

**Contract Administration System Manual: Procedure – CAP002M**

# **Development of the Administrator's Surveillance Plan**

**December 2019**

## Copyright

© The State of Queensland (Department of Transport and Main Roads) 2019.

## Licence



This work is licensed by the State of Queensland (Department of Transport and Main Roads) under a Creative Commons Attribution (CC BY) 4.0 International licence.

## CC BY licence summary statement

In essence, you are free to copy, communicate and adapt this work, as long as you attribute the work to the State of Queensland (Department of Transport and Main Roads). To view a copy of this licence, visit: <https://creativecommons.org/licenses/by/4.0/>

## Translating and interpreting assistance



The Queensland Government is committed to providing accessible services to Queenslanders from all cultural and linguistic backgrounds. If you have difficulty understanding this publication and need a translator, please call the Translating and Interpreting Service (TIS National) on 13 14 50 and ask them to telephone the Queensland Department of Transport and Main Roads on 13 74 68.

## Disclaimer

While every care has been taken in preparing this publication, the State of Queensland accepts no responsibility for decisions or actions taken as a result of any data, information, statement or advice, expressed or implied, contained within. To the best of our knowledge, the content was correct at the time of publishing.

## Feedback

Please send your feedback regarding this document to: [tmr.techdocs@tmr.qld.gov.au](mailto:tmr.techdocs@tmr.qld.gov.au)

**Contents**

- 1 Introduction .....1**
- 1.1 Purpose..... 1
- 1.2 Scope..... 1
- 1.3 Definitions, Abbreviations and Acronyms ..... 1
- 1.4 General ..... 2
- 2 Responsibilities .....2**
- 3 Process .....2**
- 3.1 General ..... 2
- 3.2 Contract Familiarisation ..... 3
- 3.3 Contract Details ..... 4
- 3.4 Stakeholder Issues ..... 5
- 3.5 Risk Assessment ..... 5
- 3.6 Surveillance Requirements..... 6
- 3.7 Resource Requirements ..... 8
- 3.8 Communication Requirements ..... 10
- 4 Reference Documents ..... 10**
- Appendix A – Surveillance Planning Model..... 11**
- Appendix B – Responsibility Matrix ..... 12**
- Appendix C – Surveillance Survey ..... 15**

## 1 Introduction

### 1.1 Purpose

The purpose of this procedure is to provide information to develop the *Administrator’s Surveillance Plan* (CAF001M), which is the key document for managing the risk-based surveillance process. Successful surveillance is essential for the Administrator to be able to exercise their functions under the contract (including the certification that the Works have been constructed in accordance with the contract).

The *Administrator’s Surveillance Plan* (CAF001M) is not part of the contract and it is not intended to duplicate the Contractor’s contract or quality plans.

**NOTE:** This procedure does not provide contract law advice which is outside the scope of the Contract Administration System (CAS) Manual. Also, all the legislations and Acts stated in this manual are for reference only. Please refer to the latest version and the year of the contract.

### 1.2 Scope

The scope of this procedure is to provide the necessary framework to allow the surveillance process to be developed successfully on a risk basis.

### 1.3 Definitions, Abbreviations and Acronyms

Abbreviation	Description
Administrator	The person appointed as the Administrator by the Principal
CAR	Corrective Action Request.
CAS	Contract Administration System
Contractor	The person identified as the Contractor in the contract.
Date for Practical Completion	Where the Annexure provides a date for Practical Completion that date, where the Annexure provides a period of time for Practical Completion, the last day of the period but if any extension of time for Practical Completion is granted by the Administrator or allowed in any arbitration or litigation, it means the date resulting therefrom.
Department / Departmental	Department of Transport and Main Roads.
Designer/Design Consultant	Person or firm who undertakes the design (for TIC the design is prepared by the Principal who may have a firm undertaking this work). Designer also has a specific meaning under WHS legislation.
DRR	Design Review Request (Where there is some design by the Contractor).
Lot Register	A register system in which the Contractor records each lot of work.
PM	Project Manager – appointed by the Principal to manage the overall project of which the TIC may be one of a number of separate contracts under the project.
Principal	The Principal is stated in the Annexure (state of Queensland acting through the department).
TIC	Transport Infrastructure Contract.

