Sunshine Coast COUNCIL

2021

Traffic Signal Installation Guide

PRINCIPLES AND GUIDELINES FOR INSTALLATION AND MODIFICATIONS

Document Change History

Version	Version Description	Issued for	Author	Reviewer	Date
1.0	Initial Document	Public (web)	R. Zinn	J. Clarke	07/12/2017
2.0	Update to include cable, conduit and pit details	Public (web)	R. Zinn	J. Clarke	15/02/2018
3.0	Refresh of references & inclusion of pre-construction and maintenance content	Internal SCC Review	A Woods	J Hall & R Zinn	09/12/2019
4.0	Additional requirements: 1. Bluetooth 2. CCTV 3. Cyberlocks	2021 Major Release	A Woods	J Hall	05/05/2021

www.sunshinecoast.qld.gov.au

mail@sunshinecoast.qld.gov.au

T 07 5475 7272 **F** 07 5475 7277

Locked Bag 72 Sunshine Coast Mail Centre Qld 4560

Acknowledgements

Council wishes to thank all contributors and stakeholders involved in the development of this document.

Disclaimer

Information contained in this document is based on available information at the time of writing. All figures and diagrams are indicative only and should be referred to as such. While the Sunshine Coast Regional Council has exercised reasonable care in preparing this document it does not warrant or represent that it is accurate or complete. Council or its officers accept no responsibility for any loss occasioned to any person acting or refraining from acting in reliance upon any material contained in this document.

Table of Contents

Abbreviation and Acronyms i
1. Introduction 1
2. Design Principles 1
3. TRAFF VC5 Firmware 2
4. Emergency Vehicle Priority (EVP) 2
5. Pedestrian Protection 2
6. Vehicle Detection Loops 3
7. Traffic Signal Controllers 3
8. Traffic Signal Design 3
8.1. General 3
8.2. Traffic Signal Cable Selection 4
8.3. Traffic Signal Conduits 4
8.4. Pits for Traffic Signals 4
8.5. Traffic Signal Lanterns 5
8.6. Bluetooth Data Capture 5
9. Multi Use Poles (Road Lighting) 6
10. Power Supply 6
Unmetered Supply Connection Applications 6
Council's account details 7
11. Telstra and Streams Connection 7
12. Police Traffic Management 7
13. Pre-Commissioning Check 8
Partial Operations of Intersections 8
14. Authorisation to Energise Traffic Signals 8
15. Milestone Documentation 8
Design (incl. D&C arrangements and Partial Operations): 8
Pre-Commissioning Check 9
Post-Construction 9
Defects Liability 9
16. Maintenance During Construction 9
17. Defects Liability and Maintenance Period 10
18. Off Maintenance/ Final Certificate 10
19. Contact Details 11

Appendix A – New Traffic Signal Installation Process Map 12
Appendix B – Telstra (IPRT) Connection Process 13
Appendix C – Application to Energise (Traffic Signals) 14
Appendix D – Traffic Signal Design Review Checklist 16
Appendix E – On-Maintenance Checklist 18
Appendix F – Off-Maintenance Checklist 20
Appendix G – Maintenance Intervention Levels & Response Times 22

www.sunshinecoast.qld.gov.au

mail@sunshinecoast.qld.gov.au

T 07 5475 7272 **F** 07 5475 7277

Locked Bag 72 Sunshine Coast Mail Centre Qld 4560

Acknowledgements

Council wishes to thank all contributors and stakeholders involved in the development of this document.

Abbreviation and Acronyms

Item	Description
4G	Fourth Generation broadband cellular network technology
BT	Bluetooth
CCTV	Closed Circuit Television
EVP	Emergency Vehicle Priority
ITS	Intelligent Transport Systems
MOU	Memorandum of Understanding
MRTS	TMR Technical Specifications
NTU	Network Termination Unit
QPS	Queensland Police Service
SCC	Sunshine Coast Council
TIM	Transport Infrastructure Management
TSC	Traffic Signal Controller
TMR	Department of Transport and Main Roads
JUP	Joint Use Pole
CMA	Combination Mast Arm

1. Introduction

This guide is intended for developers, designers, electrical contractors, and council staff when installing, modifying and/or maintaining a traffic signal installation within the Sunshine Coast Council (SCC) road network.

The guide details the principles to be considered when planning, installing, or modifying traffic signals and documents the processes to be followed when commissioning new traffic signals.

It is intended that the guide be considered in conjunction with appropriate Queensland and Australian Standards and does not take precedent over the appropriate standard unless specifically stated in the guide.

This guide was established to formalise the traffic signal installation or modification process to ensure public safety and amenity is maintained, appropriate standards are adhered to and to assist those involved in the delivery of traffic signal assets.

A process table and Gantt chart have been included in the guide to assist contractors to meet key milestones in the necessary time frames to ensure the project is delivered on time. Existing Telstra and Energex connection lead times can be up to four (4) months and delays in submitting these applications may lead to traffic signals not being able to be commissioned within expected time frames.

It should be noted that traffic signals are considered "official traffic signs" and therefore commissioning of traffic signals without approval from council's delegated officers is an offence under the Transport Operations Road Use Management Act 1995.

---

2. Design Principles

The ideal philosophy of traffic signals is to achieve a whole of network approach, regardless of the owner. This is not only to facilitate the safe navigation of road user through an intersection, but it also to give priority and coordination of particular movements during periods of large traffic volumes to minimize delay. To achieve such an outcome and provide a consistent approach to the design and operations of the traffic signal network, SCC leverages on the policy and standards developed by the Department of Transport and Main Roads (TMR) in respect to traffic signals.

Below is a list of documents to be used as a foundation to the design. The list below is provided as a guide and is in no means exhaustive.

- TMR *Road Planning and Design Manual – Volume 3, Part 4 & 4A*
- TMR *Traffic and Road Use Management – Volume 4*
- Australian Standard AS 1742.14-2014 *Manual of Uniform Traffic Control Devices – Traffic Signals*
- *Queensland Manual of Uniform Traffic Control Devices – Part 14: Traffic Signals*
- All associated AUSTROADS Guides

Traffic signals on SCC roads are intended to protect vulnerable road users, improve road safety and manage congestion at intersections with high traffic volumes.

