



## INTERIM WARREN SEWAGE TREATMENT PLANT AND COLLECTION SYSTEM POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN. (PIRMP).

April 2021



Document Control

| Version  | Author      | Reviewer     | Approved for Issue |            |
|----------|-------------|--------------|--------------------|------------|
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|          |             |              |                    |            |
|          |             |              |                    |            |

A new PIRMP will be developed for the commissioning of the new Sewerage Treatment Plant (STP) and Gillendoon Sewerage Pumping Station (SPS) in the first or second quarter of 2021/2022.

## Foreword

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The Pollution Incident Response Management Plan (PIRMP) for the Warren Sewerage Scheme is a document that has been developed to be used by Warren Shire Council (WSC) in the operation and management of incidents at the Warren Sewage Treatment Plant (STP) and the sewage collection and transport system.

The aim of this plan is to ensure that, where possible, pollution incidents are avoided but if they do occur they are managed appropriately to minimise the impacts on the environment and to human health.

This PIRMP addresses the requirements under the *Protection of the Environment Legislation Amendment Act* (POELA).

The objectives of the plan are to:

- communicate in a timely manner and with sufficient detail about a pollution incident to relevant authorities and people outside the facilities who may be affected by the impacts of the pollution incident;
- minimise and control the risk of any pollution incident occurring at the facilities by identification of risks and the development of planned actions to minimise and manage those risks; and
- ensure that the plan is properly implemented by trained staff, identifying persons responsible for implementing it, and ensuring that the plan is regularly tested for accuracy, currency and suitability.

This management plan is to be regularly updated and reviewed by the Utilities Services Manager at Warren Shire Council and Council's Work Health and Safety (WHS) committee.

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## 1 Introduction

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The township of Warren is located 100 km north west of Dubbo in the Warren Local Government Area (LGA).

ABS Census data for 2011 found a residential population of approximately 1,800 for the Warren “Urban Centre/Locality” which is a suitable indicator for the sewered population.

Warren Shire Council (WSC) owns and operates the Warren Sewerage Scheme which includes a Sewage Treatment Plant (STP) and the collection system servicing the town.

### 1.1 Collection and Transport System

The Warren sewage collection system comprises the following:

- Gravity mains,
- Six (6) Sewage Pumping Stations (SPS) as shown in **Figure 1.1**, and
- Rising mains (from each SPS).

The town comprises of two (2) major catchments and four sub-catchments as follows:

#### *Major Catchments*

- Catchment #1 – Sewage from Catchment #1 is received at the SPS located on the corner of Burton and Thornton St, referred to as Thornton SPS or SPS1, and pumps into Catchment #2.
- Catchment #2 - Sewage from the Catchment #2 and the rest of the town is pumped by the SPS located off Gillendoon St via a 150 mm DICL rising main approx 0.5km to the STP. The SPS is referred to as Gillendoon SPS or SPS2.

#### *Sub-Catchments*

- Catchment #3 – Sewage from Catchment #3 is received at the SPS located on a narrow strip of land located between three residences (two on either side and one behind) off Wilson St and pumps into Catchment #1. This SPS is referred to as Wilson St SPS or SPS3.
- Catchment #4 – Sewage from Catchment #4 is received at the SPS located between the back of residences on Garden Ave and the town levee and pumps sewage into Catchment #2. This SPS is referred to as Garden Ave SPS or SPS4.
- Sub-Catchment #5 – Sewage from Catchment #5, essentially sewage from the new residential development, is received at the SPS located near Gunningbah Creek and pumped into Catchment #1. This SPS is referred to as Gunningbah SPS or SPS4.
- Sub-Catchment #6 – Sewage from Catchment #6 located at the Council Depot transfers sewage from Council Depot on Dubbo St. This SPS is referred to as Council SPS or SPS6.

The reticulation system comprises of a combination of the vitrified clay pipe i.e. original installations and uPVC pipe i.e. extensions/additions.

## **1.2 Sewage Treatment Plant (STP)**

The STP is located off the Oxley Highway on the northern edge of town, outside the town's levee.

The Warren STP was constructed in 1959 and treats sewage by an attached growth type sewage treatment process i.e. trickling filter. The STP comprises the following treatment/process units:

- Inlet Pit;
- Imhoff Tank in series with a Hopper-bottomed Primary Sedimentation Tank (PST);
- Two (2) Trickling Filters (TF);
- A humus Tanks (HT) i.e. clarifier;
- Two (2) anaerobic digesters; a primary and a secondary in series, with associated sludge pump well;
- Three (3) Sludge Drying Beds;
- Five (5) Evaporation Basins; and
- Wet Weather Overflow to Tiger Bay.

The location of Warren STP is shown in **Figure 1.2**.

The main process units i.e. inlet pit, Imhoff tank, PSTs, Trickling Filters, Humus Tank are located above the 1 in 100 year level.

Sewage flows into a rudimentary inlet pit followed by removal of readily settable matter in the Imhoff tank and subsequently the PST.

Primary treated sewage is delivered to the trickling filters by the dosing syphons. Effluent from the trickling filters flows into the humus tank. This effluent is evaporated in large evaporation basins during

dry weather flows. During wet and extreme weather events to date, the STP has been able to handle incoming flows. No overflows have been witnessed post raising of the PST wall height. The increased volume of effluent produced as a result of wet weather events is stored in the Quarry to prevent evaporation basins from overtopping.

Primary sludge is manually withdrawn from the Imhoff Tank and PST and transferred to the primary anaerobic digester for stabilisation followed by the second anaerobic digester. The stabilised sludge is transferred to the sludge drying beds and supernatant returned to the Imhoff tank.

A Process Flow Diagram (PFD) for the plant is shown in **Figure 1.3**.

### **1.3 Scope of the PIRMP**

The scope of the plan is as follows:

- Description and likelihood of hazards;
- Pre-emptive actions to be taken;
- Inventory of pollutants;
- Safety equipment;
- Contact details;
- Communicating with neighbours and the local community;
- Minimising harm to persons on the premises;
- Maps showing location of scheme components;
- Actions to be taken during or immediately after a pollution incident; and
- Staff training.



Figure 1.1: Location of SPS

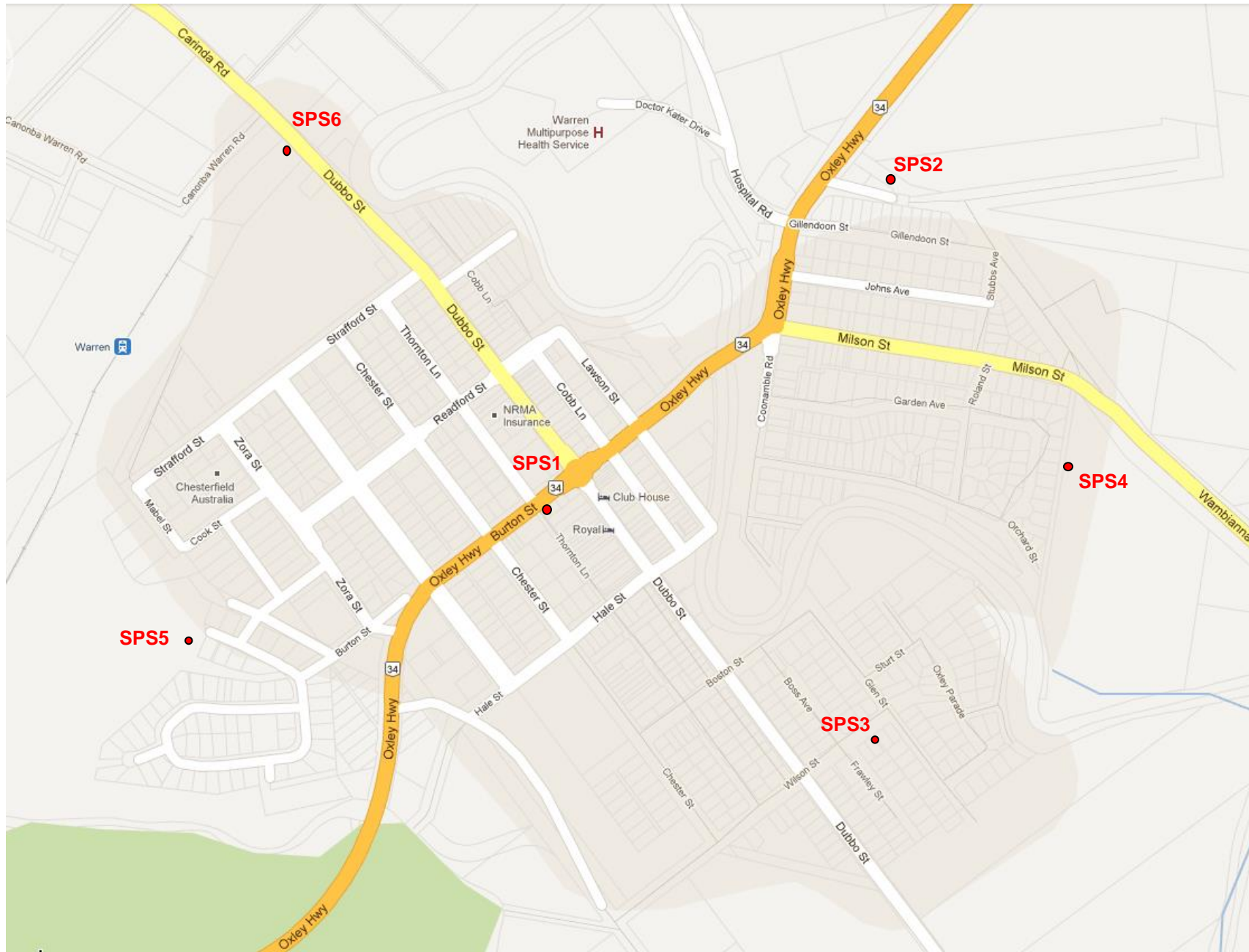


Figure 1.2: Location of Warren STP





## 2 Context of the Assessment

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### 2.1 Background

A new provision under the *Protection of the Environment Legislation Amendment Act (POELA) 2011* is the requirement to prepare, keep, test and implement a Pollution Incident Response Management Plan (PIRM) for each environmental protection licence that Council holds.

