**WAIMAKARIRI IRRIGATION LTD**

**WRIGHTS ROAD STORAGE PONDS**

# EMERGENCY EVACUATION PLAN (EEP)

**Contributing partners:**

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## 1.0 PURPOSE

This Emergency Evacuation Plan (EEP) sets the evacuation process after a failure of the proposed Waimakariri Irrigation Ltd Wright's Road storage ponds.

The plan is intended to provide guidance and direction to:

- the agencies that will assist in conducting an evacuation; and
- people living and working in the identified evacuation and warning areas.

The primary aim of the EEP is to reduce the impact of flooding caused by an unlikely failure of the storage ponds through:

- the provision of timely warnings to people in evacuation and warning areas so they can make an informed decision on whether to evacuate in a dam safety emergency, and
- evacuation agencies and the public knowing what to do a dam safety emergency.

Within the EEP there is an emphasis on ensuring that people are given sufficient information and, where feasible, warnings to make informed choices to move out of dangerous areas. Evacuation options are conservative and are designed to be simple to sufficiently provide residents advanced warning of any potential flooding.

This plan has been developed to be easily understandable by all agencies conducting an evacuation and those within the evacuation area. Technical information relating to flood modelling and demography analyses is detailed in:

- *Waimakariri Irrigation Scheme Storage Ponds – Potential Impact Classification (Damwatch Services Ltd Report E1125 – Issue 3, Dated September 2012)*
- *Proposed WIL Storage Pond – Dam Break Flood Hazard Update – dated 15 September 2016 (Damwatch Engineering Ltd, 2016)*

This EEP is supported by the Wrights Road Storage Pond Dam Safety Management Plan (DSMP) and Emergency Action Plan (EAP). Figure 1 shows the extent of area covered by each plan while Figure 2 shows the links between each plan.

### Scope

The plan outlines evacuation arrangements, roles and responsibilities and a range of actions to be undertaken to reduce the impact of flooding.

The plan does not include:

- emergency protocols or arrangements in place to manage the storage pond structures, these are detailed in the EAP prepared to support operational pond processes; or
- detailed recovery planning that addresses reinstatement of property, insurance and the recovery responsibilities of agencies.

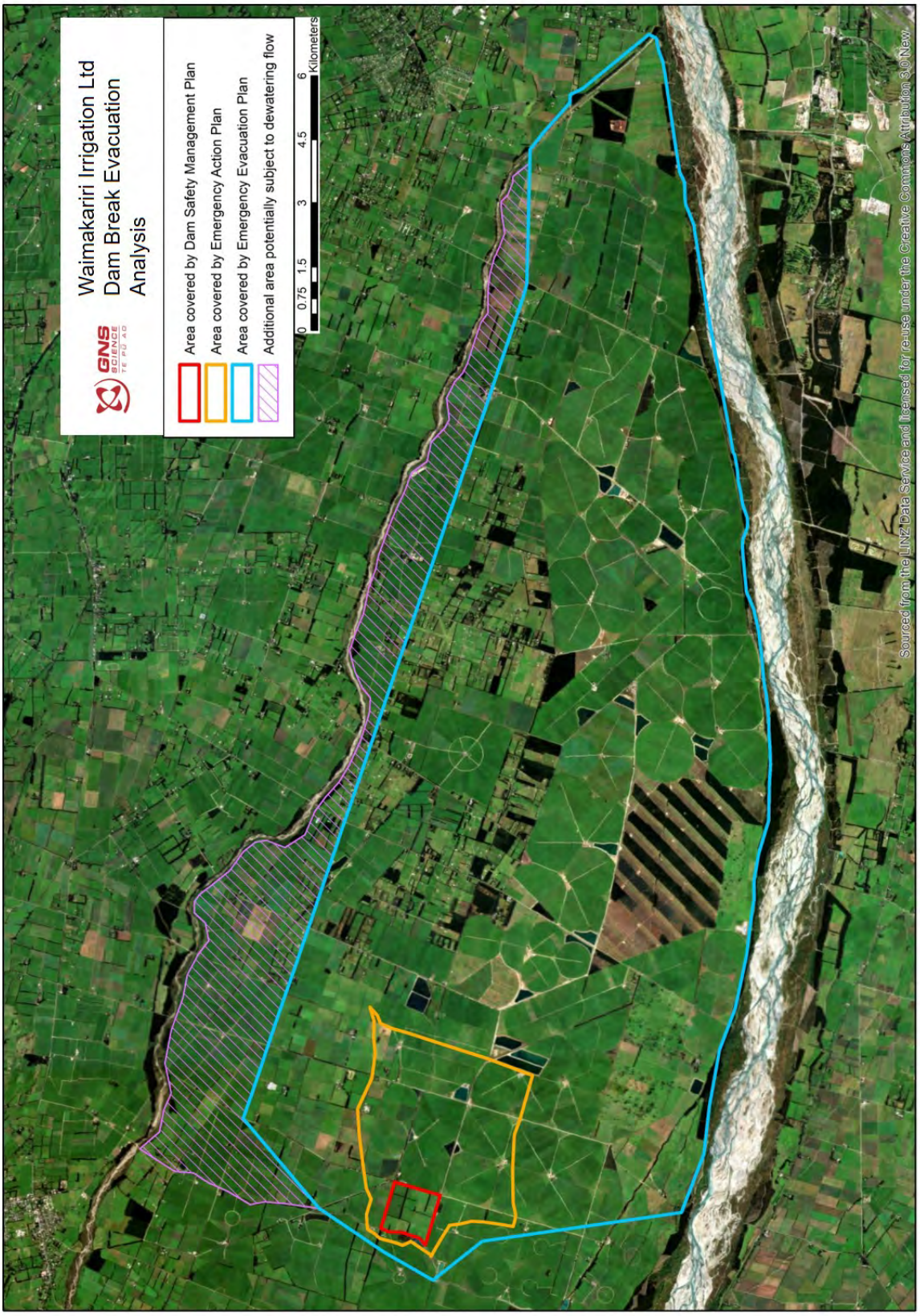



**Figure 1** Map showing the area covered by the Dam Safety Management Plan, Emergency Action Plan, this Emergency Evacuation Plan and the area considered potentially subject to dewatering flow.

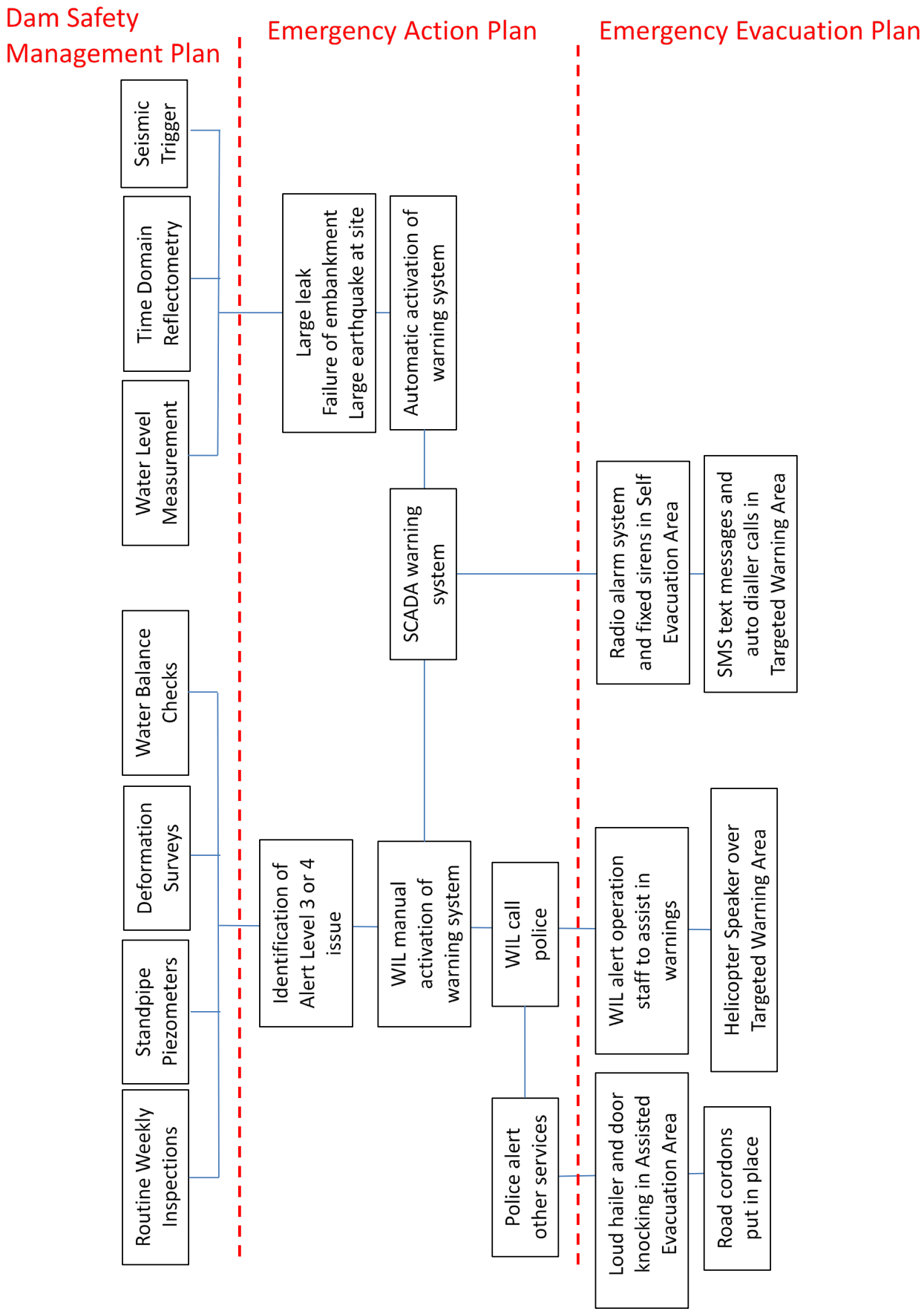



**Figure 2** Figure showing the links between the Dam Safety Management Plan, Emergency Action Plan and this Emergency Evacuation Plan.

## 2.0 BACKGROUND

### 2.1 LOCATION OF THE STORAGE PONDS

The proposed site for the Waimakariri Irrigation Limited (WIL) scheme storage ponds is located between the Waimakariri River and the Eyre River on the Canterbury Plains.

