria, documentation, inspections, and quality assurance for a safe transition, meeting regulatory and operational standards.

1.2 Scope

1. This protocol applies to complete infrastructure assets and systems applicable for Track & ROW, Signal and Communications, and Civil Structures components and is applicable to GO/UPE heavy rail contracts.

2. Roles & Responsibilities

2.1 Project Delivery Team Roles & Responsibilities for Handover

1. Fulfill all the Project Delivery Team and project management requirements in addition to the requirements listed in this protocol.
2. Arrange Asset Handover Initiation meeting with Civil Structures/Signal/Track Managers from MD, Asset Management, and Engineering and/or their designate, Rail Safety Officer, and PDT Document Controller(s) to review:
    a. Planned project and scope of infrastructure impacts, (site meeting may be required),
    b. Level of qualified Contract Administration oversight required to protect rail corridor infrastructure,
    c. Submission of all proposed construction methods and written work plans required for pre-approval and risk assessment and Rail Corridors and then Rail Operations prior to and during construction,
    d. Expected documentation to be received prior to In-Service and Asset Handover
    e. Asset Information Handover Tools- MAL, ADCL, and Asset Information Handover Acceptance Certificate (Job aids available on MyLinx)
        i. For Metrolinx Project Delivery Team's supporting Track and ROW assets only, all <u>new</u> assets must be submitted using the Metrolinx Power Apps. Project Delivery Team's must request access from Track AM. *Exception – External Vendors and Contractors must use MAL for any new or existing Track and ROW assets.*
        ii. MAL must be used for any updates, revisions, modifications, or decommissioning of <u>existing</u> Track and ROW assets.

3. Ensure that all Contractors have well-defined competency metrics for employees providing skilled work and inspections.
4. Ensure that all Contractors have a defined Quality Assurance process. Quality Assurance processes should be reviewed and accepted by the respective E&AM asset class engineering assurance.
5. Ensure tender documents contain all the deliverables set out within this document for the appropriate E&AM asset classes within the Project.
6. Prepare and submit all operations and maintenance data, including as-constructed drawings, rail reports, de-stressing reports, test documentation, etc., as defined in this protocol.
7. Supply all deficiency lists, asset handover deliverables and certificates to Metrolinx E&AM and MD at all the appropriate stages of a Project.
8. Ensure E&AM and MD are provided sufficient notice of work to allow for personnel from E&AM, MD, and maintenance contractors to become trained and competent in maintaining the new installation(s). For work which introduces new technologies, training materials, manuals, and CMREA hazard logs must be provided a minimum of ten (10) weeks in advance of the planned in-service. In addition, ensure a site visit is conducted with E&AM, MD, and maintenance contractors with sufficient time for all parties to become familiar with the site and assets.
9. Drawings as defined in the Metrolinx Design Requirements Manual and proposed commission test documentation shall be supplied to an E&AM Representative, prior to a planned in-service date for retention purposes.
10. Track and close all open deficiencies. Updated deficiency reports, including nonconformances, are to be provided to Metrolinx E&AM and MD at least monthly for tracking purposes.
11. Arrange and provide for a Civil Structures/Signal/Track In-service Inspection and Handover Inspection.
12. Send all documentation to the E&AM Asset Class Team (or Asset Owner) Document Controller with a completed checklist and Carbon Copy (CC) to respective Managers.
13. Provide notice of In-Service inspection to all required parties outlined in the handover roadmap (Appendix B, Appendix C, Appendix D) at least twenty (20) business days prior to the expected in-service time. A copy of the hour-by-hour schedule is to be included.
14. All required documentation identified in Section 5 is to be provided at least four (4) weeks prior to the scheduled in-service inspection, or as outlined in Section 5.
15. Ensure all critical spares required to maintain the asset(s) in a state of good repair are ordered with sufficient time to be available at planned in-service. Provide proof of order to MD/E&AM ten (10) weeks prior to in-service.
16. Contractor/PDT holds the responsibility for executing repairs and rehabilitation required post-in-service inspection until the full handover to E&AM is completed.
17. At project handover Contractor/PDT will provide CMREA hazard logs where applicable.
18. PDT holds responsibility for bridge regulatory inspections as defined by Transport Canada if handover is 12 months after in-service.