The most vulnerable road user groups are pedestrians and cyclists and these users are to be provided with the highest level of protection and amenity. All signalised intersections on council roads are to provide pedestrian protection, further information is provided in Section 5 of this document.

All traffic signals are to run TRAFF Firmware and have Emergency Vehicle Priority (EVP). Further information is provided in the EVP section of this document.

3. TRAFF VC5 Firmware

In enabling a consistent traffic management platform for all traffic signal installations in Queensland, developers and council projects are to ensure that all new and modifications to traffic signal installations are designed and programmed to suit the current NSW Road and Maritime Service (RMS) TRAFF VC5 Firmware. This version firmware (or personality as it is also known as) enables the full capability of traffic management treatments available within STREAMS.

Further information in relation to the development of TRAFF Firmware can be found at the following links;

RMS Traffic Signal Design

RMS Traffic Operations

A copy of the firmware file is also required as a part of the approval to progress to commissioning phase and is detailed further within this guide.

4. Emergency Vehicle Priority (EVP)

EVP is a technology that enables emergency vehicles to automatically trigger traffic light sequences to change along the most direct route when responding to an emergency call.

This means a green traffic light signal is given to emergency vehicles, when safe to do so, in the direction of that emergency response call. By clearing the path ahead, emergency vehicles can respond quicker to emergencies.

All new traffic signals in Queensland are to be programmed to provide EVP and is delivered within the programming of the VC5 TRAFF firmware. All existing SCC traffic signal installations have been EVP enabled through a state-wide initiative and therefore should be maintained when a new firmware version is developed.

5. Pedestrian Protection

All traffic signals on council roads are to provide pedestrian protection which separates pedestrian and vehicle phases.

Pedestrian protection can be provided in a number of ways;

- installing turn arrows which control turning vehicles during the pedestrian phase (council's preferred treatment)
- introduction of a late start for vehicles, which allows pedestrians to start to cross before vehicles on adjacent movements are given a green signal
- Staggered crossing arrangement across multilane arterials (subject to consideration of intersection location, geometry and delays to both vehicles and pedestrians)

- scramble pedestrian crossing phase which separates vehicle and pedestrian phases (subject to consideration of intersection location, geometry and delays to both vehicles and pedestrians)

6. Vehicle Detection Loops

Vehicle detection loops shall be rectangular detector loops at all new and reconstructed sites. See TMR standard drawings; No's 1424, 1425 and 1701.

Exception is that SCC require only 2 inductive loops beyond the stop bar for right turn lane configurations.

Bicycle detection loops are to be quadrupole loops as per TMR standard drawing 1425.

Conduits installed for vehicle loops are to be installed with 500 mm cover (for all median and footpath areas). Detector sensitivity within the personality shall be set at 0.05 ohms.

If detector loops are damaged during construction council may request Radar Detectors be installed to assist in maintaining traffic flow. Radar detectors to be supplied at the cost of the contractor until such time in pavement loop/s are reinstated in finish surface level.

7. Traffic Signal Controllers

Traffic Signal Controller to be supplied as per the current TMR ITS registered suppliers and approved products supplier list and have a Site ID sticker affixed to the cabinet. The below list is current at time of publication with either of the following controllers is acceptable by SCC:

- TYCO ECLIPSE ECX1-62
- ALDRIDGE ATSC4

The traffic signal controller shall be mounted on a structurally designed concrete plinth with an electrical pit, communications pit and earth pit incorporated into a concrete pad.

All communication equipment, including Bluetooth hardware is required to be installed in a 450mm 'Top Hat' extension box. Refer to TMR standard drawing 1778 for further details.

7.1. Next Generation Traffic Signal Controllers (Swarco ITC-3)

Currently TMR are progressing with in field trials for implementation of this new traffic signal technology. SCC will remain informed of the department's progress and until a time that this new technology is proven reliable and fully functional, all new or upgraded traffic signal controllers will remain TRAFF based as per above.

7.2. Cyberlock Security Access

In line with TMR's approach to security access to traffic signal controllers within the state, SCC have developed an MOU with TMR North Coast Region to utilise their access management platform to allow the implementation of Cyberlocks on council owned infrastructure. All new TSC are to have Cyberlocks installed on all access doors (top hats included). Procurement of compliant locks are to be achieved through the nominated SCC representative/ project manager.

8. Traffic Signal Design

8.1. General

The following electrical design parameters should be used:

- Design voltage – 230 V ac
- Design frequency – 50 Hz
- Cable operating temperature – 75°C
- Disconnect time (cables connected to metal enclosures) – 400ms
- Voltage drop (including consumers' mains) – 5%
- Earth Fault Loop Impedance (ELFI) – calculated on longest run
- RCDs are not to be used within a circuit specific to the operation of the signal hardware themselves – this does not apply to ancillary devices where the socket outlet in the controller must be have an RCD installed.

8.2. Traffic Signal Cable Selection

The traffic signal cable that is to be used within new and upgraded installations is a 36-core multicore type. Although 29-core multicore cables are still widely utilized within existing installations, effort should be made to replace with the 36-core type if feasible to do so during modifications or cable damages.

All unused multicore cable cores of traffic signal cables must be connected to earth within the controller.

8.3. Traffic Signal Conduits

Provide traffic signal installation conduit sizes and applications as follows ensure that individual conduit capacity does not exceed 40%. This includes the provision for road lighting cables which shall utilise its own conduit within the extents of the intersection.