The storage scheme consists of two adjacent ponds (Figure 3) which will occupy 100 hectares of land and 8.2 million cubic metres of water. As part of the resource consenting process WIL has commissioned detailed investigations of storage pond failure scenarios in the unlikely event a failure should occur (Appendix 1).


**Figure 3** Wrights Road Storage Ponds location.

The plan has been developed with input from the Waimakariri District Council (WDC) Civil Defence and Emergency Management (CDEM), WDC roading department, the Canterbury CDEM Group, Emergency Services, special interest groups and the public.

### 2.2 BASIS FOR WARNING AND EVACUATION

The evacuation plan included in this EEP has been developed based on the predicted inundation times set out in the report *Proposed WIL Storage Pond – Dam Break Flood Hazard Update* (DamWatch Engineering Ltd, 2016). Table 1 shows the approximate time from the start of a catastrophic failure to the arrival of water at each of the major roads which cross the modelled inundation areas.

**Table 1** Table showing conservative floodwater arrival times from storage pond embankment breach to downstream roads. Please note that these are the worst case modelled times from time of breach. Issues are likely to be identified hours or days prior to breach allowing additional warning time.

| Road | North Breach | | South Breach | | East Breach | |
|---|---|---|---|---|---|---|
| | **Arrival time** | **Water Depth (m)** | **Arrival time** | **Water Depth (m)** | **Arrival time** | **Water Depth (m)** |
| Carleton | 50 mins | 0.71 | 1 hr 35 mins | 1.43 | 1 hr 30 mins | 0.68 |
| Wolffs | 1 hr 10 mins | 0.59 | 2 hrs 5 mins | 0.99 | 2 hrs 5 mins | 0.33 |
| Poyntzs | 1 hr 35 mins | 0.41 | 2 hrs 35 mins | 0.60 | 2 hrs 40 mins | 0.34 |
| Pesters | 1 hr 50 mins | 0.55 | 3 hrs 5 mins | 0.56 | 3 hrs | 0.57 |
| Downs | 2 hrs 30 mins | 0.33 | 4 hrs 35 mins | 1.16 | 4 hrs 10 mins | 0.30 |
| Browns | 3 hours 30 mins | 0.5 | 6 hrs 40 mins | 0.36 | 5 hrs 15 mins | 0.58 |
| Two Chain | 4 hours 20 mins | 0.37 | 8 hrs 5 mins | 0.36 | 7 hrs 20 mins | 0.46 |
| Diversion | 5 hours 35 mins | Less than 0.1 | 10 hrs 40 mins | Less than 0.1 | 9 hrs | Less than 0.1 |

The method of alert notification and subsequent amount of time to evacuate varies depending on the type of pond failure and the approximate time the inundation takes to reach each affected property. For example, a property located within the self-evacuation area will be notified by a range of warning systems including automated alarm, fixed siren and phone and should evacuate immediately. In comparison, it will take an estimated 6 hours and 45 minutes for water to reach Two Chain Road. People near this Two Chain Road will be notified by automated phone messages as well as loud hailers from a helicopter and/or emergency services.

## 2.3 WARNING AND EVACUATION AREAS

Given the different arrival times of flooding and the various potential failure locations, three warning and evacuation areas have been developed:

- Self-Evacuation Area
- Assisted-Evacuation Area
- Targeted Warning Area

Depending on the pond failure scenario, people in these areas will receive different notifications through different channels. A map showing the three warning and evacuation areas is shown in Appendix 2.

While the evacuation areas were set conservatively and prioritise life safety over other considerations, they have been carefully set not to require unnecessary evacuation in areas where risks to life and property from a pond failure do not exist.

A summary of each area is set out below:

**Self-Evacuation Area**

The Self-Evacuation Area would be inundated the fastest in any storage pond failure (generally less than 1 hour). In this area, there will not be enough time for authorities to help with a co-ordinated evacuation.

For that reason, residences in the self-evacuation area will be provided with an automated radio alarm system (or similar) that distributes an alert like that in a smoke alarm, and will be within earshot of automated sirens at the ponds that will sound in the event of failure.

Residents in this area may also opt-in with WIL to receive automated SMS and email messages advising them to evacuate immediately. Residents are strongly encouraged to opt-in to these services.

**Assisted-Evacuation Areas**

Assisted-Evacuation Areas would not be inundated before authorities, in most cases, could mount a co-ordinated effort to assist residents with evacuation.

For that reason, residences in the self-evacuation area will be warned of storage pond failure [by loud hailer from vehicle or aircraft, and door-knocking]. People requiring assistance with evacuation in this area will receive it.

**Targeted Warning Area**

Residences in the broader targeted warning area are encouraged to opt-in with WIL to receive automated SMS and email messages advising them of the storage pond failure, of its possible effects, and making a recommendation not to travel in the identified evacuation areas.

A list of the residences in each area is included in Appendix 3. This list will be reviewed by WIL annually (prior to 30 June in each year) to ensure it is kept up to date

## 3.0 ROLES AND RESPONSIBILITIES

This section summarises key organisations and agencies in an evacuation, along with their roles and responsibilities for implementing an effective evacuation (Table 2).

In a number of cases, organisations may have their own plans and strategies that further detail their roles and responsibilities as set out below.

**Table 2** Roles and responsibilities of respective organisations for Wrights Road storage pond evacuation areas.

| Organisation | Role | Responsibilities | Key Contact Details |
|---|---|---|---|
| Waimakariri Irrigation Limited | Lead organisation for potential or imminent failure situation. | Ensure Emergency Action Plan protocols are implemented including the establishment of an incident management team. | *Name*<br>**Brent Walton**<br>Operations Manager<br><br>*Phone*<br>**022 086 9986**<br>**(03) 313 0200** |
| | | Lead and manage the overall incident of storage pond failure that results in the activation of this EEP. | |
| | | Manage the public communications and warning requirements to support the evacuation. | |
| | | Establish and staff an Incident Control Point from which to manage the emergency response to the dam failure. | |
| | | Provide an Incident Controller and ensure that person has a clear communications link with the police commander that is in charge of the evacuation task. | |
| | | Establish a communications structure that enables the relevant response agencies to communicate with each other and relevant people (e.g. the police commander) to communicate with the Incident Control Point. | |
| | | Provide notification of storage pond failure or potential for failure. | |
| | | Maintain monitoring systems. | |
| | | Regularly exercise and monitor this EEP. | |
| New Zealand Police | Support organisation for the event. Lead organisation for assisted evacuation tasks. | Protect life and property. | *Name*<br>**Rangiora Police Station**<br><br>*Phone*<br>Urgent: **111**<br>Non-urgent:<br>**(03) 313 6167** |
| | | Lead and manage immediate evacuations within capability. | |
| | | Mobilise additional personnel and equipment to support evacuation operations. | |
| | | Coordinate all support agencies involved in the physical evacuation task. | |

| Organisation | Role | Responsibilities | Key Contact Details |
|---|---|---|---|
| | | Provide security of evacuated areas including the security of cordons. | |
| | | Restrict unauthorised people from entering evacuated zones. | |
| | | Provide emergency traffic control in and around the evacuation zone. | |
| | | Police presence at Civil Defence Centres. | |
| | | Assistance with the dissemination of warning messages. | |
| | | Trace missing people, victim identification and notification of next of kin. | |
| Fire and Emergency New Zealand | Support organisation in undertaking assisted evacuation. | Support NZ Police to evacuate people out of assisted evacuation areas. | *Name*<br>**Rangiora Fire Station**<br><br>*Phone*<br>Urgent: **111**<br>Non-urgent:<br>**(03) 313 6278** |
| | | Support search and rescue capabilities | |
| | | Lead fire and rescue response to affected areas. | |
| | | Containment of releases and spillages of hazardous substances. | |
| | | Command all urban search and rescue response activity. | |
| | | Support evacuating people away from evacuation zones. | |
| | | Management of hazardous materials in evacuated area | |
| St John Ambulance | Support organisation in undertaking assisted evacuation. | Provide ambulance services for the Canterbury District Health Board to move vulnerable evacuees from the immediate area. | *Name*<br>**St John Rangiora**<br><br>*Phone*<br>Urgent: **111**<br>Non-urgent (CDEM):<br>**(03) 313 4432** |
| | | Support the delivery of emergency medical services at Civil Defence Centres. | |
| | | St John applies standard operating procedures in terms of prioritising service, noting that life sustaining services are priority. | |
| New Zealand Defence Force | Possibly support with personnel | May contribute personnel for cordon management if requested. | *Name*<br>**Brennan Wiremu**<br>Waimakariri CDEM<br><br>*Phone*<br>**021 480 829**<br>**(03) 313 4432** |

| Organisation | Role | Responsibilities | Key Contact Details |
|---|---|---|---|
| Waimakariri District Council[1] | Traffic management and access. Incident operations and risk assessment. Note that the role of CDEM will vary depending on the nature of the hazard event. | Assist New Zealand Police with the establishment of cordons. | *Name*<br>**Brennan Wiremu**<br>Waimakariri CDEM<br><br>*Phone*<br>**021 480 829**<br>**(03) 313 4432** |
| | | Provide assessments of transportation routes, identify alternate routes and provide temporary traffic control measures. | |
| | | Coordinate and assist with debris removal and disposal. | |
| | | Coordinate qualified building inspectors to undertake evaluations to assess whether buildings are 'safe to return'. | |
| | | Be prepared to activate the Emergency Operations Centre, if not already activated. | |
| | | If possible, provide personnel to facilitate the evacuation. | |
| | | Provision of trained welfare staff to man civil defence centres. | |
| | | In support of WIL, monitor the situation and provide advice to affected people and the general public. | |
| | | Provide emergency welfare support to displaced people. | |
| | | Support the movement of evacuees. | |
| | | Establish and manage Civil Defence Centres. | |
| | | Register evacuees with the support of NZ Police. | |
| | | Coordinate damage assessments. | |
| Canterbury Civil Defence and Emergency Management Group | Coordination support. | Monitor and stay in contact with WDC Emergency Operations Centre. | *Name*<br>**CDEM Duty Officer**<br><br>*Phone*<br>**0800 324 636** |
| | | If required, facilitate requests to the Ministry of Civil Defence and Emergency Management. | |

[1] Includes multiple departments including but not limited to CDEM, roading and building control.

## 4.0 PHYSICAL EVACUATION PLAN

This section outlines the evacuation process including the physical evacuation plan.