19. An updated bridge rating must be provided in accordance with AREMA when the loading is changed on an existing rail bridge; and, if the existing rail bridge is under major rehabilitation or is upgraded as part of the project. The bridge rating must be provided by a Senior Railway Bridge Engineer/Senior Structural Engineer with a minimum of fifteen (15) years of experience in the structural design of Class 1 railway bridges based on AREMA.

2.2 Engineering (E), Maintenance Delivery (MD), and Asset Management (AM) General Responsibilities

1. E&AM representatives are expected to participate in meetings and contribute feedback during the design review phases.
2. E&AM verifies that all the specified deliverables outlined in this document are included in the tender documents.
3. E to review, through assurance activities, key engineering documentation, including design drawings, technical specifications, and installation records, as well as deviations from standards (both granted and not granted).
4. AM to oversee the organization and management of all asset-management related documents, such as the Master Asset List and Asset Document Control List. In track and signal asset classes, AM will review warranties, maintenance manuals, and testing reports. In Civil Structures, if required, warranties, maintenance manuals, and testing reports will be reviewed by E through the engineering assurance process.
5. E to review the documentation of any potential defects, differences from design, performance issues, or any other issues found through assurance activities, review of design and testing documentation, review and observation of testing activities and other activities.
6. E to review, through assurance activities, that all identified issues have been addressed as part of deficiency correction.
7. AM to review and validate asset information, MAL and ADCL to ensure accuracy.
    a. For new Track and ROW assets in replacement of MAL, Metrolinx Power Apps must also be reviewed and validated.
8. MD & AM ensures that contractors update training programs to incorporate new installations or technologies. This does not apply to Civil Structures, but E&AM will work with PDT to request training for technologies where applicable, such as sensors in bridges.
9. MD is responsible for communicating all work details and tracking construction information to the Maintenance Contractor, if applicable.
10. E&AM and MD (if applicable) collaborate for a comprehensive handover inspection before asset handover.
11. AM will ensure that the Asset Information Handover Acceptance Certificate is signed after the MAL, Metrolinx Power Apps (if applicable), and ADCL are validated and accepted.
12. MD is accountable for ensuring the completion of regulatory inspections and emergency repairs to uphold operational service post-in-service inspection and prior to handover. Civil Structures E&AM assumes responsibility if less than 12 months lapses, otherwise the PDT is responsible.

13. MD will ensure maintenance contracts are in place for all rail corridor infrastructure items as soon as the item has been handed over and accepted. This is not applicable to Civil Structures.
14. MD and E&AM jointly ensure that, upon signing and receipt of the Asset Handover Certificate, MD assumes responsibility for the safety of the listed infrastructure components or systems. This is not applicable to Civil Structures, and E&AM is responsible for regulatory inspections.
15. Contractor/PDT holds the responsibility for executing repairs and rehabilitation required post-in-service inspection until the full handover to E&AM is completed.