Conduits for Traffic Signals	**Requirements**
Telstra point of presence to TSC communications pit	1 x 100C
TSC communications pit to TSC (if copper cable)	1 x 20C
TSC communications pit to TSC (if fibre cable)	1 x 100C
Point of supply to TSC electrical pit	1 x 50E
TSC electrical pit to TSC	2 x 100E
TSC to earth pit	1 x 20E
TSC electrical pit to post (or JUP, MA, CMA) pit	2 x 100E
Post pit to post pit	2 x 100E
Detection loop to loop pit	1 x 32E
Loop pit to post pit	1 x 50E
Post pit to post (or JUP, MA, CMA)	1 x 100E
Post pit to pedestrian pushbutton post	1 x 80E
Post pit to bicycle pushbutton post	1 x 80E
Under road crossings (at signalised intersections)	2 x 100E, 1x100C

All conduits must be heavy duty UPVC or high density HDPE, complying with AS/NZS 61386.

8.4. Pits for Traffic Signals

The following details the minimum pit requirements for traffic signal installations:

Pits for Traffic Signals	**Requirements**
TSC electrical pit	600mm Circular
TSC communications pit (if copper cable)	Type J
TSC communications pit (if fibre cable)	600mm Circular
TSC earth pit	Type 3

Traffic signal post (or JUP, MA, CMA) pit	600mm Circular
Road crossing pit (at each end)	600mm Circular
Detection loop pit	Type 3
Intermediate pit	Type 4
ITS communications pit (if FOSC/FIST installed)	1000mm Circular*

*1000mm circular pits are currently not TMR type approved, however these are now industry practice for ease of access and storage of appropriate lengths of slack.

8.5. Traffic Signal Lanterns

Provide LED technology traffic signal lanterns complying with AS/NZS 2144 with UV stabilised components and durable target boards. The current Intelligent Transport Systems & Electrical Approved Products List maintained by the Department of Transport and Main Roads shall be used to identify suitable products for installation.

8.6. Bluetooth Data Capture

To enable SCC to continue to improve the ability to monitor and manage traffic network performance, all new traffic signal installations shall have a Bluetooth traffic data logger installed. Loggers are to be able to communicate with the Addinsight traffic management software and in accordance to TMR's specifications. This will allow a seamless and collaborative approach to traffic data capture and sharing.

Current Preferred Bluetooth device: Sage Edge

Design Notes

- Warrants for BT device at an intersection is to be verified by SCC representative
- Current approved devices (as per TMR type approvals) is to be verified with SCC representative

Construction Notes

Due to the need for pre-programming of Bluetooth devices by the supplier, the procurement of Bluetooth devices should commence in the early stages of construction. This is to allow an appropriate amount of time for the device to be setup within Addinsight. Key elements that influence the timeframes for programming are:

- Sage devices require pre-programming from manufacturer – this involves filling out configuration spreadsheet
- Naming convention
- IP addressing (SCC representative)
- Site information
- Verification of operations with BT software platform administrators (TMR)

8.7. CCTV Cameras

All new intersections shall have a traffic management camera designed either within the extents of the intersection or at a reasonable location that allows appropriate vision of identified arterial and/or intersection points of interest. The required vision is to be sought from SCC within the preliminary design phase to allow sufficient time to investigate and inform the design of preferred device arrangement.

The management of vision from council traffic management cameras is to be undertaken through the North Coast Region's FLIR system and therefore all devices shall be compliant to all appropriate TMR and local technical requirements.

9. Multi Use Poles (Road Lighting)

At an intersection joint use poles (JUP) and combination mast arms (CMA) should be used to minimise road furniture as much as possible.

JUPs and CMAs must have a standard label with the words Danger – Two Sources of Supply prominently displayed at 1600mm above ground level.

The cable to the road lighting installation shall enter a reopenable joint in a pit adjacent to the pole or mast arm prior to entering the structure. The reopenable joint shall contain a switch-fuse with a 10A fuselink so that the road light can be isolated.

Streetlights on combination mast arms (CMA) or joint use (JU) poles shall be Rate 3 lighting.

A Rate 3 post mounted switch board complying with all TMR Technical Specifications (MRTS) specifications and standard drawings is to be installed adjacent to the traffic signal controller and the traffic signal controller energised from this post mounted switch board.

The Rate 3 switchboard and controller are to have their own individual earth pit, earth stake and MEN connection within the slab.

Additional SCC owned electrical infrastructure such as ITS field cabinets are to be energised from the nominated switchboard – not the traffic signal controller.

All sites requiring mast arms to be installed are to be combination mast arms with a capped spigot.

All traffic signal mounts are to be one single structure and not have a secondary 'skin' installed for the purpose of aesthetics or additional hardware.

10. Power Supply

Unmetered Supply Connection Applications

The National Energy Customer Framework (NECF) came into effect on the 1st July 2015. Energex is continuing to streamline these processes to ensure these obligations and our customer's needs are met.

Under the new obligations, all new connections and alterations to existing connections now require a Connection Application and Agreement prior to any work commencing. Energex has already implemented portal components to manage the NECF Basic Connection requirements and has implemented new portal changes to handle the Negotiated Connection types relating to the following services; commercial, industrial, large connections, and large embedded generation, and the Standard Connection type of unmetered supply.

For new unmetered supply connections this now means that UMS Customers and Electrical Contractors will need to complete a Connection Application through the Energex Portal. If you are an electrical contractor and don't have access to the portal, you can register online. If you are not an electrical contractor or solar installer and you need to submit these applications, you will need to complete a General Group Registration Form so that Energex can provide you access to the portal.

Once Energex receive your request you will receive an email with an authorisation code which will allow you to register on the portal.

Once you have access to the Electrical Partners Portal, you can access the Enquiry and Applications under MyCONNECT menu. Once the connection has been established and the work completed an EWR should be submitted by the Electrical Contractor. This will automatically send a notification to Origin who will submit a request and connection will then be completed by Energex.

Further instructions for submitting a Connection Application can be found in the Support section of the Portal main menu when you click on Training Materials.

If you have any enquiries about this new process, please email necfproject@energex.com.au and Energex will respond within two (2) business days.

Submit all required documentation to Energex within 7 days of contract award, or in the scenario of a Design and Construct (D&C) contract, once the point of supply has been identified. The electrical contractor shall manage the progress of the application through to connection and pay all associated fees / charges. Provide council with copy of all correspondence with Energex.