## **1.4 General**

The Administrator's Surveillance Plan (CAF001M) is the result of understanding the principles and practices of risk analysis, monitoring (surveillance) of quality assurance of contracts and the planning necessary to obtain the requisite level of confidence that the Contractor is meeting the requirements of the contract. Therefore, the Administrator's Surveillance Plan (CAF001M) is a live document which requires constant review and amendment.

Appendix A, Surveillance Planning Model gives an overview of the process.

The prime responsibility for all quality control for all products or services specified in the contract to consistently satisfy specified requirements lies with the Contractor. This includes the management of Subcontractors.

The prime responsibility for verification that a product or service meets specified requirements lies with the Principal. Generally, this responsibility is vested in the Administrator.

In Transport Infrastructure Contract (TIC), as for all contracts, verification of product quality is paramount in ensuring that value for money is achieved.

It is recommended that the Administrator provide the Project Manager with a copy of the *Administrator's Surveillance Plan* (CAF001M). This will assist in communicating intent and a common understanding early in the contract.

## **2 Responsibilities**

Responsibilities of those contributing to the development and implementation of the *Administrator's Surveillance Plan* (CAF001M) are defined in the responsibility matrix as part of the *Administrator's Surveillance Plan* (CAF001M).

The Principal, Contractor, Designer and Project Manager for example (and thus the Administrator's engineering staff) have legal responsibilities beyond those stated specifically in the contract due to requirements of legislation, such as those under *WHS legislation* and the *Professional Engineers Act 2002*.

The Administrator shall arrange an internal pre-start conference (Standard Form - *Internal Pre-Start Conference Agenda/Minutes* (CAF002M)) for the surveillance team (preferably prior to the start of the contract) to identify staffing details, risks and so on for the inclusion in the *Administrator's Surveillance Plan* (CAF001M).

Determination of the level of resources required for the surveillance of the contract will not be fully known until an adequate risk assessment has been carried out. Resources required early in the contract (for example, review of the contract plans) should be resolved in accordance with the requirements of the contract.

## **3 Process**

### **3.1 General**

Appendix A illustrates the typical model for the planning and execution of the surveillance plan. *Administrator's Surveillance Plan* (CAF001M) is to be used with contract specific details and appendices to be included as required.

It is also important to note that the *Administrator's Surveillance Plan* (CAF001M) is a live document. For example, at the time of starting the plan's development, the surveillance team will probably not be known, yet activities such as review of the Contractor's contract plans are undertaken. Similarly, as risks change (for example, work items may require more surveillance to meet or maintain standards), the *Administrator's Surveillance Plan* (CAF001M) is to be reviewed and amended to reflect the new risk profiles.

### **3.2 Contract Familiarisation**

Prior to proceeding with the development of the Administrator's Surveillance Plan (CAF001M), the Project Manager, the Administrator and the surveillance team must gain a thorough understanding of the:

- project scope
- design philosophy or intent
- constructability and safety
- integration of long and short-term maintenance considerations
- decisions and risk assessments made during the design phase by the regional management team and designers
- contract and project cumulative risk profile
- contract documentation and drawings, including the Contractor's contract plans (including programme and lot register – when available)
- contractor's including their subcontractor's strengths and weaknesses identified from performance reports, provided as feedback to appropriate prequalification/approved supplier systems
- Administrator surveillance team's strengths and weaknesses (particularly when the Administrator's function is out-sourced), and
- relevant communication materials, if available, including stakeholder lists, community engagement feedback and any related reports.

This research will identify issues which need to be clarified by the responsible person or may highlight risks which should be included in the risk assessment for the implementation phase.

The review of the Contractor's contract plans (including subcontracts of materials and service suppliers, when known) should be undertaken at this stage.