3. General Railway Civil Structures, Rail Corridor Infrastructure, Track and Signal Construction Requirements

1. No unsafe conditions can be created through any installation/decommissioning activities.
2. Construction involving any infrastructure asset class must be inspected prior to placing into service. Inspections must be performed by authorized personnel as determined by Metrolinx.
3. All railway corridor infrastructure construction must conform to plans, specifications, standards, and otherdocumentation for the work.
4. An in-service inspection is to be conducted, and an In-Service Certificate (where required) is to be provided to E&AM, which states that inspections have taken place and work has met all defined Standards as per the contract and as elsewhere outlined in this document. A list of all deficiencies is to be included with the In-Service certificate. Certificate and deficiency list to be provided on the next business day, or as outlined in Section 5 of this document.
5. Proper documentation is to be maintained during track, civil and signal construction, including but not limited to daily inspection quality reports, CWR de-stressing, welding, new switch/turnout inspections and applicable signal inspections or tests. All submitted forms MUST be Metrolinx approved. Documents may be requested by Metrolinx prior to In-Service.
6. A letter signed and sealed by the Engineer of Record (a Professional Engineer licensed to practice in the Province of Ontario) is to be provided stating that the Civil Structure(s) has been designed, constructed, inspected and is safe to carry the designed load at the in-service stage. This is in addition to the required In-Service and Asset Handover Certificates. (Letter signed and sealed by a Professional Engineer may not required as agreed to by E&AM in advance for minor work.)
7. E&AM, MD, and their Maintenance Contractor(s) are to be updated regularly on the status of all major work. Maintenance contractor(s) (where applicable) are to be updated regularly by MX MD.
8. The use of pre-installation checks, post-installation checks and “soft openings” are to be maximized to reduce train operating risk.

9. The Asset Information Handover Acceptance Certificate is to be signed after the MAL, Metrolinx Power Apps (if applicable), and ADCL are validated and accepted by E&AM.
10. Any impacts to zone speed and/or potential changes to train acceleration characteristics within the approach of crossings, through the application of Permanent Slow Orders (PSOs and/or Temporary Slow Orders (TSOs) shall be coordinated with and approved by Rail Corridor Access and Control (RCAC), Rail Service Design, Track and Signals Engineering, and Network Operations Centre (NOC).
11. Introduction of new signal structures must have signal sighting verified through observation from a test train and signed off by MX train operations.

4. Requirements For In-Service Certificates

4.1 Work Requiring Track In-Service Certificates

1. The following types of Track work require an In-Service Inspection and Certificate:
    1. New track construction, rehabilitation, or replacement of Track and ROW infrastructure, including but not limited to:
        a. Track
            i. Rail;
            ii. Crossings;
            iii. Ballast;
            iv. Joints;
            v. Ties;
            vi. Bumper;
            vii. Diamond;
            viii. Derail;
            ix. Lubricator/Adhesion applicator; and
            x. Turnouts.
        b. Right of Way
            i. Signage;
            ii. Parallel Culverts;
            iii. Ditching;
            iv. Fencing; and
            v. Gates;

4.2 Work Requiring Signals In-Service Certificates

1. The following types of work require an In-Service Certificate:
    1. All work that commissions, decommissions, or changes in-service signalling infrastructure, including software changes and upgrades;
    2. All work which results in changes to the as-installed signal drawings;
    3. All work which results in changes to the functionality of the existing signalling system;
    4. All work which results in changes to the in-service track layout if signalling infrastructure is affected (insulated joints, crossings in the vicinity, etc..); and
    5. All work not explicitly excluded below
2. The following types of work do not require an In-Service Certificate:
    1. Regular maintenance inspections and tests;
    2. Diagnostic testing and troubleshooting, provided no changes to the signal design are required;
    3. Emergency repairs provided no changes to the signal design are required;
    4. General signal support for track work including:
        a. Crossing deactivation/reactivation/re-calibrations (with no changes to the crossing design);
        b. Track circuit/crossing shunt wire disconnection/reconnection and joint bonding; and
        c. Standby signal support for track work, excavations, utility locates.
    5. Seasonal infrastructure changes, including snow-clearing device start-up and shutdown; and
    6. Other minor work as approved by the Director, Signals Engineering.

4.3 Work Requiring Civil Structures In-Service Certificates

1. The following types of Civil Structures work require an In-Service Inspection and Certificate:
    1. New construction, rehabilitation, or replacement of civil structures that require the structure/track to be taken out of service, including, but not limited to, bridges, retaining walls, noise barriers, signal bridges, culverts and tunnels;
    2. All work which results in changes to the as-constructed drawings;
    3. All work which results in changes to the functionality of the existing infrastructure;
    4. All work which results in changes to the in-service track layout on the structure;
    5. All work not explicitly excluded in section 4.3.2.
2. The following types of work do not require an In-Service Certificate:
    1. Annual, detailed and spot inspections and testing;
    2. Work that does not require the structure to be taken out of service or non-structural repairs;
    3. Emergency repairs provided no changes are made to the design or track layout; and
    4. Other minor work as approved by the Director, Civil Structures Engineering.

