

***A report to inform the proposed
Winton Shire Planning Scheme***

NATURAL HAZARD RISK ASSESSMENT

August 2019

Winton Shire Council



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1.0 Introduction

This fit for purpose risk assessment applies to natural hazards in the Winton Shire Council local government area. This risk assessment includes consideration of the following natural hazards:

- Flood hazard areas
- Bushfire prone areas
- Landslide hazard areas

Based upon each of the hazards detailed above, this fit for purpose risk assessment outlines:

- how the hazard areas have been identified
- the level of risk associated with the hazard areas
- what measures have been included in the proposed planning scheme to address the level of risk

In undertaking this risk assessment regard has been had to the State Planning Policy – state interest guideline [*Natural hazards, risk and resilience \(April 2019\)*](#).

2.0 Context

This risk assessment applies to the local government area of Winton Shire Council. The Winton Shire local government area encompass an area of approximately 54,000km². It has current population of 1157 people (2018) which is expected to decrease by 1.7% over the next 25 years.

The Winton Shire Council local government area is serviced by the main township of Winton. Winton has a population size of 875 (2016) persons.

Winton Shire Council has a [*local disaster management plan*](#) which deals with responses to natural hazards such as flooding and rural fires for its local community and has been considered in this assessment.

3.0 Hazard identification

3.1 Flood

Flood hazard areas have been identified using two methods. For rural areas, flood hazard areas have been identified using the State Planning Policy Interactive Mapping System Flood hazard area – Level 1 – Queensland Floodplain assessment overlay. This is because detailed flood mapping is not available for these areas. For the township of Winton detailed level 2 flood hazard mapping prepared for the Queensland Reconstruction Authority has been used.

The township of Winton is bounded to the south by the Western River which flows in a westerly direction. Kellogg Brown & Root Pty Ltd prepared a report for the Queensland Reconstruction Authority (QRA) titled *“Rural Towns Flood Hazard Mapping – Winton – Winton Shire Council”* dated 5 April 2013 and mapped the following flood events for the township of Winton:

- January 1974 flood event (177.14m AHD at Flood level sign)
- 2% AEP design event (181.15m AHD at Flood level sign)
- 1% AEP design event (181.41m AHD at Flood level sign)



For the township of Winton, the 1% AEP design event has been used as the basis to identify the flood hazard area. This will provide greater flood immunity than the 1974 flood event. The May 1955 flood remains the highest on record.

3.2 Bushfire

Bushfire prone area is land that is potentially affected by significant bushfires and includes vegetation likely to support a significant bushfire. Land adjacent that could also be subject to impacts from a significant bushfire is also mapped. Bushfire prone areas have been identified in the local government area by using the Queensland Government bushfire prone area mapping shown on the State Planning Policy Interactive Mapping System. The bushfire prone mapping includes the following hazard areas:

- very high potential bushfire intensity
- high potential bushfire intensity
- medium potential bushfire intensity
- potential impact buffer

3.3 Landslide

There is no mapping or provisions specifically relating to development on sloping land or identifying a landslide hazard area in the proposed planning scheme. The Winton Shire Disaster Management Plan (2016) identifies landslide as a rare likelihood and low priority for risk treatment.

4.0 Risk assessment

4.1 Flood

The local government area of Winton Shire has an average rainfall of 373mm. Winton Shire has a history of being impacted by flood events. The impacts from the flood events have varied and depend upon the severity of the event. These events have historically caused localised disruptions and property damage.