The objectives of these plans are to:

- communicate in a timely manner and with sufficient detail about a pollution incident to relevant authorities and people outside the facilities who may be affected by the impacts of the pollution incident;
- minimise and control the risk of any pollution incident occurring at the facilities by requiring identification of risks and the development of planned actions to minimise and manage those risks; and
- ensure that the plan is properly implemented by trained staff, identifying persons responsible for implementing it, and ensuring that the plan is regularly tested for accuracy, currency and suitability.

The NSW EPA defines a “pollution incident” as follows;

“an incident or set of circumstances during or as a consequence of which there is or is likely to be a leak, spill or other escape or deposit of a substance, as a result of which pollution has occurred, is occurring or is likely to occur. It includes an incident or set of circumstances in which a substance has been placed or disposed of on premises, but it does not include an incident or set of circumstances involving only the emission of any noise.”

A pollution incident is required to be notified if there is a risk of “material harm to the environment”, which is defined in the POEO Act as:

(a) harm to the environment is material if:

(i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or

(ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 (or such other amount as is prescribed by the regulations), and

(b) loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.”

Industry is now required to report pollution incidents *immediately* to the EPA, NSW Health, Fire and Rescue NSW, WorkCover NSW and the local council. ‘Immediately’ has its ordinary dictionary meaning of promptly and without delay. These strengthened provisions will ensure that pollution incidents are reported directly to the relevant response agencies so they will have direct access to the information they need to manage and deal with the incident in as fast a time as is practical.

The NSW EPA requires a plan to be implemented commencing 1st of September 2012 for all existing licence holders. Council holds EPL No. 2384 for the Warren Sewerage Scheme i.e. STP and collection and transport system.

### 2.2 Council Commitment

The Local Government Act contains a Charter for Local Government which describes the approach to supplying services and activities. It charges local government with a number of responsibilities including, but not limited to, the following:

- to provide directly or on behalf of other levels of government, after due consultation, adequate, equitable and appropriate services and facilities for the community and to ensure that those services and facilities are managed efficiently and effectively
- to exercise community leadership
- to properly manage, develop, protect, restore, enhance and conserve the environment of the area for which it is responsible, in a manner that is consistent with and promotes the principles of ecologically sustainable development
- to bear in mind that it is the custodian and trustee of public assets and to effectively account for and manage the assets for which it is responsible
- to engage in long-term strategic planning on behalf of the local community
- to keep the local community and the State government (and through it, the wider community) informed about its activities

## 2.3 Regulatory and Formal Requirements

The regulatory and formal requirements applicable to the Warren Sewerage Scheme are shown in **Table 2.1**. These legislative and licensing requirements and guidelines are to be met to ensure the protection of environmental and public health and to satisfy Work Health and Safety (WHS) requirements. This management plan addresses how these requirements are to be met.

**Table 2.1 : Formal and Regulatory Requirements**

| PARAMETER                       | INSTRUMENT   |   | ADMINISTERED BY                                   |
|---------------------------------|--|---|---|
| <b>Overall Scheme Operation</b> | <i>Water Management Act 2000</i>   | <ul style="list-style-type: none"> <li>• Granting of water licenses</li> <li>• Integrated management of water resources</li> </ul>  | NSW EPA   |
|                                 | <i>Local Government Act 1993 – Section 60</i>                                | <ul style="list-style-type: none"> <li>• Approval to construct extend water supply/treatment works</li> </ul>   | NSW Office of Water (NOW)                         |
|                                 | <i>Catchment Management Authorities Act 2003</i>                             | <ul style="list-style-type: none"> <li>• Management of natural resources at a catchment level</li> </ul>  | Central West Catchment Management Authority (CMA) |
|                                 | <i>Protection of the Environment Operations Act (POEO) 1997 – Section 55</i> | <ul style="list-style-type: none"> <li>• Granting/refusal of Environment Protection Licence (EPL)</li> </ul>  | NSW EPA   |
| <b>Public Health</b>            | <i>Public Health Act 2010</i>  | <ul style="list-style-type: none"> <li>• Promotion, protection and improvement of public health</li> <li>• Control risks to public health</li> <li>• Promote control and prevent spread of infectious diseases</li> </ul> | NSW Health  |
| <b>Environmental Health</b>     | <i>Protection of the Environment Operations Act (POEO) 1997</i>              | <ul style="list-style-type: none"> <li>• Protection, Restoration and Enhancement of the quality of the environment</li> </ul>   | NSW EPA   |

|                                       |   |  |                            |
|---------------------------------------|---|--|----------------------------|
|                                       | <i>Protection of Environmental Legislation Amendment Act 2011</i> | <ul style="list-style-type: none"> <li>• Pollution Incident Response Management Plan (PIRMP) compliance</li> </ul>                                       |                            |
| <b>Work Health &amp; Safety (WHS)</b> | <i>Work Health and Safety Act 2011</i>                            | <ul style="list-style-type: none"> <li>• Promote and ensure health and safety of workers</li> </ul>  | WorkCover Authority        |
| <b>Plumbing</b>                       | <i>AS/NZS 3500 - Plumbing and Drainage Code 1996-2003</i>         | <ul style="list-style-type: none"> <li>• Ensures all pipework associated with recycled water schemes is installed in accordance with standard</li> </ul> | Warren Shire Council (WSC) |

The Utilities Services Manager at Warren Shire Council is responsible for the review and evaluation of this plan and for meeting the regulatory and other requirements.

## 2.4 NSW EPA Licence.

Warren STP is covered by Environment Protection Licence (EPL) No.2384

The licence requires effluent quality discharged by the STP to the evaporation basins, i.e. from the effluent pipe delivering effluent to Evaporation Basin/Pond #3, to the following 90 and 100 percentile limits:

### EPA MONITORING POINT #2

90%ile limits:

- Biological Oxygen Demand (BOD) – 45 mg/L
- Total Nitrogen (TN) – 30 mg/L

100%ile limits:

- Biological Oxygen Demand (BOD) – 55 mg/L
- Total Suspended Solids (TSS) – 65 mg/L
- Total Nitrogen (TN) – 40 mg/L
- Total Phosphorus (TP) – 10 mg/L
- Oil and Grease (O&G) – 10 mg/L
- pH – 6.5 – 8.5

## 3 Assessment of the Risks

### 3.1 Risk Assessment – Warren STP and Collection System

A risk assessment was undertaken with the Warren water and sewer Operators at Warren STP on the 20<sup>th</sup> of September 2012. The objective of the assessment was to:

- Identify the hazards;
- Identify hazardous events;
- Assessment of the likelihood of the event and other factors that may increase the likelihood;
- Assess the impacts;
- Assess the overall risk;

Shown in **Table 3.1**, **Table 3.2** and **Table 3.3** are the likelihood, impact and risk criteria used in the assessment.

**Table 3.1: Definitions of Likelihood**

| Level | Likelihood     | Description  |
|-------|----------------|--|
| A     | Almost certain | - The event is expected to occur often ( several times per year)               |
| B     | Likely         | - The event will probably occur often (once every 1-3 years)                   |
| C     | Possible       | - The event might occur at some time (once every 3 to 10 years)                |
| D     | Unlikely       | - The event could occur at some time (once every 20 years)                     |
| E     | Rare           | - The event may occur only in exceptional circumstances (once every 100 years) |

**Table 3.2: Definitions of Impact**

| Level | Classification | Description  |
|-------|----------------|--|
| 1     | Insignificant  | The overflow is extremely unlikely to drain to a local sensitive environment* and: <ul style="list-style-type: none"> <li>- Where the overflow reaches waters, the volume of contaminant likely to enter the waterways is insignificant with regard to the volume and flow of receiving waters, or</li> <li>- Where the overflow reaches land, it is likely to be contained in an area with little chance of public exposure within the maximum response time**</li> </ul> |
| 2     | Minor          | The overflow is unlikely to drain to a local sensitive environment* and: <ul style="list-style-type: none"> <li>- Where the overflow reaches waters, the volume of contaminant likely to enter the waterways may be significant with regard to the volume and flow of receiving waters, or</li> <li>- Where the overflow reaches land, it is likely to be contained in an area where the public exposure is minimal given the maximum response time**</li> </ul>           |

|   |              |  |
|---|--------------|--|
| 3 | Moderate     | The overflow is likely to drain to a local sensitive environment* and: <ul style="list-style-type: none"> <li>- Where the overflow reaches waters, the volume of contaminant likely to enter the waterways is significant with regard to the volume and flow of receiving waters, or</li> <li>- Where the overflow reaches land, it may travel to an area where public exposure is low within the maximum response time**</li> </ul> |
| 4 | Major        | The overflow is likely to drain to a local sensitive environment* and: <ul style="list-style-type: none"> <li>- Where the overflow reaches waters, the volume of contaminant likely to enter the waterway is high with regard to the volume and flow of receiving waters, or</li> <li>- Where the overflow reaches land, the public exposure risk is likely given the maximum response time**</li> </ul>                             |
| 5 | Catastrophic | The overflow is likely to drain to a local sensitive environment* and: <ul style="list-style-type: none"> <li>- Where the overflow reaches waters, the volume of contaminant likely to enter the waterways is high with regard to the volume and flow of receiving waters, or</li> <li>- Where the overflow discharges to land, the public exposure risk is high given the maximum response time**</li> </ul>                        |

\*A sensitive environment includes: a drinking water catchment or domestic groundwater source, or shellfish growing area, or protected water bodies, ecological communities or conservation areas defined by legal or non-legal instruments, such as local environment plans (LEPs), State environmental planning policies (SEPPs), national parks, and class P or class S waters, or waterways used for primary contact recreation, or a recreational area or other area with high public exposure or associated health risk.