5. Documentation Requirements

5.1 General

1. These deliverables are required by E&AM to provide oversight for Civil Structures/Signal/Track assets.
2. The PDT/Contractor is required to provide all pertinent information as per the latest Master Asset List (MAL) to E&AM for upload to HxGN EAM and to provide a list of all documents handed over utilizing the Asset Document Control List (ADCL) as indicated in Section 5 or as per the contract.
    i. For Track and ROW assets only – Refer to Section 2.1 (e)
3. Forms for Civil Structures/Signal/Track In-Service Notification, In-Service Certificate, Asset Information Handover Acceptance Certificate and Asset Handover Certificate are available on the External GO Site.
4. The Final document soft copies, ADCL and MAL will be uploaded by PDT to the staging area in the Electronic Document and Record Management System (EDRMS) for final validation and then processed to the final EDRMS location. Hard copies will be provided during Handover Meetings. The documentation required for all safety-critical/sensitive infrastructure is to be transmitted as outlined in this Section 5 prior to Handover to allow for review prior to acceptance by E&AM.
5. Tables 5-1 through 5-9 are not exhaustive lists. Each project team will need to determine the exact documentation requirements for each project.
6. Only one set of documents is required to be provided per contract regardless of the number of disciplines (e.g., tracks, signals, civil) covered by that contract, provided it is identified by PDT and accepted in writing by the E&AM Asset Class VPs and/or their designates during Handover meetings, the document can be sent once and marked off on each discipline's ADCL.

Notes:

- The current version of the MAL, ADCL and Asset Information Handover Acceptance Certificate are available on the External site www.gosite.ca within Asset Lifecycle Management Standards and MyLinx.
- The MAL is found within the Index of the applicable Asset Information and Data Dictionary.
- The latest version of the MAL must be used as asset hierarchy attributes, etc., may change. PDT should confirm with the Asset Class Team that the MAL is the latest version.
- Metrolinx Power App for Track and ROW - Track Asset Handover

5.3 Signal Design Requirements

TABLE 5-1 SIGNAL DOCUMENTATION REQUIREMENTS – PRIOR TO IN-SERVICE

Deliverable	Format	Timeline	Description/Justification
In-Service Notification	Email	10 weeks in advance of planned in-service	Notification to all parties
Draft/ Planned IFC Design	1 Softcopy	10 weeks in advance of planned in-service	
Pre-In-Service Walkthrough & Preliminary Deficiency Report	1 Softcopy	4 weeks in advance of planned in-service	To familiarize maintenance personnel and to identify preliminary deficiencies before in-service inspection
Factory Acceptance Test Results (FAT): - Software Validation Tests - Wiring Certification Form(s)	1 Softcopy	Minimum 4 weeks in advance of planned in-service	To be utilized during a signal incident investigation
Work Plan Methodology	1 Softcopy	As outlined in the WPM template	
Site Acceptance Test (SAT) Plans	1 Softcopy	Included with the WPM submission	
In-Service Commissioning Test Plans	1 Softcopy	Included with the WPM submission	
Final IFC Design: - IFC Design Drawings - IFC Software & Configuration Files	1 Softcopy	Minimum 4 weeks in advance of planned in-service	
Remaining Critical Construction Work Schedule	1 Softcopy	First submission minimum 4 weeks in advance of planned in-service, and weekly until planned in-service	Outlines any remaining construction work required to be completed prior to in-service

Expected/Planned Master Asset List (MAL)	1 Softcopy	Minimum 10 weeks in advance of planned in-service	List of assets and asset information to be uploaded into the MX EAM system
Installation, Operation, and Maintenance Manuals	1 Softcopy 1 Hardcopy (to be left in bungalow)	Minimum 4 weeks in advance of planned in-service	
Document deliverables and Expected/ Planned Asset Document Control List (ADCL)	1 Softcopy	Minimum 10 weeks in advance of planned in-service	List of documents and the document deliverables to be uploaded into MX EDRMS