Please Note: Energex power connection lead times can be up to 3 months.

Council's account details

- Council's ABN is 37 876 973 913
- Council's account with Origin Energy for unmetered supply to traffic signals is 400 007 840 897
- Reference council's Senior Traffic Engineer, Mr Jason Hall – ph 5475 7272, on the application

Note: A unique national meter identifier (NMI) is now provided during the application process

11. Telstra and Streams Connection

All traffic signals are to be connected to the TMR North Coast STREAMS hub prior to application to SCC for commissioning. This requirement allows council to monitor the traffic signals for faults and introduce coordinated plans to provide more efficient management of traffic from switch on.

SCC's preferred telecommunication connections are to be 4G wireless type. This type follows the same applications process as the traditional ADSL modem.

Submit all required documentation to ensure the SRT application is received by Council within 7 days of Contract award. Contractor is to manage progress of the application through to connection & pay all associated fees / charges associated to works on site.

The Telstra and STREAMS connection process is outlined in Appendix A and a Gantt Chart is in Appendix C

Please Note: Telstra lead times for ADSL connection can be up to 4 months.

12. Police Traffic Management

Queensland Police Service (QPS) is to be engaged to perform traffic control in the event that an operational set of traffic signals are switched off or flashing amber for upgrade or construction purposes.

The option for not using QPS is only available with council's written approval. This approval is limited to minor EPROM changes and works at midblock pedestrian crossings and left in / left out movements.

13. Pre-Commissioning Check

Prior to signal commissioning, an independent audit by an experienced traffic signal contractor nominated by council is to be undertaken. The applicant is to arrange for the traffic signals to be ready for external audit a minimum of two (2) weeks prior to the anticipated commissioning of the signals. All outstanding works identified during the independent audit are to be completed to the satisfaction of council's Senior Traffic Engineer prior to commissioning. The applicant is to provide council's traffic signal audit contractor with all cooperation and access required.

Costs responsibilities for the pre-commissioning audit;

- Council constructed traffic signals – costs covered by the project
- Developer constructed traffic signals – all audit costs covered by SCC, developer is responsible for any corrective actions identified by the audit.

Partial Operations of Intersections

Where an intersection is proposed to be partially commissioned/operated during ongoing construction activities, all relevant checks and authorisations documented in this guide still apply to both the partial and final operating states. Authorisation to proceed with the partial operation of a signalised intersection must be endorsed by the Senior Traffic Engineer or nominated representative. The requirement of partial operation must be made during the contract start up and provide sufficient timeframe for council officers to assess the request. The design review process within this guide will be utilised to assess the appropriateness of the application and will require the submission of interim plans and personality.

14. Authorisation to Energise Traffic Signals

A minimum of two (2) weeks prior to commissioning of traffic signals the Developer, or their representative, is required to submit an 'Application to Energise form' to council, see Appendix B. Council will issue the Authorisation to Energise when all requirements have been confirmed as complete.

It is a condition of the electrical contractor that the traffic signal must be energised and preliminary operational tests be undertaken before commissioning check by SCC officer/s is completed.

Traffic signals are considered Official Traffic Signs under the Transport Operations (Road Use Management) Act 1995. It is an offence under the Act to install official traffic signs without the approval of a delegated officer.

---

15. Milestone Documentation

Before traffic signals can be commissioned and opened to traffic, the following documentation is to be supplied to council's Transport Infrastructure Management (TIM) Branch;

Design (incl. D&C arrangements and Partial Operations):

- Operational and Electrical Design

- Pits, Footing & Ducts Design (if applicable)
- Traffic Signal time settings

Pre-Commissioning Check

- As Constructed mark up/s – hand drawn in red pen
- Submission of QA documentation as per contractual obligations including appropriate photos (subsurface installations) – can be submitted electronically
- Personality file of the EPROM
- Independent audit check
- Evidence showing that the EPROM has been successfully tested in Wintraff emulator
- Confirmation of STREAMS connection
- Authorisation to energise form

Post-Construction

- Electrical Test Certificate
- Communications Systems Certificate of Compliance (if applicable)
- ADAC xml file – refer to council's requirements
- Confirmation from SCC project manager that intersection is now open to normal traffic conditions and is full operations as designed.
- As Constructed traffic signal drawing in AutoCAD and PDF format. PDF copy will be submitted in A3 size and will include signatures on hard copy. A laminated A3 PDF copy is to be installed in the Controller on completion of the project.

  (AutoCAD drawings to include all information as displayed on hard copy plan, except signatures. Provide AutoCAD drawing files with no xref files, layers 10-15 max, no plot styles and shapes with line weights set to default. The Object Properties are to be assigned by layer / block)

  For Council CAD Standards please contact:

  Gary Schulz | Design Services Supervisor

  Phone: 07 5420 8682

  Email: gary.schulz@sunshinecoast.qld.gov.au

Defects Liability

- All relevant operational manuals
- Evidence of identified defects having been rectified

16. Maintenance During Construction

The developer is responsible for the maintenance of all road related Infrastructure when site is under their possession. Road related Infrastructure includes but is not limited to the following: roads and pavements, bus and cycling facilities, tunnels, complex bridges, rest areas, signage, landscaping, animal crossings under and over roads, noise barriers, drainage, traffic signals and lighting.

SCC may nominate to undertake maintenance activities during the construction program. The electrical contractor must allow SCC, or contractors or agents of SCC, to access the works to carry out any maintenance works as deemed to be undertaken by SCC.

Maintenance activities must be carried out in accordance with the current SCC Electrical Maintenance Contract at the time the contract approval notice is given. These conditions are

consistent with both electrical maintenance provider and construction contractor and align with the availability provided by state government owned intersections. This is both to reduce confusion between maintenance providers and present a consistent road user experience.

Intervention levels for all traffic signal and road lighting maintenance activities relevant to maintenance of infrastructure under possession site is included in Appendix G.

If the electrical contractor is unable to meet the requirements as stated in Appendix G, SCC may assign the maintenance activity to a suitable contractor already engaged to perform these work as per of the SCC electrical maintenance contract. These works will be paid for by the developer/contractor either by being issued an invoice for works completed or deducted directly from the held Security Bond.

