Handover and Acceptance for Third Party Electrical Traffic Control and Management Devices

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TTS 801.200.01 SCOPE

This specification covers the terms and conditions for undertaking work on any City owned electrical traffic control signal and traffic management device including RESCU. This work includes design, construction, and activation of any new or existing electrical traffic control and traffic management device.

TTS 801.200.02 REFERENCES

This specification refers to the following standards, specifications, or publications:

City of Toronto Standard Specifications

TS 801	Electrical Work – General
TS 802	Handwells
TS 803	Ducts
TS 804	Cables
TS 805	Poles
TTS 806.100	Construction Specification for Power Supply Equipment
TTS 807.100	Construction Specifications for Footings and Sidewalk Bays
TTS 808.100	Construction Specification for Traffic Signal Control Equipment
TS 809	Traffic Signal Controllers
TTS 810.100	Construction Specification for Traffic Actuation Equipment
TTS 811.100	Construction Specification for Flashing Beacons
TTS 812.100	Construction Specification for Pedestrian Crossover (PXO) Equipment
TTS 813.100	Construction Specification for Grounding and Bonding
TTS 815.100	Construction Specification for Removal of Electrical Equipment
TS 817	RESCU Equipment

City of Toronto Publications

CADD Specification Manual
Traffic Signal Operations Policies and Strategies
Spacing of Traffic Signals
Pedestrian Timing at Signalized Intersections
Guidelines for Using Synchro 11
Electrical Contractor Pre-qualification Requirements
Traffic Control Devices and Systems Inspection Manual
Field Services Manual
Active Advance Warning Beacons

Regulations and Publications

Highway Traffic Act (HTA)
Accessibility for Ontarians with Disabilities Act (AODA)
Ontario Occupational Health and Safety Act (OHSA)
Ontario Traffic Manual (OTM)
Ontario Provincial Standards and Specifications (MTOD, OPSS and OPSD)
National Electrical Manufacturers Association (NEMA) Standards, including TS2-2003
Ontario Electrical Safety Code (22nd Edition or newer)

TTS 801.200.03 DEFINITIONS

For the purposes of this specification, the following definitions apply:

Acceptance means the completion of all the Traffic Control Devices or Traffic Management Devices scope of work or both by the Third Party to the satisfaction of the TMS, and the return of municipal responsibilities of the Traffic Control Devices or Traffic Management Devices or both including operation and maintenance to the City from the Third Party. Only the TMS can accept any Traffic Control Devices or Traffic Management Devices or both from a Third Party on behalf of the City.

Activation means the energization of the Traffic Control Devices or Traffic Management Devices or both into full time design operation by the Third Party after completion of the pre-activation site visit, shop testing and permanent pavement marking work by the Third Party. The Third Party shall arrange the activation with the TMS minimum five (5) Working Days in advance. Activation does not mean Acceptance. The Third Party address all deficiencies identified by TMS after activation for Acceptance by the City

Handover means the transfer of municipal responsibilities for Traffic Control Devices or Traffic Management Devices or both including design, supply, installation, operation, and maintenance from the City to the Third Party.

Pre-activation means an inspection site meeting after the completion of civil work and underground and overhead Traffic Control Devices or Traffic Management Devices work or both by the Third Party, and after the Third Party completes their own inspections and rectifies all its own deficiencies. The Third Party shall arrange the pre-activation meeting with the TMS to determine activation readiness. Any deficiencies identified by TMS staff during the pre-activation must be addressed before activation. Failure to address deficiencies before activation may result in subsequent pre-activation inspections or delay to activation and acceptance or both.

Programming Sheets means MS-Excel file consisting of: (i) controller programming sheets; (ii) APS wiring diagram and programming sheets; (iii) malfunction monitoring unit configuration sheet; and (iv) any additional schematics modifying the controller cabinet, such as fire hall pre-emption, interconnection, red light camera, uninterrupted power supply and transit signal priority.

RESCU means the City's traffic management system comprised of various subsystems, including communications, power, closed circuit television, variable messages signs, vehicle detection sensors equipment and infrastructure.

Third Party means any entity external to the City.