***All submissions require review and approval from Metrolinx E&AM and/or designate. Allow for appropriate review period(s) where applicable.**

TABLE 5-2 SIGNAL DOCUMENTATION REQUIREMENTS – POST IN-SERVICE

Deliverable	Format	Timeline	Description/Justification
Signals In-Service Certificate	1 Softcopy	Immediately after In-Service Inspection	
Post-In-Service Walkthrough & Deficiency Report	1 Softcopy	Not to exceed 72 hours post in-service	Attendees: MX MD + Maintenance Provider/Vendor MX E&AM PDT Representative
Site Acceptance Test (SAT) Results	1 Softcopy 1 Hardcopy (to be left in bungalow)	Softcopy: Not to exceed 72 hours after in-service Hardcopy: Immediately at In-Service	
In-Service Commissioning Test Results	1 Softcopy 1 Hardcopy (to be left in bungalow)	Softcopy: Not to exceed 72 hours after in-service Hardcopy: Immediately at In-Service	
As-Installed Design Drawings	1 Softcopy 1 Hardcopy (to be left in bungalow)	Softcopy: Not to exceed 72 hours after in-service Hardcopy: Immediately at In-Service	
As-Installed Software & Configuration Files	1 Softcopy 1 Hardcopy (USB drive left in bungalow)	Immediately at in-service	Software/configuration files to be sent to E&AM/MD immediately
Train/Crossing Logs (if applicable)	1 Softcopy 1 Hardcopy (to be left in bungalow)	Softcopy: Not to exceed 48 hours after the required observation period (typically 72 hours after in-service) Hardcopy: Immediately at In-Service	
As-Installed Master Asset List (MAL)	1 Softcopy	Not to exceed 72 hours after in-service	Includes any changes from the expected/draft MAL

***All submissions require review and approval from Metrolinx E&AM and/or designate. Allow for appropriate review period(s) where applicable.**

TABLE 5-3 SIGNAL DOCUMENTATION REQUIREMENTS - HANDOVER

Deliverable	Format	Timeline	Description/Justification
Warranty Certificates	1 Softcopy	2 weeks in advance of handover	
Final Design and Record Drawings	1 Softcopy (PDF) 1 Softcopy (CAD) 1 Hardcopy (to be left in the bungalow)	Not to exceed 30 days after in-service, and 2 weeks in advance of handover	
Completed and Signed-off deficiency list	1 Softcopy	2 weeks in advance of handover	
EOR Letter of conformance to: MX GIs, SCPs, Standards, Section 11 of the Railway Safety Act	1 Softcopy	2 weeks in advance of handover	
Supplier Contact List	1 Softcopy	2 weeks in advance of handover	
All other documents required by contract	As Required	As Required	
Signal Asset Handover Certificate	1 Softcopy	At Handover	
Final Asset Document Control List (ADCL)	1 Softcopy	Minimum 2 weeks prior to handover or as outlined in the contract	Includes any changes from the expected/draft ADCL and document deliverables
Asset Information Handover Acceptance Certificate	1 Softcopy	2 weeks in advance of handover	Confirms acceptance of MAL, ADCL and asset-related documents

***All submissions require review and approval from Metrolinx E&AM and/or designate. Allow for appropriate review period(s) where applicable.**