\*\*Maximum response time should be based on the length of time taken for the licensee to detect the overflow, or for the overflow to be reported, and the time taken for the licensee to attend the site and secure against public contact

**Table 3.3: Risk Analysis Criteria**

| Likelihood         | Impacts            |            |               |            |                   |
|--------------------|--------------------|------------|---------------|------------|-------------------|
|                    | Insignificant<br>1 | Minor<br>2 | Moderate<br>3 | Major<br>4 | Catastrophic<br>5 |
| Almost Certain – A | Low                | Moderate   | High          | Very High  | Very High         |
| Likely – B         | Low                | Moderate   | High          | Very High  | Very High         |
| Possible – C       | Low                | Moderate   | Moderate      | High       | Very High         |
| Unlikely – D       | Low                | Low        | Moderate      | High       | Very High         |
| Rare – E           | Low                | Low        | Low           | Moderate   | High              |



Table 3.4: STP Risk Register

|            | Contaminant | Description of the Hazardous Event                                 | Human Health (Public Health) | Environmental Risks | Likelihood<br>Almost certain - several times per year<br>Likely - once every 1 - 3 years<br>Possible - once every 3 - 10 years<br>Unlikely - once every 20 years<br>Rare - once every 100 years | Causes   | Impact<br>Insignificant<br>Minor<br>Moderate<br>Major<br>Catastrophic | Assessed Risk<br>Low<br>Moderate<br>High<br>Very High | Pre-emptive Actions – Existing Controls, Procedures, Operator Training, SWMS   |
|------------|-------------|--|------------------------------|---------------------|---|--|---|---|--|
| <b>STP</b> |             |  |                              |                     |   |  |   |   |  |
| 1          | Sewage      | Overflow at Inlet Pit  |                              | ✓                   | Likely  | <ul style="list-style-type: none"> <li>Blockage of inlet pit inlet and outlet points - solids buildup due large debris/lack of cleaning of screen</li> <li>Downstream units at/nearing capacity</li> </ul> | Moderate  | High  | <ul style="list-style-type: none"> <li>Work Method - daily inspection &amp; routine maintenance.</li> <li>Operator Resourcing - at least one (1) operator onsite every day, if hazardous event occurs during “out of hours”, operators “on-call” and response time is 1hour.</li> <li>Control –temporary bypass around blocked unit</li> </ul>   |
| 2          |             | Overflow at Primary Sedimentation Tanks (PSTs) i.e. Imhoff and PST |                              | ✓                   | Likely  | <ul style="list-style-type: none"> <li>Channel/Pipe blockages to downstream units.</li> <li>Unit at at/nearing hydraulic capacity.</li> </ul>  | Moderate  | High  | <ul style="list-style-type: none"> <li>Work Method - daily inspection &amp; routine maintenance.</li> <li>Operator Resourcing - at least one (1) operator onsite every day, if hazardous event occurs during “out of hours”, operators “on-call” and response time is 1hour.</li> <li>Control – temporary bypass around blocked unit.</li> </ul> |

|   |                    |  |  |   |          |   |          |          |   |
|---|--------------------|--|--|---|----------|---|----------|----------|---|
| 3 | Primary Effluent   | Overflow at Dosing Syphons                 |  | ✓ | Unlikely | <ul style="list-style-type: none"> <li>Overloaded downstream units</li> </ul>                   | Moderate | Moderate | <ul style="list-style-type: none"> <li>Work Method - daily inspection &amp; routine maintenance.</li> <li>Operator Resourcing - at least one (1) operator onsite every day, if hazardous event occurs during "out of hours", operators "on-call" and response time is 1hour.</li> <li>Control – temporary bypass around blocked unit</li> </ul> |
| 4 |                    | Overflow from PST to Dosing Syphon Channel |  | ✓ | Likely   | <ul style="list-style-type: none"> <li>Blockage</li> <li>Overloaded downstream units</li> </ul> | Moderate | High     | <ul style="list-style-type: none"> <li>Work Method - daily inspection &amp; routine maintenance.</li> <li>Operator Resourcing - at least one (1) operator onsite every day, if hazardous event occurs during "out of hours", operators "on-call" and response time is 1hour.</li> <li>Control – temporary bypass around blocked unit</li> </ul> |
| 5 | Secondary Effluent | Overflow from TF underdrains               |  | ✓ | Unlikely | <ul style="list-style-type: none"> <li>Unit at at/nearing hydraulic capacity.</li> </ul>        | Moderate | Moderate | <ul style="list-style-type: none"> <li>Work Method - daily inspection &amp; routine maintenance.</li> <li>Operator Resourcing - at least one (1) operator onsite every day, if hazardous event occurs during "out of hours", operators "on-call" and response time is 1hour.</li> <li>Control – temporary bypass around blocked unit</li> </ul> |
| 6 |                    | Overflow at Humus Tank                     |  | ✓ | Likely   | <ul style="list-style-type: none"> <li>Unit at at/nearing hydraulic capacity.</li> </ul>        | Moderate | High     | <ul style="list-style-type: none"> <li>Work Method - daily inspection &amp; routine maintenance.</li> <li>Operator Resourcing - at least one (1) operator onsite every day, if hazardous event occurs during "out of hours", operators "on-call" and response time is 1hour.</li> <li>Control – temporary bypass around blocked unit</li> </ul> |

|    |          |                                |   |   |          |   |          |          |   |
|----|----------|--------------------------------|---|---|----------|---|----------|----------|---|
| 7  | Effluent | Overflow from Evaporation Pond | ✓ | ✓ | Likely   | <ul style="list-style-type: none"> <li>Pond bank failure/leak – according to WTP Safety Audit (Feb 2012) evaporation ponds embankment were damaged during a flooding event.</li> <li>Extreme wet weather event</li> </ul> | Moderate | High     | <ul style="list-style-type: none"> <li>Work Method - daily inspection &amp; routine maintenance.</li> <li>Operator Resourcing - at least one (1) operator onsite every day, if hazardous event occurs during “out of hours”, operators “on-call” and response time is 1hour.</li> <li>Control – Route the effluent from Ponds #1, #2 and #3 to Quarry. (Effluent from Ponds #4 and #5 can’t be routed to Quarry)</li> </ul>                                     |
| 8  |          | Overflow from STP              |   | ✓ | Likely   | <ul style="list-style-type: none"> <li>Overloaded process units</li> <li>Pipe blockages in major conveyances through plant.</li> </ul>  | Moderate | High     | <ul style="list-style-type: none"> <li>Work Method - daily inspection &amp; management</li> </ul>   |
| 9  |          |                                |   | ✓ | Unlikely | <ul style="list-style-type: none"> <li>Vandalism</li> </ul>   | Moderate | Low      | <ul style="list-style-type: none"> <li>Work Method - daily inspection &amp; management</li> <li>Controls –Warning Signs, Locked/Gated entry</li> </ul>  |
| 10 |          |                                |   | ✓ | Unlikely | <ul style="list-style-type: none"> <li>Extended power failure</li> </ul>  | Moderate | Moderate | <ul style="list-style-type: none"> <li>Reliable power system.</li> <li>Only mechanically operated equipment would cease, process is not heavily reliant on mechanical equipment, therefore treatment process should continue mostly uninterrupted</li> <li>Work Method – <ul style="list-style-type: none"> <li>backup generator connected</li> <li>long outages would be planned (backup power, temporary pumping diversions organised)</li> </ul> </li> </ul> |
| 11 |          |                                |   | ✓ | Unlikely | <ul style="list-style-type: none"> <li>Storm flows - Infiltration to sewers upstream of plant</li> </ul>  | Moderate | Moderate | <ul style="list-style-type: none"> <li>Existing Control - all inflows are pumped. High flows at PS's will trigger alarm via telemetry to operator.</li> <li>Operator attendance within 1 hour</li> </ul>  |

|    |  |  |   |      |  |          |     |   |
|----|--|--|---|------|--|----------|-----|---|
| 12 |  |  | ✓ | Rare | <ul style="list-style-type: none"> <li>• Flooding in the vicinity of the STP</li> <li>• Wet weather event</li> </ul> | Moderate | Low | <ul style="list-style-type: none"> <li>• Control – plant is above 1 in 100 year flood level, only effluent ponds not above 1 in 100year flood level.</li> </ul> |
|----|--|--|---|------|--|----------|-----|---|

**Table 3.5: SPS Risk Register**

|  | Contaminant | Description of the Hazardous Event | Human Health (Public Health) | Environmental Risks | Likelihood<br>Almost certain - several times per year<br>Likely - once every 1 - 3 years<br>Possible- once every 3 - 10 years<br>Unlikely - once every 20 years<br>Rare - once every 100 years | Causes               | Impact<br>Insignificant<br>Minor<br>Moderate<br>Major<br>Catastrophic | Assessed Risk<br>Low<br>Moderate<br>High<br>Very High | Pre-emptive Actions (Existing Controls)<br>In addition to Operator training, SWMS  |
|--|-------------|------------------------------------|------------------------------|---------------------|--|----------------------|---|---|--|
| <b>SPS 1 – Thornton St/Burton St SPS</b> |             |                                    |                              |                     |  |                      |   |   |  |
| 1  | Sewage      | Overflow – dry weather             | ✓                            | ✓                   | Possible   | • Power/pump failure | Insignificant   | Low   | <ul style="list-style-type: none"> <li>As per Item #1</li> <li>Existing Control – 6hours ADWF storage</li> </ul>           |
| <b>SPS 2 – Gillendoon SPS</b>            |             |                                    |                              |                     |  |                      |   |   |  |
| 3  | Sewage      | Overflow – dry weather             | ✓                            | ✓                   | Possible   | • Power/pump failure | Major   | High  | <ul style="list-style-type: none"> <li>As per Item #1</li> <li>Existing Control – 6hours ADWF storage</li> </ul>           |
| <b>SPS 3 – Wilson St SPS</b>             |             |                                    |                              |                     |  |                      |   |   |  |
| 5  | Sewage      | Overflow – dry weather             | ✓                            | ✓                   | Possible   | • Power/pump failure | Major   | High  | <ul style="list-style-type: none"> <li>As per Item #1</li> <li>Existing Control – 6hours ADWF storage</li> </ul>           |
| <b>SPS 4 – Garden Ave SPS</b>            |             |                                    |                              |                     |  |                      |   |   |  |
| 7  | Sewage      | Overflow                           | ✓                            | ✓                   | Possible   | • Power/pump failure | Major   | High  | <ul style="list-style-type: none"> <li>As per Item #1</li> <li>Existing Control – 6hours ADWF storage</li> </ul>           |
| <b>SPS 5 – Gunningbah SPS</b>            |             |                                    |                              |                     |  |                      |   |   |  |
| 9  | Sewage      | Overflow                           | ✓                            | ✓                   | Possible   | • Power/pump failure | Moderate  | Moderate  | <ul style="list-style-type: none"> <li>As per Item #1</li> <li>Existing Control – 24hours at hours ADWF storage</li> </ul> |
| <b>SPS 6 – Council Depot SPS</b>         |             |                                    |                              |                     |  |                      |   |   |  |

|    |               |                 |   |   |          |  |          |          |   |
|----|---------------|-----------------|---|---|----------|--|----------|----------|---|
| 11 | <b>Sewage</b> | <b>Overflow</b> | ✓ | ✓ | Possible | <ul style="list-style-type: none"> <li>Power/pump failure</li> </ul> | Moderate | Moderate | <ul style="list-style-type: none"> <li>As per Item #1</li> <li>Existing Control –24hours at ADWF storage</li> </ul> |
|----|---------------|-----------------|---|---|----------|--|----------|----------|---|