### 4.1 EVACUATION PROCESS

The evacuation process is comprised of six phases which are detailed in the Emergency Action Plan (EAP) and Emergency Evacuation Plan (EEP) (Figure 4). These phases are:

1. Detection of an event or incident at the storage ponds
2. Decision to undertake the evacuation
3. Warning messages to those in the affected area
4. Undertaking the physical evacuation
5. Shelter for the evacuees
6. Where feasible return of evacuees to the affected area

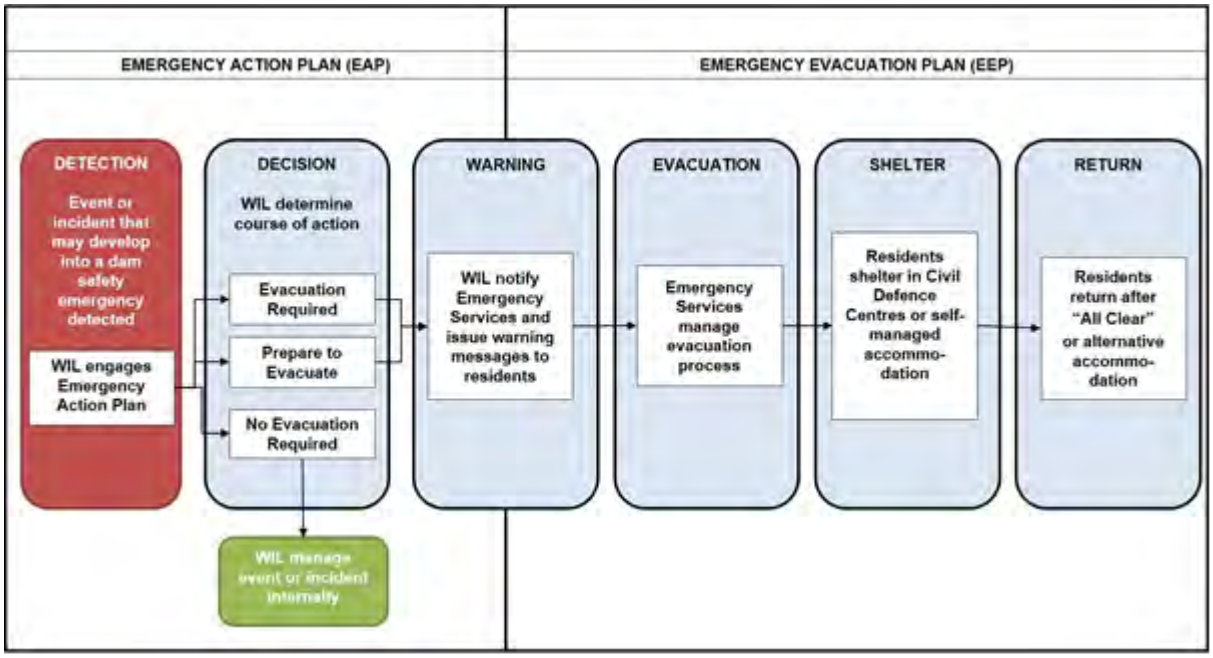



**Figure 4** The evacuation process as applied to the Wrights Road storage pond evacuation scenario.

A number of redundancies and back-up or alternative systems have been developed. Should a particular system or process fail, users of this plan should take guidance from section 4.1.7 *Limiting factors for an effective evacuation.*

#### 4.1.1 Detection and decision to undertake the evacuation

In accordance with the EAP, any of the following events may initiate a process that leads to evacuation:

- *Felt or forecast regional event e.g. earthquake, heavy rain*
- *Seismic trigger alarm of a major earthquake at the ponds*
- *Observation by a WIL staff member on site*
- *Values read from monitoring piezometers by Operator/Surveillance Inspector*
- *Values read from the control system*
- *Settlement detected from survey of the settlement markers*
- *Observations by a technical specialist carrying out an inspection of the ponds*

- *Observations by a member of the public or other third party.*

Table 3 provides a summary of the decision process thresholds (being alert levels 3 and 4) which may require an evacuation. Specific details on this process is outlined in the Section 4.2.1 of the EAP.

**Table 3** Alert level notifications used to determine WIL's course of action as per the Emergency Action Plan.

| EAP Alert Level | Description | Safety State | Consequences | Initiating Event | Notifications |
|---|---|---|---|---|---|
| 3 | Significant changes to dam condition | Threat to dam safety controllable if action taken swiftly | Injury or safety of public or property endangered | Increasing leakage, seepage or turbidity, embankment deformation | Manage corrective measures. Notify Police and Waimakariri CDEM of Alert Level |
| 4 | Deteriorating dam condition | Evacuation needed. Serious threat to pond embankment. | Downstream damages expected | Uncontrollable turbid seepage: Significant or increasing crest settlement leading to overtopping | Alert Police and Waimakriri CDEM recommending to evacuate residents in evacuation areas |

### 4.1.2 Issuing Warnings

In the event an evacuation is required, the WIL Dam Manager will communicate the status of the emergency situation at the Wrights Road Storage ponds to emergency services via the 111 system.

The WIL Dam Manager will use the pre-scripted messages included in Appendix 4.

This notification is in addition to automated alerts that will be sent to emergency services, CDEM and the Targeted Warning Area via phone and email.

### 4.1.3 Evacuation of affected people

#### *4.1.3.1 Household Emergency Plan*

As recommended by the Ministry of Civil Defence and Emergency Management, WIL will work with all local residents to ensure they keep and maintain a Household Emergency Plan. In addition to a failure of the Wrights Road storage pond, this plan should cover all hazards that can happen including frequent or rare events.

The recommended template and advice for the development of a Household Emergency Plan is included in Appendix 5.

#### *4.1.3.2 Warnings*

This section further describes the range of platforms that will be used to distribute warning messages in the event of potential or likely storage pond failure.

**Self-Evacuation Area:** Residents located within this area will be provided with warnings via:

- [a radio alarm system (or similar)] that distributes an alert like that in a smoke alarm accompanied by an instructional voice message.

  *[For example: Tsunado is a radio receiver that can deliver messages through a speaker, informing the household what to do. This alarm can be triggered automatically when storage pond failure occurs.]*

- SMS messages and automated phone calls either automatically via the dam control system or manually by the WIL Dam Manager.

- A series of multi-directional, voice-capable sirens located at strategic points on the ponds and along Carleton and Wolff's Roads.

**Assisted-Evacuation Areas:** Residents in this area will be warned by:

- SMS messages and automated phone calls either automatically via the dam control system or manually by the WIL Dam Manager.

- Loud hailer alerts from vehicles such as a helicopter and/or emergency services (as per obligations under Section 3).

- Staged door knocking by CDEM and emergency services.

**Targeted Warning Area:** Residents in this area will be warned by:

- SMS messages and automated phone calls either automatically via the dam control system or manually by the WIL Dam Manager.

- Loud hailer alerts from vehicles such as a helicopter and/or emergency services (as per roles and responsibilities in Section 3).

All message warnings via SMS and email will be opt-in services available via [WIL's website]. Table 4 summarises these systems and the respective message to be disseminated.

**Table 4** Summary of proposed warning platforms and respective warning messages.

| Target Area | Warning Platform | Message: Alert Level 3 | Message: Alert Level 4 |
|---|---|---|---|
| Self-evacuation area | SMS Text Messages<br>Auto-dialler Phone Calls<br>Radio Alarm System<br>Fixed Sirens | 'URGENT: Prepare to Evacuate - Wright's Road Storage Pond Failure Possible' | 'URGENT: Evacuate Immediately - Wright's Road Storage Pond Failure Occurring Now' |
| Assisted-evacuation area | SMS Text Messages<br>Auto-dialler Phone Calls<br>Loud Hailer<br>Door Knocking | 'URGENT: Prepare to Evacuate - Wright's Road Storage Pond Failure Possible' | 'URGENT: Evacuate Immediately - Wright's Road Storage Pond Failure Occurring Now' |
| Targeted Warning Area | SMS Text Messages<br>Auto-dialler Phone Calls<br>Fixed Helicopter Speaker | 'URGENT: Prepare to Evacuate - Wright's Road | 'URGENT: Evacuate Immediately - Wright's |

| | | | |
|---|---|---|---|
| | | Storage Pond Failure Possible' | Road Storage Pond Failure Occurring Now' |
| No Evacuation Required | Radio Alarm System<br>SMS Text Messages<br>Auto-dialler Phone Calls | N/A | N/A |

On receipt of a warning, residents should evacuate in accordance with their Household Emergency Plan towards either South Eyre Road (to the north) or Thongcaster Road (to the south) as shown in Appendix 2. Both of these roads provide safe egress from the evacuation areas.

#### *4.1.3.3 Evacuation Routes*

In line with MCDEM guidance (see Section A5.2), individuals should *"Know the evacuation routes you could take and plan several evacuation routes in case roads are damaged or blocked."* The viability of evacuation routes is influenced by a range of environmental, behavioural or individual factors therefore, the identification of preferred routes should be undertaken by each household. Notably, evacuation routes are not restricted to legal roads, they can include private roads, public roads, driveways, footpaths or egress across private or public land. Should privately-owned land be identified as preferred evacuation routes, it is recommended to seek permission from the owner when developing household plans.

Should flooding occur, evacuation routes may not be suitable for efficient egress due to a range of circumstances including locked gates, weather, roadworks or changes in road layout (Table 5). It is recognised that some residents may be using private roads on a frequent basis and if privately-owned routes are the shortest, and available, these should be used in the event an evacuation is required. As preferred evacuation routes may change over time, household emergency plans should be updated to reflect these changes as discussed in Section 5.0.

#### *4.1.3.4 Cordon Management*

The two main evacuation routes leading away from the evacuation areas are Thongcaster Road to the south and South Eyre Road to the north. Both of these arterial roads provide safe egress from the evacuation areas.

Upon receipt of a warning, Waimakariri District Council roading staff can direct contractors to close all arterial roads leading to the south of South Eyre Road to restrict access into the evacuation zone. Access to Barrett Road can be restricted by a cordon being established at the intersection of Wrights and Kennedy Roads. WDC staff advise that signage to close these roads would likely be fully erected within two hours of receiving notification.