Traffic Control Devices means all electrical traffic control related infrastructure including: (i) traffic signals, including a complete controller cabinet, traffic poles, hand wells, conduits, mast arms, APS units, signal heads, disconnect, demarcation/tap box cabinet/timer, detectors, LED blank-out signs, gates, flashers, uninterruptible power supplies and communication equipment; and (ii) pedestrian crossovers.

Traffic Management Devices means all electrical traffic management related infrastructure including: (i) CCTV traffic cameras, (ii) variable message signs, (iii) detectors including radar system and Bluetooth system; and (iv) communication network , including fibre optic cables.

TMS means Traffic Management Section in Transportation Services division.

TTS 801.200.04 HANDOVER OF DEVICES FROM CITY TO THIRD PARTY

TTS 801.200.04.01 Drawings

For any modifications to existing Traffic Control Devices or Traffic Management Devices or both or for the construction of any new Traffic Control Devices or Traffic Management Devices or both, the Third Party shall submit signal design drawing(s) to TMS for review and comments. It is the Third Party's responsibility to confirm pre-construction conditions for the drawing and design, ensure the accuracy of the drawing and coordinate with other affected City units and agencies, including Red Light Camera Unit, TTC, Toronto Hydro and contractors.

Drawings shall be:

1) Be sealed, signed, and dated by a professional engineer licensed to practice in the province of Ontario,

2) Be provided in both Microstation and PDF format and shall meet City CADD standards. AutoCAD will not be accepted,

3) Include separate removal, temporary and permanent design drawings, as appropriate,

4) Show all existing conditions in grey and all new, proposed conditions in black,

5) Show all existing conditions including curb lines, lanes, crosswalks, sidewalks, catch basins, hydro poles and property lines overlaid with the new, proposed conditions, intersection geometry and all above ground and below ground Traffic Control Devices or Traffic Management Devices assets or both,

6) Show all materials and quantities required for the Traffic Control Devices or Traffic Management Devices work or both in the bill of materials and

7) Comply with all relevant City guidelines, standards and specifications.

The drawing(s) may be circulated to and reviewed by other relevant Transportation Services units and shall address all the comments provided. No construction may start on any part of the Traffic Control Devices or Traffic Management Devices system or both until all the City's comments have been addressed to the satisfaction of the Contract Administrator.

TTS 801.200.04.02 Interconnected Signals

Where signals are interconnected with another signal, all the interconnected signals must be taken over by the Third Party – interconnected signals are defined in the *Spacing of Traffic Signals.*

TTS 801.200.04.03 SCATS Signals

Where a signal falls within an existing or a planned SCATS corridor, the Third Party shall be required to reinstate or implement new SCATS system at the impacted signal(s). TMS must be contacted as early as possible. For more detailed SCATS signal handover terms and conditions, go to Appendix A, *Third Party SCATS Handover Terms and Conditions*.

TTS 801.200.04.04 Requirements Before Starting Construction

Third Party shall provide the following to the TMS prior to the start of construction:

1) Traffic Control Devices or Traffic Management Devices work schedule or both and list of all Traffic Management Devices and Traffic Control Devices that may be impacted within or near the construction area. The work schedule shall identify target dates for site visits with TMS.

2) Site photos or video of existing Traffic Control Devices or Traffic Management Devices infrastructure or both, including the inside any traffic control cabinets, taken no more than thirty (30) Calendar Days prior to the construction.

3) Assessment report on the existing condition of all Traffic Control Devices or Traffic Management Devices infrastructure or both. The report shall also identify any device component expected to reach the end of its life cycle by the end of construction and propose new device or component for TMS review and comments. The assessment report shall also include an operational check of all Traffic Control Devices such as UPS and Traffic Management Devices such as CCTV cameras.

4) Completed TMS signal take over form and provide the project team contacts for Traffic Control Devices or Traffic Management Devices work, including 24 hours a day 7 days a week emergency contact for the pre-qualified electrical contractor that will be responsible for signal operation and maintenance. The Third Party must advise TMS immediately of any changes to any of the project team contacts immediately. The Third Party shall provide scheduled and actual handover date and time at minimum five (5) Working Days in advance.