5.4 Track Documentation Requirements

TABLE 5-4 TRACK DOCUMENTATION REQUIREMENTS – PRIOR TO IN-SERVICE

Deliverable	Format	Timeline	Description/Justification
In-Service Notification	Email	10 weeks in advance of planned in-service	Notification to E&AM
Pre-In-Service Walkthrough & Preliminary Deficiency Report	1 Softcopy (XLSX)	4 weeks in advance of planned in-service	To familiarize maintenance personnel and to identify preliminary deficiencies before in-service inspection
Factory/Manufacturer /Quality Assurance Certifications:	1 Softcopy (PDF)	Minimum 4 weeks in advance of planned in-service	
Work Plan Methodology	1 Softcopy (PDF)	As outlined in the WPM template	
Sightline Confirmation (if applicable)	Email	Minimum 4 weeks in advance of planned in-service	Applicable to works on or within the sightline distances of private crossings
Final IFC Design: - IFC Design Drawings - Geotechnical Reports	1 Softcopy (PDF & DWG)	Minimum 4 weeks in advance of planned in-service	Nomenclature for Geotechnical Reports: Corr-mileage-**Geotechnical**-Street name **in** Municipality – year of report Ex. BAR – 4.19 – **Geotechnical** – Wallace Avenue **in** Toronto - 2022
Expected/Planned Master Asset List (MAL)	1 Softcopy (XLSX)	Minimum 10 weeks in advance of planned in-service	List of assets and asset information to be uploaded into the MX EAM system
Installation, Operation, and Maintenance Manuals	1 Softcopy (PDF) 1 Hardcopy	Minimum 4 weeks in advance of planned in-service	

Remaining Critical Construction Work Schedule	1 Softcopy (PDF & XLSX)	First submission minimum 4 weeks in advance of planned in-service, and weekly until planned in-service	Outlines any remaining construction work required to be completed prior to in-service
Document deliverables and Expected/ Planned Asset Document Control List (ADCL)	1 Softcopy (XLSX)	Minimum 10 weeks in advance of planned in-service	List of documents and the document deliverables to be uploaded into MX EDRMS

***All submissions require review and approval from Metrolinx E&AM and/or designate. Allow for appropriate review period(s) where applicable.**

TABLE 5-5 TRACK DOCUMENTATION REQUIREMENTS – POST IN-SERVICE

Deliverable	Format	Timeline	Description/Justification
Track In-Service Certificate	1 Softcopy (PDF)	Immediately after In-Service Inspection	
Post-In-Service Walkthrough & Deficiency Report	1 Softcopy (XLSX)	Not to exceed 72 hours post in-service	Attendees: MX MD + Maintenance Provider/Vendor MX E&AM PDT Representative
As-Built Survey**	1 Softcopy (DWG)	Not to exceed 48 hours after in-service	
As-Built Design Drawings	1 Softcopy (PDF & DWG)	Not to exceed 120 hours after in-service	
Final Master Asset List (MAL)	1 Softcopy (XLSX)	Not to exceed 72 hours after in-service	Includes any changes from the expected/draft MAL
Deficiency Resolution Plan (If Applicable)	1 Softcopy (XLSX)	Not to exceed 72 hours after in-service	
In-Service Inspection Results	1 Softcopy (XLSX)	Not to exceed 72 hours after in-service	

***All submissions require review and approval from Metrolinx E&AM and/or designate. Allow for appropriate review period(s) where applicable.**

****To include any adjacent structures including but not limited to (civil structures, signal structures, and/or station platforms/canopies) that may be subject to dimensional clearance restrictions within 13ft from nearest rail, horizontally, and within 31ft from top of rail, vertically. Dimensional surveys are only required for track works affecting clearances for railway operations.**

TABLE 5-6 TRACK DOCUMENTATION REQUIREMENTS - HANDOVER

Deliverable	Format	Timeline	Description/Justification
Warranty Certificates	1 Softcopy (PDF)	2 weeks in advance of handover	
Final Design and Record Drawings	1 Softcopy (PDF) 1 Softcopy (CAD) 1 Hardcopy	Not to exceed 30 days after in-service, and 2 weeks in advance of handover	
Completed and Signed-off deficiency list	1 Softcopy (XLSX)	2 weeks in advance of handover	
EOR Letter of conformance to: MX Track Standard and Standard Plans, Section 11 of the Railway Safety Act	1 Softcopy (PDF)	2 weeks in advance of handover	
Supplier Contact List	1 Softcopy (PDF)	2 weeks in advance of handover	
All other documents required by contract	As Required	As Required	
Track Asset Handover Certificate	1 Softcopy (PDF)	At Handover	
Proof of Critical Spare Parts Ordered	1 Softcopy (PDF)	Minimum 2 weeks prior to handover or as outlined in the contract	
Final Asset Document Control List (ADCL)	1 Softcopy (XLSX)	Minimum 2 weeks prior to handover or as outlined in the contract	Includes any changes from the expected/draft ADCL and document deliverables
Asset Information Handover Acceptance Certificate	1 Softcopy (PDF)	2 weeks in advance of handover	Confirms acceptance of MAL, ADCL and asset-related documents