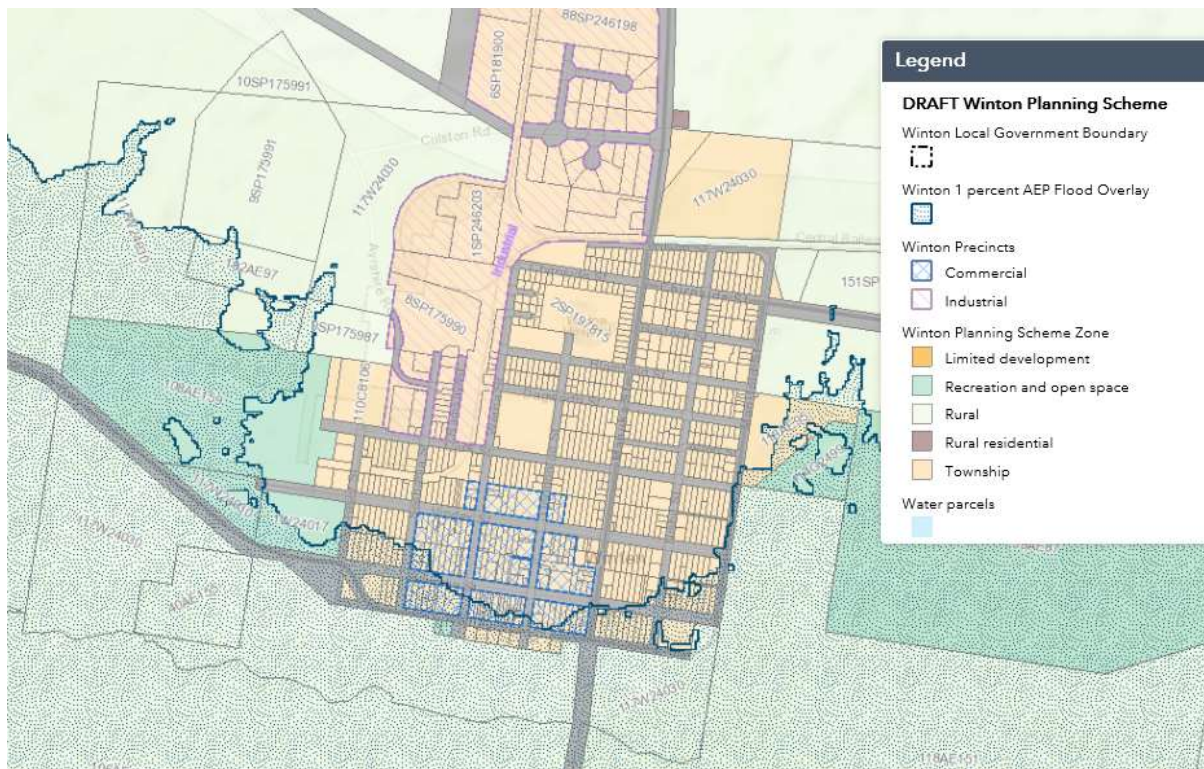
For the township of Winton, the 1% AEP design event for flooding has been used as the basis for identifying the flood hazard area. This design event is a commonly used design event for flood hazards and is considered acceptable to the level of risk that flooding represents in the town.

Winton

For the township of Winton, flood mapping for the 1% AEP extends over the southern parts of the town (refer to Figure 1). The deeper areas of inundation occur over those properties which are closest to the Western River. The areas impacted by flooding include parts of the township, recreation and open space and rural zones. For the township zone, approximately 35 properties are completely or substantially inundated and 16 lots partly inundated. In addition 19 properties within the commercial precinct are completely or substantially inundated and 28 lots partly inundated.

Note: Substantially inundated means inundation to such an extent that it would be difficult to locate development consistent with the zone outside of the flood affected area.