TTS 801.200.04.05 Project Team

The Third Party shall hire an appropriate project team, including:

1) Professional engineering consultant with Traffic Control Devices or Traffic Management Devices or both design experience in the province of Ontario, to prepare and revise design drawings as necessary, respond to any comments from TMS and prepare engineering cost estimates based on the final designs,

2) Professional engineering consultant to undertake any traffic network modelling, and to prepare and submit proposed temporary and permanent signal phasing and timing plans for TMS review and comments,

3) Contract administration and inspection services, which has relevant Traffic Control Devices or Traffic Management Devices or both operation and deployment experience, to oversee, manage and inspect all Traffic Control Devices or Traffic Management

Devices work or both and ensure compliance throughout the project and be responsible for working with the pre-qualified electrical contractor to address any issues that arise during construction. For contract administrator and inspector roles, go the Field Services Manual. Contract Administrator may also be the design consultant; and

4) Pre-qualified electrical contractor to perform all Traffic Control Devices or Traffic Management Devices work or both identified in the final design drawings, complete all controller and cabinet work including programming, wiring, intersection, communication, wiring schematics as applicable. Carry-out any signal operation and maintenance work including routine maintenance and 24 hours a day 7 days a week emergency calls until the signal is accepted by TMS.

TTS 801.200.04.06 Permits

It is the Third Party's responsibility to obtain all the required permits and approvals before starting any signal work.

TTS 801.200.04.07 No Handover

Once an intersection is handed over to a Third Party, the Third Party shall not handover the intersection to another Third Party without TMS consent.

TTS 801.200.04.08 Signal Timing

It is the Third Party's responsibility to prepare and ensure proper signal timings corresponding with the temporary or permanent signal design at the intersection are implemented and to provide electronic copy of any updated timing card and programming sheets to the TMS for record-keeping purposes. This includes preparing and implementing alternative signal timing plans as needed to address any public complaints or operational issues that may arise. The Third Party should consider retaining the services of consultant for the duration of the signal work.

The Third Party shall always maintain a hardcopy of the latest timing card in the traffic control cabinet throughout the project. Permanent programming sheets shall be provided to the TMS minimum three (3) Working Days prior to shop test and activation. Upon request, the TMS will provide electronic copy of current timing cards and programming sheets to the Third Party.

TTS 801.200.05 DURING CONTRUCTION

TTS 801.200.05.01 Operation and Maintenance

The Third Party, on behalf of the City, shall carry out all operation and maintenance of the existing, new or temporary Traffic Control Devices or Traffic Management Devices infrastructure or both within the construction area, prior to acceptance by the TMS. During construction and temporary signal staging including post permanent activation prior to TMS acceptance, the traffic signal operation and maintenance are devolved to the Third Party and the Third Party shall be responsible for all costs. The Third Party's pre-qualified electrical contractor shall be available on a 24 hours a day 7 days a week basis to receive phone calls from City regarding operation and maintenance issues.

TTS 801.200.05.02 Temporary Staging

For temporary installations, the TMS will only be responsible for reviewing and commenting on the initial temporary stage design and timing plan. The Third Party shall be responsible for all signal timings, installation, operation, and maintenance of temporary signals.

TTS 801.200.05.03 TMS Site Visits

The Third Party shall organize site visits with the TMS and provide minimum five (5) Working Days advance notice, including:

- Permanent pole layout
- Pre-activation
- Review of design conflicts
- Activation
- Review of post-activation deficiency fixes

For all site visits with TMS, the Third Party must arrange for their signal designer, Contract Administrator, pre-qualified electrical contractor, and the City civil works inspector to attend.

For pole layouts, TMS will only confirm permanent pole locations after the final curb alignments and curb depressions are constructed and no more than 21 Calendar Days prior to the start of permanent phase of construction. Prior to the pole layout site meeting with TMS staff, the Third Party shall mark all permanent signal infrastructure in the field. The Third Party shall also mark any permanent layout changes in the field and submit updated design drawing(s) for TMS review and comments. The Third Party shall notify its Contract Administrator and designer immediately if any issues with a proposed change are identified, such as utility conflicts, so that other options can be discussed. All changes must be reviewed with TMS.

For activations, the Third Party must also ensure a paid duty officer will be present, in addition to the above.