***All submissions require review and approval from Metrolinx E&AM and/or designate. Allow for appropriate review period(s) where applicable.**

5.5 Civil Structures Documentation Requirements

1. The assumption is that the Civil Structures have been assured through the Civil Structures Engineering Assurance process, that all internal Metrolinx governance has been followed (SRP, SSRP, ISA, etc.), and a Term Sheet outlines the ongoing financial obligations associated with the infrastructure. The following are the minimum documentation requirements. Also, refer to the requirements outlined in the contract.

TABLE 5-7 CIVIL STRUCTURES DOCUMENTATION REQUIREMENTS – PRIOR TO IN-SERVICE

Deliverable	Format	Timeline	Description/Justification
In-Service Notification to E&AM	Email	10 weeks in advance of In-service	Email Notification to E&AM
Pre-service Walkthrough & Preliminary Deficiency Report	1 Softcopy	4 weeks in advance of In-service	- Civil Structures Engineering Assurance confirming readiness for Pre-service walkthrough - To familiarize maintenance personnel and to identify preliminary deficiencies before in-service inspection
Final IFC Design Package: IFC Design Drawings, bridge rating report (if applicable), and Structural models/design calculations	1 Softcopy (*.PDF) 1 Softcopy (*.DWG)	4 weeks in advance of In-service	With all design revisions and up-to-date markups
Deficiency Report (Initial Draft) - including schedule for closeout	1 Softcopy	4 weeks in advance of In-service	1 business day following site inspection
Operations and Maintenance Manual	2 Hardcopies + 1 Softcopy	4 weeks in advance of In-service	For any special devices that may be included in the construction
Maintenance requirements and plans	1 Softcopy	4 weeks in advance of In-service	including impacts OPEX budget
Factory/Manufacturer /Quality Assurance Certifications	1 Softcopy	Minimum 4 weeks in advance of planned in-service	

Letter/Memo from Consultant/Owner's rep. (Engineer of Record as per the Railway Safety Act)	1 hard copy 1 Softcopy (*.PDF)	4 weeks in advance of In-service	Verification that the asset has been inspected and is safe to carry designed loads sealed and signed by the Engineer of Record (must be a Professional Engineer licensed to practice in Ontario)
Contract and warranty documentation	1 Hardcopy + 1 Softcopy (*.PDF)	4 weeks in advance of In-service	Rail Corridors reference material. Contracts are the tender document(s) which become part of the executed contract. Warranties required are to be in place after the In-Service date, not ones nulled by acceptance
Ownership/Maintenance Responsibility Agreement (if required)	1 Softcopy	4 weeks in advance of In-service	To define ownership/division of responsibility and maintenance costs sharing with third parties
Expected/Draft Master Asset List (MAL)	1 Softcopy	10 weeks in advance of In-service	List of assets and asset information to be uploaded into EAM system
Document deliverables and Expected/ Planned Asset Document Control List (ADCL)	1 Softcopy	10 weeks in advance of In-service	List of document deliverables and documents to be uploaded into EDRMS