This review would include:

- Organisation structure – does the Contractor's personnel reflect the qualification and experience required by the contract or the prequalification system?
- Responsibilities/authorities – are they linked to the individual personnel of the Contractor?
- Contract Plans – is the construction plan including inspection test plans and work method statements for high risk activities; traffic management plan; quality plan; environmental management plan including cultural heritage, construction workplace plan, and community liaison plan for the site specific and do they meet statutory and regulatory requirements?

- Inclusion and suitability of program, cash flows, construction procedures, inspections and test plans (verification), Contractor’s surveillance plan for subcontractors and internal audit plan.

To undertake this task, the Administrator should involve relevant content experts including those not on site and use current risk management techniques to effectively undertake the assessment and review.

### **3.3 Contract Details**

The essential contract details need to be provided in the *Administrator’s Surveillance Plan* (CAF001M) and are to include:

- contract description
- details of Contractor
- contractual details:
  - date of letter of acceptance
  - Formal Instrument of Agreement
  - contract period
  - date for practical completion for the contract, and date for practical completion for separable portions (where applicable)
  - rate of liquidated damages for the contract, and rate of liquidated damages for the separable portions (where applicable), and
  - contract sum.
- items in-scope and out-of-scope (refer to the pre-construction documentation)
- Any matters requiring particular attention such as those identified by the Project Manager, prior planning documents or those raised by Contractor during tender:
  - urgent issues (political, timing, interfacing with other projects)
  - any unresolved matters (relocation of public utility plant, resumptions, land access requirements, accommodation works, and so on)
  - provisional items
  - sensitive quantities
  - community engagement
  - any alternative designs or designs by the Contractor
  - influences that may affect the Project (Principal Supplied Materials), and
  - special requirements for the project including high risk requirements, critical activities or milestones, constraints (for example piling restrictions, traffic restrictions, noise, public interaction, and so on)
- assumptions that require clarification, as these may affect the risk assessment.

Improved clarity at this stage of development may yield significant benefits later in the further development of the *Administrator’s Surveillance Plan* (CAF001M) as work proceeds, and subsequently in the delivery of the contract.

### **3.4 Stakeholder Issues**

Stakeholders are those individuals, groups and organisations who are likely to be affected by and/or have an interest in department's decision and actions. These include communities, industry, businesses and government.

### **3.5 Risk Assessment**

Prior to the commencement of the Project and preferably at the internal pre-start conference, the Administrator, the surveillance team, and any specialist advisors (such as WHS, electrical, environment, cultural heritage, geotechnical, structures, blasting and piling as appropriate) must undertake a contract risk analysis of all risks associated with surveillance likely to affect the Administrator's ability to certify that the Works have been constructed according to the contract. The involvement of the site staff and surveillance team will be a function of:

- the complexity of the contract
- local conditions
- assessed level of risks
- surveillance team knowledge and experience of the construction issues and risks
- availability of specialist advisors, and
- site personnel availability.

The risk assessment will identify construction activities and associated issues considered to be of sufficient risk to the quality of the product / contract. A typical risk assessment model consistent with AS/NZS ISO 31000:2018 Risk Management.

Some of the risk analysis tasks include:

- establish the context
- identify special processes, milestones, hold points, witness points, and so on
- obtain details of any prior project risk registers / assessments
- list, analyse and evaluate all known surveillance risks
- establish a contract risk register, see *Administrator's Surveillance Plan* (CAF001M)
- consider (surveillance) actions required to address the risks
- reassess the risks as if the nominated surveillance actions have been implemented, and
- the remaining risk is either accepted or further actions taken.

The nominated surveillance actions to be undertaken and the remaining risk profile are significant inputs into the *Administrator's Surveillance Plan* (CAF001M).

The risk assessment will include areas such as:

- communications
- community and key stakeholders
- Queensland Rail and other government requirements
- public utilities requirements



- construction processes
- handover requirements
- Operation and maintenance requirements
- cultural heritage
- environment
- quality assurance including the integrity of any testing requirements
- safety
- structures
- electrical
- suppliers and specialist suppliers including service suppliers, and
- traffic.

Principal Supplied Materials are to be subjected to the same level of surveillance by the Contract Administrator to verify compliance.