TTS 801.200.05.04 Updates

The Third Party shall provide monthly updates to the TMS for any Traffic Control Devices or Traffic Management Devices related work or both within the construction area, including schedule update and design update where applicable.

TTS 801.200.05.05 Meetings

The Third Party shall coordinate and chair any necessary meetings with the TMS to review any proposed changes to any Traffic Control Devices or Traffic Management Devices or both including system operations and maintenance. The Third Party shall track the proposed changes, TMS comments and the Third Party's responses using Comments Response Review (CRR) sheets.

TTS 801.200.05.06 Salvaged Materials

The Third Party shall assume that the TMS will not be providing any materials for the signal installation. The Third Party shall provide salvaged material list, cut sheets and shop drawings, confirmed by the Third Party's Contract Administrator, to TMS for review and comments prior to purchasing materials.

TTS 801.200.05.07 Testing

The Third Party shall be responsible for any testing of new system or new devices interfacing with signal controller cabinets and provide test documentation before and after testing to the TMS. At minimum, the testing shall include, but is not limited to:

1) Shop test, which is required for all new traffic control cabinets or new traffic control timer or both. The shop test shall include operational check and system test with a traffic signal cabinet prior to field installation. The Third Party shall: (i) setup and energize the traffic signal cabinet in the Third Party's facilities; and (ii) establish communications between cabinet/timer and TMS Central System. The Third Party shall label the timers and modems accordingly based on TMS assigned intersection number. The Third Party shall provide any documentation required, such as test plan, signal timing and programming sheets, to the TMS minimum three (3) Working Days prior to shop test and invite TMS staff to attend with minimum five (5) Working Days advance notice of when the cabinet will be made available for TMS to inspect. TMS reserves the right to conduct operation testing remotely. The Third Party shall have the pre-qualified electrical contractor present for all testing and inspections.

2) Activation test, which is required for all Traffic Control Devices or Traffic Management Devices activations or both in the field to have paid duty officer on-site. In addition to physical inspection, the activation test shall at least include operational check and system test including any test that cannot be conducted in the shop test. The Third Party shall have the pre-qualified electrical contractor staff present for any testing and inspection. Any documentation required, such as final design drawing and programming sheets, shall be provided to the TMS minimum three (3) Working Days prior to traffic signal activation.

The Third Party’s Contract Administrator shall: (i) Ensure that the pre-qualified electrical contractor carries out the required testing, instrumentation calibration and commissioning including equipment checkout and verification, conflict monitor testing, and performance testing as applicable; (ii) Coordinate with TMS to ensure appropriate TMS staff attend to witness testing and activation as appropriate; (iii) Attend meetings for Factory Acceptance Test (FAT) and Site Acceptance Test (SAT) as necessary for proper coordination of work by the pre-qualified electrical contractor or suppliers as required; (iv) Attend the activation; (v) Document all verifications; and (vi) Conduct any shop and field verification of controller build and programming work undertaken by the pre-qualified electrical contractor. This includes, but is not limited to:

a) Verification of controller configuration parameters as per TMS requirements, including verification of timing parameters and operations as per timing card

b) Verification that programming sheets match controller programming parameters

c) Verification that Malfunction Management Unit (MMU) and MMU programming card are appropriately programmed, configured and jumpered – programming sheets to match as per timing card

d) Verification of communications to TMS central system

e) Verification that APS programming and identification matches programming sheets and

f) Verification that standard logic scripts have been included.

TTS 801.200.05.08 Pre-qualified Electrical Contractors Requirements

The Third Party shall ensure the most up-to-date pre-qualified electrical contractor requirements are included and executed as part of their contract or sub-contract with the pre-qualified electrical contractor, including emergency priority and response times for public concerns. The emergency calls priority and response times are shown in Table 1, *Priority response times – emergency*.

Table 1: Priority response times – emergency

Priority	Response time from time of notification	Temporary repairs completed	Permanent repairs complete (From arrival time)
High priority (P1)	Within one and half (1½) hours	Within one (1) hour of site arrival	Within 10 Working Days [c]
Low priority (P2) Calls received between 8 a.m. and 4 p.m. [a]	By 4 p.m. on the next working day	Within one (1) hour of site arrival	
Low priority (P2) Calls received after 4 p.m. [b]	By 4 p.m. on the next working day	Within one (1) hour of site arrival	

Example [a]: If a low priority call is received at 9:50 a.m. Tuesday, the call is expected to be responded to by 4:00 p.m. Wednesday.