Intersections for cordon establishment are:

- Wrights Road and Thongcaster Road
- South Eyre Road and Domain Road
- South Eyre Road and Wrights Road
- South Eyre Road and Carleton Road
- South Eyre Road and Poyntzs Road
- South Eyre Road and Pesters Road
- South Eyre Road and Downs Road
- South Eyre Road and Isaac Road

- South Eyre Road and Browns Road
- South Eyre Road and Two Chain Road
- South Eyre Road and Diversion Road
- Harrs Road and metalled access route adjacent to the Waimakariri River

#### *4.1.3.5 Evacuation of Livestock*

The primary responsibility for the management of stock (including during an emergency) lies with farmers, and as such, farmers should make their own contingency plans which incorporate local hazards. Such contingency plans should include the appropriate action times and self-protection times. People should ensure that they have sufficient time to evacuate themselves before considering stock evacuation.

If a catastrophic failure of the storage pond occurs, then due to the rapid onset of floodwater after failure, the evacuation of livestock will likely not be feasible and should not be planned for. Farmers may still develop contingency plans where a storage pond failure is considered possible. Here the most feasible scenario may be to move stock to slightly high ground. (MCDEM, 2008)

#### *4.1.3.6 Transient Populations in Evacuation Zones*

During an activation of the EEP, there may be a number of non-permanent residents located within the evacuation zone. Such 'transient' populations include seasonal workers, tourists, sightseers or people engaging in recreational activities such as fishing the Waimakariri River. In the case of seasonal workers, the risk of being located in an evacuation zone is higher than the other stated groups as their place of work may be located in the zones. In this situation, it is recommended that their employers provide workers with information regarding the proposed warning messages and correct actions to take as part of their broader business continuity arrangements.

For tourists, sightseers and those engaging in recreational activities most of these people will be travelling through the evacuation areas for short periods of times or restricted to a few hours during the day. An exception would arise if they elected to stay overnight in facilities such as AirBnB. Effectively communicating the need to evacuate to safe areas for this group of people is challenging but would be assisted by ensuring that any such accommodation provides information on the core aspects of a possible evacuation. WIL will work accommodation providers to supply maps and summary warning information sheets for guests. In addition, WIL will maintain a list of known accommodation providers, including an opt-in Air BnB option[2], in Appendix 7. This information and list will be updated during the regular review and exercise programme.

In most cases, where an assisted evacuation is feasible, audible warnings and emergency services personnel can provide sufficient warning to those located outside of the self-evacuation area. Proposed voice-capable sirens within the self-evacuation area will draw the attention of these people to evacuate. In addition, flood-based evacuation route and safe zone signage could be a consideration to direct people away from evacuation areas.

[2] AirBnB and locations are not publicly available unless you are a guest. Therefore, disclosure of specific AirBnB addresses will be at the accommodation providers discretion.

### 4.1.4 Shelter

The shelter phase of the evacuation process relates to the accommodation and registration of evacuees. In evacuations of this scale, people often seek shelter in second homes, hotels/motels or with family/friends as a preference to temporary civil defence welfare centres.

Preferred shelters for emergency and temporary accommodation, in priority order are:

1. Self-managed accommodation; a destination of the person's own choosing for example, relatives, friends or holiday homes.
2. Existing accommodation facilities for example, hotels, motels or lodges.
3. A Civil Defence Welfare Centre to be established from a range of predetermined locations. Where these will be established will depend on the nature of the actual event and requirements of evacuees.

#### *4.1.4.1 Civil Defence Centres (CDC)*

Appendix 7 shows the most likely facilities, as identified by Waimakariri CDEM, which would be established as a Civil Defence Centre, these include:

*Oxford A & P Showgrounds, Bay Rd, Oxford*

This CDC is the most likely to be used in the event of a storage pond failure not caused by a low probability severe earthquake. In this instance, most evacuees would be able to return to their unaffected properties. These grounds have a large community gymnasium hall and the immediately adjacent rugby clubrooms available for CDC activities.

*West Eyreton Hall, 2 Earlys Rd, West Eyreton*

The Hall is an option to be used as a CDC and would provide sufficient capacity to assist small number of evacuees.

*Rangiora Baptist Church, 111 East Belt Road, Rangiora*

If the Rangiora Baptist Church was required to provide additional capacity, it is likely that the event would be much larger than just a storage pond failure. The most credible example would be a low probability severe earthquake. Such a response would require a much larger CDEM response to be conducted, details of which do not fit within the scope of this plan.

#### *4.1.4.2 People Welfare*

Due to the localised scale of a failure event, local CDEM welfare arrangements and community partnerships are likely to be sufficient to support displaced people. Existing arrangements are supported by the North Canterbury Local Welfare Committee which represents the range of both health and psycho-social support agencies. If a greater level of welfare support is required, the Canterbury Welfare Coordination Group would provide assistance through existing CDEM arrangements.

### 4.1.5 Return

The return phase of the evacuation covers the period from when it is determined to be safe for evacuee return, transporting people who are returning and their arrival back to the evacuated area. The timely return of people is important as the sooner they return; the sooner they can actively engage in the broader recovery process.

Before giving an 'all-clear' for return, the evacuated area must be assessed to ensure that it is safe. Site hazard and risk assessments will be conducted by WIL, Emergency Services, CDEM and Waimakariri District Council (WDC) staff to determine the safety of properties and buildings and ensure that the flood risk has abated. WIL is responsible for determining if the storage ponds still present a flood risk. Emergency Services, particularly NZ Police, can determine the risk to life and property within the evacuation areas. CDEM may support the provision of resources to improve situational awareness of the affected area. Building inspectors, under the direction of WDC, will be able to determine whether buildings are safe to re-enter from structural and health perspectives. Residents will not be able to return to their properties until CDEM and/or emergency services has issued the 'all-clear.'

### 4.1.6 Limiting factors for an effective evacuation

There are many variables that can constrain or prevent an effective evacuation. When implementing this plan, these variables should be identified, mitigated where possible, and acknowledged in individual household emergency plans. Table 5 summarises identified factors, including those raised through the public consultation workshops. In addition, treatment options to reduce the impact of these factors are provided.

**Table 5** Limiting factors for effective evacuation as identified from stakeholder and public consultation and recommended risk treatment options.

| Limitation | Description | Mitigation |
|---|---|---|
| Evacuation required during the day | Workers and/or residents may be located in more isolated parts of the evacuation area during the day. Therefore, it may be more difficult for people in the Evacuation Areas to receive a warning message or they may be further away from evacuation routes and/or vehicles. | Proposed warning solutions have been designed to maximise reach to all parts of the evacuation and targeted warning areas. |
| Evacuation required during the night | People within the Evacuation Areas may be sleeping and may not wake on receipt of a warning message. In addition, visibility is reduced during the night which may hinder effective evacuation. | Residents should be subscribed to all of WIL's opt-in alerting options. In addition, how they will evacuate at night will be included in their Household Emergency Plan |
| Non-detection of triggering event | The detection systems fail. | This requires failure of multiple detection systems which do not all rely on the SCADA system. Detail of the detection process is described in Section 4.1 of the EAP. |
| Incorrect decision based on triggering information, leading to no warning or incorrect warning | Human decision-making failure can occur and can lead to no or incorrect warning. | Regular training and drills will minimise the potential for this situation. Automatic detection system in the embankment crest will send out an alert on failure of the crest even if incorrect decisions are made based on earlier information. |
| Non-delivery of warning messages | Non-delivery of warning messages may occur for a number of reasons being technology failure, lack of communication coverage or a warning is not issued. | Alerting platforms have overlapping coverage and messages will be disseminated across multiple platforms. Household Emergency Plans will identify specific actions to undertake in the event no warning is issued but they receive information of a possible storage pond failure. Messages are disseminated using several parallel platforms to reduce the risk of one not being heard. |
| Missed warning message | The message is delivered to the alerting device, but it is not heard or acknowledged. | Drills to test and practice the receipt of warning messages will be undertaken. Messages are disseminated using several parallel platforms to reduce the risk of one not being heard. |
| Ineffective warning messages including incorrect messages | While warnings may be issued, these may not be actioned by the individuals who receive the warning. This could be due to a lack of understanding of what action to take or the individual chooses not to action the warning. | Consistent warning messages have been developed and will be used in exercises to ensure that people within the Evacuation Areas are adequately advised to make an informed decision. Drills are key. |
| Unavailability of personnel to facilitate an assisted evacuation | While there may be sufficient time to conduct an assisted evacuation, circumstances may mean there are insufficient personnel to assist. This may be particularly relevant when there is a significant regional event that has occurred such as a large earthquake. | This is only likely during a large scale event such as an extreme local earthquake. NZ Police and CDEM confirm that the provision of personnel is situation dependent. Resources are allocated depending on their determined priority. If there is insufficient time to undertake an assisted evacuation, residents will not wait for an official warning. They will seek further information and/or consider evacuating when they experience the earthquake. |
| Vulnerable and/or injured people unable to move from evacuation areas | More vulnerable members of the community, such as the elderly or children, may not be able to leave evacuation areas efficiently. Also, if the evacuation is required due to a large earthquake, people within the evacuation zone may be injured, limiting their ability to evacuate. | On receipt of information, Emergency Services would prioritise those at risk members of the community that may require additional assistance. |
| Ease of pet transportation | Depending on how quickly flooding is expected, there may be insufficient time to evacuate pets or livestock from properties. | Household Emergency Plans include pets and provisions for transporting or releasing pets or animals where feasible. If flooding is imminent, people are advised to leave the identified evacuation areas immediately. |
| New property owners or non-residents or transient people with the evacuation areas. | Based on existing growth projections, it is likely that further intensification of the identified Evacuation Areas will continue. There may also be non-residents or transient members of the population within evacuation areas when an evacuation is required. | When the EEP is updated as per the Exercise and Monitoring Programme, new residences will be identified. The suite of warning options will be reviewed to accommodate for any changes in the community. Regular drills to educate and test plans will be undertaken. |
| Adverse weather conditions | When an evacuation is called weather conditions may be adverse, reducing the ability for people to efficiently leave evacuation areas. | Household Emergency Plans include instances where adverse weather may impact people's ability to evacuate efficiently. It is impossible to predict when and/or where such conditions will occur therefore people will plan alternative evacuation routes in case their preferred route is not available. |
| Surface flooding of evacuation routes | While flooding of evacuation routes is possible, the probability of evacuation routes being extensively affected by surface flooding when an evacuation is ordered is considered low. While some roads in the | Household Emergency Plans recognise the range of hazards which may necessitate evacuation. It is impossible to predict when and/or where such conditions will occur therefore people will plan alternative evacuation routes in case their preferred route is not available. |

| | | |
|---|---|---|
| | area have been affected by surface flooding historically, there is no information to indicate that this is a frequent occurrence. | |
| Compromised evacuation routes due to trees down or washout | While evacuation routes being blocked is possible, the probability of this occurring when an evacuation is ordered is considered low. In addition, Emergency Services have equipment to open routes if required. Regular maintenance of the road network by WDC also reduces this risk. | Household Emergency Plans recognise the range of hazards which may necessitate evacuation. It is impossible to predict when and/or where such conditions will occur therefore people will plan alternative evacuation routes in case their preferred route is not available. |

## 5.0 EVACUATION EXERCISE AND MONITORING PROGRAMME

Periodically exercising and monitoring evacuation plans is important to ensure that all involved agencies understand their responsibilities and can fulfil these should the plan be activated. In addition, exercises are vital to ensure the maintenance and upkeep of any physical warning instrumentation and ensure that recipients of warnings understand the required action to take.