Some of these items may include:

- precast concrete products such as culverts and bridge girders
- welded products
- long lead time items such as wire rope, low relaxation strand, optic fibre, and so on
- bridge bearings, and
- relocation of utility services.

Contractor's use of registered suppliers or items from these suppliers does not guarantee compliance, nor does it replace approval or acceptance of any item in accordance with the contract.

There may be various quality assurance checks that are specified during manufacture of components, prior to inspection of completed product, to demonstrate compliance with the various Technical Specifications, for example approval of weld procedures, verification of weld preparations and supply of weld maps. All the necessary quality assurance checks must be carried out notwithstanding they may be from a registered supplier.

It is important to note that the risk register and subsequent related documents are 'live' documents in that as the risk changes, or perceive to change, the risk register and subsequent documents change, particularly the *Administrator’s Surveillance Plan* (CAF001M).

### **3.6 Surveillance Requirements**

A simplified view is that the activities of surveillance audits and monitoring provide information for effective administration of the contract.

The surveillance requirements will provide the information necessary for delivery of a surveillance schedule which aligns all known risks with a surveillance requirement relevant to the level of risk and the contract.

From the established risk register, a responsibility matrix can be generated which nominates the appropriate person to provide surveillance in an appropriate method. A typical responsibility matrix is attached in Appendix B, Responsibility Matrix.

The appropriate person is one with contractual responsibility (sometimes delegated), practical experience and where required by legislation will be an accredited person. Typical examples include:

- an accredited person must be used for auditing the traffic management plan under legislation, and
- an accredited person must be used for auditing electrical installations under legislation.

Where the practical experience is not available internally, consideration should be given to an external source for either the duration of the activity or for sufficient time to include the first work operation as an absolute minimum to acquaint site staff with enough knowledge to confidently continue.

The appropriate method is related to the level of risk and the contract and may be either by scheduled system, process or product audit, or monitoring.

There are some special surveillance activities which require some additional guidance such as:

- Testing surveillance

The surveillance of testing activities carried out by the Contractor. This only covers the observation of the actual testing carried out by the Contractor and test results supplied to ensure it is appropriate and to the required standards. As an alternative form of surveillance, parallel or check testing with both the Contractor's and Administrator's staff reading the same instruments can produce acceptable results without the issues of conflicting readings. This is important particularly where there are allegations of fraudulent testing practices.

- Survey surveillance

The surveillance of survey work carried out by the Contractor's surveyors. This is the observation of the Contractor's methods and equipment to ensure they are appropriate and capable of setting out and measuring the works within the tolerances contained in the Technical Specification. Parallel testing is also recommended for this work as a slight discrepancy in target positions can give rise to differences not able to be reconciled.

- Specialist surveillance

The surveillance of specialist activities and processes, such as pre-casting for bridge work, steel fabrication, sealing, asphalt works, piling, electrical installations or blasting. Such surveillance requires specialist skills and often requires the use of specialist surveillance staff or staff with specific qualifications required by legislation (for example, electrical engineers must sign off on electrical works under the Electrical Safety Act).

If the precast components, steel fabrication and/or bituminous products are Principal Supplied Materials, the surveillance would be carried out by the Project Manager.

- Subcontracting approvals

The above surveillance types may involve some of the following to confirm product service compliance:

- Audit

- Hold point
- Inspection
- Measurement
- Observation
- Management plan review
- Spot check
- Destructive test
- Non-destructive test
- Field testing
- Laboratory testing, and
- Witness point.

Reference needs to be made to the Contractor’s construction program and lot register, which may be available at this time.

The frequency at which the surveillance is undertaken is an outcome of the risk assessment, nature of the activity (time specific or regularity), and the requirements of the contract or defined in ancillary systems such as specialists suppliers.

The frequency of surveillance may be varied during the contract depending on the Contractor’s performance, changing risk profiles or significant changes to agreed processes.

### **3.7 Resource Requirements**

Having completed the risk register, the risk assessment, the responsibility matrix (refer Appendix B, Responsibility Matrix) and identified the surveillance activities required to manage the risk to ensure specified requirements are met, the resources necessary to undertake this surveillance need to be determined.