17. Defects Liability and Maintenance Period

The contractor shall maintain the works for a minimum period of twelve months (this may be varied to coincide with any adjoining electrical work) from the date of the SCC project manager deeming the installation fully operational. This shall cover all defects, establishment, and maintenance of revegetation on embankment and excavation batters.

18. Off Maintenance/ Final Certificate

At the completion of the defects liability period, the principal contractor must request SCC to undertake a final inspection of the site. The SCC officer or nominated representative will undertake a visual 'Off Maintenance' checklist to ensure all defects identified within the commissioning and/or post-construction inspections have been rectified and no further issues arise due to poor workmanship.

Council's maintenance provider at the time of inspection will also be involved to ensure any maintenance constraints are not present and intervention levels can be adhered to once handed over. The contractor on site must make all appropriate steps to accommodate the required level of inspection.

19. Contact Details

Transmax – 07 3355 8700

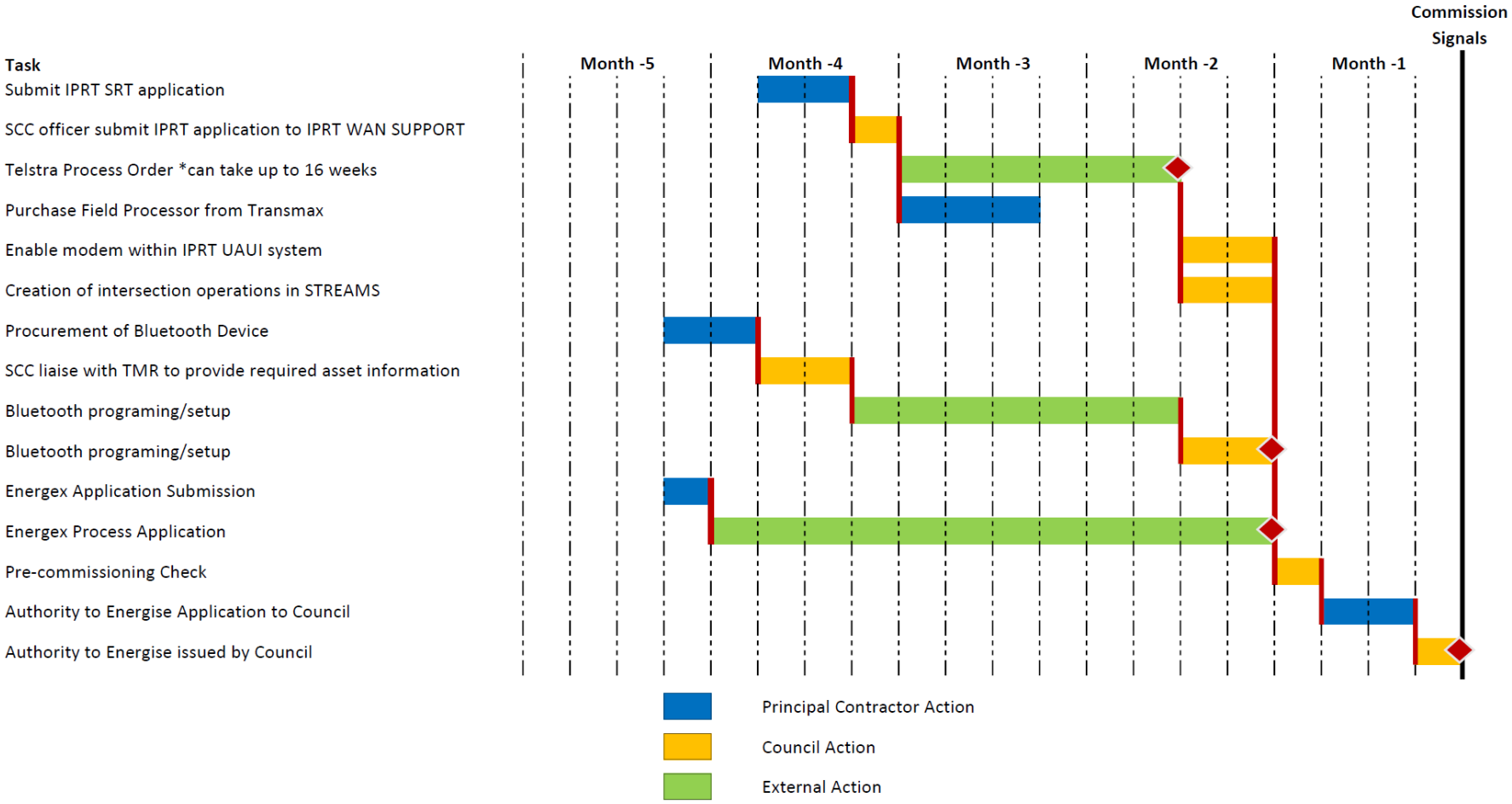
RoadTek – 07 5351 0307

TMR North Coast – 07 5451 7055, email - northcoast@tmr.qld.gov.au

Council Contact – Rodney Zinn/ Jason Hall

Ph 07 5475 7272, email - trafficandtransport@sunshinecoast.qld.gov.au

Appendix A – New Traffic Signal Installation Process Map



Appendix B – Telstra (IPRT) Connection Process

Fill out IPRT SRT form

Electrical contractor to fill out form and return it to council, within 7 days of Contract award. Email to mail@sunshinecoast.qld.gov.au and mark to the attention of "Traffic and Transportation Unit"

SRT Form supplied by council contact

Council officer to submit completed SRT form

Council Traffic Engineer to ensure that the SRT form is complete and submitted to IPRT_WAN_Support@tmr.qld.gov.au within 4 working days

Request IPRT WAN Support update the SRT with an IP address and forwarded the updated SRT to Telstra with a cc to Council officer and local TMR North Coast IPRT administrator.

Council officer to send updated SRT to Electrical Contractor.

NOTE: Supply of Telstra connection can take up to16 weeks.