Figure 1. Extract of flood mapping for Winton

4.2 Bushfire

Winton

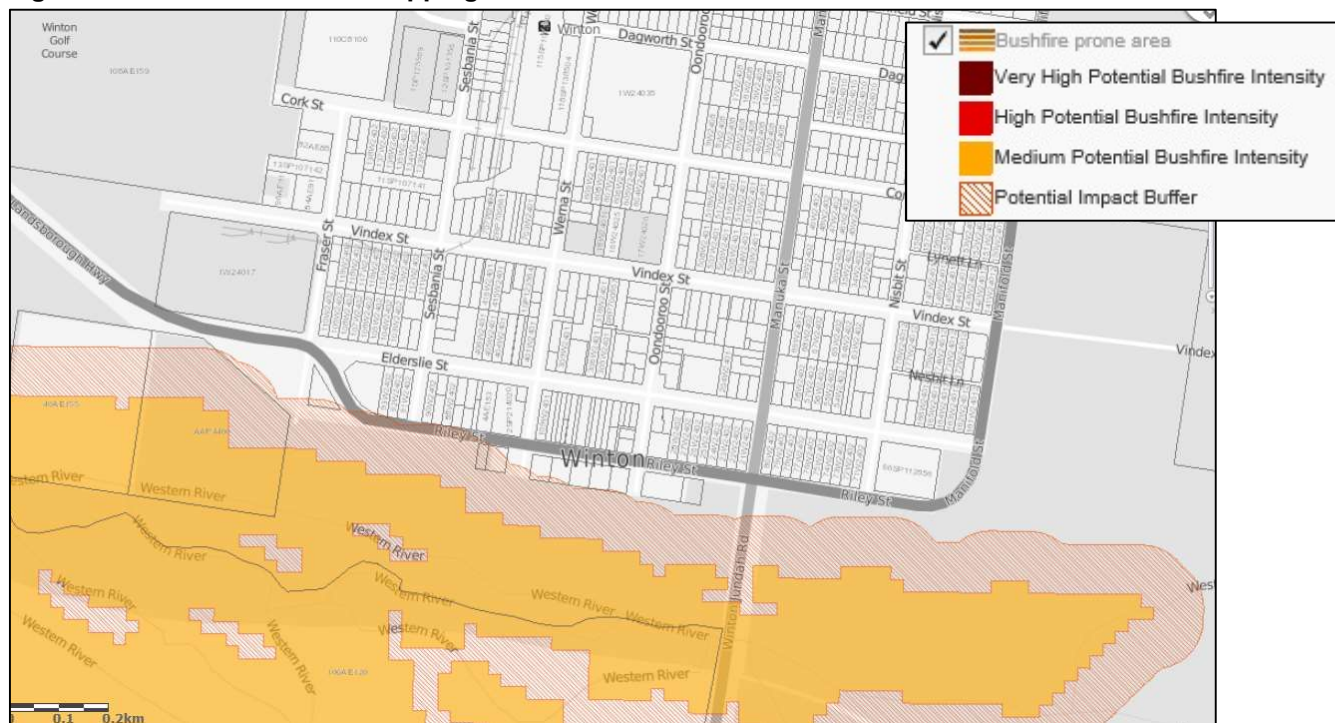
For the township of Winton, the bushfire prone area closely follows the vegetated banks of the Western River which is located to the south of the township (refer to Figure 2). Only one property in the township zone is partially affected by the bushfire potential impact area as well as a few of the recreation and open space properties located on the southern side of the township zone.

Rural areas

Parts of rural area of Winton Shire are impacted by the full range of bushfire hazard areas (e.g. very high potential bushfire intensity, high potential bushfire intensity, medium potential bushfire intensity and potential impact buffer). The higher bushfire intensity areas are generally located in the remote heavily vegetated areas which contain steep slopes. Rural fires which may affect property and grazing areas are most common in the dry season following good rainfall.



Figure 2. Extract of bushfire mapping for Winton



4.3 Landslide

The township areas do not include areas of land considered steep. Rural areas may contain areas of steep land. Rural areas primarily comprise of large rural grazing properties. There is considered minimal risk that future development will be located on steep land given the opportunities to construct buildings in other areas.

5.0 Analysis of natural hazards (planning provisions)

5.1 Flood

The township of Winton is impacted by flooding to varying degrees. No changes in zoning are proposed based upon the risk assessment, however, planning provisions are proposed based upon an avoid and mitigate approach. Ideally, future development should be located outside of flood affected areas, however where this is not possible, development needs to be designed to not expose people or property to unacceptable risks.