Item #1 - Common pre-emptive actions (i.e. existing controls, SWMS, Operator Training) in place at ALL Pump Stations:

- Existing Controls – Alarms for no flow, high flow and no flow
- Existing Controls – Standby pump
- Work Method - Biannual inspection & testing by pump contractor
- Work Method – Weekly inspection and routine maintenance by Operators
- Work Method - Overflow Notification Protocol

## 3.2 Major Findings

From **Table 3.4** and **Table 3.5**

- the health and environmental risks posed by identified hazardous events relating to the STP ranged from LOW to HIGH.
- the health and environmental risks posed by identified hazardous events relating to the SPSs ranged from LOW to HIGH

Note: A new rising main is to be installed from the manhole hole prior to SPS2 to the STP. The main will minimise SPS2 risks associated with power failures and infiltration.

All SPSs containing chemical dosing systems were assessed as presenting a LOW environmental/health risk, should a chemical overflow occur, nature of chemical being non-hazardous and the small quantity of chemical used and thus stored onsite.

## 4 Preventative Actions to be Undertaken

---

### 4.1 General

The preventative actions or measures to manage and minimise the risk to human health and the environment involve a multiple barrier approach. The multiple barriers, in order of preference, are as follows;

- Elimination;
- Substitution;
- Isolation;
- Engineering means;
- Administrative;
- Personal Protection Equipment (PPE).

These are readily broken down to the following classification of management strategies:

- Appropriate design of the facilities;
- Appropriate operation and monitoring; and
- Appropriate education and training.

The identified current preventative actions are shown in this section.

### 4.2 Collection & Transport System

A summary of details for WSC six (6) Sewage Pump Stations (SPS) currently in operation, including some catchment pipeline details, is provided in **Table 4.1**.

The details contained in **Table 4.1** were obtained during the site visit, from STP Operators.

Collection system overflows can principally occur from five main causes. These are:

- Power/mechanical failure at pumping stations;
- Reticulation system blockage/leakage;
- Rising main breakage (leaks or major failure);
- Breakdown of pump units; and
- Excessive inflows.

#### 4.2.1 Reliable Power Supply

Council has reported that Warren has a reliable power supply. Generally power outages in the Warren area are not common. Power failures of extended duration are possible but are usually planned outages.

In anticipation for the year 2000 i.e. "Y2K", Council installed generator connection points at all the SPSs.

#### 4.2.2 Provision of Emergency Storage

A sewerage system must have sufficient capacity to store sewage, which continues to flow from the catchment during extended mechanical breakdowns or electrical failures.

It is generally accepted, for towns in regional NSW, that at least 4 hours is the average time required for an operator/technician to respond to pumping or power failure.



According to Council's operators with their practical experience with the sewage pump stations, detention times are 6 hours for the three larger pump stations: Thornton/Burton SPS, Gillendoon SPS and Wilson St SPS and 24 hours or more for Gunningbah SPS and Council Depot SPS

#### **4.2.3 Response Times to Abnormal Operating Conditions**

Response times are expected to be short as the operators live within/within a close distance of the town.

It is recommended that essential spare parts are stored at a central location such as Council Depot or STP

#### **4.2.4 Pumping and storage capacity**

Pumping and storage capacity for each SPS is provided in **Table 4.1**.

#### **4.2.5 Stand-by Pumps**

All pump stations except for SPS 4 (Garden Ave SPS) and SPS6 (Council Depot) are equipped with automatic duty and standby pumps (100% standby). An uninstalled standby pump is available for SPS4.

Note 1: SPS4 and SPS6 are minor SPSs within the scheme.

#### **4.2.6 Telemetry System**

The pumping station is connected via a telemetry system. The telemetry system has recently earmarked for upgrade. The system will be upgraded as components of the system require upgrading and the budgetary constraints allows. The system as is has the capability of informing the "duty attendant," by phone, of system faults after which the attendant will ring the system back to acknowledge the problem and respond to and rectify the problem.

If the first duty attendant does not respond, the system will notify the next duty attendant. Should the second duty attendant not respond, the call will be forwarded on to the Town Services Manager (TSM).

#### **4.2.7 Risk Reduction**

The likelihood of sewage/chemical overflows/spillages from SPSs, and environmental and health risks associated with sewage/chemical overflows/spillages, can be minimised by provision of the following "preventative measures":

1. Reliable power supply;
2. Portable generators and generator connection point available;
3. Greater than 4 hours detention in upstream network;
4. Adequate pumping capacity;
5. Standby pumps;
6. Telemetry system, to provide early warning of potential events: high level, pump failure, power failure;
7. Site above 1 in 100 year flood level;
8. SPS's not located within close proximity of residences\*;
9. SPS's not located within close proximity of drainage channels and waterways\*;
10. Overflow/bypass options to another SPS or treatment/containment of overflow;

*\*The risk of an overflow from an SPS within close proximity of residences is considerably reduced by having an overflow/bypass option.*

The likelihood of overflows from SPSs, and the environmental and health risks associated with overflows can be minimised by provision of the following “post overflow measures”:

- Effective emergency plans/operational procedures for attending to failure and breakdown within the system effectively; and
- Short service response times i.e. response time less than detention time provided within the pumping station and upstream reticulation network, should power failure, pump failure or some other abnormal operating event occur.

A summary of “preventative” and “post incident” measures #1 to #10 above, for each SPS is provided in **Table 4.1**.

Recommended risk minimising actions, to reduce the environmental and/or health risk presented by sewage overflows, generally comprised of applying one more of the following for each SPS:

- Elimination Actions:
  - Reducing sewer infiltration; 2008 Sewer Investigations Study (**Ref 2**) to be referenced for problem areas and recommendations;
- Isolation/Engineering Means Actions:
  - Installation of overflow/bypass options at each SPS;
- Administration Actions:
  - Testing of any installed overflow/bypass options to ensure system will operate in an emergency scenario;
  - Adherence to Notification Protocol (contained within “Sewer System Overflow: Event Definitions & Notification Protocols” document);

## SPS Details



Photo 4.1 –SPS1 Switchboard



Photo 4.2 – SPS1 Wet Well



Photo 4.4 – SPS2



**Photo 4.5 – SPS2**



**Photo 4.6 – SPS2 Valve Pit**



**Photo 4.7 – SPS2 Switchboard**



**Photo 4.8 – SPS2 Actizyme Dosing Controls**



**Photo 4.9– SPS3 Entrance Gate to SPS (in between two residential properties)**



**Photo 4.10 – SPS3 fenced Wet Well and Mechanical Crane (switchboard not fenced)**



**Photo 4.11– SPS4 Wet Well and Switchboard**



**Photo 4.12 – SPS5**



**Photo 4.13– SPS6**

**Table 4.1 : Warren SPS – Preventative & Post Incident Summary**

| SPS      | SPS1 – Thornton St/Burton St                         | SPS2 - Gillendoon   | SPS3 – Wilson St  | SPS4 – Garden St  | SPS5 - Gunningbah   | SPS6 – Council Depot  |   |
|----------|--|---|---|---|---|---|---|
| <b>A</b> |  |   |   |   |   |   |   |
| 1        | Reliable power supply ?                              | Yes   | Yes   | Yes   | Yes   | Yes   |   |
| 2        | Generator and generator connection point available ? | Yes   | Yes   | Yes   | Yes   | Yes   |   |
| 3        | >4hrs detention ?                                    | Yes – approx 6hours   | Yes - approx 6hours   | Yes - approx 6hours   | Yes - approx 24hours  | Yes – approx > 24hours  | Unsure – only serves two properties and Council Depot   |
| 4        | Adequate pumping capacity ?                          | Yes – approx 22L/s  | Yes – approx 26L/s  | Yes – approx 10L/s  | Yes – approx 10 L/s   | Yes – approx 10 L/s   | Yes – approx 10 L/s   |
| 5        | Standby pump installed ?                             | Yes – duty & standby installed  | Yes – duty & standby installed  | Yes – duty & standby installed  | No  | Yes – duty & standby installed  | Yes – duty & standby installed  |
| 6        | Overflow/bypass option ?                             | No  | No  | No  | No  | No  | No  |
| 7        | Telemetry & alarms installed ?                       | Yes - no flow, high flow & low flow level alarms  | Yes - no flow, high flow & low flow level alarms  | Yes - no flow, high flow & low flow level alarms  | Yes - no flow, high flow & low flow level alarms  | Yes - no flow, high flow & low flow level alarms  | Yes - no flow, high flow & low flow level alarms  |
| 8        | Above 1 in100yr flood level ?                        | No – Within Town Flood Levee  | No – Within Town Flood Levee  | No – Within Town Flood Levee  | No – Within Town Flood Levee  | No – Within Town Flood Levee  | No – Within Town Flood Levee  |
| 9        | SPS Within 50m of Residences ?                       | Yes   | Yes   | Yes   | Yes   | No  | No  |
| 10       | Within 200m of Waterway ?                            | No  | Yes – Tiger Bay Lagoon (wetland)  | No  | Yes – Macquarie River   | Yes – Gunningbah Ck   | Yes – Macquarie River   |
| 11       | No. of contributing sewer catchments                 | 4   | 6   | 1   | 1   | 1   | 1   |
| 12       | Fenced   | Yes   | Yes   | Yes   | Yes   | Yes   | No - Within council compound which is fenced  |
|          | Signage provided:                                    | Yes   | Yes   | No  | No  | No  | No  |
|          | Confined Space Warning                               | No  | No  | No  | No  | No  | No  |
|          | Warning  | Yes   | Yes   | No  | No  | No  | No  |
| <b>B</b> | <b>Assessed LIKELIHOOD of overflow</b>               | Possible  | Possible  | Possible  | Possible  | Possible  | Possible  |
| <b>C</b> | <b>Assessed IMPACT of overflow</b>                   | Insignificant   | Major   | Major   | Major   | Moderate  | Moderate  |
| <b>D</b> | <b>Overall RISK</b>                                  | LOW   | HIGH  | HIGH  | HIGH  | MODERATE  | MODERATE  |
|          | <i>Measures to reduce risk</i>                       | <i>Install overflow/bypass OR Establish protocol for dealing with situation at SPS1</i><br><i>Follow Overflow/Notification Protocol</i> | <i>Install overflow/bypass OR Establish protocol for dealing with situation at SPS2</i><br><i>Follow Overflow/Notification Protocol</i> | <i>Install overflow/bypass OR Establish protocol for dealing with situation at SPS3</i><br><i>Follow Overflow/Notification Protocol</i> | <i>Install overflow/bypass OR Establish protocol for dealing with situation at SPS4</i><br><i>Follow Overflow/Notification Protocol</i> | <i>Install overflow/bypass OR Establish protocol for dealing with situation at SPS5</i><br><i>Follow Overflow/Notification Protocol</i> | <i>Install overflow/bypass OR Establish protocol for dealing with situation at SPS6</i><br><i>Follow Overflow/Notification Protocol</i> |