### 5.1 EXERCISING THE EVACUATION PLAN

Exercising evacuation plans tests the capabilities, resources and working relationships of responding organisations and improves awareness of the plan. Exercises should involve all key stakeholders including residents in developing, maintaining and implementing the plan.

Due to the very low probability circumstances that would necessitate the implementation of this plan, it is proposed to undertake a desktop based exercise bi-annually.

To ensure that warning messages are recognised and effective, it is proposed that all warning systems are to be tested on an annual basis with full resident participation (table-top tests for receiving warnings and preferably involving residents physically moving along their evacuation route).

### 5.2 MONITORING OF THE EVACUATION PLAN

It is proposed that the plan will be reviewed and updated in the following circumstances:

- Bi-annually to integrate lessons from the desktop exercises and updates of Appendices 3 and 6.
- Following an event requiring activation of the plan and/or evacuations to ensure recommendations are incorporated.

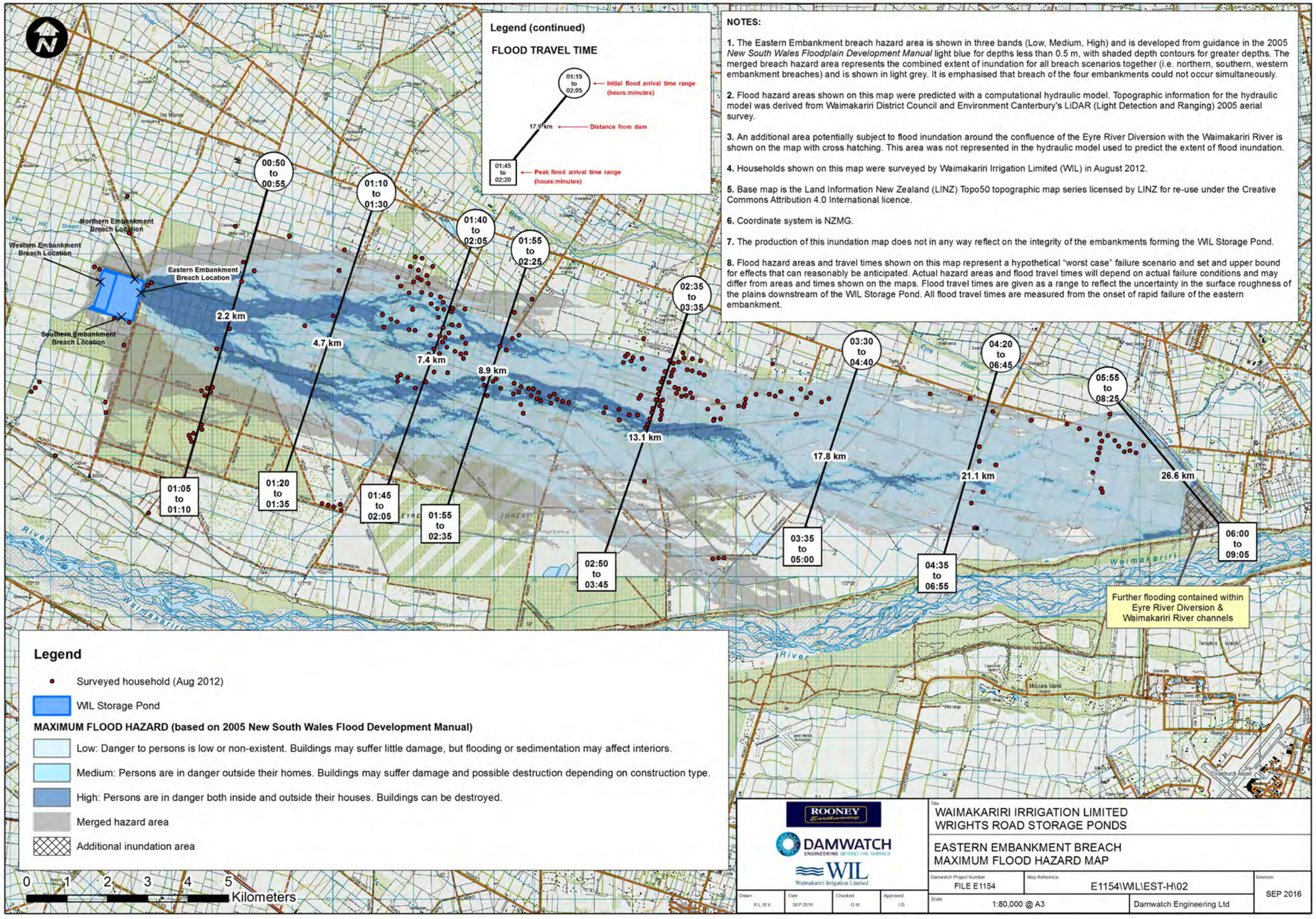
## 6.0 REFERENCES

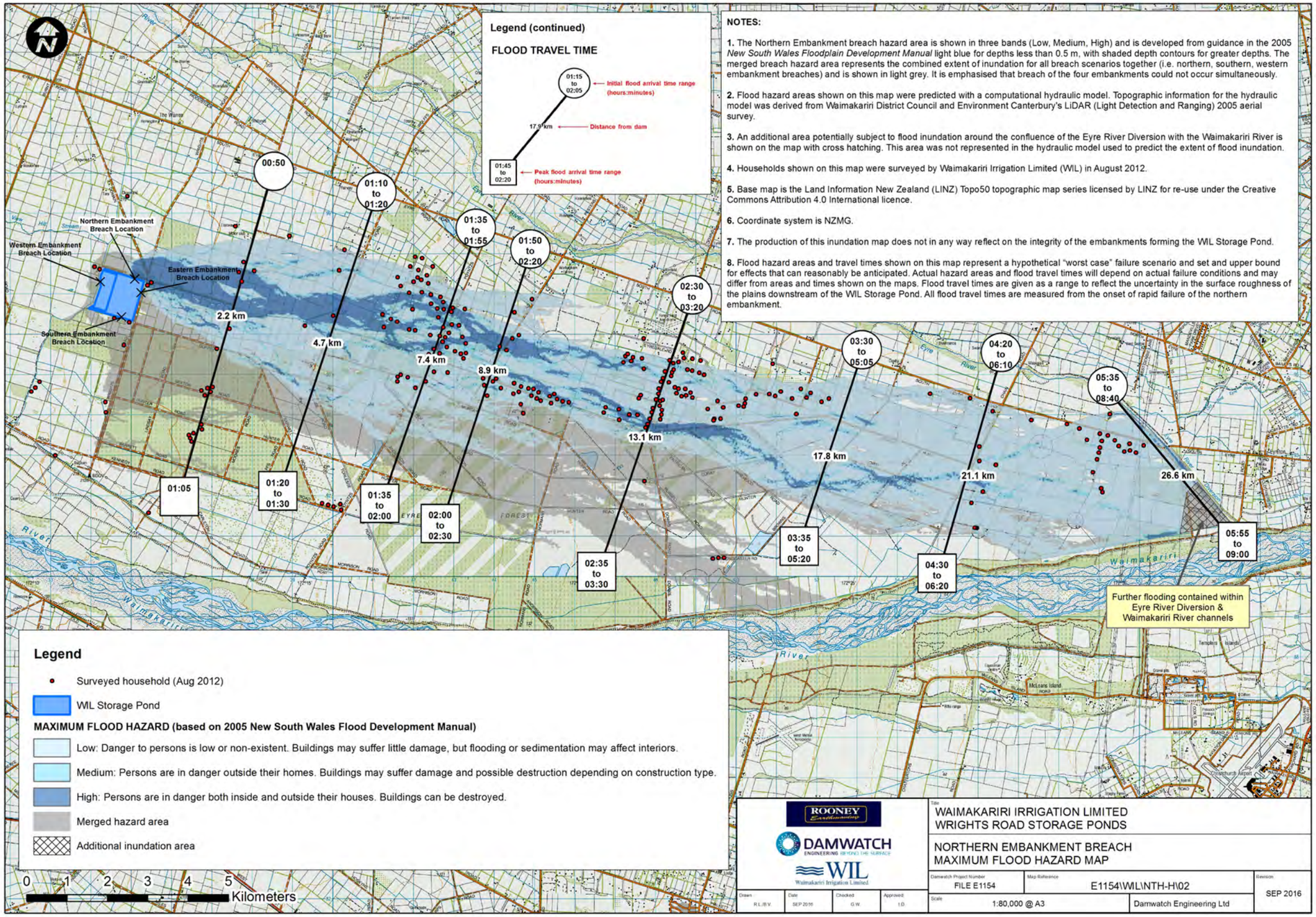
Damwatch Services Ltd. (2012) Waimakariri Irrigation Scheme Storage Ponds – Potential Impact Classification (Damwatch Services Ltd Report E1125 – Issue 3, Dated September 2012).