Table 2. Flood risk and planning response assessment

Planning response	Planning strategy	Planning scheme provisions
Limit certain land uses that are not appropriate for the hazard	Adjust current zonings to reflect appropriate land use	Provisions in the scheme have strengthened flood resilience. No new areas zoned for development proposed.
Levels of assessment appropriate for the hazard	Uses which increase people residing in flood prone areas require assessment	Development involving increasing people residing in flood affected areas (home based business, dwelling house, dwelling unit) is elevated to code assessment in the township zone. Other uses in the rural zone such as caretakers, short-term and workers accommodation are also elevated to code assessment.
New development to avoid flood prone areas or mitigates the risk	Include planning code provisions to address the risk	General development code includes provisions to ensure new development avoids flood prone areas or alternatively a risk assessment is undertaken.
Support built form change over time	Make future development resilient to the hazard	General development code includes provisions to ensure new buildings have floor levels 500mm above the defined flood level.
Flooding is not made worse	Filling and excavation in floodplain areas is minimised	Filling and excavation regulated when in flood hazard area. PO21 of the General development code limits filling or excavation to 10m ³ .
Community resilience to flooding is improved	Include planning code requirements to enable development to address the risk	Vital essential services (such as substation and utility installation) are elevated to code assessment when



Planning response	Planning strategy	Planning scheme provisions
		located in a flood affected area. General development code includes provisions to ensure safe evacuation route, appropriate storage of hazardous material, appropriate locating of community infrastructure and maintaining landforms.
Future lots ensure any future development is not adversely impacted by flood hazard	Design of new lots to address the risk	Reconfiguring of a lot code ensures any new lots created: - are located outside of the hazard area or maintain the necessary flood immunity - safe evacuation routes established.

5.2 Bushfire

Only one lot in the township zone is directly impacted by the bushfire mapping by bushfire mapping, an avoid and mitigate approach has been taken. That is new developments should avoid areas known to be bushfire-prone but, where unavoidable, must be built, designed and located to be resilient to bushfire hazards. Details of bushfire risk and planning provisions proposed are detailed below in Table 2.

Table 2. Bushfire risk and planning response assessment

Planning response	Planning strategy	Planning scheme provisions
Make no changes to existing land uses as risk is minimal	No up or down zoning in bushfire hazard areas	Maintain planning scheme zoning consistent with existing zoning
Levels of assessment appropriate for the hazard	Uses which increase people residing in bushfire prone areas require assessment	Development involving a dwelling house is elevated to code assessment. Other uses in the rural zone such as caretakers and short-term and rural workers



Planning response	Planning strategy	Planning scheme provisions
		accommodation are also elevated to code assessment.
New development to avoid bushfire prone areas or mitigates the risk	Include planning code provisions to address the risk	General development code includes provisions to ensure new development avoids bushfire prone areas or mitigates the risk by providing: • defensible buffer space • safe evacuation route • suitable water supply
Bushfire risk not made worse	Include planning code provisions to address the risk	General development code includes provisions to ensure storage of hazardous materials does not occur in the hazard area or is designed to withstand.
Community resilience to bushfire is improved	Include planning code requirements to enable development to address the risk	General development code includes provisions to ensure emergency services, community infrastructure, vulnerable uses, essential services and chemical facilities are not located in the hazard area.
Future lots ensure any future development is not adversely impacted by bushfire risk	Design of new lots to address the risk	Reconfiguring of a lot code ensures any new lots created: • maintain a separation distance • maintain an effective buffer suitable for fire fighting vehicles • safe evacuation routes established • critical infrastructure continues to operate

5.3 Landslide

No planning provisions relating to landslide are required for the township of Winton because the township area and rural residential area does not include areas of land considered steep.



Reasons for not specifically identifying a landslide hazard area in the planning scheme for the Rural or Recreation and Open Space zones are:

- the resources required to do so compared based on the expansive nature of the local government area; and
- lack of development pressure in these areas.

Standard engineering requirements for building construction will ensure any future development is constructed to a suitable standard.

6.0 Conclusion

This risk assessment has examined natural hazards such as flood, bushfire and landslide for the local government area of Winton. The assessment has reviewed the extent of the natural hazard areas and considered the relative risk of such events on people and property. Planning provisions have been developed to respond to the risk by adopting an avoid or mitigate approach. This will enable future development to be more resilient to natural hazard events.