## 4.3 Sewage Treatment Plant (STP)

The ability of an STP to prevent and/or respond to pollution events is based on:

- Capacity (hydraulic and biological) to treat sewage to licence standards thereby preventing:
  - Overflows from individual process units/STP;
  - Untreated/partially treated sewage being discharged;
- Overflow/Bypass options installed to prevent loss of treatment process or isolation of problem area;
- Ability to contain chemical spills;
- Monitoring and control systems employed i.e. Telemetry and/or SCADA system preventing overflows/reduced impact of overflows as a result of:
  - Electrical and/or mechanical failure;
  - Vandals/security breaches;
  - Wet weather events;
- Required documentation in place i.e. Operational and Emergency protocols; and
- Operator's having appropriate and sufficient training;

### 4.3.1 Sewage Treatment Capacity

NSW Department of Commerce, now NSW Department of Finance and Services, to which NSW Public Works is a division, completed a Concept Report (**Ref 1**) in 2005 for a STP augmentation in Warren. According to the report:

- Warren had a population of 2,200 in 2004;
- the STP was evaluated as having a treatment capacity of 2,500 EP,
- the sewerage schemes projected loading was estimated as 2,900 EP i.e. Year 2029;
- the following treatment units were assessed as being overloaded (i.e. in 2005):
  - Imhoff tank;
  - Primary Sedimentation Tank (PST); and
  - Digesters.

Under projected future loads, i.e. year 2029, majority of the STP's process units will be hydraulically or biologically overloaded consequently leading to partial/no treatment provided in the future.

According to STP operator feedback the STP does not currently suffer from overflows during dry or wet weather flows. The last major flood event was in 2010 during which the evaporation ponds were submerged under flood waters, however the STP was able to operate due to its location above the 1 in 100 year flood level.

An audit of the STP was completed in February 2012 by HWA (**Ref 2**) and the major findings comprised:

- Inadequate access for O&M purposes for majority of the process units;
- Unsatisfactory effluent diversion channel i.e. the channel has the potential to result in overflows during wet weather however this has been rectified since;
- Lack of operational documentation i.e. SWMS, SOPs;

Note: As a result of audit documentation is in the process of being completed.

- Lack of raw and effluent quality data to assist with performance monitoring of scheme; and

- Inadequate inlet works resulting in screenings and grit breakthrough with potential to cause blockages of downstream units such as the inlet works

### STP Details



**Figure 4.1 – STP Inlet Pit**



**Figure 4.2 – Imhoff Tank**



**Figure 4.3 – PST**



**Figure 4.4 – Raised PST wall height**





**Figure 4.5 –TF No.1**



**Figure 4.6 – TF No. 2 with amenities building (raised demountable) in background, western side**



**Figure 4.7 – Digester No #1**



**Figure 4.8 – Digester No # 2**



**Figure 4.9 – Digester Pump/Mixing Well**



**Figure 4.10 – Evaporation Basins (eastern side of plant)**



**Figure 4.11 – Evaporation Basins (eastern side of STP)**



**Figure 4.12 – Evaporation Basins (western side of STP)**

### 4.3.2 STP Chemical Spills

There are no chemicals stored onsite.

### 4.3.3 Monitoring & Control Systems

The STP does not have SCADA and remote monitoring capabilities. The mechanical equipment installed onsite comprises:

- Sludge pumping/mixing system – failure of digester mixing system, or failure to recirculate digester contents will affect the extent of sludge stabilisation and the amount of sludge that can be transferred to the digesters. Lack of mixing will result in:
  - a reduction in “digestion” volume,
  - a reduction in grit settlement,
  - formation of a surface scum layer, and
  - reduced contact between raw sludge and active biomass in the primary digester

Note: Sludge mixing is an intermittent process and breakdown of sludge mixing/pumping equipment for short durations is not critical to the sewage treatment process.

- Supernatant return pumping station – failure of this equipment is not critical to sewage treatment process and the PS may be taken offline for repair.

### 4.3.4 Documentation

Documentation required onsite to assist with overflows and spillages comprise:

- PIRMP (this document);
- Sewer MSDSs (representative) see [Appendix A](#));
- Sewer System Overflow: Event Definitions & Notification Protocols (see [Appendix B](#)); and
- Record of Sewage Discharge to the Environment (see [Appendix C](#));

## 4.4 Summary

Since 1994 WSC has been investing in the following administration tasks to reduce environmental and health risks posed by pollution events from Warren sewerage scheme:

### Administrative

- Establishment of planned maintenance and inspection and testing of SPSs and other sewerage infrastructure, including registers/logs of maintenance;
- Development of emergency response protocols;
- Engagement of consultants/further investigation of:
  - capacity constraints (e.g. detention storage);
  - sewerage scheme problem areas (e.g. Sewer System Infiltration Study in 2008);
  - the condition of assets (i.e. CCTV Study of Warren Sewer Mains in 2008); and
  - options for a new STP.

## 5 Inventory of Pollutants and MSDS

---

### 5.1 Inventory of Pollutants

The chemicals and pollutants used or generated as a result of operating the Warren sewerage scheme comprise:

- Raw Sewage,
- Primary Effluent (effluent from Imhoff & PSTs),
- Secondary Effluent (effluent from Trickling Filters),
- Primary & Secondary Sludge, and
- Biosolids,

Material Safety Data Sheets (MSDS) representative of each of the chemicals used in the sewage treatment process are included in [Appendix A](#) and further details are provided in **Table 5.1**.

### 5.2 Inventory of Chemicals/Materials

#### At Sewage Pump Stations

- Nil.

#### At Sewage Treatment Plant

- Nil.

## 5.3 Inventory of Other Pollutants – Sewage and Effluent

The other potential pollutants are:

- Sewage (within the collection system and at head of the STP) –. All raw sewage is processed by the Trickling Filter process.
- Effluent produced at the STP – 100% of the effluent is evaporated.
- Biosolids produced at the STP: - primary sludge from the Imhoff and Primary Sedimentation Tanks and a small amount of secondary sludge from the Humus Tanks is transferred to the digesters for stabilisation i.e. pathogen reductions, elimination of odours and inhibition of further putrefaction. Stabilised sludge is dried, volume recorded and disposed at Council's landfill site.

Note: The majority of secondary sludge from the Humus Tanks is returned to the head of the plant for treatment.

- Supernatant – Supernatant from the drying beds is returned by the supernatant pumping station to the inlet works.
- Screenings (inlet works) – Screenings are disposed at Council's landfill site.

**Table 5.2 : Pollutant List – Sewage And Effluent**

| Parameter                                     | Typical Raw Sewage   | Required Effluent Quality                                  |
|---|--|--|
| Biochemical oxygen demand (BOD <sub>5</sub> ) | 110 to 350 mg/L <sup>1</sup>                               | <45 mg/L(90%ile) <sup>3</sup><br><55 mg/L <sup>3</sup>     |
| Suspended solids (SS)                         | 250 to 300 mg/L <sup>1</sup>                               | <65 mg/L <sup>3</sup>                                      |
| Total nitrogen (TN)                           | 40 to 70 mg/L <sup>1</sup>                                 | <30 mg/L(90%ile) <sup>3</sup><br><40 mg/L <sup>3</sup>     |
| Ammonia                                       | 12 to 45 mg/L <sup>1</sup>                                 | <1 mg/L <sup>3</sup>                                       |
| Total phosphorus (TP)                         | 4 to 12 mg/L <sup>1</sup>                                  | <10 mg/L <sup>3</sup>                                      |
| Oil and grease (O&G)*                         | 50 to 100 mg/L <sup>1</sup>                                | <10 mg/L <sup>3</sup>                                      |
| Faecal coliforms, FC                          | 10 <sup>7</sup> to 10 <sup>9</sup> cfu/100 mL <sup>2</sup> | 10 <sup>5</sup> to 10 <sup>6</sup> cfu/100 mL <sup>2</sup> |
| pH  | 6.5 - 8.5 <sup>1</sup>                                     | 6.5 - 8.5 <sup>3</sup>                                     |

1. Taken from Table 3-15 (**Ref 3**).
2. Taken from Table 12-13 (**Ref 3**).
3. EPA POEO licence requirements for Warren STP (**Ref 1**)
4. Former EPA Sensitive Waters river discharge requirements

## 6 Safety Equipment

Safety equipment or other devices that are onsite will minimise the risks to human health or the environment and contain or control a pollution incident. These will include any personal protective equipment (PPE), material safety data sheets (MSDS), monitoring devices and spill containment equipment.