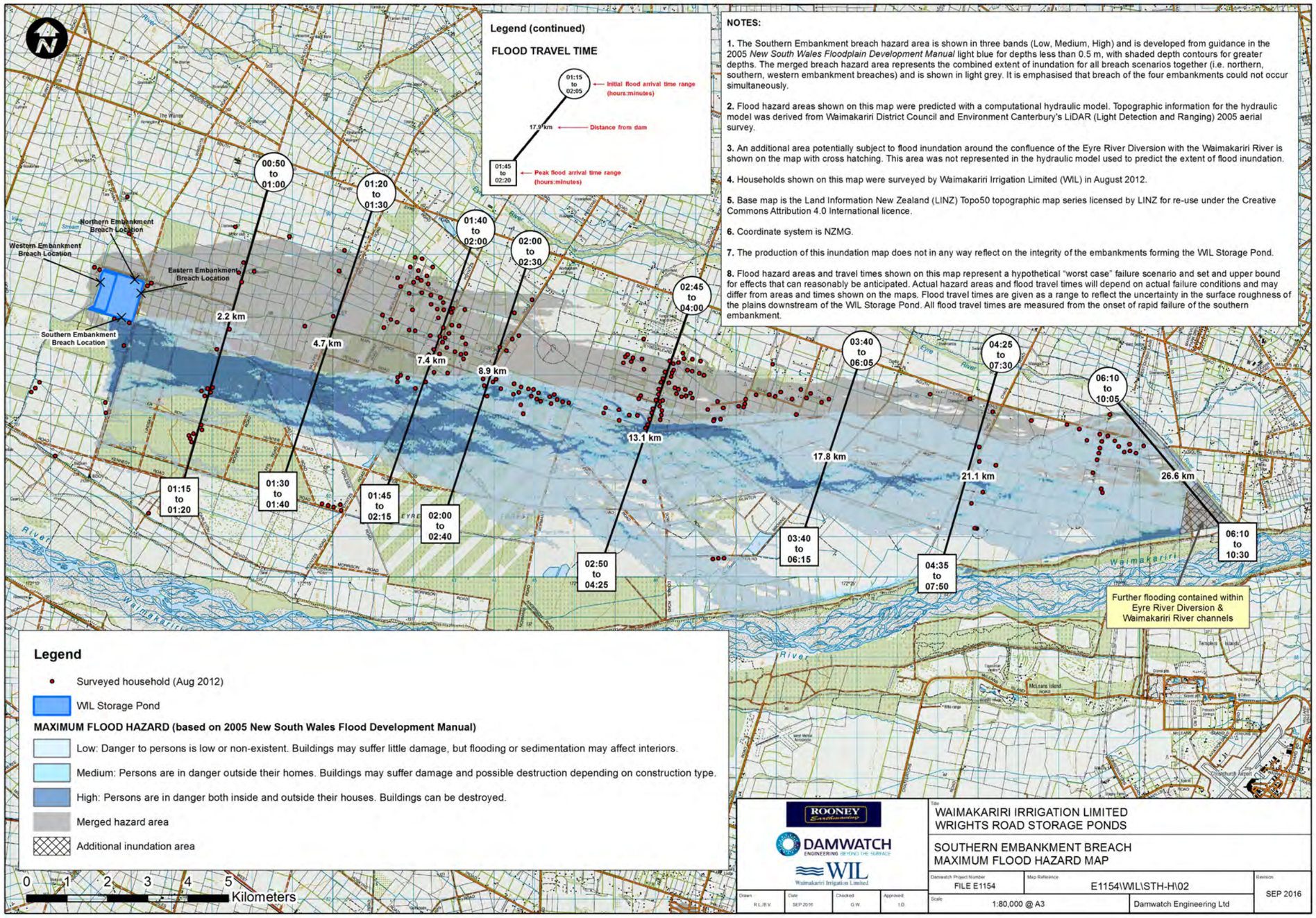
Damwatch Engineering Ltd. (2016) Proposed WIL Storage Pond – Dam Break Flood Hazard Update – dated 15 September 2016

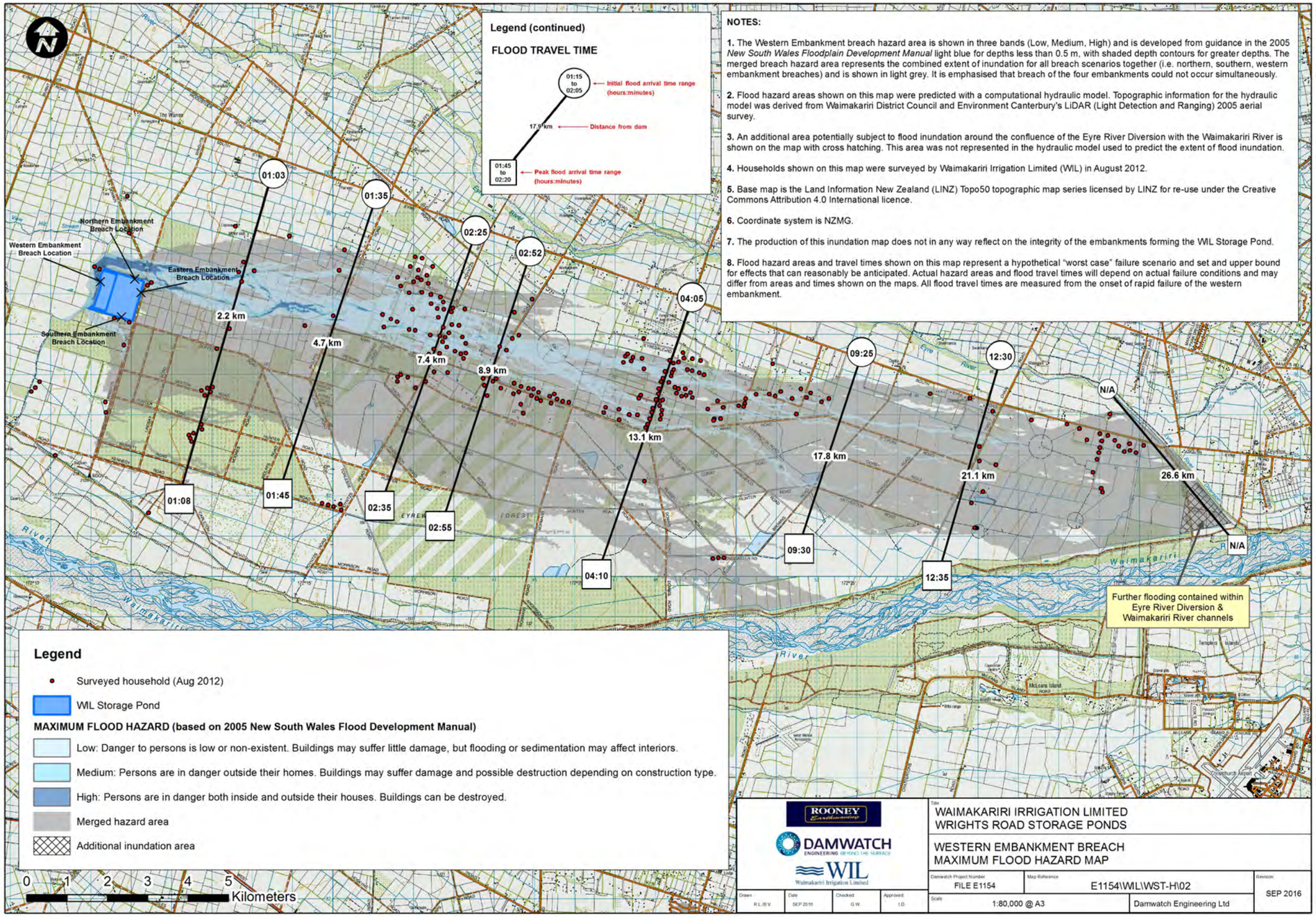
MCDEM (2008) Mass Evacuation Planning – Director's Guideline for Civil Defence Emergency Groups [DGL 07/08], Accessed 21 July 2016, from http://www.civildefence.govt.nz/assets/Uploads/publications/dgl-07-08-mass-evacuation-planning.pdf

# APPENDIX 1 MODELLED STORAGE POND FAILURE SCENARIOS




Legend (continued)
FLOOD TRAVEL TIME
01:15 to 02:05
Initial flood arrival time range (hours:minutes)
17.9 km
Distance from dam
01:45 to 02:20
Peak flood arrival time range (hours:minutes)
NOTES:
1. The Northern Embankment breach hazard area is shown in three bands (Low, Medium, High) and is developed from guidance in the 2005 New South Wales Floodplain Development Manual light blue for depths less than 0.5 m, with shaded depth contours for greater depths. The merged breach hazard area represents the combined extent of inundation for all breach scenarios together (i.e. northern, southern, western embankment breaches) and is shown in light grey. It is emphasised that breach of the four embankments could not occur simultaneously.
2. Flood hazard areas shown on this map were predicted with a computational hydraulic model. Topographic information for the hydraulic model was derived from Waimakariri District Council and Environment Canterbury's LiDAR (Light Detection and Ranging) 2005 aerial survey.
3. An additional area potentially subject to flood inundation around the confluence of the Eyre River Diversion with the Waimakariri River is shown on the map with cross hatching. This area was not represented in the hydraulic model used to predict the extent of flood inundation.
4. Households shown on this map were surveyed by Waimakariri Irrigation Limited (WIL) in August 2012.
5. Base map is the Land Information New Zealand (LINZ) Topo50 topographic map series licensed by LINZ for re-use under the Creative Commons Attribution 4.0 International licence.
6. Coordinate system is NZMG.
7. The production of this inundation map does not in any way reflect on the integrity of the embankments forming the WIL Storage Pond.
8. Flood hazard areas and travel times shown on this map represent a hypothetical "worst case" failure scenario and set and upper bound for effects that can reasonably be anticipated. Actual hazard areas and flood travel times will depend on actual failure conditions and may differ from areas and times shown on the maps. Flood travel times are given as a range to reflect the uncertainty in the surface roughness of the plains downstream of the WIL Storage Pond. All flood travel times are measured from the onset of rapid failure of the northern embankment.
Northern Embankment Breach Location
Western Embankment Breach Location
Eastern Embankment Breach Location
Southern Embankment Breach Location
00:50
01:10 to 01:20
01:35 to 01:55
01:50 to 02:20
02:30 to 03:20
03:30 to 05:05
04:20 to 06:10
05:35 to 08:40
2.2 km
4.7 km
7.4 km
8.9 km
13.1 km
17.8 km
21.1 km
26.6 km
01:05
01:20 to 01:30
01:35 to 02:00
02:00 to 02:30
02:35 to 03:30
03:35 to 05:20
04:30 to 06:20
05:55 to 09:00
Further flooding contained within Eyre River Diversion & Waimakariri River channels
Legend
Surveyed household (Aug 2012)
WIL Storage Pond
MAXIMUM FLOOD HAZARD (based on 2005 New South Wales Flood Development Manual)
Low: Danger to persons is low or non-existent. Buildings may suffer little damage, but flooding or sedimentation may affect interiors.
Medium: Persons are in danger outside their homes. Buildings may suffer damage and possible destruction depending on construction type.
High: Persons are in danger both inside and outside their houses. Buildings can be destroyed.
Merged hazard area
Additional inundation area
0 1 2 3 4 5 Kilometers
ROONEY Earthmoving
DAMWATCH ENGINEERING BEYOND THE SURFACE
WIL Waimakariri Irrigation Limited
Title
WAIMAKARIRI IRRIGATION LIMITED
WRIGHTS ROAD STORAGE PONDS
NORTHERN EMBANKMENT BREACH
MAXIMUM FLOOD HAZARD MAP
Damwatch Project Number
FILE E1154
Map Reference
E1154\WIL\NTH-H\02
Revision
SEP 2016
Drawn
R L./B V.
Date
SEP 2016
Checked
G W.
Approved
I D.
Scale
1:80,000 @ A3
Damwatch Engineering Ltd