Example [b]: If a low priority call is received at 4:05 p.m. Tuesday, the call is expected to be responded to by 4:00 p.m. Thursday.

Example [c]: Ten (10) Working Days does not apply to the permanent repairs for loop or loop feeders or both. Where locates, additional permits, or specialty material are required, the ten Working Days will commence upon receipt of the required items by the pre-qualified electrical contractor.

1) The above table provides the limits for the elapsed time between emergency notification by the TMS and arrival of the pre-qualified electrical contractor. These limits are expected to be achieved for all high priority calls and low priority calls.

2) If a low priority is received on a weekend (Saturday or Sunday), the call is expected to be responded to by 4:00 p.m. Tuesday. If a low priority call is received on a City's statutory holiday (www.toronto.ca/home/contact-us/statutory-holidays/), the call is expected to be responded to by 4:00 p.m. on the second Working Day after the call. For example, in the case a holiday falls on a Monday, the call is expected to be responded to by 4:00 p.m. Wednesday.

3) If pre-qualified electrical contractor (retained byThird Party) cannot complete a permanent repair within a reasonable time as determined solely by the TMS, a temporary repair is expected with the objective to make-safe the operation. Unless otherwise approved by the TMS or designate, the permanent repair is expected within the time duration specified. Pre-qualified electrical contractor is expected for tracking all incomplete maintenance work and to ensure permanent repairs are completed on time with comments for explanations on late work and planned remedial action.

4) The lists of High Priority and Low Priority items are provided in Table 2, *Call priority list*. At the sole discretion of the TMS, the pre-qualified electrical contractor may be advised, prior to the commencement of the work, that a service call has been (i) escalated from low priority to high priority, or (ii) transitioned from high priority to low priority.

Table 2: Call priority list

High Priority – P1: Immediate response Low Priority – P2: Scheduled response			
Traffic signal displays	P1 – Traffic signals all out	Poles	P2 – Pole leaning – not a safety hazard
	P1 – Traffic signals all out		P2 – Pole damaged – non-reported collision
	P1 – Traffic signals all out		P2 – Pole handhole cover missing
	P1 – Conflicting traffic signal displays	Transportation Services equipment	P2 – Back guy loose/damaged
	P1 – Traffic signal display out		P2 – Riser damaged – cable exposed
	P1 – Left turn green arrow not working (fully protected left turn)		P2 – Riser damaged – cable not exposed
	P1 – Pedestrian display out		P2 – Overhead cable loose
	P1 – Pedestrian countdown – not working		P2 – Water in signal head
	P1 – Bicycle display out		P2 – Signal head backboard bent
	P1 – Bicycle countdown – not working		P2 – LBO sign – not working
Traffic signal equipment	P1 – Signal display obstructed	Traffic actuation equipment	P2 – Detector faults
	P1 – Traffic signal mast arm low/loose		P2 – Detector damaged – cycling signals
	P1 – Traffic signal head hanging/loose		P2 – APS volume too loud
	P1 – Traffic signal head facing		P2 – APS push button stuck on
	P1 – Traffic signal backboard loose		P2 – Push button stuck on
	P1 – Overhead wire low/loose	Power supply	P2 – Junction box loose or damaged
	P1 – Exposed wires		P2 - Junction box cover missing
	P1 – Signal head twisted	Central systems and communications	P2 – Communication faults
	P1 – Push button not working or missing	Traffic system operations	P2 – Signal operations/timing issues