### 6.1 List of PPE Equipment Onsite

The following PPE safety equipment is available and currently stored in the Operator's vehicle. Arrangements are being made to store the list onsite in the office area:

**Table 6.1: List of PPE**

| Personal Protective Equipment             | Location | Location        |
|---|----------|-----------------|
| Hearing protection                        | STP      | Operators Truck |
| Protective gloves                         | STP      | Operators Truck |
| Dust mask                                 | STP      | Operators Truck |
| Safety glasses                            | STP      | Operators Truck |
| Self contained breathing apparatus (SCBA) | STP      | Depot           |
| Safety apron                              | STP      | Operators Truck |

### 6.2 List of Monitoring Devices

The sewerage system is monitored via a SCADA and telemetry systems. Alarms are automatically sent to operators via mobile phone message.

The following monitoring devices are present onsite:

**Table 6.2: List of Monitoring Devices**

| System | Monitoring Devices      | Devices Alert          |
|--------|-------------------------|------------------------|
| SPS    | High Level Alarm        | "on-call" STP Operator |
|        | Power Failure           | As above               |
|        | Pump Mechanical Failure | As above               |

## 7 Roles, Responsibilities and Contact Details

### 7.1 Stakeholder Responsibilities and Engagement

Council has committed to operating its STP and collection system in a responsible manner. Effective stakeholder engagement is necessary to fulfil this commitment. **Table 7.1** presents the stakeholders involved in the operation of the STP and collection system, sets out their roles, the communication expected to occur to achieve safe operation of the plant and collection system. Further information on the operation of the system and communication protocols is addressed later in this plan.

**Table 7.1: Stakeholder Responsibilities and Engagement**

| Stakeholder  | Responsibility   |
|--|--|
| <b>Warren Shire Council (WSC)</b>                                    | <ul style="list-style-type: none"> <li>• <b>Provision of safe and reliable water and sewerage services for Warren Local Government area</b></li> </ul>   |
| General Manager (GM)   | <ul style="list-style-type: none"> <li>• Reports to Council on engineering matters</li> <li>• In conjunction with Divisional Manger Engineering Services, assesses risk to public safety should an incident posing health risk occur.</li> </ul> |
| Divisional Manager Engineering Services (DMES)                       | <ul style="list-style-type: none"> <li>• Reports to General Manager</li> <li>• Responsible for strategic planning and asset renewal</li> </ul>   |
| Town Services Manager (TSM)  | <ul style="list-style-type: none"> <li>• Reports to Divisional Manager Engineering Services</li> <li>• Responsible for management of water and sewerage operations and maintenance staff</li> </ul>  |
| STP Operator   | <ul style="list-style-type: none"> <li>• Report to Town Services Manager (TSM)</li> <li>• Performs routine tasks</li> <li>• Responsible for the operation and monitoring of the STP, SPS, water and collection system components.</li> </ul>     |
| <b>NSW Health</b>  | <ul style="list-style-type: none"> <li>• <b>Public health risk assessment and issues</b></li> </ul>  |
| <b>NSW EPA</b>   | <ul style="list-style-type: none"> <li>• <b>Issuer of EPL</b></li> <li>• <b>Policing of licence compliance and releases to water, air and land</b></li> </ul>  |
| <b>NOW</b>   | <ul style="list-style-type: none"> <li>• <b>Assist Council with process treatment issues</b></li> <li>• <b>Monitor compliance with licence</b></li> <li>• <b>Plant inspections</b></li> </ul>  |
| <b>NSW Workcover</b>   | <ul style="list-style-type: none"> <li>• <b>Work Health and Safety (WHS) issues</b></li> </ul>   |
| <b>Community of Warren</b>   | <ul style="list-style-type: none"> <li>• Advice where required during incidents such as odourous releases, pipeline and SPS overflows,</li> </ul>  |
| <b>NSW Police/Fire &amp; Rescue NSW (inc HAZMAT)/ Ambulance/SES)</b> | <ul style="list-style-type: none"> <li>• Response to incidents/emergencies (i.e. spills, injuries and accidents).</li> </ul>   |

### 7.2 List of Contact Details

The contact details of the stakeholders are listed below in **Table 7.2**.

**Table 7.2: Stakeholder Contact Details**

| Organisation  | Position / Contact Person  | Contact Details   |
|---|--|---|
| Warren Shire Council (WSC)  | 24 Hour emergency number (after hours call with divert to on-call contact) | 02 6847-6600  |
|   | General  | 02 6847-6600  |
|   | Divisional Manager Engineering Services<br>Rolly Lawford                   | 02 6847-6600<br><a href="mailto:gal@warren.nsw.gov.au">gal@warren.nsw.gov.au</a>  |
|   | Town Services Manager<br>Raymond Burns                                     | 02 6847-6600<br><a href="mailto:rjb@warren.nsw.gov.au">rjb@warren.nsw.gov.au</a>  |
| NSW EPA   | EPA Pollution Line   | 131-555   |
|   |  |   |
| NSW Health  | Greater Western Area Health Service<br>Mark Neave                          | 0408 692 128 (business hours)<br>02 6885 6110 (after hours)<br><a href="mailto:Mark.Nave@health.nsw.gov.au">Mark.Nave@health.nsw.gov.au</a> |
| Water Group Department of Planning, Industry and Environment (DPIE) | Bruce Lamont   | 0458 268 453 (all hours)<br><a href="mailto:bruce.lamont@dpie.nsw.gov.au">bruce.lamont@dpie.nsw.gov.au</a>                                  |
| Emergency Services  | Police, Fire & Rescue NSW (HAZMAT),<br>Ambulance                           | 000   |

### 7.3 Council Procedures for Contacting Staff to Respond to a Possible Incident

All STP telemetry alarms will be transmitted by mobile phone message, to the “On Call” STP Operator.

The STP Operator will attend to an alarm and report to the Town Services Manager.

Any blockages reported within the sewage collection system are attended to by the Operators and cleared.

All works are undertaken to comply with the relevant:

- Sewer System Overflow (see [Appendix B](#))
- Record of Sewage Discharge to the Environment (see [Appendix C](#))



## 8 Communicating with Neighbours and the Community

### 8.1 Incident Classification

To determine the appropriate communication strategy for an incident, the incident or “*Impact*” needs to be categorised. Once categorised the prescribed communication strategy can be deployed.

Pollution incidents are currently managed via “Sewer System Overflows” notification document ([Appendix B](#)). The procedures documented in the PIRMP are based on protocols detailed notification document and triggers are consistent with “*Impacts*” detailed in **Table 3.2**.

The following details the three classes of incidents.

**MINOR Incident:** managed by routine procedures/work practices.

- Area affected – small and localised i.e. less than three properties affected
- Clean up – Easy and without additional assistance
- Waterway/Environment – Not Sensitive
- Risk of material harm to humans and/or environment – No

**MODERATE Incident:** further investigation may be required and assessment of management options over the short term. Operations and maintenance adjusted to reduce the consequences, likelihood and exposure.

- Area affected – more than three (3) properties affected
- Clean up – Moderate and without additional assistance
- Waterway/Environment – Not Sensitive
- Risk of material harm to humans and/or environment – Yes

**MAJOR Incident:** further detailed investigation and assessment of management options is required; immediate review and adjustment of operations and maintenance to reduce the consequences, likelihood and exposure; clean-up and notification procedures become high priority.

- Area affected – a large number of properties
- Clean up – Substantial with additional assistance
- Waterway/Environment – Sensitive
- Risk of material harm to humans and/or environment – Yes

### 8.2 Examples of Incident Classifications

The following lists examples of MINOR, MODERATE and MAJOR incidents:

**MINOR Incident** – incidents with a low risk to health and the environment such as:

- Reticulation system blockages.
- Short term power failure or electrical failure.
- Minor spills to the ground.
- Overflows/Spills at various STP process units.

- Treatment bypass at the STP with discharge to the effluent ponds.

**MODERATE Incident** - an incident with a medium risk to health and the environment such as;

- Moderate flows/volume spills to the ground in sensitive/high human traffic areas
  - sensitive environment/waterway.
  - in a public park or sporting field where significant usage for recreational activities is being undertaken.
  - inside the grounds of or in close proximity to a school or a child care centre.
- Treatment bypass at the STP with subsequent discharge of untreated/partially treated wastewater to receiving waters.

**MAJOR Incident** - an incident with a high risk to health and the environment such as;

- Major flows/volume spills to the ground in sensitive/high human traffic areas
  - sensitive environment/waterway.
  - in a public park or sporting field where significant usage for recreational activities is being undertaken.
  - inside the grounds of or in close proximity to a school or a child care centre.
- Extended power failure.
- Extreme wet weather event.
- Earthquake or structural collapse causing significant damage.

### 8.3 Notification process

The following incident notification process will be undertaken for the identified incident levels;

#### **MINOR Incident**

- The STP Operator will report MINOR incidents to the Town Services Manager ASAP.
- The Town Services Manager to report to the Divisional Manager of Engineering Services.

#### **MODERATE Incident – Notifiable**

- The STP Operator will report MODERATE incidents to the Town Services Manager **IMMEDIATELY**.
- The Town Services Manager will report to the Divisional Manager Engineering Services and the General Manager **IMMEDIATELY**.
  - If overflows occur - The Town Services Manager will report SIGNIFICANT OR HIGH RISK incidences **IMMEDIATELY** to NSW Health and NSW EPA
  - If public affected call NSW Health
- The Town Services Manager will notify affected Community and Media

- The Town Services Manager will also notify Environmental Health Officer (EHO) and water quality sampling and testing program will be undertaken, if required by qualified and independent personnel.