TABLE 5-8 CIVIL STRUCTURES DOCUMENTATION REQUIREMENTS – POST IN-SERVICE

Deliverable	Format	Timeline	Description/Justification
Civil Structures In-Service Certificate	1 Softcopy	Immediately after In-Service Inspection	
Post-In-Service Walkthrough & Deficiency Report	1 Softcopy	Not to exceed 72 hours post in-service	Attendees: MX MD (if required) + Vendor MX E&AM PDT Representative
Deficiency Resolution Plan (If Applicable)	1 Softcopy	Not to exceed 72 hours after in-service	
In-Service Inspection Results	1 Softcopy	Not to exceed 72 hours after in-service	

TABLE 5-9 CIVIL STRUCTURES DOCUMENTATION REQUIREMENTS - HANDOVER

Deliverable	Format	Timeline	Description/Justification
Notification to Civil Structures of upcoming handover	Email	2 weeks in advance of handover	
As-built plans. (Any update since in-service) Record Drawings, specifications, structural models, and design calculations	1 Hardcopy + 1 Softcopy (*.PDF) 1 Softcopy (*.DWG)	2 weeks in advance of handover	Record drawings, specifications and design calculations must be signed by a Professional Engineer
Final Deficiency Report – Completed	1 Softcopy	2 weeks in advance of handover	Signed off at handover by EOR
In-Service Certificate	1 Hardcopy 1 Softcopy (*.PDF)	2 weeks in advance of handover	
Inspection Report / Regulatory Inspection Reports (if handover is 12 months after in service) and Bridge Rating (if applicable)	1 Softcopy (*.PDF)	2 weeks in advance of handover	For Metrolinx Railway Safety Management System (RSMS) Regulation
Final Master Asset List (MAL)	1 Softcopy	2 weeks in advance of handover	Includes any changes from the draft MAL
Final Asset Document Control List (ADCL)	1 Softcopy	2 weeks in advance of handover	Includes any changes from the draft ADCL and document deliverables
Asset Information Handover Acceptance Certificate	1 Hardcopy 1 Softcopy (*.PDF)	2 weeks in advance of handover	Confirms acceptance of MAL, ADCL and asset-related documents

5.6 Other Documentation Requirements

5.6.1 Letter(s) of Conformance

1. After receiving the letter of bridge/track/signal condition from the Contractor and prior to the handover of the bridge/track/signal asset(s), the Owner's Representative and/or Engineer of Record (qualified bridge engineer/track inspector/signal inspector) must submit a signed and sealed letter stating that:
    a. All bridge/track/signal deficiencies have been addressed, and no further deficiencies exist.
    b. Bridge/track/signal asset(s) is safe for design speed/load.
    c. Bridge/track/signal asset(s) is in full conformance with the design/design changes and is compliant with the latest edition of all applicable standards.
2. If applicable, accompanying the letter of Conformance should also be a softcopy of a clear geometry report. (The arrangement of the Rail Corridors track geometry testing vehicle may be possible through Rail Corridors; however, the operator arrangements will need to be made through PDT teams.)

Appendix A - Deficiency List Template

Embedded Excel file contains Deficiency List Tracking Template

Project-Deficiency-Tracking-Sheet.xlsx

Note: Metrolinx reserves the right to add deficiencies to this deficiency tracking sheet at any time prior to handover.

Severity Descriptions

Severity Level	Description
1-Critical	The installation cannot go into service.
2-Major	The installation can go into service with limitations.
3-Minor	Installation is placed In-Service and operates as designed.
4-Document	Minor documentation issues.

Note: These are minimum requirements. A consultant or contractor may supply a more detailed deficiency tracking sheet depending on the project. Consultant/Contractor tracking sheets will bedeemed to be acceptable if they meet the minimum shown above.

Appendix B - Signals Handover Roadmap

Handover Roadmap_Signals.pdf

Appendix C - Track Handover Roadmap

Handover Roadmap_Track.pdf

Appendix D - Civil Handover Roadmap

Handover Roadmap_Civil Struct

Appendix E – Forms & Certificates

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IN-SERVICE NOTIFICATION FORM (Ref. S&C SCP 1208-1)

In-Service Notification Form

IN-SERVICE CERTIFICATE

In-Service Certificate

HANDOVER CERTIFICATE

Handover Certificate