High Priority – P1: Immediate response Low Priority – P2: Scheduled response			
Traffic actuation equipment	P1 – APS volume too low	Traffic signal display	P2 – Left turn arrow not working (protective and permissive turn)
	P1 – Push button loose or damaged		
	P1 – Detector damaged – Not cycling		
	P1 – APS damaged or not working		
PXO equipment	P1 – PXO light fixture out		
	P1 – PXO timer not working		
	P1 – PXO flashing beacon out		
Flashing beacon	P1 – Flashing beacon not working properly		
Poles	P1 – Pole down – Reported collision		
	P1 – Pole leaning – Safety hazard		
Traffic controller cabinet	P1 – Cabinet hit or damaged		
	P1 – Cabinet door open		
Handwells	P1 – Hand well lid broken or missing		
RESCU equipment	P1 – P/VMS – LOC with incorrect message		
	P1 – PVMS trailer – Not secured		
	P1 – RESCU equipment Hit or damaged		
	P1 – RESCU fibre optic cable cut		
Traffic system operations	P1 – Signal operations/timing issues		

TTS 801.200.05.09 Public Concerns

Upon receipt of public concern(s) related to the affected Traffic Control Devices or Traffic Management Devices or both, the Third Party shall investigate, determine priority, take appropriate action(s) to resolve the issue and provide response to the public and the TMS within two (2) Working Days of the initial receipt. The Third Party shall be responsible for proper documentation tracking all public concerns, including date and time, issue, resolution and call back, and provide the documentation upon request by theTMS.

TTS 801.200.05.10 Emergency and Special Events

The Third Party shall implement signal timing changes to accommodate emergency or special events or allow paid duty officer or both to manually control the signal as needed or if requested by theTMS. In certain circumstances such as escalation of public complaints and emergency/special events, the TMS reserves the right to implement signal timing changes and will notify the Third Party in advance.

TTS 801.200.05.11 City Cost Recovery

Where the Third Party and their pre-qualified electrical contractor are unable to address public concerns or accommodate signal timing changes for emergency or special events in a timely manner, the City reserves the right to dispatch its own Electrical Maintenance Contractor (EMC) for any maintenance or safety issues or both and recover costs from the Third Party. Upon completion of work by the City's EMC, the Third Party and their pre-qualified electrical contractor shall resume responsibility for the operation and maintenance of the Traffic Control Devices or Traffic Management Devices or both.

TTS 801.200.05.12 Downtime

The Third Party shall follow TMS central system downtime restrictions, including:

1) Arterial CCTV cameras' planned downtime – (i) All arterial CCTV cameras shall be always operating properly with TMS central system. Any planned downtime must be pre-approved by TMS with minimum one (1) week advance notice. Any down time should be limited to one (1) overnight period; (ii) The downtime is only allowed to start from 12:00 a.m. when special events, such as sporting events, concerts, takes place, otherwise, the downtime is only allowed to start from 11:00 p.m.; (iii) The downtime shall end no later than 5:00 a.m. on weekdays (Monday to Friday), and 7:00 a.m. on weekends; (iv) The Third Party shall coordinate with TMS at 416-392-5556 and confirm TMS emergency use on the CCTV prior to the start of down time; and (v) The Third Party shall contact TMS at 416-392-5556 as soon as the down time is over and confirm that the CCTV is operational with TMS central system.

2) Arterial CCTV cameras' unplanned downtime – CCTV cameras are to be maintained during all stages of the construction. Camera repairs are to be completed within thirty (30) Calendar Days. The Third Party shall contact TMS at 416-392-5556 as soon as the repair is completed to confirm that the CCTV is operational with TMS central system.

3) Traffic signals – (i) All traffic signals shall communicate with TMS central system according to TTS 801.200.06 herein; (ii) If the communication is intact during construction, the signal is allowed to continuously operate with TMS central system; (iii)

If the traffic signal communication goes offline or has not yet been established, the Third Party shall arrange communication restoration or new connection with TMS central system prior to acceptance; and (iv) Any new temporary Traffic Control Devices, which is required for construction management plan but will not be owned by the City will not require communication to TMS central system.

TTS 801.200.05.13 Maintenance Records

The Third Party shall log all changes and maintenance activities to the Traffic Control Devices or Traffic Management Devices infrastructure or both, including signal operation changes, including timing/phasing, and provide proper tracking documentation to TMS. The Third Party shall always maintain a hardcopy of the latest timing card in the traffic control cabinet throughout the project.

TTS 801.200.05.14 Routine Maintenance

The Third Party shall be responsible for scheduling and completing all routine maintenance work for Traffic Control Devices or Traffic Management Devices infrastructure or both within the construction area in adherence to the schedule in Table 3, *Routine maintenance work and requirements*.