### **MAJOR Incident - Notifiable**

- The STP Operator will report MAJOR incidents to the Town Services Manager **IMMEDIATELY**.
- The Town Services Manager will report to Emergency Services (if not previously contacted) and Divisional Manager Engineering Services and the General Manager **IMMEDIATELY**.
  - If overflows occur – The Divisional Manager Engineering Services or the Town Services manager will report SIGNIFICANT OR HIGH RISK incidences **IMMEDIATELY** to NSW Health and NSW EPA.
  - If public affected - contact NSW Health
- The Divisional Manager Engineering Services will notify WSC General Manager.
- The Divisional Manager Engineering Services will notify affected Community post discussions with WSC General Manager.

This notification process is shown schematically in **Figure 8.1** and forms part of the operator training and awareness.

Incident reporting includes communicating the incident and also documenting the incident.

For Notifiable Incidents i.e. MODERATE and MAJOR incidents, notification will consist of:

- Ringing NSW EPA's Pollution Line of 131-555.
- Notification within of 48 hours of Council being aware of the overflow/bypass incident and provision (by fax or email) of completed "Record of Sewer Overflow" report within a week after the incident to the following bodies:
  - NSW Health;
  - NSW EPA;
  - NSW Office of Water (NOW);
  - Council's Corporate and Community Services Section and
  - Council's Environmental Services Section.

Contact details are provided in the "Sewer Incident Notification Protocol" document in [Appendix B](#)

#### **8.3.1 Information to be collected**

Information to be collected in the event of an overflow or bypass from the reticulation system, at a sewage pumping station or a sewage treatment plant will include but not be limited to:

- The location of the overflow/bypass and a description of the receiving environment;
- Date, estimated start time and duration of event;
- Volume of overflow/bypass;
- Classification of overflow/bypass due to dry (e.g. power and mechanical equipment failure) and/or wet (i.e. due to heavy rainfall) weather;

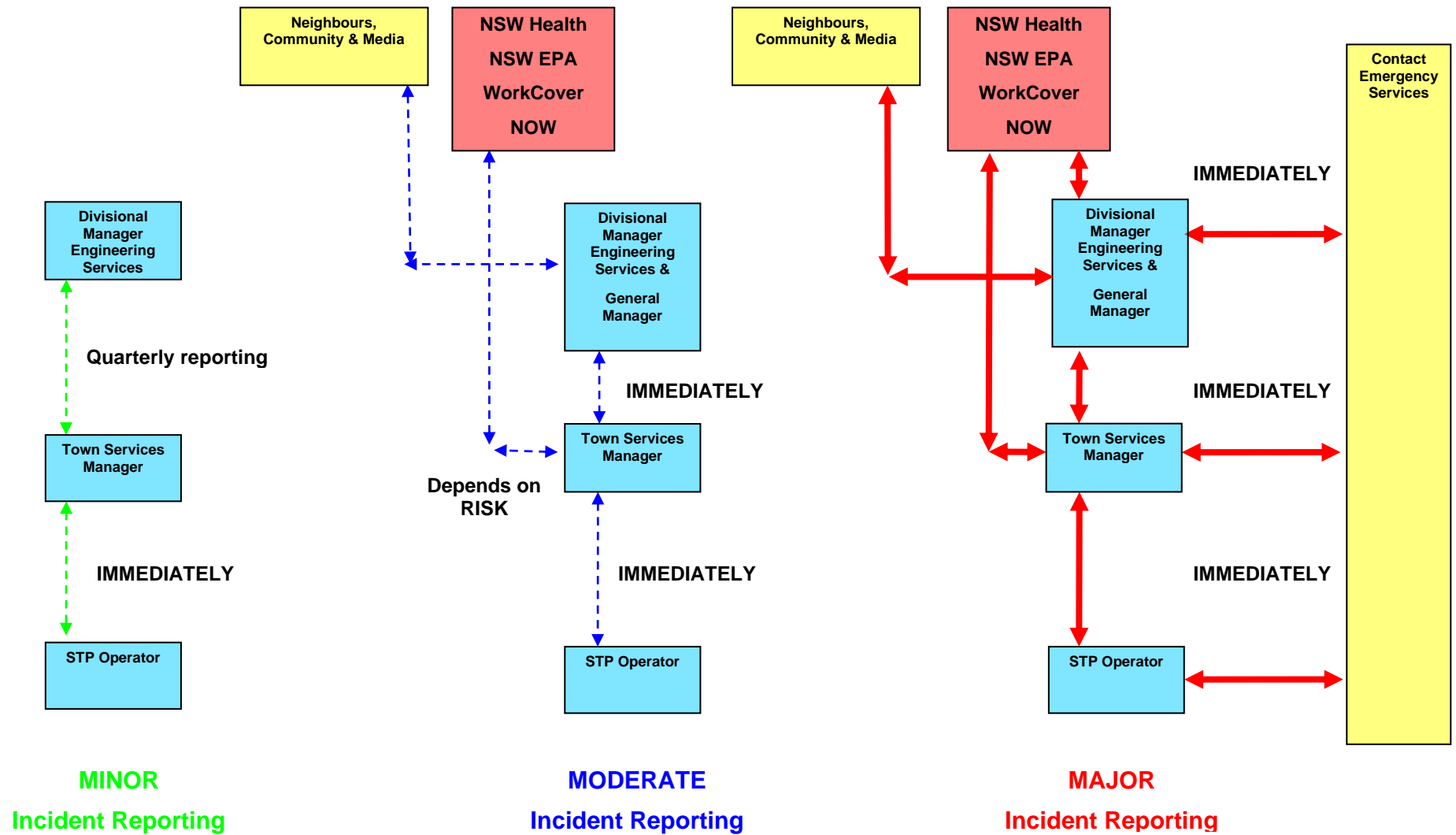
- Probable cause of the overflow/bypass;
- Actions taken to stop overflow/bypass from occurring;
- Clean up activities undertaken; and
- Mitigating actions to prevent overflow/bypass from recurring.

## **8.4 Workplace Incidents**

The following incidents and injuries must be reported to WorkCover:

- Notifiable incidents involving a fatality or a serious injury or illness.
- Notifiable incidents involving a fatality or serious injury or illness to other people at your workplace.
- Notifiable incidents that present a serious risk to health and safety at your workplace (dangerous incidents).
- Other incidents involving an injury or illness where workers compensation is payable.

Figure 8.1 : Incident Communication Protocols



## 8.5 Investigation of Incidents and Emergencies

Following any incident or emergency situation, including any “near misses” an investigation will be undertaken and all involved staff should be debriefed, to discuss performance and address any issues or concerns.

The investigation will consider factors such as:

- What was the initiating cause of the problem ?
- How was the problem first identified or recognised ?
- What were the most critical actions required ?
- What communication problems arose and how were they addressed ?
- What were the immediate and longer term consequences ?
- How well did the protocol function ?

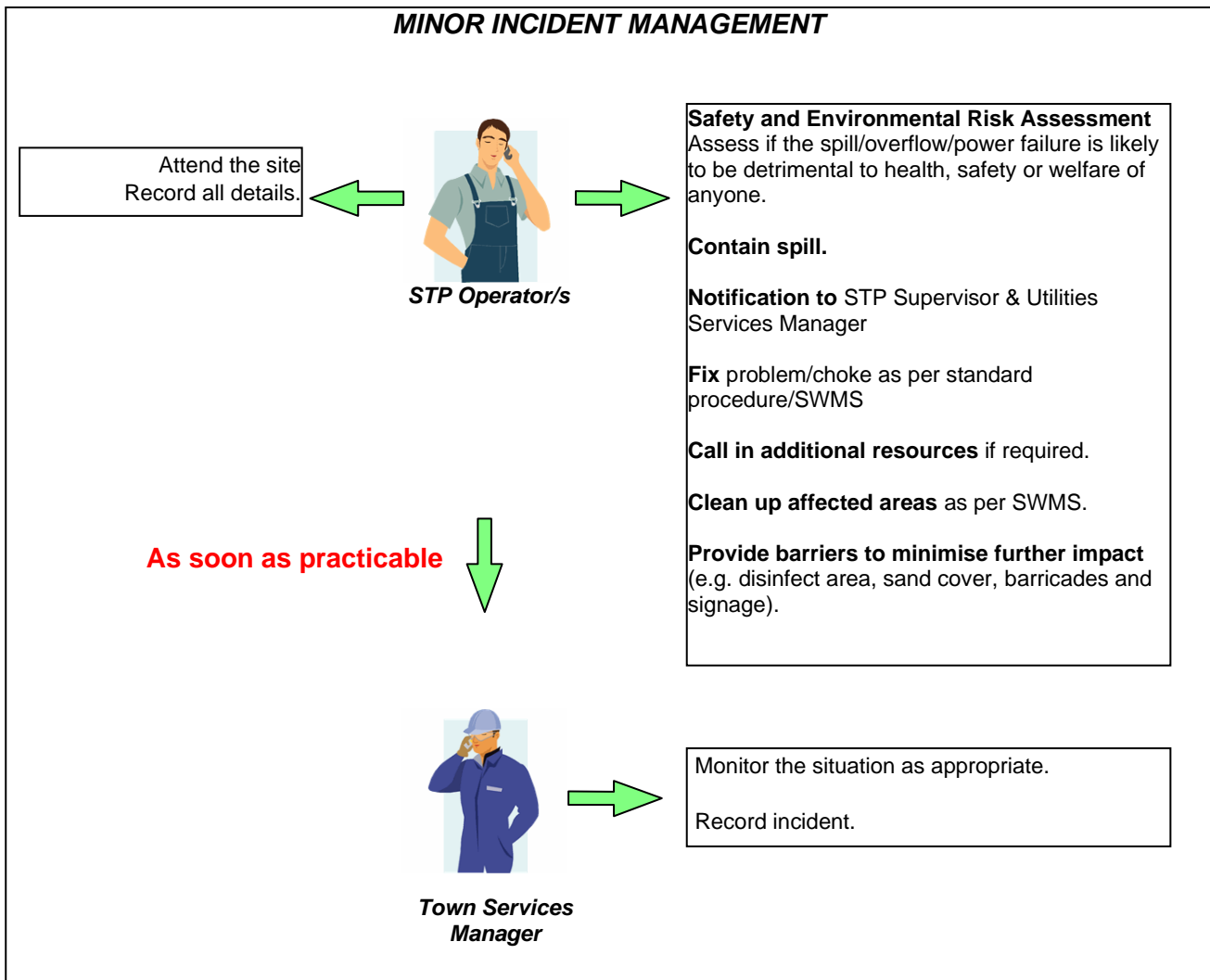
An incident reporting form for Warren is attached as [Appendix C](#).