Legend (continued)
FLOOD TRAVEL TIME
01:15 to 02:05
Initial flood arrival time range (hours:minutes)
17.9 km
Distance from dam
01:45 to 02:20
Peak flood arrival time range (hours:minutes)
NOTES:
1. The Southern Embankment breach hazard area is shown in three bands (Low, Medium, High) and is developed from guidance in the 2005 New South Wales Floodplain Development Manual light blue for depths less than 0.5 m, with shaded depth contours for greater depths. The merged breach hazard area represents the combined extent of inundation for all breach scenarios together (i.e. northern, southern, western embankment breaches) and is shown in light grey. It is emphasised that breach of the four embankments could not occur simultaneously.
2. Flood hazard areas shown on this map were predicted with a computational hydraulic model. Topographic information for the hydraulic model was derived from Waimakariri District Council and Environment Canterbury's LiDAR (Light Detection and Ranging) 2005 aerial survey.
3. An additional area potentially subject to flood inundation around the confluence of the Eyre River Diversion with the Waimakariri River is shown on the map with cross hatching. This area was not represented in the hydraulic model used to predict the extent of flood inundation.
4. Households shown on this map were surveyed by Waimakariri Irrigation Limited (WIL) in August 2012.
5. Base map is the Land Information New Zealand (LINZ) Topo50 topographic map series licensed by LINZ for re-use under the Creative Commons Attribution 4.0 International licence.
6. Coordinate system is NZMG.
7. The production of this inundation map does not in any way reflect on the integrity of the embankments forming the WIL Storage Pond.
8. Flood hazard areas and travel times shown on this map represent a hypothetical "worst case" failure scenario and set and upper bound for effects that can reasonably be anticipated. Actual hazard areas and flood travel times will depend on actual failure conditions and may differ from areas and times shown on the maps. Flood travel times are given as a range to reflect the uncertainty in the surface roughness of the plains downstream of the WIL Storage Pond. All flood travel times are measured from the onset of rapid failure of the southern embankment.
Northern Embankment Breach Location
Western Embankment Breach Location
Eastern Embankment Breach Location
Southern Embankment Breach Location
00:50 to 01:00
01:20 to 01:30
01:40 to 02:00
02:00 to 02:30
02:45 to 04:00
03:40 to 06:05
04:25 to 07:30
06:10 to 10:05
2.2 km
4.7 km
7.4 km
8.9 km
13.1 km
17.8 km
21.1 km
26.6 km
01:15 to 01:20
01:30 to 01:40
01:45 to 02:15
02:00 to 02:40
02:50 to 04:25
03:40 to 06:15
04:35 to 07:50
06:10 to 10:30
Further flooding contained within Eyre River Diversion & Waimakariri River channels
Legend
Surveyed household (Aug 2012)
WIL Storage Pond
MAXIMUM FLOOD HAZARD (based on 2005 New South Wales Flood Development Manual)
Low: Danger to persons is low or non-existent. Buildings may suffer little damage, but flooding or sedimentation may affect interiors.
Medium: Persons are in danger outside their homes. Buildings may suffer damage and possible destruction depending on construction type.
High: Persons are in danger both inside and outside their houses. Buildings can be destroyed.
Merged hazard area
Additional inundation area
0 1 2 3 4 5 Kilometers
ROONEY Earthmoving
DAMWATCH ENGINEERING BEYOND THE SURFACE
WIL Waimakariri Irrigation Limited
Title
WAIMAKARIRI IRRIGATION LIMITED
WRIGHTS ROAD STORAGE PONDS
SOUTHERN EMBANKMENT BREACH
MAXIMUM FLOOD HAZARD MAP
Damwatch Project Number
FILE E1154
Map Reference
E1154\WIL\STH-H\02
Revision
SEP 2016
Drawn
R.L./B.V.
Date
SEP 2016
Checked
G.W.
Approved
I.D.
Scale
1:80,000 @ A3
Damwatch Engineering Ltd


Legend (continued)
FLOOD TRAVEL TIME
01:15 to 02:05
Initial flood arrival time range (hours:minutes)
17.9 km
Distance from dam
01:45 to 02:20
Peak flood arrival time range (hours:minutes)
NOTES:
1. The Western Embankment breach hazard area is shown in three bands (Low, Medium, High) and is developed from guidance in the 2005 New South Wales Floodplain Development Manual light blue for depths less than 0.5 m, with shaded depth contours for greater depths. The merged breach hazard area represents the combined extent of inundation for all breach scenarios together (i.e. northern, southern, western embankment breaches) and is shown in light grey. It is emphasised that breach of the four embankments could not occur simultaneously.
2. Flood hazard areas shown on this map were predicted with a computational hydraulic model. Topographic information for the hydraulic model was derived from Waimakariri District Council and Environment Canterbury's LiDAR (Light Detection and Ranging) 2005 aerial survey.
3. An additional area potentially subject to flood inundation around the confluence of the Eyre River Diversion with the Waimakariri River is shown on the map with cross hatching. This area was not represented in the hydraulic model used to predict the extent of flood inundation.
4. Households shown on this map were surveyed by Waimakariri Irrigation Limited (WIL) in August 2012.
5. Base map is the Land Information New Zealand (LINZ) Topo50 topographic map series licensed by LINZ for re-use under the Creative Commons Attribution 4.0 International licence.
6. Coordinate system is NZMG.
7. The production of this inundation map does not in any way reflect on the integrity of the embankments forming the WIL Storage Pond.
8. Flood hazard areas and travel times shown on this map represent a hypothetical "worst case" failure scenario and set and upper bound for effects that can reasonably be anticipated. Actual hazard areas and flood travel times will depend on actual failure conditions and may differ from areas and times shown on the maps. All flood travel times are measured from the onset of rapid failure of the western embankment.
Northern Embankment Breach Location
Western Embankment Breach Location
Eastern Embankment Breach Location
Southern Embankment Breach Location
01:03
01:35
02:25
02:52
04:05
09:25
12:30
N/A
2.2 km
4.7 km
7.4 km
8.9 km
13.1 km
17.8 km
21.1 km
26.6 km
01:08
01:45
02:35
02:55
04:10
09:30
12:35
N/A
Further flooding contained within Eyre River Diversion & Waimakariri River channels
Legend
Surveyed household (Aug 2012)
WIL Storage Pond
MAXIMUM FLOOD HAZARD (based on 2005 New South Wales Flood Development Manual)
Low: Danger to persons is low or non-existent. Buildings may suffer little damage, but flooding or sedimentation may affect interiors.
Medium: Persons are in danger outside their homes. Buildings may suffer damage and possible destruction depending on construction type.
High: Persons are in danger both inside and outside their houses. Buildings can be destroyed.
Merged hazard area
Additional inundation area
0 1 2 3 4 5 Kilometers
ROONEY Earthmoving
DAMWATCH ENGINEERING BEYOND THE SURFACE
WIL Waimakariri Irrigation Limited
Title
WAIMAKARIRI IRRIGATION LIMITED
WRIGHTS ROAD STORAGE PONDS
WESTERN EMBANKMENT BREACH
MAXIMUM FLOOD HAZARD MAP
Damwatch Project Number
FILE E1154
Map Reference
E1154\WIL\WST-H\02
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SEP 2016
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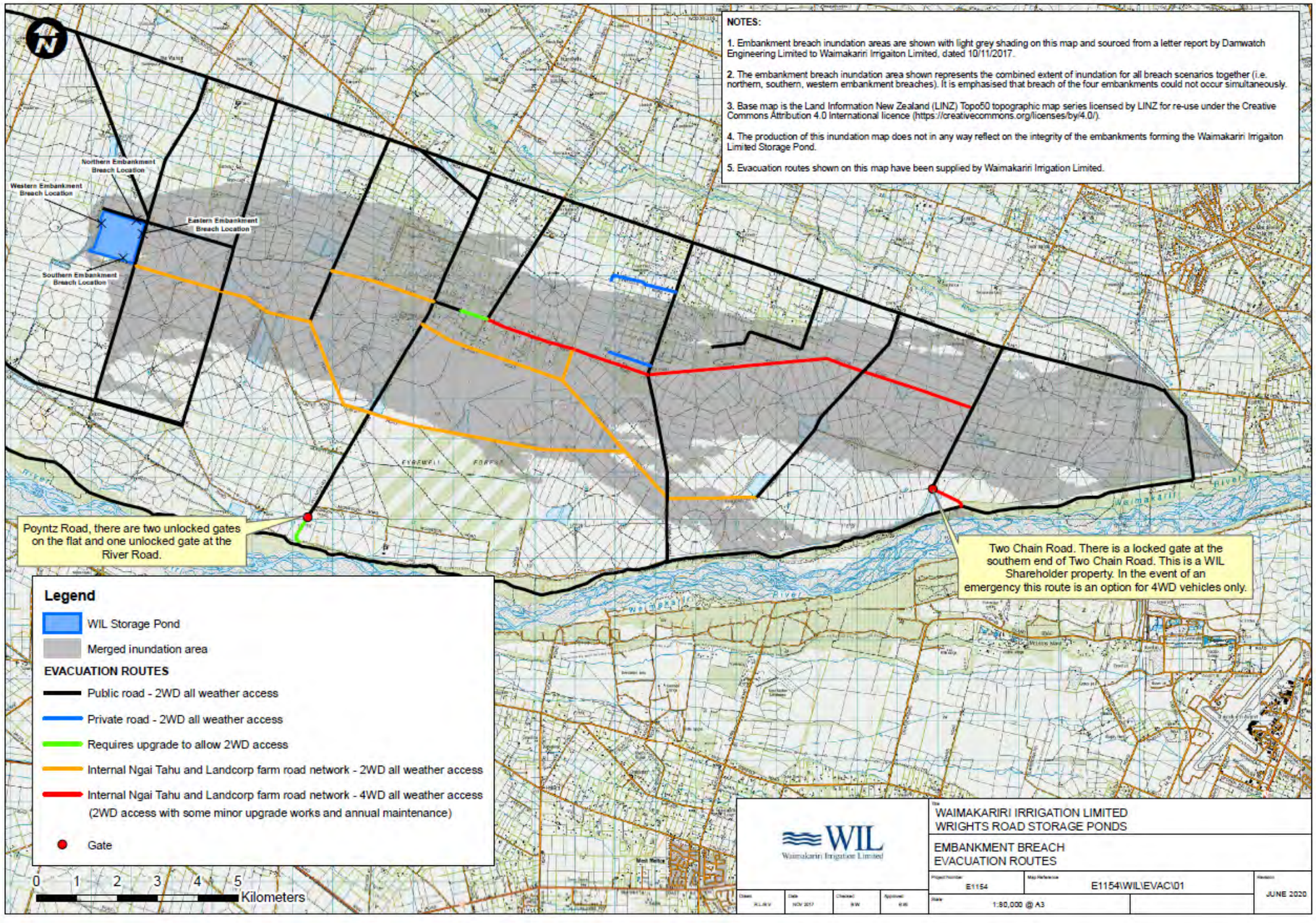
Date
SEP 2016
Checked
G W.
Approved
I D.
Scale
1:80,000 @ A3
Damwatch Engineering Ltd