Table 3: Routine maintenance work and requirements

Routine maintenance work for both temporary and permanent infrastructure	Requirement
Conflict monitor check	Semi-annually
Fire hall and railway pre-emption check	Annually
Annual time clock reprogramming	Annually
Non-system controller traffic signals check	Every two (2) months
UPS maintenance	Semi-annually
Spring and fall cabinet maintenance	Annually. Spring maintenance to take place between April 1st – May 30th . Fall maintenance to take place between October 15 – December 15.
Traffic signal LED cleaning	Bi-annually. Cleaning shall be completed between April 1st to July 15th.
PXO annual inspection	Annually
PXO cleaning	Annually between April 1st – May 30th
Motorized horizontal pivoting swing gate	Semi-annually
Swing gate inspection	Annually
RESCU overhead VMS	Semi-annually between March 15th and May 30th and September 15th and November 30th

Routine maintenance work for both temporary and permanent infrastructure	Requirement
RESCU pole mounted VMS	Semi-annually between March 15th and May 30th and September 15th and November 30th
PVMS routine maintenance	Semi-annually between March 15th and May 30th and September 15th and November 30th
Smart work zone trailer routine maintenance	Semi-annually
RESCU CCTV camera routine maintenance	Annually between March 15th and May 30th
RESCU field cabinets routine maintenance	Semi-annually – refer to TTR 817.300

TTS 801.200.06 ACCEPTANCE OF DEVICES FROM THIRD PARTY TO CITY

TTS 801.200.06.01 Timing Cards

The Third Party shall develop and submit new timing cards – electronic copy – for TMS review and comments prior to the shop test or the activation or both. The Third Party shall address any comments from TMS and submit the final copy of timing cards to TMS for confirmation prior to acceptance.

TTS 801.200.06.02 TMS Site Visits

The Third Party shall organize site visits including pre-activation, activation, and post-activation with the TMS and provide any documentation required, such as site meeting notes and list of deficiencies, with minimum five (5) Working Days advance notice.

TTS 801.200.06.03 Final Review

The Third Party or its Contract Administrator or both shall be present during the final review with TMS and shall take immediate corrective action for any deficiencies identified. All subsequent related inspections will be at the Third Party's cost.

TTS 801.200.06.04 Communications

Communication with the City's Central System must be maintained during construction and throughout all stages. The Third Party shall confirm traffic signal communication to the TMS central system within 24 hours of activation except temporary signal, which will not be owned by the City and be responsible for troubleshooting and resolving issues if signal communication to the TMS central system cannot be properly configured or cannot be maintained or both for minimum 30 Calendar Days.

TTS 801.200.06.05 Deficiencies

The Third Party project team shall inspect and make any necessary changes to ensure compliance with the final design and the City's standards and specification and to address any comments from the TMS. The TMS will not accept any Traffic Control Devices or Traffic Management Devices or both with any deficiencies. Any delay and damages caused by non-compliance will be at the Third Party's expense.

TTS 801.200.06.06 Testing

The Third Party shall ensure and prove all Traffic Control Devices or Traffic Management Devices systems/subsystems or both are tested and operating properly prior to commissioning. The TMS will not accept individual signalized intersection commissioning or any road segment with any system deficiencies, including new transit signal priority.

TTS 801.200.06.07 Training

The Third Party shall prepare and deliver training and any pertinent documents or materials to TMS for any installation exempt from the City's standards.

TTS 801.200.06.08 Final Documentation

The Third Party shall submit the final copy and provide Contract Administrator confirmation for the following at the completion of Traffic Control Devices or Traffic Management Devices work or both

1) Salvaged and unsalvaged material list

2) New material selection document

3) Cabinet schematics and wiring diagrams — if there is no City specification to the proposed solution

4) New communication equipment infrastructure drawings, including fibre optics pedestals and splicing

5) Final signal timing cards — which must be reviewed by an engineer, but engineering stamp may not be necessary

6) Documentation of all new equipment models, serial numbers and warranty end dates per intersection for all materials used in the signal work

7) As-built drawings in MicroStation and PDF formats — redline drawings will not be accepted as as-built drawings

8) As-built programming sheet for traffic signal controller — including detector configuration files and associated software — according to the accepted traffic signal timing card

9) Other documents upon request by TMS, such as test results, key decision logs, site activity logs, operation and maintenance logs and responses to public concerns.