# 9 Actions to be Undertaken During or Immediately After a Pollution Incident

## 9.1 Minor Incident Action Plan (IAP)

The action plan for the following minor incidents is shown in **Figure 10.1**:

**Figure 10.1 Minor Incident Action Plan**

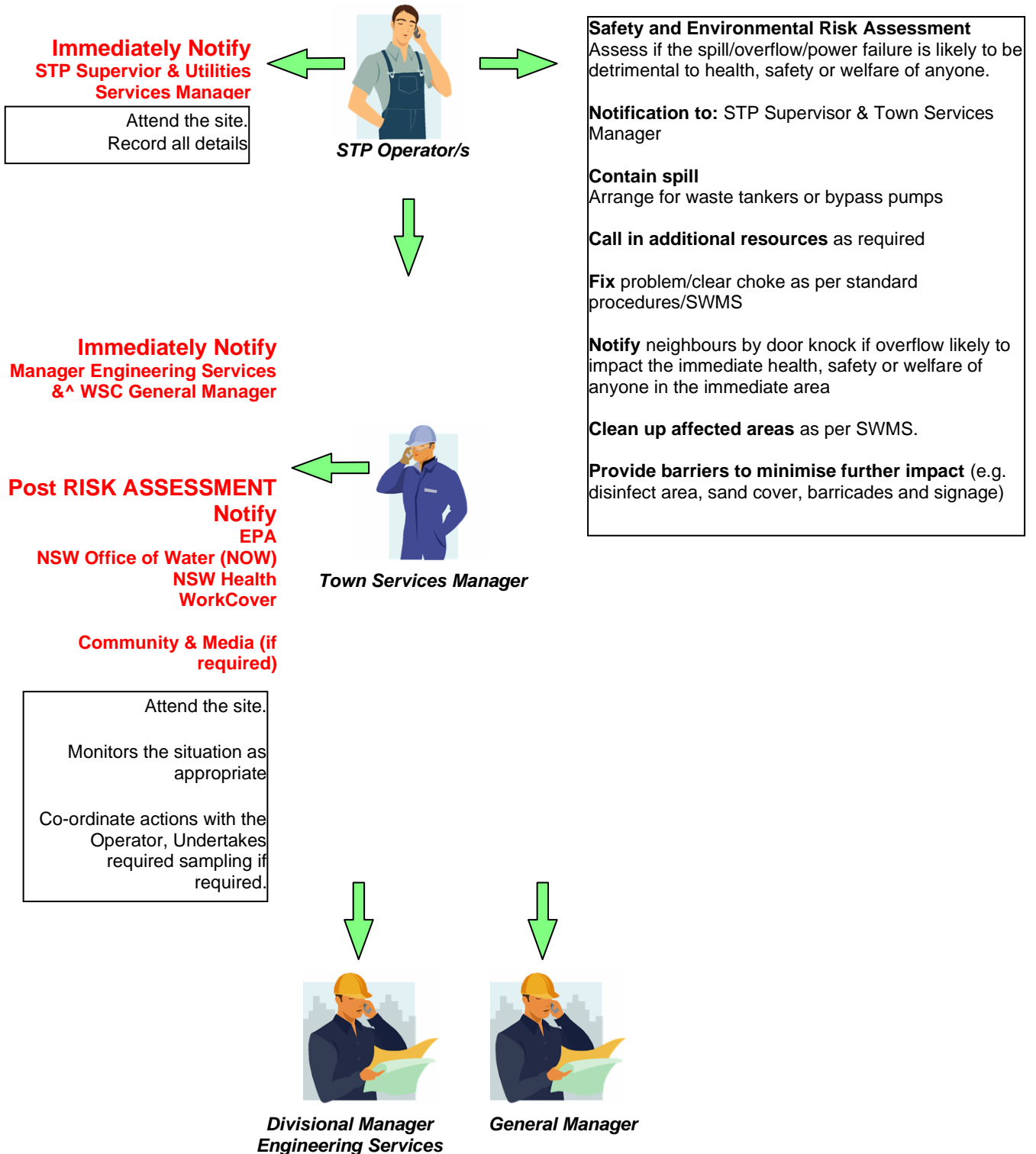


## 9.2 Moderate Incident Action Plan (IAP)

The action plan for the following moderate incidents is shown in **Figure 10.2** :

**Figure 10.2 : Moderate Incident Action Plan**

### **MODERATE INCIDENT MANAGEMENT**



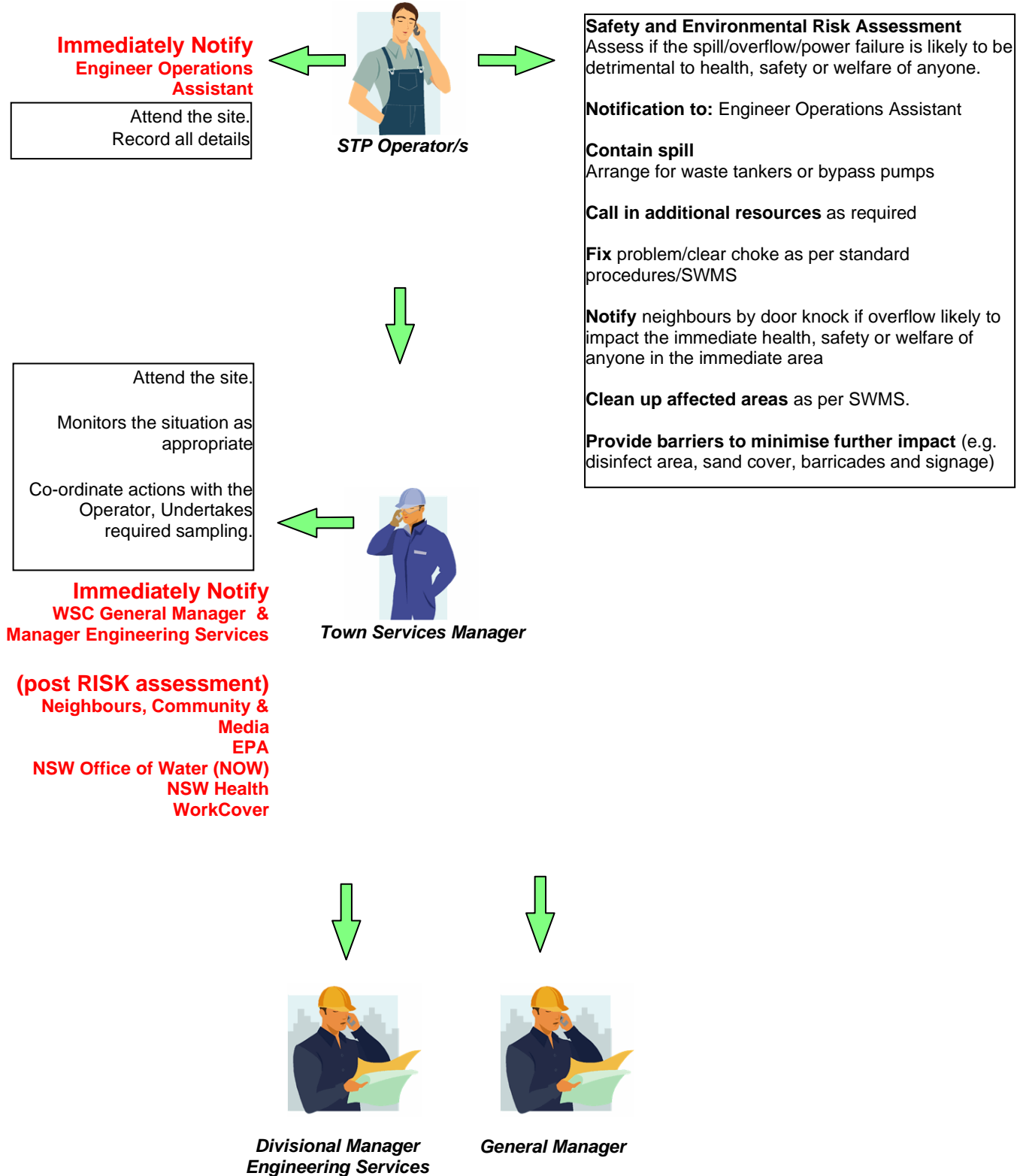


### 9.3 Major Incident Action Plan (IAP)

The action plan for the following major incidents is shown in **Figure 10.3** :

**Figure 10.3 : Major Incident Action Plan (IAP)**

#### MAJOR INCIDENT MANAGEMENT



## 10 Staff Training

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The water and wastewater group within Council comprises:

- Four (4) Water and Wastewater Operations staff:
  - Operator that works at the STP have a Certificate in Trickle Filter Sewerage Treatment Operation. Training records for each operator are held at Councils main offices, not the STP.
  - All operators have Confined Space Entry training.
- External contractors, as required.

Every staff member has a formal training record held by Council's HR department.

# 11 Evaluation, Audit and Review for Continuous Development

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## 11.1 Evaluation and Review

A systematic review of the plan will be undertaken by the Town Services Manager annually or within one month of an incident occurring at the plant. The evaluation will:

- Assess the relevance of the risk assessment against the current state of the plant
- Identify any emerging problems and trends
- Assess the communication between Council, Council operational staff and regulators
- Assist in determining priorities for improving procedures
- Assessment of incidents and responses determined
- Determine when and what is to be audited in the next six months

Evaluation of results described above will be documented and the plan updated.

Evaluation will be reported to the Council stakeholders.

## 11.2 Auditing

Auditing of the pollutant inventory is to be done annually.

An audit may also be triggered by a significant incident or if the process chemical is changed.