The resource plan will balance the needs, available resources and capabilities. The following should be considered when determining the composition of the surveillance team:

- experience of staff
- qualifications of staff (in some cases, staff with specific qualifications are mandatory under legislation, for example auditing of construction safety and traffic management plans require staff with specific qualifications)
- specialist advisors to assist the surveillance team (or in some cases to be the site auditor)
- off-site versus on-site surveillance personnel
- part-time versus full-time resources
- other time commitments of the team to contract administration duties or other projects
- day versus night works

- industrial award requirements, and
- departmental policies with respect to health, safety, leave, overtime, and so on.

For some projects, on-site training by specialists may be an option. This supports the development of the surveillance team and engages the expert in the Project.

Having determined the number and type of resources required to undertake the surveillance, the timing / sequencing of these activities can be scheduled. It is necessary that the surveillance activities be superimposed on the Contractor's construction program (initially this may be the tender program) as soon as it is available or the Current Program once the construction program has been deemed suitable, as this is the anticipated timeframe for the Work being monitored.

It is a recommended strategy to schedule surveillance of critical, repetitive and significant activities such that the first work activity in these fields is closely monitored and/or audited. To this must also be added any activity of which the surveillance team as a whole does not have a good practical working knowledge. Having a contractual knowledge of the requirements does not overcome practical experience. External assistance, even for a short time at the commencement of an activity may assist in overcoming on-site lack of experience.

This process will maximise the utilisation of the surveillance resources and reinforce the responsibilities and skill profile of the surveillance team.

Details of a sample Contractor's construction program and an Administrator's surveillance schedule overlaid on the former are attached as Appendix C as a guide to the process.

This shows how the initial requirements for surveillance are planned but is subject to:

- changes to the Contractor's program
- opened lots of the lot register
- the frequency of audits may alter depending upon the Contractor's performance in achieving quality (as evidenced by no or few *Corrective Action Request* (CAF031M) being issued by the Contractor or no or few Corrective Action Requests (CAR) being issued by the Administrator), and
- good conformance in one work area may lead to a re-scheduling of surveillance resources to another of higher risk.

The surveillance program would also include details of:

- resources for off-site surveillance (steel fabrication, precast, asphalt plant, plants, etc.);
- resources for off-site welded steel products such as bridge rails and girders (if these are Principal Supplied Materials then it is the Project Manager's responsibility for surveillance, or if part of the contract, then it is the Administrator's responsibility), and
- the Contractor's responsibilities with regard to milestones, hold points and witness points.

The timing of the surveillance activity should include the lead-time that may be necessary to undertake tests and obtain reports from a laboratory or a specialist engaged by the surveillance team.

### **3.8 Communication Requirements**

The communication requirements can now be established as duties and anticipated timeline for their inputs, are known as much as is possible, by the surveillance team.

The communication requirements for external sources can be established from the stakeholder assessment and the subsequent risk analysis.

Items that will need addressing include:

- internal communication
  - surveillance team: staffing, meetings, assessment of team satisfaction and performance, night work rosters
  - Designer(s), Design Review Requests (DRR), design clarifications
  - specialist surveillance/advisory personnel, and
  - management of correspondence, telephone systems.
- External communication
  - Contractor and specialist suppliers
  - Service authorities
  - Community information, consultation and feedback, Requests for Information (RFI), *Issues and Complaints Register* (CAF016M)
  - Communication with other external stakeholders, and
  - Reports to Principal.

## **4 Reference Documents**

- AS/NZS ISO 31000:2018 Risk Management
- Electrical Safety Act
- *Issues and Complaints Register* (CAF016M)
- *Corrective Action Request* (CAF031M)
- Professional Engineers Act 2002
- *Administrator's Surveillance Plan* (CAF001M)
- WHS Legalisation