Send a copy of the updated SRT to Transmax at varsales@transmax.com.au requesting the supply of a Field Processor

If development related, the Developer is required to raise the purchase order for the Field Processor. Include a copy of the SRT with purchase order.

If a council project, then Project Delivery is required to raise the purchase order for the Field Processor. Include a copy of the SRT with purchase order.

Enable modem within IPRT UAUI system

On receipt of modem, SCC officer to email IPRT WAN SUPPORT including Serial Number & MAC address.

Forward IPRT response to electrical contractor

Creation of intersection in STREAMS

Before intersection is to be commissioned, site to be created and left disabled in STREAMS including FP

Ensure site is enabled prior to commissioning

Traffic signals to be connected to TMR North Coast STREAMS hub via Telstra connection

Supporting documentation required before commissioning;

- Signal Plan in AutoCAD and PDF format
- E-Prom time settings
- Personality File

Electrical Contractor to manage this process to ensure application is received by Telstra and processed to meet Construction Program.

Appendix C – Application to Energise (Traffic Signals)

Sunshine Coast COUNCIL

2020/2021 Traffic & Transportation Application to Energise Traffic Signals

1. Applicant Details		
Surname		
Given names		
Business phone	A/H phone	Mobile
Email address		Fax

2. Business details			
Business name			
Postal address			
Suburb		State	Postcode
Preferred contact person			
Business phone	Alternate phone		Mobile
Email address			Fax

3. Works Location Number
Operational Works or Project Number
Street Names and Suburbs
Intersection Number

4. Actions Checklist – information to be provided to council	
Traffic signal drawing in Autocad and .pdf format	Date
A3 Laminated copy of traffic signal drawing in traffic signal controller	Date
Time settings	Date
Personality File	Date
EPROM tested in Wintraff and under load in a controller	Date
Electrical and Communications Systems Certificate of Compliance	Date
ADAC xml file	Date
Electrical Test Certificate/Electrical Periodic Verification carried out	Date
Intersection set up and operational in STREAMS	Date

Privacy
Council will use any personal information provided for the intended purpose only and for remaining in contact with you. Council is authorised to collect this information in accordance with the *Local Government Act 2009* and other Local Government Acts. Your personal information is only accessed by persons authorised to do so. Your personal information is dealt with in accordance with council's privacy policy.

www.sunshinecoast.qld.gov.au | mail@sunshinecoast.qld.gov.au | **T** 07 5475 7272 **F** 07 5475 7277
Postal address Locked Bag 72 Sunshine Coast Mail Centre Qld 4560 | ABN 37 876 973 913

Caloundra office 1 Omrah Avenue Caloundra Qld 4551
Maroochydore office 10 First Avenue Maroochydore Qld 4558
Nambour office Corner Currie and Bury Streets Nambour Qld 4560

5. Declaration of applicant	
I/We, the applicant, declare that the above information is correct in all respects, at the time of lodgement of this application with the Sunshine Coast Council. Should any of the details given in relation to this application be changed in the future, the applicant shall advise the Sunshine Coast Regional Council in writing prior to any such change being implemented.	
Signature	Date

6. Authorisation to Energise (Sunshine Coast Council Officer to Complete)	
I (name) _____ hereby authorise (company name) _____ to energise the traffic signals at (location) _____ on (date) (day) (time) _____ with due regard given to the safety of all road users.	
Signature	Date

OFFICE USE ONLY					
Application no.	Amount paid	Date paid	Receipt no.	Initial	Date stamp

Transport Operations (Road Use Management) Act 1995

s75 Unlawful installation of official traffic signs

(1) Any person who without lawful authority installs on a road or an off-street regulated parking area an official traffic sign or other thing in the nature of or similar to or which is likely to be mistaken for an official traffic sign shall be guilty of an offence, and any such sign or other thing may be removed by the chief executive or the local government (whether or not any proceeding is taken for an offence with respect thereto).
Maximum penalty—40 penalty units or 6 months imprisonment.

Appendix D – Traffic Signal Design Review Checklist

Sunshine Coast COUNCIL

Traffic & Transportation
Traffic Signal Design Checklist

1. Intersection Details
Site Description
Site/Intersection Number
Revision
Project

2. Presentation	
All relevant road geometry and line marking present: • Raised and painted channelisation • Line marking accurately reflects existing and/or civil design • North Point • Key infrastructure identified (Point of Supply & Communications) • Road names • Title block complete	Y / N
Only information relevant to the traffic signal plan is presented on drawing: • Underground services on Civil Electrical plan only • Reduced clutter around intersection to improve clarity of traffic signal infrastructure	Y / N
Line types print out appropriately on A3 paper	Y / N
Legend present	Y / N
Scope of works clearly listed (for modifications to traffic signals only)	Y / N

3. Operational	
Phasing diagrams match traffic engineering report (if attached)	Y / N
Phasing operations confirmed with appropriate SCC officer	Y / N
Phasing matches signal and pedestrian groups in layout including detector inputs	Y / N
Special conditions are present and correct: • Standard TRAFF • Pedestrian Protection	Y / N
Conflict table matches signal groups in layout	Y / N
Detector locations appropriate to desired operation of intersection: • Right turn loops • Red light camera • Sufficient access to push buttons (i.e vision impaired and or disabled/wheelchair access) • Strategic count/departure loops	Y / N
All hardware in layout labelled clearly: • Station numbers • Signal/Pedestrian groups • Detectors	Y / N
Traffic/Civil RPEQ nominated for modifications involving the operational characteristics to the installation only: • Phasing changes • Special conditions	Y / N / N/A

www.sunshinecoast.qld.gov.au | trafficandtransport@sunshinecoast.qld.gov.au | **T** 07 5475 7272 | **F** 07 5475 7277
Postal address Locked Bag 72 Sunshine Coast Mail Centre Qld 4560 | ABN 37 876 973 913
Caloundra office 1 Omrah Avenue Caloundra Qld 4551
Maroochydore office 10 First Avenue Maroochydore Qld 4558
Nambour office Corner Currie and Bury Streets Nambour Qld 4560