TTS 801.200.07 MATERIALS – Not Used

TTS 801.200.08 EQUIPMENT – Not Used

TTS 801.200.09 CONSTRUCTION – Not Used

TTS 801.200.10 QUALITY ASSURANCE – Not Used

TTS 801.200.11 MEASUREMENT OF PAYMENT – Not Used

TTS 801.200.12 BASIS OF PAYMENT – Not Used

Appendix 801.200-A, September 2024

Third Party SCATS Handover Terms and Conditions

New Signals General Terms and Conditions

The Third Party shall hire TransCore to provide the following at Sydney Coordinated Adaptive Traffic System (SCATS) traffic signals only:

1) Undertake field assessment and intersection design with required deliverables including field photos, intersection design drawings, material quantities sheet, wiring diagrams, SCATS timing card, SCATS graphics, design and construction specifications / test plan / checklist and design estimates before installation.

2) Supply, installation, and maintenance of SCATS system components and assisting tools.

3) Configuration, implementation, verification, and documentation including deliverables for SCATS deployment and/or modification.

4) SCATS technical support and training to pre-qualified electrical contractor engaged.

5) SCATS licenses, software design and deployment to facilitate the Traffic Control Devices or Traffic Management Devices design and installation or both.

6) Coordination of work activities with prequalified electrical contractor, any other City's electrical contractor(s) and other parties for successful SCATS deployment on time.

7) Configuration of SCATS system for the new intersection.

8) Masterlink to be fully operational upon permanent / ultimate signal activation.

9) Supply and install controller TRAFF firmware license and personality file for new traffic control signals.

10) Attend the SCATS signal activation, fine tuning, and final acceptance.

11) Once the City's Central Transit Signal Priority (TSP) is operational, the Third Party is expected to integrate new traffic signal into TransSuite Central TSP.

The Third Party through their contractor shall be responsible for the following in relation to the SCATS signal:

1) Conduct local and remote shop tests
2) Supply and install PEEK board support package
3) Perform field SCATS turn-on and system pickup.

In addition to the above requirements, the Third Party shall undertake an inspection at activation using the SCATS test templates and SCATS checklists. The Third Party shall contact Traffic Systems Operations or Traffic Systems Planning, Design and Capital Coordination for these documents.

Existing Signals General Terms and Conditions

For any existing SCATS signal handed over to a Third Party, the expectation is that Sydney Coordinated Adaptive Traffic System (SCATS) coordination will not be applicable during the handover period.

The Third Party shall hire TransCore to provide the following at SCATS traffic signals only based on any required modifications:

1) Undertake field assessment and update intersection design with required deliverables including field photos, intersection drawings, material quantities sheet, wiring diagrams, SCATS timing card, SCATS graphics, test plan / checklist and design estimates before installation.

    a) The permanent traffic signal design drawing must include modifications to the detector zones and detector locations that reflect the changes made to intersection, examples include geometry change, lane configurations and traffic signal pole relocations.

    b) Ensure that the intersection is reinstated to the normal state of SCATS operation in compliance with any modifications such as geometry change, lane configurations and any other changes that could affect detection at the intersection.

2) Update personality file.

3) Modify an existing SCATS intersection – configuration, verification and acceptance

4) Conduct local and remote shop tests.

5) Attend the SCATS signal activation, fine tuning, and final acceptance.

6) Perform field SCATS turn-on and system pickup.

7) Submit all deliverables and documentation for SCATS modifications.

The Third Party through their contractor shall be responsible for the following in relation to the SCATS signal:

1) Store SCATS traffic controller cabinet and install a temporary traffic controller cabinet until the signal is handed back to the TMS.

2) Conduct local and remote shop tests.

3) Perform field SCATS turn-on and system pickup.

In addition to the above requirements, the Third Party shall undertake an inspection at activation using the SCATS test templates and SCATS checklists. The Third Party shall contact Traffic Systems Operations or Traffic Systems Planning, Design and Capital Coordination for these documents.