**Appendix A – Surveillance Planning Model**

<b>Planning</b>	<b>Define Scope and Current Situation</b>	<ul style="list-style-type: none"> <li>• Contract Familiarisation</li> <li>• Scope Clarity</li> </ul>
	<b>Identify Stakeholders</b>	<p>Consider:</p> <ul style="list-style-type: none"> <li>• Principle, Contractor, Administrator</li> <li>• Others who could impact on project/outcomes (Inspectors, other Specialists)</li> </ul>
	<b>Undertake Risk Analysis</b>	<ul style="list-style-type: none"> <li>• Hold Points/Stakeholders</li> <li>• Special processes / Suppliers</li> <li>• High risk practices / Project Environment</li> <li>• Testing practices</li> </ul>
	<b>Determine Surveillance Requirements</b>	<p>Consider:</p> <ul style="list-style-type: none"> <li>• Risk Assessment</li> <li>• Specifics for safety, environment, community, traffic and so on</li> </ul>
	<b>Determine Resource Requirements for Surveillance</b>	<p>Consider:</p> <ul style="list-style-type: none"> <li>• Resource availability and timing</li> <li>• Specialist Surveillance Officers</li> <li>• Persons from other Regions, organisations</li> <li>• Skill set of Surveillance Officers</li> </ul>
	<b>Determine Communication and Admin Support needs</b>	<p>Link to:</p> <ul style="list-style-type: none"> <li>• Key Stakeholders</li> <li>• Risk assessment</li> <li>• Internal and external requirements</li> <li>• Record and support requirements</li> </ul>
		<b>Complete the Surveillance Plan</b>

**Appendix B – Responsibility Matrix**

<b>Staffing Legend</b>			
<b>PR</b>	Principal's Representative	<b>SS</b> Survey Services	<b>ST</b> Soil Tester
<b>A</b>	Administrator	<b>QA</b> Quality Assurance Auditor	<b>AT</b> Asphalt Tester
<b>AR</b>	Administrator's Representative	<b>ES</b> External Safety Auditor	<b>CT</b> Concrete Tester
<b>SE</b>	Site Engineer	<b>EG</b> Engineer (Geotechnical)	
<b>SI</b>	Senior Inspector	<b>ES</b> Engineer (Structures)	<b>AO</b> Administration Officer
<b>I</b>	Inspector	<b>EP</b> Engineer (Pavements)	<b>SA</b> Regional Safety Advisor
<b>EA</b>	Environmental Advisor	<b>EC</b> Engineer (Construction)	
<b>CH</b>	Cultural Heritage Officer	<b>EE</b> Engineer (Electrical)	
<b>SA</b>	Safety Advisor	<b>SP</b> Specialist (Piling)	<b>C</b> Contractor

**Add Qualifications/ Accreditation Requirements**

<b>Responsibility Legend</b>					
<b>A</b> Assist	<b>C</b> Consult	<b>O</b> Coordinate	<b>P</b> Primary responsibility	<b>R</b> Review	<b>S</b> Sign off

ACTIVITY	ROLE														
	Contract Site Staff						Specialist Support Staff					External			
	PR	A	AR	SE	SI	AO	SA	EA	ST	SS	AT	C	ST	AT	CT
Preparation of Surveillance Plan															
Risk Register															
Suitability of Construction Plan															
Suitability of Environment Management Plan															
Suitability of Quality Plan															
Suitability of Traffic Management Plan															
Suitability of Community Liaison Plan															
Surveillance Audits															
Site Surveillance															
Formal Process Audits															
Survey Compliance Audits															
Material Compliance Audits															
Compaction Compliance Audits															
Concrete Compliance Audits (Material)															
Asphalt Compliance Audits (Laying and test procedure)															
Pile Driving Records															
Construction Diary															



ACTIVITY	ROLE														
	Contract Site Staff						Specialist Support Staff					External			
	PR	A	AR	SE	SI	AO	SA	EA	ST	SS	AT	C	ST	AT	CT
CAR															
Site Meetings															
Hold Point Release (approval to Proceed)															
Photographic/video/voice file Records															
Subcontractor Approvals															
Marking up "As Constructed" Drawings															
Forward "As Constructed Drawings" to Project Manager															
Approval of Inspector Time and Dissection Sheets															
Site Office Safety Audit															
Site Office Inductions															
Site Induction															

### Appendix C – Surveillance Survey

#### Surveillance Planning