## APPENDIX 2 WRIGHTS ROAD STORAGE PONDS EVACUATION AND TARGETED WARNING AREAS



## APPENDIX 3 LIST OF RESIDENCES LOCATED IN EVACUATION AREAS

## APPENDIX 4 PRE-SCRIPTED WARNING MESSAGES

The following pre-scripted messages will be used to guide the Waimakariri Irrigation Limited Dam Manager to communicate the status of an emergency situation at the Wrights Road Storage Ponds to emergency services via the 111 system.

*Alert Level 3 - Potential Failure*

- This is _____ (identify yourself, name and position).
- I am notifying you that we have an unusual event at the Wrights Road Storage Ponds, located approximately 8 km south of Oxford, Canterbury.
- We are implementing pre-determined actions to respond to this unusual event which could, if not mitigated, result in dam failure.
- The dam could potentially fail at _____ (state time and date).
- Please be advised this situation may result in an evacuation of the areas identified on evacuation maps in the Wrights Road Storage Ponds - Emergency Evacuation Plan.
- Please reference your copy of these evacuation maps.
- Please be on standby to prepare to evacuate these areas.
- We will advise you when the situation is resolved or if the situation gets worse
- The next status report will be provided in approximately _____ (state number of hours or minutes).
- I can be contacted at the following number XXX-XXXX. If you cannot reach me, please call the following alternative number XXX-XXXX.

*Alert Level 4 - Imminent Failure*

- This is an emergency.
- This is _____ (identify yourself, name and position).
- The Wrights Road Storage Ponds, located approximately 8 km south of Oxford, Canterbury are failing. The downstream area must be evacuated immediately.
- Repeat. The Wrights Road Storage Ponds are failing, evacuate the downstream area immediately.
- Reference your evacuation map in your copy of the Wrights Road Storage Ponds - Emergency Evacuation Plan.
- We have activated the Emergency Action Plan for this dam and are currently under Alert Level 4 - Imminent Failure.
- I can be contacted at the following number XXX-XXXX. If you cannot reach me, please call the following alternative number XXX-XXXX.
- The next status report will be provided in approximately thirty minutes

# APPENDIX 5 HOUSEHOLD EMERGENCY PLAN TEMPLATE AND ADVICE

## A5.1 MCDEM HOUSEHOLD EMERGENCY PLAN TEMPLATE


### MY HOUSEHOLD PLAN

**Your household members details**

| | |
|---|---|
| *Name:* | *Telephone Number:* |
| *Name:* | *Telephone Number:* |
| *Name:* | *Telephone Number:* |

### IF WE CAN'T GET HOME

**Our meeting place:** Where will we meet if we can't get home (local and out of town)?

*Add an address and instructions:*

**Who will pick up the kids?** If you are not able to pick the kids up, who will?

| | |
|---|---|
| *Name:* | *Telephone Number:* |
| *Name:* | *Telephone Number:* |

### IF WE CAN'T GET HOLD OF EACH OTHER

**We will leave a message with:** Who will we check in with (someone out of town in case local phone lines are down)?

| | |
|---|---|
| *Name:* | *Telephone Number:* |
| *Name:* | *Telephone Number:* |

**Where to get updates:** How will we find the latest news/alerts (which radio stations, websites, social media pages)?

*Radio station/websites/social media:*

### WHO MIGHT NEED OUR HELP? Think about friends and neighbours who may need our help or who can help us

| | |
|---|---|
| *Name:* | *Telephone Number:* |
| *Name:* | *Telephone Number:* |

## WHO WILL WE NEED TO CONTACT? (ALWAYS DIAL 111 IN AN EMERGENCY)

Think about council emergency hotline, medical centre/doctor, landlord, insurance company, power company, day care/school, work, family members

| | |
|---|---|
| **Emergency Services** | **111** |
| *Name:* | *Telephone Number:* |

## IF WE ARE STUCK AT HOME

Do we have emergency supplies? Food and drink for three days or more (for everyone including babies and pets)? Torches and radio with batteries? First aid/medical supplies? They don't all need to be in one big box, but you may have to find them in the dark. Do we know how to turn off water, power and gas.

*Make detailed notes on where these items are stored:*

*Details on how to turn the water and gas off:*

## IF WE HAVE NO POWER

How will we cook, stay warm, see at night? Do we have spare cash in case ATMs are not working? Do we have enough fuel in case petrol pumps are not working?

*Make notes on what you and your family need to do:*

## IF WE HAVE NO WATER

Do we have enough drinking water (3 litres per person per day for 3 days or more), change every 12 months. What will we cook and clean with? What will we use for a toilet?

*What will you do? How have you prepared?*

## IF WE HAVE TO LEAVE IN A HURRY

Do we have Getaway Kits* for everyone? At home, at work, in the car?

* A small bag with warm clothes, torch, radio, first aid kit, snack food and water, to get you to your safe place.

*Detail where you have stored your getaway kits:*

## A5.2 MCDEM HOUSEHOLD EMERGENCY PLAN ADVICE

*Before an evacuation:*

- Find out about your community's warning systems and evacuation routes from civil defence emergency management staff at your local council.
- Consider your transportation options in case you have to evacuate. If you do not own or drive a car, ask emergency management staff about plans for people without private vehicles.
- Know which local radio stations to listen to during an event for announcements from your local emergency management officials.
- Discuss and practice your evacuation plans with everyone in the household.
- Make in-case-of-evacuation arrangements with friends or relatives in your neighbourhood as well as outside the area you are in.
- Know the evacuation routes you could take and plan several evacuation routes in case roads are damaged or blocked.
- Know where the emergency or welfare shelter locations are in your community
- If you have pets, domestic animals or livestock, include them in your emergency plans.
- If there is a possibility of an evacuation, fill your car's fuel tank. Keep in mind that if there are power cuts in an event, fuel stations may not be able to operate pumps.
- Participate in regular evacuation exercises.

*During an evacuation:*

- Listen to your local radio stations (without delaying your evacuation) as emergency management officials will be broadcasting the most appropriate advice for your community and situation.
- Evacuate quickly (within the planned timeframe) if told to do so by authorities. Take your getaway kit with you. If you are outside the evacuation zone when a warning is issued, do not go into an at-risk area to collect your belongings.
- If there is time, secure your home as you normally would when leaving for an extended period.
- Turn off electricity and water at the mains if there is time. Do not turn off natural gas unless you smell a leak or hear a blowing or hissing sound, or are advised to do so by the authorities.
- <u>If there is time</u>, take your pets with you when you leave if you can safely do so.
- If you have livestock, evacuate your family and staff first. If there is time, move livestock and domestic animals to a safer area.
- In some emergency situations such as a tsunami or wildfire it is better to leave by foot than to drive or wait for transportation.

Use evacuation routes specified by local authorities. Some areas may be impassable or dangerous so avoid shortcuts. Do not drive through moving water. If you come upon a barrier, follow posted detour signs.

## A5.3 WRIGHTS ROAD PONDS HOUSEHOLD EVACUATION PLAN TEMPLATE

### *HOUSEHOLD EMERGENCY EVACUATION PLAN: WRIGHTS ROAD PONDS*

1. Following notification to '**Prepare to Evacuate**' we will take the following actions:

*e.g. Collect our grab bag of important documents and medication.*

**COMPLETE**

a. ..... ☐

b. ..... ☐

c. ..... ☐

d. ..... ☐

e. ..... ☐

f. ..... ☐

g. ..... ☐

h. ..... ☐

i. ..... ☐

j. ..... ☐

2. Following notification to '**Evacuate Immediately**' we will evacuate to:

*e.g. Poyntzs Road cordon via Main Race Road and; Poyntzs Road*

a. ..... cordon via ..... Road and;

..... Road and;

..... Road and;

..... Road and;

..... Road and;

..... Road.

b. if the above route is not available our alternative evacuation route is:

cordon via ..... Road and;

..... Road and;

..... Road and;

..... Road and;

..... Road and;

..... Road.

3. After taking the actions above we expect that it will take us at least ……. hours and …… minutes to evacuate to …….. cordon.

4. We will stay at the cordon until we are given clearance to return to our home by: ……

5. If we are advised that we cannot return home, we will contact Civil Defence on

(03) …..…. ……..… or …..….. ……..… or report to the Civil Defence Centre located at:

……..…..…….. ……..…..…….. or

…….. ……..

## APPENDIX 6 LIST OF ACCOMMODATION PROVIDERS LOCATED WITHIN THE TARGETED WARNING AREA

## APPENDIX 7 CIVIL DEFENCE CENTRE LOCATION MAP