4. Electrical	
Detector table fully populated with all detectors presented in layout	Y / N
Preferred pit types used (*Traffic Signal Installation Guide: Section 8.4*)	Y / N
Preferred multicore cables used (*Traffic Signal Installation Guide: Section 8.2*)	Y / N
Preferred traffic signal controller used (*Traffic Signal Installation Guide: Section 7*)	Y / N
Cable connection sheet correct with spare cores identified	Y / N
Electrical RPEQ nominated for new installation or modifications involving changes to electrical hardware: • Addition of lanterns • Changes to traffic signal cable type or length • Modification of point of supply	Y / N / N/A

5. Review Comments	
Reviewer	
Title	
Signature	Date

www.sunshinecoast.qld.gov.au | trafficandtransport@sunshinecoast.qld.gov.au | **T** 07 5475 7272 | **F** 07 5475 7277
Postal address Locked Bag 72 Sunshine Coast Mail Centre Qld 4560 | ABN 37 876 973 913
Caloundra office 1 Omrah Avenue Caloundra Qld 4551
Maroochydore office 10 First Avenue Maroochydore Qld 4558
Nambour office Corner Currie and Bury Streets Nambour Qld 4560

Appendix E – On-Maintenance Checklist

Sunshine Coast COUNCIL

Traffic & Transportation
Traffic Signal On-Maintenance Checklist

1. Intersection Details
Site Description
Site/Intersection Number
Revision
Project

2. On-Site Plan Review	
Is there As Constructed, hand drawn mark ups relevant to this inspection	Y / N
Intersection Layout matches latest RPEQ/As Constructed plans: • Post locations • Correct lanterns on posts • Lantern configurations Pedestrian push buttons	Y / N

3. Quality	
All applicable quality documentation provided	Y / N
Wiring within traffic signal controller neat and tidy	Y / N
Pits flush with finished surface level and don't present a trip hazard	Y / N
Concrete surrounds on all pits not located within pathways	Y / N
Draw wire installed in all ducting	Y / N
Pedestrian push buttons at correct height and easily accessible to all users	Y / N
Site is presented in a clean and tidy manner	Y / N

3. Electrical	
Random audit of electrical conduit depths in pit are below 600mm finished surface level	Y / N
Electrical test results are compliant to appropriate standards i.e AS/NZS3000	Y / N

3. Civil	
Pole locations outside nominated clear zones	Y / N

**A more thorough investigation maybe also be undertaken through the services of an external auditor (i.e. nominated maintenance provider). It is the intention of this checklist to provide prompts to SCC project managers only.*

www.sunshinecoast.qld.gov.au | trafficandtransport@sunshinecoast.qld.gov.au | **T** 07 5475 7272 | **F** 07 5475 7277
Postal address Locked Bag 72 Sunshine Coast Mail Centre Qld 4560 | ABN 37 876 973 913
Caloundra office 1 Omrah Avenue Caloundra Qld 4551
Maroochydore office 10 First Avenue Maroochydore Qld 4558
Nambour office Corner Currie and Bury Streets Nambour Qld 4560

5. Review Comments/Defects	
Inspector's Name	
Title	
Signature	Date

Appendix F – Off-Maintenance Checklist

Sunshine Coast COUNCIL

Traffic & Transportation
Traffic Signal Off-Maintenance Checklist

1. Intersection Details
Site Description
Site/Intersection Number
Revision
Project

2. On-Site Plan Review	
Is there As Constructed, hand drawn mark ups relevant to this inspection	Y / N
Intersection Layout matches latest RPEQ/As Constructed plans: • Post locations • Correct lanterns on posts • Lantern configurations Pedestrian push buttons	Y / N

3. Quality	
All applicable quality documentation provided	Y / N
Defects identified during on-maintenance inspection have been addressed	Y / N
Additional defect identified during on-maintenance period have been addressed	Y / N
Wiring within traffic signal controller neat and tidy	Y / N
Pits flush with finished surface level and don't present a trip hazard	Y / N
Site is presented in a clean and tidy manner	Y / N

**A more thorough investigation maybe also be undertaken through the services of an external auditor (i.e. nominated maintenance provider). It is the intention of this checklist to provide prompts to SCC project managers only.*

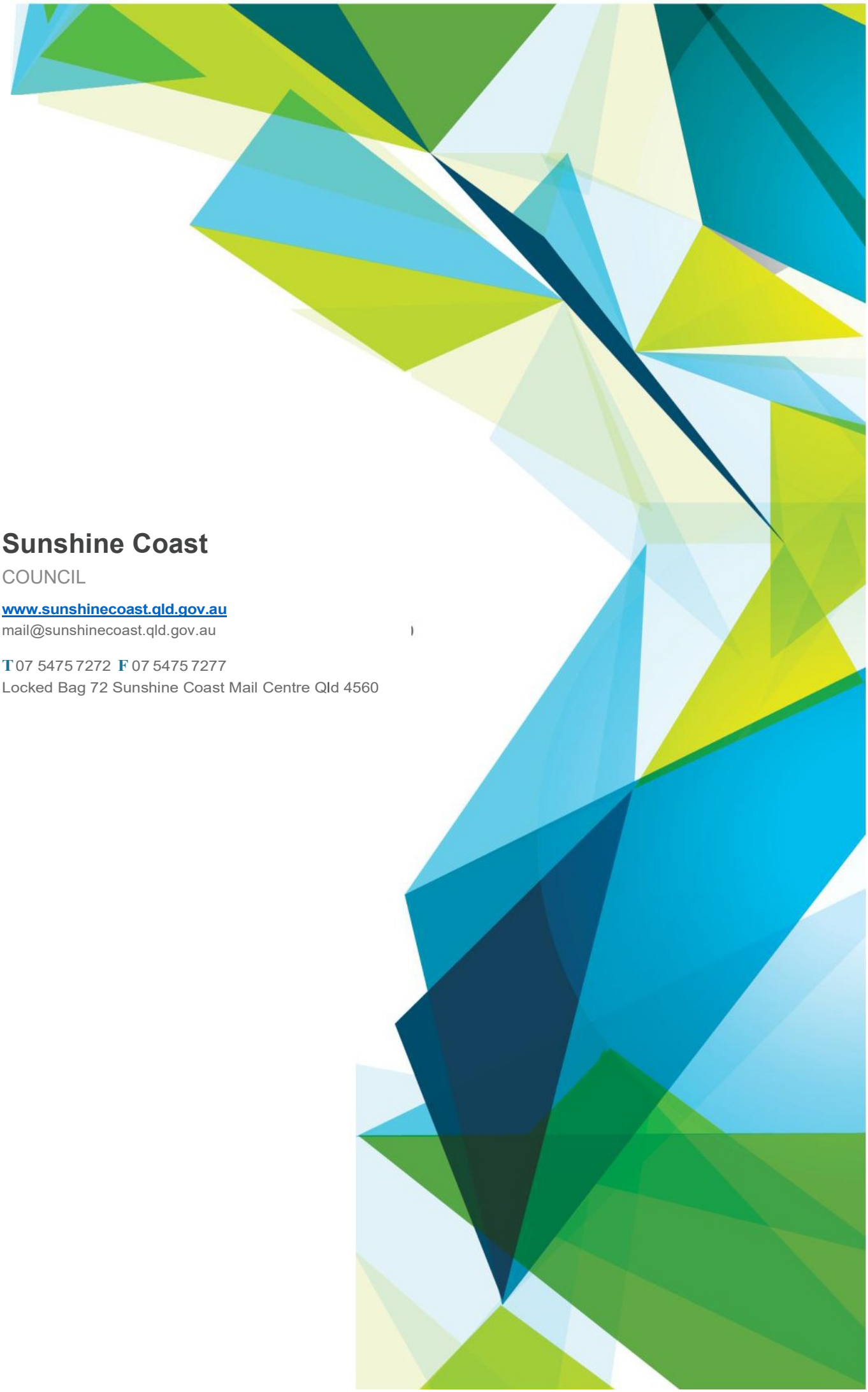
www.sunshinecoast.qld.gov.au | trafficandtransport@sunshinecoast.qld.gov.au | **T** 07 5475 7272 | **F** 07 5475 7277
Postal address Locked Bag 72 Sunshine Coast Mail Centre Qld 4560 | ABN 37 876 973 913
Caloundra office 1 Omrah Avenue Caloundra Qld 4551
Maroochydore office 10 First Avenue Maroochydore Qld 4558
Nambour office Corner Currie and Bury Streets Nambour Qld 4560

5. Review Comments/Defects	
Inspector's Name	
Title	
Signature	Date

Appendix G – Maintenance Intervention Levels & Response Times

Defect	Priority	Intervention Level/s	Response Time	Rectification Time
Traffic Signal Equipment	1	Any reported defects which have potential to cause personal injury, create a dangerous situation and create a situation where use of the intersection places the user at greater risk, including but not limited to: • Damaged or missing finial end cap/traffic signal mast arm junction box/ JU pole terminal panel cover/controller cabinet door; • Damaged and dangerous post/pole (including knockdowns); • Hanging or damaged cables; • Controller knocked down; • Damaged push button; • Damaged or open door on lantern; • Damaged lantern at risk of falling; • Conflicting green signal displays; • Twisted & conflicting lantern arrangement; • Site blacked out; • Stuck in phase/phase not introducing; • Flashing amber; • Pedestrian "Don't Walk" lamp out; • Push button – no call; • Trivision sign fault; • Audio tactile unit fault; • Two lamps out or more per signal group failure; • No call on vehicle detector.	4 hours	4 hours
	1	Any reported defects where the installation is safe but is operationally degraded, including but not limited to: • Missing or damaged hardware (ie. Missing pole and/or associated equipment as a result of damage/knockdown) **without** footing damage.	4 hours	10 business days
	1	Any reported defects where the installation is safe but is operationally degraded, including but not limited to: • Missing or damaged hardware (ie. Missing pole and/or associated equipment as a result of damage/knockdown) **with** footing damage.	4 hours	15 business days

Defect	Priority	Intervention Level/s	Response Time	Rectification Time
	2	Any reported defects that do not stop the installation operating safely but the performance is inefficient, including but not limited to: • Timing fault; • Permanent call on detector; • Detector not operating correctly; • Push button – permanent call; • Communications failure.	1 business day	4 hours
	-	Any reported defects where the installation is safe but is operationally degraded, including but not limited to ground mounted and overhead mounted traffic signals: • Twisted & non conflicting lantern arrangement; • Lamps out (other than pedestrian "Don't Walk" lamps); • Visors or louvres missing or damaged; • Lenses damaged; • Missing/defaced labelling.	Monthly	As identified
Cable Joining Pits	1	Any reported missing/damaged cable jointing pit or pit lid located in areas of the road reserve that **are** readily accessible by public pedestrians ("make safe work").	4 hours	4 hours
	4	Any reported missing/damaged cable jointing pit or pit lid located in areas of the road reserve that are **not** readily accessible by public pedestrians (i.e. Motorway, rural road environment) ("make safe work").	5 business days	4 hours
	-	Cable jointing pit is safe but is operationally degraded with **low** level traffic management (Pit Repairs).	As directed	15 business days
	-	Cable jointing pit is safe but is operationally degraded with **high** level traffic management eg. Motorways (Pit Repairs).	As directed	15 business days
Inductive Loops	1	Any reported defects where the equipment can cause personal injury or operational malfunction, including but not limited to: • Damaged equipment in travelled path (make safe work); • Exposed or damaged cables; • Investigation of reported defect.	4 hours	4 hours
	2	Traffic signal & counting detector loops with low level traffic management.	1 business day	10 business days



Sunshine Coast

COUNCIL

www.sunshinecoast.qld.gov.au
mail@sunshinecoast.qld.gov.au

T 07 5475 7272 F 07 5475 7277
Locked Bag 72 Sunshine Coast Mail Centre Qld 4560